Appendix A

Scoping Summary Memo

CEQA Scoping Report

IP Athos, LLC

Athos Renewable Energy Project

Conditional Use Permit No. 180001
Public Use Permit No. 180001

CEQA Lead Agency:
Riverside County
Planning Department
4080 Lemon Street, 12th Floor
Riverside, CA 92502
Contact: Jason Killebrew
Phone: (951) 955-0314

June 2018

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Introduction

This scoping report documents the public scoping effort conducted by the Riverside County Planning Department (County) for the Athos Renewable Energy Project (Project). IP Athos, LLC, a subsidiary of Intersect Power, the Project Applicant, has filed an application with the County for a Conditional Use Permit (No. 180001) and a Public Use Permit (No. No. 180001). In compliance with California Environmental Quality Act (CEQA), the County held a 30-day public scoping period to allow the members of the public, regulatory agencies, and interested parties an opportunity to comment on the scope of the Environmental Impact Report (EIR) and to identify issues that should be addressed in the environmental document. This report documents the notification that occurred, the Scoping Meeting that was held, and the written comments received during the scoping period.

Project Scoping

This section describes the methods used to notify the public and agencies about the scoping process conducted for the Project. It outlines how information was made available for public and agency review and identifies the different avenues available for providing comments on the Project. The 30-day scoping period began on May 11, 2018 and continued through June 11, 2018.

Notice of Preparation

On May 11, 2018, the County issued a Notice of Preparation (NOP) consistent with CEQA Guidelines Section 15082, which summarized the proposed Project, stated its intention to prepare an EIR, and requested comments from interested parties (the NOP is provided in Appendix A). NOPs were mailed to responsible, trustee, and interested agencies, the State Clearinghouse, tribal governments, all residents within 2,400 feet of the project boundaries and individuals on the County's interested parties list. Fifteen copies were submitted to the State Clearinghouse. A copy of the NOP was also mailed to both the Desert Sun and Press-Enterprise newspapers, and the City of Riverside Public Library.

Scoping Meeting

On Monday June 4, 2018, the County held a Scoping Meeting at 1:30 p.m. at the County of Riverside, Desert Office in Palm Desert. At the Scoping Meeting, Kevin White, Planner, represented the County's Planning Department, and was assisted by Hedy Koczwara from Aspen Environmental Group. Kevin White and Hedy Koczwara presented the intent of the Scoping Meeting, the EIR timeline, the approval process, and a brief overview of the proposed Project. Attendees were then able to provide verbal comments.

The following information was part of the public scoping meeting:

- **Meeting Sign-in Sheet** to record contact names and addresses of all meeting attendees for use in future mailings.
- **Project Presentation Handout** including information on key components of the Project, the CEQA process, the purpose of scoping and how to provide comments.
- **Speaker Registration Card** to be filled out by anyone wishing to speak at the meeting.

Table 1, below, summarizes each of the verbal comments. Appendix B includes the sign-in sheet documenting the stakeholders who attended the meeting, and the speaker cards that were submitted during the meeting. As shown on the sign-in sheet, 18 people signed the sheet. Appendix C provides copies of the mailed and emailed comments.

Internet Website

The County has established a Project-specific website to provide ongoing information about the Project. The website includes an electronic version of the NOP, which provides a description of the proposed Project, as well as announcement of the Scoping Meeting's time, date and location. The website also includes County staff's contact information and IP Athos, LLC's, proposed site plan. The website will continue to provide Project information to the public throughout the application process. The website address is:

http://planning.rctlma.org/Home/PlanningNotices/CUP180001PUP180001.aspx

Email Address

Kevin White was the County Planner who was managing the EIR for the proposed Project at the time of scoping (he has since been replaced by Jason Killebrew). The Project website provided a direct link to Mr. White's email address, which was provided as another means of submitting comments on the scope and content of the EIR. Comments received by email will be considered in the EIR and have been incorporated into this scoping summary.

Distribution List

The County has compiled a Project-specific mailing list with over 205 entries. This list includes responsible and interested agencies, the County's 4th District Supervisor, the State Clearinghouse, tribal governments, all residents within 2,400 feet of the project boundaries, and individuals on the County's interested parties list.

The mailing list will be updated based on contact information from the comment letters received during the scoping comment period and from the Scoping Meeting sign-in sheets. This mailing or distribution list will continue to be used throughout the environmental review process for the Project to distribute public notices and will continue to be updated to ensure all interested parties are notified of key Project milestones.

Scoping Comments

A total of 10 commenters provided verbal comments during the Scoping Meeting. In addition, 15 written comment letters were submitted by mail or by email from public agencies, organizations, tribes, and private individuals. Table 1 lists all comment letters that were submitted during the scoping period along with a summary of the key comments. Table 2 lists the speakers at the Scoping Meeting and provides a similar summary of the key comments. Appendix C of this report includes copies of all comment letters in their original format.

Table 1. Summary of Written Scoping Comments			
Cmt No.	Date	From	Summary of Comments
A - Public Agencies, Written Comments			
A01	6/4/2018	California Department of Toxic Substances	• The EIR needs to determine whether current or historic uses of the site may have resulted in any release of hazardous wastes. • A Phase I Environmental Site Assessment might be needed. • If any environmental conditions are found to occur in the project area, sampling and remedial action should be conducted prior to construction. • Recommends evaluation, proper investigation, and mitigation for onsite areas with current or historic polychlorinated biphenyls (PCB)-containing transformers. • If soil contamination is suspected, the soil should be sample prior to export/disposal; and, if the soil is determined to be contaminated, it should be disposed of properly in accordance with all applicable laws and regulations. If the project requires importing soil to backfill excavated areas, proper evaluation should be conducted to ensure the imported soil is free of contamination. • If soil contamination is suspected during construction, then all construction should cease, and appropriate health and safety procedures should be implemented. • If it is determined that contaminated soil and/or groundwater exists, the EIR should identify how any required investigation and/or remediation will be conducted and the appropriate agency to provide regulatory oversight.
A02	6/5/2018	South Coast Air Quality Control District (SCAQMD)	• Requests a copy of the Draft EIR be sent directly to SCAQMD upon its completion. • Also send all appendices or technical documents related to air quality, health risk, and greenhouse gas analyses and electronic versions of all air quality modeling and health risk assessment files, including emission calculation spreadsheets and modeling input and output files (not PDF files), pursuant to the CEQA Guidelines Section 15174. • Any delays in providing all supporting documentation will require additional time for review beyond the end of the comment period. • Recommends the Lead Agency use the CEQA Air Quality Handbook (1993) as guidance when preparing the air quality analysis. • Recommends the Lead Agency use the CalEEMod land use emissions software available at www.caleemod.com. • Requests the Lead Agency quantify criteria pollutant emissions and compare the results to SCAQMD's CEQA regional pollutant emissions significance thresholds to determine impacts. • Recommends calculating localized air quality impacts and comparing the results to localized significance thresholds (LST) by either using the LSTs developed by SCAQMD or performing dispersion modeling as necessary. • The Lead Agency should identify any potential adverse air quality impacts that could occur from all phases of the project and all air pollutant sources related to the project, including from indirect sources. • Recommends the Lead Agency perform a mobile source health risk assessment in the event the project would generate or attract vehicular trips, especially heavy-duty diesel-fueled vehicles. • An analysis of all toxic air contaminant impacts due to the use of equipment potentially generating such air pollutants should be included. • States the California Air Resources Board's Air Quality and Land Use Handbook: A Community Health Perspective gives guidance on siting incompatible land uses and can be used as a general reference guide for reducing air pollution impacts. • States where to find guidance on strategies to reduce air pollution exposure near high-volume roadways. • States that CEQA requires that all feasible mitigation measures go beyond what is required by law be utilized during project construction and operation to

Table 1. Summary of Written Scoping Comments

Cmt No.	Date	From	Summary of Comments
			minimize these impacts; and, any impacts resulting from mitigation measures must also be discussed. • SCAQMD notifies the Lead Agency of several resources useful for identifying potential mitigation measures for the project. • Pursuant to CEQA Guidelines Section 15126.6(d), the Draft EIR shall include sufficient information about each alternative to allow meaningful evaluation, analysis, and comparison with the Proposed Project. • If the project requires a permit from SCAQMD, then SCAQMD should be identified as a Responsible Agency. • SCAQMD staff is available to work with the Lead Agency to ensure that project air quality impacts are accurately evaluated, and any significant impacts are mitigated where feasible.
A03	6/11/2018	United States Fish and Wildlife Service	• Federal trust resources to likely occur in the project area include the threatened Mojave desert tortoise, endangered Yuma clapper rail and Yuma Ridgway's rail, endangered southwestern willow flycatcher, and endangered yellow-billed cuckoo. • Other sensitive resources include the golden eagle and the western burrowing owl. • Comments are made based on familiarity with the locations for other large solar projects. • Recommends conducting appropriate protocol surveys so USFWS can more effectively advise the County of potential impacts. • Recommends representatives of the County and the applicant meet with BLM, USFWS, and California Department of Fish and Wildlife (CDFW) to discuss jurisdiction. • Suggest standard measures to avoid, minimize, and mitigate project impacts to Federal trust resources • Offers to further refine site-specific measures as more information becomes available.
B – Group, Organizations, & Companies, Written Comments			
No comments.			
C - Tribal Governments, Written Comments			
C01	5/29/2018	Twenty-Nine Palms Band of Missions Indians #1	• The Twenty-Nine Palms Band of Mission Indians Tribal Historic Preservation Office was aware of over 75 cultural resources within 1-mile of the Project area, as previously started in a letter May 2, 2018. • The Project is in the vicinity of a culturally sensitive site and within the Chemehuevi Traditional Use Area. • The Project would have significant impacts on potential cultural resources that concern the Twenty-Nine Palms Band of Mission Indians. • The EIR should identify and evaluate the potential for the Project to adversely affect archaeological and historical resources. • A Phase II and III Cultural Resource Investigation should be done • Recommends creating a mitigation monitoring plan with input and participation from the consulting Tribes. • Requests copies of all available or forthcoming reports and noticed in regard to the project.
C02	6/7/2018	Twenty-Nine Palms Band of Missions Indians #2	• Since the previous correspondence, the Twenty-Nine Palms Band of Missions Indians became aware of 2 resources in the study area that fit into the category of a Tribal Cultural Resource (TCR). • Requests the updated cultural report with shapefiles and DPR reports of the new resources recorded. Once this documentation is received, the THPO will provide further recommendations. • Recommends a comprehensive Visual Impact Assessment emphasizing the visual effects that may compromise the integrity of cultural resources and TCRs. Representatives from the consulting Tribe(s) should be able to accompany the firm conducting the Visual Impact Assessment.

Table 1. Summary of Written Scoping Comments

Cmt No.	Date	From	Summary of Comments
D - Private Citizens, Written comments			
D01	5/17/2018	Behrooz Mehri	• Received the Notice regarding permit No. 180001. • States that personal property looks to be in the middle of the proposed Project. • Requests a way to view online or to receive digital copies of the proposed Project's plans.
D02	5/29/2018	Stephen Luth #1	• Stephen Luth states he is a disabled Vietnam Veteran and suffers from post-traumatic stress disorder (PTSD). • His residence is located on APNs 811-260-07, 811-260-08, and 811-260-09 and he has lived there for 30 years. • Due to his PTSD, noise and movement around him is very difficult – he moved to the Desert Center to get away from city chaos. • It will be difficult for him to have this Project located so close to him. • Hopes to find a solution that will benefit all parties.
D03	6/5/2018	John Beach	• Stated that Steve Jones is the county manager of Desert Center, and he can set up a local meeting at the community center, if interested. • Suggested the meeting could be held at Lake Tamarisk, and that the winter is the best time because of the "snowbirds." • There are four other nearby major projects that may coincide with construction: o Eagle Crest Energy Pumped Storage Project, Eagle Mountain (former Kaiser mine site) o Palen Solar Energy Project, Corn Springs Road (10 miles east of Desert Center) o Desert Harvest Solar Energy Project, Kaiser Road (immediately south of Desert Sunlight Solar Energy Plant) o Interstate 10 Upgrade & Repair, Desert Center to Blythe ($400 million Caltrans budget) • NextEra Energy of Juno Beach also has more work planned close to the McCoy and Blythe Solar Energy Plants north of Blythe Airport, somewhat outside of the immediate area.
D04	6/5/2018	Johnney Coon #1	• Concerned about how the Project will affect him, his community, the environment, and the wildlife. • There is only one access road he and his neighbors use and it is already being negatively impacted by the environmental studies crews. • Concerned about the access road not being open during an emergency, and whose responsibility it is to maintain the road. • Concerned about the migratory and other birds flying into the panels due to the fact that it may look like a lake. • Curious about what will happen to the displaced animals, loss of habitat, and loss of migration patterns due to the Project. • Concerned about massive water use lowering the water table and the Project interfering with their right to water. • Concerned about flash floods and curious about any plans regarding this issue. • Concerned about noise from the transmission lines and the on-site building throughout the Project area. • Curious about the plans to mitigate noise and light pollution (they have very dark nights) and the aesthetic impacts. • Will the Project add to the heat already felt in the area? • Will the Project affect the next generation? • Concerned about trash and proper waste disposal in the Project area. • States that a positive of the Project is that it will be on already disturbed land, not on pristine desert land.

Table 1. Summary of Written Scoping Comments

Cmt No.	Date	From	Summary of Comments
D05	6/1/2018	Jerry and Christine Samons	• State that they received the Notice from Riverside County and that it was the very first notice they received about the Project. • They agree that the Project would affect their property in Desert Center and state their opposition to the Project. • The Project is 2,000 feet from their 80-acre date ranch and would prevent them, from the quiet enjoyment of their property. • Do not want their access to be infringed upon in any way and provided a map of their property in reference to the proposed Project and the access road to Rice Road Hwy 177. • Concerned about the short amount of time between the notice, the public meeting, and the comment period. • Concerned about wildlife, birds, brightness, aesthetic impacts, and safety impacts due to the glare. • States a similar project is off of Interstate 15 near Prim, NV and it causes glare problems that affect drivers nearby. • Concerned that the new California law requiring new builds to have solar panels will make this project obsolete.
D06	6/6/2018	Stephen Luth #2	• Letter from Just Atchison on behalf of Steven Luth. • Concerned about physical impacts including: Dust that could trigger asthma in Esther Luth, noise and traffic that would cause severe stress to Steven Luth due to his PTSD, view from their home and use of open spaces, devaluation of home, and probability of being forced to move due to these physical impacts. • Concerned about environmental impacts: Flooding, berm destruction, increased heat, endangering wildlife (kangaroo rats, desert iguanas), increase snake problem as they migrate, and access from the home during emergencies (flash flood). • Notes attention to the fact that Steven Luth is a Vietnam Veteran with a Purple Heart. • States that Steven and Esther Luth just paid off their property in March 2018 and have lived at the property year-round for 30 years. • Requests communication with Steven and Esther go through Judy Atchison. • Requests a link to the map that also shows APNs 811-260-007, 811-260-008, and 811-260-009.
D07	6/11/2018	June Capp	• Concerns about the Project causing several issues in her area. • The increase tillage since the solar plant started being built blows silt and dirt. • Concerned the water diversions may cause runoff to flood their property and neighbors' properties. • Major rains caused land and access road damage. • Concerned about the excess of blowing silt that cannot be plowed into the ground or contained by wetting it. • States that after the rerouting of the water flow, the family and animals have suffered from allergies that they did not have in the past. • States the mud left something that is affecting plants and trees. • Questions what the plan is to mitigate the effect that the lines, substation, and inverters may have on the people, such as those who have pacemakers like her son). • Concerned about effects on their health due to the continuous buzzing of the lines and continuous lighting day and night. • Concerned for the wildlife and their habitat, including mountain lions, deer, big horn sheep, badger, coyote, fox, iguanas, snakes, lizards, buzzards, dove, geese, ducks, local birds, and desert turtles. • Concerned about water usage the solar plant is going to require. • Concerned about the Project's effect on the current drought conditions and lowering water table. • Concerned about the Project's impacts to roads. • Two lane roads on Hwy 177 are dangerous with a multitude of trucks on it. • Requests to be placed on mailing list.

Table 1. Summary of Written Scoping Comments			
Cmt No.	Date	From	Summary of Comments
D08	6/11/2018	Johnney Coon #2	• Stated that her and her husband have been in Desert Center for 42 years. • Concerned about birds crashing into panels. Are their mitigation measures for this? • Concerned about displaced animals, animal deaths, loss of habitat, and loss of migration and corridor patterns. Proposed fencing with large enough opening to let the small animals pass through. • Concerned about the project further dropping the water table and the effect it will have on the local population. Residents maintain their own pumps and wells; would there be compensation for the need to lower them? • Concerned about water diversions and flash flooding. Who would be responsible for providing and maintaining berms to protect residents? • Concerned about noise pollution since the substation will be right next to them. • Requests the substation be moved to the west of the gen-tie/project access road for there are no neighbors over there. • Concerned about her and her husband WHIP wildlife pond on their property and its proximity to the substation. • Concerned about transmission lines or substation having a negative effect on people with pacemakers. • Concerned about light pollution. Requests no to little lights around the Project to protect the moonless nights in the area. • Concerned about dust, especially during construction. States that asthma and respiratory issues are on the rise. • Concerned about heat generation and reflections issues. • Concerned about road access and maintenance. The only access road to their property is being used by those performing environmental studies for the Project. Also quotes a notice from the planning department on 5/9/2018 which states, "the applicant is also seeking to vacate interior roadways and merge contiguous project parcels." • Concerned about trash from workers and construction • Concerned about quality of life and aesthetics. • Requests that the issues are addressed in good faith to lessen the impacts of the Project and be a good neighbor.
D09	6/11/2018	Sharon Davis	• Submitted description and Plat Plan of the Green Acres Mobil Home Park, and recommended the property as a project staging site.
D10	7/17/18	Mark and Katrina Hedberg	• Supports clean renewable energy • Owns date farm and concerned that current zoning will be changed for surrounding properties, which could include height limits and setbacks for the date trees • Concerned about heat and reflection on agriculture, which could damage trees • Concerned about property access • Questions why their parcel was not considered for inclusion in the Project

Table 2. Summary of Oral Scoping Comments			
Cmt No.	Date	From	Summary of Comments
E - Scoping Meeting, Oral Comments (June 4, 2018)			
E01	6/4/18	Judy Atchison	• Residents suffer from PTSD and asthma, so are concerned about noise, dust and traffic • Cited visual concerns, because will be surrounded by proposed solar panels • Other concerns include property value impacts, and the cost of having to move • Requested a map with parcels, which Ken Baez said is on the County website

Table 2. Summary of Oral Scoping Comments

Cmt No.	Date	From	Summary of Comments
E02	6/4/18	Johnney Coon	• Concerns about impacts to Loma Verde Road, which could preclude property access. Said that specialists performing environmental studies are already causing deterioration. Loma Verde Road also becomes a "river" in big rain events and this is the only access to their property. • Concerns about impacts to wildlife, including "lake effect" impacts of migratory and other birds flying into panels (people are calling the area Lake Chuckwalla) and from the blockage of wildlife corridors, especially with other projects in the area • Emergency access concerns with impacts to road conditions • Concerns about water use and groundwater supply, as well as water diversions and flash flooding • Concerns about corona noise from transmission lines and from solar facility buildings • Light pollution concerns • Concerns about heat generation and increase in temperatures from installation of solar panels • Trash and waste disposal concerns • Concerns about visual impacts • Supports use of already-disturbed lands
E03	6/4/18	Ann Richmond	• Concerns about access to her property
E04	6/4/18	Jeff Harvey, Eagle Crest Energy Company	• Concerned about the right-of-way of the Eagle Crest transmission line through several proposed Project parcels • Stated that federal approval is required by the Federal Energy Regulatory Commission (FERC) in addition to the U.S. Bureau of Land Management, so it doesn't interfere with a federally licensed project.
E05	6/4/18	Arthur Samons	• Access and ROW concerns • Land use concerns about access to game bird hunting areas northwest of the proposed Project • Concerns about impacts to desert tortoise • Concerns about flood control • Chuckwalla Raceway is noisy, so wondered if the panels could interfere and possibly amplify the racetrack noise
E06	6/4/18	Chris Braun	• Neutral on the project • Concerned about an increase in traffic accidents on Interstate 10 as travelers may take their eyes off the road to view the solar facility • Concerned about reflective (glare) issues for drivers on the Chuckwalla Raceway from the solar panels
E07	6/4/18	Rena Van Fleet, Colorado River Indian Tribes	• CRIT would like to be advised when the archaeological walkover will happen • Corridors in the area between Red Bluff Substation and Eagle Mountain are sacred to the Mojave Tribe, so they would like to be updated on the proposed Project
E08	6/4/18	Vince Samons	• Asked whether there is a chance that existing SCE power lines that go through the properties could be pulled out
E09	6/4/18	John Richards	• Summarized issues raised, namely property access concerns along unpaved roadways in the Project area due to use by construction workers and heavy equipment, during flooding/rain events and from an increase in windblown dust • Asked who will maintain the perimeter roads around the solar facility site parcels • Summarized concerns associated with rerouting of power lines, if applicable to the Project • Flood/drainage concerns if existing berms would be removed
E10	6/4/18	Unknown (no speaker registration card submitted)	• Concerns about how many people will be involved in construction and where the construction workers will live and shop

Appendix A:

Notice of Preparation

(filed with the State Clearinghouse on May 11, 2018)

Appendix B:

Scoping Meeting Materials

Appendix C

Written Comment Letters Received During Scoping Period

Appendix A:

Notice of Preparation

(filed with the State Clearinghouse on May 11, 2018)

RIVERSIDE COUNTY
PLANNING DEPARTMENT

Charissa Leach, P.E.
Assistant Director of TLMA

Notice of Preparation of an Draft Environmental Impact Report

Date: May 11, 2018

To: Responsible and Trustee Agencies, Interested Organizations, and Individuals.

Project Title/Case No Athos Renewable Energy Project - Draft Environmental Impact Report
Conditional Use Permit No. 180001/ Public Use Permit No. 180001

Project Location: The Athos Renewable Energy Project is located in Riverside County, north of Interstate 10 (I-10) and approximately 4 miles east and northeast of the Desert Center Community. The Project consists of 65 parcels on private land, the APNs of which are listed on the attached sheet titled "Assessor's Parcels for the Athos Renewable Energy Project." A 220 kilovolt (kV) generation tie (gen-tie) transmission line would be located both north and south of the I-10 freeway to connect the facility into the existing Southern California Edison (SCE) Red Bluff 500/220 kV Substation. The solar facility site is located within the County of Riverside's jurisdiction. The 220 kV gen-tie line would traverse mainly BLM-administered public lands.

Project Description: IP Athos, LLC ("Applicant"), a subsidiary of Intersect Power, proposes to construct, operate, and decommission the Athos Renewable Energy Project, which includes a large scale solar photovoltaic (PV) electrical generating and storage facility and associated infrastructure to generate and deliver renewable electricity to the statewide electricity transmission grid. The proposed Project, a PV solar power plant and 11-mile-long 220 kV gen-tie transmission line, would be located on approximately 3,400 acres across 7 non-contiguous groups of parcels northeast of the community of Desert Center. The Project would consist of a solar fields, inverters, powerlines, 4 substations, an O&M Building, access roads, telecommunications facilities, and related equipment. The facility would generate and provide storage for 500 megawatts (MW) of renewable energy using PV technology. The power produced by the Project would be conveyed to the statewide power grid via interconnection to the SCE Red Bluff Substation, an existing substation located south of I-10 and approximately 1.1 miles south of the Project area. As part of the Project, the applicant is also seeking to vacate interior roadways and merge contiguous project parcels. Roads along the project perimeter on the solar facility lands would remain dedicated public access.

Pursuant to the California Environmental Quality Act, notice is given to responsible and interested agencies that the Riverside County Planning Department plans to oversee the preparation on an Environmental Impact Report for the above-described project. The purpose of this notice is to solicit guidance from your agency as to the scope and content of the environmental information to be included in the EIR. Information in that regard should be submitted to this office as soon as possible, but <u>not later than thirty (30) days</u> after receiving this notice.

Probable Environmental effects of the project: *The County of Riverside has determined that an Environmental Impact Report (EIR) shall be prepared to address the potential significant impacts of the proposed Athos Renewable Energy Project. As a result, the probable environmental impacts that will be analyzed as part of the EIR include:*

Aesthetics/Visual Resources/Reflection	**Agricultural Resources**
Air Quality	**Biological Resources**
Cultural Resources and Paleontological Resources	**Geology and Soils**
Greenhouse Gas Emissions	**Hazards and Hazardous Materials**
Hydrology and Water Quality	**Land Use and Planning**
Noise	**Population and Housing / Socioeconomics**
Traffic and Transportation	

The EIR will include all topical areas of content required by the California Environmental Quality Act (CEQA), including cumulative impacts, alternatives to the proposed Project, and growth-inducing impacts. For each resource topic, environmental impacts relating to construction, operations, and decommissioning phases of the Project will be identified. However, the level of analysis to be included may vary based on the complexity of the issues, public and agency input to this Notice of Preparation (NOP), and/or refinements to the Project description that may occur subsequent to the publication of this NOP. For impacts that are significant, mitigation measures will be proposed to alleviate or avoid the significant impact(s).

LEAD AGENCY:
Riverside County Planning Department
4080 Lemon Street, 12th Floor
P.O. Box 1409
Riverside, CA 92502-1409
Attn: Kevin White, Project Planner

PROJECT SPONSOR:
Applicant: IP Athos, LLC
Address: *548 Market Street # 68743*
San Francisco, CA 94104-5401

PUBLIC SCOPING MEETING

Because the Project meets the CEQA Guidelines §15206 definition of a project having statewide, regional, or area-wide significance, the Count of Riverside will hold a scoping meeting as specified in CEQA Guidelines §15082. The scoping meeting will be held at:

County of Riverside – Desert Office
77-588 El Duna Court, Suite H
Palm Desert, CA 92211
June 4, 2018 at 1:30 p.m.

If you have any questions, please contact Kevin White at **(951) 955-1417** or by email at **KEWhite@rivco.org.**

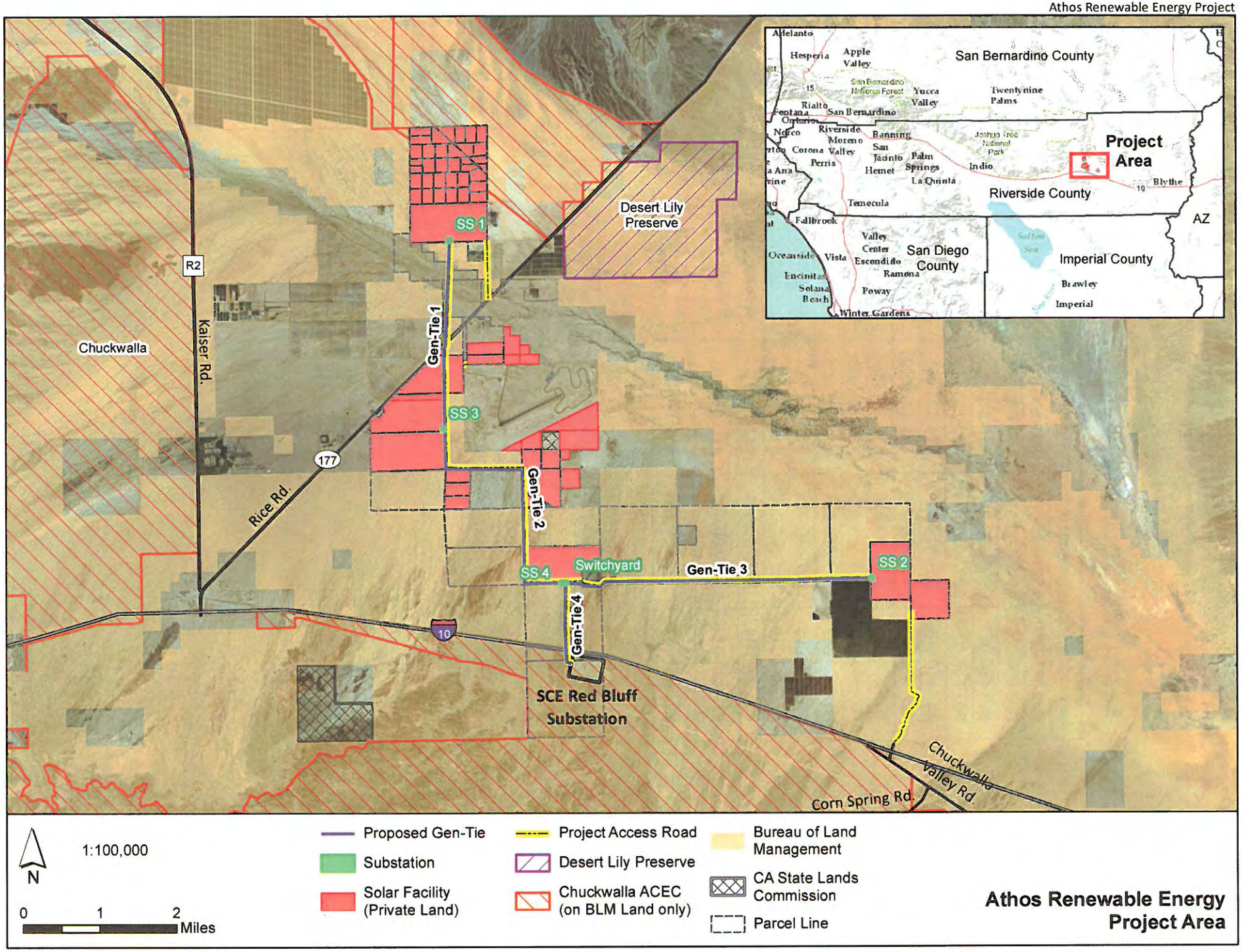
Sincerely,

RIVERSIDE COUNTY PLANNING DEPARTMENT
Charissa Leach, P.E., Assistant Director of TLMA

Kevin White, Project Planner

Assessor's Parcels for the Athos Renewable Energy Project.

Assessor's Parcels for Project Site (CUP 180001 & PUP 180001)			
807-191-004	807-690-004	807-690-027	811-170-009
807-680-001	807-690-011	807-690-028	811-170-013
807-680-002	807-690-012	810-110-001	811-180-001
807-680-003	807-690-013	810-110-006	811-180-002
807-680-004	807-690-014	811-122-001	811-180-003
807-680-005	807-690-015	811-122-002	811-180-004
807-680-006	807-690-016	811-122-009	811-180-005
807-680-007	807-690-017	811-130-010	811-180-013
807-680-008	807-690-018	811-142-005	811-180-014
807-680-009	807-690-019	811-142-006	811-180-024
807-680-010	807-690-020	811-142-007	811-190-001
807-680-011	807-690-021	811-142-015	811-260-013
807-680-012	807-690-022	811-150-001	807-191-031 (gen-tie only)
807-680-013	807-690-023	811-150-002	811-121-003 (gen-tie only)
807-690-001	807-690-024	811-170-002	
807-690-002	807-690-025	811-170-007	
807-690-003	807-690-026	811-170-008	


Desert Lily Preserve
SS 1
Gen-Tie 1
SS 3
Gen-Tie 2
SS 4
Switchyard
Gen-Tie 3
SS 2
Gen-Tie 4
SCE Red Bluff Substation
Chuckwalla
Kaiser Rd.
R2
Rice Rd.
177
10
Chuckwalla Valley Rd
Corn Spring Rd.
Project Area
San Bernardino County
Riverside County
San Diego County
Imperial County
AZ
Hesperia
Apple Valley
Yucca Valley
Twentynine Palms
Rialto
San Bernardino
Riverside
Moreno Valley
Banning
San Jacinto
Hemet
Palm Springs
La Quinta
Indio
Blythe
Corona
Perris
Temecula
Fallbrook
Vista
Escondido
Ramona
Poway
Winter Gardens
Oceanside
Encinitas
Solana Beach
Brawley
Imperial
N
1:100,000
0
1
2
Miles
Proposed Gen-Tie
Substation
Solar Facility (Private Land)
Project Access Road
Desert Lily Preserve
Chuckwalla ACEC (on BLM Land only)
Bureau of Land Management
CA State Lands Commission
Parcel Line
Athos Renewable Energy Project Area

Appendix B:

Scoping Meeting Materials

SIGN IN

Athos Renewable Energy Project

Scoping Meeting – Monday, June 4, 2018, Riverside County Planning Department

PLEASE PRINT CLEARLY

Name:* Marisa Mitchell	**Affiliation (if any):** Applicant		
Address:*	**City:***	**State:**	**Zip:**
Email Address: marisa@intersectpower.com		Prefer to receive notices via email? → ☒	
Name:* Noelle Ronan	**Affiliation (if any):** USFWS		
Address:* 777 E. Tahquitz Canyon Way, ~~Palm Spring~~ suite 208	**City:*** Palm Springs	**State:** CA	**Zip:** 92264
Email Address: noelle_ronan@fws.gov		Prefer to receive notices via email? → ☐	
Name:* Jennessa McBride	**Affiliation (if any):** USFWS		
Address:* 777 E Tahquitz Can Way	**City:*** Palm Springs	**State:** CA	**Zip:** 92262
Email Address: jenness_mcbride@fws.gov		Prefer to receive notices via email? → ☑	
Name:* JDhoney Coon & Timothy Anderson	**Affiliation (if any):**		
Address:* P.O. Box 436 Desert Center CA 92239	**City:*** Desert Center	**State:** CA	**Zip:** 92239
Email Address: JCoon0313@gmail.com		Prefer to receive notices via email? → ☑	
Name:* JEFF HARVEY	**Affiliation (if any):** EAGLE CREST ENERGY CO.		
Address:*	**City:***	**State:**	**Zip:**
Email Address: harvey-jeff@sbcglobal.net		Prefer to receive notices via email? → ☑	
Name:* CHRIS BRAIN	**Affiliation (if any):** Desert Center Havasu		
Address:* 43 Camino Real	**City:*** Rancho Mirage	**State:** CA	**Zip:** 92270
Email Address: 2Adventure@gmail.com		Prefer to receive notices via email? → ☑	

*This information may be released if requested under the Freedom of Information Act. Individual respondents may request that we withhold their home address from the record, which we will honor to the extent allowable by law. If you wish us to withhold your name and/or address:, you must state: this prominently at the beginning of your written comments. All submissions from organizations or businesses will be available for public inspection in their entirety

SIGN IN

Athos Renewable Energy Project

Scoping Meeting – Monday, June 4, 2018, Riverside County Planning Department

send PPT *

PLEASE PRINT CLEARLY

Name:* Sharon L. Davis	**Affiliation (if any):** Green Acres / Desert Center CA		
Address:* 83 Sunset	**City:***	**State:**	**Zip:**
Email Address: Sldavis63379@charter.net		Prefer to receive notices via email? → ☐	
Name:* Richard W. Zeiler	**Affiliation (if any):** Owner - "Green Acres"		
Address:* 638 S. Grand St	**City:***	**State:**	**Zip:**
Email Address: Orange, CA. 92866		Prefer to receive notices via email? → ☐	
Name:* John Beach	**Affiliation (if any):**		
Address:* PO Box 91	**City:*** Desert Center	**State:** CA	**Zip:** 92239
Email Address: jbeach1950@gmail.com		Prefer to receive notices via email? → ☑	
Name:* Richard DeLashmit	**Affiliation (if any):** Global Organics		
Address:* 26301 Rice Rd.	**City:*** Desert Center	**State:** CA	**Zip:** 92239
Email Address: richarddelashmit@gmile.com		Prefer to receive notices via email? → ☑	
Name:* Arthur Samons	**Affiliation (if any):** Wonder Palms Date Ranch		
Address:* 1511 Merita Dr.	**City:*** Boulder City	**State:** NV	**Zip:** 89005
Email Address: Arthur_Samons@NPS.Gov		Prefer to receive notices via email? → ☑	
Name:* Vince Samons	**Affiliation (if any):** Landowner		
Address:* 69215 Buck Dr.	**City:*** Mountain Center	**State:** CA	**Zip:** 92561
Email Address: Vince.Samons@ucr.edu		Prefer to receive notices via email? → ☐	

*This information may be released if requested under the Freedom of Information Act. Individual respondents may request that we withhold their home address from the record, which we will honor to the extent allowable by law. If you wish us to withhold your name and/or address:, you must state: this prominently at the beginning of your written comments. All submissions from organizations or businesses will be available for public inspection in their entirety

SIGN IN

Athos Renewable Energy Project

Scoping Meeting – Monday, June 4, 2018, Riverside County Planning Department

PLEASE PRINT CLEARLY

Name:* JR Chiriaco	**Affiliation (if any):** Property Owner L.T.		
Address:* 62450 Chiriaco Rd	**City:*** Chiriaco Smt.	**State:** CA	**Zip:** 92201
Email Address: JRCBOB@yahoo.com		Prefer to receive notices via email? →	☒
Name:* MARGIT F. CHIRIACO RUSCHE	**Affiliation (if any):** Neighbor		
Address:* 62450 CHIRIACO ROAD	**City:*** CHIRIACO SUMMIT	**State:** Ca	**Zip:** 92201
Email Address: CHIRIACO SUMMIT Ca 92201 MCHIRIACOR@AOL.COM		Prefer to receive notices via email? →	☐
Name:* Steve H. Jones	**Affiliation (if any):** Property Owner		
Address:* PO Box 246	**City:*** Desert Center	**State:** CA	**Zip:** 92239
Email Address: SteveJ8460@Earthlink.net		Prefer to receive notices via email? →	☑
Name:* Don Richmond	**Affiliation (if any):** Property Owner		
Address:* P.O. Box 1387	**City:*** Riverside	**State:** CA	**Zip:** 92502
Email Address: ann@vandrinc.com		Prefer to receive notices via email? →	☒
Name:* Calvin Lott	**Affiliation (if any):**		
Address:* PO Box 272	**City:*** Desert Center	**State:** CA	**Zip:** 92502
Email Address: dad@dc.rr.com		Prefer to receive notices via email? →	☐
Name:* Rena Van Fleet	**Affiliation (if any):** Colorado River Indian Tribes		
Address:* 26600 Mohave Road	**City:*** Parker	**State:** Az	**Zip:** 85344
Email Address: rena.vanfleet@crit-nsn.gov		Prefer to receive notices via email? →	☒

*This information may be released if requested under the Freedom of Information Act. Individual respondents may request that we withhold their home address from the record, which we will honor to the extent allowable by law. If you wish us to withhold your name and/or address:, you must state: this prominently at the beginning of your written comments. All submissions from organizations or businesses will be available for public inspection in their entirety

Both email & mail

SPEAKER IDENTIFICATION FORM
Riverside County Planning Commission or Director's Hearing

Submit request at Planning Commission to the Hearing Secretary or at Director's Hearing to the Case Planner.

Speakers are permitted to be heard up to three (3) minutes, subject to Public Hearing Rules listed on the reverse side of this form.

Date: 6-4-18 **Agenda #:** 4.1

SPEAKER'S NAME: Ann Richmond
(Print Name)

Address: _____
(Only required if follow-up mail response is requested)

City: _____ **Zip:** _____

Phone #: _____ **Email:** _____

I AM:

- [ ] The Applicant
- [ ] Applicant's Representative
- [ ] A Neighbor
- [x] Other Interested Party
- [ ] The Appellant
- [ ] Respondent

PLEASE STATE YOUR POSITION BELOW:

- [x] **I wish to speak**
- [ ] **I DO NOT wish to speak**

Position on Agenda Item:

- [x] **In Favor**
- [ ] **Neutral**
- [ ] **Opposed**

I give my 3 minutes to: _____

SPEAKER IDENTIFICATION FORM
Riverside County Planning Commission or Director's Hearing

Submit request at Planning Commission to the Hearing Secretary or at Director's Hearing to the Case Planner.

Speakers are permitted to be heard up to three (3) minutes, subject to Public Hearing Rules listed on the reverse side of this form.

Date: 06/04/18 **Agenda #:** 4.0

SPEAKER'S NAME: JEFF HARVEY
(Print Name)

Address: _____
(Only required if follow-up mail response is requested)

City: INDIO **Zip:** 92203

Phone #: _____ **Email:** harvey-jeff@sbcglobal.net

I AM:

- [ ] The Applicant
- [ ] Applicant's Representative
- [ ] A Neighbor
- [x] Other Interested Party
- [ ] The Appellant
- [ ] Respondent

PLEASE STATE YOUR POSITION BELOW:

- [ ] **I wish to speak**
- [ ] **I DO NOT wish to speak**

Position on Agenda Item:

- [ ] **In Favor**
- [x] **Neutral**
- [ ] **Opposed**

I give my 3 minutes to: _____

SPEAKER IDENTIFICATION FORM
Riverside County Planning Commission or Director's Hearing

Submit request at Planning Commission to the Hearing Secretary or at Director's Hearing to the Case Planner.

Speakers are permitted to be heard up to three (3) minutes, subject to Public Hearing Rules listed on the reverse side of this form.

Date: 6-4-18 **Agenda #:** _____

SPEAKER'S NAME: Arthur Samous
(Print Name)

Address: 1511 Marita Dr.
(Only required if follow-up mail response is requested)

City: Boulder City, NV **Zip:** 89005

Phone #: 702-575-8770 **Email:** Arthur_Samous@NPS.gov

I AM:

- [x] The Applicant
- [ ] Applicant's Representative
- [ ] A Neighbor
- [ ] Other Interested Party
- [ ] The Appellant
- [ ] Respondent

PLEASE STATE YOUR POSITION BELOW:

- [x] **I wish to speak**
- [ ] **I DO NOT wish to speak**

Position on Agenda Item:

- [ ] **In Favor**
- [x] **Neutral**
- [ ] **Opposed**

I give my 3 minutes to: _____

SPEAKER IDENTIFICATION FORM
Riverside County Planning Commission or Director's Hearing

Submit request at Planning Commission to the Hearing Secretary or at Director's Hearing to the Case Planner.

Speakers are permitted to be heard up to three (3) minutes, subject to Public Hearing Rules listed on the reverse side of this form.

Date: June 4, 2018 **Agenda #:** 4.1

SPEAKER'S NAME: CHRIS BRAUN
(Print Name)

Address: _____
(Only required if follow-up mail response is requested)

City: _____ **Zip:** _____

Phone #: _____ **Email:** _____

I AM:

- [ ] The Applicant
- [ ] Applicant's Representative
- [x] A Neighbor
- [ ] Other Interested Party
- [ ] The Appellant
- [ ] Respondent

PLEASE STATE YOUR POSITION BELOW:

- [x] **I wish to speak**
- [ ] **I DO NOT wish to speak**

Position on Agenda Item:

- [ ] **In Favor**
- [x] **Neutral**
- [ ] **Opposed**

I give my 3 minutes to: _____

SPEAKER IDENTIFICATION FORM
Riverside County Planning Commission or Director's Hearing

Submit request at Planning Commission to the Hearing Secretary or at Director's Hearing to the Case Planner.

Speakers are permitted to be heard up to three (3) minutes, subject to Public Hearing Rules listed on the reverse side of this form.

Date: 06/04/2018 **Agenda #:** 4.1

SPEAKER'S NAME: RENA VAN Fleet
(Print Name)

Address: _____
(Only required if follow-up mail response is requested)

City: Parker **Zip:** 85344

Phone #: (928) 216-0408 **Email:** rena.vanfleet@CRIT-NSN.gov

I AM:

- [ ] The Applicant
- [ ] Applicant's Representative
- [ ] A Neighbor
- [x] Other Interested Party
- [ ] The Appellant
- [ ] Respondent

PLEASE STATE YOUR POSITION BELOW:

- [x] **I wish to speak**
- [ ] **I DO NOT wish to speak**

Position on Agenda Item:

- [ ] **In Favor**
- [x] **Neutral**
- [ ] **Opposed**

I give my 3 minutes to: _____

SPEAKER IDENTIFICATION FORM
Riverside County Planning Commission or Director's Hearing

Submit request at Planning Commission to the Hearing Secretary or at Director's Hearing to the Case Planner.

Speakers are permitted to be heard up to three (3) minutes, subject to Public Hearing Rules listed on the reverse side of this form.

Date: 6/4 **Agenda #:** 4.1

SPEAKER'S NAME: John R[illegible]
(Print Name)

Address: _____
(Only required if follow-up mail response is requested)

City: _____ **Zip:** _____

Phone #: _____ **Email:** _____

I AM:

- [ ] The Applicant
- [ ] Applicant's Representative
- [ ] A Neighbor
- [x] Other Interested Party
- [ ] The Appellant
- [ ] Respondent

PLEASE STATE YOUR POSITION BELOW:

- [x] **I wish to speak**
- [ ] **I DO NOT wish to speak**

Position on Agenda Item:

- [ ] **In Favor**
- [ ] **Neutral**
- [ ] **Opposed**

I give my 3 minutes to: _____

SPEAKER IDENTIFICATION FORM
Riverside County Planning Commission or Director's Hearing

Submit request at Planning Commission to the Hearing Secretary or at Director's Hearing to the Case Planner.

Speakers are permitted to be heard up to three (3) minutes, subject to Public Hearing Rules listed on the reverse side of this form.

Date: 6-4-2018 **Agenda #:** _____

SPEAKER'S NAME: Vince Samons
(Print Name)

Address: 69215 Buck Dr.
(Only required if follow-up mail response is requested)

City: Mountain Center **Zip:** 92561

Phone #: 760 349-9077 **Email:** Gmail@dategrove.com

I AM:

- [ ] The Applicant
- [ ] Applicant's Representative
- [ ] A Neighbor
- [ ] Other Interested Party
- [ ] The Appellant
- [ ] Respondent

PLEASE STATE YOUR POSITION BELOW:

- [x] **I wish to speak**
- [x] **I DO NOT wish to speak**

Position on Agenda Item:

- [ ] **In Favor**
- [ ] **Neutral**
- [ ] **Opposed**

I give my 3 minutes to: _____

SPEAKER IDENTIFICATION FORM
Riverside County Planning Commission or Director's Hearing

Submit request at Planning Commission to the Hearing Secretary or at Director's Hearing to the Case Planner.

Speakers are permitted to be heard up to three (3) minutes, subject to Public Hearing Rules listed on the reverse side of this form.

Date: 5-4-18 **Agenda #:** Solar

SPEAKER'S NAME: Johnney Coon
(Print Name)

Address: 23-375 Rice Rd
(Only required if follow-up mail response is requested)

City: Desert Center **Zip:** 92239

Phone #: 760-485-6807 **Email:** jcoon0313@gmail.com

I AM:

- [ ] The Applicant
- [ ] Applicant's Representative
- [x] A Neighbor
- [ ] Other Interested Party
- [ ] The Appellant
- [ ] Respondent

PLEASE STATE YOUR POSITION BELOW:

- [x] **I wish to speak**
- [ ] **I DO NOT wish to speak**

Position on Agenda Item:

- [ ] **In Favor**
- [ ] **Neutral**
- [x] **Opposed**

I give my 3 minutes to: Tony Anderson

Using 3 minutes from

SPEAKER IDENTIFICATION FORM
Riverside County Planning Commission or Director's Hearing

Submit request at Planning Commission to the Hearing Secretary or at Director's Hearing to the Case Planner.

Speakers are permitted to be heard up to three (3) minutes, subject to Public Hearing Rules listed on the reverse side of this form.

Date: 5-4-18 **Agenda #:**

SPEAKER'S NAME: Johnney Tony Anderson
(Print Name)

Address: 23-375 Rice Rd
(Only required if follow-up mail response is requested)

City: Desert Center CA **Zip:** 92239

Phone #: 760 227 9291 **Email:** T2 Falls@aol.com

I AM:

- [ ] The Applicant
- [ ] Applicant's Representative
- [x] A Neighbor
- [ ] Other Interested Party
- [ ] The Appellant
- [ ] Respondent

PLEASE STATE YOUR POSITION BELOW:

- [ ] **I wish to speak**
- [ ] **I DO NOT wish to speak**

Position on Agenda Item:

- [ ] **In Favor**
- [ ] **Neutral**
- [x] **Opposed**

I give my 3 minutes to: Johnney Coon

Rep. Steven & Esther Luth

SPEAKER IDENTIFICATION FORM
Riverside County Planning Commission or Director's Hearing

Submit request at Planning Commission to the Hearing Secretary or at Director's Hearing to the Case Planner.

Speakers are permitted to be heard up to three (3) minutes, subject to Public Hearing Rules listed on the reverse side of this form.

Date: 6/4/18 **Agenda #:** solar panel 4.0 project - Desert Center

SPEAKER'S NAME: Judy Atchison
(Print Name)

Address: 1127-B Stone Pine Lane
(Only required if follow-up mail response is requested)

City: Corona **Zip:** 92879

Phone #: 909 633 7292 **Email:** jatchison909@gmail.com

I AM:

- [ ] The Applicant
- [x] Applicant's Representative
- [ ] A Neighbor
- [ ] Other Interested Party
- [ ] The Appellant
- [ ] Respondent

PLEASE STATE YOUR POSITION BELOW:

- [x] **I wish to speak**
- [ ] **I DO NOT wish to speak**

Position on Agenda Item:

- [ ] **In Favor**
- [x] **Neutral**
- [ ] **Opposed**

I give my 3 minutes to: _____

IP Athos Renewable Energy Project

RIVERSIDE COUNTY
PLANNING DEPARTMENT

Public Scoping Meeting

June 4, 2018

Meeting Agenda

- Welcome and Introduction
- Purpose of Scoping
- CEQA Process
- Description of the Proposed Project
- Riverside County Process
- Public Comments

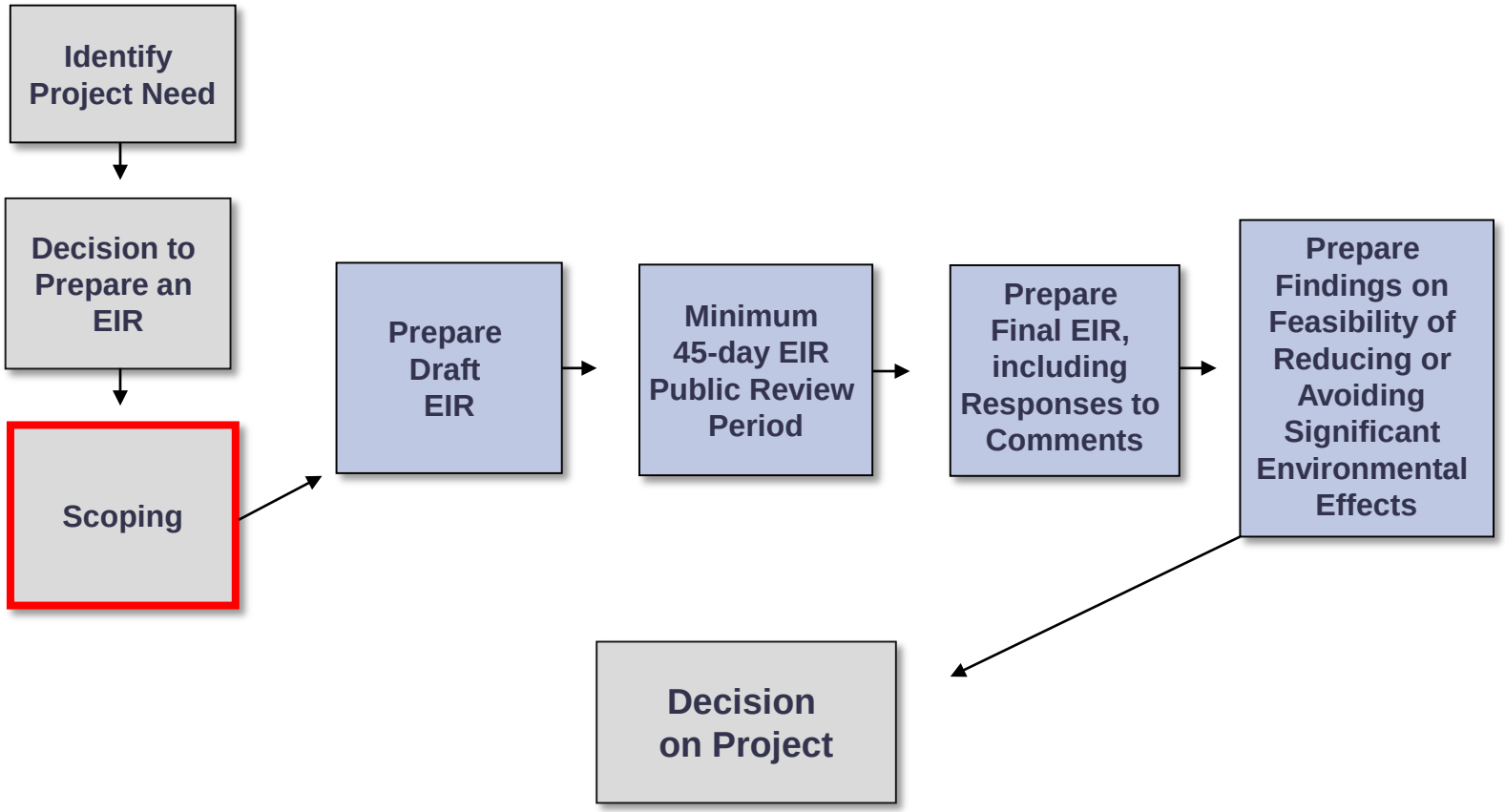
Key Players and their Roles in the CEQA Process

- **Riverside County Planning Department:**
  Lead Agency under California Environmental Quality Act (CEQA)
- **IP Athos, LLC:**
  The Applicant
- **Aspen Environmental Group:**
  Environmental Consultant for Riverside County

The Purpose of Scoping

- To inform the public and responsible agencies about an upcoming project for which an EIR will be prepared
- To inform the public about the environmental review process
- To solicit input regarding potential alternatives to the proposed project and the appropriate scope of issues to be studied in the environmental document
- To identify issues of concern and areas of potential controversy

CEQA Process



General Purpose and Content of an Environmental Document

- **Purpose**:
  - Provide technically sound information for decision-makers to consider in evaluating the proposed project
- **Content**:
  - Describe the environmental setting of the project area
  - Disclose potential environmental impacts of the project and alternatives
  - Propose measures to reduce or avoid significant environmental impacts (mitigation measures)

Initial Study Analysis

Environmental Issue Areas

- Aesthetics
- Agricultural Resources
- Air Quality
- Biological Resources
- Cultural Resources
- Geology & Soils
- Greenhouse Gas Emissions
- Hazards & Hazardous Materials
- Hydrology & Water Quality
- Land Use & Planning
- Mineral Resources
- Noise
- Population & Housing
- Public Services
- Recreation
- Transportation/Traffic
- Tribal Cultural Resources
- Utilities & Service Systems

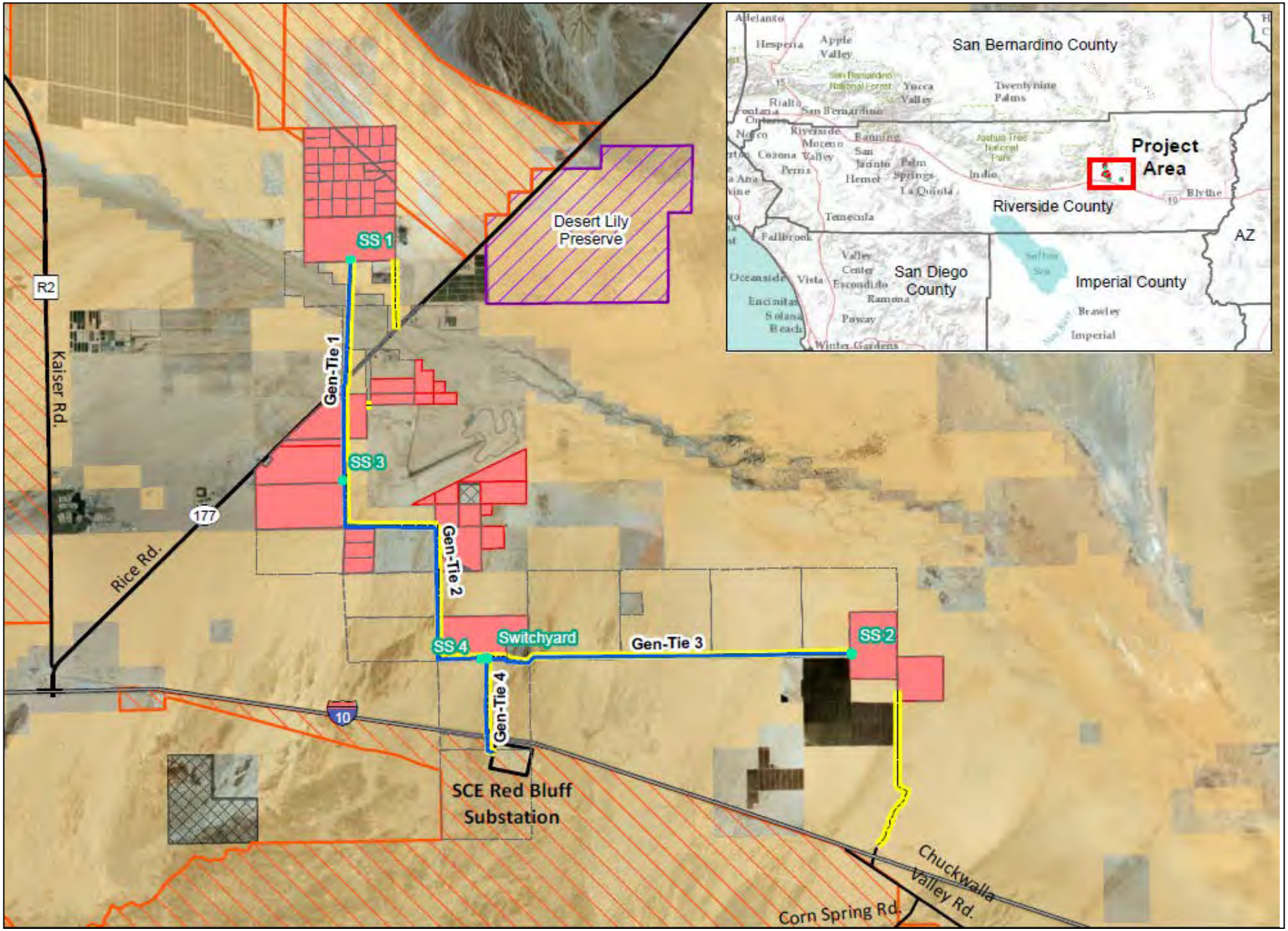
Applicant's Project Objectives

- Assist Californians in meeting their renewable energy generation goals under Senate Bill 350 and greenhouse gas emissions reduction goals of the California Global Warming Solutions Act (AB 32), as amended by Senate Bill 32 in 2016;
- Bring living-wage jobs to eastern Riverside County;
- Make the highest and best use of primarily disturbed, retired agricultural land in and around a federal "Solar Energy Zone" and "Development Focus Area" to generate, store, and transmit affordable, wholesale solar electricity.

Proposed Project

- **Solar Facility** (3,228 total acres, private land)
  - Solar array field with single-axis solar PV trackers
  - Inverters
  - Collector power lines (34.5 kilovolt [kV])
  - Up to 4 onsite substations and switchyards
  - O&M building
  - SCADA and telecommunications facilities.
  - Meteorological data collection system
  - Battery or flywheel storage system
  - Several interior access roads
  - Vacate interior roadways & merge contiguous project parcels
- **220 kV Gen-Tie Transmission Lines**
  (11 miles, private and BLM-administered land)
  - Connect solar facility parcels with SCE Red Bluff Substation

Athos Proposed Project Area



What's Next?

- Public scoping period will be held from **May 11 through June 11, 2018**.
  - All public comments will be reviewed.
  - Environmental issues raised will be addressed in the EIR.

- Following review of public scoping comments, the County will prepare an EIR to be released for public review and comment.

Environmental Review Schedule

Activity	Date
IP filed a CUP Application	January 30, 2018
County issued Completeness Letter	March 13, 2018
IP filed PUP Application (under County review)	April 16, 2018
Notice of Preparation of an Environmental Document	May 11, 2018
Public Review of Draft Environmental Document • At least 45-day comment period	Fall 2018 **
Final Environmental Document	Early 2019 **
County Planning Board Hearing	Early/Mid 2019 ** (**Estimated)

Scoping Comments

The most useful scoping comments:

1. Identify potential environmental concerns regarding the proposed project
2. Identify issues where the proposed project would not result in impacts
3. Recommend alternatives that would avoid or reduce impacts of the proposed project
4. Provide in writing

Comments

Please send comments by June 11th to:

Kevin White
Riverside County Planning Department
4080 Lemon Street, 12 Floor
Riverside, CA 92501

or

Email: **kewhite@rivco.org**

Please be sure to include your name, address, and email or phone number on all comments.

Thank You for Your Input!

Appendix C

Written Comment Letters Received During Scoping Period

Department of Toxic Substances Control

Barbara A. Lee, Director
5796 Corporate Avenue
Cypress, California 90630

Matthew Rodriquez
Secretary for
Environmental Protection

Edmund G. Brown Jr.
Governor

June 4, 2018

Mr. Kevin White
Project Planner
Riverside County Planning Department
4080 Lemon St., 12th Floor
P.O. Box 1409
Riverside, California 92502-1409
KEWhite@rico.org

NOTICE OF PREPARATION (NOP) OF AN ENVIRONMENTAL IMPACT REPORT (EIR) FOR ATHOS RENEWABLE ENERGY PROJECT, CONDITIONAL USE PERMIT NO, 18-0001, LOCATED AT EAST AND WEST OF RICE ROAD AND SOUTH OF INTERSTATE FREEWAY 10 SOUTH, RIVERSIDE COUNTY (SCH# 2018051034)

Dear Mr. White:

The Department of Toxic Substances Control (DTSC) has reviewed the subject NOP. The following project description is stated in the NOP: "IP Athos, LLC ("Applicant"), a subsidiary of Intersect Power, proposes to construct, operate, and decommission the Athos Renewable Energy Project, which includes a large scale solar photovoltaic (PV) electrical generating and storage facility and associated infrastructure to generate and deliver renewable electricity to the statewide electricity transmission grid. The proposed Project, a PV solar power plant and 11-mile-long 220 kV gen-tie transmission line, would be located on approximately 3,400 acres across 7 non-contiguous groups of parcels northeast of the community of Desert Center. The Project would consist of a solar fields, inverters, powerlines, 4 substations, an O&M Building, access roads, telecommunications facilities, and related equipment. The facility would generate and provide storage for 500 megawatts (MW) of renewable energy using PV technology."

Based on the review of the submitted document, DTSC has the following comments:

1. The EIR should identify and determine whether current or historic uses at the project site may have resulted in any release of hazardous wastes/substances. A Phase I Environmental Site Assessment may be appropriate to identify any recognized environmental conditions.

2. If there are any recognized environmental conditions in the project area, then proper investigation, sampling and remedial actions overseen by the appropriate regulatory agencies should be conducted prior to the new development or any construction.

3. The NOP states, "The Project consists of 65 parcels on private land, the APNs of which are listed on the attached sheet titled "Assessor's Parcels for the Athos Renewable Energy Project. A 220 ki lovoU (kV) generation tie (gen-tie) transmission line would be 'located both north and south of the 1-10 freeway to connect the facility into the existing Southern California Edison (SCE) Red Bluff 500/220 kV Substation." DTSC recommends evaluation, proper investigation and mitigation, if necessary, on onsite areas with current or historic polychlorinated biphenyls (PCB)-containing transformers.

4. If soil contamination is suspected or observed in the project area, then excavated soil should be sampled prior to export/disposal. If the soil is contaminated, it should be disposed of properly in accordance with all applicable and relevant laws and regulations. In addition, if the project proposes to import soil to backfill the excavated areas, proper evaluation and/or sampling should be conducted to make sure that the imported soil is free of contamination.

5. If during construction/demolition of the project, soil and/or groundwater contamination is suspected, construction/demolition in the area should cease and appropriate health and safety procedures should be implemented. If it is determined that contaminated soil and/or groundwater exist, the EIR should identify how any required investigation and/or remediation will be conducted and the appropriate government agency to provide regulatory oversight.

If you have any questions regarding this letter, please contact me at (714) 484-5380 or by email at Johnson.Abraham@dtsc.ca.gov.

Sincerely,

Johnson P. Abraham
Project Manager
Brownfields Restoration and School Evaluation Branch
Site Mitigation and Restoration Program – Cypress

kl/sh/ja

cc: See next page.

cc: Governor's Office of Planning and Research (via e-mail)
State Clearinghouse
P.O. Box 3044
Sacramento, California 95812-3044
State.clearinghouse@opr.ca.gov

Mr. Dave Kereazis (via e-mail)
Office of Planning & Environmental Analysis
Department of Toxic Substances Control
Dave.Kereazis@dtsc.ca.gov

Mr. Shahir Haddad, Chief (via e-mail)
Brownfields Restoration and School Evaluation Branch
Site Mitigation and Restoration Program - Cypress
Shahir.Haddad@dtsc.ca.gov

CEQA# 2018051034

South Coast
Air Quality Management District
21865 Copley Drive, Diamond Bar, CA 91765-4178
(909) 396-2000 • www.aqmd.gov

SENT VIA USPS AND E-MAIL: June 5, 2018
KEWhite@rivco.org
Kevin White, Project Manager
Riverside County Planning Department
4080 Lemon Street, 12th Floor/P.O. Box 1409
Riverside, CA 92502-1409

Notice of Preparation of a Draft Environmental Impact Report for the Athos Renewable Energy Project (Conditional Use Permit No. 180001/Public Use Permit No. 180001)

The South Coast Air Quality Management District (SCAQMD) staff appreciates the opportunity to comment on the above-mentioned document. SCAQMD staff's comments are recommendations regarding the analysis of potential air quality impacts from the Proposed Project that should be included in the Draft Environmental Impact Report (EIR). Please send SCAQMD a copy of the Draft EIR upon its completion. Note that copies of the Draft EIR that are submitted to the State Clearinghouse are not forwarded to SCAQMD. Please forward a copy of the Draft EIR directly to SCAQMD at the address shown in the letterhead. **In addition, please send with the Draft EIR all appendices or technical documents related to the air quality, health risk, and greenhouse gas analyses and electronic versions of all air quality modeling and health risk assessment files[1]. These include emission calculation spreadsheets and modeling input and output files (not PDF files). Without all files and supporting documentation, SCAQMD staff will be unable to complete our review of the air quality analyses in a timely manner. Any delays in providing all supporting documentation will require additional time for review beyond the end of the comment period.**

Air Quality Analysis

SCAQMD adopted its California Environmental Quality Act (CEQA) Air Quality Handbook in 1993 to assist other public agencies with the preparation of air quality analyses. SCAQMD recommends that the Lead Agency use this Handbook as guidance when preparing its air quality analysis. Copies of the Handbook are available from SCAQMD's Subscription Services Department by calling (909) 396-3720. More guidance developed since this Handbook is also available on SCAQMD's website at: http://www.aqmd.gov/home/regulations/ceqa/air-quality-analysis-handbook/ceqa-air-quality-handbook-(1993). SCAQMD staff also recommends that the Lead Agency use the CalEEMod land use emissions software. This software has recently been updated to incorporate up-to-date state and locally approved emission factors and methodologies for estimating pollutant emissions from typical land use development. CalEEMod is the only software model maintained by the California Air Pollution Control Officers Association (CAPCOA) and replaces the now outdated URBEMIS. This model is available free of charge at: www.caleemod.com.

SCAQMD has also developed both regional and localized significance thresholds. SCAQMD staff requests that the Lead Agency quantify criteria pollutant emissions and compare the results to

[1] Pursuant to the CEQA Guidelines Section 15174, the information contained in an EIR shall include summarized technical data, maps, plot plans, diagrams, and similar relevant information sufficient to permit full assessment of significant environmental impacts by reviewing agencies and members of the public. Placement of highly technical and specialized analysis and data in the body of an EIR should be avoided through inclusion of supporting information and analyses as appendices to the main body of the EIR. Appendices to the EIR may be prepared in volumes separate from the basic EIR document, but shall be readily available for public examination and shall be submitted to all clearinghouses which assist in public review.

SCAQMD's CEQA regional pollutant emissions significance thresholds to determine air quality impacts. SCAQMD's CEQA regional pollutant emissions significance thresholds can be found here: http://www.aqmd.gov/docs/default-source/ceqa/handbook/scaqmd-air-quality-significance-thresholds.pdf. In addition to analyzing regional air quality impacts, SCAQMD staff recommends calculating localized air quality impacts and comparing the results to localized significance thresholds (LSTs). LSTs can be used in addition to the recommended regional significance thresholds as a second indication of air quality impacts when preparing a CEQA document. Therefore, when preparing the air quality analysis for the Proposed Project, it is recommended that the Lead Agency perform a localized analysis by either using the LSTs developed by SCAQMD staff or performing dispersion modeling as necessary. Guidance for performing a localized air quality analysis can be found at: http://www.aqmd.gov/home/regulations/ceqa/air-quality-analysis-handbook/localized-significance-thresholds.

The Lead Agency should identify any potential adverse air quality impacts that could occur from all phases of the Proposed Project and all air pollutant sources related to the Proposed Project. Air quality impacts from both construction (including demolition, if any) and operations should be calculated. Construction-related air quality impacts typically include, but are not limited to, emissions from the use of heavy-duty equipment from grading, earth-loading/unloading, paving, architectural coatings, off-road mobile sources (e.g., heavy-duty construction equipment) and on-road mobile sources (e.g., construction worker vehicle trips, material transport trips). Operation-related air quality impacts may include, but are not limited to, emissions from stationary sources (e.g., boilers), area sources (e.g., solvents and coatings), and vehicular trips (e.g., on- and off-road tailpipe emissions and entrained dust). Air quality impacts from indirect sources, such as sources that generate or attract vehicular trips, should be included in the analysis.

In the event that the Proposed Project generates or attracts vehicular trips, especially heavy-duty diesel-fueled vehicles, it is recommended that the Lead Agency perform a mobile source health risk assessment. Guidance for performing a mobile source health risk assessment ("*Health Risk Assessment Guidance for Analyzing Cancer Risk from Mobile Source Diesel Idling Emissions for CEQA Air Quality Analysis*") can be found at: http://www.aqmd.gov/home/regulations/ceqa/air-quality-analysis-handbook/mobile-source-toxics-analysis. An analysis of all toxic air contaminant impacts due to the use of equipment potentially generating such air pollutants should also be included.

In addition, guidance on siting incompatible land uses (such as placing homes near freeways) can be found in the California Air Resources Board's *Air Quality and Land Use Handbook: A Community Health Perspective*, which can be found at: http://www.arb.ca.gov/ch/handbook.pdf. CARB's Land Use Handbook is a general reference guide for evaluating and reducing air pollution impacts associated with new projects that go through the land use decision-making process. Guidance[2] on strategies to reduce air pollution exposure near high-volume roadways can be found at: https://www.arb.ca.gov/ch/rd_technical_advisory_final.PDF.

Mitigation Measures

In the event that the Proposed Project generates significant adverse air quality impacts, CEQA requires that all feasible mitigation measures that go beyond what is required by law be utilized during project construction and operation to minimize these impacts. Pursuant to CEQA Guidelines Section 15126.4 (a)(1)(D), any impacts resulting from mitigation measures must also be discussed. Several resources are

[2] In April 2017, CARB published a technical advisory, *Strategies to Reduce Air Pollution Exposure Near High-Volume Roadways: Technical Advisory*, to supplement CARB's Air Quality and Land Use Handbook: A Community Health Perspective. This technical advisory is intended to provide information on strategies to reduce exposures to traffic emissions near high-volume roadways to assist land use planning and decision-making in order to protect public health and promote equity and environmental justice. The technical advisory is available at: https://www.arb.ca.gov/ch/landuse.htm.

available to assist the Lead Agency with identifying potential mitigation measures for the Proposed Project, including:

- Chapter 11 of SCAQMD's CEQA Air Quality Handbook
- SCAQMD's CEQA web pages available here: http://www.aqmd.gov/home/regulations/ceqa/air-quality-analysis-handbook/mitigation-measures-and-control-efficiencies
- SCAQMD's Rule 403 – Fugitive Dust, and the Implementation Handbook for controlling construction-related emissions and Rule 1403 – Asbestos Emissions from Demolition/Renovation Activities
- SCAQMD's Mitigation Monitoring and Reporting Plan (MMRP) for the 2016 Air Quality Management Plan (2016 AQMP) available here (starting on page 86): http://www.aqmd.gov/docs/default-source/Agendas/Governing-Board/2017/2017-mar3-035.pdf
- CAPCOA's *Quantifying Greenhouse Gas Mitigation Measures* available here: http://www.capcoa.org/wp-content/uploads/2010/11/CAPCOA-Quantification-Report-9-14-Final.pdf

Alternatives

In the event that the Proposed Project generates significant adverse air quality impacts, CEQA requires the consideration and discussion of alternatives to the project or its location which are capable of avoiding or substantially lessening any of the significant effects of the project. The discussion of a reasonable range of potentially feasible alternatives, including a "no project" alternative, is intended to foster informed decision-making and public participation. Pursuant to CEQA Guidelines Section 15126.6(d), the Draft EIR shall include sufficient information about each alternative to allow meaningful evaluation, analysis, and comparison with the Proposed Project.

Permits

In the event that the Proposed Project requires a permit from SCAQMD, SCAQMD should be identified as Responsible Agency for the Proposed Project. For more information on permits, please visit SCAQMD webpage at: http://www.aqmd.gov/home/permits. Questions on permits can be directed to SCAQMD's Engineering and Permitting staff at (909) 396-3385.

Data Sources

SCAQMD rules and relevant air quality reports and data are available by calling SCAQMD's Public Information Center at (909) 396-2039. Much of the information available through the Public Information Center is also available at SCAQMD's webpage at: http://www.aqmd.gov.

SCAQMD staff is available to work with the Lead Agency to ensure that project air quality impacts are accurately evaluated and any significant impacts are mitigated where feasible. If you have any questions regarding this letter, please contact me at lsun@aqmd.gov or call me at (909) 396-3308.

Sincerely,

Lijin Sun

Lijin Sun, J.D.
Program Supervisor, CEQA IGR
Planning, Rule Development & Area Sources

LS
RVC180516-04
Control Number

United States Department of the Interior

FISH AND WILDLIFE SERVICE
Ecological Services
Palm Springs Fish and Wildlife Office
777 East Tahquitz Canyon Way, Suite 208
Palm Springs, California 92262

In Reply Refer To:
FWS-ERIV-18B0223-18CPA0233

June 11, 2018
Sent by email

Mr. Kevin White
Project Planner
Riverside County Planning Department
4080 Lemon Street, 12th Floor
P.O. Box 1409
Riverside, California 92501

Subject: Athos Renewable Energy Project, Notice of Preparation of a Draft Environmental Impact Report, Conditional Use Permit No. 180001/Public Use Permit No. 180001, Riverside County, California

Dear Mr. White:

The U.S. Fish and Wildlife Service (Service) provides for your information our comments on the scope and content of the environmental analysis to be included in a draft Environmental Impact Report (EIR), as solicited in the County of Riverside's May 9, 2018, Notice of Preparation (NOP) under the California Environmental Quality Act. IP Athos, LLC (the applicant), a subsidiary of Intersect Power, proposes to construct, operate, and decommission the Athos Renewable Energy Project north of Interstate 10 (I-10), approximately 4 miles east of the Desert Center Community in eastern Riverside County.

The proposed Athos project is a utility-scale solar photovoltaic (PV) electrical generating and storage facility with a 220 kilovolt (kV) generation tie (gen-tie) transmission line. The solar facility would be located on approximately 3,400 acres across seven non-contiguous groups of privately owned parcels within the County's jurisdiction, and would generate and provide storage for 500 megawatts (MW) of renewable energy. The 11-mile-long gen-tie transmission line would traverse lands mainly administered by the Bureau of Land Management (BLM) both north and south of I-10 to connect the facility into the existing Southern California Edison Red Bluff 500/220 kV Substation.

The Service's mission is working with others to conserve, protect, and enhance fish, wildlife, plants, and their habitats for the continuing benefit of the American people. We offer our comments on this project according to authorities of the Department of the Interior, including our legal responsibility for threatened and endangered animals and plants listed under the Endangered Species Act of 1973 (ESA), as amended (16 U.S.C. 1531 *et seq.*). Federal trust resources that likely occur in the project area include the threatened Mojave desert tortoise (*Gopherus agassizii*); endangered Yuma clapper rail (*Rallus longirostris yumanensis*),

recently renamed Yuma Ridgway's rail (*Rallus obsoletus yumanensis*) by the American Ornithologists Union; endangered southwestern willow flycatcher (*Empidonax traillii extimus*); and endangered western distinct population segment of yellow-billed cuckoo (*Coccyzus americanus*). Other sensitive species in the project vicinity include golden eagle (*Aquila chrysaetos*) and western burrowing owl (*Athene cunicularia*).

We have received no habitat assessment information about the proposed Athos project. Our comments are based on our familiarity with the locations for other large solar projects in the vicinity, such as the existing Desert Sunlight Project to the northwest and the proposed Palen Solar Project to the east. Biological assessments for those projects indicated potential impacts to the Federal trust resources identified above, which we assume would be similar to potential impacts at the proposed Athos site. We recommend that the applicant conduct appropriate protocol surveys at the project site so that we may more effectively advise the County of potential impacts to ESA-listed species and other sensitive resources; recommend measures to avoid, minimize, and mitigate project impacts to them; and facilitate the applicant's compliance with the ESA. We also recommend that representatives of the County and the applicant meet with BLM, the Service, and the California Department of Fish and Wildlife (CDFW) to discuss how BLM's jurisdiction over the proposed location for the gen-tie transmission line would interface with the County's jurisdiction over the private lands for the solar facility.

To assist you with developing the draft EIR, we offer our standard comments for utility-scale solar projects, which suggest standard measures to avoid, minimize, and mitigate project impacts to Federal trust resources. We would be glad to work with you to refine site-specific measures for the Athos site as more information becomes available during the planning process.

Mojave Desert Tortoise

Surveys at the Desert Sunlight and Palen solar projects found suitable desert tortoise habitat inhabited by the species in low densities. Accordingly, we assume the proposed Athos site also provides available habitat for desert tortoise, which the applicant should confirm through onsite habitat assessment and pre-construction protocol surveys for desert tortoise conducted according to the Service's most recent survey guidelines. Habitat assessment should include evaluation of linkage habitat that may provide important connectivity for desert tortoise and other desert species to available habitat outside the proposed project site. Because construction and operation of the Athos project would result in permanent elimination or degradation of 3,400 acres of desert tortoise habitat, we recommend that the County require a suite of avoidance, minimization, and mitigation measures as permit terms and conditions to offset any adverse effects to desert tortoise. We recommend that the draft EIR describe the results of habitat and protocol surveys for desert tortoise, and specify that the applicant would implement general conservation measures for desert tortoise that include, but are not limited to, the following:

- Retain an onsite designated biologist, authorized desert tortoise biologists, and biological monitors,
- Develop and present a worker environmental awareness program;
- and Implement site-specific impact avoidance and minimization measures.
- Conduct desert tortoise clearance surveys, construct exclusion fencing, and develop and implement a desert tortoise translocation plan, as necessary;
- and Compensate for desert tortoise habitat eliminated by the project.
- Manage and monitor the presence of common ravens (*Corvus corax*) onsite, and contribute a per-acre fee to the Service's Regional Common Raven Management Program (see below).

We recommend that the draft EIR evaluate the impacts to desert tortoise associated with increasing numbers of common ravens. Human development in the desert, including solar facilities, typically leads to a local increase in the number of common ravens, which prey on desert tortoises. Ravens are highly attracted to human activity, which "subsidizes" more ravens by providing new food sources and sites for nesting, roosting, and perching. Therefore, to reduce project impacts on desert tortoises from common ravens that may be attracted to the project site, we recommend that the County require the applicant to establish on-site measures to eliminate or minimize the availability of subsidies and discourage the potential for common ravens to occupy the site during all project phases, including construction, operation, and maintenance. In addition, the draft EIR should evaluate the effects of any local increase in raven numbers at the project site to desert tortoises elsewhere, as these birds travel long distances on a daily basis between roosting and foraging sites. To address these indirect and cumulative effects, we recommend that the County require the applicant to contribute a per-acre fee to the Service's Regional Common Raven Management Program; please contact our office for more information on this regional plan.

<u>Yuma Ridgway's Rail and Other Listed Birds</u>

Breeding Yuma Ridgway's rail populations in southeastern California are primarily restricted to freshwater marshes along the lower Colorado River Valley and near the Salton Sea, although the species has been observed sporadically in desert locations. Available data suggest that solar facilities in the desert pose a hazard to which various rail species and other water-associated birds are particularly vulnerable. To date, we know that two Yuma Ridgway's rails have been killed at solar PV projects, one at the Desert Sunlight project in May 2013 and one in Imperial County in April 2014. Vulnerability of the Ridgway's rail also is evidenced by several incidentally observed fatalities of sora (*Porzana carolina*) and Virginia rail (*Rallus limicola*) at solar and transmission projects along the I-10 corridor and in the Imperial Valley. These data indicate a risk of mortality to all rail species caused by project-related features such as gen-tie lines, solar panels, and perimeter fencing.

We are concerned that utility-scale solar and transmission projects within the resident and dispersal range of Yuma Ridgway's rail may result in multiple fatalities over the life span of these projects, especially given the large cumulative disturbance footprint of existing and planned projects in the California desert. Because of the large size of these projects and the apparent lack of effective adaptive management measures and other design modifications sufficient to avoid the risk of incidental take[1], we anticipate recurrent but low levels of take of Yuma Ridgway's rail at various project sites. Therefore, we recommend the draft EIR address the risk of take to Yuma Ridgway's rail, considering the direct, indirect, and cumulative effects of the Athos project to this endangered species. We also recommend the project include a risk analysis, monitoring program, and a range of avoidance, minimization, and mitigation measures (see below).

We are concerned that the proposed Athos project would increase fatalities of other listed birds (southwestern willow flycatcher, yellow-billed cuckoo) and non-listed sensitive species (golden eagle, burrowing owl), which are known to breed and migrate in riparian habitats in the project vicinity and westward through the Coachella Valley and beyond. Dead willow flycatchers and yellow-billed cuckoos have been documented on or near existing solar projects in the California desert within their migratory range yet distant from suitable habitat. Therefore, the draft EIR should include a rigorous analysis to determine the vulnerability of all avian taxa that could occur at the project site, with a risk assessment that quantifies potential fatalities and incidental take of listed species. This risk analysis should be based on a robust program of post-construction monitoring (see below).

Non-listed Migratory Birds

In general, systematically-collected mortality monitoring data for utility-scale solar facilities are limited and the magnitude of potential impacts has not yet been accurately quantified. However, such projects currently under construction or recently put into operation are reporting incidental observations of fatalities and injuries to a wide range of avian species due to various features such as solar panels, evaporation ponds, fencing, distribution lines within the facility, and gen-tie lines. There is growing recognition that "polarized light pollution" or a "lake effect" presents a particular hazard to water-associated birds and other species seeking aquatic migratory stopover habitat. Therefore, we recommend that the County require the applicant to design and construct any aboveground electrical lines to reduce powerline bird collisions and the likelihood of electrocution of large birds, such as raptors. Please consult the guidance of the Avian Powerline Interaction Committee (APLIC) for options to reduce bird collisions and electrocutions at powerlines.

Given these multiple sources of bird hazards at solar facilities, we recommend that the draft EIR thoroughly address the risk potential on project-specific as well as cumulative scales. To help the applicant reduce potential adverse effects to avian species, we encourage the applicant to develop

[1]"Take" is defined by the ESA as to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture or collect, or to attempt to engage in any such conduct.

and implement a statistically robust, systematic avian monitoring program as a component of a project-specific Bird and Bat Conservation Strategy (BBCS), which should be analyzed as part of the draft EIR. The draft EIR also should include an adaptive management program that outlines the implementation and success of various bird deterrents during the construction and operational phases of the project. We advise you that mortality monitoring typically requires carcass collection, which must be authorized by a Special Purpose Utility Permit (SPUT). We encourage the County and applicant to begin the SPUT application process as early as possible to allow us to issue a permit prior to the onset of construction. Please contact us for BBCS guidance and SPUT permit requirements. We would also be glad to work with you and the applicant to develop and implement options for appropriate mitigation of avian impacts.

Cumulative Effects

We understand that many applications are in process for utility-scale solar and wind energy projects on public and private lands to meet California renewable energy priorities. The draft EIR should consider the acreage already lost to solar development along the I-10 solar corridor, and the acreage reasonably certain to occur as future development. Given the extent of existing and proposed renewable energy projects in the vicinity, we recommend that the draft EIR include a thorough analysis of all direct, indirect, and cumulative effects of the proposed Athos project. The Service is particularly concerned about impacts to desert tortoise habitat connectivity and the potential loss of gene flow within and among designated critical habitat units across the species' range. Therefore, the draft EIR should examine potential impacts to the population connectivity requirements of desert tortoise and other wildlife species throughout the project area and its vicinity.

In addition to the minimization and mitigation measures discussed above, we recommend that the draft EIR include the following standard measures for utility-scale solar projects:

- Analyze a range of alternatives, such as a reduced-footprint alternative that would minimize adverse effects to avian and other wildlife species.
- Eliminate any water features, such as evaporation ponds.
- Retain natural vegetation as much as possible beneath the solar panels.
- Place onsite distribution lines and gen-tie lines underground or use monopoles.
- For any above-ground distribution and gen-tie lines, install visual deterrents to minimize avian collisions.
- Investigate ways to modify solar panels to break-up any illusion of a large water body, especially at night.
- Mark fences or install deterrents to reduce avian collisions.
- Avoid use of lattice-type structures or placing external ladders and platforms on any infrastructure to minimize perching and nesting.
- Avoid use of guy wires on meteorological towers.
- Avoid night-time lighting to the extent possible and focus any necessary lighting downward to reduce sky illumination.

- Minimize permanent disturbance area by limiting construction of new roads, and by reducing vegetation clearing and grading wherever possible.
- Develop and implement a Nesting Bird Plan that establishes methods and timing for vegetation clearing to protect active nests.
- Survey for golden eagle nests any year when construction occurs during the nesting season.
- Conduct pre-construction clearance surveys for burrowing owls and implement standard burrowing owl mitigation guidelines in coordination with the Service and CDFW.
- Conduct mandatory site training for all construction personnel regarding avoidance of bird nests, bat colonies, and other biological resources.

If you have any questions about our comments, please contact Noelle Ronan of my staff at (760-322-2070, extension 407; noelle_ronan@fws.gov). We would be glad to provide additional information.

Sincerely,

JENNESS MCBRIDE Digitally signed by JENNESS MCBRIDE
Date: 2018.06.11 12:08:51 -07'00'

For Kennon A. Corey
Assistant Field Supervisor

cc:
Magdalena Rodriguez, CDFW
Brandon Anderson, BLM

TWENTY-NINE PALMS BAND OF MISSION INDIANS

46-200 Harrison Place . Coachella, California . 92236 . Ph. 760.863.2444 . Fax: 760.863.2449

May 29, 2018

Heather Thomson, Archaeologist
Riverside County Planning Department
4080 Lemon St., 12th Floor
P.O. Box 1409
Riverside, CA 92502-1409

RE: Athos Renewable Energy Project – Draft Environmental Impact Report Conditional Use Permit No. 180001/Public Use Permit No. 180001

Dear Ms. Thomson,

This letter is in regards to continued consultation in compliance with AB 52 (California Public Resources Code § 21080.3.1) and CEQA (California Environmental Quality Act) for CUP 180001. This project entails the construction of a 220 kilovolt (kV) generation tie (gen-tie) transmission line. As stated in our letter sent May 2nd, 2018, the Twenty-Nine Palms Band of Mission Indians Tribal Historic Preservation Office (THPO) was aware of over 75 cultural resources within 1-mile of the project area that may be impacted by the construction that may take place. Additionally, the project is in the vicinity of a culturally sensitive site and within the Chemehuevi Traditional Use Area (TUA). For these reasons, the project could have significant impacts on potential cultural resources that concern the Twenty-Nine Palms Band of Mission Indians (Tribe).

Since there are numerous cultural resources in the vicinity of the project the Environmental Impact Report (EIR) should identify and evaluate the potential for the project to adversely affect archaeological and historical resources in the project area. This should include a Phase II and III Cultural Resource Investigation to identify resources and define site boundaries within the project area and to evaluate if there are any cultural resources eligible for inclusion in the National Register of Historic Places (NRHP) or California Register of Historic Resources (CRHR). Additionally, a mitigation and monitoring plan is recommended to be created; with input and participation from the consulting Tribe(s). As stated in our previous correspondence, the THPO requests copies of all available or forthcoming reports and notices in regards to this project.

The Tribe and THPO look forward to working with Riverside County on this project. If you have any questions, please do not hesitate to contact the Tribal Historic Preservation Office at (760) 775-3259 or by email: TNPConsultation@29palmsbomi-nsn.gov.

Sincerely,

Anthony Madrigal, Jr.
Tribal Historic Preservation Officer

cc: Darrell Mike, Twenty-Nine Palms Tribal Chairman
Sarah Bliss, Twenty-Nine Palms Cultural Resources Manager
Kevin White, Riverside County Planning Department

Email: Athos Renewable Energy Project EIR Team

From: Sarah Bliss [mailto:sbliss@spotlight29.com]
Sent: Thursday, June 07, 2018 10:55 AM
To: 'Evan Mills' <emills@appliedearthworks.com>
Cc: TNP Consultation <TNPConsultation@29palmsbomi-nsn.gov>; Thomson, Heather <HTHOMSON@RIVCO.ORG>
Subject: RE: Scoping Letter for Athos Renewable Energy Project

Hello Evan,

The Twentynine Palms Band of Mission Indians (Tribe) has been in consultation under the California Environmental Quality Act (CEQA) with the Riverside County Planning Department for the Athos Renewable Energy Project. In our previous correspondence, the Tribe has noted a substantial number of cultural resources within the vicinity of the project. Additionally, in this previous correspondence, the Twenty-Nine Palms Band of Mission Indians Tribal Historic Preservation Office (THPO) was not aware of any additional cultural resources or any Tribal Cultural Resources, as defined California Public Resources Code § 21074 (a) (1) (A)-(B) within the project area. However, there are two (2) resources in the study area (within the 5-mile buffer) that fit into the category of a Tribal Cultural Resource (TCR) defined as sites, features, places, cultural landscapes, sacred places, and objects that have cultural value to the Tribe. Since the project has had an updated layout from our previous correspondence with the lead agency, the THPO requests the updated cultural report with shapefiles and DPR reports of the new resources recorded. Once the Tribe receives this documentation, the THPO will provide further recommendations to the Lead Agency.

Additionally, because of the increased project footprint and its vicinity to culturally sensitive areas to the Tribe, the THPO recommends a comprehensive Visual Impact Assessment. This assessment should emphasize the visual effects that may compromise the integrity of cultural resources and TCRs. Representatives from the consulting Tribe(s) should be able to accompany the firm conducting the Visual Impact Assessment.

If you have any questions, please do not hesitate to contact the Tribal Historic Preservation Office at (760) 775-3259 or by email: TNPConsultation@29palmsbomi-nsn.gov.

Thank you,

Sarah Bliss
Twenty-Nine Palms Band of Mission Indians
Cultural Resources Manager
46-200 Harrison Place, Coachella, CA 92236
Ofc: (760) 863-2489
Cell: (760) 702-0679
E-mail: sbliss@29palmsbomi-nsn.gov

Email: Athos Renewable Energy Project EIR Team

From: Behrooz Mehri [mailto:behrooz.inc@gmail.com]
Sent: Thursday, May 17, 2018 2:59 PM
To: White, Kevin C. <KEwhite@rivco.org>
Subject: Athos Renewable Energy Project

Hi Kevin,

I received the Notice regarding permit No. 180001. It looks like my property sits somewhere in the middle of the proposed project.

Is there any chance of viewing online or receiving a digital copy of the proposed project's plans?

I am attaching a screen shot of the notice I received for your convenience.

Thanks!

Behrooz Mehri
858-689 4142

To whom it may concern,

I am a disabled Vietnam Veteran and I suffer from Post traumatic stress disorder. My residence is located on Parcel # 811-260-07, 811-260-08, 811-260-09. I have lived here for over 30 years. Noise and movement around me is very difficult. I moved to Desert Center, to be away from the city chaos. It will be very difficult for me to handle this project being located right on top of me. We need to come up with a solution that will be beneficial to both parties.

Stephen Luth
25750 Rice road
Desert Center, Ca. 92239
760-533-4682

From: John Beach
To: Hedy Koczwara; Marisa Mitchell
Subject: Athos Solar Energy Project - Desert Center
Date: Tuesday, June 5, 2018 8:42:15 AM

Good morning, Hedy and Marisa -

Thank you for the meeting yesterday, and we look forward to learning about the project as it proceeds. Steve Jones was there - he's the county manager for Desert Center - and if you are interested in holding a meeting locally, he can set that up at the community center at Lake Tamarisk. Other projects have done this and the best time is during the winter, when the snowbirds are here.

Four other nearby major projects that may coincide with your construction (not news to you, just a recap):

- Eagle Crest Energy Pumped Storage Project, Eagle Mountain (former Kaiser mine site)
- Palen Solar Energy Project, Corn Springs Road (10 miles east of Desert Center)
- Desert Harvest Solar Energy Project, Kaiser Road (immediately south of Desert Sunlight Solar Energy Plant)
- Interstate 10 Upgrade & Repair, Desert Center to Blythe ($400 million Caltrans budget)

My former employer, NextEra Energy of Juno Beach, Florida, has more work planned close to the McCoy and Blythe Solar Energy Plants north of Blythe Airport, but that is somewhat out of the immediate area.

Marisa - I didn't think to say yesterday, but Kaye Paugh may have been one of your English teachers at Paly - she and her husband Bob are good friends of mine.

On the last day of the Genesis Solar Energy Project (March 2014), at Ford Dry Lake midway between Desert Center and Blythe, I took the photo below. There were only three or four of us left after a construction peak of 1100 or so. Unlikely there will ever be another parabolic trough project, at least in the US, since the cost of PV has come down so much and the construction is "order of magnitude" simpler.

John

Johnney Coon
P.O. Box 436
Desert Center, CA. 92239
760-485-6807

My name is Johnney Coon. I've lived in Desert Center for 42 years. I live right next to this proposed large scale solar site.

I'm concerned about a variety of issues & how they will effect me, my neighbors, the environment & the wildlife.

We are already being impacted by the use of the dirt road, we depend on, by the people you employ to do the environmental studies. This is the only road we have to get to & from our home. We have to locate & often pay someone to fix it for us, as we no longer have a tractor. We have almost gotton stuck in the sand on this road due to the people who are doing these studies. We depend on this road for everything including for fuel & water deliveries ect. If it is not passable then we are stuck. What if we have an emergency?

Are you going to maintain this road to keep it passable for us?

I'm very concerned about the migratory birds or any birds flying into the panels The other large scale solar project in this valley looks just like a lake at certain times of the day. I know theres a problem

with birds flying into these panels & dying.
What about the displaced animals, loss of habitat & loss of migration patterns. Are wildlife just supposed to go around all of these projects? How will that effect their hunt for food, mating, ect?
Water use is a big issue. You can't live in the desert without it or anywhere. We maintain our own well & pump. As you will propably use vast somes of water for this project, how do you intend to deal with the local population & our right to water. What happens when our water table drops due to your usuage? Do you have any remedies in place or thoughts on this?
What about water diversion during flash floods? Your solar fields will likely change the current flow of water during flash flooding. Are these projects going to flood us? What do you intend to do about this very real possibility?
I know residents are bothered by the transmission line noise. What about those on site buildings located throughout the solar fields? I've heard that they produce a constant noise.
So what do you intend to do about

noise & light pollution? We have very dark nights. You can see the Milky Way & so much more during moonless nights. Are we going to lose that ability?

What about heat generation? Will this project add to the already oppessive heat we have in the summer?

Trash is another concern. People don't seem to have much respect for the environment & properly disposing of their waste. This would probably be an easy one to deal with. Please are you able to make sure your workers don't further trash the desert.

Last but not least is the quality of life issue & asthetics. I'm sure you realize this will effect us greatly, in particular, because we are right next to the largest proposed project. As I said I came here 42 yrs ago because it was peaceful, quiet & with very few people around. I see all that being slowly destroyed now. What can you do to lessen the impact that this project will have on us who have lived here so long?

One positive point regarding this proposal is that at least it will be on already disturbed land & not on pristine, undisturbed desert land.

Jerry & Christine Samons
69-215 Buck Drive
Mountain Center, CA 92561

June 1, 2018

Riverside County Planning Department
Attn: Kevin White, Project Planner
4080 Lemon Street, 12th Floor
P.O. Box 1409
Riverside, CA 92502-1409

Re: Athos Renewable Energy Project – Draft Environmental Impact Report Conditional Use Permit No. 180001/Public Use Permit No. 180001

Dear Mr. White,

We received a Public Hearing Notice from your office last week that stated boldly on the envelope that it may affect our property in Desert Center. We agree with that and hereby register our opposition to the Athos Project. This notice is the first we have received about this project.

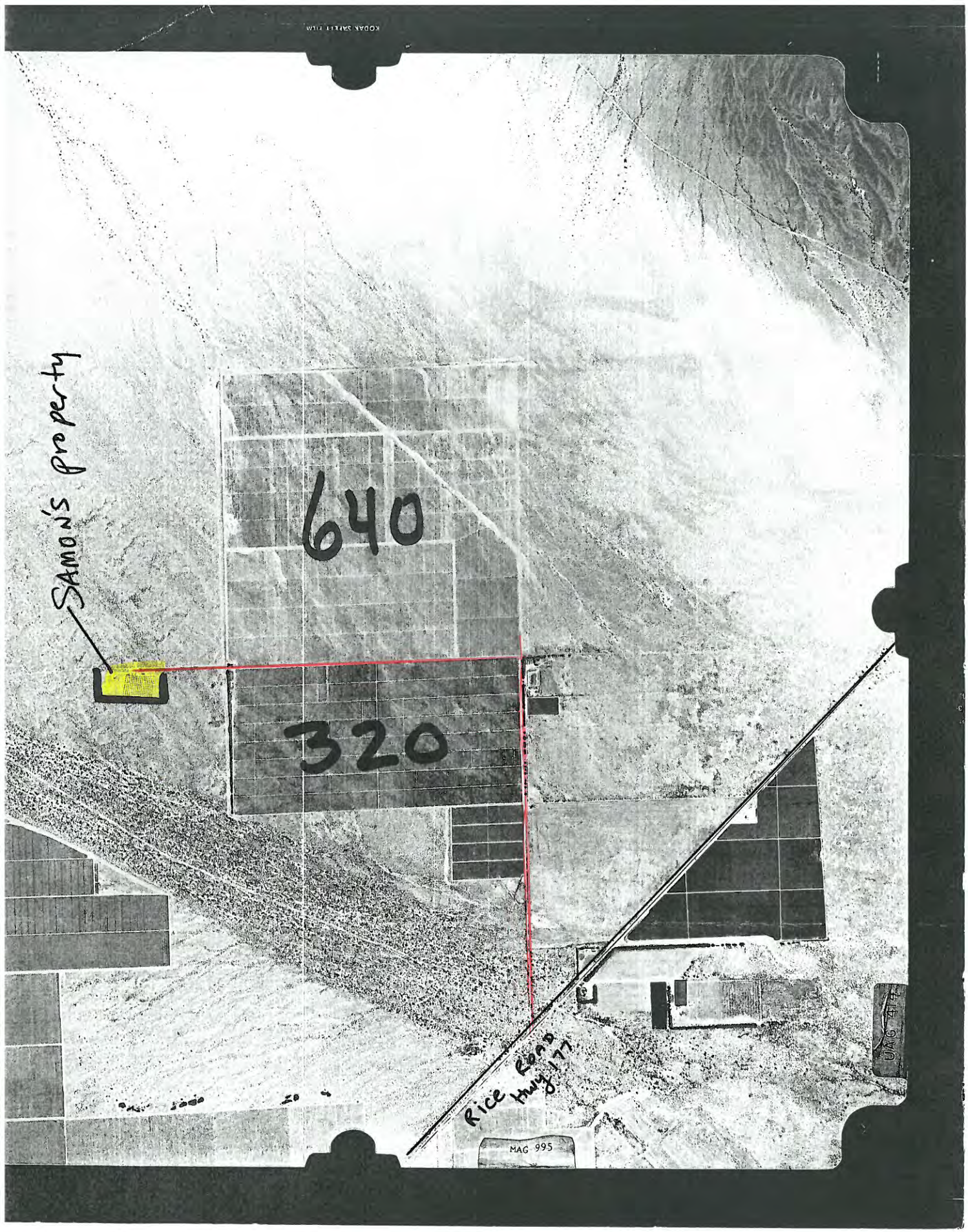
1.) We definitely have concerns as our 80 acre date ranch is located less than 2000 feet from the proposed project. If this moves forward we believe that the solar project will absolutely prevent us from quiet enjoyment of our property.
2.) We do not want our access to be infringed upon or blocked in any way. Our property was purchased in 1965. On the view map I have marked our property in yellow and labeled the 320 and the 640 acre pieces. Our right-of-way runs along with the established SCE powerlines in from Rice Road or Hwy. 177.
3.) We plan to attend the June 4, 2018 meeting however feel pressed for time with just two weeks of notice on this project.
4.) It is common knowledge that these mega projects have problems by endangering wildlife and birds. No one wants to get close to these projects because they are bright, glaring and unattractive. Off of Interstate 15 near Prim, NV there is a large project of this type that turns with the sun and at certain times of the day causes a glare and problems for drivers nearby.
5.) Another consideration is that a new California law just went into effect requiring solar panels on every new house built going forward. That may quickly make these projects obsolete.

We look forward to discussing this matter further with you. If you have any questions, please call Jerry and Christine Samons at 760-349-9077.

Sincerely,

Jerry V. Samons
Christine Samons

Enclosures


SAMON'S property
640
320
Rice Road
Hwy 177
MAG 995
UAG 414

WATER WELL DRILLERS REPORT

State Well No. _____
Other Well No. _____

(1) OWNER:

Name [illegible]
Address [illegible]
[illegible] City, Calif.

(2) LOCATION OF WELL:

County Riverside Owner's number, if any

Township, Range, and Section NE¼ NE¼ Sec 36 T4S R15E

Distance from cities, roads, railroads, etc.

(3) TYPE OF WORK (check):

New Well ☒ Deepening ☐ Reconditioning ☐ Destroying ☐

If destruction, describe material and procedure in Item 11.

(4) PROPOSED USE (check):

Domestic ☐ Industrial ☐ Municipal ☐
Irrigation ☒ Test Well ☐ Other ☐

(5) EQUIPMENT:

Rotary ☒
Cable ☐
Other ☐

(6) CASING INSTALLED:

STEEL: SINGLE ☒ DOUBLE ☐ OTHER:

If gravel packed

From ft.	To ft.	Diam.	Gage or Wall	Diameter of Bore	From ft.	To ft.
0	216	16"	1/4	20"		
216	900	12 3/4	3/16		150	900

Size of shoe or well ring: Size of gravel: Bird eye

Describe joint Collar

(7) PERFORATIONS OR SCREEN:

Type of perforation or name of screen

From ft.	To ft.	Perf. per row	Rows per ft.	Size in. x in.
216	360			3/32
560	600			
672	900			

(8) CONSTRUCTION:

Was a surface sanitary seal provided? Yes ☒ No ☐ To what depth 150 ft.

Were any strata sealed against pollution? Yes ☐ No ☐ If yes, note depth of strata

From ft. to ft.

From ft. to ft.

Method of sealing Standard Mud Slurry

(9) WATER LEVELS:

Depth at which water was first found, if known ft.

Standing level before perforating, if known ft.

Standing level after perforating and developing 105 ft.

(10) WELL TESTS:

Was pump test made? Yes ☐ No ☒ If yes, by whom?

Yield: gal./min. with ft. drawdown after hrs.

Temperature of water Was a chemical analysis made? Yes ☐ No ☐

Was electric log made of well? Yes ☐ No ☒ If yes, attach copy

(11) WELL LOG:

Total depth [illegible] Depth of completed well [illegible] ft.

Formation: Describe by [illegible]

From ft.	To ft.	Formation
0	45	Fine to Cor sand, gravel, small bldrs
45	90	Fine to Cor sand, gravel thin strks clay
90	112	Fine to Cor sand, gravel, bldrs.
112	135	Fine to Cor sand, cemented streaks
135	177	Fine to Cor sand, gravel, thin strks clay
177	191	Fine to Cor sand, gravel, cemented strk
191	291	Fine to Cor sand, gravel, thin strks clay
291	337	Fine to Cor sand - tight streaks
337	359	Fine to Cor sand, strks brown sandy clay
359	402	Brown sandy clay, strks fine to coarse sand
402	425	Fine to Cor sand, thin strks brown clay
425	560	Brown sandy clay, thin strks fine and medium sand
560	583	Fine to Cor sand, gravel, thin strks clay
583	605	Fine to Coarse sand
605	673	Fine, medium sand, strks clay
673	740	Fine to Cor sand, gravel, thin strks clay
740	898	Fine to Cor sand, gravel, cemented strk
898	943	Fine to Cor sand gravel, cemented thin streaks clay

Work started 4/22 19 74, Completed 5/24 19 74

WELL DRILLER'S STATEMENT:

This well was drilled under my jurisdiction and this report is true to the best of my knowledge and belief.

NAME Desert Water Drilling Co. Inc.
(Person, firm, or corporation) (Typed or printed)

Address P. O. Box 133, Indio, Calif. 92201

[SIGNED] L G Brown
(Well Driller)

License No. 219051 Dated _____, 19__

SKETCH LOCATION OF WELL ON REVERSE SIDE

3/3

DWR 188 [illegible]

67139-780 8-72 30M TRIP ①T OSP

Email: Athos Renewable Energy Project EIR Team

From: Judy [mailto:jjatchison909@gmail.com]
Sent: Wednesday, June 06, 2018 9:28 AM
To: White, Kevin C. <KEwhite@rivco.org>
Subject: Desert Center renewable energy project

Good morning, this is Judy Atchison who spoke for Steven Luth at the Monday meeting in Palm Desert. Our comments regarding the environmental impact are as follows:

Physical impacts:

- Dust that could trigger asthma in Esther Luth
- Noise and traffic that could cause severe distress for Steven Luth due to existing diagnosis of PTSD
- View from home and use of open space ruined
- Financial concerns over devaluation of home and probability of being forced to move due to above physical impacts which would be very costly and stressful

Environmental impacts

- Flooding concerns, berm destruction
- Increased heat
- Wildlife: Kangaroo Rats already endangered, desert iguanas, increased snake problem as they migrate to property
- Rear access to exit the property when exit onto highway is not possible during a flash flood

Please note Steven Luth is a Viet Nam veteran with a Purple Heart. He and his wife just paid off their property in March 2018. This is their full-time home year-round and has been for the past 30 years.

Please communicate to Steven and Esther Luth through this email address. Also, please send a link to the map that shows parcel numbers and if possible, along with parcel numbers

811260007
811260008
811260009

Thank-you

Judy Atchison on behalf of Steven Luth
25940 Rice Road
Desert Center, Ca 92239
760-533-4682

Double JJ Capp Ranch
June Capp
P.O. Box 343, Desert Center, CA 92239
Phone: 760-227-3432

June 10, 2018

TO: Riverside County Planning Department
Kevin White, Project Planner
County of Riverside – Desert Office
P: 951-955-1417 – F: KEWhite@rivco.org

RE: Athos Renewable Energy Project - Draft Environmental Impact Report Conditional Use PERMIT no. 180001/Public Use Permit No. 180001

FROM: June Capp, Double JJ Capp Ranch
Assessment Number – 811130011-0

I've lived in the Desert Center/Eagle Mountain area since 1956. We've begun to have unusual issues ever since the original solar plant started being built. Our area is dry and with the increase tillage and movement of the land blowing silt and dirt are an everyday occurrence. (Also, not appreciated since it affects our quality of life.)

We are also the low area in the valley so when the water course was and will be diverted, which you WILL do, the runoff floods my property as well as the other small land owners around me. The major rains caused land and access road damage. Because of this we are forced to live with excessive blowing silt. This does not plow into the ground nor does wetting it contain it. My family and I now suffer from allergies which we did not have until the rerouting of water flow. (This includes my horses, cat and dog. My husband had COPD which this aggravated.) Whatever the mud left has affected my plants and trees.

We have people in the area who have pacemakers including my son. How do you mitigate the affect of your lines, substations and inverters on these people? The continuous buzzing of the lines is detrimental to health. Continuous lighting, day and night is also an assault on our health. After all, we've been here almost 50 years

On my property I see mountain lions, deer, and big horn sheep as well as the occasional badger, regular coyote and fox. There are not many places for the animals to go for water or forage. Iguanas, snakes and a myriad of lizards are in the area along with migrating buzzards, dove, geese, ducks and local birds including hummingbirds. Let's not forget our desert turtles. Further destruction of their natural habitat should be of great concern.

What kind of water usage are the solar plants going to need for installation and upkeep? We've been in drought conditions for a number of years and the water table is dropping. How will your installation affect it?

What is this going to do to the roads? Will you keep them in good repair? With your construction the traffic will increase considerably. They are not currently prepared for it. Two lane roads on Highway 177 are dangerous with a multitude of trucks on it.

My concerns are as listed. Please place me on your mailing list.

-----Original Message-----
From: Johnney Coon [mailto:jcoon0313@gmail.com]
Sent: Monday, June 11, 2018 11:18 AM
To: White, Kevin C. <KEwhite@rivco.org>
Cc: jcoon0313@gmail.com
Subject: Comments for Athos Renewable Energy Project in Desert Center

Kevin White
Riverside County Planning Department
4080 Lemon St., 12 Floor
Riverside, CA. 92501

Dear Mr. White,

Following are my concerns and comments regarding the proposed Athos Renewable Energy Project in Desert Center. First, I'd like to state, that I've spent all of my adult years, 42 to be exact, in Desert Center. I own, along with my husband 305 acres here. We were previously grape growers for over 30 years. Our land is located adjacent to the largest proposed solar field. I would like these comments to be addressed and be part of the public record. They are in no particular order of concern.

1. Bird deaths due to crashing into panels. These solar fields look like lakes during certain times of the day. I'm not sure how you would go about mitigating this. Is there any way to lessen the destruction?

2. Displaced animals and animal deaths, loss of habitat, and loss of migration and corridor patterns. Fencing with large enough openings can be used to allow small rodents, snakes and lizards to travel mostly without impediment.

3. Water usage and drop in our water table. How will this be addressed regarding effects on local population? Do you plan on any compensation if we need to lower our pumps due to your usage? Many residents here maintain their own wells and pumps.

4. Water diversion and flash flooding. How do you plan on addressing this issue so your project doesn't cause local residents to get flooded out.
This is very important. Do you plan on providing and maintaining berms? Your project will probably divert water in new directions possibly causing additional flooding.

5. Noise pollution. We are very concerned about the substation that appears to be right next to us. Is it possible to site it further to the west, possibly to the west of your Gen-Tie / project access road? There are no neighbors to the west of us. My husband and I are the only one's living next to this proposed solar parcel. We also have on our property a WHIP wildlife pond very near to this proposed substation.

6. Transmission lines, substations, ect., would these have a negative effect on those who have a pacemaker? If so, what can be done to prevent or lessen potential problems?

7. Light pollution is a quality of life and aesthetics issue. Many residents and visitors to this area love our dark moonless nights in which to view the many stars, planets and the milky way. Please don't light it up like a car lot at night. No lights or very few lights at night would mitigate this.

8. Dust generation, especially during construction. How will you prevent or lessen the effects to our health? Asthma and respiratory issues seem to be on the rise. Are you planning on watering roads and construction areas?

9. Heat generation and reflection issues. How do you intend to mitigate or lessen the impacts?

10. Road access and maintenance. The road currently being used by those doing the environmental studies, is the same road we use to get to and from our property. We want to make certain this remains accessible to us and remains passable. We have lived on this particular road since 1980.
Will you exclusively use the Project Access Road when it is completed? If not, do you intend to maintain the current road?
A statement in the notice from the Planning Department dated 5/9/18 has us concerned by stating “the applicant is also seeking to vacate interior roadways and merge contiguous project parcels”. There are other land owners near this project who depend on access to their property.

11. Trash generation by workers and construction in general. Please entail that your employees do not trash the roadways and desert in general. This is an easy issue to mitigate.

12. Quality of life and aesthetics is very important, as that is why we live here. That will change but by addressing these issues and concerns in good faith you can help lessen the impacts that this will have on all of us and be a good neighbor.

Sincerely,

Johnney Coon
Timothy Anderson
P.O. Box 436
Desert Center, CA. 92239
760-485-6807
jcoon0313@gmail.com
Confidentiality Disclaimer

This email is confidential and intended solely for the use of the individual(s) to whom it is addressed. The information contained in this message may be privileged and confidential and protected from disclosure.
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County of Riverside California <http://www.countyofriverside.us/>

From:	Sharon L. Davis
To:	marisa@intersectpower.com; Hedy Koczwara
Subject:	Athos Solar Project - Desert Center CA
Date:	Monday, June 11, 2018 6:09:21 PM
Attachments:	Plat Survey.pdf

From: Sharon L. Davis <sldavis63379@charter.net>
Sent: Monday, June 11, 2018 4:53 PM
To: Marisa Mitchell, Hedy Koczwara
Subject: Athos Solar Project - Desert Center CA

Dear Marisa Mitchell and Hedy Koczwara,

My name is Sharon L. Davis and I am the Trustee for Mary E. Zeiler, owner of Green Acres Mobile Park 25950 Rice Road in Desert Center CA 92239.

My brother Richard W. Zeiler and I attended the scoping session meeting on June 4, 2018 coordinated by the Riverside Planning Department regarding the Athos Solar Project; this project has a direct impact on our property as our east property line borders the solar project.

Green Acres is a 9.4 acre mobile park with approximately 4.4 acres developed with 27 mobile home/RV spaces with cement pads. There are seven (7) park-owned mobiles furnished with stove, refrigerator, central heating and cooling. Each of the 27 spaces has septic and water hook-up and individual electric meters. The remaining 5.0 acres (front footage) is undeveloped but graded and flat.

Green Acres has:	400 ft well	Water tank
	street lights	(5) septic tanks
	propane tanks on park owned mobile home spaces	
	30'x30' storage/utility garage	
	10'x20' shed and several other storage sheds	
	Direct access to Rice Road (Highway 177)	

Marisa, as I mentioned to you after the meeting, I feel our property would be an ideal asset as the project staging site as we have all the necessary amenities. For your convenience I have attached a Plat Plan of Green Acres Mobil Home park.

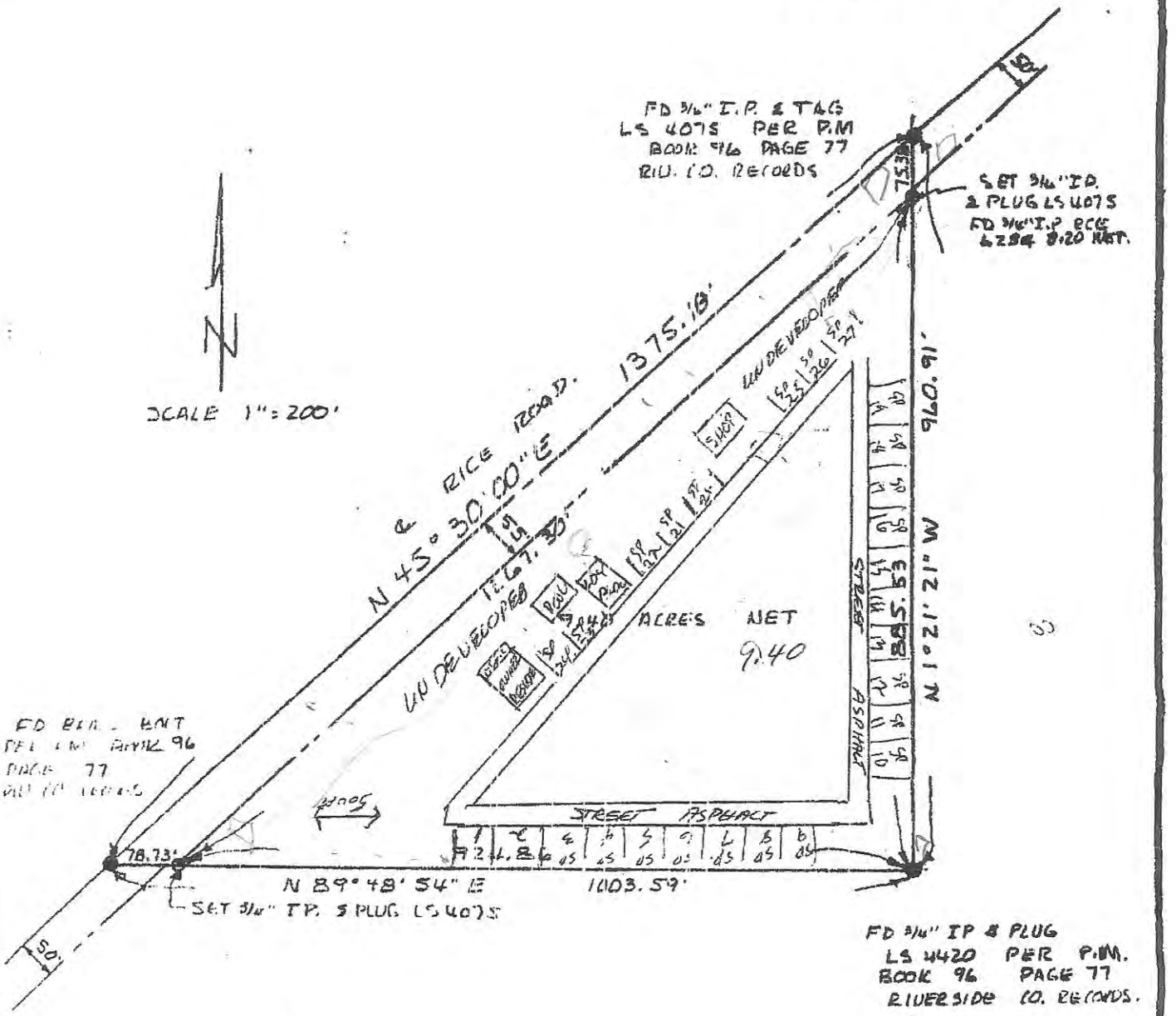
I look forward to speaking with you soon and perhaps arranging a site visit.

Sharon L. Davis
Cell: (314) 401-2738

GREEN ACRES MOBILE PARK

~~CHAIN~~ APN 808030011-7

ZONING — W2



SURVEY PLAT
OF

A PORTION OF THE SOUTHEAST 1/4 OF SECTION 12 T5S, R15E SBBM; LYING SOUTHEASTERLY OF THE SOUTHEASTERLY LINE OF DESERT CENTER - RICE ROAD.

James D. Feiro
JAMES D. FEIRO LS4075

From: Mark Hedberg [mailto:hedberginc@icloud.com]
Sent: Tuesday, July 17, 2018 10:46 PM
To: White, Kevin C. <KEwhite@rivco.org>
Cc: Hedberg Construction, Inc. <hedberginc@icloud.com>; Home Hedberg <katrinahedberg@me.com>
Subject: Athos Renewable Energy Project

Hi Kevin,

My name is Mark Hedberg my wife and I own a 40 acre parcel of vacant land directly adjacent to a section of the solar project, parcel #811180007-2. First off I would like to say that we are supporters of clean renewable energy and in fact have solar panels on our personal home. We do have a few concerns that we would like to have addressed regarding the projects possible post completion impact to our property.

Our family has a rich date tree farming history in the Coachella Valley which goes back about 100 years and still continues today. We purchased this 40 acre parcel based on the fact that it was zoned agricultural with plans to carry on and continue the date tree business in an area where we would not need to worry about being forced out by development as we have experienced in the Coachella Valley, unfortunately it looks as though we might be facing this same problem now. Our first concern is that if and when the project is completed the current zoning will be changed for properties surrounding this project, changes which may include limits to the height and set backs from property lines of items such as date trees (which can grow upwards of 60'-80' tall) which create a considerable amount of shade as this would block sunlight from reaching the solar ray at certain times of the day and as a result effect the energy production. Our second concern is what negative impacts the solar panels pose on agricultur such as heat or reflective issues which might damage trees. Our third concern is that we will no longer have access to our property.

Something else we are curious about and you might not be able to answer is how the project area layout and boundaries were determined. The proposed project area runs along our North and West property lines, is there a reason why our parcel was not considered to be included in this project?

I hope this email does not reach you to late and these concerns will hopefully be able to be addressed.

Respectfully,
Mark & Katrina Hedberg
73-535 Silver Moon Trail
Palm Desert, CA 92260
Cell phone, (760) 601-5404

Appendix B

Site Plan

©2018 Westwood Professional Services, Inc.

Call 48 Hours before digging:
811 or call811.com
Common Ground Alliance

Athos Solar Project

500 MW
Riverside County, California
Conditional Use Permit Site Plan

PROJECT DESCRIPTION
SINGLE AXIS TRACKER SOLAR ARRAY PROJECT. APPROXIMATELY 3,600 ACRES, INCLUDING 3,250 ACRES OF PRIVATE LAND.

PROJECT LOCATION
LATITUDE= 33° 44' 43.08"
LONGITUDE= −115° 20' 56.4"

LEGAL DESCRIPTION
SEE PARCEL CONSTRAINTS MAP FOR LEGAL DESCRIPTION

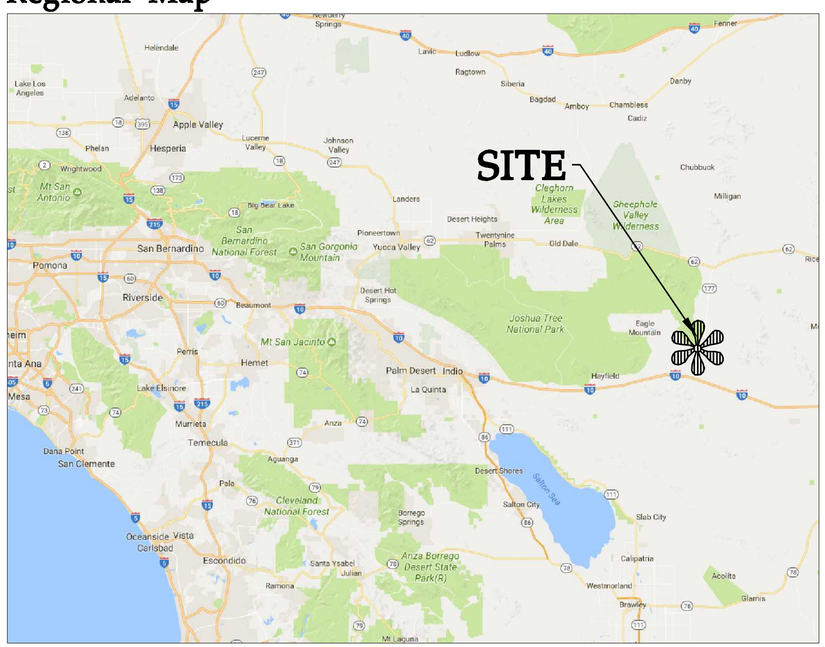
PROJECT COORDINATE SYSTEM
NSRS 2011 CALIFORNIA STATE PLANES ZONE IV, US FOOT

BASIS OF ELEVATION
CONTOURS SHOWN WERE GENERATED FROM AVAILABLE PUBLIC DATA

Sheet List Table

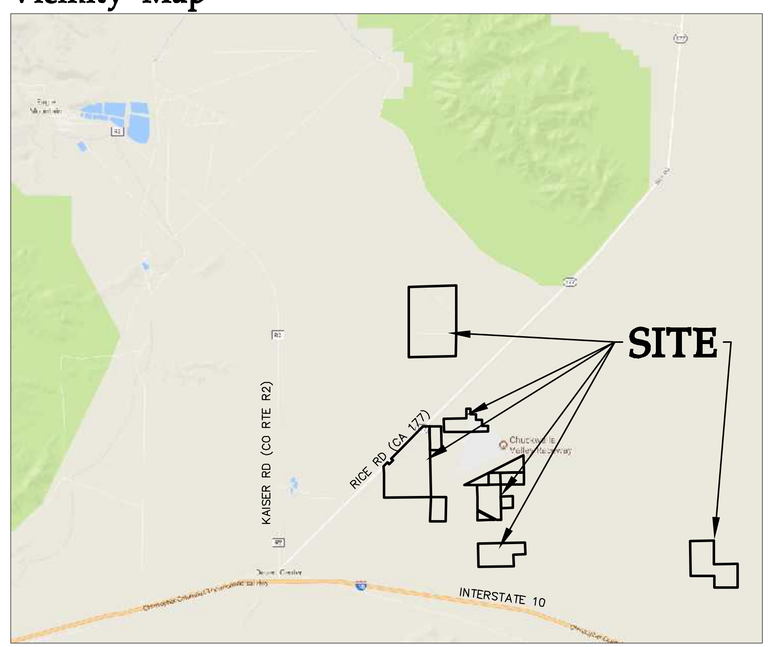
Sheet Number	Sheet Title
T.100	COVER
C.100	OVERALL SITE PLAN
C.200	EXISTING CONDITIONS−1
C.201	EXISTING CONDITIONS−2
C.202	EXISTING CONDITIONS−3
C.203	EXISTING CONDITIONS−4
C.204	EXISTING CONDITIONS−5
C.205	EXISTING CONDITIONS−6
C.206	EXISTING CONDITIONS−7
C.207	EXISTING CONDITIONS−8
C.208	EXISTING CONDITIONS−9
C.300	CIVIL SITE PLAN−1
C.301	CIVIL SITE PLAN−2
C.302	CIVIL SITE PLAN−3
C.303	CIVIL SITE PLAN−4
C.304	CIVIL SITE PLAN−5
C.305	CIVIL SITE PLAN−6
C.306	CIVIL SITE PLAN−7
C.307	CIVIL SITE PLAN−8
C.308	CIVIL SITE PLAN−9
C.309	CIVIL SITE PLAN−10
C.310	CIVIL SITE PLAN−11
C.311	CIVIL SITE PLAN−12
C.312	CIVIL SITE PLAN−13
C.313	CIVIL SITE PLAN−14
C.400	CONSTRUCTION DETAILS
C.401	CONSTRUCTION DETAILS
C.402	CONSTRUCTION DETAILS
C.403	CONSTRUCTION DETAILS
C.404	EROSION CONTROL DETAILS
C.405	CONSTRUCTION NOTES

Regional Map



SOURCE: MAP DATA ©2017 GOOGLE (NOT TO SCALE)

Vicinity Map



SOURCE: MAP DATA ©2017 GOOLGE (NOT TO SCALE)

Quantities

Item	Quantity
Security Fence Length	148,850 LF
20' Access Road Centerline Length	175,200 LF
16' Internal Road Centerline Length	182,250 LF
Silt Fence Lenth	71,350 LF
24' Swing Gate	19 EA

Earthwork

Item	Cut	Fill
Site Grading	0 CY	0 CY
Total	0 CY	0 CY

0013768−CVF01.dwg

Date: 01/15/19 Sheet: T.100

Athos Solar

Riverside County, CA

Cover

Westwood
Phone (952) 937-5150 12701 Whitewater Drive, Suite #300
Fax (952) 937-5822 Minnetonka, MN 55343
Toll Free (888) 937-5150 westwoodps.com
Westwood Professional Services, Inc.

Exhibit Amendments:

Designed: BTB
Checked: ADC
Drawn: BTB
Record Drawing by/date:

Prepared for:

IP Athos, LLC
548 MARKET STREET
SAN FRANCISCO, CA 94104 USA
(415) 675−1500

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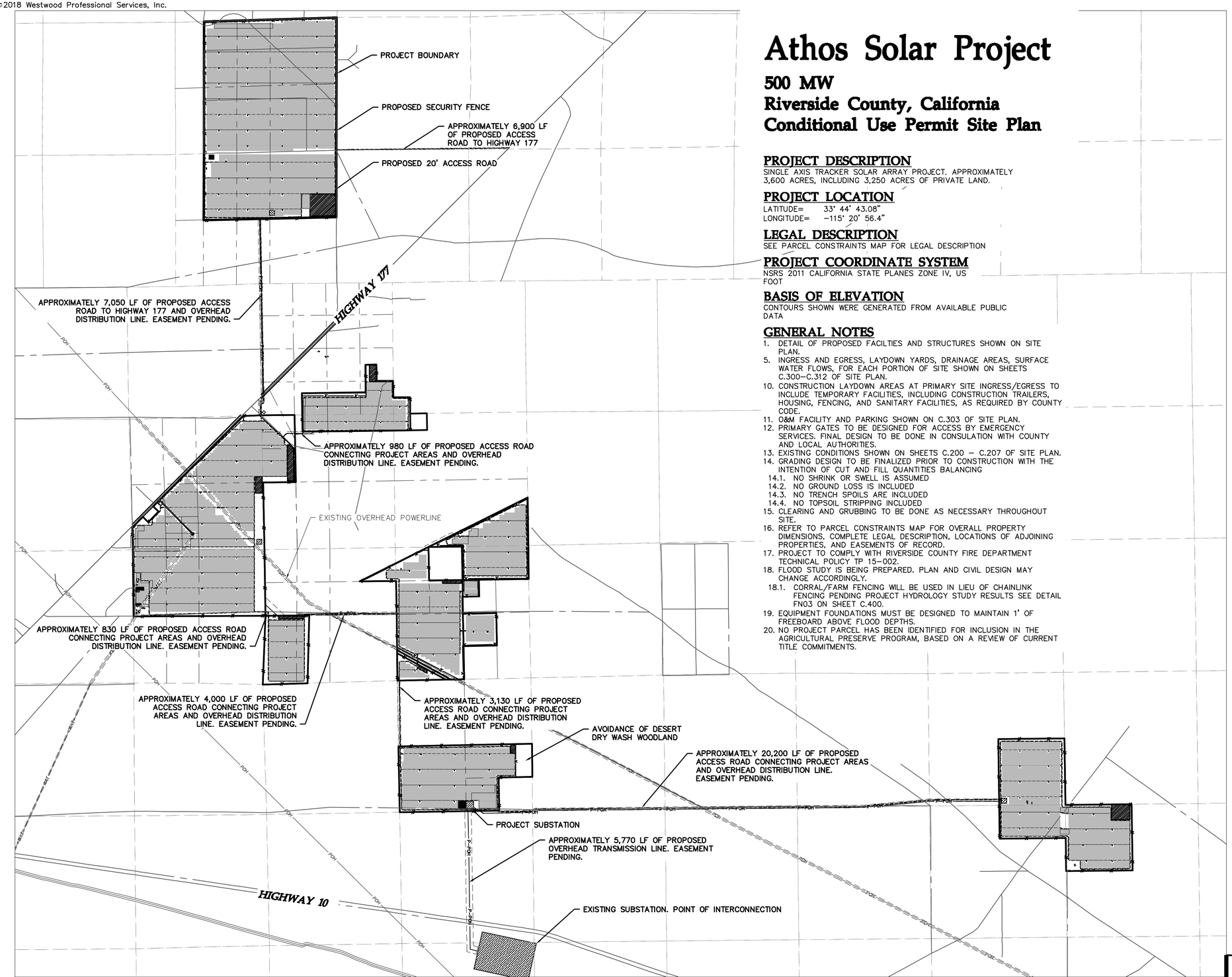
Call 48 Hours before digging:
811 or call811.com
Common Ground Alliance



Athos Solar Project

500 MW
Riverside County, California
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PROJECT COORDINATE SYSTEM
NSRS 2011 CALIFORNIA STATE PLANES ZONE IV, US FOOT

BASIS OF ELEVATION
CONTOURS SHOWN WERE GENERATED FROM AVAILABLE PUBLIC DATA

GENERAL NOTES
1. DETAIL OF PROPOSED FACILTIES AND STRUCTURES SHOWN ON SITE PLAN.
5. INGRESS AND EGRESS, LAYDOWN YARDS, DRAINAGE AREAS, SURFACE WATER FLOWS, FOR EACH PORTION OF SITE SHOWN ON SHEETS C.300−C.312 OF SITE PLAN.
10. CONSTRUCTION LAYDOWN AREAS AT PRIMARY SITE INGRESS/EGRESS TO INCLUDE TEMPORARY FACILITIES, INCLUDING CONSTRUCTION TRAILERS, HOUSING, FENCING, AND SANITARY FACILITIES, AS REQUIRED BY COUNTY CODE.
11. O&M FACILITY AND PARKING SHOWN ON C.303 OF SITE PLAN.
12. PRIMARY GATES TO BE DESIGNED FOR ACCESS BY EMERGENCY SERVICES. FINAL DESIGN TO BE DONE IN CONSULATION WITH COUNTY AND LOCAL AUTHORITIES.
13. EXISTING CONDITIONS SHOWN ON SHEETS C.200 − C.207 OF SITE PLAN.
14. GRADING DESIGN TO BE FINALIZED PRIOR TO CONSTRUCTION WITH THE INTENTION OF CUT AND FILL QUANTITIES BALANCING
    14.1. NO SHRINK OR SWELL IS ASSUMED
    14.2. NO GROUND LOSS IS INCLUDED
    14.3. NO TRENCH SPOILS ARE INCLUDED
    14.4. NO TOPSOIL STRIPPING INCLUDED
15. CLEARING AND GRUBBING TO BE DONE AS NECESSARY THROUGHOUT SITE.
16. REFER TO PARCEL CONSTRAINTS MAP FOR OVERALL PROPERTY DIMENSIONS, COMPLETE LEGAL DESCRIPTION, LOCATIONS OF ADJOINING PROPERTIES, AND EASEMENTS OF RECORD.
17. PROJECT TO COMPLY WITH RIVERSIDE COUNTY FIRE DEPARTMENT TECHNICAL POLICY TP 15−002.
18. FLOOD STUDY IS BEING PREPARED. PLAN AND CIVIL DESIGN MAY CHANGE ACCORDINGLY.
    18.1. CORRAL/FARM FENCING WILL BE USED IN LIEU OF CHAINLINK FENCING PENDING PROJECT HYDROLOGY STUDY RESULTS SEE DETAIL FN03 ON SHEET C.400.
19. EQUIPMENT FOUNDATIONS MUST BE DESIGNED TO MAINTAIN 1' OF FREEBOARD ABOVE FLOOD DEPTHS.
20. NO PROJECT PARCEL HAS BEEN IDENTIFIED FOR INCLUSION IN THE AGRICULTURAL PRESERVE PROGRAM, BASED ON A REVIEW OF CURRENT TITLE COMMITMENTS.

Quantities

Item	Quantity
Security Fence Length	148,850 LF
20' Access Road Centerline Length	175,200 LF
16' Internal Road Centerline Length	182,250 LF
Silt Fence Lenth	71,350 LF
24' Swing Gate	19 EA

Earthwork

Item	Cut	Fill
Site Grading	0 CY	0 CY
Total	0 CY	0 CY

LEGEND:
- PROJECT BOUNDARY
- SECTION LINE
- PROPOSED GRAVEL ROAD
- PROPOSED SOLAR ARRAY
- PROPOSED SECURITY FENCE
- EXISTING OVERHEAD POWER
- PROPOSED OVERHEAD POWER
- PROPOSED UNDERGROUND POWER
- EXISTING BITUMINOUS AND DIRT ROADS
- PROPOSED EASEMENT

0' 2000' 4000' 6000'

0013768−OAF01.dwg

Date: 01/15/19 Sheet: C.100

Athos Solar

Riverside County, CA

Overall Site Plan

Westwood
Phone (952) 937-5150 12701 Whitewater Drive, Suite #300
Fax (952) 937-5822 Minnetonka, MN 55343
Toll Free (888) 937-5150 westwoodps.com
Westwood Professional Services, Inc.

Exhibit Amendments:

Designed: BTB
Checked: ADC
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Record Drawing by/date:

Prepared for:

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SAN FRANCISCO, CA 94104 USA
(415) 675−1500

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Common Ground Alliance

LEGEND:

- PROJECT BOUNDARY
- SECTION LINE
- EXISTING OVERHEAD POWER
- 1000 EXISTING 5' CONTOURS
- EXISTING 1' CONTOURS
- EXISTING PAVED ROAD
- POTENTIAL STORMWATER MANAGEMENT ARES
- EXISTING BUILDING
- EXISTING EASEMENT LINE
- EXISTING RIGHT OF WAY LINE
- EXISTING RIGHT OF WAY LINE
- EXISTING EASEMENT CENTERLINE

NOTES:
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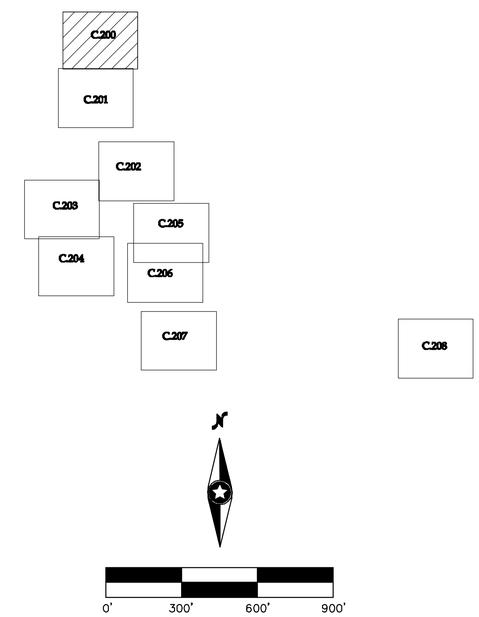
KEY MAP:



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Date: 01/15/19 Sheet: C.200

Athos Solar

Riverside County, CA

Existing Conditions-1

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Checked: ADC
Drawn: BTB
Record Drawing by/date:

Prepared for:

IP Athos, LLC
548 MARKET STREET
SAN FRANCISCO, CA 94104 USA
(415) 675-1500

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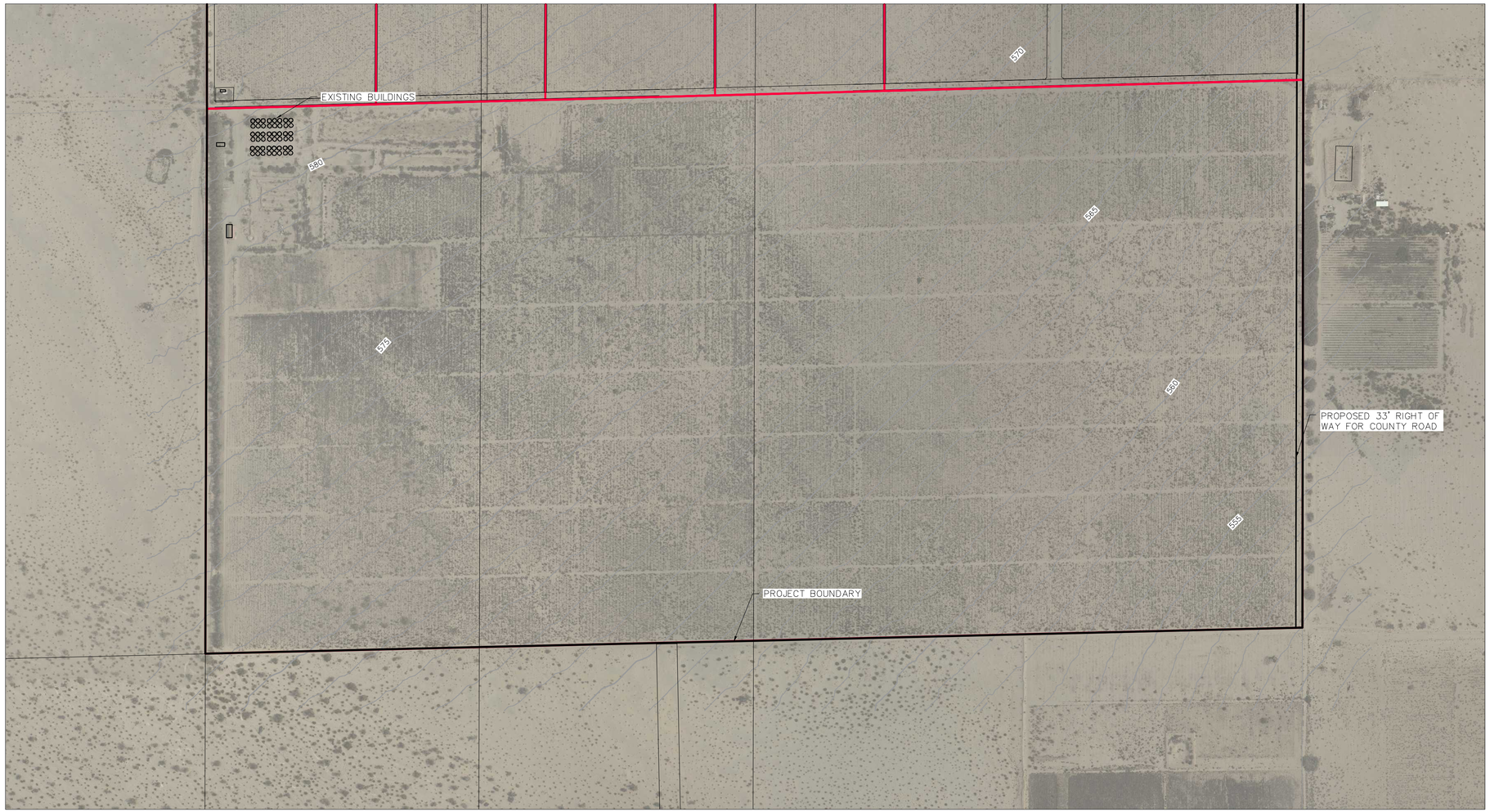

LEGEND:

- PROJECT BOUNDARY
- SECTION LINE
- EXISTING OVERHEAD POWER
- 1000 EXISTING 5' CONTOURS
- EXISTING 1' CONTOURS
- EXISTING PAVED ROAD
- POTENTIAL STORMWATER MANAGEMENT ARES
- EXISTING BUILDING
- EXISTING EASEMENT LINE
- EXISTING RIGHT OF WAY LINE
- EXISTING RIGHT OF WAY LINE
- EXISTING EASEMENT CENTERLINE

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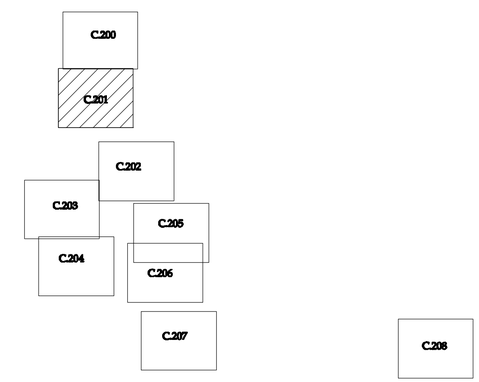

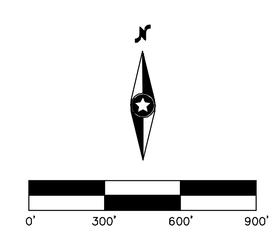

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Date: 01/15/19 Sheet: C.201

Athos Solar

Riverside County, CA

Existing Conditions-2

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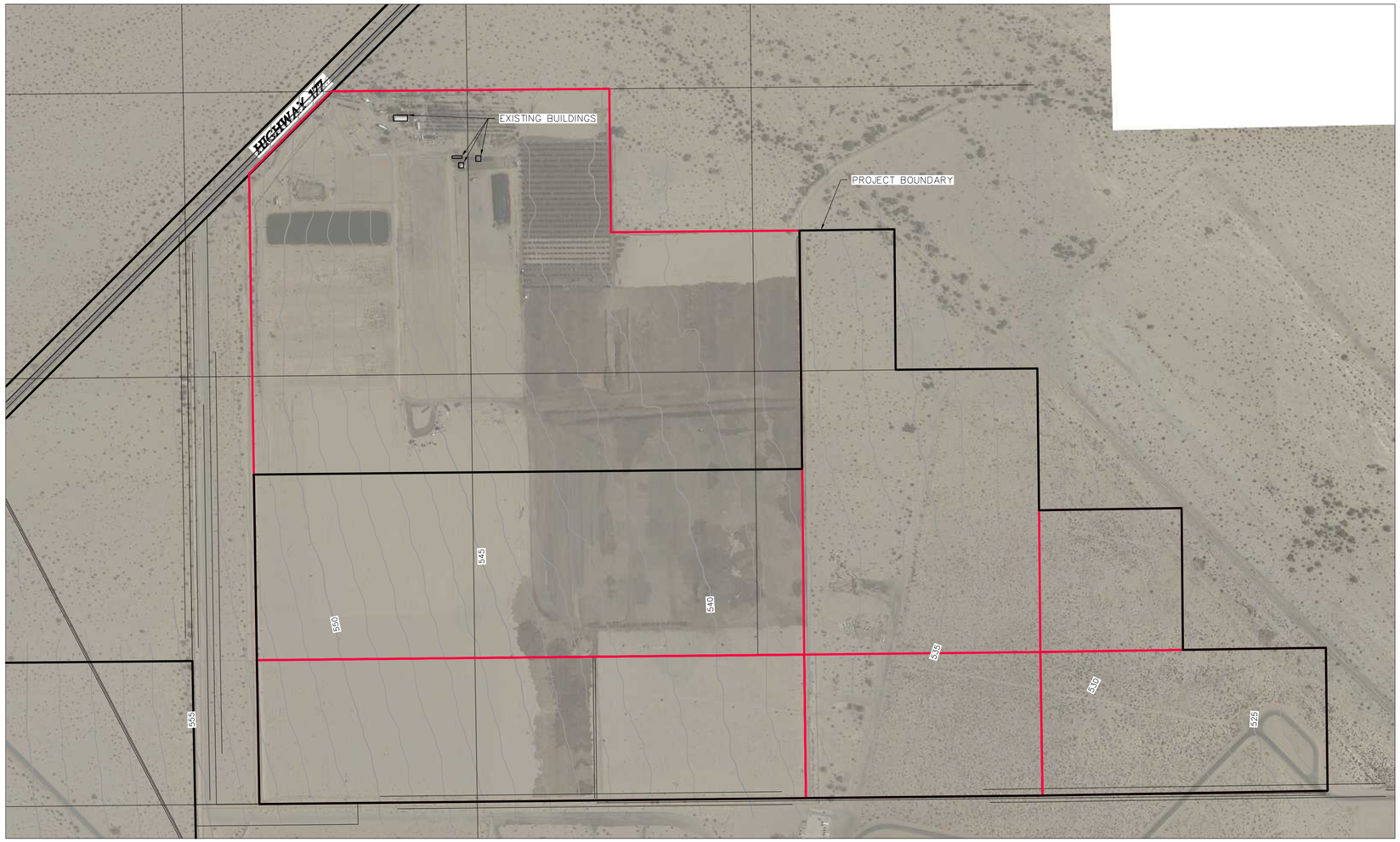

LEGEND:

- PROJECT BOUNDARY
- SECTION LINE
- EXISTING OVERHEAD POWER
- 1000 EXISTING 5' CONTOURS
- EXISTING 1' CONTOURS
- EXISTING PAVED ROAD
- POTENTIAL STORMWATER MANAGEMENT ARES
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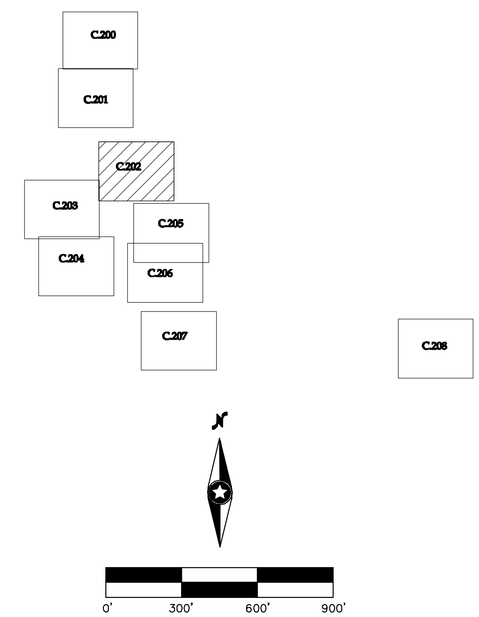

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Date: 01/15/19 Sheet: C.202

Athos Solar

Riverside County, CA

Existing Conditions-3

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LEGEND:

- PROJECT BOUNDARY
- SECTION LINE
- EXISTING OVERHEAD POWER
- 1000 EXISTING 5' CONTOURS
- EXISTING 1' CONTOURS
- EXISTING PAVED ROAD
- POTENTIAL STORMWATER MANAGEMENT ARES
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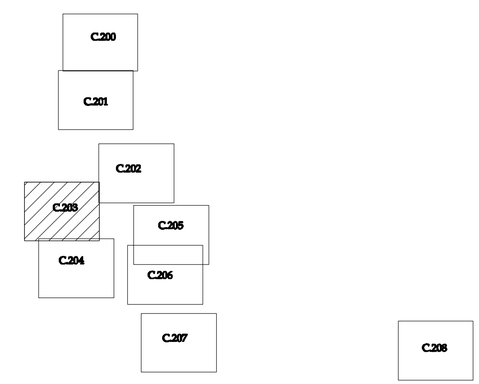

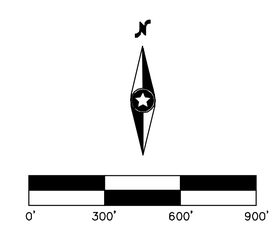

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Date: 01/15/19 Sheet: C.203

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Existing Conditions-4

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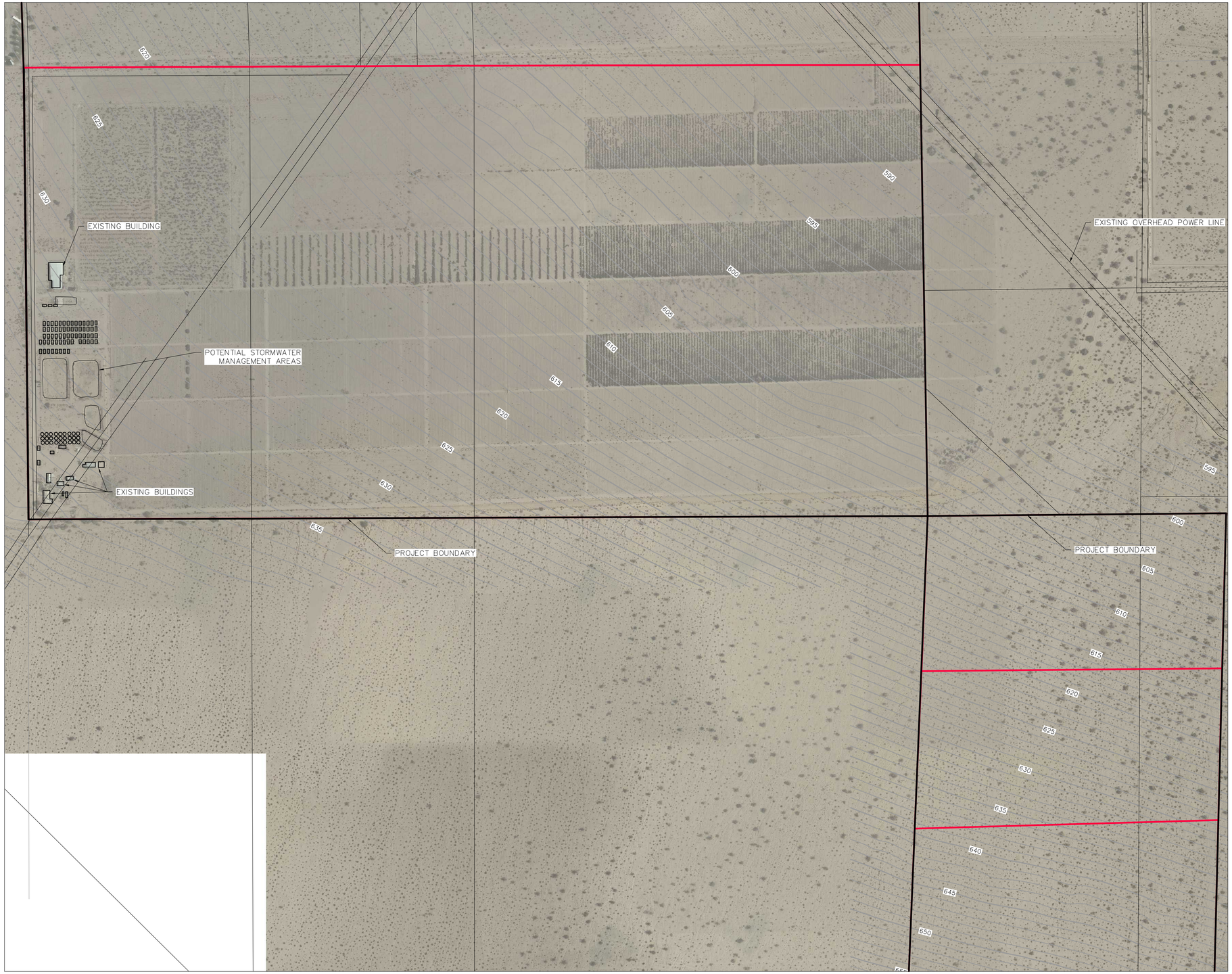

LEGEND:

- PROJECT BOUNDARY
- SECTION LINE
- EXISTING OVERHEAD POWER
- 1000 EXISTING 5' CONTOURS
- EXISTING 1' CONTOURS
- EXISTING PAVED ROAD
- POTENTIAL STORMWATER MANAGEMENT ARES
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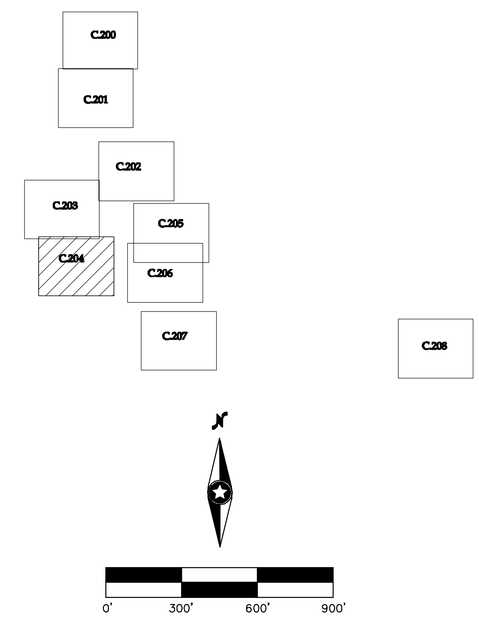

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Date: 01/15/19 Sheet: C.204

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Existing Conditions-5

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1.
2.
3.

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LEGEND:

- PROJECT BOUNDARY
- SECTION LINE
- EXISTING OVERHEAD POWER
- 1000 EXISTING 5' CONTOURS
- EXISTING 1' CONTOURS
- EXISTING PAVED ROAD
- POTENTIAL STORMWATER MANAGEMENT ARES
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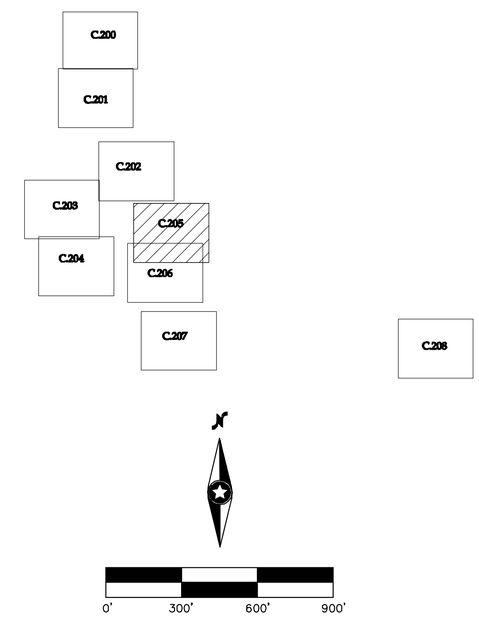

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Date: 01/15/19 Sheet: C.205

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Existing Conditions-6

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LEGEND:

- PROJECT BOUNDARY
- SECTION LINE
- EXISTING OVERHEAD POWER
- 1000 EXISTING 5' CONTOURS
- EXISTING 1' CONTOURS
- EXISTING PAVED ROAD
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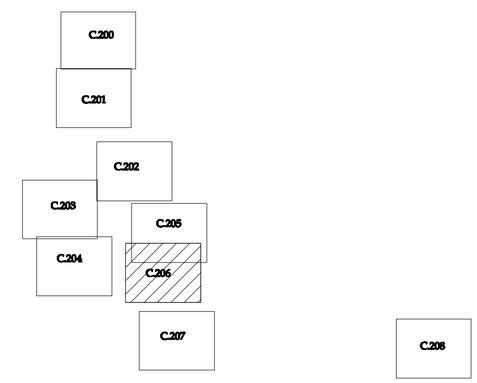

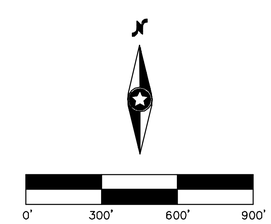

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Date: 01/15/19 Sheet: C.206

Athos Solar

Riverside County, CA

Existing Conditions-7

Westwood

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LEGEND:

- PROJECT BOUNDARY
- SECTION LINE
- EXISTING OVERHEAD POWER
- 1000 EXISTING 5' CONTOURS
- EXISTING 1' CONTOURS
- EXISTING PAVED ROAD
- POTENTIAL STORMWATER MANAGEMENT ARES
- EXISTING BUILDING
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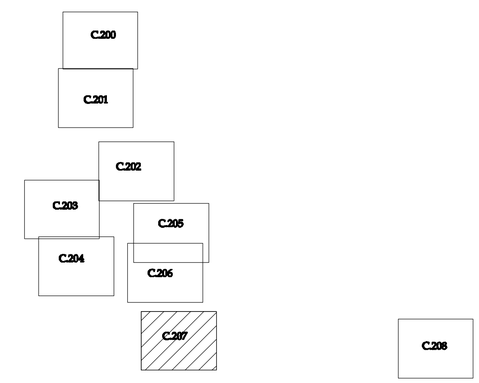

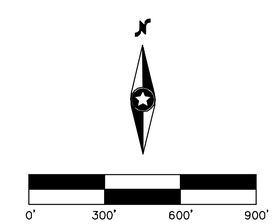

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Date: 01/15/19 Sheet: C.207

Athos Solar

Riverside County, CA

Existing Conditions-8

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LEGEND:

- PROJECT BOUNDARY
- SECTION LINE
- EXISTING OVERHEAD POWER
- 1000 EXISTING 5' CONTOURS
- EXISTING 1' CONTOURS
- EXISTING PAVED ROAD
- POTENTIAL STORMWATER MANAGEMENT ARES
- EXISTING BUILDING
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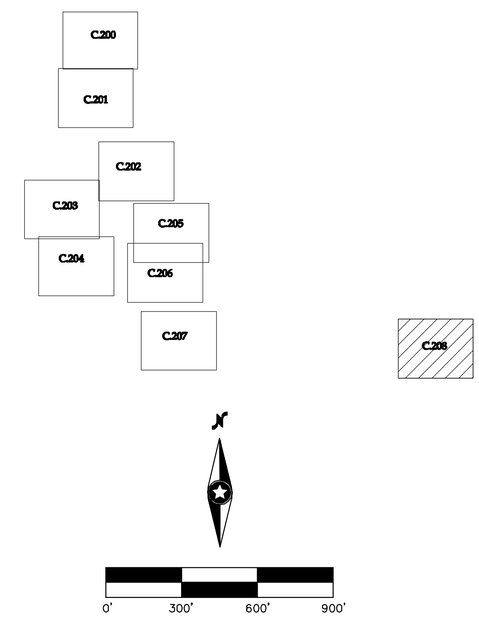

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Date: 01/15/19 Sheet: C.208

Athos Solar

Riverside County, CA

Existing Conditions-9

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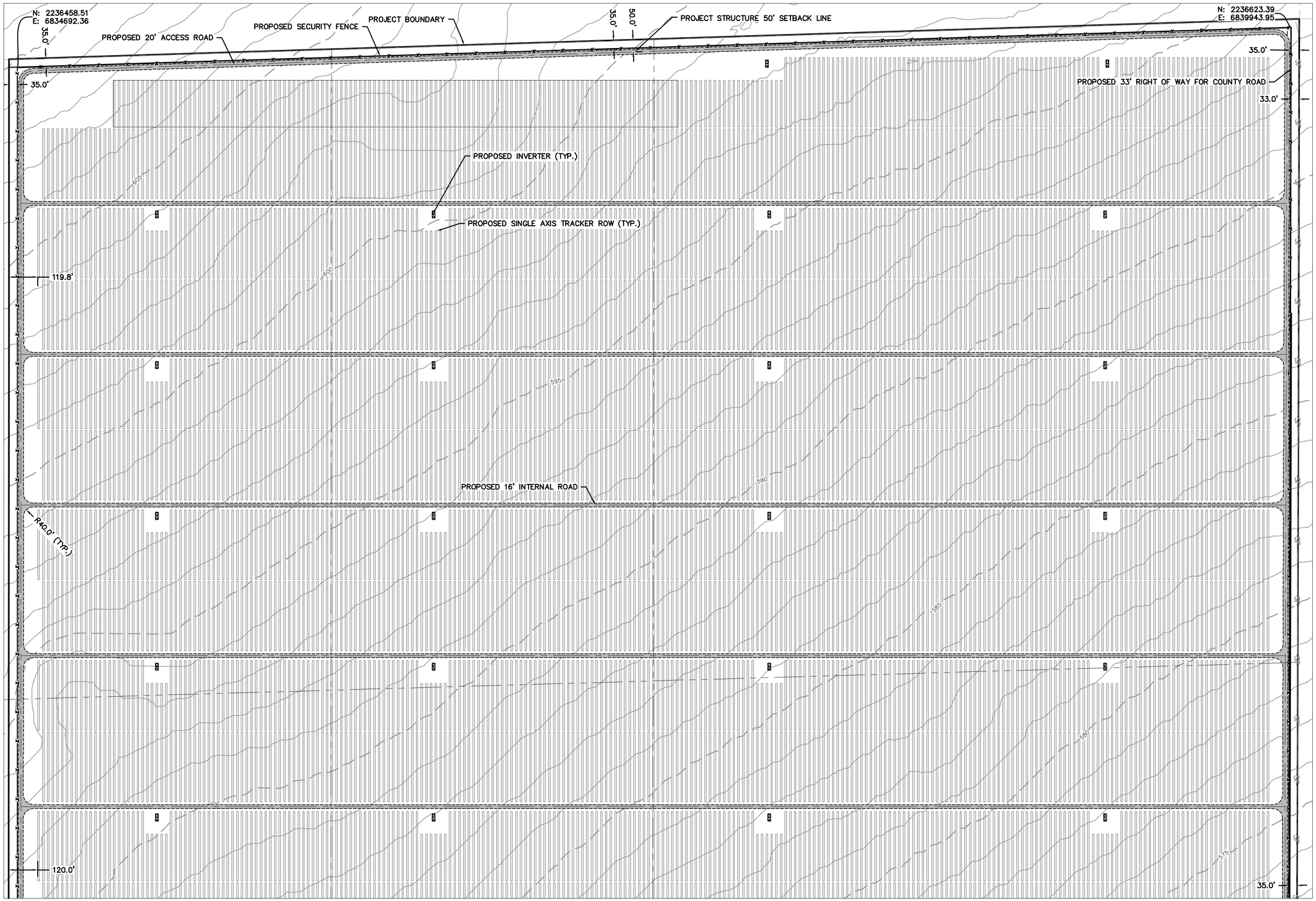


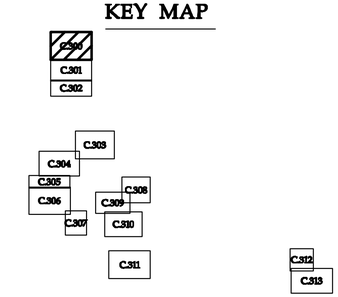
SEE SHEET C.301

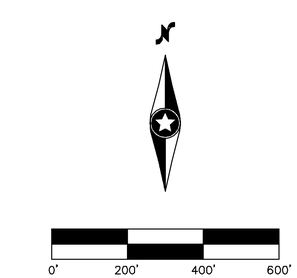
LEGEND

- PROJECT BOUNDARY/DISTURBANCE LIMITS
- PROPOSED SOLAR ARRAY
- PROPOSED ACCESS ROAD
- PROPOSED SECURITY FENCE
- POSSIBLE STORMWATER BASIN LOCATION
- PROPOSED LAYDOWN YARD LOCATION
- PROPOSED SILT FENCE
- PROPOSED OVERHEAD POWER LINE
- PROJECT STRUCTURE SETBACK LINE
- EXISTING 5' CONTOURS
- EXISTING 1' CONTOURS
- EXISTING OVERHEAD POWER LINE
- EXISTING EASEMENT LINE
- EXISTING RIGHT OF WAY LINE
- EXISTING WATER LINE
- EXISTING EASEMENT CENTERLINE
- EXISTING GROUND SLOPE

NOTES:
1. PROJECT QUANTITIES SHOWN ON PLAN SET ARE PRELIMINARY AND ARE MEANT FOR GENERAL DISCUSSION AND GENERAL PRICING PURPOSES.
2. DESIGN ASSUMPTIONS:
   2.1. MAX SLOPE: 10%
   2.2. INTERIOR ROAD WIDTH: 16 FT.
   2.3. EXTERIOR ROAD WIDTH: 20 FT.
3. FINAL GRADING DESIGN TO BE COMPLETED PRIOR TO CONSTRUCTION WITH THE INTENTION OF CUT AND FILL QUANTITIES BALANCING.
4. FLOOD STUDY IS BEING PREPARED. PLAN AND CIVIL DESIGN MAY CHANGE ACCORDINGLY.
   4.1. CORRAL/FARM FENCING WILL BE USED IN LIEU OF CHAINLINK FENCING PENDING PROJECT HYDROLOGY STUDY RESULTS SEE DETAIL FN03 ON SHEET C.400
   4.2. EQUIPMENT FOUNDATIONS MUST BE DESIGNED TO MAINTAIN 1' OF FREEBOARD ABOVE FLOOD DEPTHS.
5. THIS PLAN SHOWS THE PROJECT SITE WITH PROPOSED PARCEL MERGERS AND VACATED EASEMENTS.

KEY MAP





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Date: 01/15/19 Sheet: C.300

Athos Solar

Riverside County, CA

Civil Site Plan-1

Westwood

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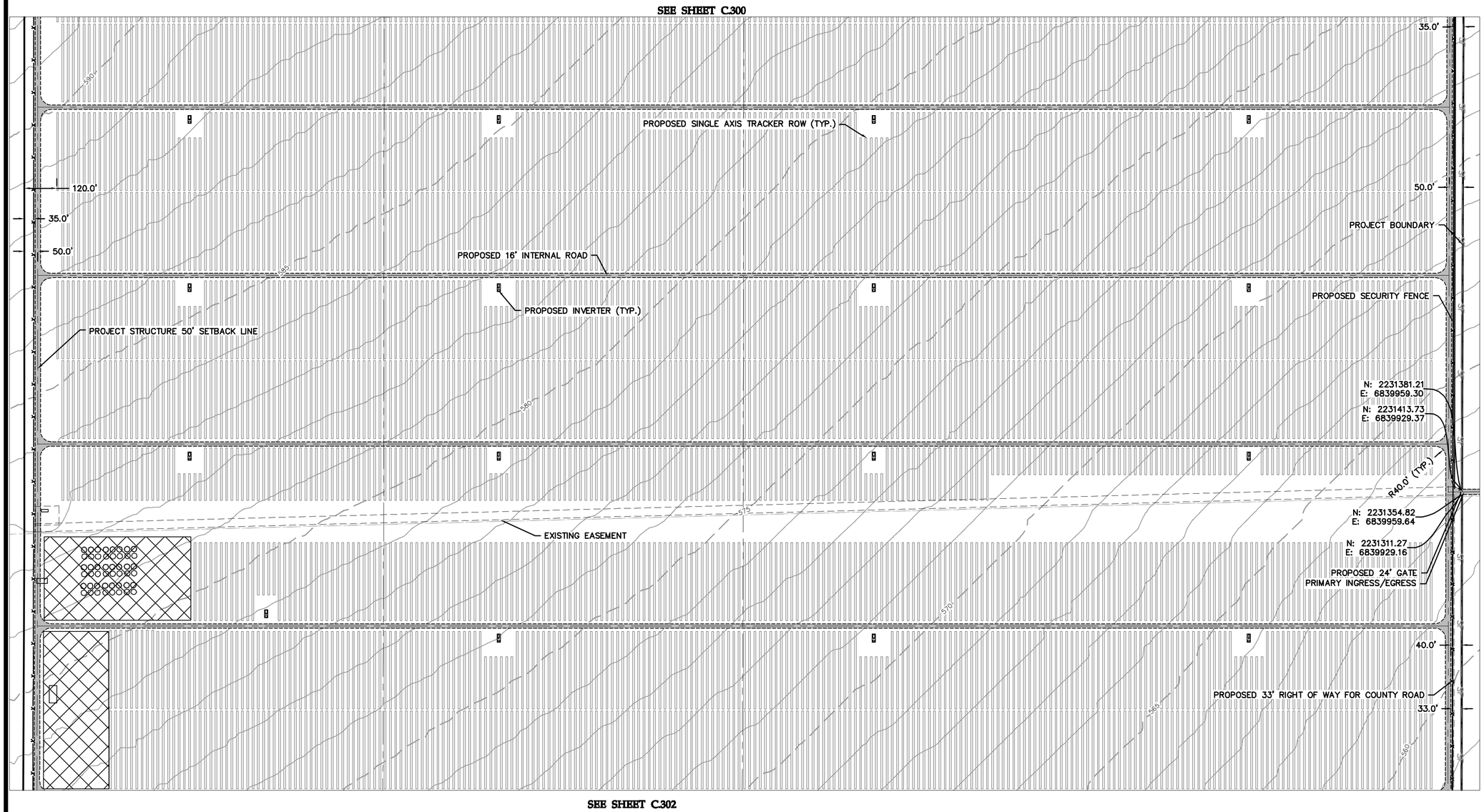

LEGEND

- PROJECT BOUNDARY/DISTURBANCE LIMITS
- PROPOSED SOLAR ARRAY
- PROPOSED ACCESS ROAD
- PROPOSED SECURITY FENCE
- POSSIBLE STORMWATER BASIN LOCATION
- PROPOSED LAYDOWN YARD LOCATION
- PROPOSED SILT FENCE
- PROPOSED OVERHEAD POWER LINE
- PROJECT STRUCTURE SETBACK LINE
- EXISTING 5' CONTOURS
- EXISTING 1' CONTOURS
- EXISTING OVERHEAD POWER LINE
- EXISTING EASEMENT LINE
- EXISTING RIGHT OF WAY LINE
- EXISTING WATER LINE
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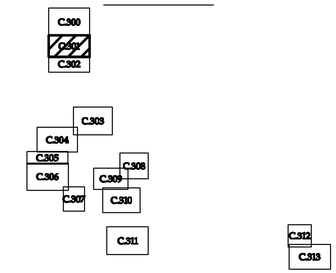
KEY MAP



0' 200' 400' 600'

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Date: 01/15/19 Sheet: C.301

Athos Solar

Riverside County, CA

Civil Site Plan-2

Westwood
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Drawn: BTB
Record Drawing by/date:

Prepared for:

IP Athos, LLC
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SAN FRANCISCO, CA 94104 USA
(415) 675-1500

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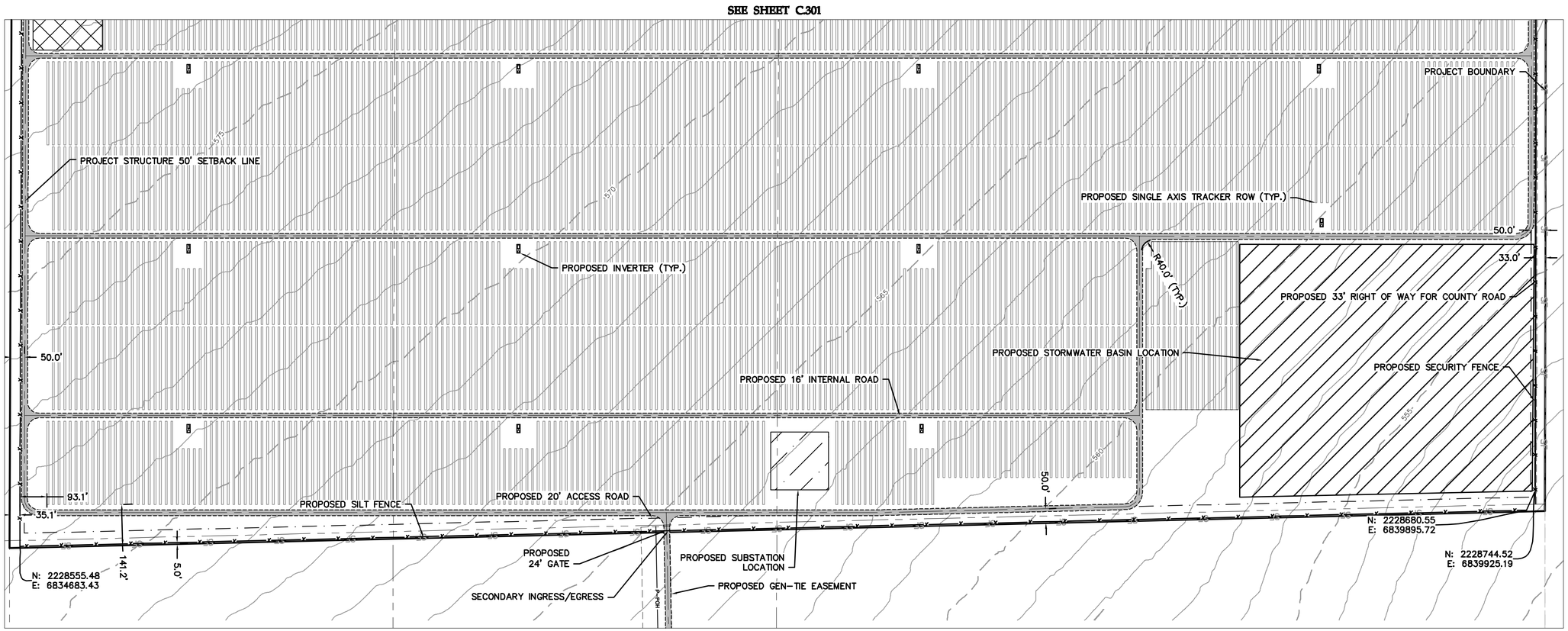
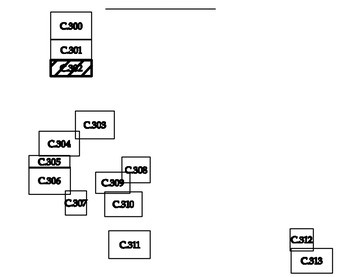
LEGEND

- PROJECT BOUNDARY/DISTURBANCE LIMITS
- PROPOSED SOLAR ARRAY
- PROPOSED ACCESS ROAD
- PROPOSED SECURITY FENCE
- POSSIBLE STORMWATER BASIN LOCATION
- PROPOSED LAYDOWN YARD LOCATION
- SF — PROPOSED SILT FENCE
- P-POH — PROPOSED OVERHEAD POWER LINE
- PROJECT STRUCTURE SETBACK LINE
- 1000 — EXISTING 5' CONTOURS
- EXISTING 1' CONTOURS
- POH — EXISTING OVERHEAD POWER LINE
- EXISTING EASEMENT LINE
- EXISTING RIGHT OF WAY LINE
- WAT — EXISTING WATER LINE
- EXISTING EASEMENT CENTERLINE
- 0.66% — EXISTING GROUND SLOPE

NOTES:
1. PROJECT QUANTITIES SHOWN ON PLAN SET ARE PRELIMINARY AND ARE MEANT FOR GENERAL DISCUSSION AND GENERAL PRICING PURPOSES.
2. DESIGN ASSUMPTIONS:
   - 2.1. MAX SLOPE: 10%
   - 2.2. INTERIOR ROAD WIDTH: 16 FT.
   - 2.3. EXTERIOR ROAD WIDTH: 20 FT.
3. FINAL GRADING DESIGN TO BE COMPLETED PRIOR TO CONSTRUCTION WITH THE INTENTION OF CUT AND FILL QUANTITIES BALANCING.
4. FLOOD STUDY IS BEING PREPARED. PLAN AND CIVIL DESIGN MAY CHANGE ACCORDINGLY.
   - 4.1. CORRAL/FARM FENCING WILL BE USED IN LIEU OF CHAINLINK FENCING PENDING PROJECT HYDROLOGY STUDY RESULTS SEE DETAIL FN03 ON SHEET C.400
   - 4.2. EQUIPMENT FOUNDATIONS MUST BE DESIGNED TO MAINTAIN 1' OF FREEBOARD ABOVE FLOOD DEPTHS.
5. THIS PLAN SHOWS THE PROJECT SITE WITH PROPOSED PARCEL MERGERS AND VACATED EASEMENTS.



KEY MAP



N

0' 200' 400' 600'

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Date: 01/15/19 Sheet: C.302

Athos Solar

Civil Site Plan-3

Riverside County, CA

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Checked:	ADC
Drawn:	BTB
Record Drawing by/date:	

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SAN FRANCISCO, CA 94104 USA
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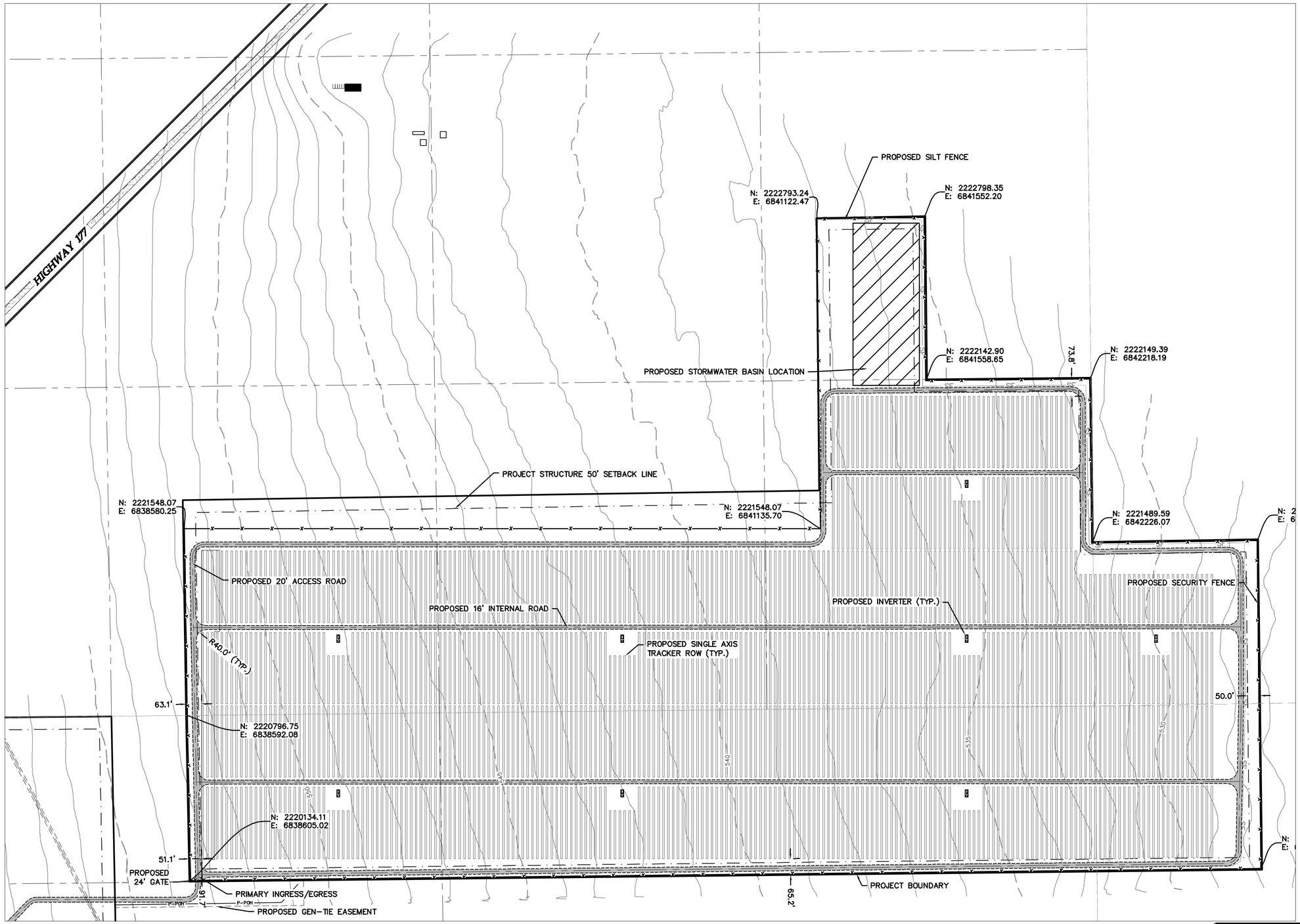

LEGEND

- PROJECT BOUNDARY/DISTURBANCE LIMITS
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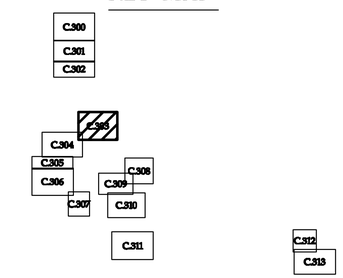
KEY MAP



0' 200' 400' 600'

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Date: 01/15/19 Sheet: C.303

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Drawn:	BTB
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Riverside County, CA

Civil Site Plan-4

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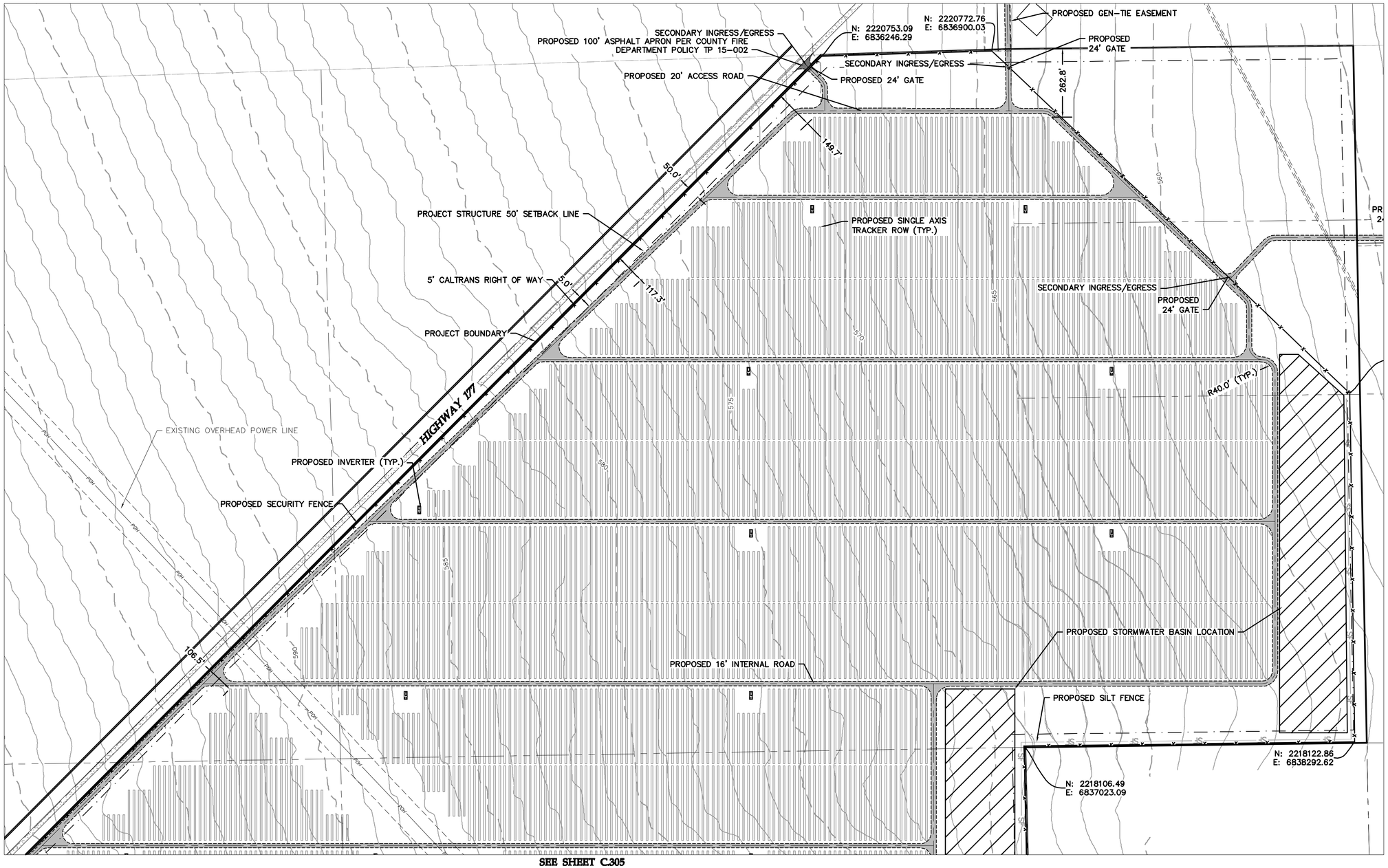

LEGEND

- PROJECT BOUNDARY/DISTURBANCE LIMITS
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- PROPOSED ACCESS ROAD
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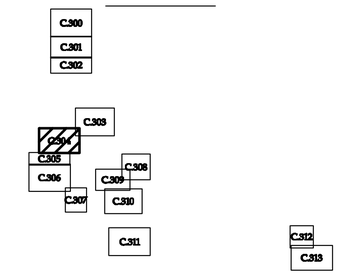
KEY MAP



0' 200' 400' 600'

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Date: 01/15/19 Sheet: C.304

Athos Solar

Civil Site Plan-5

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LEGEND

- PROJECT BOUNDARY/DISTURBANCE LIMITS
- PROPOSED SOLAR ARRAY
- PROPOSED ACCESS ROAD
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- POSSIBLE STORMWATER BASIN LOCATION
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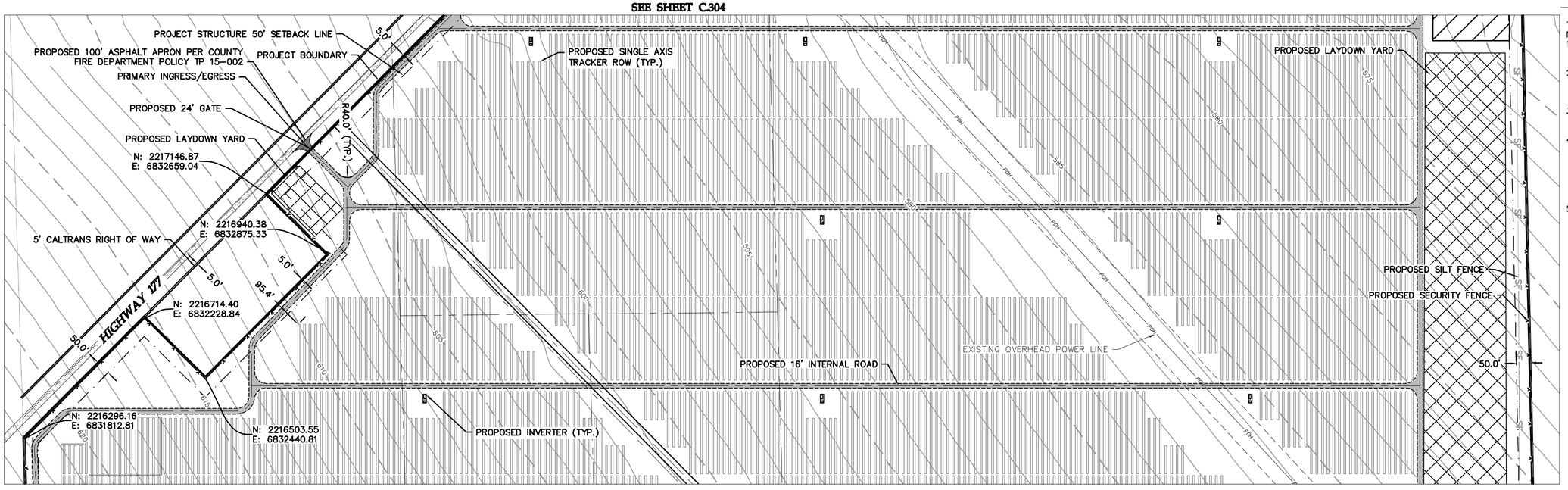
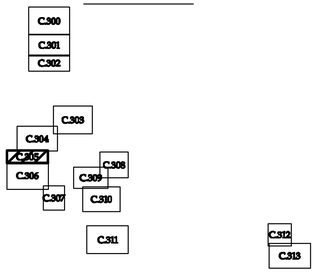
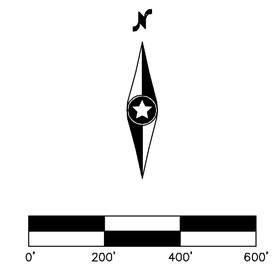
SEE SHEET C.304



SEE SHEET C.306

KEY MAP





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Date: 01/15/19 Sheet: C.305

Athos Solar

Riverside County, CA

Civil Site Plan-6

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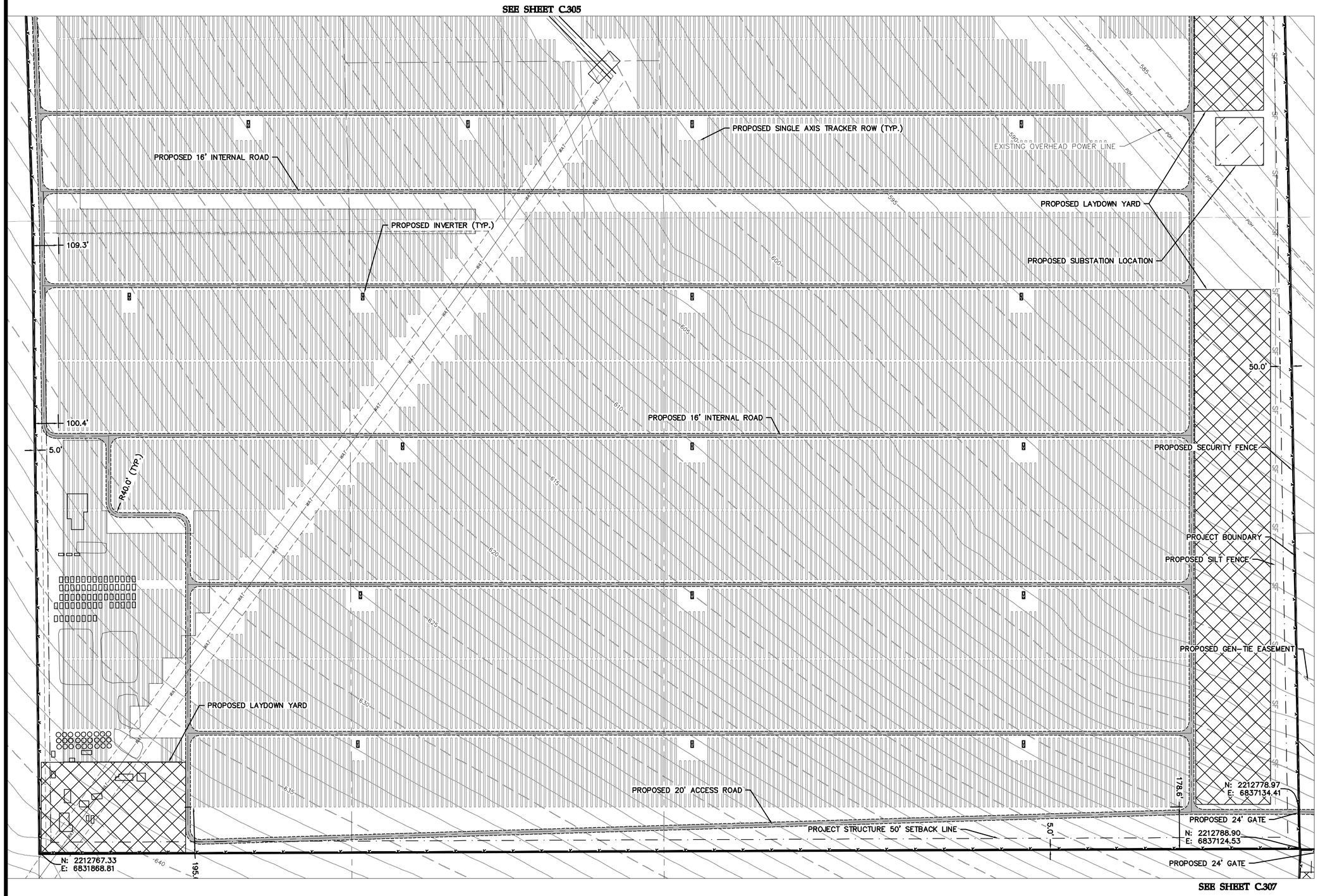

LEGEND

- PROJECT BOUNDARY/DISTURBANCE LIMITS
- PROPOSED SOLAR ARRAY
- PROPOSED ACCESS ROAD
- PROPOSED SECURITY FENCE
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- PROPOSED SILT FENCE
- PROPOSED OVERHEAD POWER LINE
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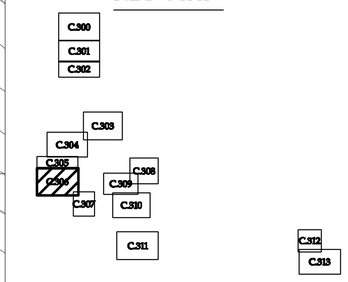
5. THIS PLAN SHOWS THE PROJECT SITE WITH PROPOSED PARCEL MERGERS AND VACATED EASEMENTS.

KEY MAP



0' 200' 400' 600'

0013768-SPF01.dwg

Date: 01/15/19 Sheet: C.306

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Riverside County, CA

Civil Site Plan-7

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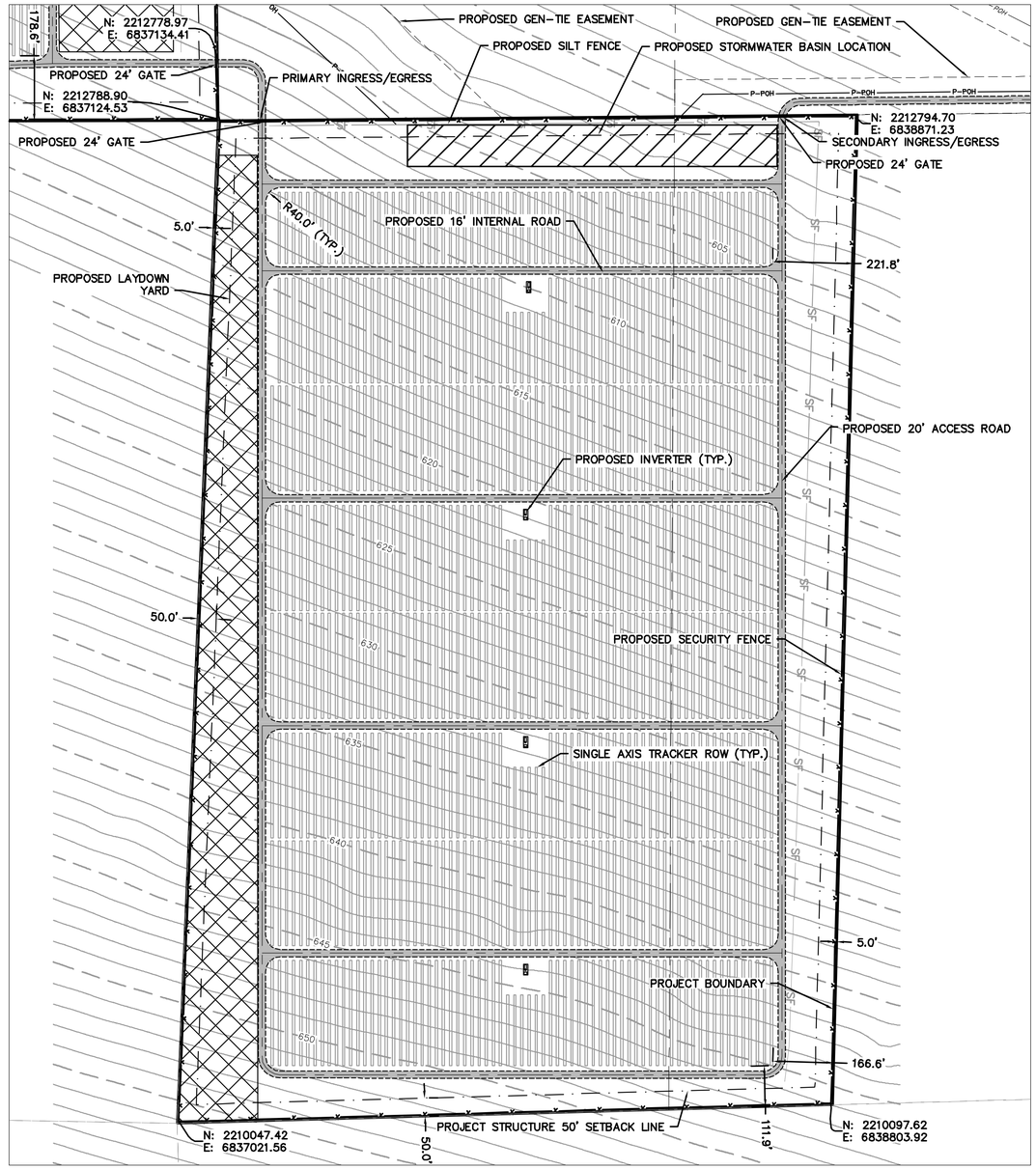

LEGEND

- PROJECT BOUNDARY/DISTURBANCE LIMITS
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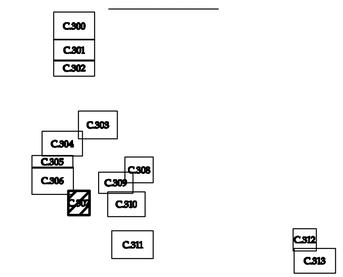
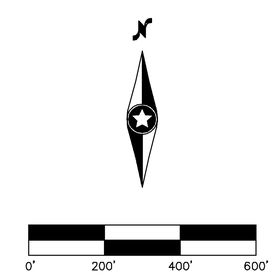
KEY MAP





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Date: 01/15/19 Sheet: C.307

Athos Solar

Civil Site Plan-8

Riverside County, CA

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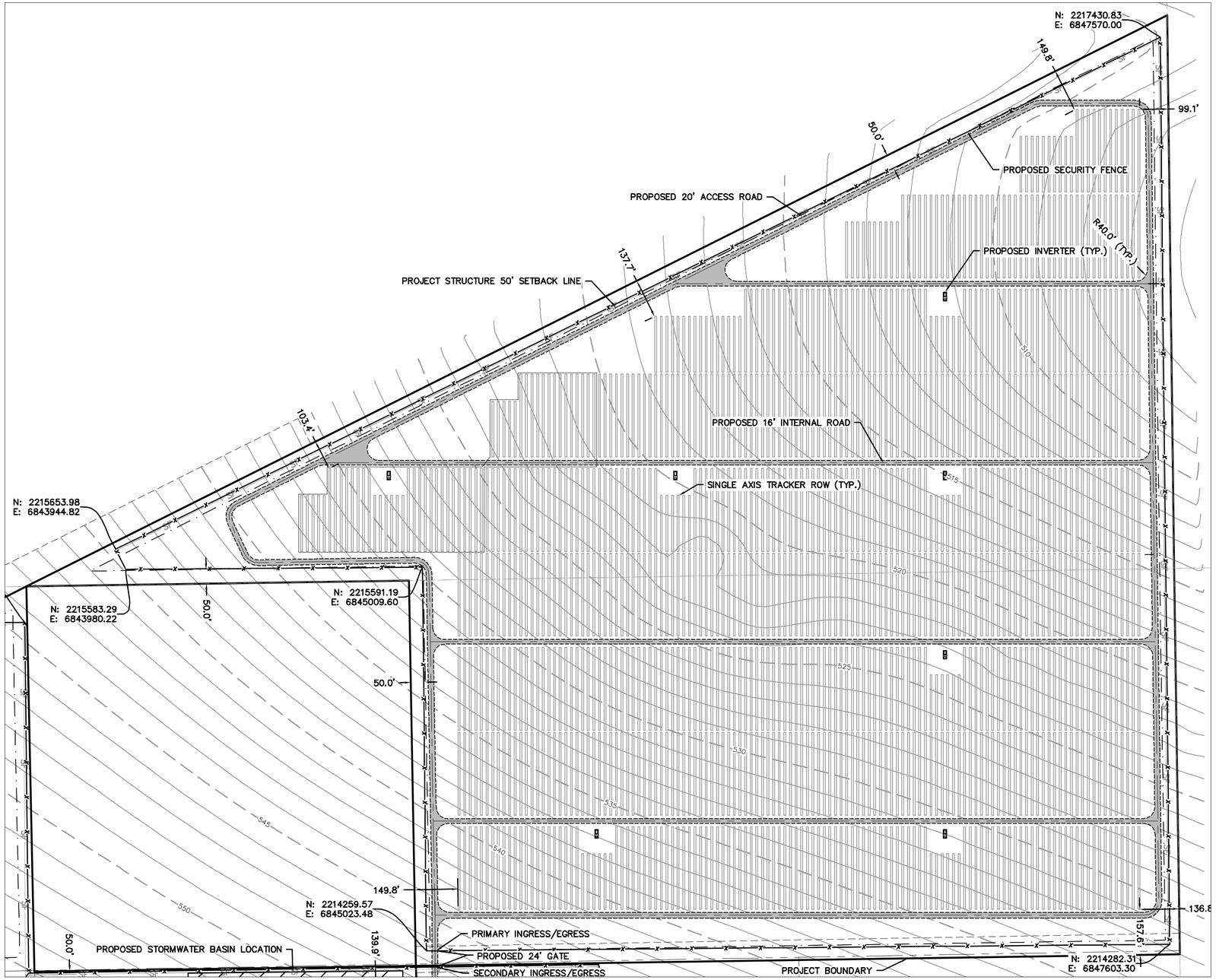

SEE SHEET C.309

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LEGEND

- PROJECT BOUNDARY/DISTURBANCE LIMITS
- PROPOSED SOLAR ARRAY
- PROPOSED ACCESS ROAD
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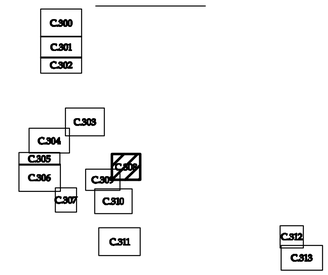
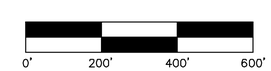
KEY MAP





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Date: 01/15/19 Sheet: C.308

Athos Solar

Riverside County, CA

Civil Site Plan-9

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Westwood Professional Services, Inc.

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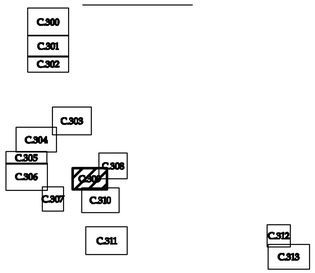
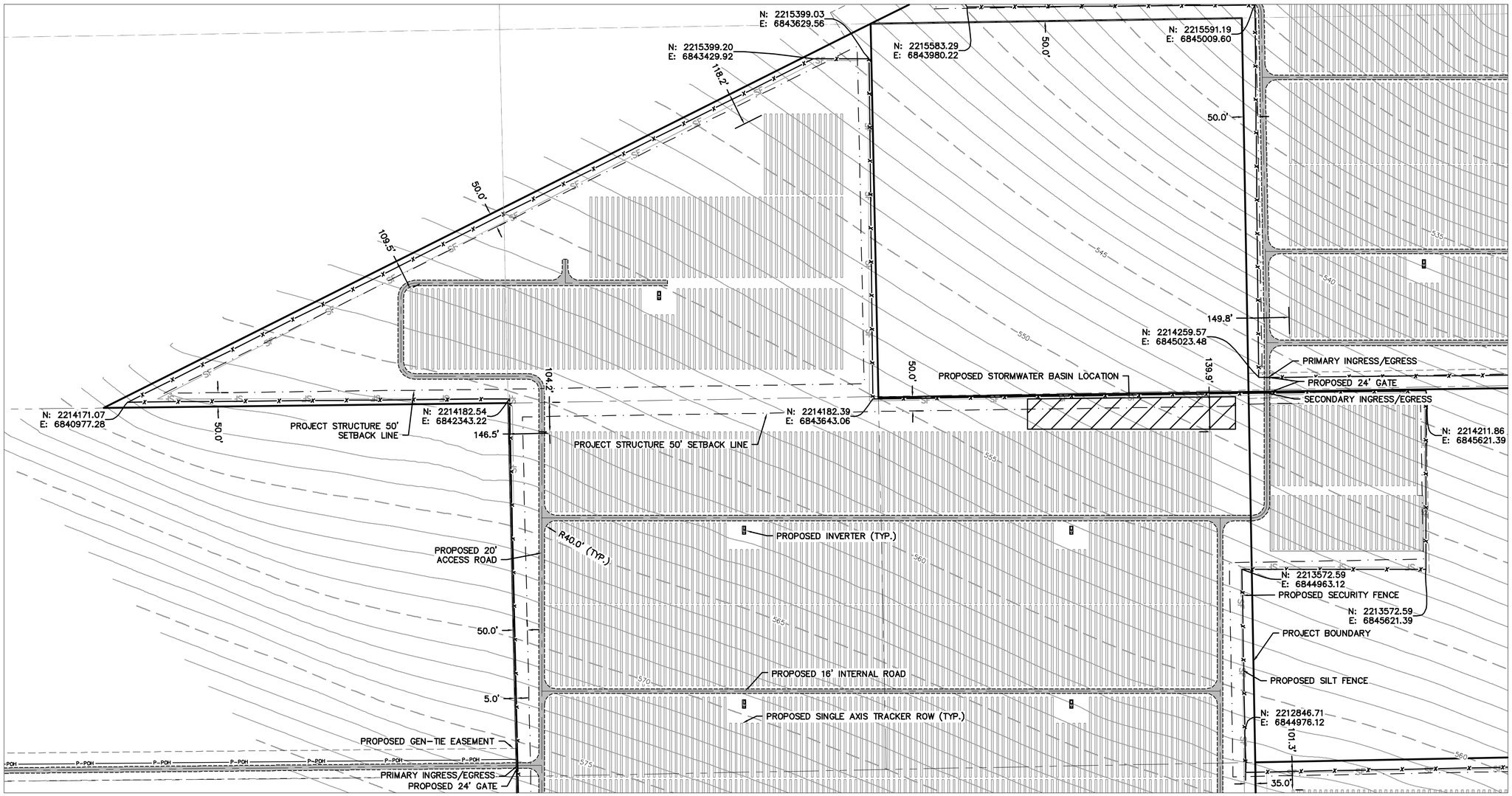
4. FLOOD STUDY IS BEING PREPARED. PLAN AND CIVIL DESIGN MAY CHANGE ACCORDINGLY.
   - 4.1. CORRAL/FARM FENCING WILL BE USED IN LIEU OF CHAINLINK FENCING PENDING PROJECT HYDROLOGY STUDY RESULTS SEE DETAIL FN03 ON SHEET C.400
   - 4.2. EQUIPMENT FOUNDATIONS MUST BE DESIGNED TO MAINTAIN 1' OF FREEBOARD ABOVE FLOOD DEPTHS.
5. THIS PLAN SHOWS THE PROJECT SITE WITH PROPOSED PARCEL MERGERS AND VACATED EASEMENTS.

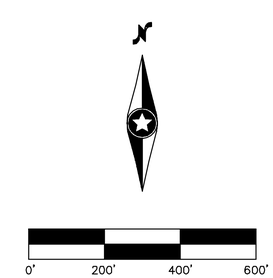
KEY MAP



SEE SHEET C.308



SEE SHEET C.310



0013768-SPF01.dwg

Date: 01/15/19 Sheet: C.309

Athos Solar

Riverside County, CA

Civil Site Plan-10

Westwood

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Westwood Professional Services, Inc.

Exhibit Amendments:

Designed:	BTB
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Drawn:	BTB
Record Drawing by/date:	

Prepared for:

IP Athos, LLC
548 MARKET STREET
SAN FRANCISCO, CA 94104 USA
(415) 675-1500

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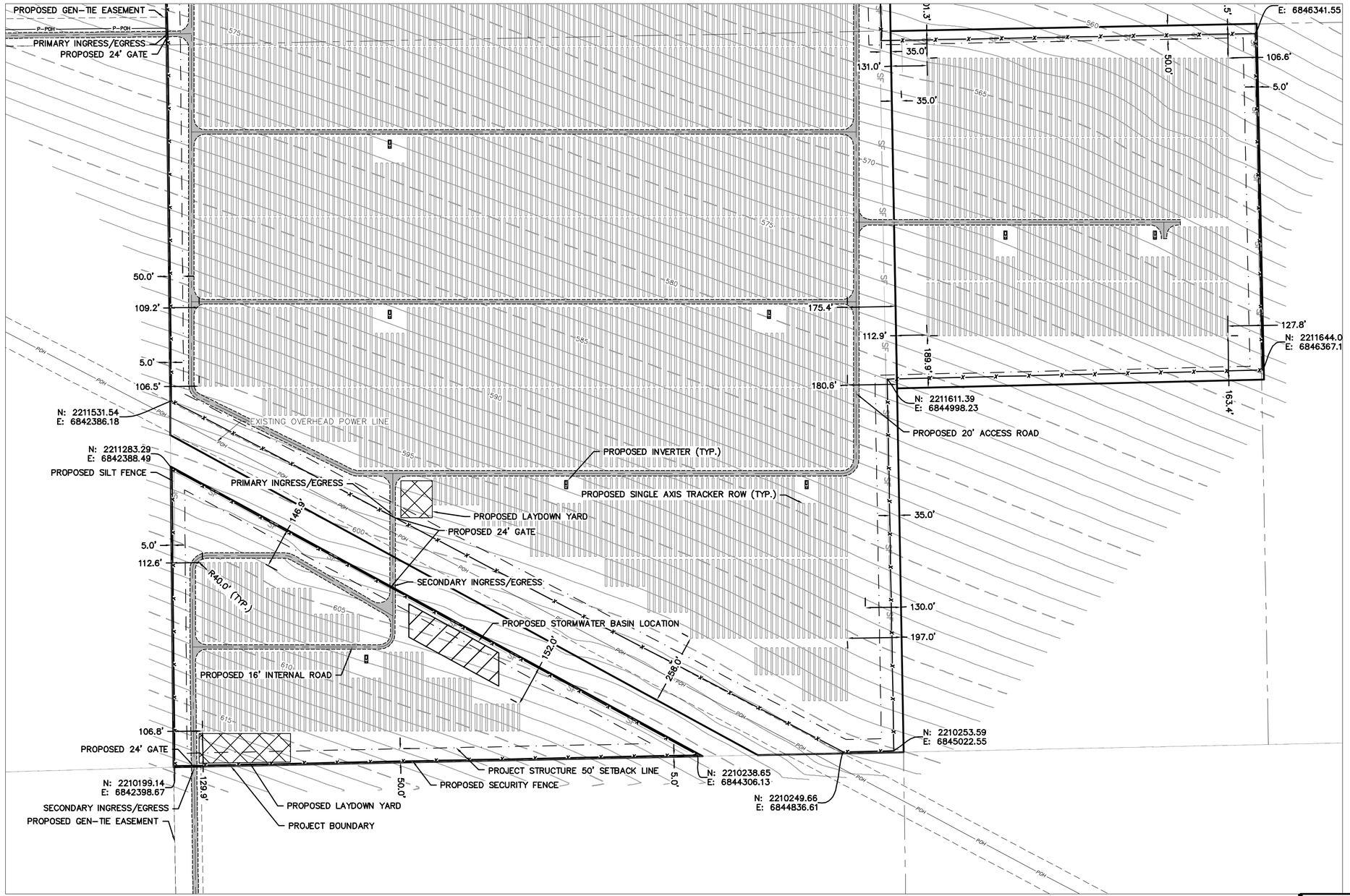
SEE SHEET C.311



LEGEND

- PROJECT BOUNDARY/DISTURBANCE LIMITS
- PROPOSED SOLAR ARRAY
- PROPOSED ACCESS ROAD
- PROPOSED SECURITY FENCE
- POSSIBLE STORMWATER BASIN LOCATION
- PROPOSED LAYDOWN YARD LOCATION
- PROPOSED SILT FENCE
- PROPOSED OVERHEAD POWER LINE
- PROJECT STRUCTURE SETBACK LINE
- EXISTING 5' CONTOURS
- EXISTING 1' CONTOURS
- EXISTING OVERHEAD POWER LINE
- EXISTING EASEMENT LINE
- EXISTING RIGHT OF WAY LINE
- EXISTING WATER LINE
- EXISTING EASEMENT CENTERLINE
- EXISTING GROUND SLOPE

NOTES:
1. PROJECT QUANTITIES SHOWN ON PLAN SET ARE PRELIMINARY AND ARE MEANT FOR GENERAL DISCUSSION AND GENERAL PRICING PURPOSES.
2. DESIGN ASSUMPTIONS:
   2.1. MAX SLOPE: 10%
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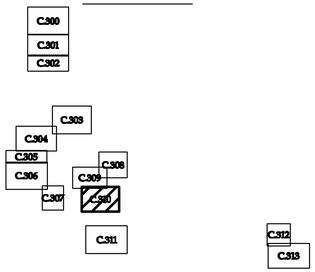
5. THIS PLAN SHOWS THE PROJECT SITE WITH PROPOSED PARCEL MERGERS AND VACATED EASEMENTS.

KEY MAP



0' 200' 400' 600'

0013768-SPF01.dwg

Date: 01/15/19 Sheet: C.310

Athos Solar

Riverside County, CA

Civil Site Plan-11

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Exhibit Amendments:

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Prepared for:

IP Athos, LLC
548 MARKET STREET
SAN FRANCISCO, CA 94104 USA
(415) 675-1500

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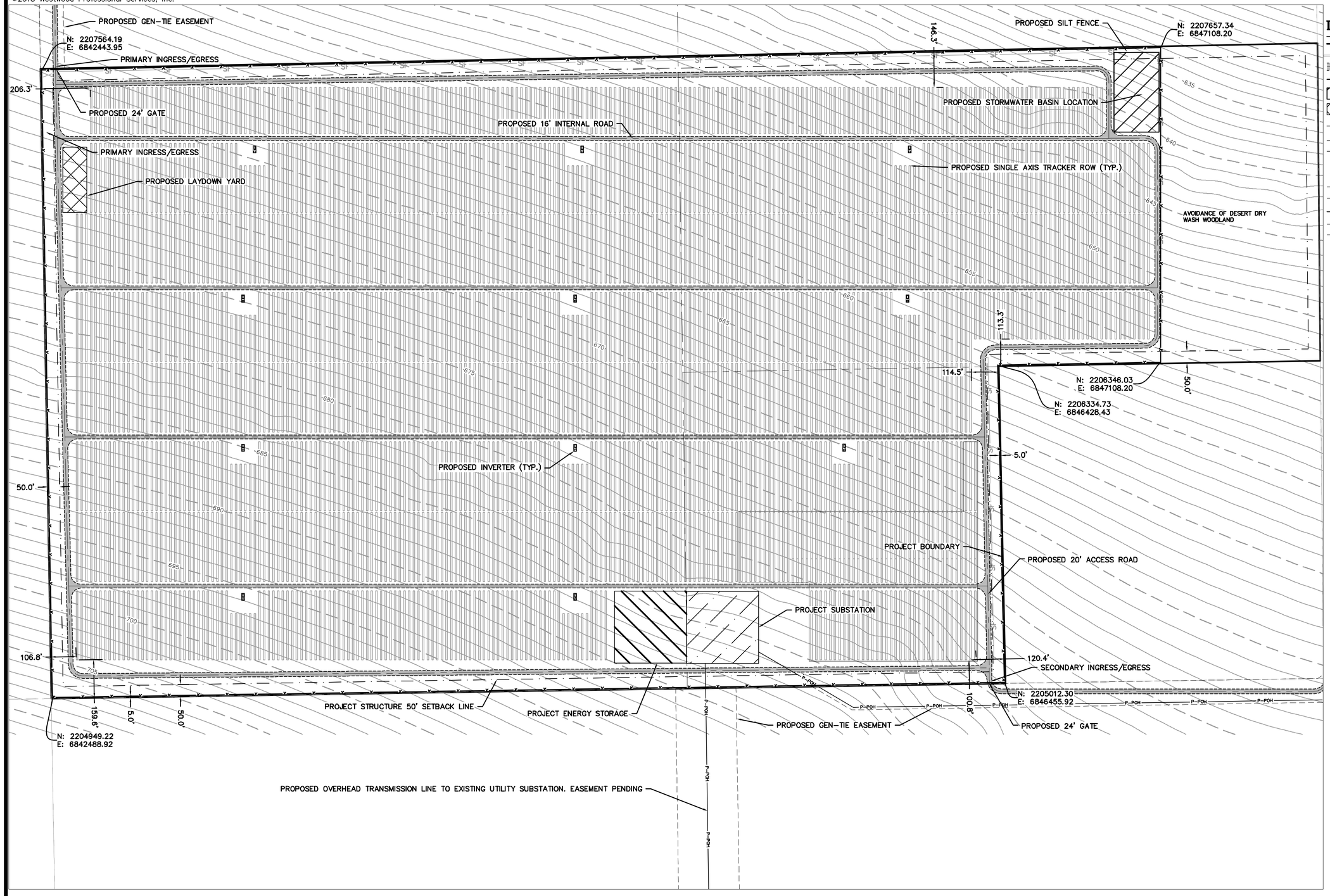

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LEGEND

- PROJECT BOUNDARY/DISTURBANCE LIMITS
- PROPOSED SOLAR ARRAY
- PROPOSED ACCESS ROAD
- PROPOSED SECURITY FENCE
- POSSIBLE STORMWATER BASIN LOCATION
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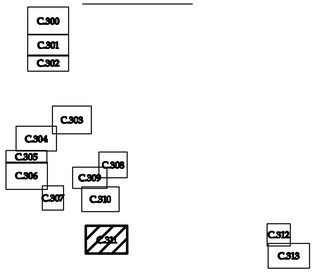
5. THIS PLAN SHOWS THE PROJECT SITE WITH PROPOSED PARCEL MERGERS AND VACATED EASEMENTS.

KEY MAP



0' 200' 400' 600'

0013768-SPFD1.dwg

Date: 01/15/19 Sheet: C.311

Athos Solar

Civil Site Plan-12

Riverside County, CA

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Westwood Professional Services, Inc.

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Checked: ADC
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Prepared for:

IP Athos, LLC
548 MARKET STREET
SAN FRANCISCO, CA 94104 USA
(415) 675-1500

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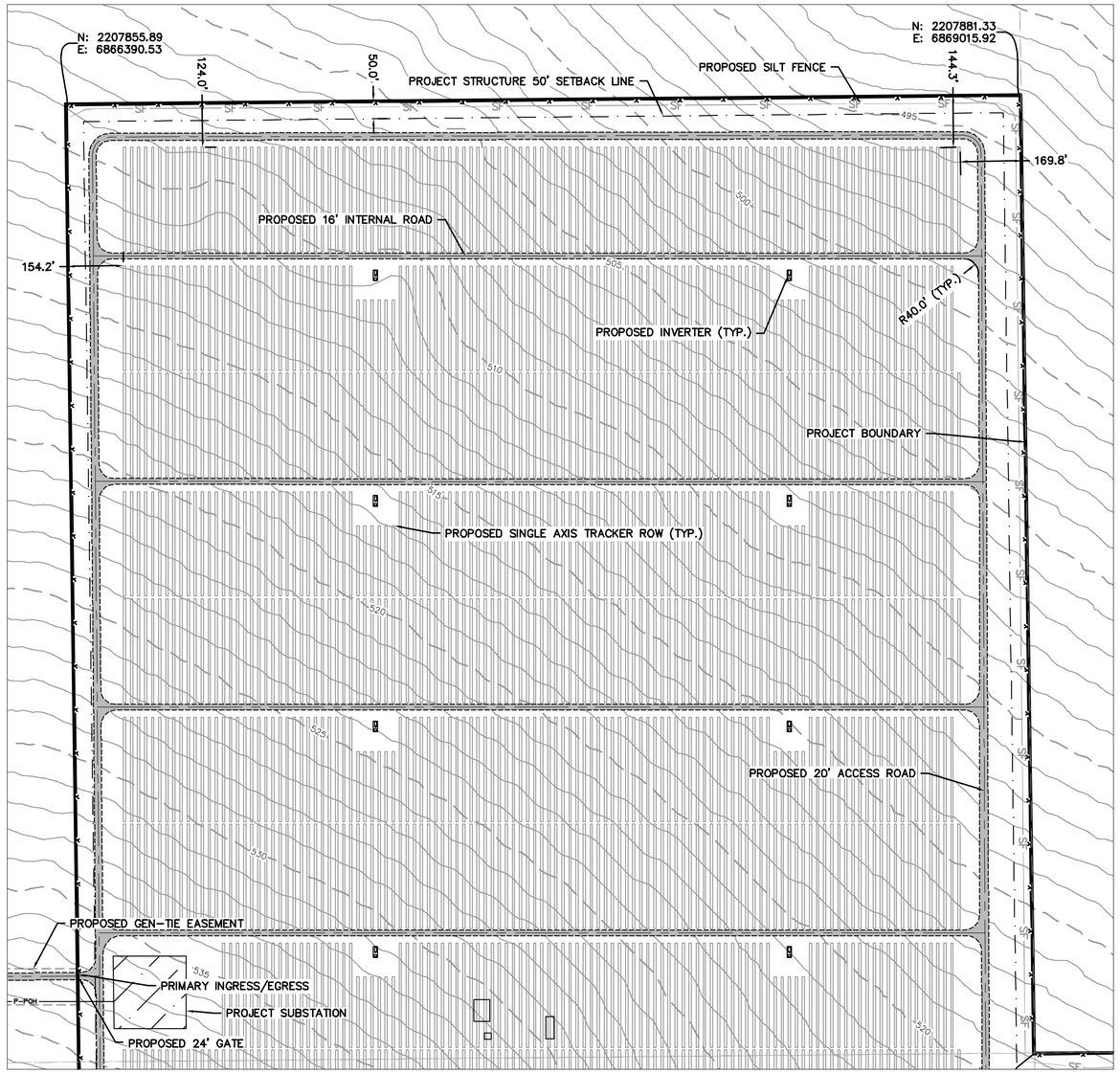

SEE SHEET C.313

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LEGEND

- PROJECT BOUNDARY/DISTURBANCE LIMITS
- PROPOSED SOLAR ARRAY
- PROPOSED ACCESS ROAD
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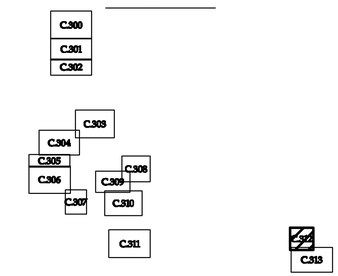
KEY MAP



0' 200' 400' 600'

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Date: 01/15/19 Sheet: C.312

Athos Solar

Riverside County, CA

Civil Site Plan-13

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Checked: ADC
Drawn: BTB
Record Drawing by/date:

Prepared for:

IP Athos, LLC
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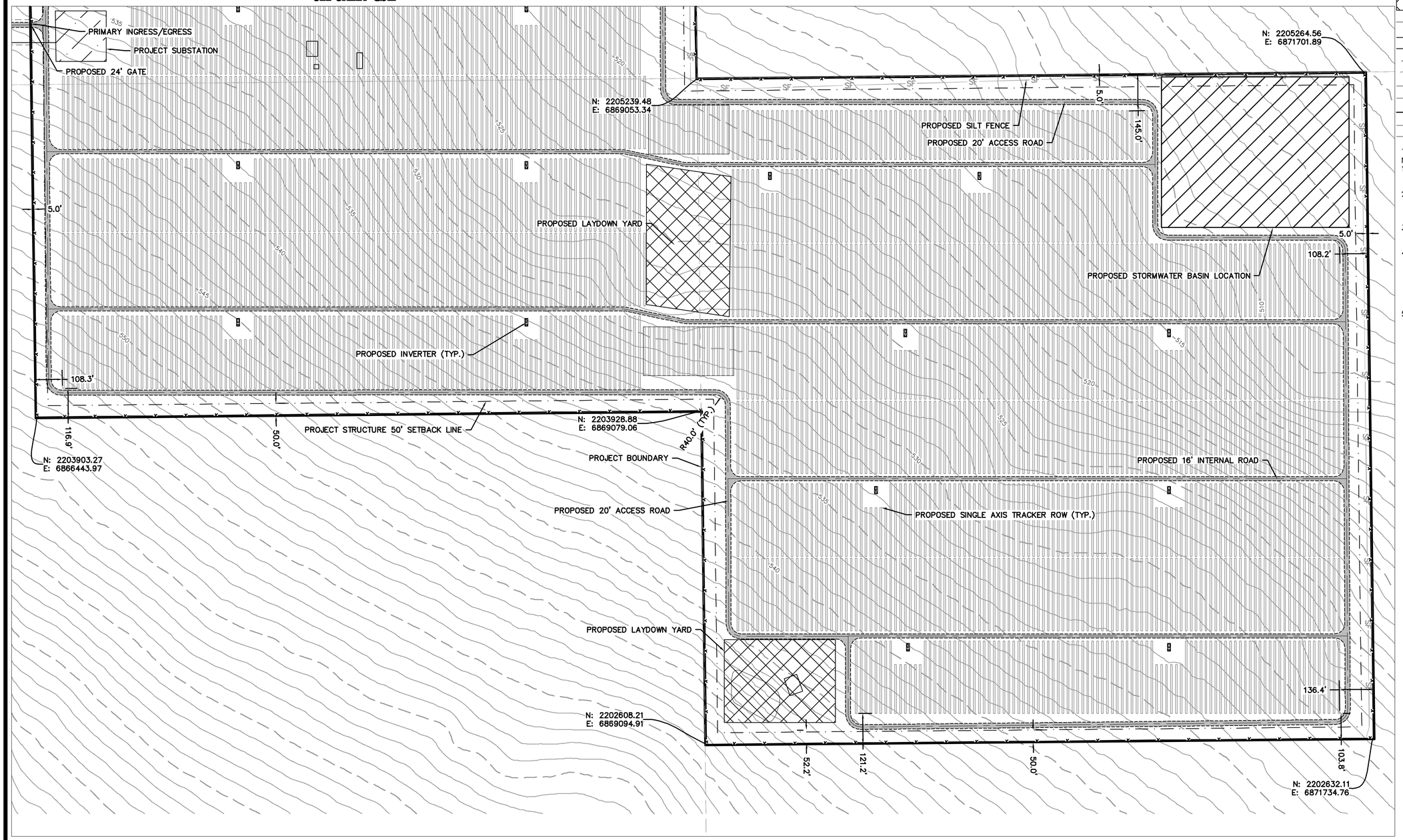

LEGEND

- PROJECT BOUNDARY/DISTURBANCE LIMITS
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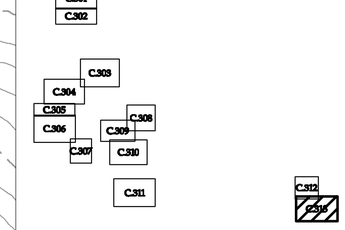
KEY MAP



0' 200' 400' 600'

0013768-SPF01.dwg

Date: 01/15/19 Sheet: C.313

Athos Solar

Riverside County, CA

Civil Site Plan-14

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Checked:	ADC
Drawn:	BTB
Record Drawing by/date:	

Prepared for:

IP Athos, LLC
548 MARKET STREET
SAN FRANCISCO, CA 94104 USA
(415) 675-1500

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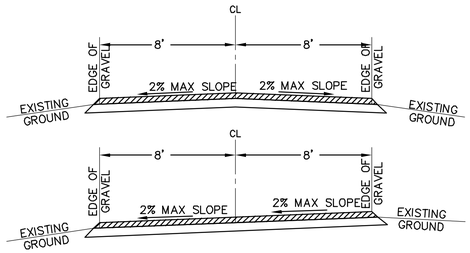
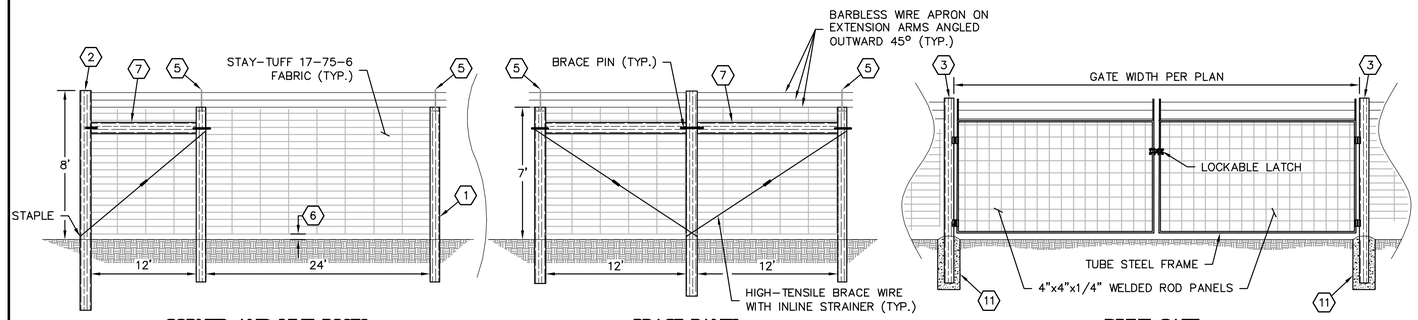


16' PROJECT ACCESS ROAD

NOTES:
1. CONTRACTOR SHALL CONSTRUCT CROSS-SLOPE ROAD SECTION WHERE ACCESS ROADS ARE CONSTRUCTED ON A SIDE SLOPE, AND WHERE OTHERWISE NOTED ON PLANS, TO ENSURE THAT ROADS AND SHOULDERS REMAIN WELL DRAINED AT ALL TIMES.
2. CONTRACTOR SHALL MAINTAIN POSITIVE DRAINAGE ACROSS ACCESS ROADS

TYPICAL SOLAR ACCESS ROAD | LAST REVISED: 07/15/13 | RD01

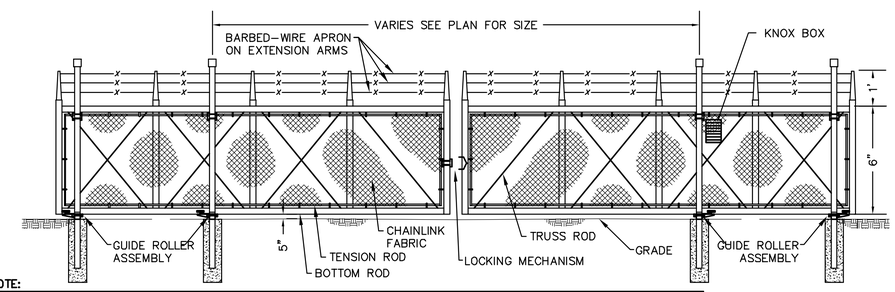


CORNER AND LINE POSTS **BRACE PANEL** **DRIVE GATE**

NOTE:
FENCING SUPPLIER SHALL PROVIDE FINAL AND SEALED FENCING DRAWINGS WITH MATERIAL AND SPECIFICATION REQUIREMENTS.

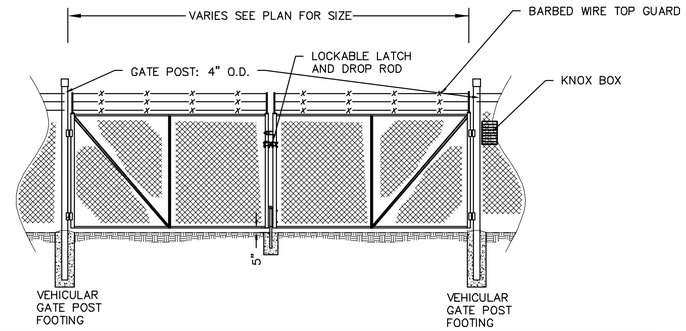
AGRICULTURAL SECURITY FENCE DETAIL (NOT TO SCALE) | FN03

FENCING KEY NOTES	
1	LINE POST
2	CORNER POST
3	GATE POST
4	CHAIN LINK FABRIC
5	BARBED WIRE ARM
6	SPACE AT FENCE BOTTOM
7	TOP SUPPORT
8	BOTTOM SUPPORT
9	LINE POST FOUNDATION
10	CORNER POST FOUNDATION
11	GATE POST FOUNDATION



NOTE:
1. FENCE AND GATE TYPE TO BE APPROVED BY OWNER PRIOR TO CONSTRUCTION
2. STRUCTURAL DESIGN TO BE PROVIDED BY FENCE SUPPLIER
3. DIMENSIONS AND INFORMATION SHOWN ABOVE ARE FOR REFERENCE ONLY. ACTUAL DIMENSIONS AND INFORMATION TO BE PROVIDED BY MANUFACTURER/SUPPLIER.
4. A KNOX BOX SHALL BE INSTALLED WITHIN 3' FROM THE GATE POST ON THE ADJACENT FENCE FOR EACH GATE

CHAIN-LINK SECURITY LEAF GATE | LAST REVISED: 07/16/13 | FN02



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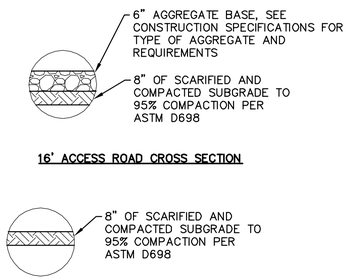
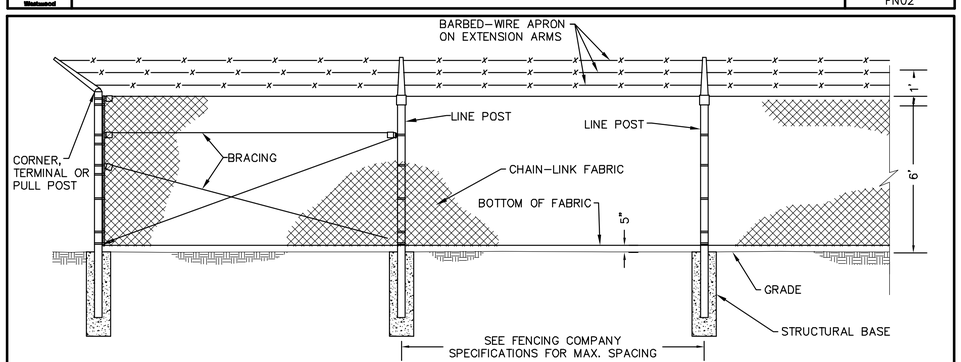
4. A KNOX BOX SHALL BE INSTALLED WITHIN 3' FROM THE GATE POST ON THE ADJACENT FENCE FOR EACH GATE

CHAIN-LINK SECURITY SWING GATE | LAST REVISED: 12/18/14 | FN05



NOTE:
STRUCTURAL SECTIONS SHOWN ARE THE MINIMUM THICKNESS REQUIREMENTS DURING NORMAL FIELD CONDITIONS. THE SECTIONS MAY NEED TO BE INCREASED BASED ON ACTUAL FIELD CONDITIONS AT THE TIME OF CONSTRUCTION. CONDITIONS INCLUDE BUT ARE NOT LIMITED TO CONSTRUCTION DURING UNUSUALLY WET PERIODS, OR IN LOW/WET AREAS.

TYPICAL STRUCTURAL CROSS SECTIONS | LAST REVISED: 07/15/13 | RD02



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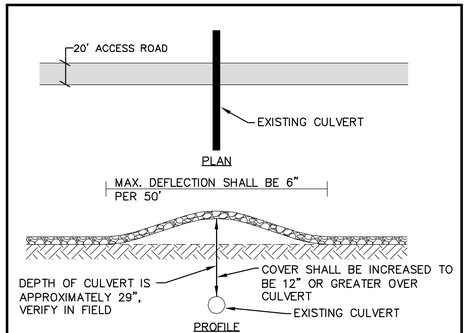
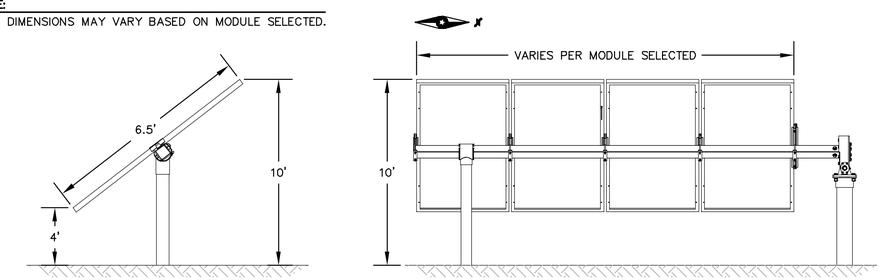
CHAIN-LINK SECURITY FENCE DETAIL (NOT TO SCALE) | LAST REVISED: 07/16/13 | FN01



NOTE:
1. LOCATION AND DEPTH OF EXISTING UTILITY SHALL BE FIELD VERIFIED BY CONTRACTOR PRIOR TO CONSTRUCTION.
2. EARTH COVER PROTECTION FOR EXISTING UTILITIES SHALL BE USED WHERE THE COVER OVER THE EXISTING UTILITY IS LESS THAN 12".

EARTH COVER PROTECTION FOR UTILITY CROSSING | LAST REVISED: 03/28/15 | UT01

NOTE:
1. DIMENSIONS MAY VARY BASED ON MODULE SELECTED.



TYPICAL TRACKER PANEL PROFILE VIEWS | LAST REVISED: 07/07/17 | TRK02

0013768-DTF01.dwg

Date: 01/15/19 Sheet: C.400

Athos Solar

Riverside County, CA

Construction Details

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Westwood Professional Services, Inc.

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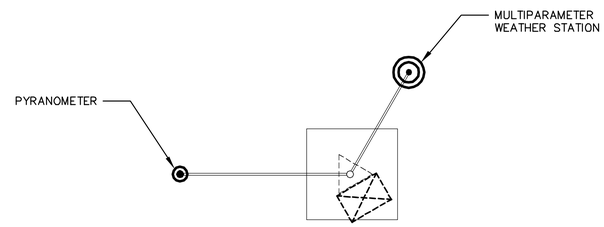
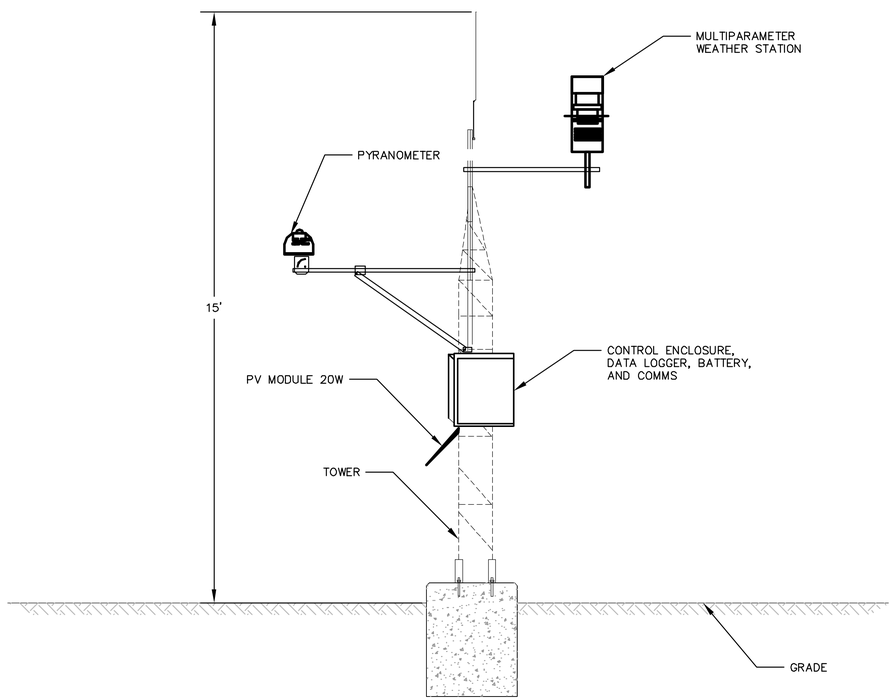


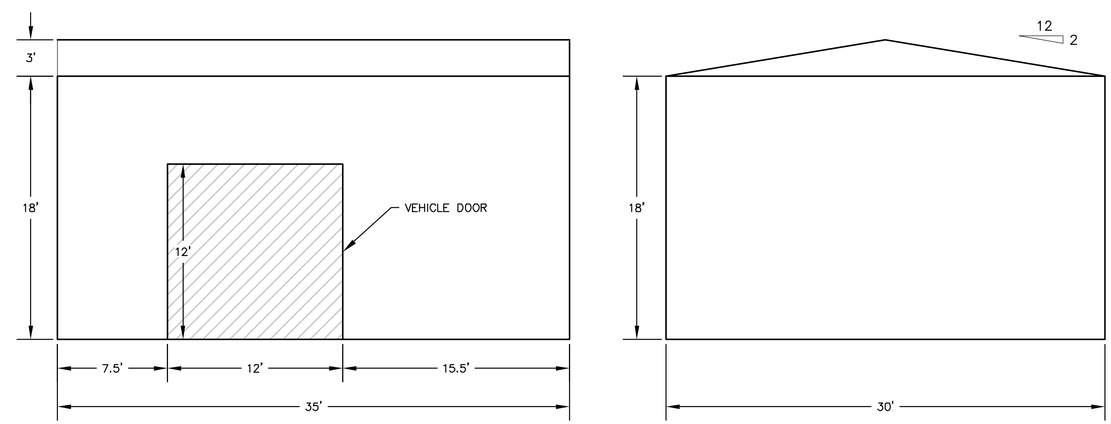
NOTE:
1. NOT TO SCALE

Westwood	TYPICAL WEATHER STATION ELEVATION	LAST REVISED: 12/13/17 MET01



NOTE:
1. NOT TO SCALE

Westwood	TYPICAL WEATHER STATION ELEVATION	LAST REVISED: 12/13/17 MET02



NOTE:
1. NOT TO SCALE

Westwood	O&M AND SCADA STRUCTURE ELEVATION	LAST REVISED: 12/13/17 OM01

0013768-DTF01.dwg

Westwood
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Athos Solar

Riverside County, CA

Date: 01/15/19 Sheet: C.401

Construction Details

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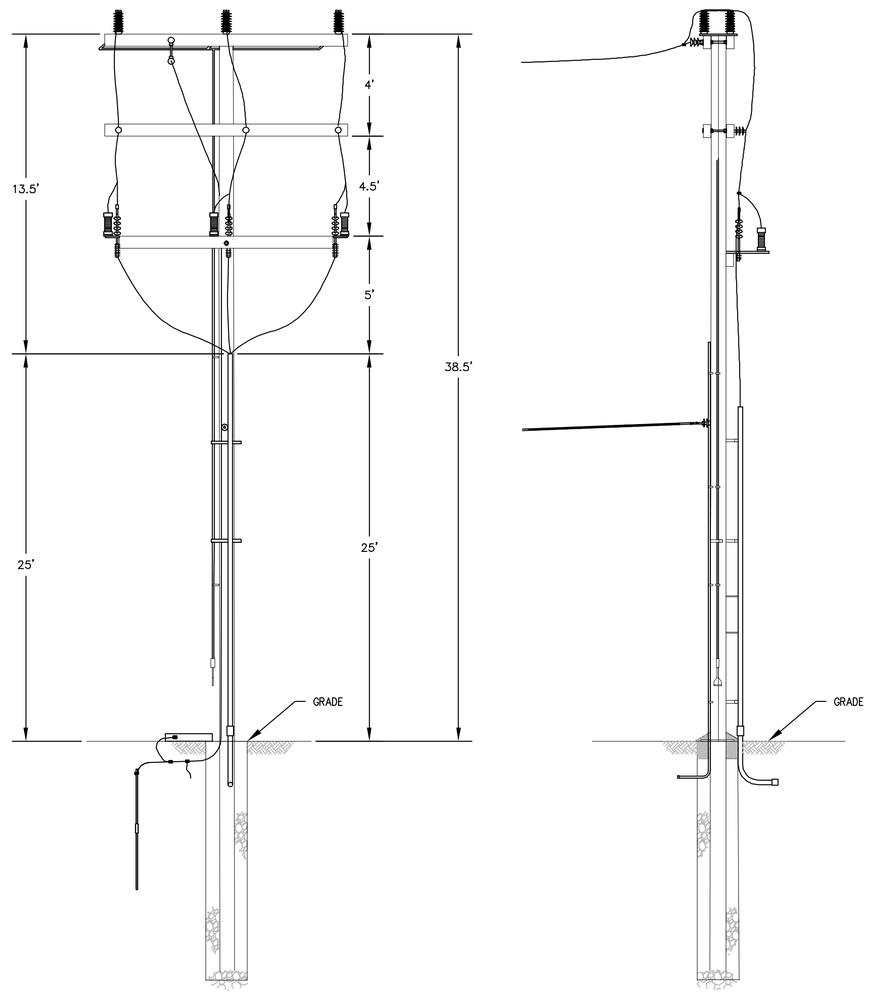
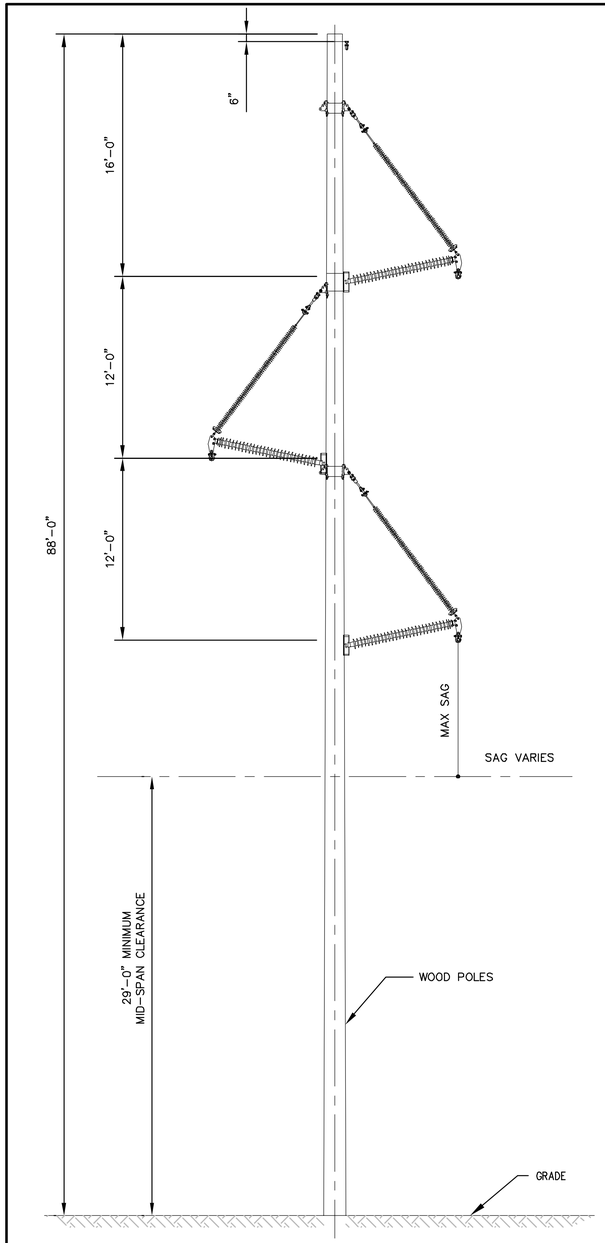


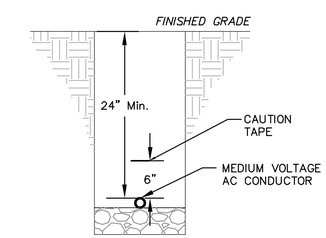
TYPICAL DISTRIBUTION POLE ELEVATION

LAST REVISED: 12/14/17
DPL01



TYPICAL TRANSMISSION POLE ELEVATION

LAST REVISED: 12/13/17
TPL01



NOTE:
1. NOT TO SCALE

TYPICAL AC TRENCH ELEVATION

LAST REVISED: 12/13/17
TCH01

0013768-DTF01.dwg

Date: 01/15/19 Sheet: C.402

Athos Solar

Riverside County, CA

Construction Details

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Toll Free (888) 937-5150 westwoodps.com

Westwood Professional Services, Inc.

Exhibit Amendments:

Designed: BTB
Checked: ADC
Drawn: BTB
Record Drawing by/date:

Prepared for:

IP Athos, LLC
548 MARKET STREET
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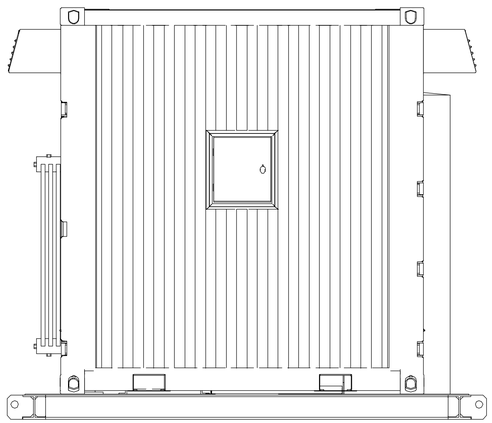

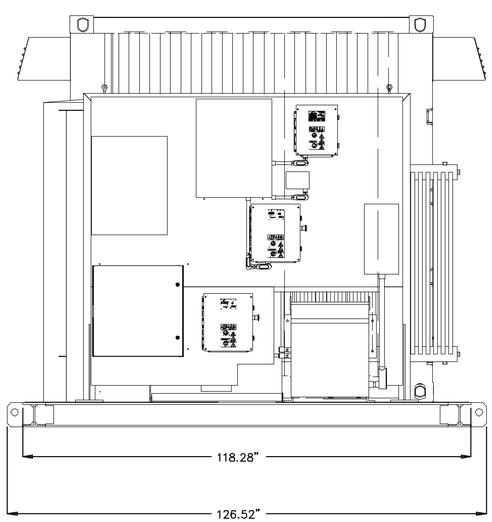

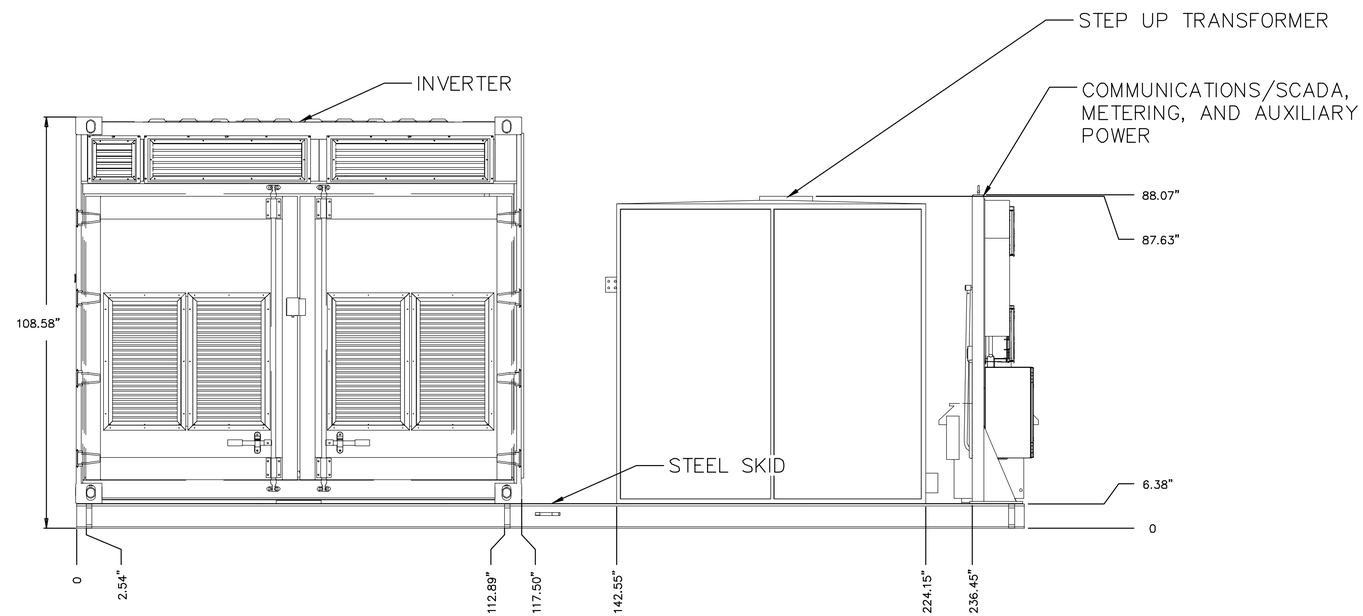

1 Transformer and Inverter Elevations
NTS

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Date: 01/15/19 Sheet: C.403

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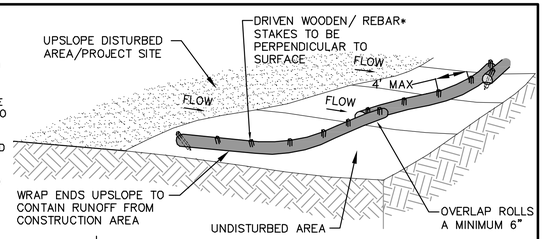
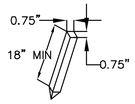
NOTES:

1. FIBER ROLLS SHALL BE INSTALLED PRIOR TO UPSLOPE DISTURBANCE ACTIVITIES COMMENCE.
2. FIBER ROLLS SHALL BE PREFABRICATED AND MADE FROM WEED FREE RICE STRAW, FLAX, OR A SIMILAR AGRICULTURAL MATERIAL BOUND INTO A TIGHT TUBULAR ROLL BY NETTING. USE A 6" OR 12" DIA. ROLL.
3. TRENCHES SHALL BE CREATED ALONG THE SLOPE OF THE PERIMETER. THE TRENCH DEPTH SHOULD BE 1/4 TO 1/3 OF THE THICKNESS OF THE ROLL, AND THE WIDTH SHOULD EQUAL THE ROLL DIAMETER, IN ORDER TO PROVIDE AREA TO BACKFILL THE TRENCH.
4. STAKE FIBER ROLLS INTO THE TRENCH. DRIVE STAKES AT THE END OF EACH FIBER ROLL AND SPACED 4 FEET MAXIMUM ON CENTER. USE WOOD STAKES WITH NOMINAL CLASSIFICATION OF 0.75 IN BY 0.75 IN. AND A MINIMUM LENGTH OF 24 IN.
5. ROLLS SHALL BE INSTALLED PERPENDICULAR TO WATER MOVEMENT, AND PARALLEL TO THE SLOPE CONTOUR.
6. TURN THE ENDS OF THE FIBER ROLLS UP SLOPE TO PREVENT RUNOFF FROM GOING AROUND THE ROLL. THE UPSLOPE POINT SHOULD BE A MINIMUM 6" HIGHER IN ELEVATION THAN THE LOW POINT.
7. IF MORE THAN ONE FIBER ROLL IS PLACED IN A ROW, THE ROLLS SHOULD BE OVERLAPPED A MINIMUM OF 6 INCHES, NOT ABUTTED.
8. FIBER ROLLS ENCASED WITH PLASTIC NETTING ARE USED FOR A TEMPORARY APPLICATION ONLY AND SHOULD BE REMOVED FOLLOWING STABILIZATION. FIBER ROLLS USED IN A PERMANENT APPLICATION SHALL BE ENCASED WITH A BIODEGRADABLE MATERIAL AND MAY BE LEFT IN.
9. TEMPORARY INSTALLATIONS SHOULD ONLY BE REMOVED WHEN UP GRADIENT AREAS ARE STABILIZED PER GENERAL PERMIT REQUIREMENTS, AND/OR POLLUTANT SOURCES NO LONGER PRESENT A HAZARD. BUT, THEY SHOULD ALSO BE REMOVED BEFORE VEGETATION BECOMES TOO MATURE SO THAT THE REMOVAL PROCESS DOES NOT DISTURB MORE SOIL AND VEGETATION THAN IS NECESSARY
10. FIBER ROLLS MUST BE INSPECTED IN ACCORDANCE WITH GENERAL PERMIT REQUIREMENTS FOR THE ASSOCIATED PROJECT TYPE AND RISK LEVEL. IT IS RECOMMENDED THAT AT A MINIMUM, THE BMPS BE INSPECTED WEEKLY, PRIOR TO FORECASTED RAIN EVENTS, DAILY DURING EXTENDED RAIN EVENTS, AND AFTER THE CONCLUSION OF RAIN EVENTS.

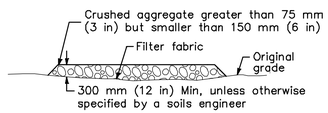




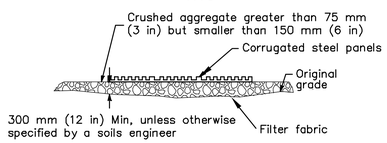
* IF EXISTING SOIL DOES DO NOT ALLOW WOOD STAKES OR REBAR STAKES TO BE INSTALLED ROCK, CONCRETE CINDER BLOCKS CAN BE USED TO ANCHOR FIBER ROLLS. ROCKS SHOULD BE 10"–14" IN DIAMETER. SPACING SHOULD BE SET EVERY 2'–4'.

12. REPAIR OR REPLACE SPLIT, TORN, UNRAVELING, OR SLUMPING FIBER ROLLS.
13. SEDIMENT THAT ACCUMULATES UPSLOPE OF THE BMP SHOULD BE PERIODICALLY REMOVED IN ORDER TO MAINTAIN BMP EFFECTIVENESS. SEDIMENT SHOULD BE REMOVED WHEN SEDIMENT ACCUMULATION REACHES ONE–THIRD THE DESIGNATED SEDIMENT STORAGE DEPTH.
14. RILLS OR GULLIES MAY BEGIN TO FORM FOLLOWING MAJOR STORM EVENTS WHERE RUNOFF HAS OVERTOPPED THE FIBER ROLLS. THESE RILLS OR GULLIES SHOULD BE PROMPTLY REPAIRED.

TYPICAL FIBER ROLLS FOR PERIMETER CONTROL OF CONSTRUCTION AREA LIMIT — NOT TO SCALE — LAST REVISED: 09/09/13 — SE–5

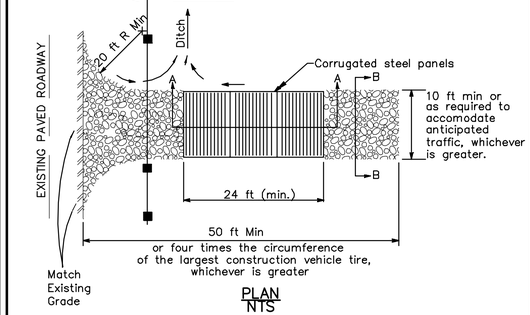


SECTION B–B
NTS



SECTION A–A
NOT TO SCALE

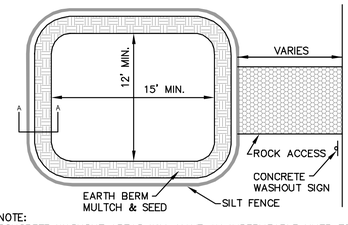
NOTE:
Construct sediment barrier and channelize runoff to sediment trapping device



PLAN
NTS

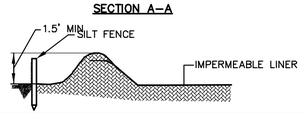
ROCK CONSTRUCTION ENTRANCE (NOT TO SCALE) — LAST REVISED: 11/05/13 — TC-1

"AN APPROVED ALTERNATE MAY BE USED"
"USE AS NEEDED"

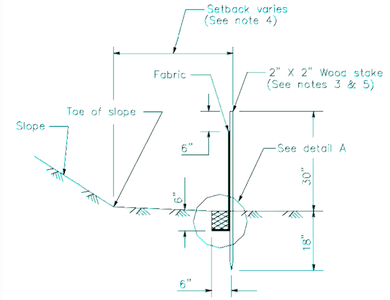


NOTE:
CONCRETE WASHOUT AREAS WILL HAVE AN IMPERMEABLE LINER TO PREVENT CONCRETE WASHOUT WATER FROM INFILTRATING/CONTACTING WITH SOIL. IMPERMEABLE LINER INCLUDES 10 MIL POLYLINER OR COMPACTED CLAY LINER. WASHOUT SYSTEMS CAN BE USED AS ALTERNATE WASHOUT AREAS.

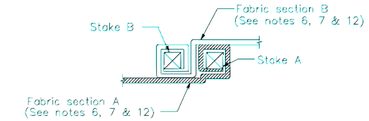
SECTION A–A



CONCRETE WASHOUT AREA — LAST REVISED: 10/14/14 — WO

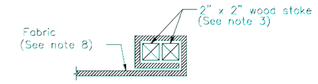


SECTION A–A

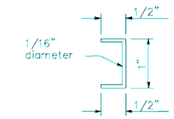


JOINING SECTION DETAIL (TOP VIEW)

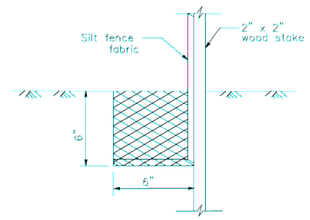
LEGEND
Tamped backfill
Slope direction
Direction of flow



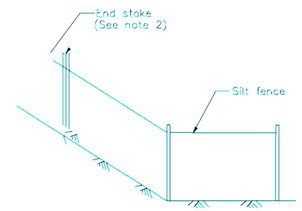
END STAKE DETAIL (TOP VIEW)



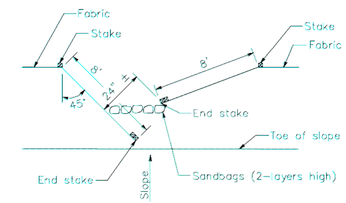
STAPLE DETAIL
(SEE NOTE 9)



DETAIL A



END DETAIL

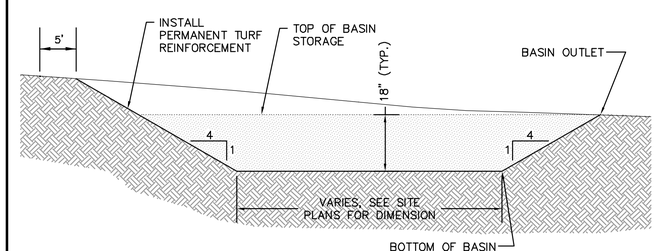


OPTIONAL MAINTENANCE OPENING DETAIL
(SEE NOTE 11)

NOTE:

1. CONSTRUCT THE LENGTH OF EACH REACH SO THAT THE CHANGE IN BASE ELEVATION ALONG THE REACH DOES NOT EXCEED 1/3 THE HEIGHT OF THE LINEAR BARRIER. IN NO CASE SHALL THE REACH LENGTH EXCEED 500'.
2. THE LAST 8'–0" OF FENCE SHALL BE TURNED UP SLOPE.
3. STAKE DIMENSIONS ARE NOMINAL.
4. DIMENSION MAY VERY TO FIT FIELD CONDITION.
5. STAKES SHALL BE SPACED AT 8'–0" MAXIMUM AND SHALL BE POSITIONED ON DOWNSTREAM SIDE OF FENCE.
6. STAKES TO OVERLAP AND FENCE FABRIC TO FOLD AROUND THE TWO STAKES ONE FULL TURN AND SECURED WITH 4 STAPLES.
7. STAKES SHALL BE DRIVEN TIGHTLY TOGETHER TO PREVENT POTENTIAL FLOW–THROUGH OF SEDIMENT AT JOINT. THE TOPS OF THE STAKES SHALL BE SECURED WITH WIRE.
8. FOR END STAKE, FENCE FABRIC SHALL BE FOLDED AROUND TWO STAKES ONE FULL TURN AND SECURED WITH 4 STAPLES.
9. MINIMUM 4 STAPLES PER STAKE. DIMENSIONS SHOWN ARE TYPICAL.
10. CROSS BARRIERS SHALL BE A MINIMUM OF 1/3 AND A MAXIMUM 1/2 THE HEIGHT OF THE LINEAR BARRIER.
11. MAINTENANCE OPENINGS SHALL BE CONSTRUCTED IN A MANNER TO ENSURE SEDIMENT REMAINS BEHIND SILT FENCE.
12. JOINING SECTIONS SHALL NOT BE PLACED AT SUMP LOCATIONS.

SILT FENCE — LAST REVISED: 03/25/15 — SE-1



NOTES:

1. REFER TO SITE PLANS FOR ACTUAL DIMENSIONS AND ELEVATIONS OF BASINS.
2. MINIMUM SLOPE FOR BASINS SHALL BE 4:1 (H:V).
3. BASIN SHALL HAVE VEGETATION ESTABLISHED PER THE AGRICULTURAL MANAGEMENT PLAN AND SWPPP.

TYPICAL BASIN CROSS SECTION (NOT TO SCALE) — LAST REVISED: 07/19/13 — GD01

0013768–DTF01.dwg

Date: 01/15/19 Sheet: C.404

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Athos Solar

Riverside County, CA

Erosion Control Details

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ROAD DESIGN PARAMETERS

1. ROAD CONSTRUCTION DESIGN HAS BEEN SELECTED FOR USE BY LIGHT DUTY TRUCKS FOR LOW VOLUME USE IN NORMAL CONDITIONS. THE ROAD DESIGN SPECIFIED IS NOT INTENDED FOR HEAVY DUTY, HIGH VOLUME, ALL WEATHER USE. ROAD MAINTENANCE IS ANTICIPATED DURING CONSTRUCTION.
2. ROAD MAINTENANCE CAN BE EXPECTED OVER THE LIFE OF THE PERMANENT FACILITY.

PRODUCTS

1. ALL EROSION AND SEDIMENT CONTROL MEASURES SHALL BE IN CONFORMANCE WITH THE CURRENT REVISION OF THE SWPPP AND THE CALIFORNIA STORNWATER QUALITY ASSOCIATION.
2. AGGREGATE ROAD BASE AND SUBGRADE BELOW TRAILER PARKING AREA SHALL CONSIST OF CLASS II AGGREGATE BASE, MEETING THE REQUIREMENTS OF THE LATEST CALTRANS STANDARDS AND SPECIFICATIONS AND/OR MEETING THE GRADATION PROVIDED IN TABLE 1.
3. EXCAVATED SOILS THROUGHOUT PROJECT SHALL BE UTILIZED AS FILL. SOILS SHALL BE CLEAN OF DEBRIS AND ORGANIC MATERIAL.
4. ALL OTHER SITE ROADS SHALL CONSIST OF COMPACTED NATIVE SOILS WITH SOIL STABILIZERS.
5. SOIL STABILIZER SHALL BE AN APPROVED PRODUCT BY THE STATE OF CALIFORNIA AND IT'S REGULATORY AGENCIES.
6. GEOTEXTILE FABRIC (IF USED) SHALL BE MIRAFI HP270 OR APPROVED EQUAL.

EXECUTION

1. SITE PREPARATION

A. THE CONTRACTOR SHALL BE REQUIRED TO CLEAR AND GRUB AREAS DESIGNATED ON THE PLANS. REMOVE ALL TREES, STUMPS, BRUSH, AND DEBRIS WITHIN THE PROJECT AREAS IN AREAS WHERE FILL WILL BE 6" OR GREATER INCLUDING THE TRAILER/PARKING AREA, SUBSTATION AREA, AND ROADWAY AREAS.
B. AREAS THAT ARE NOT TO BE CLEARED AND GRUBBED SHALL HAVE THE EXISTING VEGETATION MOWED TO A MINIMUM HEIGHT OF 3 INCHES.
C. THE CONTRACTOR SHALL PRESERVE OTHER EXISTING VEGETATION TO THE MAXIMUM EXTENT PRACTICABLE. ANY VEGETATION THAT IS REMOVED SHALL ONLY BE ALLOWED WITHIN THE PROJECT BOUNDARY. THE CONTRACTOR IS TO REMOVE ONLY THAT VEGETATION WHICH SHALL BE DESIGNATED BY THE OWNERS REPRESENTATIVE FOR REMOVAL, AND SHALL EXERCISE EXTREME CARE AROUND EXISTING VEGETATION TO BE SAVED. CONSTRUCTION FENCING MAY BE INSTALLED TO PROTECT AREAS THAT ARE NOT TO BE DISTURBED.
D. TOPSOIL SHALL BE STRIPPED FROM ALL ROADWAY, PARKING AND TRAILER AREAS THROUGH THE ROOT ZONE. TOPSOIL SHALL NOT BE STRIPPED OUTSIDE OF THE DESIGNATED CLEARING AND GRUBBING AREAS. STRIPPED MATERIALS CONSISTING OF VEGETATION AND ORGANIC MATERIALS SHALL BE WASTED FROM THE SITE OR USED TO REVEGETATE LANDSCAPED AREAS OR EXPOSED SLOPES AFTER COMPLETION OF GRADING OPERATIONS. IF IT IS NECESSARY TO DISPOSE OF ORGANIC MATERIALS ON-SITE THEY SHALL BE PLACED IN NON-STRUCTURAL AREAS, AND IN FILL SECTIONS NOT EXCEEDING FIVE (5) FEET IN HEIGHT
E. EMBANKMENT CONSTRUCTION SHALL CONSIST OF THE PLACING OF SUITABLE FILL MATERIAL, AFTER TOPSOIL STRIPPING, ABOVE THE EXISTING GRADE. GENERALLY, EMBANKMENTS SHALL HAVE COMPACTED SUPPORT SLOPES OF FOUR FEET HORIZONTAL TO ONE FOOT VERTICAL. THE MATERIAL FOR EMBANKMENT CONSTRUCTION SHALL BE OBTAINED BY THE CONTRACTOR AND APPROVED BY THE ENGINEER. THIS MATERIAL SHALL BE PLACED IN LIFTS NOT TO EXCEED 8".
F. ALL SLOPES SHALL BE CONSTRUCTED IN ACCORDANCE WITH THE GRADING SHOWN ON THE PLANS.
G. EXPOSED SURFACES SHALL BE FREE OF MOUNDS AND DEPRESSIONS WHICH COULD PREVENT UNIFORM COMPACTION.
H. IF FILL IS PLACED IN AREAS OF THE SITE WHERE EXISTING SLOPES ARE STEEPER THAN 5:1 (HORIZONTAL:VERTICAL), THE AREA SHALL BE BENCHED TO REDUCE THE POTENTIAL FOR SLIPPAGE BETWEEN EXISTING SLOPES AND FILLS.
I. BENCHES SHALL BE WIDE ENOUGH TO ACCOMMODATE COMPACTION AND EARTH MOVING EQUIPMENT, AND TO ALLOW PLACEMENT OF HORIZONTAL LIFTS OF FILL.
J. NO BURNING OF DEBRIS IS ALLOWED WITHOUT THE NECESSARY PERMITS FROM JURISDICTIONAL GOVERNING AUTHORITIES AND APPROVAL BY THE OWNER.

2. SUBGRADE PREPARATION

A. ACCESS ROADS – SUBSEQUENT TO THE SURFACE CLEARING AND GRUBBING, COMPACTING AND PROOF ROLLING EFFORTS THE EXPOSED SUBGRADE SOILS SHALL BE OBSERVED BY A GEOTECHNICAL ENGINEER TO IDENTIFY IF SOFT AREAS EXIST. IF SOFT SOILS EXIST THEY SHALL BE OVER EXCAVATED. THE REMOVED SOILS MAY BE PLACED BACK IN THE SUBEXCAVATION AS COMPACTED FILL. SCARIFICATION AND RECOMPACTION SHALL EXTEND HORIZONTALLY AT LEAST TWO FEET BEYOND THE OUTSIDE EDGE OF THE DRIVABLE SURFACE.
B. CONCRETE PAD – SUBSEQUENT TO THE SURFACE CLEARING AND GRUBBING EFFORTS THE EXPOSED SUBGRADE SOILS SHALL BE SCARIFIED TO A DEPTH OF 12 INCHES, MOISTURE CONDITIONED TO APPROXIMATELY THREE PERCENT OF OPTIMUM MOISTURE CONTENT AND RECOMPACTED TO AT LEAST 90% OF MAXIMUM DRY DENSITY. NON-EXPANSIVE FILL SOILS CAN BE USED AS AN ALTERNATE TO EXISTING SOILS. SEE TABLE 3 FOR REQUIREMENTS.
C. THE MOISTURE CONTENT AND COMPACTION OF SUBGRADE SOILS SHALL BE MAINTAINED UNTIL SLAB OR PAVEMENT CONSTRUCTION.
D. EXPOSED AREAS WHICH WILL RECEIVE FILL, ONCE PROPERLY CLEARED AND BENCHED WHERE NECESSARY, SHALL BE SCARIFIED TO A MINIMUM DEPTH OF EIGHT (8) INCHES, CONDITIONED TO NEAR OPTIMUM MOISTURE CONTENT, AND COMPACTED.
E. CLEAN ON-SITE SOILS OR APPROVED IMPORTED MATERIAL MAY BE USED AS SUBGRADE MATERIAL FOR GENERAL SITE GRADING AND ROADWAY AREAS.

3. FILL MATERIALS AND PLACEMENT

A. ALL FILL MATERIALS SHALL BE INORGANIC SOILS FREE OF VEGETATION, DEBRIS, AND FRAGMENTS LARGER THAN THREE (3) INCHES IN SIZE. PEA GRAVEL OR OTHER SIMILAR NON-CEMENTITIOUS, POORLY-GRADED MATERIALS SHALL NOT BE USED AS FILL OR BACKFILL WITHOUT THE PRIOR APPROVAL OF THE GEOTECHNICAL ENGINEER.
B. CLEAN ON-SITE SOILS OR APPROVED IMPORTED MATERIAL MAY BE USED AS FILL MATERIAL FOR GENERAL SITE GRADING.
C. IMPORTED SOILS MUST HAVE EXPANSION VALUES IN THE "VERY LOW" RANGE.
D. WHERE FILL IS PLACED ON A SLOPING GROUND WHERE THE SLOPE IS STEEPER THAN 20% AND HAS A VERTICAL CHANGE GREATER THAN 10 FT, BENCHING SHALL BE PROVIDED. THE BENCH SHALL BE A MINIMUM 15 FT WIDE.
E. ENGINEERED FILL SHALL BE PLACED AND COMPACTED IN HORIZONTAL LIFTS, USING EQUIPMENT AND PROCEDURES THAT WILL PRODUCE RECOMMENDED MOISTURE CONTENTS AND DENSITIES THROUGHOUT THE LIFT. FILL LIFTS SHALL NOT EXCEED TWELVE (12) INCHES LOOSE THICKNESS.

4. TRENCH PREPARATION

A. TRENCH'S SHALL BE EXCAVATED TO THE DEPTH IDENTIFIED IN THE ELECTRICAL DRAWINGS/DETAILS.
B. TRENCH BACKFILL SHALL CONSIST OF APPROVED, ONSITE OR IMPORT SOILS. SOILS SHALL BE FREE OF VEGETATION, DEBRIS, AND FRAGMENTS LARGER THAN 3 INCHES.
C. INITIAL BACKFILL LIFT SHALL BE 18", ADDITIONAL BACKFILL LIFTS SHALL NOT EXCEED 9 INCHES OF LOOSE MATERIAL. IF TESTING OF THE INITIAL LIFT DOES NOT PROVIDE THE REQUIRED DENSITY THE INITIAL BACKFILL LIFT WILL BE REDUCED TO A 9 INCH LOOSE THICKNESS.
D. BACKFILL SHALL BE COMPACTED TO AT LEAST 90% OF MAXIMUM DRY DENSITY IN NON-STRUCTURAL AREAS AND 95% OF MAXIMUM DRY DENSITY UNDER STRUCTURAL AREA OR WITH IN 18" OF SOLAR POST FOUNDATION, AND WITHIN 3% OF OPTIMUM MOISTURE.
E. TRENCH BACKFILL SHALL BE MECHANICALLY COMPACTED.

TESTING REQUIREMENTS:

DEFINITIONS

1. TESTING SHALL BE PERFORMED BY A DESIGNATED INDEPENDENT TESTING AGENCY.
2. SUBMIT TESTING AND INSPECTION RECORDS SPECIFIED TO THE CIVIL ENGINEER OF RECORD FOR REVIEW.
   A. THE ENGINEER WILL REVIEW THE TESTING AND INSPECTION RECORDS TO CHECK CONFORMANCE WITH THE DRAWINGS AND SPECIFICATIONS. THE ENGINEER'S REVIEW DOES NOT RELIEVE THE CONSTRUCTION CONTRACTOR FROM THE RESPONSIBILITY FOR CORRECTING DEFECTIVE WORK.
3. PROOF ROLLING SHALL BE PERFORMED IN THE PRESENCE OF THE GEOTECHNICAL ENGINEER OR QUALIFIED GEOTECHNICAL REPRESENTATIVE USING A FULLY LOADED TANDEM AXLE DUMP TRUCK WITH A MINIMUM GROSS WEIGHT OF 25 TONS OR A FULLY LOADED WATER TRUCK WITH AN EQUIVALENT AXLE LOADING. PROOF-ROLLING ACCEPTANCE STANDARDS INCLUDE NO RUTTING GREATER THAN 1.5 INCHES, AND NO "PUMPING" OF THE SOIL BEHIND THE LOADED TRUCK.
4. SIEVE ANALYSIS SHALL BE CONDUCTED IN ACCORDANCE WITH ASTM C136
5. PROCTORS SHALL BE DETERMINED IN ACCORDANCE WITH ASTM D698
6. ATTERBERG LIMITS SHALL BE DETERMINED IN ACCORDANCE WITH ASTM D4318
7. MOISTURE DENSITY (NUCLEAR DENSITY) TESTING SHALL BE DONE IN ACCORDANCE WITH ASTM D2922
8. DYNAMIC CONE PENETROMETER (DCP) TESTING SHALL BE DONE IN ACCORDANCE WITH ASTM D6951-03
9. RESISTANCE (R-VALUE) SHALL BE DONE IN ACCORDANCE WITH CALIFORNIA TEST 301
10. SAND EQUIVALENT SHALL BE DONE IN ACCORDANCE WITH CALIFORNIA TEST 217
11. DURABILITY INDEX SHALL BE DONE IN ACCORDANCE WITH CALIFORNIA TEST 229

REQUIREMENTS

1. COMPACTION:
   A. REFER TO TABLE 3 FOR COMPACTION REQUIREMENTS AND ACCEPTABLE MOISTURE CONTENTS.
2. FILL MATERIAL:
   A. SOILS USED AS FILL MATERIAL SHALL BE TESTED FOR GRAIN SIZE ANALYSIS, MOISTURE CONTENT, ATTERBERG LIMITS ON FINES CONTENT, PROCTOR TESTS, R-VALUES, SAND EQUIVALENTS, DURABILITY INDEX, LIQUID LIMIT, PLACTICITY INDEX, AND MAXIMUM EXPANSION INDEX.
3. COMPACTED SUBGRADE:
   A. PROVIDE 1 MOISTURE DENSITY COMPACTION TEST FOR EVERY 2,640 L.F. OF ROAD LENGTH
   B. THE ENTIRE SUBGRADE SHALL BE PROOF-ROLLED PRIOR TO THE PLACEMENT OF THE AGGREGATE BASE TO IDENTIFY AREAS OF UNSTABLE SUBGRADE. IF UNSTABLE SUBGRADE IS ENCOUNTERED SCARIFY, MOISTURE CONDITION, AND RECOMPACT SOILS TO ACHIEVE COMPACTION.
4. AGGREGATE BASE:
   A. PROVIDE 1 MOISTURE DENSITY COMPACTION TEST FOR EVERY 2,640 L.F. OF ROAD LENGTH.
   B. AGGREGATE BASE SHALL BE PROOF-ROLLED OVER THE ENTIRE LENGTH. IF PROOF ROLLING DETERMINES THAT THE ROAD IS UNSTABLE, ADDITIONAL AGGREGATE SHALL BE ADDED UNTIL THE UNSTABLE SECTION IS ABLE TO PASS A PROOF ROLL FOR ALL ROAD CLASSIFICATIONS.
   C. PROVIDE 1 SIEVE ANALYSIS PER 2500 CY OF ROAD BASE PLACED.
5. MISCELLANEOUS FILL:
   A. PROVIDE MOISTURE DENSITY COMPACTION TESTS ONCE PER 2 VERTICAL FOOT LIFTS AND/OR 1,000 C.Y. OF COMPACTED FILL MATERIAL.

TABLE 1: CLASS 2 AGGREGATE BASE GRADATION

SIEVE SIZE	PERCENT PASSING
2"	(100)
1-½"	(90-100)
¾"	(50-85)
#4	(25-45)
#30	(10-25)
#200	(2-9)
QUALITY REQUIREMENTS	
RESISTANCE (R-VALUE)	78 MIN.
SAND EQUIVALENT	22 MIN.
DURABILITY INDEX	35 MIN.

TABLE 2: TESTING SCHEDULE SUMMARY

LOCATION	TEST	FREQUENCY
STRUCTURAL FILL	GRAIN SIZE ANALYSIS, MOISTURE CONTENT, ATTERBERG LIMITS ON FINES CONTENT, AND PROCTOR	1 PER MAJOR SOIL TYPE
COMPACTED SUBGRADE	MOISTURE DENSITY TEST (NUCLEAR DENSITY)	1 EVERY 2,640 LF OF ROAD
	PROOF-ROLL	ENTIRE LENGTH
AGGREGATE BASE	MOISTURE DENSITY TEST (NUCLEAR DENSITY)	1 EVERY 2,640 LF OF ROAD
	PROOF-ROLL	ENTIRE LENGTH
	SIEVE ANALYSIS	1 PER 2500 CY
MISCELLANEOUS FILL:	MOISTURE DENSITY TEST (NUCLEAR DENSITY)	1 PER 2 VERTICAL FOOT LIFTS AND/OR 1,000 C.Y. OF MATERIAL
TRENCH BACKFILL:	MOISTURE DENSITY TEST (NUCLEAR DENSITY)	1 EVERY 1,000 LF OF TRENCH, ALTERNATE TEST DEPTHS OF 18" AND AT GRADE

TRAFFIC CONTROL:

1. THE CONTRACTOR SHALL BE RESPONSIBLE FOR PROVIDING AND MAINTAINING TRAFFIC CONTROL DEVICES SUCH AS BARRICADES, WARNING SIGNS, DIRECTIONAL SIGNS, FLAGGERS AND LIGHTS TO CONTROL THE MOVEMENT OF TRAFFIC WHERE NECESSARY. PLACEMENT OF THESE DEVICES SHALL BE APPROVED BY THE CITY/COUNTY AND ENGINEER PRIOR TO PLACEMENT. TRAFFIC CONTROL DEVICES SHALL CONFORM TO THE LATEST VERSION OF THE CALIFORNIA MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES (MUTCD).

GENERAL NOTES:

1. CONSTRUCTION PLANS ARE BASED OFF A DESKTOP SURVEY PROVIDED BY WESTWOOD PROFESSIONAL SERVICES.
2. PROPOSED SOLAR LAYOUT FOR THIS PROJECT PROVIDED BY WESTWOOD PROFESSIONAL SERVICES.
3. ALL DIMENSIONS ARE TO PROJECT BOUNDARY, EDGE OF GRAVEL, FENCE LINES AND SOLAR PANELS UNLESS OTHERWISE NOTED.
4. THE GROUND SURFACE CONTOURS (AT ONE-FOOT VERTICAL INTERVALS) AND ELEVATIONS ARE BASED ON PUBLICLY AVAILABLE DATA.
5. WHERE SECTION OR SUBSECTION MONUMENTS ARE ENCOUNTERED, THE OWNER SHALL BE NOTIFIED AND ARE NOT TO BE REMOVED WITHOUT PERMISSION FROM THE OWNER. THE CONTRACTOR SHALL PROTECT AND CAREFULLY PRESERVE ALL PROPERTY MARKERS AND MONUMENTS UNTIL THE OWNER, AN AUTHORIZED SURVEYOR OR AGENT HAS WITNESSED OR OTHERWISE REFERENCED THEIR LOCATION.
6. CONTRACTOR SHALL BE RESPONSIBLE TO LOCATE EXISTING FACILITIES AND UTILITIES PRIOR TO SITE WORK.
7. CONTRACTOR SHALL BE RESPONSIBLE FOR THE COSTS AND REPAIRS OF DAMAGES TO EXISTING AND NEW FACILITIES RESULTING FROM CONSTRUCTION ACTIVITIES.
8. CONTRACTOR SHALL FIELD VERIFY SURVEY CONTROL AND DESIGN COORDINATES PRIOR TO CONSTRUCTION STAKING.
9. CONTRACTOR SHALL BE RESPONSIBLE TO REMOVE DEBRIS AND WASTE FROM PROJECT SITE AT NO EXPENSE TO OWNER.
10. THE CONTRACTOR IS RESPONSIBLE FOR MAINTAINING DRAINAGE THROUGHOUT THE CONSTRUCTION OF THIS PROJECT. CONSTRUCTION ACTIVITIES SHALL NOT BLOCK THE NATURAL DRAINAGE SWALES CAUSING RAINWATER TO POND. IF CULVERTS ARE NEEDED, THE PROJECT ENGINEER MUST BE CONTACTED FOR APPROPRIATE SIZING OF STRUCTURE.
11. ANY FACILITIES REMOVED TO ALLOW FOR CONSTRUCTION (MAILBOXES, SIGNS, FENCES, ETC.) SHALL BE REPLACED BY THE CONTRACTOR IN A CONDITION AS GOOD AS PRE-EXISTING. PERMISSION SHALL BE OBTAINED TO REMOVE ITEM BY THE OWNER AND/OR LANDOWNER.
12. THE CONTRACTOR SHALL NOTIFY CALIFORNIA DIG ALERT (811 ONE CALL) AT LEAST 48 HOURS BEFORE EXCAVATION ACTIVITIES COMMENCE.
13. ALL CONSTRUCTION PERFORMED SHALL CONFORM WITH THE CURRENT STANDARDS AND SPECIFICATION OF RIVERSIDE COUNTY. WHERE DISCREPANCIES EXIST BETWEEN THE PROJECT SPECIFICATIONS AND THE COUNTY SPECIFICATIONS OR STANDARD, THE CONTRACTOR SHALL ABIDE BY THE GREATER OR MORE RESTRICTIVE REQUIREMENTS.
14. ELECTRONIC FILES ARE AVAILABLE FOR CONSTRUCTION OPERATIONS.

EROSION AND SEDIMENT CONTROL / STORMWATER POLLUTION PREVENTION PLAN (SWPPP):

1. THE CONTRACTOR SHALL PROVIDE EROSION CONTROL MEASURES AS PLANNED AND SPECIFIED FOLLOWING BEST MANAGEMENT PRACTICES AS OUTLINED BY THE CALIFORNIA STORMWATER QUALITY ASSOCIATION (CASQA) AND BEING IN CONFORMANCE WITH THE NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM (NPDES) GENERAL STORMWATER PERMIT. SEE THE PROJECT SITE PLANS AND ASSOCIATED STORMWATER POLLUTION PREVENTION PLAN (SWPPP) FOR EROSION CONTROL AND RESTORATION LOCATIONS AND SPECIFICATIONS. UNLESS OTHERWISE NOTED OR MODIFIED IN THE SWPPP/HEREIN, ALL SECTIONS OF THE GENERAL CONDITIONS SHALL APPLY.
2. THE CONTRACTOR SHALL BE RESPONSIBLE FOR MAINTAINING THE SWPPP'S AVAILABILITY.
3. ALL FIBER ROLLS AND OTHER EROSION CONTROL FEATURES SHALL BE IN-PLACE PRIOR TO ANY EXCAVATION/CONSTRUCTION AND SHALL BE MAINTAINED UNTIL VIABLE TURF OR GROUND COVER HAS BEEN ESTABLISHED.
4. ALL DRAINAGE SWALES DISTURBED DURING CONSTRUCTION ACTIVITIES AND NOT COVERED BY ROAD SURFACING MATERIALS, SHALL BE STABILIZED IN ACCORDANCE WITH THE SWPP PLAN.

TABLE 3: COMPACTION AND MOISTURE CONTENT REQUIREMENTS

MATERIAL TYPE AND LOCATION	MINIMUM COMPACTION REQUIREMENT (%)	RANGE OF MOISTURE CONTENTS FOR COMPACTION (% OVER OPTIMUM)	
		MINIMUM	MAXIMUM
AGGREGATE BASE:	95	-2%	+2%
MISCELLANEOUS FILL:	95	-2%	+2%
SUBGRADE (BENEATH EQUIPMENT PADS, NATIVE MATERIAL)	90	-3%	+3%
SUBGRADE (BENEATH EQUIPMENT PADS, NON-EXPANSIVE SOILS)	95	-3%	+3%
TRENCH BACKFILL (NON-STURCTURAL AREAS)	90	-3%	+3%
TRENCH BACKFILL (STRUCTURAL AREAS)	95	-3%	+3%

Call 48 Hours before digging:
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0013768-DTF01.dwg

Date: 01/15/19 Sheet: C.405

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Phone (952) 937-5150 12701 Whitewater Drive, Suite #300
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Exhibit Amendments:

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Athos Solar
Riverside County, CA

Construction Notes

Appendix C

Biological Resources

C.1 Biological Resources Technical Report

C.2 Jurisdictional Delineation

C 3 Bird and Bat Conservation Strategy

Appendix C.1

Biological Resources Technical Report

BIOLOGICAL RESOURCES TECHNICAL REPORT
ATHOS RENEWABLE ENERGY PROJECT
RIVERSIDE COUNTY, CALIFORNIA

Prepared for
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January 2019

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List of Acronyms

agl	above ground level
amsl	above mean sea level
AC	Alternating Current
ACEC	Area of Critical Environmental Concern
BRTR	Biological Resources Technical Report
BBCS	Bird and Bat Conservation Strategy
BLM	Bureau of Land Management
CA-177	California Highway 177
Cal-IPC	California Invasive Plant Council
CDFW	California Department of Fish and Wildlife
CDFA	California Department of Food and Agriculture
CESA	California Endangered Species Act
CEC	California Energy Commission
CEQA	California Environmental Quality Act
CNPS	California Native Plant Society
CNDDB	California Natural Diversity Database
CRPR	California Rare Plant Rank
DFA	Development Focus Area
DRECP	Desert Renewable Energy Conservation Plan
DC	Direct Current
FEIS	Final Environmental Impact Statement
FESA	Federal Endangered Species Act
FWS	Fish and Wildlife Service
GIS	Geographic Information Systems
GPS	Global Positioning System
I-10	Interstate 10
LUPA	Land Use Plan Amendment
NEPA	National Environmental Protection Act
NPS	National Park Service
NECO Plan	Northern and Eastern Colorado Desert Coordinated Management Plan
O&M	Operations and Maintenance
PV	Photovoltaic
SEZ	Solar Energy Zone
TCAs	Tortoise Conservation Areas
USFWS	US Fish and Wildlife Service

1 INTRODUCTION

1.1 Background

In 2017, Intersect Power, LLC proposed the Athos Renewable Energy Project within the Desert Center community of unincorporated Riverside County, California. The proposed Project would consist of solar facilities located on seven non-contiguous groups of private parcels and approximately 11 miles of generation interconnection (gen-tie) transmission line crossing a mixture of privately owned and Bureau of Land Management (BLM) managed lands, connecting to the existing Southern California Edison Red Bluff substation. The Athos Renewable Energy Project is expected to generate 500 megawatts (MW) of renewable energy using photovoltaic (PV) panels. The solar facility and gen-tie are collectively referred to as the Athos Renewable Energy Project (the Project) throughout this report.

1.2 Purpose

This Biological Resources Technical Report (BRTR) provides a description of methods and results of biological resource surveys and investigations conducted in fall of 2017 and spring of 2018 for the Athos Renewable Energy Project.

The primary purpose of this report is to provide biological information that will be used as the foundation for impact assessments pursuant to the National Environmental Policy Act (NEPA) and California Environmental Quality Act (CEQA). The discussion included herein may also be used to support consultation between Bureau of Land Management (BLM) and U.S. Fish and Wildlife Service (USFWS) under the Federal Endangered Species Act (FESA), and any necessary incidental take authorization from the California Department of Fish and Wildlife (CDFW) with respect to the California Endangered Species Act (CESA).

1.3 Site Location

The Project site is located in unincorporated Riverside County, California. It consists of approximately 3456.7 acres, including 3262.8 acres of privately-owned land and 193.9acres of BLM-managed land (acreages were obtained from shapefile data that may result in small discrepancies between different documents for the Project). The site is situated within Chuckwalla Valley near the community of Desert Center, about halfway between the cities of Indio and Blythe (see Figure 1).

The Project site is on three 7.5-Minute U.S. Geological Survey topographic quadrangles: East of Victory Pass, Corn Springs, and Sidewinder Well. The federal lands included within the Project site are located within in the California Desert Conservation Area (CDCA) planning area, and within the southern Desert Tortoise Recovery Unit of the Northern and Eastern Colorado Desert Coordinated Management (NECO) Plan. The Chuckwalla Area of Critical Environmental Concern

(ACEC) is located just south of I-10 and Joshua Tree National Park is located approximately two miles north of the northernmost portion of the Project site.

The federal lands included within the Project site are primarily within the boundaries of the Riverside East Solar Energy Zone (SEZ) identified in the Solar Programmatic Environmental Impact Statement (EIS) approved by a Record of Decision signed by BLM on October 12, 2012. Additionally, the Project site is within the Chuckwalla Valley ecoregion subarea of the Desert Renewable Energy Conservation Plan (DRECP) area. The DRECP identifies the federal lands in and around the Project site in the Land Use Plan Amendment (LUPA) and Final Environmental Impact Statement (FEIS) as a Development Focus Area (DFA), as approved by a Record of Decision signed by BLM on September 14, 2016.

The portions of the Project site proposed for PV and storage components consist of seven non-contiguous groups of privately-owned parcels. For the purposes of this report, the seven groups of parcels are identified as parcel groups A-G. The gen-tie routes are identified as six segments (gen-tie 1, 1A, 2A, 2B, 3, and 4) and are located on a combination of privately owned and BLM managed lands (see Figure 2). Additional access areas are also on a combination of private and public lands. A summary of all project components is found in Table 1.

Private Land Components

All seven non-contiguous parcel groups for proposed PV and storage are located on privately owned parcels. The northernmost parcel group A, is just northwest of California Highway 177 (CA-177) while the remaining parcel groups (C-G) are located southeast of CA-177 and north of Interstate 10 (I-10). These lands include a combination of disused former agricultural lands (parcel groups A-E, G, 2827 acres total) and native undisturbed habitat (parcel groups D and F, 394.6acres total).

The proposed gen-tie routes connect each of these groups of parcels and connect group F to Southern California Edison's existing Red Bluff substation. The gen-tie routes that cross privately owned land include gen-tie 1, gen-tie 1A, gen-tie 1B, gen-tie 2C, and gen-tie 3 (see Figures 2 and 3). The habitat on these routes include some previously disturbed habitat.

The proposed solar facilities (A-G) and gen-tie routes (gen-tie 1A, gen-tie 1B, gen-tie 2C, and gen-tie 3) on private components are located outside boundaries of ACECs, BLM wilderness areas, or USFWS designated critical habitat units for desert tortoise.

Public Land Components

The proposed gen-tie routes located on BLM managed lands include gen-tie 1A, gen-tie 1C, gen-tie 2A, and gen-tie 2B through gen-tie 4. Vegetation along the gen-tie routes that cross public land is mostly in its natural undisturbed state (see Figures 2 and 3).

The entirety of gen-tie route 4 is located within USFWS designated critical habitat for desert tortoise, and the southernmost portion of that route (portion south of I-10) is also within the Chuckwalla ACEC.

Table 1. Summary of Project Components

	Component	Private	Public
Solar Facility	A	X	-
	B	X	-
	C	X	-
	D	X	-
	E	X	-
	F	X	-
	G	X	-
	Component	**Private**	**Public**
Gen-tie	Gen-tie 1	X	X
	Gen-tie 1A	X	X
	Gen-tie 2A	-	X
	Gen-tie 2B	X	-
	Gen-tie 3	X	X
	Gen-tie 4	-	X
	Component	**Private**	**Public**
Additional Access	Access Road	X	-
	ROW Access	X	X
	Spur Road 1	-	X
	Spur Road 2	-	X

1.4 Project Summary

The following summary of the project components, construction methods, schedule, and operation and maintenance activities is based on information provided by Intersect Power.

Solar fields

The Project's PV modules would be manufactured at an offsite location and transported to the Project site. Panels would be arranged in strings with a maximum height of 12 feet. Panel faces would be minimally reflective, dark in color, and highly absorptive.

Panels would be arranged on the site in solar arrays. Spacing between each row would be a minimum of 4 feet. Structures supporting the PV modules would consist of steel piles which

would be driven into the soil using pneumatic techniques, such as a hydraulic rock hammer attachment on the boom of a rubber-tired backhoe excavator. The piles typically would be spaced 10 feet apart. The total height of the panel system measured from ground surface would be up to 12 feet. Where excavations are required, the majority would be limited to less than 6 feet in depth, however, some excavations, such as those undertaken for the installation of collector poles and dead-end structures, may reach depths of 20 feet or more.

Each 2-MW PV panel increment would include an inverter-transformer station constructed on a concrete pad or steel skid, and centrally located within the PV arrays. Each inverter-transformer station would contain electrical components and a security camera at the top of an approximately 20-foot pole. An inverter shade structure may also be installed at each one. The shade structure would consist of wood or metal supports and a durable outdoor material shade structure (metal, vinyl, or similar). The shade structure would extend up to 10 feet above the top of the inverter pad.

Underground cables would be installed to convey electricity from the panels, via combiner boxes located throughout the PV arrays, to inverter-transformer stations. From there, the 34.5 kV level collection cables would either be buried underground or installed overhead on wood poles. If the collection system is installed overhead, some of the wood poles could be located at the outside edge of the property line, but a majority of these poles are expected to be located interior to the site. Approximately 300 to 500 wood poles located at 250-foot intervals could be installed across the entire site. The typical height of the poles would be approximately 30 to 50 feet.

Up to four substations would be located within the proposed solar sites. The area of each substation and associated equipment would be approximately 37,500 square feet (150 feet by 250 feet). Substation equipment would be built on concrete pad foundations, and the remaining area would be graveled to a maximum depth of approximately 6 inches. Each substation would be surrounded by an up-to 6-foot high chain link fence topped with one foot of barbed wire.

The Project may use one of the existing homes on the solar facility site as an O&M building, or it may use the septic system of an existing home and build a new O&M building. If a new O&M building is constructed, it would be approximately 3,000 square feet in size and approximately 15 feet at its tallest point.

A fiber optic or other cabling system would be installed for remote monitoring of operation and/or remote control of critical components. It typically would be installed in buried conduit, leading to one or more Supervisory Control and Data Acquisition System (SCADA) system cabinets located within the Project site. External telecommunications connections could be provided through wireless or hard-wired connections to locally available commercial service

providers. The Project's SCADA system would interconnect to this fiber optic network at the Red Bluff Substation, and no additional disturbance associated with telecommunications is anticipated.

The Project could include, at the Applicant's option, a battery or flywheel storage system capable of storing up to 500 MW of electricity. If installed, the storage system would consist of battery or flywheel banks housed in electrical enclosures and buried electrical conduit. The battery system would either be concentrated near the Project substations or dispersed throughout the solar facility sites. Up to 3,000 electrical enclosures measuring approximately 40 feet by 8 feet by 8.5 feet high would be installed on concrete foundations designed for secondary containment. Battery systems are operationally silent, and flywheel systems have a noise rating of 45 dBA.

The Project would include a permanent meteorological (met) data collection system, consisting of approximately 15 met stations, each with multiple weather sensors mounted on a main mast approximately 20 feet tall.

Solar field ingress/egress would be via locked gates located at multiple points. The boundaries of the Project sites would be secured by up-to 6-foot-high chain-link perimeter fences, topped with one foot of three-strand barbed wire, or as dictated by Riverside County specifications. If required, site fencing would also adhere to US Fish and Wildlife Service (USFWS) design guidelines (USFWS, 2009) to exclude desert tortoise from the Project site. The fence would typically be set approximately 100 feet from the edge of the solar panel array.

The Project's on-site roadway system would include perimeter roads, access roads, and internal roads. The perimeter roads and main access roads would be approximately 20 feet wide and constructed to be consistent with facility maintenance requirements and County standards. These roads would be surfaced with gravel, compacted dirt, or another commercially available surface. Internal roads would have permeable surfaces and be approximately 16 feet in width or as otherwise required by County standards. They would be treated to create a durable, dustless surface for use during construction and operation. This would not involve lime treatment but would likely involve surfacing with gravel, compacted native soil, or a dust palliative.

Motion sensitive, directional security lights would provide illumination around the substation areas, inverter clusters, gates, and along perimeter fencing. All lighting would be shielded and directed downward to minimize the potential for glare or spillover onto adjacent properties. No Project structures would necessitate aviation lighting per Federal Aviation Administration Part 77 Obstruction Evaluation Consultation.

Infrared security cameras, motion detectors, or other similar technology would be installed to allow for security monitoring. Such cameras or other equipment would be placed along the perimeter of the facility and/or at the inverters. Security cameras located at the inverters would be posted on poles approximately 20 feet high.

Gen-tie Lines

The project gen-tie lines would be located within a 100-foot-wide right-of-way (ROW), and consist of either monopoles, lattice steel structures, or wooden H-frame poles. For the overhead gen-tie line, structure foundations would be excavated to a depth of 35 feet or more and include concrete supports depending on final engineering (without these foundations, guy-lines would be needed to support the structures). Gen-tie structures would be on average 90 feet tall (as short as 50 feet and as tall as 120 feet to clear another line for a perpendicular crossing). The gen-tie structures would be less than 200 feet tall and would not necessitate aviation lighting per Federal Aviation Administration Part 77 Obstruction Evaluation Consultation. A total of up to 120 gen-tie structures would be built. The gen-tie would include a 3-phase 220 kV conductor, a ground wire, and a telecommunications fiber-optic cable.

Access

Access to the majority of the Project sites would be via Highway 177; Corn Springs Road would be used to access the easternmost group of parcels. Seven new access road segments, totaling approximately ten miles in length, would be constructed for primary and secondary access to the seven groups of Project sites (Groups A-G; see Figure 3). In some cases, access would be via improved existing BLM open routes and agricultural roads, rather than requiring new route construction.

All new and improved access roads would be 24 feet wide with a two-foot-wide shoulder on each side, for a total width of approximately 30 feet, including allowances for side slopes and surface runoff control. Construction of the access road segments would include compacting subsurface soils and placing a four-inch-thick layer of asphalt concrete over a 6-inch-thick layer of compacted aggregate base.

Construction

Construction is anticipated to occur over a 30-month period with multiple construction activities occurring simultaneously. Project construction may be phased. The on-site workforce is expected to reach its peak of approximately 530 individuals with an average construction-related workforce of 320 individuals. An estimated 40 roundtrips per day would be required to deliver materials and equipment to the project site (mainly tractor-trailer trucks and occasional oversize tractor-trailers for large equipment such as cranes). Prior to construction, all contractors, subcontractors, and project personnel would receive Worker Environmental

Awareness Program (WEAP) training to effectively understand and implement the biological commitments in the project description, implement the mitigation measures, comply with applicable environmental laws and regulations, avoid and minimize impacts, and understand the importance of these resources and the purpose and necessity of protecting them. The following species and their habitat would be specifically covered in the WEAP: desert tortoise, burrowing owl, other raptors and migratory birds, American badger, and desert kit fox. Applicable sensitive plant species would also be covered in the WEAP.

Construction would begin with pre-construction surveys, construction of the main access road, security fencing, biological resource exclusion fences where needed, clearing and construction of a laydown yard, site grading and preparation, construction of the O&M building, parking area, and pad mounts for transformers. Construction would continue with the installation of temporary power, construction of on-site roads, construction of the project substation, and assembly and installation of panel blocks and wiring.

Construction equipment would normally operate between the hours of 7:00 a.m. and 7:00 p.m. Monday through Friday for up to a maximum of 8 hours per piece of equipment, daily. Weekend construction work is not expected but may occur on occasion, depending on schedule considerations.

During pre-construction field surveys site boundaries, fence locations, and gen-tie ROW boundaries would be identified and clearly marked with stakes and flagging. All off-road vehicle travel across BLM-administered land would be monitored by qualified biologists, archaeologists, and tribal monitors, as appropriate. A desert tortoise exclusion fence, if required, would be installed per the USFWS guidelines (USFWS 2009). Fence installation would be monitored by qualified biologists, archaeologists, and tribal monitors, as appropriate. Following fence installation, desert tortoise clearance surveys would be conducted according to USFWS 2009 guidelines (USFWS 2009). Mammals and burrowing owls would be passively relocated using one-way doors or using other accepted exclusion methods. Desert tortoise individuals would be moved outside of fenced areas “out of harm’s way” or actively translocated to a pre-selected site pursuant to an approved desert tortoise Translocation Plan to be developed in consultation with USFWS and the California Department of Fish and Wildlife (CDFW).

Several staging areas would be established within the solar facility site boundaries and security fence for storing materials, construction equipment, and vehicles. On-site pre-assembly of trackers would take place in the staging areas. Grubbing, light grading, and construction of staging areas would be monitored by qualified biologists, archaeologists, and tribal monitors, as appropriate.

Since most of the site has nearly level to gently sloping topography, no mass grading would be required; however, much of the solar facility would be impacted by some form of ground disturbance, either from compaction, micro-grading, or disc-and-roll grading. Some of the parcels where facilities and arrays would be located would require light grubbing for leveling and trenching.

Access road beds would be grubbed, graded, and compacted; however minimal grading is anticipated. The cut and fill would be approximately balanced; minimal import/export would be necessary.

A Stormwater Pollution Prevention Plan (SWPPP) or SWPPP equivalent document would be prepared, approved, and implemented before and during construction. The SWPPP will include Project information and identify best management practices (BMP). The BMPs would include stormwater runoff quality control measures, concrete waste management, stormwater detention, watering for dust control, and construction of perimeter silt fences, as needed.

Underground cables to connect panel strings would be installed using ordinary trenching techniques, which typically includes using a rubber-tired backhoe excavator or trencher. Wire depths would be in accordance with local, State, and Federal requirements, and would likely be buried at a minimum of 18 inches below grade, by excavating a trench approximately 3 to 6 feet wide to accommodate the conduits or direct buried cables. The excavated soil would likely be used to fill the trench and lightly compressed. All cabling excavations would be to a maximum depth of 10 feet.

All electrical inverters and the transformer would be placed on concrete foundation structures or steel skids. The substation areas would be excavated for the transformer equipment and control building foundation and oil containment area. The substation sites would be graded and compacted to an approximately level grade. Concrete pads would be constructed as foundations for substation equipment, and the remaining area would be graveled. Concrete for foundations would be brought to the site from a batching plant in Blythe or would be batched on site as necessary.

Since most of the gen-tie ROW has nearly level to gently sloping topography, no grading would be required for the gen-tie structures; however, some light grubbing may be required to clear vegetation from an approximately 12,500 square-foot area (0.3 acre) where the structure would be erected and selectively in some adjacent work areas, as needed. Structure installation would consist of the following steps:

- Deliver new structure to each structure site;
- Auger new hole using line truck attachment to a depth of up to 35 feet and include concrete supports depending on final engineering;

- Pour concrete foundation;
- Install bottom section by line truck, crane, or helicopter; and
- Install top section(s) by line truck, crane, or helicopter, if required.

Once poles are erected the conductor will be strung from pull and tension sites at the end of the power line interconnection alignment moving from one pole to the next. The average distance is approximately 4,000 feet between pull and tension sites. The line may also be equipped with optical ground wire (OPGW), which would serve as a ground wire and a telecommunication link. Alternately, telecommunications fiber optic cable may be installed in a small trench within the access roads with no new surface disturbance anticipated.

Construction sites would be kept in an orderly condition throughout the construction period by using approved enclosed refuse containers. All refuse and trash would be removed from work sites daily and be disposed of in accordance with BLM requirements. No open burning of construction trash would occur. All vegetation that may interfere with equipment would be trimmed and/or removed using manual non-mechanical means described in the Vegetation Resources Management Plan or treated with an approved herbicide, as necessary.

Following the completion of construction, temporarily disturbed areas on the Project site would be revegetated for the operations phase pursuant to an approved Vegetation Management Plan. Based on the aridity of the project area and the overall low density of vegetation present, it is not likely that vegetation would encroach upon structures so that access or operation would become impaired. However, spread of noxious weeds and other nonnative invasive plant species onto the project sites could create a fire hazard if allowed to become established, and invasive weeds could also become problematic from an ecological perspective. Therefore, weed control activities would be implemented within the project limits according to the Project's Integrated Weed Management Plan.

Weed control activities would include both mechanical and herbicide control methods. Mechanical control activities include chaining, disking, grubbing, and mowing using tractors or other heavy equipment, as necessary. On BLM-administered land (gen-tie component only), herbicide control could involve the use of BLM-approved herbicides to control weeds if manual control methods are not successful. Any potential herbicide use on BLM lands will be subject to BLM review and approval.

Operation and Maintenance

The solar modules would operate during daylight 7 days a week, 365 days a year. Operational activities at the Project site would include:

- Solar module washing;

- Vegetation, weed, and pest management (no pest management would be required on the gen-tie route; no anticoagulant rodenticides would be used anywhere on the project site);
- Security monitoring;
- Responding to automated electronic alerts based on monitored data, including actual versus expected tolerances for system output and other key performance metrics; and
- Communicating with customers, transmission system operators, and other entities involved in facility operations.

Up to 10 permanent staff could be on the site at any one time for O&M activities. Alternatively, approximately 2 permanent staff and 8 Project operators would be located off-site and would be on call to respond to alerts generated by the monitoring equipment at the Project site. Security personnel would be on call to respond to trespasses and other incidents as necessary.

Site maintenance would be largely conducted during daytime hours, typically in the early morning or evening when the plant would be producing the least amount of energy. Maintenance typically would include panel repairs; panel washing; maintenance of electrical equipment; road and fence repairs; and weed management. On-site vegetation would be managed to ensure access to all areas of the site and to screen facilities as needed. Solar modules would be washed as needed (up to four times each year) using light utility vehicles with tow-behind water trailers to maintain optimal electricity production. No chemical cleaners would be used for module washing.

No heavy equipment would be used during normal operation. Routine O&M vehicles would be primarily pickup trucks, flatbed trucks, and water trucks for solar panel washing. Forklifts or loaders may be used for occasional unscheduled maintenance. Large heavy-haul transport equipment may be brought to the solar facility infrequently for equipment repair or replacement.

Standard defensible space requirements would be maintained surrounding any welding or digging operations. Fire safety and suppression measures, such as smoke detectors and extinguishers, would be installed and available at the O&M facility, per the Riverside County Building and Safety Department's requirements. A Fire Management and Prevention Plan will be prepared and implemented in coordination with the Riverside County Fire Department, BLM Fire, or other emergency response organizations.

Decommissioning and Repowering

As the facility's equipment has a useful life of 40 years, at the end of the power purchase agreement's contract term (typically 10 to 25 years), the power from the facility would be sold to another buyer and/or the Project may be repowered to increase efficiency. If the Athos

Renewable Energy Project continues to operate, the long-term operations would be the same as described above. At the end of the project's useful life, the solar arrays and gen-tie line would be decommissioned and dismantled, according to a Closure, Decommissioning, and Reclamation Plan to be prepared closer to the end of the project's life.

2 SITE CHARACTERISTICS

2.1 Regional Setting

The Project site is located in the central portion of Chuckwalla Valley, east of Palm Springs in the Colorado Desert. The elevation of Chuckwalla Valley ranges from less than 400 feet above mean sea level (amsl) at Ford Dry Lake to approximately 1,800 feet amsl west of Desert Center and along the upper portions of the alluvial fans that surround the valley perimeter. The surrounding mountains rise to over 3,000 feet amsl. The topography of the Project site generally slopes downward to the southeast at gradient of less than 1 percent. Ground surface elevations at the Project site itself range from approximately 491 feet amsl in the southeast to 588 feet amsl in the northwest.

Anthropogenic features and land use near the Project site include agricultural, residential, renewable energy, energy transmission, historical military operations and recreational development. Adjacent land uses are summarized in Table 2.

Table 2. Adjacent Land Uses

Direction	LAND USES
NORTH	Desert Sunlight Solar Farm, Joshua Tree National Park, fallow agriculture
SOUTH	Chuckwalla ACEC, transmission lines, I-10, Southern California Edison's Red Bluff substation
EAST	Chuckwalla Valley Raceway, Desert Lily Preserve, active/fallow agriculture, rural residences, existing transmission line, CA-177, historical military
WEST	CA-177, Lake Tamarisk Community, active/fallow agriculture, aquaculture farms, Chuckwalla ACEC

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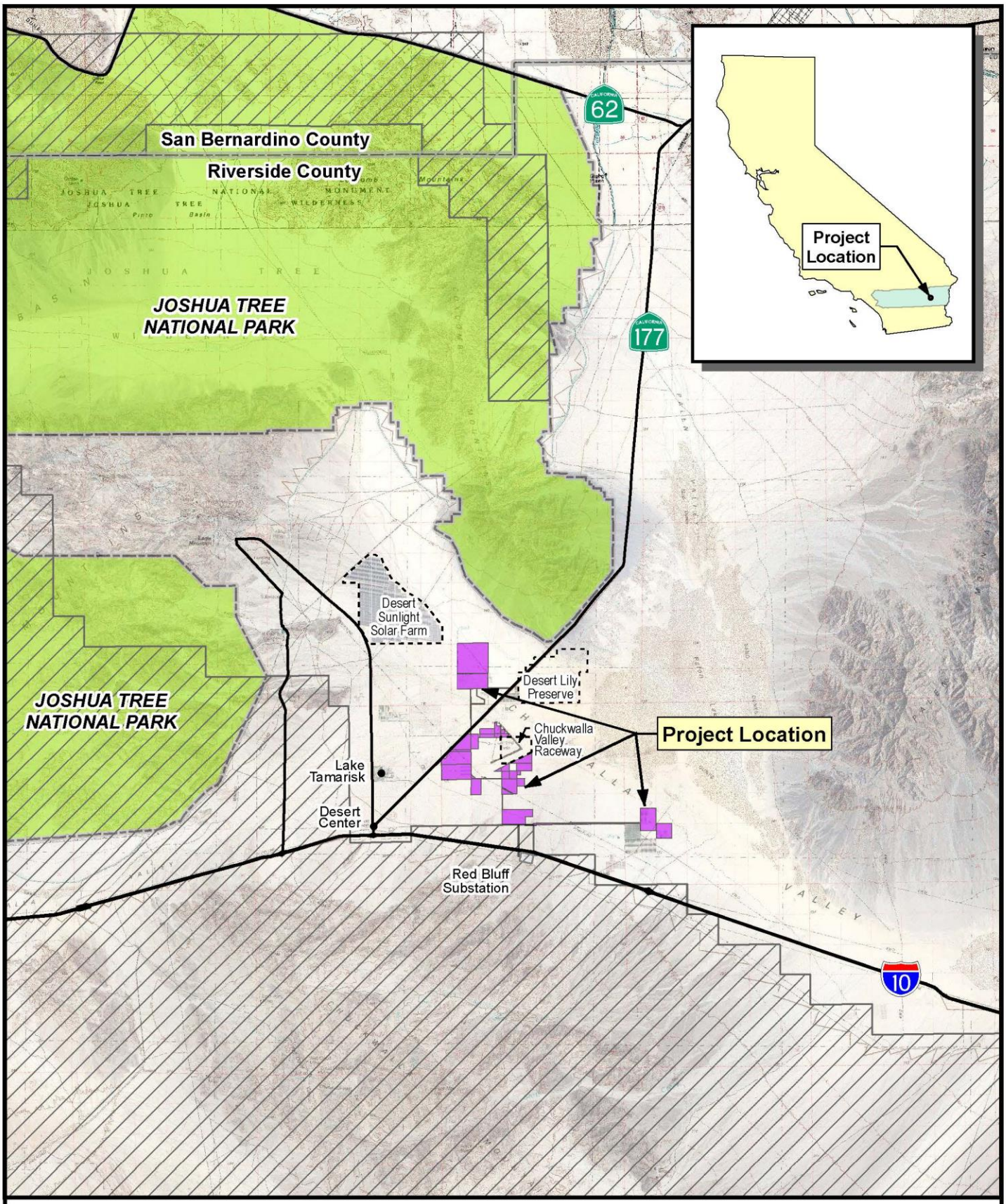

Ironwood Consulting

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Miles

Athos Solar Project
Joshua Tree National Park
Desert Tortoise Critical Habitat

FIGURE 1

Regional Location

Athos Solar

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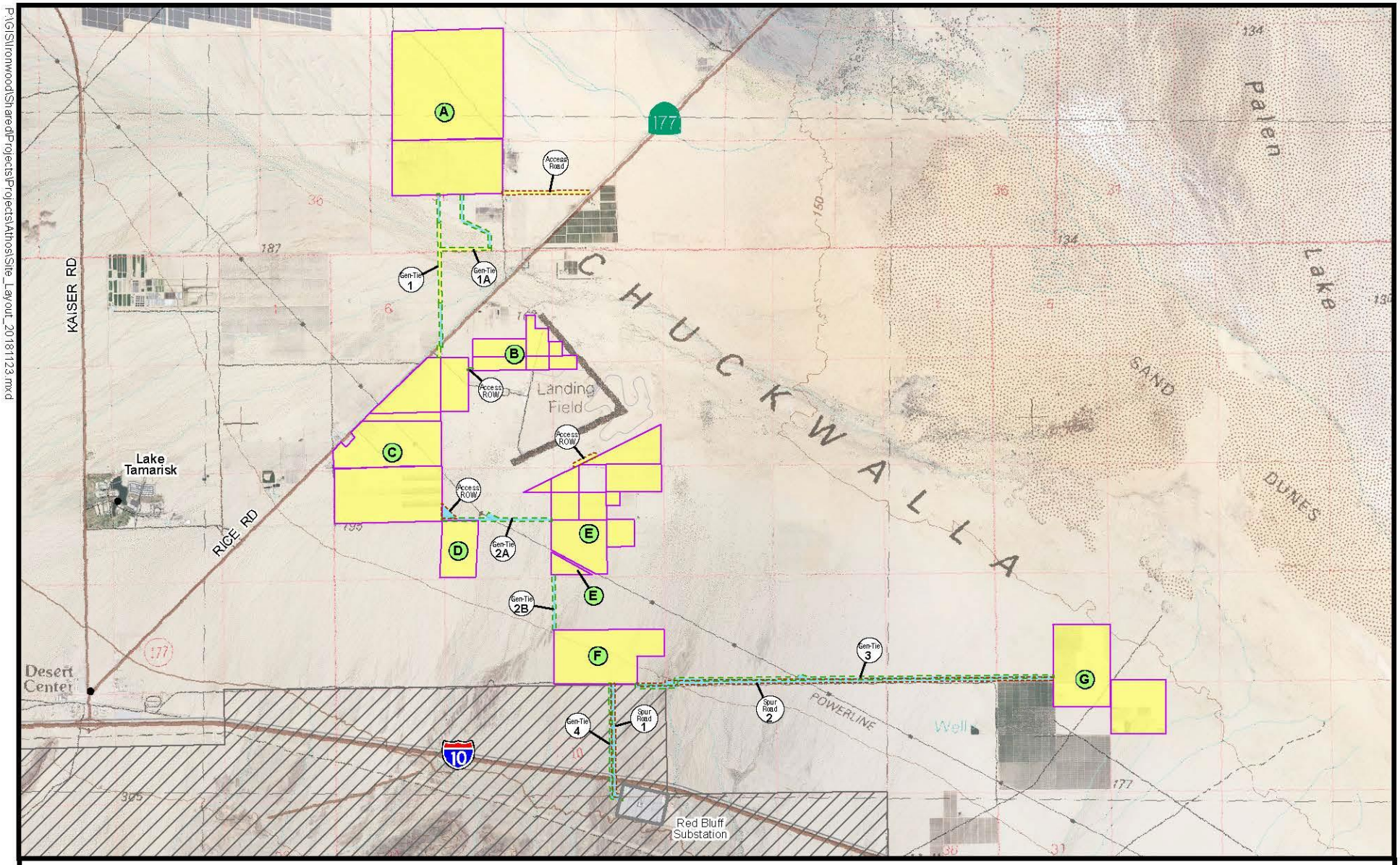

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Consulting

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Solar Farm Parcel
Gen-Tie Corridor
Access Road/Easement
BLM Administered Land
Private Land
Desert Tortoise Critical Habitat

FIGURE 2

Project Site Parcel Groups and Gen-Tie Segments

Athos Solar

2.2 Hydrology

The Project resides within the Colorado River Hydrologic Region (HR). The Colorado River HR covers approximately 13 million acres (20,000 square miles) in southeastern California and is the most arid HR in California with annual precipitation averaging 5.5 inches (DWR 1994). The Project is in the Big Wash, Lower Pinto Wash, and Palen Lake HUC 10 Hydrologic Areas, which flow to closed basins, not connected with the Colorado River. Palen Dry Lake and Ford Dry Lake represent the lowest elevations within the basin.

Desert washes within this region contract and expand dramatically in size due to extreme variations in flows, which can range from high-discharge floods to periods when surface flow is absent. The Project site lies between the alluvial fans emanating from the Eagle Mountains to the west, Chuckwalla Mountains to the south, and Coxcomb Mountains to the north.

The Project is situated in the lower alluvial fan that is characterized by less stabilized soils consisting of finer sand and silt, compared to the upper alluvial fan that supports more stabilized, rocky soils with well-defined channels. The topography the Project site is relatively flat with gradients of less than two percent. Ground surface elevations of the Project site range from approximately 500 feet amsl in the southeast (parcel group G) to 800 feet amsl in the south near the Red Bluff Substation.

Alluvial processes across the majority of the Project site generally flow from southwest to northeast, with the exception of the portion of the Project situated west of CA-177 (parcel group A and gen-tie 1A), which flows from northwest to southeast. Located south of the Project (parcel group F, gen-tie 2B, and gen-tie 3), the I-10 crosses the alluvial fan that emanates from the Chuckwalla Mountains. I-10 and associated wing dikes, which were constructed over 45 years ago, have altered natural surface flows from dozens of meandering small alluvial washes into concentrated discrete channels. Lancaster et al. (2014) noted that changes to drainage patterns resulting from the construction of I-10 translate into downstream hydrological degradation, rendering portions of the alluvial fan less active than under historical conditions. Minor washes located in the hydrological shadow of I-10 were degraded (transporting lower volumes of water and entrained sediment). Major, culverted washes received more surface flow and distribute a higher volume and fine sediment compared to conditions that preceded the construction of I-10. These effects persist under current conditions.

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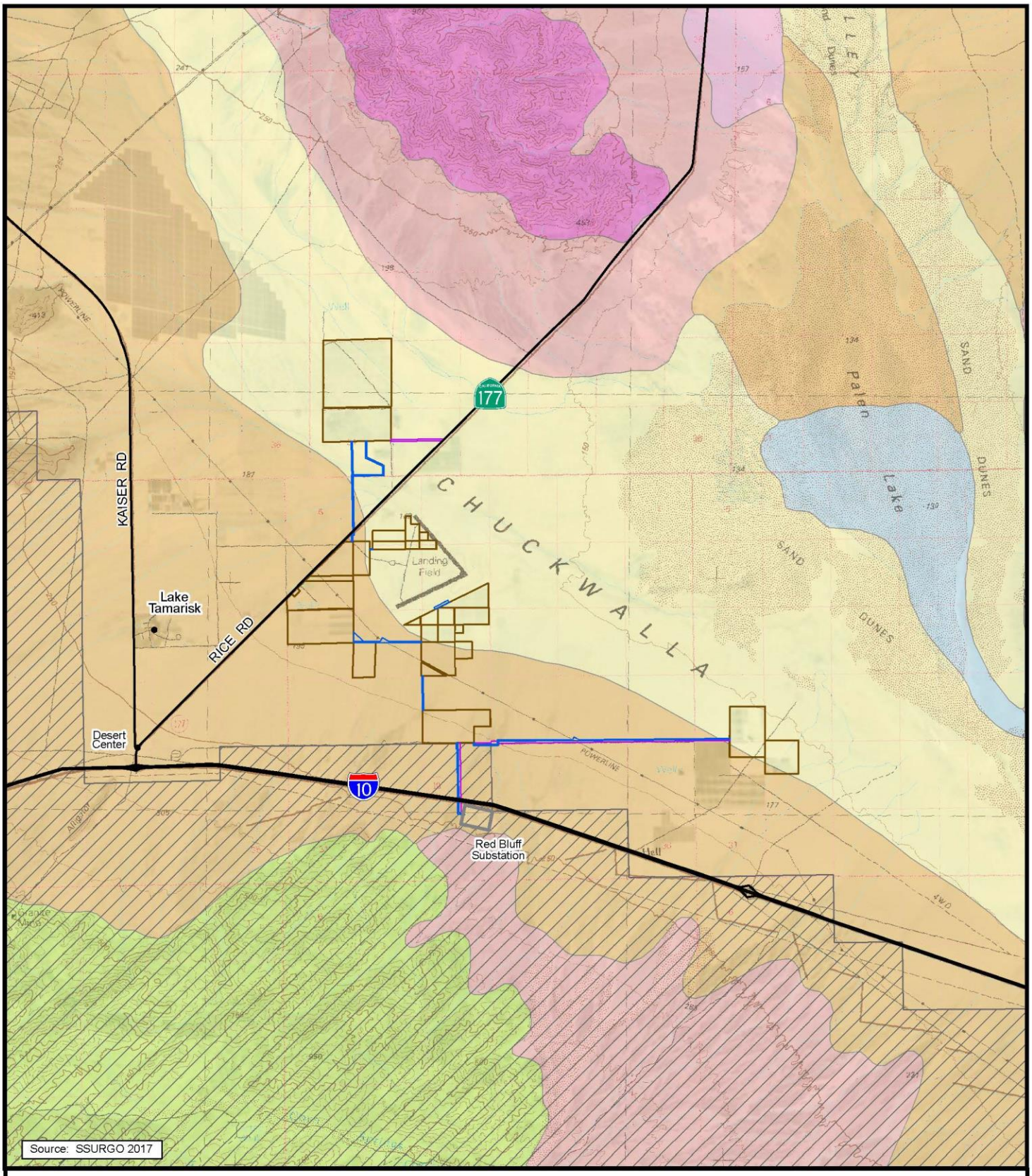

Ironwood Consulting

0 1 2 Miles

- Solar Facility Boundary
- Gen-Tie Corridor
- Access/Spur Road
- Desert Tortoise Critical Habitat
- Playas (s1138)
- Rillito-Gunsight (s1140)
- Rositas-Carrizo (s1137)
- Rositas-Dune land-Carsitas (s1136)
- St. Thomas-Rock outcrop (s1125)
- Tecopa-Rock outcrop-Lithic Torriorthents (s1126)
- Vaiva-Quilotosa-Hyder-Cipriano-Cherioni (s1141)

FIGURE 3

Soils

Athos Solar

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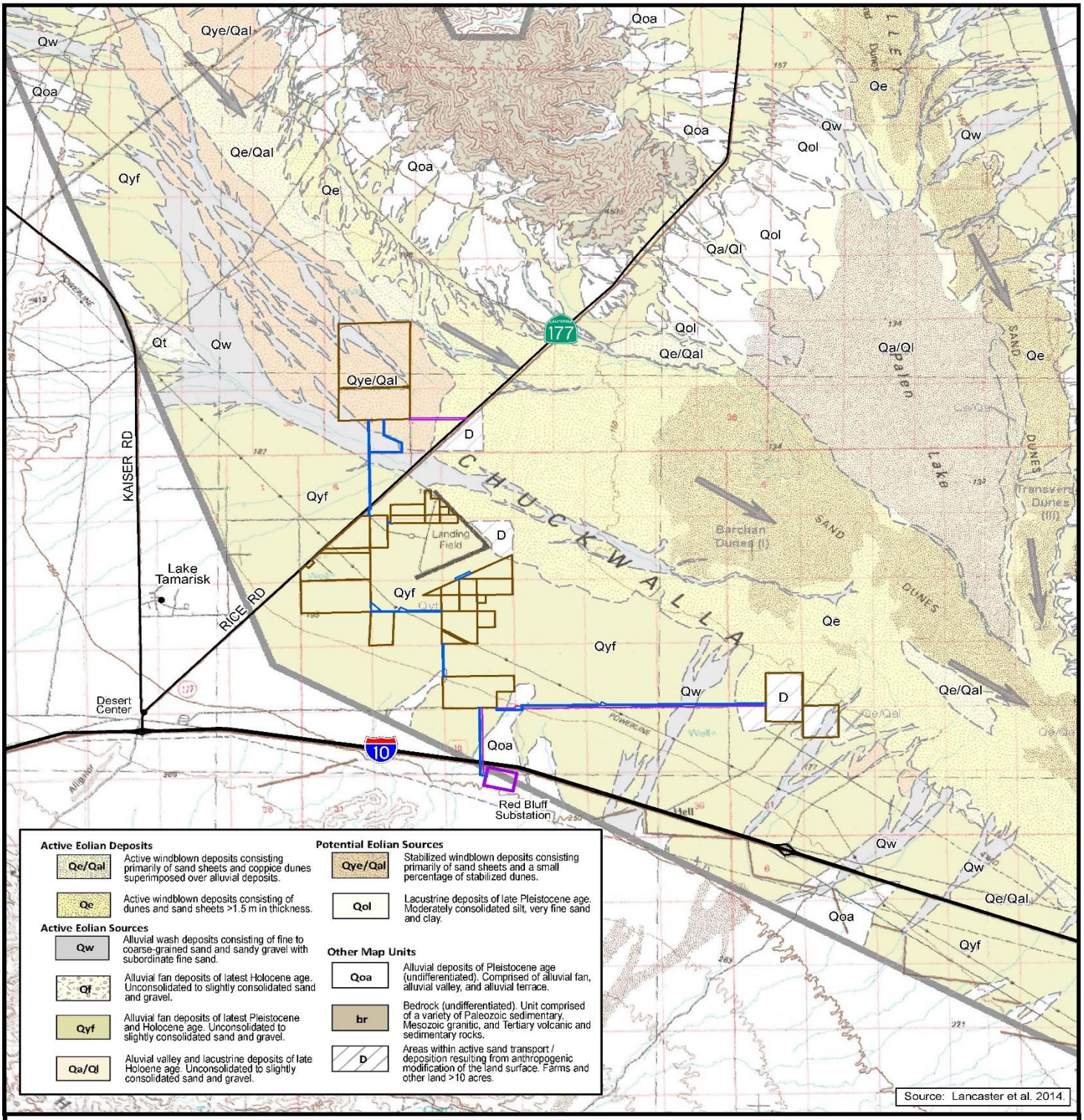

Ironwood
Consulting

0 1 2
Miles

Solar Facility Boundary
Gen-Tie Corridor
Access/Spur Road

FIGURE 4

Historic Sand Transport

Athos Solar

2.3 Soils

Soils mapped on the Project site consist of two general soil types per the United States General Soils Map [Soil Survey Staff 2018]: (1) the Rositas–Dune land–Carsitas map unit and (2) the Vaiva-Quilotosa-Hyder-Cipriano-Cherioni map unit. The Rositas-Dune land-Carsitas map unit is found on the eastern 53 percent of the site and is characterized by soils with a very high sand percentage (greater than 95 percent) and is highly susceptible to wind erosion. The remaining 47 percent of the site was mapped as the Vaiva-Quilotosa-Hyder-Cipriano-Cherioni map unit characterized by soils with high percentage (greater than 65 percent) of sand with moderate susceptibility to wind erosion (Figure 3).

2.4 Sand Transport System

The Project site is located within the Chuckwalla Valley, a region of active aeolian (wind-blown) sand migration and deposition. Aeolian processes play a major role in the creation and establishment of sand dune formations and habitat in the Chuckwalla Valley and those within the project area. Aeolian sands (dunes, sand fields, and similar habitats) are important habitats for certain plants and animals, including Mojave fringe-toed lizard (addressed in Section 4).

In conjunction with the DRECP process, the Department of Conservation's California Geological Survey prepared a regional Eolian System Mapping Report for Eastern Riverside County in 2014 (Lancaster et al. 2014; note that eolian and aeolian are alternate spellings of the same word). Lancaster et al. (2014) characterized the majority of the Project as Qyf, which is described as modern alluvial fan deposits consisting of 'unconsolidated to slightly consolidated sand and gravel that is considered an active aeolian source (Figure 4).

<u>Private Components</u>

Parcel groups C-F are all mapped as Qyf but several of these have been affected by anthropogenic changes, with the exception of parcel groups D and F, which still have native vegetation community cover.

Parcel group A, is categorized as a potential aeolian source, is mapped primarily as Qye/Qal and characterized as active windblown deposits consisting primarily of sand sheets and coppice dunes superimposed over alluvial deposits. A small portion of parcel group A was categorized as being Qw (active eolian source) and is characterized as alluvial wash deposits consisting of fine to coarse-grained sand and sandy gravel with subordinate fine sand. Active eolian sources surrounding parcel group A include areas northwest and southwest of it, but are primarily stabilized windblown deposits.

A northern portion of gen-tie segments 1 and1A are also categorized as Qw, making that portion an active eolian source, but north and south of that portion are stabilized sand or slightly consolidated sand and gravel.

Parcel group G is considered to have active sand transport that has been affected by anthropogenic modifications, such as agriculture, with some alluvial deposits. Active eolian sources surrounding parcel group G, include areas north and south of the parcel group that contain fine sand and have active windblown deposits.

Public Components

A majority of the public components of the project site are mapped as Qyf, with the exception of small portions within gen-tie segments 1, 1A,2B, 3, and 4. These components have portions that are categorized as active eolian sand but have consolidated sand and gravel.

2.5 Rainfall

Measurements of precipitation during winter (October through March) and summer (April through September) periods are important in determining the efficacy of both wildlife and special status plant surveys. Data were obtained from the Western Regional Climate Center (WRCC 2018) for the most proximate stations to the Project site: Blythe Airport and Eagle Mountain weather stations (approximately 37 miles and 8 miles from the Project site, respectively). Historical rainfall data from 2009 to 2018 were totaled and averaged (Table 2). Over the period of analysis, the highest winter rainfall occurred in 2010 and highest summer rainfall occurred in 2012. Since 2014, annual winter and summer rainfall has measured less than 50% compared to the peaks in 2010 and 2012. Winter rains prior to the spring 2018 survey were extremely low.

Table 3. Regional Rainfall Totals Since 2009

Year	October to March (inches) *	April to September (inches) *
2009	2.4	0.2
2010	4.8	0.1
2011	2.5	1.2
2012	1.0	3.3[1]
2013	1.5	2.6
2014	0.7	1.2
2015	2.1	1.3
2016	1.5	0.7
2017	3.4	1.1

2018	0.1	0.5

* Seasonal average of Blythe Airport and Eagle Mountain weather stations

2.6 Vegetation

2.6.1 Natural Communities

Vegetation communities in the Project area were mapped and classified by Chris Blandford, of Ironwood Consulting, using Holland (1986) and cross-referencing with *A Manual of California Vegetation, 2nd edition* (Sawyer et al. 2009) and the National Vegetation Classification System (NVCS) referenced in the DRECP. Vegetation was mapped by drawing vegetation polygons on aerial images in the field. These field maps were then digitized into GIS shapefiles using ArcGIS (version 10.4) and one-foot pixel aerial imagery on a diagonal flat screen monitor at the office. The smallest mapping unit delineated was approximately 0.10 acres; most mapped vegetation boundaries are accurate to within approximately 10 feet.

The small-scale PDF vegetation map provided with this report was generated from ArcGIS shapefiles; the shapefiles were used to calculate areas of each vegetation type and may be viewed at larger scale for management or analysis purposes, if needed. Any vegetation map is subject to imprecision for several reasons:

- Vegetation types tend to intergrade on the landscape so that there are no true boundaries in the vegetation itself. In these cases, a mapped boundary represents best professional judgment.
- Vegetation types as they are named and described tend to intergrade; that is, a given stand of real-world vegetation may not fit into any named type in the classification scheme used. Thus, a mapped and labeled polygon is given the best name available in the classification, but this name does not imply that the vegetation unambiguously matches its mapped name.
- Vegetation types tend to be patchy. Small patches of one named type are often included within mapped polygons of another type. The size of these patches varies, depending on the minimum mapping units and scale of available aerial imagery.

The majority of the Project site is disused or fallow agricultural land. There are two primary natural vegetation communities (creosote bush scrub and desert dry wash woodland) as well as one distinct natural habitat type (desert pavement) within the gen tie routes and proposed solar fields D and F. Some of the former agricultural lands have partially recovered from previous disturbance and are mapped as recovering creosote bush scrub or salt bush scrub. One vegetation community (desert dry wash woodland) is identified by BLM (NECO Plan 2002) and CDFW (2010) as sensitive due to the association with alluvial processes and would likely be considered California State jurisdictional waters. Natural vegetation communities occur on both

private and public components of the Project while the recovering communities and developed areas occur only on private components. Vegetation communities on the Project site are summrized in Tables 4 and 5 and depicted on Figure 5.

Table 4. Vegetation and Land Cover Acreages by Land Ownership

Vegetation or Land Cover	ACREAGES			
	Private Components		Public Components	Vegetation Habitat Type Subtotals
	Solar facility	Gen-tie ROW*	Gen-tie ROW *	
Natural vegetation and habitat types				
Sonoran creosote bush scrub	295.9	15.4	106.6	**417.9**
Desert pavement	7.5	0	16.4	**23.9**
Desert dry wash woodland	91.2	12.2	58.0	**161.4**
subtotals	*394.6*	*27.6*	*181.0*	***603.2***
Recovering vegetation and habitat types				
Recovering creosote bush scrub	289.7	12.0	1.2	**302.9**
Recovering salt bush scrub	183.3	-	-	**183.3**
subtotals	*473.0*	*12.0*	*1.2*	***486.2***
Anthropogenic land use and cover types				
Developed/disturbed	167.9	0.9	3.8	**172.6**
Active agriculture	151.2	-	-	**151.2**
Fallow agriculture	2,032.6	0.7	7.9	**2,041.2**
Open water (agricultural pond)	2.3	-	-	**2.3**
subtotals	*2,354.0*	*1.6*	*11.7*	***2,367.3***
TOTAL	***3,221.6***	***41.2***	***193.9***	***3456.7***
SOLAR FACILITY TOTAL				**3221.6**
GEN-TIE TOTAL				**235.1**
PRIVATE TOTAL				**3262.8**
PUBLIC TOTAL				**193.9**

**Includes ROW access, access road, and spur roads*

2.6.1.1 Sonoran Creosote Bush Scrub

Sonoran creosote bush scrub has a State Rarity rank of S5 (CDFW 2018d), being demonstrably secure, and is not designated as a sensitive plant community by BLM. It is synonymous with *Larrea tridentata -Ambrosia dumosa* alliance (Sawyer et. al 2009) and *Lower Bajada and Fan Mojavean-Sonoran Desert Scrub* (NVCS). Sonoran creosote bush scrub occurs on well-drained, secondary soils of slopes, fans, and valleys and is the basic creosote bush scrub habitat of the Colorado Desert (Holland 1986). Sonoran creosote bush scrub covers much of the undisturbed portions of the Project site and intergrades with desert dry wash woodland along desert washes. Within the Project site, this community occurs on sandy soils with a shallow clay pan. Dominant plants within this community are creosote bush and white bursage. Other occasional components include indigo bush (*Psorothamnus emoryi*), sweetbush (*Bebbia juncea*), and button brittlebush (*Encelia frutescens*).

There are also areas of recovering creosote bush scrub within the Project site where formerly fallow agricultural areas are recovering back to native vegetation. These areas have recolonized with ruderal species and sparse native vegetation with some evidence of former agricultural use.

Private components within Sonoran creosote bush vegetation include parcel groups D and gen-tie 2A. Those with recovering creosote bush scrub include parcel groups C and E. Public components within Sonoran creosote bush vegetation includes gen-tie segments 1, 1A, 2A, 2B, 3 and ROW access. There is no recovering creosote bush scrub on the public components.

Photo 1. Sonoran creosote bush scrub vegetation

2.6.1.2 Desert Dry Wash Woodland

Desert dry wash woodland is a sensitive vegetation community recognized with a rarity rank of S4 (CDFW 2018d). Desert dry wash woodland is characteristic of desert washes, and is likely to be regulated by CDFW as jurisdictional state waters. This community is synonymous with blue palo verde (*Parkinsonia florida*) - ironwood (*Olneya tesota*) (microphyll) woodland alliance (Sawyer et. al 2009) and Sonoran - Coloradan Semi Desert Wash Woodland / Scrub (NVCS). Holland (1986) describes this community as an open to relatively densely covered, drought-deciduous, microphyll (small compound leaves) riparian scrub woodland, often supported by braided wash channels that change following every surface flow event. Within the Project site this vegetation community is dominated by an open tree layer of ironwood, blue palo verde, and smoke tree (*Psorothamnus spinosus*). The understory is a modified creosote scrub with big galleta grass (*Hilaria rigida*), brittlebush (*Encelia farinosa*), desert lavender (Condea [=*Hyptis emoryi*] *emoryi*), and occasional Russian thistle (*Salsola tragus*).

On the private components, desert dry wash woodland occurs within parcel groups D, F, and gen-tie segments 1, 1A, and 3. On the public components, desert dry wash woodland occurs within gen-tie segments 1, 1A, 2A, 2B, and 3.

Photo 2. Desert Dry Wash Woodland vegetation

2.6.1.3 Desert Pavement

The term desert pavement is primarily descriptive of soil and substrate conditions, rather than vegetation. It has a state rarity rank of S4 (CDFW 2018d) and is synonymous to the rigid spineflower-hairy desert sunflower (*Chorizanthe rigida-Geraea canescens)* desert pavement sparsely vegetated alliance (Sawyer et. al 2009). It is sparsely vegetated with an intermittent layer of cryptogamic crust. The ground surface is sandy and gravelly mixed alluvium with various rocks and gravel. The shrub layer of creosote bush is extremely sparse. The herb layer, though sparse within this community on the Project site, is slightly larger than the shrub layer, and is characterized by rigid spine flower and desert sunflower. Desert pavement is often interwoven between areas of creosote bush scrub and desert dry wash woodland where it occurs on the Project. Other occasional plants in the herb layer include annual buckwheat (*Eriogonum* sp.*)* and brittle spineflower (*Chorizanthe brevicornu*).

On the private components, desert pavement occurs in parcel group F and gen-tie segments 3 and 4. On the public components, desert pavement occurs in gen-tie 2B, gen-tie 3, and gen-tie 4.

Photo 3. Desert Pavement

2.6.1.4 Desert Saltbush Scrub (recovering)

Desert saltbush scrub has a state rarity rank of S4 (CDFW 2018d). It is synonymous to an Arizona honey sweet (*Tidestromia oblongifolia*) provisional alliance - saltbushes are less dominant than Arizona honey sweet within this vegetation community on the Project site. It is typically found on alluvial fans, dune aprons, and steep colluvium (CNPS 2009).

This vegetation community is located only on the private component of the Project site at parcel group G and is surrounded by active and fallow agriculture or developed areas. It is recovering from previous agricultural use and has been recolonized by ruderal species and sparse native vegetation.

Photo 4. Recovering Desert Saltbush Scrub

2.6.1.5 Agriculture

Agricultural land is not a natural vegetation community described by Holland (1986) or Sawyer et al. (2009). Active and fallow agricultural fields cover a majority of the solar field portions of the Project site (71%). The active agricultural area is an active date palm farm. The fallow agricultural areas consist of abandoned jojoba, citrus, or date palm farms.

On private land, agriculture occurs on parcel groups A, C, B, D, E, and G. On public land, fallow agriculture occurs on the ROW access areas only.

Photo 5. Active Agriculture – Date Palm Farm

Photo 6. Fallow Agriculture - Abandoned Citrus Groves

2.6.1.6 Developed/Disturbed

Developed and disturbed areas consist of abandoned homes, buildings, completely denuded sections of old agricultural fields, or unnamed dirt roads that are in regular use.

Within private components, developed/disturbed areas include parcel groups A, B, C, and G. There are no developed/disturbed areas in public components.

Photo 7. Developed/Disturbed Land Cover

Table 5. Summary of Vegetation Communities

Vegetation Community/Land Cover	Private Components		Public Components
	Solar Parcel	Gen-tie	Gen-tie
Sonoran creosote bush scrub	D, F	1, 1A	1, 1A, 2A, 2B, 3, 4, ROW access, spur roads 1 and 2
Desert dry wash woodland	D, F	1, 1A, 3	1, 1A, 2A, 2B, 3, 4, ROW access, spur roads 1 and 2
Desert pavement	F	3	2B, 3, 4, spur roads 1 and 2
Recovering creosote bush scrub	C, E	Access road	-
Recovering salt bush scrub	G	3	-
Fallow Agriculture	A, B, C, D, E, G	2C, ROW access	ROW access
Active Agriculture	G	-	-
Developed/disturbed	A, B, C, G	ROW access	-

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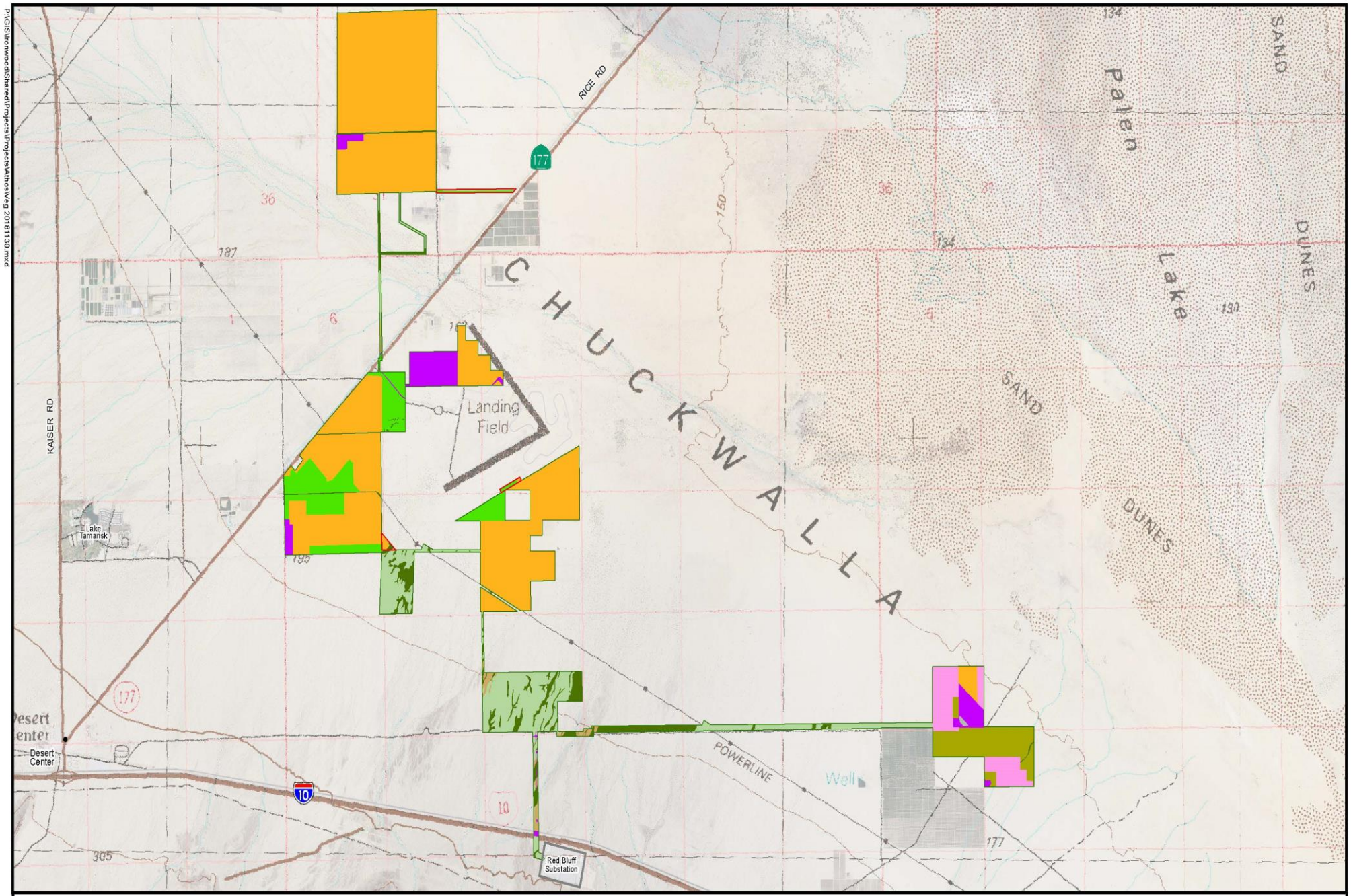

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Feet

Native Vegetation
- Creosote Bush Scrub
- Desert Dry Wash Woodland
- Desert Pavement
- Recovering Creosote Bush Scrub
- Recovering Salt Bush Scrub

Non-Native Vegetation
- Active Agriculture
- Developed/Disturbed
- Fallow Agriculture

- Athos Solar Project
- Access Road/Right of Way
- Red Bluff Substation

FIGURE 5

Vegetation Communities

Athos Solar

2.6.2 Invasive Weeds

Invasive weeds are non-native (exotic) plants included on the weed lists of the California Invasive Plant Council (Cal-IPC), or those weeds of special concern identified by the BLM. There are also some weeds designated as "noxious" by California Department of Food and Agriculture (CDFA) or the US Department of Agriculture. Invasive weeds are of concern in wild lands because of their potential to degrade habitat and disrupt the ecological functions (Cal-IPC 2018). The following invasive weeds were identified on the Project site during Ironwood's field surveys.

Sahara Mustard (*Brassica tournefortii)*

Sahara mustard has a highly invasive rating on Cal-IPC (Cal-IPC 2018). It has severe ecological impacts on physical processes, plant and animal communities, and vegetation structure, as well as having reproductive biology and other attributes that are conducive to moderate to high rates of dispersal and establishment (Cal-IPC 2018). Sahara mustard is native to the deserts of North Africa, the Middle East, and the Mediterranean regions of southern Europe (Bossard et al. 2000). Initial establishment of this species in California occurred through the importation of date palms from the Middle East to the Coachella Valley during the early 1900s (Bossard et al. 2000). Sahara mustard currently occurs across Riverside County, as well as all neighboring counties (Cal-IPC 2018). During the field surveys, Sahara mustard was found on the Project site and concentrated in the agricultural and developed/disturbed areas of the Project. One dried individual was detected on gen-tie 3. It was not detected on the native parcel groups.

Russian Thistle (*Salsola traqus*)

Russian thistle has a Limited-to-Moderate rating by the Cal-IPC, indicating a species that is invasive but has an ecological impact that is minor on a statewide level, or there was not enough information to justify a higher score. Its reproductive biology and other attributes result in low to moderate rates of invasiveness. Ecological amplitude and distribution are generally limited, but it may be locally persistent and problematic. Russian thistle is listed on the CDFA Noxious Weed List, making it subject to state laws and regulations regarding its spread and pollution of an area (CDFA 2018). Russian thistle is an annual herb that is found in open and disturbed areas in the Mojave Desert and throughout western North America (MacKay 2003). Otherwise known as tumbleweed, it becomes large and round with age, the dried plant breaking off and rolling with the wind to aid in seed dispersal. Native to Eurasia, this plant was likely introduced around the turn of the century. It typically occurs on sandy soils on disturbed sites, cultivated and abandoned fields, and disturbed natural and semi-natural plant communities (CDFA 2018). Russian thistle was found in disturbed areas and agricultural parcels of the project site, but not on the native areas, or the gen-tie.

Redstem filaree (*Erodium cicutarium*)

Redstem filaree has a limited invasive rating on Cal-IPC (Cal-IPC 2018) and is not listed on the CDFA Noxious Weed List (CDFA 2018). This species is an aggressive annual/biannual of the family Geraniaceae (geranium) family that is very widespread throughout California and is commonly found along roadsides, grasslands, fields, and semi-desert areas. It occurs across both public and private parcels of the project and often carpets large areas, out-competing native grasses and forbs.

Tamarisk or Saltcedar (*Tamarix ramosissima*)

Tamarisk or saltcedar is a BLM weed species of concern. It is also rated as highly invasive by Cal-IPC and rated B by CDFA, meaning it is a pest of known economic or environmental detriment of limited distribution. Tamarisk or saltcedar was observed in the agriculturally developed areas of the Project site and along the gen-tie line. It was not found in ephemeral washes and drainages on the areas with native vegetation within the project area.

Mediterranean grass (*Schismus barbatus* and *S. arabicus*)

Mediterranean grass has a limited invasive potential (CAL-IPC 2018) and is not listed by CDFA. It is an annual grass found in both central and southern California, particularly in disturbed areas and deserts, probably introduced at the turn of the century (CDFA 2018). It contributes to increased fire ignition and spread due to accumulation of dry thatch during dry seasons. Wildfire, in turn, contributes to the type-conversion of desert shrubland into annual grassland. These species' reproductive biology and other attributes result in low to moderate rates of invasiveness. Spread may occur from seed dispersal associated with soil disturbance, vegetation cutting, and from vehicle tires and footwear. Increase of these species is most likely to occur in areas where it already exists. Mediterranean grass is prevalent throughout Sonoran creosote bush scrub and agricultural portions of the Project site. BLM and other agencies recognize that because of its widespread distribution, Mediterranean grass is not feasible to eradicate.

Highway Ice Plant *(Carpobrotus edulis)*

Highway ice plant is considered highly invasive by CAL-IPC with an A-1 listing. It is not listed on the CDFA noxious weed list. Highway ice plant is a mat-forming perennial succulent native to coastal areas of South Africa. It was brought to California in the early 1900s for soil stabilization, was widely promoted as an ornamental plant for home gardens and is still available at some nurseries. It tolerates a range of soil moisture and nutrient conditions and will spread easily to natural areas via mammalian frugivores (D'Antonio 1990). It can suppress the growth of both native seedlings and mature native shrubs. Only a few isolated individuals were observed in the easternmost parcel group G, near the date farm near artificial water

sources. Invasiveness of highway ice plant is low due to the few individuals observed; they can be removed mechanically.

Mexican Fan Palm *(Washingtonia robusta)*

Mexican fan palm is considered moderately invasive by CAL-IPC with a rating of moderate-alert and not listed on the CDFA noxious weed list. It is a single-trunked palm tree commonly used as a landscape ornamental that has become invasive in riparian areas, orchards and landscaped areas. This palm can create monospecific stands in riparian areas, and dead fronds of the tree can create a fire hazard. Only a few individuals were observed on parcel group G near the date farm where irrigation water is present. It can be easily controlled by removing the individuals and seedlings. Even without control, it is unlikely to spread into surrounding dry desert lands.

2.6.3 Cacti, Yucca, and Native Trees

Native cacti, succulents, and trees are generally not ranked as special status plant species but the harvesting of these native plants is regulated under the California Native Plant Protection Act (Fish and Game Code §§1900-1913) and the California Desert Native Plant Act of 1981 (Food and Agricultural Code § 80001 et. seq.; Fish & Game Code §§1925-1926). Any vegetation to be salvaged and removed from the site (such as cactus or yucca) would be subject to sale at appraised value, according to CFR 43:5420.0-6. If the cacti or yucca is salvaged and/or transplanted offsite, as approved by BLM, then this resource is not subject to sale but remains in BLM ownership. A total of five cactus species were observed within both the private and public components of the Project. These species included:

- silver cholla (*Cylindropuntia echinocarpa*)
- pencil cholla (*C. ramosissima*)
- barrel cactus (*Ferocactus acanthodes*)
- common fishhook cactus (*Mammillaria tetrancistra*)
- beavertail cactus (*Opuntia basilaris*).

Additionally, ocotillo (*Fouquieria splendens* ssp. *splendens)* and five species of native trees were found within the private and public components of the Project site:

- desert ironwood (*Olneya tesota*)
- blue palo verde (*Parkisonia florida*)
- honey mesquite (*Prosopis glandulosa*)
- smoke tree (*Psorothamnus spinosus*)
- catclaw acacia (*Senegalia greggii*)

3 DATA COLLECTION METHODS

3.1 Special Status Species Definition

Special status species are those that have been afforded special recognition by federal, state, or local resource agencies or organizations, are often of relatively limited distribution, and typically have unique habitat conditions, which also may be in decline. Special status criteria include:

- Officially listed or candidates for listing by California or the federal government as endangered, threatened, or rare;
- Plants or animals which meet the criteria for listing, even if not currently included on any list, as described in Section 15380 of the California Environmental Quality Act (CEQA);
- BLM, USFWS, or U.S. Forest Service Sensitive Species;
- Plants listed in the CNPS Inventory of Rare and Endangered Plants of California (CNPS 2018);
- Wildlife species identified by CDFW as Species of Special Concern (CNDDB 2018);
- Plants or animals included in the CDFW lists of Special Plants or Special Animals (CNDDB 2018);
- Protected under other statutes or regulations (e.g., Migratory Bird Treaty Act, Bald and Golden Eagle Protection Act, etc.)

All surveys were conducted per DRECP DFA Biological Conservation Management Action (CMA) requirements for each species within the timing recommended. Any modifications are further explained within each individual sensitive species section below.

3.2 Wildlife Surveys

Full coverage wildlife surveys were conducted during the following periods:

- Fall Surveys October 21 to 26, 2017 (Parcels containing native vegetation, some of which have since been removed from the Project footprint)
- Spring Surveys May 9 to 27, 2018 (disturbed parcels and the gen-tie)
- Fall Surveys October 30-31, 2018 (new gen-tie 1 alignment, new gen-tie 1A, access road, and spur roads 1 and 2)

Wildlife surveys in 2017 and 2018 employed belt transects approximately 10 meters (32.8 feet) apart in order to provide 100 percent (full) coverage within 395.5 acres of native and 478.1 acres of recovering native vegetation within the proposed solar facility. Along the gen-tie line, spur roads, and access roads, 10-meter belt transects were employed 30 meters on each side of the centerline, resulting in a 60-meter-wide survey corridor. Within the groups of solar facility parcels that contained non-native vegetation (current and fallow agriculture, as well as

recovering former agriculture), surveys employed belt transects approximately 20 meters (65.6 feet) apart. A preliminary Project design included parcels and gen-tie routes that are no longer components of the proposed Project, including areas east of parcel group E and west of parcel group F. Initial field surveys covered these areas, and relevant results are included in this BRTR.

Survey crews consisted of experienced wildlife biologists. Surveys were conducted by walking linear transects and visually searching for live individuals or sign of any sensitive species. All holes detected that may be inhabited by sensitive species were carefully inspected for potential occupancy, or sign of recent use as burrows or burrow complexes. Special emphasis was placed on searching around the bases of shrubs and along the banks of shallow washes. Burrows were carefully examined and assigned to the wildlife species that may have inhabited them based on indicator signs within the burrow or near the mouth of the burrow.

During wildlife surveys, biologists recorded all wildlife species observed, regardless of status. Common species were tallied at the end of each transect and recorded throughout each day by each crew. All locational information for special status species observations and sign detected were recorded using a Global Positioning System (GPS) unit and each occurrence was assigned a unique identifier. In addition to recording sign with the GPS unit, standardized paper datasheets were also completed.

3.2.1 Desert Tortoise

Wildlife surveys on the gen-tie routes and on private land parcels with native vegetation conformed to full coverage desert tortoise protocol surveys (USFWS 2010a). Surveys on the disturbed or recovering lands (i.e., current and former agriculture) also conformed to the protocol, except that transects were spaced at 20-meter (65.6 feet) width due to the poor habitat quality.

All tortoise sign [e.g., live tortoises (all age classes), shell/bone/scutes, scats, burrows/pallets, tracks, egg shell fragments, and courtship rings] observed was recorded. The condition of burrows was categorized per the following class designations (USFWS 2009):

1. currently active, with desert tortoise or recent desert tortoise sign;
2. good condition (no evidence of recent use) - definitely desert tortoise;
3. deteriorated condition (including collapsed burrows) - definitely desert tortoise;
4. good condition - possibly desert tortoise; and
5. deteriorated condition (including collapsed burrows) - possibly desert tortoise.

3.2.2 Mojave Fringe-toed Lizard

There is no protocol for surveying Mojave fringe-toed lizards, but during wildlife surveys, special attention was given to the search for live individuals in soft, sandier soils where the potential for the species to occur is high. In areas with a higher density of Mojave fringe-toed

lizards observed within close proximity of one another (within 20 meters), groups of lizards were tallied and represented by a single data point on project maps.

3.2.3 Couch's Spadefoot Toad

A reconnaissance level survey for Couch's spadefoot toad was conducted in conjunction with 2018 fall plant reconnaissance surveys searching for areas that may provide suitable habitat for reproduction. Wash areas and drainages within the both the parcel groups and gen-tie were walked with meandering transects. Areas where water may accumulate and retain for at least 2 weeks following heavy rain were recorded as potential Couch's spadefoot toad reproductive habitat.

3.2.4 Avian Species

3.2.4.1 Western Burrowing Owl

Survey recommendations in both the 1993 California Burrowing Owl Consortium (CBOC) Guidelines and 2012 CDFW Staff Report include baseline data collection and an assessment of site use by burrowing owl. One full-coverage survey was conducted during the breeding season, which is consistent with Phase II of the CBOC 1993 Guidelines and partially consistent with the 2012 CDFW Staff Report. Occupancy of burrowing owl habitat is confirmed at a site when at least one burrowing owl, or its sign at or near a burrow entrance, is observed within the last three years (CDFW 2012; CBOC 1993).

These surveys provided a greater level of coverage than the 30-meter spacing recommended in the 1993 CBOC Guidelines and the 20-meter spacing recommended in the 2012 CDFW Staff Report. All burrows detected during wildlife surveys were assessed for wildlife occupancy, to ensure detection of any special status species, including burrowing owl, that may have occupied a burrow. The 10-20 meter transect spacing also increased the likelihood of flushing live burrowing owls during the survey. All sign of burrowing owl, including individuals, feathers, tracks, white wash, pellets, and suitable burrows were recorded if present.

3.2.4.2 Golden Eagle

No golden eagles were incidentally observed during wildlife surveys conducted for the Project. Targeted surveys for golden eagles were not performed for the Project due to numerous surveys conducted in the Project vicinity and Chuckwalla Valley within the last ten years. A compilation of survey methodology and results from other projects that have conducted these surveys in the last ten years is provided in the results section of this report.

3.2.4.3 Elf Owl and Gila Woodpecker

Wildlife surveys conducted in spring 2018 included presence/absence surveys for elf owl and Gila woodpecker surveys due to potential suitable habitat that may occur within the Project vicinity. Visual and auditory surveys conducted for these two species were focused on the

easternmost parcel near the date palm farm where perches, potential nesting trees, and plentiful water from irrigation are present (parcel group G).

Twelve locations were selected for elf owl callback surveys (Figure 7). Approximately 10 minutes were spent at each station at dawn and dusk between May 22-23, 2018. Biologists used smart phones and played elf owl calls from the Sibley Guide bird mobile application (Sibley 2018). Approximately two minutes of calls were played followed by one minute of listening for responses. This procedure was repeated 3-4 times per station and responses were recorded.

3.2.4 Special Status Bat Species

Targeted surveys for bats were not conducted and incidental observations of bats or bat roosts were not detected during wildlife surveys. Acoustic bat surveys previously conducted for nearby proposed project, Palen Solar Energy Project, provides supplementary information about bat populations within the project vicinity, further discussed in the section 4.1.8.

3.2.5 Other Special Status Wildlife Species

All sign of desert kit fox and American badger was recorded including live or dead individuals, scat, tracks, burrows, and burrow complexes. Activity for each burrow or complex was determined by the freshness of the sign found. If fresh tracks, scratches, or scat were found at a burrow or complex, it was categorized as active. The presence of old scat without tracks would indicate that a burrow or complex was inactive.

3.3 Special Status Plants

Focused special status plant surveys were conducted during the following periods:

- April 16-May 27, 2018 – All disturbed parcels
- May 5-9, 2018 - All parcels containing native vegetation, entirety of the gen-tie route, and access roads
- Reconnaissance-level surveys
    - September 9 and October 30 - spot checks for potential plant germination after reported rain within Project vicinity
    - November 19-21, 2018 – pedestrian survey in washes and drainages within parcel groups and gen-tie segments

Survey methodology was consistent with the following guiding documents:

- Guidelines for Conducting and Reporting Botanical Inventories for Federally Listed, Proposed, and Candidate Plants (USFWS 2000)
- Guidelines for Assessing the Effects of Proposed Projects on Rare, Threatened, and Endangered Plants and Natural Communities (CDFG 2009)
- CNPS Botanical Survey Guidelines (CNPS 2001)

- Survey Protocols for Survey and Manage Strategy 2: Vascular Plants (Whiteaker 1998).

Based upon review of the literature, a list of special-status plant species with potential to occur in the vicinity of the proposed project was compiled. Plant taxa were considered to be special-status species if they were classified as one or more of the following:

- Listed, proposed for listing, or candidates for listing as threatened or endangered under the federal Endangered Species Act (ESA);
- Listed as threatened or endangered, or candidates for listing under the California Endangered Species Act (CESA);
- Designated by BLM as Sensitive Plants: "all plant species that are currently on List 1B of the CNPS Inventory of Rare and Endangered Plants of California, are BLM sensitive species, along with others that have been designated by the California State Director" (BLM 2009; note that the CNPS Lists are now known as California Rare Plant Ranks, or CRPR);
- Listed as rare under the California Native Plant Protection Act;
- Meet the definition of rare or endangered under CEQA §15380 (b) and (d) (in some cases, these may include CRPR 2, 3, or 4 plant occurrences, which may be regionally significant if the occurrence is located at the periphery of the species' range, or exhibits unusual morphology, or occurs in an unusual habitat/substrate);
- Considered special-status species in local or regional plans, policies, or regulations, such as the NECO Plan/EIS.

Focused plant surveys performed in spring 2018 included visual coverage across the entire Project site. Surveys employed belt transects approximately 10 meters apart in areas with native vegetation cover, access roads, and the gen-tie routes in order to provide 100 percent coverage in those areas. In areas of former or active agriculture, belt transects were spaced at approximately 20 meters apart. Based on topography and open vegetation structure, the transect spacing was adequate to detect any potential sensitive species, if present, and inventory existing plants.

Only highly-experience botanists conducted plant surveys in areas of native vegetation on the project site (along gen-tie routes, and access roads). Plant surveys conducted in the former or active agricultural portions of the Project were coordinated by an experienced botanist; teams consisted of biologists experienced with plant identification. All surveyors were trained on diagnostic features and habitat notes of potential sensitive species that may occur (Appendix B). Surveys on the former or active agricultural parcel groups B, C, E, and G were conducted in conjunction with wildlife surveys. A cumulative list of all plant species observed during the surveys is provided in Appendix D.

The value of the 2018 spring plant survey may be limited due to the low winter rainfall during the 2017-2018 season (see Table 3). Regional winter rainfall from the two nearest weather stations showed rainfall averaging at 0.1 inches.

Late season rainfall for fall 2018 plant surveys was also limited. Spot checks occurred after reported rain events within the project vicinity for potential germination and fall blooms, but rain was insufficient to warrant a full focused fall plant survey. In late fall, a reconnaissance-level fall plant survey was conducted within washes, drainages, and areas where water accumulation may occur throughout the private and public components of the site by an experienced botanist to inventory plants occurring in those areas.

In addition to focused spring and fall plant surveys, a GIS desktop search, in high resolution, was conducted to delineate creosote rings that occur within the public components of the Project. This was field verified during fall 2018 reconnaissance plant surveys.

Table 6. Survey Personnel and Dates

Personnel	Survey Type	Area Surveyed	Survey Dates
R. Woodard	Habitat assessment	gen-tie	10/21/2017
R. Woodard	Habitat assessment	parcel groups	10/22/2017
R. Woodard, C. Mitchell	Wildlife survey	F	10/23/2017-10/24/2017
R. Woodard, C. Mitchell	Wildlife survey	D	10/25/2017
R. Woodard, C. Mitchell	Wildlife survey	gen-tie	10/26/2017-10/30/2017
K. Hughes, L. Chow	Plant survey	A	4/16/2018-4/20/2018
M. Baker, M. Cloud-Hughes, K. Hughes, C. Rousten	Plant survey	gen-tie	5/7/2018
M. Baker, M. Cloud-Hughes, K. Hughes, C. Rousten	Plant survey	F	5/8/2018-5/9/2018
M. Baker, M. Cloud-Hughes, K. Hughes, C. Rousten	Plant Survey	D	5/9/2018
B. Sandstrom	Wildlife/Plant Survey	C	5/9/2018
B. Sandstrom	Wildlife/Plant Survey	D	5/13/18 & 5/14/18
B. Sandstrom	Wildlife Survey	gen-tie	5/15/2018
R. Woodard, B. Sandstrom, J. Tony	Wildlife/Plant Survey	B	5/16/2018
R. Woodard, J. Tony	Wildlife/Plant Survey	E	5/17, 5/18, 5/19
R. Woodard, J. Tony	Wildlife/Plant Survey	E	5/17/2018
R. Woodard, B. Sandstrom, J. Tony	Wildlife Survey	gen-tie	5/20/2018
B. Sandstrom, J. Tony, R. Woodard, M. Rivera	Wildlife/Plant Survey	C	5/21, 5/24, 5/25
B. Sandstrom, J. Tony, R. Woodard, M. Rivera	Wildlife/Plant Survey	G	5/22/2018

Personnel	Survey Type	Area Surveyed	Survey Dates
B. Sandstrom, J. Tony, R. Woodard, M. Rivera	Wildlife/Plant Survey	G	5/23/2018
B. Sandstrom	Wildlife Survey	Access road, gen-tie	5/23/2018
B. Sandstrom, J. Tony, R. Woodard, M. Rivera, C. Fabry	Wildlife Survey	A	5/26/2018
B. Sandstrom, J. Tony, R. Woodard, M. Rivera, C. Fabry	Wildlife Survey	A	5/26/2018-5/27/2018
K. Hughes	Fall Bloom Spot Check	Throughout Project site	9/3/2018
R. Woodard, M. Lopez	Wildlife Survey, Fall Bloom Spot Check	gen-tie alignments 1, 1A, access road and spur roads	10/30/2018-10/31/2018
K. Hughes	Reconnaissance Plant Survey/Couch's Spadefoot Habitat	Drainages and washes throughout Project Site	11/19/2018-11/28/2018

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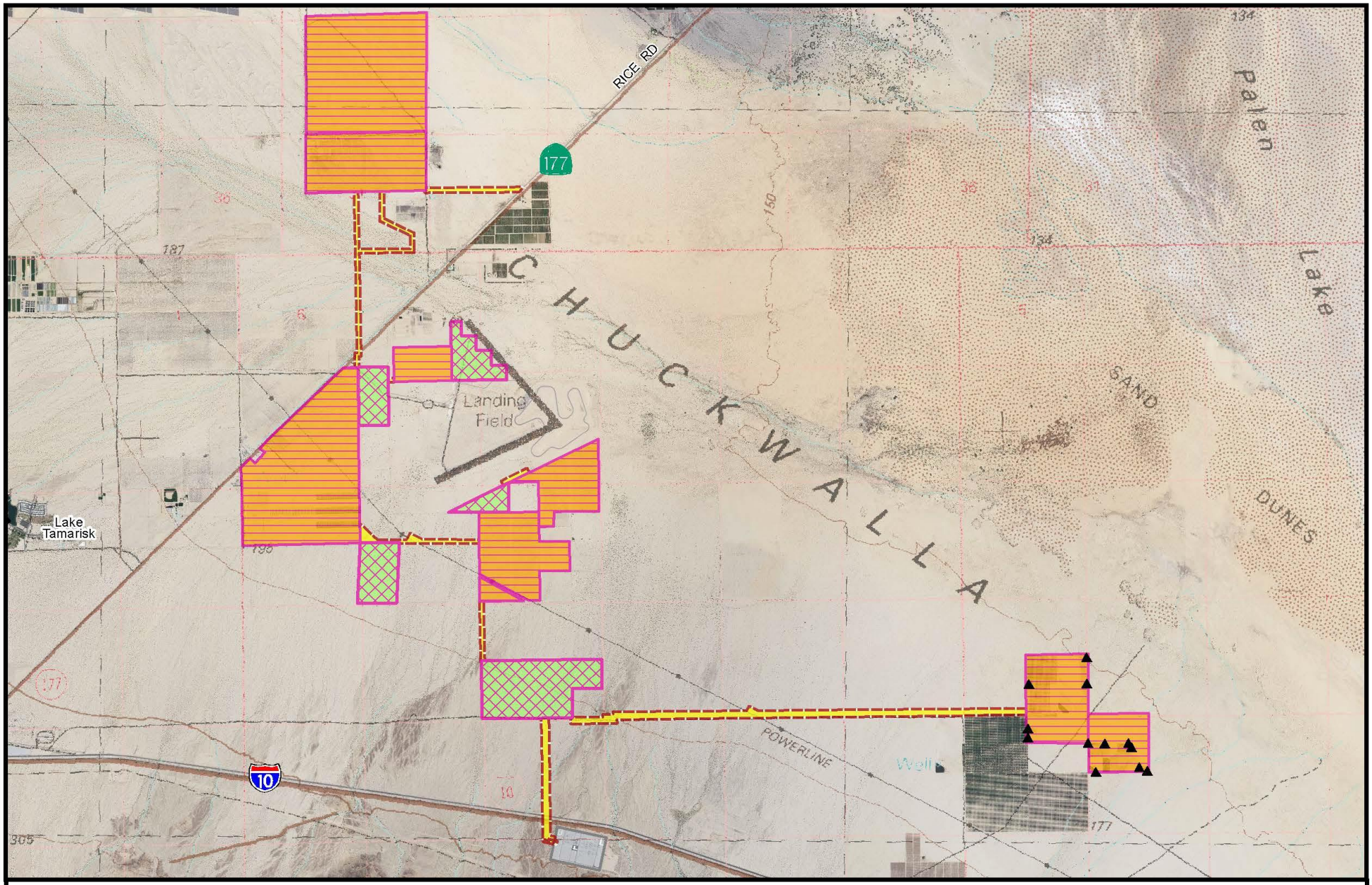

Ironwood
Consulting

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Feet

▲ Elf Owl Study Points
Red Bluff Substation

Plant and Wildlife Surveys, 10-meter (m) Transects
Plant Surveys 30-m Transects, Wildlife Surveys 20-m Transects
Gen-Tie Survey, 10-m Transects

FIGURE 6

Study Area

Athos Solar

4 RESULTS

4.1 Special Status Wildlife

Sixty-six special status wildlife species were reviewed for their potential to occur within the Project site and its vicinity using information gathered from regional plans and database records (Appendix A). Several species were determined to have a low probability of occurrence due to the absence of suitable habitat. Special status wildlife species observed within the Project site or with moderate potential to occur based on the presence of suitable habitat are discussed further in this section. A comprehensive list of wildlife species observed during previous surveys is included in Appendix C.

4.1.1 Desert Tortoise: *ST, FT*

Background

Desert tortoises (*Gopherus agassizii*) live north and west of the Colorado River in the Mojave Desert of California, Nevada, Arizona, and southwestern Utah, and in the Sonoran (Colorado) Desert in California (USFWS 1990). Desert tortoises inhabit a variety of habitats from flats and slopes dominated by creosote bush – white bursage communities, where a diversity of perennial plants is relatively high, to a variety of habitats in higher elevations. Tortoises are found most often on gentle slopes with sandy-gravel soils. Soils must be appropriately soft for digging burrows, but firm enough so that burrows do not collapse (Anderson et al., 2000). Tortoises typically prefer habitats with abundant annual forbs, grasses and cactus, which constitute its primary food sources. Plant species that have high potential for potassium excretion (high-PEP) may be critical to the diet of desert tortoise (Oftedal 2002; Oftedal et. al 2002).

The Project site is located within the Colorado Desert Recovery Unit for desert tortoises. The highest desert tortoise densities within this recovery unit (Murphy et al. 2007) occur in Chemehuevi and Ward valleys (approximately 60 miles north of the project site), on the Chuckwalla Bench within the Chuckwalla Desert DWMA (closest border is directly south of the Project), and in Joshua Tree National Park (closest border is approximately 2 miles north of the Project).

Desert tortoise habitat on the Project site has low predicted occupancy values (Nussear et al. 2009). These predicted occupancy values do not account for habitat degradation resulting from existing anthropogenic features (Nussear et al. 2009), which would further reduce the occurrence probability in disturbed areas. Predicted desert tortoise occupancy values of 0.3 or above are appropriate for identifying suitable habitat in this low desert region (BLM 2012). Project field survey results are described below. Desert tortoise habitat connectivity is discussed in Section 4.2, Wildlife Movement.

Private Components

Without considering anthropogenic disturbance, parcel groups A and B and gen-tie 1 have predicted occupancy value of less than 0.3 (Nussear et al. 2009). The remainder of the parcel groups and gen-tie routes range between 0.4 and 0.6. Only parcel groups, D and F, are undisturbed native habitat reflective of the predicted occupancy values (Figure 8).

Surveys detected no live desert tortoises or active tortoise sign within the private components. Within parcel group C, three burrows were detected that were of poor quality and not definitively tortoise. In parcel group F, three tortoise burrows of deteriorated condition were detected.

The agricultural properties (date palm farms) adjacent to the Project's eastern boundary (parcel group G), and the parcel groups near CA-177 (C and B) include a modern irrigation system and ponds. These ponds have likely subsidized wildlife that prey on desert tortoises, including coyotes, feral dogs, and ravens and may have negatively affected the local population of desert tortoises.

Desert tortoise sign observed during wildlife surveys on private components were consistent with the predicted occupancy of the species within the Project vicinity. Desert tortoise occupancy within the Project area is not expected to be high.

Public Components

Gen-tie routes such as 3 and 4, have undisturbed native vegetation cover, which is reflective of the predicted occupancy values in the Nussear model. The remainder of the gen-tie routes range between 0.4-0.6, with the exception of gent-tie 1A, which ranges 0.0-0.1.

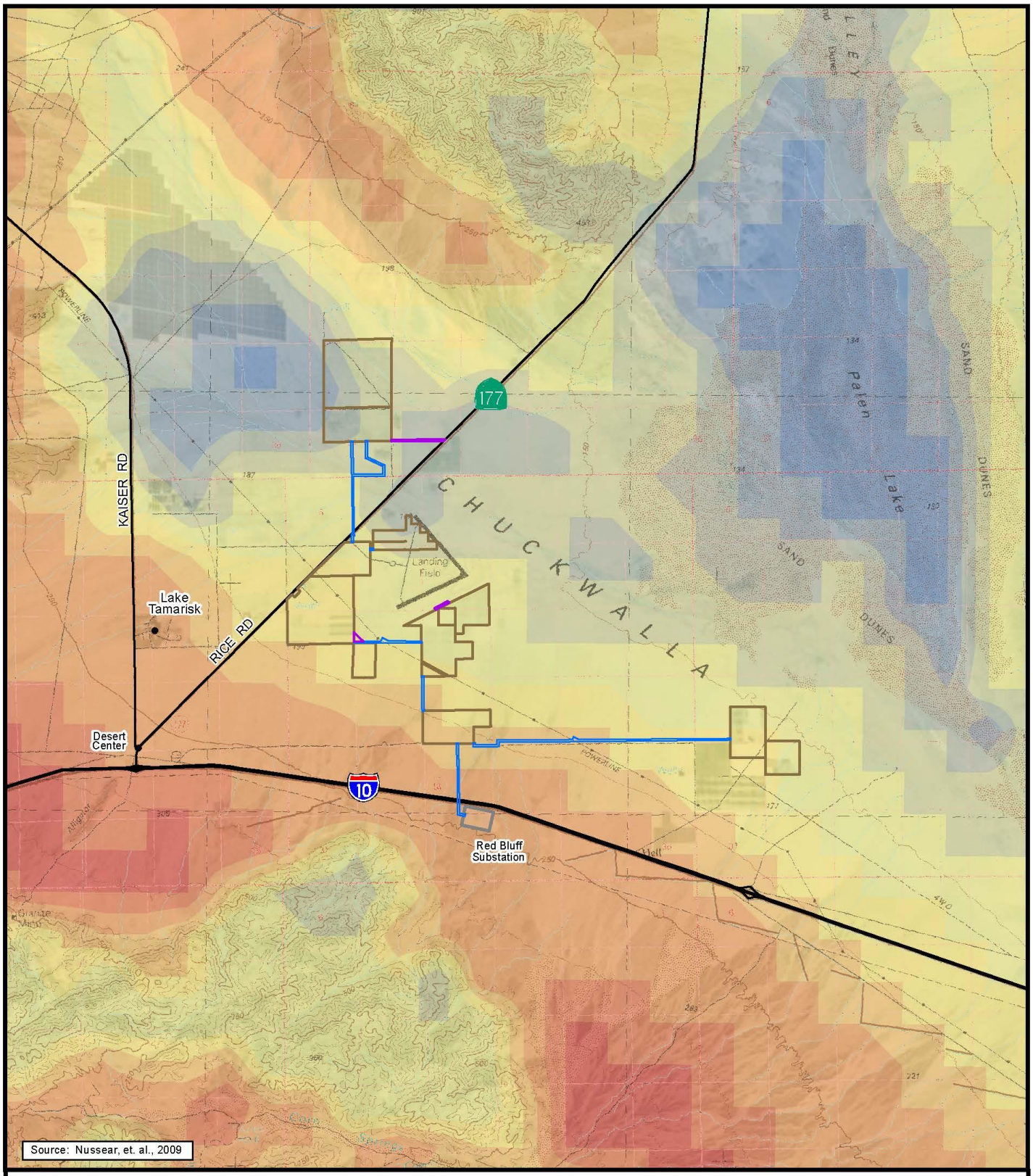
Surveys detected no live desert tortoises. Active desert tortoise sign was detected during the fall 2017 survey west of gen-tie 2B with tracks, scat, and a burrow in good condition. Spring 2018 surveys did not result in detections of any active desert tortoise sign.

Desert tortoise sign observed during wildlife surveys were consistent with the predicted occupancy of the species within the Project vicinity. Desert tortoise occupancy within the Project area is not expected to be high. Survey results for desert tortoise are summarized in Table 7 and Figure 9.

Table 7. Desert Tortoise Observations

Project Component	Sign Type	Classification	Location	Habitat	Date Observed
Private	burrow	class 4	C	recovering Sonoran creosote bush scrub	5/9/2018
	burrow	class 4	C	recovering Sonoran creosote bush scrub	5/9/2018
	burrow	class 4	C	recovering Sonoran creosote bush scrub	5/9/2018
	burrow	class 3	F	Sonoran creosote bush scrub	10/23/2017
	burrow	class 3	F	Sonoran creosote bush scrub	10/24/2017
	burrow	class 3	F	desert dry wash woodland	10/23/2017
Public	tracks, scat	class 1	west of gen-tie 2B	Sonoran creosote bush scrub	10/22/2017
	burrow	class 2	west of gen-tie 2B	Sonoran creosote bush scrub	10/22/2017
	burrow	class 3	west of gen-tie 2B	Sonoran creosote bush scrub	10/22/2017
	burrow	class 4	gen-tie 3	desert dry wash woodland	5/11/2018

P:\GIS\Ironwood\Shared\Projects\Projects\Athos\DT_Model.mxd



Ironwood Consulting

0 1 2
Miles

- Solar Facility Boundary
- Gen-Tie Line
- Access Road/Easement
- Red Bluff Substation

Desert Tortoise Predicted Occupancy

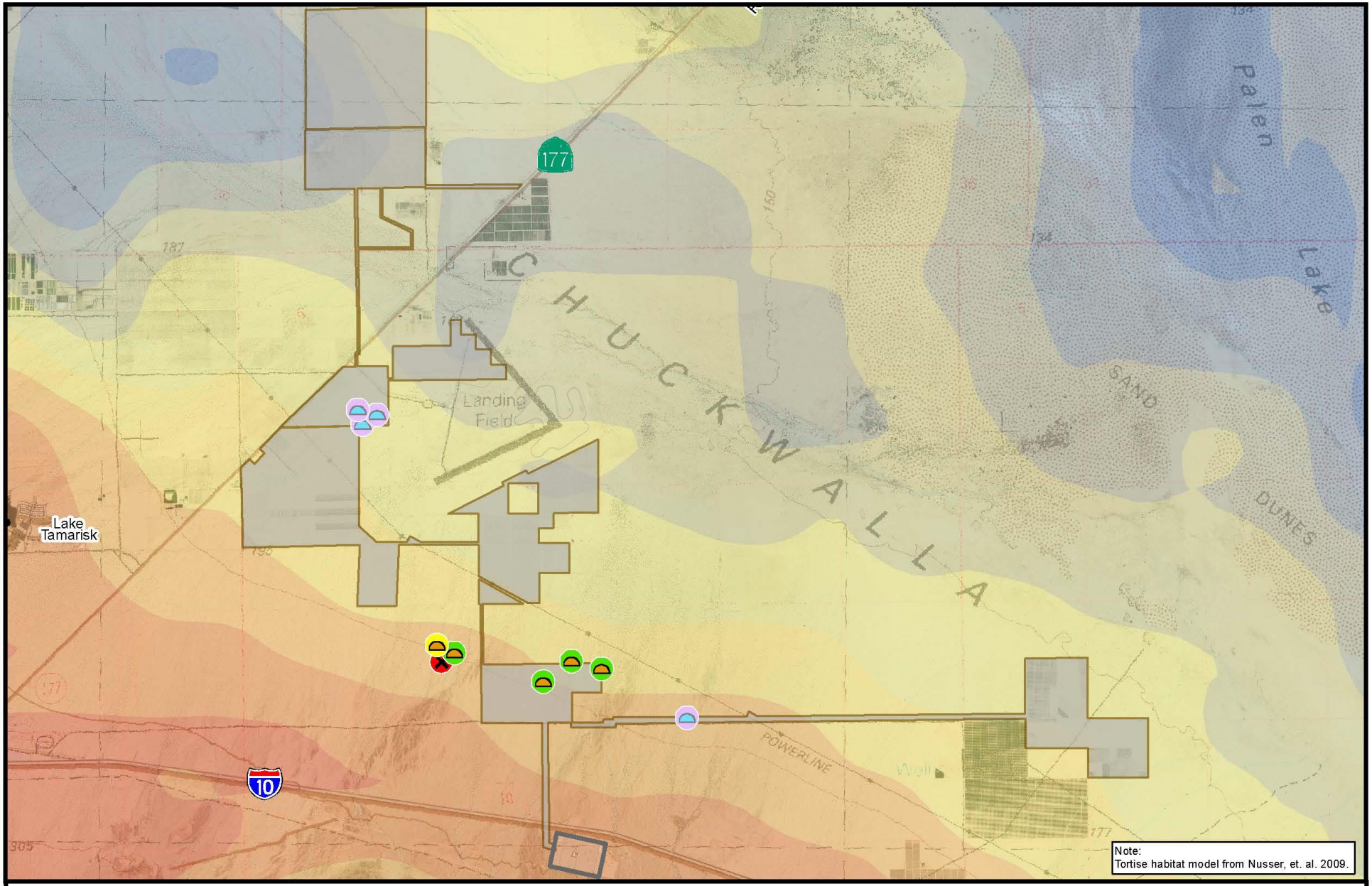
0	0.4 - 0.5
0 - 0.1	0.5 - 0.6
0.1 - 0.2	0.6 - 0.7
0.2 - 0.3	0.7 - 0.8
0.3 - 0.4	0.8 - 0.9

FIGURE 7

Predicted Desert Tortoise Occupancy

Athos Solar

P:\GIS\Ironwood\Shared\Projects\Projects\Athos\DT_Observations.mxd



Ironwood
Consulting

0 3,000 6,000
Feet

Athos Solar Project
Red Bluff Substation
Desert Tortoise Burrow, Fall Survey
Desert Tortoise Burrow, Spring Survey
Tortoise Tracks and Scat

Tortoise Sign Condition

Class 1 - Currently active; with desert tortoise or recent desert tortois sign
Class 2 - Good condition, definiteley desert tortoise, no evidence of recent use
Class 3 - Deteriorated condition which includes collapsed burrows, definitely desert tortoise
Class 4 - Good condition; possibly desert tortoise

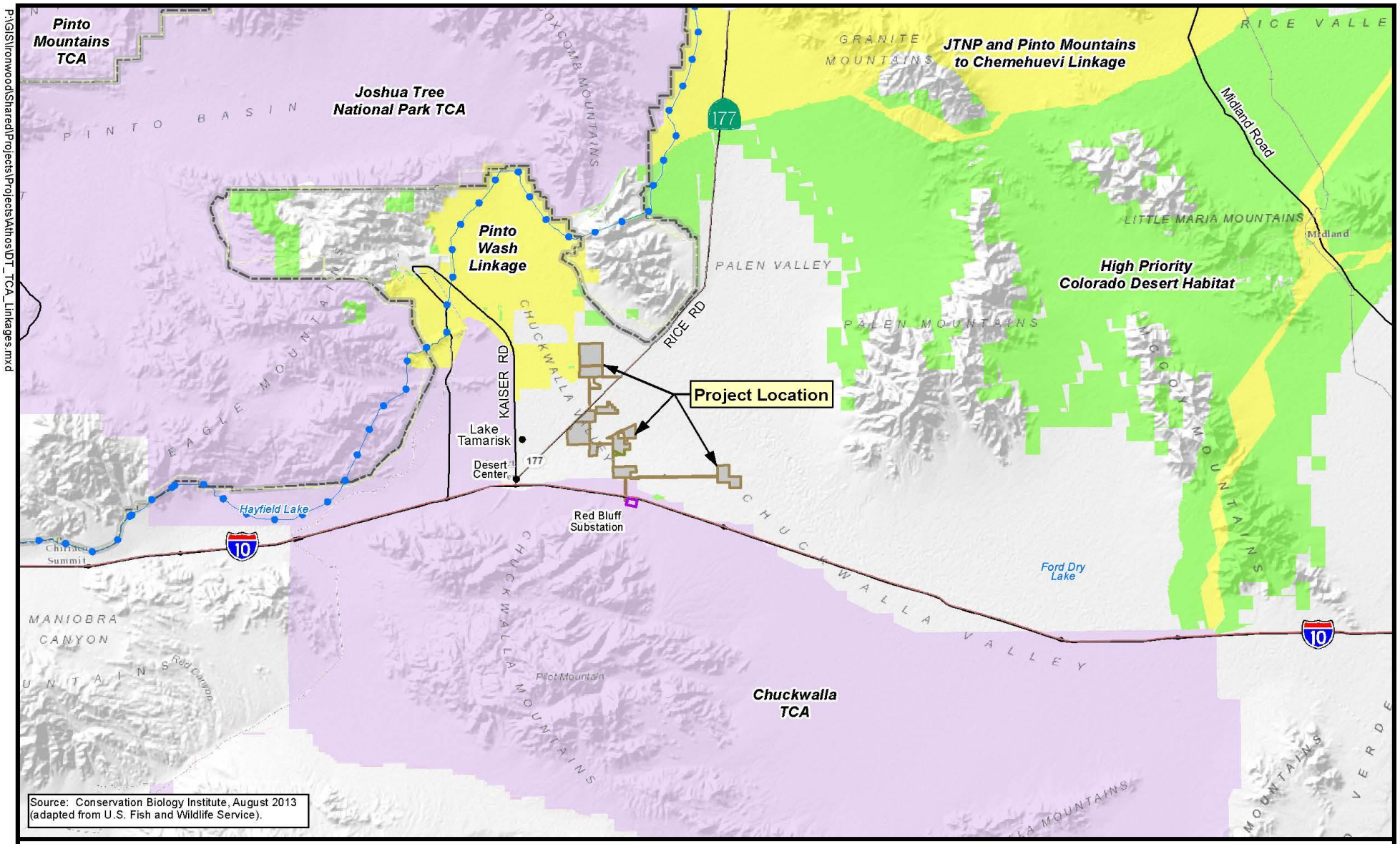
Tortoise Habitat Quality

0
0 - 0.1
0.1 - 0.2
0.2 - 0.3
0.3 - 0.4
0.4 - 0.5
0.5 - 0.6
0.6 - 0.7
0.7 - 0.8
0.8 - 0.9

FIGURE 8

Desert Tortoise Observations

Athos Solar



Source: Conservation Biology Institute, August 2013 (adapted from U.S. Fish and Wildlife Service).

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Ironwood
Consulting

0 5
Miles

- Aqueduct
- Athos Solar Project
- Red Bluff Substation
- High Priority Habitat
- Linkage
- Tortoise Conservation Area

FIGURE 9
Desert Tortoise Conservation Areas (TCAs) and Linkages

Athos Solar

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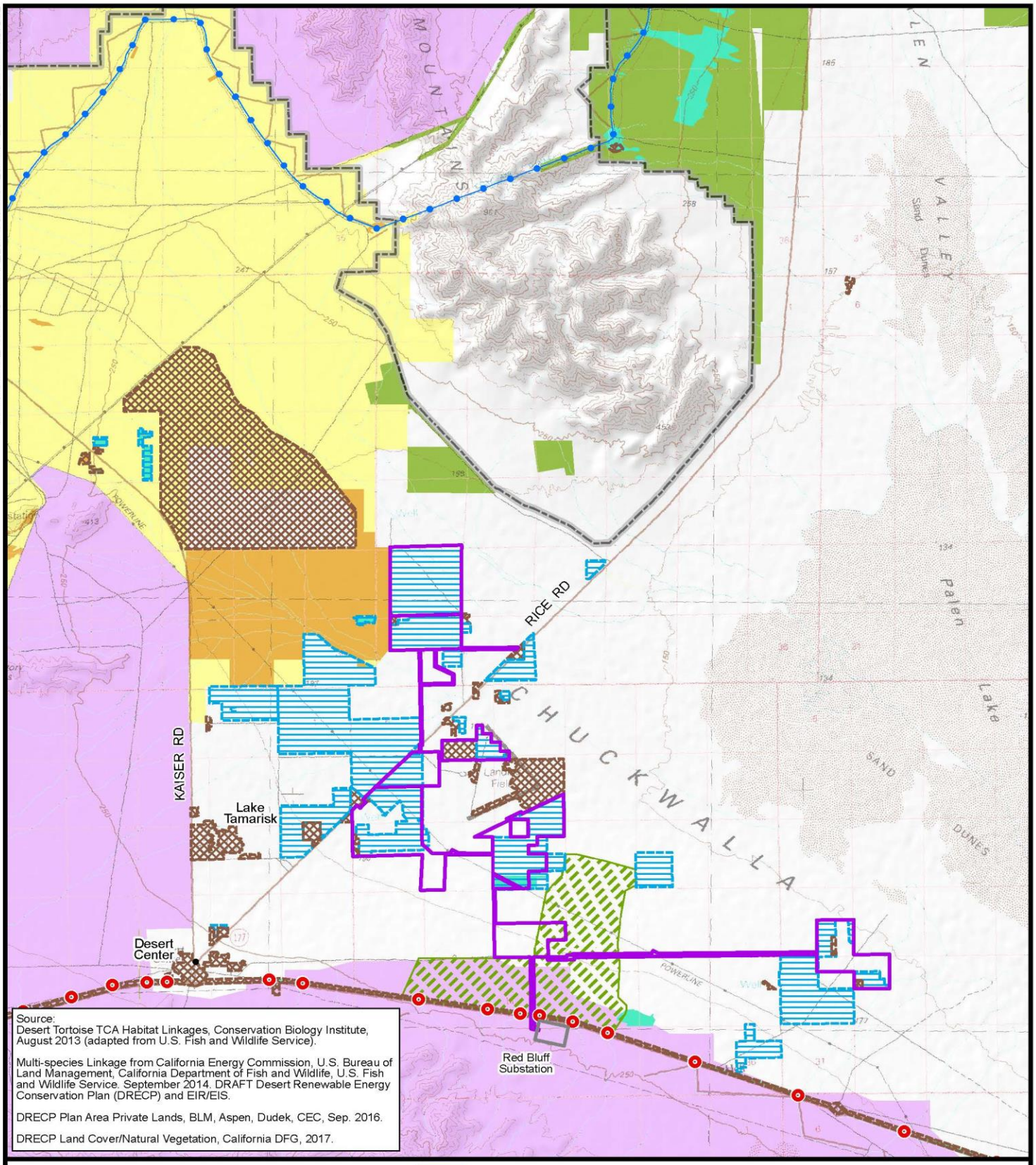

Ironwood Consulting

0 2
Miles

I-10 Culvert/Underpass
Aqueduct
Athos Solar Project
Red Bluff Substation

Land Cover
Agriculture
Developed/Disturbed

High Priority Habitat,
High Priority Habitat, Lost or Severely Disturbed Habitat
Linkage
Linkage, Lost or Severely Disturbed Habitat
Tortoise Conservation Area
Multi-Species Linkage Area

FIGURE 10

Desert Tortoise Local Connectivity

Athos Solar

4.1.2 Mojave Fringe-Toed Lizard: *SSC, BLMS*

The Mojave fringe-toed lizard (*Uma scoparia*) occupies arid, sandy, sparsely vegetated habitats and is associated with creosote scrub throughout much of its range (Jennings and Hayes 1994). It is found within and around aeolian sand habitats in the deserts of Los Angeles, Riverside, and San Bernardino Counties in California and La Paz County in Arizona (Hollingsworth and Beaman 1999; Stebbins 1985; Murphy et al. 2006). Within these regions, it occurs at more than 35 sand dune complexes in California and one in Arizona (Jarvis 2009). Nearly all records for this species are associated with present-day and historical drainages and sand dune complexes associated with three major river systems with blow sand: Amargosa River, Mojave River, and Mojave and Colorado Rivers (BLM 2015).

Mojave fringe-toed lizards normally hibernate from November to February, emerging from hibernation sites from March to April. The breeding season is April to July (Mayhew 1965). From May to September, they are active in mornings and late afternoon, but seek cover during the hottest parts of the day. They burrow in the sand for both cover from predators and protection from undesirable temperatures (Stebbins 2003), though they also will seek shelter in rodent burrows.

As this species requires loose, wind-blown sand, its distribution within the survey areas is consistent with the presence of suitable soil conditions. All detections for Mojave fringe-toed lizard were concentrated on the easternmost parcel group G of the Project site, with eight observations where the sand transport system and the DRECP modelling for Mojave fringe-toed lizard overlapped. It is noted that the DRECP habitat model (Figure 12) also includes or surrounds parcel groups A, B, and E in the northwestern part of the Project site, but a combination of former agricultural land use on-site as well as upwind land use conversion off-site has altered sand availability and aeolian sand transport, so these parcel groups no longer provide suitable habitat for Mohave fringe-toed lizard. Results for Mojave fringe-toed lizard observations are summarized in Table 8 and Figure 12.

Table 8. Mojave Fringe-toed Lizard Observations

Project Component	# individuals	Location	Vegetation Community	Date Observed
Private	3	G	recovering salt bush scrub	5/22/2018
	1	G	recovering salt bush scrub	5/22/2018
	1	G	recovering salt bush scrub	5/22/2018
	5	G	recovering salt bush scrub	5/22/2018
	4	G	recovering salt bush scrub	5/22/2018
	1	G	recovering salt bush scrub	5/23/2018
	2	G	recovering salt bush scrub	5/23/2018
Public	-	-	-	-

4.1.3 Couch's Spadefoot Toad: *SSC, BLMS*

Couch's spadefoot toad (*Scaphiopus couchii*) is often found in shortgrass plains, mesquite savannah, creosote bush desert, thorn forest, and tropical deciduous forest (Mexico) and other areas of low rainfall (Stebbins 2003). It is considered an opportunistic species because it only appears when rainfall forms temporary pools and potholes with water lasting longer than 10-12 days, which are required for breeding, hatching, and metamorphosis. Runoff basins at the base of sand dunes are also sites of reproduction (Mayhew 1965). In California, it is known from the low desert region, especially the Colorado River corridor. It burrows underground or occupies rodent burrows when inactive.

Couch's spadefoot toad was not observed, but suitable breeding habitat may be present within parcel group G of the Project site due to presence of irrigation water which can accumulate to form suitable temporary pools near the active date tree farm. A preliminary reconnaissance survey indicated that there are three areas where water may potentially accumulate for at least two weeks after rainfall on parcel group G that may provide suitable reproductive habitat for the species. The existing pond in Parcel Group G was also noted as well as a ponded area south of parcel group A, within the project vicinity, adjacent to highway 177. Upon inspection, the existing pond and the ponded area did not indicate any tadpole or toad activity. Figure 11 depicts potential Couch's spadefoot habitat.

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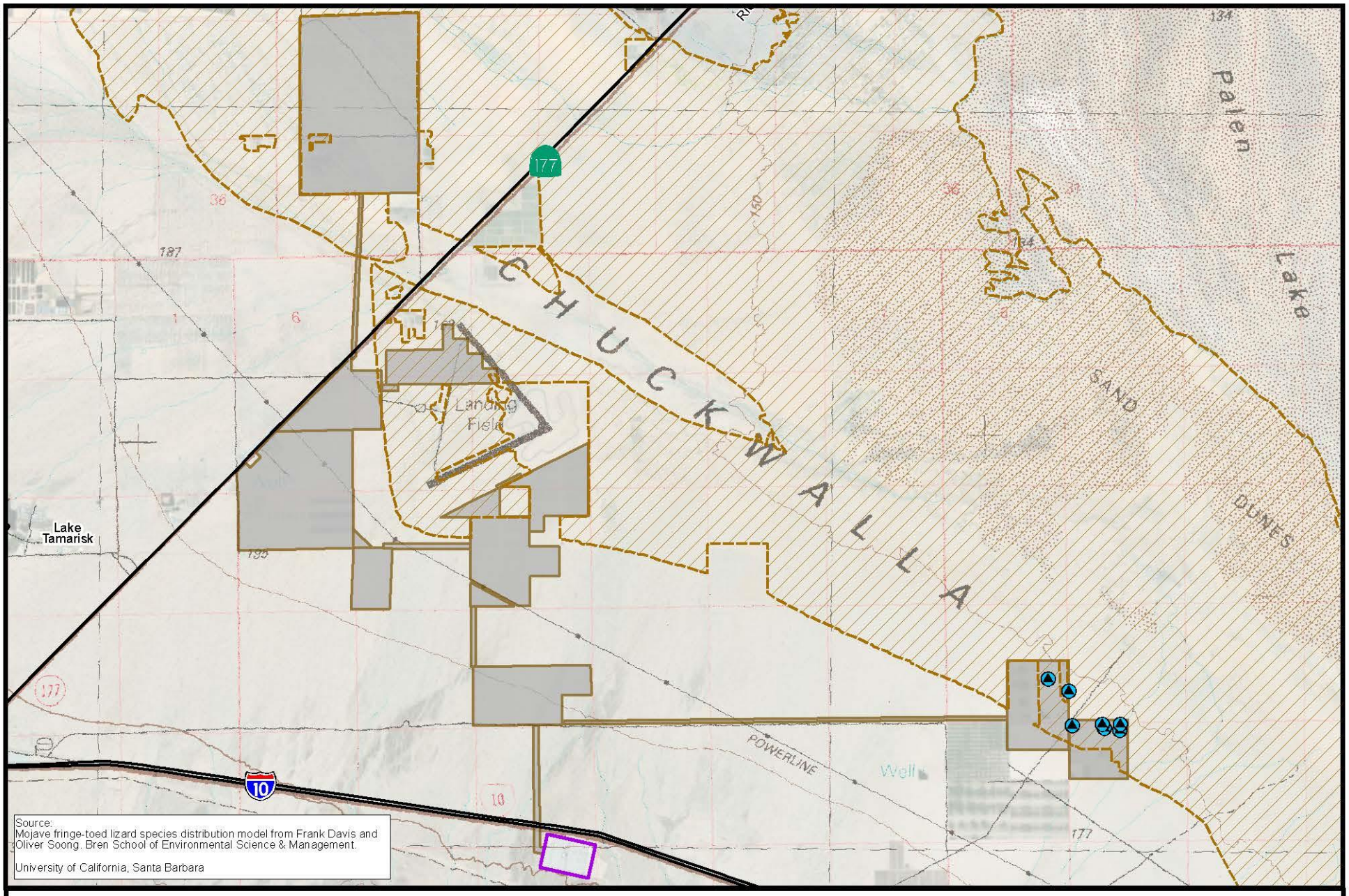

Ironwood
Consulting

0 3,000 6,000
Feet

Mojave Fringe-toed Lizard

Mojave Fringe-toed Lizard Species Distribution Model

Athos Solar Project

Red Bluff Substation

FIGURE 11

Mojave Fringe-toed Lizard Observations

Athos Solar

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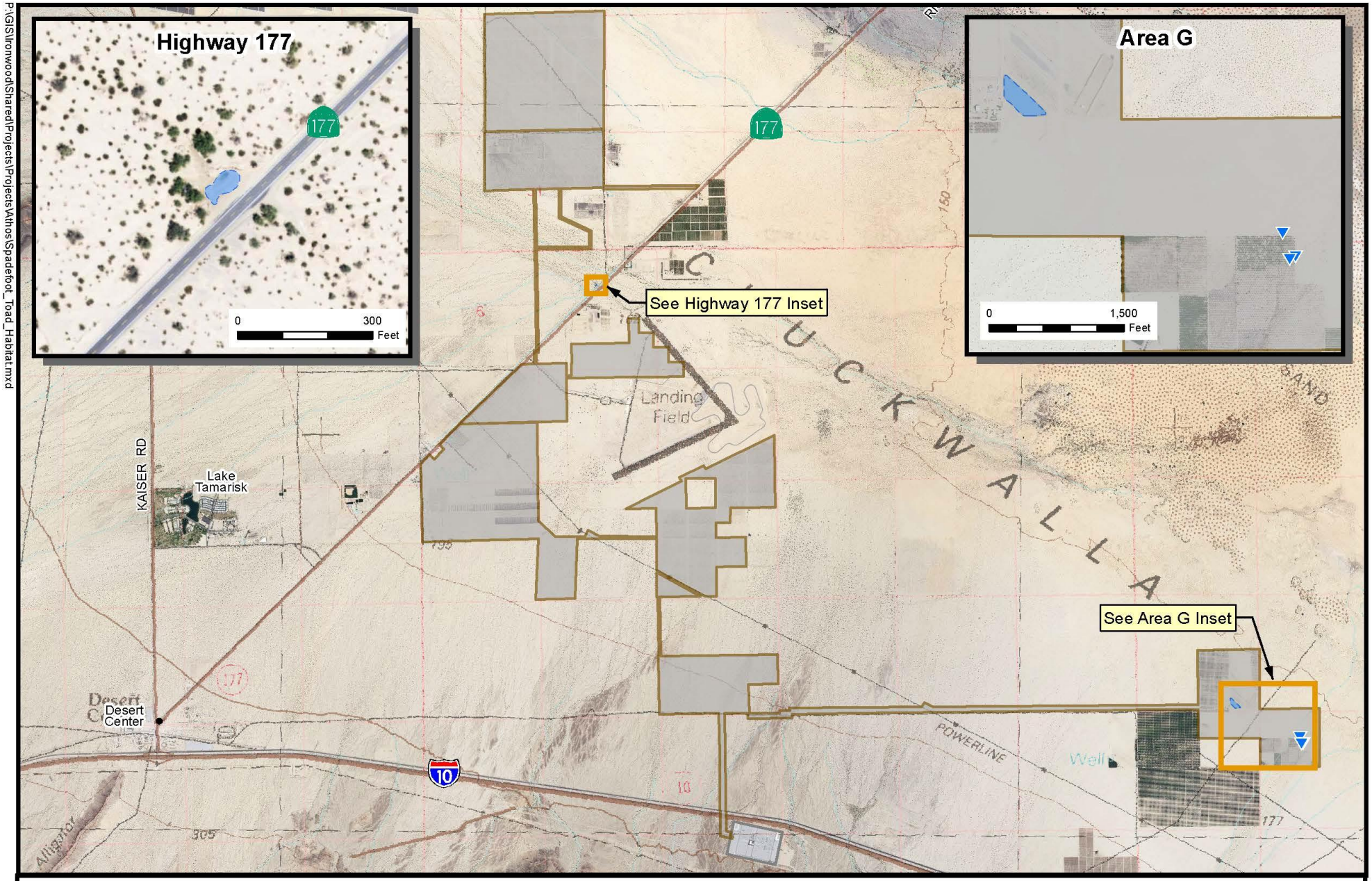

Ironwood Consulting

0 3,000 6,000 Feet

Potential Water Accumulation Area

Pond

Athos Solar Project

Red Bluff Substation

FIGURE 12

Potential Couch's Spadefoot Toad Habitat

Athos Solar

4.1.4 American Badger: *SSC*

The American badger is associated with dry open forest, shrub, and grassland communities with an adequate burrowing rodent population and friable soils. Badgers generally are associated with treeless regions, prairies, parklands, and cold desert areas (Zeiner et al. 1990). Badgers inhabit burrows and often prey on small mammals that inhabit burrows, as evidenced by claw marks along the edges of burrows. Suitable habitat exists for American badgers on the Project. One active burrow and two digs with claw marks or tracks were observed in parcel groups A and C. One carcass was also observed, within parcel group D – evidence of a struggle was detected near the carcass, indicating its potential cause of death.

4.1.5 Desert Kit Fox: *CPF*

Desert kit fox (*Vulpes macrotis arsipus*) is protected by the California Code of Regulations (Title 14, CCR: §460) and Fish and Game Commission Section 4000 as a fur-bearing mammal. Title 14 of the California Code of Regulations, Section 460, stipulates that desert kit fox may not be taken at any time. Desert kit fox is a fossorial mammal that occurs in arid open areas, shrub grassland, and desert ecosystems within the Mojave Desert. Desert kit fox typically occurs in association with its prey base, which includes small rodents, primarily kangaroo rats, rabbits, lizards, insects, and in some cases, immature desert tortoises (Zeiner et al. 1990). Burrow complexes that have multiple entrances provide shelter, escape, cover, and reproduction, but desert kit fox may utilize single burrows for temporary shelter. Litters of one to seven young are typically born in February through April (McGrew 1979).

Desert kit fox burrows, burrow complexes, and scat were observed in parcel groups A, B, C, D, E, and F of the Project site. A total of twenty-six burrows and seven complexes were detected. Of these detections, sixteen burrows and five complexes were considered active. These numbers may change over time since kit fox distribution is dynamic and change under natural conditions due to prey availability and other environmental factors such as the presence of coyotes that are known to prey on kit fox pups. At parcel group G, the date palm farm may subsidize the local coyote population allowing it to flourish more than under natural conditions. The high numbers of coyotes could dissuade desert kit fox from using this area.

A summary of kit fox, coyote and badger observations can be found in Table 9 and Figure 13.

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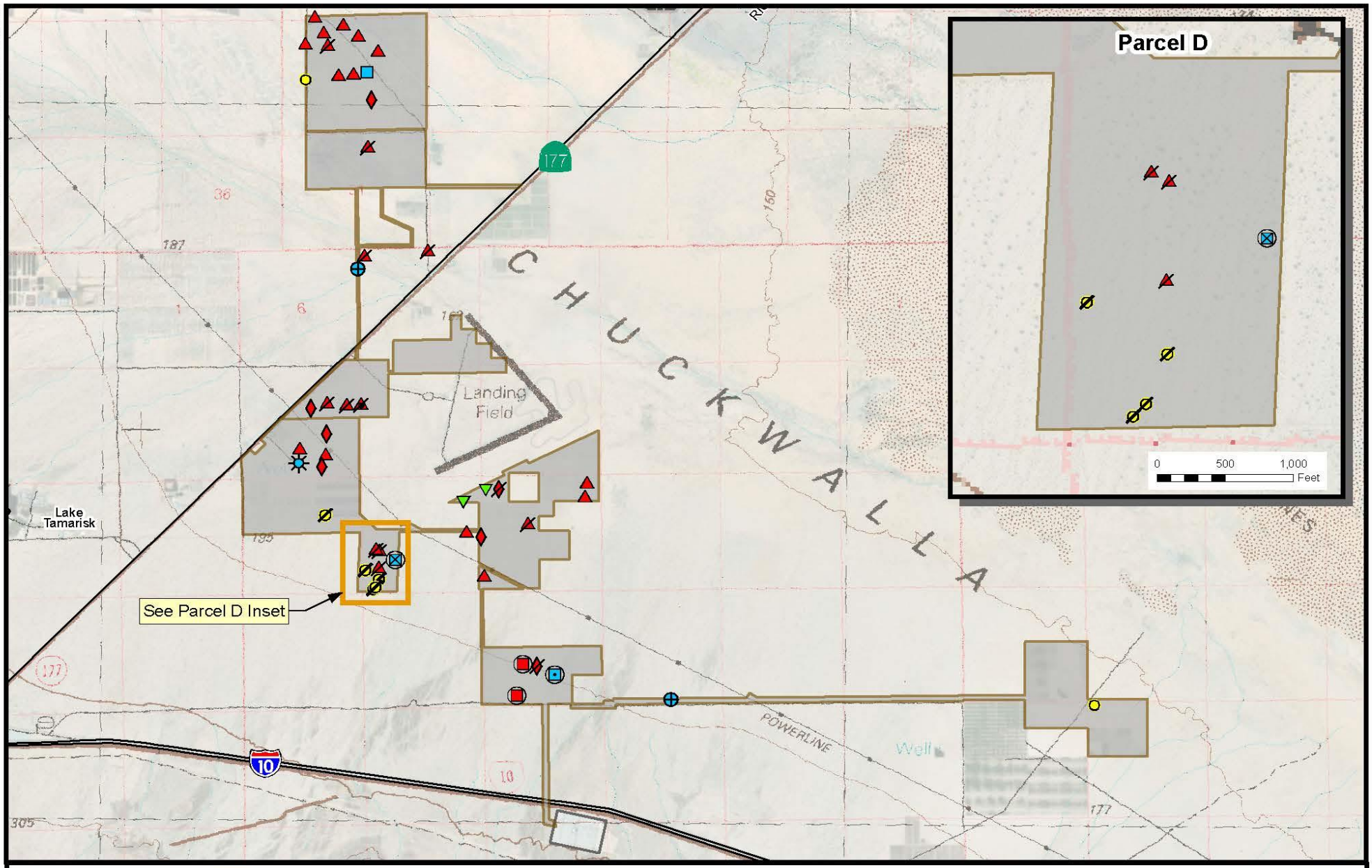

Ironwood Consulting

0 3,000 6,000 Feet

Athos Solar Project

Red Bluff Substation

Fall 2017

American Badger, dig

American Badger, tracks, fresh dig with claw marks

Kit Fox, active burrow

Spring 2018

American Badger, active burrow

American Badger, carcass

Canid, inactive burrow

Coyote, active burrow

Coyote, inactive burrow

Kit Fox, active burrow

Kit Fox, inactive burrow

Kit Fox, inactive burrow, scat

Kit Fox, active complex

Kit Fox, inactive complex

Fall 2018

American Badger, inactive dig

FIGURE 13

Kit Fox. Badger, and Coyote Observations

Athos Solar

Table 9. Summary of Kit Fox, Badger, and Coyote Observations

Project Components	Species	Location	SIGN TYPE				Vegetation Community	Date
			Hole Type	Scat	Tracks	Activity		
Private	Kit Fox	A	Burrow	-	X	active	fallow agriculture	5/26/2018
	Kit Fox	A	Burrow	-	X	active	fallow agriculture	5/26/2018
	Kit Fox	A	Burrow	X	X	active	fallow agriculture	5/26/2018
	Kit Fox	A	Burrow	-	X	active	fallow agriculture	5/26/2018
	Kit Fox	A	Burrow	-	X	active	fallow agriculture	5/27/2018
	Kit Fox	A	Burrow	X	X	active	fallow agriculture	5/27/2018
	Kit Fox	A	Burrow	-	X	active	fallow agriculture	5/27/2018
	Kit Fox	A	Burrow	X	X	active	fallow agriculture	5/27/2018
	Kit Fox	A	Burrow	-	X	active	fallow agriculture	5/27/2018
	Kit Fox	A	Burrow	-	-	inactive	fallow agriculture	5/26/2018
	Kit Fox	south of A	Burrow	-	-	inactive	fallow agriculture	5/23/2018
	Kit Fox	C	Burrow	-	-	active	fallow agriculture	5/19/2018
	Kit Fox	C	Burrow	-	-	active	fallow agriculture	5/24/2018
	Kit Fox	C	Burrow	X	X	active	fallow agriculture	5/25/2018
	Kit Fox	C	Burrow Complex	X	X	active	fallow agriculture	5/24/2018
	Kit Fox	C	Burrow Complex	X	X	active	fallow agriculture	5/24/2018
	Kit Fox	C	Burrow complex	X	X	active	fallow agriculture	5/25/2018
	Kit Fox	C	Burrow	X	-	inactive	fallow agriculture	5/25/2018
	Kit Fox	C	Burrow	-	-	inactive	fallow agriculture	5/25/2018
	Kit Fox	D	Burrow	X	-	inactive	creosote bush scrub	5/14/2018

Project Components	Species	Location	SIGN TYPE				Vegetation Community	Date
			Hole Type	Scat	Tracks	Activity		
	Kit Fox	D	Burrow	-	-	inactive	creosote bush scrub	5/14/2018
	Kit Fox	D	Burrow	-	-	inactive	creosote bush scrub	5/14/2018
	Kit Fox	E	Burrow	-	-	active	fallow agriculture	5/17/2018
	Kit Fox	E	Burrow	-	-	active	fallow agriculture	5/19/2018
	Kit Fox	E	Burrow Complex	-	-	active	fallow agriculture	5/17/2018
	Kit Fox	E	Burrow Complex	-	-	inactive	fallow agriculture	5/17/2018
	Kit Fox	E	Burrow	-	-	inactive	fallow agriculture	5/19/2018
	Kit Fox	F	Burrow	X	X	active	creosote bush scrub	10/25/2017
	Kit Fox	F	Burrow complex	X	X	active	creosote bush scrub	10/25/2017
	Kit Fox	F	Dig	X	X	inactive	creosote bush scrub	10/24/2017
	Badger	A	Burrow	-	X	active	fallow agriculture	5/27/2018
	Badger	C	Carcass	-	-	sign of fight	recovering creosote bush scrub	5/25/2018
	Badger	D	Dig	-	X, fresh, claw marks	active	creosote bush scrub	10/27/2017
	Badger	F	Burrow	-	-	inactive	creosote bush scrub	10/24/2017
	Badger	gen-tie 1	Dig	-	-	inactive	creosote bush scrub	10/30/2017
	Coyote	A	Burrow	-	X	active	fallow agriculture	5/26/2018
	Coyote	D	Burrow	-	-	inactive	creosote bush scrub	5/21/2018
	Coyote	D	Burrow	-	-	inactive	creosote bush scrub	5/13/2018
	Coyote	D	Burrow	-	-	inactive	creosote bush scrub	5/14/2018
	Coyote	D	Burrow	-	-	inactive	creosote bush scrub	5/14/2018

Project Components	Species	Location	SIGN TYPE				Vegetation Community	Date
			Hole Type	Scat	Tracks	Activity		
	Coyote	D	Burrow	-	-	inactive	creosote bush scrub	5/14/2018
	Coyote	G	Burrow	-	X	active	recovering salt bush scrub	5/22/2018
	Canid	E	Burrow	-	-	inactive	recovering creosote bush scrub	5/17/2018
	Canid	E	Burrow	-	-	inactive	recovering creosote bush scrub	5/17/2018
Public	Badger	gen-tie 3	Dig	-	-	inactive	desert dry wash woodland	10/31/2018
	Kit Fox	gen-tie 1	Burrow	X	-	Inactive	creosote bush scrub	5/9/2018
	Kit Fox	gen-tie 1	Burrow	-	-	inactive	creosote bush scrub	5/15/2018
	Kit Fox	gen-tie 1	Burrow	-	-	inactive	creosote bush scrub	5/15/2018
	Kit Fox	gen-tie 2A	Burrow	-	-	active	creosote bush scrub	5/15/2018

4.1.6 Desert Bighorn Sheep *BLMS*

The desert bighorn sheep (*Ovis canadensis nelsoni)* is found from the Peninsular and Transverse Ranges through most of the desert mountain ranges of California, Nevada, and northern Arizona to Utah. The Project site is well outside the range of the listed threatened Peninsular bighorn sheep, which was formerly recognized as a subspecies and now considered a distinct vertebrate population segment of the desert bighorn sheep. Essential habitat for bighorn sheep includes steep, rocky slopes of desert mountains, and areas where surface water is available during dry seasons. In the spring, when annual plants are available, bighorn sheep tend to disperse downhill to bajadas and alluvial fans to forage.

Habitat in the desert mountain ranges surrounding the upper Chuckwalla Valley is occupied by Nelson's bighorn sheep, and they occasionally use the valley floor habitat either for foraging (near the lower mountain slopes) or as movement routes among mountain ranges. Due to the project's location on the valley floor near sites with comparable land uses and human activity patterns, the project is not likely to affect bighorn sheep behavior or habitat use to any large extent. No sign or evidence of desert bighorn sheep was found during field surveys but scat is often difficult to distinguish from burro deer. Potential for occurrence is low.

4.1.7 Burro Deer: *CPGS*

Burro deer (*Odocoileus hemionus eremicus*) is a subspecies of mule deer (*Odocoileus hemionus*) that inhabits desert dry wash woodland communities in the Colorado region of the Sonoran Desert near the Colorado River. Some burro deer are year-around residents along the Colorado River, while others are transient and move between mesic and arid desert areas in response to seasonal water and forage availability. During hot summers burro deer concentrate along the Colorado River or the Coachella Canal where water developments have been installed and where microphyll woodland is dense and provides good forage and cover. With late summer thundershowers and cooler temperatures, burro deer move away from the Colorado River and Coachella Canal into larger washes or wash complexes in the foothills and nearby mountains (BLM CDD 2002).

Burro deer scat and tracks were observed at the southern end of gen-tie 4, scat on gen-tie 3, and a group of four live individuals were observed southwest of parcel group G (see Table 10 and Figure 14). The observations of burro deer are all within close proximity to the active date farm where irrigation water is regularly available.

Table 10. Summary of Burro Deer Observations

Project Component	Location	SIGN TYPE			Vegetation Community	Date Observed
		scat	tracks	live individual		
Private	date farm adjacent to G	-	-	X (4)	active agriculture	10/26/2017
Public	gen-tie 3	X	-	-	desert dry wash woodland	10/31/2018
	gen-tie 3	X	-	-	creosote bush scrub	10/31/2018
	gen-tie 4	X	X	-	desert dry wash woodland	10/26/2017
	gen-tie 4	X	X	-	desert dry wash woodland	10/26/2017

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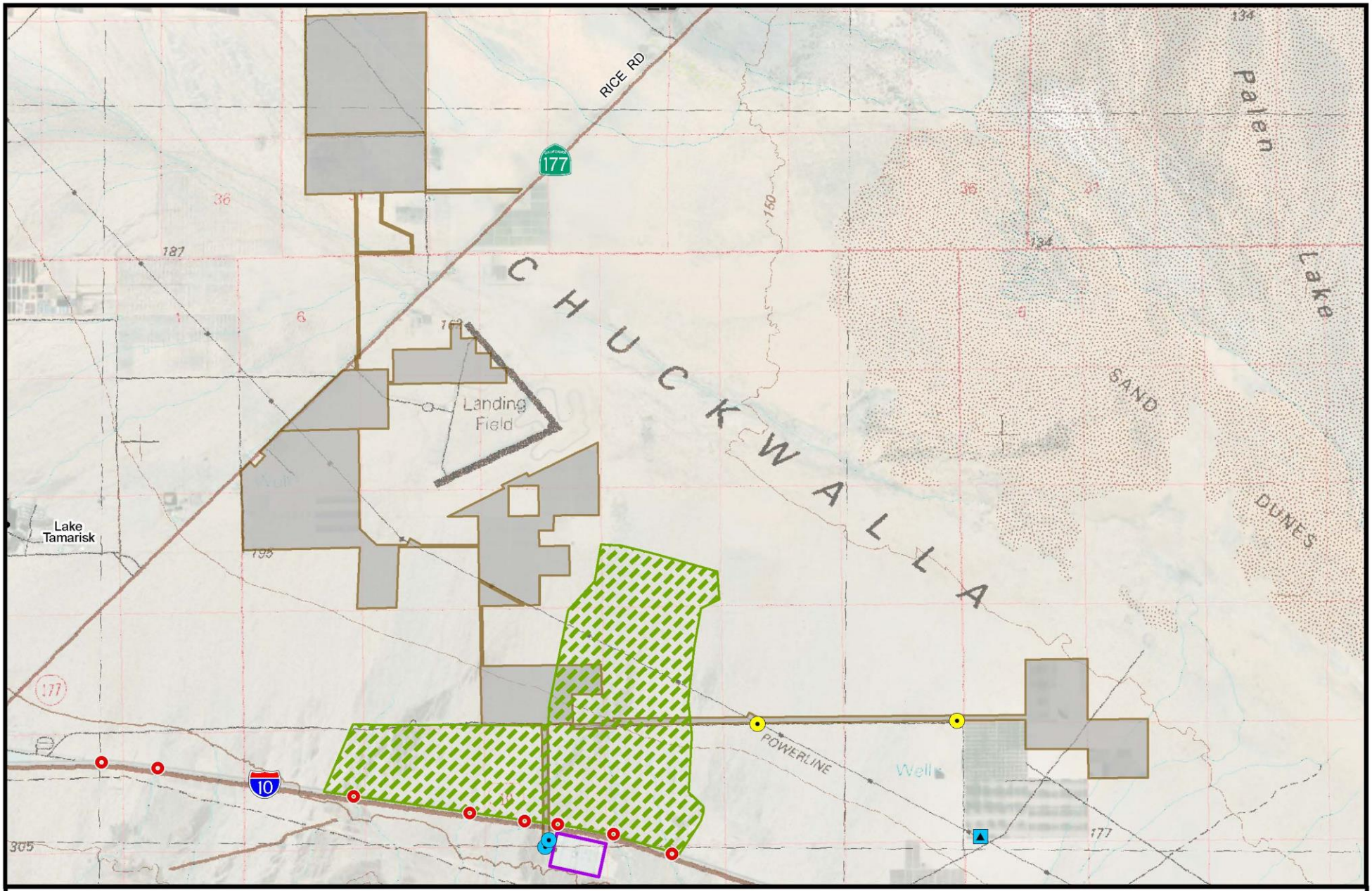


Ironwood
Consulting

0 3,000 6,000
Feet

I-10 Culvert/Underpass
Multi-Species Linkage Area
Athos Solar Project
Red Bluff Substation

Fall 2017
Burro Deer, live individual
Burro Deer, scat and tracks

Fall 2018
Burro Deer, scat

FIGURE 14

Burro Deer Observations

Athos Solar

4.1.8 Special Status Bats

Bat roosts occur in the vicinity of the Project site in the McCoy Mountains, Eagles Nest Mine within the Little Maria Mountains, and Paymaster Mine within the Pinto Mountains (Larry LaPre, BLM, pers. comm.; CEC 2010). No active bat roosts were documented on the Project site during any of the surveys to date. It is not expected that any special status bat species would have a substantial roost on the Project site since habitat features most associated with these species (e.g. rock ledges, cliffs, large tree hollows, mine shafts) do not occur on the Project. However, roosting opportunities for bat species, such as the common canyon bat and California myotis, are available in tree cavities, soil crevices and rock outcroppings within dry desert wash woodland habitat and the active date farm. Additionally, suitable foraging habitat for common and special status bats is found on the Project site, particularly within the desert dry wash woodland (parcel groups D and F) and near the date tree farm (parcel group G) where water is available year-round.

Seven special status bat species may forage on or near the Project site; they are discussed further below. Suitable, but limited, roosting habitat may occur for several of these species within the dry wash woodland habitat, abandoned buildings, and the date tree farm on the Project site. Other special status bat species known from the region typically inhabit rocky sites and would not be expected to use the Project site for roosting.

<u>Townsend's Big-Eared Bat:</u> *SSC, BLMS*

Townsend's big-eared bat (*Corynorhinus townsendii*) roosts in caves, mines, abandoned dwellings, and large basal hollows of large trees (e.g., redwoods). Townsend's big-eared bat occurs from sea level to approximately 9,000 feet elevation within a range of habitats. It typically forages along streams and within woodlands. The Project site may provide roosting areas for Townsend's big eared bat at the abandoned structures in the developed and agricultural areas (parcel groups A, B, C, and G) and within desert dry wash woodland (parcel groups D and F and gen-tie 1, 1A, 2A, 2B, 3, and 4), although it may be at a lower probability. The Project site may also provide foraging habitat in the areas of desert dry wash woodland (parcel groups D, F and gen-tie 1, 1A, 2A, 2B, 3, and 4) and artificial water sources by the date tree farms (parcel group G).

<u>California Leaf-Nosed Bat:</u> *SSC, BLMS*

California leaf-nosed bat (*Macrotus californicus*) occurs in the deserts of California, southern Nevada, Arizona and south to northwestern Mexico. In California, it is known from eastern San Bernardino, Riverside, and San Diego counties and all of Imperial County (CEC 2012). California leaf-nosed bat relies on caves and mines for roosting habitat. Foraging habitat typically consists of riparian and desert wash habitats such as those in parcel groups D and F and gen-tie 1, 1A,

2A, 2B, 3, and 4. California leaf-nosed bat may forage within the Project site but it is not expected to roost due to absence of suitable caves and mines.

Pallid Bat: *SSC/BLMS*

The pallid bat (*Antrozous pallidus*) is a locally common species throughout California, and a year-round resident in most of the range. It occupies a wide variety of habitats at elevations less than 6,000 feet including grasslands, shrublands, woodlands, and forests, and is most common in open, dry habitats with rocky areas for roosting; pallid bat roosts in cliffs, caves, crevices, mines, hollow trees, and various human-made structures (Zeiner 1990). The Project site may provide suitable foraging habitat for pallid bat within the dry wash woodland (parcel groups D and F and gen-tie 1, 1A, 1C, 2A, 2B, 3, and 4), date tree farms (parcel group G). Roosting habitat includes those areas as well as abandoned structures in the developed areas of the Project site (parcel groups A, B, C and G). Acoustic bat surveys for Palen Solar Power Project detected pallid bat within the Project vicinity.

Western Mnastiff Bat: *SSC, BLMS*

The western mastiff bat (*Eumops perotis californicus*) is widespread throughout the southwest U.S. and into Mexico. Its distribution in California is widespread, with year-round occurrence data primarily in central and southern California (Zeiner 1990). The western mastiff bat is found in a range of habitats, including coastal, forests, woodland, and desert scrub areas where roosting sites are available (Pierson and Rainey 1998). Roosting habitat typically consists of rocky crevices in canyons and cliffs with vertical or nearly vertical walls. The majority of roost sites are at least two meters above the ground (e.g., on cliff faces) and lacking obstructions. Suitable habitat for foraging occurs on the Project site within parcel groups C, E, D, and F, as well as gen-tie 1, 1A, 1C, 2A, 2B, 3, and 4 but roosting habitat is lacking. Western mastiff bat was detected within the vicinity on acoustic bat surveys for Palen Solar Power Project.

Western Yellow Bat: *SSC*

The western yellow bat (*Lasiurus xanthinus*) is a CDFW Species of Special Concern. It is found in Arizona, New Mexico, Mexico, and year-round in California. It is found in arid regions, in riparian, desert riparian, desert wash and palm oasis habitat. The western yellow bat is insectivorous, and roosts and feeds in palm oases and riparian habitats (Zeiner 1990). Potential roosting habitat exists within the Project site at parcel groups D and F as well as gen-tie 1, 1A, 2A, 2B, 3, and 4; date tree farms mimic palm oases due to the artificial water sources. Suitable habitat for foraging also occurs on the Project site in the same areas for the western yellow bat. Western yellow bat was detected within the vicinity during acoustic bat surveys for the Palen Solar Power Project.

Big Free-Tailed Bat: *SSC*

The big free-tailed bat (*Nyctinomops macrotis*) is distributed in the southwest U.S., and northern South America, generally from sea level to 8,000 feet in elevation. It is rare in California, prefers rocky terrain, and roosts in tree cavities and man-made structures. It is known to wander in autumn, out of its normal range (Zeiner 1990). Potential roosting and foraging habitat exist for the big free-tailed bats within the abandoned structures (parcel group A, B, C, G), dry wash woodland (parcel groups D and F as well as gen-tie 1, 1A, 2A, 2B, 3, and 4, and date tree farm (parcel group G) on the Project site. Big free-tailed bat was detected within the Project vicinity through acoustic surveys conducted for Palen Solar Energy Project.

Pocketed Free-Tailed Bat: *SSC*

The pocketed free-tailed bat (*Nyctinomops femorosaccus*) is common in Mexico but less common in western North America, from southern California, central Arizona, southern New Mexico, and western Texas (WBWG 2018). The pocketed free-tailed bat has been documented in Riverside, San Diego, and Imperial counties. Typical habitats include pinyon-juniper woodlands, desert scrub, desert succulent shrub, desert riparian, desert wash, alkali desert scrub, Joshua tree, and palm oasis and roosting habitat typically includes rock crevices associated with granite boulders, cliffs, or rocky canyons at a height suitable for approach and takeoff (CNDDB 2018). Pocketed free-tailed bats are known to occur in the desert from March through August, when they then migrate out of the area (BLM 2011). Suitable habitat for foraging exists on the Project site on parcel groups D, F, and G, as well as gen-tie 1, 1A, 2A, 2B, 3, and 4, but roosting habitat is lacking. Call sequences that may have been pocketed free-tailed bat were detected within the Project vicinity during acoustic surveys for Palen Solar Energy Project, but lacked features for definitive confirmation.

4.1.8 Western Burrowing Owl: *SSC, BCC, BLMS*

The Western burrowing owl *(Athene cunicularia hypugaea)* inhabits arid lands throughout much of the western United States and southern interior of western Canada (Haug et al. 1993). Suitable habitat for western burrowing owl includes open habitat with available burrowing opportunities, including agricultural fields (active and fallow), creosote scrub, desert saltbush, ephemeral washes, and ruderal areas. Burrowing owls depend on other species to dig suitable burrows for use. If those species do not return to an area to dig new burrows or repair collapsed burrows, then burrowing owls would not be able to use those collapsed burrows.

Burrowing owls are unique among the North American owls in that they nest and roost in abandoned burrows, especially those created by ground squirrels, kit fox, desert tortoise, and other wildlife. Burrowing owls have a strong affinity for previously occupied nesting and wintering sites and will often return to previously used burrows, particularly if they had successful reproduction in previous years (Gervais et al. 2008). The southern California breeding

season (defined as the time from pair bonding of adults to fledging of the offspring) generally occurs from February to August, with peak breeding activity from April through July (Haug et al. 1993).

In the Colorado Desert, burrowing owls generally occur at low densities in scattered populations, but they can be found in much higher densities near agricultural lands where rodent and insect prey tend to be more abundant (Gervais et al. 2008). Burrowing owls tend to be opportunistic feeders, and a large portion of their diet consists of beetles, grasshoppers, and other larger arthropods. The consumption of insects increases during the breeding season (Haug et al. 1993). Small mammals, especially mice and voles (*Microtus* and *Peromyscus* spp.) are important food items, and other prey animals include herpetofauna, young cottontail rabbits, bats, and birds such as sparrows and horned larks.

Burrowing owls and their sign were observed at several locations within the Project site. A total of seventeen burrows were observed with burrowing owl sign consisting of white wash, feathers, or pellets. Four live individuals were observed at burrows during the spring 2018 surveys and one live individual was observed at a burrow during the fall 2017 surveys. All live individuals were observed in the southern portion of the Project site with all 2018 observations concentrated on the eastern portion of the Project site on parcel group G (see Figure 15 for locations). Burrowing owls may have been more prevalent in the eastern portion of the site due to the increased prey availability from artificial water sources. No burrowing owl sign was found on the public components of the gen-tie. Table 11 summarizes all the burrowing owl observations from wildlife surveys and Figure 16 summarizes all sensitive avian observations.

Table 11. Summary of Burrowing Owl Observations

Project Component	Location	SIGN TYPES					Vegetation Community	Date Observed
		burrow	whitewash	pellets	feather	live individual		
Private	A	X	X	X	-	-	fallow agriculture	5/26/2018
	A	X	X	X	-	-	fallow agriculture	5/27/2018
	A	X	X	-	-	-	fallow agriculture	5/27/2018
	A	X	X	-	-	-	fallow agriculture	5/27/2018
	B	X	X	-	-	-	fallow agriculture	5/16/2018
	B	X	X	X	-	-	fallow agriculture	5/16/2018
	C	X	X	-	-	-	fallow agriculture	5/25/2018
	D	X	X	X	-	-	desert dry wash woodland	10/27/2017
	E	X	X	X	-	-	fallow agriculture	5/19/2018
	F	X	X	X	-	X	creosote bush scrub	10/24/2017
	G	X	X	X	-	-	fallow agriculture	5/22/2018
	G	X	X	X	X	X	fallow agriculture	5/23/2018
	G	X	X	X	-	X	fallow agriculture	5/23/2018
	G	X	X	X	X	X	fallow agriculture	5/23/2018
	G	X	X	X	-	X	fallow agriculture	5/23/2018
	G	X	X	X	-	-	fallow agriculture	5/23/2018
	G	X	X	X	-	-	recovering salt bush scrub	5/23/2018
Public	-	-	-	-	-	-	-	-

4.1.9 Golden Eagle: *CFP, WL, BCC, BLMS*

Background

Golden eagles are typically year-round residents throughout most of their western United States range. They breed from late January through August with peak activity March through July (Kochert et al. 2002). Habitat for golden eagles typically includes rolling foothills, mountain areas, and deserts. Golden eagles need open terrain for hunting and prefer grasslands, deserts, savanna, and early successional stages of forest and shrub habitats. Golden eagles primarily prey on rabbits and rodents but will also take other mammals, birds, reptiles, and some carrion (Kochert et al. 2002). They generally nest in rugged, open habitats with canyons and escarpments, often with overhanging ledges and cliffs or large trees used as cover.

Recent data analysis and population modeling suggest the status of the golden eagle population in the western United States is gradually declining towards an equilibrium of about 26,000 individuals, down from an estimated 34,000 in 2009 and 2014 (USFWS 2016). The future population estimate relies on the continuation of current ecological and biological conditions. It was estimated that 3,400 golden eagles die annually from anthropogenic causes in the United States (USFWS 2016) and suggest a level of sustainable take is approximately 2,000 individuals annually. Additional unmitigated mortality will steepen the rate of decline that the golden eagle population is presently undergoing (USFWS 2016).

Regional Surveys

Golden eagle surveys have been conducted on a multitude of projects within 10 miles of the Project vicinity. Methods and results for regional golden eagle surveys between the years of 2010-2015 are summarized in Table 12 below.

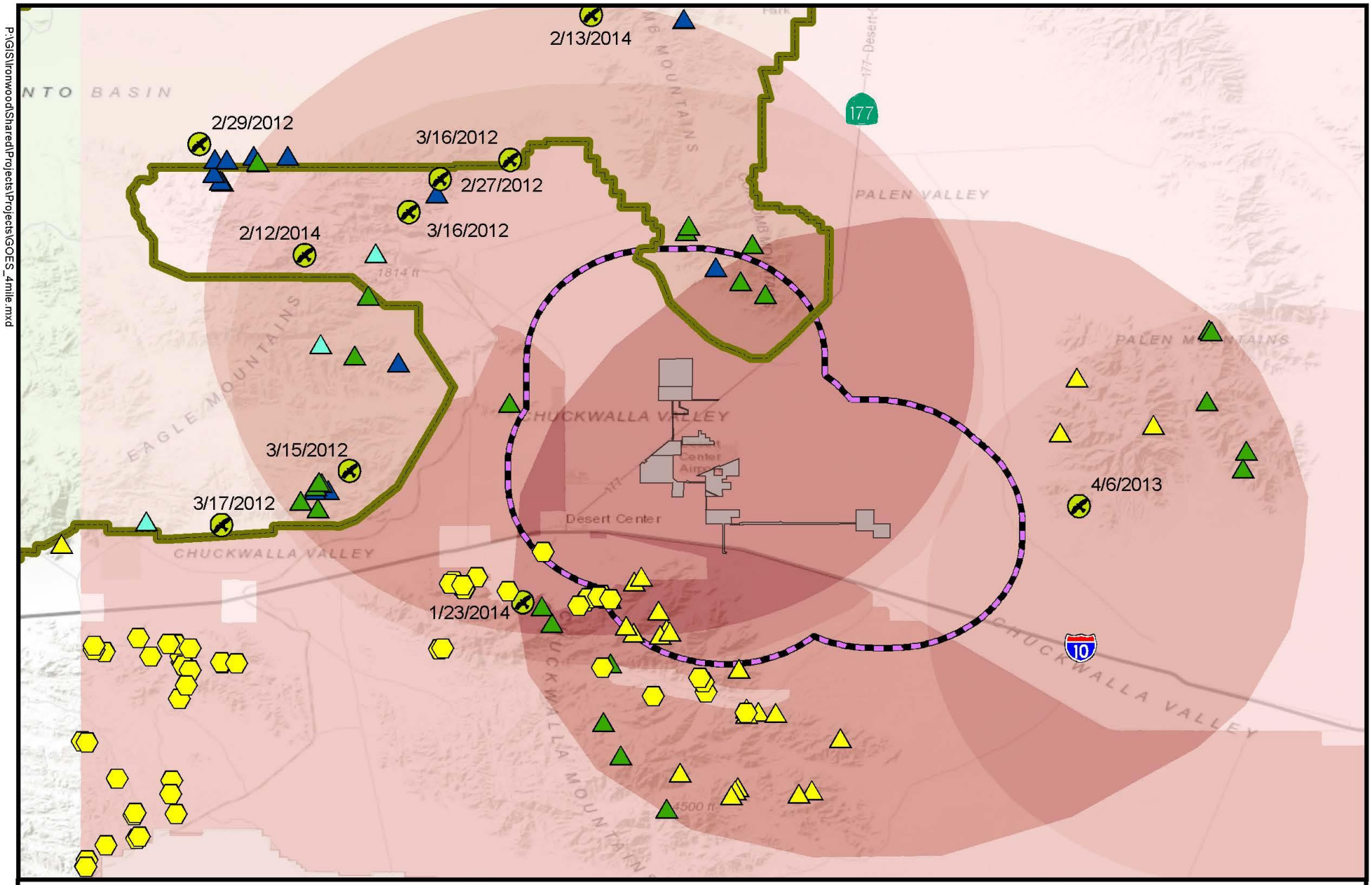
No live golden eagles were observed within 4 miles of the Project during any of these surveys or during the 2017-2018 wildlife surveys for the Project site. The highest concentration of surveys repeated between 2010-2015 occurred within Project area as shown in Figure 15.

Table 12. Summary of Regional Golden Eagle Surveys

Year	Other	Regional Nest Survey	Joshua Tree NP	BLM Raptor-Raven Nest Survey	Desert Sunlight Solar Project	Desert Harvest Solar Project	Genesis Solar Project	Palen Solar Project
2010		Aerial Survey (Wildlife Research Institute)*			*		*	*
		1 active nest in Coxcomb Mtns, 1 active territory in Eagle Mtns						
2011	Aerial Eagle (not nesting) transect survey (West)	Aerial and Ground (BioResource Consultant)	Aerial Survey (Wildlife Research Institute)*			Ground Survey (Bloom Biological Inc.)		

Year	Other	Regional Nest Survey	Joshua Tree NP	BLM Raptor-Raven Nest Survey	Desert Sunlight Solar Project	Desert Harvest Solar Project	Genesis Solar Project	Palen Solar Project
	No eagles in this area	No active eagles in this area	2011 season - 4 territories active (Eagle Mountains - West Central, Eagle Mountains – West Northwest, Hexie Mountains - Central, Little San Bernardino - East), the 2 Eagle Mountain territories were the only productive territories and produced a total of at least 3 young.			No active nests. 1 GOEA sighting		
2012	Aerial Eagle (not nesting) transect survey (West) / Tracking Eagles (Duerr et al)				Ground Survey (Ironwood)			
	No eagles in this area/None tracked in this area				No active nests; 7 GOEA sightings - 6 in Eagle Mtns, 1 in Coxcomb			
2013	Tracking eagles (Duerr et al)			Ground Survey (Corvus Ecological)	Ground Survey (Corvus Ecological)			Air and Ground Survey and Camera traps (Bloom Biological Inc.)

Year	Other	Regional Nest Survey	Joshua Tree NP	BLM Raptor-Raven Nest Survey	Desert Sunlight Solar Project	Desert Harvest Solar Project	Genesis Solar Project	Palen Solar Project
	None tracked in this area			No GOEA nests or sightings	No active nests, 4 GOEA sightings			1 sub-adult at bait station during all 5 weeks; 3rd year flying along cliffs
2014				Ground Survey (Boarman)				Air and Ground Survey (West)
				No GOEA nests or sightings				No eagles observed
2015				Ground Survey (Corvus Ecological)				Ground Survey (West)
				No GOEA nests or sightings				No eagles observed



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Ironwood Consulting

0 4 Miles

Potential Eagle Nests

Season Last Surveyed

- 2009-2010
- 2011-2012
- 2013-2014
- 2014-2015

- Cliff Nests Monitored During BLM Raven Surveys
- GOEA Sighting (Date of Sighting)
- Athos Solar Project
- Joshua Tree NP
- Athos Solar Project 4-Mile Buffer

Number of Surveys Conducted

12
8
5
1

Adapted from CORVUS, 2018.

FIGURE 15
Regional Golden Eagle Survey Results 2010-2015

Athos Solar

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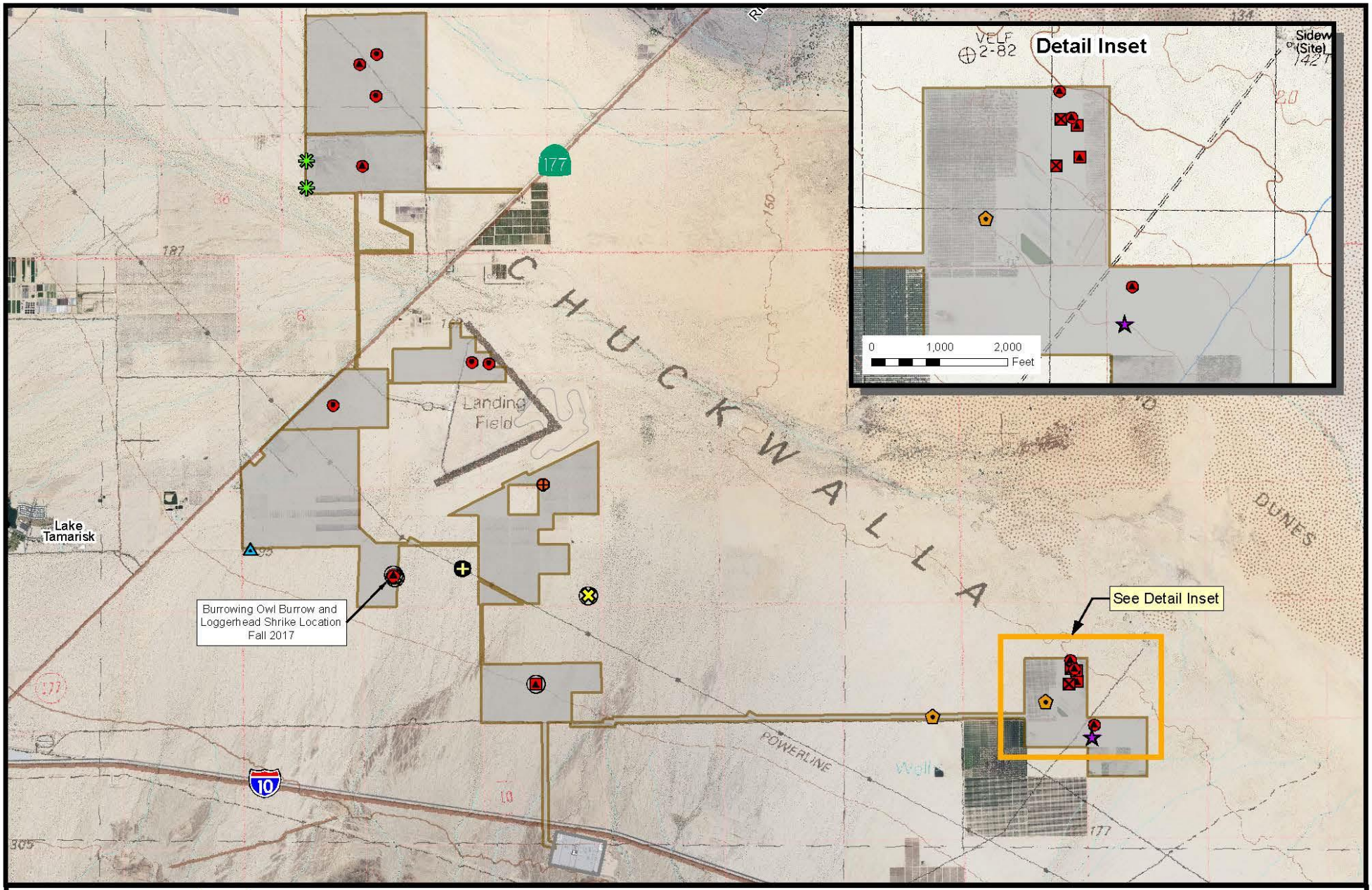

Ironwood Consulting

0 3,000 6,000 Feet

Athos Solar Project

Red Bluff Substation

Fall 2017

- Burrowing Owl Burrow with whitewash, pellets
- Burrowing Owl Burrow with whitewash, pellets, live individual
- Loggerhead Shrike

Spring 2018

- Burrowing Owl Burrow with whitewash, pellets,feather, live individual
- Burrowing Owl Burrow with whitewash, pellets, live individual
- Burrowing Owl Burrow with whitewash, pellets, feather
- Burrowing Owl Burrow with whitewash, pellets

- Burrowing Owl Burrow with whitewash
- Great Horned Owl active nest
- Prairie Falcon, in flight
- Raven, stick nest
- Red Tail Hawk, nest with nestling
- Swainson's Hawk

FIGURE 16

Sensitive and Noteworthy Avian Observations

Athos Solar

Table 13. Sensitive and Noteworthy Avian Observations

Project Component	Location	Species	Sign Type	Vegetation Community	Date Observed
Private	A	raven stick nest	stick nest	fallow agriculture	5/26/2018
	A	raven stick nest	stick nest	fallow agriculture	5/26/2018
	C	great horned owl	active nest	fallow agriculture	5/21/2018
	D	loggerhead shrike	live, perching	desert dry wash woodland	10/27/2017
	east of E	loggerhead shrike	live, perching	creosote bush scrub	10/27/2017
	west of E	redtail hawk	active nest	creosote bush scrub	5/14/2018
	G	prairie falcon	live, in flight	recovering salt bush scrub	5/22/2018
	G	Swainson's hawk	live, in flight	active agriculture	5/23/2018
Public	gen-tie 3	Swainson's hawk	live, in flight	creosote bush scrub	5/20/2018

4.1.10 Loggerhead Shrike: *SSC (nesting), BCC*

Loggerhead shrikes (*Lanius ludovicianus*) are small predatory birds that are uncommon residents throughout most of the southern portion of their range, including southern California. In southern California, they are generally much more common in interior desert regions than along the coast (Humple 2008). They can be found within lowland, open habitat types, including creosote scrub and other desert habitats, sage scrub, non-native grasslands, chaparral, riparian, croplands, and areas characterized by open scattered trees and shrubs Loss of habitat to agriculture, development, and invasive species is a major threat; this species has shown a significant decline in the Sonoran Desert (Humple 2008). Loggerhead shrikes initiate their breeding season in February and may continue with raising a second brood as late as July; they often re-nest if their first nest fails or to raise a second brood (Yosef 1996). In general, loggerhead shrikes prey upon large insects, small birds, amphibians, reptiles, and small rodents over open ground within areas of short vegetation, usually impaling prey on thorns, wire barbs, or sharp twigs to cache for later feeding (Yosef 1996). Suitable habitat for loggerhead shrike is found throughout the Project site. One individual was observed on a parcel with native vegetation on the proposed solar facility site (parcel group D) and another was observed west of parcel group E.

4.1.11 Le Conte's Thrasher: *SSC*

In California, Le Conte's thrasher (*Toxostoma lecontei*) is a resident in the San Joaquin Valley and the Mojave and Colorado Deserts (Weigand and Fitton 2008). This pale gray bird occurs in desert flats, washes and alluvial fans with sandy and/or alkaline soil and scattered shrubs. Preferred nest substrate includes thorny shrubs and small desert trees and nesting rarely occurs in monotypic creosote scrub habitat or Sonoran Desert woodlands (Prescott 2005). Breeding activity occurs from January to early June, with a peak from mid- March to mid-April. Le Conte's thrashers forage for food by digging and probing in the soil. They eat arthropods, small lizards and snakes, and seeds and fruit; the bulk of their diet consists of beetles, caterpillars, scorpions, and spiders. Suitable habitat for Le Conte's thrasher is located in the Project site, primarily within desert dry wash woodland (parcel groups D and F, as well as gen-tie segments 1A, 1C, 2A, 2B, 3, and 4) and the Sonoran creosote bush scrub (parcel groups C, D, E, and F, as well as gen-tie segments 1A, 1C, 2A, 2B, 3, and 4).

4.1.12 California Horned Lark: *WL*

The California horned lark (*Eremophila alpestris actia*) is found throughout California except the north coast and is less common in mountainous areas. It prefers open areas that are barren or with short vegetation including deserts, brushy flats, and agricultural areas, and includes creosote scrub. Eggs are laid March to early June, and it frequently lays a second clutch (Zeiner 1990). There are numerous records in western Riverside County (CNDDB 2018). The Project site contains suitable habitat throughout the Project. It was observed frequently on the Project site, including the gen-tie routes, during the wildlife surveys.

4.1.13 Prairie Falcon: *WL, BCC*

The prairie falcon (*Falco mexicanus*) is currently on the CDFW watch list, and a USFWS Bird of Conservation Concern. It inhabits dry environments in the North American west from southern Canada to central Mexico. It is found in open habitat at all elevations up to 3,350 m, but is associated primarily with perennial grasslands, savannahs, rangeland, some agricultural fields, and desert scrub areas. Prairie falcons require cliffs or bluffs for nesting though will sometimes nest in trees, on power line structures, on buildings, or inside caves or stone quarries. Ground squirrels and horned larks are the primary food source, but prairie falcons will also prey on lizards, other small birds, and small rodents (Zeiner 1990).

A prairie falcon was observed in flight at the eastern portion of the Project site (Figure 15). The entire Project site contains suitable foraging habitat for this species, particularly near active agriculture where artificial water draws in more potential prey. The Project site does not contain suitable nesting habitat, although mountains located over 3 miles away may provide nesting habitat.

4.1.14 Gila Woodpecker: *CE, BLMS, BCC*

Gila woodpecker is predominantly a permanent resident across its range in areas of southeast California, southern Nevada, central Arizona, extreme southwest New Mexico, and parts of Mexico. The Gila woodpecker is an uncommon to fairly common resident in Southern California along the Colorado River, and locally near Brawley, Imperial County (Garrett and Dunn 1981). Suitable habitats include riparian woodlands, uplands with concentrations of large columnar cacti, old- growth xeric-riparian wash woodlands, and urban or suburban residential areas (Rosenberg et al. 1987; Edwards and Schnell 2000). Gila woodpeckers prefer large patches of woody riparian vegetation for nesting (greater than 49 acres), but they have also been documented in various habitat types, such as desert washes (McCreedy 2008) and residential areas (Mills et al. 1989). They excavate cavity nests in large riparian trees such as cottonwoods. In California, their primary habitat is cottonwood-willow riparian woodland. Where Gila woodpeckers occur in dry desert wash woodlands, they excavate cavity nests in large blue palo verdes (McCreedy 2008). They also may nest in ornamental trees including palms. Availability of suitable nesting trees is a limiting factor in breeding habitat suitability (Grinnell and Miller 1944). Potentially suitable habitat within the Project site is found in desert washes (in palo verde trees large enough for cavity nests) but they would be expected to more readily use palm trees in parcel group G than palo verde or ironwood trees. The probability of this species nesting on the Project site is low to moderate because the site supports only sparse riparian woodland habitat, but the existing date palms on the former agricultural land may be attractive as nesting sites. Where Gila woodpeckers occur, they generally are loud and conspicuous, and readily located by field biologists. No Gila woodpeckers were observed within the Project site during surveys, but a nesting pair feeding young was incidentally observed in a palm tree at the Corn Springs Campground seven miles from the Project, during the spring 2018 survey period.

4.1.15 Black-tailed Gnatcatcher: *WL*

Black-tailed gnatcatchers (*Polioptila melanura)* are permanent residents from southeastern California and Arizona to southern Texas and northern Mexico. They are found in arid scrublands, desert brush, and dry washes amongst creosote bush, ocotillo, mesquite, paloverdes, and cactus. They live in pairs all year-round, defend their territory, and forage for small insects amongst low shrubs and trees. The Project site contains suitable foraging and potential nesting habitat for this species in the components with native vegetation such as parcel groups C, D, E, and F as well as gen-tie segments 1A, 1C, 2A, 2B, 3, and 4. One individual was observed during the fall 2017 survey within parcel group F.

4.1.16 Sonora Yellow Warbler: *SSC, BCC*

The Sonora yellow warbler (*Setophaga petechia sonorana*) occurs principally as a migrant and summer resident from late March through early October, and breeds from April to late July (Dunn and Garrett 1997). The Sonora yellow warbler breeds only along the lower Colorado

River in California, and from southern Arizona and southwest New Mexico to north-central Mexico and possibly the Colorado River Delta. It arrives to breed on the lower Colorado River in early April and nests mainly from mid-May through July (Rosenberg et al. 1991). It generally occupies riparian shrubs and trees close to water. Its diet includes ants, bees, wasps, caterpillars, beetles, true bugs, flies, and spiders (Beal 1907, Shuford 2008). The Project site contains suitable foraging habitat (during migration) in the dry wash woodland (parcel groups D, and F as well as gen-tie 1, 1A, 2A, 2B, 3, and 4) but no suitable nesting habitat is present onsite.

4.1.17 Short Eared Owl: *SSC*

The short-eared owl (*Asio flammeus*) is a widespread winter migrant in central and western California, and generally present from September through April. It is an uncommon winter migrant in southern California. Habitat requirements include grasslands, prairies, dunes, meadows, irrigated lands, and wetlands. Short-eared owls generally require dense vegetation for roosting and nesting (Shuford 2008). The active and fallow agricultural areas that contain palm groves are not dense enough for short-eared owl due to the sparse growth of the palm leaves. The Project site does not provide suitable nesting habitat, although short-eared owls may be found on the site incidentally during migration or foraging in irrigated areas such as parcel group G or gen-tie 3 near the active date farm.

4.1.18 Ferruginous Hawk: *WL, BCC*

The ferruginous hawk (*Buteo regalis*) is an uncommon winter resident and migrant at lower elevations and open grasslands in the Central Valley and Coast Ranges, and a fairly common winter resident of grasslands and agricultural areas in southwestern California (Garrett and Dunn 1981). There are no breeding records from California. This species frequents open grasslands, sagebrush flats, and desert scrub. Prey items include lagomorphs, small mammals, reptiles and amphibians (Zeiner 1990). The project site provides potential wintering, migration, and foraging habitat throughout the native vegetation areas in parcel groups D, and F as well as gen-tie segments 1, 1A, 2A, 2B, 3, and 4. The site is outside the Ferruginous hawk's breeding range and is not expected in the area during nesting season.

4.1.19 Swainson's Hawk: *ST, BBC*

Swainson's hawk (*Buteo swainsoni*) breeds in open habitats throughout much of the western United States and Canada, and in northern Mexico. In California, breeding populations of Swainson's hawks occur in desert, shrub and grasslands, and agricultural habitats with tree rows; however, most of the state's breeding sites are in the Great Basin and Central Valley (Woodbridge 1998). The only desert breeding occurrences are in the Antelope Valley, well northwest of the Project site. These birds favor open habitats for foraging, and are near-exclusive insectivores as adults, but may also forage on small mammals and reptiles. The project site provides potential migration habitat but is well outside the nesting range. An

immature Swainson's hawk was incidentally observed flying over the project site on two occasions during the spring 2018 surveys (parcel group G and gen-tie 3) and was likely a migrant since the nearest nesting area for Swainson's hawk is in Antelope Valley. It may be found throughout the project site during migration.

4.1.20 American Peregrine Falcon: *FP, BCC*

The American peregrine falcon (*Falco peregrinus anatum*) is distributed worldwide. Peregrine falcons were formerly listed under CESA and ESA, but have been delisted under both Acts. In California, range is primarily central to northern California, with wintering habitat located in southern California. Migrants occur along the coast and in the western Sierra Nevada in spring and fall. It breeds mostly in woodland, forest, and coastal habitats, and favors open landscapes with cliffs as nest sites. They are found irregularly in the southern desert region, generally during migratory and winter seasons. They nested historically in desert mountain ranges near the Colorado River (Rosenberg et al. 1991; Patten et al. 2003) and may be re-occupying this historical part of their nesting range as their populations recover. Their diet consists primarily of birds and bats (Zeiner 1990). Waterfowl and shorebirds make up a large proportion of their prey, and nest sites are often within foraging range of large water bodies. Suitable migratory or foraging habitat is present throughout the Project site but the site lacks suitable nesting habitat.

4.1.21 Vaux's Swift: *SSC*

Vaux's swift (*Chaetura vauxi*) is a summer resident of northern California and a fairly common migrant throughout most of the state in spring and fall. It roosts in hollow trees and snags, and often in large flocks. Vaux's swifts feed exclusively on flying insects (Shuford 2008). The entire project site provides suitable habitat during migration for foraging, but there is no suitable nesting habitat on the project site.

4.1.22 Mountain Plover: *SSC, BCC*

Mountain plover (*Charadrius montanus)* is found in semi-arid plains, grasslands, and plateaus. It uses open grasslands, plowed fields with little vegetation, and open sagebrush areas. Winter habitats include desert flats, and plowed fields. Mountain plovers are insectivores, feeding primarily on large ground-dwelling insects, including grasshoppers, beetles, and crickets (Shuford 2008). Its distribution was modeled as occurring in the Chuckwalla Valley (CEC 2014a). The entire project site provides suitable habitat during migration but is unlikely to support suitable nesting habitat.

4.1.23 Northern Harrier: *SSC*

Northern harrier (*Circus cyaneus)* inhabits most of California at various times of the year, found up to 3000 m elevation. Northern harriers frequent meadows, grasslands, open rangelands, desert sinks, fresh and saltwater emergent wetlands. They are a widespread winter resident

and migrant in suitable habitat. They primarily feed on small mammals, birds, frogs, small reptiles, crustaceans, and insects (Zeiner 1990). There is suitable foraging throughout the Project site, and no suitable nesting habitat on the Project site. One individual was observed flying over the Project site during fall 2017 surveys.

4.1.24 Yellow-breasted Chat: *SSC*

The yellow-breasted chat (*Icteria virens*) is an uncommon summer resident and migrant in coastal California, in foothills of the Sierra Nevada, and within the Colorado Desert. Breeding occurrences closest to the Project are known from the Salton Sea and Colorado River. In southern California, yellow-breasted chats breed locally on the coast, and very locally inland (Garrett and Dunn 1981). During migration, they may be found in lower elevations of mountains in riparian habitat (McCaskie et al. 1979; Shuford 1990). The yellow-breasted chat may be found on the Project site during migration likely on desert dry wash woodland areas (parcel groups D and F as well as gen-tie segments 1, 1A, 2A, 2B, 3, and 4), but suitable nesting habitat is not present.

4.1.25 Crissal Thrasher: *SSC*

Crissal thrasher (*Toxostoma crissale*) is a year-round resident of southeastern deserts, occupying dense shrubs in desert riparian and desert wash habitats, including mesquite, ironwood, and acacia. It primarily forages on the ground, feeding on invertebrates, berries, and seeds (Bent 1948; Shuford 2008). The project site provides limited but suitable nesting and foraging habitat primarily associated with dry wash woodlands (parcel groups D and F as well as gen-tie segments 1, 1A, 2A, 2B, 3, and 4). No crissal thrashers were observed onsite during surveys.

4.1.26 Elf Owl: *BLMS, BCC*

Elf owl (*Micrathene whitneyi*) is found in lowland habitats that provide cover and good nesting cavities. It is most common farther east and north, in deserts with many tall saguaro cactus or large mesquites, and in canyons in the foothills, especially around sycamores or large oaks. The project site is near the western margin of its geographic range; the nearest nesting occurrence is near Corn Springs (Garret and Dunn 1981). Elf owls are more common and widely distributed outside of California and probably have never been common in California due to limited geographic range and generally marginal habitat. The elf owl is migratory, spending winters in Mexico and southward. It arrives in California by March, and its breeding period extends from April to mid-July (Gould 1987).

The elf owl is a secondary cavity nester (it nests in cavities of trees and cacti, generally in disused woodpecker nests). Its nesting habitat is closely correlated with nesting habitat of woodpeckers, including Gila woodpecker (Hardy et al. 1999; Johnsgard 2002). Gila woodpeckers sometimes nest in blue palo verde and palms, and elf owls have been documented nesting in

blue palo verde near Wiley's Well, east of the project site, by Robert McKernan (Director, San Bernardino County Museum; SBCM 2012a). The palm groves (parcel group G) and desert wash woodland habitat (parcel groups D and F as well as gen-tie segments 1, 1A, 2A, 2B, 3, and 4) on the site may provide suitable (albeit probably marginal) habitat for nesting elf owls.

4.1.27 Other listed Avian Species

No suitable breeding or wintering habitat for the avian species below occur within or near the Project area. These state or federal listed bird species have been recorded at other utility-scale solar energy facilities. There is a moderate potential for them to pass within the Project vicinity during migration periods, but there is no suitable nesting or foraging habitat on the site for these species.

Yuma Ridgway's Rail: *ST, CFP, FE*

Yuma Ridgway's rail *(Rallus obsoletus yumanensis),* formerly known as Yuma clapper rail *(Rallus longirostris yumanensis),* nests in freshwater marshes. It is found along the lower Colorado River southward to its terminus at the Sea of Cortez, along the Gila River drainage in Arizona, at Lake Mead (and the Overton Arm) and its local tributaries, along the Virgin River in Nevada and Utah, and at the Salton Sea/Imperial Valley areas of California (CEC et. al 2014; USFWS 2014). It is believed that most Ridgway's rails do not migrate (USFWS 2014). The extent of dispersal or migration between the populations is not well known (USFWS 2009d); however, outlier records across the desert show that some level of movement occurs (CNDDB 2018). Outlier observations have been documented at Harper Dry Lake, East Cronese Dry Lake, and Desert Center, all at a great distance from known breeding areas (CNDDB 2018).

Southwestern Willow Flycatcher: *SE, FE*

Southwestern willow flycatcher *(Empidonax traillii extimus)* breeds in dense riparian habitats in the southwestern United States, and winters in southern Mexico, Central America, and northern South America (USFWS 2002). The willow flycatcher species is comprised of several recognized subspecies, including the southwestern willow flycatcher, which is the only subspecies that nests in the region. The closest known breeding habitat to the Project site is approximately 35 miles away along the Colorado River and adjacent to the Salton Sea (CNDDB 2018). Recent studies indicate that southwestern willow flycatchers do not migrate over the area of the desert where the Athos project site is located (BLM 2017). However, other willow flycatcher subspecies (not listed as threatened or endangered) may pass through the area during migration. There is no suitable breeding habitat on the Project site, and the site appears to be outside the southwestern willow flycatcher's migratory routes.

Yellow billed cuckoo: *SE, FT, BCC, BLMS*

Western yellow-billed cuckoo (*Coccyzus americanus occidentalis*) breeds in expansive riparian areas in portions of California, Nevada, Arizona, and New Mexico. The closest known breeding habitat is located approximately 35 miles away along the Colorado River (CNDDB 2018). During migration, western yellow-billed cuckoos migrate across the desert and use shrubland habitats, but there have been no documented sightings of western yellow-billed cuckoo within the Development Focus Areas (DFAs) identified in the DRECP LUPA (USFWS 2016). No suitable nesting habitat is present on the Athos project site, although it is possible that western yellow-billed cuckoo could occur on the site briefly during migration season.

Least Bell's Vireo: *SE, FE*

Least Bell's vireo (*Vireo bellii pusillis*) breeds in riparian habitats in southern California and portions of northern Baja California, Mexico and winters in southern Baja California, Mexico (USFWS 1998). Its numbers and distribution have probably increased since its listing, although it remains absent from large parts of its former range (USFWS 2016). The closest known breeding habitat to the Athos site is to the northwest in the Big Morongo Canyon (USFWS 2016). Least Bell's vireos are also uncommon breeders at the Anza-Borrego Desert State Park, located approximately 70 miles southwest (USFWS 2016). The subspecies Arizona Bell's vireo (V. b. arizonae) is not ESA-listed, but is State-listed in California as endangered, and occurs along the lower Colorado River, approximately 35 miles east of the Project site.

Although there is little information on its migration behavior (USFWS 2016), least Bell's vireo likely migrates through the Colorado Desert. It is presumed that it may use riparian habitat and possibly upland scrub habitat during migration (USFWS 2016). No suitable nesting habitat is present on the Athos project site, although least Bell's vireo could occur on the site briefly, during migration season.

4.2 Wildlife Movement

For many wildlife species, movement among habitat areas is a part of regular activities and may be needed for long-term population sustainability. Land use changes can impact wildlife movement across the landscape, leading to habitat fragmentation and population isolation. Habitat fragmentation results when habitat converted to other uses separates or isolates the remaining habitat areas. The result of fragmentation is (1) less habitat availability, and (2) less opportunity for wildlife to make use of the remaining habitat, due to its physical isolation. Habitat areas may be isolated from one another by distance across unfavorable habitat, or by linear barriers such as roadways or aqueducts. Barriers may be impassable for some species (e.g., a wide busy road, for a slow-moving animal) or may be only minor interruptions to movement (such as a narrow, lightly travelled road). Fragmentation and subsequent population isolation can affect wildlife populations by limiting dispersal and genetic exchange, limiting

movement within the home-ranges for wide-ranging species, and limiting the opportunity for populations to occupy new habitat in response to the effects of climate change. Fragmentation also increases habitat "edge" (i.e., habitat adjacent to other land uses), leading to increased exposure to invasive species, human disturbance (vehicles, trash dumping, etc.), and an overall reduction of biodiversity and alteration or degradation of ecological processes.

Accessibility between habitat areas (i.e., "connectivity") is important to long-term genetic diversity and demography of wildlife populations. In the short term, connectivity may also be important to individual animals' ability to occupy their home ranges, if their ranges extend across a potential movement barrier. These considerations apply to greater or lesser extent to all plants and animals. Plant populations "move" over the course of generations via pollen and seed dispersal; most birds and insects travel and disperse via flight; terrestrial species, including small mammals, reptiles, arid land amphibians, and non-flying invertebrates, disperse across land. Therefore, landscape barriers and impediments are more important considerations for movement of terrestrial species. These considerations are especially important for rare species and wide-ranging mammals, which both tend to exist in lower population densities.

In developed landscapes where remnant habitat exists as partially isolated patches surrounded by other land uses, planning for wildlife movement generally focuses on "wildlife corridors" to provide animals with access routes between habitat patches. In largely undeveloped areas, including the Chuckwalla Valley, wildlife habitat is available in extensive open space areas throughout much of the region, but specific barriers may impede or prevent movement. In these landscapes, wildlife movement planning focuses on specific sites where animals can cross linear barriers (e.g., wash crossings beneath Interstate 10), and on broader linkage areas that may support stable, long-term populations of target species and allow demographic movement and genetic exchange among populations in distant habitats (e.g., surrounding mountains).

The California Desert Connectivity Project provides a comprehensive and detailed habitat connectivity analysis for the California deserts (Penrod et al., 2012). The Connectivity Project identified a Desert Linkage Network to maintain habitat for movement between landscape blocks. The landscape blocks identified in the project vicinity are the Palen–McCoy Mountains to the northeast and the Chocolate Mountains to the southwest. Broad habitat linkages connect these landscape blocks. The CDCA Plan, as amended by the DRECP, designates specific areas within the mapped habitat linkage for multiple species habitat connectivity (see Figures 9, 10, and 14). Parcel Group F is partially located within the habitat linkage area identified in the DRECP.

In the Chuckwalla Valley, the biologically important functions of large mammal movement are the long-term demographic and genetic effects of occasional animal movement among mountain ranges and other large habitat areas. Animals such as desert bighorn sheep may

travel across the valley infrequently, to reach other subpopulations in surrounding mountains. In contrast to large animal movement, desert tortoises and other less-mobile animals may live out their entire lives within a linkage area between larger habitat blocks; for these species, movement among surrounding habitat areas may take place over the course of several generations.

Movement opportunity varies for each species, depending on motility and behavioral constraints, as well as landscape impediments. For many terrestrial wildlife species, movement across the Chuckwalla Valley, including movement to and from the project site, or across the site, is limited by anthropogenic barriers or land uses. The I-10 freeway, located south of the project site, is a significant obstruction to movement by terrestrial wildlife. Some species, such as coyote, may learn to cross the freeway safely. However, the freeway presents an impassable or high-risk barrier to north-south movement for most terrestrial species. Other linear features, such as smaller paved and unpaved roads and transmission lines have only minimal effects on wildlife movement.

On the 32-mile stretch of I 10 between the Desert Center and Wiley Wells Road exits there are 24 crossings that provide safe access under the freeway (CEC, 2010). Other than these crossings, the freeway is a nearly complete barrier to north-south terrestrial wildlife movement in the Chuckwalla Valley. A survey of potential tortoise accessibility across the I-10 investigated these 24 crossings (oriented approximately in a north-south direction) for suitability for large mammals, small mammals, and reptiles (CEC, 2010). The survey found that fencing was often missing or in disrepair, was not tethered to the underpasses, and does not function to funnel wildlife under the interstate. The study concluded the underpasses provide connectivity and safe movement corridors between habitat areas to the north and south of the I-10, but the fencing does not prevent animals from accessing I-10. Wildlife species and sign detected at the undercrossings included lizards, rodents, rabbit, roadrunner, ground squirrel, fox, coyote, bobcat, and burro deer. Additionally, the CDFW has documented burro deer using an I-10 undercrossing several miles east of the Athos site.

4.3 Special Status Plant Species

Forty-one special status plant species were reviewed for their potential to occur within the Project site and its vicinity based on regional plans and database records (Appendix B). The probability of occurrence is defined as follows:

- Present: Species was observed at the time of the survey
- High: Both a historical record exists of the species within the project site or its immediate vicinity (approximately 5 miles) and the habitat requirements associated with the species occur within the project site.
- Moderate: Either a historical record exists of the species within the immediate vicinity of the project site (approximately 5 miles) or the habitat requirements associated with the species occur within the project site.
- Low: No records exist of the species occurring within the project site or its immediate vicinity and/or habitats needed to support the species are of poor quality.
- Minimal: Species was not observed during focused surveys conducted at an appropriate time for identification of the species, or species is restricted to habitats that do not occur within the project site

Special status species detected within the Project site or have moderate potential to occur based on the presence of suitable habitat are discussed further in this section. Figure 17 and Table 14 summarize special status plant observations during plant surveys.

Table 14. Summary of Special Status Plant Observations

Project Components	Species	Sign Type	Location	Vegetation Community	Date
Private	Crucifixion Thorn	live shrubs (4)	D	creosote bush scrub	10/29/2017
	Desert Unicorn Plant	live plant in fruit (2)	south of A	creosote bush scrub	10/21/2017
	Desert Unicorn Plant	live plant in fruit (2)	south of A	creosote bush scrub	10/21/2017
	Desert Unicorn Plant	dry Plant w/ fruit	B	fallow agriculture	5/16/2018
	Desert Unicorn Plant	dry plants with fruit (2)	B	fallow agriculture	5/16/2018
	Desert Unicorn Plant	dry plants with fruit (2)	E	fallow agriculture	5/19/2018
	Desert Unicorn Plant	dry plant with fruit	C	fallow agriculture	5/21/2018

Project Components	Species	Sign Type	Location	Vegetation Community	Date
	Desert Unicorn Plant	dry plant with fruit	C	fallow agriculture	5/25/2018
	Desert Unicorn Plant	live plant	F	creosote bush scrub	11/21/2018
	Desert Unicorn Plant	live plant	gen-tie 1	desert dry wash woodland	10/31/2018
	Desert Unicorn Plant	live plant	gen-tie 1	desert dry wash woodland	10/31/2018
	Desert Unicorn Plant	live plant	gen-tie 1	desert dry wash woodland	10/31/2018
	Desert Unicorn Plant	live plant	gen-tie 1	desert dry wash woodland	10/31/2018
	Desert Unicorn Plant	live plant	gen-tie 1	desert dry wash woodland	11/19/2018
	Desert Unicorn Plant	live plant	gen-tie 1	creosote bush scrub	10/31/2018
	Desert Unicorn Plant	live plant	gen-tie 1A	desert dry wash woodland	10/31/2018
	Desert Unicorn Plant	live plant	gen-tie 1A	desert dry wash woodland	10/31/2018
	Desert Unicorn Plant	live plant	gen-tie 1A	desert dry wash woodland	10/31/2018
	Desert Unicorn Plant	live plant	gen-tie 1A	desert dry wash woodland	10/31/2018
Public	Crucifixion Thorn	live shrubs with seeds (2)	gen-tie 2A	creosote bush scrub	10/27/2017
	Desert Unicorn Plant	live plant in fruit	east of gen-tie 1	desert dry wash woodland	10/21/2017
	Desert Unicorn Plant	live plant	east of gen-tie 1	desert dry wash woodland	10/21/2017

Project Components	Species	Sign Type	Location	Vegetation Community	Date
	Desert Unicorn Plant	live plant	east of gen-tie 1	desert dry wash woodland	10/21/2017
	Desert Unicorn Plant	live plant (2)	east of gen-tie 1	desert dry wash woodland	10/21/2017
	Desert Unicorn Plant	live plant in fruit	east of gen-tie 1	creosote bush scrub	10/21/2017

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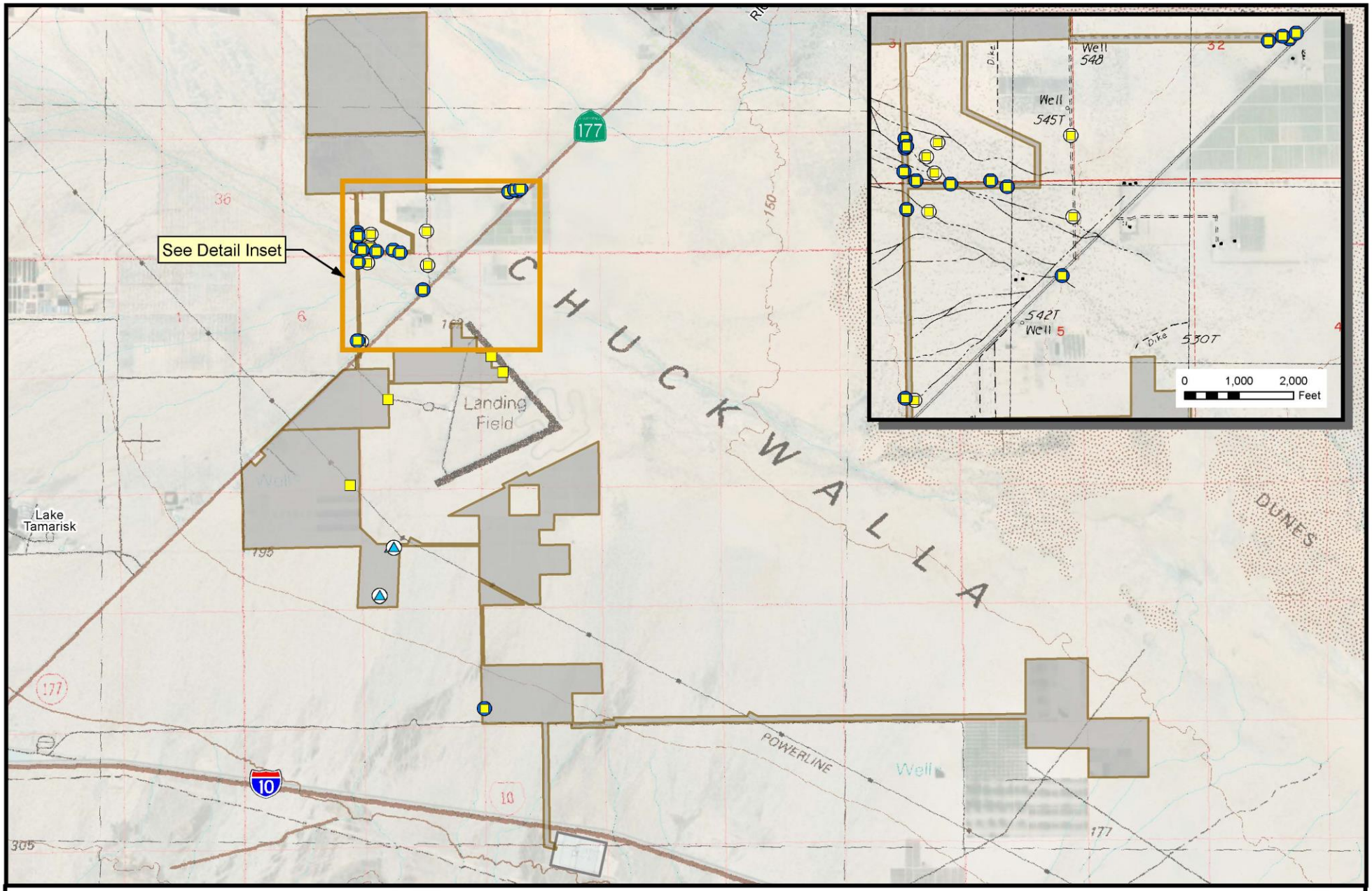

Ironwood Consulting

0 3,000 6,000 Feet

Athos Solar Project

Red Bluff Substation

Fall 2017

Castella emoryi, Crucifixion Thorn

Proboscidea altheafolia, Desert Unicorn Plant

Spring 2018

Castella emoryi, Crucifixion Thorn

Proboscidea altheafolia, Desert Unicorn Plant

Fall 2018

Proboscidea altheafolia Desert Unicorn Plant

FIGURE 17

Special Status Plant Species Observations

Athos Solar

4.3.1 Chaparral sand verbena: *BLMS*, *CRPR 1B.1*

Chaparral sand verbena (*Abronia villosa* var. *aurita*) has 238 records within several counties in southern California, many of which are in Riverside County. Its distribution and identification are unclear in published reference works, including Spellenberg (2002), CNPS (2018) and CNDDB (CDFW 2018). It was added to the CNPS Inventory based on recommendations by Andrew C. Sanders of the UC Riverside Herbarium. The primary conservation concern is for chaparral sand-verbena occurrences in western Riverside County and other locations outside the desert (see Roberts et al. 2004). These western plants appear to be distinct from the very common desert sand verbena, *Abronia villosa* var. *villosa*. Plants in the low desert often match the characteristics of the western Riverside County populations, but they are not regionally rare. There is one record that is very close to the Project site, on the Palen sand dunes in the vicinity of the Desert Lily Sanctuary, located in 2012. Suitable sandy habitat occurs on the eastern extent of the Project site for the species (parcel group G). It is not expected on the former agricultural lands on the Project site. No sand verbena species, including chaparral sand verbena were observed during spring plant surveys, possibly due to the extremely low winter rainfall.

4.3.2 Harwood's Milkvetch: *CRPR 2B.2*

Harwood's milkvetch (*Astragalus insularis* var. *harwoodii*) has historic and recent collections that include Ogilby Road in Imperial County and three locales west of Blythe, the Pinto Basin, and Chuckwalla Basin in Riverside County. Harwood's milkvetch has also been reported from Baja California, Sonora Mexico, and portions of Yuma County. Its primary habitat is windblown sand. There are several CNDDB records for this species within the Project vicinity (CNDDB 2018). Many new occurrences were documented in Chuckwalla Valley and the Palo Verde mesa during surveys for the Blythe Solar Power Project, the Genesis Solar Energy Project, McCoy Solar Energy Project, and Palen Solar Power Project study areas. The Consortium of California Herbaria (CCH) lists 107 occurrences within California (CCH 2018).

There is suitable habitat for Hardwood's milkvetch in undisturbed or disturbed windblown sand habitats of the Project site, particularly in Parcel Group G and some of the gen-tie routes. It is not expected on the former agricultural lands. It was not observed during plant surveys, possibly due to the extremely low winter rainfall.

4.3.3 Crucifixion Thorn: *CRPR 2B.2*

Crucifixion thorn (*Castela emoryi*) has 177 records occurring within California. In Riverside County, several records are near or within Desert Center, including Desert Sunlight Solar Farm just northwest of the Project (CCH 2018). There is suitable habitat for Crucifixion thorn within wash areas of the Project site on Parcel Groups D and F. It was observed at two locations in Parcel Group F where a total of six live individuals were recorded (Figure 17). It is a large conspicuous shrub and can be located and identified at any time of year, even in a year of poor

rainfall. It was not observed elsewhere on the Project site, and no additional occurrences are expected.

4.3.4 Abram's Spurge: *CRPR 2B.2*

Abram's spurge (*Chamaesyce abramsiana* [=*Euphorbia abramsiana*]) occurs in saline scrub flats, playas, and along inlets and floodplains of playas. There are 137 records in California within Imperial, Riverside, San Bernardino and San Diego counties. The records within Chuckwalla Valley closest to the Project site were near Palen Dry Lake and Pinto Basin. Marginally suitable habitat may be present within the Project site in saltbush scrub at parcel group G. Abram's spurge was not observed within the project area since it is a fall blooming plant and dries too quickly for identification in the spring. It is unlikely to occur on the Project site.

4.3.5 Ribbed Cryptantha: *CRPR 4.3*

Ribbed cryptantha (*Cryptantha costata*) has 279 records from several locations throughout Riverside, Imperial, San Diego, and Imperial counties (CCH 2018). It occurs in windblown sand habitats. A large local population of ribbed cryptantha was observed just east of the proposed Palen Solar Power Project. Suitable habitat for ribbed cryptantha occurs at the Project site within Parcel Group G and possibly on some of the gen-tie routes. Ribbed cryptantha was not observed during plant surveys possibly due to extremely low winter rainfall.

4.3.6 Glandular Ditaxis: *CRPR 2B.2*

Glandular ditaxis (*Ditaxis claryana*) is an annual or short-lived perennial that blooms in the fall following the start or rainy season. There are 49 occurrences in the Consortium of California Herbaria (CCH 2018) and there is one record within Desert Center and another near Corn Springs, south of I-10 (CNDDB 2018). Suitable habitat does occur within the Project site. Glandular ditaxis was not observed during spring plant surveys. If the species does occur within the Project site, then fall plant surveys may yield more accurate results for the species.

4.3.7 California Ditaxis: *CRPR 3.2*

California ditaxis (*Ditaxis serrata* var. *californica*) has a CRPR of 3.2 and a NatureServe rank of G3G4/S2 S, which indicates more information is needed about the status of this species. California ditaxis may be a glabrous variety of the common *Ditaxis neomexicana* (CEC 2010). It occupies Sonoran Desert scrub vegetation and prefers sandy washes and alluvial fans of the foothills and lower desert slopes, from 100 to 3,000 feet amsl. It is known from San Bernardino, Riverside, Imperial, San Diego, and Sonora, Mexico (CNPS 2018). There are 45 records of this species in California, primarily from Riverside County (CCH 2018). Suitable habitat appears to be present in Parcel Groups D and F and along some of the gen-tie lines. It was not found during field surveys, possibly because of the poor 2017-2018 rainfall.

4.3.8 Harwood's Eriastrum: *CRPR 1B.2, BLMS*

Harwood's eriastrum (*Eriastrum harwoodii*), also commonly known as Harwood's woollystar, has a CRPR of 1B.2, has a NatureServe rank of G2/S2 and is a BLM sensitive species. It is a spring annual, typically found in dunes associated with the margins around dry lakes such as Dale, Cadiz, and Soda lakes (CNPS 2018). Reports of this species are known from San Bernardino, Riverside, Imperial, San Diego, and Sonora, Mexico (CNPS 2018). There are 118 records of this species in California (CCH 2018). It has been observed within partially stabilized dunes at nearby project sites. Harwood's eriastrum was not observed on the Athos Project site during spring 2018 surveys, possibly due to the poor 2017-2018 rainfall. There is suitable habitat in the sandy areas of parcel group G and on gen-tie route 3.

4.3.9 Utah Milkvine: *CRPR 4.2*

Utah milkvine (*Cynanchum utahense* [=*Funastrum utahense*]) has 149 records from the Consortium of California Herbaria database primarily from San Bernardino and San Diego counties, but there are also several records in Riverside county. There is one record of this species north of Desert Center and another record just southwest of Palen Lake. There is suitable habitat for this twining perennial in the sandy soils of the eastern extent of the Project and slightly more gravelly soils within the creosote bush scrub in the west. Utah milkvine was not observed during spring 2018 surveys, possibly due to the poor 2017-2018 rainfall.

4.3.10 Desert Unicorn Plant: *CRPR 4.3*

Desert unicorn plant (*Proboscidea althaeifolia*) has limited distribution but is not very threatened in California. It is a low-growing, perennial species that occurs in sandy washes within Sonoran desert scrub vegetation in San Bernardino, Imperial, Riverside, and San Diego counties of California. There are 36 records in Riverside County, several of which are from the Chuckwalla Mountains and Desert Center area (CCH 2018). It is a late-season bloomer (May to August) but has large and distinctive seed pods that can be detected during the spring season and fleshy root structure that can remain dormant in dry years (BLM 2011). Suitable habitat occurs within the Project site; it was observed on the gen-tie and the solar farm parcels.

4.3.11 Jackass Clover: *CRPR 2B.2*

Jackass clover (*Wislizenia refracta* ssp. *refracta*) is commonly associated with sandy washes, roadsides, or alkaline flats. There are 28 occurrences in the Consortium of California Herbaria most of which are located in San Bernardino County near Twentynine Palms, with only one record in Riverside County east of Indio (CCH 2018). Jackass clover was also documented at several locations from the northern to southern end of Palen Lake in dune habitats during a detailed vegetation mapping and classification project conducted by CNPS Vegetation Program for BLM (Evens & Hartman 2007). Jackass clover is found in sandy washes, roadsides, or alkaline flats. Suitable habitat is present in small patches on the Project site within parcel groups D, F,

and G and some of the gen-tie routes. Jackass clover was not observed during spring 2018 plant surveys, possibly due to the poor 2017-2018 rainfall.

4.3.12 Palmer's Jackass Clover: *CRPR 2B.2*

Palmer's jackass clover (*Wislizenia refracta* ssp. *palmeri*) has 15 occurrences in the Consortium of California Herbaria with at least three records near Desert Center (CCH 2018). It typically occupies sandy washes, within Sonoran desert scrub vegetation. Suitable habitat is present in small patches of the Project site within Parcel Groups D, F, and G and some of the gen-tie routes. Palmer's jackass clover was not observed during spring 2018 plant surveys, possibly due to the poor 2017-2018 rainfall.

4.3.13 Creosote Bush Rings

No creosote bush rings were detected on public or private components of the Project through a desktop GIS analysis. These negative results for creosote bush rings were field verified in the fall of 2018.

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APPENDIX A

Potential for Special Status Wildlife Species to Occur
Athos Renewable Energy Project

SPECIES	HABITAT REQUIREMENTS	CONSERVATION STATUS	POTENTIAL TO OCCUR ON PROJECT SITE	
			PRIVATE	PUBLIC
AMPHIBIAN and REPTILES				
Couch's spadefoot toad *Scaphiopus couchii*	Occurs along desert washes, desert riparian, palm oasis, desert succulent shrub, and desert scrub habitats. Also found in cultivated cropland areas. Breeds in temporary pools within rocky streambeds, washes, agricultural fields, in road depressions railroad tracks, and cattle tanks. Pools of water must persist 7 to 8 days to facilitate eggs hatching and larvae transformation	Federal: None State: SSC BLM sensitive	low to moderate not observed potentially occur on G	low to moderate not observed potentially occur on gen-tie 3
Agassiz's desert tortoise *Gopherus agassizii*	higher populations in creosote bush communities with friable soils for burrow construction, with extensive annual blooms, but found in almost every desert habitat	Federal: FT State: ST State: ST	low to moderate live individual not observed, burrows observed on C, F, and west of F; potentially occur on D, F, gen-tie 3	low to moderate live individual not observed, burrows observed on gen-tie 3 potentially occur on gen-tie 2A, 2B, 3, 4,
Mojave fringe-toed lizard *Uma scoparia*	Restricted to fine, loose, wind-blown deposits in sand dunes, dry lakebeds, riverbanks, desert washes, sparse alkali scrub and desert shrub habitats	Federal: None State: SSC BLM sensitive	**Present** observed on G	low to moderate potentially occur on gen-tie 1, 1A or gen-tie 3

SPECIES	HABITAT REQUIREMENTS	CONSERVATION STATUS	POTENTIAL TO OCCUR ON PROJECT SITE	
			PRIVATE	PUBLIC
MAMMALS				
Burro deer *Odocoileus hemionus eremicus*	Occur in early to intermediate successional stages of most forest, woodland, and brush habitats. Prefer a mosaic of various-aged vegetation that provides woody cover, meadow and shrubby openings, and free water	Federal: None State: CPGS	high live individual observed south of G potentially occur on D, F, G, or gen-tie 3	high live individual observed south of gen-tie 3, and scat/tracks observed on gen-tie 4 potentially occur on gen-tie 2A, 2B, 3, 4
Desert bighorn sheep *Ovis canadensis nelsoni*	Habitats used include alpine dwarf-shrub, low sage, sagebrush, bitterbrush, pinyon-juniper, palm oasis, desert riparian, desert succulent shrub, desert scrub, subalpine conifer, perennial grassland, montane chaparral, montane riparian (DeForge 1980, Monson and Sumner 1980, Wehausen 1980). Use rocky, steep terrain for escape and bedding. Remain near rugged terrain while feeding in open habitat	Federal: BLMS State: CFP	low - unsuitable habitat not observed	low - unsuitable habitat not observed
Yuma mountain lion *Puma concolor browni*	Primarily inhabit the low mountains and extensive wash systems in and around Chuckwalla Bench, Chuckwalla Mountains, Chocolate Mountains, Picacho	Federal: None	low to moderate not observed	low to moderate not observed

SPECIES	HABITAT REQUIREMENTS	CONSERVATION STATUS	POTENTIAL TO OCCUR ON PROJECT SITE	
			PRIVATE	PUBLIC
	Mountains, Milpitas Wash, Vinagre Wash, and other washes in that area. Mountain lions typically occur in habitat areas with extensive, well- developed riparian or shrubby vegetation interspersed with irregular terrain, rocky outcrops, and community edges. Restricted to the southern Colorado Desert from Joshua Tree National Park south and east to the Colorado River.	State: SSC	potentially occur on D, F, and gen-tie 3	potentially occur on gen-tie 3, 4
American badger *Taxidea taxus*	Suitable habitat for badgers is characterized by herbaceous, shrub, and open stages of most habitats with dry, friable soils.	Federal: None State: SSC	**Present** carcass observed in C, dig and burrow observed in A, D, F potentially occur throughout site	high not observed potentially occur throughout gen-tie
Desert kit fox *Vulpes macrotis arsipus*	Lives in annual grasslands or grassy open vegetation dominated by scattered brush, shrubs, and scrub. Cover provided by occur. Active dens/complexes with sign observed. dens they dig in open, level areas with loose-textured, sandy and loamy soils.	Federal: None State: CPF	high burrows and complexes observed in A, C, D, E, F potentially occur throughout Project site	high not observed potentially occur throughout Project site
BATS				
Pallid bat *Antrozous pallidus*	Inhabit low elevation (less than 6,000 feet) rocky, arid deserts and canyon lands. Typical roosting habitat is not shrub/steppe grasslands. Day and night roosts include crevices in rocky outcrops and cliffs, however, roosting opportunities may exist outside caves, mines, trees with	Federal: None State: SSC	foraging moderate, roosting low, not observed potentially forage in D, F, G, gen-tie 1A, 3	foraging moderate, roosting low, not observed potentially forage in gen-tie 1A,1C, 2A, 2B, 3, 4

SPECIES	HABITAT REQUIREMENTS	CONSERVATION STATUS	POTENTIAL TO OCCUR ON PROJECT SITE	
			PRIVATE	PUBLIC
	exfoliating bark, and various human structures (WBWG, 2005)	BLM sensitive	potentially roost in A, B, C, D, F, G, gen-tie 1A, 3	potentially roost in gen-tie 1, 1A, 2A, 2B, 3, 4
Townsend's big-eared bat *Corynorhinus townsendii*	Habitat associations include coniferous forests, deserts, native prairies, riparian communities, active agricultural areas, and coastal habitat types. Foraging associations include edge habitats along streams, adjacent to and within a variety of wooded habitats.	Federal: None State: SSC BLM sensitive	foraging moderate, roosting low-moderate, not observed potentially forage in D, F, gen-tie 1A, 3 potentially roost in A, B, C, D, F, G, gen-tie 1A, 3	foraging moderate, roosting low-moderate, not observed potentially forage in gen-tie 1, 1A,, 2A, 2B, 3, 4 potentially roost in gen-tie 1, 1A, 2A, 2B, 3, 4
Big brown bat *Eptesicus fuscus*	widespread and abundant species has been recorded in virtually every North American vegetation type. Uncommon in hot desert habitats, and is absent only from the highest alpine meadows and talus slopes. Vagrant individuals may be seen in any habitat. Uses buildings and other human-made structures for roosting to such an extent that natural roosting habits are under documented	Federal: None State: none	low not observed distant from nearest records	low not observed distant from nearest records
Spotted bat *Euderma maculatum*	Arid, low desert habitats to high elevation conifer forests and prominent rock features appear to be a necessary feature for roosting	Federal: None State: SSC BLM sensitive	low not observed distant from nearest records	low not observed distant from nearest records
Western mastiff bat *Eumops perotis*	Variety of habitats, from desert scrub to chaparral to oak woodland and into the ponderosa pine belt and high elevation meadows of mixed conifer forests	Federal: None State: SSC BLM sensitive	foraging moderate, roosting low, not observed potentially forage in C, E, D, F, and gen-tie 1A, 3 lacks roosting	foraging moderate, roosting low, not observed potentially forage in gen-tie 1, 1A, 2A, 2B, 3, 4 lacks roosting

SPECIES	HABITAT REQUIREMENTS	CONSERVATION STATUS	POTENTIAL TO OCCUR ON PROJECT SITE	
			PRIVATE	PUBLIC
Hoary bat *Lasiurus cinereus*	Highly associated with forested habitats. Usually are located at the edge of a clearing, although more unusual roosting sites have been reported in caves, beneath rock ledges, woodpecker holes, squirrel nests, building sides, and in dried palm fronds on palm trees.	Federal: None State: None	foraging moderate, roosting low not observed	foraging moderate, roosting low not observed
Western yellow bat *Lasiurus xanthinus*	Recorded below 600 m (2000 ft) in valley foothill riparian, desert riparian, desert wash. This species occurs year-round in California.	Federal: None State: SSC	foraging and roosting moderate, not observed potentially forage or roost in D, F, gen-tie 1A, 3	foraging and roosting moderate, not observed potentially forage or roost in gen-tie 1, 1A, 2A, 2B, 3, 4
California leaf-nosed bat *Macrotus californicus*	species depends on either caves or mines for roosting habitat. All major maternity, mating, and overwintering sites are in mines or caves (BLM CDD, 2002). California leaf-nosed bat forage almost exclusively among desert wash vegetation within 10 km of their roost (WBWG, 2005)	Federal: None State: SSC BLM sensitive	foraging moderate, roosting low not observed potentially forage in D, F, gen-tie 1A, 3	foraging moderate, roosting low not observed potentially forage in gen-tie 1, 1A,2A, 2B, 3, 4, ROW access
Arizona myotis *Myotis occultus*	Commonly known from conifer forests from 6,000 to 9,000 feet in elevation, although maternity roosts are known from much lower elevations including areas along the Colorado River in California.	Federal: None State: SSC	low not observed distant from nearest records	low not observed distant from nearest records
Cave myotis *Myotis velifer*	Found primarily at lower elevations of the arid southwest in areas dominated by creosote bush, palo verde, and cactus. This species is a “cave dweller” and	Federal: None State: SSC	low not observed distant from nearest records	low not observed distant from nearest records

SPECIES	HABITAT REQUIREMENTS	CONSERVATION STATUS	POTENTIAL TO OCCUR ON PROJECT SITE	
			PRIVATE	PUBLIC
	caves are the main roosts although this species may also use mines, buildings, and bridges for roosts	BLM sensitive		
Yuma myotis *Myotis yumanensis*	Associated with permanent sources of water, typically rivers and streams, feeding primarily on aquatic emergent insects. Also use tinajas (small pools in bedrock) in the arid west. Occurs in a variety of habitats including riparian, arid scrublands and deserts, and forests. Roosts in bridges, buildings, cliff crevices, caves, mines, and trees.	Federal: None State: None BLM sensitive	low not observed distant from nearest records	low not observed distant from nearest records
Pocketed free-tailed bat *Nyctinomops femorosaccus*	Known to occur in the desert from Mar-Aug, when they then migrate out of the area. In California, found primarily in creosote bush and chaparral habitats in proximity to granite boulders, cliffs, or rocky canyons.	Federal: None State: SSC	low not observed distant from nearest records	low not observed distant from nearest records
Big free-tailed bat *Nyctinomops macrotis*	Found generally sea level to 8,000 feet in elevation. This species occurs in desert shrub, . It roosts mostly in the crevices of rocks although may roost in buildings, caves, and tree cavities	Federal: None State: SSC	foraging moderate, roosting low not observed potentially forage D, F, G, gen-tie 1A, 3	foraging moderate, roosting low not observed potentially forage in gen-tie 1, 1A, 2A, 2B, 3, 4, ROW access
BIRDS				
Golden eagle **(Nesting and wintering)** *Aquila chrysaetos*	Typically rolling foothills, mountain areas, sage- juniper flats, desert. Nests on cliffs of all heights and in large trees in open areas. Rugged, open habitats with canyons and escarpments used most frequently for nesting.	Federal: BCC State: CFP, WL BLM sensitive	Nesting/Wintering - minimal Foraging - Low	Nesting/Wintering - minimal Foraging - Low

SPECIES	HABITAT REQUIREMENTS	CONSERVATION STATUS	POTENTIAL TO OCCUR ON PROJECT SITE	
			PRIVATE	PUBLIC
Short-eared owl (Nesting) *Asio flammeus*	Year-round residents in N. California and other parts of CA during wintering. Require open country that supports small mammal that also provides adequate vegetation to provide cover for nests includes salt- and freshwater marshes, irrigated alfalfa or grain fields, and ungrazed grasslands and old pastures.	Federal: None State: SSC	migration -moderate, nesting - low, not observed potentially occur on G	migration-moderate, nesting - low, not observed potentially occur near gen-tie 3
Western burrowing owl *Athene cunicularia hypugaea*	A yearlong resident of open, dry grassland and desert habitats. Uses rodent or other burrows for roosting and nesting cover. In the Colorado Desert, generally occur at low densities in scattered populations	Federal: BCC State: SSC BLM sensitive	high - nesting, foraging observed live at G, sign at A, B, C, D, E, F, G potentially occur throughout Project	high - nesting, foraging not observed potentially occur throughout Project
Redhead (Nesting) *Aythya americana*	During breeding season may be found along e Colorado River and Salton Sea. Breeds locally in the Central Valley, coastal Southern California, eastern Kern County, and the Salton. Nests in fresh emergent wetland bordering open water.	Federal: None State: SSC	low not observed distant from nearest records	low not observed distant from nearest records
Ferruginous hawk (Wintering) *Buteo regalis*	Most common in grassland and agricultural areas in the southwest. Found in open terrain from grasslands to deserts, and are usually associated with concentrations of small mammals.	Federal: BCC State: WL	wintering/migration moderate, nesting low, not observed potentially forage in D, F, gen-tie 1A, 3	wintering/migration moderate, nesting low, not observed potentially forage in gen-tie 1, 1A,2A, 2B, 3, and 4, ROW access

SPECIES	HABITAT REQUIREMENTS	CONSERVATION STATUS	POTENTIAL TO OCCUR ON PROJECT SITE	
			PRIVATE	PUBLIC
Swainson's hawk *Buteo swainsoni*	Require large areas of open landscape for foraging, including grasslands and agricultural lands that provide low-growing vegetation for hunting and high rodent prey populations. Typically nest in large native trees such as valley oak, cottonwood, walnut, willow, and occasionally in nonnative trees within riparian woodlands, roadside trees, trees along field borders, isolated trees, small groves, and on the edges of remnant oak woodlands	Federal: BCC State: ST	migration moderate, nesting - low, observed at G potentially forage throughout Project	migration high, nesting – Low, observed at gen-tie 3 potentially forage throughout Project
Costa's hummingbird (Nesting) *Calypte costae*	Primary habitats are desert wash, edges of desert riparian and valley foothill riparian	Federal: BCC State: None	foraging, nesting - moderate not observed potentially forage or nest in D, F, G gen-tie 1A, 3	foraging, nesting - moderate not observed potentially forage or nest in gen-tie 1, 1A, 2A, 2B, 3, 4, ROW access
Vaux's swift (Nesting) *Chaetura vauxi*	Not known to breed in Riverside or Southern California. They prefer to nest in the hollows inside of large old conifer trees, especially snags, which are entirely lacking from the Project site.	Federal: None State: SSC	migration high, nesting - low, not observed potentially migrate throughout Project	migration high, nesting – low not observed potentially migrate throughout Project
Mountain plover (Wintering) *Charadrius montanus*	habitat includes short-grass prairie or their equivalents, and in southern California deserts are associated primarily with agricultural areas	Federal: BCC State: SSC BLM sensitive	wintering moderate, nesting low, not observed potentially forage in A, B, C, E, G	wintering moderate, nesting low, not observed potentially forage in gen-tie 1C
Black tern	restricted to freshwater habitats while breeding, can be fairly	Federal: None	wintering and nesting low	wintering and nesting low

SPECIES	HABITAT REQUIREMENTS	CONSERVATION STATUS	POTENTIAL TO OCCUR ON PROJECT SITE	
			PRIVATE	PUBLIC
Chlidonias niger	common on bays, salt ponds, river mouths, and pelagic waters in spring and fall migration (Grinnell and Miller 1944, Cogswell, 1977)	State: SSC	not observed uncommon migrant	not observed uncommon migrant
Northern harrier (Nesting) *Circus cyaneus*	Does not commonly breed in desert regions of California, where suitable habitat is limited, but winters broadly throughout California in areas with suitable habitat. Northern harriers forage in open habitats including deserts, pasturelands, grasslands, and old fields.	Federal: None State: SSC	wintering/migration high, nesting low observed flying over Project potentially forage throughout Project	wintering/migration high, nesting low observed flying over Project potentially forage throughout Project
Western yellow-billed cuckoo *Coccyzus americanus occidentalis*	Breeds along the major river valleys in southern and western New Mexico, and central and southern Arizona. In California, the western yellow-billed cuckoo's breeding distribution is now thought to be restricted to isolated sites in the Sacramento, Amargosa, Kern, Santa Ana, and Colorado River valleys.	Federal: FT, BCC State: SE BLM sensitive	migration and nesting low not observed uncommon migrant	migration and nesting low not observed uncommon migrant
Gilded flicker *Colaptes chrysoides*	Stands of giant cactus, Joshua tree, and riparian groves of cottonwoods and tree willows in warm desert lowlands and foothills. Nests primarily in cactus, but also will use cottonwoods and willows of riparian woodlands. May be nearly extinct in California.	Federal: BCC State: SE BLM sensitive	low not observed distant from nearest records	low not observed distant from nearest records
Black swift (Nesting) *Cypseloides niger*	Nests in moist crevice or cave on sea cliffs r above the surf, or on cliffs behind, or adjacent to, waterfalls in deep canyons. Forages widely over many habitats.	Federal: BCC State: SSC	migration and nesting low not observed uncommon migrant	migration and nesting low not observed uncommon migrant

SPECIES	HABITAT REQUIREMENTS	CONSERVATION STATUS	POTENTIAL TO OCCUR ON PROJECT SITE	
			PRIVATE	PUBLIC
Willow flycatcher (Nesting) *Empidonax traillii* **Southwestern willow flycatcher** *E. t. extimus*	Most often occurs in broad, open river valleys or large mountain meadows with lush growth of shrubby willows (Serena 1982). Common spring (mid-May to early June) and fall (mid- August to early September) migrant at lower elevations, primarily in riparian habitats throughout the state exclusive of the North Coast.	Federal: None State: SE Federal: FE State: SE	nesting and wintering low uncommon migrant not observed nesting/winter - low uncommon migrant	nesting and wintering low uncommon migrant not observed nesting/wintering low uncommon migrant
California horned lark *Eremophila alpestris actia*	A common to abundant resident in a variety of open habitats, usually where trees and large shrubs are absent. Found from grasslands along the coast and deserts near sea level to alpine dwarf-shrub habitat above tree line. In winter, flocks in desert lowlands and other areas augmented by winter visitants, many migrating from outside the state (Garrett and Dunn 1981).	Federal: None State: WL	high observed potentially occur throughout Project site	high observed potentially occur throughout Project site
Prairie falcon (Nesting) *Falco mexicanus*	Occurs in annual grasslands to alpine meadows, but associated primarily with perennial grasslands, savannahs, rangeland, some agricultural fields, and desert scrub. Typically nests at cliffs and bluffs	Federal: BCC State: WL	foraging high, nesting low observed potentially occur foraging throughout Project site	foraging high, nesting low observed potentially occur foraging throughout Project site
American peregrine falcon (Nesting) *Falco peregrinus anatum*	Rare in the arid southeast, occur and are suspected to breed in the lower Colorado River Valley. Peregrine falcons require open habitat for foraging, and prefer breeding sites near water. Nesting habitat includes cliffs, steep banks, dunes, mounds, and some human-made structures	Federal: BCC State: CFP	foraging moderate, nesting low not observed potentially forage throughout Project	foraging moderate, nesting low not observed potentially forage throughout Project

SPECIES	HABITAT REQUIREMENTS	CONSERVATION STATUS	POTENTIAL TO OCCUR ON PROJECT SITE	
			PRIVATE	PUBLIC
Sandhill crane (Wintering) *Grus canadensis*	Breeds in open wetland habitats surrounded by shrubs or trees. They nest in marshes, bogs, wet meadows, prairies, burned-over aspen stands, and other moist habitats, preferring those with standing water. Outside of known wintering grounds, extremely rare except during migration over much of interior California.	Federal: None State: SSC	migration moderate, nesting low observed flying over Project migration - throughout Project, but no suitable foraging	migration moderate, nesting low observed flying over Project migration -throughout Project, but no suitable foraging
Yellow-breasted chat (Nesting) *Icteria virens*	This species occupies shrubby riparian habitat with an open canopy, and will nest in non-native species, including tamarisk.	Federal: None State: SSC	migration moderate, nesting low not observed potentially occur foraging during migration in D, F, gen-tie 1, 1A, 3	migration moderate, nesting low not observed potentially occur foraging during migration on gen-tie 1, 1A, 2A, 2B, 3, 4, ROW access
Loggerhead shrike (Nesting) *Lanius ludovicianus*	Open habitats with scattered shrubs, trees, posts, fences, utility lines, or other perches. Highest density occurs in open-canopied valley foothill hardwood, valley foothill hardwood- conifer, valley foothill riparian, pinyon-juniper, juniper, desert riparian, and Joshua tree habitats	Federal: BCC State: SSC	nesting - high, foraging high observed at E potentially occur throughout Project site	nesting- high, foraging - high not observed potentially occur throughout Project site
Gila woodpecker *Melanerpes uropygialis*	In California, this species is found primarily along the Colorado River and in small numbers in Imperial County. In southeastern California, Gila woodpeckers formerly were associated with desert washes extending up to 1 mile from the Colorado River; however, their range may be expanding	Federal: BCC State: SE BLM sensitive	foraging, nesting - low to moderate, not observed potentially occur foraging or nesting on D, F, G gen-tie 1A, 3	foraging, nesting - low to moderate, not observed potentially occur foraging or nesting on gen-tie 1,1A, 2A, 2B, 3, 4
Elf owl *Micrathene whitneyi*	A very rarely seen spring and summer resident of the Colorado River Valley. Nests in desert riparian habitat with cottonwood, sycamore, willow or mesquite;	Federal: BCC State: SE	foraging, nesting - low to moderate not observed potentially occur foraging or nesting on D, F, G gen-tie 1, 1A, 3	foraging, nesting - low to moderate, not observed potentially occur foraging or nesting on gen-tie 1, 1A, 2A, 2B, 3, 4, ROW access

SPECIES	HABITAT REQUIREMENTS	CONSERVATION STATUS	POTENTIAL TO OCCUR ON PROJECT SITE	
			PRIVATE	PUBLIC
	absent from desert riparian habitat dominated by saltcedar	BLM sensitive		
Long-billed curlew (Nesting) *Numenius americanus*	Preferred breeding and winter habitats include large coastal estuaries, upland herbaceous areas, and croplands. On estuaries, feeding occurs mostly on intertidal mudflats.	Federal: BCC State: WL	migration moderate, nesting low not observed migration throughout Project site, no suitable foraging	migration moderate, nesting low not observed migration throughout Project site, no suitable foraging
Lucy's warbler (Nesting) *Oreothlypis luciae*	An uncommon to common, summer resident and breeder along the Colorado River, common locally in a few other desert areas, and rare near Salton Sea. It occurs in desert typical nesting habitat, mesquite wash and desert riparian habitats, may use abandoned verdin nests	Federal: BCC State: SSC BLM sensitive	foraging, nesting moderate, not observed potentially occur foraging or nesting on D, F, gen-tie 1, 1A, 3	foraging, nesting moderate, not observed potentially occur foraging or nesting on gen-tie 1, 1A, 2A, 2B, 3, 4, ROW access
American white pelican (Nesting colony) *Pelecanus erythrorhynchos*	Common spring and fall migrant at Salton Sea and Colorado River. Migrant flocks pass overhead almost any month, but mainly in spring and fall throughout the state, especially in southern California (Cogswell 1977, McCaskie et al. 1979, Garrett and Dunn 1981)	Federal: None State: SSC	migration moderate, nesting/wintering low not observed migration throughout Project site, no suitable foraging	migration moderate, nesting/wintering low not observed migration throughout Project site, no suitable foraging
Black-tailed gnatcatcher	A year-round resident in southwestern U.S. and central and northern Mexico, in California, is found in the southeast desert wash habitat from Palm Springs and Joshua	Federal: None	foraging, nesting high observed	foraging, nesting high observed

SPECIES	HABITAT REQUIREMENTS	CONSERVATION STATUS	POTENTIAL TO OCCUR ON PROJECT SITE	
			PRIVATE	PUBLIC
Polioptila melanura	Tree National Park south, and along the Colorado River. It is now rare in eastern Mojave Desert north to the Amargosa River, Inyo County. This species nests primarily in wooded desert wash habitat, but also occurs in creosote scrub habitat during the non-breeding season.	State: WL	potentially occur on B, C, D, E, F, gen-tie 1, 1A, 3	potentially occur on gen-tie 1, 1A, , 2A, 2B, 3, 4, ROW access
Vesper sparrow *Pooecetes gramineus*	Fairly common locally in southern deserts in the winter and during migration. Occupies grasslands, croplands, and open brush lands.	Federal: None State: SSC	migration moderate, nesting low not observed migration throughout Project site, no suitable wintering or nesting habitat	migration moderate, nesting low not observed migration throughout Project site, no suitable wintering or nesting habitat
Purple martin *Progne subis*	The historical breeding range of the purple martin includes southern California, though populations have shrunk dramatically and neither includes the Colorado Desert. Habitat requirements include adequate nest sites and availability of large aerial insects, and therefore are most abundant near wetlands and other water sources.	Federal: None State: SSC	migration moderate, nesting low not observed migration throughout Project site, no suitable wintering or nesting habitat	migration moderate, nesting low not observed migration throughout Project site, no suitable wintering or nesting habitat
Vermilion flycatcher (Nesting) *Pyrocephalus rubinus*	They are usually found near water in arid scrub, farmlands, parks, golf courses, desert, savanna, cultivated lands, and riparian woodlands; nesting substrate includes cottonwood, willow, and mesquite.	Federal: None State: SSC	wintering, nesting low not observed migration throughout Project site	wintering, nesting low not observed migration throughout Project site

SPECIES	HABITAT REQUIREMENTS	CONSERVATION STATUS	POTENTIAL TO OCCUR ON PROJECT SITE	
			PRIVATE	PUBLIC
Ridgway's (Yuma) clapper rail *Rallus obsoletus yumanensis*	Occurs in inland areas in the southwestern United States. This subspecies is partially migratory, with many birds wintering in brackish marshes along the Gulf of California. Some remain on their breeding grounds throughout the year; for example, the Salton Sea (south) Christmas Bird Count frequently records this species in the fresh-water marshes in and around the Imperial Wildlife Area (Wister Unit). Nesting and foraging habitat occurs only along the Lower Colorado River (from Topock Marsh southward) and around the Salton Sea	Federal: FE State: ST, CFP	wintering, nesting low not observed rare, migrants only	wintering, nesting low not observed rare, migrants only
Bank swallow (Nesting) *Riparia riparia*	A neotropical migrant found primarily in riparian and other lowland habitats in California west of the deserts during the spring-fall period. Uses holes dug in cliffs and river banks for cover. Will also roost on logs, shoreline vegetation, and telephone wires.	Federal: None State: ST BLM sensitive	wintering, nesting low, migration moderate not observed migration throughout Project site	wintering, nesting low, migration moderate not observed migration throughout Project site
Sonora Yellow warbler (Nesting) *Setophaga petechia sonorana*	In southeastern California, this species is known only from the lower Colorado River Valley from the middle of San Bernardino County through Riverside and Imperial Counties. This species commonly uses wet, deciduous thickets for breeding, and seeks a variety of wooded, scrubby habitats in winter	Federal: BCC State: SSC	nesting low, migration moderate migration throughout Project site	nesting low, migration moderate migration throughout Project site

SPECIES	HABITAT REQUIREMENTS	CONSERVATION STATUS	POTENTIAL TO OCCUR ON PROJECT SITE	
			PRIVATE	PUBLIC
Lawrence's goldfinch (Nesting) *Spinus lawrencei*	Highly erratic and localized in occurrence. Rather common along western edge of southern deserts. Breeds in open oak or other arid woodland and chaparral, near water. Typical habitats in southern California include desert riparian, palm oasis, pinyon-juniper, and lower montane habitats.	Federal: BCC State: none	wintering, nesting low, migration moderate migration throughout Project site	wintering, nesting low, migration moderate migration throughout Project site
Bendire's thrasher *Toxostoma bendirei*	Favors open grassland, shrubland, or woodland with scattered shrubs, primarily in areas that contain large cholla, Joshua tree, Spanish bayonet, Mojave yucca, palo verde, mesquite, catclaw, desert-thorn, or agave.	Federal: BCC State: SSC BLM sensitive	foraging moderate, nesting low potentially occur on D, F, gen-tie 1, 1A, 3	foraging moderate, nesting low potentially occur on gen-tie 1, 1A, 2A, 2B, 3, 4, ROW access
Crissal thrasher *Toxostoma crissale*	This species prefers habitats characterized by dense, low scrubby vegetation, which, at lower elevations, includes desert and foothill scrub and riparian brush.	Federal: None State: SSC	wintering, nesting low, migration moderate potentially occur throughout Project site	wintering, nesting low, migration moderate potentially occur throughout Project site
Le Conte's thrasher *Toxostoma lecontei*	Occurs primarily in open desert wash, desert scrub, alkali desert scrub, and desert succulent shrub habitats; also occurs in Joshua tree habitat with scattered shrubs.	Federal: None State: SSC	High potentially occur on C, D, E, F, G, and gen-tie 1, 1A, 3	High potentially occur on gen-tie 1, 1A, 2A, 2B, 3, 4, ROW access

SPECIES	HABITAT REQUIREMENTS	CONSERVATION STATUS	POTENTIAL TO OCCUR ON PROJECT SITE	
			PRIVATE	PUBLIC
***Arizona* Bell's vireo** *Vireo bellii arizonae*	Subspecies *V. b. pusillus* (endemic to California and Baja California - state and federally listed) and *V. b arizonae* are state listed. Bell's vireo is a rare, local, summer resident below about 600 m (2000 ft) in willows and other low, dense valley foothill riparian habitat and lower portions of canyons mostly in San Benito and Monterey Co.; in coastal southern California from Santa Barbara Co. south; and along the western edge of the deserts in desert riparian habitat.	Federal: BCC State: SE BLM sensitive	wintering and nesting low, migration moderate migration throughout Project	wintering and nesting low, migration moderate migration throughout Project
Least Bell's vireo *V. b. pusillus*		Federal: FE State: SE	wintering and nesting low, migration moderate migration throughout Project	wintering and nesting low, migration moderate migration throughout Project
Yellow-headed blackbird (Nesting) *Xanthocephalus xanthocephalus*	Nests in fresh emergent wetland with dense vegetation and deep water, often along borders of lakes or ponds. Forages in emergent wetland and moist, open areas, especially cropland and muddy shores of lacustrine habitat. Occurs as a migrant and local breeder in deserts	Federal: None State: SSC	wintering and nesting low, migration moderate migration throughout Project	wintering and nesting low, migration moderate migration throughout Project

Conservation Status

Federal FE = Federally listed endangered: species in danger of extinction throughout a significant portion of its range

FT = Federally listed, threatened: species likely to become endangered within the foreseeable future

FCT = Proposed for federal listing as a threatened species

BCC = Fish and Wildlife Service: Birds of Conservation Concern:

State SSC = State Species of Special Concern
CFP = California Fully Protected
SE = State listed as endangered
ST = State listed as threatened
WL = State watch list
CPF = California Protected Furbearing Mammal
CPGS = California Protected Game Species

Bureau of Land Management
BLMS = BLM Sensitive

** Species not detected during previous surveys may have the potential to occur on the Project site in the future.

APPENDIX B

Potential for Special Status Plant Species to Occur
Athos Renewable Energy Project

PLANT SPECIES	FORM; HABITAT; DISTRIBUTION (COUNTIES)	CONSERVATION STATUS	ELEVATION (meters)	BLOOMING PERIOD	POTENTIAL TO OCCUR ON PROJECT SITE	
					PRIVATE	PUBLIC
Chaparral sand verbena *Abronia villosa var. aurita*	Annual herb; sandy – chaparral, coastal scrub, desert dunes; Imperial, Los Angeles, Orange, Riverside, San Bernardino, San Diego, Ventura	Federal: none CRPR: 1B.1 BLM sensitive	75 - 1600	Jan-Sep	moderate not observed potentially occur on parcel group A or D	moderate not observed potentially occur on gen-tie 1A or 3
Angel trumpets *Acleisanthes longiflora*	Perennial herb; Sonoran desert scrub (carbonate); known in CA only from one occurrence in the Maria Mountains	Federal: none CRPR: 2B.3	90 - 95	May	Low – distant from known records not observed	low - distant from known records not observed
Desert sand parsley *Ammoselinum giganteum/ Spermolepis gigantea*	Annual herb; Sonoran Desert scrub, Riverside-known in CA only from Hayfields Dry Lake	Federal: none CRPR: 2B.1	~152	Mar-Apr	low - distant from known records not observed	low – distant from known records not observed
Small-flowered andstrostphium *Androstephium breviflorum*	perennial bulbiferous herb; desert dunes, Mojavean desert scrub (bajada); San Bernardino, Riverside, Inyo	Federal: none CRPR: 2B.2	220 - 800	Mar-Apr	low - distant from known records not observed	low – distant from known records Not observed
Harwood's milkvetch *Astragalus insularis* var. *harwoodii*	Annual herb; sandy or gravelly - desert dunes, Mojavean Desert scrub; Riverside, San Bernardino, San Diego, Inyo	Federal: none CRPR: 2B.2	0-710	Jan-May	Moderate not observed potentially occur on G	Moderate not observed potentially occur on gen-tie 1A or 3

PLANT SPECIES	FORM; HABITAT; DISTRIBUTION (COUNTIES)	CONSERVATION STATUS	ELEVATION (meters)	BLOOMING PERIOD	POTENTIAL TO OCCUR ON PROJECT SITE	
					PRIVATE	PUBLIC
Coachella Valley milkvetch *Astragalus lentiginosus* var. *coachellae*	Annual/perennial herb; Desert dunes -Sonoran desert scrub (sandy); Riverside Coachella Valley Preserve System	Federal: FE CRPR: 1B.2 BLM sensitive	40-655	Feb-May	low - distant from known records not observed	low - distant from known records not observed
California ayenia *Ayenia compacta*	Perennial herb; Mojavean desert scrub Sonoran desert scrub; Riverside, San Bernardino, San Diego	Federal: none CRPR: 2B.3	150-1095	Mar-Apr	low - distant from known records not observed	low - distant from known records not observed
Pink fairy duster *Calliandra eriophylla*	perennial deciduous shrub Sonoran Desert scrub (sandy or rocky); Imperial, Riverside, San Diego	Federal: none CRPR: 2B.3	120 - 1500	Jan-Mar	minimal not observed	minimal not observed
Sand evening-primrose *Chylisimia arenaria*[=*Camissonia arenaria*]	annual / perennial herb; Sonoran Desert scrub (sandy or rocky); Imperial, Riverside, San Bernardino	Federal: none CRPR: 2B.2	70-915	Nov-May	low - distant from known records not observed	low- distant from known records not observed
Crucifixion thorn *Castela emoryi*	perennial deciduous shrub; gravelly -Mojavean desert scrub, Playas, Sonoran Desert scrub, Imperial, Inyo, Riverside, San Bernardino	Federal: none CRPR: 2B.2	90-725	Apr-Oct	**Present** observed at D	moderate not observed
Abram's spurge *Chamaesyce abramsiana*	Annual herb; sandy - Mojavean desert scrub, Sonoran Desert scrub, Imperial, San Bernardino, San Diego, Riverside	Federal: none CRPR: 2B.2	5-1310	Aug-Nov	Moderate Not observed potentially occur on C, D, E, F, or gen-tie 1A, 3	Moderate Not observed potentially occur on gen-tie 1A, 1C, 2A, 2C, 3, 4

PLANT SPECIES	FORM; HABITAT; DISTRIBUTION (COUNTIES)	CONSERVATION STATUS	ELEVATION (meters)	BLOOMING PERIOD	POTENTIAL TO OCCUR ON PROJECT SITE	
					PRIVATE	PUBLIC
Arizona spurge *Chamaesyce arizonica*	Perennial herb; Sonoran Desert scrub (sandy); Imperial, Riverside, San Diego	Federal: none CRPR: 2B.3	50-300	Mar-Apr	low - distant from known records Not observed	low – distant from known records Not observed
Flat-seeded spurge *Chamaesyce platysperma*	Annual herb; Desert dunes - Sonoran Desert scrub (sandy); Imperial Riverside, San Bernardino, San Diego	Federal: none CRPR: 1B.2 BLM sensitive	65-100	Feb-Sep	low - distant from known records not observed	low - distant from known records not observed
Las Animas colubrina *Colubrina californica*	Perennial deciduous shrub; Mojavean desert scrub, Sonoran desert scrub Imperial; Riverside, San Diego	Federal: none CRPR: 2B.3	10-1000	Apr-Jun	minimal not observed	minimal not observed
Spiny abrojo *Condalia globosa* var. *pubescens*	Perennial deciduous shrub, Sonoran desert scrub, Imperial, Riverside, San Diego	Federal: none CRPR: 4.2	85-1000	Mar-Nov	minimal not observed	minimal not observed
Foxtail cactus *Coryphantha alversonii*	perennial stem succulent; sandy or rocky, usually granitic - Mojavean desert scrub, Sonoran desert scrub; Imperial, Riverside, Imperial	Federal: none CRPR: 4.3	75-1525	Apr-Jun	minimal not observed	minimal not observed
Ribbed cryptantha *Cryptantha costata*	annual herb; sandy - Desert dunes, Mojavean desert scrub, Sonoran desert scrub; Imperial, Inyo, Riverside, San Bernardino, San Diego	Federal: none CRPR: 4.3	-560	Feb-May	moderate not observed potentially occur on A, C, D, E, F, G, or gen-tie 1A, 3	moderate not observed potentially occur on gen-tie 1A, 1C, 2A, 2B, 3, 4
Winged cryptantha	Annual herb; Mojavean desert scrub - Sonoran	Federal: none	100-1690	Mar-Apr	low - distant from known records	low - distant from known records

PLANT SPECIES	FORM; HABITAT; DISTRIBUTION (COUNTIES)	CONSERVATION STATUS	ELEVATION (meters)	BLOOMING PERIOD	POTENTIAL TO OCCUR ON PROJECT SITE	
					PRIVATE	PUBLIC
Cryptantha holoptera	desert scrub Imperial, Inyo, Riverside, San Bernardino, San Diego	CRPR: 4.3			Not observed	Not observed
Wiggins' cholla *Cylindropuntia wigginsii* [=*Opuntia wigginsii*]	Perennial stem succulent. Sonoran desert scrub (sandy) Imperial, Riverside, San Bernardino, San Diego	Federal: none CRPR: 3.3	30-885	Mar	minimal not observed	minimal not observed
Utah milkvine *Cynanchum utahense* (syn=[=*Funastrum utahense*]	Perennial herb; sandy or gravelly - Mojavean desert scrub, Sonoran desert scrub; Imperial, Riverside, San Bernardino, San Diego	Federal: none CRPR: 4.2	100-1435	Mar-Oct	moderate not observed potentially occur on A, C, D, E, F, G, or gen-tie 1A, 3	moderate no observed potentially occur on gen-tie 1A, 1C, 2A, 2B, 3, 4
Glandular ditaxis *Ditaxis claryana*	perennial herb; sandy; Mojavean desert scrub; Sonoran desert scrub; Imperial, Riverside, San Diego	Federal: none CRPR: 2B.2	0-465	Oct-Mar	moderate not observed potentially occur on A, C, D, E, F, G, or gen-tie 1A, 3	moderate not observed potentially occur on gen-tie 1A, 1C, 2A, 2B, 3, 4
California ditaxis *Ditaxis serrata* var. *californica*	Perennial herb; Sonoran desert scrub; Imperial, Riverside, San Bernardino, San Diego	Federal: none CRPR: 3.2	30-1000	Mar-Dec	moderate not observed potentially occur on A, C, D, E, F, G, or gen-tie 1A, 3	moderate not observed potentially occur on gen-tie 1A, 1C, 2A, 2B, 3, 4
Cottontop cactus *Echinocactus polycephalus var. polycephalus*	Perennial stem succulent. Rocky hills, silt valleys; Sonoran desert scrub; Imperial, Inyo, Riverside, San Bernardino, San Diego	Federal: none CRPR: CBR	<1400	Mar-Aug	minimal not observed	minimal not observed
Harwood's Eriastrum *Eriastrum harwoodii*		Federal: none CRPR: 1B.2	125-915	Mar-Jun	moderate not observed	moderate not observed

PLANT SPECIES	FORM; HABITAT; DISTRIBUTION (COUNTIES)	CONSERVATION STATUS	ELEVATION (meters)	BLOOMING PERIOD	POTENTIAL TO OCCUR ON PROJECT SITE	
					PRIVATE	PUBLIC
	annual herb; Desert dunes; Riverside, San Bernardino, San Diego	BLM sensitive			potentially occur on A, G, or gen-tie 1A, 3	potentially occur on gen-tie 1A, 3
California satintail *Imperata brevifolia*	perennial rhizomatous herb; Chaparral, Coastal scrub, Mojavean desert scrub, Meadows and seeps (often alkali), Riparian scrub; Butte, Fresno, Imperial, Inyo, Kern, Lake, Los Angeles, Orange, Riverside, San Bernardino, Tehama, Tulare, Ventura	Federal: none CRPR: 2B.1	0-1215	Sep-May	minimal not observed	minimal not observed
Pink velvet mallow *Horsfordia alata*	Perennial shrub; Sonoran desert scrub (rocky); Imperial, Riverside	Federal: none CRPR: 4.3	100-500	Feb-Dec	minimal not observed	minimal not observed
Bitter hymenoxys *Hymenoxys odorata*	Annual herb sandy; Riparian scrub, Sonoran desert scrub; San Bernardino, Riverside, Imperial	Federal: none CRPR: 2B.1	45-150	Feb-Nov	low - distant from known records Not observed	low - distant from known records Not observed
Spearleaf *Matelea parvifolia*	Perennial herb; rocky - Mojavean desert scrub, Sonoran desert scrub; Imperial, Riverside, San Bernardino, San Diego	Federal: none CRPR: 2B.3	440-1095	Mar-May	low - distant from known records not observed	low - distant from known records not observed
Argus blazing star *Mentzelia puberula*	Perennial herb; sandy or rocky -Mojavean desert scrub Sonoran desert scrub, Imperial, Riverside, San Bernardino	Federal: none CRPR: 2B.2	90-1280	Mar-May	low - unsuitable habitat not observed	low - unsuitable habitat not observed

PLANT SPECIES	FORM; HABITAT; DISTRIBUTION (COUNTIES)	CONSERVATION STATUS	ELEVATION (meters)	BLOOMING PERIOD	POTENTIAL TO OCCUR ON PROJECT SITE	
					PRIVATE	PUBLIC
Slender cotton-heads *Nemacaulis denudata* var. *gracilis*	Annual herb; coastal dunes, desert dunes, Sonoran desert scrub; Imperial, Riverside, San Bernardino, San Diego	Federal: none CRPR: 2B.2	-450	Mar-May	low - distant from known records not observed	low - distant from known records not observed
Lobed cherry *Physalis lobata*	Perennial herb; Mojavean desert scrub (decomposed granitic), Playas; San Bernardino	Federal: none CRPR: 2B.3	500-800	May-Jan	Low- habitat not observed	Low – habitat not observed
Desert portulaca *Portulaca halimoides*	Annual herb; Joshua tree woodland (sandy, San Bernardino, Riverside	Federal: none CRPR: 4.2	1000-2000	Sep	low - unsuitable elevation not observed	low - unsuitable elevation not observed
Desert unicorn plant *Proboscidea althaeifolia*	Perennial herb; gently sloping sandy flats and washes, sometimes roadsides, Sonoran desert scrub; Imperial, Riverside, San Bernardino, San Diego	Federal: none CRPR: 4.3	85-1000	May-Oct	**Present** Observed at A, B, C and gen-tie 1A	**Present** Observed at gen-tie 1A
Orocopia sage *Salvia greatae*	Perennial evergreen shrub; Mojavean desert scrub, Sonoran desert scrub; Imperial, Riverside, San Bernardino	Federal: none CRPR: 1B.3 BLM sensitive	-865	Mar-Apr	minimal not observed	minimal not observed
Desert spikemoss *Selaginella eremophila*	Perennial rhizomatous herb; chaparral, Sonoran desert scrub (gravelly or rocky); Imperial, Riverside, San Diego	Federal: none CRPR: 2B.2	200-1295	May-Jul	minimal not observed	minimal not observed

PLANT SPECIES	FORM; HABITAT; DISTRIBUTION (COUNTIES)	CONSERVATION STATUS	ELEVATION (meters)	BLOOMING PERIOD	POTENTIAL TO OCCUR ON PROJECT SITE	
					PRIVATE	PUBLIC
Cove's cassia *Senna covesii*	Perennial herb; dry, sandy desert washes and slopes, Sonoran desert scrub; Imperial, Riverside, Kern, San Bernardino, San Diego	Federal: none CRPR: 2B.2	225-1295	Mar-Aug	low – unsuitable elevation not observed	low-unsuitable elevation not observed
Mesquite nest straw *Stylocline sonorensis*	Annual herb; Sonoran desert scrub (sandy) Known in CA from only a single collection (1930) at Hayfields Dry Lake Possibly extirpated after 1930 by development	Federal: none CRPR: 2A	+/- 400	Apr	low - distant from known records not observed	low - distant from known records not observed
Dwarf germander *Teucrium cubense ssp. depressum*	Annual herb; desert dunes, playas margins; Sonoran desert scrub, Imperial, Riverside	Federal: none CRPR: 2B.2	45-400	Mar-Nov	low - distant from known records not observed	low - distant from known records not observed
Jackass clover *Wislizenia refracta ssp. refracta*	Annual herb; desert dunes, Mojavean desert scrub, playas, Sonoran desert scrub, Riverside, San Bernardino	Federal: none CRPR: 2B.2	600-800	Apr-Nov	moderate not observed potentially occur on A, C, D, E, F, G, or gen-tie 1A, 3	moderate not observed potentially occur on gen-tie 1A, 1C, 2A, 2B, 3, 4
Palmer's jackass clover Wislizenia refracta ssp. Palmeri	perennial deciduous shrub; Chenopod scrub, Desert dunes, Sonoran desert scrub, Sonoran thorn woodland, Riverside, San Diego	Federal: none CRPR: 2B.2	0-300	Jan-Dec	moderate not observed potentially occur on A, C, D, E, F, G, or gen-tie 1A, 3	moderate not observed potentially occur on gen-tie 1A, 1C, 2A, 2B, 3, 4
"Palen Lake atriplex" *Atriplex sp. nov. J. Andre* *(Atriplex canescens ssp.)*	Perennial shrub; Saline habitats, playa margins of Palen Dry Lake; Riverside	Federal: none CRPR: none BLM sensitive	<160	May-Jun	minimal not observed	minimal not observed

Federal FE = Federally listed endangered: species in danger of extinction throughout a significant portion of its range

FT = Federally listed, threatened: species likely to become endangered within the foreseeable future

California Rare Plant Rank (CRPR)

CRPR 1A = Presumed extirpated in California and either rare or extinct elsewhere

CRPR 1B = Rare, threatened, or endangered in California and elsewhere

CRPR 2A = Presumed extirpated in California but more common elsewhere

CRPR 2B = Rare, threatened, or endangered in California but more common elsewhere

CRPR 3 = Plants which need more information

CRPR 4 = Limited distribution – a watch list

CBR = Considered, But Rejected

.1 = Seriously endangered in California (high degree/immediacy of threat; over 80% of occurrences threatened)

.2 = Fairly endangered in California (moderate degree/immediacy of threat; 20%-80% of occurrences threatened)

.3 = Not very endangered in California (low degree/immediacy of threats or no current threats known; <20% of occurrences threatened or no current threats known)

Bureau of Land Management

BLM Sensitive = BLM Manual §6840 defines sensitive species as those species that are (1) under status review by the FWS/NMFS; or (2) whose numbers are declining so rapidly that Federal listing may become necessary, or (3) with typically small and widely dispersed populations; or (4) those inhabiting ecological refugia or other specialized or unique habitats. BLM, 2001

APPENDIX C

Athos Renewable Energy Project
Wildlife Species Observed
Fall 2017-Spring 2018

COMMON NAME	SCIENTIFIC NAME
Mammals	
antelope ground squirrel	*Ammospermophilus leucurus*
round tail ground squirrel	*Xerospermophilus tereticaudus*
black tailed jackrabbit	*Lepus californicus*
desert kit fox	*Vulpes macrotis*
coyote	*Canis latrans*
burro deer	*Odocoileus hemionus*
Reptiles	
sidewinder rattlesnake	*Crotalus cerastes*
desert iguana	*Dipsosaurus dorsalis*
side blotched lizard	*Uta stansburiana*
western whiptail lizard	*Aspidoscelis tigris*
zebra-tailed Lizard	*Calisaurus draconoides*
Birds	
American kestrel	*Falco sparverius*
Anna's hummingbird	*Calypte anna*
ash-throated flycatcher	*Myiarchus cinerascens*
barn owl	*Tyto alba*
black phoebe	*Sayornis nigricans*
black tailed gnatcatcher	*Polioptila melanura*
black throated sparrow	*Amphispiza bilineata*
black-headed grosbeak	*Pheucticus melanocephalus*
black-necked stilt	*Himantopus mexicanus*
black-tailed gnatcatcher	*Polioptila melanura*
blue grey gnatcatcher	*Polioptila caerulea*
brown headed cowbird	*Molothrus ater*
burrowing owl	*Athene cunicularia*
cactus wren	*Campylorhynchus brunneicapillus*
common poorwill	*Phalaenoptilus nuttallii*
common raven	*Corvus corax*
common yellowthroat	*(Geothlypis trichas)*
Cooper's hawk	*Accipiter cooperii*
Eurasian collared-dove	*Streptopelia decaocto*
European starling	*Sturnus vulgaris*
Gambel's quail	*Callipepla gambelii*

COMMON NAME	SCIENTIFIC NAME
greater roadrunner	*Geococcyx californianus*
greater yellowlegs	*Tringa melanoleuca*
great-tailed grackle	*Quiscalus mexicanus*
hooded oriole	*Icterus cucullatus*
horned lark	*Eremophila alpestris*
house finch	*Carpodacus menicanus*
killdeer	*Charadrius vociferus*
ladder-backed woodpecker	*Picoides scalaris*
lesser nighthawk	*Chordeiles acutipennis*
Lincoln's sparrow	*Melospiza lincolnii*
loggerhead shrike	*Lanius ludovicianus*
MacGillivray's warbler	*Geothlypis tolmiei*
mourning dove	*Zenaida macroura*
northern flicker	*Colaptes auratus*
northern harrier	*Circus cyaneus*
pacific-slope flycatcher	*Empidonax difficilis*
prairie falcon	*Falco mexicanus*
red railed hawk	*Buteo jamaicensis*
red-necked phalarope	*Phalaropus lobatus*
red-winged blackbird	*Agelaius phoeniceus*
ruby crowned kinglet	*Regulus calendula*
ruddy duck	*Oxyura jamaicensis*
sandhill crane	*Antigone canadensis*
Say's phoebe	*Sayornis saya*
spotted sandpiper	*Actitis macularius*
Swainson's hawk	*Buteo swainsoni*
Townsend's warbler	*Setophaga townsendi*
turkey vulture	*Cathartes aura*
verdin	*Auriparus flaviceps*
warbling vireo	*Vireo gilvus*
western kingbird	*Tyrannus verticalis*
western meadowlark	*Sturnella neglecta*
western tanager	*Piranga ludoviciana*
western wood-pewee	*Contopus sordidulus*
white-faced ibis	*Plegadis chihi*
white-winged dove	*Zenaida asiatica*
willow flycatcher	*Empidonax traillii*
Wilson's phalarope	*Phalaropus tricolor*
Wilson's warbler	*Cardellina pusilla*
yellow-rumped (Audubon's)warbler	*Setophaga coronata*
yellow Warbler	*Setophaga petechia*

APPENDIX D

Athos Renewable Energy Project
Plant List, Spring and Fall 2018

SCIENTIFIC NAME	COMMON NAME	GENUS	SOLAR FARM	GEN-TIE
Abronia villosa	sand verbena	Nyctaginaceae	X	
Achyronychia cooperi	onyx flower	Caryophyllaceae	X	X
Allionia incarnata	windmills	Nyctaginaceae	X	
Ambrosia dumosa	white bursage	Asteraceae	X	X
Ambrosia salsola	cheesebush	Asteraceae	X	X
Amaranthus fimbriatus	fringed amaranth	Amaranthaceae	X	
Amsinckia tessellata	devil's lettuce	Boraginaceae	X	
Aristida sp.	three-awn	Poaceae	X	
**Antennaria* sp.	pussy toes	Asteraceae	X	
Asclepias erosa	desert milkweed	Apocynaceae	X	
Asclepias subulata	skeleton milkweed	Apocynaceae	X	
Atriplex polycarpa	allscale saltbush	Chenopodiaceae	X	X
Baileya sp.	desert marigold	Asteraceae	X	
Bebbia juncea var. *aspera*	rush sweetbush	Asteraceae	X	
Boerhavia sp.	slender spiderling	Nyctaginaceae	X	
Bouteloua sp.	six-weeks gramma	Poaceae	X	
Brandegea bigelovii	desert starvine	Cucurbitaceae	X	
**Brassica tournefortii*	Sahara mustard	Brassicaceae	X	X
**Carpobotus edulis*	highway ice plant	Aizoaceae	X	
Castela emoryi	**Crucifixion thorn**	Simaroubaceae	X	
Caulanthus lasiophyllus	California mustard	Brassicaceae	X	
Chaenactis carphoclinia	pebble pincushion	Asteraceae	X	
Chaenactis fremontii	Fremont's pincushion	Asteraceae	X	X
Chaenactis sp.	pincushion	Asteraceae	X	X
Chorizanthe brevicornu	brittle spineflower	Polygonaceae	X	X
Chorizanthe rigida	spiny herb	Polygonaceae	X	
Chylismia brevipes ssp. *Brevipes*	golden suncup	Onagraceae	X	X
Chylismia claviformis	browneyes	Onagraceae	X	
Croton californicus	California croton	Euphorbaceae	X	
Cryptantha angustifolia	narrow leaved cryptantha	Boraginaceae	X	X

SCIENTIFIC NAME	COMMON NAME	GENUS	SOLAR FARM	GEN-TIE
Cryptantha maritima	Guadalupe cryptantha	Boraginaceae	X	
Cryptantha micrantha	redroot cryptantha	Boraginaceae	X	
Cryptantha sp.	cryptantha	Boraginaceae	X	
Cucurbita palmata	coyote melon	Cucurbitaceae	X	
Cylindropuntia echinocarpa	silver cholla	Cactaceae	X	X
Cylindropuntia ramosissima	pencil cholla	Cactaceae	X	
Dalea mollis	hairy prairie clover	Fabaceae	X	
Dalea mollissima	silky dalea	Fabaceae	X	X
Datura discolor	jimson weed	Solanaceae	X	X
Distichlis spicata	salt grass	Poaceae	X	
Ditaxis lanceolata	narrowleaf ditaxis	Euphorbaceae	X	
Ditaxis neomexicana	New Mexico ditaxis	Euphorbaceae	X	
Encelia farinosa	brittlebush	Asteraceae	X	X
Encelia frutescens	button brittlebush	Asteraceae	X	
Erigeron bonariensis [=*Conyza bonariensis*]	flax-leaved horseweed	Asteraceae	X	
Eremalche rotundifolia	desert fivespot	Malvaceae	X	
Eremothera boothii ssp. *condensata*	Booth's suncup	Onagraceae	X	
**Erodium cicutarium*	red stem filaree	Geraniaceae	X	X
Eriogonum reniforme	kidney leaf buckwheat	Polygonaceae	X	
Eriogonum trichopes	little desert buckwheat	Polygonaceae	X	
Eriogonum sp.	annual buckwheat	Polygonaceae	X	
Euphorbia polycarpa	smallseed sandmat	Euphorbaceae	X	
Fagonia laevis	California fagonia	Zygophyllaceae	X	
Ferocactus acanthodes	barrel cactus	Cactaceae	X	
Ferocactus cylindraceus var. *cylindraceus*	barrel cactus	Cactaceae	X	
Fouquieria splendens	ocotillo	Fouquieriaceae	X	X
Geraea canescens	desert sunflower	Asteraceae	X	X
Heliotropium curassavicum	Chinese parsley	Boraginaceae	X	
Hesperocallis undulata	desert lily	Liliaceae	X	
Hibiscus denudatus	paleface	Malvaceae	X	
Hilaria rigida	big galleta grass	Poaceae	X	X
Hyptis emoryi	desert lavender	Lamiaceae	X	
Justicia californica	chuparosa	Acanthaceae	X	
Kallstroemia californica	California caltrop	Zygophyllaceae	X	

SCIENTIFIC NAME	COMMON NAME	GENUS	SOLAR FARM	GEN-TIE
Krameria bicolor	white rhatany	Krameriaceae	X	X
Larrea tridentata	creosote bush	Zygophyllaceae	X	X
Lepidium lasiocarpum	pepperweed	Brassicaceae	X	
Lupinus sp.	Lupine	Fabaceae	X	
Lycium andersonii	Anderson's desert thorn	Solanaceae	X	
Malacothrix glabrata	desert dandelion	Asteraceae	X	X
Mammillaria tetrancistra	fishhook cactus	Cactaceae	X	
Marina parryi	Parry's false prairie clover	Fabaceae	X	
Mentzelia albicaulis	white stemmed stickleaf	Loasaceae	X	
Mentzelia involucrata	whitebract blazingstar	Loasaceae	X	
Nicotiana obtusifolia	desert tobacco	Solanaceae	X	
Oenothera caespitosa	fragrant evening primrose	Onagraceae	X	X
Oenothera deltoides ssp. *deltoides*	birdcage desert primrose	Onagraceae	X	
Olneya tesota	desert ironwood	Fabaceae	X	X
Opuntia basilaris	prickly pear cactus	Cactaceae	X	
Orobanche cooperi	desert broomrape	Orobanchaceae	X	
Palafoxia arida var. *arida*	Spanish needles	Asteraceae	X	X
Parkinsonia florida	blue palo verde	Fabaceae	X	X
Pectis papposa var. *papposa*	chinch weed	Asteraceae	X	
Perityle emoryi	Emory's rockdaisy	Asteraceae	X	
Petalonyx thurberi	sandpaper plant	Loasaceae	X	
Petunia axillaris	large white petunia	Solanaceae	X	
Phacelia crenulata	purplestem phacelia	Boraginaceae	X	
Phacelia sp.	annual phacelia	Boraginaceae	X	
Phacelia distans	common phacelia	Boraginaceae	X	
**Phoenix dactylifera*	date palm	Areaceae	X	
Physalis crassifolia	ground cherry	Solanaceae	X	
Plantago ovata	wooly plantain	Plantaginaceae	X	
Proboscidea althaeifolia	**Desert Unicorn plant**	Martyniaceae	**X**	**X**
Peucephyllum schotti	desert pine	Asteraceae	X	
Prosopis glandulosa	honey mesquite	Fabaceae	x	X
Psathyrotes ramosissima	turtleback	Asteraceae	X	
Psorothamnus emoryi	indigo bush	Fabaceae	X	X
Psorothamnus schottii	Schott's indigo bush	Fabaceae	X	

SCIENTIFIC NAME	COMMON NAME	GENUS	SOLAR FARM	GEN-TIE
Psorothamnus spinosus	smoke tree	Fabaceae	X	X
**Saccharum* sp.	Sugar cane	Poaceae	X	
**Salsola tragus*	Russian thistle	Chenopodiaceae	X	
**Schismus arabicus*	Mediterranean grass	Poaceae	x	
Senegalia greggii	catclaw acacia	Fabaceae	X	
Simmondsia chinensis	Jojoba	Simmonsiaceae	X	
Sphaeralcea ambigua	desert globemallow	Malvaceae	X	
Stillingia sp.	Mojave toothleaf	Euphorbaceae	X	
**Tamarix sp.*	tamarisk	Tamariaceae	X	
Tidestromia suffruticosa var. *oblongifolia*	Arizona honeysweet	Amaranthaceae	X	X
Tiquilia plicata	fanleaf crinklemat	Boraginaceae	X	
Washingtonia filifera	California fan palm	Arecaceae	X	X
**Washingtonia robusta*	Mexican fan palm	Arecaceae	X	
**Antennaria* sp.	pussytoes	Asteraceae	X	
**Carpobotus edulis*	highway ice plant	Aizoaceae	X	

*= non-native plant

BOLD = sensitive plant species

Appendix C.2

Jurisdictional Delineation

JURISDICTIONAL WATERS REPORT
ATHOS RENEWABLE ENERGY PROJECT
RIVERSIDE COUNTY, CALIFORNIA

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Appendix B – Athos Solar Project Approved Jurisdictional Determination

List of Acronyms

amsl	above mean sea level
BLM	Bureau of Land Management
CDFW	California Department of Fish and Wildlife
CEC	California Energy Commission
CEQA	California Environmental Quality Act
CFGC	California Fish and Game Code
CWA	Clean Water Act
DRECP	Desert Renewable Energy Conservation Plan
EIS	Environmental Impact Statement
EPA	United States Environmental Protection Agency
GIS	Geographic Information Systems
GPS	Global Positioning System
LSAA	Lake and Streambed Alteration Agreement
MESA	Mapping Episodic Stream Activity
NAIP	National Agriculture Imagery Program
NVCS	National Vegetation Classification System
PV	Photovoltaic
RWQCB	Regional Water Resources Control Board
SWANCC	Solid Waste Agency of North Cook County
SWRCB	State Water Resources Control Board
USACE	United States Army Corps of Engineers
USDA	United States Department of Agriculture
USGS	United States Geological Survey
USFWS	United States Fish and Wildlife Service
WDR	Waste Discharge Requirement
WRCC	Western Regional Climate Center

1 INTRODUCTION

1.1 Background

Intersect Power, LLC has proposed the Athos Renewable Energy Project (Project) in unincorporated Riverside County, California. The solar facility would be located on seven non-contiguous groups of private land parcels with approximately eleven miles of generation interconnection (gen-tie) transmission lines crossing both private and Bureau of Land Management (BLM) managed lands connecting to the existing Southern California Edison Red Bluff substation. The Project is expected to generate 500 megawatts of renewable energy.

This Jurisdictional Waters Report presents the methods, results, and recommendations associated with the jurisdictional waters evaluation performed in 2018. The primary purpose of this report is to provide the location of and quantify jurisdictional waters within the Project site. Information found in this report would be evaluated during future site design, impact calculations, and permitting process.

1.2 Site Location

The site is situated within the Chuckwalla Valley located near the community of Desert Center, halfway between the cities of Indio and Blythe (Figure 1). The Project site consists of approximately 3456.8acres, 3262.9 acres on privately owned land and 193.9 acres on BLM-managed land (acreages were obtained from shapefile data that may result in small discrepancies between different documents for the Project).

The privately-owned land consists of seven non-contiguous groups of land parcels (A-G) that will accommodate the photovoltaic (PV) and storage components of the Project. The northernmost parcel group A is just northwest of California Highway 177 (CA-177) while the remaining parcels are located southeast of CA-177 but occur north of Interstate 10 (I-10) (Figure 2). The land uses associated with the privately-owned parcels include a combination of active and historical agricultural lands, and disturbed/developed lands (2,838.3 acres) and native undisturbed habitat (422.3 acres). The gen-tie will cross BLM managed lands to connect the solar facilities to the Red Bluff substation.

The site is in the Sonoran Desert ecoregion setting, Chuckwalla Valley ecoregion subarea, of the Desert Renewable Energy Conservation Plan (DRECP; BLM, 2016). The BLM-managed lands within the Project site are located within a Development Focus Area, as designated by the DRECP Final EIS/EIR and approved by a Record of Decision signed by the BLM on 14 September 2016. These Federal lands are also located within the Riverside East Solar Energy Zone per BLM's 2012 Western Solar Plan analyzed in the Final Programmatic Environmental Impact Statement for Solar

Energy Development in Six Southwestern States that was approved by a Record of Decision signed by the BLM on 12 October 2012.

1.3 Project Summary

The following summary of the project components, construction methods, schedule, and operation and maintenance activities are based on information provided by Intersect Power.

Solar fields

The Project's PV modules would be manufactured at an offsite location and transported to the Project site. Panels would be arranged in strings with a maximum height of 12 feet. Panel faces would be minimally reflective, dark in color, and highly absorptive.

Panels would be arranged on the site in solar arrays. Spacing between each row would be a minimum of 4 feet. Structures supporting the PV modules would consist of steel piles which would be driven into the soil using pneumatic techniques, such as a hydraulic rock hammer attachment on the boom of a rubber-tired backhoe excavator. The piles typically would be spaced 10 feet apart. The total height of the panel system measured from ground surface would be up to 12 feet. Where excavations are required, the majority would be limited to less than 6 feet in depth, however, some excavations, such as those undertaken for the installation of collector poles and dead-end structures, may reach depths of 20 feet or more.

Each 2-MW PV panel increment would include an inverter-transformer station constructed on a concrete pad or steel skid, and centrally located within the PV arrays. Each inverter-transformer station would contain electrical components and a security camera at the top of an approximately 20-foot pole. An inverter shade structure may also be installed at each one. The shade structure would consist of wood or metal supports and a durable outdoor material shade structure (metal, vinyl, or similar). The shade structure would extend up to 10 feet above the top of the inverter pad.

Underground cables would be installed to convey electricity from the panels, via combiner boxes located throughout the PV arrays, to inverter-transformer stations. From there, the 34.5 kV level collection cables would either be buried underground or installed overhead on wood poles. If the collection system is installed overhead, some of the wood poles could be located at the outside edge of the property line, but a majority of these poles are expected to be located interior to the site. Approximately 300 to 500 wood poles located at 250-foot intervals could be installed across the entire site. The typical height of the poles would be approximately 30 to 50 feet.

Up to four substations would be located within the proposed solar sites. The area of each substation and associated equipment would be approximately 37,500 square feet (150 feet by

250 feet). Substation equipment would be built on concrete pad foundations, and the remaining area would be graveled to a maximum depth of approximately 6 inches. Each substation would be surrounded by an up-to 6-foot high chain link fence topped with one foot of barbed wire.

The Project may use one of the existing homes on the solar facility site as an O&M building, or it may use the septic system of an existing home and build a new O&M building. If a new O&M building is constructed, it would be approximately 3,000 square feet in size and approximately 15 feet at its tallest point.

A fiber optic or other cabling system would be installed for remote monitoring of operation and/or remote control of critical components. It typically would be installed in buried conduit, leading to one or more Supervisory Control and Data Acquisition System (SCADA) system cabinets located within the Project site. External telecommunications connections could be provided through wireless or hard-wired connections to locally available commercial service providers. The Project's SCADA system would interconnect to this fiber optic network at the Red Bluff Substation, and no additional disturbance associated with telecommunications is anticipated.

The Project could include, at the Applicant's option, a battery or flywheel storage system capable of storing up to 500 MW of electricity. If installed, the storage system would consist of battery or flywheel banks housed in electrical enclosures and buried electrical conduit. The battery system would either be concentrated near the Project substations or dispersed throughout the solar facility sites. Up to 3,000 electrical enclosures measuring approximately 40 feet by 8 feet by 8.5 feet high would be installed on concrete foundations designed for secondary containment. Battery systems are operationally silent, and flywheel systems have a noise rating of 45 dBA.

The Project would include a permanent meteorological (met) data collection system, consisting of approximately 15 met stations, each with multiple weather sensors mounted on a main mast approximately 20 feet tall.

Solar field ingress/egress would be via locked gates located at multiple points. The boundaries of the Project sites would be secured by up-to 6-foot-high chain-link perimeter fences, topped with one foot of three-strand barbed wire, or as dictated by Riverside County specifications. If required, site fencing would also adhere to US Fish and Wildlife Service (USFWS) design guidelines (USFWS, 2009) to exclude desert tortoise from the Project site. The fence would typically be set approximately 100 feet from the edge of the solar panel array.

The Project's on-site roadway system would include perimeter roads, access roads, and internal roads. The perimeter roads and main access roads would be approximately 20 feet wide and

constructed to be consistent with facility maintenance requirements and County standards. These roads would be surfaced with gravel, compacted dirt, or another commercially available surface. Internal roads would have permeable surfaces and be approximately 16 feet in width or as otherwise required by County standards. They would be treated to create a durable, dustless surface for use during construction and operation. This would not involve lime treatment but would likely involve surfacing with gravel, compacted native soil, or a dust palliative.

Motion sensitive, directional security lights would provide illumination around the substation areas, inverter clusters, gates, and along perimeter fencing. All lighting would be shielded and directed downward to minimize the potential for glare or spillover onto adjacent properties. No Project structures would necessitate aviation lighting per Federal Aviation Administration Part 77 Obstruction Evaluation Consultation.

Infrared security cameras, motion detectors, or other similar technology would be installed to allow for security monitoring. Such cameras or other equipment would be placed along the perimeter of the facility and/or at the inverters. Security cameras located at the inverters would be posted on poles approximately 20 feet high.

Gen-tie Lines

The project gen-tie lines would be located within a 100-foot-wide right-of-way (ROW), and consist of either monopoles, lattice steel structures, or wooden H-frame poles. For the overhead gen-tie line, structure foundations would be excavated to a depth of 35 feet or more and include concrete supports depending on final engineering (without these foundations, guy-lines would be needed to support the structures). Gen-tie structures would be on average 90 feet tall (as short as 50 feet and as tall as 120 feet to clear another line for a perpendicular crossing). The gen-tie structures would be less than 200 feet tall and would not necessitate aviation lighting per Federal Aviation Administration Part 77 Obstruction Evaluation Consultation. A total of up to 120 gen-tie structures would be built. The gen-tie would include a 3-phase 220 kV conductor, a ground wire, and a telecommunications fiber-optic cable.

Access

Access to the majority of the Project sites would be via Highway 177; Corn Springs Road would be used to access the easternmost group of parcels. Seven new access road segments, totaling approximately ten miles in length, would be constructed for primary and secondary access to the seven groups of Project sites (Groups A-G; see Figure 3). In some cases, access would be via improved existing BLM open routes and agricultural roads, rather than requiring new route construction.

All new and improved access roads would be 24 feet wide with a two-foot-wide shoulder on each side, for a total width of approximately 30 feet, including allowances for side slopes and surface runoff control. Construction of the access road segments would include compacting subsurface soils and placing a four-inch-thick layer of asphalt concrete over a 6-inch-thick layer of compacted aggregate base.

Construction

Construction is anticipated to occur over a 30-month period with multiple construction activities occurring simultaneously. Project construction may be phased. The on-site workforce is expected to reach its peak of approximately 530 individuals with an average construction-related workforce of 320 individuals. An estimated 40 roundtrips per day would be required to deliver materials and equipment to the project site (mainly tractor-trailer trucks and occasional oversize tractor-trailers for large equipment such as cranes). Prior to construction, all contractors, subcontractors, and project personnel would receive Worker Environmental Awareness Program (WEAP) training to effectively understand and implement the biological commitments in the project description, implement the mitigation measures, comply with applicable environmental laws and regulations, avoid and minimize impacts, and understand the importance of these resources and the purpose and necessity of protecting them. The following species and their habitat would be specifically covered in the WEAP: desert tortoise, burrowing owl, other raptors and migratory birds, American badger, and desert kit fox. Applicable sensitive plant species would also be covered in the WEAP.

Construction would begin with pre-construction surveys, construction of the main access road, security fencing, biological resource exclusion fences where needed, clearing and construction of a laydown yard, site grading and preparation, construction of the O&M building, parking area, and pad mounts for transformers. Construction would continue with the installation of temporary power, construction of on-site roads, construction of the project substation, and assembly and installation of panel blocks and wiring.

Construction equipment would normally operate between the hours of 7:00 a.m. and 7:00 p.m. Monday through Friday for up to a maximum of 8 hours per piece of equipment, daily. Weekend construction work is not expected but may occur on occasion, depending on schedule considerations.

During pre-construction field surveys site boundaries, fence locations, and gen-tie ROW boundaries would be identified and clearly marked with stakes and flagging. All off-road vehicle travel across BLM-administered land would be monitored by qualified biologists, archaeologists, and tribal monitors, as appropriate. A desert tortoise exclusion fence, if required, would be installed per the USFWS guidelines (USFWS 2009). Fence installation would be monitored by qualified biologists, archaeologists, and tribal monitors, as appropriate.

Following fence installation, desert tortoise clearance surveys would be conducted according to USFWS 2009 guidelines (USFWS 2009). Mammals and burrowing owls would be passively relocated using one-way doors or using other accepted exclusion methods. Desert tortoise individuals would be moved outside of fenced areas "out of harm's way" or actively translocated to a pre-selected site pursuant to an approved desert tortoise Translocation Plan to be developed in consultation with USFWS and the California Department of Fish and Wildlife (CDFW).

Several staging areas would be established within the solar facility site boundaries and security fence for storing materials, construction equipment, and vehicles. On-site pre-assembly of trackers would take place in the staging areas. Grubbing, light grading, and construction of staging areas would be monitored by qualified biologists, archaeologists, and tribal monitors, as appropriate.

Since most of the site has nearly level to gently sloping topography, no mass grading would be required; however, much of the solar facility would be impacted by some form of ground disturbance, either from compaction, micro-grading, or disc-and-roll grading. Some of the parcels where facilities and arrays would be located would require light grubbing for leveling and trenching.

Access road beds would be grubbed, graded, and compacted; however minimal grading is anticipated. The cut and fill would be approximately balanced; minimal import/export would be necessary.

A Stormwater Pollution Prevention Plan (SWPPP) or SWPPP equivalent document would be prepared, approved, and implemented before and during construction. The SWPPP will include Project information and identify best management practices (BMP). The BMPs would include stormwater runoff quality control measures, concrete waste management, stormwater detention, watering for dust control, and construction of perimeter silt fences, as needed.

Underground cables to connect panel strings would be installed using ordinary trenching techniques, which typically includes using a rubber-tired backhoe excavator or trencher. Wire depths would be in accordance with local, State, and Federal requirements, and would likely be buried at a minimum of 18 inches below grade, by excavating a trench approximately 3 to 6 feet wide to accommodate the conduits or direct buried cables. The excavated soil would likely be used to fill the trench and lightly compressed. All cabling excavations would be to a maximum depth of 10 feet.

All electrical inverters and the transformer would be placed on concrete foundation structures or steel skids. The substation areas would be excavated for the transformer equipment and control building foundation and oil containment area. The substation sites would be graded and

compacted to an approximately level grade. Concrete pads would be constructed as foundations for substation equipment, and the remaining area would be graveled. Concrete for foundations would be brought to the site from a batching plant in Blythe or would be batched on site as necessary.

Since most of the gen-tie ROW has nearly level to gently sloping topography, no grading would be required for the gen-tie structures; however, some light grubbing may be required to clear vegetation from an approximately 12,500 square-foot area (0.3 acre) where the structure would be erected and selectively in some adjacent work areas, as needed. Structure installation would consist of the following steps:

- Deliver new structure to each structure site;
- Auger new hole using line truck attachment to a depth of up to 35 feet and include concrete supports depending on final engineering;
- Pour concrete foundation;
- Install bottom section by line truck, crane, or helicopter; and
- Install top section(s) by line truck, crane, or helicopter, if required.

Once poles are erected the conductor will be strung from pull and tension sites at the end of the power line interconnection alignment moving from one pole to the next. The average distance is approximately 4,000 feet between pull and tension sites. The line may also be equipped with optical ground wire (OPGW), which would serve as a ground wire and a telecommunication link. Alternately, telecommunications fiber optic cable may be installed in a small trench within the access roads with no new surface disturbance anticipated.

Construction sites would be kept in an orderly condition throughout the construction period by using approved enclosed refuse containers. All refuse and trash would be removed from work sites daily and be disposed of in accordance with BLM requirements. No open burning of construction trash would occur. All vegetation that may interfere with equipment would be trimmed and/or removed using manual non-mechanical means described in the Vegetation Resources Management Plan or treated with an approved herbicide, as necessary.

Following the completion of construction, temporarily disturbed areas on the Project site would be revegetated for the operations phase pursuant to an approved Vegetation Management Plan. Based on the aridity of the project area and the overall low density of vegetation present, it is not likely that vegetation would encroach upon structures so that access or operation would become impaired. However, spread of noxious weeds and other nonnative invasive plant species onto the project sites could create a fire hazard if allowed to become established, and invasive weeds could also become problematic from an ecological perspective. Therefore, weed control activities would be implemented within the project limits according to the Project's Integrated Weed Management Plan.

Weed control activities would include both mechanical and herbicide control methods. Mechanical control activities include chaining, disking, grubbing, and mowing using tractors or other heavy equipment, as necessary. On BLM-administered land (gen-tie component only), herbicide control could involve the use of BLM-approved herbicides to control weeds if manual control methods are not successful. Any potential herbicide use on BLM lands will be subject to BLM review and approval.

Operation and Maintenance

The solar modules would operate during daylight 7 days a week, 365 days a year. Operational activities at the Project site would include:

- Solar module washing;
- Vegetation, weed, and pest management (no pest management would be required on the gen-tie route; no anticoagulant rodenticides would be used anywhere on the project site);
- Security monitoring;
- Responding to automated electronic alerts based on monitored data, including actual versus expected tolerances for system output and other key performance metrics; and
- Communicating with customers, transmission system operators, and other entities involved in facility operations.

Up to 10 permanent staff could be on the site at any one time for O&M activities. Alternatively, approximately 2 permanent staff and 8 Project operators would be located off-site and would be on call to respond to alerts generated by the monitoring equipment at the Project site. Security personnel would be on call to respond to trespasses and other incidents as necessary.

Site maintenance would be largely conducted during daytime hours, typically in the early morning or evening when the plant would be producing the least amount of energy. Maintenance typically would include panel repairs; panel washing; maintenance of electrical equipment; road and fence repairs; and weed management. On-site vegetation would be managed to ensure access to all areas of the site and to screen facilities as needed. Solar modules would be washed as needed (up to four times each year) using light utility vehicles with tow-behind water trailers to maintain optimal electricity production. No chemical cleaners would be used for module washing.

No heavy equipment would be used during normal operation. Routine O&M vehicles would be primarily pickup trucks, flatbed trucks, and water trucks for solar panel washing. Forklifts or loaders may be used for occasional unscheduled maintenance. Large heavy-haul transport equipment may be brought to the solar facility infrequently for equipment repair or replacement.

Standard defensible space requirements would be maintained surrounding any welding or digging operations. Fire safety and suppression measures, such as smoke detectors and extinguishers, would be installed and available at the O&M facility, per the Riverside County Building and Safety Department's requirements. A Fire Management and Prevention Plan will be prepared and implemented in coordination with the Riverside County Fire Department, BLM Fire, or other emergency response organizations.

Decommissioning and Repowering

As the facility's equipment has a useful life of 40 years, at the end of the power purchase agreement's contract term (typically 10 to 25 years), the power from the facility would be sold to another buyer and/or the Project may be repowered to increase efficiency. If the Athos Renewable Energy Project continues to operate, the long-term operations would be the same as described above. At the end of the project's useful life, the solar arrays and gen-tie line would be decommissioned and dismantled, according to a Closure, Decommissioning, and Reclamation Plan to be prepared closer to the end of the project's life.

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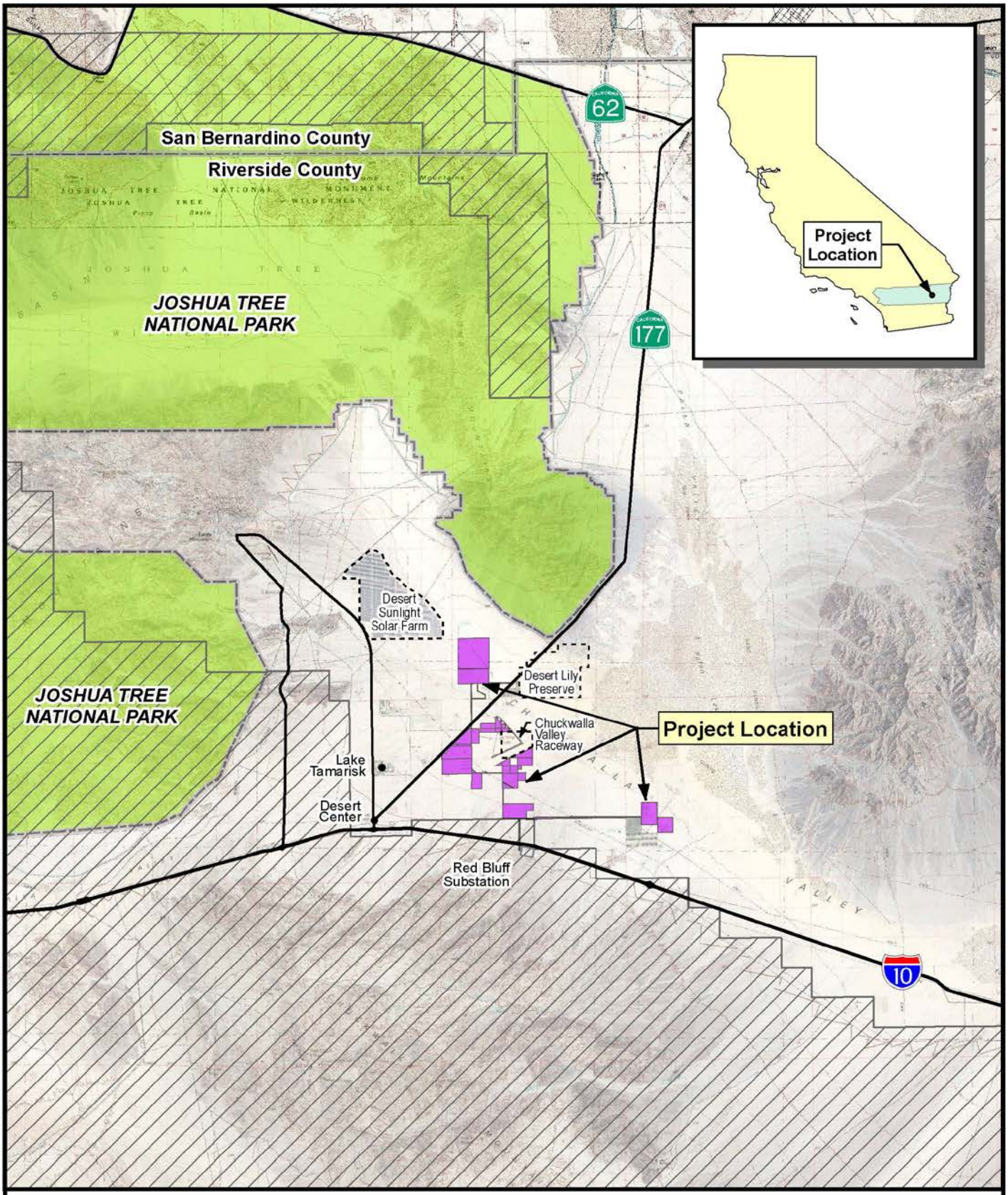

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Athos Solar Project
Joshua Tree National Park
Desert Tortoise Critical Habitat

FIGURE 1

Regional Location

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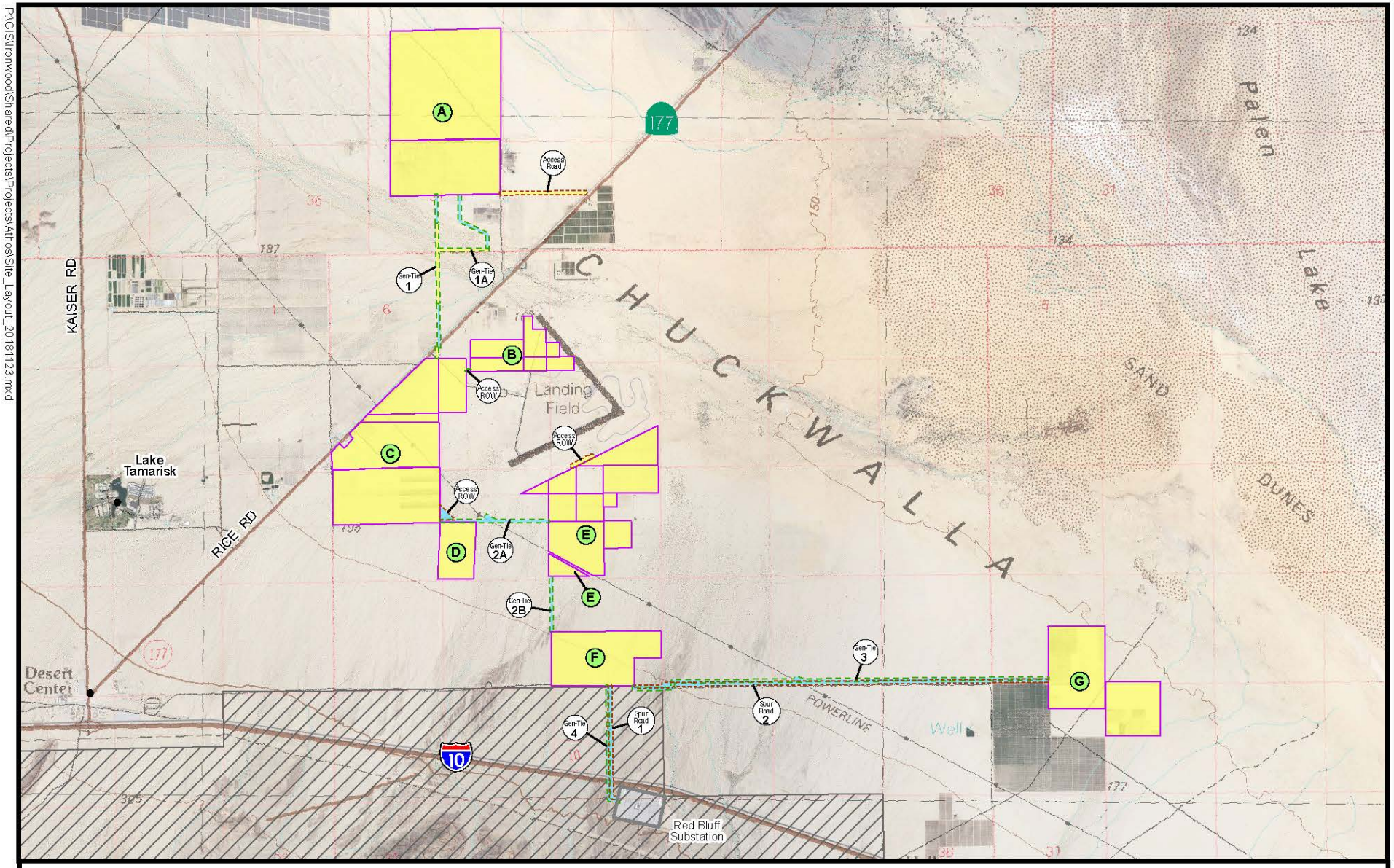

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Solar Farm Parcel
Gen-Tie Corridor
Access Road/Easement
BLM Administered Land
Private Land
Desert Tortoise Critical Habitat

FIGURE 2

Project Site Parcel Groups and Gen-Tie Segments

Athos Solar

2 REGULATORY SETTING

2.1 Clean Water Act (§ 404)

Under provisions of the Clean Water Act (CWA), the U.S. Army Corps of Engineers (USACE) administers the activities required by § 404. These include the individual permit decisions, jurisdictional determinations, developing policy and guidance, and enforcing provisions of § 404. Waters of the U.S. are defined in 33 CFR 328.3 and clarified via several Supreme Court and supplemental guidance documents.

2.1.1 Supreme Court Decisions

On 9 January 2001, the Supreme Court of the United States issued a decision on *Solid Waste Agency of Northern Cook County v. United States Army Corps of Engineers, et al*. with respect to whether the USACE could assert jurisdiction over isolated waters. The Solid Waste Agency of North Cook County (SWANCC) ruling stated that the USACE does not have jurisdiction over "non-navigable, isolated, intrastate" waters.

In 2006, the Supreme Court addressed the jurisdictional scope of § 404 of the CWA, specifically the term "the waters of the U.S.," in their consolidated decision in *Rapanos v. U.S.* and in *Carabell v. U.S.* (hereafter referred to as *Rapanos*). A *Jurisdictional Determination Form Instructional Guidebook* (USACE 2007) was prepared to provide guidance on interpretation and implementation of the *Rapanos* decision, which states:

> *…the Rapanos decision provided two new analytical standards for determining whether water bodies that are not traditional navigable waters (TNWs), including wetlands adjacent to those non-TNWs, are subject to CWA jurisdiction: (1) if the water body is relatively permanent, or if the water body is a wetland that directly abuts (e.g., the wetland is not separated from the tributary by uplands, a berm, dike, or similar feature) a relatively permanent water body (RPW), or (2) if a water body, in combination with all wetlands adjacent to that water body, has a significant nexus with TNWs.*

As a result of *Rapanos*, the United States Environmental Protection Agency (EPA) and USACE in coordination with the Office of Management and Budget (OMB) and the President's Council on Environmental Quality, developed the *Memorandum Regarding CWA Jurisdiction Following Rapanos v. United States*. This guidance requires the application of the two new standards described above, as well as a greater level of documentation, to support an agency Jurisdictional Determination for a particular water body. Furthermore, this guidance required the USACE and EPA to develop a revised Jurisdictional Determination form to be used by field staff for documenting assertion or declination of CWA jurisdiction.

2.2 Clean Water Act (§ 401) and California Porter-Cologne Water Quality Act.

Dredge and fill activities in federally jurisdictional waters of the U.S. that trigger coverage under § 404 of the CWA must also receive water quality certification under § 401 of the CWA. The State Water Resources Control Board (SWRCB), through its Regional Water Resources Control Boards (RWQCBs), has jurisdiction over § 401 water quality certification in California. There are no federally jurisdictional waters of the U.S. on the proposed Athos project site, and § 401 water quality certification is not applicable for the project.

The Porter-Cologne Water Quality Control Act (Porter-Cologne), Division 7 of the California Water Code, establishes the responsibilities and authorities of the nine RWQCBs and the SWRCB. This act establishes that the waters of the State shall be protected for use and enjoyment by the people of the State; that the activities and factors which may affect the quality of the waters of the State shall be regulated to attain the highest water quality. Porter-Cologne also names the RWQCBs to formulate and adopt water quality control plans for all areas within the region. The Athos project site is located within the Colorado River (Region 7) RWQCB jurisdiction.

Under Porter-Cologne, the RWQCB may regulate discharge of waste. All parties proposing to discharge waste that could affect waters of the State must file a report of waste discharge with the appropriate RWQCB (§ 13260 of the California Water Code). The RWQCB would then respond to the report of waste discharge by issuing waste discharge requirements (WDRs), or by waiving WDRs for the proposed discharge. Both of the terms *Discharge of Waste* and *waters of the State* are broadly defined such that discharges of waste, including fill, any material resulting from human activity or any other discharge that may directly or indirectly affect waters of the State. While all waters of the U.S. that are within the borders of California are also waters of the State pursuant to Porter-Cologne, the converse is not true. Waters of the U.S. are federally jurisdictional and legally distinct from waters of the State. While § 404 permits and § 401 certifications are required when activity results in fill or discharge directly below ordinary high-water mark of waters of the U.S., any activity that results or may result in a discharge that directly or indirectly impacts waters of the State or the beneficial uses of those waters may be subject to WDRs.

Pursuant to California Water Code § 13191.3(a), the SWRCB and RWQCBs would comply with the listing requirements of § 303(d) of the CWA which requires states to identify waters that do not meet or are not expected to meet by the next listing cycle, applicable water quality standards.

2.3 California Fish and Game Code §§ 1600 to 1616

Pursuant to § 1602 of the California Fish and Game Code (CFGC), California Department of Fish and Wildlife (CDFW) may require a Lake or Streambed Alteration Agreement (LSAA) prior to any

activity that would substantially divert or obstruct the natural flow, or substantially change the bed, channel, or bank of a river, stream or lake, or use material from a streambed. CDFW's issuance of a LSAA is subject to California Environmental Quality Act (CEQA) certification.

CDFW traditionally defines a stream (including creeks and rivers) as "a body of water that flows at least periodically or intermittently through a bed or channel having banks and supports fish or other aquatic life. This includes watercourses having surface or subsurface flow that supports or has supported riparian vegetation." CDFW's definition of lake includes natural lakes or man-made reservoirs. CDFW jurisdiction also includes riparian or wetland vegetation associated with a watercourse.

In 2014, the *Mapping Episodic Stream Activity (MESA) Field Guide* and *Methods to Describe and Delineate Episodic Stream Processes on Arid Landscapes for Permitting Utility-Scale Solar Power Plants* ("MESA Guide"; Brady and Vyverberg 2013) were published by the California Energy Commission (CEC). The primary objective of the MESA guide was to clarify definitions used to determine CDFW-jurisdictional waters and replace guidance (e.g., A Field Guide to Lake and Streambed Alteration Agreements [CDFW 1994]) with current understanding of fluvial geomorphology and ecohydrology.

3 ENVIRONMENTAL SETTING

3.1 Regional Setting

The Project site resides in the central portion of Chuckwalla Valley in the Colorado Desert. The elevation of Chuckwalla Valley ranges from under 400 feet above mean sea level (amsl) at Ford Dry Lake to approximately 1,800 feet amsl west of Desert Center and along the upper portions of the alluvial fans that surround the valley perimeter. The surrounding mountains rise to over 3,000 feet amsl.

Existing anthropogenic features and private land uses that exist within and adjacent to the Project site include agricultural, residential, renewable energy, energy transmission, historical military, and recreational development. Much of the agricultural activity within proximity of the Project has waned in the past decade, including most of the aquaculture (fish farms) and jojoba ventures; however, active agriculture still occurs within the vicinity of the project including a date palm orchard adjacent to easternmost parcel (parcel group G). Approximately 1,585 acres of private lands occur within one mile of, and immediately adjacent to, the Project site and much of these private lands have been converted from natural desert habitat to active or historical agricultural land.

The I-10 is located south of the Project site and CA-177 divides the northern and southern portions of the Project site (Figure 3). The developed footprint of I-10 and CA-177 have altered surface hydrology and condition of natural habitat over time within Project site.

3.2 Hydrology

The Project site resides within the Colorado River Hydrologic Region (HR). The Colorado River HR covers approximately 13 million acres (20,000 square miles) in southeastern California and is the most arid HR in California with annual precipitation averaging 5.5 inches (DWR 1994). The Project is in the Big Wash, Lower Pinto Wash, and Palen Lake HUC 10 Hydrologic Areas, which flow to closed intrastate basins, not connected with the Colorado River, traditional navigable waters, or interstate waters (Figure 3). Palen Dry Lake and Ford Dry Lake represent the lowest elevations within the basin.

Desert washes within this region contract and expand dramatically in size due to extreme variations in flow, which can range from high-discharge floods to periods when surface flow is absent. The Project site lies between the alluvial fans emanating from the Eagle Mountains to the west, Chuckwalla Mountains to the south, and Coxcomb Mountains to the north.

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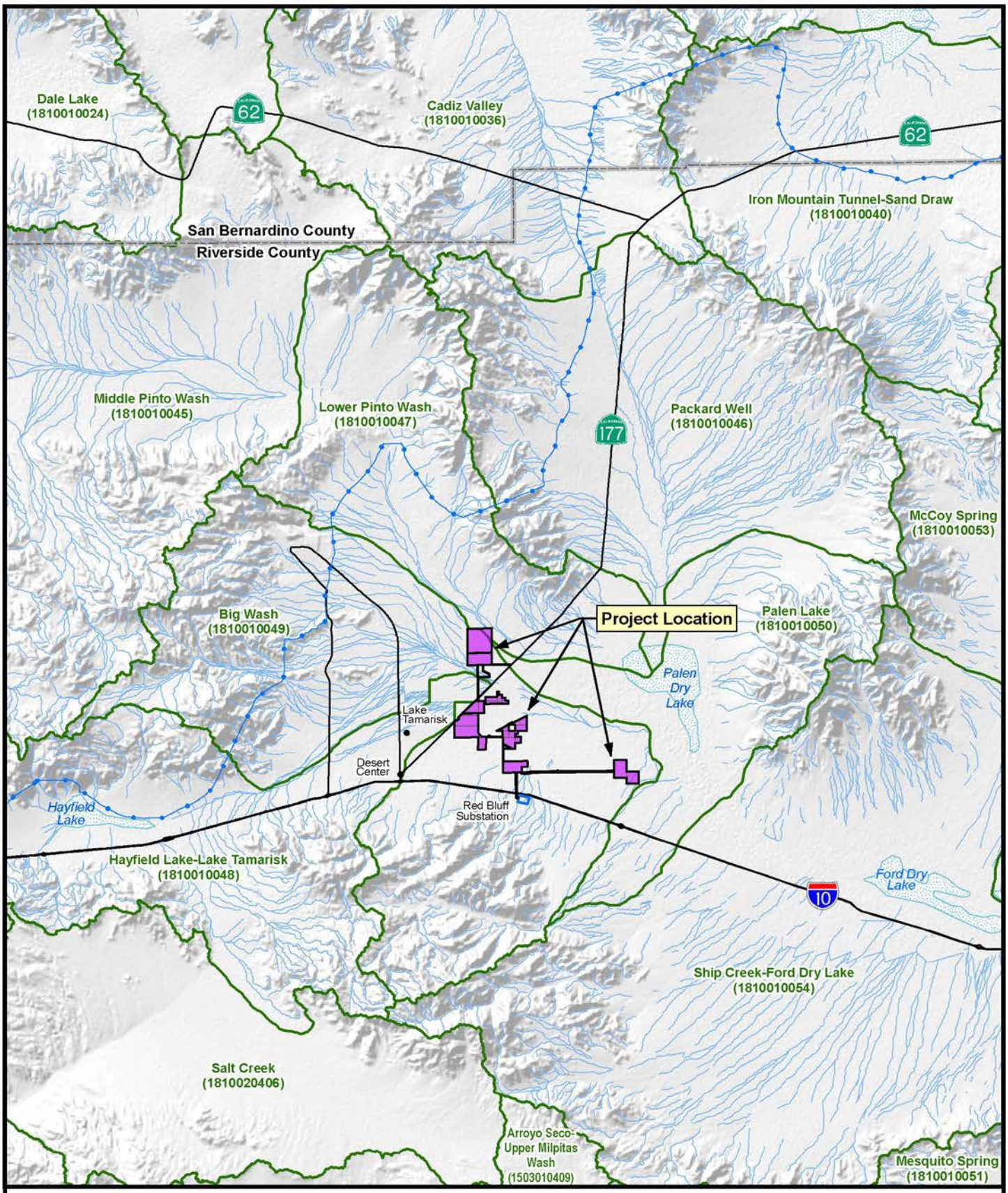

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Athos Solar Project

Ephemeral Drainage

Aqueduct

Intermittent Water Feature

Watershed Boundary

FIGURE 3

Hydrologic Unit Map

Athos Solar

The Project site is situated in the lower alluvial fan that is characterized by less stabilized soils consisting of finer sand and silt, compared to the upper alluvial fan that supports more stabilized, rocky soils with well-defined channels. The topography the Project site is relatively flat with gradients of less than two percent. Ground surface elevations of the Project site range from approximately 500 feet amsl in the southeast (parcel group G) to 800 feet amsl in the south near the Red Bluff Substation.

Alluvial processes across the majority of the Project site generally flow from southwest to northeast, with the exception of the portion of the Project situated west of CA-177 (parcel group A, gen-tie segments 1, 1A, and the access road), which flow from northwest to southeast. Located south of the Project (parcel groups F and G and gen-tie segments 2B, 3 and 4), the I-10 crosses the alluvial fan that emanates from the Chuckwalla Mountains. I-10 and associated wing dikes, which were constructed over 45 years ago, have altered natural surface flows from dozens of meandering small alluvial washes into concentrated discrete channels. Lancaster et al. (2014) noted that changes to drainage patterns resulting from the construction of I-10 translate into downstream hydrological degradation, rendering portions of the alluvial fan less active than under historical conditions. Minor washes located in the hydrological shadow of I-10 are degraded (transporting lower volumes of water and entrained sediment). Major, culverted washes receive more surface flow and distribute a higher volume and fine sediment compared to conditions that preceded the construction of I-10. These conditions are evident within portions of the Project site downstream of the I-10, specifically the parcel group F and gen-tie 2B, and 3.

3.3 Rainfall

Precipitation data was obtained from the Western Regional Climate Center (WRCC 2017) for the most proximate stations to the Project site: Blythe Airport and Eagle Mountain weather stations (approximately 30 and 8 miles from the Project site, respectively). Historical rainfall data from 2009 to 2018 were totaled and averaged for the winter (October through March) and summer (April through September) periods (Table 1). Over the previous ten years, the highest winter rainfall occurred in 2009/2010 and the second highest occurred in 2016/2017. The winter of 2017/2018 recorded the least amount of rainfall of the previous ten years.

Table 1 - Regional Rainfall Totals Since 2009

Year	October to March (inches)	April to September (inches)
2009	2.4	0.2
2010	4.8	0.1
2011	2.5	1.2
2012	1.0	3.3[1]
2013	1.5	2.6
2014	0.7	1.2

Year	October to March (inches)	April to September (inches)
2015	2.1	1.3
2016	1.5	0.7
2017	3.4	1.1
2018	0.1	0.5

Source: Western Regional Climate Center (WRCC 2018): Blythe Airport and Eagle Mountain weather stations.

3.4 Soils

The Project site supports two general soil types per the United States General Soil Map (NRCS 2018): (1) the Rositas–Dune land–Carsitas map unit and (2) the Vaiva-Quilotosa-Hyder-Cipriano-Cherioni map unit. The Rositas-Dune land-Carsitas map unit occurs on the eastern 53 percent of the site and is characterized by soils with a very high sand percentage (greater than 95 percent) and is highly susceptible to wind erosion. The remaining 47 percent of the site was mapped as the Vaiva-Quilotosa-Hyder-Cipriano-Cherioni map unit characterized by soils with high percentage (greater than 65 percent) of sand with moderate susceptibility to wind erosion (Figure 4).

Windblown (aeolian, or eolian) sand transport is characteristic of the vicinity. In conjunction with the DRECP process, the Department of Conservation's California Geological Survey prepared a regional Eolian System Mapping Report for Eastern Riverside County in 2014 (Lancaster et al. 2014). Lancaster et al. (2014) characterized the majority of the site as Qyf, which is described as modern alluvial fan deposits consisting of 'unconsolidated to slightly consolidated sand and gravel' (Figure 5).

Lancaster et al. (2014) mapped the major washes that bisect the project site as Qw and Qoa. The distal portions of Pinto Wash that cross parcel group A and gen-tie 1, and eastern washes that cross gen-tie 3 and parcel group G, are mapped as Qw. This soil type is described as unconsolidated fine to coarse-grained sand and sandy gravel with subordinate fine sand and silt with bar and swale morphology and is noted as an active aeolian source. Within this map unit, local alluvial fans serve as a source of aeolian sand.

The southern washes that cross parcel group F, gen-tie 2B, gen-tie 4, and the western extent of gen-tie 3 are mapped as Qoa. This soil type is described as undifferentiated alluvial deposits of Pleistocene age. Within this map unit, deposits typically support gravel lag and desert pavement with desert varnish. The northwestern edge of the project (parcel groups A, B, E, and G) borders areas mapped as Qe, which is described as active windblown deposits consisting of dunes and sand sheets typically greater than 1.5 m in thickness with fine to medium grained sand.

4 METHODS

4.1 Desktop Review

Initial analysis was performed with Geographic Information Systems (GIS) using the following digital datasets:

- 7.5' USGS topographic quadrangles;
- National Agriculture Imagery Program (NAIP) 4-band imagery (2016);
- National Wetlands Inventory Wetlands Mapper (USFWS 2018);
- National Vegetation Classification Standard (NVCS) layers from the (DRECP) Data Basin (CEC 2015);
- Natural Resource Conservation Service (NRCS) Web Soil Survey (NRCS 2016);
- Eastern Riverside County Soil Mapping (Lancaster et al. 2014);
- Western Regional Climate Center (WRCC 2018);
- USGS National Hydrography Dataset (2018);
- Jurisdictional waters layers for Palen Solar Project;
- Jurisdictional waters layers for Desert Harvest Solar Project; and
- Preliminary Onsite Drainage Study Athos Solar Project.

Relevant digital data were incorporated into ESRI ArcGIS Online and made accessible during field investigations via the ESRI Collector application.

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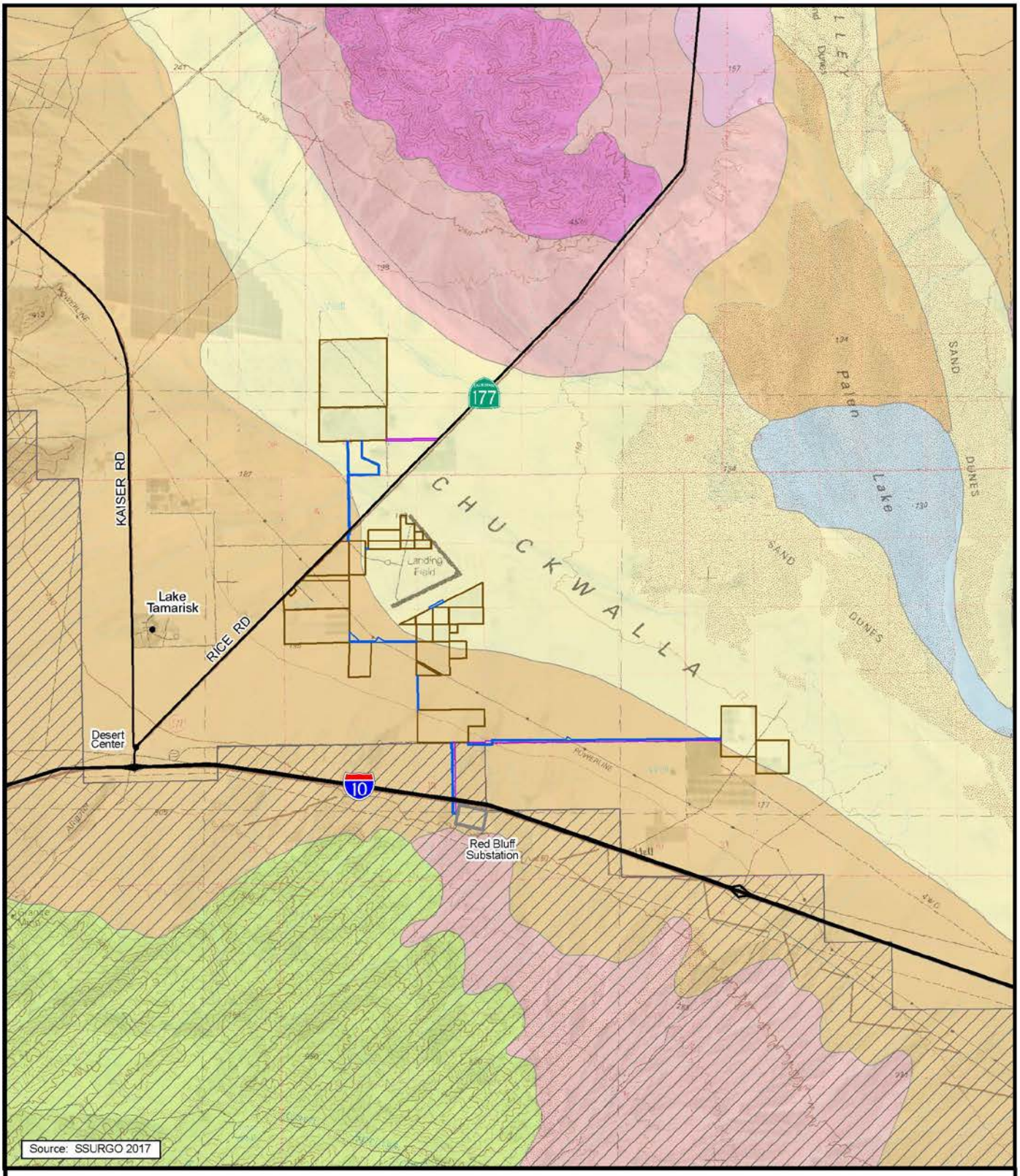

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0 1 2 Miles

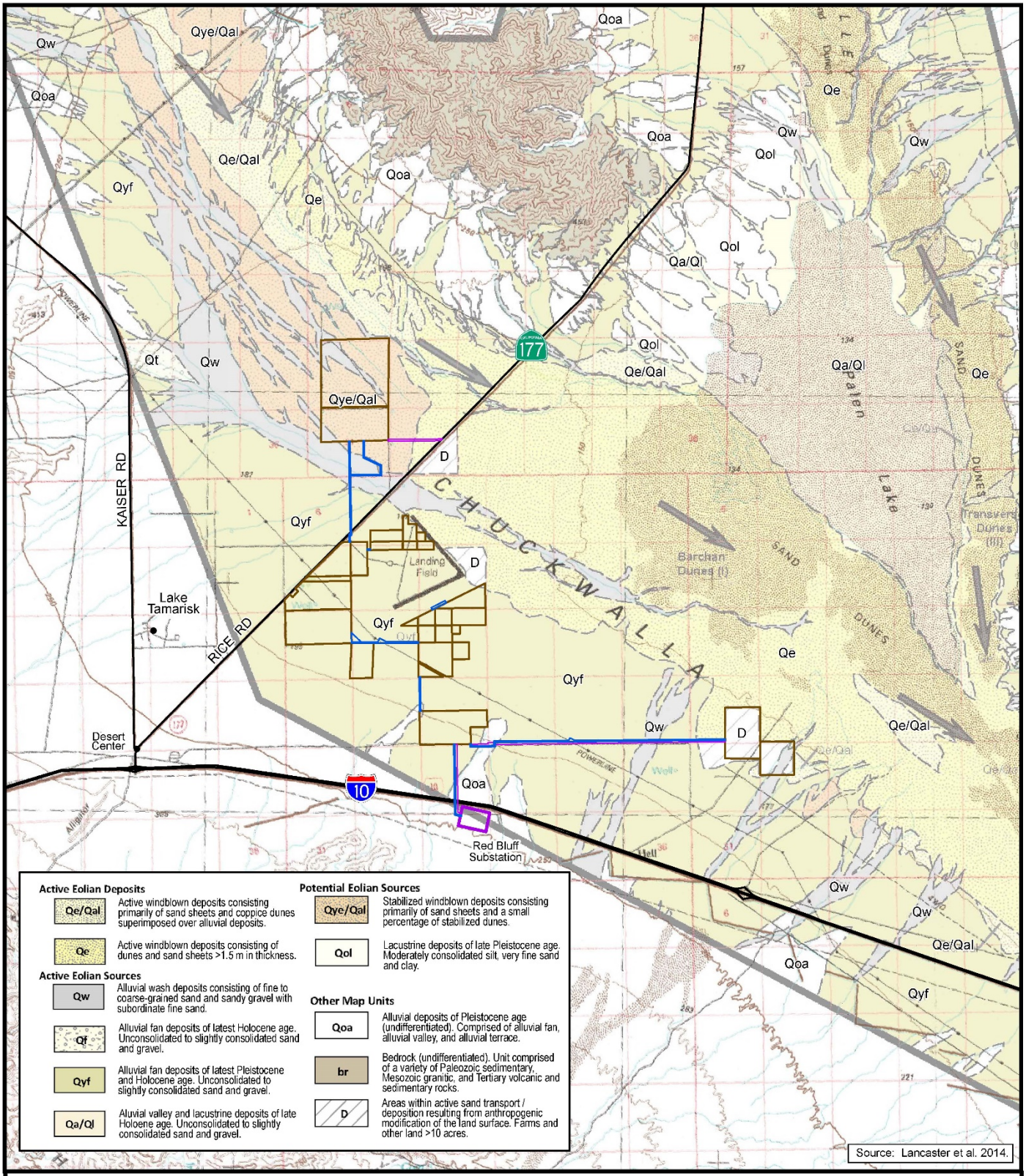
- Solar Facility Boundary
- Gen-Tie Corridor
- Access/Spur Road
- Desert Tortoise Critical Habitat
- Playas (s1138)
- Rillito-Gunsight (s1140)
- Rositas-Carrizo (s1137)
- Rositas-Dune land-Carsitas (s1136)
- St. Thomas-Rock outcrop (s1125)
- Tecopa-Rock outcrop-Lithic Torriorthents (s1126)
- Vaiva-Quilotosa-Hyder-Cipriano-Cherioni (s1141)

FIGURE 4

Soils

Athos Solar

P:\GIS\Ironwood\Shared\Projects\Projects\Athos\Soils_V3_JD.mxd



Ironwood Consulting

0 1 2 Miles

Solar Facility Boundary

Gen-Tie Corridor

Access/Spur Road

FIGURE 5

Historic Sand Transport

Athos Solar

4.2 Field Investigations

Field investigations (surveys) were conducted on seven separate days between March 22 and May 9, 2018. Surveyors included Chris Blandford, Christopher Fabry, and Lehong Chow, who were qualified with 40-hour jurisdictional water training and previous experience with jurisdictional resources associated with arid lands of the California deserts. Due to the anticipated absence of Federal jurisdiction based on the recent Approved Jurisdictional Determination for the Palen Solar Project (USACE 2017; Appendix A), field investigations focused on CDFW's definition of jurisdictional waters, which was consistent with the *MESA (Mapping Episodic Stream Activity) Field Guide* and *Methods to Describe and Delineate Episodic Stream Processes on Arid Landscapes for Permitting Utility-Scale Solar Power Plants* ("MESA Guide"; Brady and Vyverberg 2013). The MESA Guide provides a current understanding of fluvial geomorphology and ecohydrology and facilitates mapping of State-jurisdictional waters.

Data were collected using a combination of records entered into ESRI ArcGIS Collector© and hand-written field notes. Transects were typically performed perpendicular to flow patterns and conducted within all Project components to obtain sufficient quantity of data points to facilitate GIS digitization of jurisdictional features. Over twenty-five miles of pedestrian and vehicular transects were performed. Point data were collected at individual features that displayed characteristic sign of episodic flow and, in some cases, upland areas that lacked watercourse features. Data points were taken for each feature that crossed the Project, typically at the center of each feature and the width of the feature was recorded.

Field investigations were conducted during a dry spring (Table 2). As a result, recent evidence of episodic flow was minimal during the survey; however, historical episodic flow and watercourse features, as defined by the MESA Guide (Brady and Vyverberg 2013), were evident during the surveys and subsequently recorded and photographed when observed. Such features included:

- vegetation channel alignment,
- sand-filled channels,
- levee ridges,
- wrack lines,
- bifurcated flow,
- bar-and-swale topography,
- braided channels,
- cut banks,
- organic drift, and
- low flow and secondary channels.

Upland features including desert pavement, deflated sand sheets, gravel lag deposits, and islands were also recorded. Jurisdictional waters and riparian communities were mapped at a minimum scale of 1:6000, often down to 1:3000, as suggested in the MESA guidance for utility solar projects (Brady and Vyverberg 2013). The field delineation utilized the Holland Code Classification System for vegetation communities (Holland 1986) for identifying xeric riparian vegetation. Where vegetation contained a mixture of upland and wash-dependent indicator species from two or more Holland vegetation communities, the indicator species that appeared with the greatest vegetation coverage (absolute dominance based on percent cover) was used to identify the vegetation community.

Post-field analysis was conducted by surveyors and GIS specialists, in tandem, to code, define, designate, and edit all acquired field data representing jurisdictional waters. Acreages were calculated using GIS by referencing collected digital data and aerial photography. The linear path and extent of Unvegetated Ephemeral Dry Washes were digitized using polylines with an accompanying width measurement. The width value was used to convert polylines to polygons. The resulting features were reviewed and further refined based on interpretation of high-resolution aerial imagery. Rainfall data and historical aerial imagery were reviewed to estimate the time that anthropogenic influences may have affected hydrology and determine whether channels downstream of diversions may have been abandoned.

5 RESULTS

Potential CDFW-jurisdictional waters identified within the Project site consisted of streambeds (Unvegetated Ephemeral Dry Wash) and streambeds-riparian (Desert Dry Wash Woodland), and an agricultural pond (Figures 6a-6f).

5.1 Unvegetated Ephemeral Dry Wash

Unvegetated Ephemeral Dry Washes were mapped consistent with the presence of active channels, primarily within the creosote bush scrub or agricultural lands. Unvegetated Ephemeral Dry Washes were not dominated by xeric riparian vegetation such as desert ironwood or blue palo verde, yet irregular and isolated occurrences of wash-dependent shrubs and trees may be found within mapped Unvegetated Ephemeral Dry Wash.

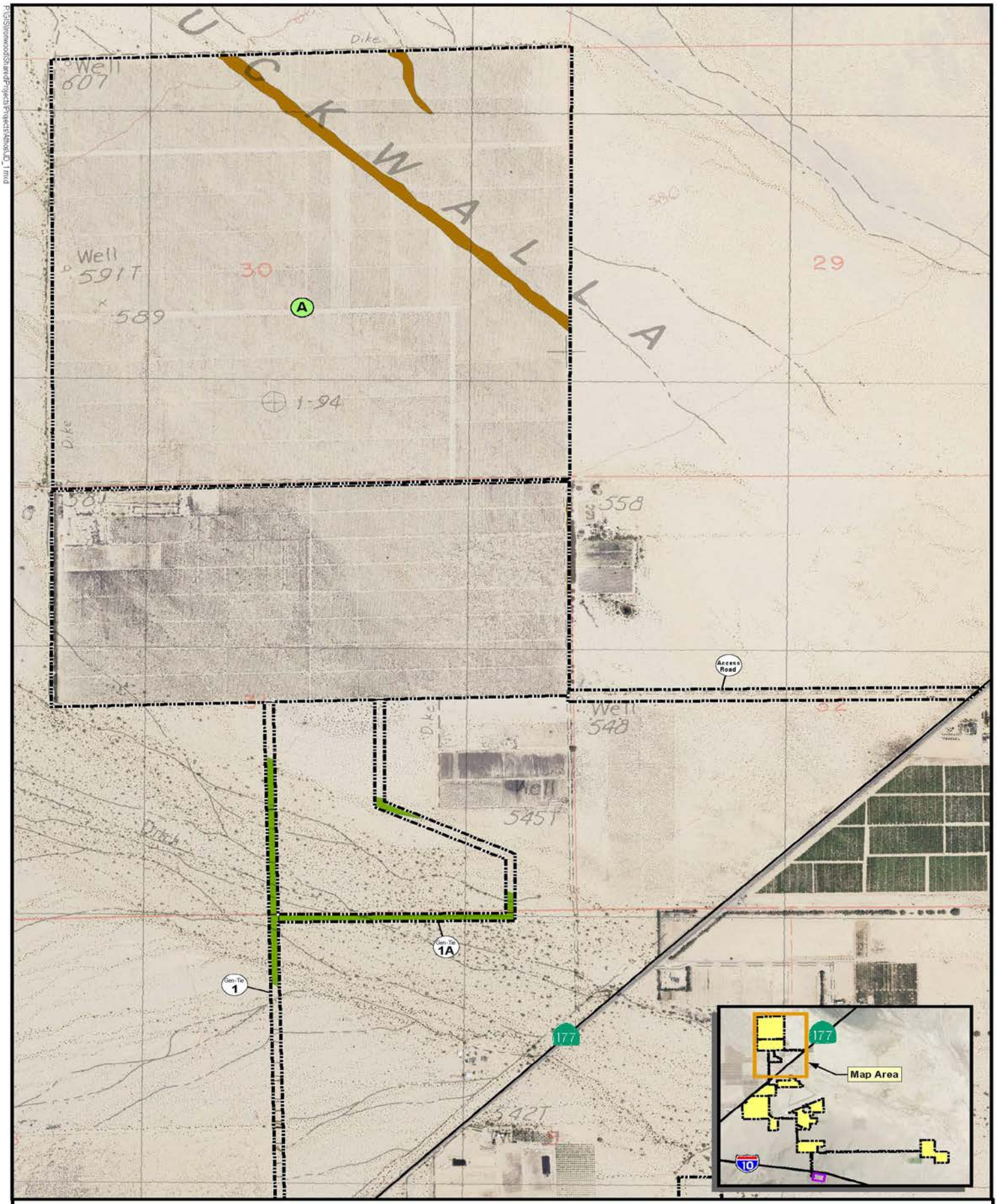
Active channels within the lower alluvial fan, where the Project is situated, showed sign of frequent avulsion (changes in flow direction following surface water flow events) due to high sand content and patterns of brief, intense surface water flow. The avulsion process results in a network of active and inactive (abandoned) channels. Active channels supported evidence of scour, cut banks, levee ridges, wrack lines, and organic drift. Inactive channels and swales were characterized as discontinuous, shallow depressions with no evidence of recent episodic flow.

Although some of these features are visible on aerial imagery and may appear to be active, the absence of watercourse indicators, presence of upland indicators (e.g., bioturbation), and isolation from a larger floodplain disqualified these features as being mapped as Unvegetated Ephemeral Dry Wash.

Agricultural lands that had been fallow for longer periods shows more evidence of episodic flow than lands that were undergoing active agricultural practices at the time of field investigations due to the level of recent ground disturbance. Much of the fallow agriculture within the Project site had been cultivated into windrows, which may collect rainfall and concentrate surface flow. Active flow was more evident where upstream diversion berms were absent, or breaches had occurred.

Most of the Project site supported active or fallow agricultural land where evidence of episodic flow and watercourse features was obfuscated by historical and ongoing intensive ground disturbance and flow diversion practices (Appendix B – Photos 3, 10 and 11). Agricultural properties located within active alluvial fans (parcel groups A and E) had historically maintained earthen berms to divert surface flow from coursing through the property and directed flow around the property (Appendix B – Photos 1 and 2). The condition of the existing berms varied within the Project site. The berm located around the western and northern boundary of parcel group A appeared to have been intact for several decades, thus resulting in abandoned channels throughout the agricultural land (Appendix B – Photos 1, 2, and 3). This berm would be subject to washing out only during extremely high flows that occur rarely. The berm around the southern edge of parcel group E showed evidence of more recent breaches, thus allowing flow to course through the agricultural land.

Narrow washes within hydrological shadow of I-10, and its associated levees, were mapped as Unvegetated Ephemeral Dry Washes if they supported watercourse characteristics (gen-tie segments 3 and 4). While these washes have been affected by upstream diversions and likely support far less surface flow than under historical conditions, some could become active after sufficient rainfall, if the reduced drainage area north of the freeway generates sufficient runoff.



Ironwood Consulting

0 500 1,000 Feet

Athos Solar Project

Desert Dry Wash Woodland

Unvegetated Ephemeral Dry Wash

FIGURE 6a

Potential CDFW - Juridictional Areas

Athos Solar

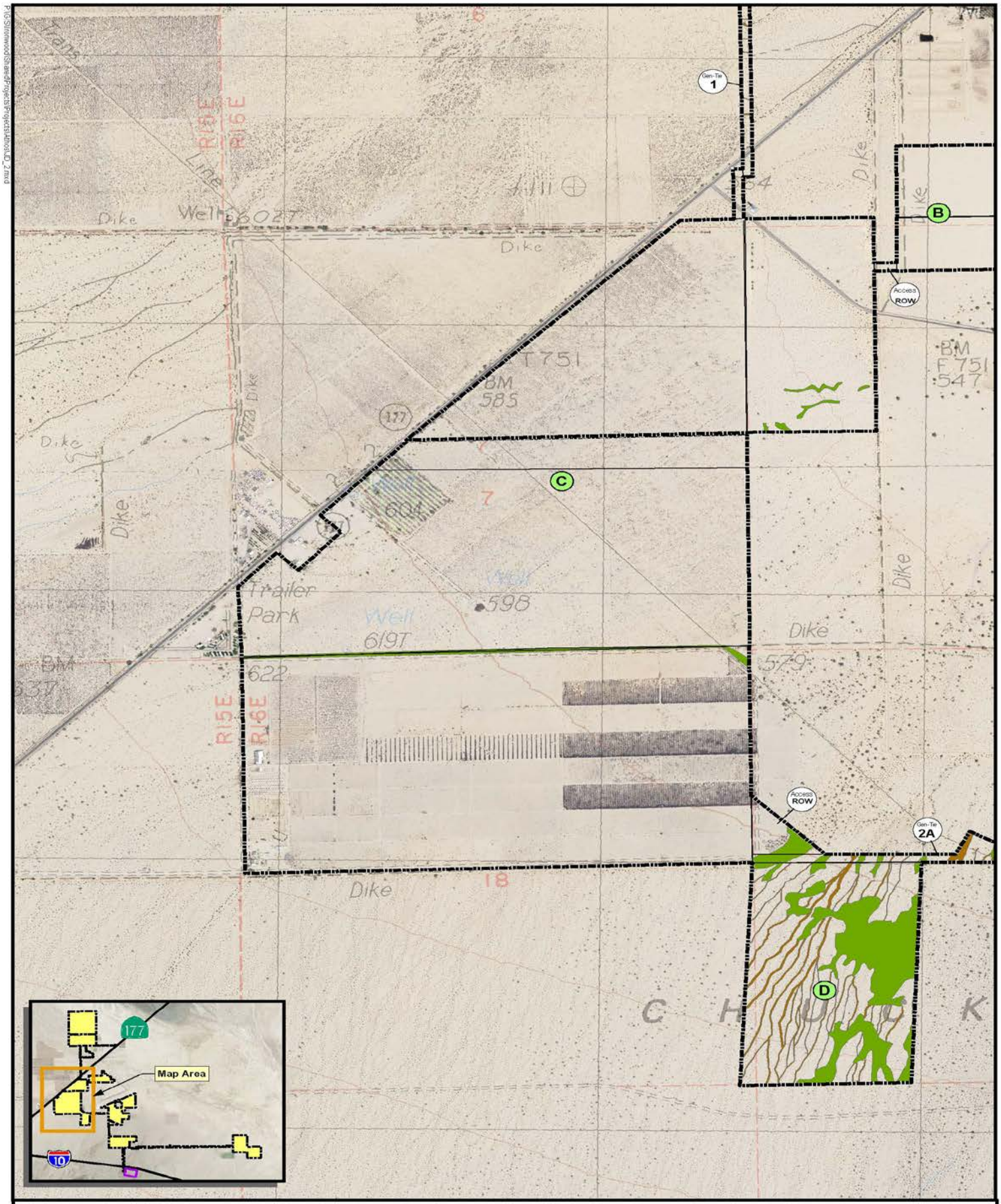
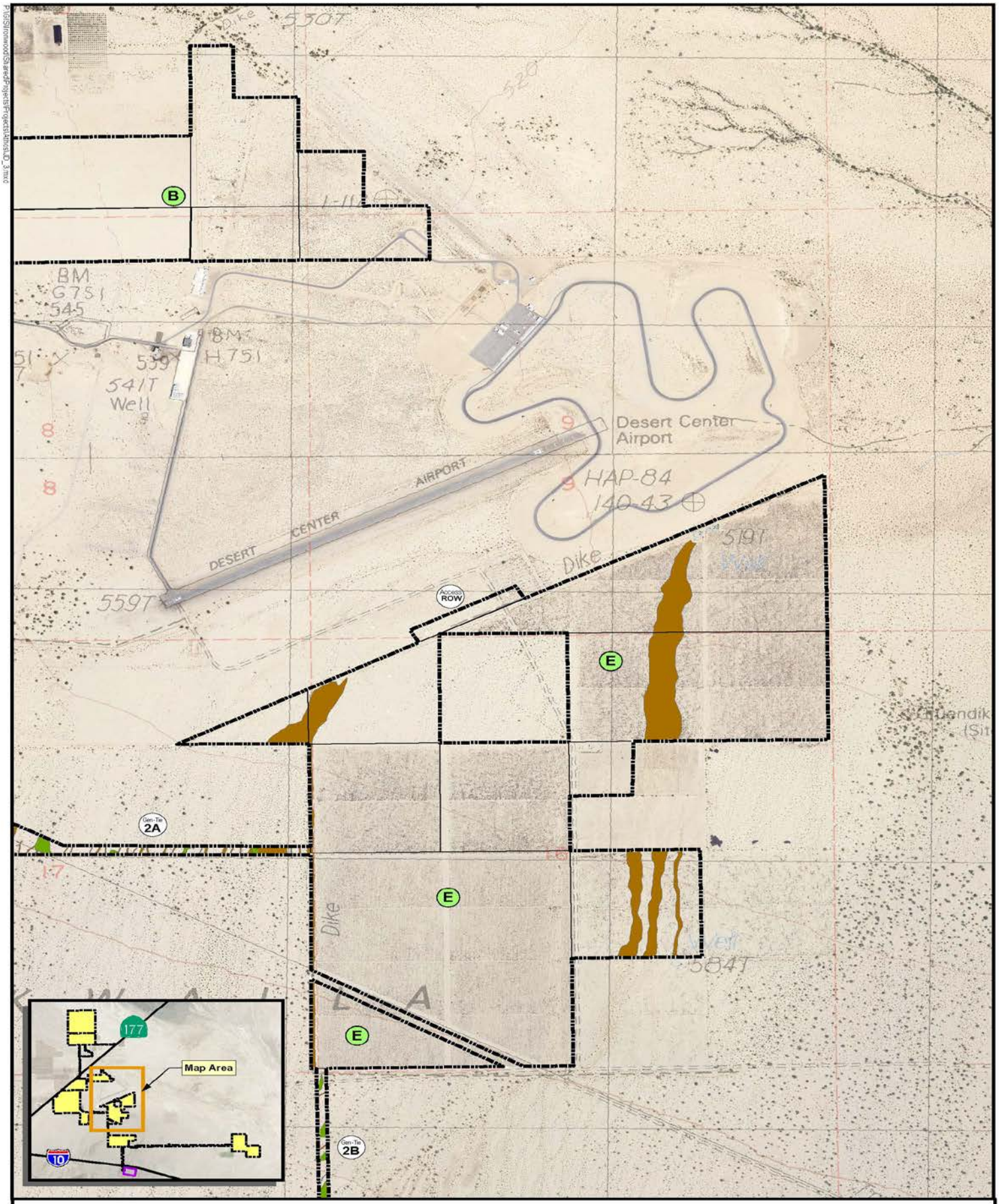


FIGURE 6b

Potential CDFW - Juridictional Areas

Athos Solar



Ironwood Consulting

0 500 1,000 Feet

Athos Solar Project

Desert Dry Wash Woodland

Unvegetated Ephemeral Dry Wash

FIGURE 6c

Potential CDFW - Juridictional Areas

Athos Solar

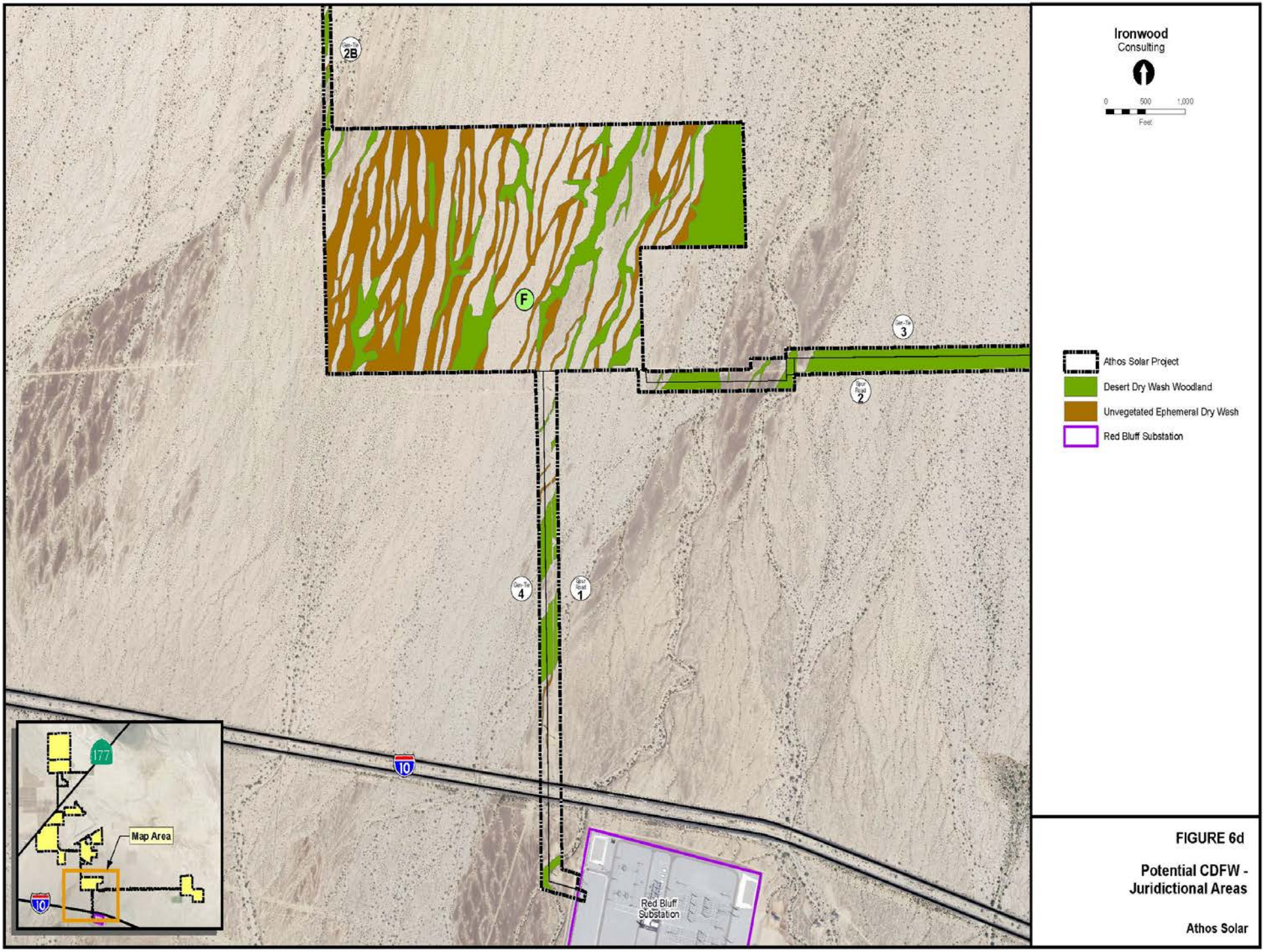
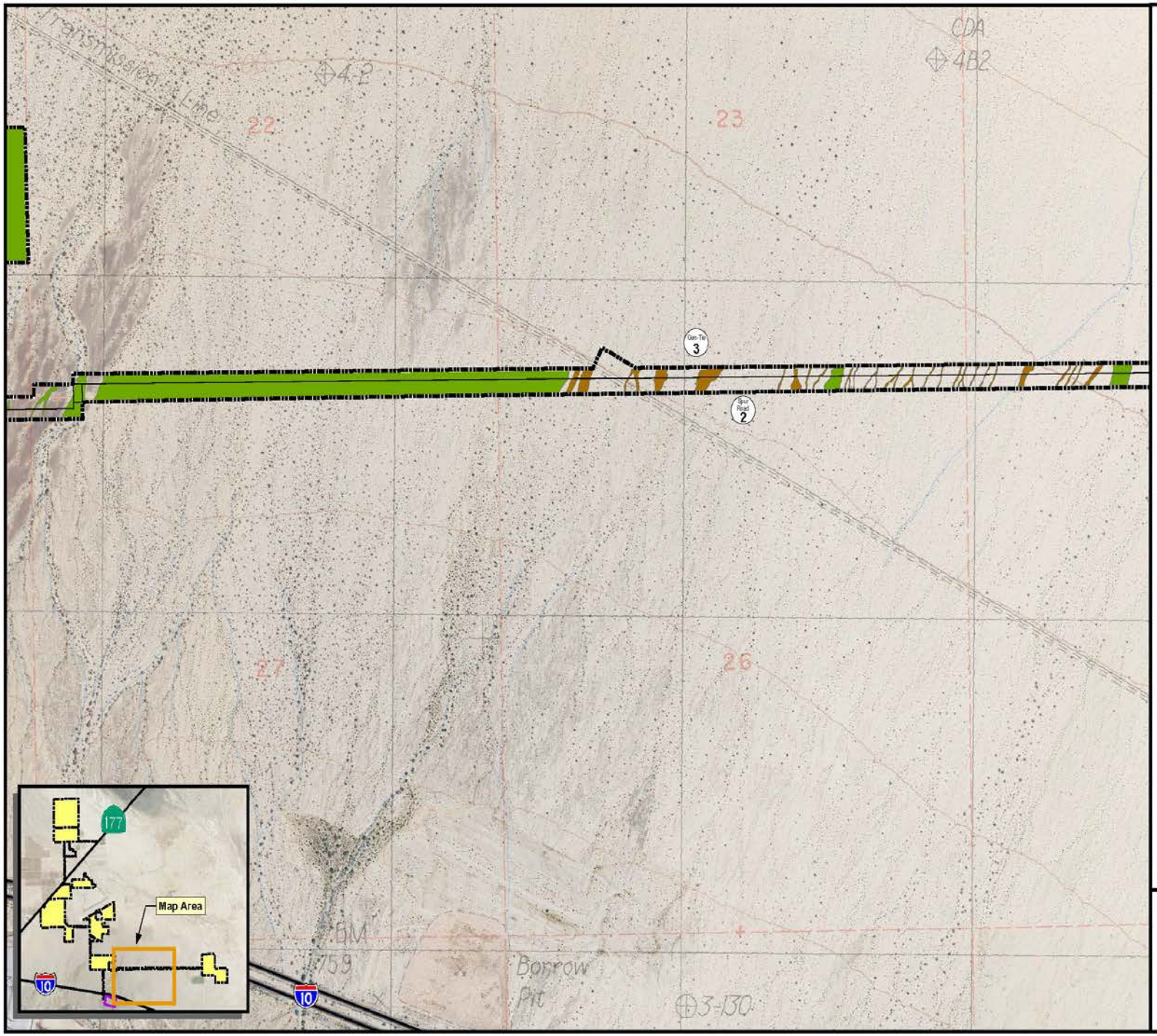


FIGURE 6d

Potential CDFW - Juridictional Areas

Athos Solar



Ironwood
Consulting

0 500 1,000
Feet

Athos Solar Project
Desert Dry Wash Woodland
Unvegetated Ephemeral Dry Wash

FIGURE 6e

Potential CDFW - Juridictional Areas

Athos Solar

Ironwood
Consulting

0 500 1,000
Feet

Athos Solar Project
Agricultural Pond
Desert Dry Wash Woodland
Unvegetated Ephemeral Dry Wash

FIGURE 6f

Potential CDFW - Juridictional Areas

Athos Solar

5.2 Desert Dry Wash Woodland

Desert Dry Wash Woodland is a xeric riparian vegetation community (Holland Code 62200). Areas mapped as Desert Dry Wash Woodland were composed of ephemeral dry wash (streambed) and riparian interfluves within a matrix of dominant wash-dependent vegetation. Holland (1986) describes this community as an open to relatively densely covered, drought-deciduous, microphyll (small compound leaves) riparian scrub woodland (Appendix B – Photo 12). Desert Dry Wash Woodland is characterized by braided wash channels that experience regular avulsion. This community is synonymous with blue palo verde (*Parkinsonia florida*) - ironwood (*Olneya tesota*) (microphyll) woodland alliance (Sawyer et. al 2009) and *Sonoran - Coloradan Semi Desert Wash Woodland / Scrub* (NVCS). Within the Project site, this vegetation community is dominated by an open tree layer of ironwood, with occasional blue palo verde. The understory typically consisted of creosote bush scrub with big galleta grass, cheesebush (*Ambrosia salsola*), desert lavender (*Hyptis emoryii*), and occasional Russian thistle.

Desert dry wash woodland is located within the southern native parcels of the Project site (parcel groups D and F, and gen-tie segments 2A, 2B, 3 and 4.). Disturbed desert dry wash woodland is associated with a channelized wash that bisects parcel group C and the distal portion of the wash that courses through the southeast corner of the date palm farm (parcel group G). Outside and adjacent to the western and northern boundaries of parcel group A, the distal extent of Big Wash and Pinto Wash supports disturbed desert dry wash woodland (Appendix B – Photos 1 and 2).

5.3 Agricultural Pond

The date palm farm (parcel group G) supports one pond with standing water (Figure 6f). The pond is 2.4 acres as measured from on aerial imagery dated 2016. Based on field surveys conducted in 2018, it is evident that the area of surface water associated with this pond is substantially less than in 2016 (Appendix B, Photo 15). The pond likely receives groundwater pumped from a nearby well. As with several other historical ponds within the date palm farm, the volume of water stored in the pond has fluctuated, and continues to fluctuate, over time proportional to the demand of agricultural irrigation. All other historical ponds were dry, supporting no surface water, during the 2018 surveys.

6 JURISDICTIONAL FINDINGS AND RECOMMENDATIONS

The following discussion represents the best effort at determining the jurisdictional boundaries using the most current regulations and guidance from the USACE and CDFW.

6.1 Clean Water Act (§ 404)

An Approved Jurisdictional Determination (SPL-2018-00708) was issued by the USACE on October 29, 2018 for the Athos Renewable Energy Project (Appendix B), The Approved Jurisdictional Determination states the following:

> *Based on available information, I have determined waters of the United States do not occur on the project site. The aquatic resources identified are intrastate isolated waters with no apparent interstate or foreign commerce connection. As such, these waters are not currently regulated by the Corps of Engineers. This disclaimer of jurisdiction is only for Section 404 of the Clean Water Act. Other Federal, State, and local laws may apply to your activities.*

Due to the conclusion drawn in the Athos-Approved Jurisdictional Determination, it is assumed that waters of the U.S. do not occur within the Athos Project site

6.2 California Porter-Cologne Water Quality Act and Clean Water Act (§ 401)

The RWQCB regulates discharges to jurisdictional waters under the federal CWA and the California Porter-Cologne Water Quality Control Act, which is implemented through issuance of National Pollutant Discharge Elimination System permits for point source discharges and WDRs for non-point source discharges.

Due to the conclusion drawn in the Athos Approved Jurisdictional Determination, waters of the U.S. do not occur within the Athos Project site; therefore, a CWA § 401 Water Quality Certification is not anticipated to be required.

It is recommended that the Applicant confirms with the Colorado River Basin (Region 7) RWQCB that no Waste Discharge Requirements or Report of Waste Discharge would be required for the Project.

6.3 California Fish and Game Code §§ 1600–1616

The area estimated to meet the definition of CDFW-jurisdictional waters within the Project site are shown in Table 2.

Table 2 - CDFW-Jurisdictional Waters

HABITAT TYPE	PRIVATE				PUBLIC		TOTAL (acres)
	Solar Facility (acres)		Gen-Tie [1] (acres)		Gen-Tie BLM [1] (acres)		
	Native	Ag	Native	Ag	Native	Ag	
Streambed - Unvegetated Ephemeral Dry Wash	100.28	45.62	0.39	-	10.38	0.06	**156.67**
Streambed and Riparian - Desert Dry Wash Woodland	91.2	-	12.54	-	59.19	-	**162.93**
Agricultural Pond	-	2.3	-	-	-	-	**2.3**
subtotals	***191.48***	***47.92***	***12.93***	***0***	***69.57***	***0.06***	**321.9**

[1] Based on gen-tie survey area of 200ft (60m) wide corridor. Includes spur roads and access roads - actual disturbance will likely be substantially less.

California Fish and Game Code § 1602 requires project proponents to notify CDFW prior to any activity that may substantially modify CDFW-jurisdictional streambeds. Based on the findings above, a Notification of Lake or Streambed Alteration form should be submitted to CDFW, along with the required supplemental material (including precise impact calculations) and fee. CEQA review will be required for the effects CDFW-jurisdictional streambeds and associated riparian habitat.

7 REFERENCES

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APPENDIX A

Representative Photographs

Photo 1 – Parcel Group A. Northwest corner facing south. Earthen berm intact. Distal extent of Pinto Wash diverted along the western boundary.

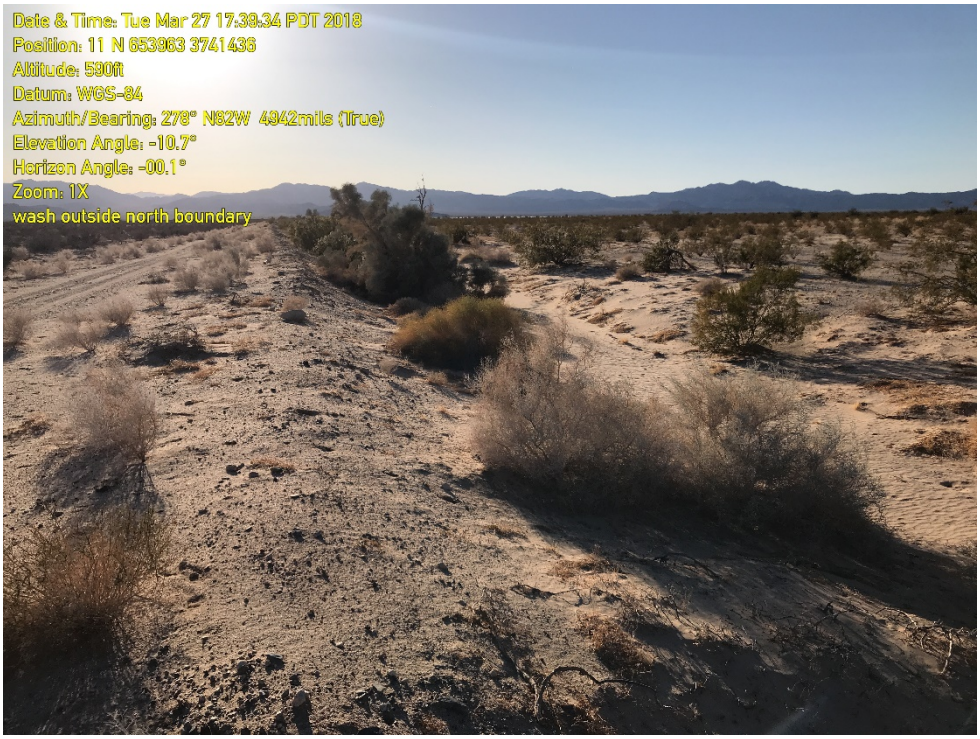


Photo 2 – Parcel Group A. Northern boundary facing west. Earthen berm intact. Distal extent of Pinto Wash diverted along the northern boundary.

Photo 3 – Parcel Group A. Northern boundary facing southeast. Remnant wash through fallow agricultural land.

Photo 4 – Parcel Group A. Eastern boundary facing south. Earthen berm on east boundary directing flow down perimeter road. Flow emanates from fallow agriculture field with windrows upslope.

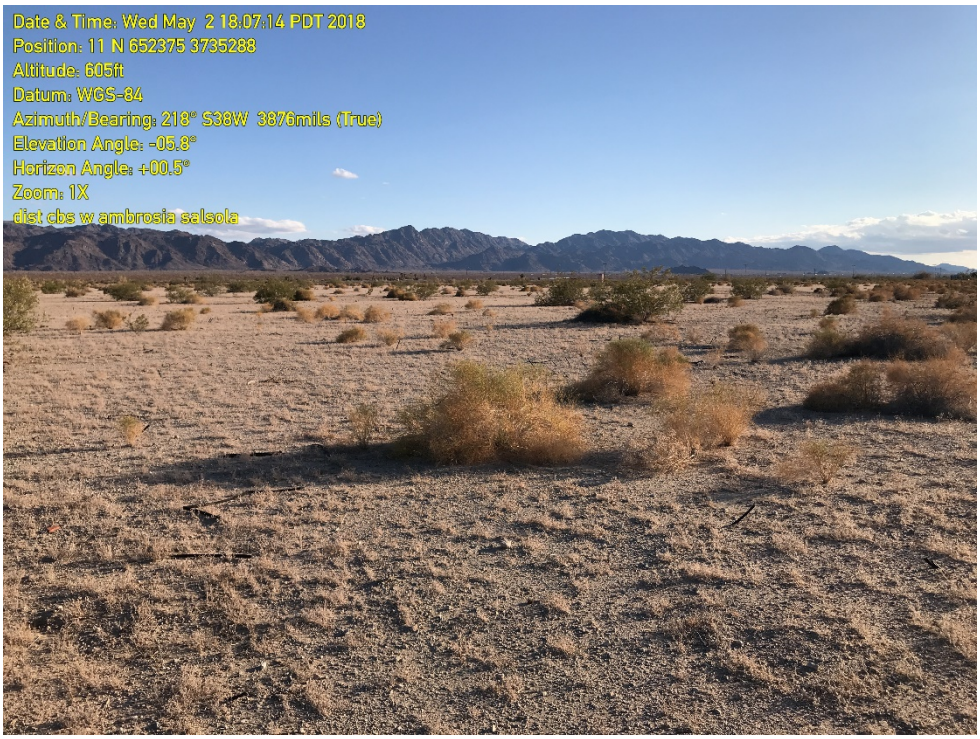


Photo 5 – Parcel Group B. Facing south. Lack of active watercourse within disturbed scrub.

Photo 6 – Parcel Group B. Facing east. Channelized wash with disturbed Desert Dry Wash Woodland between earthen berms.

Photo 7 –Parcel Group C. Facing west. Lack of active watercourse within disturbed saltbush scrub.

Photo 8 – Parcel Group D. Facing south. Sparse Desert Dry Wash Woodland within active and inactive channel network. Avulsion evident within braided channels.

Photo 9 – Parcel Group D. Facing northeast. Sparse Desert Dry Wash Woodland within active and inactive channel network. Off highway vehicle disturbance.

Photo 10 – Parcel Group E. Facing north. Fallow agricultural land with active channels between tilled windrows.

Photo 11 – Parcel Group E. Facing north. Distal extent of wash within fallow agricultural land.

Photo 12 – Parcel Group F and gen-tie 4. Facing south. Major wash system with Desert Dry Wash Woodland.
Cut banks, sediment sorting, and wrack lines present

Photo 13 – Parcel Group G. Facing northeast. Distal portion of major wash *entering* fallow date palm farm.
Scour, sediment sorting, and cut banks visible.

Photo 14 – Parcel Group G. Facing north. Distal portion of major wash *exiting* though fallow date palm farm.
Scour, vegetation alignment, and cut banks visible.

Photo 15 – Parcel Group G. Facing southeast. Agricultural pond within palm farm. Water levels low compared to historical levels.

APPENDIX B

Athos Renewable Energy Project

Approved Jurisdictional Determination

DEPARTMENT OF THE ARMY
CORPS OF ENGINEERS, LOS ANGELES DISTRICT
1451 RESEARCH PARK DRIVE, SUITE 100
RIVERSIDE, CALIFORNIA 92507-2154

October 29, 2018

SUBJECT: Approved Jurisdictional Determination

Scott White
Aspen Environmental Group
615 North Benson Ave., Suite E
Upland, California 91786

Dear Mr. White:

I am responding to your request (File No. SPL-2018-00708) dated May 9, 2018, on behalf of IP Athos, LLC, for an approved Department of the Army jurisdictional determination (JD) for the Athos Renewable Energy Project. The proposed project is located on approximately 3,300 acres, including approximately seven miles of transmission lines, in Desert Center, Riverside County, California (centered near lat. 33.7519°N, long. -115.3637°W).

The Corps' evaluation process for determining whether or not a Department of the Army permit is needed involves two tests. If both tests are met, a permit would likely be required. The first test determines whether or not the proposed project is located within the Corps' geographic jurisdiction (i.e., it is within a water of the United States). The second test determines whether or not the proposed project is a regulated activity under Section 10 of the Rivers and Harbors Act or Section 404 of the Clean Water Act. This evaluation pertains only to geographic jurisdiction.

Based on available information, I have determined waters of the United States do not occur on the project site. The basis for our determination can be found in the enclosed Approved Jurisdictional Determination (JD) form.

The aquatic resources identified on the project site in the project documentation you provided are intrastate isolated waters with no apparent interstate or foreign commerce connection. As such, these aquatic resources are not currently regulated by the Corps of Engineers. This disclaimer of jurisdiction is only for Section 404 of the Clean Water Act. Other federal, state, and local laws may apply to your activities. In particular, you may need authorization from the California State Water Resources Control Board, the California Department of Fish and Wildlife, and the U.S. Fish and Wildlife Service.

This letter includes an approved jurisdictional determination for the Athos Renewable Energy Project in Desert Center, Riverside County, California. If you wish to submit new information regarding this jurisdictional determination, please do so within 60 days. We will consider any new information so submitted and respond within 60 days by either revising the prior determination, if appropriate, or reissuing the prior determination. If you object to this or

any revised or reissued jurisdictional determination, you may request an administrative appeal under Corps regulations at 33 CFR Part 331. Enclosed you will find a Notification of Appeal Process (NAP) and Request for Appeal (RFA) form. If you wish to appeal this decision, you must submit a completed RFA form within 60 days of the date on the NAP to the Corps South Pacific Division Office at the following address:

Tom Cavanaugh
Administrative Appeal Review Officer
U.S. Army Corps of Engineers
South Pacific Division, CESPD-PDS-O, 2042B
1455 Market Street
San Francisco, California 94103-1399

In order for an RFA to be accepted by the Corps, the Corps must determine that it is complete, that it meets the criteria for appeal under 33 CFR Part 331.5 (see below), and that it has been received by the Division Office by **December 28, 2018**.

This determination has been conducted to identify the extent of the Corps' Clean Water Act jurisdiction on the particular project site identified in your request, and is valid for five years from the date of this letter, unless new information warrants revision of the determination before the expiration date. This determination may not be valid for the wetland conservation provisions of the Food Security Act of 1985. If you or your tenant are USDA program participants, or anticipate participation in USDA programs, you should request a certified wetland determination from the local office of the Natural Resources Conservation Service prior to starting work.

Thank you for participating in the regulatory program. If you have any questions, please contact me at (951) 276-6624 x263 or via e-mail at James.E.Mace@usace.army.mil. Please help me to evaluate and improve the regulatory experience for others by completing the customer survey form at http://corpsmapu.usace.army.mil/cm_apex/f?p=regulatory_survey.

Sincerely,

James E. Mace
Senior Project Manager
South Coast Branch
Regulatory Division

Enclosure(s)

NOTIFICATION OF ADMINISTRATIVE APPEAL OPTIONS AND PROCESS AND REQUEST FOR APPEAL		
Applicant: IP Athos, LLC	File Number: SPL-2018-00708	Date: OCTOBER 29, 2018
Attached is:		See Section below
	INITIAL PROFFERED PERMIT (Standard Permit or Letter of permission)	A
	PROFFERED PERMIT (Standard Permit or Letter of permission)	B
	PERMIT DENIAL	C
X	APPROVED JURISDICTIONAL DETERMINATION	D
	PRELIMINARY JURISDICTIONAL DETERMINATION	E

SECTION I - The following identifies your rights and options regarding an administrative appeal of the above decision. Additional information may be found at http://www.usace.army.mil/cecw/pages/reg_materials.aspx or Corps regulations at 33 CFR Part 331.

A: INITIAL PROFFERED PERMIT: You may accept or object to the permit.

- ACCEPT: If you received a Standard Permit, you may sign the permit document and return it to the district engineer for final authorization. If you received a Letter of Permission (LOP), you may accept the LOP and your work is authorized. Your signature on the Standard Permit or acceptance of the LOP means that you accept the permit in its entirety, and waive all rights to appeal the permit, including its terms and conditions, and approved jurisdictional determinations associated with the permit.

- OBJECT: If you object to the permit (Standard or LOP) because of certain terms and conditions therein, you may request that the permit be modified accordingly. You must complete Section II of this form and return the form to the district engineer. Your objections must be received by the district engineer within 60 days of the date of this notice, or you will forfeit your right to appeal the permit in the future. Upon receipt of your letter, the district engineer will evaluate your objections and may: (a) modify the permit to address all of your concerns, (b) modify the permit to address some of your objections, or (c) not modify the permit having determined that the permit should be issued as previously written. After evaluating your objections, the district engineer will send you a proffered permit for your reconsideration, as indicated in Section B below.

B: PROFFERED PERMIT: You may accept or appeal the permit

- ACCEPT: If you received a Standard Permit, you may sign the permit document and return it to the district engineer for final authorization. If you received a Letter of Permission (LOP), you may accept the LOP and your work is authorized. Your signature on the Standard Permit or acceptance of the LOP means that you accept the permit in its entirety, and waive all rights to appeal the permit, including its terms and conditions, and approved jurisdictional determinations associated with the permit.

- APPEAL: If you choose to decline the proffered permit (Standard or LOP) because of certain terms and conditions therein, you may appeal the declined permit under the Corps of Engineers Administrative Appeal Process by completing Section II of this form and sending the form to the division engineer. This form must be received by the division engineer within 60 days of the date of this notice.

C: PERMIT DENIAL: You may appeal the denial of a permit under the Corps of Engineers Administrative Appeal Process by completing Section II of this form and sending the form to the division engineer. This form must be received by the division engineer within 60 days of the date of this notice.

D: APPROVED JURISDICTIONAL DETERMINATION: You may accept or appeal the approved JD or provide new information.

- ACCEPT: You do not need to notify the Corps to accept an approved JD. Failure to notify the Corps within 60 days of the date of this notice means that you accept the approved JD in its entirety, and waive all rights to appeal the approved JD.

- APPEAL: If you disagree with the approved JD, you may appeal the approved JD under the Corps of Engineers Administrative Appeal Process by completing Section II of this form and sending the form to the division engineer. This form must be received by the division engineer within 60 days of the date of this notice.

E: PRELIMINARY JURISDICTIONAL DETERMINATION: You do not need to respond to the Corps regarding the preliminary JD. The Preliminary JD is not appealable. If you wish, you may request an approved JD (which may be appealed), by contacting the Corps district for further instruction. Also you may provide new information for further consideration by the Corps to reevaluate the JD.

SECTION II - REQUEST FOR APPEAL or OBJECTIONS TO AN INITIAL PROFFERED PERMIT

REASONS FOR APPEAL OR OBJECTIONS: (Describe your reasons for appealing the decision or your objections to an initial proffered permit in clear concise statements. You may attach additional information to this form to clarify where your reasons or objections are addressed in the administrative record.)

ADDITIONAL INFORMATION: The appeal is limited to a review of the administrative record, the Corps memorandum for the record of the appeal conference or meeting, and any supplemental information that the review officer has determined is needed to clarify the administrative record. Neither the appellant nor the Corps may add new information or analyses to the record. However, you may provide additional information to clarify the location of information that is already in the administrative record.

POINT OF CONTACT FOR QUESTIONS OR INFORMATION:

If you have questions regarding this decision and/or the appeal process you may contact:

James Mace
U.S. Army Corps of Engineers
Los Angeles District
1451 RESEARCH PARK DRIVE, SUITE 100
RIVERSIDE, CALIFORNIA 92507-2154
Phone: (951) 276-6624
Email: James.E.Mace@usace.army.mil

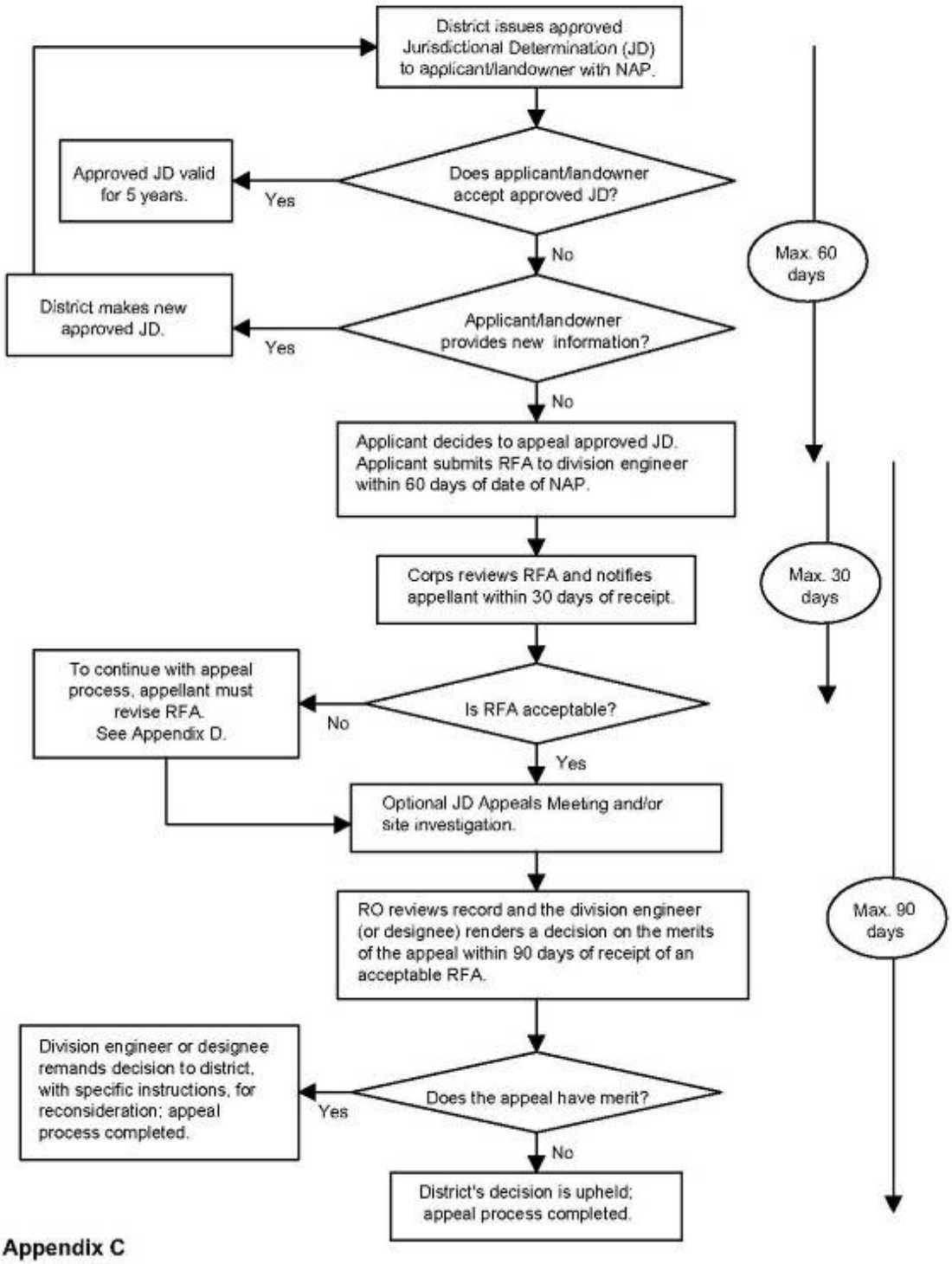
If you only have questions regarding the appeal process you may also contact: Thomas J. Cavanaugh

Administrative Appeal Review Officer,
U.S. Army Corps of Engineers
South Pacific Division
1455 Market Street, 2052B
San Francisco, California 94103-1399
Phone: (415) 503-6574
Fax: (415) 503-6646
Email: thomas.j.cavanaugh@usace.army.mil

RIGHT OF ENTRY: Your signature below grants the right of entry to Corps of Engineers personnel, and any government consultants, to conduct investigations of the project site during the course of the appeal process. You will be provided a 15 day notice of any site investigation, and will have the opportunity to participate in all site investigations.

_____ Signature of appellant or agent.	Date:	Telephone number:

Administrative Appeal Process for Approved Jurisdictional Determinations



Appendix C

§ 331.5 Criteria.

(a) *Criteria for appeal* —(1) *Submission of RFA.* The appellant must submit a completed RFA (as defined at §331.2) to the appropriate division office in order to appeal an approved JD, a permit denial, or a declined permit. An individual permit that has been signed by the applicant, and subsequently unilaterally modified by the district engineer pursuant to 33 CFR 325.7, may be appealed under this process, provided that the applicant has not started work in waters of the United States authorized by the permit. The RFA must be received by the division engineer within 60 days of the date of the NAP.

(2) *Reasons for appeal.* The reason(s) for requesting an appeal of an approved JD, a permit denial, or a declined permit must be specifically stated in the RFA and must be more than a simple request for appeal because the affected party did not like the approved JD, permit decision, or the permit conditions. Examples of reasons for appeals include, but are not limited to, the following: A procedural error; an incorrect application of law, regulation or officially promulgated policy; omission of material fact; incorrect application of the current regulatory criteria and associated guidance for identifying and delineating wetlands; incorrect application of the Section 404(b)(1) Guidelines (see 40 CFR Part 230); or use of incorrect data. The reasons for appealing a permit denial or a declined permit may include jurisdiction issues, whether or not a previous approved JD was appealed.

(b) *Actions not appealable.* An action or decision is not subject to an administrative appeal under this part if it falls into one or more of the following categories:

(1) An individual permit decision (including a letter of permission or a standard permit with special conditions), where the permit has been accepted and signed by the permittee. By signing the permit, the applicant waives all rights to appeal the terms and conditions of the permit, unless the authorized work has not started in waters of the United States and that issued permit is subsequently modified by the district engineer pursuant to 33 CFR 325.7;

(2) Any site-specific matter that has been the subject of a final decision of the Federal courts;

(3) A final Corps decision that has resulted from additional analysis and evaluation, as directed by a final appeal decision;

(4) A permit denial without prejudice or a declined permit, where the controlling factor cannot be changed by the Corps decision maker (e.g., the requirements of a binding statute, regulation, state Section 401 water quality certification, state coastal zone management disapproval, etc. (See 33 CFR 320.4(j));

(5) A permit denial case where the applicant has subsequently modified the proposed project, because this would constitute an amended application that would require a new public interest review, rather than an appeal of the existing record and decision;

(6) Any request for the appeal of an approved JD, a denied permit, or a declined permit where the RFA has not been received by the division engineer within 60 days of the date of the NAP;

(7) A previously approved JD that has been superceded by another approved JD based on new information or data submitted by the applicant. The new approved JD is an appealable action;

(8) An approved JD associated with an individual permit where the permit has been accepted and signed by the permittee;

(9) A preliminary JD; or

(10) A JD associated with unauthorized activities except as provided in §331.11.

Appendix C.3

Bird and Bat Conservation Strategy

IP Athos Renewable Energy Project
Bird and Bat Conservation Strategy

Prepared for:

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March 2019

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Abbreviations and Acronyms

amsl	Above mean sea level
ACEC	Areas of Critical Environmental Concern
BGEPA	Bald and Golden Eagle Protection Act
BBCS	Bird and Bat Conservation Strategy
BLM	Bureau of Land Management
CBOC	California Burrowing Owl Consortium
CDCA	California Desert Conservation Area
CEQA	California Environmental Quality Act
DWMA	Desert Wildlife Management Area
DEIR	Draft Environmental Impact Report
ESA	Federal Endangered Species Act
gen-tie line	Generator tie line
MW	Megawatt
MBTA	Migratory Bird Treaty Act
NEPA	National Environmental Policy Act
O&M	Operation and maintenance
PV	Photovoltaic
ROD	Record of Decision
ROW	Right-of-way
SEZ	Solar Energy Zone
SCADA	Supervisory Control and Data Acquisition System
USFWS	U.S. Fish and Wildlife Service
WHMA	Wildlife Management Habitat Area

1.0 Introduction

IP Athos, LLC, a subsidiary of Intersect Power, proposes to construct, operate and decommission the IP Athos Renewable Energy Project (Athos or Project), a utility-scale solar photovoltaic (PV) electrical generating and storage facility, and associated infrastructure to generate and deliver renewable electricity to the statewide electricity transmission grid. The proposed Project is located on approximately 3,400 acres across seven (7) groups of non-contiguous parcels in the Desert Center area of Riverside County, California (**Figures 1 and 2**; all figures are in Appendix A). The County of Riverside is reviewing the Project pursuant to the California Environmental Quality Act (CEQA), and Bureau of Land Management (BLM) is performing a separate review of the Project under the National Environmental Policy Act (NEPA).

It is important to note that the implementation of clean solar energy generation is, though difficult to quantify, a compensatory measure by which plant and wildlife species will benefit on a local, regional, and global scale. When solar energy substitutes for fossil fuel energy sources, the result is a net decrease in toxic air emissions and reduced exposure of wildlife to those emissions. When carbon-free electricity substitutes for carbon-emitting electricity, the result is a net contribution toward mitigating the effects of climate change. This benefit to the ecosystem is a part of the Project's purpose. IP Athos is also committed to reducing direct impacts to local wildlife populations by implementing appropriate measures identified in this Bird and Bat Conservation Strategy (BBCS).

IP Athos is voluntarily proposing this BBCS to set forth the measures it will implement to avoid, minimize, or mitigate for potential adverse effects of the Project to birds or bats. Accordingly, IP Athos will collect and evaluate data during the construction, operation and maintenance (O&M), and decommissioning phases of the Project and will implement adaptive management measures as necessary and appropriate to minimize or mitigate impacts to birds or bats. IP Athos does not anticipate that construction, operations, or decommissioning of the Project will cause unauthorized take or prohibited disturbance of bird or bat species.

This BBCS was prepared according to guidelines recommended by the U.S. Fish and Wildlife Service (USFWS, 2010a; 2010b). It describes the proposed Athos Project components, summarizes baseline data regarding birds and bats in the Project vicinity; assesses potential risks to those species that could result from Project construction, operation, and decommissioning; and describes conservation measures to be implemented, to minimize those risks.

1.1 Project Description

The proposed Project is located on approximately 3,400 acres across seven (7) groups of non-contiguous parcels in the Desert Center area of Riverside County, California (**Figures 1 and 2**; all figures are in Appendix A). The renewable energy facility sites would occupy approximately 3,228 acres on privately-owned land. The proposed Project is located on primarily disturbed lands to minimize ground disturbance and impacts to resources. The portion of the 220 kilovolt (kV) generation tie (gen-tie) transmission line outside of the solar facility would be located on seven (7) miles of federal lands managed by the BLM, Palm Springs–South Coast Field Office. The remainder of the gen-tie lines would traverse approximately four (4) miles of privately-owned land, primarily on the solar facility sites.

Most of the Athos Project site is former agricultural lands (jojoba farms) or currently active date palm farms. Part of the proposed solar field land and most of the proposed gen-tie routes are natural desert landscape.

The analysis, conservation measures, monitoring, reporting, and adaptive management identified in this BBCS will be applicable for the proposed project or for potential minor variations such as a reduced footprint, or local siting or schedule modifications.

1.1.1 Summary of Project Components

The following summary of the Project components, construction methods, schedule, and operation and maintenance activities are based on information provided by Intersect Power.

1.1.2 Solar Facility

The Project's PV modules would be manufactured at an offsite location and transported to the Project site. Panels would be arranged in strings with a maximum height of 12 feet. Panel faces would be minimally reflective, dark in color, and highly absorptive.

Panels would be arranged on the site in solar arrays. Spacing between each row would be a minimum of four (4) feet. Structures supporting the PV modules would consist of steel piles which would be driven into the soil using pneumatic techniques, such as a hydraulic rock hammer attachment on the boom of a rubber-tired backhoe excavator. The piles typically would be spaced 10 feet apart. The total height of the panel system measured from ground surface would be up to 12 feet. Where excavations are required, the majority would be limited to less than six (6) feet in depth, however, some excavations, such as those undertaken for the installation of collector poles and dead-end structures, may reach depths of 20 feet or more.

Each two-megawatt (MW) PV panel increment would include an inverter-transformer station constructed on a concrete pad or steel skid, and centrally located within the PV arrays. Each inverter-transformer station would contain electrical components and a security camera at the top of an approximately 20-foot pole. An inverter shade structure may also be installed at each one. The shade structure would consist of wood or metal supports and a durable outdoor material shade structure (metal, vinyl, or similar). The shade structure would extend up to 10 feet above the top of the inverter pad.

Underground cables would be installed to convey electricity from the panels, via combiner boxes located throughout the PV arrays, to inverter-transformer stations. From there, the 34.5 kV level collection cables would either be buried underground or installed overhead on wood poles. If the collection system is installed overhead, some of the wood poles could be located at the outside edge of the property line, but a majority of these poles are expected to be located interior to the site. Approximately 300 to 500 wood poles located at 250-foot intervals could be installed across the entire site. The typical height of the poles would be approximately 30 to 50 feet.

Up to four (4) substations would be located within the proposed solar sites. The area of each substation and associated equipment would be approximately 37,500 square feet (150 feet by 250 feet). Substation equipment would be built on concrete pad foundations, and the remaining area would be graveled to a maximum depth of approximately six (6) inches. Each substation would be surrounded by an up-to six-foot (6-foot) high chain link fence topped with one foot of barbed wire.

The Project may use one of the existing homes on the solar facility site as an O&M building, or it may use the septic system of an existing home and build a new O&M building. If a new O&M building is constructed, it would be approximately 3,000 square feet in size and approximately 15 feet at its tallest point.

A fiber optic or other cabling system would be installed for remote monitoring of operation and/or remote control of critical components. It typically would be installed in buried conduit, leading to one or more Supervisory Control and Data Acquisition System (SCADA) system cabinets located within the Project site. External telecommunications connections could be provided through wireless or hard-wired connections to locally available commercial service providers. The Project's SCADA system would interconnect to this

fiber optic network at the Red Bluff Substation, and no additional disturbance associated with telecommunications is anticipated.

The Project could include, at the Applicant's option, a battery or flywheel storage system capable of storing up to 500 MW of electricity. If installed, the storage system would consist of battery or flywheel banks housed in electrical enclosures and buried electrical conduit. The battery system would either be concentrated near the Project substations or dispersed throughout the solar facility sites. Up to 3,000 electrical enclosures measuring approximately 40 feet by 8 feet by 8.5 feet high would be installed on concrete foundations designed for secondary containment. Battery systems are operationally silent, and flywheel systems have a noise rating of 45 dBA.

The Project would include a meteorological (met) data collection system, consisting of approximately 15 met stations, each with multiple weather sensors mounted on a main mast approximately 20 feet tall. Solar field ingress/egress would be via locked gates located at multiple points. The boundaries of the Project sites would be secured by up-to 6-foot-high chain-link perimeter fences, topped with one (1) foot of three-strand barbed wire, or as dictated by Riverside County specifications. If required, site fencing would also adhere USFWS design guidelines (USFWS, 2009) to exclude desert tortoise from the Project site. The fence would typically be set approximately 100 feet from the edge of the solar panel array.

The Project's on-site roadway system would include a perimeter road, access roads, and internal roads. The perimeter road and main access roads would be approximately 20 feet wide and constructed to be consistent with facility maintenance requirements and County standards. These roads would be surfaced with gravel, compacted dirt, or another commercially available surface. Internal roads would have permeable surfaces and be approximately 16 feet in width or as otherwise required by County standards. They would be treated to create a durable, dustless surface for use during construction and operation. This would not involve lime treatment but would likely involve surfacing with gravel, compacted native soil, or a dust palliative.

Motion sensitive, directional security lights would provide illumination around the substation areas, inverter clusters, gates, and along perimeter fencing. All lighting would be shielded and directed downward to minimize the potential for glare or spillover onto adjacent properties. No Project structures would necessitate aviation lighting per Federal Aviation Administration Part 77 Obstruction Evaluation Consultation.

Infrared security cameras, motion detectors, or other similar technology would be installed to allow for security monitoring. Such cameras or other equipment would be placed along the perimeter of the facility and/or at the inverters. Security cameras located at the inverters would be posted on poles approximately 20 feet high.

1.1.3 220 kV Gen-tie Transmission Line

The Project gen-tie lines would be located within a 100-foot right-of-way (ROW), and would be constructed with either monopoles, lattice steel structures, or wooden H-frame poles. For the overhead gen-tie line, structure foundations would be excavated to a depth of 35 feet or more and include concrete supports depending on final engineering. Gen-tie structures would be on average 90 feet tall. The gen-tie structures would be less than 200 feet tall and would not necessitate aviation lighting per Federal Aviation Administration Part 77 Obstruction Evaluation Consultation. A total of up to 120 gen-tie structures would be built. The gen-tie would include a 3-phase 220 kV conductor, a ground wire, and a telecommunications fiber-optic cable.

1.1.4 Access Roads

Access to the Project site would be via Highway 177, except the easternmost group of parcels would be accessed from Corn Springs Road. Seven new access road segments, totaling approximately 10 miles in length, would be constructed for primary and some secondary access to the seven (7) groups of Project sites. In some cases, access would be via improved existing BLM open routes and agricultural roads, rather than new route construction.

All new and improved access roads would be 24 feet wide with a two-foot-wide shoulder on each side, for a total width of approximately 30 feet, including allowances for side slopes and surface runoff control. Construction of the access road segments would include compacting subsurface soils and placing a four-inch-thick layer of asphalt concrete over a 6-inch-thick layer of compacted aggregate base.

1.2 Construction Activities

Construction is anticipated to occur over a 30-month period with multiple construction activities occurring simultaneously. The Project may be phased. The on-site workforce is expected to reach its peak of approximately 530 individuals with an average construction-related on-site workforce of 320 individuals. In addition, an estimated 40 roundtrips per day would be required to deliver materials and equipment to the Project site. Prior to construction, all contractors, subcontractors, and Project personnel would receive Worker Environmental Awareness Program (WEAP) training to effectively understand and implement the biological commitments in the Project description; implement the mitigation measures; comply with applicable environmental laws and regulations; avoid and minimize impacts; and understand the importance of these resources and the purpose and necessity of protecting them. The following species and their habitat would be specifically covered in the WEAP: desert tortoise, burrowing owl, other raptors and migratory birds, American badger, and desert kit fox. Applicable sensitive plant species would also be covered in the WEAP.

Construction would begin with pre-construction surveys, construction of the main access road, security fencing, biological resource exclusion where needed, clearing and construction of a laydown yard, site grading and preparation, construction of the O&M building, parking area, and pad mounts for transformers. Construction would continue with the installation of temporary power, construction of on-site roads, construction of the Project substation, and assembly and installation of panel blocks and wiring.

Construction equipment would operate between the hours of 7:00 a.m. and 7:00 p.m. Monday through Friday for up to a maximum of eight (8) hours per piece of equipment, daily. Weekend construction work is not expected, but may occur on occasion, depending on schedule considerations.

Pre-construction field survey work would identify and stake the site boundaries, fence locations, and gen-tie ROW boundary. All off-road vehicle travel across BLM-administered land would be monitored by qualified biologists, archaeologists, and tribal monitors, as appropriate. A desert tortoise exclusion fence, if required, would be installed per the USFWS protocol. Fence installation would be monitored by qualified biologists, archaeologists, and tribal monitors, as appropriate. Following fence installation, biological clearance surveys would be conducted. Mammals and owls would be passively relocated using one-way doors or other techniques. Desert tortoise individuals would be moved off-site “out of harm’s way” or actively translocated to an approved site pursuant to an approved Translocation Plan to be developed in consultation with USFWS and the California Department of Fish and Wildlife (CDFW).

Several staging areas would be established within the solar facility site boundaries for storing materials, construction equipment, and vehicles. On-site pre-assembly of trackers would take place in the staging

areas. Grubbing, light grading, and construction of staging areas would be surveyed and monitored by qualified biologists, archaeologists, and tribal monitors, as appropriate.

Since most of the site has nearly level to gently sloping topography, no mass grading would be required; however, much of the solar facility would be impacted by some form of ground disturbance, either from compaction, micro-grading, or disc-and-roll grading. Some of the parcels where facilities and arrays would be located would require light grubbing for leveling and trenching.

Access road beds would be grubbed, graded, and compacted; however minimal grading is anticipated. The cut and fill would be approximately balanced; minimal import/export would be necessary.

A Stormwater Pollution Prevention Plan (SWPPP) or SWPPP equivalent document would be prepared, approved, and implemented before and during construction. The SWPPP will include Project information and best management practices (BMP). The BMPs would include stormwater runoff quality control measures, concrete waste management, stormwater detention, watering for dust control, and construction of perimeter silt fences, as needed.

Underground cables to connect panel strings would be installed using ordinary trenching techniques, which typically include a rubber-tired backhoe excavator or trencher. Wire depths would be in accordance with local, state, and federal requirements, and would likely be buried at a minimum of 18 inches below grade, by excavating a trench approximately three (3) to six (6) feet wide to accommodate the conduits or direct buried cables. The excavated soil would likely be used to fill the trench and lightly compressed. All cabling excavations would be to a maximum depth of 10 feet.

All electrical inverters and the transformer would be placed on concrete foundation structures or steel skids. The substation areas would be excavated for the transformer equipment and control building foundation and oil containment area. The substation sites would be graded and compacted to an approximately level grade. Concrete pads would be constructed as foundations for substation equipment, and the remaining area would be graveled. Concrete for foundations would be brought on-site from a batching plant in Blythe or would be batched on site as necessary.

Since most of the gen-tie ROW has nearly level to gently sloping topography, no grading would be required for the gen-tie structures; however, some light grubbing may be required to clear vegetation from an approximately 12,500 square-foot area (0.3 acre) where the structure would be erected and selectively in some work areas, as needed. Structure installation would consist of the following steps:

- Deliver new structure to structure site;
- Auger new hole using line truck attachment to a depth of up to 35 feet and include concrete supports depending on final engineering;
- Pour concrete foundation;
- Install bottom section by line truck, crane, or helicopter; and
- Install top section(s) by line truck, crane, or helicopter, if required.

Once poles are erected, the conductor will be strung from conductor pull and tension sites at the end of the power line interconnection alignment moving from one pole to the next. The average distance is approximately 4,000 feet between pull and tension sites. The line may also be equipped with optical ground wire (OPGW), which would serve as a ground wire and a telecommunication link. Alternately, telecommunications fiber optic cable may be installed in a small trench within the access roads with no new surface disturbance anticipated.

Construction sites would be kept in an orderly condition throughout the construction period by using approved enclosed refuse containers. All refuse and trash would be removed from the sites and disposed of in accordance with BLM (for the gen-tie lines) and other applicable regulations. No open burning of construction trash would occur. All vegetation that may interfere with equipment would be trimmed and removed using manual non-mechanical means or sprayed with an approved herbicide, as necessary.

Following the completion of major construction, the Project site would be revegetated for the operations phase pursuant to an approved Vegetation Management Plan. Based on the aridity of the Project area and the overall low densities of vegetation present, it is not likely that vegetation would encroach upon structures so that access would become impaired. However, noxious weeds and other nonnative invasive plant species could create a fire hazard if allowed to become established, and invasive weeds could also become problematic from an ecological perspective. Therefore, weed control activities would be implemented within the Project limits.

Weed control activities would include both mechanical and herbicide control methods on non-BLM lands. Mechanical control activities include chaining, disking, grubbing, and mowing using tractors or other heavy equipment, as necessary. On BLM-administered land (gen-tie component only), only mechanical and manual control methods will be utilized; no herbicides will be used.

1.3 Operation and Maintenance

The solar modules would operate during daylight seven (7) days a week, 365 days a year. Operational activities at the Project site would include:

- Solar module washing;
- Vegetation, weed, and pest management;
- Security;
- Responding to automated electronic alerts based on monitored data, including actual versus expected tolerances for system output and other key performance metrics; and
- Communicating with customers, transmission system operators, and other entities involved in facility operations.

Up to 10 permanent staff could be on the site at any one time for O&M activities. Alternatively, approximately two (2) permanent staff and eight (8) Project operators would be located off-site and would be on call to respond to alerts generated by the monitoring equipment at the Project site. Security personnel would be on-call

Site maintenance would be largely conducted during daytime hours, largely in the early morning or evening when the plant would be producing the least amount of energy. Maintenance typically would include panel repairs; panel washing; maintenance of electrical equipment; road and fence repairs; and weed management. On-site vegetation would be managed to ensure access to all areas of the site and to screen facilities as needed. Solar modules would be washed as needed (up to four times each year) using light utility vehicles with tow-behind water trailers, as needed, to maintain optimal electricity production. No chemical cleaners would be used for module washing.

No heavy equipment would be used during normal operation. O&M vehicles would include trucks (pickup and flatbed), forklifts, and loaders for routine and unscheduled maintenance, and water trucks for solar panel washing. Large heavy-haul transport equipment may be brought to the solar facility infrequently for equipment repair or replacement.

Standard defensible space requirements would be maintained surrounding any welding or digging operations. Fire safety and suppression measures, such as smoke detectors and extinguishers, would be installed and available at the O&M facility, per the Riverside County Building and Safety Department's requirements. A Fire Management and Prevention Plan will be prepared and implemented in coordination with the Riverside County Fire Department, BLM Fire, or other emergency response organizations.

1.4 Decommissioning and Repowering

As the facility's equipment has a useful life of 40 years, at the end of the power purchase agreement's 25-year contract term, the power from the facility would be sold to another buyer and/or the Project may be repowered to increase efficiency. If the Athos Renewable Energy Project continues to operate, the long-term operations would be the same as described above. At the end of the Project's useful life, the solar arrays and gen-tie line would be decommissioned and dismantled, according to a Closure, Decommissioning, and Reclamation Plan to be prepared.

1.5 Regulatory Setting

This BBCS was prepared to ensure Project compliance with state and federal statutes protecting native birds, as well as NEPA and CEQA requirements to disclose environmental effects of the Project, and provide public opportunity for comment. These applicable statutes are summarized below:

1.5.1 Federal Regulations

Endangered Species Act of 1973. The Endangered Species Act (ESA) (16 USC 1531 et seq.) and subsequent amendments establish legal requirements for the conservation of endangered and threatened species and the ecosystems upon which they depend. Section 9 prohibits the take of any fish or wildlife species listed as endangered and most species listed as threatened, and defines *take* to mean "to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect, or to attempt to engage in any such conduct." *Harm* is further defined to mean "any act that kills or injures the species, including significant habitat modification." *Harass* is further defined as actions that create the likelihood of injury to listed species to an extent as to significantly disrupt normal behavior patterns which include breeding, feeding, and shelter.

The ESA also includes mechanisms for allowing exceptions to the Section 9 take prohibitions. Section 7 requires federal agencies, in consultation with the U.S. Fish and Wildlife Service (USFWS) to ensure that actions they authorize, fund, or carry out are not likely to jeopardize the continued existence of threatened or endangered terrestrial wildlife species or result in the destruction or adverse modification of critical habitat for these species. Under Section 7, USFWS may authorize limited, incidental take (i.e., incidental to carrying out otherwise lawful activities) of listed species in a Biological Opinion.

The Project is not expected to affect federally listed threatened or endangered bird or bat species, though it is possible that such federally listed migratory species may be found in the Project vicinity during seasonal migrations.

Migratory Bird Treaty Act. The Migratory Bird Treaty Act (16 U.S.C. §§ 703, et seq.; MBTA) prohibits the taking, killing, possession, transportation and importation of migratory birds, their eggs, parts, and nests, except where specifically authorized by the USFWS (e.g., hunting waterfowl and upland game species). Under the MBTA, *migratory bird* is broadly defined as "any species or family of birds that live, reproduce or migrate within or across international borders at some point during their annual life cycle" and thus applies to most native bird species. Except where specifically permitted, most actions that cause bird mortality or result in the permanent or temporary possession of migratory birds or any associated body

parts, feathers, eggs or nests, constitute violations of the MBTA. The U.S. Department of Interior has recently issued a memorandum interpreting the MBTA prohibitions as being inapplicable to incidental take.

The USFWS recommends that electric utilities and utility-scale renewable energy Project developers prepare and implement Bird and Bat Conservation Strategies to minimize the incidental take of migratory birds.

Bald and Golden Eagle Protection Act. The Bald and Golden Eagle Protection Act (16 U.S.C. §§ 668-668d; BGEPA) prohibits take of bald eagles (*Haliaeetus leucocephalus*) and golden eagles (*Aquila chrysaetos*). The BGEPA defines *take* to include "pursuing, shooting, shooting at, poisoning, wounding, killing, capturing, trapping, collecting, molesting, and disturbing." The USFWS (2007) further defines *disturb* as "to agitate or bother a bald or golden eagle to a degree that causes, or is likely to cause, based on the best scientific information available, (1) injury to an eagle, (2) a decrease in its productivity, by substantially interfering with normal breeding, feeding, or sheltering behavior, or (3) nest abandonment, by substantially interfering with normal breeding, feeding, or sheltering behavior.'' Therefore, the requirements for guarding against impacts to eagles generally are more stringent than those required by the MBTA alone.

The USFWS can authorize take of bald and golden eagles when the take is associated with, but not the purpose of, an otherwise lawful activity, and cannot practicably be avoided (50 CFR § 22.26). In order to authorize take, the USFWS must determine that the proposed action is consistent with the goal of maintaining stable or increasing breeding populations. That is, any authorized take must be offset or mitigated by the proposed action. The Project is not anticipated to result in take of eagles.

Executive Order 13186, Responsibilities of Federal Agencies to Protect Migratory Birds. Directs federal agencies to review the effects of actions and agency plans on migratory birds according to NEPA or other established environmental review processes, with emphasis on species of concern (Section 6 of the order) and identify unintentional take reasonably attributable to agency actions, focusing first on species of concern, priority habitats, and key risk factors and to develop and use principles, standards, and practices to lessen the amount of unintentional take (Section 9).

Desert Renewable Energy Conservation Plan (DRECP), Land Use Plan Amendment to the California Desert Conservation Area Plan. The purpose of the DRECP is to conserve and manage plant and wildlife communities in the desert regions of California while facilitating the timely permitting of compatible renewable energy Projects. The DRECP covers over 10 million acres of BLM land. The BLM Proposed Land Use Plan Amendment (LUPA) and Final Environmental Impact Statement for the DRECP was released in November 2015 and the BLM Record of Decision (ROD) for the DRECP was issued in September 2016. The IP Athos Project site is within the Chuckwalla Valley ecoregion subsection of the DRECP area. The DRECP LUPA identifies this area as a Development Focus Area (DFA). The DRECP LUPA identifies a series of Conservation Management Actions (CMAs) to be implemented on BLM lands. The portions of the proposed IP Athos gen-tie routes located on public lands are subject to the DRECP CMAs, including LUPA BIO-17 which requires a BBCS.

1.5.2 State Regulations

California Endangered Species Act. The California Endangered Species Act (CESA) prohibits take of wildlife listed as threatened or endangered and defines '*take'* as any action or attempt to "hunt, pursue, catch, capture, or kill." CESA also allows exceptions for take that occur incidental to otherwise lawful activities. Approval requires minimization and full mitigation of projected impacts. For projects that affect a species listed under both CESA and the federal ESA, compliance with the federal ESA will satisfy CESA if CDFW

determines that the federal incidental take authorization is consistent with CESA under Fish and Game Code § 2080.1. For projects that will result in take of a species listed under CESA but not under the federal ESA, the applicants must apply for a take permit under § 2081(b).

Native Birds (California Fish and Game Code, Sections 3503, 3503.5, and 3513). California Fish and Game Code § 3503 prohibits take, possession, or needless destruction of bird nests or eggs except as otherwise provided by the Code; § 3503.5 prohibits take or possession of birds of prey or their eggs except as otherwise provided by the Code; and § 3513 provides for the adoption of the MBTA's provisions (above). With the exception of a few non-native birds such as European starling, the take of any bird or loss of active bird nests or young is regulated by these statutes. As with the MBTA, these statutes offer no statutory or regulatory mechanism for obtaining an incidental take permit for the loss of non-game migratory birds.

California Fully Protected Species. Prior to enactment of CESA and the federal ESA, California enacted laws to "fully protect" designated wildlife species from take, including hunting, harvesting, and other activities (Fish and Game Code § 3511). Unlike the subsequent CESA and ESA, there was no provision for authorized take of designated fully protected species. Currently, 36 fish and wildlife species are designated as fully protected, including golden eagle and several other desert species.

2.0 Agency Coordination

IP Athos has initiated a series of meetings with state and federal resource agencies (BLM, USFWS, and CDFW) to discuss environmental review of the Athos Project, including review of potential impacts to native birds, and minimization or mitigation of those impacts. Meetings and other communications relative to this Bird and Bat Conservation Strategy took place on:

- June 26, 2018. Agency coordination meeting, CDFW Ontario office. Representatives from CDFW Ontario office, BLM Palm Springs Field Office, BLM California Desert District, USFWS Palm Springs Fish & Wildlife Office, IP Athos, Aspen Environmental Group, and Ironwood Consulting.
- July 17, 2018. Follow-up agency coordination meeting, BLM Palm Springs Field Office. Representatives from BLM Palm Springs Field Office, BLM California Desert District, USFWS Palm Springs Fish & Wildlife Office, CDFW Ontario office, IP Athos, Aspen Environmental Group, and Ironwood Consulting.
- July 31, 2018. Riverside County Planning Department pre-application meeting, UC Riverside Palm Desert facility. Representatives from Riverside County Planning, BLM Palm Springs Field Office, BLM California Desert District, USFWS Palm Springs Fish & Wildlife Office, IP Athos, Aspen Environmental Group, and Ironwood Consulting.
- August 8, 2018. Field meeting, Desert Center. Representatives from BLM Palm Springs Field Office, BLM California Desert District, USFWS Palm Springs Fish & Wildlife Office, CDFW Ontario office, IP Athos, Aspen Environmental Group, and Ironwood Consulting.
- A letter provided by USFWS dated June 11, 2018. The USFWS has made a number of recommendations in regard to minimization and avoidance measures to sensitive bird species that may occur in the Athos Project Area, including Yuma Ridgway's rail, southwest willow flycatcher, yellow-billed cuckoo, golden eagle, and burrowing owl. The Service encourages the applicant to develop and implement a statistically robust, systematic avian monitoring program as a component of a project-specific BBCS. In addition, the Service recommends that an adaptive management program should be developed that outlines the implementation and success of various bird deterrents during the construction and operational phases of the Project. The Service advises that mortality monitoring typically requires carcass

collection, which must be authorized by a Special Purpose Utility Permit (SPUT) and requests the applicant contact them for BBCS guidance and SPUT permit requirements.

3.0 Siting

3.1 Site Overview

The Athos Project site is located in the Chuckwalla Valley near the community of Desert Center, about halfway between the cities of Indio and Blythe, in unincorporated Riverside County, California. It consists of approximately 3,396 acres, including 3,216 acres of privately owned land, proposed as solar generator facilities and, in part, transmission line routes (i.e., generator-tie or gen-tie routes) and approximately 152.3 acres of BLM-managed public land, entirely within proposed gen-tie routes. The portions of the Project site proposed for PV and storage components, consist of seven non-contiguous groups of privately-owned parcels. The seven groups of parcels are identified as A through G and the gen-tie segments are referred to as Gen-tie 1 through Gen-tie 4.

The proposed Project site is located within the BLM California Desert Conservation Area (CDCA) and the Northern and Eastern Colorado Desert Coordinated Management (NECO) Plan area. The proposed Project site is located outside boundaries of BLM designated Areas of Critical Environmental Concern (ACECs) and wilderness areas. It is within the USFWS designated southern Desert Tortoise Recovery Unit, and Gen-tie 4 is located within designated critical habitat for the desert tortoise. Two BLM designated Desert Wildlife Management Areas (DWMAs), established to support management and recovery of the listed threatened desert tortoise, are located within close proximity to the proposed Project site: The Chuckwalla DWMA is located just south of I-10 (including the southernmost portion of Gen-tie 4, but south of the proposed solar facilities), and the Joshua Tree National Park DWMA is located approximately two miles north of the northernmost portion of the Project site.

The proposed Project site is within the Riverside East Solar Energy Zone (SEZ) identified in the Solar Programmatic Environmental Impact Statement (BLM, 2012). Additionally, the Project site is within the Chuckwalla Valley ecoregion subsection of the Desert Renewable Energy Conservation Plan (DRECP) area (BLM, 2015).

The proposed Project site is in the central portion of Chuckwalla Valley in the Colorado Desert. The elevation of the surrounding landscape ranges from less than 400 feet above mean sea level (amsl) at Ford Dry Lake to over 3,000 feet amsl in the mountains that enclose the Chuckwalla Valley. The topography of the proposed Project site generally slopes toward the southeast at gradient of less than one (1) percent. Elevations of the Project site itself ranges from approximately 491 feet amsl in the southeast to 588 feet amsl in the northwest. Anthropogenic features and private land uses in the vicinity include agricultural, residential, renewable energy, energy transmission, historical military, and recreational development.

3.2 Habitat

This description of the biological resources of the proposed IP Athos Renewable Energy Project site is based on the *Biological Resources Technical Report, Athos Renewable Energy Project, Riverside County, California* (BRTR) prepared by Ironwood Consulting Inc. (Ironwood) in 2018.

Most of the Project site is disused or fallow agricultural land. There are two primary natural vegetation communities (creosote bush scrub and desert dry wash woodland) as well as one distinct natural habitat type (desert pavement) within the gen tie routes and proposed solar fields D and F. Some of the former

agricultural lands have partially recovered from previous disturbance and are mapped as recovering creosote bush scrub or salt bush scrub. One vegetation community (desert dry wash woodland) is identified by BLM (2002) and CDFW (2010) as sensitive due to its association with alluvial processes and likely California state water jurisdiction. Acreages of vegetation communities are summarized in Table 1 and mapped on Figure 3.

The term habitat refers to the environment and ecological conditions where a species is found. Wildlife habitat is generally described in terms of vegetation, though a more thorough explanation often must encompass further detail, such as availability or proximity to water; suitable nesting or denning sites; shade; foraging perches; cover sites to escape from predators; soils that are suitable for burrowing or hiding; limited noise and disturbance; or other factors that are unique to each species. Vegetation reflects many aspects of habitat, including regional climate, physical structure, and biological productivity and food resources (for many wildlife species). Thus, vegetation is a useful overarching descriptor for habitat and it is one of the primary factors in the assessments of habitat suitability presented in this section.

Sonoran creosote bush scrub. This vegetation is found on much of the undisturbed portions of the Project site and intergrades with desert dry wash woodland along desert washes. It is not designated as a sensitive plant community by BLM or CDFW. It is synonymous with *Larrea tridentata–Ambrosia dumosa* alliance (Sawyer et al., 2009) and Lower Bajada and Fan Mojavean-Sonoran Desert Scrub (NVCS). Sonoran creosote bush scrub occurs on well-drained, secondary soils of slopes, fans, and valleys and is the most widespread creosote bush scrub habitat of the Colorado Desert (Holland, 1986). Dominant plants are creosote bush (*Larrea tridentata*) and white burr-sage (*Ambrosia dumosa*). Other occasional components include indigo bush (*Psorothamnus emoryi*), sweetbush (*Bebbia juncea*), and button brittlebush (*Encelia frutescens*). There are also areas of recovering creosote bush scrub within the Project site where formerly fallow agricultural areas are recovering back to native vegetation. These areas have recolonized with ruderal species and sparse native vegetation with some evidence of former agricultural use.

Desert Dry Wash Woodland. Desert dry wash woodland is located along ephemeral washes within Parcel Groups D and F, and on some of the gen-tie routes. It is a sensitive vegetation community recognized as S4 by the CNDDB and the BLM (2002) and the DRECP. Desert dry wash woodland is characteristic of desert washes, and often meets CDFW jurisdictional criteria as waters of the state. This community is synonymous with blue palo verde—ironwood (*Parkinsonia florida—Olneya tesota*) (microphyll) woodland alliance (Sawyer et al., 2009). Holland (1986) describes this community as an open to relatively densely covered, drought-deciduous, microphyll (small compound leaves) riparian scrub woodland, often supported by braided wash channels that change following every surface flow event. Within the Project site, this vegetation community is dominated by an open tree layer of ironwood, blue palo verde, and smoke tree (*Psorothamnus spinosus*). The understory is a modified creosote scrub with big galleta grass (*Hilaria rigida*), brittlebush (*Encelia farinosa*), desert lavender (*Hyptis emoryii*), and occasional Russian thistle.

Desert Pavement. The term desert pavement is primarily descriptive of soil and substrate conditions, rather than vegetation. It has a state rarity rank of S4 and is synonymous to rigid spineflower—hairy desert sunflower (*Chorizanthe rigida—Geraea canescens*) desert pavement sparsely vegetated alliance (Sawyer et al., 2009). It is sparsely vegetated and may have an intermittent layer of cryptogamic crust. The ground surface is sandy and gravelly mixed alluvium with various rocks and gravel, cemented together by fine sediment or mineral deposits. The shrub layer of creosote bush is extremely sparse. The herb layer, though also sparse, is slightly greater (seasonally) and more diverse. Within the Project site, desert pavement is interwoven between areas of creosote bush scrub and desert dry wash woodland on solar sites D and F and some of the gen-tie routes in the southern portion of the site.

The remainder of the proposed Project area consists of active or former agricultural lands, and lands that have been developed or disturbed for human activities such as abandoned structures, completely denuded sections of former agricultural fields, and dirt roads. Portions of these former agricultural lands are recovering some components of natural vegetation (recovering creosote bush scrub and recovering saltbush scrub, see Table 1).

Table 1. Vegetation, Habitat, and Land Cover Acreages, by Land Ownership

Vegetation, habitat, or land cover	Solar facility (private)	Gen-tie (private)	Gen-tie ROW (BLM)	Total
Natural vegetation and habitat types				
Sonoran creosote bush scrub	295.6	7.1	88.6	391.3
Desert pavement	7.5	2.1	12.5	22.1
Desert dry wash woodland	92.4	10.3	40.4	143.1
subtotals	*395.3*	*19.5*	*141.5*	*556.5*
Recovering vegetation and habitat types				
Recovering creosote bush scrub	183	2.6	1.8	187.4
Recovering salt bush scrub	295.1	-	-	295.1
subtotals	*478.1*	*2.6*	*1.8*	*482.5*
Anthropogenic land use and cover types				
Developed/disturbed	172.8	-	4.5	177.3
Active agriculture	151.3	-	-	151.3
Fallow agriculture	2,029.8	0.9	9.0	2,070.8
subtotals	*2,353.9*	*0.9*	*9.0*	*2,363.8*
Totals[1]	3,227.5	23.0	152.3	3,402.8

1 - Minor variations from total acreage identified in the EIR and text above are due to rounding error or differing GIS files created for the Project and/or obtained from other sources.

4.0 Bird and Bat Species of the Project Vicinity

4.1 Information Compiled to Date (Pre-Construction Surveys)

The following discussion of bird and bat occurrence in the area is based on field surveys conducted by Ironwood in the fall of 2017 and spring of 2018 on all portions of the proposed Athos Project site, and a review of field surveys for previous projects in the vicinity (Ironwood, 2010, 2017, 2018; Aspen, 2012). Aspen and Ironwood biologists reviewed the California Natural Diversity Data Base (CNDDB; CDFW, 2018a) to identify special status species known from the area. Aspen and Ironwood biologists also reviewed applicable documents pertaining to the Desert Sunlight, Desert Harvest, and Palen projects, including the Biological Resources Technical Reports for each project (Aspen 2012, Ironwood Consulting 2011, 2018). During all field surveys conducted for the Athos Project, all incidental bird species observations were recorded in field notes.

On undisturbed habitats and gen-tie routes, the wildlife surveys for the Athos Project employed belt transects spaced approximately 10 meters (32.8 feet) apart to provide 100 percent (full) coverage. Along the gen-tie routes, 10-meter belt transects were employed 30 meters on each side of the gen-tie centerline, resulting in a 60-meter-wide survey corridor. On the agricultural and former agricultural lands,

the surveys employed belt transects approximately 20 meters (65.6 feet) apart. All burrows or holes with potential to shelter special-status wildlife (e.g., burrowing owl) were carefully inspected for potential occupancy or sign of recent wildlife use.

Wildlife surveys described here provided one full-coverage burrowing owl survey conducted during breeding season. Occupancy of burrowing owl habitat is confirmed at a site when at least one burrowing owl, or its sign at or near a burrow entrance, is observed within the last three years.

Presence/absence surveys for elf owl and Gila woodpecker surveys by visual and auditory searches, focusing on Parcel Group G in and around the date palm farm where there are perches, potential nesting trees, and plentiful water from irrigation. Nocturnal callback surveys for elf owls were conducted at 12 locations.

All sign or other evidence of burrowing owl was recorded. Type of sign recorded included live or dead individuals, tracks, burrows, pellets, white wash, and burrow complexes. Activity for each burrow or complex was determined by the freshness of the sign found. If fresh tracks, scratches, pellets or white wash were found at a burrow or complex, it was categorized as active.

Incidental observations of bats and roosts would have been recorded, if detected during wildlife surveys. Targeted surveys for bats were not conducted. Acoustic bat surveys previously conducted for adjacent proposed projects provide supplementary information about the status of current bat populations within the Project vicinity.

During all wildlife surveys, biologists recorded all wildlife species observed, regardless of status. The BRTR provides a compilation of special-status wildlife with potential to occur in Project vicinity, and evaluates probability of occurrence for each species, based on habitat, elevational and geographic ranges, and field survey results. The complete methods and results of the surveys are provided in the BRTR (Ironwood, 2018).

Most of the birds occurring in the Project vicinity have no special conservation status but all native birds are protected under the federal MBTA and California Fish and Game Code. In addition to the common birds of the area, a list of special-status bird and bat species with potential to occur in the vicinity of the proposed Project was compiled. Special status criteria include:

- Officially listed, or candidate for listing, by California or the federal government as endangered, threatened, or rare;
- Birds or bats which meet the criteria for listing, even if not currently included on any list, as described in Section 15380 of the California Environmental Quality Act (CEQA);
- BLM Sensitive Species;
- Birds or bats identified by CDFW as Species of Special Concern (CNDDB, 2018);
- Birds or bats included in the CDFW lists of Special Plants or Special Animals (CNDDB, 2018);
- Birds or bats protected under other statutes or regulations (e.g., Migratory Bird Treaty Act, Bald and Golden Eagle Protection Act, etc.)

All special-status birds or bats identified by this literature review, and others known from the general region, are included in Table 2, which summarizes the natural history, agency status, and occurrence probability on the site for each species.

Table 2. Special Status Bird and Bat Species of the Chuckwalla Valley Area

Species	Habitat and Distribution	Activity Season	Conservation Status	Occurrence Probability
BIRDS				
Circus cyaneus Northern harrier	Does not commonly breed in desert regions of California, where suitable habitat is limited, but winters broadly throughout California in areas with suitable habitat. Northern harriers forage in open habitats including deserts, pasturelands, grasslands, and old fields. N America and Eurasia	Winter; rare in summer	Fed: none State: SSC S3 (nesting)	Wintering/Migration: High; Nesting: Low Foraging: Expected rarely, mainly winter; observed flying over Project
Aquila chrysaetos Golden eagle	Typically rolling foothills, mountain areas, sage- juniper flats, desert. Nests on cliffs of all heights and in large trees in open areas. Rugged, open habitats with canyons and escarpments used most frequently for nesting. Forages over shrublands and grasslands; breeds throughout W N America, winters to E coast	Year-around	Fed: Eagle Protection act (see text) State: FP, WL	Nesting/Wintering: Minimal on-site; occurs in surrounding mtns Foraging: Low (year-around)
Pandion haliaetus Osprey	Nests in northern N America and Mexican coastlines near large water bodies, preys primarily on fish; winters in central Calif to S America;	Spring and fall migr. seasons	Fed: none State: WL S3 (nesting)	Nesting: Minimal (outside range; no suitable sites) Migration: Present, occasional flyover
Buteo swainsonii Swainson's hawk	Require large areas of open landscape for foraging, including grasslands and agricultural lands that provide low-growing vegetation for hunting and high rodent prey populations. Typically nest in large native trees such as valley oak, cottonwood, walnut, willow, and occasionally in nonnative trees within riparian woodlands, roadside trees, trees along field borders, isolated trees, small groves, and on the edges of remnant oak woodlands. Central Valley (Calif.) and east to cent. U.S., S. Canada, N. Mexico; winters in S America. A few nesting records in W Mojave Des (e.g., Lancaster area)	Spring and fall migr. seasons	Fed: BCC State: ST S2	Nesting: Low Migration: Moderate to high; observed at site G on Private Lands and at gen-tie 3 on BLM Lands
Buteo regalis Ferruginous hawk	Most common in grassland and agricultural areas in the southwest. Found in open terrain from grasslands to deserts, and are usually associated with concentrations of small mammals. Forages over grassland and shrub-land; winters in W and SW N Amer. (breeds in Great Basin and N plains)	Winter	Fed: BCC State: SSC S3S4, WL (wintering)	Nesting: Low Wintering/Migration: Moderate; not observed
Accipiter striatus Sharp-shinned hawk	Nests and hunts in forest & woodland mainly to N (may breed in S Calif. Mtn woodlands); also forages in open areas; regularly winters in S Calif.	Winter	Fed: none State: SSC S3 (nesting)	Nesting: Minimal (no habitat, outside range) Winter/Migration: High

Table 2. Special Status Bird and Bat Species of the Chuckwalla Valley Area

Species	Habitat and Distribution	Activity Season	Conservation Status	Occurrence Probability
Accipiter cooperii Cooper's hawk	Nests and hunts in forest &woodland, also forages in open areas; most of U.S., Central and S America	Year-around	Fed: none State: SSC S3 (nesting)	Nesting: Minimal (no habitat) Winter/Migration expected
Falco columbaris Merlin	Uncommon in winter in S Calif. desert and valleys (breeds in northern N America and Eurasia)	Winter	Fed: none State: SSC S3 (wintering)	Nesting: Minimal (outside range) Winter: Expected during winter
Falco mexicanus Prairie falcon	Occurs in annual grasslands to alpine meadows, but associated primarily with perennial grasslands, savannahs, rangeland, some agricultural fields, and desert scrub. Typically nests at cliffs and bluffs; occurs throughout arid western U.S. and Mexico	Year-around	Fed: BCC State: SSC S3 (nesting), WL	Nesting: Low, occurs in surrounding mtns Foraging: High (year-around), observed
Athene cunicularia hypugaea Western Burrowing owl	A yearlong resident of open, dry grassland and desert habitats. Uses rodent or other burrows for roosting and nesting cover. In the Colorado Desert, generally occur at low densities in scattered populations; forages in open habitat; increasingly uncommon in S Calif.; occurs through W U.S. and Mexico	Year-around	Fed: none BLM: Sensitive State: SSC S2 (burrow sites)	High potential for nesting in Project area; foraging observed live on Private Lands at G, sign at A, B, C, D, E, F, G; foraging not observed on BLM Lands.
Falco peregrinus anatum American peregrine falcon	Rare in the arid southeast, occur and are suspected to breed in the lower Colorado River Valley. Peregrine falcons require open habitat for foraging, and prefer breeding sites near water. Nesting habitat includes cliffs, steep banks, dunes, mounds, and some human-made structures. Widespread but rare worldwide	Spring - summer	Fed: none (former FE) BLM: sensitive State: FP S2 (former SE)	Nesting: Low (no suitable nest sites; well outside breeding range) Foraging: Moderate
Asio flammeus Short-eared owl	Require open country that supports small mammal that also provides adequate vegetation to provide cover for nests includes salt- and freshwater marshes, irrigated alfalfa or grain fields, and ungrazed grasslands and old pastures. Breeds; temperate N & S America, Eurasia	Year-around	Fed: none State:: SSC S3 (nesting)	Migration – moderate; nesting low; not observed
Asio otus Long-eared owl	Breed in riparian woodlands; forage (nocturnally) over open land; sea level to about 6000 ft. elev.; through N America and Eurasia	Year-around	Fed: none State: SSC S3 (nesting)	Breeding: Minimal (no habitat) Winter: Occurs at Lake Tamarisk
Micrathene whitneyi Elf owl	A very rarely seen spring and summer resident of the Colorado River Valley. Nests in desert riparian habitat with cottonwood, sycamore, willow or mesquite; absent from desert riparian habitat dominated by saltcedar	Spring and Summer	Fed: BCC BLM: Sensitive State: SE	Nesting: Low to Moderate; Foraging: Low to Moderate; not observed

Table 2. Special Status Bird and Bat Species of the Chuckwalla Valley Area

Species	Habitat and Distribution	Activity Season	Conservation Status	Occurrence Probability
Chaetura vauxi Vaux's swift	Not known to breed in Riverside or Southern California. They prefer to nest in the hollows inside of large old conifer trees, especially snags, which are entirely lacking from the Project site. Breeds central Calif. and north-ward, in coastal and montane forests; winters in Central and S America	Spring and fall migr. seasons	Fed: none State: SSC S3 (nesting)	Nesting: Low (outside range) Migration: High, not observed
Progne subis Purple martin	The historical breeding range of the purple martin includes southern California, though populations have shrunk dramatically and neither includes the Colorado Desert. Habitat requirements include adequate nest sites and availability of large aerial insects, and therefore are most abundant near wetlands and other water sources.	Spring and Fall	Fed: none State: SSC	Migration: Moderate; Nesting: Low; no suitable wintering or nesting habitat
Riparia riparia Bank swallow	A neotropical migrant found primarily in riparian and other lowland habitats in California west of the deserts during the spring-fall period. Uses holes dug in cliffs and river banks for cover. Will also roost on logs, shoreline vegetation, and telephone wires.	Spring and Fall	Fed: none BLM: Sensitive State: ST	Wintering: Low: Nesting: Low; Migration: Moderate
Cypseloides niger Black swift	Nests in moist crevice or cave on sea cliffs or above the surf, or on cliffs behind, or adjacent to, waterfalls in deep canyons. Forages widely over many habitats.	Spring and Fall	Fed: BCC State: SSC	Migration: Low; Nesting: Low
Colaptes chrysoides Gilded flicker	Stands of giant cactus, Joshua tree, and riparian groves of cottonwoods and tree willows in warm desert lowlands and foothills. Nests primarily in cactus, but also will use cottonwoods and willows of riparian woodlands. May be nearly extinct in California.	Year-around	Fed: BCC BLM: Sensitive State: SE	Low potential for occurrence.
Melanerpes uropygialis Gila woodpecker	In California, this species is found primarily along the Colorado River and in small numbers in Imperial County. In southeastern California, Gila wood-peckers formerly were associated with desert washes extending up to 1 mile from the Colorado River; however, their range may be expanding. Saguaro woodlands, sometimes other woodlands; cavity nester mainly in cactus; SE Calif., S Ariz., W Mexico (incl. Baja)	Year – around	Fed: BCC BLM: Sensitive State: SE S1S2	Nesting: Low to Moderate; Foraging: Low to Moderate; not observed

Table 2. Special Status Bird and Bat Species of the Chuckwalla Valley Area

Species	Habitat and Distribution	Activity Season	Conservation Status	Occurrence Probability
Lanius ludovicianus Loggerhead shrike	Open habitats with scattered shrubs, trees, posts, fences, utility lines, or other perches. Highest density occurs in open-canopied valley foothill hardwood, valley foothill hardwood-conifer, valley foothill riparian, pinyon-juniper, juniper, desert riparian, and Joshua tree habitats; widespread in N America; valley floors to about 7000 ft. elev.	Year-around	Fed: BCC State: SSC S4 (nesting)	Nesting: High; Foraging: High; observed at site E on Private Lands
Aphelocoma californica cana Scrub jay (Eagle Mtn population)	Locally endemic year-around resident in pinyon woodlands in the Eagle Mountains; long-disjunct from other populations	Year-around	Fed: none State: WL S1S2	Present (observed as transient, Oct 2011)
Aythya Americana Redhead	During breeding season may be found along e Colorado River and Salton Sea. Breeds locally in the Central Valley, coastal Southern California, eastern Kern County, and the Salton. Nests in fresh emergent wetland bordering open water.	Spring and summer	Fed: none State: SSC (nesting)	Nesting – Low
Charadrius montanus Mountain plover	Habitat includes short-grass prairie or their equivalents, and in southern California deserts are associated primarily with agricultural areas	Winter	Fed: BCC BLM: Sensitive State: SSC	Wintering/Migration: Moderate; Nesting: Low, not observed
Pelecanus erythrorhynchos American white pelican	Common spring and fall migrant at Salton Sea and Colorado River. Migrant flocks pass overhead almost any month, but mainly in spring and fall throughout the state, especially in southern California (Cogswell 1977, McCaskie et al. 1979, Garrett and Dunn, 1981)	Spring and Fall	Fed: none State: SSC	Migration: Moderate; Nesting/Wintering: Low; not observed
Chlidonias niger Black tern	Restricted to freshwater habitats while breeding, can be fairly common on bays, salt ponds, river mouths, and pelagic waters in spring and fall migration (Grinnell and Miller 1944; Cogswell, 1977)	Spring and Fall	Fed: none State: SCC	Migration: Low; Nesting: Low; uncommon migrant
Grus canadensis Sandhill crane	Breeds in open wetland habitats surrounded by shrubs or trees. They nest in marshes, bogs, wet meadows, prairies, burned-over aspen stands, and other moist habitats, preferring those with standing water. Outside of known wintering grounds, extremely rare except during migration over much of interior California.	Winter	Fed: none State: SSC	Migration: Moderate; Nesting: Low, observed flying over Project
Numenius americanus Long-billed curlew	Preferred breeding and winter habitats include large coastal estuaries, upland herbaceous areas, and croplands. On estuaries, feeding occurs mostly on intertidal mudflats.	Spring and Fall; some Winter	Fed: BCC State: WL	Migration: Moderate; Nesting: Low; no suitable foraging

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Species	Habitat and Distribution	Activity Season	Conservation Status	Occurrence Probability
Rallus obsoletus yumanensis Ridgway's (Yuma) clapper rail	Occurs in inland areas in the south-western United States. This subspecies is partially migratory, with many birds wintering in brackish marshes along the Gulf of California. Some remain on their breeding grounds throughout the year; for example, the Salton Sea (south) Christmas Bird Count frequently records this species in the fresh-water marshes in and around the Imperial Wildlife Area (Wister Unit). Nesting and foraging habitat occurs only along the Lower Colorado River (from Topock Marsh southward) and around the Salton Sea.	Spring and Fall, Winter	Fed: FE State: ST, CFP	Wintering: Low; Nesting: Low; rare migrants only
Eremophila alpestris actia California horned lark	A common to abundant resident in a variety of open habitats, usually where trees and large shrubs are absent. Found from grasslands along the coast and deserts near sea level to alpine dwarf-shrub habitat above treeline. In winter, flocks in desert lowlands and other areas augmented by winter visitants, many migrating from outside the state (Garrett and Dunn, 1981).	Spring and summer migrants, winter	Fed: none State: WL	Wintering: High, observed
Coccyzus americanus occidentalis Western yellow-billed cuckoo	Breeds along the major river valleys in southern and western New Mexico, and central and southern Arizona. In California, the western yellow-billed cuckoo's breeding distribution is now thought to be restricted to isolated sites in the Sacramento, Amargosa, Kern, Santa Ana, and Colorado River valleys.	Spring and Summer	Fed: FT, BCC BLM: Sensitive State: SE	Migration: Low; Nesting: Low; uncommon migrant
Calypte costae Costa's hummingbird	Primary habitats are desert wash, edges of desert riparian and valley foothill riparian	Spring and summer; some year-around	Fed: BCC (nesting) State: none	Nesting – Low; Foraging – Low; not observed
Toxostoma bendirei Bendire's thrasher	Favors open grassland, shrubland, or woodland with scattered shrubs, primarily in areas that contain large cholla, Joshua tree, Spanish bayonet, Mojave yucca, palo verde, mesquite, catclaw, desert-thorn, or agave; mainly E Mojave Des in Calif. (scarce in W Mojave); American SW and mainl. Mexico; winters in S Arizona, New Mexico, and mainl. Mexico	Spring and Summer	Fed: BCC BLM: Sensitive State: SSC S3	Foraging: Moderate; Nesting: Low

Table 2. Special Status Bird and Bat Species of the Chuckwalla Valley Area

Species	Habitat and Distribution	Activity Season	Conservation Status	Occurrence Probability
Toxostoma crissale Crissal thrasher	This species prefers habitats characterized by dense, low scrubby vegetation, which, at lower elevations, includes desert and foothill scrub and riparian brush; Sonoran Des, E Mojave Des, to Texas, W mainland Mexico	Year - around	Fed: none State: SSC S3	Wintering: Low; Nesting: Low; Migration: Moderate
Toxostoma lecontei Le Conte's thrasher	Occurs primarily in open desert wash, desert scrub, alkali desert scrub, and desert succulent shrub habitats; also occurs in Joshua tree habitat with scattered shrubs; Calif. deserts, SW Central Val. & Owens Val., east to Utah, Arizona	Year - around	Fed: none State: SSC S3	Potential to occur: High; Private Lands: Sites C, D, E, F, G, and gen-tie 1A, 3; BLM Lands: gen-tie 1A, 1C, 2A, 2B, 3, 4
Empidonax traillii Willow flycatcher	Most often occurs in broad, open river valleys or large mountain meadows with lush growth of shrubby willows (Serena, 1982). Common spring (mid-May to early June) and fall (mid- August to early September) migrant at lower elevations, primarily in riparian habitats throughout the state exclusive of the North Coast.	Spring and Fall	Fed: none State: SE	Wintering: Low; Nesting: Low; uncommon migrant
Empidonax traillii extimus Southwestern willow flycatcher	Most often occurs in broad, open river valleys or large mountain meadows with lush growth of shrubby willows (Serena, 1982). Common spring (mid-May to early June) and fall (mid- August to early September) migrant at lower elevations, primarily in riparian habitats throughout the state exclusive of the North Coast.	Spring and Fall	Fed: FE State: SE	Wintering: Low; Nesting: Low; uncommon migrant
Pyrocephalus rubinus Vermillion flycatcher	They are usually found near water in arid scrub, farmlands, parks, golf courses, desert, savanna, cultivated lands, and riparian woodlands; nesting substrate includes cottonwood, willow, and mesquite; SE Calif., east through S Texas, and S through Mexico; winters in Mexico	Spring and Summer	Fed: none State: SSC S2S3 (nesting)	Wintering: Low; Nesting: Low; migration through Project site
Polioptila melanura Black-tailed gnatcatcher	A year-round resident in southwestern U.S. and central and northern Mexico, in California, is found in the southeast desert wash habitat from Palm Springs and Joshua Tree National Park south, and along the Colorado River. It is now rare in eastern Mojave Desert north to the Amargosa River, Inyo County. This species nests primarily in wooded desert wash habitat, but also occurs in creosote scrub habitat during the non-breeding season.	Year-around	Fed: none State: WL	Foraging: High; Nesting: High

Table 2. Special Status Bird and Bat Species of the Chuckwalla Valley Area

Species	Habitat and Distribution	Activity Season	Conservation Status	Occurrence Probability
Vireo bellii arizonae Arizona Bell's vireo	Bell's vireo is a rare, local, summer resident below about 600 m (2000 ft) in willows and other low, dense valley foothill riparian habitat and lower portions of canyons mostly in San Benito and Monterey Co.; in coastal southern California from Santa Barbara Co. south; and along the western edge of the deserts in desert riparian habitat.	Summer	Fed: none BLM: Sensitive State: SE	Wintering: Low; Nesting: Low; Migration: Moderate
Vireo bellii pusillus Least Bell's vireo	Least Bell's vireo (endemic to California and Baja California) is a rare, local, summer resident below about 600 m (2000 ft) in willows and other low, dense valley foothill riparian habitat and lower portions of canyons mostly in San Benito and Monterey Co.; in coastal southern California from Santa Barbara Co. south; and along the western edge of the deserts in desert riparian habitat.		Fed: FE BLM: Sensitive State: SE	Wintering: Low; Nesting: Low; Migration: Moderate
Icteria virens Yellow-breasted chat	This species occupies shrubby riparian habitat with an open canopy, and will nest in non- native species, including tamarisk.	Spring, Summer, and Fall	Fed: none State: SSC (nesting)	Migration: Moderate; Nesting: Low; Foraging potential during migration
Xanthocephalus xanthocephalus Yellow-headed blackbird	Nests in fresh emergent wetland with dense vegetation and deep water, often along borders of lakes or ponds. Forages in emergent wetland and moist, open areas, especially cropland and muddy shores of lacustrine habitat. Occurs as a migrant and local breeder in deserts	Spring and Fall	Fed: none State: SSC	Wintering: Low; Nesting: Low; Migration: Moderate
Pooecetes gramineus Vesper sparrow	Fairly common locally in southern deserts in the winter and during migration. Occupies grasslands, croplands, and open brushlands.	Winter, Spring and Fall	Fed: none State: SSC	Migration: Moderate; Nesting: Low; no suitable wintering or nesting habitat
Spinus lawrencei Lawrence's goldfinch	Highly erratic and localized in occur-rence. Rather common along western edge of southern deserts. Breeds in open oak or other arid woodland and chaparral, near water. Typical habitats in southern California include desert riparian, palm oasis, pinyon-juniper, and lower montane habitats.	Spring and Fall	Fed: BCC State: none	Wintering: Low; Nesting: Low; Migration: Moderate
Setophaga petechia sonorana Sonora yellow warbler	In southeastern California, this species is known only from the lower Colorado River Valley from the middle of San Bernardino County through Riverside and Imperial Counties. This species commonly uses wet, deciduous thickets for breeding, and seeks a variety of wooded, scrubby habitats in winter	Spring and Fall	Fed: BCC State: SSC	Nesting: Low; Migration: Moderate

Table 2. Special Status Bird and Bat Species of the Chuckwalla Valley Area

Species	Habitat and Distribution	Activity Season	Conservation Status	Occurrence Probability
Vermivora luciae Lucy's warbler	An uncommon to common, summer resident and breeder along the Colorado River, common locally in a few other desert areas, and rare near Salton Sea. It occurs in typical desert nesting habitat, mesquite wash and desert riparian habitats. May use abandoned verdin nests; cavity-nesting species; breeds through much of Arizona; winters on Pacific Coast of mainl. Mexico	spring - summer	Fed: BCC BLM: Sensitive State: SSC S2S3 (nesting)	Nesting: Moderate (margin of known range); Foraging: Moderate; not observed
MAMMALS				
Antrozous pallidus Pallid bat	Inhabit rock outcrops of shrublands, arid deserts and canyonlands, mostly below about 6000 ft. elev. Typical roosting habitat is not shrub/steppe grasslands. Day and night roosts include crevices in rocky outcrops and cliffs, however, roosting opportunities may exist outside caves, mines, trees with exfoliating bark, and various human structures (WBWG, 2016). Calif, SW N Amer through interior Oregon and Washington; hibernates in winter	Warm season	Fed: none BLM: Sensitive State: SSC S3	Moderate potential for foraging; low potential for roosting; not observed.
Corynorhinus (Plecotus) townsendii Townsend's big-eared bat (incl. "pale," "western," and other subspecies)	Habitat associations include coniferous forests, deserts, native prairies, riparian communities, active agricultural areas, and coastal habitat types. Day roosts in caves, tunnels, mines. Foraging associations include edge habitats along streams, adjacent to and within a variety of wooded habitats. Feed primarily on moths. Many habitats throughout Calif and W N Amer, scattered pop'ns in E;	Year-around	Fed: none BLM: Sensitive State: SSC, S2S3	Low-moderate potential for roosting on site; moderate potential for foraging in area; not observed
Euderma maculatum Spotted bat	Arid, low desert habitats (cool seasons) to high elevation conifer forests (summer), much of SW N Amer. but very rare; roosts in deep crevices in cliffs, feeds on moths captured over open water	Not known	Fed: none BLM: Sensitive State: SSC S2S3	Low potential for roosting or foraging on site; not observed
Eumops perotis Western mastiff bat	Variety of habitats, from desert scrub to chaparral to oak woodland and into the ponderosa pine belt and high elevation meadows of mixed conifer forests; cent. and S Calif., S Ariz., NM, SW Tex., N Mexico; roost in deep rock crevices, forage over wide area	Year-around	Fed: none BLM: Sensitive State: SSC S3?	Low potential for roosting on site; moderate potential for foraging in area; not observed
Lasiurus xanthinus Western yellow bat	Recorded below 600 m (2000 ft) in valley foothill riparian, desert riparian, desert wash. Mexico and Cent. Amer., to S AZ; Riv., Imperial and San Diego Cos.; roosts in trees; evidently migrates from Calif. during winter	Year-around	Fed: none State: SSC S3	Moderate potential for roosting on site; Moderate potential for foraging in area; not observed

Table 2. Special Status Bird and Bat Species of the Chuckwalla Valley Area

Species	Habitat and Distribution	Activity Season	Conservation Status	Occurrence Probability
Macrotus californicus California leaf-nosed bat	Species depends on either caves or mines for roosting habitat. All major maternity, mating, and overwintering sites are in mines or caves (BLM CDD, 2002). California leaf-nosed bat forage almost exclusively among desert wash vegetation within 10 km of their roost (WBWG, 2016). Arid lowlands, S Calif., S and W Ariz., Baja Calif. and Sonora, Mexico	Year-around	Fed: none BLM: Sensitive State: SSC S2S3	Low potential for roosting on site; moderate potential for foraging in area; not observed
Myotis occultus Arizona myotis	Commonly known from conifer forests from 6,000 to 9,000 feet in elevation, although maternity roosts are known from much lower elevations including areas along the Colorado River in California.	Year-around	Fed: none BLM: none State: SSC	Low potential for roosting on site; low potential for foraging in area; not observed
Myotis velifer Cave myotis	Found primarily at lower elevations of the arid southwest in areas dominated by creosote bush, palo verde, and cactus. This species is a "cave dweller" and caves are the main roosts although this species may also use mines, buildings, and bridges for roosts	Late spring, summer, and fall	Fed: none BLM: Sensitive State: SSC	Low potential for roosting on site; low potential for foraging in area; not observed
Myotis yumanensis Yuma myotis	Associated with permanent sources of water, typically rivers and streams, feeding primarily on aquatic emergent insects. Also use tinajas (small pools in bedrock) in the arid west. Occurs in a variety of habitats including riparian, arid scrublands and deserts, and forests. Roosts in bridges, buildings, cliff crevices, caves, mines, and trees.	Year-around	Fed: none BLM: Sensitive State: none	Low potential for roosting on site; low potential for foraging in area; not observed
Nyctinomops macrotis (Tadarida molossa) Big free-tailed bat	Found generally sea level to 8,000 feet in elevation. This species occurs in desert shrub. It roosts mostly in the crevices of rocks although may roost in buildings, caves, and tree cavities; scattered localities in W N. Amer. through Cent. Amer.; ranges widely from roost sites; often forages over water	Year-around (?)	Fed: none BLM: none State: SSC S2	Low potential for roosting on site; moderate potential for foraging in area
Nyctinomops femorosaccus (Tadarida femorosaccus) Pocketed free-tailed bat	Known to occur in the desert from Mar-Aug, when they then migrate out of the area. In California, found primarily in creosote bush and chaparral habitats in proximity to granite boulders, cliffs, or rocky canyons, deserts and arid lowlands, SW U.S., Baja Calif., mainland Mexico; Roost mainly in crevices of high cliffs; forage over water and open shrubland	Spring and summer	Fed: none BLM: none State: SSC S2S3	Low potential for roosting on site; low potential for foraging in area; not observed

General References: American Ornithologists Union 1998; BLM CDD 2002; CDFW 2018a; 2018b; Cogswell 1977; Garrett and Dunn 1981; Grinnell and Miller 1944; Hall 1981; McCaskie et al., 1979; Rosenberg, et al., 1991; Schuford and Gardali 2008; Serena 1982; WBWG 2016

Conservation Status

Federal designations: (federal Endangered Species Act, U.S. Fish and Wildlife Service). Until 1996, FWS maintained a list of Category 2 candidates, described as species of concern, but with insufficient data to support listing. This list is no longer maintained and FWS has no SOC category.

FE: Federally listed, endangered.
FT: Federally listed, threatened.
BCC: Fish and Wildlife Service: Birds of Conservation Concern
Candidate: Sufficient data are available to support federal listing, but not yet listed.
Proposed: Formally proposed for federal status shown.

State designations: (California Endangered Species Act, California Dept. of Fish and Wildlife)

SE: State listed, endangered.
ST: State listed, threatened.
RARE: State listed as rare (applied only to certain plants).
SSC: California species of special concern. Considered vulnerable to extinction due to declining numbers, limited geographic ranges, or ongoing threats.
FP: Fully protected. May not be taken or possessed without permit from CDFW.
WL: Watch list

CDFG Natural Diversity Data Base Designations: Applied to special status plants and sensitive plant communities; where correct category is uncertain, CDFG uses two categories or question marks.

S1: Fewer than 6 occurrences or fewer than 1000 individuals or less than 2000 acres.
S1.1: Very threatened
S1.2: Threatened
S1.3: No current threats known
S2: 6-20 occurrences or 1000-3000 individuals or 2000-10,000 acres (decimal suffixes same as above).
S3: 21-100 occurrences or 3000-10,000 individuals or 10,000-50,000 acres (decimal suffixes same as above).
S4: Apparently secure in California; this rank is clearly lower than S3 but factors exist to cause some concern, i.e., there is some threat or somewhat narrow habitat. No threat rank.
S5: Demonstrably secure or ineradicable in California. No threat rank.
SH: All California occurrences historical (i.e., no records in > 20 years).
SX: Presumed extirpated in California.

4.2 Listed Threatened or Endangered Species

Gila woodpecker (*Melanerpes uropygialis*). The Gila woodpecker is listed as endangered under CESA but has no status under the federal ESA. It is identified as a bird species of conservation concern (USFWS, 2008). Gila woodpecker is predominantly a permanent resident across its range in areas of southeast California, southern Nevada, central Arizona, extreme southwest New Mexico, and parts of Mexico. The Gila woodpecker is an uncommon to fairly common resident in Southern California along the Colorado River, and locally near Brawley, Imperial County (Garrett and Dunn, 1981). Suitable habitats include riparian woodlands, uplands with concentrations of large columnar cacti, old- growth xeric-riparian wash woodlands, and urban or suburban residential areas (Edwards and Schnell, 2000). Gila woodpeckers prefer large patches of woody riparian vegetation for nesting (greater than 49 acres), but they have also been documented in various habitat types, such as desert washes (McCreedy, 2008) and residential areas (Mills et al., 1989). They excavate cavity nests in large riparian trees such as cottonwoods. In California, their primary habitat is cottonwood-willow riparian woodland. Where Gila woodpeckers occur in dry desert wash woodlands, they excavate cavity nests in large blue palo verdes (McCreedy, 2008). They also may nest in ornamental trees including palms. Availability of suitable nesting trees is a limiting factor in breeding habitat suitability (Grinnell and Miller, 1944).

Athos Project occurrence: No Gila woodpeckers were observed within the Project site during surveys, but a nesting pair feeding young was incidentally observed in a palm tree at the Corn Springs Campground seven miles from the Project site, during the spring 2018 survey period.

Potentially suitable habitat within the Project site is found in desert washes (if there are palo verde trees large enough for cavity nests) but they would be expected to more readily use palm trees in parcel group G than palo verde or ironwood trees. The probability of this species nesting on the Project site is low to moderate because the site supports sparse riparian woodland habitat and the existing date palms on the old agricultural land may be attractive. Where Gila woodpeckers occur, they generally are loud and conspicuous, and readily located by field biologists.

Swainson's hawk (*Buteo swainsoni*). The Swainson's hawk is listed as a threatened species under CESA but has no federal listing status. It is a migratory raptor. Swainson's hawk breeds in open habitats throughout much of the western United States and Canada, and in northern Mexico. In California, breeding populations of Swainson's hawks occur in desert, shrub and grasslands, and agricultural habitats with tree rows; however, most of the state's breeding sites are in the Great Basin and Central Valley (Woodbridge, 1998). The only desert breeding occurrences are in the Antelope Valley, well northwest of the Project site. These birds favor open habitats for foraging, and are near-exclusive insectivores as adults, but may also forage on small mammals and reptiles.

Athos Project occurrence: An immature Swainson's hawk was incidentally observed flying over the Project site on two occasions during the spring 2018 surveys (parcel group G and gen-tie 3) and was likely a migrant since the nearest nesting area for Swainson's hawk is in Antelope Valley.

The Project site provides potential migration habitat but is well outside the nesting range. It may be found throughout the Project site during migration.

Elf owl (*Micrathene whitneyi*). The elf owl is listed as endangered under CESA but has no federal listing status. The elf owl is found in lowland habitats that provide cover and good nesting cavities. It is most common farther east and north, in deserts with many tall saguaro cactus or large mesquites, and in canyons in the foothills, especially around sycamores or large oaks. The Project site is near the western margin of its geographic range; the nearest nesting occurrence is near Corn Springs (Garret and Dunn, 1981). Elf owls are more common and widely distributed outside of California and probably have never been common in California due to limited geographic range and generally marginal habitat. The elf owl is migratory, spending winters in Mexico and southward. It arrives in California by March, and its breeding period extends from April to mid-July (Gould, 1987).

The elf owl is a secondary cavity nester (it nests in cavities of trees and cacti, generally in disused woodpecker nests). Its nesting habitat is closely correlated with nesting habitat of woodpeckers, including Gila woodpecker (Hardy et al., 1999; Johnsgard, 2002).

Athos Project occurrence: Gila woodpeckers sometimes nest in blue palo verde and palms, and elf owls have been documented nesting in blue palo verde near Wiley's Well, east of the Project site (by Robert McKernan, Director, San Bernardino County Museum; SBCM, 2012a). The palm groves (parcel group G) and desert wash woodland habitat (parcel groups D and F as well as gen-tie 1A, 1C, 2A, 2B, 3, and 4) on the site may provide suitable (albeit probably marginal) habitat for nesting elf owls.

Other Listed Avian Species

No suitable breeding or wintering habitat for the avian species below occur within or near the Project area. These state or federal listed bird species have been recorded at other utility-scale solar energy facilities. There is a moderate potential for them to pass within the Project vicinity during migration periods, but there is no suitable nesting or foraging habitat on the site for these species.

Yuma Ridgway's rail (*Rallus obsoletus yumanensis*). Yuma Ridgway's rail, formerly known as Yuma clapper rail (*Rallus longirostris yumanensis*), is listed as a threatened species under CESA and an endangered species under the federal ESA. Yuma Ridgway's rail nests in freshwater marshes. It is found along the lower Colorado River southward to its terminus at the Sea of Cortez, along the Gila River drainage in Arizona, at Lake Mead (and the Overton Arm) and its local tributaries, along the Virgin River in Nevada and Utah, and at the Salton Sea/Imperial Valley areas of California (USFWS, 2014). It is believed that most Ridgway's rails do not migrate (USFWS, 2014). The extent of dispersal or migration between the populations is not well known (USFWS, 2009d); however, outlier records across the desert show that some level of movement occurs (CNDDB, 2018). Outlier observations have been documented at Harper Dry Lake, East Cronese Dry Lake, and Desert Center, all at a great distance from known breeding areas (CNDDB, 2018).

Southwestern willow flycatcher (*Empidonax traillii extimus*). Southwestern willow flycatcher is listed as endangered under CESA and the federal ESA. Southwestern willow flycatcher breeds in dense riparian habitats in the southwestern United States, and winters in southern Mexico, Central America, and northern South America (USFWS, 2002). The willow flycatcher species is comprised of several recognized subspecies, including the southwestern willow flycatcher, which is the only subspecies that nests in the region. The closest known breeding habitat to the Project site is approximately 35 miles away along the Colorado River and adjacent to the Salton Sea (CNDDB, 2018). Recent studies indicate that southwestern willow flycatchers do not migrate over the area of the desert where the Athos Project site is located (BLM, 2017). However, other willow flycatcher subspecies (not listed as threatened or endangered) may pass through the area during migration. There is no suitable breeding habitat on the Project site, and the site appears to be outside the southwestern willow flycatcher's migratory routes.

Western yellow-billed cuckoo (*Coccyzus americanus occidentalis*). Western yellow-billed cuckoo is listed as endangered under CESA and threatened under the federal ESA. Western yellow-billed cuckoo breeds in expansive riparian areas in portions of California, Nevada, Arizona, and New Mexico. The closest known breeding habitat is located approximately 35 miles away along the Colorado River (CNDDB, 2018). During migration, western yellow-billed cuckoos migrate across the desert and use shrubland habitats, but there have been no documented sightings of western yellow-billed cuckoo within the Development Focus Areas (DFAs) identified in the DRECP LUPA (USFWS, 2016). No suitable nesting habitat is present on the Athos Project site, although it is possible that western yellow-billed cuckoo could occur on the site briefly, during migration season.

Least Bell's vireo (*Vireo bellii pusillus*). Least Bell's vireo is listed as endangered under CESA and the federal ESA. Least Bell's vireo breeds in riparian habitats in southern California and portions of northern Baja California, Mexico and winters in southern Baja California, Mexico (USFWS, 1998). Its numbers and distribution have probably increased since its listing, although it remains absent from large parts of its former range (USFWS, 2016). The closest known breeding habitat to the Athos site is to the northwest in the Big Morongo Canyon (USFWS, 2016). Least Bell's vireos are also uncommon breeders at the Anza-Borrego Desert State Park, located approximately 70 miles southwest (USFWS, 2016). The subspecies Arizona Bell's vireo (*V. b. arizonae*) is not ESA-listed, but is state-listed in California as endangered, and occurs along the lower Colorado River, approximately 35 miles east of the Project site. Although there is little information on its migration behavior (USFWS, 2016); least Bell's vireo likely migrates through the Colorado Desert. It is presumed that it may use riparian habitat and possibly upland scrub habitat during migration (USFWS, 2016). No suitable nesting habitat is present on the Athos Project site, although least Bell's vireo could occur on the site briefly, during migration season.

4.3 Species Protected Under the Federal Bald and Golden Eagle Protection Act

Golden Eagle (*Aquila chrysaetos*). Golden eagles are typically year-round residents throughout most of their western United States range. They breed from late January through August with peak activity March through July (Kochert et al., 2002). Habitat for golden eagles typically includes rolling foothills, mountain areas, and deserts. Golden eagles need open terrain for hunting and prefer grasslands, deserts, savanna, and early successional stages of forest and shrub habitats. Golden eagles primarily prey on rabbits and rodents but will also take other mammals, birds, reptiles, and some carrion (Kochert et al., 2002). They generally nest in rugged, open habitats with canyons and escarpments, often with overhanging ledges and cliffs or large trees used as cover.

Recent data analysis and population modeling suggest the status of the golden eagle population in the western United States is gradually declining towards an equilibrium of about 26,000 individuals, down from an estimated 34,000 in 2009 and 2014 (USFWS, 2016). The future population estimate relies on the continuation of current ecological and biological conditions. It was estimated that 3,400 golden eagles die annually from anthropogenic causes in the United States (USFWS, 2016) and suggest a level of sustainable take is approximately 2,000 individuals annually. Additional unmitigated mortality will steepen the rate of decline that the golden eagle population is presently undergoing (USFWS, 2016).

Golden eagle surveys have been conducted on a multitude of projects within 10 miles of the Project vicinity between 2010-2015.

Athos Project occurrence: No golden eagles were observed within four (4) miles of the Project during the surveys between 2010-2015 or during the 2017-2018 wildlife surveys for the Project site. Within the Project area, is the highest concentration of surveys repeated over time between 2010-2015.

The mountain ranges surrounding the Project site provide suitable golden eagle nesting habitat. No on-site impacts to nest sites are expected, but golden eagles are sensitive to human disturbances during the nesting season. If there is an active nest nearby, then human activity and noise during Project construction could adversely affect golden eagle nesting success.

The Project site and gen-tie alignments provide suitable golden eagle foraging habitat. Golden eagles could forage at the Athos Project site at any time of year. Foraging birds could include mated pairs using the surrounding nesting territories; or, if the territories are inactive, unmated golden eagles or adult birds whose nests may have failed, could forage over the site during breeding season. Foraging would be somewhat more common during winter and migration seasons due to larger numbers of golden eagles in the region and their larger winter foraging ranges.

4.4 Species Fully Protected Under the California Fish and Game Code

Most of the state's designated fully protected species occur well outside the Project vicinity, but two fully protected birds could occur in the area. These are: golden eagle (discussed above, Species Protected Under the Bald and Golden Eagle Protection Act) and American peregrine falcon.

American peregrine falcon (*Falco peregrinus anatum*). The American peregrine falcon is distributed worldwide. Peregrine falcons were formerly listed under CESA and ESA, but have been delisted under both Acts. In California, range is primarily central to northern California, with wintering habitat located in southern California. Migrants occur along the coast and in the western Sierra Nevada in spring and fall. It breeds mostly in woodland, forest, and coastal habitats, and favors open landscapes with cliffs as nest sites. They

are found irregularly in the southern desert region, generally during migratory and winter seasons. They nested historically in desert mountain ranges near the Colorado River (Rosenberg et al. 1991; Patten et al., 2003) and may be re-occupying this historical part of their nesting range as their populations recover. Their diet consists primarily of birds and bats (Zeiner, 1990). Waterfowl and shorebirds make up a large proportion of their prey, and nest sites are often within foraging range of large water bodies.

Athos Project occurrence: There is only minimal likelihood that American peregrine falcon would be found in the Project vicinity, except as brief overflight during migration. Project implementation would not affect nesting habitat and has little likelihood of adversely affecting foraging behavior.

Suitable migratory or foraging habitat is present throughout the Project site, but the site lacks suitable nesting habitat.

4.5 BLM Sensitive Species

The BLM maintains a list of Sensitive Species, including species that are rare, declining, or dependent on specialized habitats (BLM, 2010). It manages sensitive species to provide protections comparable to species that may become listed as threatened or endangered (i.e., candidate species for federal listing). In addition to species addressed in this section of the BBCP, all listed threatened or endangered species (above) are managed as BLM sensitive species.

Burrowing owl (*Athene cunicularia*). The burrowing owl is a BLM Sensitive Species and a CDFW Species of Special Concern. The Western burrowing owl *(Athene cunicularia hypugaea)* inhabits arid lands throughout much of the western United States and southern interior of western Canada (Haug et al., 1993). Suitable habitat for western burrowing owl includes open habitat with available burrowing opportunities, including agricultural fields (active and fallow), creosote scrub, desert saltbush, ephemeral washes, and ruderal areas. Burrowing owls depend on other species to dig suitable burrows for use. If those species do not return to an area to dig new burrows or repair collapsed burrows, then burrowing owls would not be able to use those collapsed burrows.

Burrowing owls are unique among the North American owls in that they nest and roost in abandoned burrows, especially those created by ground squirrels, kit fox, desert tortoise, and other wildlife. Burrowing owls have a strong affinity for previously occupied nesting and wintering sites and will often return to previously used burrows, particularly if they had successful reproduction in previous years (Gervais et al., 2008). The southern California breeding season (defined as the time from pair bonding of adults to fledging of the offspring) generally occurs from February to August, with peak breeding activity from April through July (Haug et al., 1993).

In the Colorado Desert, burrowing owls generally occur at low densities in scattered populations, but they can be found in much higher densities near agricultural lands where rodent and insect prey tend to be more abundant (Gervais et al., 2008). Burrowing owls tend to be opportunistic feeders, and a large portion of their diet consists of beetles, grasshoppers, and other larger arthropods. The consumption of insects increases during the breeding season (Haug et al., 1993). Small mammals, especially mice and voles (*Microtus* and *Peromyscus* spp.) are important food items, and other prey animals include herpetofauna, young cottontail rabbits, bats, and birds such as sparrows and horned larks.

Athos Project occurrence: Burrowing owls and their sign were observed at several locations within the Project site. A total of seventeen burrows were observed with burrowing owl sign consisting of white wash, feathers, or pellets. Four live individuals were observed at burrows during the spring 2018 surveys and one live individual was observed at a burrow during the fall 2017 surveys. All live individuals were

observed in the southern portion of the Project site with all 2018 observations concentrated on the eastern portion of the Project site on parcel group G (see Figure 2 for locations). Burrowing owls may have been more prevalent in the eastern portion of the site due to the increased prey availability from artificial water sources. No burrowing owl sign was found on the public components of the gen-tie.

Bendire's thrasher (*Toxostoma bendirei*). Bendire's thrasher is a BLM Sensitive Species and CDFW Species of Special Concern. California populations are migratory, though Bendire's thrasher is found year-around in more southern portions of its range, in southern Arizona and adjacent Mexico. The Athos Project site is near the southern boundary of its breeding range in California. It breeds in open, upland desert shrublands of JTNP and surrounding area, and northward through several disjunct regions of the Mojave Desert (Sterling, 2008). Its habitat requirements are poorly understood, but it is generally associated with *Yucca* (e.g., Joshua tree) and *Opuntia* (cholla cacti) species on gently sloping terrain. Soil texture is apparently important to habitat suitability, perhaps because Bendire's thrashers largely forage on ground-dwelling insects. Hard rocky soils (e.g., desert pavement) and loose sands (e.g., dry wash sands) are apparently less suitable than firmly packed, fine-textured soils.

Athos Project occurrence: Bendire's thrashers were not observed on the Project site during the fall 2017 and spring 2018 surveys. Habitat throughout the site appears to be of marginal suitability, due to relatively low cover of *Yucca* and *Opuntia* species, and seemingly poorly-suitable soil texture. There is a low to moderate probability that Bendire's thrasher may occur on the site.

Lucy's warbler (*Vermivora luciae*). Lucy's warbler is a migratory songbird that breeds in desert riparian woodlands and winters on Pacific Coast of mainland Mexico. Its breeding range extends through much of Arizona, and parts of the eastern California deserts. It is a cavity-nesting species (i.e., it generally nests in unoccupied woodpecker nests or other cavities in trees). Its primary nesting habitat is mesquite thickets, but also uses native riparian trees and saltcedar (*Tamarix* spp.).

Athos Project occurrence: Lucy's warblers were not observed on the Project site during the fall 2017 and spring 2018 surveys, though no focused surveys were conducted. The probability of Lucy's warblers nesting and/or foraging in desert wash woodlands on or near the proposed solar facility site or gen-tie alignment alternatives is moderate.

Project development would eliminate desert dry wash woodland habitat and potential nesting and foraging habitat for Lucy's warbler on the proposed solar generator site, and could also affect smaller areas of suitable habitat along gen-tie alignments (see Table 1 for a summary of vegetation and habitat types). In addition to habitat impacts, the Project could cause mortality or injury to a Lucy's warbler (including juvenile birds or eggs), if an active nest were damaged or disturbed during construction or other phases of the Project. Potential Project impacts would be comparable to those described for nesting birds, below.

Bats. The BLM includes several bat species on its list of sensitive species. The special status bats of the local area roost in rock crevices, tunnels, or caves; one species (western yellow bat) roosts in the foliage of riparian trees. Roost sites may be used seasonally (e.g., inactive cool seasons) or daily (day roosts, used during inactive daylight hours). Maternity roosts are particularly important overall for bat life histories. Knowledge of bat distributions and occurrences is sparse. The majority of adverse impacts to bat populations in the region result from disturbance of roosting or hibernation sites, especially where large numbers of bats congregate; physical closures of old mine shafts, which eliminates roosting habitat; elimination of riparian or desert wash microphyll vegetation which is often productive foraging habitat; more general habitat loss or land use conversion; and agricultural pesticide use which may poison bats or eliminate their prey-base (Pierson & Rainey, 1998; Gannon, 2003). Bat life histories vary widely. Some species hibernate

during winter, or migrate south. During the breeding season, bats generally roost during the day, either alone or in communal roost sites, depending on species. All special status regional bats are insectivorous, catching their prey either on the wing or on the ground. Some species feed mainly over open water where insect production is especially high, but others forage over open shrublands such as found on the Project site.

Athos Project occurrence: No active bat roosts were documented on the Project site during any of the surveys to date. It is not expected that any special-status bat species would have a substantial roost on the Project site since habitat features most associated with these species (e.g. rock ledges, cliffs, large tree hollows, mine shafts) do not occur on the Project. Suitable foraging habitat for special-status bats if found on the Project site, particularly within the desert dry wash woodland (parcel groups D and F) and near the date tree farm (parcel group G) where water is available year-round. This is especially true for California leaf-nosed bats and pallid bats that feed on large insects they glean from the foliage. Bat roosts occur in the vicinity of the Project site in the McCoy Mountains, Eagles Nest Mine within the Little Maria Mountains, and Paymaster Mine within the Pinto Mountains (Ironwood Consulting, 2018).

4.6 Other Special Status Bird and Bat Species

Raptors. In addition to raptors discussed above, several other special-status birds of prey are found seasonally, especially during winter, in the region. These include ferruginous hawk (*Buteo regalis*), Cooper's hawk (*Accipiter cooperii*), sharp-shinned hawk (*A. striatus*), northern harrier (*Circus cyaneus*), prairie falcon (*Falco mexicanus*), merlin (*F. columbaris*), short-eared owl (*Asio flammeus*), and long-eared owl (*A. otus*). Outside their breeding seasons, these raptors need not return to their nests to feed young or tend eggs. Thus, they are able to forage over wide areas, where they capture birds or small mammals. Suitable winter or migratory season foraging habitat for all of these raptors is widely available throughout the region.

Athos Project occurrence: Potential Project impacts to these species and their foraging habitat would be comparable to those discussed above for wintering golden eagles. In summary, Project construction would eliminate suitable foraging habitat (see Table 1 for vegetation and habitat types), cause increased noise and disturbance to adjacent habitat, and may present collision or electrocution hazards, such as the gen-tie line and other Project facilities.

Upland Perching Birds. Several upland perching bird species are included in the CDFW Special Animals compilation. These include LeConte's thrasher (*T. lecontei*), Crissal thrasher (*T. crissale*), the Eagle Mountains scrub-jay population (*Aphelocoma californica cana*), vermilion flycatcher (*Pyrocephalus rubinus*), Vaux's swift (*Chaetura vauxi*), black-tailed gnatcatcher (*Polioptila melanura*), California horned lark (*Eremophila alpestris*), Sonora yellow warbler (*Setophaga petechia sonorana*), and loggerhead shrike (*Lanius ludovicianus*).

Athos Project occurrence: Suitable habitat for loggerhead shrike is found throughout the Project site. One live individual was observed on a native parcel of the proposed solar facility and another was observed west of parcel group E on private lands (Ironwood, 2018). Neither LeConte's thrasher nor Crissal thrasher have been reported on-site, but suitable habitat for Le Conte's thrasher is located in the Project site, primarily within desert dry wash woodland (parcel groups D and F, as well as gen-tie 1A, 1C, 2A, 2B, 3, and 4) and the Sonoran creosote bush scrub (parcel groups C, D, E, and F, as well as gen-tie 1A, 1C, 2A, 2B, 3, and 4); and suitable nesting and foraging habitat for Crissal thrasher primarily associated with dry wash woodlands (parcel groups D and F as well as gen-tie 1A, 1C, 2A, 2B, 3, and 4). The Project site contains suitable habitat throughout the Project for California horned lark. It was observed frequently on the Project site, including the gen-tie routes, during the wildlife surveys. The Project site contains suitable

foraging and potential nesting habitat for the black-tailed gnatcatcher in the components with native vegetation such as parcel groups C, D, E, and F as well as gen-tie 1A,1C 2A, 2B, 3, and 4. One individual was observed during the fall 2017 survey. The Project site contains suitable foraging habitat (during migration) for Sonora yellow warbler in the dry wash woodland (parcel groups D, and F as well as gen-tie 1A, 1C, 2A, 2B, 3, and 4) but no suitable nesting habitat. The entire Project site provides suitable habitat for Vaux's swift during migration for foraging, but no suitable nesting habitat.

Project development would eliminate suitable habitat as well as poorly suitable anthropogenically disturbed habitat for one or more of these species at the solar generator site, and would also affect smaller areas of suitable habitat along gen-tie alignments (see Table 1 for a summary of vegetation and habitat types). Other potential impacts to these species would be similar to those discussed below, under the MBTA.

5.0 Risk Assessment

This section of the BBCS describes project-specific risks that the Athos Project would or could pose to birds and bats. The USFWS (2010b) recommends that the project-specific risk assessments for solar projects should address the potential for take, including lethal take, based on each of the threats described below (Sections 5.1 through 5.9).

5.1 Burning from Concentrated Light at Solar Arrays

As a PV solar facility, the Athos Project would not concentrate light for electricity generation and would not pose a burning risk to birds or bats.

5.2 Transmission Line, Distribution Line, Power Tower, Meteorological Tower, or Guy Line Collision

The Project component of greatest potential concern that would pose lethal collision risk to birds or bats is the gen-tie line, during the construction, O&M, and decommissioning Project phases. Smaller risks would be posed by other components, during any of the three phases. These include the above-ground distribution lines, above-ground collection lines, the meteorological station(s) and any guy-wires that may support meteorological instruments, and large equipment such as cranes that would be in use during the construction and decommissioning phases. As a PV solar facility, the Project would not include a power tower.

Bird collisions with structures typically occur when the structures are not visible (e.g., bare power lines or guy wires at night), deceptive (e.g., glazing and reflective glare), or confusing (e.g., light refraction or reflection from mist). Transmission lines, including the proposed gen-tie line, present collision hazards to birds. Based on mortality data for another project's gen-tie within the Riverside East SEZ, mortality of approximately 24 birds per year per kilometer of gen-tie is expected for the proposed Project.

The Athos Project will construct all transmission lines and distribution lines according to APLIC guidelines to minimize the risk of avian and bat collision, and to monitor bird fatality at the Athos Project site to evaluate need for follow-up adaptive management measures (see Monitoring and Adaptive Management sections, below). The Project will endeavor to design the gen-tie lines without the use of guy wires to the greatest extent feasible. In addition, the Project will consolidate the gen-tie infrastructure in the area by stringing conductors on existing structures or allowing another project to string its conductors on the Project's poles.

5.3 Electrocution Potential

Large birds can be electrocuted by transmission lines if a bird's wings simultaneously contact conductors, or a conductor and a groundwire or grounded hardware. This happens most frequently when a bird attempts to perch or take off from a structure with insufficient clearance between these elements. Distribution lines that are less than 69 kilovolts (kV) but greater than 1 kV generally have less spacing than transmission lines, thus posing an electrocution hazard for perching raptors. Configurations less than 1 kV or greater than 69 kV typically do not present an electrocution potential, based on conductor placement and orientation (APLIC, 2006).

IP Athos will monitor the death and injury of birds and the resulting data will be used to inform an adaptive management program to mitigate or minimize any substantial project-related avian impacts. IP Athos will design and construct the gen-tie lines to avoid potential for electrocution and minimize potential for roosting on the structures or colliding with them. These measures would effectively minimize or mitigate adverse effects of electrocution to the extent feasible.

5.4 Territory Abandonment

Construction activities would cause most mobile vertebrate wildlife to leave the site, or attempt to leave. Animals dispersing from the site would be subject to further adverse effects, potentially including mortality. They would be at increased risk of predation as they flush from cover during site clearing. After leaving their home territories, displaced animals may be unable to find suitable food or cover in new, unfamiliar areas. They may attempt to return to their home ranges, possibly resulting in increased predation risk or other effects. Or, if they find food and other resources at new locations off site, these may be within the occupied territory of another individual of the same or similar species, resulting in competition for resources. These displacement effects would apply to common wildlife species and to special-status species.

5.5 Nest and Roost Site Disturbances

The entire Project site and surrounding area provides suitable nesting habitat for resident and migratory bird species. Many adult birds would flee from equipment during initial vegetation clearance for Project construction. However, nestlings and eggs would be vulnerable to impacts during Project construction. If initial site grading or brush removal were to occur during nesting season, then it likely would destroy bird nests, including eggs or nestling birds. One special-status species, the burrowing owl, is unlikely to flee the site during construction, due to its characteristic behavior of taking cover in burrows. Potential Project impacts and avoidance for burrowing owl are summarized below.

Some birds will likely nest in the Project area during construction and O&M phases, even after initial grading and clearing. Depending on the species, birds may nest on the ground close to equipment; within the open metal framework of the panel support structures; on buildings, foundations, structures, or construction trailers; or on idle vehicles or construction equipment left overnight or during a long weekend. In areas where construction is phased (e.g., footings, or tower structures) birds may quickly use these features as nest sites between active construction phases. The species most likely to nest in the Project area during construction are common ravens (*Corvus corax*), house finches (*Carpacus erythrinus)*, and mourning doves (*Zenaida macroura*), all of which are protected by the MBTA and Fish and Game Code Sections 3503 and 3513.

IP Athos will conduct pre-construction surveys for active nests throughout the entire Project and adjacent off-site habitat areas, beginning January 1 for raptors and hummingbirds and February 1 for other species, and continue through August 15. Pre-construction nest surveys will occur no more than seven days prior to scheduled activities at any given site and will be repeated as needed if activities are delayed. At each active nest, the qualified biologist will establish and mark buffer areas of various sizes depending upon the species, baseline environmental conditions, and construction activity levels. If for any reason a bird nest must be removed during the nesting season, IP Athos will notify CDFW and USFWS and retain written documentation of the correspondence. Nests would only be removed if they are inactive, or if an active nest presents a hazard. Due to the high probability that birds may nest on site during construction, IP Athos will conduct monitoring of the work area throughout the breeding season, so that all active work sites and equipment are monitored at least weekly. During bird breeding season, surveys for active nests will occur no more than 7 days prior to ground disturbance at any work site.

Burrowing Owl. Potential direct Project impacts to burrowing owls would be similar to those described for nesting birds, but construction activities also could destroy occupied burrows or cause the owls to abandon burrows during any season. If owls were present, construction during the breeding season could cause nest abandonment, or the incidental loss of fertile eggs or nestlings. IP Athos will conduct preconstruction surveys for burrowing owls, possible burrows, and sign of owls (e.g., pellets, feathers, white wash). If owls are or active burrows are found within the solar facility, avoidance measures and set-back distances will be implemented. Disturbance of owls or occupied burrows during the breeding season (February 1 through August 31) will not be permitted. Any unoccupied suitable burrows within the solar facility footprint will be excavated and filled in under the supervision of the Lead Biologist prior to site preparation. If necessary, passive relocation of burrowing owls will occur and a three-year monitoring program will be implemented. IP Athos will also minimize habitat impacts, avoid direct impacts to owls, and give a worker environmental awareness training to all personnel on the Project. These measures would prevent take of occupied burrowing owl burrows.

Golden Eagle. Human intrusions near golden eagle nest sites have resulted in nest abandonment, high nestling mortality when young go unattended due to altered behavior by the parent birds, premature fledging, and ejection of eggs or young from the nest (reviewed by Pagel, 2010). Project activities that result in nest-site abandonment would constitute take under the Bald and Golden Eagle Protection Act (USFWS, 2007).

Project construction is not expected to cause substantial direct disturbance (e.g., noise, lighting, visual disturbance) to nest sites in the local nesting territories due to their distance from the site. Moreover, implementation of preconstruction surveys and regular monitoring during the nesting season will prevent any impacts to golden eagle nest sites.

5.6 Habitat Loss and Fragmentation

Habitat Loss. The majority of the Project facilities would be located on anthropogenically disturbed lands. However, Project construction would result in permanent and long-term impacts to natural vegetation and habitat types, including Sonoran Creosote Bush Scrub, Desert Pavement, and Desert Dry Wash Woodland (see Table 1 for a summary of vegetation and habitat types). Project construction would also result in permanent and long-term impacts to recovering disturbed habitat types, including recovering Sonoran creosote bush scrub and recovering salt bush scrub (see Table 1). Site preparation and construction methods are intended to minimize impacts on soils and vegetation, and revegetation in temporarily disturbed areas will replace certain habitat values (e.g., food sources and shaded cover). Vegetation and habitat conditions following construction would likely remain suitable for many species, such as side-

blotched lizard (*Uta stansburiana*), house finch (*Carpacus erythrinus*), northern mockingbird (*Mimus polyglottos*), and desert cottontail (*Sylvilagus audubonii*).

Golden Eagle. Athos does not anticipate that project-related loss of potential foraging habitat will appreciably reduce foraging habitat availability for golden eagles. The nearest golden eagle nesting territory is in the Coxcomb Mountains, about four (4) miles from the Athos site. Athos does not believe that foraging habitat loss would constitute disturbance to golden eagles (pursuant to USFWS, 2007); and would not cause decrease in productivity, or substantially interfere with normal breeding, feeding, or sheltering behavior.

Gila Woodpecker. The probability of this species nesting on the Project site is low to moderate. The site is at the margin of the Gila woodpecker's geographic range and supports only sparse riparian woodland habitat, but the existing date palms on the site e may be suitable for nesting. Loss of anthropogenic palm groves would not be offset, although other palm groves and ornamental trees are available in the area. Project impacts to dry wash woodland will be offset through compensatory habitat.

Habitat Fragmentation. Wildlife, including birds and bats, are often restricted to specific habitat types or elevations. Their habitats may be contiguous over extensive areas, or they may be scattered in patches in a landscape. For species with patchy distributions, dispersal between habitat patches may be important in colonizing (or recolonizing) areas or in supplementing demography or genetic makeup in isolated populations. Increasingly, land use planners designate wildlife dispersal corridors among open space areas to maintain movement routes for wildlife populations among the larger habitat areas. Public discussion of movement corridors tends to focus on uncommon, large, wide-ranging mammals, particularly mountain lions. But wildlife corridors also are intended to enable dispersal for other species, including small mammals, birds, amphibians, reptiles, and plants. The Project would not present an absolute barrier to bird or bat movement, but it could reduce movement throughout the area for resident shrubland species, possibly including loggerhead shrike, Crissal thrasher, Le Conte's thrasher, or Gila woodpecker. Any of these species would be likely to disperse around, but not across, the Project site. For migratory birds or wide-ranging non-migrants routinely flying long distances within or among habitat patches, the Project's effects on habitat fragmentation would be relatively unimportant. Examples include most raptors, common raven, and migratory passerines such as Lucy's warbler and Bendire's thrasher.

5.7 Disturbance Due to Ongoing Human Presence at the Facility

Construction noise would be a substantial increase over existing background noise levels near the solar field site, which are expected to be low. In addition, if construction activities were to occur at night, lighting would be required. Noise and lighting during construction would affect wildlife in adjacent habitats by disrupting foraging, breeding, sheltering, and other activities; or it cause animals to avoid otherwise suitable habitat surrounding the site. The effects of construction noise include annoyance, which causes birds and other wildlife to abandon nests or dens; increased stress hormone levels, interference with sleep and other activities; and interference with acoustic communication by masking important sounds or sound components, such as territorial calls, contact calls, or alarm calls (Dooling and Popper, 2007). Many species rely on vocalizations during the breeding season to attract a mate within their territory, and noise from construction could disturb nesting birds and other wildlife and adversely affect nesting and other activities.

Lighting during Project construction may affect nocturnal wildlife species. Lighting can affect behavior and physiology, and may also increase the risk of predation of wildlife because they may be more detectable to nocturnal predators. Lighting would be likely to attract nocturnal insects and, in turn, bats; possibly including special-status bats, discussed further below. IP Athos will minimize the impacts of noise and lighting by ensuring lighting is focused only on work areas and does not unnecessarily extend beyond work

areas, and scheduling noisy construction activities near the Project site perimeter outside the most sensitive season.

During operation, some birds and other small wildlife species would re-occupy the solar field site once construction activities are completed, where ongoing O&M noise and lighting may affect them. Noise and lighting may also affect wildlife in the nearby off-site habitat. These effects would be qualitatively similar to the description of construction phase effects of noise and lighting, but would be of lesser magnitude. IP Athos will minimize these impacts as described above.

5.8 Additional Risk Factors

Predator subsidies. Project construction, operation, and decommissioning activities could provide resources in the form of trash, litter, or water, which attract and subsidize unnaturally high numbers of predators such as common ravens, coyotes, and feral dogs. This influx of predators could cause unnaturally high predation pressure on wildlife species in the vicinity. Ravens are opportunistic omnivores and they prey on the eggs and nestlings of native birds, among many other food sources (Zeiner et al., 1990), including juvenile desert tortoises. Ravens and coyotes habituate to human activities and are subsidized by food (trash, road killed animals), water (irrigation or dust control overspray), and (for ravens) new perching, roosting, and nesting sites (transmission line structures and other structures) that are introduced or augmented by human encroachment.

IP Athos will require management of all potential predator subsidies (i.e., food trash, pooled water, shelter), monitoring of raven presence and abundance, and control measures as needed.

5.9 Cumulative Impacts

The development of numerous large-scale renewable energy projects, including the Athos Project and other solar and wind projects in the region, would result in a substantial permanent conversion of desert habitat to industrial and commercial uses. Existing and foreseeable future projects in the NECO planning area (not including the Athos Project) would constitute a substantial cumulative impact to plant communities and wildlife habitat through direct habitat loss and habitat fragmentation.

Solar Facility

Common Wildlife. The Athos Project's incremental contribution to cumulative impacts to common wildlife, including most resident and migratory birds, would be habitat loss and fragmentation. Most common wildlife species range widely over California, and these species have not been identified as conservation priorities. The Athos would contribute incrementally to impacts to common wildlife such as disruption of movement, disturbance, mortality, loss of habitat, and fragmentation. With the incorporation of recommended mitigation measures, this incremental contribution would be mitigated to the extent feasible and would not result in the loss of a population or a trend toward federal or state listing for any common wildlife species. With incorporated mitigation, the Athos Project would not make a considerable contribution to the cumulative regional impacts to common wildlife, when combined with the effects of past and future projects in the NECO planning area.

Special-Status Raptors, including Golden Eagle. No special-status raptors (except burrowing owl) are expected to nest on the solar facility site. However, the site provides suitable seasonal or year-round foraging habitat for several raptor species and is within potential foraging distance of known golden eagle nesting territories. Several raptors are likely to forage infrequently on the solar facility site at any time of year, including winter and migration seasons. Much of the Project area consists of anthropogenic land

uses and previously converted desert habitat. Effects of the other projects in the cumulative scenario would be similar to potential effects of the proposed solar facility. Cumulatively, these projects could result in significant impact due to habitat loss. The incremental contribution of the proposed solar facility to the cumulative impacts to special-status raptors, including habitat and collision morality, would not be considerable because native habitat loss would be offset and potential collision would be mitigated as described above for native birds. The residual net loss of habitat would not make a material difference to the scope, nature or extent of the cumulative impact.

Burrowing Owl. Potential impacts of the solar facility to burrowing owl include habitat loss or degradation, possible injury or mortality if they happen to be present in a work area, particularly during nesting season, and possible mortality from collision with facilities, as described above for native birds. Other projects in the cumulative scenario include several transmission lines and solar energy projects with similar habitat for burrowing owl. Effects of the other projects would be similar to potential effects of the proposed solar facility. Together these projects would result in significant impact to habitat loss and mortality to burrowing owls. The incremental contribution of the proposed Project to the cumulative impacts to burrowing owls, including habitat, construction-related mortality, or collision morality, would not be considerable because native habitat loss would be offset, no take would occur during construction, and potential collision would be mitigated as described above for native birds. The residual net loss of habitat would not make a material difference to the scope, nature or extent of the cumulative impact.

Gila Woodpecker and Elf Owl. Potential habitat for Gila woodpecker and elf owl is present in desert dry wash woodland and commercial palm groves on the proposed solar facility site. There is a low possibility that either species may nest on or adjacent to the site or may be subject to potential collision with the facilities. Potential impacts, including mortality or other direct impacts as well as habitat loss for both species would be avoided or mitigated. These measures are expected to effectively avoid any take of Gila woodpecker or elf owl and to offset native habitat loss. Impacts of the projects in the cumulative scenario not on agriculture lands would cumulatively result in significant loss of desert dry wash woodland habitat, potentially affecting Gila woodpecker and elf owl habitat availability. The incremental contribution of the proposed solar facility to the cumulative impacts to Gila woodpecker and elf owl, including habitat loss and collision morality, would not be considerable because native habitat loss would be offset and potential collision would be mitigated as described above for native birds. The residual net loss of habitat would not make a material difference to the scope, nature or extent of the cumulative impact.

Native Birds, including Special-Status Passerine Birds. Migratory birds are expected to occur throughout the area during construction and O&M of the solar Project. Land use conversion for the solar Project and any of the cumulative projects would result in habitat loss and degradation, displacement, decreased foraging activities, and potentially disruption or failure of nesting, increased predation, or mortality. Solar panels of the proposed Project as well as other solar PV projects may cause a “lake effect” leading to increased bird mortality. Collision hazards would occur due to the transmission lines and gen-tie lines associated with the solar projects and the Eagle Crest Pumped Storage Project. Taken together, the projects would result in a cumulatively significant impact for native birds.

The proposed Project’s impacts would be mitigated to the extent feasible through pre-construction surveys, avoidance of active nests, O&M phase mortality monitoring, and mitigation applied through adaptive management, depending on monitoring results. Additionally, the majority of the Project’s solar facilities would be built on disturbed lands, and natural habitat loss would be minimized and offset through mitigation. Therefore, the incremental contribution of the proposed Project to the cumulative impacts to native bird habitat and nesting success would not be considerable because no take would

occur, and native habitat loss would be offset. The residual net loss of native habitat would not make a material difference to the scope, nature or extent of the cumulative impact.

Regarding potential collision or lake effect mortality, IP Athos will monitor for bird kills and implement adaptive management as needed. With implementation of these project-specific measures, the contribution to cumulative impacts to native bird populations from the proposed solar facilities would not be considerable.

Special-Status Bats. Solar facility construction could adversely impact special-status bats through the elimination of desert shrubland foraging habitat or (less likely) loss of roost sites in desert dry wash woodland habitat, palm groves, or the existing structures (homes, trailers, etc.) on the site. Removal of those features could disturb, injure, or kill bats. IP Athos will implement measures that will minimize and offset habitat loss, inspect structures and remove wildlife or allow wildlife to escape prior to demolition, and require pre-construction surveys or scheduling of tree removal outside the bat maternal roosting season. These measures are expected to effectively minimize potential impacts to special-status bats, and to offset habitat loss. Cumulative projects would also eliminate desert shrubland foraging habitat and result in the loss of roost sites, a significant cumulative impact to special-status bats. These projects would implement measures similar to those identified for the proposed Project, including offset of native habitats, avoidance of active roosts, and Bird and Bat Conservation Strategies. The incremental contribution of the proposed solar facility to the cumulative impacts to special-status bats, including habitat loss and collision morality, would not be considerable because native habitat loss would be offset and potential collision would be mitigated as described above for native birds. The residual net loss of habitat would not make a material difference to the scope, nature or extent of the cumulative impact.

220 kV Generation-Tie Line

The cumulative analysis for the gen-tie lines would be the same as for the solar facility because the habitat and affected species would be the same. The contribution of the gen-tie lines would be less than the solar facility because of the minor disturbance associated with the gen-tie poles.

Regarding potential collision or electrocution mortality, IP Athos will require monitoring of bird kills and implementation of adaptive management. IP Athos will design and construct the gen-tie lines to avoid potential for electrocution and minimize potential for roosting on the structures or colliding with them. Future projects on public BLM lands would incorporate applicable DRECP Conservation Management Actions, activity-specific bird and bat CMAs, bird and bat conservation strategies, and bird and bat habitat compensation. Projects not subject to the DRECP would implement any applicable mitigation measures required by Riverside County or other lead agencies. With implementation of the project-specific conservation measures, the contribution to cumulative impacts to native bird populations from the proposed gen-tie line would not be considerable.

6.0 Conservation Measures

IP Athos will adopt conservation measures to avoid and minimize impacts. The measures that relate to bird and bat conservation are listed and briefly summarized below.

Biological Monitoring. IP Athos will assign biological monitors to the Project. Some of the duties include conducting clearance surveys, marking sensitive biological resource areas, monitoring construction activities for compliance, removing inactive nests (except for raptor nests, which will be coordinated with the resource agencies), preparing written compliance reports for agency review, and presenting worker environmental awareness trainings.

Minimization of Vegetation and Habitat Impacts. Work areas (including, but not limited to, staging areas, access roads, and sites for temporary placement of construction materials and spoils) will be delineated with orange construction fencing or staking to clearly identify the limits of work. When feasible, construction activities will minimize soil and vegetation disturbance to minimize impacts to soil and root systems.

Compensation for Natural Habitat Impacts. IP Athos will acquire and protect, in perpetuity, compensation habitat to offset loss of natural habitat on the Project site where required. No compensation is proposed for impacts to anthropogenic land use or recovering areas.

Wildlife Protection. IP Athos will avoid or minimize impacts to wildlife during construction and O&M by implementing the following measures: conducting preconstruction surveys; allowing animals to escape from work sites prior to disturbance; enforcing vehicle speed limits; designing, installing, and maintaining lighting to not affect surrounding wildlife habitat; scheduling noisy construction activities as to minimize impacts to sensitive species; managing use of toxic substances to prevent spills, contamination, or wildlife exposure; covering water sources such as tanks and pipes to prevent animals from entering; avoiding overwatering and pooling of water that could attract animals; containing all food-related trash in containers inaccessible to ravens or other wildlife; regularly inspecting and maintaining bird deterrent netting; securing Project excavations and covering or capping all pipes to prevent wildlife entrapment; and reporting all dead or injured special-status species wildlife to CDFW.

Wildlife Water Source. IP Athos will coordinate with the County, BLM, CDFW, and USFWS to offset potential Project impacts to wildlife resulting from loss of existing irrigation water supplies at Parcel Group G. In coordination with the agencies, the Applicant will support replacement, repairs, maintenance, or monitoring of existing wildlife water sources in the Project vicinity; support access improvements to existing sources; support removal of invasive saltcedar from natural water sources (to improve surface flow); or provide an alternative water source as a replacement or supplement to existing sources.

Burrowing Owl Avoidance and Relocation: Burrowing owl protection and relocation will incorporate the following requirements: pre-construction surveys for burrowing owls, possible burrows, and sign of owls (e.g., pellets, feathers, white wash) will be conducted throughout each work area no more than 30 days prior to construction; if burrowing owl or active burrows are found within the solar facility, avoidance and set-back distances will be implemented (disturbance of owls or occupied burrows during the breeding season from February 1 through August 31 will be avoided); any unoccupied suitable burrows within the solar facility footprint will be excavated and filled in under the supervision of the Lead Biologist prior to site preparation; and if relocation of burrowing owls is necessary, a plan with detailed methods for passive relocation and monitoring and management, including a three-year monitoring program, will be implemented.

Gen-tie lines. IP Athos will design the gen-tie line support structures and other facility structures in compliance with APLIC guidelines and current standards and practices to discourage their use by raptors for perching or nesting (e.g., by use of anti-perching devices). This design will also reduce the potential for increased predation of special-status species, such as the desert tortoise. Mechanisms to visually warn birds (permanent markers or bird flight diverters) will be placed on gen-tie lines at regular intervals to prevent birds from colliding with the lines (APLIC, 2006). To the extent practicable, the use of guy wires shall be avoided because they pose a collision hazard for birds and bats. Necessary guy wires will be clearly marked with bird flight diverters to reduce the probability of collision. Shield wires will also be marked. Gen-tie lines will maintain sufficient distance between all conductors and grounded components to prevent potential for electrocution of the largest birds that may occur in the area (e.g., golden eagle and turkey vulture). They will utilize non-specular conductors and non-reflective coatings on insulators.

7.0 Monitoring and Reporting

7.1 Bird and Bat Monitoring Requirements

Several of the conservation measures summarized above specify monitoring and reporting requirements. The Lead Biologist will be responsible for monitoring and reporting on biological resources for Project activities, beginning during pre-construction surveys and continuing through the construction and O&M Project phases. Specific monitoring requirements related to bird and bat conservation are the following:

- Biologists will conduct pre-construction surveys of work areas prior to the start of construction (time varies for different species)
- Biologists will ensure biologically sensitive resources are clearly marked for avoidance.
- Biologists will conduct monitoring of construction activities for compliance with agency permits and other Project requirements.
- Lead Biologist will prepare monitoring reports for agency submittals and review.
- Biologists will conduct required on-going monitoring and reporting during O&M activities.

7.2 Athos Project Bird and Bat Monitoring Approach and Strategy

The primary objective of the post-construction bird and bat monitoring is to monitor undesirable nest construction on Project equipment and estimate the annual number of avian and bat fatalities attributable to the Project. These data will provide a measure of plan efficacy and inform adaptive management. Because of the presumed low risk potential for the site, this BBCS does not direct the assignment of a full-time operational Project biologist. IP Athos will implement a wildlife reporting system to document incidentally found bird and bat fatalities and to monitor for significant fatality events. The site manager will lead the program. Site personnel will be trained to follow the wildlife reporting system procedures and complete the wildlife reporting form. Post-construction monitoring will be conducted by facility operators and field engineers during normally scheduled activities.

Employees and subcontractors of the Athos Project are required to comply with all environmental laws and regulations. As discussed previously, all native birds that occur in the vicinity of the Athos Project are protected by the federal MBTA. Bat species are not afforded specific federal legal protection, unless they are federally listed under the Endangered Species Act. Sensitive species such as the burrowing owl (*Athene cunicularia*) are afforded special status by CDFW and BLM, and are afforded varying levels of protection under legal statute and agency policy. It is illegal to take or collect birds or other special-status species unless otherwise permitted by the respective jurisdictional agencies. These regulations affect the handling and disposition of injured or dead birds or bats or their parts.

The following procedures are to be followed when Athos Project personnel discover a dead or injured animal on site. Until updated with future revisions of this BBCS, monitoring for nesting materials is intended to be in place for the duration of the Athos Project including during construction and O&M. Mortality monitoring and reporting is intended to continue for a three year period beginning at onset of project operations and maintenance.

Personnel will complete searches of solar arrays within the Project development area as part of normal maintenance and line patrols of the gen-tie line. Searches will consist of walking around solar generation structures to identify carcasses of birds or bats or nesting materials on equipment. Bird nest monitoring and reporting forms for gen-tie line and the solar array are provided in Attachment 2. When a reportable

mortality or injury incident is discovered, an avian/bat incident reporting form will be filled out (Attachment 3) and turned in to the site manager, following the protocol in Section 7.3, Injury and Mortality Procedures. Reportable incidences include, but are not limited to, a complete carcass, carcass parts, bones, scattered feathers, or an injured animal observed within the Athos Project generation facility or interconnection facilities ROW. When encountering a potentially dead or injured bird or bat, Athos Project personnel will observe the animal's behavior long enough to determine whether or not it is indeed injured or dead. Most bats enter daily torpor (a deep, sleep-like state) while roosting during the day and may appear dead and hanging from equipment to a casual observer. If a bat does not show obvious injuries or is not directly on the ground, personnel will assume that it is normal and simply note its location. If the same bat is seen in the same location during subsequent equipment searches, personnel will proceed with the protocol. Once it is confirmed that an animal is either injured or dead, the protocol will be followed. Project personnel will photograph dead birds or bats in place but will not handle them. Additionally, only those personnel who are trained and permitted will handle any live bird or bat. If an injured raptor or sensitive species is found, the CDFW and USFWS will be contacted to determine whether a rehabilitator should come pick up the injured animal.

Bird nests constructed on equipment can lower efficiency, create operational problems, and lead to down time (outages) and safety issues. Because the solar facilities and gen-tie line provide vertical structure over a fairly large area, the probability exists for birds to occasionally attempt nest construction on equipment. Workers should be diligent in observing attempts by birds to construct nests on equipment during the breeding season. Athos Project personnel are not authorized to remove active nests or destroy young birds at this time. In the event that an active nest is observed on equipment, Athos Project personnel will contact CDFW and USFWS for direction. As needed, Athos Project personnel will coordinate with CDFW and USFWS to remove or manage inactive nests to avoid safety issues and minimize future nest locations for ravens.

7.3 Injury and Mortality Procedures

This section details procedures to be employed in the event of a reportable incident of bat or bird mortality, as defined above. In order to ensure that procedures are implemented consistently and efficiently, a "bird kit" will be kept on site at all times. No birds, bats, or carcasses will be handled during normal procedures; handling supplies such as bags and gloves are included in the kit but will be used only on specific direction from agency staff on a case-by-case basis. Items in the kit will include:

- Copy of the BBCS
- Copies of Avian/Bat Incident Reporting Forms
- Avian/Bat Injury and Mortality Log binder for retaining forms
- Athos Project personnel and agency contact information
- Camera
- Zip-top bags (quart and gallon size to be used in the event that carcasses or parts must be retained at agency direction)
- Garbage bags or similarly sized bags with zip fasteners (for larger carcasses)
- Latex or protective disposable gloves
- Large forceps
- Leather gloves
- Pin flags and flagging

- Permanent markers, pencils, and pens
- 3x5 index cards

If a dead or injured bird or bat is found, the following procedures will be followed:

1. When an injured bird or bat is found, Athos Project personnel will maintain a large enough distance so as not to further disturb or distress the animal. Athos Project personnel will follow the procedures for reporting and care of injured wildlife found in step 2 below. If a bat is hanging, head down, in a concealed or semi-concealed location, Athos Project personnel will not disturb it, but will re-check later. If a bird or bat is certainly dead, Athos Project personnel will continue on to step 3 below.

2. Athos Project personnel will immediately report observations of injured wildlife to the site manager responsible for implementing the BBCS. They will in turn report to the applicable agency contact for further instructions. No live animal will be handled or harassed in any way by unauthorized personnel. Only qualified personnel who are trained to implement BBCS injury procedures and appropriately permitted as applicable will be authorized to handle dead or injured animals.

   - Athos Project site manager will contact CDFW personnel responsible for the injured animal species for further instructions and to determine whether a rehabilitator should come and pick up the injured animal. If the injured animal is found after normal business hours, the Athos Project site manager will leave a message (if possible) and report it again the next available working day.
   - If Athos Project personnel cannot reach the appropriate agency contact with the initial phone call, they will phone the USFWS Division of Law Enforcement and request further instruction.
   - Athos Project personnel will fill out an Avian/Bat Incident Reporting Form as would be required for a fatality, and place the form in the Athos Project Avian/Bat Injury and Mortality Log maintained for the facility.

3. For dead bats or birds, Athos Project personnel will flag the location of the carcass while data is being taken. Carcasses present a potential human health hazard and may attract scavengers (bird and mammal) to Project facilities and work areas, further increasing the risk of wildlife mortality. Athos Project personnel will not dispose of any bird or bat carcasses in dumpsters onsite. Carcasses of eagles or other raptors, state-listed species, and sensitive species require special consideration described under step 8. Unless otherwise directed (see step 8), other carcasses will be covered with an open crate or similar container to prevent scavenging. Scavenged or scattered carcasses (e.g., bones, feathers), will be left in pace and the location documented so that they are not reported again during subsequent facility inspections.

4. Athos Project personnel will complete an Avian/Bat Incident Reporting Form (Attachment 3). All reportable incidences discovered by Athos Project personnel will be recorded using the reporting form that identifies the type of animal (bird or bat), the species (if known), its condition (e.g., recently run over, predated), surrounding vegetation type or Project component, and the date, time, and location of the incident. Personnel will then determine whether the death appears to be related to Athos Project construction or O&M activities. If the mortality apparently occurred through contact with equipment, the observer will also list the type of equipment and damage sustained by the equipment (if any).

5. Athos Project personnel will record the date and time of the discovery and the observer's name on a 3x5 index card using a permanent marker. This card will be photographed with the bird or bat remains to ensure that photos and datasheets are correctly correlated to the incident.

6. Athos Project personnel will photograph the bird or bat carcass as it was found. The carcass will be photographed from at least four angles: two close-up shots with the 3x5 index card next to the animal, and two more expansive views that include the area surrounding the animal.

7. After completing the Avian/Bat Incident Reporting Form and photographs, Athos Project personnel will immediately contact the site manager responsible for implementing the BBCS. The site manager will take the appropriate steps listed below to report the mortality to the resource agencies. Based on feedback from the agencies, personnel will be instructed to take appropriate action (e.g., remove the carcass). These actions will be recorded on the Mortality Reporting Form and maintained in the Athos Project Avian/Bat Injury and Mortality Log, copies of which will be provided to agency representatives on an annual basis. Reporting of bird incidents will also be reported to USFWS using their online USFWS Bird Fatality/Injury Reporting Program (https://birdreport.fws.gov/). The site manager will be responsible for making sure the incident data is entered into the USFWS Bird Fatality/Injury Reporting Program. A record of all other dead or injured bird or bat species will be maintained in the Athos Project Avian/Bat Injury and Mortality Log, copies of which will be provided to agency representatives an annual basis.

8. Carcasses will not be handled by Athos personnel except at the specific direction of USFWS, to temporarily store the specimen on site until it can be shipped to that agency or retrieved by representatives of the agency. If directed, Athos Project personnel will place a large, open crate upside-down over the carcass, and secure the crate to the ground with stakes or other devices to reduce scavengers' access to the carcass.

Each year, a concise annual report will be provided to USFWS, briefly summarizing each year's wildlife reporting system findings. If a significant fatality event is discovered (e.g., any eagle fatality, more than three raptors in a single event, more than ten birds or bats in a single event) or if nesting attempts reach a nuisance level, the site manager will contact environmental contractors (if any), and the USFWS as soon as possible for coordination.

8.0 Adaptive Management

8.1 Adaptive Management Process

Adaptive management is an iterative process in which impact minimization and mitigation measures are continuously reevaluated to improve upon them. As action is taken, the results are monitored and future actions are modified accordingly. This is an especially useful strategy for managing resources where uncertainty surrounds appropriate management actions and their consequences. Because utility-scale solar energy development is a relatively new and rapidly expanding industry, its effect on bird and bat populations is uncertain. There is also uncertainty surrounding current fatality predictions as well as which measures are most effective at reducing fatalities and mitigating impacts to bird and bat populations. As more data are gathered at facilities and new strategies are tested, these uncertainties will be reduced and agency guidance will be refined.

IP Athos is committed to incorporating adaptive management principles into its BBCS. To facilitate the adaptive management process, IP Athos will submit timely reports to USFWS and CDFW summarizing results of operational monitoring and the wildlife reporting system, including fatalist estimates calculated as fatalities/MW/year. Fatality thresholds and future conservation measures may be subject to revision in coordination with USFWS and CDFW as new information is obtained. If a threshold is surpassed, IP Athos will evaluate the species, timing, and locations of fatalities and consult with USFWS and CDFW to

determine if additional avoidance or minimization measures are appropriate. If thresholds are surpassed again, IP Athos will coordinate with USFWS and CDFW to reconsider the applicability of the threshold or identify and implement additional avoidance and minimization measures.

8.2 Avian and Bat Fatality Thresholds and Risk Reduction Measures

The criteria identified below have been developed as initial thresholds to trigger adaptive management actions. As part of the adaptive management process, the thresholds may be adjusted as new information is developed regarding bird or bat population trends and the extent to which solar facility fatalities may affect those trends, or whether solar-related mortality may be offset by natural density-dependent demographic factors (e.g., lower natural mortality or higher productivity). In every case, these initial thresholds consider only those bird or bat fatalities or injuries that are conclusively attributed to the Project.

1) more than four total native bird fatalities/MW/year,
2) more than 0.3 raptor fatalities/MW/year,
3) more than one golden eagle fatality,
4) more than one active raptor nest constructed on generating equipment,
5) more than three bat fatalities/MW/year, or
6) more than ten active non-raptor nests requiring removal

In the event that the above thresholds are exceeded, one or more of the following adaptive measures will be implemented to reduce impacts. This BBCS will be updated to reflect the additional measures and monitoring for efficacy will be conducted for one year following implementation.

- Installation of remedial avian protection equipment (bird flight diverters or perch preventers or dissuaders) in problem areas
- Manage, monitor and remove potential bird nesting materials near solar arrays
- Modification of existing equipment to prevent nesting, perching or other undesired bird access
- Obtain necessary federal and state permits for problem nest removal
- Formal, systematic fatality monitoring along the gen-tie line or within problem areas at the array facilities
- Employ a dedicated and qualified site biological monitor either full-time or seasonally, depending on the specific issue identified

Additional adaptive measures may include investigation, evaluation of the factors associated with the fatalities, exploration of engineering solutions, consideration of available avoidance and minimization measures. Monitoring for efficacy will be conducted for one year following implementation of any adaptive measures. Upon implementing any adaptive measures, this BBCS will be updated to reflect the additional measures and, if appropriate, the adequacy of the thresholds.

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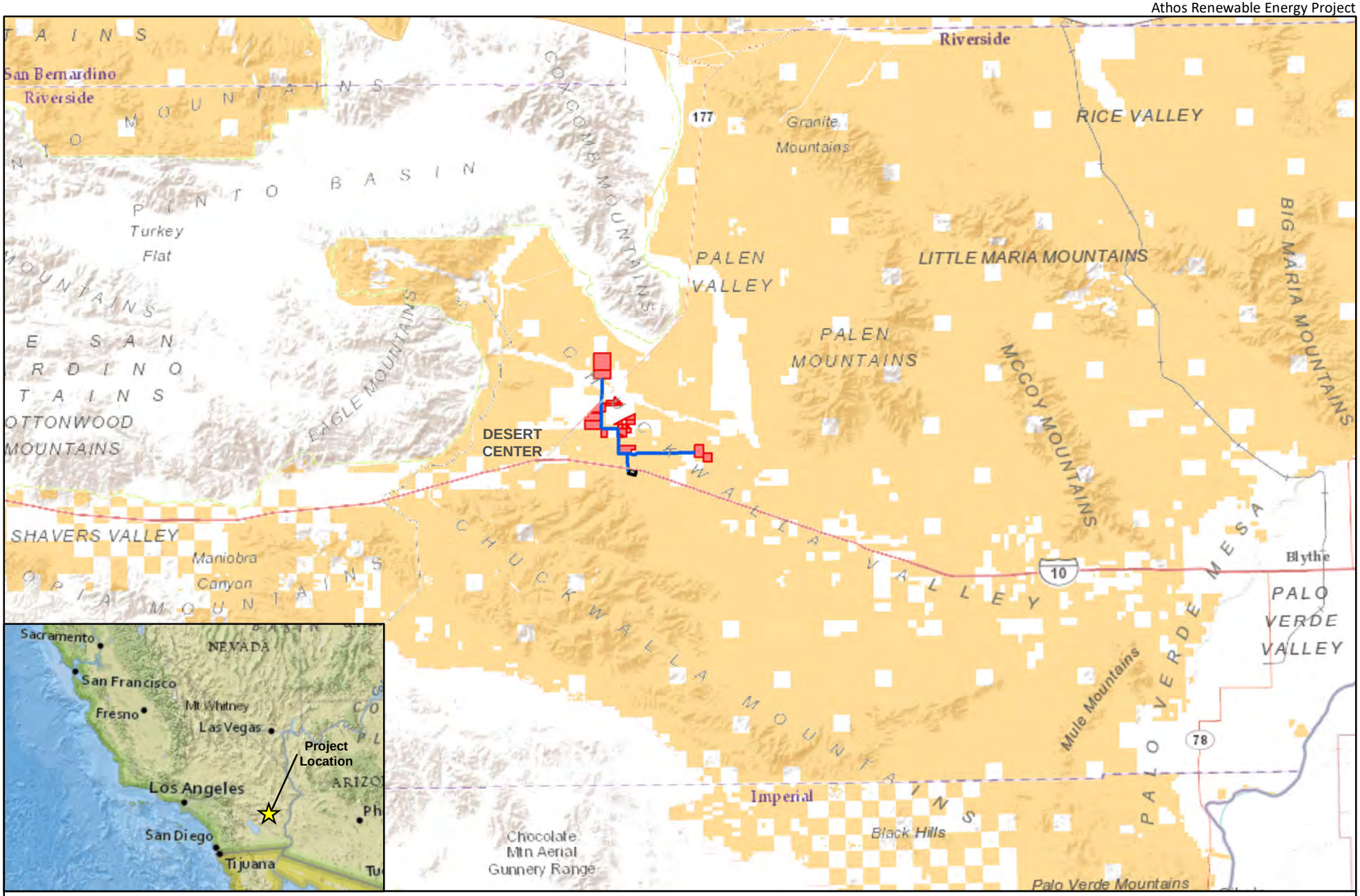
Appendix A – Figures



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1 in = 8 miles

0 5 10 Miles

Proposed Gen-Tie

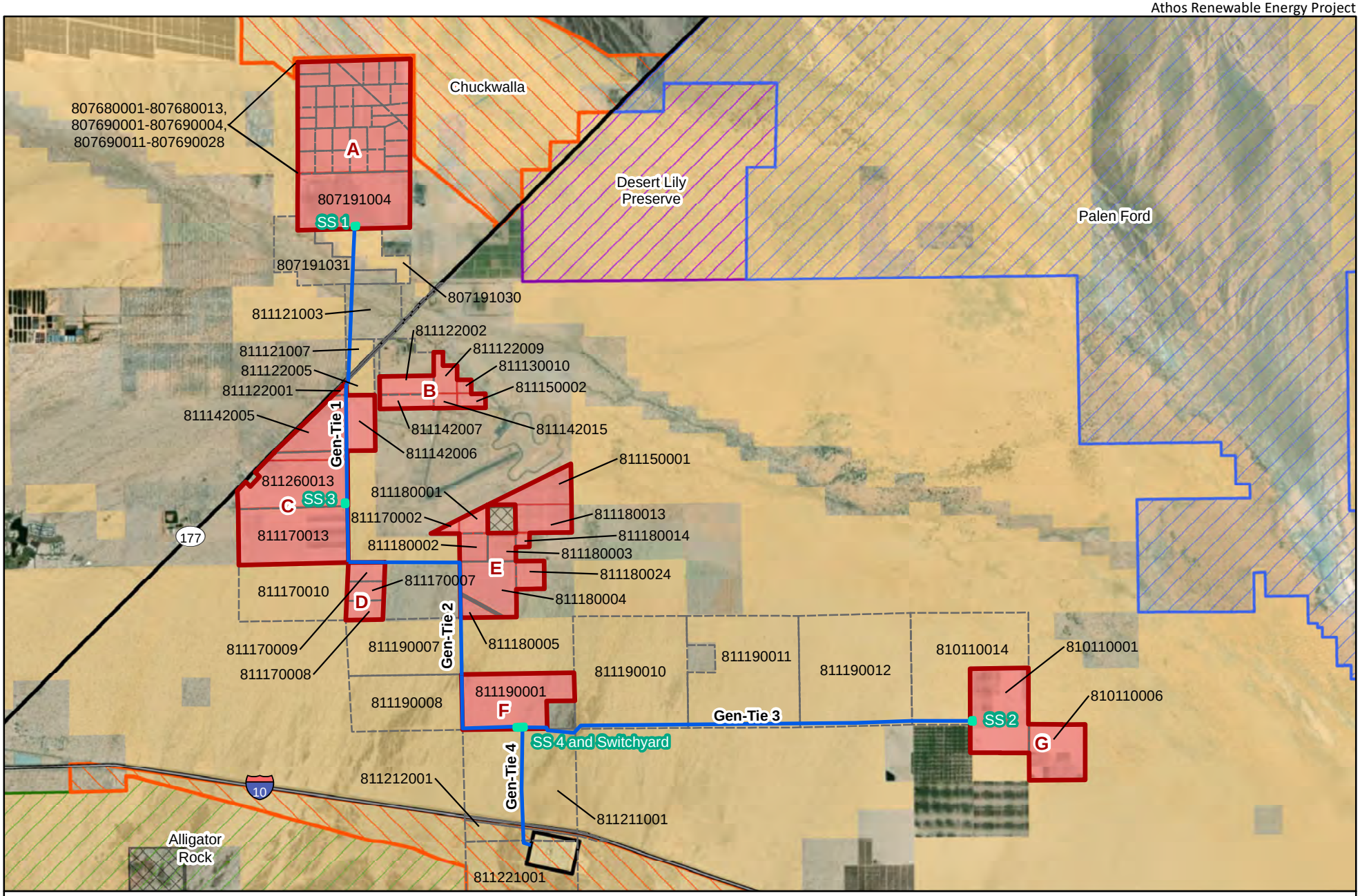
Solar Facility

Red Bluff Substation

BLM Land

Figure 1

Project Vicinity



N

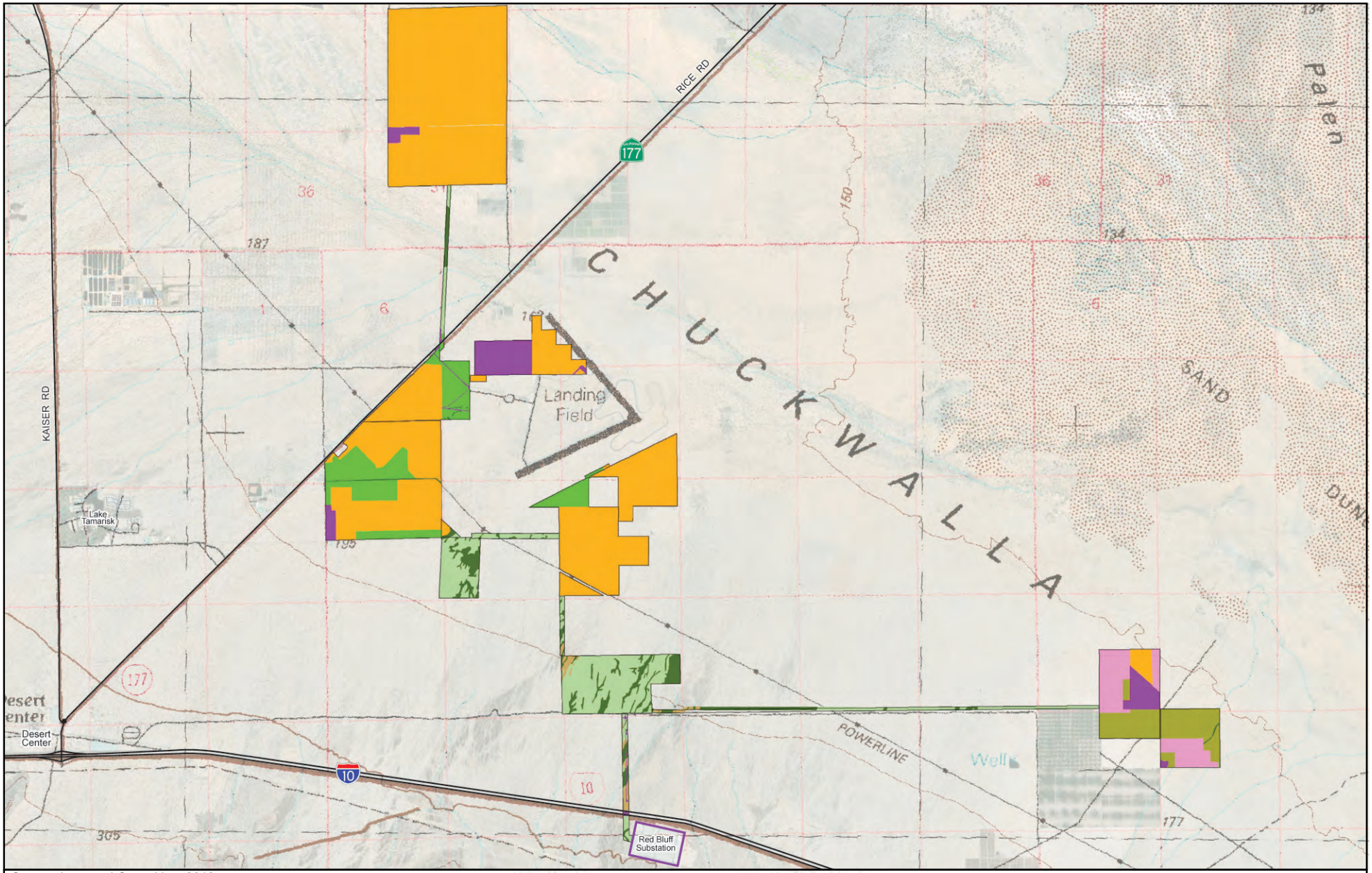
1:75,000

0 0.75 1.5 Miles

Proposed Gen-Tie
Substation
Solar Facility (Private Land)
Parcel Groups
Red Bluff Substation
Bureau of Land Management
CA State Lands Commission
Parcel Line
Alligator Rock ACEC
Chuckwalla ACEC (on BLM Land only)
Desert Lily Preserve
Palen Ford ACEC

Figure 2

Project Area



Source: Ironwood Consulting, 2018.

0 4,000 8,000 Feet

Red Bluff Substation

Native Vegetation
- Creosote Bush Scrub
- Desert Dry Wash Woodland
- Desert Pavement
- Recovering Creosote Bush Scrub
- Recovering Salt Bush Scrub

Non-Native Vegetation
- Active Agriculture
- Developed/Disturbed
- Fallow Agriculture

Figure 3

Vegetation Communities

Attachment 1 – Construction Avian Nest Reporting Form

Athos Solar Project Construction Phase – Solar Facility Avian Nest Reporting Form

Discoverer's Name _____

Phone Number _____ **Date of Nest Discovery** _____

Nest Location (circle one) Tree Shrub Structure Ground

Nest Coordinates _____

Other Location Information _____

Surrounding Habitat (circle all that apply)

Agricultural Desert Scrub Riparian
Grassland Disturbed/Developed Bare

Nest Condition (circle one) Active Inactive, Intact
Inactive, Partial Deterioration Inactive, Heavy Deterioration

Describe any Bird Signs around the Nest (feathers, scat, prey remains) _____

_____

Are Birds Present? (circle one) Yes No

Number of Birds Visible _____

Age of Bird(s) (circle all that apply) Adult Juvenile Nestling Eggs Unknown

Bird Species (if known) _____

Type of Bird (circle one if species is unknown)

Diurnal Raptor (hawk, falcon, eagle) Owl Crow/Raven
Passerine (songbird) Unknown

Risk to Birds/Construction (circle one)

No Risk Potential Risk – Not Imminent Potential Risk – Imminent

Additional Comments _____

_____

_____

Athos Solar Project Construction Phase – Gen-tie Line Avian Nest Reporting Form

Discoverer's Name _____

Phone Number _____ **Date of Nest Discovery** _____

Nest Location (circle one) Tree Shrub Structure Ground

Nest Coordinates or Closest Pole Location _____

Other Location Information _____

Surrounding Habitat (circle all that apply)

Agricultural Desert Scrub Riparian
Grassland Disturbed/Developed Bare

Nest Condition (circle one) Active Inactive, Intact
Inactive, Partial Deterioration Inactive, Heavy Deterioration

Describe any Bird Signs Around the Nest (feathers, scat, prey remains)

_____

_____

Are Birds Present? (circle one) Yes No

Number of Birds Visible _____

Age of Bird(s) (circle all that apply) Adult Juvenile Nestling Eggs Unknown

Bird Species (if known) _____

Type of Bird (circle one if species is unknown)

Diurnal Raptor (hawk, falcon, eagle) Owl Crow/Raven
Passerine (songbird) Unknown

Risk to Birds/Construction (circle one)

No Risk Potential Risk – Not Imminent Potential Risk – Imminent

Additional Comments_____

_____

_____

Attachment 2 – Operational Avian Nest Reporting Form

Athos Solar Project Operational Phase – Solar Facility Avian Nest Reporting Form

Discoverer's Name _____

Phone Number _____ **Date of Nest Discovery** _____

Nest Location (circle one) Facility Equipment or Structure Tree Shrub Ground

Nest Coordinates _____

Other Location Information _____

Surrounding Habitat outside of Solar Array Fence (circle all that apply)

Agricultural Desert Scrub Riparian

Grassland Disturbed/Developed Bare

Nest Condition (circle one) Inactive Under Construction Active

Describe any Bird Signs around the Nest (feathers, whitewash, scat, prey remains)

_____

_____

Are Birds Present? (circle one) Yes No

Number of Birds Visible _____

Age of Bird(s) (circle all that apply) Adult Juvenile Nestling Eggs Unknown

Bird Species (if known) _____

Type of Bird (circle one if species is unknown)

Diurnal Raptor (hawk, falcon, eagle) Owl Crow/Raven

Passerine (songbird) Unknown

Risk to Solar Array and Equipment (circle one)

No Risk Potential Risk – Not Imminent Potential Risk – Imminent

Additional Comments _____

_____

_____

Athos Solar Project Operations Phase – Gen-tie Line Avian Nest Reporting Form

Discoverer's Name _____

Phone Number _____ **Date of Nest Discovery** _____

Pole Number of Nest Location _____

Other Location Information

_____

Surrounding Habitat (circle all that apply)

Agricultural Desert Scrub Riparian

Grassland Disturbed/Developed Bare

Nest Condition (circle one) Inactive Under Construction Active

Describe any Bird Signs Around the Nest (feathers, scat, prey remains) _____

_____

Are Birds Present? (circle one) Yes No

Number of Birds Visible _____

Age of Bird(s) (circle all that apply) Adult Juvenile Nestling Eggs Unknown

Bird Species (if known) _____

Type of Bird (circle one if species is unknown)

Diurnal Raptor (hawk, falcon, eagle) Owl Crow/Raven

Passerine (songbird) Unknown

Risk to Electrical Equipment (circle one)

Potential Risk – Not Imminent Potential Risk – Imminent

Additional Comments _____

_____

_____

Attachment 3 – Avian-Bat Incident Reporting Form

Athos Solar Project Avian/Bat Incident Reporting Form

Discoverer's Name _____

Phone Number _____ **Date of Discovery** _____

Date and Time of Incident/Discovery _____

Location, include Pole and GPS Coordinates (if available) _____

_____

Species (if known) _____

Type of Bird or Bat (circle one if species is unknown)

Diurnal Raptor (hawk, falcon, eagle)	Owl	Crow / Raven
Passerine (songbird)	Bat	Unknown / Other

Number of Individuals _____

Age of Bird(s) (circle all that apply) Adult Juvenile Nestling Eggs Unknown

Surrounding Habitat (circle all that apply)

Agricultural	Chaparral/Shrubs	Desert Scrub
Disturbed/Developed	Grassland	Riparian

Type of Incident (circle one) Injury Mortality

Description of Incident. Include condition of bird, circumstances of incident and cause of injury or mortality (if known), and any damage to facilities._____

_____

_____

_____

_____

_____

_____

Please attach a picture of the bird or bat, if possible.

ATHOS SOLAR PROJECT

OPERATIONS MORTALITY REPORTING FORM FOR AVIAN AND BAT SPECIES

DATE: _____ TIME: _____ OBSERVER: _____

PROXIMAL TO PROJECT COMPONENT: _____

CARCASS POSITION

GPS COORDINATES (UTM NAD83) 11S East: _____ North: _____

BEARING (degrees) to PROJECT COMPONENT: _____

DISTANCE (meters) to PROJECT COMPONENT: _____

CARCASS DESCRIPTION

SPECIES: _____

SEX (*circle*): M F U AGE (*circle*): A J U Tag/Band Number: _____

CONDITION (*circle*): intact scavenged dismembered feather spot injured

ESTIMATED TIME SINCE DEATH/INJURY (no. of days): >1 1 2 3 4 5 6 7 7+

CAUSE OF DEATH:

_____

_____

OBSERVABLE INJURIES:

_____

_____

SUBSTRATE/GROUND COVER (*at carcass location)*:_____

DISPOSITION OF CARCASS[1] (*circle*): left in place removed collected for trials collected for other: _____

SHIPPED TO:

[name of institution] _____

[physical address] _____

[phone/email] _____

WEATHER CONDITIONS

AIR TEMPERATURE (degrees Fahrenheit): _____

PRECIPITATON (last 24 hours, *circle*): none light rain rain heavy rain hail snow

CLOUD COVER (*circle*): clear mostly clear partly cloudy mostly cloudy cloudy

WIND DIRECTION: _____ SPEED (mph, *circle*): 0-10 10-20 20-30 30+ gusty

NOTES (describe noteworthy weather conditions since last search, including high wind, fog, precipitation, and storm events):

_____

_____

_____

_____

PHOTOGRAPHS[2]:

Close Up: Photo 1 _____ Photo 2 _____

Landscape: Photo 3 _____ Photo 4 _____

PHOTO NOTES:

_____

_____

NOTIFICATION[3]:

DATE: _____ TIME: _____

NAME: _____ AGENCY/ASSOCIATION: _____

NOTES:

_____

_____

_____

_____

_____

[1] Permit required to handle bird carcasses.

[2] At least four photographs should be taken. Two should be close-in shots of the carcass and should be taken from at least two different angles. Two should be shots taken farther away showing the landscape (project components, surrounding habitat, etc.) and should be taken from at least two different angles).

[3] Indicate who was notified of the event, date, time, etc.

Appendix D

Cultural Resources

CONFIDENTIAL

(On file with the County of Riverside Planning Department)

Appendix E

Paleontological Resources Survey Report

Paleontological Identification Report for the Athos Renewable Energy Project Riverside County, California

Prepared By

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Submitted To

County of Riverside
Office of the Associate Geologist
4080 Lemon Street
Riverside, CA 92501

July 2018
draft

Paleontological Identification Report for the Athos Renewable Energy Project, Riverside County, California

Prepared By: _____

Amy Ollendorf, Ph.D., Paleontology Program Manager
Christopher Shi, M.S., Paleontology Supervisor
Christopher Shea, M.S., Staff Paleontologist

Reviewed By: _____

Scott Rohlf, M.S., Project Paleontologist

Approved By: _____

Amy Ollendorf, Ph.D., PG (Minnesota 30084), RPA 12588
Applied EarthWorks, Inc., Pasadena, California

July 2018
draft

EXECUTIVE SUMMARY

At the request of the Aspen Environmental Group, Applied EarthWorks, Inc. (Æ) provided paleontological resource identification services for the Athos Renewable Energy Project (Project) in Riverside County, California. The Project will construct a utility-scale photovoltaic solar electrical generating facility and associated infrastructure to connect to the statewide electricity transmission grid. The power produced by the Project will be conveyed to the local power grid via interconnection to the Southern California Edison Red Bluff Substation, an existing facility.

The Project Area is located on both sides of State Route 177 and Interstate 10 near the town of Desert Center in Townships 4 and 5 South, Ranges 16 and 17 East as summarized in the following table.

Project Area Locational Information

Township (South)	Range (East)	Section	U.S. Geological Survey 7.5-minute Topographic Quadrangle
4	16	19, 30, 31	East of Victory Pass, CA
5	16	4, 5, 6,7, 8, 9, 16, 17, 18, 19, 20, 21, 22, 22, 23, 24, 25, 26, 27, 28, 33	East of Victory Pass, CA
5	16	4, 5, 6,7, 8, 9, 16, 17, 18, 21, 22, 22, 23, 24, 25, 26, 27, 28, 33	Corn Springs, CA
5	17	19, 20, 29, 30	Sidewinder Well, CA

The Project is primarily on private land, and the County of Riverside (County) is the lead agency for compliance with the California Environmental Quality Act (CEQA). Portions of the generation tie-line (gen-tie) are on public lands managed by the Bureau of Land Management (BLM) Palm Springs-South Coast Field Office. The BLM is the lead agency for federal compliance.

This PIR was produced for compliance with the CEQA, using County guidelines for paleontological sensitivity. Æ's Paleontology Program Manager, Dr. Amy Ollendorf, PG (Minnesota #30084) oversaw the production of this PIR by Æ Staff Paleontologists Christopher Shi, Christopher Shea, and Scott Rohlf. Rohlf is Æ's Project paleontologist as he meets the Society of Vertebrate Paleontology qualifications standards.

This PIR was prepared through the successful completion of desktop and field tasks. Desktop studies included searches of museum collection records maintained by the Natural History Museum of Los Angeles County and the online database maintained by the University of California Museum of Paleontology as well as a review of all pertinent literature and geologic maps readily available online. The purpose of the desktop studies was to identify the geologic units in the Project Area and to determine whether previously recorded paleontological localities occur either within the Project boundaries or within the same geologic units outside of the

Project Area. The Records Search Area consisted of a 5-mile-wide buffer around the Project Area.

Following the desktop studies, Æ conducted fieldwork to accomplish several additional goals:

- Conduct surface reconnaissance for the presence/absence of exposed fossils.
- Evaluate geologic exposures in and near the Project Area for their potential to contain subsurface fossil material.
- Examine subsurface geology exposed in geotechnical trenches to refine lithologic descriptions and to ascertain the presence/absence of buried fossils.

Published geologic maps indicate that surface deposits found within the Project Area consist of Pleistocene- to Holocene-age alluvium. Museum records and online database entries show there are no previously recorded fossil localities directly within the Project Area; however, a few fossil localities are recorded ex situ nearby in similar alluvial deposits or in other geologic units that may underlie the Project Area at unknown depths. Furthermore, Æ recorded one fossil ex situ during reconnaissance of the ground surface in the Northeast Development Block. No fossils were observed in the excavations of 40 geotechnical trenches to a depth of 10 feet below the present ground surface. However, reddish sediments may be derived from the fossiliferous Pinto Formation thought to underlie parts of the Project Area, particularly in the central portion. Comparatively fine-grained sediments observed in Test Pit (TP) 33 (South) and TP 37 (Southeast) may be associated with fossiliferous deposits at depth from ancient Ford Dry Lake.

The Pinto Formation and older Quaternary alluvium have previously yielded significant paleontological material outside of but near the Athos Project Area. Given the presence of highly sensitive (Ha) geologic units and units of undetermined paleontological sensitivity mapped from surface exposures in and near the Project Area, several management measures are recommended to mitigate adverse impacts to paleontological resources, if present:

- Prior to the start of construction, as part of a complete Worker Environmental Awareness Program all field personnel should be briefed regarding the possible types of fossils that could be found in the Project Area and the procedures to follow should paleontological resources be encountered.
- In general, disturbance of the top 10 feet by construction activities warrants only spot-check monitoring across the entire Project Area. The major exceptions to this general rule are the Northeast Development Block, West Development Block, and the southern portion of the East Development Block. If no paleontological finds are made during full-time monitoring in those locations, then the paleontological monitor may switch to spot-check monitoring at the direction of the Project paleontologist.
- For depths below 10 feet, Æ recommends full-time monitoring initially since the subsurface geology is yet undocumented. If no paleontological finds are made during full-time monitoring at depths greater than 10 feet, then the paleontological monitor may switch to spot-check monitoring at the direction of the Project paleontologist.

- Any significant fossils collected during fieldwork will be prepared in a properly equipped paleontology laboratory to a point ready for curation. At the conclusion of laboratory work and curation, a final report will be prepared to describe the results of the paleontological inventory and evaluation. If fossils are collected and prepared for curation, a copy of the report will be submitted to the curation institution along with the fossil assemblage.

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1
INTRODUCTION

At the request of the Aspen Environmental Group, Applied EarthWorks, Inc. (Æ) provided paleontological resource identification services for the Athos Renewable Energy Project (Project) in Riverside County, California. IP Athos, LLC, a wholly owned subsidiary of Intersect Power, Inc. (IP), proposes to construct, operate, and decommission the Project, which will be a utility-scale photovoltaic solar electrical generating facility and associated infrastructure to connect to the statewide electricity transmission grid. The power produced by the Project will be conveyed to the local power grid via interconnection to the Southern California Edison (SCE) Red Bluff Substation, an existing facility.

The Project Area is located north and south of State Route (SR) 177 and Interstate 10 (I-10) near the town of Desert Center (Figure 1-1) in Townships 4 and 5 South, Ranges 16 and 17 East as shown in Figure 1-2 and summarized in Table 1-1.

Table 1-1
Project Area Locational Information

Township (South)	Range (East)	Section	U.S. Geological Survey 7.5-minute Topographic Quadrangle
4	16	19, 30, 31	East of Victory Pass, CA
5	16	4, 5, 6,7, 8, 9, 16, 17, 18, 19, 20, 21, 22, 22, 23, 24, 25, 26, 27, 28, 33	East of Victory Pass, CA
5	16	4, 5, 6,7, 8, 9, 16, 17, 18, 21, 22, 22, 23, 24, 25, 26, 27, 28, 33	Corn Springs, CA
5	17	19, 20, 29, 30	Sidewinder Well, CA

The Project is primarily on private land and the County of Riverside (County) is the lead agency for compliance with the California Environmental Quality Act (CEQA). Portions of the generation tie-line (gen-tie) are on public lands managed by the Bureau of Land Management (BLM) Palm Springs-South Coast Field Office. The BLM is the lead federal agency.

This PIR was produced for compliance with the CEQA using County of Riverside (2015a) guidelines for paleontological sensitivity. Æ's Paleontology Program Manager, Dr. Amy Ollendorf, oversaw the production of this PIR by Æ Staff Paleontologists Christopher Shi, Christopher Shea, and Scott Rohlf. Rohlf is Æ's Project paleontologist as he meets the Society of Vertebrate Paleontology (SVP) qualifications standards (Society of Vertebrate Paleontology (SVP), 2010).

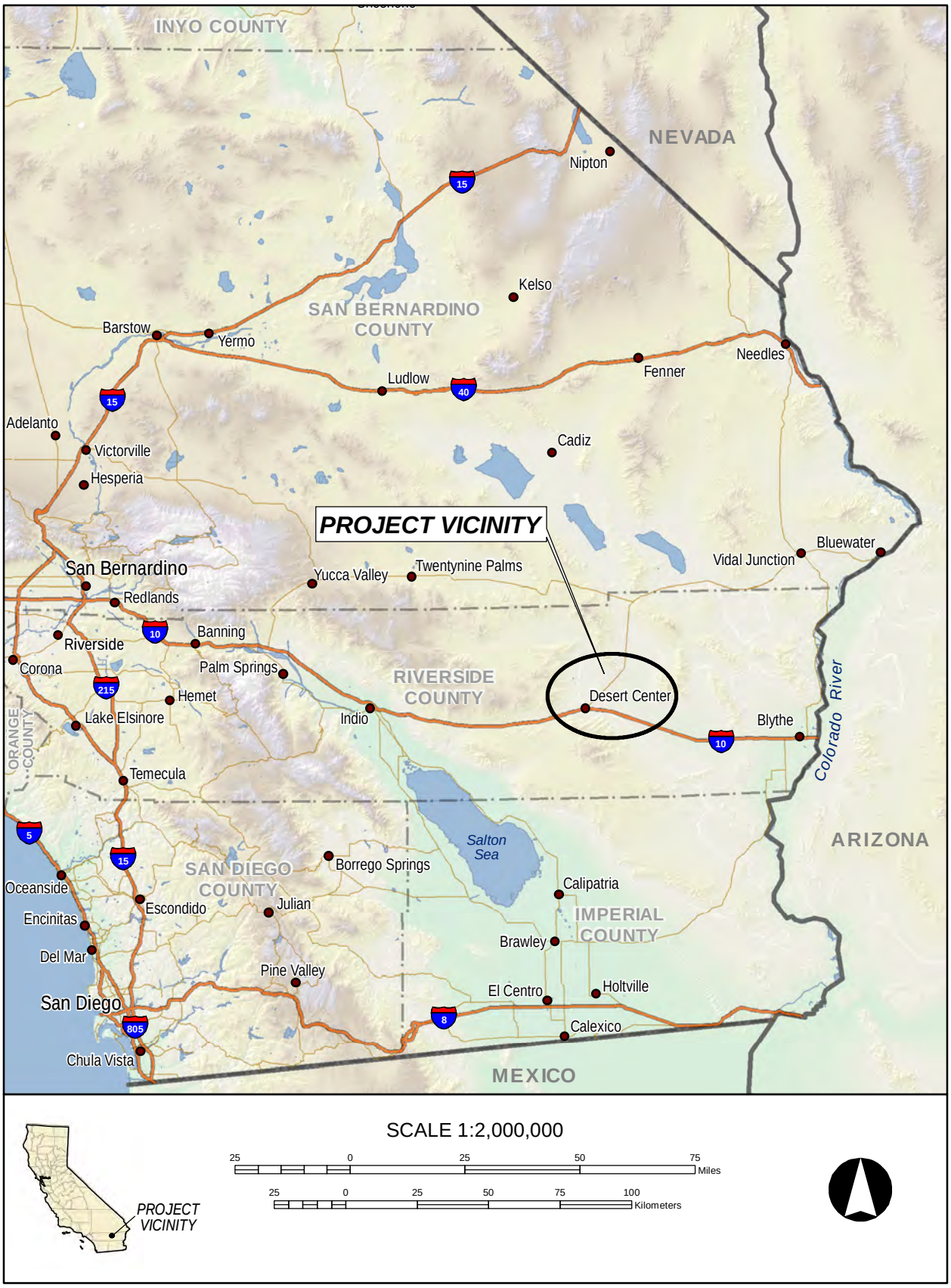

Figure 1-1 Project vicinity in Riverside County, California.

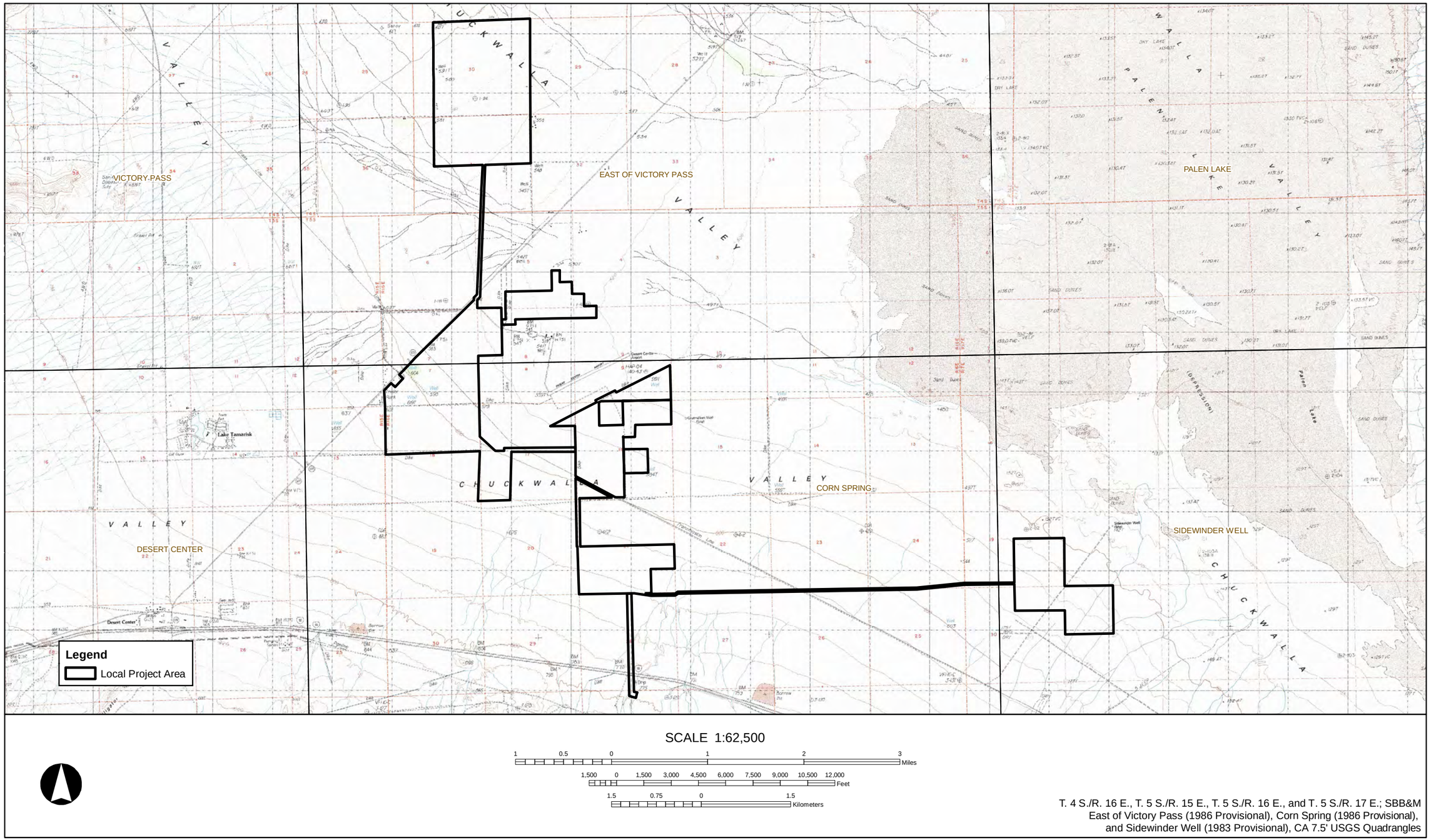

Figure 1-2 Project location on the USGS Corn Springs, East Victory Pass, and Sidewinder Well 7.5-minute quadrangles (reduced scale).

1.1 PROJECT DESCRIPTION

The Project is approximately 47 miles west of Blythe, 66 miles east of Palm Springs, 3 miles north of the Chuckwalla Mountains, and just north of I-10 within the Riverside East Solar Energy Zone (SEZ) of BLM's Western Solar Plan and within the Desert Renewable Energy Conservation Plan Development Focus Area, which amends the California Desert Conservation Area Plan.

The Project contains approximately 3,395 acres that span seven noncontiguous development blocks for solar arrays to be linked by proposed gen-tie lines that will terminate at the existing Red Bluff Substation on the south side of I-10. The proposed solar arrays and substation facilities will occupy 65 parcels (3,237 acres) on privately owned land, which makes up approximately 95 percent of the total Project. The remaining 25 parcels (158 acres) will be utilized for an 11.1-mile-long 220 kilovolt (kV) gen-tie to link the facility to the Red Bluff Substation. Specifically, 7.8 miles (134 acres) of gen-tie will be on federal lands managed by the BLM and 3.3 miles (24 acres) will be on privately owned land.

The maximum height of the solar panels will be up to 12 feet, and the maximum height of the gen-tie and substation dead-end towers will not exceed 150 feet. Maximum depth of disturbance is anticipated to be 35 feet.

In addition to the solar arrays (Facility) and gen-tie lines, access roads will be utilized. Access to the Project will be provided from SR 177, except for the easternmost group of parcels, which would be accessed from Corn Springs Road. Seven new access road segments, totaling approximately 10 miles long, will be constructed to provide primary and secondary access to the seven Project development blocks. BLM open routes and agricultural roads also are proposed to be improved as part of the Project. All new and improved access roads would be 24 feet wide with a 2-foot-wide shoulder on each side, for a total width of approximately 30 feet, including allowances for side slopes and surface runoff control. In addition, all roads with the exception of one main access road will be located within the proposed Facility.

Most of the Project components are to be located on disturbed retired agricultural land to minimize ground disturbance and impacts to resources. Within the established SEZ, the existing Desert Sunlight and approved Desert Harvest solar projects are northwest of the northernmost parcels of the proposed Project Area, and the proposed Palen Solar Project is adjacent to the easternmost parcels of the proposed Project Area. The proposed Victory Pass Solar Project is directly west of the Project Area, and there are several other solar projects and associated gen-tie lines proposed on private and BLM-administered land in the area.

A portion of the gen-tie line would be sited within the Section 368 Federal Energy Corridor as established by the Westwide Energy Corridor Final Programmatic Environmental Impact Statement (PEIS) and Record of Decision. South of I-10, the gen-tie line would also cross the Chuckwalla Area of Critical Environmental Concern, paralleling an existing overhead transmission corridor. To further minimize disturbance and other environmental impacts, the proposed Athos gen-tie lines have been routed to most directly connect its project substations and to run parallel to the gen-tie lines associated with other existing and proposed solar projects in the area to the maximum extent feasible.

1.2 PURPOSE OF INVESTIGATION

The purpose of this investigation is to: (1) identify the geologic units within the Project Area and assess their paleontological resource potential; (2) determine whether the Project has the potential to adversely impact scientifically significant paleontological resources; and (3) provide Project-specific management recommendations for paleontological resource mitigation, as necessary.

1.3 REPORT ORGANIZATION

This PIR documents the results of Æ's paleontological resource assessment efforts in the Project Area. Chapter 1 has introduced the scope of work, identified the Project location, described the Project, and defined the purpose of the investigation. Chapter 2 outlines the regulatory framework governing the Project. Chapter 3 presents the paleontological sensitivity criteria and resource guidelines used for this assessment. Chapter 4 provides the methods employed, and Chapter 5 describes the geology and paleontology of the Project Area. The results of the museum records search and paleontological sensitivity assessment are discussed in Chapter 6. Findings and management recommendations are presented in Chapter 7 and references cited are listed in Chapter 8. Appendix A contains résumés of key personnel.

2
REGULATORY ENVIRONMENT

Paleontological resources (i.e., fossils) are considered nonrenewable scientific resources because when they are destroyed, they cannot be replaced. As such, paleontological resources are afforded protection under various federal, state, and local laws. Laws pertinent to this project are discussed below.

2.1 STATE LAW, REGULATIONS, AND GUIDELINES

2.1.1 California Environmental Quality Act of 1970 (Public Resources Code [PRC] Section 21000 et seq.)

The Project is subject to compliance with CEQA statute, as amended, and the associated guidelines. The CEQA Guidelines, Article 1, Section 15002(a)(3) states that the CEQA is intended to "prevent significant, avoidable damage to the environment by requiring changes in projects through the use of alternatives or mitigation measures when the governmental agency finds the changes to be feasible." CEQA further states that public or private projects financed or approved by the state are subject to environmental review by the state. All such projects, unless entitled to an exemption, may proceed only after this requirement has been satisfied.

CEQA requires detailed studies that analyze the environmental effects of a proposed project. If a project is determined to have a potential significant environmental effect, the act requires that alternative plans and mitigation measures be considered. Specifically, in Section V(c) of Appendix G of the CEQA Guidelines, the Environmental Checklist Form, the question is posed, "Will the project directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?" If paleontological resources are identified as being within the proposed study area, the sponsoring agency must take those resources into consideration when evaluating project effects. The level of consideration may vary with the importance of the resource.

2.1.2 Public Resources Code Section 5097.5

No person shall knowingly and willfully excavate upon, or remove, destroy, injure or deface any historic or prehistoric ruins, burial grounds, archaeological or vertebrate paleontological site, including fossilized footprints, inscriptions made by human agency, or any other archaeological, paleontological or historical feature, situated on public lands, except with the express permission of the public agency having jurisdiction over such lands. Violation of this section is a misdemeanor. As used in this section, "public lands" means lands owned by, or under the jurisdiction of, the state, or any city, county, district, authority, or public corporation, or any agency thereof.

2.2 RIVERSIDE COUNTY

Paleontological resources are also addressed within the state at a county level. There are several policies covering paleontological resources within the County's General Plan, Multipurpose Open Space (OS) Element (County of Riverside 2015b, p. OS-51):

1. **OS 19.6:** Whenever existing information indicates that a site proposed for development has high paleontological sensitivity as shown on Figure OS-8, paleontological resource impact mitigation program (PRIMP) shall be filed with the Riverside County Geologist prior to site grading. The PRIMP shall specify the steps to be taken to mitigate impacts to paleontological resources.

2. **OS 19.7:** Whenever existing information indicates that a site proposed for development has low paleontological sensitivity as shown on Figure OS-8, no direct mitigation is required unless a fossil is encountered during site development. Should a fossil be encountered, the Riverside County Geologist shall be notified and a paleontologist shall be retained by the project proponent. The paleontologist shall document the extent and potential significance of the paleontological resources on the site and establish appropriate mitigation measures for further site development.

3. **OS 19.8:** Whenever existing information indicates that a site proposed for development has undetermined paleontological sensitivity as shown on Figure OS-8, a report shall be filed with the Riverside County Geologist documenting the extent and potential significance of the paleontological resources on site and identifying mitigation measures for the fossil and for impacts to significant paleontological resources prior to approval of that department.

4. **OS 19.9:** Whenever existing information indicates that a site proposed for development has undetermined paleontological sensitivity as shown on Figure OS-8, a report shall be filed with the Riverside County Geologist documenting the extent and potential significance of the paleontological resources on site and identifying mitigation measures for the fossil and for impacts to significant paleontological resources prior to approval of that department.

3
PALEONTOLOGICAL SENSITIVITY AND SIGNIFICANCE

3.1 DEFINITION OF PALEONTOLOGICAL RESOURCES AND SIGNIFICANCE CRITERIA

Paleontology, the scientific study of past life, exclusive of the study of human fossil remains, is a natural science closely associated with geology and biology. Fossils, the remains of past vertebrate, invertebrate, and plant life are usually found in sedimentary and metasedimentary deposits. Evidence of past life can also be represented by trackways, imprints, and burrows, known as trace fossils, within sedimentary and metasedimentary deposits. In general, fossils are greater than 5,000 years old (older than Middle Holocene) (Society of Vertebrate Paleontology, 2010).

Significant paleontological resources are defined as “identifiable” vertebrate fossils, uncommon invertebrate, plant, and trace fossils that provide taphonomic, taxonomic, phylogenetic, paleoecologic, stratigraphic, or biochronological data (Society of Vertebrate Paleontology, 2010). These data are important because they are used to examine evolutionary relationships, provide insight on the development of and interaction between biological communities, establish time scales for geologic studies, and for many other scientific purposes (Scott and Springer, 2003).

3.2 PROFESSIONAL STANDARDS AND CATEGORIES OF PALEONTOLOGICAL RESOURCE SENSITIVITY

Riverside County has been inventoried for geologic formations known to potentially contain paleontological resources. Lands with high, low, or undetermined potential for finding paleontological resources are mapped (see Figure OS-8 Paleontological Sensitivity Resources Map in County of Riverside, 2015a). These guidelines define the various levels of paleontological resource potential (i.e., “sensitivity”) and provide detailed protocols for the mitigation of adverse impacts to fossil resources during project development.

Using baseline information gathered during a paleontological resource assessment, the paleontological resource potential of the geologic unit(s) (or members thereof) underlying a project area is assigned to one of four categories (County of Riverside, 2015a). These categories include high, undetermined, and low potential. The criteria for each sensitivity classification, and the corresponding mitigation recommendations, are summarized in Table 3-1.

If a project area has high potential for paleontological resources following the initial assessment, then a paleontological resource impact mitigation program (PRIMP) must be developed by a qualified professional paleontologist (Society of Vertebrate Paleontology, 2010) and approved by the County Geologist prior to implementation during the construction phase of a project.

Table 3-1
Paleontological Sensitivity Classifications

Resource Potential	Criteria	Mitigation Recommendations
Low Potential	Lands for which previous field surveys and documentation demonstrate as having a low potential for containing significant paleontological resources subject to adverse impacts. The mapping of low potential was determined based on actual documentation and was not generalized to cover all areas of a particular rock unit on a geologic map.	Mitigation is not typically required unless a fossil is encountered during site development. If a fossil is encountered, the County Geologist shall be notified, and a paleontologist shall be retained by the project proponent. In such cases, the paleontologist shall document the extent and potential significance of the paleontological resources on the site and establish appropriate mitigation measures for further site development.
Undetermined Potential	Areas underlain by sedimentary rocks for which literature or unpublished studies are not available have undetermined potential for containing significant paleontological resources.	A field survey is required *prior to the commencement of construction activities* by a qualified vertebrate paleontologist to assess the unit's paleontological potential as either High or Low.
High Potential	Sedimentary rock units with high potential for containing significant non-renewable paleontological resources include rock units in which vertebrate or significant invertebrate fossils have been found or determined likely to be present. These units include, but are not limited to, sedimentary formations which contain significant non-renewable paleontological resources anywhere within their geographical extent and sedimentary rock units temporally or lithologically suitable for the preservation of fossils. High sensitivity includes not only the potential for yielding abundant vertebrate fossils, but also for production of a few significant fossils that may provide new and significant data. High sensitivity areas are mapped as either "High A" or "High B," according to the following criteria: **High Sensitivity A (Ha):** Based on geologic formations or mapped rock units that are known to contain or have the correct age and depositional conditions to contain significant paleontological resources. These include rocks of Silurian or Devonian age and younger that have potential to contain remains of fossil fish, and Mesozoic and Cenozoic rocks that contain fossilized body elements and trace fossils such as tracks, nests and eggs. **High Sensitivity B (Hb):** Equivalent to High A, but is based on the occurrence of fossils at a specified depth below the surface. This category indicates fossils that are likely to be encountered at or below 4 feet of depth and may be impacted during construction activities.	The qualified paleontologist approved by the County ("Project Paleontologist") will create and implement a project-specific paleontological resource impact mitigation program (PRIMP) to be approved by the County Geologist *prior to the issuance of a grading permit.* Construction monitoring and details covering the treatment of fossil discoveries are included in the PRIMP. Any significant specimens discovered will need to be prepared, identified, and curated into a museum. A final report documenting the significance of the finds will also be required.

Source: County of Riverside, 2015a

Information to be contained in the PRIMP, according to County of Riverside (2015a, p. 4.9-31), at a minimum and in addition to other industry standards are:

- Description of the proposed site and planned grading operations.
- Description of the level of monitoring required for all earthmoving activities in the project area.
- Identification (name) and qualifications of the qualified paleontological monitor to be employed for grading operations monitoring.
- Identification of personnel with authority and responsibility to temporarily halt or divert grading equipment to allow for recovery of large specimens.
- Direction for any fossil discoveries to be immediately reported to the property owner who in turn will immediately notify the Riverside County Geologist of the discovery.
- Means and methods to be employed by the paleontological monitor to quickly salvage fossils as they are unearthed to avoid construction delays.
- Sampling of sediments that are likely to contain the remains of small fossil invertebrates and vertebrates.
- Procedures and protocol for collecting and processing of samples and specimens.
- Fossil identification and curation procedures to be employed.
- Identification of the permanent repository to receive any recovered fossil material. The County of Riverside must be consulted on the repository [or] museum to receive the fossil material and a written agreement between the property owner/developer and the repository must be in place prior to site grading.
- All pertinent exhibits, maps and references.
- Procedures for reporting of findings. Identification and acknowledgement of the developer for the content of the PRIMP as well as acceptance of financial responsibility for monitoring, reporting and curation fees.

Elements of the plan can be adjusted throughout the course of a project as new information is gathered and conditions change, as long as the County Geologist is consulted and all parties agree. For example, if after 50 percent of earth-disturbing activities have occurred in a particular unit or area and no fossils whatsoever have been discovered, then the Project paleontologist may be able to reduce or eliminate monitoring efforts in that unit or area.

4
METHODS

4.1 RECORDS SEARCH AND LITERATURE REVIEW

Paleontological resources are not found in soil (i.e., surface material created via the interaction of weathered geologic material and organic material) but are contained within the geological deposits or bedrock that underlie the soil layer. Therefore, in order to ascertain whether a particular project area has the potential to contain significant fossil resources at the subsurface, it is necessary to review relevant scientific literature and geologic maps to determine the underlying geology and stratigraphy of the area. Furthermore, in order to delineate the boundaries of paleontological sensitivity, it is necessary to determine the extent of the entire geologic unit because paleontological sensitivity is not limited to surface exposures of fossil material.

In order to determine whether fossil localities have been previously discovered within a project area or a particular rock unit, a search of pertinent local museum repositories for paleontological localities within and near the project area should be performed. For this Project, a museum records search was conducted at the Natural History Museum of Los Angeles County (NHMLAC). The museum records search was supplemented by a search of the University of California Museum of Paleontology's online database (UCMPDB) for Riverside County as well as a review of previous technical reports of work conducted in the vicinity. The Records Search Area consisted of a 5-mile buffer around the Project Area and included portions of the Victory Pass, East of Victory Pass, Palen Lake, Sidewinder Well, Corn Springs, and Desert Center U.S Geological Survey (USGS) 7.5-minute topographic quadrangle maps.

4.2 FIELDWORK

Æ completed two field investigations during the preconstruction phase of the Project to ascertain the paleontological potential of the Project Area. The first investigation consisted of reconnaissance of the ground surface and the second consisted of observations of geotechnical trenching.

4.2.1 Surface Reconnaissance Survey

The purpose of the field reconnaissance survey was to identify the presence/absence of exposed fossils on the ground surface and to evaluate geologic exposures for their potential to yield subsurface fossil material. On May 4 and 5, 2018, two Æ paleontologists were guided by Æ's Archaeological Field Director, Evan Mills, who used a Global Positioning System (GPS) Trimble Geo XH throughout the Project Area.

The survey was completed by a combination of systematic pedestrian walkover and spot-checking to inspect the ground surface for evidence of paleontological resources. During the systematic survey, close inspections were completed insofar as possible along transects oriented north–south within subareas of each proposed development block mapped as high or

undetermined paleontological sensitivity (see Section 6.3). Æ's field crew also inspected locations where subsurface stratigraphy was exposed from incision by ephemeral streams or previous disturbance (e.g., excavated trenches). In contrast, only spot-checking was completed in locations with low sensitivity for paleontological resources.

Æ's field crew kept notes on the encountered geology and sedimentology, and took photographs to document the survey. Observed fossils, if any, were field documented and not collected.

4.2.2 Geotechnical Trenching

To supplement the surface survey, Æ also examined subsurface geology exposed in geotechnical trenches to refine lithologic descriptions and to ascertain the presence/absence of buried fossils. Terracon Consultants, Inc. (Terracon) was contracted directly by IP Athos, LLC to conduct the geotechnical trenching at 40 locations throughout the Project Area (Figure 4-1). Each trench was 10 feet long by 2 feet wide by 10 feet deep.

At each trench location, Terracon excavated in 2-foot increments downward while laying out each sequential bucketful in stratigraphic order in a safe location adjacent to the trench. After a single representative stratigraphic profile had been laid out on the ground surface, Æ's paleontologist completed sedimentological documentation and paleontological examination for the presence/absence of fossils while Terracon's crew continued excavating the trench for geotechnical purposes (i.e., put the spoils elsewhere nearby).

In addition to the stratigraphic profiling at every trench, Æ's paleontologist also examined all geotechnical spoils piles for the presence/absence of fossils. The presence/absence of fossils was to be determined visually for large-fraction fossils as well as by screening through a 2-millimeter mesh sieve for small-fraction fossils at every trench location. Photo-documentation was completed by Æ, and all trenches were backfilled by Terracon at the conclusion of the field investigations at any given trench.

4.3 KEY PERSONNEL

Æ's Paleontology Program Manager Dr. Amy Ollendorf, oversaw the production of this PIR. Æ Staff Paleontologist Christopher Shi wrote the PIR with Ollendorf assisted by two other Æ staff paleontologists, Scott Rohlf and Christopher Shea. Cari Inoway and Jessica Jones provided GIS mapping. Rohlf and one of Æ's paleontological field technicians, Jorge Mendieta, conducted the field reconnaissance survey. Shi subsequently completed the paleontological field assessments during the geotechnical trenching. Ollendorf also provided overall quality control of all desktop, field, and production output.

Rohlf is also Æ's Project paleontologist as he meets the SVP (2010) qualifications standards. Both Shi and Shea have graduate degrees in geology; they both also possess familiarity and proficiency with paleontology, sedimentology, and stratigraphy, and Shi has 1.5 years of paleontological monitoring experience in California. Mendieta has a bachelor's degree in geosciences and 2 years of paleontological monitoring experience in California. As Managing Principal, Ollendorf is a Licensed Professional Geologist (Minnesota #30084) with 30 years of environmental compliance experience across the United States and abroad. Résumés for key personnel can be found in Appendix A.

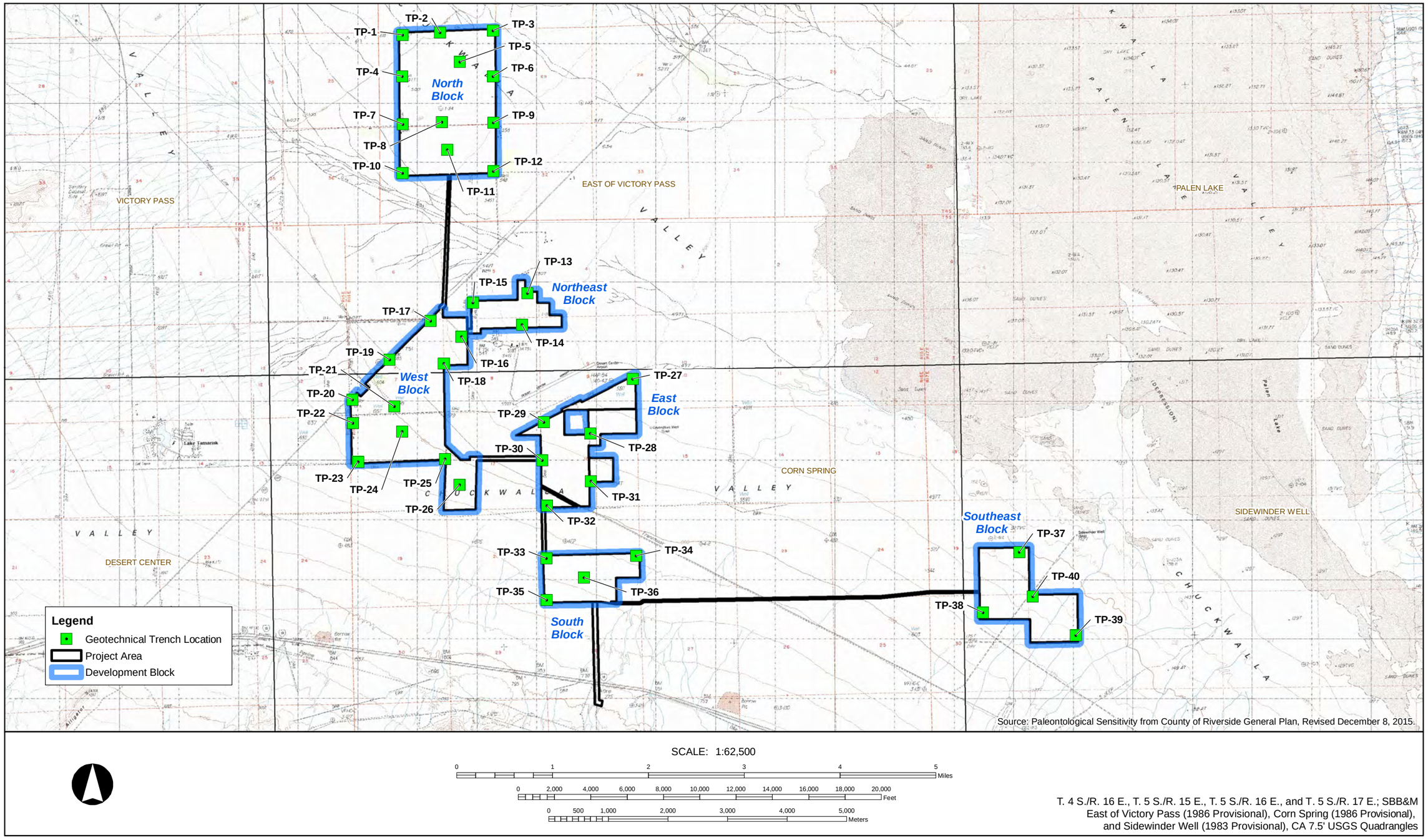

Figure 4-1 Locations of geotechnical trenches.

5
GEOLOGY AND PALEONTOLOGY

The information presented in the chapter is based on recent Æ projects in the Mojave Desert in general and in the Desert Center area in particular (Tennyson, 2017). The section on geology and paleontology of the Project Area is original.

5.1 REGIONAL GEOLOGY

The Project is located in the Chuckwalla Valley of eastern Riverside County at the boundary between the Mojave Desert and eastern Transverse Range geomorphic provinces (California Geological Survey, 2002; Hall, 2007). Basin and range topography, typical of the eastern Mojave Desert and eastern California, extends to the north and east (California Geological Survey, 2002), while mountains comprising part of the eastern Transverse Ranges occur to the west and south (Powell, 1981). Mountain ranges surrounding the Chuckwalla Valley and the Project include the Palen and Coxcomb ranges to the north, the Eagle Mountains to the west, and the Chuckwalla Mountains to the south (Jennings, 1967). The Palen and Coxcomb ranges exhibit typical basin and range topography, characterized by narrow faulted mountain chains separated by subsiding flat alluvial basins (Peterson, 1980), a pattern that continues north into the Mojave Desert Geomorphic Province. The Eagle Mountains are within the easternmost extent of the Transverse Ranges (Hall, 2007, p. 180; Powell, 1981).

The oldest rock units in this region are Proterozoic-age gneiss and granite, forming the core of the Chuckwalla and Big Maria mountains. These units may be overlain by Paleozoic-age quartzite, silicate rocks, marble, and schist and Triassic- or Jurassic-age sedimentary rocks including shallow-water (marine and nonmarine) strata of schist, quartzite, and metaconglomerate (Stone, 2006). Large intrusive masses of Triassic and Jurassic granites are found in many ranges (Jennings, 1967; Stone, 2006; Dibblee, 2010). Regionally extensive Jurassic volcanics consist of highly deformed and metamorphosed rocks of intermediate to silicic composition (such as rhyolite). Limited exposures of Tertiary-age rocks in the valley include fanglomerates and sedimentary breccias (Stone, 2006) and undifferentiated volcanics (Jennings, 1967). Tertiary volcanics include olivine basalt flows and dikes in the Palen Pass area, rhyolitic to basaltic lava flows, flow breccias, airfall tuff, ash-flow tuff, domes of the Chuckwalla Mountains, and felsic intrusive rocks consisting of hypabyssal rhyolitic to dacitic composition (Stone and Pelka, 1989).

The Chuckwalla Valley is a broad, alluviated, and enclosed tectonic basin or bolson (Peterson, 1980), which is an alluvium-filled internally drained structural depression with outlets blocked by alluvial divides (American Geological Institute, 1976; Peterson, 1980). The valley is filled with Pliocene- to Quaternary-age deposits divided into the Pliocene Bouse Formation, Pleistocene Pinto Formation, and Pleistocene and Quaternary alluvium (California Department of Water Resources, 2003). The Pliocene Bouse Formation is generally a limestone overlain by interbedded clay, silt, sand, and tufa; the Pinto Formation is composed of coarse fanglomerate with boulders interbedded with lacustrine clay; and the overlying alluvium is fine to coarse sands

interbedded with gravel, silt, and clay (California Department of Water Resources, 1963, 2003; Metzger et al., 1973; Everett, 2013).

Four dry lakes or playas present within the Chuckwalla Valley basin include Palen Lake, which is closest to the Project Area, Ford Lake, Hayfield Lake, and an unnamed playa between the McCoy Range and Mule Mountain. The eastern end of the valley is located on a drainage divide at the base of the Mule and McCoy mountains where the Palo Verde Mesa extends eastward. Alluvial fan deposits derived from these surrounding highlands fill the basin and may contain numerous dry lake beds separated by sand dunes (Norris and Webb, 1976).

Since the late Miocene Epoch, northward movement along the San Andreas fault has resulted in clockwise rotation of the eastern Transverse Ranges by approximately 41 degrees (Carter et al., 1987) with east-west displacement along these faults of roughly 40 kilometers (Langenheim and Powell, 2009; Powell, 1981), increasing the elevation of the alluvial divide and resulting in geographic separation of Ford and Palen lakes. Near the Palen Range, blocks are tilted with uplifted northern and eastern margins and dropped southern and western sides, suggesting the valley is either actively subsiding or subsided in the past (Hayhurst et al., 2010; Stone and Pelka, 1989).

The Middle and Late Pleistocene were characterized by periods of high rainfall in this part of the continent and the creation of large pluvial lakes in the Basin-Range and Mojave Desert resulting from glacial melting until about 10,000 years before present (B.P.). While not certain, it is possible that the Palen and Ford dry lake beds in the Chuckwalla Valley could represent the remnants of one of the southernmost of these pluvial lakes. It is also possible that, subsequent to 10,000 B.P., briefer periods of higher rainfall during the Holocene may have created temporary lakes in these basins. Recently, a “last high-stand” shoreline for Ford Lake, at the eastern end of the Chuckwalla Valley, was estimated to have occurred circa (ca.) 4000 B.P. (Tetra Tech, 2009, p. 4). In today’s Mojave Desert, it has been postulated that at the onset of the Late Holocene, approximately 4000 B.P., a period of greater precipitation and elevated lake levels began (Sutton et al., 2007). This coincides with the period when Ford Lake is estimated to have contained a significant volume of water. It seems reasonable to extrapolate that maximum filling of Palen Lake occurred at this time as well.

Along the northern front of the Chuckwalla Mountains, a series of coalescing alluvial fans form a broad piedmont that spreads northward toward Desert Center and northeastward, terminating at Palen Lake. The bulk of deposition on many of the alluvial fans observed in the Mojave Desert occurred during the Pleistocene, primarily during the latest part of the epoch (9,400–14,000 years ago) as a response to an increase in storm events during Pleistocene-Holocene transition (McDonald et al., 2003). Alluvial sediments underlying the Project Area are mainly sourced from Corn Spring Wash, part of the Chuckwalla Mountains piedmont, a roughly 4- to 5-mile-wide alluvial fan that extends nearly 9 miles to the basin floor passing through the Project Area toward the Palen Lake area. The western side of the upper fan consists primarily of intermediate age (mid-Pleistocene) fan remnants (Stone and Pelka, 1989) with old (early Pleistocene) fan deposits presumably near the fan apex. Young alluvial fan deposits, mid- to late-Holocene, comprise the medial fan and distal fan (Stone and Pelka, 1989) with eolian deposits mantling the fan skirt. Playa deposits are found in lowest areas of the basin, which are mantled by eolian deposits obscuring the true extent of the former lake (Jennings, 1967; Stone and Pelka, 1989).

5.2 GEOLOGY AND PALEONTOLOGY OF THE PROJECT AREA

The Project Area is mapped at a scale of 1:250,000 by Jennings (1967) and 1:62,500 by Dibblee (2010). According to these published maps, surface exposures of Pleistocene- to Holocene-age sedimentary rocks are distributed across the Project Area. The geology and paleontology of these deposits are described in the following sections and depicted in Figure 5-1.

5.2.1 Holocene-age Alluvium (Qa)

Holocene-age alluvium (Qa) covers most of the Project Area's present ground surface (Figure 5-1). This alluvium occurs in fans derived during modern washes from the surrounding mountain ranges; they typically consist of silt, sand, and gravel. In addition, active dune sands may be present at the surface in the northern and eastern portions of the Project Area (McLeod, 2018). According to McLeod (2018) and the SVP (2010), Holocene alluvial deposits similar to those mapped at the surface of the Project Area, particularly those younger than 5,000 years old, are generally too young to contain fossilized material. While these do not typically produce fossil material, they may shallowly overlie older Quaternary alluvium, which can produce significant fossil material (McLeod, 2018).

5.2.2 Pleistocene-age Surficial Deposits (Qc)

Pleistocene-age surficial deposits (Qc) mapped in the Project Area (Figure 5-1) are comprised of moderately bedded, nonmarine gravels and sands in coarse sandy matrix (Dibblee, 2010).

5.2.3 Older Pleistocene-age Subsurface Deposits (Qpb, Qoa, Qoc)

Other Pleistocene deposits near the Project Area are likely buried at unknown depths, including the lacustrine clays, sandstones, and gravels of the Pinto Formation (Qpb), which is known to be fossiliferous and red where interstratified with basalt flows (Dibblee, 2010; Scharf, 1935). In addition, paleolacustrine deposits associated with an ancient expanded Palen Lake (Qoa, Qoc) are possible at depth in the eastern and northern portions of the Project Area (McLeod, 2018). These lacustrine sediments may contain significant fossil vertebrates (McLeod, 2018).

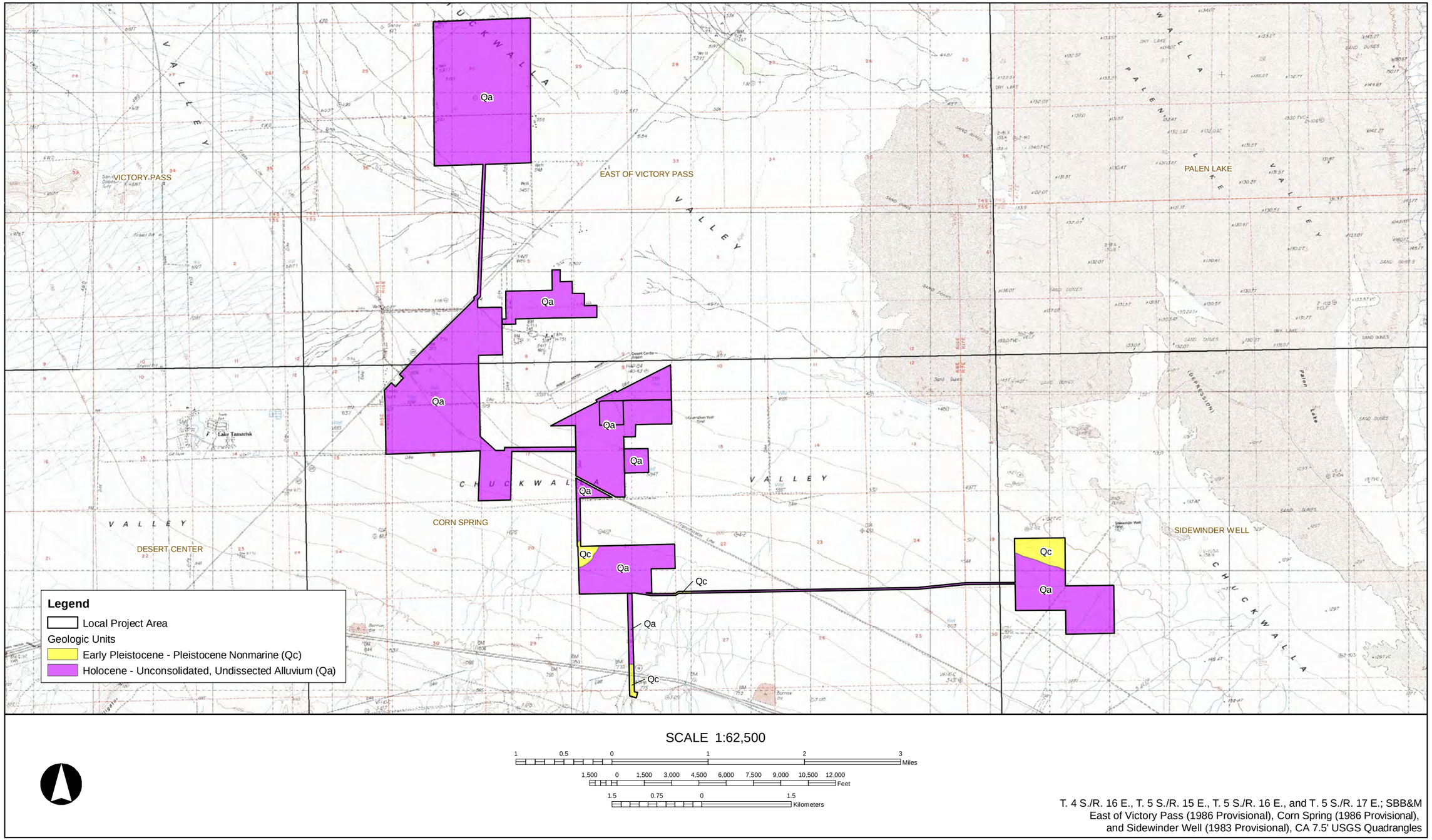

Figure 5-1 Geologic units in the Project area.

6
RESULTS AND ANALYSIS

6.1 MUSEUM RECORDS SEARCH AND ONLINE DATABASE RESULTS

The NHMLAC and UCMPDB searches yielded no records for previously identified vertebrate localities within the Project Area. However, the NHMLAC reports at least three localities recorded near the Project Area from the same or similar sedimentary deposits (Table 6-1). The closest fossil locality, LACM 5977, contains specimens of kangaroo rat and pocket mouse from Pleistocene-age older Quaternary deposits. This locality is east-southeast of the proposed Project Area, north of I-10 on the southwest side of Ford Dry Lake. The NHMLAC also reported two additional Pleistocene-age localities from the Pinto Formation, northwest of the Project Area between the Eagle and Coxcomb mountains: LACM (CIT) 208 and LACM 3414. These produced tortoise, horse, camel, and llama (McLeod, 2018). Depth for each vertebrate locality is unreported. Several fossil localities within Quaternary deposits in Riverside County are recorded in the UCMPDB. However, the majority of these fossils are from the Bautista Beds, which are not mapped near the Project Area or the records have unspecified localities.

Table 6-1
Vertebrate Localities Reported near the Project Area

Locality No.	Geologic Unit	Age	Taxa
LACM 5977	Fine-grained lacustrine deposits	Pleistocene	*Dipodomys* (kangaroo rat) *Perognathus* (pocket mouse)
LACM (CIT) 208 and LACM 3414	Pinto Formation	Pleistocene	*Gopherus* (tortoise) *Equus* (horse) *Camelops* (camel) *Tanupolama stevensi* (llama)

Source: McLeod, 2018

6.2 LITERATURE REVIEW

In addition to the museum and online database search results, technical reports from field surveys conducted in the vicinity of the Project Area also provided information pertinent to the Athos Project Area. For instance, five nonsignificant fossil occurrences were reported for the adjacent Palen Solar Power Project. Of these, four were specimens of petrified wood and one was of nondiagnostic vertebrate material. All specimens were discovered ex situ, having been transported an unknown distance from their original geologic context (DeBusk and Corsetti, 2009).

Another five fossil occurrences of indeterminate significance were encountered at the Desert Harvest Solar Project. The report describes bones from relict deposits scattered within sand dunes, which have been variously attributed to rodent, rabbit, bird, and tortoise remains, as well as an isolated tortoise shell fragment. These localities are interpreted to have been either the

surface of the ancient Palen Dry Lake during high stand or reworked pond deposits (Roeder, 2012a, 2012b). In the latter, such deposits may have been deposited initially prior to ca. 5,000 years ago and subsequently eroded and redeposited into dunes of relatively modern age (Nials, 2013).

6.3 DETERMINATION OF PALEONTOLOGICAL RESOURCE POTENTIAL FOR GEOLOGIC UNITS WITHIN THE PROJECT AREA

Æ overlaid the GIS shapefile for the Project Area onto the Paleontological Sensitivity Map as published by the County of Riverside (Figure 6-1). According to the County's map, the Project Area consists of locations with high A (Ha), low, and undetermined paleontological sensitivities. The majority of the Project Area is characterized by Ha paleontological sensitivity, followed in acreage by low and undetermined paleontological sensitivities (Table 6-2). No locations of High B (Hb) paleontological potential are mapped in the Project Area.

Table 6-2
Distribution of Paleontological Sensitivity throughout the Project Area

High A (acres)	Low (acres)	Undetermined (acres)
2,256.65	1,087.55	50.94

6.4 FIELD RESULTS

Preconstruction investigations were conducted to confirm the presence/absence of surface fossils as well as to ascertain the subsurface paleontological potential throughout the Project Area.

6.4.1 Reconnaissance Field Survey

The ground surface and shallow to moderate depths over the majority of the Project Area are disturbed as a result of previous agricultural activities associated with past jojoba farming (Figure 6-2). The overall topography is low relief, characterized by agricultural fields and alluvial wash plains incised by ephemeral stream channels with coarse-grained berms (Figure 6-3). The surface geology is predominantly coarse-grained alluvial sands with abundant angular to subangular cobbles and boulders of igneous and metamorphic origin. In the North Development Block there are occasional finer-grained eolian sands, whereas the South and Southeastern development blocks are characterized by abundant cobbles and boulders. Observations of subsurface geology were restricted to shallow ephemeral stream channels or past trenching (Figure 6-4). Exposures varied between 2 and 4 feet thick and offered little to no additional information in comparison to the observed surface geology.

Only one fossil specimen was observed during the two-day reconnaissance field survey (UTM Zone 11 653446 Easting, 3736590 Northing). This specimen was an indeterminate vertebrate bone fragment with evidence of mineralogical replacement; it was approximately 2.5–3.0 centimeters long (Figure 6-5) and was found ex situ in unconsolidated alluvium in the Northeast Development Block.

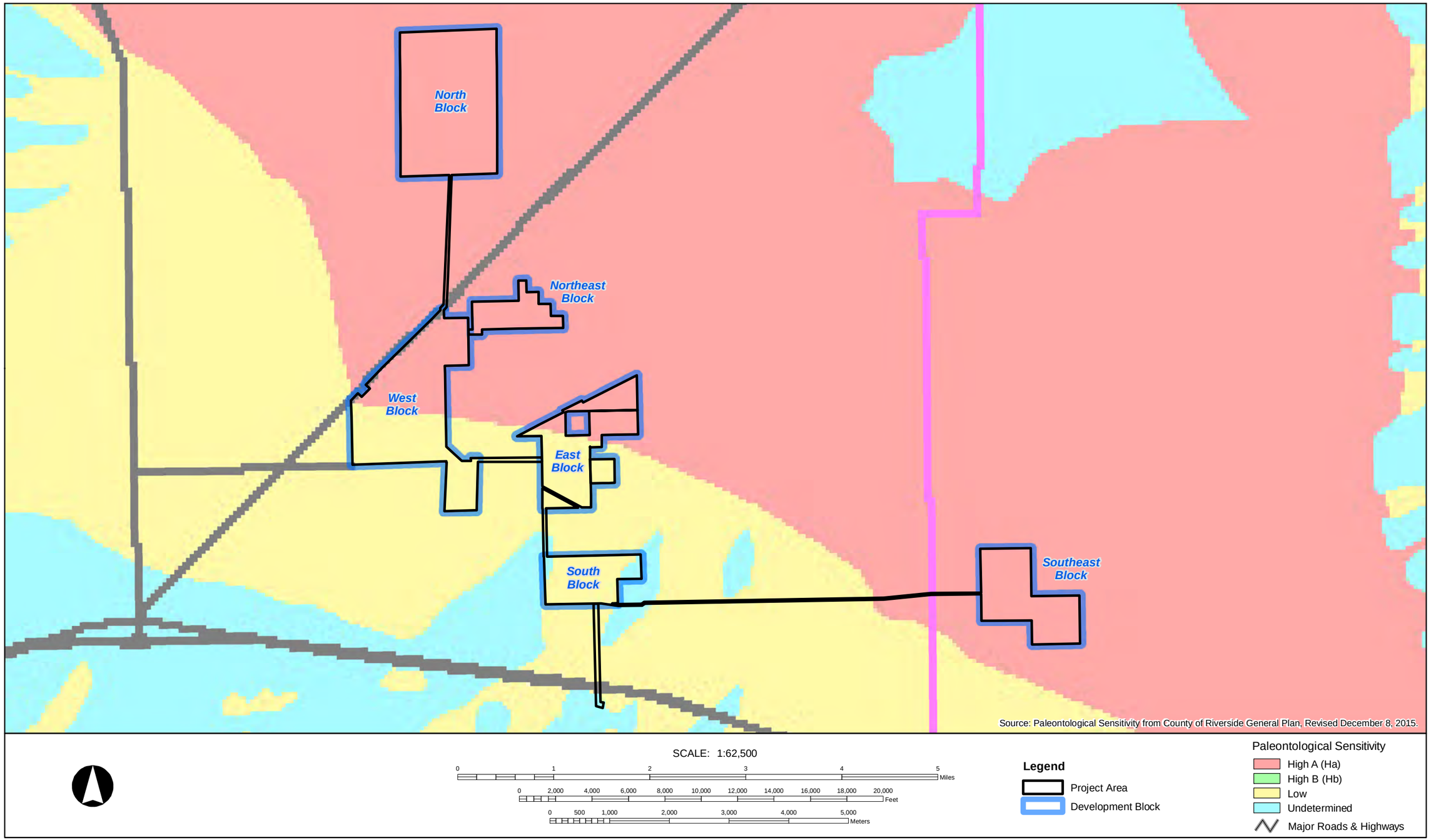

Figure 6-1 Paleontological sensitivity in the Project area and vicinity.

Figure 6-2 Alluvial wash, West Development Block, southeast subarea, facing north.

Figure 6-3 Disturbed surface from agricultural tilling, North Development Block, southern subarea, facing east

Figure 6-4 Stratigraphic profile of exposure in previously abandoned trench.

Figure 6-5 Indeterminate vertebrate fossil—top (left), obverse (right)

Examination of surface exposures verified the ubiquity of Quaternary alluvium as mapped by Dibblee (2010). The sedimentary deposits across the ground surface and in near-surface contexts across the Project Area are characterized by poorly sorted, angular to subangular, poorly consolidated coarse-grained sands to boulders, which are indicative of high-energy and relatively recent deposition. Both factors are generally incompatible with good fossil preservation. Published literature and museum records searches indicate there may be older fossiliferous alluvium beneath the younger alluvium (McLeod 2018); however, the thickness of the younger alluvium is unknown at this time.

6.4.2 Geotechnical Trenching—Observations

Of the 40 geotechnical trenches excavated by Terracon (Figure 6-6), 33 were observed by Æ during paleontological monitoring. It should be noted that Terracon's lexicon refers to each trench location as a "test pit" or "TP," and all trenches are numbered sequentially from north to south to southeast. For each group of trenches in proximity displaying similar strata, one trench was selected as a representative stratigraphic profile to illustrate. Additionally, certain trenches were selected for their presence of unique layers. Æ illustrated stratigraphic profiles for a total of 14 observed trenches (Figure 6-7). Sedimentological descriptions as well as presence/absence of fossils for each observed trench are recorded in Table 6-3.

The approximate dimensions of each excavated trench were 10 feet long by 2 feet wide by 10 feet deep (Figure 6-8). The near-surface sedimentary deposits throughout the Project Area consist of alternating layers of tan fine- to coarse-grained sand with varying proportions of gravel and boulder fractions, interspersed with dark brown or reddish silt to silty sand layers (e.g., TP 16 in Figure 6-9). No fossils were encountered in any of the geotechnical trenches. The results are discussed below on a development block by development block basis from north to south to southeast.

6.4.2.1 North Development Block

In the North Development Block (North), sediments were observed to be increasingly fine-grained with depth in TPs 1, 2 and 5, whereas TPs 3 and 6 exhibited increasingly coarse-grained sediments with depth. TP 6 also exposed a unique whitish layer of calcium-rich sand at a depth of 8–10 feet. This unique layer also was observed in TP 13 (Northeast Development Block, see below). TPs 4 and 9 had identical stratigraphic successions of fine-grained sand with low gravel content from 0 to 4 feet, a reddish silty sand layer from 4 to 6 feet, followed by more fine-grained sand with low gravel content from 6 to 10 feet.

6.4.2.2 Northeast Development Block

In the Northeast Development Block (Northeast), TP 13 contained a unique layer of calcium-rich sand similar to that observed in TP 6 (North, see above). However, TP 13 also included caliche fragments first encountered at 8 feet, which continued to an unknown total depth (Figure 6-10).

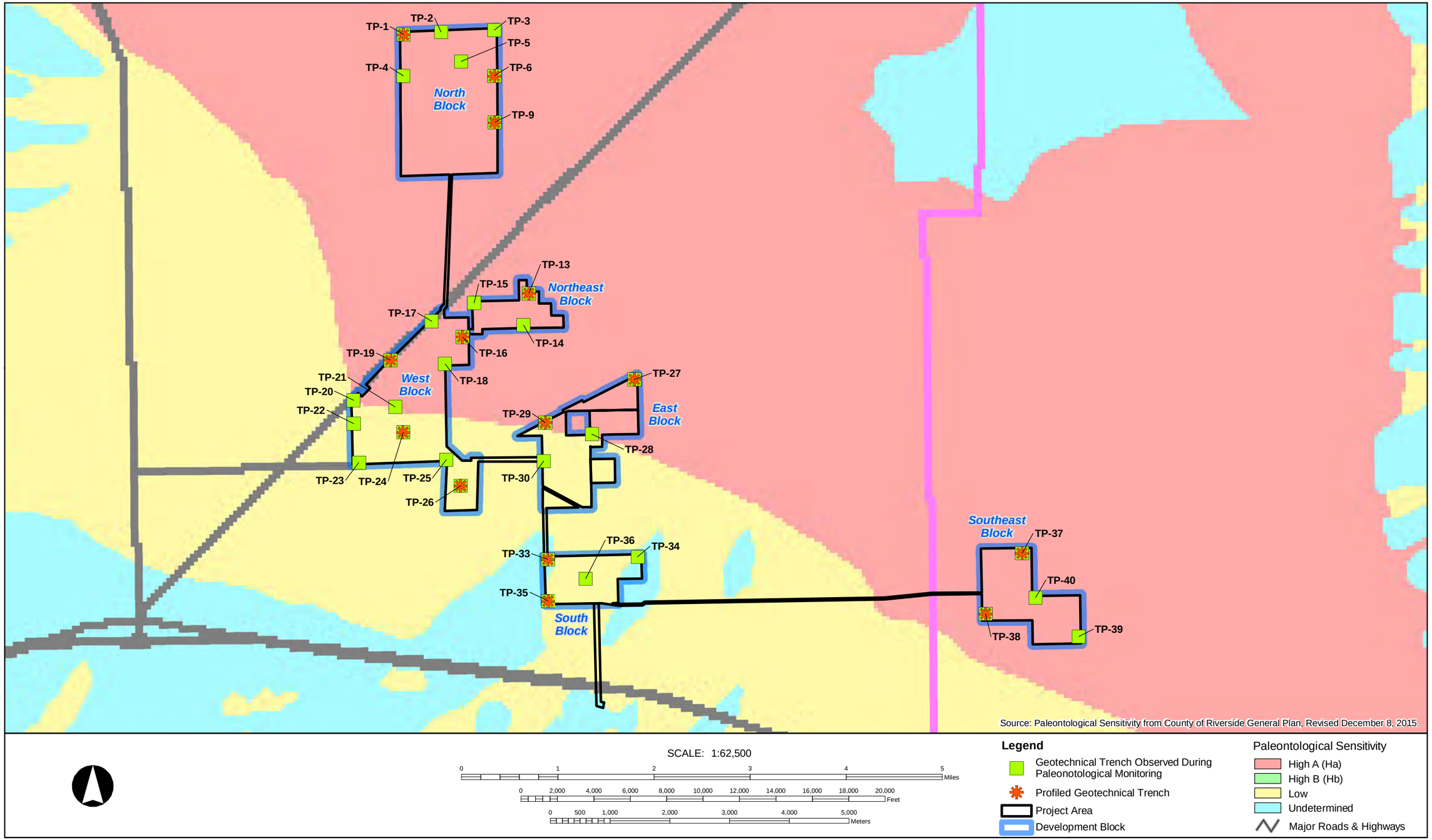

Figure 6-6 Locations of observed geotechnical trenches and illustrated stratigraphic profiles.

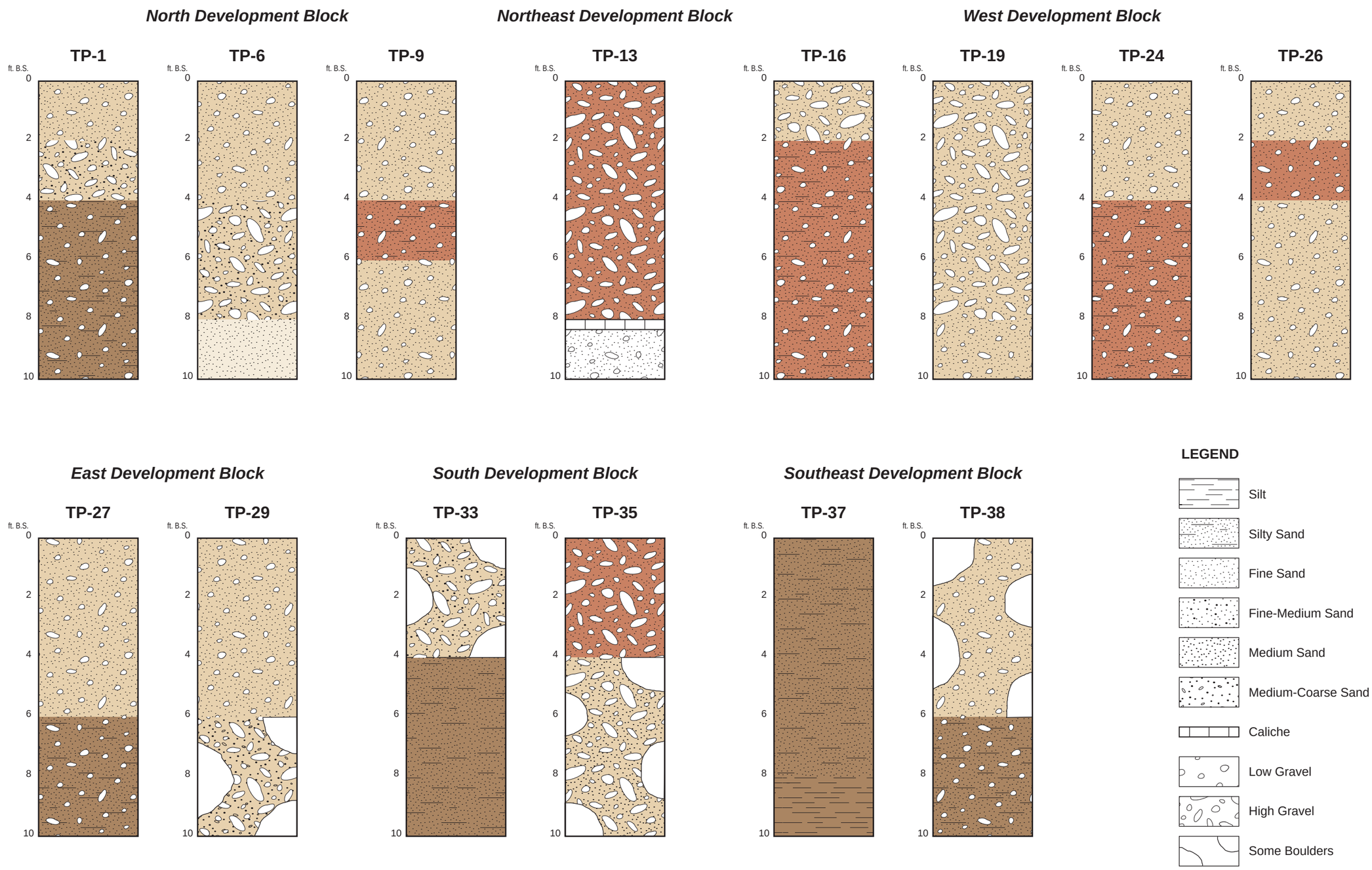

Figure 6-7 **Representative stratigraphic profiles of observed geotechnical trenches.**

Table 6-3
Results of Geotechnical Trenching

Trench (Test Pit, TP)	Description	Paleontology
1(*)	**0-2 ft:** tan fine-grained sand, low gravel **2-4 ft:** tan fine to medium-grained sand, high gravel **4-10 ft:** dark brown silty sand, low gravel	None throughout
2	**0-6 ft:** tan fine-grained sand, low gravel **6-10 ft:** dark brown silty sand, low gravel	None throughout
3	**0-4 ft:** red Fe-rich fine-grained sand, low gravel **4-10 ft:** tan fine to medium-grained sand, high gravel	None throughout
4	**0-4 ft:** tan fine-grained sand, low gravel **4-6 ft:** red Fe-rich silty sand **6-10 ft:** tan fine-grained sand, low gravel	None throughout
5	**0-10 ft:** dark brown silty sand, low gravel	None throughout
6(*)	**0-4 ft:** tan fine-grained sand, low gravel **4-8 ft:** tan fine to medium-grained sand, high gravel **8-10 ft:** white to tan Ca-rich fine-grained sand	None throughout
7	Not observed	
8	Not observed	
9(*)	**0-4 ft:** tan fine-grained sand, low gravel **4-6 ft:** red Fe-rich silty sand, low gravel **6-10 ft:** tan fine-grained sand, low gravel	None throughout
10	Not observed	
11	Not observed	
12	Not observed	
13(*)	**0-8 ft:** red Fe-rich fine-grained sand, high gravel **8-10 ft:** white Ca-rich fine-grained sand and caliche fragments, low gravel	None throughout
14	**0-4 ft:** tan fine-grained sand, low gravel **4-10 ft:** red Fe-rich silty sand, low gravel	None throughout
15	**0-2 ft:** tan fine-grained sand, low gravel **2-4 ft:** red Fe-rich fine-grained sand, low gravel **4-10 ft:** dark brown silty sand, low gravel	None throughout
16(*)	**0-2 ft:** tan fine-grained sand, high gravel **2-10 ft:** red Fe-rich silty sand, low gravel	None throughout
17	**0-4 ft:** tan fine-grained sand, high gravel **4-10 ft:** red Fe-rich silty sand, low gravel	None throughout
18	**0-2 ft:** tan fine to medium-grained sand, high gravel **2-4 ft:** red Fe-rich fine to medium-grained sand, high gravel **4-6 ft:** tan fine to medium-grained sand, high gravel **6-10 ft:** red Fe-rich fine to medium-grained sand, high gravel	None throughout
19(*)	**0-8 ft:** tan fine-grained sand, high gravel **8-10 ft:** tan fine-grained sand, low gravel	None throughout
20	**0-2 ft:** tan fine-grained sand, low gravel **2-10 ft:** red Fe-rich silty sand, low gravel	None throughout
21	**0-6 ft:** tan fine-grained sand, low gravel **6-10 ft:** tan fine-grained sand, high gravel	None throughout

Table 6-3
Results of Geotechnical Trenching

Trench (Test Pit, TP)	Description	Paleontology
22	**0-2 ft:** tan fine-grained sand, low gravel **2-6 ft:** red Fe-rich fine-grained sand, high gravel **6-10 ft:** red Fe-rich silty sand	None throughout
23	**0-2 ft:** tan fine-grained sand, high gravel **2-10 ft:** red Fe-rich silty sand, low gravel	None throughout
24(*)	**0-4 ft:** tan fine-grained sand, low gravel **4-10 ft:** red Fe-rich silty sand, low gravel	None throughout
25	**0-2 ft:** tan fine-grained sand, high gravel **2-8 ft:** tan fine-grained sand, low gravel **8-10 ft:** tan fine to medium-grained sand, high gravel	None throughout
26(*)	**0-2 ft:** tan fine-grained sand, low gravel **2-4 ft:** red Fe-rich fine-grained sand, low gravel **4-10 ft:** tan fine-grained sand, low gravel	None throughout
27(*)	**0-6 ft:** tan fine-grained sand, low gravel **6-10 ft:** dark brown silty sand, low gravel	None throughout
28	**0-2 ft:** tan fine to medium-grained sand, high gravel **2-10 ft:** dark brown silty sand, high gravel	None throughout
29(*)	**0-6 ft:** tan fine-grained sand, low gravel **6-10 ft:** tan medium to coarse-grained sand, high gravel, some boulders	None throughout
30	**0-2 ft:** tan fine to medium-grained sand, high gravel **2-10 ft:** red Fe-rich silty to fine-grained sand, low gravel	None throughout
31	Not observed	
32	Not observed	
33(*)	**0-4 ft:** tan fine to medium-grained sand, high gravel, some boulders **4-10 ft:** dark brown silty sand	None throughout
34	**0-4 ft:** red Fe-rich fine-grained sand, high gravel, some boulders **4-8 ft:** tan fine-grained sand, high gravel, some boulders **8-10 ft:** red Fe-rich fine-grained sand, high gravel, some boulders	None throughout
35(*)	**0-4 ft:** red Fe-rich fine-grained sand, high gravel **4-10 ft:** medium-grained sand, high gravel, some boulders	None throughout
36	**0-10 ft:** tan fine-grained sand, high gravel, some boulders	None throughout
37(*)	**0-8 ft:** dark brown silty sand **8-10 ft:** dark brown silt	None throughout
38(*)	**0-6 ft:** tan fine-grained sand, low gravel, some boulders **6-10 ft:** dark brown silty sand, low gravel	None throughout
39	**0-10 ft:** dark brown silty sand, low gravel	None throughout
40	**0-8 ft:** dark brown silty sand, low gravel **8-10 ft:** tan fine-grained sand, high gravel	None throughout

(*) – profiled geotechnical trench

Figure 6-8 **Example of excavated geotechnical trench (TP 17, facing west).**

Figure 6-9 **Tan fine-grained sand (top) and red silty sand (bottom) in TP 16.**

Figure 6-10 Caliche layer (bottom) in TP 13

6.4.2.3 West Development Block

In the West Development Block (West), fine-grained sand with high gravel content was exposed near the surface of TP 16 grading downward into reddish silty sand, beginning around 2 feet deep. This stratigraphy was similar to that of TP 17, also in the West, but also was similar to TPs 14 and 15 in the Northeast (see above). TP 19 had high gravel content throughout much of the top 10 feet, similar to TPs 18 and 21. TP 24 showed a familiar trend with fine-grained sand with high gravel content near the surface, transitioning downward to reddish silty sand at approximately 4 feet depth, similar to TPs 20, 22, and 23. The top 2 feet in TP 26 was similar to the upper layer of TP 24. From 2 to 8 feet, the entire profile of TP 26 was identical to TP 25, although it differed slightly by remaining consistently fine-grained with low gravel content from 0 to 2 feet and from 8 to 10 feet.

6.4.2.4 East Development Block

In the East Development Block (East), TP 29 is unique in that it contained coarse-grained sand with high gravel content and boulders near the base. TP 27 showed a fining downward trend similar to TPs 28 and 30, although the silty sand in TP 30 was distinctly reddish.

6.4.2.5 South Development Block

In the South Development Block (South), TP 33 was selected for observation and illustration because it was placed in an area of undetermined sensitivity. TP 35, similar to TPs 34 and 36, contained a high gravel and boulder content throughout.

6.4.2.6 Southeast Development Block

In the Southeast Development Block (Southeast), TP 38 contained boulders from 0 to 6 feet depth, but from 6 to 10 feet it was nearly identical to the entirety of TPs 39 and 40 (i.e., silty sand with low gravel content). TP 37 is unique in comparison to TPs 38–40 because it was primarily finer sediment devoid of any gravel.

6.4.3 Geotechnical Trenching—Interpretations

The lack of fossils along with the overall ubiquity of poorly sorted layers and the inconsistencies in the thicknesses of similar layers, even between neighboring trenches, made discernment of individual geologic units (i.e., younger alluvium vs. older alluvium), if present, impossible by Æ's purely observational methods across the Project Area. Nevertheless, there appear to be at least a few notable trends among the observed trenches. For instance, fine-grained probable eolian sands were more abundantly obvious in the upper few feet of trenches in the north and central portions of the Project (Northeast, West, and East) than in the southern portion of the Project (South and Southeast). Conversely, coarse gravels and boulders were observed in much more abundance in the southern portions of the Project. Fine-grained deposits are usually best for fossil preservation, and eolian sands generally are not known for fossil preservation outside of highly unusual conditions. Coarse-grained sediments, such as gravels and boulders, generally are unlikely to preserve fragile fossil material because of the high energy of the depositional environment.

With a few exceptions, the thicker reddish silt and silty sand layers were concentrated within the central portion of the Project Area (Northeast and West). Similar fine reddish layers were rarer in the North and South in comparison to the central portion of the Project and were absent altogether in the Southeast and north half of the East. Comparatively fine-grained sediments observed in TP 33 (South) and TP 37 (Southeast) may be associated with fossiliferous deposits at depth from ancient Palen Dry Lake.

7
RECOMMENDATIONS

The literature review and museum records search along with Riverside County's paleontological sensitivity mapping informed the field reconnaissance survey and interpretations from 33 observed geotechnical trenches in the Project Area. The following section provides a discussion of paleontological sensitivity and mitigation recommendations.

Highly sensitive (Ha) geologic units and units with undetermined paleontological sensitivity are mapped from surface exposures in and near the Project Area (County of Riverside, 2015b). Æ's discovery of a single fossil ex situ in the Northeast Development Block during the surface reconnaissance field survey supports the sensitivity rankings. Museum record searches and the literature review results suggest the presence of the Pinto Formation and older Quaternary alluvium in the Project Area, both of which have previously yielded significant paleontological material elsewhere. Æ's observations of reddish sediments in some of the geotechnical trenches may confirm the presence of the Pinto Formation at depth in the Project Area. Furthermore, the presence of fine-grained sediments in some of the trenches also is compatible with depositional environments conducive to fossil preservation.

The present study indicates Project-related activities may impact potentially significant paleontological resource; therefore, several management recommendations are provided herein to mitigate adverse impacts to paleontological resources, if present. The following measures have been used by professional paleontologists for many years and have proven to be effective in reducing or eliminating adverse impacts to paleontological resources from development projects.

7.1 WORKER'S ENVIRONMENTAL AWARENESS TRAINING

Prior to the start of construction, all field personnel should be briefed regarding the types of fossils that could be found in the Project Area and the procedures to follow should paleontological resources be encountered. This training should be accomplished at the pregrade kick-off meeting or morning tailboard meeting and should be conducted by the Project paleontologist or his/her representative. Specifically, the training should provide a description of the fossil resources that may be encountered in the Project Area, outline steps to follow in the event that a fossil discovery is made, and provide contact information for the Project paleontologist and on-site monitor(s). The training should be developed by the Project paleontologist and may be conducted concurrent with other environmental training (e.g., cultural and natural resources awareness training, safety training, etc.).

7.2 PALEONTOLOGICAL MITIGATION MONITORING

Monitoring recommendations are presented on the basis of proposed depth of disturbance by grading and excavation during construction. Prior to the commencement of ground-disturbing activities, a qualified professional paleontologist should be retained to prepare and implement a Paleontological Resources Mitigation Plan (PRMP) for the Project.

7.2.1 Disturbance Less than 10 Feet

In general, disturbance of the top 10 feet by construction activities warrants only spot-check monitoring across the entire Project Area. The major exceptions to this general rule are locations in which sediments from the fossiliferous Pinto Formation may be present. Full-time monitoring is warranted in those development areas where Æ documented reddish sediments that may be derived from the Pinto Formation (Figure 7-1):

- Northeast Development Block,
- West Development Block, and
- Southern portion of the East Development Block.

If no paleontological finds are made during full-time monitoring in those locations, then the paleontological monitor may switch to spot-check monitoring at the direction of the Project paleontologist.

7.2.2 Disturbance Greater than 10 Feet

For depths below 10 feet, Æ recommends full-time monitoring initially since the subsurface geology is yet undocumented. If no paleontological finds are made during full-time monitoring at depths greater than 10 feet, then the paleontological monitor may switch to spot-check monitoring at the direction of the Project paleontologist.

7.3 FOSSIL PREPARATION, CURATION, AND REPORTING

Any significant fossils collected during fieldwork will be prepared in a properly equipped paleontology laboratory to a point ready for curation. Preparation will include the careful removal of excess matrix from fossil materials and stabilization and repair of specimens, as necessary. Following laboratory work, all fossils specimens will be identified to the lowest taxonomic level, cataloged, analyzed, and prepared for curation. Fossil specimens will be submitted for permanent curation in a museum repository approved by the County. The cost of curation is assessed by the repository and is the responsibility of IP Athos, LLC.

At the conclusion of laboratory work and curation, a final report will be prepared to describe the results of the paleontological inventory and evaluation. The report will include an overview of the Project Area geology and paleontology, a description of the field and laboratory methods, a list of taxa recovered (if any), an analysis of fossils recovered (if any) and their scientific significance, and recommendations. If fossils are collected and prepared for curation, a copy of the report will be submitted to the curation institution along with the fossil assemblage.

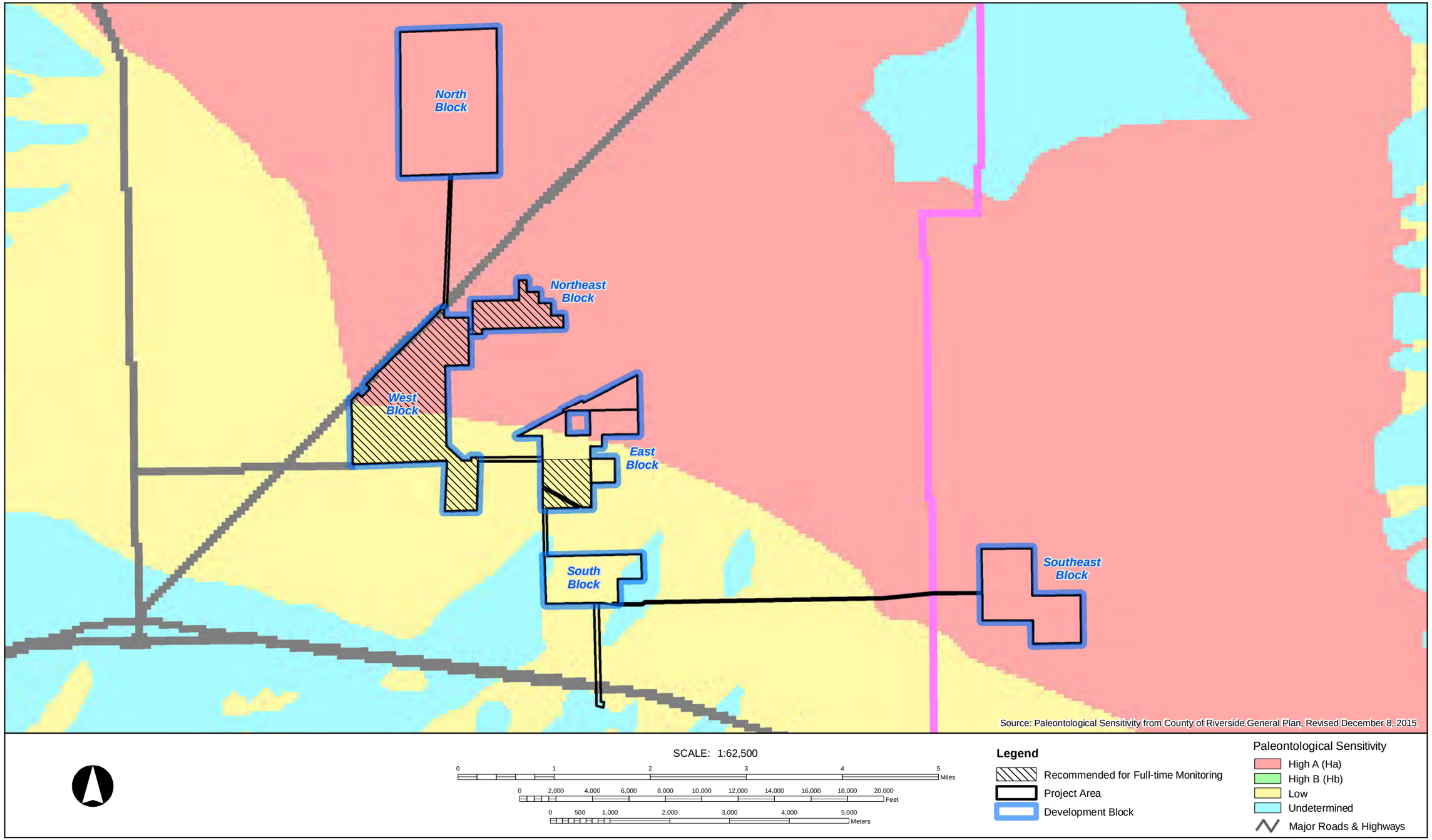

Figure 7-1 Areas recommended for full-time monitoring.

8
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APPENDIX A

Qualifications of Key Personnel

AMY L. OLLENDORF

Managing Principal/Paleontology Program Manager

Education

Postdoctoral Research Associate, 2006–2007, World Heritage Studies, University of Minnesota

Ph.D., Ancient Studies,1993, University of Minnesota

M.S., Ancient Studies, 1986, University of Minnesota

B.S., Anthropology (with honors) and Geology, 1983, Beloit College

Registrations/Certifications

- Licensed Professional Geologist, Minnesota #30084
- Registered Professional Archaeologist #12588

Professional Experience

- 2018–present, Managing Principal/ Paleontology Program Manager, Applied EarthWorks, Inc.
- 2015–2017, 2005–2008, President and Senior Cultural Heritage Specialist, ALO Environmental Associates LLC
- 2006–2015, Program Manager, Cultural Heritage Planning and Management, AECOM
- 2003–2005, Director, Cultural Resources Management, Peterson Environmental Consulting, Inc.
- 2000–2003, Director, Cultural Resources Management, HDR Engineering, Inc.
- 1996–2000, Director, Cultural Resources Management, Braun Intertec Corporation, Inc.
- 1994–1996, Statewide Inventory Coordinator, Minnesota State Historic Preservation Office

Summary of Qualifications

Dr. Ollendorf is a licensed professional geologist (Minnesota) with more than 30 years of experience in environmental compliance at the global, national, tribal, state, and local levels. She has supervised and/or participated in paleontology, paleoecology, and geoarchaeological services, tribal negotiations, and agency coordination throughout her career. She also has been a team member or project manager for projects involving an Environmental Impact Statement (EIS) or Environmental Assessment (EA) and has project experience in the renewable energy and utilities sectors. Dr. Ollendorf's project experience includes work in 35 states (including Arizona, California, Nevada, New Mexico, and Washington), and abroad.

Selected Project Experience

Proposed Development of 55 Acres On the Northwest Corner of Alabama Street & Palmetto Avenue, City of Redlands, San Bernardino County, California. Paleontology Program Manager (2018). Overseeing records search request to Natural History Museum of Los Angeles (NHMLA) and will provide quality control/quality assurance on the paleontological technical memorandum. Client: Albert A. Webb Associates for City of Redlands.

Athos Renewable Energy Project, Riverside County, California. Paleontology Program Manager and Project Manager (2018). Oversaw museum and online records searches for the 3,237-acre solar facility, a 11.1-mile-long by 150-foot-wide transmission line corridor (158 acres), and a surrounding 5-mile-wide buffer. Also oversaw completion of a Paleontology Survey Plan, ground-reconnaissance field survey, observations of geotechnical trenches on private lands, and Paleontological Identification Report (PIR) to the County. Wrote Scope of Work and will oversee completion of paleontological observation of geotechnical test trenching for presence/absence of subsurface fossils and/or fossiliferous geologic units on private lands. If necessary, also will oversee BLM Paleontology Work Plan and Fieldwork Authorization for fossil identification surveys of proposed generation tie-in lines ("gen-ties") and access roads on BLM lands as well as a Report of Findings to BLM. Completing for NEPA and CEQA compliance. Client: IP Athos, LLC and Aspen Environmental Group.

Ten West Link 500 kV Transmission Connection, Maricopa County, Arizona to Riverside County, California. Paleontology Program Manager and Project Manager (2018). Oversaw museum and online records searches and Paleontology Identification Report (PIR) for the entire 114-mile-long preferred alignment and alternatives. Completed for U.S. BLM compliance with the NEPA and California Public Utilities Commission (PUC) compliance with the CEQA. Client: DCR Transmission LLC.

Professional Experience (continued)

- 1993–1994, Staff Archaeologist, Institute for Minnesota Archaeology
- 1991–1993, Independent Contractor—Paleoecology
- 1990, Co-Director, Geoarchaeological Field School & Geoarchaeologist, Southern Illinois University-Edwardsville
- 1987–1990, Graduate Research Assistant, Limnological Research Center, University of Minnesota, Minneapolis
- 1984–1987, Graduate Research Assistant, Archaeometry Laboratory, University of Minnesota, Duluth
- 1983–1984, University of Maryland Research Assistant, Crustal Dynamics Project, Geology & Geophysics Branch, NASA Goddard Space Flight Center, Greenbelt, Maryland
- 1987, 1984, Assistant Geoarchaeologist, Tel Miqne Excavations, ASOR-Albright Institute, Jerusalem, Israel
- 1983, Summer Intern, US Bureau of Land Management, Phoenix District, Arizona
- 1983, Teaching Assistant – Evolution of the Earth and Research Assistant—Palynomorph (Acritarchs) Research, Beloit College

Selected Project Experience (continued)

Madera Travel Center at Avenue 17 and Highway 99, Madera County, California. Paleontology Program Manager (2018). Co-authored draft Paleontological Resource Mitigation Plan for CEQA compliance. Client: Love's Travel Stops Corporate Office.

Talavera Pipeline Replacement, City of Indio, Riverside County, California. Paleontology Program Manager (2018). Completed quality control/quality assurance on draft paleontological technical memorandum for CEQA compliance. Client: Albert A. Webb Associates for Coachella Valley Water District.

Blythe Airport Perimeter Fence Project, Riverside County, California. Paleontology Program Manager (2018). Will complete quality control/quality assurance on draft paleontological technical memorandum for federal (NEPA) and CEQA compliance. Client: Mead & Hunt for Caltrans

Madison Street Improvements Project, City of Murrieta, Riverside County, California. Paleontology Program Manager (2018). Completed quality control/quality assurance on draft paleontological technical memorandum for the Warm Springs Creek Bridge. Will oversee fossil identification survey and draft paleontological resources technical report for CEQA compliance. Client: Kleinfelder for City of Murrieta Public Works & Engineering.

I-215 University Parkway Interchange Improvement Project, San Bernardino County, California. Paleontology Program Manager (2018). Will complete quality control/quality assurance on updated PIR following design changes for CEQA compliance. Client: HDR for Caltrans.

I-10 Monroe Interchange Project, Riverside County, California. Paleontology Program Manager (2018). Will complete quality control/quality assurance on draft PIR for CEQA compliance. Also oversaw fossil identification field. Client: Michael Baker for Caltrans.

Water-Main Replacement Project in the San Gorgonio River, City of Banning, Riverside County, California. Paleontology Program Manager (2018). Overseeing paleontological spot-check monitoring for CEQA compliance. Client: Aspen Environmental Group for City of Banning Public Works Department.

De Anza Sewer Force Main Project, City of San Jacinto, Riverside County, California. Paleontology Program Manager (2018). Oversaw creation of informational brochure for construction-worker sensitivity training for Worker Environmental Awareness Program (WEAP) compliance. Also overseeing coordination and completion of spot-check monitoring. If fossils are found, then also will oversee development and implementation of a paleontological treatment plan and completion of a paleontological letter report for CEQA compliance. Client: HELIX for Eastern Municipal Water District.

Other Paleontological Research

Ph.D. Dissertation.
Changing Landscapes in the American Bottom (USA): An Interdisciplinary Investigation with an Emphasis on the Late-Prehistoric and Early-Historic Periods. Advisor: Herbert E. Wright, Jr.

M.S. Thesis.
A Study of Phytoliths from Philistine Levels at Tel Miqne (Ekron), Israel. Advisor: George R. Rapp, Jr.

B.S. Theses.
The High Diversity of the Mazon Creek Biota: The Result of Excellent Preservation in a Deltaic Environment. Advisor (Geology): Carl Mendelson.

The Role of Man in the Pleistocene Extinction of Large Mammals. Advisor (Anthropology): Daniel Shea.

Selected Project Experience (continued)

Sixth Street Park, Arts, River & Connectivity (PARC) Improvements, City of Los Angeles, Los Angeles County, California. Paleontology Program Manager (2018). Completed quality control/quality assurance of draft paleontological technical memorandum for CEQA compliance. Client: GPA Consulting for City of Los Angeles Bureau of Engineering.

Multiple Projects as Independent Contractor. Paleoecologist (1991–1993). Distinguished the post-contact cultural horizon using pollen analysis for Dr. Daniel Engstrom (University of Minnesota) and Minnesota Pollution Control Agency (MPCA) for projects in Lake St. Croix (MN-WI border) and Duluth-Superior Harbor (MN-WI border). Collected modern pollen samples and made reference slides of Upper Midwest pollen taxa for Dr. Greg McDonald (Cincinnati Museum of Natural History & Science, Ohio). Processed sediment samples from the Island of Madeira and analyzed phytoliths for Dr. Glenn Goodfriend (Carnegie Institution, Washington, D.C.).

Geoarchaeological Field School at Cahokia Mounds State Historic Site (UNESCO World Heritage Site), Collinsville, Illinois. Co-Director (1990). Lectured on paleoecological research and geoarchaeology, led wetland-coring & laboratory activities, participated in remote sensing field and laboratory activities. Co-Director: Dr. Rinita Dalan.

Limnological Research Center, University of Minnesota, Minneapolis. Graduate Research Assistant (1987–1990). Conducted analyses of pollen and other appropriate material from lake-sediment and peat cores. Supervisors: Dr. Herbert Wright, Jr. and Dr. Linda Shane.

Archaeometry Laboratory, University of Minnesota, Duluth. Graduate Research Assistant (1984–1987). Conducted sediment grain-size analyses, processed and identified phytoltihs and pollen, assisted in publication, obtained literature about sediment studies, performed various office duties. Supervisor: Dr. George (Rip) Rapp, Jr.

Crustal Dynamics Project, Geology & Geophysics Branch, NASA Goddard Space Flight Center, Greenbelt, Maryland. University of Maryland Research Assistant (1983–1984). Correlated geologic features with satellite magnetic anomalies (MAGSAT) and researched the crustal structure and composition of each feature for Principal Investigator (Dr. Herbert Frey).

Tel Miqne (Ekron) Excavations, American Schools of Oriental Research, Israel. Assistant Geoarchaeologist and Project Archaeologist (1984, 1987). Assisted the Project Geoarchaeologist (Dr. Arlene Rosen) in all phases of field and laboratory studies during spring-summer excavations. **1987 season** involved all phases of grain-size studies, including collection, processing, microscopic analysis, and data analysis; also assisted with on-site geological problems and flotation procedures. **1984 season** involved assistance with wadi stratigraphy studies, on-site geological problems, flotation procedures, and grain-size analyses.

Selected Project Experience (continued)

Collaborative Research: Deltaic Resilience and the Genesis of Mesopotamian Cities (Iraq) Project. Phytolith Analyst (2014). Oversaw chemical processing of mudbrick samples from the archaeological site of Ur for the. Completed phytolith analysis and reporting. Client: Dr. Jennifer Pournelle, Principal Investigator, University South Carolina Research Foundation.

Geological Background Research for the Naval Industrial Reserve Ordnance Plant (NIROP) Superfund Cleanup Project, City of Fridley, Hennepin County, Minnesota. Staff Geologist (2014). Compiled and examined boring logs and identified stratigraphic contacts for 3D modeling at the 83-acre site located about 700 feet east of the Mississippi River. Research completed for compliance with the US Clean Water Act (CWA). Client: US Navy.

Geoarchaeological Investigation for the Elford-Fullerton Relief Line Installation, City of Rochester, Olmsted County, Minnesota. Project Manager/Principal Investigator (2006). Oversaw backhoe trenching to identify presence/absence of well-developed, deeply buried archaeological soils and assessed archaeological potential of paleosols. Also completed final report for compliance with Section 106. Client: Earth Tech, Inc.

Geoarchaeological Investigation for the Bear Creek Sewer Installation in Rochester, Olmsted County, Minnesota. Principal Investigator (2006). Monitored geotechnical backhoe trenching to identify presence and absence of well developed, deeply buried archaeological soils for proposed. Also completed draft and final reports. Client: Earth Tech, Inc.

Geoarchaeological Sensitivity Study for a West Field Wetland Mitigation Site in Savage, Scott County, Minnesota. Principal Investigator (2003). Completed soil probing (one-inch diameter) to assess archaeological sensitivity. Also completed final report regarding buried soils in the four survey areas (with Charles Diesen). Client: Waste Management.

Multi-Disciplinary High-Density Testing/Evaluation of Archaeological Site 32CS0046 near Enderlin, North Dakota. Project Director (2003). Oversaw high-resolution (one-meter interval) topographic mapping (half-inch elevations), remote sensing (magnetic field gradiometry and ground-penetrating radar), and soils field investigations. Submitted final report with subconsultants (Peterson Environmental Consulting, Inc. and Archaeo-Physics LLC). Client: Cass County Joint Water Resource District.

Southwest Arterial Highway Project in Dubuque County, Iowa. Project Director (2002). Oversaw completion of continuous borings, trenching, soil sampling, laboratory analyses (lead-content analyses). Also submitted final report with geological (Dr. Rolfe Mandel) and environmental laboratory (Braun Intertec Corporation) subconsultants. Client: Iowa DOT.

Selected Project Experience (continued)

Phase III Archaeological Data Recovery for Reconstruction of the 7th Street Interchange, U.S. Highway 14/61, LaCrosse, LaCrosse County, Wisconsin. Phytolith Analyst (2000). Completed laboratory procedures, microscopic phytolith analysis, and final report for archaeological sediments. Client: Mississippi Valley Archaeology Center and Wisconsin DOT.

Loucks & Associates, Lake Onamia/T.H. 169 Phase III Archaeological Data Recovery, Mille Lacs County, Minnesota. Paleoecologist (2000). Completed paleoecological literature search, overview, and final report in support of archaeological mitigation for FHWA compliance with Section 106.

Geoarchaeological Investigation for the Proposed Redesign and Realignment of CSAH 1/5 and the Proposed Replacement of Bridge No. 4184, Scott and Sibley Counties, Minnesota. Principal Investigator (1999). Completed continuous borings and final report in support of the EA/EAW. Client: TKDA & Associates and Scott & Sibley County Highway Departments.

Archaeological Salvage Excavations of a Mid-Nineteenth Century Cemetery (21SN0136) at the James W. Miller Learning Resources Center, St. Cloud State University, Minnesota. Project Manager (1999). Oversaw continuous borings at active construction site (Dr. Richard Rothaus, Principal Investigator).

Phase III Archaeological Data Recovery Project (Sites 13JK118 and 13JK121), Fulton, Iowa. Pollen Analyst (1997). Completed laboratory procedures, microscopic pollen analyses, and final report of archaeological sediments. Client: Louis Berger & Associates and Iowa DOT.

Washington Street Residential District Phase III Archaeological Data Recovery Project in Downtown St. Paul, Ramsey County, Minnesota. Pollen Analyst (1997). Completed laboratory procedures, microscopic pollen analyses, and final report of archaeological sediments. Client: The 106 Group, Ltd. and the Science Museum of Minnesota.

Keystone Gulf Coast Expansion (Keystone XL), Cushing, Oklahoma, to Texas City, Texas. Cultural Resources Task Manager and Paleontologist. Selected and managed subcontractors for proposed 478-mile-long crude-oil pipeline; helped plan right-of-way alignments, re-reroutes; researched existing cultural resources; wrote cultural resources management section and paleontology sections of Environmental Report for permit application. Coordinated with client, subcontractors, engineers, right- of-way agents, federal agencies, Texas Historical Commission, Texas Archaeological Research Laboratory, Oklahoma SHPO, Oklahoma Archeological Survey, and federally recognized American Indian tribes. Client: Trow Engineering.

Selected Project Experience (continued)

PolyMet Mining, Land Exchange (Hay Lake and McFarland parcels) with the U.S. Forest Service, Cook and St. Louis counties, Minnesota. Principal Investigator. Researched and summarized existing conditions of cultural resources and paleontological resources for an Environmental Impact Statement for USFS compliance with NEPA.

Geoarchaeological Investigation in the Proposed Holman Airfield Approach Lights Corridor, St. Paul, Ramsey County, Minnesota. Geoarchaeologist (1996). Completed continuous borings and final geoarchaeological report in support of Phase I archaeological investigation for Federal Aviation Administration compliance with Section 106. Client: Archaeological Research Services and the Metropolitan Airports Commission.

Geoarchaeological Investigation for the Replacement of Railroad Bridge No. 235.66 over the Wisconsin River, Prairie du Chien, Crawford County, Wisconsin. Project Director (2002). Oversaw completion of vibra-cores, geotechnical borings, and push-probes for deeply buried archaeological sites. Also submitted final report with geological subconsultant (Dr. Michael Kolb, StrataMorph Geoexploration) in support of EA with subcontractor (StrataMorph Geoexploration), wrote cultural resources report for submittal to the client and Wisconsin SHPO, and wrote management sections of the EA for compliance with NEPA. Client: BNSF Railroad Corporation.

Geoarchaeological Investigation for the 250MW Ridgecrest Solar Power Project, City of Ridgecrest, Kern County. Quality Assurance/Senior Reviewer (2009). Reviewed draft geoarchaeological monitoring report of geotechnical investigations. Jointly regulated by the Bureau of Land Management (BLM) and the California Energy Commission (CEC). Geoarchaeological Subcontractor: SWCA Environmental Consultants. Client: Solar Millennium, LLC and Chevron Energy Solutions.

Geoarchaeological Investigation for the 500MW Palen Solar Power Project, near Desert Center, Riverside County. Quality Assurance/ Senior Reviewer (2009). Reviewed draft geoarchaeological monitoring report of geotechnical investigations. Jointly regulated by the BLM and the CEC. Geoarchaeological Subcontractor: SWCA Environmental Consultants. Client: Solar Millennium, LLC and Chevron Energy Solutions.

Geoarchaeological Investigation for the 1,000MW Blythe Solar Power Project, near Blythe, Riverside County. Quality Assurance/ Senior Reviewer (2009). Reviewed draft geoarchaeological monitoring report of geotechnical investigations. Jointly regulated by the BLM and the CEC. Geoarchaeological Subcontractor: SWCA Environmental Consultants. Client: Solar Millennium, LLC and Chevron Energy Solutions.

Selected Project Experience (continued)

Geoarchaeological Investigation for the City of Palmdale, 570 MW Palmdale Hybrid Power Project, Palmdale, Los Angeles County, California. Quality Assurance/Senior Reviewer (2009). Oversaw geoarchaeological scope of work and reporting of desktop study results in response to data requests by the CEC for the 377-acre project area in the Antelope Valley. Project included solar thermal. Geoarchaeological Subcontractor: William Self Associates, Inc. (Dr. James Allen and Mr. David De Vries). Client: Solar Millennium, LLC and Chevron Energy Solutions.

Geoarchaeological Investigation for the Nextera Energy Resources, 250 MW Beacon Solar Energy Project, Kern County, California. Quality Assurance/Senior Reviewer (2009). Oversaw geoarchaeological trenching plan and post-field reporting, including preliminary report, and comprehensive draft and final reports in response to data requests by the CEC for the 2,012-acre project area in the Fremont Valley. Geoarchaeological Subcontractor: Far Western Anthropological Research Group, Inc. (Dr. Craig Young). Client: Solar Millennium, LLC and Chevron Energy Solutions.

Selected Publications

Ollendorf, Amy L., 1994, New Paleoecological Data Pertaining to the Late Holocene in the American Bottom, USA. *Program and Abstracts of the 13th Biennial Meeting of the American Quaternary Association*, University of Minnesota, Minneapolis, p. 236.

Ollendorf, Amy L., 1993, Toward a Classification Scheme of Sedge (Cyperaceae) Phytoliths, In G. Rapp, Jr. and S.C. Mulholland, eds., *Phytolith Systematics: Emerging Issues.* Plenum Press, p. 91-111.

Mulholland, Susan C., Rapp, George Jr., Ollendorf, Amy L., and Regal, R., 1990, Variation in Phytolith Assemblages within a Population of Corn (cv. Mandan Yellow Flour), *Canadian Journal of Botany* 68:1638-1645.

Ollendorf, Amy L., Mulholland, Susan C., and Rapp, George Jr., 1988, Phytolith Analysis as a Means of Plant Identification: *Arundo donax* and *Phragmites communis*. *Annals of Botany* 61:209-214.

Mulholland, Susan C., Rapp, George Jr., and Ollendorf, Amy L., 1988, Variation in Corn Phytolith Assemblages. *Canadian Journal of Botany* 66:2001-2008.

Ollendorf, Amy L., 1987, Archaeological Implications of a Phytolith Study at Tel Miqne (Ekron), Israel. *Journal of Field Archaeology* 14:453-463.

Ollendorf, Amy L., Mulholland, Susan C., and Rapp, George Jr., 1987, Phytoliths from Some Israeli Sedges. *Israel Journal of Botany* 36:125-132.

Ollendorf, Amy L., Mulholland, Susan C., and Rapp, George Jr., 1987, A New Apparatus for the Digestion of Plants in Phytolith Analysis. *Phytolitharien Newsletter* 5(1):13-16.

Selected Publications (continued)

Ollendorf, Amy L., 1986, Tel Miqne, Israel - Phytoliths from Philistine Levels. *Old World Archaeology Newsletter* 10(2):16.

Selected Presentations

Ollendorf, Amy L., 2000, "Pollen Analysis." Assisted Dr. Edward Cushing (Univ. of MN) by helping train health professionals during weekend seminar sponsored by Multidata Corporation. **Invited.**

Ollendorf, Amy L., 1999, "Pollen Analysis." Assisted Dr. Edward Cushing (Univ. of MN) by helping train health professionals during weekend seminar sponsored by Multidata Corporation. **Invited.**

Ollendorf, Amy L., 1997, "Sneezing, Wheezing, and the Study of Fossil Pollen: What this Allergenic Material Can Tell Us About the Past." Guest lecture at the *Annual Meeting of the Materials Information Society - Minnesota Chapter of the American Society of Metallurgists International*, Minneapolis, Minnesota. **Invited.**

Ollendorf, Amy L., 1997, "Paleoecological Research at Cahokia." Guest lecture for *Minnesota Archaeology Week and Hamline University Anthropology Club*, St. Paul, Minnesota. **Invited.**

Ollendorf, Amy L., 1994, "New Paleoecological Data Pertaining to the Late Holocene in the American Bottom, USA." *Program and Abstracts of the 13th Biennial Meeting of the American Quaternary Association*, University of Minnesota, Minneapolis, p. 236.

Ollendorf, Amy L., 1993, "Paleoecology and Culture Change in the American Bottom, USA." *58th Annual Meeting of the Society for American Archaeology*, St. Louis, Missouri.

Ollendorf, Amy L., 1993, "Recent Paleoecological Doctoral Research in the American Bottom." Guest lecture in the *Illinois State Museum Lunchtime Lecture Series*, Springfield, Illinois. **Invited.**

Ollendorf, Amy L., 1991, "The Decline of the Mississippian Occupation of Cahokia: An Interdisciplinary Investigation of Landscape Changes in the American Bottom (USA)." *24th Annual Chacmool Conference*, University of Calgary, Alberta, Canada.

Ollendorf, Amy L. and Wright, H.E. Jr., 1989, "Landscape Changes Associated with Urbanization in Temperate Europe." *1st Joint Archaeological Congress*, Baltimore, Maryland. **Invited.**

Ollendorf, Amy L., 1988, "Comparison of Sedge Phytoliths from Widely Separated Geographic Areas, With an Emphasis on Israel." *3rd Annual Phytolith Workshop*, University of Missouri-Columbia.

Ollendorf, Amy L., 1986, "Phytoliths from Philistine Occupation Surfaces at Tel Miqne (Ekron), Israel." *51st Annual Meeting of the Society for American Archaeology*, New Orleans, Louisiana.

SCOTT ROHLF

Associate Paleontologist

Areas of Expertise

- Geology
- Paleontology
- Paleontological fieldwork/supervision
- Fossil preparation
- Small-fraction fossil sampling
- Environmental Science

Years of Experience

- 10

Education

M.S., Earth Science, University of California, Santa Cruz, 2011

B.S., Environmental Geology, University of California, Santa Cruz, 2009

Other Paleontological Research

M.A. thesis: *Using Earth System Model GEOCLIM-LPJ to Establish Past Temperatures at Vertebrate Localities in the Paleobiology Database*
Advisor: Paul Koch.

Registrations/Certifications

- Type II Wildland Firefighter
  - L-180, S-130, S-190 Certificates

Professional Experience

2017–	Associate Paleontologist, Applied EarthWorks, Inc., San Luis Obispo, California.
2014–	Adjunct Faculty, Santa Barbara City College, California.
2016	Environmental Services Intern, California State Parks, Santa Cruz District, California.
2012–2014	Staff Paleontologist, Applied EarthWorks, Inc., San Luis Obispo, California.
2009–2011	Teaching Assistant, University of California, Santa Cruz.
2009	Paleontologist, Bryce Canyon National Park, Utah.
2007	Paleontologist, John Day Fossil Beds National Monument, Oregon.

Technical Qualifications

Mr. Rohlf has over 10 years of experience as a paleontologist. He has successfully completed numerous paleontological inventory and monitoring projects in California, Oregon, and Utah. His paleontological experience was gained through graduate studies, positions with the National Park Service, and as Applied EarthWorks, Inc. staff. Mr. Rohlf is experienced in conducting fossil prospecting and collection, including specimen identification and preparation for curation, site erosional surveys, background and literature research, paleontological monitoring, and field-worker supervision. His report writing experience, includes paleontological identification reports, paleontological technical memoranda, and monitoring plans. His field and lab experience are supplemented by his instruction and mentorship of undergraduate students as an adjunct faculty member in the Earth and Planetary Sciences Department at Santa Barbara City College. Mr. Rohlf's skills are applicable to a wide range of paleontological work assignments, including those around construction equipment.

Paleontological Teaching Experience

Santa Barbara City College. Adjunct Faculty (2014–present). Provide instruction and mentorship to undergraduate students. Responsible for the following courses: Environmental Geology, Dynamic Earth, and Physical Geography. Develop lecture and laboratory course material and examinations following campus approved outlines. Lead field trips to areas of local geologic and geographic interest relevant to course material.

Selected Project Experience

Athos Renewable Energy Project, Riverside County, California. Staff Paleontologist (2018). Completed Paleontological Survey Plan and fossil identification surface survey of private lands. Also completed quality control/assurance on the Paleontological Identification Report submitted to the County (CEQA compliance). Client: IP Athos, LLC and Aspen Environmental Group.

Blythe Airport Fence, Blythe, Riverside County, California. Staff Paleontologist (2018). Completed quality control/assurance on paleontological technical memorandum. Client: Mead & Hunt for Caltrans.

Talavera Pipeline Replacement, City of Indio, Riverside County, California. Staff Paleontologist (2018). Completed letter request for records search and prepared draft paleontological technical memorandum. Client: Albert A. Webb Associates for Coachella Valley Water District.

Prologis Trailer Park Expansion Project near the City of Redlands, San Bernardino County, California. Staff Paleontologist (2018). Prepared draft paleontological technical memorandum. Client: Albert A. Webb Associates.

Crossroads North Storm Drain Facilities Improvement Project, Riverside County, California. Staff Paleontologist (2018). Prepared draft paleontological technical memorandum. Client: Albert A. Webb Associates.

Bloomington Commerce Center Project, Bloomington, San Bernardino County, California. Staff Paleontologist (2018). Completed letter request for records search and preparation of draft paleontological technical memorandum. Client: Howard Industrial Partners.

Ten West Link Transmission Line Project, Riverside County, California, to Maricopa County, Arizona. Staff Paleontologist (2017–present). Completed letter requests for records searches and prepared draft and final paleontological identification report for 114-mile-long preferred alignment corridor and alternatives. Client: DCR Transmission, LLC.

Madera Travel Center at Avenue 17 and Highway 99, Madera County, California. Staff Paleontologist (2017–present). Completed letter request for records search and wrote draft Paleontology Monitoring Plan. Client: Love's Travel Stops Corporate Office.

Sixth Street Park, Arts, River & Connectivity Improvements, Los Angeles, California. Staff Paleontologist (2017–present). Completed letter request for records search and writing draft paleontological technical memorandum. Client: GPA Consulting for City of Los Angeles.

Selected Project Experience (continued)

Ethanac and Nichols Road Corridor Project, Riverside County, California. Staff Paleontologist (2017). Prepared paleontology section for Preliminary Environmental Analysis Report (PEAR). Client: Michael Baker International for Caltrans.

Topaz Solar Farm, San Luis Obispo County, California. Staff Paleontologist (2012–2014). Directed and supervised on-site monitoring for paleontological resources. Conducted fossil specimen salvages. Developed and implemented matrix sampling, washing, and picking procedures for small-fraction fossils. Conducted specimen preparation, identification, and cataloging. Represented Applied EarthWorks, Inc. during site-wide coordination meetings. Authored daily, site-wide paleontological monitoring reports. Client: First Solar, Inc.

Bryce Canyon National Park. Paleontologist (2009). Conducted fossil prospecting surveys and collections for vertebrate and invertebrate macrofossils. Collected and conducted matrix sampling, washing, and picking for vertebrate, invertebrate, and botanical small-fraction fossils. Assessed and composed reports on erosional and possible poaching effects on known fossil localities.

John Day Fossil Beds National Monument. Paleontologist (2007). Conducted fossil prospecting surveys and collections for macrofossils, with an emphasis on vertebrates and botanical fossils. Created plaster jackets for removal of large vertebrate specimens. Prepared specimens in laboratory with manual and mechanical, power assisted tools (air-scribes and sand-blasters).

CHRISTOPHER J. SHEA

Staff Paleontologist

Years of Experience

4

Education

M.S., Geology—Quaternary Stratigraphy, University of Minnesota, Duluth, 2017

B.S., Geology, Northern Illinois University, DeKalb, 2015

Coursework: Paleontology, Paleogeography, Paleoecology, Paleoclimatology

Other Paleontological Research

M.S. thesis: *A multiple proxy lake sediment record of Middle to Late Holocene climate change in southwestern British Columbia, Canada.* Advisor: Byron Steinman.

B.S. thesis: *Late Holocene oxygen isotope record of solar variability from Lake Mirabel, Guatemala.* Advisor: Nathan Stansell.

Northern Illinois Geological Field School, 2014 (6 weeks). Surveyed and mapped fossiliferous geologic units and collected fossil specimens in the Big Horn Mountains in Wyoming and the Black Hills in South Dakota.

Registrations/Certifications

- OSHA 40-hour HAZWOPER (2017)
- Worker Environmental Awareness Program (2018)
- Valley Fever Awareness and Prevention Training (2018)
- Incidental Take Permit (2018)
- Emergency Response Training (2018)

Professional Experience

2018–	Staff Paleontologist, Applied EarthWorks, Inc., Pasadena, California
2015–2017	Research Assistant, University of Minnesota, Duluth, Minnesota
2014–2015	Lab Manager Assistant and Manager of Department of Geology Fossil Collection, Northern Illinois University, DeKalb, Illinois

Technical Qualifications

Mr. Shea is a Staff Paleontologist with a background in geology, paleontology, stratigraphy, and paleolimnology. He received his bachelor's degree in geology from Northern Illinois University, DeKalb, taking multiple paleontology-related courses. His master's research at the University of Minnesota-Duluth involved field work in the fossiliferous Cache Creek Limestone with a focus on sedimentology and Quaternary paleoenvironmental reconstruction. As a Staff Paleontologist at Applied EarthWorks, he provides fossil identification, bulk-sediment sampling, stratigraphic analysis and other geological data collection, and prepares reports and proposals. As a Geologist and Paleontologist, Mr. Shea has cataloged and characterized specimens from the large collections of invertebrate and vertebrate fossils curated at Northern Illinois University. Additionally, he has extensive background in lab management and analyses including Scanning Electron Microscopy (SEM), X-Ray Fluorescence (XRF), X-Ray diffraction (XRD), and more. Mr. Shea has also conducted field surveys, taught geology lab courses, and collected lake sediment from fossiliferous units in multiple countries, including the Coban Formation in Guatemala and the Cache Creek Formation in Canada.

Selected California Experience

California Flats Solar Project, Monterey County, California. Staff Paleontologist (2018). Completing full-time paleontological monitoring on-site during construction in the paleontologically sensitive Pismo Formation as well as the paleontologically sensitive Temblor, Monterey, and Etchegoin formations. Completed as part of CEQA compliance. Client: First Solar.

Ten West Link Transmission Line Project, Riverside County, California, Maricopa and Yuma Counties, Arizona. Staff Paleontologist (2018) Worked as a team member under the guidance of the Project Paleontologist to prepare a Paleontological Identification Report (PIR) for the 114-mile-long study area, which included the Preferred Route and alternatives. Completed for BLM approval for NEPA compliance. Client: DCR Transmission LLC.

Professional Affiliations

- Geological Society of America

Other Paleontological Experience

Research Assistant, University of Minnesota, Duluth, Minnesota (2015–2017). Conducted field work in the fossiliferous Cache Creek Limestone and lab research funded by the National Science Foundation to understand drought variability in the Pacific Northwest while managing the Sedimentology Laboratory and teaching introductory geology laboratory courses.

Lab Manager Assistant and Manger of Department of Geology Fossil Collection, Northern Illinois University, DeKalb (2014–2015). Inventoried and updated laboratories and fossil collections.

Undergraduate Researcher, Northern Illinois University, DeKalb (2014–2015). Under an Undergraduate Research Assistantship, learned basic research techniques, lab work, and apply them to complete a senior thesis project.

Selected California Experience (continued)

Athos Renewable Energy Project, Riverside County, California. Staff Paleontologist (2018). Worked as a team member under the guidance of the Project Paleontologist to request and review museum fossil records searches, and to prepare a Survey Work Plan for 700 acres of land. Completed for California Environmental Quality Act (CEQA) compliance. Client: Aspen Environmental Group.

Ponte Vista, Los Angeles County, California. Staff Paleontologist **(**2018). Under supervision of the Project Paleontologist, completed on-site monitoring during ground-disturbing construction activities within paleontologically sensitive units (Palos Verdes Sands and San Pedro Formation), took pictures, and maintained a daily activity log. Completed for CEQA compliance. Client: iStar Financial.

Madera Travel Center, Riverside County, California. Staff Paleontologist **(**2018). Worked as a team member under the guidance of the Project Paleontologist to prepare a Paleontological Resource Mitigation Plan (PRMP), which included the mapping of paleontologically sensitive geologic units underlying the project area and the development of monitoring plans. Completed for CEQA compliance. Client: Alphabiota Environmental Consulting.

Fieldwork

California Flats, Monterey County, California (2018)

- Monitored on site during ground-disturbing construction activities with the paleontologically sensitive Monterey Formation.
- Received worker environmental and valley fever awareness safety training.

Ponte Vista, Los Angeles County, California (2018)

- Monitored on site during ground-disturbing construction activities within paleontologically sensitive units (Palos Verdes Sands, San Pedro Formation), took pictures, and maintained a daily activity log.

Northern Illinois University Field School (2014, 6 weeks)

- Mapped several square kilometers in the Big Horn Mountains, WY and the Black Hills, SD using topographic maps, a Brunton compass, and GPS.
- Surveyed and measured outcrops to develop detailed stratigraphic columns, marking important features such as crossbedding, fossils, and distinct depositional and erosional features.
- Recovered and described fossils in the field.
- Identified geological formations by index fossils, such as belemnites of the Sundance Formation and fish scales in the Mowry Shale.

Fieldwork (continued)

British Columbia, Alberta, and Washington (2015 and 2016, summers—each 2–3 weeks)

- Collected over 80m of sediment from the fossiliferous Cache Creek Formation using hand-driven piston equipment deployed from inflatable rafts.
- Hiked up to several kilometers with 50lbs+ packed bags using GPS and topographic maps as a guide.
- Conducted field surveys using well level loggers, gathered water samples, and took detailed notes.

Guatemala (July 2015, February 2016, January 2017—each 2 weeks)

- Cored four lakes in lesser-studied rural countryside within the fossiliferous Coban Formation, organized outreach with locals, and collaborated with the University of San Carlos.
- Organized and packed field equipment in order to be shipped on a plane and through customs.
- Built and installed a weather station to monitor on site parameters including temperature, humidity, and rain.

CHRISTOPHER SHI

Associate Paleontologist

Education

Ph.D., Geology (studies), 2012–2016

M.S., Geology, University of California, Los Angeles, 2011

B.S., Biology, University of Minnesota, Minneapolis, 2006

Professional Experience

2018–present, Associate Paleontologist, Applied EarthWorks, Inc., Pasadena, California

2016–2018, Paleontological Field Technician, Applied EarthWorks, Inc., Pasadena, California

2017–2018, Paleontology Field Technician, Rincon Consultants, Los Angeles, California

2008–2009, Instructor, Mad Science of Minnesota, St. Paul

Other Paleontological Research

Ph.D., Geology Studies.
Proposed dissertation topic: *Establishing a link between the trend in changing seawater chemistry and the evolution of the first animals that built shells and skeletons from calcium carbonate during the Cambrian explosion*. Advisor: Bruce N. Runnegar.

M.S. Thesis.
Demonstrating the application of confocal laser scanning microscopy in the characterization of a fossil fern from the Eocene. Advisor: J. William Schopf.

Summary of Qualifications

Mr. Shi is a paleontologist and geologist with more than 10 years of experience in paleontology, evolutionary biology, mineralogy, and sedimentary geology. He has a background in plant and invertebrate taphonomy, and his master's thesis focused on the characterization of fossilized Eocene ferns using a novel three-dimensional imaging technique. Additionally, Mr. Shi spent several years working toward a Ph.D. in geology with research focused on the link between the trend in changing seawater chemistry and the evolution of the first animals to develop shells from calcium carbonate during the Cambrian explosion. As an Associate Paleontologist with Applied EarthWorks, Mr. Shi conducts records searches and background research, and authors paleontology monitoring plans as well as paleontological inventory and evaluation reports. He has served as lead monitor on a number of construction monitoring projects for transportation, land development, water, and power generation projects. In the field, Mr. Shi's responsibilities include fossil identification, bulk sediment sampling, stratigraphic analysis, and geological data collection.

Selected Project Experience

Blythe Airport Perimeter Fence Project, Riverside County, California. Associate Paleontologist (2018). Will complete paleontological technical memorandum for federal (NEPA) and CEQA compliance. Client: Mead & Hunt for Caltrans.

Madison Street Improvements Project, City of Murrieta, Riverside County, California. Associate Paleontologist (2018). Will supervise fossil identification survey. Also will complete paleontological technical memorandum for the Warm Springs Creek Bridge and paleontological resources technical report for CEQA compliance. Client: Kleinfelder for City of Murrieta.

De Anza Sewer Force Main Project, City of San Jacinto, Riverside County, California. Associate Paleontologist (2018). Created informational brochure for construction-worker sensitivity training for Worker Environmental Awareness Program (WEAP). Also will coordinate or complete spot-check monitoring. If fossils are found, then also will develop and implement a paleontological treatment plan and will complete a paleontological letter report. Completing for CEQA compliance. Client: HELIX for Eastern Municipal Water District.

Ten West Link Transmission Project, Riverside County, California, Yuma and Maricopa Counties, Arizona. Associate Paleontologist (2018). Responsible for research and co-authorship of paleontological identification report for the 114-mile-long preferred alignment corridor and alternatives. Completed for the BLM for NEPA compliance. Client: DCR Transmission, LLC.

Selected Project Experience (continued)

Athos Renewable Energy Project, Riverside County, California. Associate Paleontologist (2018). Coordinated fossil identification surface survey of private lands (CEQA compliance). Will coordinate or complete fossil identification surface survey of proposed generation tie-in lines ("gen-ties") on BLM lands (federal compliance). Also will observe geotechnical test trenching for presence/absence of subsurface paleontological resources and will co-author Paleontological Resources Investigation Report to the County and Report of Findings to BLM. Client: IP Athos, LLC and Aspen Environmental Group.

I-215 University Parkway Interchange Improvement Project, San Bernardino County, California. Associate Paleontologist (2018). Updated PIR following design changes for CEQA compliance. Client: HDR for Caltrans.

I-10 Monroe Interchange Project, Riverside County, California. Associate Paleontologist (2018). Completing museum records and online research and coordinated fossil identification field survey. Will complete draft PIR for CEQA compliance. Also Client: Michael Baker for Caltrans.

Talavera Pipeline Replacement Project, City of Indio, Riverside County, California. Associate Paleontologist (2018). Responsible for review of technical memorandum for the 5.7-mile-long pipeline replacement. Client: Albert A. Webb Associates for Coachella Valley Water District.

Sixth Street Park, Arts, River & Connectivity Improvements Project, City of Los Angeles, Los Angeles County, California. Associate Paleontologist (2018). Responsible for review of technical memorandum for the construction of public spaces spanning 12 acres. Client: GPA Consulting for City of Los Angeles.

Vista Pointe Project, Los Angeles County, California. Lead Paleontology Monitor (2018). Responsible for construction monitoring, fossil identification, sample collection, stratigraphic analysis, and geologic data collection for a 1.5-acre-lot cleared for the construction of residential units. Also completing preparation of fossils for museum curation. Completed for CEQA compliance. Client: iStar Financial and Harridge Development Group.

Sampson Road Improvements Project, San Pedro, California. Lead Paleontology Monitor (2017). Managed Worker's Awareness Training for all construction crews on site. Responsible for construction monitoring, fossil identification, sample collection, stratigraphic analysis, and geologic data collection for an urban and infrastructure development project spanning 400 acres. Client: Jones & Stokes.

The Grove Project, Scotts Valley, California. Lead Paleontology Monitor (2017). Responsible for construction monitoring, fossil identification, stratigraphic analysis, and geologic data collection for a 4.32-acre-lot cleared for the construction of residential units. Client: City Ventures.

Selected Project Experience (continued)

Crowder Canyon (SR 138) Paleontological Mitigation Project, San Bernardino County, California. Paleontological Field Technician (2017). Responsible for construction monitoring, fossil identification, stratigraphic analysis, and geologic data collection for the 1.7-mile-long state route realignment. Client: Caltrans, District 8.

Malibu Wastewater Treatment Facility, City of Malibu, Los Angeles County, California. Paleontological Field Technician (2017). Responsible for construction monitoring, fossil identification, stratigraphic analysis, and geologic data collection for a 4.8-acre-lot cleared for the installation of the facility. Client: Myers-Banicki for City of Malibu.

Highpark (Ponte Vista) Residential Development, San Pedro, California. Paleontological Field Technician (2017). Responsible for construction monitoring, fossil identification, bulk sediment sampling, stratigraphic analysis, and geological data collection for a 61.5-acre-lot cleared for the construction of residential units. Client: iStar Financial.

Relevant Publications

Shi, C. S. 2013. Use of Confocal Laser Scanning Microscopy for Studies in Paleobotany: Documentation of Stem Anatomy of the Eocene Fern *Dennstaedtiopsis aerenchymata* (Dennstaedtiaceae). LAP LAMBERT Academic Publishing: 88 p.

Shi, C. S., J. W. Schopf, A. B. Kudryavtsev. 2013. Characterization of the stem anatomy of the Eocene fern *Dennstaedtiopsis aerenchymata* (Dennstaedtiaceae) by use of confocal laser scanning microscopy. American Journal of Botany, vol. 100, no. 8: p. 1626–1640.

Zheng, J., W. Zhuang, N. Yian, G. Kou, H. Peng, C. McNally, D. Erichsen, A. Cheloha, S. Herek, C. Shi, and Y. Shi. 2004. Classification of HIV-1 mediated neuronal dendritic and synaptic damage using Multiple Criteria Linear Programming. Neuroinformatics, vol. 2, no. 3: p. 303–326.

Appendix F

Geotechnical Evaluation

Geotechnical Engineering Report

Athos Solar Facility

Desert Center, California

June 29, 2018

Terracon Project No. 60185052

Prepared for:

Intersect Power

San Francisco, California

Prepared by:

Terracon Consultants, Inc.

Tustin, California

Draft

June 29, 2018

Intersect Power
2 Embarcadero Center, 7th Floor
San Francisco, CA 94118

Attn: Mr. Seth Israel, Partner
M: 415-312-9911
E: seth@intersectpower.com

RE: Geotechnical Engineering Report
Athos Solar Facility
Desert Center, Riverside County, California
Terracon Project No. 60185052

Dear Mr. Israel,

Terracon Consultants, Inc. (Terracon) has completed the geotechnical engineering services for the above referenced project. These services were performed in general accordance with our proposal, and discussions with the client. This report provides a description of subsurface exploration, in-situ soil resistivity testing, and laboratory testing. Based on field and laboratory test results, this report provides geotechnical engineering recommendations concerning earthwork and the design and construction of the proposed structures and site development elements for this project.

We appreciate the opportunity to be of service to you on this project. If you have any questions concerning this report, or if we may be of further service, please contact us.

Sincerely,

Terracon Consultants, Inc.

Joshua R. Morgan P.E.
Project Engineer

F. Fred Buhamdan, P.E.
Principal

Draft

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GEOTECHNICAL ENGINEERING REPORT
ATHOS SOLAR FACILITY
DESERT CENTER, CALIFORNIA

Terracon Project No. 60185052

June 29, 2018

1.0 INTRODUCTION

This report presents the results of our geotechnical engineering services performed for the proposed Athos Solar Facility Project. The proposed facility is comprised of multiple segregated abnormally shaped parcels located north and east of Desert Center, Riverside County, California. The Site Location Plan (Exhibit A-1) is included in Appendix A of this report. The purpose of these services is to provide information and geotechnical engineering recommendations relative to:

- subsurface soil conditions
- earthwork
- driven pile design and construction
- drilled shaft design and construction
- lateral earth pressures
- groundwater conditions
- pavement/roadway design and construction
- shallow foundation design and construction

Terracon's geotechnical engineering scope of work for this project included the advancement of thirty-seven (37) borings to approximate depths ranging between 21½ and 51½ feet below the ground surface (bgs) and forty (40) test pits to approximate depths of 10 feet bgs. In addition to the subsurface exploration, forty-five (45) field electrical resistivity surveys were performed. Furthermore, in-situ pile tests were performed on eighty (80) test piles installed at forty (40) locations.

Logs of the borings and test pits along with "Boring and Test Location Diagrams" (Exhibits A-2 through A-6) are included in Appendix A of this report. The results of the laboratory testing performed on soil samples obtained from the site during the field exploration are included in Appendix B of this report. Descriptions of the field exploration and laboratory testing are included in their respective appendices.

2.0 PROJECT INFORMATION

2.1 Project Description

ITEM	DESCRIPTION
Site layout	Refer to the Site Plan and Boring and Test Location Diagrams (Exhibit A-1 and A-2 through A-6 in Appendix A).

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ITEM	DESCRIPTION
Proposed Structures	It is our understanding that the Client intends to develop a photovoltaic (PV) electric power plant on the site. Ultimately, the power plant will consist of solar panels installed on steel structures and various other equipment and appurtenances associated with the power plant. The project also includes a total of five (5) substations and multiple transmission lines interconnecting the lot clusters and connecting to the Red Bluff substation located south of the I-10 freeway. The substation and transmission line development will include transformers, overhead transmission towers, bus supports, and self-contained support structures. Transmission line structures are not included in this phase of the project.
Maximum Loads (assumed)	Structural loads were not provided, but have been estimated based on our experience on projects: ■ PV Module Downward: 2 - 4 kips; ■ PV Module Uplift: 1 - 3 kips; and ■ PV Module Lateral: 2 - 4 kips. ■ Transformers: 400 - 800 psf contact pressure
Proposed grading	We anticipate that the final grades of the solar array field will generally follow the existing site grades with minimal grading.
Roads	We anticipate that unpaved and/or aggregate source roads are planned onsite.

2.2 Site Location and Description

ITEM	DESCRIPTION
Location	The project is segmented into eight (8) disconnected clusters of lots. The developable area of the project site will encompass a gross area of approximately 3,216 acres. The project site is located between 2.4 and 9 miles northeast and east of Desert Center off Desert Center Rice Road in Riverside County, California.
Existing site features	The project site is mostly undeveloped; however, there are several unpaved roads across the area. Some parcels exhibit evidence of past and current agricultural operations. Two of the eastern parcels includes orchards, farm-type structures, and water basins. One of the southwestern parcels also has old farm buildings and evidence of former agricultural orchards and crops.
Current ground cover	The majority of the project site is undeveloped desert land with some evidence of current and former agricultural operations on several site parcels.
Existing topography	The site is relatively level with elevations ranging from 520 feet to 680 feet above mean sea level. The slopes at the site generally descend from southwest to northeast, with the exception of the northernmost parcel which slopes from the northeast to the southwest. The sites drain to a large wash which traverses this portion of the valley draining from northwest to southeast.

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3.0 SUBSURFACE CONDITIONS

3.1 Site Geology

The site is situated within the Mojave Desert Geomorphic Province in Southern California. Geologic structures within this Province trend mostly northwest, in contrast to the prevailing east-west trend in the neighboring Transverse Ranges Geomorphic Province to the west. The Mojave Desert Province extends into lower California, and is bounded by the Garlock Fault to the north, the San Andreas Fault to the west and Nevada and Arizona borders to the east. [1, 2] Surficial geologic units in the site consist mainly of Alluvium deposits, portion of the northern and easternmost parcels of the project site are mapped for surficial deposits of Dune sands. Within the southwestern most portions of the site, Pleistocene non-marine deposits are mapped.[3]

3.2 Typical Subsurface Profile

Specific conditions encountered at each boring location are indicated on the individual boring logs and test pit logs. Stratification boundaries on the boring and test pit logs represent the approximate location of changes in soil types; in-situ, the transition between materials may be gradual. Details for each of the borings can be found on the boring logs included in Appendix A of this report. Based on the results of the borings and test pits, the subsurface materials encountered generally consisted of loose to very dense sand with variable amounts of silt, clay, gravel, and cobbles to the maximum depth of exploration of 51½ feet. Within borings B-35 and B-36, located within the outline of proposed substations 3 and 4, clayey soils were encountered at approximate depths ranging from 41 to 48 feet.

Laboratory tests were conducted on selected soil samples and the test results are presented in Appendix B. Atterberg limits test results indicated on-site sandy soils exhibit non-plastic characteristics. A consolidation test was performed on materials encountered at depths of 2.5 feet bgs within the outline of one of the proposed substations and indicates the soils have a moderate collapse potential under confining pressures of 2,000 psf. However, based on the in-situ dry density, it is likely that these samples were disturbed prior to testing. A direct shear test was performed on a sample obtained at a depth of 5 feet bgs and indicates on-site sandy soils have an effective friction angle of 32° with a corresponding cohesion of 72 psf. Moisture Density Relationship tests utilizing the modified proctor method (ASTM D1557) were performed on near surface samples at select locations across the site. Results from these tests indicated on-site soils have a maximum dry density ranging between 123.6 to 134.5 pcf with an optimum moisture content ranging between 6.3% and 7.9%. California Bearing Ratio tests are being

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[1] Harden, D. R., "*California Geology, Second Edition*," Pearson Prentice Hall, 2004.

[2] Norris, R. M. and Webb, R. W., *"Geology of California, Second Edition,"* John Wiley & Sons, Inc., 1990.

[3] *State of California – Division of Mines and Geology, Geologic Map of California: Salton Sea Sheet, Charles W. Jennings, Compiled in 1967.*

performed on near surface samples at select locations across the site. Results from the CBR tests will be included in the final report. Laboratory test results are provided in Appendix B.

3.3 Field Soil Resistivity Test Results

Field measurements of soil resistivity were performed in general accordance with ASTM Test Method G57, and IEEE Standard 81, using the Wenner Four-Electrode Method. Two perpendicular arrays were performed for each test. Forty (40) tests were performed within the solar array sites, and five (5) tests were performed at the substation locations as shown on Exhibits A-3 through A-6. The soil resistivity measurements were performed using a 4-Point Ground Resistance Tester. The Wenner arrangement (equal electrode spacing) was used with the "a" spacings of 2, 4, 6, and 10 feet within the solar arrays and 2, 4, 6, 10, 20, 30, 50, 100, and 200 feet at the substation locations. The "a" spacing is generally considered to be the depth of influence of the test. The soil resistivity measurements is presented in Appendix E of this report.

3.4 Thermal Resistivity Test Results

Samples were collected for laboratory thermal resistivity testing at a total of twenty-five (25) locations. Twenty samples were obtained within the solar arrays and one sample was obtained from each of the five substations. The locations are shown on Exhibit A-3 through A-6. The samples were tested for laboratory thermal resistivity at 90% of the maximum dry density (as determined per ASTM D1557).

We recommend that the thermal resistivity results be discussed with an electrical design team to determine the influence on cable type and backfill materials. Terracon subcontracted Geotherm USA to perform these tests, and their report documenting the thermal resistivity test results is presented in Appendix B.

3.5 Groundwater

Groundwater was not observed while drilling the test borings or excavating the test pits. These observations represent groundwater conditions at the time of the field exploration and may not be indicative of other times, or at other locations.

Based on a monitoring well located approximately 1-mile north of Desert Center Airport, identified by the California Department of Water Resources, recent groundwater levels are approximately 70 feet bgs[4].

[4] California Department of Water Resources, State Well No. 04S16E32M001S, measurements taken between 1961 and 1985 (www.water.ca.gov/waterdatalibrary)

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3.6 Seismic Considerations

3.6.1 Seismic Site Class and Design Parameters

DESCRIPTION	Substation 1 (Boring B-33)	Substation 2 (Boring B-34)	Substation 3 / 4 (Borings B-35/B-36)	Substation 5 (Boring B-37)
2016 California Building Code Site Classification (CBC) [1]	D	D	C	D
Site Latitude (Degrees)	N 33.7803	N 33.7441	N 33.7152	N 33.7220
Site Longitude (Degrees)	W 115.3429	W 115.3445	W 115.3177	W 115.2477
S_s Spectral Acceleration for a Short Period [2]	0.739g	0.755g	0.743g	0.683g
S_1 Spectral Acceleration for a 1-Second Period [2]	0.308g	0.314g	0.312g	0.295g
F_a Site Coefficient for a Short Period [2]	1.209	1.198	1.103	1.253
F_v Site Coefficient for a 1-Second Period [2]	1.783	1.772	1.488	1.810

[1] The 2016 California Building Code (CBC) requires a site soil profile determination extending to a depth of 100 feet for seismic site classification. The current scope does not include the required 100 foot soil profile determination. Borings were extended to a maximum depth of 51½ feet, and this seismic site class definition considers that similar or denser soils continue below the maximum depth of the subsurface exploration. Additional exploration to deeper depths would be required to confirm the conditions below the current depth of exploration.

[2] To be verified by the structural engineer.

3.6.2 Faulting and Estimated Ground Motions

The project site is located in Southern California, which is a seismically active area. The type and magnitude of seismic hazards affecting the site are dependent on the distance to causative faults, the intensity, and the magnitude of the seismic event. The distance of the fault zones and the associated maximum credible earthquake that can be produced by nearby seismic events, was calculated using the USGS Unified Hazard Tool with the Dynamic: Conterminous U.S. 2014 Edition input, Return period of 2,475 years for each substation. The faulting and peak ground acceleration for each substation location is tabulated below:

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Parameter	Substation 1 (Boring B-33)	Substation 2 (Boring B-34)	Substation 3 / 4 (Borings B-35/B-36)	Substation 5 (Boring B-37)
2016 California Building Code Site Classification (CBC)	D	D	C	D
Nearest Fault [a]	San Andreas (Coachella)			
Mean Magnitude [b]	6.64	6.7	6.69	6.72
Mean Distance (km)[b]	30.17	32.07	29.76	35.46
Peak Ground Acceleration (PGA_m)[c]	0.338g	0.341g	0.301g	0.318g

[a] This fault is considered to have the most significant effect at the site from a design standpoint based on deaggregations.
[b] Based on USGS deaggregations.
[c] Based on USGS U.S. Seismic Design Maps using the 2010 ASCE 7 (March 2013 errata).

The sites are not located within an Alquist-Priolo Earthquake Fault Zone based on our review of the State Fault Hazard Maps.[5]

3.6.3 Liquefaction Potential

Liquefaction is a mode of ground failure that results from the generation of high pore water pressures during earthquake ground shaking, causing loss of shear strength. Liquefaction is typically a hazard where loose sandy soils exist below groundwater. The California Geologic Survey (CGS) has designated certain areas within Southern California as potential liquefaction hazard zones. These are areas considered at a risk of liquefaction-related ground failure during a seismic event, based upon mapped surficial deposits and the presence of a relatively shallow water table. The project site is not located within a liquefaction hazard zone as mapped by the CGS. Based on the County of Riverside GIS website, the project site is located within a low to moderate liquefaction hazard potential zone. However, based on the subsurface conditions and depth to groundwater, we conclude that the potential for liquefaction at the site is considered low. Other geologic hazards related to liquefaction, such as lateral spreading, are therefore also considered low.

3.6.4 Dry Seismic Settlement

A seismic settlement analysis for the site was performed in general accordance with the DMG Special Publication 117. The liquefaction study utilized the software "LiquefyPro" by CivilTech Software. This analysis was based on the soil data from the substation soil borings (B-33

[5] *California Department of Conservation Division of Mines and Geology (CDMG), "Digital Images of Official Maps of Alquist-Priolo Earthquake Fault Zones of California, Southern Region", CDMG Compact Disc 2000-003, 2000.*

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through B-37). A PGA of 0.301g to 0.341g and the mean magnitude of 6.64 to 6.72 for the project site was used. Calculations utilized the depth of groundwater at 70 feet bgs. Settlement analysis used the Tokimatsu M-Correction method. Fines were corrected for liquefaction using the Olson and Stark method.

Seismically induced settlement was calculated from a depth of 0 to 50 feet below the ground surface. Based on the calculation results, total and differential settlement for dry sands is estimated to be less than ¼ inch.

3.7 Corrosion Potential

Results of soluble sulfate testing indicate that ASTM Type I/II portland cement may be used for concrete on and below grade for construction of foundations and other elements onsite. Foundation concrete should be designed for negligible sulfate exposure Class S0 in accordance with the provisions of the ACI Design Manual, Section 318, Chapter 19.

Laboratory test results indicate that on-site soils have resistivity ranging between 873 and 4,559 ohm-centimeters, chloride contents ranging between 27 and 248 mg/kg, Redox Potential ranging between 638 and 732 mV, pH value ranging between 8.51 and 9.34, sulfate contents ranging between 0.01 to 0.02 and negligible concentrations of sulfides. These test results are provided to assist in determining the type and degree of corrosion protection that may be required. The following corrosion ranges are provided to show the general classification of corrosivity of on-site materials. We recommend a corrosion engineer be utilized to assess the corrosion rates or hazards present.

Resistivity (Ohm-cm)	Corrosivity Classification
0 – 500	Severely Corrosive
501 – 2,000	Corrosive
2,001 – 8,000	Moderately Corrosive
8,001 – 32,000	Mildly Corrosive
> 32,000	Progressively Less Corrosive

Chloride (ppm)	Corrosivity Classification
>1,500	Severely Corrosive
300 – 1,500	Corrosive
150 – 300	Moderately Corrosive
100 – 150	Mildly Corrosive
0 – 100	Non-Corrosive

Reference: ACI-318, Building Code Requirements for Reinforced Concrete (American Concrete Institute, 1999)

Sulfate (ppm)	Corrosivity Classification
>15,000	Severely Corrosive
2,000 – 15,000	Corrosive
1,000 – 2,000	Moderately Corrosive
200 – 1,000	Mildly Corrosive
0 – 200	Non-Corrosive

Reference: ACI-318, Building Code Requirements for Reinforced Concrete (American Concrete Institute, 1999)

pH	Corrosivity Classification
< 5.5	Corrosive
5.5 – 6.0	Moderately Corrosive
6.0 – 6.5	Mildly Corrosive
6.5 – 9.0	Non-Corrosive

Reference: M. Romanoff, Underground Corrosion, 1957

Refer to the results of corrosivity analysis attached to this report for the complete results of the various corrosivity testing conducted on the site soils in conjunction with this geotechnical exploration.

3.8 Geologic Hazards

- Slope stability – The site is within a gentle slope area, geologic hazards associated with slope instability may be considered low.

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- Rock fall hazards - The site is within a gentle slope area, rock fall hazards may be considered low.
- Landslide hazards – The site is within a gentle slope area, landslide hazards may be considered low.
- Surface fault rupture - The site is not located within an Alquist-Priolo Special Study Zone or a fault zone based on the County of San Bernardino.
- Fissures - The site is not within an Alquist-Priolo Special Study Zone nor within a liquefaction zone. Therefore, the expectation of fissures occurring at the site is considered low.
- Liquefaction potential – The site is mapped within a low to moderate liquefaction zone by Riverside County. Based on the anticipated depth to groundwater and subsurface conditions encountered on-site, we conclude that the potential for liquefaction at the site is considered low.
- Collapsible and/or expansive soils – the laboratory test results indicate that the materials at a depth of approximately 2½ feet bgs exhibit a moderate collapse potential when saturated under a confining pressure of 2,000 psf. However, based on the in-situ dry density of the sample and the relatively granular nature of the soils, it is our opinion that this sample was slightly disturbed. Onsite soils are not considered expansive due to their non-plastic nature.
- Subsidence –Based on the County of Riverside GIS system, the site is located within an area susceptible to subsidence.
- Ground shaking potential - The site is not located with an Alquist-Priolo Fault Zone. However, with the active faults in the region, the site could be subjected to strong ground shaking that may result from earthquakes on local to distant sources during the life span of the project.
- Seismic Settlement – Based on subsurface conditions and our analysis, we anticipate seismic induced settlement at the site to be considered low.

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Appendix G

Water Supply Assessment

Athos Renewable Energy Project
Water Supply Assessment

Prepared by
Philip Lowe, P.E.

Aspen environmental group

October 2018

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1. Introduction

The objective of this report is to provide a Water Supply Assessment (WSA) pursuant to the requirements of California Senate Bill (SB) 610/221, for the Athos Renewable Energy Project (AREP).

SB 610, passed in 2002, amended the California Water Code to require detailed analysis of water supply availability for certain types of development projects, and to improve the link between information on water supply availability and certain land use decisions made by cities and counties. SB 610 requires detailed information regarding water availability to be provided to the city and county decision-makers prior to approval of specified large development projects. This information is to be included in the administrative record that serves as the evidentiary basis for an approval action by the city or county on such projects. The companion measure to SB 610, SB 221, applies to residential subdivisions, and does not apply to the AREP. Both measures recognize local control and decision making regarding the availability of water for projects and the approval of projects.

2. Project Location and Description

The AREP would be in Riverside County, California approximately 2.5 to 10 miles east and northeast of the unincorporated community of Desert Center and north of Interstate 10. The project is within Riverside East Solar Energy Zone (Riverside East SEZ). The project location is shown in Figure 1. The project layout is shown in Figure 2. All figures are included at the end of the document.

The AREP consists of 65 parcels on private land for the solar facility, and 25 parcels located on BLM-administered and private land for the gen-tie lines. It is located on primarily disturbed lands to minimize ground disturbance and impacts to resources.

The proposed solar facility would generate up to 500 megawatts (MW) of renewable energy using photovoltaic (PV) technology and would include up to 500 MW of integrated energy storage. Construction is anticipated to occur over a 30-month period with construction activities occurring simultaneously. The Project may be phased. The project would cover an area of 3,228 acres and include a solar facility and new 220 kV Gen-tie line.

Water for construction-related dust control and operations would be obtained from several potential sources, including an on-site or off-site groundwater well, or trucked from an offsite water purveyor. During the construction phase, it is anticipated that a total of up to 500 acre-feet would be used for dust suppression (including truck wheel washing) and other purposes during the 30-month construction timeframe. During the operation and maintenance phase water would be required for panel washing and maintenance, and for substation restroom facilities. During operation, the Project would require panel washing up to four times per year resulting in the use of approximately 15 to 40 acre-feet annually (afy) for panel washing and other uses.

3. SB 610 Overview and Applicability

SB 610 requires that a project be supported by a WSA if the project is subject to the California Environmental Quality Act, and would demand an amount of water equivalent to, or greater than, the amount of water required by a 500-dwelling unit project. According to SB 610 Guidelines, one dwelling unit typically consumes 0.3 to 0.5 afy, which would amount to 150 to 250 afy for 500 units. Projects must analyze whether the total projected water supplies determined to be available for the project during normal, single dry, and multiple dry water years during a 20-year projection, will meet the projected water

demand associated with the proposed project, in addition to existing and planned future uses, including agricultural and manufacturing uses. Averaged over the 30-year project lifespan, the AREP would use 52.3 acre feet per year.

Senate Bill 267 (SB 267), signed into law in 2011, amended California's Water Law to revise the definition of "project" specified in SB 610. Under SB 267, wind and solar photovoltaic projects which consume less than 75 afy of water are not considered to be a "project" under SB 610, in which case a WSA would not be required. The Project's average 30-year water use of 52.3 afy (40 afy for operations) would be below this threshold. It is therefore assumed that the AREP operations is exempted from SB 610 by SB 267. However, because the 75 afy threshold would be exceeded during the 30-month construction period, Riverside County has requested preparation of this Water Supply Assessment.

4. Regional Overview and Water Supply Sources

The AREP is located within the Chuckwalla Valley Drainage Basin. All surface water in the western portion of the valley flows to Palen Dry Lake, located approximately 10 miles east of the community of Desert Center. Surface water in the eastern portion of the valley flows to Ford Dry Lake, located approximately 10 miles southeast of the Palen Dry Lake. All the AREP parcels drain to the Palen Dry Lake.

The local climate is arid with high summer temperatures and mild winter temperatures. Average annual precipitation in the project area, based on the gauging station at the nearby Blythe, California, airport, is 3.42 inches (USHCN, 2016). Average summer maximum temperatures are above 100 degrees. Precipitation is seasonal.

Off-site stormwater flows are from a series of desert washes originating from the Coxcomb Mountains, Eagle Mountains, and Chuckwalla Mountains. Major named drainage courses affecting the project include the Pinto Wash, which flows southeastward into the Chuckwalla Valley from between the Eagle and Coxcomb Mountains, the Big Wash, which flows eastward into the Chuckwalla Valley from the Eagle Mountains, and the Corn Springs Wash, which flows northeastward into the Chuckwalla Valley from the Chuckwalla Mountains. Numerous other unnamed watercourses drain into the Chuckwalla Valley from these same mountain ranges. Due to the aridity of the area, there are no perennial streams which could serve as water supply for the AREP.

Springs and seeps in the area include Corn Springs, Box Spring, Crystal Spring, Old Woman Spring, Cove Spring, Mitchell Caverns Spring, Bonanza Spring, Agua Caliente Spring, Kleinfelter Spring, Von Trigger Spring, Malpais Spring, and Sunflower Spring (Aspen, 2018). All these springs are in the surrounding mountains and none are located such that they could serve as water supply for the AREP.

All water for the AREP, whether derived from onsite wells or offsite water purveyor, will come from the Chuckwalla Valley Groundwater Basin (CVGB).

5. Chuckwalla Valley Groundwater Basin

5.1 Basin Overview and Storage

The CVGB covers an area of 940 square miles in eastern Riverside County, California. The basin underlies the Palen and Chuckwalla Valleys and is bounded by consolidated rocks of the Chuckwalla, Little Chuckwalla, and Mule Mountains on the south, of the Eagle Mountains on the west, and of the Mule and McCoy Mountains on the east. The Coxcomb, Granite, Palen, and Little Maria Mountains bound the valley on the north and extend ridges into the valley. There are no perennial streams in Chuckwalla Valley. Palen, Ford,

and several smaller dry lakes are found in topographic low-points (CDWR, 2004). The surface watershed contributing to the area of the CVGB is 1,344 square miles (CEC, 2010), comprised of the Chuckwalla Valley (940 square miles) and the surrounding bedrock mountains (404 square miles).

Water-bearing units of the CVGB include Pliocene to Quaternary age continental deposits divided into Quaternary alluvium, the Pinto Formation, and the Bouse Formation. Bedrock is as deep as 5,000 feet below ground surface in the eastern portion of the CVGB. Wells near Parcels A and G extend to depths of approximately 550 to 875 feet below ground level with water levels approximately 100 to 150 feet below ground level (Aspen, 2018) Total groundwater storage available to wells was originally estimated at 9,100,000 acre-feet (af), and more recently at 15,000,000 af (CDWR, 2004, CDWR, 1979). The estimate of 15,000,000 af was made by the CDWR based on multiplying specific yield times saturated thickness times basin size. Saturated thickness was obtained by subtracting the average depth to water from the average thickness of alluvial sediments, or 500 feet, whichever is smaller (CDWR, 1979). The 15,000,000 estimate, being the more recent, is used in this analysis.

The CVGB is located within the jurisdiction of the Colorado River Basin Regional Water Quality Control Board (RWQCB) and is subject to management direction of the Water Quality Control Plan (Basin Plan) for the Colorado River Basin (Region 7). The CVGB is bordered by the Orocopia Valley groundwater basin on the west, the Palo Verde Mesa Groundwater Basin on the east, the Cadiz Valley, Rice Valley and Ward Valley Groundwater Basins on the north, and the Pinto Valley Groundwater Basin on the northwest (Figure 3).

5.2 Groundwater Management

The CVGB is an unadjudicated groundwater basin. Owners of property overlying the basin have the right to pump groundwater from the basin for reasonable and beneficial use, provided that the water rights were never severed or reserved. Groundwater production in the basin is not managed by an entity and no groundwater management plan has been submitted to the California Department of Water Resources (CDWR, 2016). There is no Urban Water Management Plan for the area, and there is no Integrated Regional Water Management Plan.

5.3 Groundwater Trends

Groundwater levels range from the ground surface to about 400 feet below ground surface (RWQCB, 2006). Groundwater contour data from 1979 shows that CVGB groundwater moves from the north and west toward the gap between the Mule and McCoy Mountains at the southeastern end of the valley. Groundwater levels were stable up to about 1963 (CDWR, 2004). The CDWR reported total groundwater extraction of 9,100 afy in 1966.

The direction of groundwater movement is not expected to have changed since 1979, but there have been changes in groundwater levels, especially localized around areas of significant extraction. For example, data from wells within the Desert Center area show a period of water level decline from the mid-1980s through the early 1990s during periods of expanded agricultural operations when combined pumping exceeded 20,000 afy, well above historic water usage for the western portion of the basin (AECOM, 2011).

The National Park Service has noted that groundwater levels throughout the CVGB appear to have been trending downward for several decades (BLM, 2012). Most wells in the CVGB have not been used for monitoring data such as groundwater level trends since the 1980s; however, several wells have been used to collect groundwater data for the past 25 years, and these data show that groundwater level trends have been fairly stable in the eastern CVGB, and rising slowly back towards pre-agricultural pumping

groundwater levels in the western CVGB, while dropping slowly but steadily only in the central CVGB (Aspen, 2018).

In general, the well data show a relatively stable groundwater surface, interrupted locally in the past mainly by agricultural pumping. Local groundwater levels show evidence of rising after the agriculture-related drawdown of the 1980s ended, indicating that local extraction rates have not exceeded recharge. Since groundwater levels were reported as stable in 1963 (CDWR, 2004), an extraction rate of roughly 9,100 afy may be a sustainable safe yield.

5.4 Groundwater Recharge

Recharge to the CVGB occurs from subsurface inflow from other groundwater basins, infiltration of precipitation, irrigation return flow, and wastewater return. Leakage from the Colorado River Aqueduct has also been identified as a possible source of inflow.

Subsurface Inflow

Groundwater in the CVGB generally flows west to east. Subsurface inflow originates from the Pinto Valley and Orocopia Valley groundwater basins, which are west of the CVGB. Although the California Department of Water Resources has hypothesized that underflow from the Cadiz Valley Groundwater Basin may enter the CVGB (CDWR, 2004), Cadiz Valley, Rice Valley and Ward Valley Groundwater Basins are not considered to contribute to the CVGB (BLM, 2011).

The amount of inflow from the Pinto Valley and Orocopia Valley Groundwater Basins is uncertain, and there have been a wide range of estimates from different experts. The results of several studies on CVGB recharge from subsurface inflow are shown in Table 1.

Table 1. Subsurface Inflow Recharge Estimates for the Chuckwalla Valley Groundwater Basin

Study	Recharge from Inflow from Pinto Valley and Orocopia Valley Groundwater Basins (acre-feet per year)
Genesis Solar Project EIS[1]	3,500
Eagle Mountain Draft EIR[1]	6,700
Palen Solar Power Project EIS[1]	3,500
Eagle Mountain Draft EIS[1]	6,575
National Park Service (NPS)[1]	953–1,906
Argonne National Laboratory[2]	1,595

1 - Source: BLM, 2012
2 - Source: Argonne, 2013

Overall, there is substantial uncertainty regarding inflow from the adjacent groundwater basins. For purposes of this analysis, the groundwater budget uses 3,500 afy. This estimate has been used for other projects in the past and is approximately in the middle of the range of estimates given in Table 1. The analysis herein also applies the NPS low estimate of 953 afy to provide a probable range for the groundwater budget given the uncertainties involved.

Recharge from Precipitation

Infiltration recharge to the CVGB by precipitation is difficult to assess due to lack of reliable data and the aridity of the area. There has been a wide range of estimates by experts in support of other projects or agencies. The CDWR has not published an estimate.

Generally, precipitation recharge has been estimated as a percentage of total precipitation. The CVGB receives annually about 258,000 afy total rain (CEC, 2015). Most analysts note that studies published by the BLM indicate that 7 to 8 percent of the precipitation that falls on the bedrock mountain fronts ends

up as groundwater recharge (BLM, 2012), while a smaller percentage of the valley floor precipitation makes it to the groundwater. For the CVGB, 7 to 8 percent of the precipitation that falls on the mountain fronts would be equivalent to 3 percent of the total precipitation that falls on the total CVGB watershed (BLM, 2012). The CEC, using estimates of 3, 5 and 7% of total incident precipitation ending up as groundwater recharge, and overlaying isohyetal precipitation maps over the entire CVGB watershed to estimate precipitation distribution and bedrock characteristics by sector, estimated precipitation-related recharge to be 8,588, 14,313, and 20,038 afy, respectively, and recommended using 8,588 afy (about 3% of total precipitation) for a groundwater budget analysis (CEC, 2015). These results are supported by the findings of a study presented in a USGS report on groundwater recharge in the arid and semiarid southwestern United States (USGS 2007), which gave a range of approximately 3 to 7 percent of total precipitation for the Mojave Desert, depending on the amount of precipitation received. In the 2007 study by the USGS, the lower (3 percent) estimate represented years with below-average precipitation, with the higher (7 percent) estimate for above-average precipitation. The percentage changes with the amount of precipitation because most recharge occurs from runoff, and runoff is generally higher in years with greater precipitation.

The results of several studies on CVGB recharge from precipitation are shown in Table 2.

Table 2. Precipitation Recharge Estimates for the Chuckwalla Valley Groundwater Basin

Study	Recharge from Precipitation (acre-feet per year)
Genesis Solar Project EIS[1]	9,448
Eagle Mountain Draft EIR[1]	5,500
Palen Solar Project EIS[1]	8,588
Eagle Mountain Draft EIS[1]	6,125
National Park Service (NPS)[1]	2,060–6,125
Argonne National Laboratory[2]	3,200

1 - Source: BLM, 2012
2 - Source: Argonne, 2013

The NPS study in Table 2 was based on groundwater modeling by the U.S. Geological Survey (USGS) on the Warren, Joshua Tree, and Copper Mountain groundwater basins described above. These results are subject to a high level of uncertainty due to simplified assumptions and model inputs, and the fact that the modeled basins are not adjacent to the CVGB. The results of the study were extrapolated to the CVGB, which was not studied directly (BLM, 2012).

There is high uncertainty regarding the amount of precipitation-related recharge to the CVGB, and substantial disagreements among experts, with estimates presented herein ranging from 2,060 afy to 9,448 afy, and possibly even lower, or higher. For purposes of this analysis, the groundwater budget uses 8,588 afy as was used for the nearby Palen Solar Project. This is approximately equivalent to 3 percent of the total average precipitation of 258,000 af and is supported by the USGS 2007 study for which 3 percent would represent the estimated recharge for a below-average precipitation year. The analysis herein also applies the NPS low estimate of 2,060 afy, representing about (0.7 percent of average annual precipitation) to provide a probable range for the groundwater budget given the uncertainties involved.

Irrigation Return Discharge

Irrigation water applied to crops within the CVGB has the potential to infiltrate to groundwater depending on the amount and method of irrigation, soils, crop type, and climate. The CEC estimated irrigation return recharge as 10% of total irrigation volume as determined by a 2010 study (WorleyParsons, 2009), and determined that 800 afy would reach the CVGB (CEC, 2010). This was based on a total irrigation volume of 7,700 afy (6,400 afy for agriculture, 215 afy for aquaculture pumping, and 1,090 afy for Tamarisk Lake).

Wastewater Return Flow

Wastewater return flow within the CVGB originates from the Chuckwalla State Prison, the Ironwood State Prison, and the Lake Tamarisk development near Desert Center (CEC, 2010, WorleyParsons, 2009). The prisons use an unlined pond to dispose of treated wastewater, and it is estimated that 795 afy infiltrates to the CVGB (WorleyParsons, 2009). Another 36 afy is estimated to originate from Lake Tamarisk, for a total of 831 afy (WorleyParsons, 2009).

Colorado River Aqueduct

Leakage from the Colorado River Aqueduct, which runs across the western edge of the CVGB, has not been documented, but was hypothesized by the Argonne National Laboratory in a 2013 study of the Riverside East Solar Energy Zone (Argonne, 2013). Argonne estimated a 2,000 afy contribution to the CVGB from the aqueduct based on measured leakage rates from the Central Arizona Project in Arizona. Since this recharge component is not well documented, and if it does occur the use of it would require entitlement, it is not used in this analysis.

5.5 Groundwater Demand/Outflow

Outflow from the CVGB occurs from subsurface outflow to the Palo Verde Mesa Groundwater Basin, groundwater extraction for agriculture and other uses, and evapotranspiration from Palen Dry Lake. Outflow also occurs, or will occur, from the AREP and other existing and proposed projects.

Subsurface Outflow

Subsurface outflow from the CVGB is to the Palo Verde Mesa Groundwater Basin and has been variously estimated as ranging from 400 afy to 1,162 afy (CEC, 2015). Argonne (Argonne, 2013), in their 2013 study of the basin, assumed zero subsurface outflow, with no justification given. Using gravity data, Wilson and Owens-Joyce (1994) found that the area through which discharge occurs is significantly more limited than previously thought due to the presence of a buried bedrock ridge, though the discharge pathway was not indicated to be completely closed. Since this discovery was made after the 1,162 afy estimate was made (which was in 1990), the lower estimate of 400 afy outflow was adopted for this study.

Groundwater Extraction

Current and historical groundwater extraction in the CVGB includes agricultural water use, pumping for Chuckwalla and Ironwood State Prisons, pumping for the Tamarisk Lake development and golf course, domestic pumping, and a minor amount of pumping by Southern California Gas Company (CEC, 2010). The California Department of Water Resources, using data from 2005 to 2010, estimated the total amount of pumping at 4,700 afy for the entire CVGB (CDWR, 2015). Argonne (Argonne, 2013), also using California Department of Water Resources data, estimated 5,100 afy. Other recent studies have given higher estimates. Specifically, the Palen Solar Project EIS and CEC staff assessment for the Palen Solar Project, both used 10,361 afy (BLM, 2011, CEC, 2015). AECOM, in a previous WSA for the Palen Solar Power Project (AECOM, 2010) estimated 5,745 to 7,415 afy, with no source given. For purposes of this analysis, the most-recent estimate of 10,361 afy is used as a reasonable upper estimate of total extraction, as was used by the BLM and CEC.

The Genesis Solar Electric Plant and the First Solar Desert Sunlight Solar Farm have been recently completed in the area, and these projects will use 218 afy groundwater for operations (218 afy for Genesis1,

and 0.3 afy for First Solar, with the total rounded to 218). Total baseline groundwater extraction is therefore 10,579 afy for purposes of this study.

Evapotranspiration at Palen Dry Lake

In 2009, Worley-Parsons, using hand-augur borings, found free groundwater at a depth of 8 feet below the ground surface at the Palen Dry Lake. This suggests that groundwater could be close enough to rise through capillary action and be lost through evaporation (CEC, 2015).

The CEC (CEC, 2015) estimated groundwater discharge rates from the Palen Dry Lake using measured evaporation rates at Franklin Lake Playa in Death Valley, adjusted for differences in the characteristics of the two dry lakes, as a reference. The result was 0.0583 feet of evapotranspiration per month, for three months of the year. Over the 2,000-acre area thought susceptible to groundwater evapotranspiration, this amounts to 350 afy (CEC, 2015).

6. Groundwater Budget

The primary question to be answered in a WSA that is compliant with SB 610 requirements is:

> *Will the total projected water supply available during normal, single dry, and multiple dry water years during a 20-year projection meet the projected water demand of the proposed project, in addition to existing and planned future uses of the identified water supplies, including agricultural and manufacturing uses?*

In order to determine whether there are sufficient supplies to serve the project over the next twenty years, this section provides a baseline normal-year groundwater budget for the CVGB, based on the information provided in Section 5. This section also includes a normal-year groundwater budget assuming the AREP is in place, and a normal-year groundwater budget assuming the AREP and all known cumulative projects are in place. The same is repeated for single and multiple dry-year scenarios. The following is an explanation of water budget terms used in this document.

A **Water Budget** is an identification, estimate, and comparison of the groundwater inputs and outputs that affect the overall trend of groundwater balance in the CVGB. Inputs such as recharge from precipitation, underflow from other groundwater basins, and other sources are compared to outputs such as loss to other groundwater basins, extractions by humans, and evapotranspiration. Total inflow minus total outflow equals change in storage.

A **Safe Yield** is the amount of water that can be withdrawn from the groundwater basin for human use without depleting the groundwater resource. A safe yield occurs if the groundwater extractions, plus other natural outputs, do not exceed inputs. In this case, there would be no net depletion of the groundwater in storage. In this report, the safe yield is calculated for the basin as a whole.

An **Overdraft** occurs if extractions plus other outputs exceed total inputs, in which case there will be a net loss of groundwater storage over time. In this report, an overdraft, also referred to herein as a deficit, is estimated for the CVGB basin as a whole. Long-term overdraft conditions will result in a protracted diminishment of the groundwater resource that could have effects on the environment and the sustainability of the groundwater use.

The CVGB has a lack of long-term monitoring data for performing a detailed analysis. Wells have been in only a few areas of the basin, are not well documented, and the available data are incomplete and localized. It is known that extractions were 11 afy in 1952 (CDWR, 2004), rising to about 9,100 afy in 1966

(same source), and then peaking at around 20,000 afy for agriculture in the Desert Center area, as described above, resulting in local drawdowns that have since appeared to recover.

As a result of the scarcity of available data, there is substantial uncertainty regarding some of the primary inputs to a groundwater budget. Several studies in recent years for projects such as the AREP have used the best available information do draw conclusions, summarized in Table 3. The conclusions herein are based on the same best available information and should be considered in the context of the overall uncertainty regarding the CVGB basin. Because of the uncertainties involved, the analysis uses two groundwater budgets. The first is a best estimate using data that has been widely reported and used in previous studies of this kind as described in Section 5. These adopted data are presented in Table 3. The second uses lower input estimates that have been made by U.S. Government agencies entrusted with management of natural resources in the area, also described in Section 5. Specifically, the second budget uses a recharge from precipitation estimate of 2,060 afy, and an underflow from Pinto Valley and Orocopia Valley Groundwater Basins of 953 afy as recommended by the NPS (BLM, 2012). All other inflow/outflow estimates are the same for both budgets. The two together provide insight into a range of potential outcomes related to groundwater use in the CVGB.

Table 3. CVGB Inflow/Outflow Summary

Inflow/Outflow Component	Range (afy)*	Adopted for This Study (afy)*	Reason for Adoption/Source
Recharge from Precipitation	+206 to +20,038	+8,588	3 Percent of Total Precipitation USGS (2007), BLM, (2012)
Underflow from Pinto Valley and Orocopia Valley Groundwater Basins	+953 to +6,575	+3,500	Used Previously for Palen and Genesis Projects
Irrigation Return Flow	+800	+800	WorleyParsons (2009)
Wastewater Return Flow	+831	+831	WorleyParsons (2009)
Groundwater Extraction	–4,700 to –10,579	–10,579	Recent Estimate: –10,361 (CEC, 2015) + –218 (Genesis; WorleyParsons, 2009)
Underflow to Palo Verde Mesa Groundwater Basin	–400	–400	CEC (2015). Used lower estimate due to restricted discharge area (Wilson and Owens-Joyce, 1994)
Evapotranspiration at Palen Dry Lake	–350	–350	CEC (2015) estimate from Franklin Playa study.

*Inflow is depicted by a '+' sign; outflow is depicted by a '–' sign.

6.1 Baseline Groundwater Budget

The baseline groundwater budget is the groundwater budget for the CVGB in the absence of the proposed project and all other known cumulative projects not already in place. For the purposes of this analysis, agricultural uses are considered as part of the baseline budget, as is the Prison Water Use, and the Genesis Solar Project. There are no manufacturing water uses in the area.

Normal (Average) Year

Table 4 provides a baseline normal groundwater budget for the CVGB based on the adopted information presented in Sections 4.4 and 4.5 and Table 3. This budget indicates a safe yield, which is the maximum quantity of water that can be continuously withdrawn from a groundwater basin without adverse effect. The baseline safe yield for the CVGB is estimated at 2,390 afy (total from Table 4), meaning the basin is currently close to capacity in terms of groundwater extraction. This budget would be for a normal (average) year, in terms of precipitation and water use.

Table 5 provides the same analysis using the lower NPS estimates of precipitation and underflow recharge described in Section 4. This baseline budget shows the CVGB to be in deficit, with a loss of approximately 6,685 afy in the groundwater resource, meaning groundwater levels would be expected to drop as the resource is depleted over the years.

Assuming a 2,390 afy average year surplus, the CVGB would have a surplus of approximately 71,700 af at the end of the 30-year period (the life of the Athos project not including the 2.5 years of construction), meaning the groundwater basin would slowly recover from any deficits that may have been created by high agricultural pumping in the past. A 30-year period is used because that is the expected life of the project. With the NPS infiltration and underflow estimates (Table 5), at the end of the 30-year period the cumulative deficit would be 200,550 af. The basin would not recover losses during that period if the NPS estimates are correct. However, the amount of groundwater available in the CVGB is large, and this cumulative deficit after 30 years would amount to only about one percent of the total estimated storage.

Table 4. Estimated Baseline Groundwater Budget for the Chuckwalla Valley Groundwater Basin

Budget Components	Acre-Feet per Year
Inflow	
Recharge from Precipitation[1]	8,588
Underflow from Pinto Valley and Orocopia Valley Groundwater Basins[2]	3,500
Irrigation Return Flow[3]	800
Wastewater Return Flow[4]	831
Total Inflow	13,719
Outflow	
Groundwater Extraction[5]	-10,579
Underflow to Palo Verde Mesa Groundwater Basin[6]	-400
Evapotranspiration at Palen Dry Lake[7]	-350
Total Outflow	-11,329
Budget Balance (Inflow – Outflow)	2,390 (+ 0.02% of total storage)

1 - BLM, 2012
2 - BLM, 2012
3 - CEC, 2015
4 - WorleyParsons, 2009
5 - Based on CEC, 2015 plus extractions of Genesis Solar Electric Plant (WorleyParsons, 2009)
6 - CEC, 2010
7 - CEC, 2010

Table 5. Estimated Baseline Groundwater Budget for the Chuckwalla Valley Groundwater Basin Using NPS Estimates of Precipitation and Subsurface Inflow

Budget Components	Acre-Feet per Year
Inflow	
Recharge from Precipitation[1]	2,060
Underflow from Pinto Valley and Orocopia Valley Groundwater Basins[2]	953
Irrigation Return Flow[3]	800
Wastewater Return Flow[4]	831
Total Inflow	4,644

Table 5. Estimated Baseline Groundwater Budget for the Chuckwalla Valley Groundwater Basin Using NPS Estimates of Precipitation and Subsurface Inflow

Budget Components	Acre-Feet per Year
Outflow	
Groundwater Extraction[5]	–10,579
Underflow to Palo Verde Mesa Groundwater Basin[6]	–400
Evapotranspiration at Palen Dry Lake[7]	–350
Total Outflow	–11,329
Budget Balance (Inflow – Outflow)	–6,685 (–0.04% of total storage)

1 - BLM, 2012
2 - BLM, 2012
3 - CEC, 2015
4 - WorleyParsons, 2009
5 - Based on CEC, 2015 plus extractions of Genesis Solar Electric Plant (WorleyParsons, 2009)
6 - CEC, 2010
7 - CEC, 2010

Dry Year

According to SB 610 guidelines, a dry year can be considered a year with a precipitation amount that is at 10 percent probability of occurrence, meaning 10 percent of the years would be drier. A critical dry year would be a year with 3 percent probability. The historic precipitation data at Blythe, California, approximately 35 miles east of the project and at a similar elevation with similar climate, was used as a reference. Historical precipitation data for Blythe, dating from 1893 to 2014, is available from the United States Historical Climatology Network (USHCN, 2016).

The average of the annual precipitation from 1893 to 2014 at Blythe was 3.42 inches. The 10- percent probability dry year was estimated by ranking precipitation years from 1893 to 2014 from lowest to highest and giving them ranking numbers 1 to 122 with the lowest precipitation year number 1 and the highest precipitation year number 122. Dividing the ranking number by the total (122) gives a relative probability of the precipitation in any given year being less than the corresponding precipitation for the ranking number. For instance, the precipitation for Year 2009 was 1.15 inches and ranked #13. Dividing 13 by 122 and converting to percent gives 10.7%. Consequently, 1.15 inches of rain, or about 34 percent of average annual precipitation at Blythe, was considered the 10 percent probability dry year. The critical dry year was estimated in the same way and found to be approximately 0.72 inches of precipitation, or 21 percent of average precipitation (reference precipitation year 2000, ranking #4 of 122 giving 3.3 percent relative probability).

This section provides a revised baseline groundwater budget based on dry year and critical dry year conditions. The following assumptions were used:

- Recharge from precipitation is the primary factor in determining the dry year groundwater budgets. Dry years are expected to produce less recharge from precipitation, due to the fact that less runoff would generally be expected to occur in dry years, resulting in less runoff leading to infiltration. This would depend, of course, on the pattern, intensity and distribution of precipitation in a dry year, which is difficult to predict for the future. There is some evidence (USGS, 2007) that lower precipitation years may in general give a lower percentage of precipitation ending up as recharge, but the evidence is apparently not consistent, and data presented by the USGS (USGS, 2007) provides no information below 3 percent, which is the percentage used as a basis for the infiltration rate used in this analysis. There-

fore, for purposes of this analysis a simplifying assumption was made that the reduction in infiltration to groundwater is in direct proportion to the reduction in precipitation. A dry year recharge is therefore estimated as 8,588 afy multiplied by 0.34 (the ratio of dry year to average year precipitation). This calculation gives 2,920 afy precipitation recharge for a dry year, and 1,803 afy for a critical dry year.

- Underflow from the Pinto Valley and Orocopia Groundwater Basins is assumed to be unaffected. Some dry-year effect could occur, especially in the case of multiple dry years, but the timing of the effect would probably be delayed, and the magnitude of the effect much reduced due to the volume of existing groundwater already in these basins.
- Irrigation return flow is assumed to be unaffected. The area is naturally very arid, and it is assumed that natural precipitation, which in normal years is infrequent, is of minor or negligible consideration in the determination of the amount of irrigation water needed yearly.
- Wastewater return flow is assumed to be unaffected for similar reasons as for precipitation.
- Groundwater extraction is assumed to be unaffected by dry years for the same reasons the irrigation return flow and wastewater return flow were assumed to be unaffected.
- Underflow to Palo Verde Mesa Groundwater Basin was assumed to be unaffected for the same reasons the inflow from the Pinto Valley and Orocopia Groundwater Basins was assumed to be unaffected.
- Evapotranspiration at Palen Dry Lake was assumed to be unaffected for the reason that a single dry year, or critical dry year, would result in a reduction of a maximum of 6,782 acre feet of recharge. Given the size of the CVGB (940 square miles) a one-year reduction of this magnitude would only reduce the average groundwater level by about 0.14 inches. Evapotranspiration could be affected by a significant, long-term groundwater deficit, but for purposes of this analysis evapotranspiration was assumed to remain constant.

Tables 6 and 7 provide the assumed baseline groundwater budgets for a dry year and critical dry year. In both cases, a groundwater deficit is expected for the year, meaning groundwater withdrawals would exceed groundwater input. A dry year is expected to have a deficit of approximately 3,278 acre feet, increasing to 4,395 acre feet for a critical dry year.

Tables 8 and 9 provide the results of the same analysis using the NPS estimates of precipitation and underflow recharge. Each scenario, dry year and critical dry year, would have groundwater deficits, amounting to 8,045 afy and 8,312 afy, respectively.

Table 6. Estimated Dry Year Groundwater Budget for the Chuckwalla Valley Groundwater Basin

Budget Components	Acre-Feet per Year
Inflow	
Recharge from Precipitation	2,920
Underflow from Pinto Valley and Orocopia Valley Groundwater Basins	3,500
Irrigation Return Flow	800
Wastewater Return Flow	831
Total Inflow	8,051
Outflow	
Groundwater Extraction	–10,579
Underflow to Palo Verde Mesa Groundwater Basin	–400
Evapotranspiration at Palen Dry Lake	–350

Table 6. Estimated Dry Year Groundwater Budget for the Chuckwalla Valley Groundwater Basin

Budget Components	Acre-Feet per Year
Total Outflow	–11,329
Budget Balance (Inflow – Outflow)	–3,278 (–0.02% of total storage)

Table 7. Estimated Critical Dry Year Groundwater Budget for the Chuckwalla Valley Groundwater Basin

Budget Components	Acre-Feet per Year
Inflow	
Recharge from Precipitation	1,803
Underflow from Pinto Valley and Orocopia Valley Groundwater Basins	3,500
Irrigation Return Flow	800
Wastewater Return Flow	831
Total Inflow	6,934
Outflow	
Groundwater Extraction	–10,579
Underflow to Palo Verde Mesa Groundwater Basin	–400
Evapotranspiration at Palen Dry Lake	–350
Total Outflow	–11,329
Budget Balance (Inflow – Outflow)	–4,395 (–0.02% of total storage)

Table 8. Estimated Dry Year Groundwater Budget for the Chuckwalla Valley Groundwater Basin Using NPS Estimates of Precipitation and Subsurface Inflow

Budget Components	Acre-Feet per Year
Inflow	
Recharge from Precipitation	700
Underflow from Pinto Valley and Orocopia Valley Groundwater Basins	953
Irrigation Return Flow	800
Wastewater Return Flow	831
Total Inflow	3,284
Outflow	
Groundwater Extraction	-10,579
Underflow to Palo Verde Mesa Groundwater Basin	-400
Evapotranspiration at Palen Dry Lake	-350
Total Outflow	-11,329
Budget Balance (Inflow – Outflow)	–8,045 (–0.05% of total storage)

Table 9. Estimated Critical Dry Year Groundwater Budget for the Chuckwalla Valley Groundwater Basin Using NPS Estimates of Precipitation and Subsurface Inflow

Budget Components	Acre-Feet per Year
Inflow	
Recharge from Precipitation	433
Underflow from Pinto Valley and Orocopia Valley Groundwater Basins	953
Irrigation Return Flow	800
Wastewater Return Flow	831
Total Inflow	3,017
Outflow	
Groundwater Extraction	–10,579
Underflow to Palo Verde Mesa Groundwater Basin	–400
Evapotranspiration at Palen Dry Lake	–350
Total Outflow	–11,329
Budget Balance (Inflow – Outflow)	–8,312 (–0.06% of total storage)

Multiple Dry Years

The Blythe precipitation data shows that in the 122 years of record from 1893 to 2014, the longest consecutive series of dry (10 percent) years on record is two. There are no consecutive critical dry years on record. A two-year string of dry years would result in a baseline groundwater deficit of twice the amount given in Table 6, or 6,556 acre feet. A three-year string of dry years would result in a baseline groundwater deficit of 9,834 acre feet (0.07% of total storage). The longest consecutive series of years with below average precipitation on record at Blythe was 12 years, from 1893 to 1904. This period was considered to be representative of a series of multiple dry years for the purposes of this analysis.

Table 10 presents the results of an estimated 12-year groundwater budget assuming a repeat of the 1893-1904 drought at Blythe, assuming without-project conditions. The results show that at the end of the 12-year period, the cumulative groundwater deficit would be approximately 31,612 acre feet (0.2% of total storage). Table 11 shows the same analysis using NPS estimates of precipitation and subsurface recharge. In that scenario, at the end of the 12-year period the cumulative groundwater deficit would be more than 94,682 acre feet (0.6% of total storage).

Table 10. Baseline Multiple Dry Year Groundwater Budget

Year	1	2	3	4	5	6
Dry Year Reference Year	1893	1894	1895	1896	1897	1898
Precipitation, in Inches	1.75	2.16	1.84	1.29	2.84	1.30
Precipitation as Percentage of Average	51%	63%	54%	38%	83%	38%
Normal Recharge from Precipitation	8,588	8,588	8,588	8,588	8,588	8,588
Dry Year Adjusted Recharge from Precipitation	4,394	5,424	4,620	3,239	7,132	3,264
Other Groundwater Recharge (All Sources)	5,131	5,131	5,131	5,131	5,131	5,131
Total Groundwater Recharge	9,525	10,555	9,751	8,370	12,263	8,395
Groundwater Outflow (All Sources)	–11,329	–11,329	–11,329	–11,329	–11,329	–11,329
Budget Balance (Inflow – Outflow)	–1,804	–774	–1,578	–2,959	934	–2,934
Cumulative Budget Balance (Inflow – Outflow)	–1,804	–2,578	–4,155	–7,114	–6,180	–9,114

Table 10. Baseline Multiple Dry Year Groundwater Budget

Year	7	8	9	10	11	12
Dry Year Reference Year	1899	1900	1901	1902	1903	1904
Precipitation, in Inches	0.75	0.56	1.21	1.12	0.88	1.33
Precipitation as Percentage of Average	22%	16%	35%	33%	26%	39%
Normal Recharge from Precipitation	8,588	8,588	8,588	8,588	8,588	8,588
Dry Year Adjusted Recharge from Precipitation	1,883	1,406	3,038	2,812	2,210	3,340
Other Groundwater Recharge (All Sources)	5,131	5,131	5,131	5,131	5,131	5,131
Total Groundwater Recharge	7,014	6,537	8,169	7,943	7,341	8,471
Groundwater Outflow (All Sources)	–11,329	–11,329	–11,329	–11,329	–11,329	–11,329
Budget Balance (Inflow – Outflow)	–4,315	–4,792	–3,160	–3,386	–3,988	–2,858
Cumulative Budget Balance (Inflow – Outflow)	–13,428	–18,220	–21,380	–24,765	–28,754	–31,612

Table 11. Baseline Multiple Dry Year Groundwater Budget Using NPS Estimates of Precipitation and Subsurface Inflow

Year	1	2	3	4	5	6
Dry Year Reference Year	1893	1894	1895	1896	1897	1898
Precipitation, in Inches	1.75	2.16	1.84	1.29	2.84	1.30
Precipitation as Percentage of Average	51%	63%	54%	38%	83%	38%
Normal Recharge from Precipitation	2,060	2,060	2,060	2,060	2,060	2,060
Dry Year Adjusted Recharge from Precipitation	1,054	1,301	1,108	777	1,711	783
Other Groundwater Recharge (All Sources)	2,584	2,584	2,584	2,584	2,584	2,584
Total Groundwater Recharge	3,638	3,885	3,692	3,361	4,295	3,367
Groundwater Outflow (All Sources)	–11,329	–11,329	–11,329	–11,329	–11,329	–11,329
Budget Balance (Inflow – Outflow)	–7,691	–7,444	–7,637	–7,968	–7,034	–7,962
Cumulative Budget Balance (Inflow – Outflow)	–7,691	–15,135	–22,772	–30,740	–37,774	–45,736
Year	7	8	9	10	11	12
Dry Year Reference Year	1899	1900	1901	1902	1903	1904
Precipitation, in Inches	0.75	0.56	1.21	1.12	0.88	1.33
Precipitation as Percentage of Average	22%	16%	35%	33%	26%	39%
Normal Recharge from Precipitation	2,060	2,060	2,060	2,060	2,060	2,060
Dry Year Adjusted Recharge from Precipitation	452	337	729	675	530	801
Other Groundwater Recharge (All Sources)	2,584	2,584	2,584	2,584	2,584	2,584
Total Groundwater Recharge	3,036	2,921	3,313	3,259	3,114	3,385
Groundwater Outflow (All Sources)	–11,329	–11,329	–11,329	–11,329	–11,329	–11,329
Budget Balance (Inflow – Outflow)	–8,293	–8,408	–8,016	–8,070	–8,215	–7,944
Cumulative Budget Balance (Inflow – Outflow)	–54,029	–62,437	–70,453	–78,523	–86,738	–94,682

6.2 Groundwater Budget with Athos Renewable Energy and Cumulative Projects

Normal (Average) Year

All water for the project would be derived from the CVGB. Total water use by the AREP will be up to 200 afy for the 30 months of construction, and up to 40 afy for all subsequent 30 years of operation, for a total of 1,700 acre feet of water used by the project over the project life. Based on the budget balance given in Table 4, the CVGB under average-year conditions would have a cumulative surplus of 77,675 acre feet during the same time period. The net CVGB surplus, with the AREP in place, would therefore be 75,975 acre feet, or 98 percent of the surplus that would exist without the Athos project. By contrast, using the NPS recharge rates for precipitation and underflow (Table 5), the 32.5-year deficit without the AREP would be 217,263 acre feet, increased to 218,962 acre feet by the AREP. The AREP would contribute about one percent to this cumulative deficit.

For a single dry year and single critical dry year with the AREP in place, the worst-case scenario is for one of those years, dry or critical dry, to occur during the first year of construction. During the first year of construction the CVGB annual groundwater deficit if a dry year or critical dry year occurs would be 3,478 and 4,595 acre feet, respectively. By comparison to Tables 6 and 7, the AREP would increase the dry year deficit by 4 to 6 percent if a dry year or critical dry year occurs during the first year of construction. Assuming normal precipitation returns, this deficit would be completely recovered in the second year under both (dry or critical dry) scenarios.

Using NPS inflow data, the single-year deficits depicted in Tables 8 and 9 are 8,045 afy for dry and 8,312 afy for critical dry years without the project. These deficits would increase to 8,245 and 8,512 afy for dry and critical dry years during the first year of construction (2 percent deficit increases. Assuming normal precipitation returns after the dry year, this deficit would not be recovered during the project lifespan, with or without the project.

Cumulative projects that are projected or already constructed are listed in Table 12, with their projected water use. Water used for agriculture is not anticipated to increase so was not included in the cumulative projects. Peak agriculture in the Desert Center region occurred in 1994 with an estimated 6,100 acres under cultivation. Since then, agriculture has continued to decline with an estimated 2,100 acres under cultivation in 2016.

Table 12. Cumulative Projects – Water Use Summary

Project Name	Construction Start (year)	Construction Duration (years)	Annual Construction Water Use (afy)	Annual Operational Water Use (afy)
Palen Solar PV Project	2018[1]	2.5	7002[2]	41
First Solar Desert Sunlight Solar Farm	Completed	2.2	600–650[2]	0.3
Red Bluff Substation	Completed	2.2	150[2]	0
Eagle Mountain Gen-tie line	Completed	1	6.25[2]	0
AREP	2020[1]	2.5	200	40
Eagle Mountain Pumped Storage Project	2020[1]	4	4,456[3]	2,050[4]
IO Solar Project	2020[1]	2	215[4]	43
Victory Pass Solar	2021[1]	1	75[4]	15
California Jupiter	2020[1]	1	110[4]	22

Table 12. Cumulative Projects – Water Use Summary

Project Name	Construction Start (year)	Construction Duration (years)	Annual Construction Water Use (afy)	Annual Operational Water Use (afy)
Desert Harvest Solar PV Project	2018[1]	2	400-500[2]	26-39
DC 50 Solar Project (450 acres) (50 MW)	2019[1]	1	100[2]	2.5
SunEdison Origination3, LLC (1,800 acres) (250 MW – calculated)	2019[1]	2	275[b]	12.5
First Solar Development, LLC (3,500 acres) (500 MW – calculated)	2019[1]	2.5	440[b]	25

1 - Assumed date of construction start and construction duration.
2 - Aspen (2018)
3 - BLM Estimate (FERC, 2014). Of this amount, 600 cfs is expected to seep back into the groundwater (ECEC, 2008), then pumped back out and reused.
4 - Water use estimated based on project size and Athos Renewable Energy water use.

Table 12 shows that the AREP contributes about two percent of the total operational extractions, long-term. The Eagle Mountain Pumped Storage Project would use more than 5 times the operational groundwater of all other future projects combined.

Table 13 provides a 30-year groundwater budget projection for average years with AREP and all cumulative projects in place. Only those cumulative projects that would withdraw groundwater during the assumed 2020 to 2049 period of analysis are included. Assuming an average precipitation year, there would be an initial groundwater overdraft of up to 12,673 af in the year 2023. The groundwater basin would then begin to slowly recover. By the end of the 30-year period, the cumulative groundwater deficit would be approximately 10,601 acre feet (approximately 0.07% of total storage). Without the AREP and all other cumulative projects in place, there would be a surplus of 71,700 acre feet at the end of the 30-year period (Approximately 0.48% of total storage).

The same analysis using NPS infiltration and underflow estimates results in a total cumulative deficit of about 282,851 acre feet (1.9% of total storage), of which the AREP would contribute about 0.6 percent, or 1,600 af. Using these inflow estimates, the CVGB would not recover the overdraft within 30-years period, with or without the project.

Table 13. 30-Year Projected CVGB Groundwater Budget for Athos Renewable Energy Project Plus Cumulative Projects Using Adopted Precipitation and Underflow Recharge Estimates

Year	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029
Palen Solar PV Project	371	41	41	41	41	41	41	41	41	41
First Solar Desert Sunlight Solar Farm	0	0	0	0	0	0	0	0	0	0
AREP	200	200	120	40	40	40	40	40	40	40
Eagle Mountain Pumped Storage Project	4,456	4,456	4,456	4,456	2,050	2,050	2,050	2,050	2,050	2,050
IO Solar Project	215	215	215	43	43	43	43	43	43	43
Victory Pass Solar	0	75	15	15	15	15	15	15	15	15
California Jupiter	110	22	22	22	22	22	22	22	22	22
Desert Harvest Solar PV Project	500	39	39	39	39	39	39	39	39	39
DC 50 Solar Project	3	3	3	3	3	3	3	3	3	3
SunEdison Origination	275	13	13	13	13	13	13	13	13	13
First Solar Development	440	245	25	25	25	25	25	25	25	25

Table 13. 30-Year Projected CVGB Groundwater Budget for Athos Renewable Energy Project Plus Cumulative Projects Using Adopted Precipitation and Underflow Recharge Estimates

Sun Power	440	230	20	20	20	20	20	20	20	20
Total Used	7,010	5,538	4,968	4,716	2,310	2,310	2,310	2,310	2,310	2,310
CVGB Baseline Surplus	2,390	2,390	2,390	2,390	2,390	2,390	2,390	2,390	2,390	2,390
CVGB Surplus Minus Total Use	–4,620	–3,148	–2,578	–2,326	80	80	80	80	80	80
Cumulative CGVB Surplus/Deficit	–4,620	–7,768	–10,346	–12,673	–12,593	–12,513	–12,434	–12,354	–12,274	–12,195
Year	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039
Palen Solar PV Project	41	41	41	41	41	41	41	41	41	41
First Solar Desert Sunlight Solar Farm	0	0	0	0	0	0	0	0	0	0
AREP	40	40	40	40	40	40	40	40	40	40
Eagle Mountain Pumped Storage Project	2,050	2,050	2,050	2,050	2,050	2,050	2,050	2,050	2,050	2,050
IO Solar Project	43	43	43	43	43	43	43	43	43	43
Victory Pass Solar	15	15	15	15	15	15	15	15	15	15
California Jupiter	22	22	22	22	22	22	22	22	22	22
Desert Harvest Solar PV Project	39	39	39	39	39	39	39	39	39	39
DC 50 Solar Project	3	3	3	3	3	3	3	3	3	3
SunEdison Origination	13	13	13	13	13	13	13	13	13	13
First Solar Development	25	25	25	25	25	25	25	25	25	25
Sun Power	20	20	20	20	20	20	20	20	20	20
Total Used	2,310	2,310	2,310	2,310	2,310	2,310	2,310	2,310	2,310	2,310
CVGB Baseline Surplus	2,390	2,390	2,390	2,390	2,390	2,390	2,390	2,390	2,390	2,390
CVGB Surplus Minus Total Use	80	80	80	80	80	80	80	80	80	80
Cumulative CGVB Surplus/Deficit	–12,115	–12,035	–11,955	–11,876	–11,796	–11,716	–11,637	–11,557	–11,477	–11,398
Year	2040	2041	2042	2043	2044	2045	2046	2047	2048	2049
Palen Solar PV Project	41	41	41	41	41	41	41	41	41	41
First Solar Desert Sunlight Solar Farm	0	0	0	0	0	0	0	0	0	0
AREP	40	40	40	40	40	40	40	40	40	40
Eagle Mountain Pumped Storage Project	2,050	2,050	2,050	2,050	2,050	2,050	2,050	2,050	2,050	2,050
IO Solar Project	43	43	43	43	43	43	43	43	43	43
Victory Pass Solar	15	15	15	15	15	15	15	15	15	15
California Jupiter	22	22	22	22	22	22	22	22	22	22
Desert Harvest Solar PV Project	39	39	39	39	39	39	39	39	39	39
DC 50 Solar Project	3	3	3	3	3	3	3	3	3	3
SunEdison Origination	13	13	13	13	13	13	13	13	13	13
First Solar Development	25	25	25	25	25	25	25	25	25	25
Sun Power	20	20	20	20	20	20	20	20	20	20
Total Used	2,310	2,310	2,310	2,310	2,310	2,310	2,310	2,310	2,310	2,310
CVGB Baseline Surplus	2,390	2,390	2,390	2,390	2,390	2,390	2,390	2,390	2,390	2,390
CVGB Surplus Minus Total Use	80	80	80	80	80	80	80	80	80	80
Cumulative CGVB Surplus/Deficit	–11,318	–11,238	–11,158	–11,079	–10,999	–10,919	–10,840	–10,760	–10,680	–10,601

Dry Year

From the analysis in Table 13, the year with the highest groundwater deficit would be 2023. For that year, assuming dry year and critical dry year precipitation, the CVGB cumulative groundwater deficit would be 18,341 af (0.12% of total storage) and 19,458 af (0.13% of total storage) respectively, if all cumulative projects are in place and assuming adopted recharge inputs and four previous years of normal precipitation. Using NPS recharge estimates, the deficits would be 23,108 af and 23,375 af, respectively (0.15% and 0.16% of total storage).

Multiple Dry Years

Table 14 provides a summary of the multiple dry year analysis using the same methods as described for Table 13, and assuming the AREP plus all cumulative projects are in place. At the end of the 12-year period representing the longest consecutive series of years with below average precipitation on record at Blythe, the cumulative groundwater deficit would be 72,327 acre feet (0.5% of total storage). AREP would contribute 880 acre feet to this deficit, or about 1.2 percent of the deficit. The same analysis using the NPS estimates of recharge and outflow result in a cumulative deficit of 135,397 acre feet (0.9% of total storage). AREP would cause about 0.6 percent of this deficit.

Table 14. Multiple Dry Year Groundwater Budget Analysis with AREP and All Cumulative Projects in Place, Assuming Adopted Recharge and Inflow Estimates

Assumed Project Year	2020	2021	2022	2023	2024	2025
Dry Precipitation Reference Year	1893	1894	1895	1896	1897	1898
Precipitation, in Inches	1.75	2.16	1.84	1.29	2.84	1.30
Precipitation as Percentage of Average	51%	63%	54%	38%	83%	38%
Normal Recharge from Precipitation, in Acre Feet	8,588	8,588	8,588	8,588	8,588	8,588
Dry Year Adjusted Recharge from Precipitation, in Acre Feet	4,394	5,424	4,620	3,239	7,132	3,264
Other Groundwater Recharge (All Sources), in Acre Feet	5,131	5,131	5,131	5,131	5,131	5,131
Total Groundwater Recharge, in Acre Feet	9,525	10,555	9,751	8,370	12,263	8,395
Baseline Groundwater Outflow, in Acre Feet	–11,329	–11,329	–11,329	–11,329	–11,329	–11,329
Cumulative Project Groundwater Use, in Acre Feet	–7,010	–5,538	–4,968	–4,716	–2,310	–2,310
Total Groundwater Outflow, in Acre Feet	–18,339	–16,867	–16,297	–16,045	–13,639	–13,639
Budget Balance (Recharge + Outflow), in Acre Feet	–8,813	–6,312	–6,546	–7,675	–1,377	–5,244
Cumulative Budget Balance, in Acre Feet	–8,813	–15,126	–21,672	–29,346	–30,723	–35,967
Assumed Project Year	2020	2021	2022	2023	2024	2025
Dry Precipitation Reference Year	1899	1900	1901	1902	1903	1904
Precipitation, in Inches	0.75	0.56	1.21	1.12	0.88	1.33
Precipitation as Percentage of Average	22%	16%	35%	33%	26%	39%
Normal Recharge from Precipitation, in Acre Feet	8,588	8,588	8,588	8,588	8,588	8,588
Dry Year Adjusted Recharge from Precipitation, in Acre Feet	1,883	1,406	3,038	2,812	2,210	3,340
Other Groundwater Recharge (All Sources), in Acre Feet	5,131	5,131	5,131	5,131	5,131	5,131
Total Groundwater Recharge, in Acre Feet	7,014	6,537	8,169	7,943	7,341	8,471
Baseline Groundwater Outflow, in Acre Feet	–11,329	–11,329	–11,329	–11,329	–11,329	–11,329
Cumulative Project Groundwater Use, in Acre Feet	–2,310	–2,310	–2,310	–2,310	–2,310	–2,310
Total Groundwater Outflow, in Acre Feet	–13,639	–13,639	–13,639	–13,639	–13,639	–13,639
Budget Balance (Recharge + Outflow), in Acre Feet	–6,625	–7,102	–5,470	–5,696	–6,299	–5,169
Cumulative Budget Balance, in Acre Feet	–42,592	–49,694	–55,164	–60,860	–67,158	–72,327

The rainfall record shows that a series of dry years has been followed by a series of years with above-average rainfall. To assess the probable effect of this over the 30-year life of the project, a 30-year running average analysis was made of the 121 years of record. This analysis, including the 30-year multiple-dry-year baseline calculation, is summarized in Tables 15 through 17.

The driest 30-year period was the period beginning in 1893 and ending in 1922. Average annual rainfall during this period was 3.05 inches, or about 89% of normal. Table 15 shows that if a repeat of this 30-year period occurs under current (no project) conditions, at the end of the 30-year period the CVGB would have a surplus of 43,601 af assuming adopted rainfall and infiltration conditions. The worst year of the drought-induced deficit in the CVGB would be year 12, in which the total deficit would be 31,612 af. Recovery would then begin with total recovery by year 21, and there would be a groundwater surplus of 43,601 af by the end of the 30 years. Using NPS recharge data, the same analysis results in a continually-increasing groundwater deficit ending at 207,290 af after 30 years.

Table 16 provides the same analysis with the AREP in place but no other cumulative project. The results are similar to the without-project condition, with total groundwater recovery occurring in year 22, and recovery to a surplus of 42,001 af at the end of 30 years. Using NPS recharge data, the same analysis, with the AREP in place, results in a continually- increasing groundwater deficit ending at 208,890 af after 30 years.

Table 17 provides the cumulative-project analysis. With all cumulative projects in place, the greatest CVGB deficit would occur in year 12, after which recovery would begin, but full recovery would not occur during the 30-year period. The CVGB would end the period with a 38,700-af deficit. Using NPS recharge data, the 30-year deficit would be 289,591 af.

Table 15. 30-Year Projected CVGB Groundwater Budget in Acre Feet for Baseline (No Project) Conditions Using Adopted Precipitation and Underflow Recharge Estimates and Assuming a Repeat of the Driest 30 Years on Record at Blythe

Year	1	2	3	4	5	6	7	8	9	10
Precipitation Reference Year	1893	1894	1895	1896	1897	1898	1899	1900	1901	1902
Rainfall, in Inches	1.75	2.16	1.84	1.29	2.84	1.3	0.75	0.56	1.21	1.12
Precipitation as Percentage of Average	51%	63%	54%	38%	83%	38%	22%	16%	35%	33%
Normal Recharge from Precipitation	8,588	8,588	8,588	8,588	8,588	8,588	8,588	8,588	8,588	8,588
Adjusted Recharge from Precipitation	4,394	5,424	4,620	3,239	7,132	3,264	1,883	1,406	3,038	2,812
Other Groundwater Recharge (All Sources)	5,131	5,131	5,131	5,131	5,131	5,131	5,131	5,131	5,131	5,131
Total Groundwater Recharge	9,525	10,555	9,751	8,370	12,263	8,395	7,014	6,537	8,169	7,943
Non-Project Groundwater Outflow (All Sources)	–11,329	–11,329	–11,329	–11,329	–11,329	–11,329	–11,329	–11,329	–11,329	–11,329
Total Groundwater Outflow	–11,329	–11,329	–11,329	–11,329	–11,329	–11,329	–11,329	–11,329	–11,329	–11,329
Budget Balance (Inflow – Outflow)	–1,804	–774	–1,578	–2,959	934	–2,934	–4,315	–4,792	–3,160	–3,386
Cumulative Budget Balance (Inflow – Outflow)	–1,804	–2,578	–4,155	–7,114	–6,180	–9,114	–13,428	–18,220	–21,380	–24,765
Year	11	12	13	14	15	16	17	18	19	20
Precipitation Reference Year	1903	1904	1905	1906	1907	1908	1909	1910	1911	1912
Rainfall, in Inches	0.88	1.33	4.29	2.55	2.18	3.21	5.51	4.66	3.58	4.44
Precipitation as Percentage of Average	26%	39%	125%	75%	64%	94%	161%	136%	105%	130%
Normal Recharge from Precipitation	8,588	8,588	8,588	8,588	8,588	8,588	8,588	8,588	8,588	8,588

Table 15. 30-Year Projected CVGB Groundwater Budget in Acre Feet for Baseline (No Project) Conditions Using Adopted Precipitation and Underflow Recharge Estimates and Assuming a Repeat of the Driest 30 Years on Record at Blythe

Adjusted Recharge from Precipitation	2,210	3,340	10,773	6,403	5,474	8,061	13,836	11,702	8,990	11,149
Other Groundwater Recharge (All Sources)	5,131	5,131	5,131	5,131	5,131	5,131	5,131	5,131	5,131	5,131
Total Groundwater Recharge	7,341	8,471	15,904	11,534	10,605	13,192	18,967	16,833	14,121	16,280
Non-Project Groundwater Outflow (All Sources)	–11,329	–11,329	–11,329	–11,329	–11,329	–11,329	–11,329	–11,329	–11,329	–11,329
Total Groundwater Outflow	–11,329	–11,329	–11,329	–11,329	–11,329	–11,329	–11,329	–11,329	–11,329	–11,329
Budget Balance (Inflow – Outflow)	–3,988	–2,858	4,575	205	–724	1,863	7,638	5,504	2,792	4,951
Cumulative Budget Balance (Inflow – Outflow)	–28,754	–31,612	–27,037	–26,832	–27,556	–25,693	–18,055	–12,551	–9,759	–4,808
Year	21	22	23	24	25	26	27	28	29	30
Precipitation Reference Year	1913	1914	1915	1916	1917	1918	1919	1920	1921	1922
Rainfall, in Inches	4.8	5.82	3.88	3.64	1.82	6.64	3.66	4.51	7.08	2.11
Precipitation as Percentage of Average	140%	170%	113%	106%	53%	194%	107%	132%	207%	62%
Normal Recharge from Precipitation	8,588	8,588	8,588	8,588	8,588	8,588	8,588	8,588	8,588	8,588
Adjusted Recharge from Precipitation	12,053	14,615	9,743	9,140	4,570	16,674	9,191	11,325	17,779	5,298
Other Groundwater Recharge (All Sources)	5,131	5,131	5,131	5,131	5,131	5,131	5,131	5,131	5,131	5,131
Total Groundwater Recharge	17,184	19,746	14,874	14,271	9,701	21,805	14,322	16,456	22,910	10,429
Non-Project Groundwater Outflow (All Sources)	–11,329	–11,329	–11,329	–11,329	–11,329	–11,329	–11,329	–11,329	–11,329	–11,329
Total Groundwater Outflow	–11,329	–11,329	–11,329	–11,329	–11,329	–11,329	–11,329	–11,329	–11,329	–11,329
Budget Balance (Inflow – Outflow)	5,855	8,417	3,545	2,942	–1,628	10,476	2,993	5,127	11,581	–900
Cumulative Budget Balance (Inflow – Outflow)	1,048	9,464	13,009	15,952	14,324	24,800	27,792	32,920	44,500	43,601

Table 16. 30-Year Projected CVGB Groundwater Budget in Acre Feet Using Adopted Precipitation and Underflow Recharge Estimates and Assuming a Repeat of the Driest 30 Years on Record at Blythe, with the Athos Renewable Energy Project in Place

Year	1	2	3	4	5	6	7	8	9	10
Precipitation Reference Year	1893	1894	1895	1896	1897	1898	1899	1900	1901	1902
Rainfall, in Inches	1.75	2.16	1.84	1.29	2.84	1.3	0.75	0.56	1.21	1.12
Precipitation as Percentage of Average	51%	63%	54%	38%	83%	38%	22%	16%	35%	33%
Normal Recharge from Precipitation	8,588	8,588	8,588	8,588	8,588	8,588	8,588	8,588	8,588	8,588
Adjusted Recharge from Precipitation	4,394	5,424	4,620	3,239	7,132	3,264	1,883	1,406	3,038	2,812
Other Groundwater Recharge (All Sources)	5,131	5,131	5,131	5,131	5,131	5,131	5,131	5,131	5,131	5,131
Total Groundwater Recharge	9,525	10,555	9,751	8,370	12,263	8,395	7,014	6,537	8,169	7,943
Non–Project Groundwater Outflow (All Sources)	–11,329	–11,329	–11,329	–11,329	–11,329	–11,329	–11,329	–11,329	–11,329	–11,329
Project Groundwater Outflow (AREP only)	–200	–200	–120	–40	–40	–40	–40	–40	–40	–40

Table 16. 30-Year Projected CVGB Groundwater Budget in Acre Feet Using Adopted Precipitation and Underflow Recharge Estimates and Assuming a Repeat of the Driest 30 Years on Record at Blythe, with the Athos Renewable Energy Project in Place

Total Groundwater Outflow	–11,529	–11,529	–11,449	–11,369	–11,369	–11,369	–11,369	–11,369	–11,369	–11,369
Budget Balance (Inflow – Outflow)	–2,004	–974	–1,698	–2,999	894	–2,974	–4,355	–4,832	–3,200	–3,426
Cumulative Budget Balance (Inflow – Outflow)	–2,004	–2,978	–4,675	–7,674	–6,780	–9,754	–14,108	–18,940	–22,140	–25,565
Year	11	12	13	14	15	16	17	18	19	20
Precipitation Reference Year	1903	1904	1905	1906	1907	1908	1909	1910	1911	1912
Rainfall, in Inches	0.88	1.33	4.29	2.55	2.18	3.21	5.51	4.66	3.58	4.44
Precipitation as Percentage of Average	26%	39%	125%	75%	64%	94%	161%	136%	105%	130%
Normal Recharge from Precipitation	8,588	8,588	8,588	8,588	8,588	8,588	8,588	8,588	8,588	8,588
Adjusted Recharge from Precipitation	2,210	3,340	10,773	6,403	5,474	8,061	13,836	11,702	8,990	11,149
Other Groundwater Recharge (All Sources)	5,131	5,131	5,131	5,131	5,131	5,131	5,131	5,131	5,131	5,131
Total Groundwater Recharge	7,341	8,471	15,904	11,534	10,605	13,192	18,967	16,833	14,121	16,280
Non–Project Groundwater Outflow (All Sources)	–11,329	–11,329	–11,329	–11,329	–11,329	–11,329	–11,329	–11,329	–11,329	–11,329
Project Groundwater Outflow (AREP only)	–40	–40	–40	–40	–40	–40	–40	–40	–40	–40
Total Groundwater Outflow	–11,369	–11,369	–11,369	–11,369	–11,369	–11,369	–11,369	–11,369	–11,369	–11,369
Budget Balance (Inflow – Outflow)	–4,028	–2,898	4,535	165	–764	1,823	7,598	5,464	2,752	4,911
Cumulative Budget Balance (Inflow – Outflow)	–29,594	–32,492	–27,957	–27,792	–28,556	–26,733	–19,135	–13,671	–10,919	–6,008
Year	21	22	23	24	25	26	27	28	29	30
Precipitation Reference Year	1913	1914	1915	1916	1917	1918	1919	1920	1921	1922
Rainfall, in Inches	4.8	5.82	3.88	3.64	1.82	6.64	3.66	4.51	7.08	2.11
Precipitation as Percentage of Average	140%	170%	113%	106%	53%	194%	107%	132%	207%	62%
Normal Recharge from Precipitation	8,588	8,588	8,588	8,588	8,588	8,588	8,588	8,588	8,588	8,588
Adjusted Recharge from Precipitation	12,053	14,615	9,743	9,140	4,570	16,674	9,191	11,325	17,779	5,298
Other Groundwater Recharge (All Sources)	5,131	5,131	5,131	5,131	5,131	5,131	5,131	5,131	5,131	5,131
Total Groundwater Recharge	17,184	19,746	14,874	14,271	9,701	21,805	14,322	16,456	22,910	10,429
Non–Project Groundwater Outflow (All Sources)	–11,329	–11,329	–11,329	–11,329	–11,329	–11,329	–11,329	–11,329	–11,329	–11,329
Project Groundwater Outflow (AREP only)	–40	–40	–40	–40	–40	–40	–40	–40	–40	–40
Total Groundwater Outflow	–11,369	–11,369	–11,369	–11,369	–11,369	–11,369	–11,369	–11,369	–11,369	–11,369
Budget Balance (Inflow – Outflow)	5,815	8,377	3,505	2,902	–1,668	10,436	2,953	5,087	11,541	–940
Cumulative Budget Balance (Inflow – Outflow)	–192	8,184	11,689	14,592	12,924	23,360	26,312	31,400	42,940	42,001

Table 17. 30-Year Projected CVGB Groundwater Budget in Acre Feet Using Adopted Precipitation and Underflow Recharge Estimates and Assuming a Repeat of the Driest 30 Years on Record at Blythe, with all Cumulative Projects in Place

Year	1	2	3	4	5	6	7	8	9	10
Precipitation Reference Year	1893	1894	1895	1896	1897	1898	1899	1900	1901	1902
Rainfall, in Inches	1.75	2.16	1.84	1.29	2.84	1.3	0.75	0.56	1.21	1.12
Precipitation as Percentage of Average	51%	63%	54%	38%	83%	38%	22%	16%	35%	33%
Normal Recharge from Precipitation	8,588	8,588	8,588	8,588	8,588	8,588	8,588	8,588	8,588	8,588
Adjusted Recharge from Precipitation	4,394	5,424	4,620	3,239	7,132	3,264	1,883	1,406	3,038	2,812
Other Groundwater Recharge (All Sources)	5,131	5,131	5,131	5,131	5,131	5,131	5,131	5,131	5,131	5,131
Total Groundwater Recharge	9,525	10,555	9,751	8,370	12,263	8,395	7,014	6,537	8,169	7,943
Non-Project Groundwater Outflow (All Sources)	–11,329	–11,329	–11,329	–11,329	–11,329	–11,329	–11,329	–11,329	–11,329	–11,329
Project Groundwater Outflow (All Cumulative Projects)	–7,010	–5,538	–4,968	–4,716	–2,310	–2,310	–2,310	–2,310	–2,310	–2,310
Total Groundwater Outflow	–18,339	–16,867	–16,297	–16,045	–13,639	–13,639	–13,639	–13,639	–13,639	–13,639
Budget Balance (Inflow – Outflow)	–8,813	–6,312	–6,546	–7,675	–1,377	–5,244	–6,625	–7,102	–5,470	–5,696
Cumulative Budget Balance (Inflow – Outflow)	–8,813	–15,126	–21,672	–29,346	–30,723	–35,967	–42,592	–49,694	–55,164	–60,860
Year	11	12	13	14	15	16	17	18	19	20
Precipitation Reference Year	1903	1904	1905	1906	1907	1908	1909	1910	1911	1912
Rainfall, in Inches	0.88	1.33	4.29	2.55	2.18	3.21	5.51	4.66	3.58	4.44
Precipitation as Percentage of Average	26%	39%	125%	75%	64%	94%	161%	136%	105%	130%
Normal Recharge from Precipitation	8,588	8,588	8,588	8,588	8,588	8,588	8,588	8,588	8,588	8,588
Adjusted Recharge from Precipitation	2,210	3,340	10,773	6,403	5,474	8,061	13,836	11,702	8,990	11,149
Other Groundwater Recharge (All Sources)	5,131	5,131	5,131	5,131	5,131	5,131	5,131	5,131	5,131	5,131
Total Groundwater Recharge	7,341	8,471	15,904	11,534	10,605	13,192	18,967	16,833	14,121	16,280
Non-Project Groundwater Outflow (All Sources)	–11,329	–11,329	–11,329	–11,329	–11,329	–11,329	–11,329	–11,329	–11,329	–11,329
Project Groundwater Outflow (All Cumulative Projects)	–2,310	–2,310	–2,310	–2,310	–2,310	–2,310	–2,310	–2,310	–2,310	–2,310
Total Groundwater Outflow	–13,639	–13,639	–13,639	–13,639	–13,639	–13,639	–13,639	–13,639	–13,639	–13,639
Budget Balance (Inflow – Outflow)	–6,299	–5,169	2,264	–2,105	–3,034	–448	5,328	3,193	481	2,641
Cumulative Budget Balance (Inflow – Outflow)	–67,158	–72,327	–70,063	–72,167	–75,202	–75,649	–70,321	–67,128	–66,646	–64,005
Year	21	22	23	24	25	26	27	28	29	30
Precipitation Reference Year	1913	1914	1915	1916	1917	1918	1919	1920	1921	1922
Rainfall, in Inches	4.8	5.82	3.88	3.64	1.82	6.64	3.66	4.51	7.08	2.11
Precipitation as Percentage of Average	140%	170%	113%	106%	53%	194%	107%	132%	207%	62%
Normal Recharge from Precipitation	8,588	8,588	8,588	8,588	8,588	8,588	8,588	8,588	8,588	8,588
Adjusted Recharge from Precipitation	12,053	14,615	9,743	9,140	4,570	16,674	9,191	11,325	17,779	5,298
Other Groundwater Recharge (All Sources)	5,131	5,131	5,131	5,131	5,131	5,131	5,131	5,131	5,131	5,131

Table 17. 30-Year Projected CVGB Groundwater Budget in Acre Feet Using Adopted Precipitation and Underflow Recharge Estimates and Assuming a Repeat of the Driest 30 Years on Record at Blythe, with all Cumulative Projects in Place

Total Groundwater Recharge	17,184	19,746	14,874	14,271	9,701	21,805	14,322	16,456	22,910	10,429
Non-Project Groundwater Outflow (All Sources)	–11,329	–11,329	–11,329	–11,329	–11,329	–11,329	–11,329	–11,329	–11,329	–11,329
Project Groundwater Outflow (All Cumulative Projects)	–2,310	–2,310	–2,310	–2,310	–2,310	–2,310	–2,310	–2,310	–2,310	–2,310
Total Groundwater Outflow	–13,639	–13,639	–13,639	–13,639	–13,639	–13,639	–13,639	–13,639	–13,639	–13,639
Budget Balance (Inflow – Outflow)	3,545	6,106	1,235	632	–3,938	8,165	682	2,817	9,270	–3,210
Cumulative Budget Balance (Inflow – Outflow)	–60,460	–54,354	–53,119	–52,487	–56,425	–48,260	–47,577	–44,760	–35,490	–38,700

7. Analysis Summary and Conclusions

The following provides a summary of the results of the analysis presented above.

- Table 4 shows that under normal precipitation conditions and using precipitation recharge and the adopted subsurface inflow recharge estimates, the CVGB would have a baseline surplus of approximately 2,390 afy, which means there could be a sustainable yield of groundwater extraction in that amount. Table 5, based on lower precipitation and subsurface inflow estimates (the NPS recharge estimates), shows that the CVGB could already be in an overdraft condition of 6,685 afy, and is and will continue to lose groundwater unless current pumping is curtailed. In this case, any additional extractions would increase the overdraft unless replaced by additional inflow.
- Tables 6 through 9 show that there will be a groundwater deficit in dry years and critical dry years (10 percent and 3 percent probability) under current conditions. The magnitude of the deficit depends on the recharge input assumptions.
- Tables 10 and 11 show that under current extraction conditions a repeat of the worst sustained drought on record at Blythe, 12 years of below-average precipitation, will likely result in cumulative groundwater overdrafts of 31,612 af to 94,682 af. Unless compensated by subsequent high-precipitation years, this would likely become a new baseline groundwater level. This cumulative overdraft would represent roughly 0.2 percent to 0.6 percent of the total groundwater in the basin.
- The addition of the AREP alone to the existing condition would not create an overdraft in the CVGB, assuming adopted recharge estimates, and would have little effect on the cumulative surplus that is expected. Assuming NPS recharge estimates, the AREP would contribute about 1 percent to a 30-year projected overdraft.
- Table 13 shows that with all cumulative projects in place, and using adopted recharge estimates, the CVGB would suffer an initial overdraft of about 12,673 af in 2023, due to the higher use of water during project construction, and then begin to recover. In other words, after construction is complete, operation water use will be slightly less than the safe yield estimate of 2,390 afy. Long-term cumulative operational use is estimated at 2,310 afy, to which the AREP would contribute about 1.7 percent. This AREP contribution would have little effect on the rate of groundwater use or recovery. At the end of 30 years, the total cumulative deficit would be about 10,601 af.
- Using NPS recharge estimates the CVGB, now in overdraft, would be in more severe overdraft with cumulative projects in place, resulting in a cumulative 30-year overdraft of 282,851 af, to which the AREP would contribute about 0.6 percent.

- Table 14 shows that under a repeat of the multiple dry year scenario based on the 1893 to 1904 drought, cumulative projects would exacerbate the cumulative overdraft shown in Table 10. With projects in place and adopted recharge estimates, the cumulative overdraft would be 72,327 af to which the AREP would contribute about 1.2 percent. Using NPS recharge estimates, there would be a cumulative overdraft of 135,397 af at the end of the drought, to which the AREP would contribute about 0.6 percent.

7.1 Groundwater Budget Reliability Considerations

The groundwater budgets presented in this section are based on assumptions that could affect the reliability of the budget projections. These assumptions are based on the best available data from the sources cited in this document. The following is a discussion of these assumptions, and other considerations, and their implications on the groundwater budgets.

Recharge from precipitation is an important component of the groundwater budget, and alone can make a difference whether the groundwater basin is in a condition of surplus or overdraft. The amount of recharge from precipitation is difficult to estimate. The estimate used in this analysis, 8,588 afy, represents 3% of the total average annual precipitation on the CVGB watershed, and is considered a reasonable estimate of the reported recharge range from previous studies. The overall groundwater budget is very sensitive to the precipitation input. For instance, if the recharge by precipitation is as low as 2.4% of total annual precipitation (6,198 afy), the baseline groundwater budget would give a net budget balance of zero, and all project scenarios presented above would result in a groundwater deficit. If recharge from precipitation is as high as 6% of total rainfall, which is within the probable range of recharge estimated by the USGS (USGS, 2007) and CEC (CEC, 2015), there would be no groundwater deficit in any year under the cumulative scenario except under the lower subsurface inflow estimates of the NPS, for which the 30-year cumulative deficit would be only about 25,000 acre feet (less than 0.2 percent of total storage).

Precipitation reliability could be uncertain should there be shifts in the future climate of the area.

All other groundwater budget input parameters are best estimates subject to uncertainty. The cumulative project list includes projects that are still under consideration and which could be altered or cancelled in the future. Other projects could be proposed, and projects could use other water sources than the CVGB. Changes in future projects could have substantial effects on the groundwater budget.

7.2 Conclusions

It is determined that the AREP, as a stand-alone project, can draw all its anticipated water needs from the CVGB without resulting in an overdraft of the groundwater basin under normal (average precipitation) conditions using adopted inflow rates. The normal-year baseline groundwater budget for the CVGB shows a surplus of 2,390 acre feet, which is more than the total yearly need for construction by the AREP, and far more than the annual operating water needs. The total 30-year projected water use of the AREP is less than the annual baseline water surplus for the CVGB.

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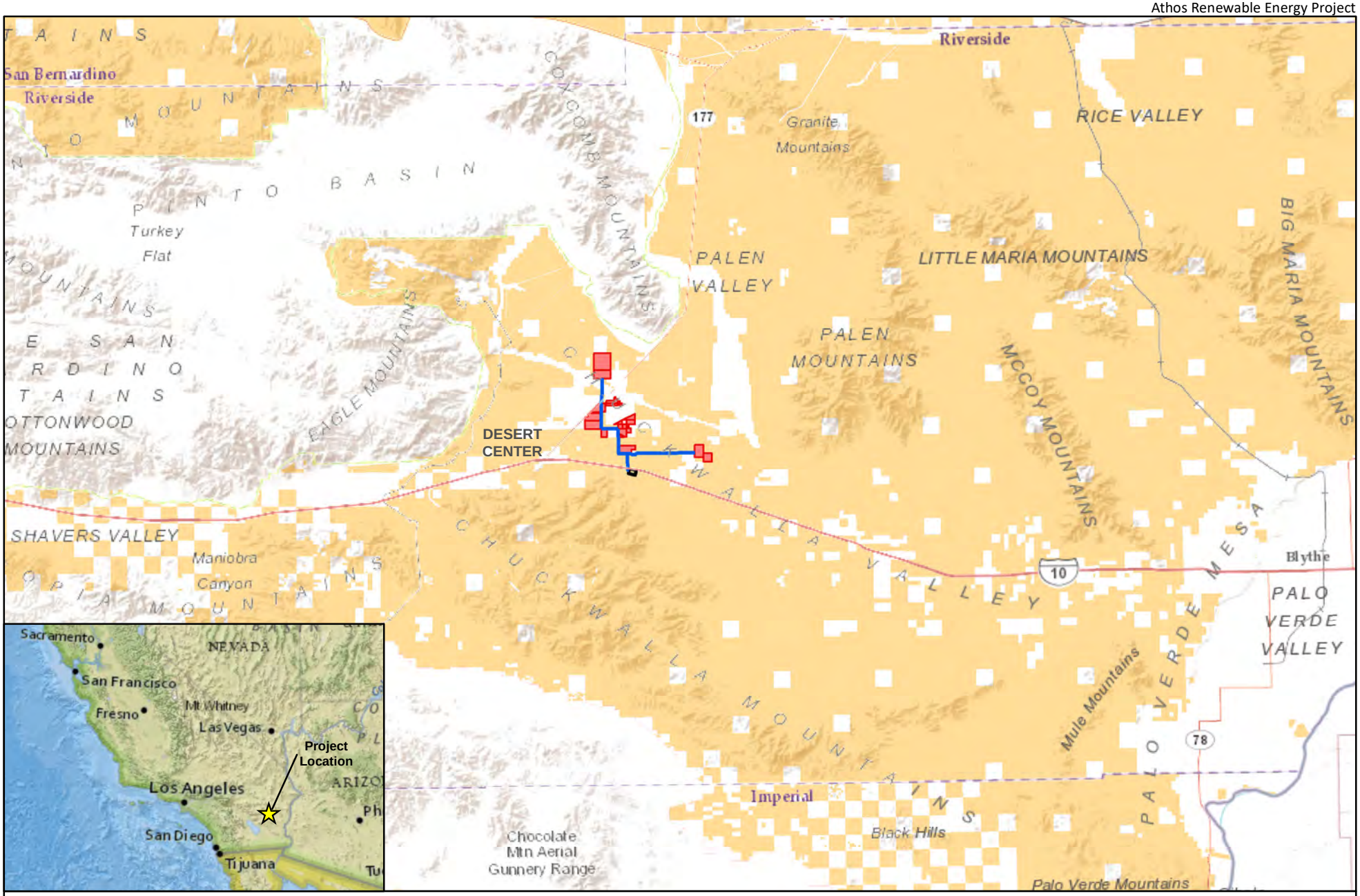

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Proposed Gen-Tie

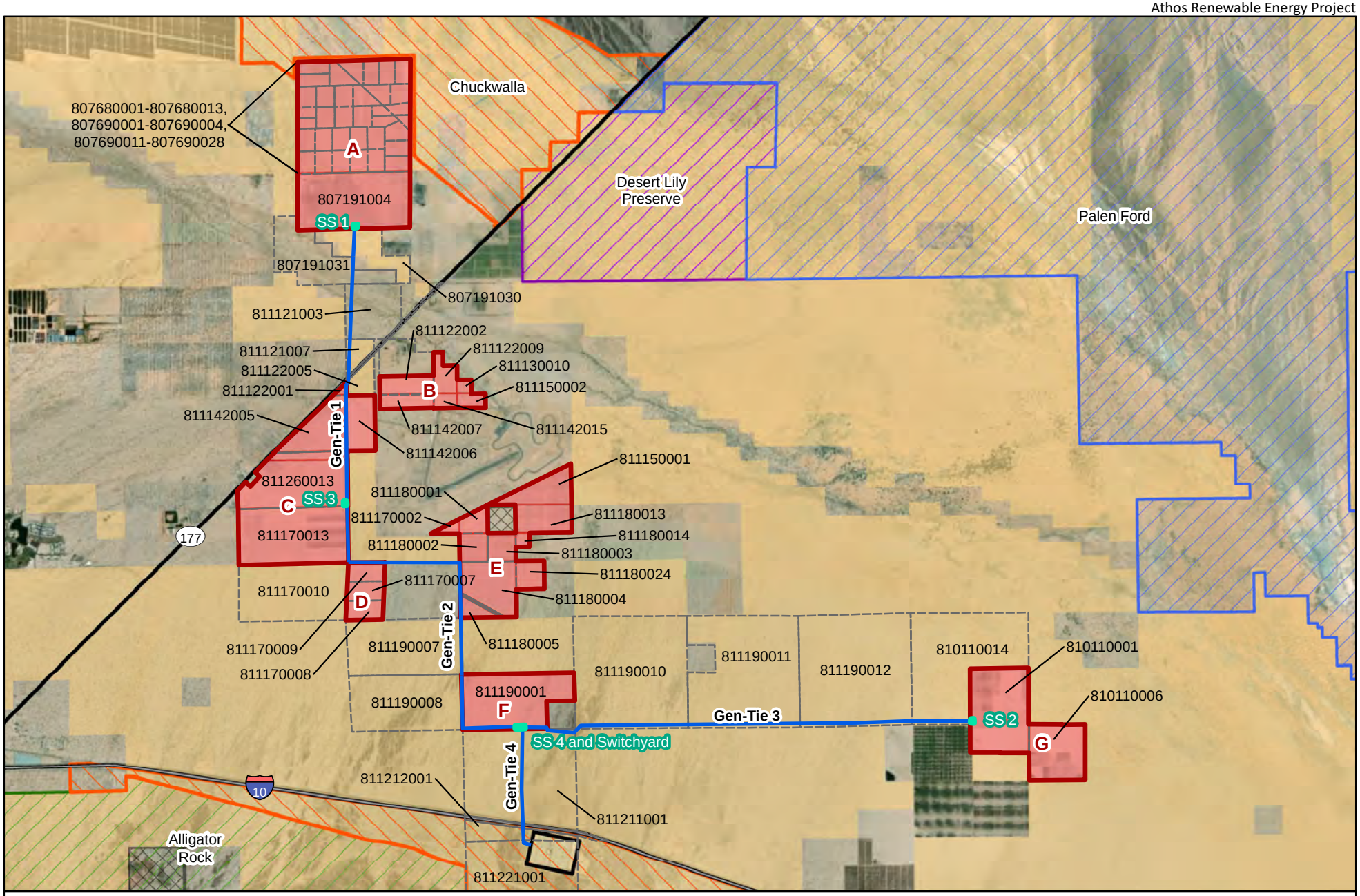
Solar Facility

Red Bluff Substation

BLM Land

Figure 1

Project Vicinity



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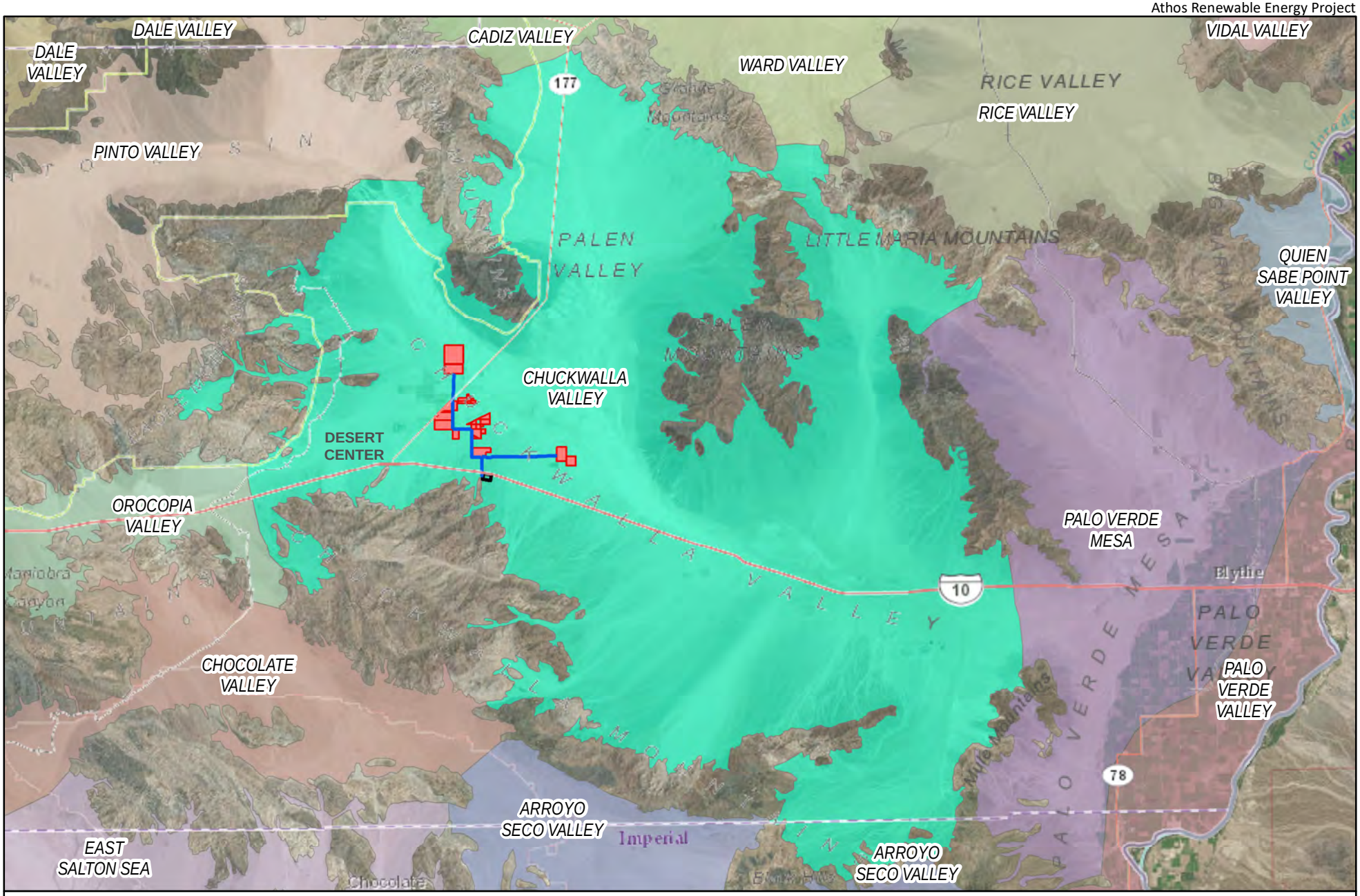
Proposed Gen-Tie
Substation
Solar Facility (Private Land)
Parcel Groups
Red Bluff Substation
Bureau of Land Management
CA State Lands Commission
Parcel Line
Alligator Rock ACEC
Chuckwalla ACEC (on BLM Land only)
Desert Lily Preserve
Palen Ford ACEC

Figure 2

Project Area



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Proposed Gen-Tie

Solar Facility

Red Bluff Substation

Chuckwalla Valley Groundwater Basin (Adjacent Basins Shown with Different Colors)

Figure 3

Chuckwalla Valley Groundwater Basin

Appendix H

Hydrology and Water Resources

Appendix H.1

Preliminary Hydrology Study

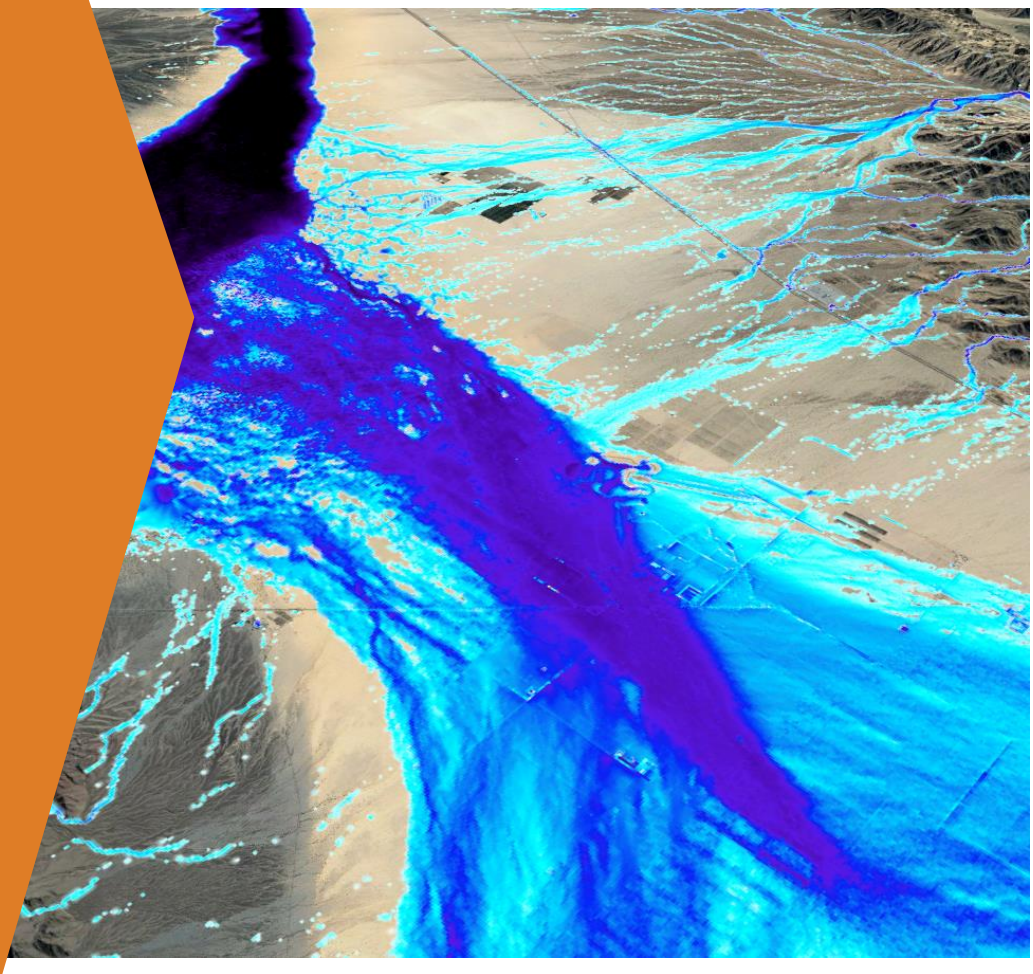
Westwood

Preliminary Hydrology Study

Athos Solar Project

Riverside County, California

June 2018



Prepared For:

Intersect Power

Westwood

Preliminary Hydrology Study for

Athos Solar Project

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Project Number: 0013768.00
Date: 06/12/2018

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Exhibit 5: Curve Number Map
Exhibit 6: 100-Year Max Water Depth Map
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APPENDICES

Appendix A: NOAA Atlas 14 Rainfall Data
Appendix B: Curve Number Table
Appendix C: Flooding Depth Analyses (Prepared by Others)

OVERVIEW

The purpose of the study is to describe the hydrology of the proposed Athos Solar Project ("the project") and any impacts that the hydrology may play in the design of the solar array.

The preliminary project boundary encompasses approximately 5.04 square miles of land in Riverside County, starting approximately 3 miles northeast of Desert Center in Riverside County, California (Exhibit 1). At the time of this report, the project consists of preliminary parcels although the layout is not finalized.

The project site is located on a steep to moderate slopes and generally slopes to the southeast. The modeled watershed area encompasses ~264 square miles. The project area has some mild slopes of around 1% and the upper reaches of the watershed has some steeper slopes of 20%-35%.

FEMA has completed a study to determine flood hazard for the selected location, the project area is covered by panels 06065C1825G, 06065C2450G and 06065C2475G. The project area contains no mapped FEMA flood hazards however the project does contain flood hazards from the CA DWR Flood Awareness layer (Exhibit 2).

The hydrologic modeling in this report was created using FLO-2D modeling software. Because of the complex and distributary nature of flow paths upstream and through the project site, FLO-2D hydrologic/hydraulic modeling software was utilized to determine flow depths and velocities throughout the site. These results were then compared against HEC-RAS modeling of the project area.

During a 100 year storm the flood depths vary greatly across the parcels depending on their location. Overall, the analysis shows low water depths and velocities (Exhibits 6 and 7) across the more southern parcels. The southern parcels primarily have flood depths with less than 0.5 feet with velocities less than 1 foot/second except in the more channelized areas. The more northern parcels in and directly adjacent to the main wash have flood depths in excess of 1'-6' of water during the 100 year storm event with velocities exceeding 2 feet/second. See Exhibits 6A and 7A for these areas within the project with higher flood depths and velocities. FLO-2D modeling produced the most conservative water depths across the majority of the site. Final equipment elevations should be based on the FLO-2D maximum depths.

DATA SOURCES

The models and methods for this project utilize a combination of public and private data as shown in Table 1.

Table 1: Data Sources

Data Type	Format	Source	Use
Elevation	2-ft Photogrammetry	Westwood	Onsite FLO-2D Model Elevations
Elevation	5-Meter Digital Elevation Model (DEM)	Intermap Nextmap Lidar	Offsite FLO-2D Model Elevations
Elevation	10-Meter DEM	USGS Data Gateway	Offsite FLO-2D Model Elevations
Crop Data	Shapefile	USDA 2013 Crop Data Layer	Landcover
Soils	Shapefile	USGS SSURGO Dataset	Curve Numbers
Precipitation	PDF File	NOAA Atlas 14	Design storms
HUC-12 Drainage Boundary	Shapefile	USGS	Define Model Extents
Site Boundary	KMZ	Intersect Power	Define Model Extents
2014 Aerial Photography	ArcGIS Map Service	USDA FSA	Reference

OFFSITE HYDROLOGY

The project area is located approximately 3 miles northeast of Desert Center in Riverside County, California. The project site is located on mild slopes of 1% and generally slopes to the southeast h. The modeled watershed area encompasses ~264 square miles and the total tributary area is 1,004 square miles (Exhibit 9). The project area has some mild slopes of around 1%-2% and also includes areas of steeper slopes of 20%-35% through portions of the project area. The potential hydrologic issues in this general landscape are flooding and erosive velocities.

Because of the complex and distributary nature of flow paths upstream and through the project site, a FLO-2D model with 100' grid cells was utilized to determine flow depths and velocities throughout the site.

FLO-2D

FLO-2D is a physical process model that routes rainfall runoff and flood hydrographs over flow surfaces or in channels using the dynamic wave approximation to the momentum equation. FLO-2D offers advantages over 1-D models and unit hydrograph methods by allowing for breakout flows and visualization of flows across a potential site. This is particularly useful on a flat site that receives offsite flows, such as the project site. The primary inputs are a DTM (elevation data), curve numbers and precipitation. No hydraulic structures were modeled (roads/berms are overtopped).

Precipitation data obtained NOAA Atlas 14 (Appendix A) for a 100-year, 24-hour rainfall is 4.09 inches for the modeled project watershed. By using the 100-year rainfall event allows for the best initial analysis in order to determine the worst areas of flooding and erosion.

With such a large tributary area to the parcels inflow hydrographs were used to reduce the model size. The inflows input into the model were obtained from the Flooding Depth Analyses and Scour requirements for PSL#298145 (Appendix C) which was obtained from Riverside County. The peak flow rates for the northern and southern offsite watersheds were then input into the FLO2D model.

Westwood 2-ft photogrammetry was incorporated into the DTM using the export to xyz file function in Global Mapper for onsite model elevations and was used for onsite model elevation data, Intermap Nextmap 5 meter LIDAR and 10-m DEM USGS elevation data was incorporated into the DTM for offsite model elevations. These XYZ files are read directly into FLO-2D.

USDA-NRCS SSURGO soils data provided a general idea of the soils in the area but did not cover the entire area. Soil types were estimated based on landcover and SSURGO data and were hand edited after being approved by Riverside County. Soils in the area are primarily classified as hydrologic group C and D in the watershed area and A soils in the project boundary (Exhibit 3). Land cover was obtained from the USDA 2013 Crop Data Layer or estimated for areas not covered. Exhibit 4 displays the Land Cover Classes for the entire watershed. Curve numbers were applied to each grid cell in the FLO-2D model based on intersecting the grid with the curve numbers (Exhibit 5).

PROJECT HYDRAULICS - GEOHECRAS

The main channel adjacent to the project parcels was also modeled in Geo-HEC-RAS software to determine the extent of the 1% chance area of inundation (100-year floodplain) within the project area compared to FLO-2D. Geo-HEC-RAS is proprietary software that uses HEC-RAS, a U.S. Corps of Engineers product, as its main engine and includes an interface to build models and view results.

In the model, a reach was drawn to depict the direction and connections of stream flow. The same flow rates as input into the FLO-2D model were input on the upstream end of each reach within the project boundary. Cross-sections were then drawn perpendicular to the reaches and elevation contours. A digital terrain model (topographic data) of the project site was uploaded to the model. This data is encoded onto the cross-sections by the software in order to route the flow of water and calculate the width of the floodplain. The GeoHECRAS results and cross sections can be seen on Exhibit 10.

RESULTS AND DESIGN INFORMATION

During a 100 year storm the flood depths vary greatly across the parcels depending on their location. Overall, the analysis shows low water depths and velocities (Exhibits 6 and 7) across the more southern parcels. The southern parcels primarily have flood depths with less than 0.5 feet with velocities less than 1 foot/second except in the more channelized areas. The more northern parcels in and directly adjacent to the main wash have flood depths in excess of 1'-6' of water during the 100 year storm event (Exhibits 6B & 6C). The northern parcels also have a much higher risk of erosion due to the increased velocities exceeding 2 feet/second through the main wash. This flooding through the main wash has a wide expanse and inundates most of the northern parcels. See Exhibits 6A and 7A for these areas within the project with higher flood depths and velocities.

FEMA has completed a study to determine flood hazards and the project area contains no mapped flood zones, however the CA DWR has flood hazards that encompass some of the northern parcels.

A comparison of the FLO-2D results, CA DWR Flood Awareness layer and the GeoHECRAS results can be found in Exhibit 8. The results are similar but do have differences since GeoHECRAS is a 1-D model. FLO-2D modeling produced the most conservative water depths across the majority of the site. Final equipment elevations should be based on the FLO-2D maximum depths.

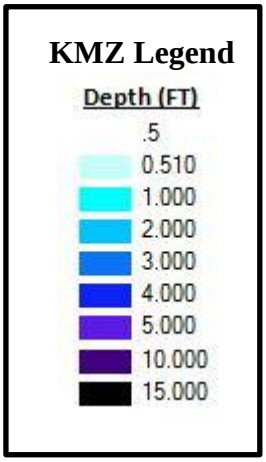
NEXT STEPS

1. Final design should account for avoidance of the flood depths and velocities presented in Exhibits 6 and 7 to protect infrastructure.
2. Facilities to be elevated 1' above the 100-year peak flood elevation.
3. Follow up with geotechnical consultant for additional soil texture data.

Included Output Files:

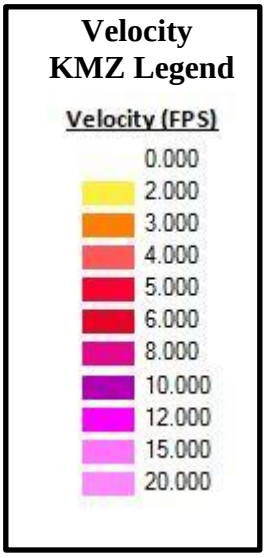
1. Shapefile of Flow Depth
   2018-05-23_Athos_Prelim_Flow_Depth_at_Cell.shp
   Attribute "ID" = Grid Cell Number
   Attribute "VAR" = Max Flow Depth (Feet)

2. KMZ of Flow Depth
   2018-05-23_Athos_Flow_Depth_Preliminary.kmz
   Overlay in Google Earth for graphical representation.



3. Shapefile of Velocity
   2018-05-23_Athos_Prelim_Velocity_at_Cell.shp
   Attribute "ID" = Grid Cell Number
   Attribute "VAR" = Velocity (FPS)

4. KMZ of Velocity
   2018-05-23_Athos_Velocity_Preliminary.kmz
   Overlay in Google Earth for graphical representation.



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NOAA, & Service, N. W. AHPS Precipitation analysis. Retrieved May 2018, from http://water.weather.gov/precip/download.php

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USDA 2013 Crop Data Layer, Landcover data, retrieved May 2018, from https://www.nass.usda.gov/Research_and_Science/Cropland/SARS1a.php

Exhibits

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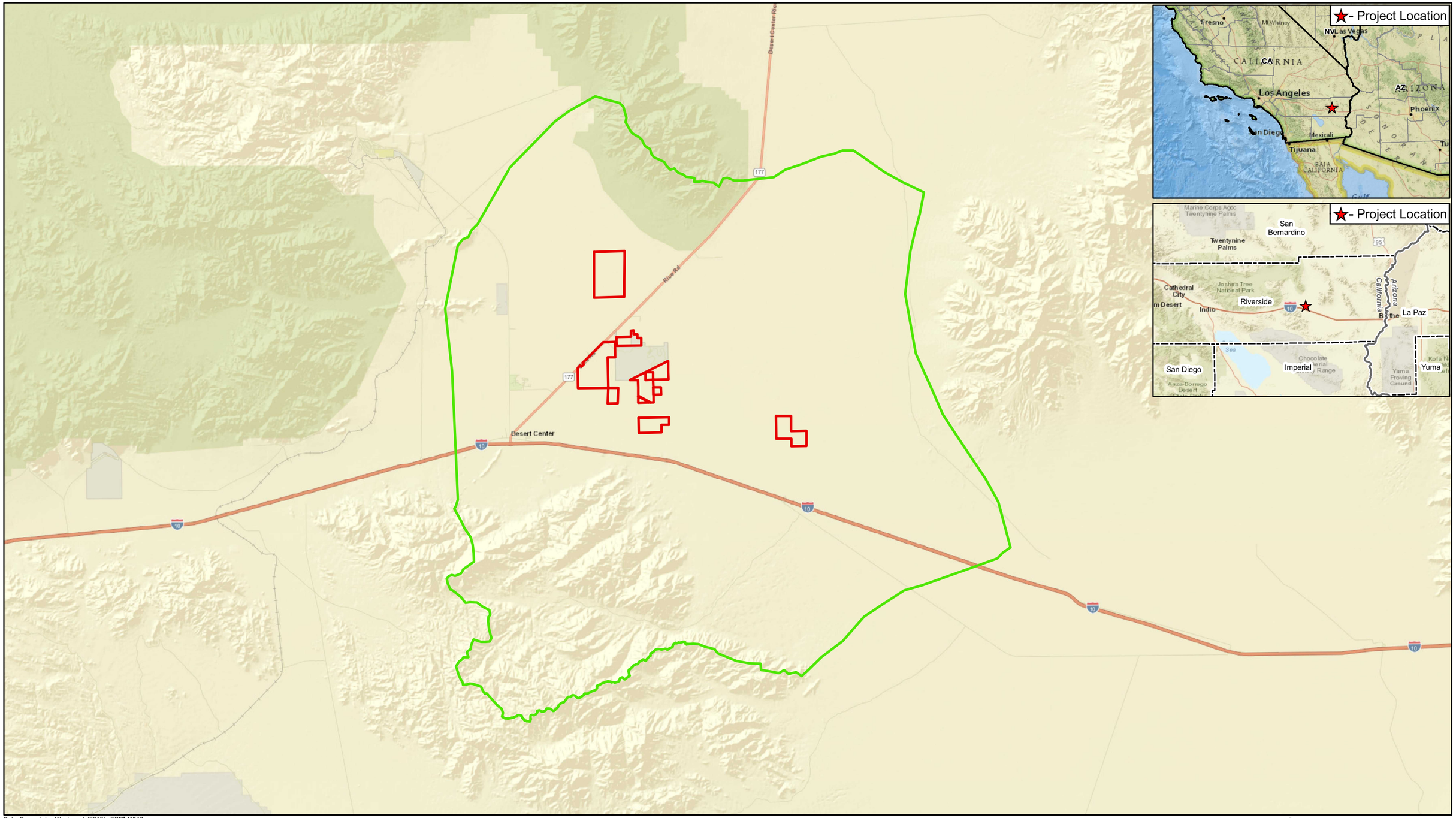

Data Source(s): Westwood (2018); ESRI WMS World Streets Basemap Imagery (Accessed 2018).

Legend

- Project Boundary
- FLO-2D Model Boundary
- County Boundary

N

0 3 Miles

Athos Solar Project

Riverside County, California

Exhibit 1: Location Map

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Map Document: N:\0013768.00\GIS\Hydro Exhibits\2018-05-29_Athos_EX1LocationMap.mxd 5/29/2018 4:16:30 PM

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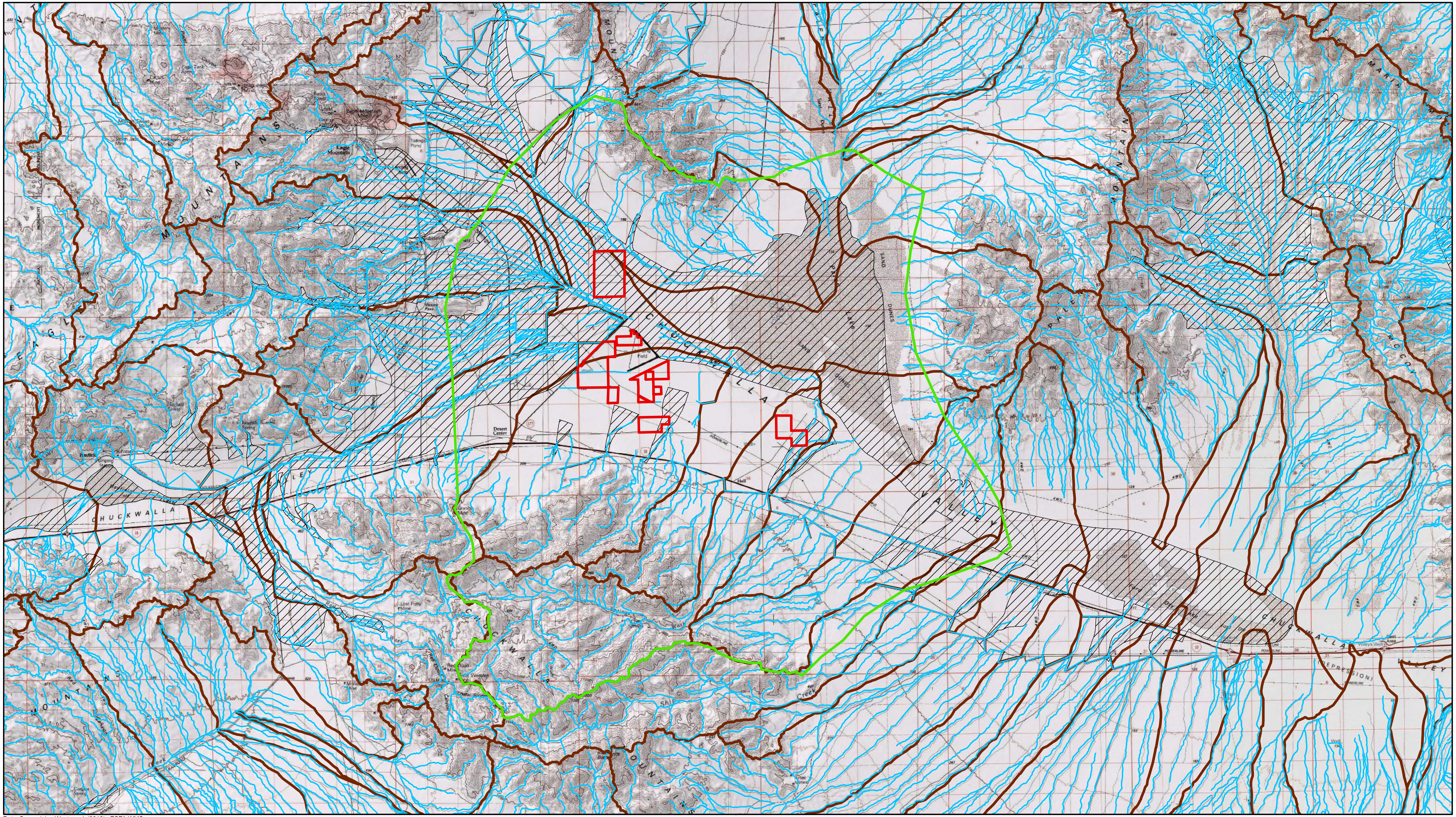

Map Document: N:\0013768.00\GIS\Hydro Exhibits\2018-05-29_Athos_EX2BaseMap.mxd 5/29/2018 4:30:58 PM

Data Source(s): Westwood (2018); ESRI WMS World Streets Basemap Imagery (Accessed 2018).

Legend

- Project Boundary
- FLO-2D Model Boundary
- County Boundary
- CA DWR Flood Awareness Layer
- HUC 12 Boundary
- NHD Flowline

N

0 3 Miles

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Exhibit 2: Base Map

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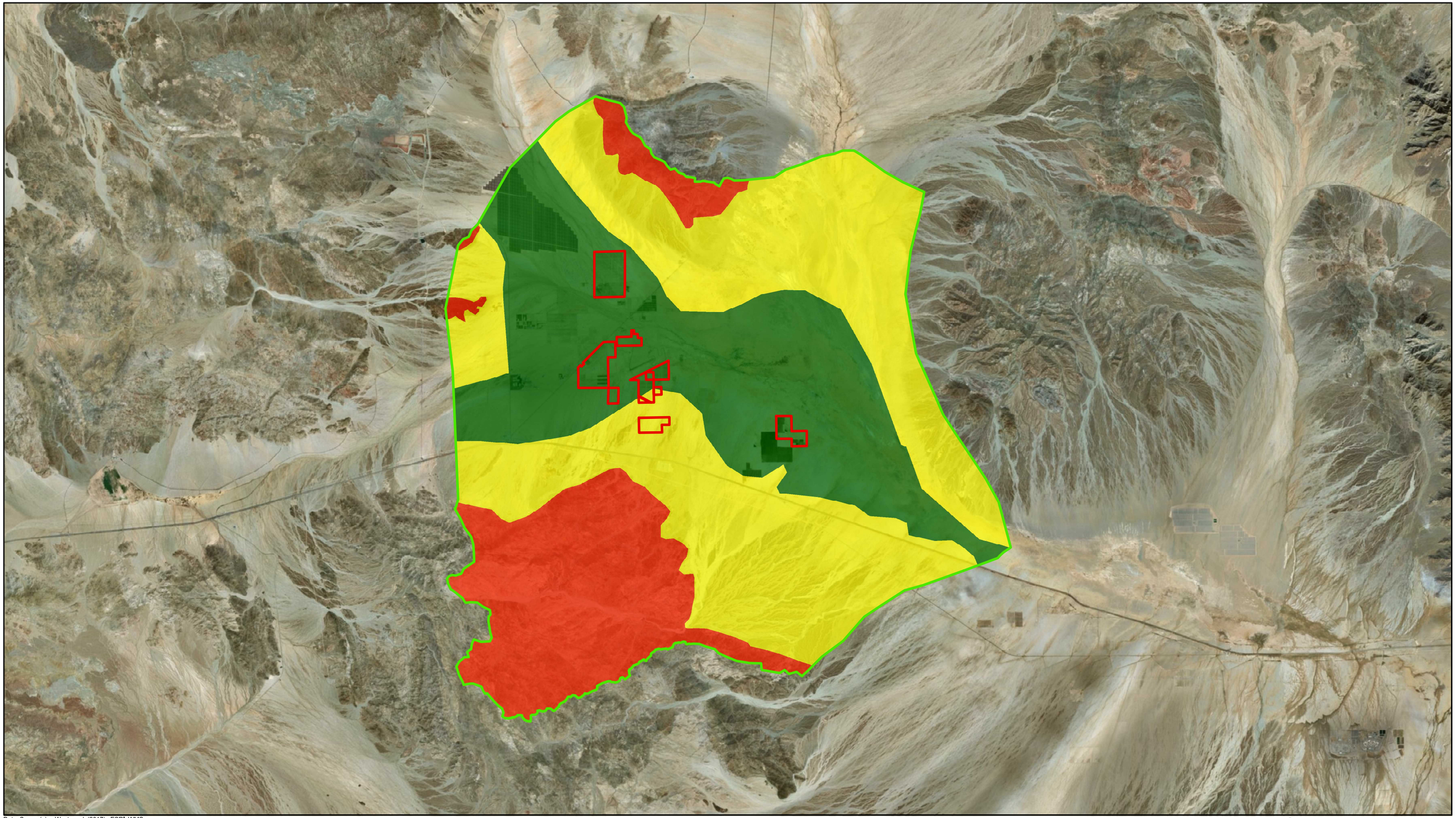

Data Source(s): Westwood (2017); ESRI WMS World Streets Basemap Imagery (Accessed 2017).

Legend

- Project Boundary
- FLO-2D Model Boundary
- County Boundary

Hydrologic Soils Group

- A
- C
- D

N

0 3 Miles

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Exhibit 3: Soils Map

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Map Document: N:\0013768.00\GIS\Hydro Exhibits\2018-05-09_Athos_EX3SoilsMap.mxd 5/29/2018 4:17:08 PM

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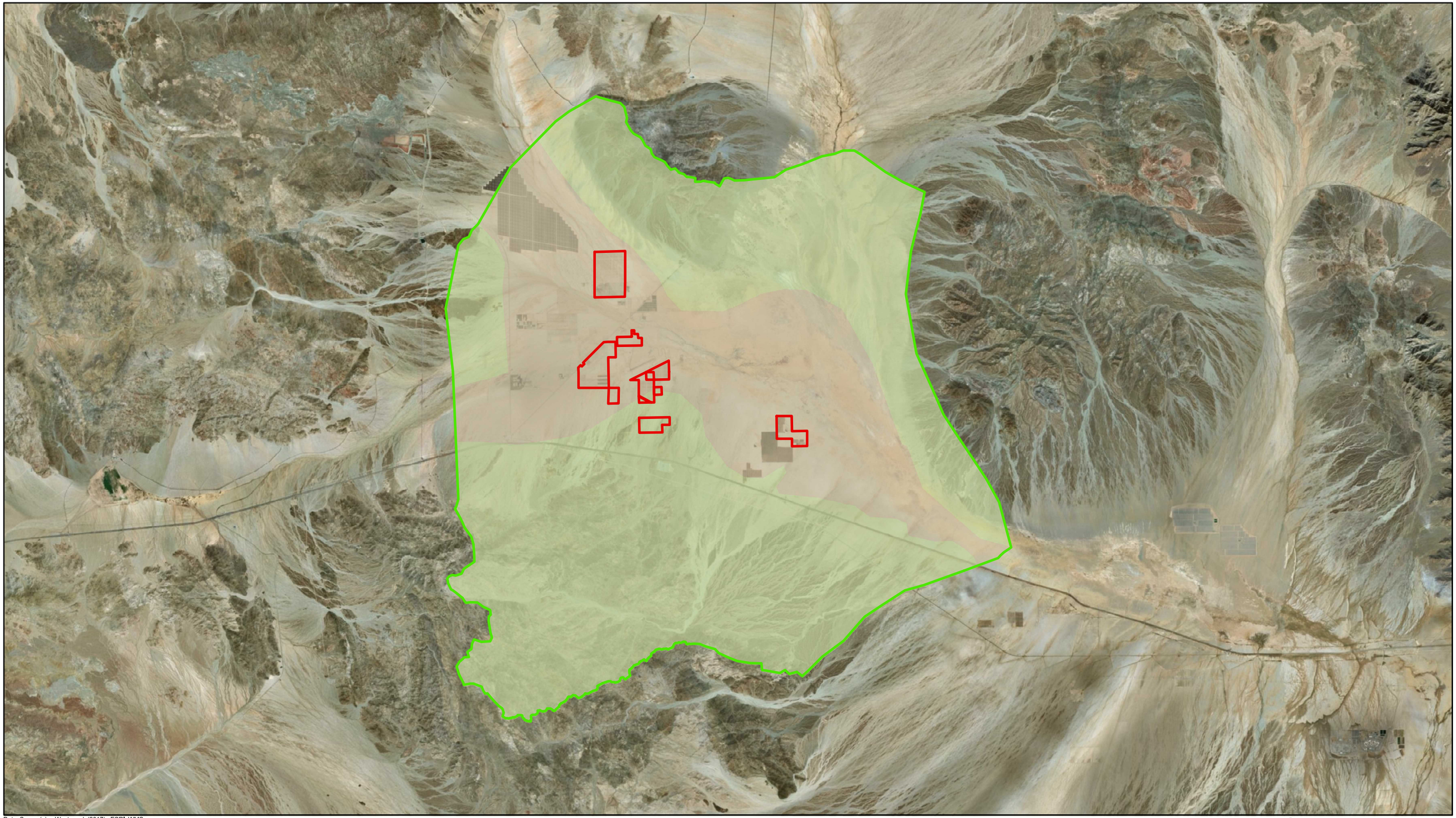

Data Source(s): Westwood (2017); ESRI WMS World Streets Basemap Imagery (Accessed 2017).

Legend

- Project Boundary
- FLO-2D Model Boundary
- County Boundary

Landcover

- Barren
- Shrubland

N

0 3 Miles

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Exhibit 4: Landcover Map

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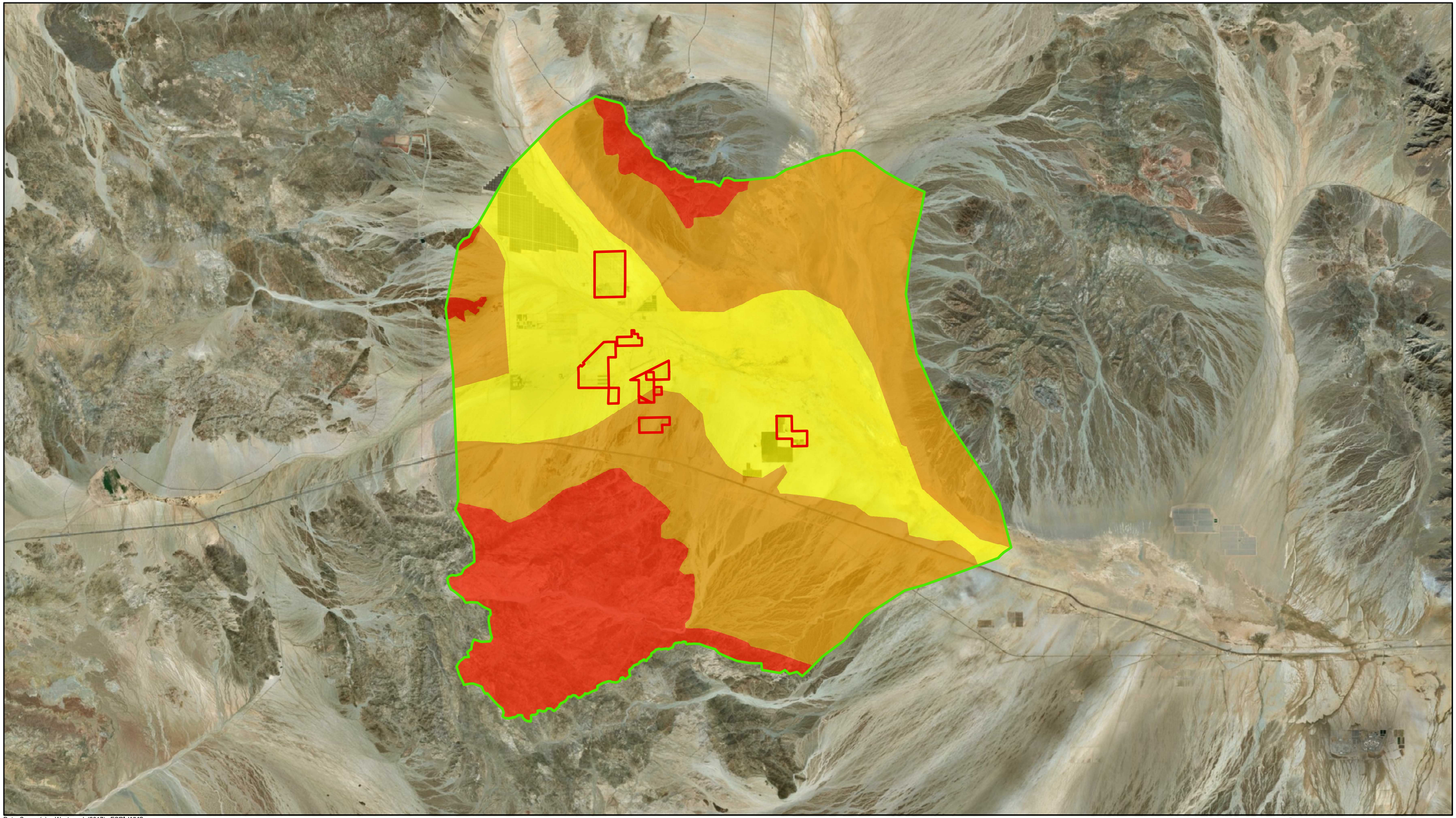

Data Source(s): Westwood (2017); ESRI WMS World Streets Basemap Imagery (Accessed 2017).

Legend

- Project Boundary
- FLO-2D Model Boundary
- County Boundary

Curve Number

- 77
- 81
- 89

N

0 3 Miles

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Exhibit 5: Curve Number Map

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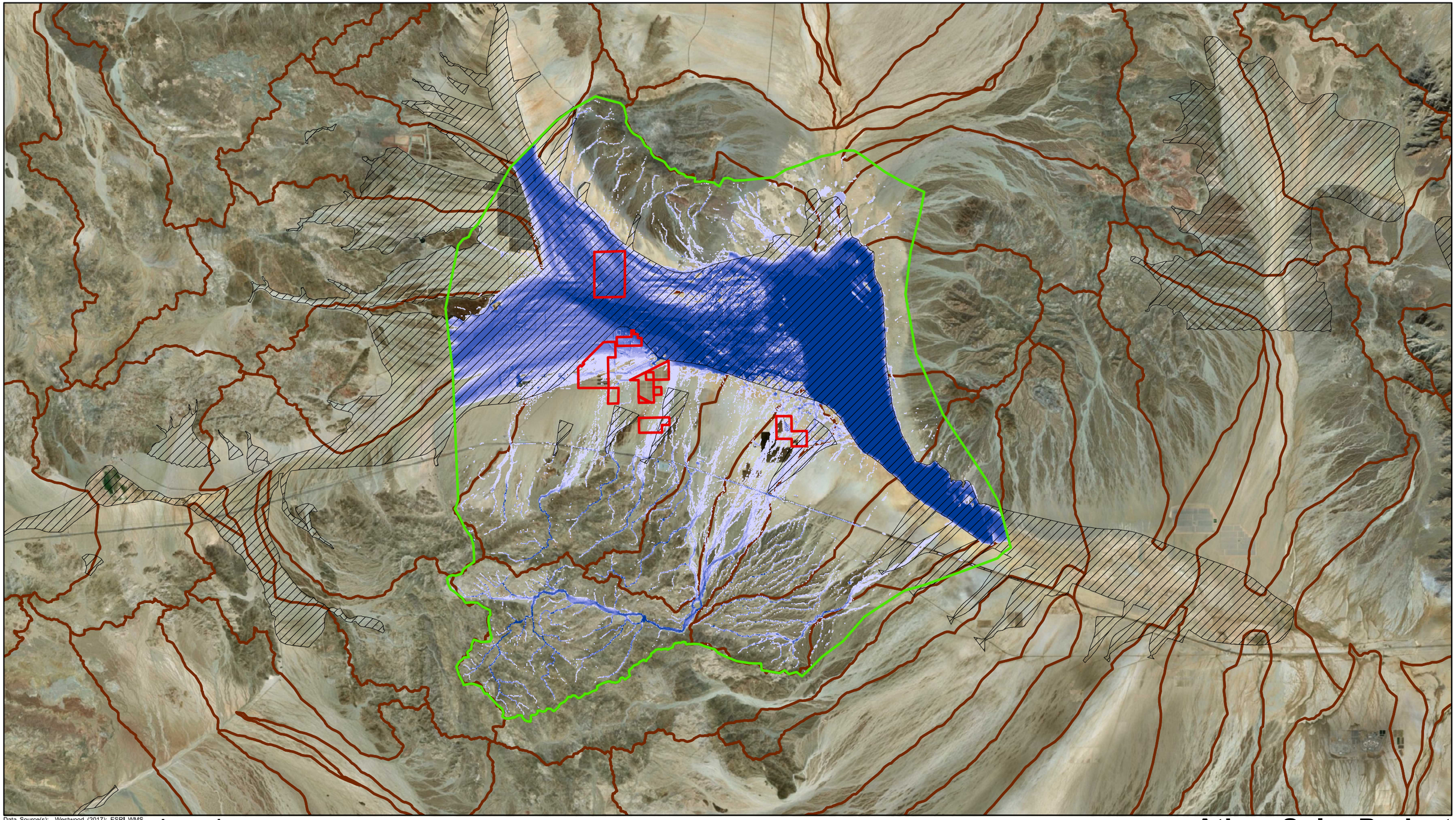

Data Source(s): Westwood (2017); ESRI WMS World Streets Basemap Imagery (Accessed 2017).

Legend

- Project Boundary
- FLO-2D Model Boundary
- County Boundary
- HUC 12 Boundary
- CA DWR Flood Awareness Layer

Max Flow Depth (ft)

0.50 - 1.00 | 1.01 - 1.50 | 1.51 - 2.00 | 2.01 - 2.50 | 2.51 - 3.00 | 3.01 - 4.00 | 4.01 - 6.00 | 6.01+

N

0 Miles 3

Athos Solar Project

Riverside County, California

Exhibit 6: 100-Year Max Water Depth Map

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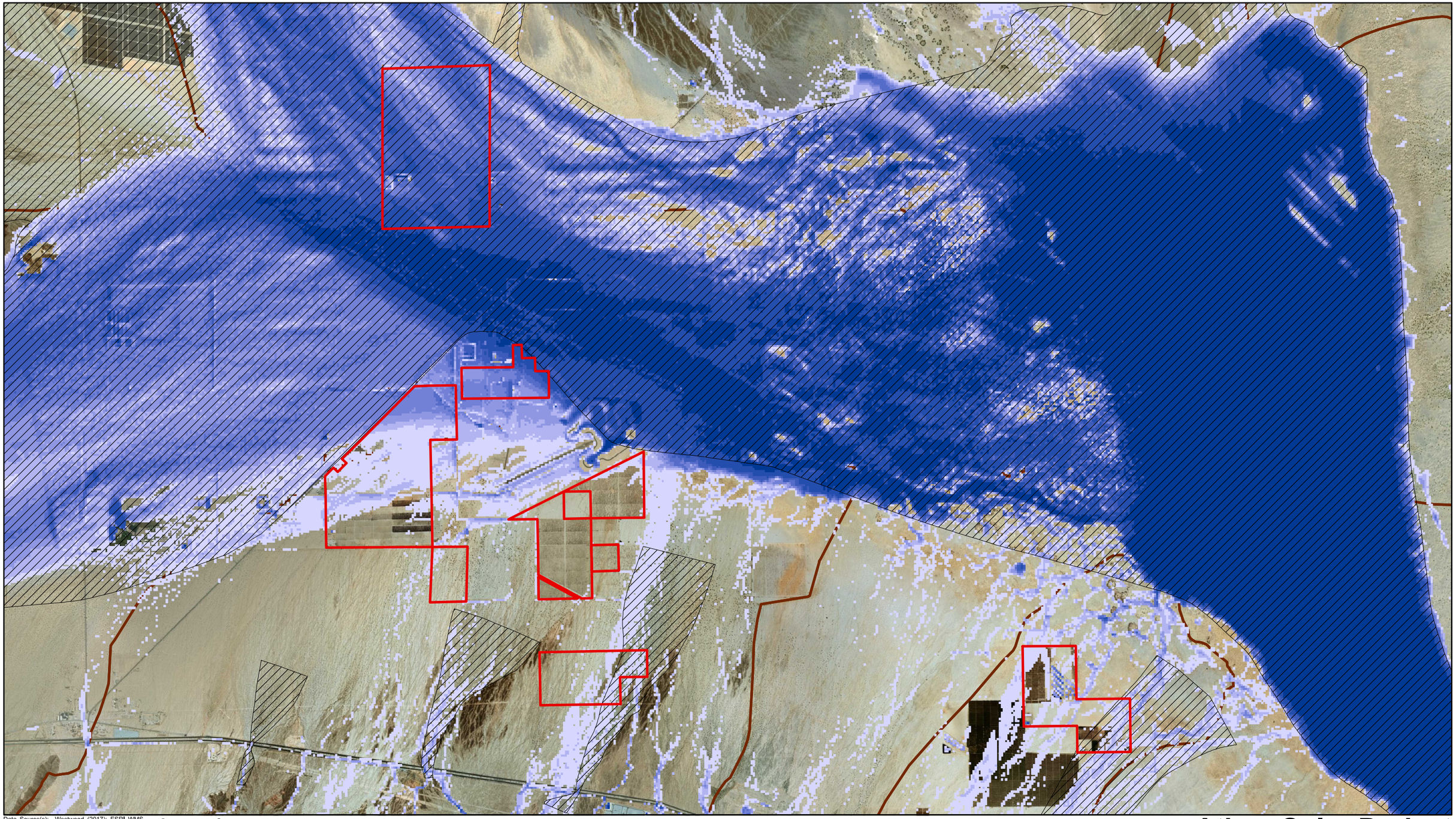

Data Source(s): Westwood (2017); ESRI WMS World Streets Basemap Imagery (Accessed 2017).

Legend

- Project Boundary
- FLO-2D Model Boundary
- County Boundary
- HUC 12 Boundary
- CA DWR Flood Awareness Layer

Max Flow Depth (ft)

0.50 - 1.00 | 1.01 - 1.50 | 1.51 - 2.00 | 2.01 - 2.50 | 2.51 - 3.00 | 3.01 - 4.00 | 4.01 - 6.00 | 6.01+

N

0 — 4,500 Feet

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Exhibit 6A: 100-Year Max Water Depth Project Area Map

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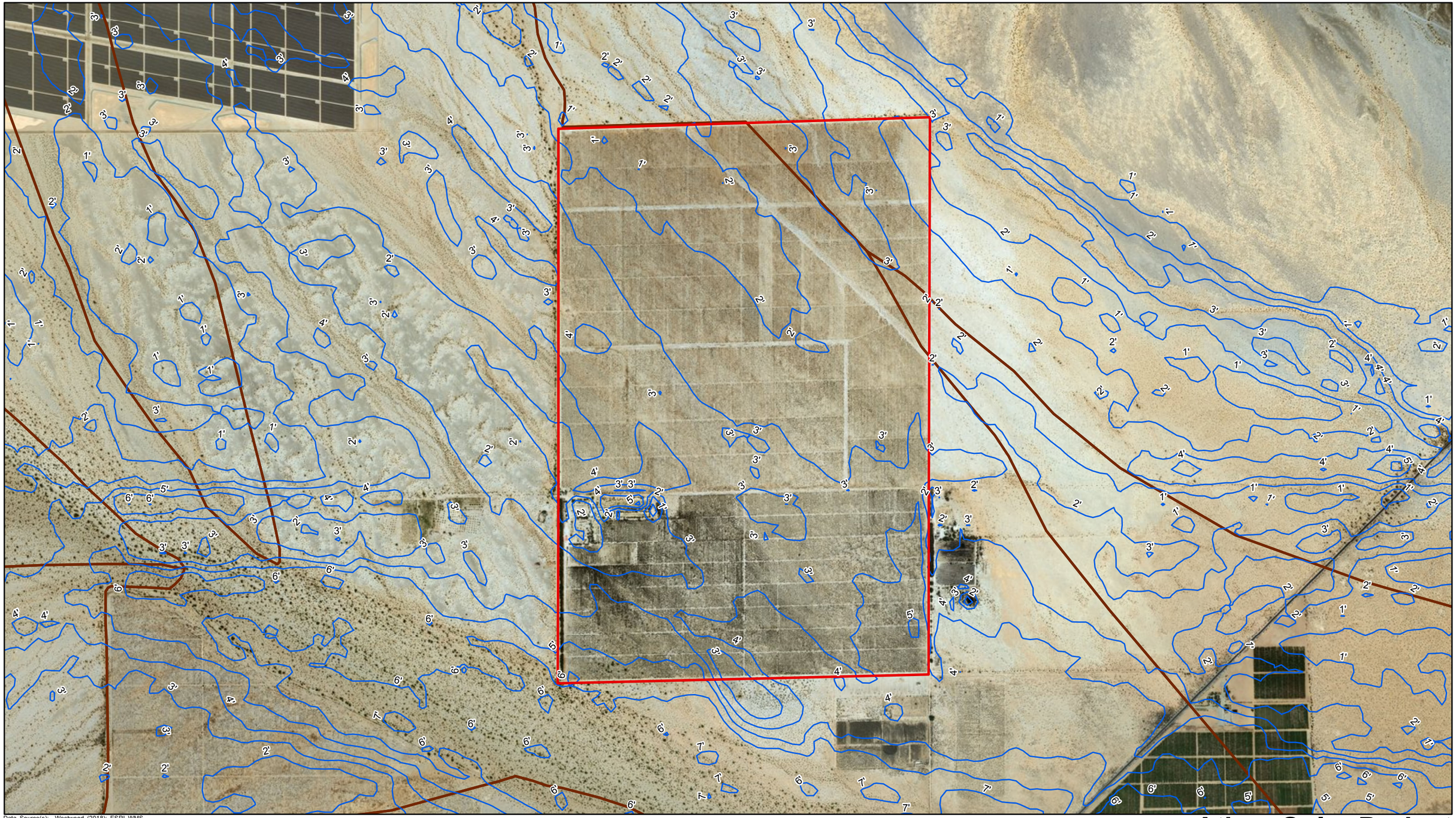

Data Source(s): Westwood (2018); ESRI WMS World Streets Basemap Imagery (Accessed 2018).

Legend

- Project Boundary
- FLO-2D Model Boundary
- County Boundary
- HUC 12 Boundary
- Flood Depth Contour

N

0 1,300 Feet

Athos Solar Project

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Exhibit 6B: 100-Year Max Water Depth North Parcel Map

June 12, 2018

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Map Document: N:\0013768.00\GIS\Hydro Exhibits\2018-05-09_Athos_EX6B_100YMaxWaterDepthMap_North.mxd 6/12/2018 10:38:10 AM

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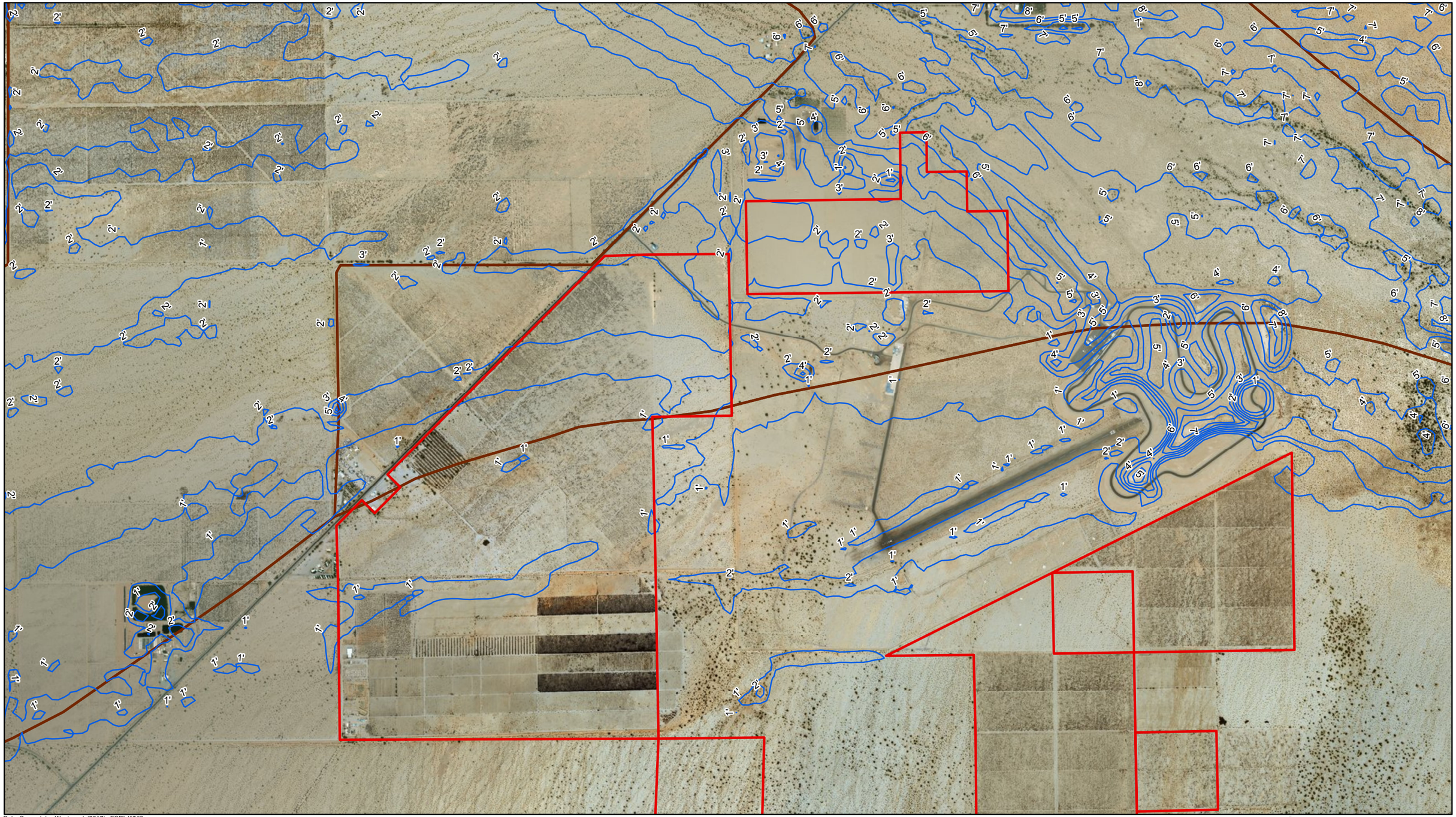

Data Source(s): Westwood (2017); ESRI WMS World Streets Basemap Imagery (Accessed 2017).

Legend

- Project Boundary
- HUC 12 Boundary
- FLO-2D Model Boundary
- Flood Depth Contour
- County Boundary

N

0 1,500 Feet

Athos Solar Project

Riverside County, California

Exhibit 6C: 100-Year Max Water Depth Central Parcels Map

June 12, 2018

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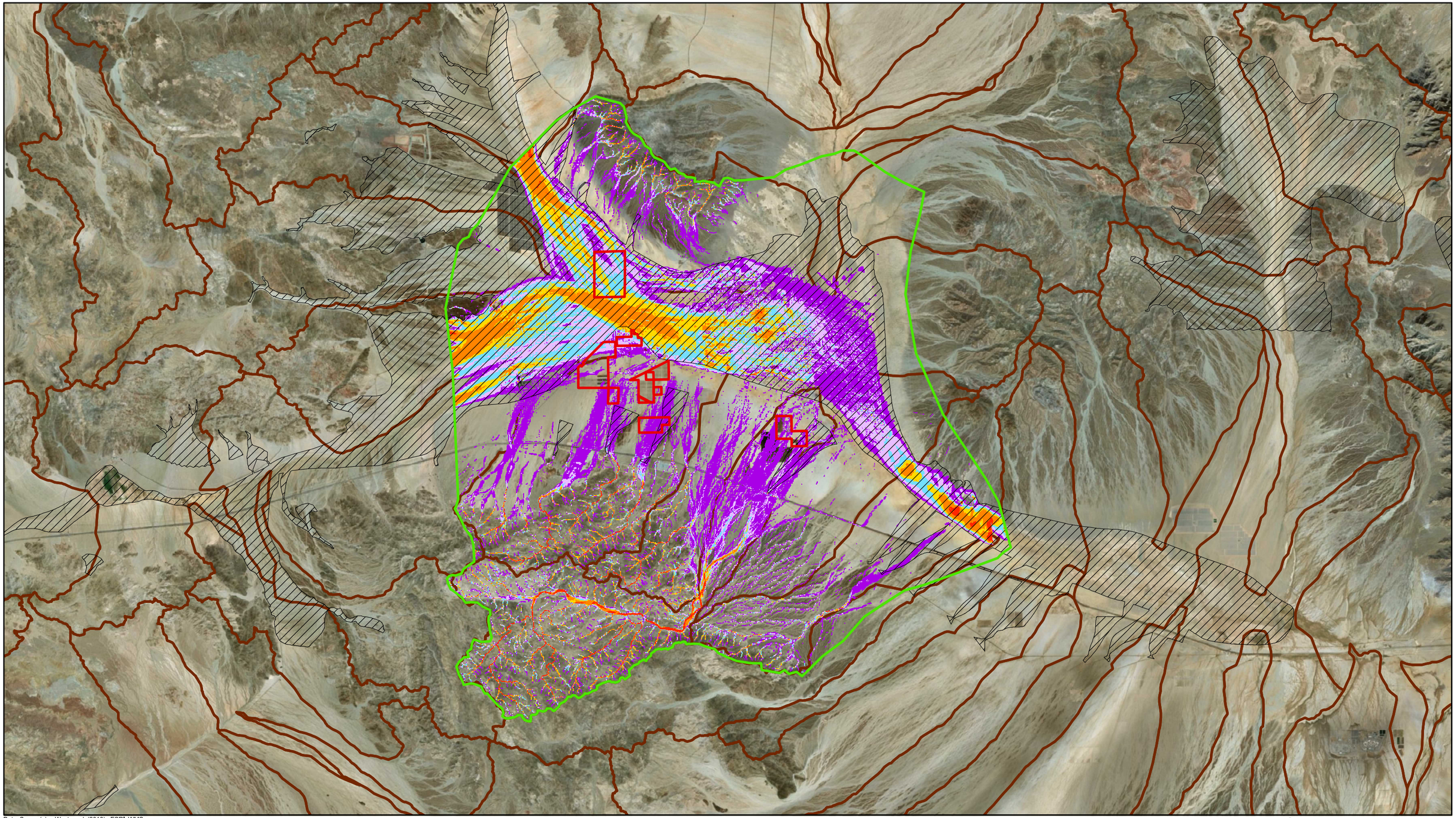

Data Source(s): Westwood (2018); ESRI WMS World Streets Basemap Imagery (Accessed 2018).

Legend

- Project Boundary
- FLO-2D Model Boundary
- County Boundary
- HUC 12 Boundary
- CA DWR Flood Awareness Layer

Peak Velocity (fps)

1.00 - 1.50
1.51 - 2.00
2.01 - 2.50
2.51 - 3.00
3.01 - 4.00
4.01+

N

0 Miles 3

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Exhibit 7: 100-Year Peak Velocity Map

May 29, 2018

Map Document: N:\0013768.00\GIS\Hydro Exhibits\2018-05-09_Athos_EX7_100PeakVelocityMap.mxd 5/29/2018 4:55:29 PM

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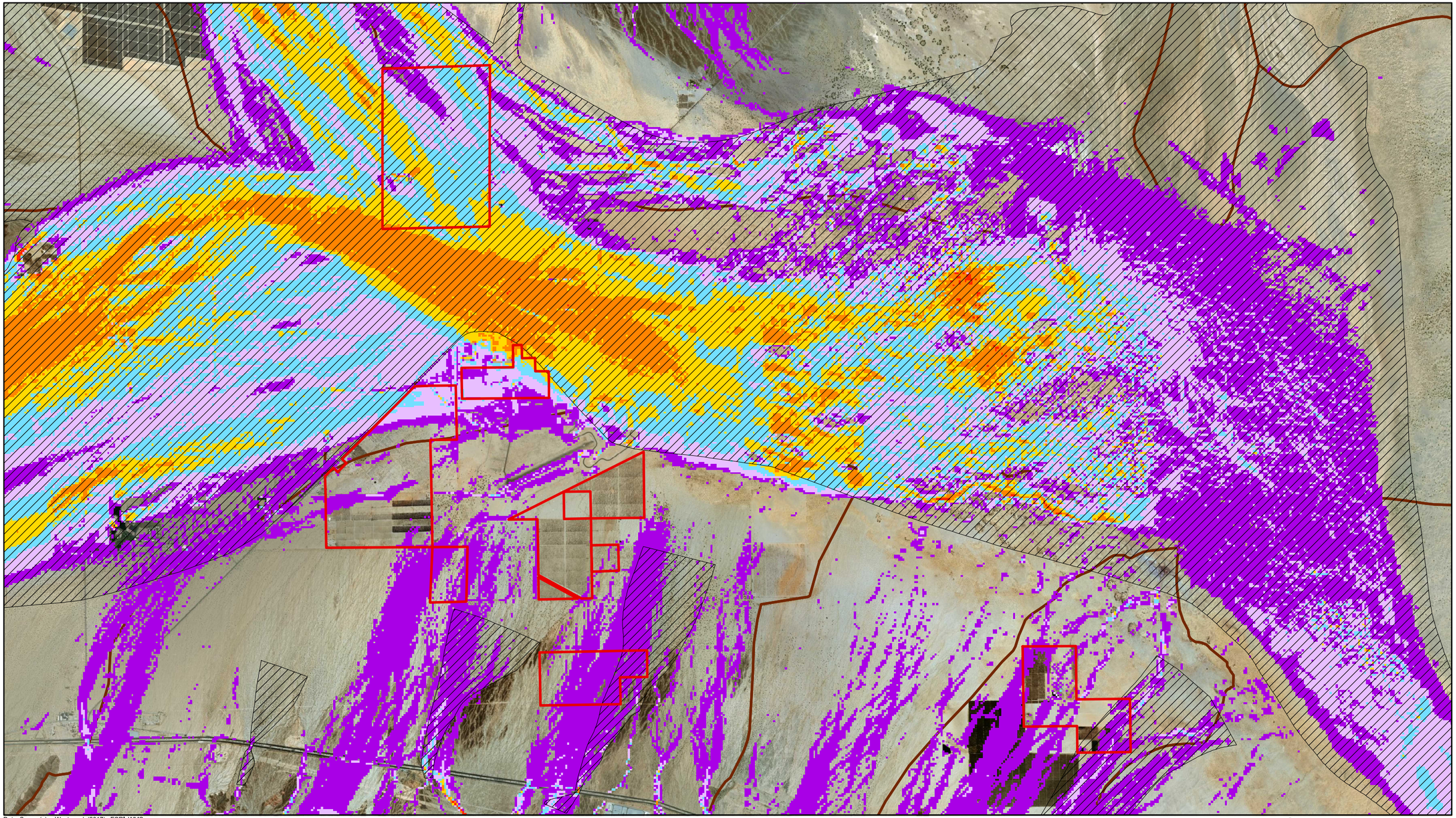

Data Source(s): Westwood (2017); ESRI WMS World Streets Basemap Imagery (Accessed 2017).

Legend

- Project Boundary
- FLO-2D Model Boundary
- County Boundary
- HUC 12 Boundary
- CA DWR Flood Awareness Layer

Peak Velocity (fps)

1.00 - 1.50 | 1.51 - 2.00 | 2.01 - 2.50 | 2.51 - 3.00 | 3.01 - 4.00 | 4.01+

N

0 — 4,500 Feet

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Exhibit 7A: 100-Year Peak Velocity Project Area Map

May 29, 2018

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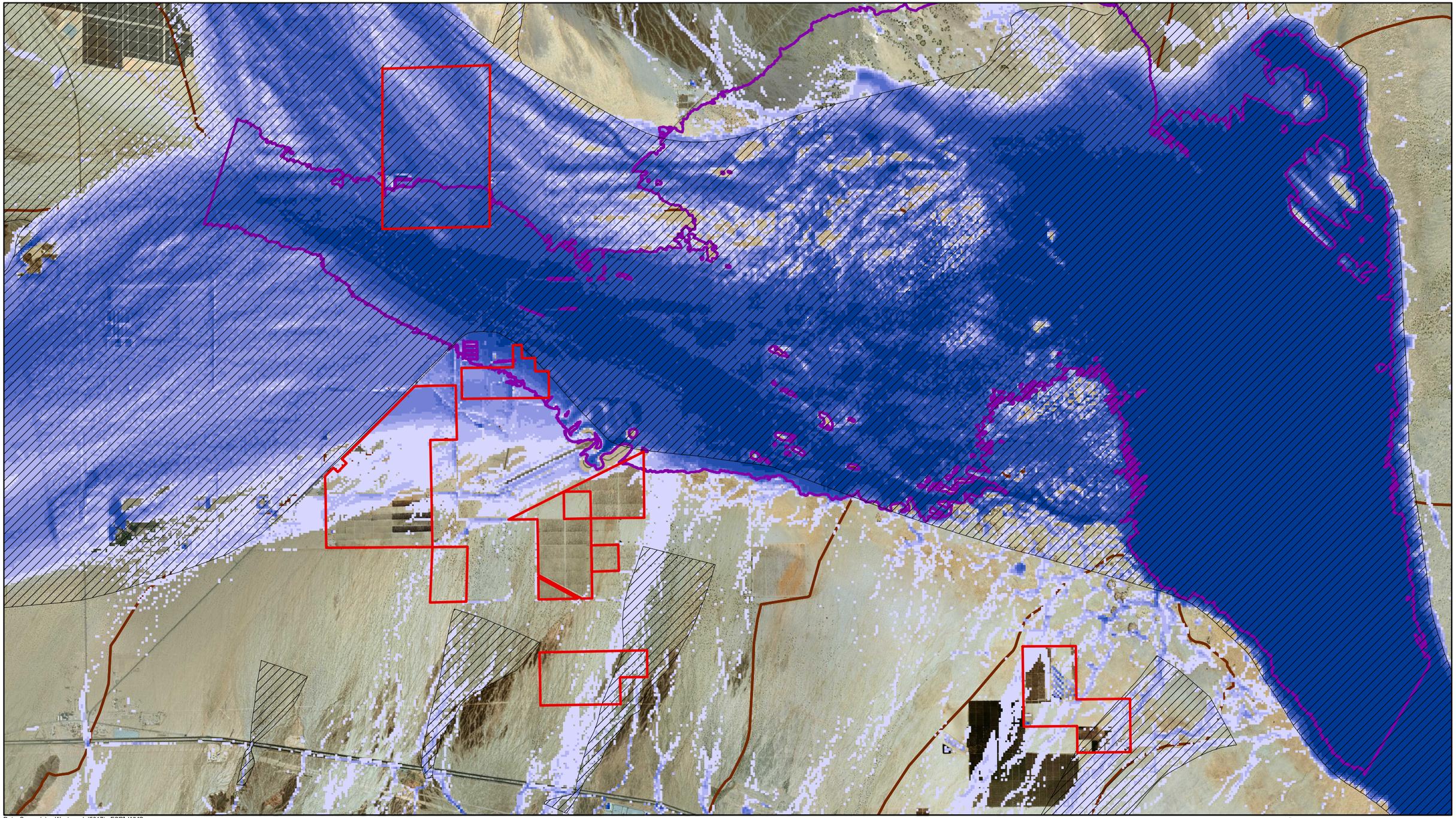

Data Source(s): Westwood (2017); ESRI WMS World Streets Basemap Imagery (Accessed 2017).

Legend

- Project Boundary
- FLO-2D Model Boundary
- County Boundary
- HUC 12 Boundary
- CA DWR Flood Awareness Layer
- GeoHECRAS 100 Year Results

Max Flow Depth (ft)

0.50 - 1.00 | 1.01 - 1.50 | 1.51 - 2.00 | 2.01 - 2.50 | 2.51 - 3.00 | 3.01 - 4.00 | 4.01 - 6.00 | 6.01+

N

0 — 4,500 Feet

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Exhibit 8: Flooding Extents Comparison Map

May 30, 2018

Map Document: N:\0013768.00\GIS\Hydro Exhibits\2018-05-09_Athos_EX8_FloodingExtentsMap.mxd 5/30/2018 9:01:21 AM

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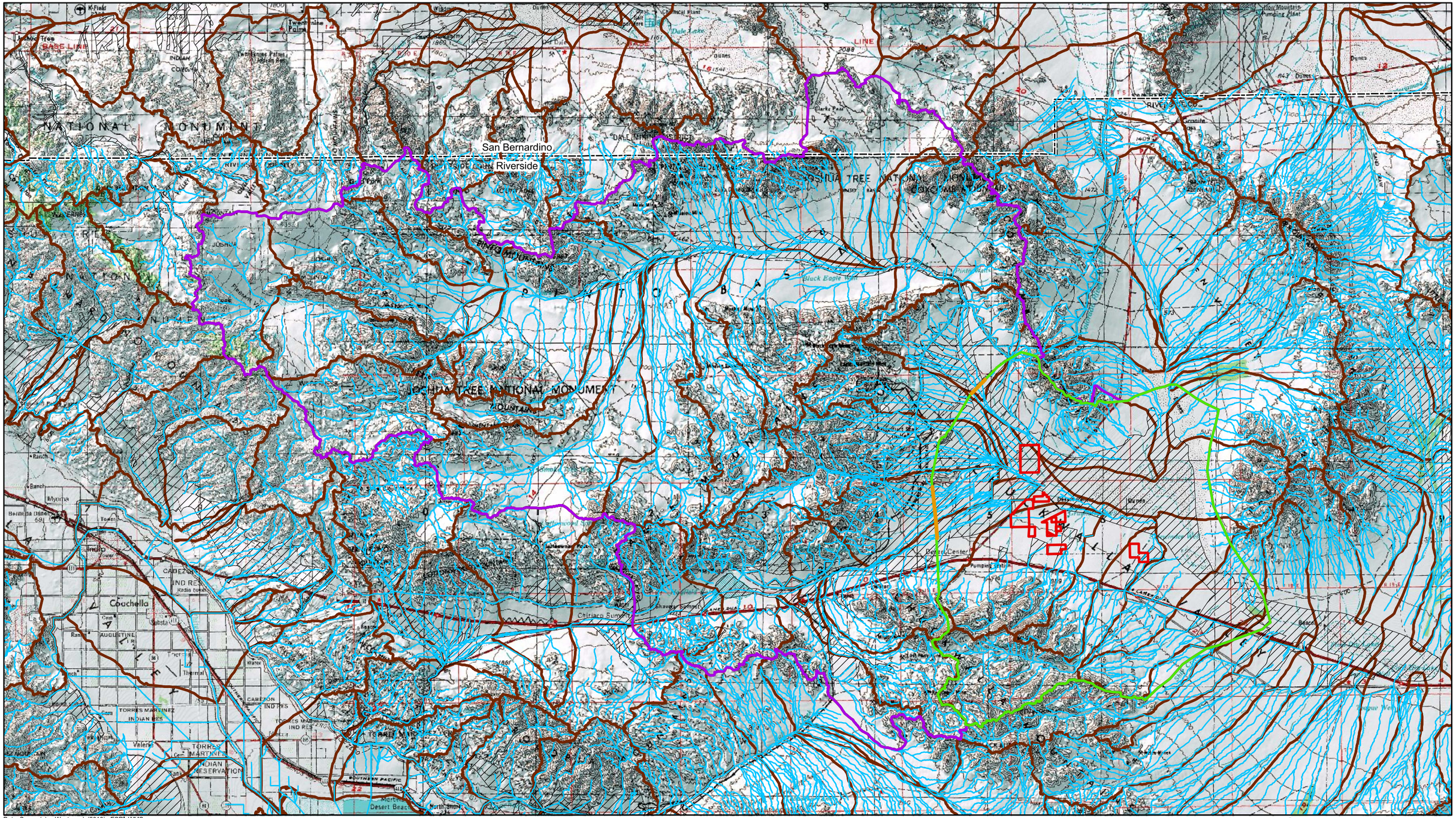

Data Source(s): Westwood (2018); ESRI WMS World Streets Basemap Imagery (Accessed 2018).

Legend

- Project Boundary
- FLO-2D Model Boundary
- County Boundary
- CA DWR Flood Awareness Layer
- HUC 12 Boundary
- Overall Watershed
- NHD Flowline
- Inflow Hydrograph Location

N

0 5 Miles

Athos Solar Project

Riverside County, California

Exhibit 9: Overall Watershed Map

May 31, 2018

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Map Document: N:\0013768.00\GIS\Hydro Exhibits\2018-05-29_Athos_EX9OverallWatershedMap.mxd 5/31/2018 11:01:03 AM

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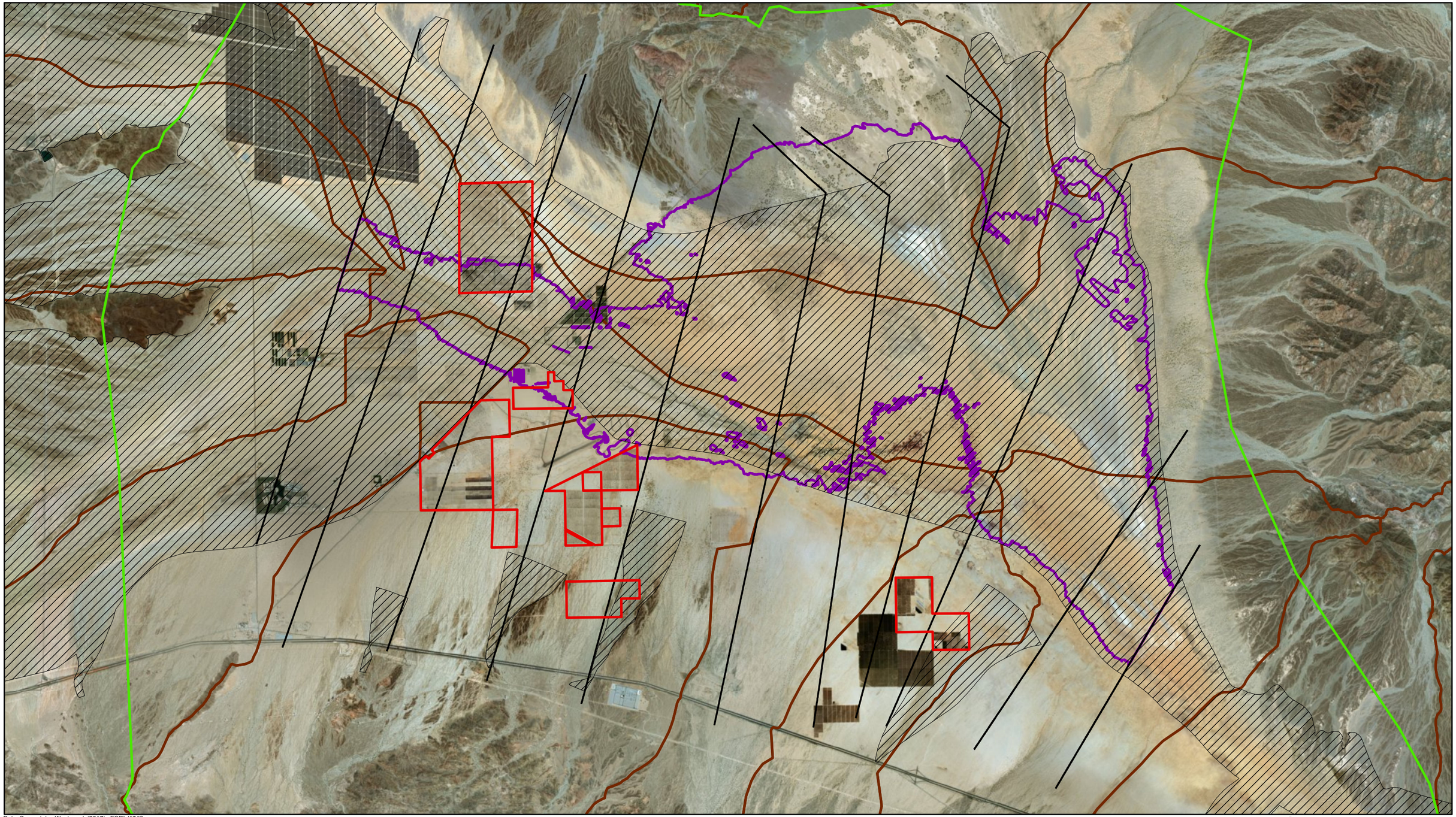

Data Source(s): Westwood (2017); ESRI WMS World Streets Basemap Imagery (Accessed 2017).

Legend

- Project Boundary
- FLO-2D Model Boundary
- County Boundary
- HUC 12 Boundary
- CA DWR Flood Awareness Layer
- GeoHECRAS 100 Year Results
- GeoHECRAS Cross Sections

N

0 Miles 1.25

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Exhibit 10: GeoHECRAS Flooding Extents Map

June 12, 2018

Map Document: N:\0013768.00\GIS\Hydro Exhibits\2018-05-09_Athos_EX10_HECRASFloodingExtentsMap.mxd 6/12/2018 10:46:29 AM

Appendix A

NOAA Atlas 14 Rainfall Data

NOAA Atlas 14, Volume 6, Version 2
Location name: Desert Center, California, USA*
Latitude: 33.7518°, Longitude: -115.3673°
Elevation: 625.2 ft**
* source: ESRI Maps
** source: USGS

POINT PRECIPITATION FREQUENCY ESTIMATES

Sanja Perica, Sarah Dietz, Sarah Heim, Lillian Hiner, Kazungu Maitaria, Deborah Martin, Sandra Pavlovic, Ishani Roy, Carl Trypaluk, Dale Unruh, Fenglin Yan, Michael Yekta, Tan Zhao, Geoffrey Bonnin, Daniel Brewer, Li-Chuan Chen, Tye Parzybok, John Yarchoan

NOAA, National Weather Service, Silver Spring, Maryland

PF_tabular | PF_graphical | Maps_&_aerials

PF tabular

PDS-based point precipitation frequency estimates with 90% confidence intervals (in inches)[1]

Duration	Average recurrence interval (years)									
	1	2	5	10	25	50	100	200	500	1000
5-min	0.081 (0.067-0.098)	0.127 (0.106-0.154)	0.192 (0.159-0.234)	0.248 (0.204-0.304)	0.329 (0.262-0.418)	0.396 (0.309-0.514)	0.468 (0.356-0.622)	0.548 (0.405-0.748)	0.663 (0.470-0.945)	0.760 (0.521-1.12)
10-min	0.116 (0.097-0.140)	0.182 (0.152-0.221)	0.275 (0.228-0.335)	0.355 (0.293-0.436)	0.472 (0.376-0.599)	0.568 (0.443-0.736)	0.671 (0.510-0.892)	0.785 (0.580-1.07)	0.951 (0.674-1.36)	1.09 (0.746-1.61)
15-min	0.140 (0.117-0.170)	0.221 (0.184-0.268)	0.333 (0.276-0.405)	0.430 (0.354-0.528)	0.571 (0.454-0.724)	0.687 (0.535-0.890)	0.812 (0.617-1.08)	0.949 (0.702-1.30)	1.15 (0.815-1.64)	1.32 (0.902-1.95)
30-min	0.195 (0.163-0.237)	0.307 (0.256-0.373)	0.464 (0.385-0.564)	0.599 (0.493-0.735)	0.795 (0.633-1.01)	0.957 (0.745-1.24)	1.13 (0.860-1.50)	1.32 (0.977-1.81)	1.60 (1.14-2.28)	1.84 (1.26-2.71)
60-min	0.264 (0.220-0.320)	0.415 (0.345-0.504)	0.626 (0.520-0.762)	0.809 (0.666-0.992)	1.07 (0.854-1.36)	1.29 (1.01-1.68)	1.53 (1.16-2.03)	1.79 (1.32-2.44)	2.16 (1.53-3.08)	2.48 (1.70-3.66)
2-hr	0.347 (0.289-0.421)	0.526 (0.438-0.638)	0.779 (0.646-0.948)	1.00 (0.823-1.23)	1.33 (1.06-1.68)	1.60 (1.25-2.07)	1.89 (1.44-2.52)	2.22 (1.64-3.04)	2.71 (1.92-3.86)	3.12 (2.13-4.60)
3-hr	0.397 (0.331-0.481)	0.594 (0.494-0.721)	0.874 (0.725-1.06)	1.12 (0.922-1.38)	1.49 (1.18-1.89)	1.79 (1.40-2.32)	2.13 (1.62-2.83)	2.50 (1.85-3.42)	3.06 (2.17-4.36)	3.53 (2.42-5.21)
6-hr	0.484 (0.403-0.587)	0.719 (0.598-0.873)	1.06 (0.875-1.28)	1.35 (1.11-1.66)	1.79 (1.43-2.27)	2.16 (1.69-2.80)	2.57 (1.96-3.42)	3.03 (2.24-4.14)	3.71 (2.63-5.29)	4.30 (2.94-6.34)
12-hr	0.564 (0.470-0.683)	0.851 (0.708-1.03)	1.26 (1.05-1.53)	1.62 (1.33-1.99)	2.15 (1.71-2.73)	2.59 (2.02-3.36)	3.08 (2.34-4.09)	3.62 (2.68-4.95)	4.42 (3.14-6.30)	5.11 (3.50-7.53)
24-hr	0.723 (0.640-0.834)	1.11 (0.984-1.29)	1.67 (1.47-1.93)	2.15 (1.88-2.51)	2.86 (2.42-3.44)	3.45 (2.86-4.23)	4.09 (3.32-5.13)	4.79 (3.79-6.18)	5.83 (4.43-7.82)	6.70 (4.93-9.29)
2-day	0.838 (0.741-0.966)	1.30 (1.15-1.51)	1.96 (1.73-2.27)	2.53 (2.22-2.95)	3.37 (2.86-4.05)	4.06 (3.38-4.99)	4.81 (3.91-6.04)	5.63 (4.46-7.27)	6.84 (5.20-9.17)	7.84 (5.77-10.9)
3-day	0.890 (0.788-1.03)	1.39 (1.23-1.60)	2.09 (1.84-2.42)	2.70 (2.37-3.15)	3.60 (3.05-4.33)	4.34 (3.60-5.32)	5.13 (4.17-6.45)	6.01 (4.75-7.76)	7.29 (5.54-9.78)	8.36 (6.15-11.6)
4-day	0.943 (0.835-1.09)	1.47 (1.30-1.70)	2.21 (1.95-2.56)	2.86 (2.50-3.33)	3.80 (3.22-4.57)	4.58 (3.81-5.62)	5.43 (4.41-6.82)	6.36 (5.03-8.20)	7.71 (5.86-10.4)	8.85 (6.51-12.3)
7-day	0.994 (0.880-1.15)	1.53 (1.35-1.77)	2.29 (2.02-2.65)	2.96 (2.59-3.45)	3.94 (3.34-4.74)	4.75 (3.95-5.83)	5.63 (4.58-7.08)	6.61 (5.23-8.53)	8.04 (6.11-10.8)	9.24 (6.80-12.8)
10-day	1.02 (0.905-1.18)	1.57 (1.38-1.81)	2.34 (2.06-2.71)	3.02 (2.64-3.52)	4.02 (3.40-4.83)	4.85 (4.03-5.95)	5.75 (4.67-7.23)	6.75 (5.34-8.71)	8.22 (6.25-11.0)	9.45 (6.95-13.1)
20-day	1.11 (0.984-1.28)	1.71 (1.51-1.97)	2.55 (2.25-2.95)	3.28 (2.87-3.83)	4.37 (3.70-5.26)	5.27 (4.38-6.46)	6.24 (5.07-7.84)	7.31 (5.78-9.43)	8.87 (6.75-11.9)	10.2 (7.49-14.1)
30-day	1.18 (1.05-1.36)	1.83 (1.62-2.11)	2.75 (2.42-3.18)	3.55 (3.11-4.14)	4.72 (4.00-5.68)	5.69 (4.73-6.98)	6.73 (5.46-8.45)	7.86 (6.22-10.1)	9.50 (7.22-12.7)	10.9 (7.99-15.1)
45-day	1.25 (1.11-1.44)	1.98 (1.75-2.28)	3.00 (2.65-3.48)	3.89 (3.41-4.54)	5.19 (4.40-6.25)	6.25 (5.20-7.68)	7.38 (6.00-9.28)	8.60 (6.80-11.1)	10.3 (7.87-13.9)	11.8 (8.66-16.3)
60-day	1.35 (1.19-1.55)	2.16 (1.91-2.49)	3.30 (2.91-3.82)	4.28 (3.75-5.00)	5.71 (4.84-6.87)	6.87 (5.71-8.43)	8.10 (6.58-10.2)	9.42 (7.45-12.1)	11.3 (8.58-15.1)	12.8 (9.41-17.7)

[1] Precipitation frequency (PF) estimates in this table are based on frequency analysis of partial duration series (PDS).

Numbers in parenthesis are PF estimates at lower and upper bounds of the 90% confidence interval. The probability that precipitation frequency estimates (for a given duration and average recurrence interval) will be greater than the upper bound (or less than the lower bound) is 5%. Estimates at upper bounds are not checked against probable maximum precipitation (PMP) estimates and may be higher than currently valid PMP values.

Please refer to NOAA Atlas 14 document for more information.

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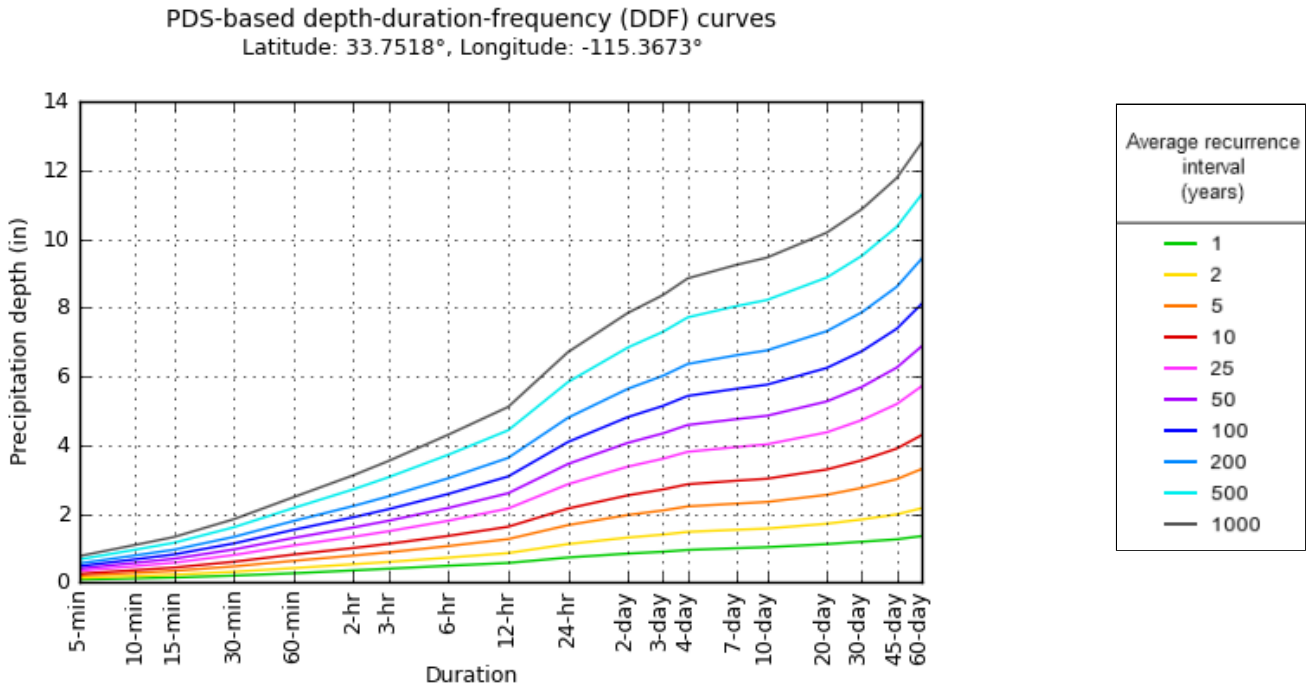
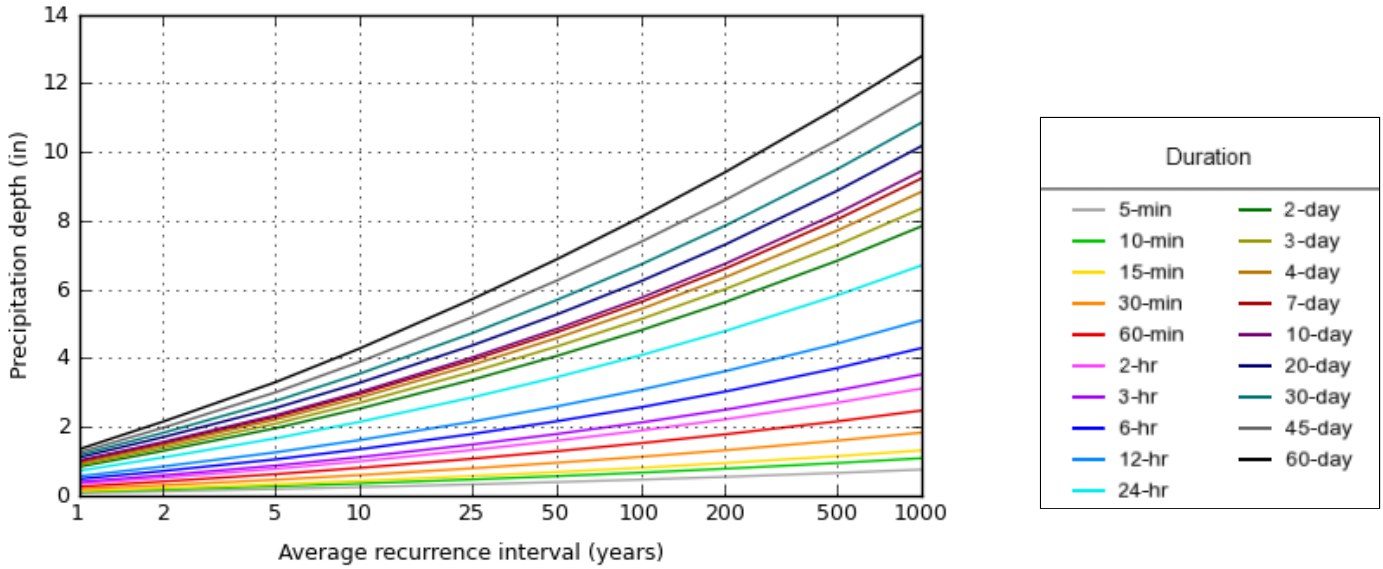
PF graphical





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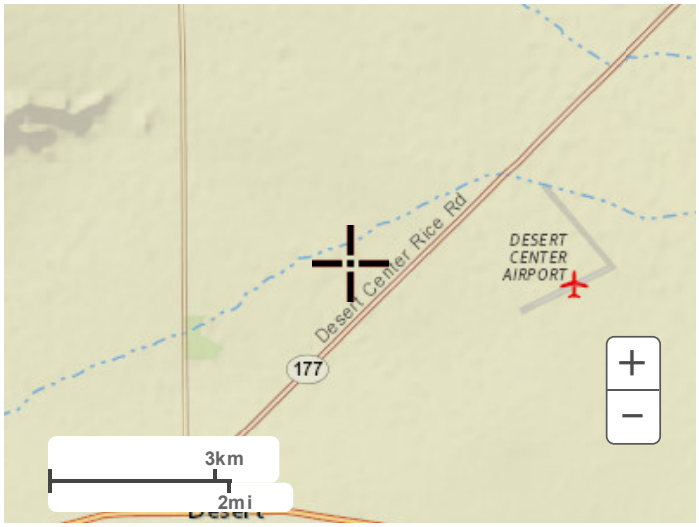
Maps & aerials

Small scale terrain



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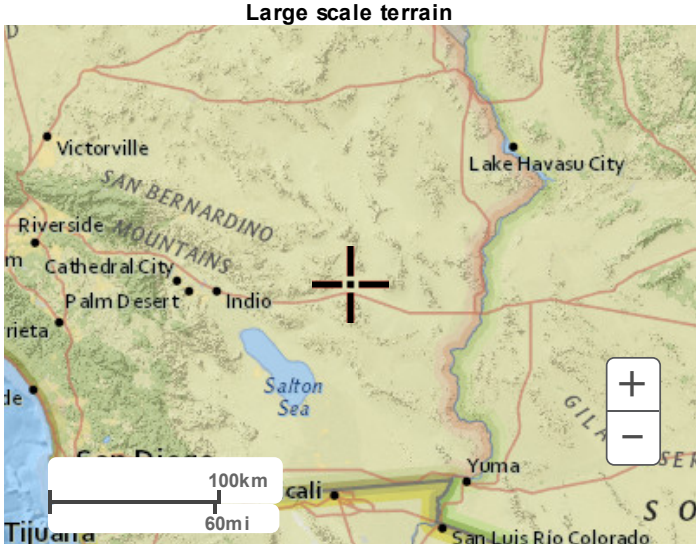
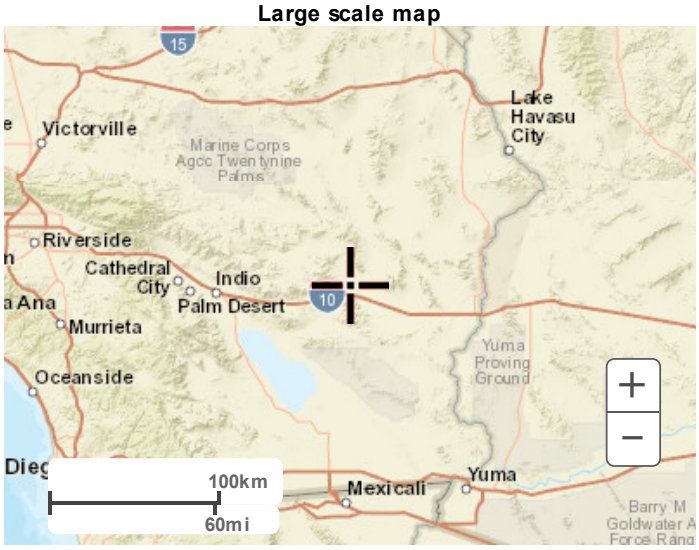
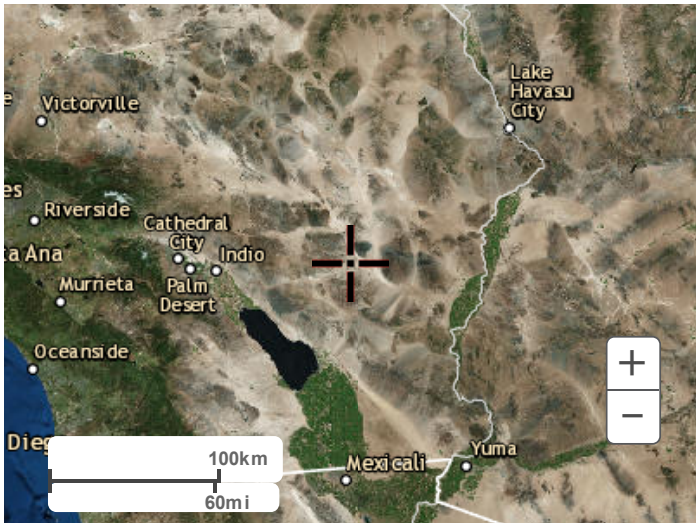


Large scale map



Large scale aerial



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Appendix B

Curve Number Table

Table 2. Semi-Arid Curve Numbers (adapted from NEH 630)

Class	Value	Classification Description	Curve Number Soil Type* A	B	C	D	W
Water	11	Open Water - areas of open water, generally with less than 25% cover of vegetation or soil.	98	98	98	98	100
	12	Perennial Ice/Snow - areas characterized by a perennial cover of ice and/or snow, generally greater than 25% of total cover.	98	98	98	98	100
Developed	21	Developed, Open Space - areas with a mixture of some constructed materials, but mostly vegetation in the form of lawn grasses. Impervious surfaces account for less than 20% of total cover. These areas most commonly include large-lot single-family housing units, parks, golf courses, and vegetation planted in developed settings for recreation, erosion control, or aesthetic purposes.	46	65	77	82	100
	22	Developed, Low Intensity - areas with a mixture of constructed materials and vegetation. Impervious surfaces account for 20% to 49% percent of total cover. These areas most commonly include single-family housing units.	61	75	83	87	100
	23	Developed, Medium Intensity – areas with a mixture of constructed materials and vegetation. Impervious surfaces account for 50% to 79% of the total cover. These areas most commonly include single-family housing units.	77	85	90	95	100
	24	Developed High Intensity -highly developed areas where people reside or work in high numbers. Examples include apartment complexes, row houses and commercial/industrial. Impervious surfaces account for 80% to 100% of the total cover.	89	92	94	95	100
Barren	31	Barren Land (Rock/Sand/Clay) - areas of bedrock, desert pavement, scarps, talus, slides, volcanic material, glacial debris, sand dunes, strip mines, gravel pits and other accumulations of earthen material. Generally, vegetation accounts for less than 15% of total cover.	77	86	91	94	100
Forest	41	Deciduous Forest - areas dominated by trees generally greater than 5 meters tall, and greater than 20% of total vegetation cover. More than 75% of the tree species shed foliage simultaneously in response to seasonal change.	43	55	70	77	100
	42	Evergreen Forest - areas dominated by trees generally greater than 5 meters tall, and greater than 20% of total vegetation cover. More than 75% of the tree species maintain their leaves all year. Canopy is never without green foliage.	43	55	70	77	100
	43	Mixed Forest - areas dominated by trees generally greater than 5 meters tall, and greater than 20% of total vegetation cover. Neither deciduous nor evergreen species are greater than 75% of total tree cover.	43	55	70	77	100
Shrubland	51	Dwarf Scrub - Alaska only areas dominated by shrubs less than 20 centimeters tall with shrub canopy typically greater than 20% of total vegetation. This type is often co-associated with grasses, sedges, herbs, and non-vascular vegetation.	55	71	81	89	100
	52	Shrub/Scrub - areas dominated by shrubs; less than 5 meters tall with shrub canopy typically greater than 20% of total vegetation. This class includes true shrubs, young trees in an early successional stage or trees stunted from environmental conditions.	55	71	81	89	100
Herbaceous	71	Grassland/Herbaceous - areas dominated by gramanoid or herbaceous vegetation, generally greater than 80% of total vegetation. These areas are not subject to intensive management such as tilling, but can be utilized for grazing.	55	71	81	89	100
	72	Sedge/Herbaceous - Alaska only areas dominated by sedges and forbs, generally greater than 80% of total vegetation. This type can occur with significant other grasses or other grass like plants, and includes sedge tundra, and sedge tussock tundra.	55	71	81	89	100
	73	Lichens - Alaska only areas dominated by fruticose or foliose lichens generally greater than 80% of total vegetation.	55	71	81	89	100
	74	Moss - Alaska only areas dominated by mosses, generally greater than 80% of total vegetation.	55	71	81	89	100
Planted/Cultivated	81	Pasture/Hay – areas of grasses, legumes, or grass-legume mixtures planted for livestock grazing or the production of seed or hay crops, typically on a perennial cycle. Pasture/hay vegetation accounts for greater than 20% of total vegetation.	55	71	81	89	100
	82	Cultivated Crops – areas used for the production of annual crops, such as corn, soybeans, vegetables, tobacco, and cotton, and also perennial woody crops such as orchards and vineyards. Crop vegetation accounts for greater than 20% of total vegetation. This class also includes all land being actively tilled.	67	78	85	89	100
	83	Small Grains	63	75	83	87	100
Wetlands	91	Woody Wetlands - areas where forest or shrubland vegetation accounts for greater than 20% of vegetative cover and the soil or substrate is periodically saturated with or covered with water.	45	66	77	83	100
	92	Emergent Herbaceous Wetlands - Areas where perennial herbaceous vegetation accounts for greater than 80% of vegetative cover and the soil or substrate is periodically saturated with or covered with water.	45	66	77	83	100

*A/D, B/D and C/D soils lumped as D soils, W denotes water

**Curve Numbers for NLCD Codes 41-43 have been increased from 30 to 43 as many of these areas are partially grazed Woods-grass combination.

Appendix C

Flooding Depth Analyses (Prepared by Others)

FLOODING DEPTH ANALYSES AND SCOUR REQUIREMENTS FOR PSL#298145 NORTH OF 22100 RICE ROAD

COUNTY OF RIVERSIDE
CALIFORNIA

PREPARED FOR:

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(951) 304-9552 • FAX (951) 304-3568

DATE PREPARED:
JUNE 21, 2016
REVISED:

This report has been prepared by or under the direction of the following registered civil engineer who attests to the technical information contained herein. The registered civil engineer has also judged the qualifications of any technical specialists providing engineering data upon which recommendations, conclusions, and decisions are based.

REGISTERED PROFESSIONAL ENGINEER
JOSEPH L. CASTANEDA
NO. 59835
EXP. 12/31/17
CIVIL
STATE OF CALIFORNIA

06/21/2016

Joseph L. Castaneda RCE 59835 Registered Civil Engineer	Date	Seal

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EXHIBITS

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EXHIBIT B: PROJECT IMPROVEMENT PLANS

I. INTRODUCTION

PLS # 298145 is a proposed cellular tower site that proposes to construct a building and cellular tower in the unincorporated area of Desert Center, County of Riverside. The project site is located on Rice Road north of Interstate 10. The following is the scope of work for this report:

- Determine the tributary watershed area using the United States Geodetic Survey 20 foot interval topographic mapping.
- Determine the flow rate utilizing a yield obtained from the Enveloping Curves included in the Riverside County Flood Control and Water Conservation District (RCFC & WCD) Hydrology Manual.
- Determine the depth of flooding for the flows tributary to the project site.
- Determine the velocity of flows and required scour depth for the project site.
- Preparation of a report and calculations summarizing the findings and recommendations.

II. PROJECT SITE AND DRAINAGE OVERVIEW

The project is a proposed cellular tower site that will construct a cellular tower and a building within the unincorporated area of Desert Center in Riverside County. The project is located north of Interstate 10 off of Desert Center Rice Road (Highway 177). The project site is approximately 160 acres (with a small northerly portion of the project being developed) located in Section 32 of Township 4 South, Range 16.

The project site will construct one cellular tower and one building within the northerly portion of the project limits. Based upon the United States Geological Survey topographic mapping, two major watersheds are tributary to the project limits. The southerly watershed area may not actually impact the project site, however, it was analyzed since this are of the desert consists of alluvial fan flooding, which can be unpredictable. Therefore, analyzing this southerly tributary watershed would result in more conservative values.

III. HYDROLOGY ANALYSIS

Meetings were held with RCFC&WCD staff regarding the modeling of the tributary watershed area. The total tributary area to the project from both the northerly and southerly watersheds is 1,004 square miles. To analyze this area in the traditional unit hydrograph method by delineating the hydrologic soils and land uses would be be very intense. Therefore, it was agreed upon with RCFC&WCD staff that a yield would be utilized using the Enveloping Curves of Peak Discharges in Southern California included in the RCFC&WCD Hydrology Manual.

The watersheds tributary to the project boundary were determined using the United States Geological Survey topographic mapping, which is 20 foot interval contours. Based upon the mapping, there are two major watersheds tributary to the project designated as Area A and Area B. Area A is the northerly watershed area of 690.08 square miles, and Area B is the southerly watershed area of 313.55 square miles. The southerly watershed may or may not actually enter the project site, however it was analyzed to be conservative.

Using these watershed areas, the Enveloping Curve of Maximum Floods in Interior Basins of Southern California was utilized to determine the discharge in ft^3/s per square mile (see Appendix A for the Enveloping Curves Graph). Area A resulted in 100 ft^3/s per square mile and Area B resulted in 290 ft^3/s per square mile. The table below summarizes the results:

Area	Area (sq. mi.)	Yield (ft^3/s per sq. mi.)	Total Flow Rate (ft^3/s)
Area A	690.08	100	69,008
Area B	313.55	290	90,930

These flow rates were utilized in the following section to determine the maximum depth of flow within the project limits, the velocity of the flows and the required scour depth.

The peak discharge curves have been included in Appendix A, and the watershed map has been included as Exhibit A.

IV. DEPTH AND SCOUR ANALYSIS

Since the flows tributary to the project boundary are part of an alluvial fan, and therefore required an analyses that would accurately represent this flooding condition. The Cabazon Flood Study, prepared by PRC TOUPS, dated June 1980, was utilized as the guidance document for determining the flooded depth, velocity and required scour depth for the proposed building within the project limits.

The Cabazon Flood Study uses the Dawdy Equation (1979), which assumes that an alluvial channel stabilizes itself at the point where a decrease in depth causes a two hundred fold increase in width, or Width = 200 * Depth. Therefore the change in width over the change in depth (dW/dD) equals 200. The study also uses Manning's Equation of:

$$Q = \frac{1.49}{n} * W * D^{5/3} * S^{1/2}$$

Solving for W and D, and then taking the derivative of both equations, and substituting for dW and dW in the Dawdy Equation allows for a solution for W and D (see Appendix C of Excerpt A for a full derivation of these equations). The resulting equation for depth is:

$$D = \left(\frac{Q\,n}{178\,S^{1/2}}\right)^{3/8}$$

The velocity tributary to the project for each area was determined using the following version of Manning's Equation:

$$V = 0.41\,Q^{1/4}\,S^{3/8}\,n^{-3/4}$$

Once the velocity was determined, the scour depth was determined using the graph included in Appendix B, which was obtained from the Cabazon Flood Study. The following table summarizes the results:

Area	Flow Rate	Depth	Velocity	Scour Depth
Area A	69,008 ft^3/s	7.04 ft	11.70 ft/s	9.0 ft
Area B	90,930 ft^3/s	7.81 ft	12.54 ft/s	9.3 ft

Based upon the results, the maximum scour depth of 9.3 feet shall be utilized for the design, and the building should be elevation 8.8 feet above the existing ground to provide 1 foot of freeboard between the depth of flow and the finished surface of the building.

V. CONCLUSIONS

Calculations were performed to determine the tributary flow rates to the project boundary, to determine the flooding depths within the project limits, and to determine the scour depth. Based upon the analyses, the following have been concluded:

1. The potential peak flowrates tributary to the northerly and southerly project limits are 69,008 ft^3/s and 90,930 ft^3/s, respectively.
2. The maximum depth of water within the project is 7.8 feet. Providing 1 foot of freeboard requires the proposed building to be elevated 8.8 feet above the existing ground.
3. The maximum scour depth is 9.3 feet. Rip-rap should be constructed to a depth of 9.3 feet below the existing ground.

VI. REFERENCES

1. Riverside County Flood Control and Water Conservation District Hydrology Manual, April 1978.

FIGURES

FIGURE 1: VICINITY MAP

PSL # 298145 VICINITY MAP

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MURRIETA, CA 92562
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FIGURE 1

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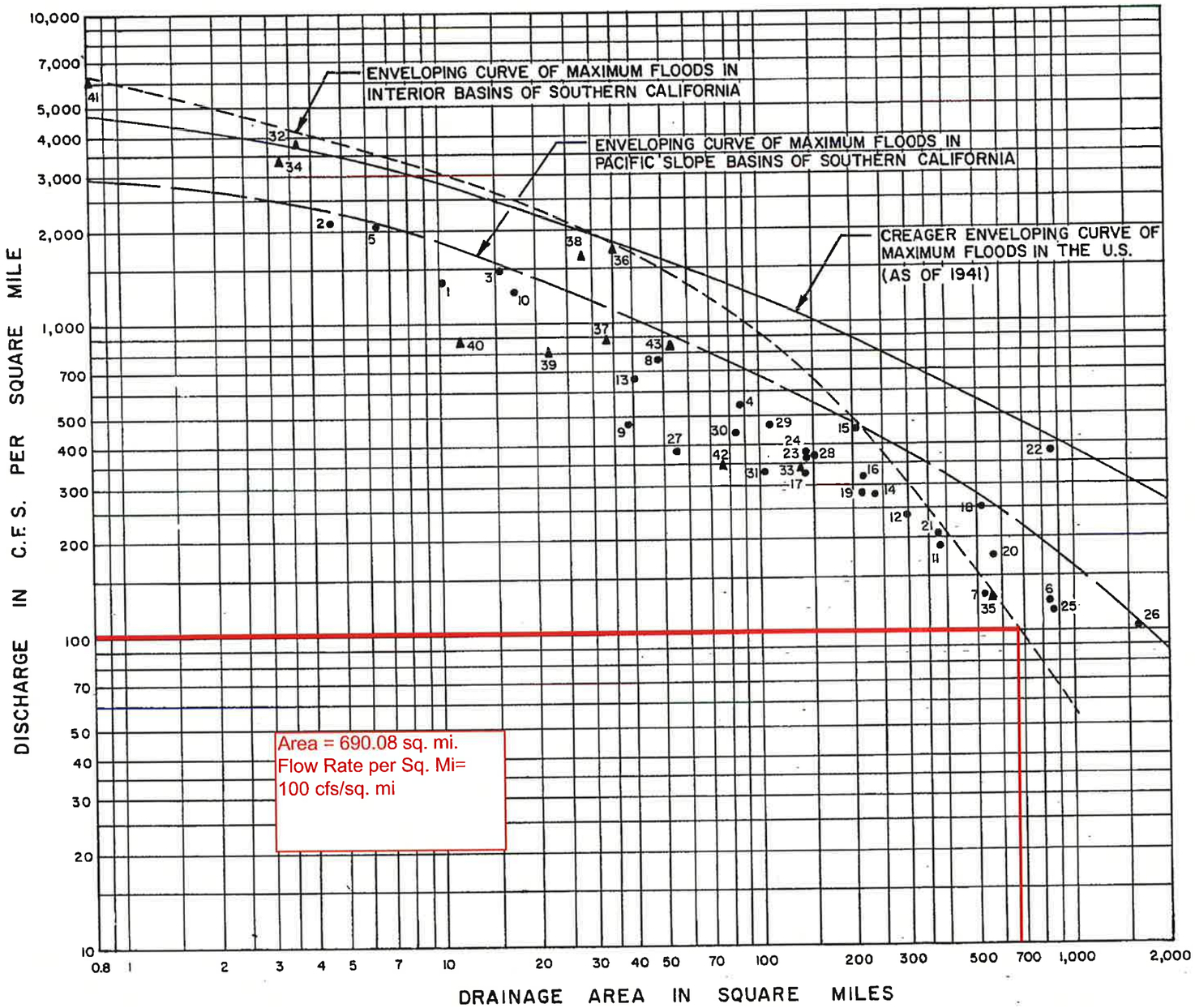
APPENDICES

APPENDIX A: ENVELOPING CURVES OF PEAK DISCHARGES IN SOUTHERN CALIFORNIA

APPENDIX A.1: DISCHARGE PER SQUARE MILE ENVELOPING CURVES – AREA A



RECORDED OR ESTIMATED PEAK DISCHARGES OF RECORD

	STREAM & LOCATION	DRAINAGE AREA (SQUARE MILES)	PEAK DISCHARGE (INCLUDES DEBRIS) C.F.S.	DATE
● –	SOUTHERN CALIF.-PACIFIC SLOPE BASINS			
1	CUCAMONGA CREEK NEAR UPLAND.....	10.1	14,100	25 JAN 1969
2	DAY CREEK NEAR ETIWANDA.....	4.6	9,450	25 JAN 1969
3	DEVIL'S CANYON ABOVE COGSWELL DAM.....	15.4	23,000	2 MAR 1938
4	EAST FORK SAN GABRIEL RIVER NEAR CAMP BONITA.....	88.2	46,000	2 MAR 1938
5	FISH CREEK NEAR DUARTE.....	6.4	13,000	25 JAN 1969
6	LOS ANGELES RIVER AT LONG BEACH.....	832	102,000	25 JAN 1969
7	LOS ANGELES RIVER AT LOS ANGELES.....	514	67,000	3 MAR 1938
8	LYTLE CREEK NEAR FONTANA.....	47.9	35,900	25 JAN 1969
9	MILL CREEK NEAR YUCAIPA.....	38.1	18,100	2 MAR 1938
10	SAN ANTONIO CREEK NEAR CLAREMONT.....	16.9	21,400	2 MAR 1938
11	SAN DIEGO RIVER NEAR SANTEE.....	377	70,200	27 JAN 1916
12	SAN DIEGUITO RIVER NEAR BERNARDO.....	299	72,100	27 JAN 1916
13	SAN GABRIEL RIVER AT COGSWELL DAM.....	40.4	26,900	2 MAR 1938
14	SAN GABRIEL RIVER AT FOOTHILL BLVD.....	230	61,800	2 MAR 1938
15	SAN GABRIEL RIVER AT SAN GABRIEL DAM...	202	90,000	2 MAR 1938
16	SAN GABRIEL RIVER BELOW MORRIS DAM.....	211	65,700	2 MAR 1938
17	SAN JACINTO RIVER BELOW NORTH FORK NEAR SAN JACINTO.....	141	45,000	16 FEB 1927
18	SAN LUIS REY RIVER AT BONSALL.....	512	128,000	23 FEB 1891
19	SAN LUIS REY RIVER NEAR MESA GRANDE....	209	58,600	27 JAN 1916
20	SAN LUIS REY RIVER AT OCEANSIDE.....	557	95,600	27 JAN 1916
21	SAN LUIS REY RIVER NEAR PALA.....	373	75,300	27 JAN 1916
*22	SANTA ANA RIVER AT AGUA MANSA.....	855	320,000	22 JAN 1862
23	SANTA ANA RIVER NEAR MENTONE.....	144	52,300	2 MAR 1938
24	SANTA ANA RIVER NEAR MENTONE.....	144	53,700	23 FEB 1891
25	SANTA ANA RIVER AT RIVERSIDE NARROWS...	858	100,000	2 MAR 1938
26	SANTA CLARA RIVER NEAR SATICOY.....	1595	165,000	25 JAN 1969
27	SANTA YSABEL CREEK NEAR MESA GRANDE....	53.9	21,100	27 JAN 1916
28	TUJUNGA CREEK BELOW HANSEN DAM.....	150	54,000	3 MAR 1938
29	TUJUNGA CREEK NEAR SUNLAND.....	106	50,000	3 MAR 1938
30	TUJUNGA CREEK AT TUJUNGA DAM (INFLOW)..	81.4	35,000	3 MAR 1938
31	WEST FORK SAN GABRIEL RIVER AT CAMP RINCON.....	102	34,000	2 MAR 1938
▲ –	SOUTHERN CALIF.-INTERIOR BASINS			
32	CAMERON CREEK NEAR TEHACHAPI.....	3.59	13,500	30 SEP 1932
33	DEEP CREEK NEAR HESPERIA.....	137	46,600	2 MAR 1938
34	LITTLE SAN GORGONIO CREEK NEAR BEAUMONT	3.23	11,000	25 FEB 1969
35	MOJAVE RIVER NEAR VICTORVILLE.....	530	70,600	2 MAR 1938
36	PINE TREE CANYON 12 MILES NORTH OF MOJAVE.....	35	59,500	12 AUG 1931
37	PINE TREE CREEK NEAR MOJAVE.....	33.5	30,000	23 AUG 1961
38	SACRAMENTO WASH NEAR NEEDLES.....	27	43,000	17 AUG 1939
39	SAN GORGONIO RIVER NEAR BANNING.....	21.2	17,000	2 MAR 1938
40	SNOW CREEK NEAR PALM SPRINGS.....	11	9,500	FEB 1927
41	UPPER WILLOW SPRINGS CANYON NEAR MOJAVE	0.81	4,900	30 SEP 1932
42	WEST FORK MOJAVE RIVER NEAR HESPERIA...	74.8	26,100	2 MAR 1938
43	WHITEWATER RIVER ABOVE WHITEWATER.....	51.4	42,000	2 MAR 1938

NOTES:

*1. Because of the extreme variation of this value from the other data, this point was disregarded in construction of the enveloping curve for California.

2. References for flow estimates are USGS Water Supply Papers and Bibliography item No. 13.

RCFC & WCD

HYDROLOGY MANUAL

RIVERSIDE COUNTY FLOOD CONTROL AND WATER CONSERVATION DISTRICT

ENVELOPING CURVES OF PEAK DISCHARGES IN SOUTHERN CALIFORNIA

REVISED

APPROVED CHIEF ENGINEER R.E. NO. 5655

DATE

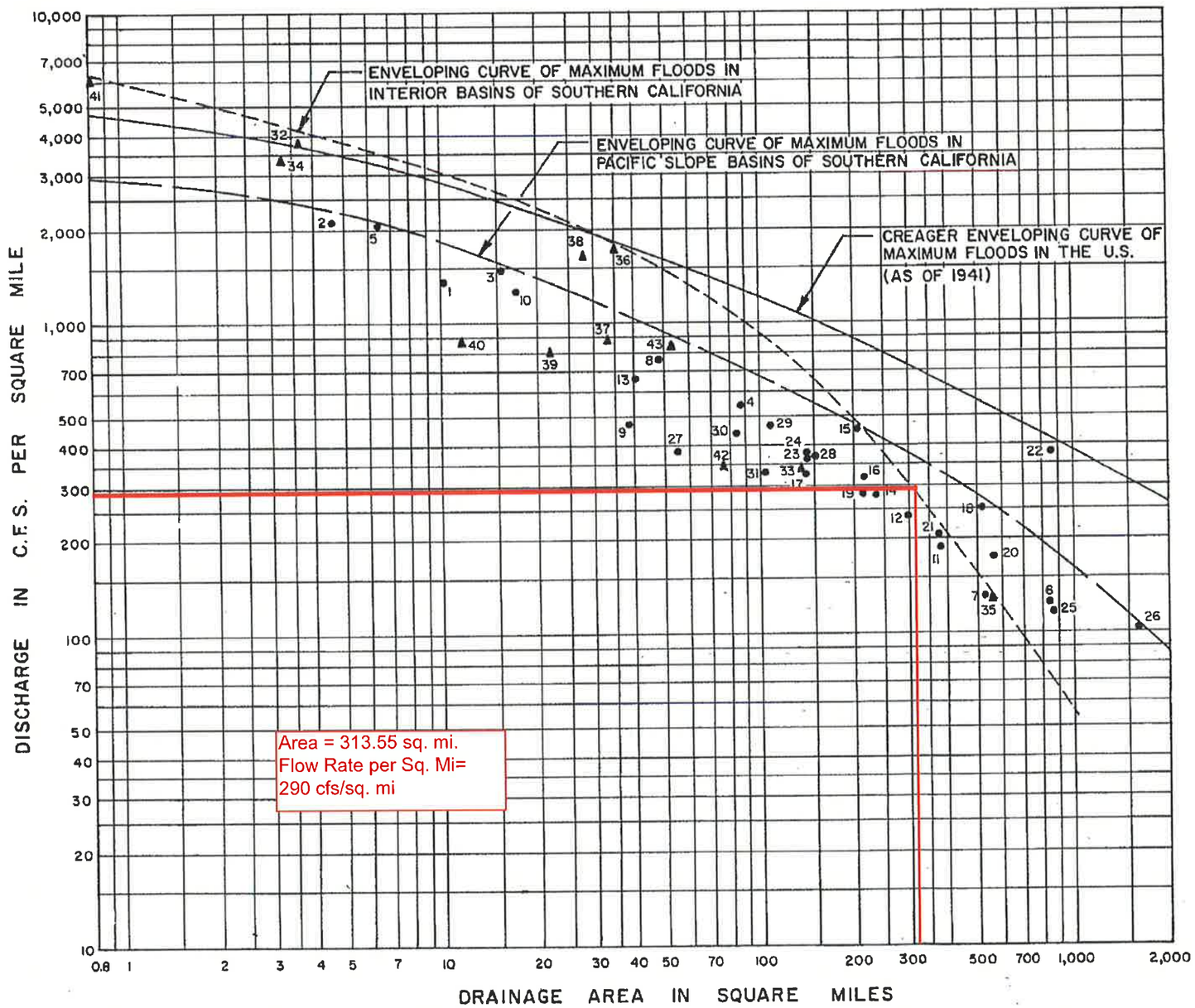
DRAWN BY R.A.S.

PLATE A-4

SHEET NO.

DR. NO.

APPENDIX A.2: DISCHARGE PER SQUARE MILE ENVELOPING CURVES – AREA A



RECORDED OR ESTIMATED PEAK DISCHARGES OF RECORD

	STREAM & LOCATION	DRAINAGE AREA (SQUARE MILES)	PEAK DISCHARGE (INCLUDES DEBRIS) C.F.S.	DATE
● –	SOUTHERN CALIF.-PACIFIC SLOPE BASINS			
1	CUCAMONGA CREEK NEAR UPLAND	10.1	14,100	25 JAN 1969
2	DAY CREEK NEAR ETIWANDA	4.8	9,450	25 JAN 1969
3	DEVIL'S CANYON ABOVE COGSWELL DAM	15.4	23,000	2 MAR 1938
4	EAST FORK SAN GABRIEL RIVER NEAR CAMP BONITA	88.2	46,000	2 MAR 1938
5	FISH CREEK NEAR DUARTE	6.4	13,000	25 JAN 1969
6	LOS ANGELES RIVER AT LONG BEACH	832	102,000	25 JAN 1969
7	LOS ANGELES RIVER AT LOS ANGELES	514	87,000	3 MAR 1938
8	LYTLE CREEK NEAR FONTANA	47.9	35,900	25 JAN 1969
9	MILL CREEK NEAR YUCAIPA	38.1	18,100	2 MAR 1938
10	SAN ANTONIO CREEK NEAR CLAREMONT	16.9	21,400	2 MAR 1938
11	SAN DIEGO RIVER NEAR SANTEE	377	70,200	27 JAN 1916
12	SAN DIEGUITO RIVER NEAR BERNARDO	299	72,100	27 JAN 1916
13	SAN GABRIEL RIVER AT COGSWELL DAM	40.4	26,900	2 MAR 1938
14	SAN GABRIEL RIVER AT FOOTHILL BLVD	230	61,800	2 MAR 1938
15	SAN GABRIEL RIVER AT SAN GABRIEL DAM	202	90,000	2 MAR 1938
16	SAN GABRIEL RIVER BELOW MORRIS DAM	211	65,700	2 MAR 1938
17	SAN JACINTO RIVER BELOW NORTH FORK NEAR SAN JACINTO	141	45,000	16 FEB 1927
18	SAN LUIS REY RIVER AT BONSALL	512	128,000	23 FEB 1891
19	SAN LUIS REY RIVER NEAR MESA GRANDE	209	58,600	27 JAN 1916
20	SAN LUIS REY RIVER AT OCEANSIDE	557	95,600	27 JAN 1916
21	SAN LUIS REY RIVER NEAR PALA	373	75,300	27 JAN 1916
*22	SANTA ANA RIVER AT AGUA MANSA	855	320,000	22 JAN 1862
23	SANTA ANA RIVER NEAR MENTONE	144	52,300	2 MAR 1938
24	SANTA ANA RIVER NEAR MENTONE	144	53,700	23 FEB 1891
25	SANTA ANA RIVER AT RIVERSIDE NARROWS	858	100,000	2 MAR 1938
26	SANTA CLARA RIVER NEAR SATICOY	1595	165,000	25 JAN 1969
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32	CAMERON CREEK NEAR TEHACHAPI	3.59	13,500	30 SEP 1932
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RCFC & WCD
HYDROLOGY MANUAL

RIVERSIDE COUNTY FLOOD CONTROL AND WATER CONSERVATION DISTRICT

ENVELOPING CURVES OF PEAK DISCHARGES IN SOUTHERN CALIFORNIA

Approved: Chief Engineer R.C.F.C. & W.C.D. — Date
Drawn By: R.A.S.
Sheet No.
PLATE A-4
Dr. No.
Revised

APPENDIX B: SCOUR DEPTH CALCULATIONS

APPENDIX B.1: VELOCITY VS. SCOUR DEPTH – AREA A

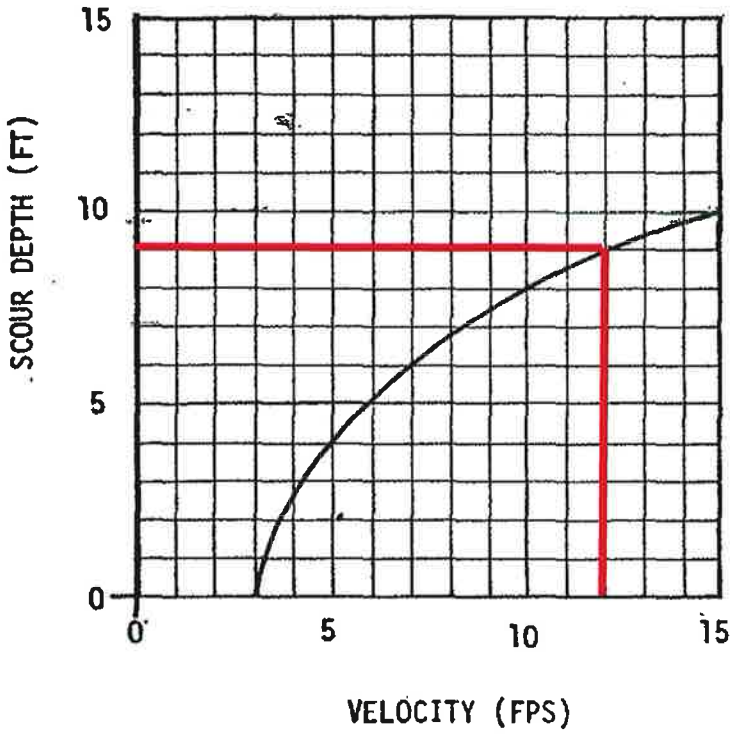


FIGURE 3 SCOUR DEPTH

APPENDIX B.2: VELOCITY VS. SCOUR DEPTH – AREA B

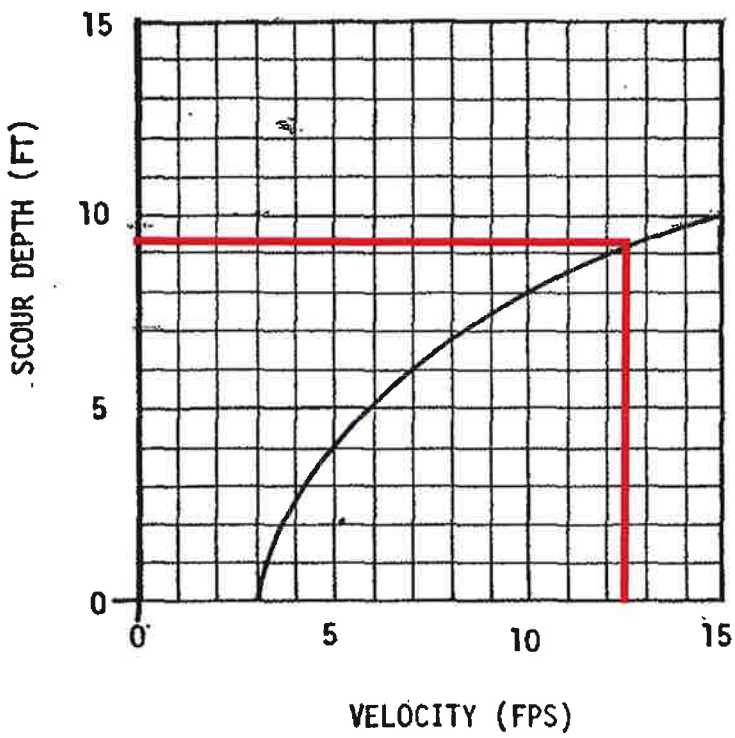
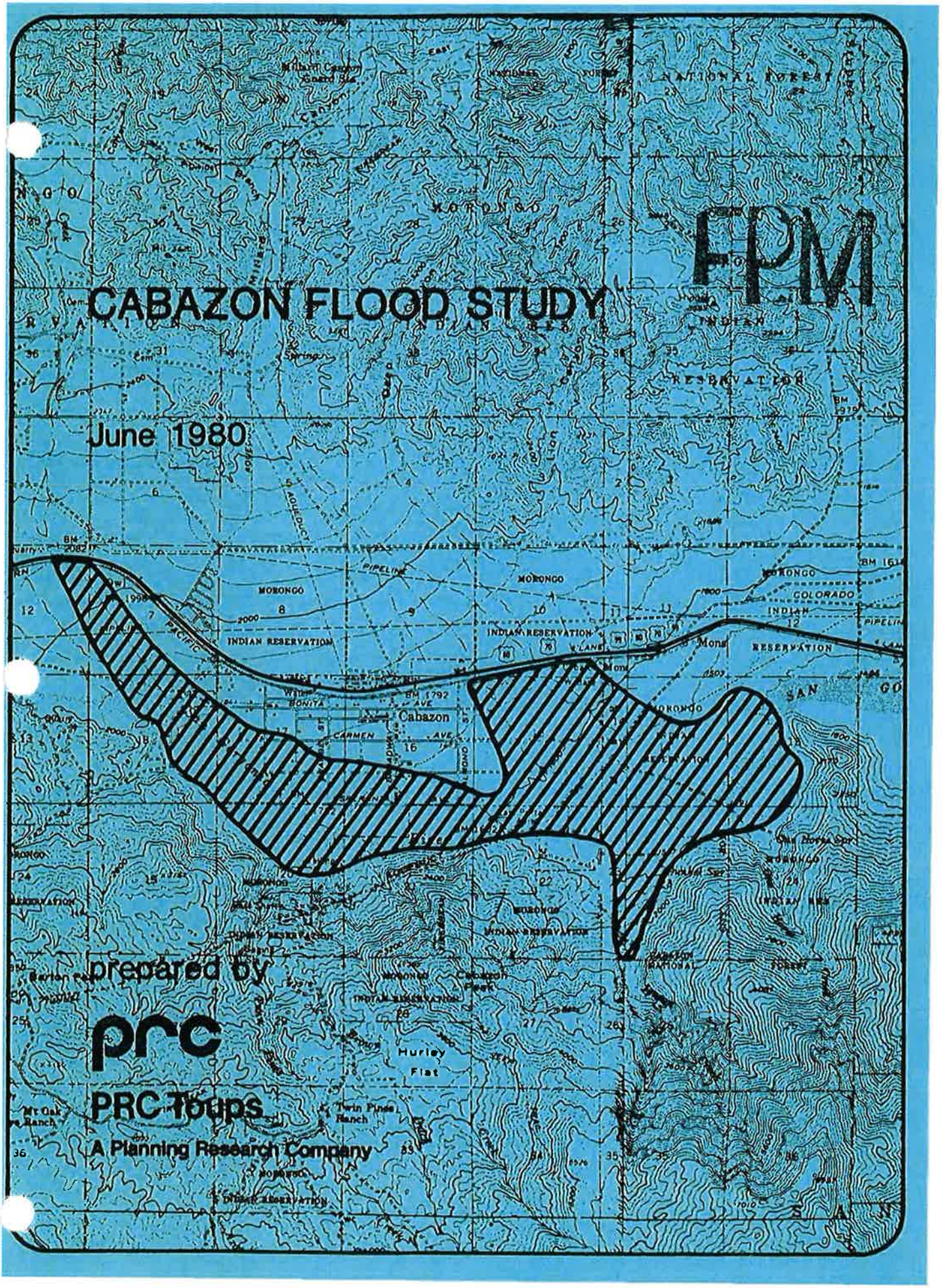


FIGURE 3 SCOUR DEPTH

EXCERPTS

EXCERPT A: CABAZON FLOOD STUDY, PREPARED BY PRC TOUPS, DATED JUNE 1980



CABAZON FLOOD STUDY

June 1980

FPM

prepared by

prc

PRC Toups

A Planning Research Company

PRC Toups

prc

June 12, 1980

Mr. Kenneth L. Edwards, Chief Engineer
Riverside County Flood Control
and Water Conservation District
1995 Market Street
Riverside, California 92502

Subject: Cabazon Flood Study

Dear Mr. Edwards:

PRC Toups is pleased to submit this report on flood hazards in Cabazon. The report identifies the extent and character of flooding from the San Gorgonio River, Jenson Creek, and Millard Canyon Creek. Recommendations on the type of development suitable within the identified flood plains are made and floodproofing guidelines provided. By the application of the guidelines and development limitations outlined in the report, flood damages can be avoided for future development.

The identification of flood hazards is important to the continuing development of the community of Cabazon. We appreciated the opportunity to participate in this study and look forward to providing additional assistance as necessary.

Very truly yours,

PRC TOUPS

Jens Thielmann

Jens Thielmann
Project Manager

JT:fa

A Planning Research Company
6529 Riverside Avenue, Riverside, California 92506
Telephone (714) 359-4301

CABAZON FLOOD STUDY

Prepared for:

Riverside County Flood Control
and
Water Conservation District

Prepared by:

PRC TOUPS
6529 Riverside Avenue
Riverside, California 92506

JUNE 1980

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CABAZON FLOOD STUDY	1
BACKGROUND	3
METHODOLOGY	7
Hydrology	7
Flood Depth, Width and Velocities	8
Flood Boundaries	10
DEVELOPMENT CRITERIA	12
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APPENDIX A Floodway Calculation

APPENDIX B Riverside County Regulations

APPENDIX C Calculations

CABAZON FLOOD STUDY

Recent development pressures in the Cabazon area have created an urgent need for definitive guidelines on development within the floodprone segments of this community. Devastating floods in recent years have underscored this critical need. Prior flood studies have been done for the area, but lack sufficient detail for use in regulating development. This report, prepared by PRC Toups was authorized by the Riverside County Flood Control and Water Conservation District in response to this need.

The study area, an unincorporated portion of Riverside County located between Banning and Palm Springs at Cabazon, can generally be described as including those areas south of Interstate 10 (I-10) freeway and east of Fingal Point which are subject to flooding from the San Gorgonio River, Jenson Creek, and Millard Canyon Creek. The study area is delineated on Figure 1.

This report provides a detailed study of the indicated flooding sources and determines not only the boundaries of the flooding, but the character of flooding including velocity, depth and width. Other factors such as erosion, scour and siltation are also addressed. Recommendations on where development should be permitted or prohibited are made. Guidelines on methods of flood proofing structures are provided. Land density and other land planning recommendations relative to the flood prone areas are made.

SHR - SHDL2

The steep slopes and easily erodable alluvial bed material characteristic of the study area required the development of methodologies which addressed these conditions. A research of current methodologies was made and the most appropriate was selected for use in this study. Modifications to the selected methodology were made to suit the unique features of the study area. The developed methodology permits the determination of flood boundaries, depths, widths and velocities. Additional methods were developed to determine maximum land development densities consistent with the flood hazard potential.

SHR - UFR (alluvial)

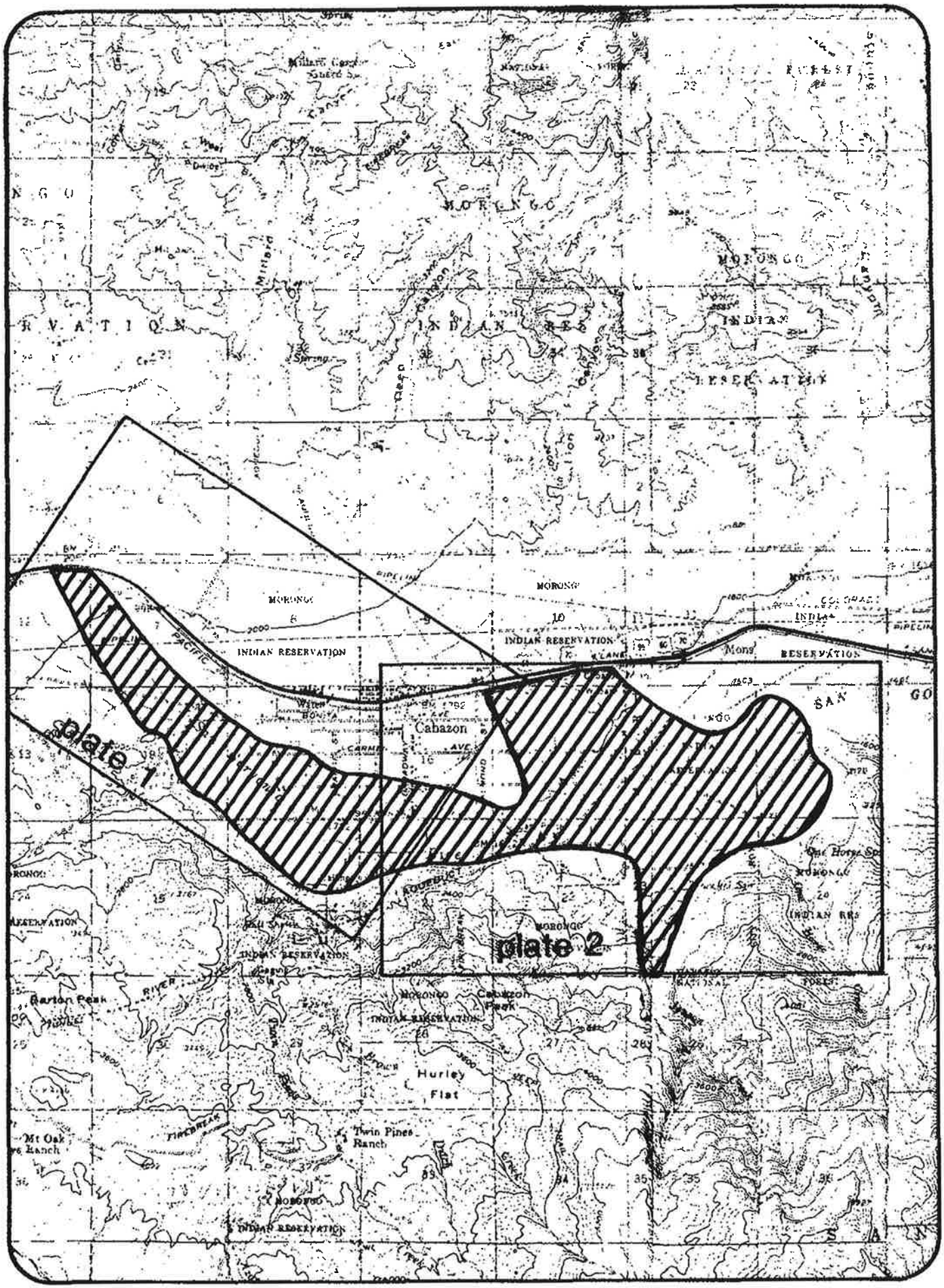


Figure 1 STUDY AREA

The study results delineating flood hazard areas are shown on the two report plates attached to the back of this report. Flood proofing guidelines are summarized on Figure 4.

BACKGROUND

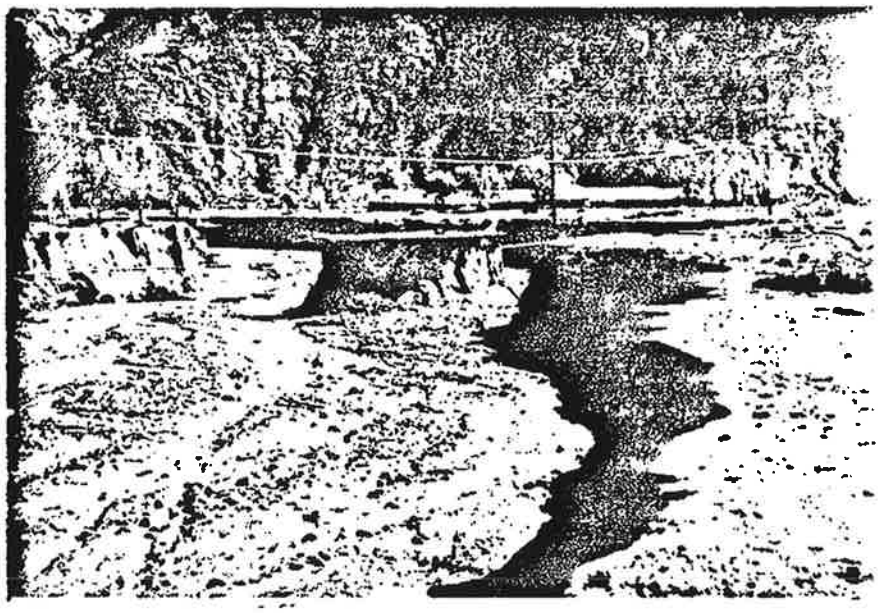
Both the San Bernardino and San Jacinto Mountains form the watershed contributing to flood flows in the study area. The San Gorgonio River, which drains a roughly rectangular watershed area of about 150 square miles from both mountains is characterized as a wide sandy watercourse. Upstream of the Esperanza Avenue dip crossing, the river's steep bed slope of two to three percent, coupled with the soft alluvial bed material subject the river to severe and unpredictable lateral and vertical erosion. During major floods, the river's course can change dramatically, creating new overflow channels. Downstream of the Esperanza Avenue dip crossing, the river's bed slope decreases to about one percent, with resulting lower velocities. Sediments carried along with the higher upstream velocities can settle out in the lower portions of the river. The lower velocities and topographic conditions in the lower reaches reduce the likelihood of occurrence of the unpredictable flow paths characteristic of the upper reaches. Instead, the lower reaches have a well defined water course. Within the study area, flows in the river are ephemeral, occuring only during and shortly after a significant rainfall.

Millard Canyon Creek, which drains approximately 15 square miles of watershed within the San Bernardino Mountains, flows over an alluvial fan, ultimately reaching the San Gorgonio River. Within the study reach, numerous well defined watercourses emanate from culverts under the Southern Pacific Railroad which, combined with the I-10 freeway intersects the otherwise unobstructed alluvial fan. The steep two to three percent bed slopes give rise to the same unpredictable flow paths during floods as are characteristic of the upper reaches of the San Gorgonio River.

Jenson Creek, which drains approximately four square miles of watershed within the San Jacinto Mountains flows over a steep alluvial cone formed out of sediment and boulders originating within the watershed. The Jenson Cone has the shape of a classical alluvial fan with a narrow apex and well defined convex cone with boundaries defined by the adjacent mountains. A feature distinguishing the cone from a normal alluvial cone, however, is the predominance of large boulders interspersed in the alluvial material within the upper reaches. Field investigations along with aerial topography show a well defined incised channel in the upper reaches, approximately above elevation 1,650 feet. This channel, which hugs the easterly toe of the San Jacinto Mountains has the characteristics of a typical mountain stream. The creek bed and sides are well defined and highly armored with large adjoining boulders, up to ten feet in diameter. Flows in the upper reaches are perennial, giving rise to an established riparian growth. Below elevation 1,650 feet the boulders become scattered and decrease rapidly in size with decreasing elevation. At the lower portion of the cone, the boulders are absent altogether and the fan is comprised entirely of non-cohesive alluvial sediment.

Flooding from these sources can occur anytime of the year, although the significant floods of record have all occurred during the winter months. Floods resulting from tropical storms may occur during the summer and earlier fall months. The smaller watersheds such as Jenson and Millard Creeks are more likely to flood from this kind of weather condition whereas the San Gorgonio River is more likely to be affected by a general winter storm.

The most damaging flood of record occurred during January 1969, where the severe erosive force of the San Gorgonio River scoured new channels which did not previously exist. Figure 2 shows a portion of the scoured area at Broadway Avenue near Dolores Avenue. Flood flows from Jenson Creek inundated a subdivision located at the base of the cone. Land erosion occurred on the Millard Cone as a result of the flood flows there.



(FIGURE 2 - SAN GORGONIO CREEK OVERFLOW CHANNEL)

Other damaging floods of record occurred during February 1969, November 1965 and March 1938. Significant to the study undertaken herein, are the paths of flow taken by the floods, the magnitude of flow that occurred, and the severe erosion and siltation that was observed. This information is useful in the prediction of future flood characteristics in the area.

Prior flood studies have been made within the Cabazon Area. The U.S. Army Corps of Engineers published a "Flood Plain Information" Report for the San Gorgonio River and Smith Creek in June of 1973 [U.S.C.O.E., 1973]. The study included a hydrologic and hydraulic analysis which determined flood flow frequencies and flood plain limits, widths, depths and velocities for the San Gorgonio River. A detailed study of the river below Experanza Avenue was made, but the analysis of the reach above the Esperanza Avenue provided only an approximate indication of areas subject to flooding.

Recognizing the need for additional studies in the area, the Corps of Engineers extended their study the following year to include tributaries of the San Gorgonio River including Jenson Creek and Millard Canyon Creek. This study also provided only an approximate indication of areas subject to flooding [U.S.C.O.E. 1974].

In 1976, the Federal Emergency Management Agency (formerly Federal Insurance Administration) studied the Cabazon area for purposes of determining flood hazard areas and setting flood insurance rates [HUD, 1976]. Flood boundaries published by FEMA correspond to those of the Corps of Engineers reports. Information contained in the FEMA report was limited to mapping of flood boundaries and did not provide flood depths, velocities or other flood characteristics. Also, no floodproofing guidelines were provided nor were conditions imposed to restrict development within the area, except that flood insurance is mandatory in the flood hazard areas delineated.

No significant flood control facilities are located along the San Gorgonio River or at Jenson Creek which would control flood flows. A sand levee located in the upper reaches of the San Gorgonio River controls only low flows and is considered ineffective in controlling major flood flows.

A concrete-lined channel along the westerly boundary of the Millard Canyon Creek cone serves to define that boundary and prevent flows from spreading laterally to the west of the channel. It does not however, protect lands to the east.

The I-10 freeway and the Southern Pacific Railroad are the only man-made structures which could have a significant effect on the nature of flooding in this area. Their effects are considered and described in a subsequent section of this report.

Existing development within the flood plains of the three flooding sources lies principally at the base of the Jenson Cone, where existing structures are subject to flooding from both Jenson Creek and the San Gorgonio River. Along the upper reaches of the San Gorgonio River some isolated structures can be found. In the Millard Cone only one structure is currently located there, but much subdivided land is located within the Millard flood plain.

METHODOLOGY

This section describes the methods used in determining the hydrologic and hydraulic analysis necessary to this study. A literature search was conducted to determine the most appropriate method of flood plain analysis, particularly with regard to alluvial fans. Modifications were made as needed to accurately account for the unique conditions characteristic of the study site.

HYDROLOGY

In the preparation of the Flood Plain Information Reports, the Corps of Engineers prepared a detailed hydrologic analysis of all the streams under study. Their method of analysis was based on a statistical analysis of stream gage records for gaged streams in the same hydrologic vicinity as the study streams. Peak discharges computed by the Corps were considered appropriate to this study and used. Criteria established by the Riverside County Flood Control and Water Conservation District and FEMA set the 100-year flood as the basis for flood plain regulations and therefore is the base frequency used herein. Since the indicated discharges are based on stream gage data, no bulking factors for debris were applied to the values for use in this study as stream gage data includes the effects of debris. Table 1 lists 100-year peak discharges used in the study.

TABLE 1. 100-YEAR PEAK DISCHARGES

Flood Source & Location	100-Year Peak Discharge (cfs)	Drainage Area (S.M.)
San Gorgonio River [b]		
at U/S of Fingal Point	30,000	148
at D/S of SPRR	21,000	46
Jenson Creek		
at Canyon Mouth [a]	5,000	3.8
Millard Canyon		
at Canyon Mouth [a]	11,000	15.5

[a] U.S. COE, 1974
[b] U.S. COE, 1973

FLOOD DEPTH, WIDTH AND VELOCITIES

The primary characteristic of flooding on the alluvial fans and plains within the study area is that the flood flows form their own channels in the generally non-cohesive alluvial material through which they flow. Conventional "backwater" hydraulic analyses are usually inappropriate in all but the flatter reaches of the study area because there is no consideration given to the change in the channel geometry which is caused by the flows. Conventional analytical methods are based on an assumption of rigid channel boundaries.

In recognition of this deficiency, the Federal Emergency Management Agency (FEMA) recently developed and adopted specific methodology for analysis of flood hazards on alluvial fans [HUD, undated]. The method predicts not only the width, but the depth of the channel that is formed by the flood flows. The study bases the predicted channel geometry on the observation that an alluvial channel will continue to widen until the ratio of width to depth approaches 200. At this point the channel width stabilizes. Coupled with this observation is the contention that flows on alluvial fans are at critical depth. Statistical equations are also used to take into account the probability of a flooding event occurring on a specific point on the fan, since the width of the channel formed is generally only a fraction of the possible width over which the flooding could occur.

Other studies on alluvial fan methodologies have been conducted [Leopold and Maddock 1953] [Leopold and Langbein 1962] however, these studies only provide general relationships of parameters associated with alluvial flooding but not sufficient information for predicting width and depths of channel formation. Additional studies have been made which provide only indications of velocities in alluvial channels [Mostafa 1978].

A review of the indicated literature was made in order to determine the appropriate methodology to use in the study. The FEMA method was the only study which would predict all of the parameters needed in the flood hazard analysis. However, although the FEMA method is appropriate for determining statistical velocities and depths useful in setting insurance rates, in our opinion it does not reflect transitory peak conditions to which improvements within the flood plain

must be designed to in order to protect them from a 100-year peak discharge. Moreover, the bed slopes for which the FEMA methodology was developed were on the order of 2 to 3 percent, whereas slopes in the study area are as high as 18 percent. For this study, it is believed that the Manning's resistance equation is more appropriate than the critical depth used in the FEMA study. Therefore, using the observation that a channel will cease to widen when the depth-width ratio approaches 200, and equating this to the first order derivative of depth with respect to width using Manning's equations, yields the following equations:

$$D = 0.143\,(Qn)^{3/8}\,S^{-3/16}$$

and

$$W = 17.2\,(Qn)^{3/8}\,S^{-3/16}$$

and using $V = Q/A$

$$V = 0.41\,Q^{1/4}S^{3/8}n^{-3/4}$$

A full derivation of the indicated equations is included in the Appendix. Using these equations for the conditions within the study site, figures of 1 to 3 feet of depth and 10 to 25 feet per second (fps) of velocity and widths of 100 to 500 feet are computed. We believe that the computed velocities are supported by field evidence of past floods at the study site. Discussions with Mark Busby (Senior Hydrologist, U.S.G.S.) indicate that indirect field measurements of flood flows on alluvial fans in the general vicinity of the study site yield velocities in the range of 15 to 25 fps. Using equations developed for rapid flow in alluvial channels [Mostafa 1978], velocities up to 35 feet per second are calculated. Both of these lend support to the velocities predicted by the substitution of Manning's equation for critical depth in the original FEMA methods. Although much additional research is needed in the subject, it is believed that the methodology developed herein will provide reasonable estimates.

Using 100-year peak discharges previously established by the U.S. Army Corps of Engineers for the streams within the study area along with the bed slopes and appropriate Manning's values, sufficient parameters are available for the calculations of depths, widths and velocities. As indicated earlier, the width

computed corresponds to the width of channel eroded by the flood flows. The depth of flow is the "normal" depth corresponding to that width. It must be noted that the depth of flow and depth of channel are not necessarily identical because of the action of scour which tends to deepen the channel.

FLOOD BOUNDARIES

Prior floods have shown that flooding can occur anywhere along a given contour across an alluvial fan. Therefore, flood hazard boundaries to be determined in this study are not based upon the width of channel erosion computed in the developed methodology, but are derived from topographic constraints using available 400 scale aerial topographic maps. Photographs showing historic flooding in the study site and on other similar alluvial fans were also used in the determination. The effects of man-made structures such as railroads, freeways and culverts were considered by the use of conventional hydraulic analyses.

SHR - UFR1 (alluvial)

For the San Gorgonio River, the upstream study limit coincides with the I-10 freeway. A conventional hydraulic analysis indicates that the 100-year flood flows will pass under the existing freeway bridge. With this as a starting point or apex of the flows, and the observation that alluvial fan flooding diverges at an angle of about 15 degrees from the apex, boundaries of flooding immediately downstream of the I-10 crossing were delineated. Further downstream, the adjacent mountains provide a well-defined boundary for the southerly flood hazard limits. For the northerly side, the point where the contour lines abruptly change direction provide a reasonable boundary when used along with photos showing historical flooding in that area.

For the lower portion of the San Gorgonio River, conventional "backwater" analyses were made using the Corps of Engineers' HEC-2 computer program. It is believed that this portion of the river permits the use of this method because of the much flatter slopes (1 percent) in this reach as compared with 2 and 3 percent in the upper reach. A "floodway" section was computed by determining the extent of area on the southerly bank of the river where encroachment could be permitted without raising the water surface by more than one foot.

As indicated earlier, the Jenson alluvial fan has a classical fan shape, with well-defined boundaries formed by the adjacent mountains. However, the presence of large boulders forming an effective bed and side armoring for the incised channel in the upper reaches of the cone suggest that flooding will be confined to the creek's channel in the upper reaches although excessive debris generated within the watershed can reduce its capacity. As flows progress downstream, the diminishing size and number of boulders permits the flows to take unpredictable directions as they scour their own channels.

The Millard fan is somewhat complicated by the presence of the I-10 freeway and the railroad which bisect the entire fan. Conventional hydraulics indicate that flows upstream of the freeway are likely to approach the freeway in two paths due to upstream dykes and topographic constraints. Within the freeway, a series of seven culverts divides the flow further. Between the freeway and the railroad, the flows recombine and flow out of a series of 8 culverts under the railroad. However, the combined capacity of the culverts is not sufficient to prevent overtopping of the railroad embankment. The geometry of the railroad embankment along with other uncertainties prevent a prediction of where the flows will break out. It can, however, be safely assumed that there will be at least three major breakout points along the railroad embankment. Therefore, the effect that the railroad and freeway system has is that it reduces the severity of the 100-year flooding to the extent of spreading the width of flooding over a wider area than it would be under natural conditions, but does not make the location of the flooding any more predictable than if it were a natural alluvial fan. The westerly boundary of the Millard fan can by inspection of the aerial photography, be located at the existing concrete channel. The easterly boundary, which begins at the last railroad culvert crossing the Millard fan, is extended using the divergence angle previously discussed for the San Gorgonio River. The southerly boundary is made to coincide with the floodway limit of the San Gorgonio River.

DEVELOPMENT CRITERIA

Using the previously established flood hazard boundaries, velocities, depths and channel widths, criteria for development can be established. Flood velocities are a significant consideration because they provide an indication of the potential for erosion and scour. Using Los Angeles Flood Control District criteria, and field observations of scour from historical floods in the study area, scour depths as shown on Figure 3 can be anticipated. UFR1(1)

Protection of a structure would require that non-erosive material, e.g., rock rip rap, etc., be placed below grade to the indicated scour depths. Moreover, the potential exists for the flows to be abruptly interrupted by a structure causing the velocity head of the flows to be converted to an equivalent depth of water. This would require raising of pads for structures to a height equal to the sum of depth plus velocity head. An alternative to slope protection is the construction of pile foundations, which must extend below the indicated scour depths. The publication "Elevated Residential Structures" [HUD, 1976] provides guidelines to this type of construction. UFR1(1)

The width of the channel created by the flood flows is significant because it provides an indication of how much area must be left undisturbed in order to permit conveyance of flows through a fully developed community. Using the ratio of channel width to available flooding width provides a basis for setting permissible housing density. Calculations (see Appendix) indicate that minimum lot sizes for the Millard and the Jenson fans should be one-third acre and one-half acre, respectively. In addition to minimum lot size requirements, calculations show that 30 percent and 35 percent of the lot width in the direction of flow for the Millard and Jenson fans respectively must remain unobstructed. UFR1(1)

It is believed that strict limitations on development should be made after an upper limit is reached on flow velocities, not only because of the severe flood proofing requirements to individual structures but because of the severe impact that a flood would have to the adjacent areas such as surrounding roads and utilities. It is believed that when velocities reach 15 fps development should be limited. This SHDL2

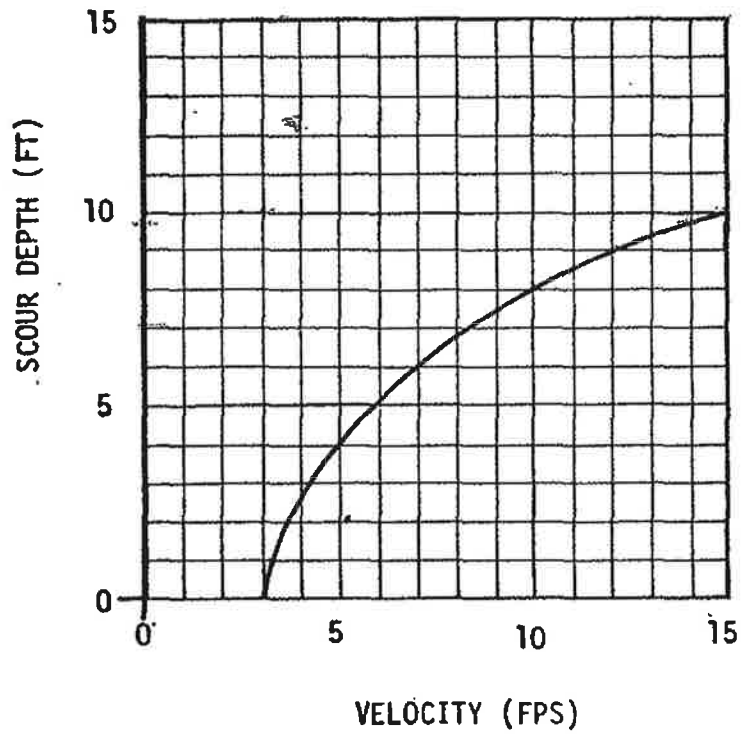


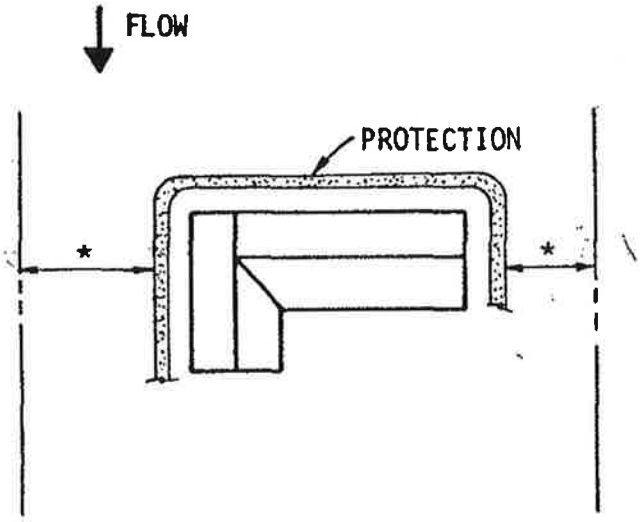
FIGURE 3 SCOUR DEPTH

velocity is based on criteria used by agencies involved in flood control. The Corps of Engineers, in the "Flood Proofing Regulations Manual" [U.S.C.O.E. 1972] states that "a velocity of 10 feet per second is considered to be an upper limit for which flood proofing measures are economically effective, except for special structures and facilities built at the edge of a channel, where permitted." Los Angeles County Flood Control District generally permits construction of levees for protection of structures only up to 20 feet per second [LACFCD, 1970]. Areas delineated on Plates 1 and 2 which have velocities of 15 fps or greater are designated as a "Severe Flood Hazard Area." Within these areas, development should be limited to those uses consistent with the County of Riverside's W-1 Zone (Watercourse Area) as amended December 10, 1975 (see Appendix). SHDL2

The upper reaches of the San Gorgonio River fall into this category, with the 20 fps velocities computed at that location. Based on the channel widths computed, and field observations of the 1969 floods, it is clear that unacceptable damages would be sustained to a community located within the flood hazard boundaries. During a 100-year flood, a channel 500 feet wide and more than ten feet deep could form resulting in complete isolation for affected areas. Portions of the Millard and Jenson fans with 15 fps or greater velocities are subject to similar conditions.

For areas with lower velocity potential, such as portions of the Millard fan and Jenson fan, some development could proceed subject to strict flood proofing requirements and density limitations as outlined herein. UFR1(1) The indicated precautions notwithstanding, prospective developers of lands should be made aware of potential for damage to adjacent surrounding improvements. Figure 4 summarizes flood-proofing measures which should be taken.

For the lower reaches of the San Gorgonio River, development could occur in most of the flood fringe areas, provided pads are raised to the elevation of the 100-year flood and protection of the fill is provided for velocities of 3 fps or greater. The requirements of County Ordinance No. 458 are applicable to the flood fringe area. One hundred year flood elevations are profiled on Figure 5. A 6- to 12-inch freeboard above the 100-year flood elevation would provide additional safety and is encouraged. The only exception to development in the fringe is the reach of river between mile 6.5 and 7.3, delineated as a "Special Fringe Area" on Plate 2. Since

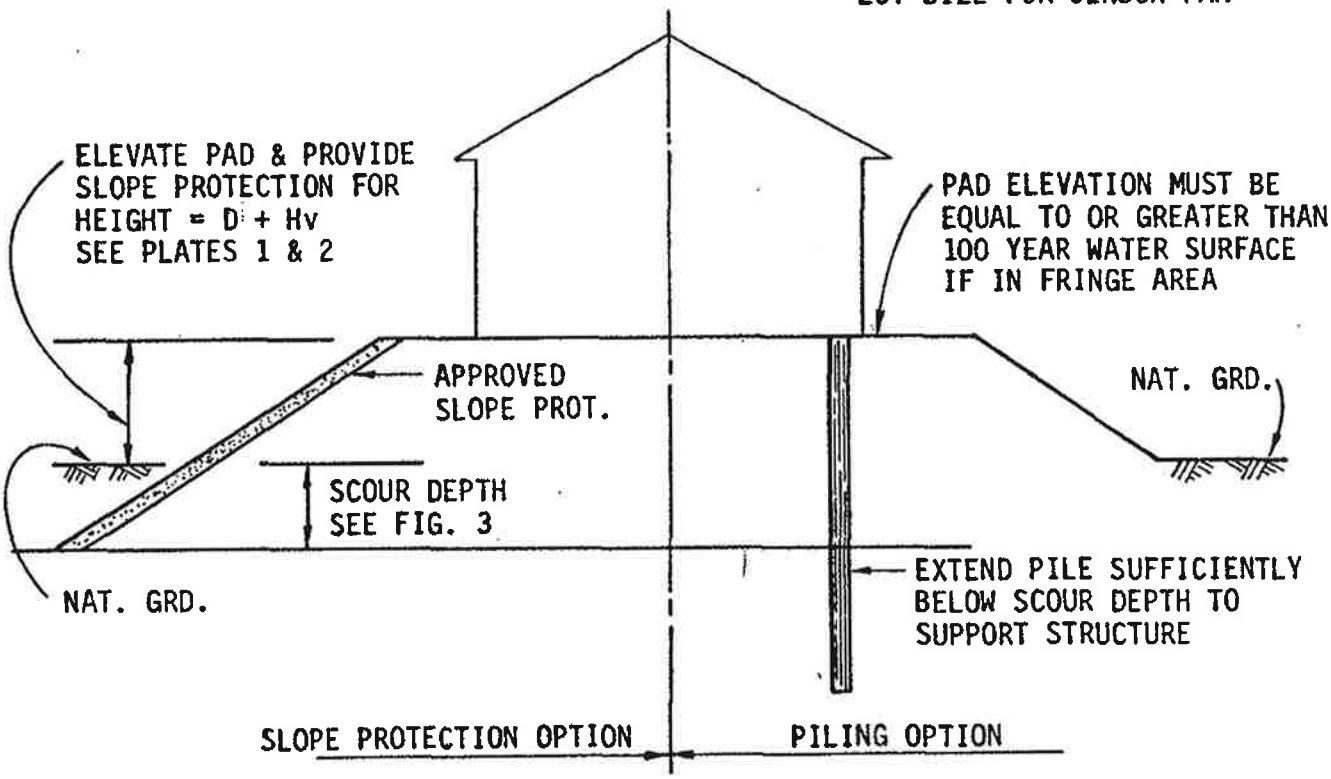


PLAN

NO SCALE

NOTE

*TOTAL UNOBSTRUCTED AREA MIN. 30% LOT WIDTH FOR MILLARD FAN AND 35% FOR JENSON FAN AND MIN. 1/3 ACRE LOT SIZE FOR MILLARD FAN, MIN. 1/2 ACRE LOT SIZE FOR JENSON FAN



ELEVATION

NO SCALE

FIGURE 4

FLOODPROOFING CRITERIA

the main flows impinge directly on the river curve there, development should not proceed until bank protection is provided for the entire curve. The floodway portion of the San Gorgonio River should remain unobstructed as outlined in Ordinance No. 458.

For all three of the flooding sources, no obstructions should be placed within any of the defined drainage swales. Plates 1 and 2 delineate defined drainage swales with a line designated as "watercourse." No structures or other obstructions should be placed within 25 feet of the bank.

An additional area located southwest of the intersection of Elm Street and Esperanza Avenue, which is outside the influence of the San Gorgonio River and Jenson fan but is affected by small flows from the surrounding mountains, was also studied for flood hazards. Since the flows are small, it is recommended that development in this area provide for raising of pads a minimum of one foot above the natural ground as a protection against local sheet flooding.

REGIONAL SOLUTIONS

An alternative to protection of individual residences is the construction of regional flood control facilities, which would protect the entire area. Floodproofing criteria for individual structures presented earlier was given not because it is preferable to a regional solution, but because a means of implementing regional facilities is currently unattainable. Regional solutions are the preferred method of flood control in the area because they will protect surrounding support facilities such as roads, water lines and other utilities in addition to serving the primary function of structure protection.

Solutions to all three flooding sources studied must give adequate consideration to the high volumes of debris transported during floods. This is particularly acute for the Jenson Creek area, where large quantities of debris generated within the watershed are carried with the high velocity flows in the steep areas of the cone and can settle out and fill in channels in the flatter reaches.

The construction of subdivisions should proceed only if adequate flood proofing for each building is provided, and the densities recommended in this report are complied with. An alternative would be to construct a regional facility which would protect the development but would not divert flows to adjacent lands.

RECOMMENDATIONS

Study results indicate that a severe flood potential exists within the flood plains of the Cabazon community. In some locations, it is believed to be so severe that strict limitations should be placed on development. In other areas, it is recommended that development only occur if flood proofing measures as outlined herein are strictly followed. Plates 1 and 2, showing the location and type of flooding, along with Figures 3 and 4, which provide flood proofing criteria, and Figure 5 showing 100-year water surface elevations provide the necessary conditions for development in the area to the extent of providing for protection against a 100-year flood.

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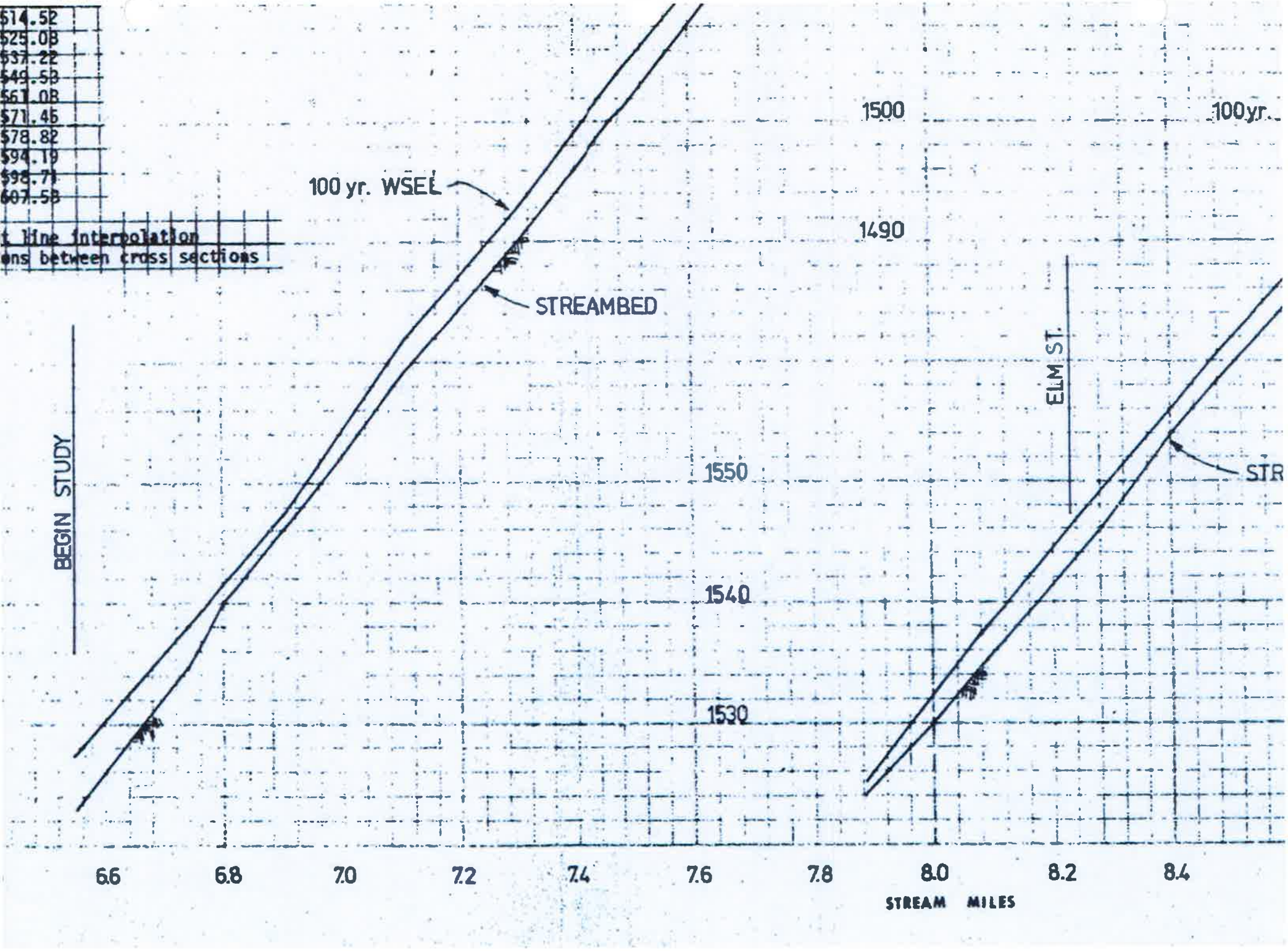
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7.0
7.2
7.4
7.6
7.8
8.0
8.2
8.4
STREAM MILES

Appendix A

PRC Toups

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*****************************************
  HEC2 RELEASE DATED NOV 76 UPDATED AUG 1977
  ERROR CODE -  01,02
  MODIFICATION -  50,51,52,53
*****************************************

C
T1      CAPAZON STUDY 100 YEAR FLOW
T2      SAN GORGONIO RIVER
T3      CH TOURS VENTURA

J1  ICHECK    INQ       NINV      IDIP      STRT      METRIC    HVINS     Q         WSEL      FQ

      -0        2        -0        -0 -1.000000     -0.00      -0.0        -0  1449.000    -0.000

J2  NPROF     IPLOT     PRFVS     XSECV     XSECH     FN        ALLOC     IBW       CHNIM     ITRACE

     1.000    -0.000    -1.000    -0.000    -0.000    -0.000    -0.000    -0.000    -0.000    15.000

J3  VARIABLE CODES FOR SUMMARY PRINTOUT

    38.000    42.000    39.000    63.000     1.000     2.000    25.000     5.000    10.000    43.000

     4.000    53.000    54.000    -0.000    38.000    43.000    50.000    55.000    26.000    56.000

    13.000    14.000    15.000    36.000    27.000    28.000     8.000    -0.000   100.000    -0.000

   200.000    -0.000    -0.000    -0.000    -0.000    -0.000    -0.000    -0.000    -0.000    -0.000

J5  LPRNT    NUMSEC                    ********REQUESTED SECTION NUMBERS********

   -10.000   -10.000    -0.000    -0.000    -0.000    -0.000    -0.000    -0.000    -0.000    -0.000
NC      .035      .035      .035      .200      .400     -0.000     -0.000     -0.000     -0.000     -0.000
QT     2.000  30000.000  30000.000     -0.000     -0.000     -0.000     -0.000     -0.000     -0.000     -0.000
ET    -0.000     -0.000      4.100   3981.130   4941.920     -0.000     -0.000     -0.000     -0.000     -0.000

        FLOW LINE SET AT 4000

        STATIONING FROM LEFT TO RIGHT LOOKING UPSTREAM

X1      6.550     12.000   3950.000   5160.000     -0.000     -0.000     -0.000     -0.000     -0.000     -0.000
GR   1460.000   3950.000   1444.000   3990.000   1443.000   4070.000   1444.000   4150.000   1445.000   4180.000
GR   1444.000   4250.000   1444.000   4450.000   1446.000   4700.000   1444.000   4990.000   1444.000   4930.000
GR   1456.000   4970.000   1460.000   5160.000     -0.000     -0.000     -0.000     -0.000     -0.000     -0.000
ET     -0.000     -0.000      4.100   3080.000   5370.000     -0.000     -0.000     -0.000     -0.000     -0.000

X1      6.740     22.000   3020.000   5350.000   1300.000    550.000   1003.200     -0.000     -0.000     -0.000
GR   1480.000   3020.000   1460.000   3050.000   1456.000   3110.000   1454.000   3160.000   1456.000   3210.000
GR   1456.000   3270.000   1459.000   3450.000   1456.000   3650.000   1457.000   3750.000   1456.000   3830.000
GR   1454.600   4000.000   1456.000   4090.000   1456.000   4290.000   1458.000   4280.000   1456.000   4380.000
GR   1454.000   4580.000   1457.300   4700.000   1456.000   4740.000   1454.700   5000.000   1452.000   5200.000
GR   1460.000   5270.000   1454.000   5370.000     -0.000     -0.000     -0.000     -0.000     -0.000     -0.000
ET     -0.000     -0.000      4.100   2600.000   3600.000     -0.000     -0.000     -0.000     -0.000     -0.000
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X1	8.000	18.000	1[illegible]0.000	5600.000	2070.000	900.000	944.300	-0.000	-0.000	-0.000
GR	1480.000	1680.000	1468.000	1730.000	1465.000	1950.000	1464.700	2350.000	1468.000	2590.000
GR	1468.000	3350.000	1465.000	3390.000	1466.000	4000.000	1468.000	4100.000	1476.700	4200.000
GR	1468.000	4300.000	1472.000	4320.000	1472.000	4370.000	1469.000	4540.000	1474.000	5100.000
GR	1464.000	5200.000	1468.000	5290.000	1472.000	5500.000	-0.000	-0.000	-0.000	-0.000
ET	-0.000	-0.000	4.100	2630.000	5870.000	-0.000	-0.000	-0.000	-0.000	-0.000

X1	7.100	27.000	1450.000	5850.000	2200.000	1100.000	1056.000	-0.000	-0.000	-0.000
GR	1488.000	1450.000	1484.000	1620.000	1480.000	1920.000	1490.000	2150.000	1478.500	2450.000
GR	1480.000	2730.000	1482.000	3000.000	1480.000	3130.000	1478.000	3170.000	1480.700	3210.000
GR	1478.000	3280.000	1480.000	3350.000	1481.000	3500.000	1480.000	3540.000	1479.000	4000.000
GR	1480.000	4190.000	1496.200	4250.000	1490.000	4450.000	1480.000	4930.000	1482.000	4960.000
GR	1480.000	5050.000	1484.000	5070.000	1485.000	5200.000	1484.000	5330.000	1480.000	5370.000
GR	1484.000	5400.000	1488.000	5850.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000
ET	-0.000	-0.000	4.100	2770.000	5920.000	-0.000	-0.000	-0.000	-0.000	-0.000

X1	7.300	18.000	1720.000	5920.000	1100.000	600.000	1056.000	-0.000	-0.000	-0.000
GR	1500.000	1720.000	1496.000	1930.000	1495.000	2120.000	1492.000	2400.000	1492.000	3290.000
GR	1491.000	3310.000	1492.000	3630.000	1494.000	3750.000	1492.000	3920.000	1490.000	4000.000
GR	1492.000	4200.000	1493.000	4300.000	1492.000	4370.000	1490.000	4420.000	1492.000	4920.000
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ET	-0.000	-0.000	4.100	3010.000	5690.000	-0.000	-0.000	-0.000	-0.000	-0.000

X1	7.490	23.000	1650.000	5600.000	1100.000	900.000	1003.200	-0.000	-0.000	-0.000
GR	1520.000	1650.000	1512.000	1710.000	1510.700	1890.000	1512.000	2100.000	1508.000	2500.000
GR	1504.000	2770.000	1502.700	2830.000	1504.000	2920.000	1505.500	3000.000	1504.000	3010.000
GR	1502.700	3090.000	1504.000	3250.000	1504.000	3320.000	1502.000	3500.000	1504.000	3950.000
GR	1501.300	4000.000	1501.300	4350.000	1504.000	4790.000	1504.000	4990.000	1502.000	5100.000
GR	1504.000	5320.000	1504.000	5450.000	1508.000	5600.000	-0.000	-0.000	-0.000	-0.000
ET	-0.000	-0.000	4.100	3350.000	5640.000	-0.000	-0.000	-0.000	-0.000	-0.000

X1	7.660	14.000	1860.000	5640.000	700.000	850.000	997.500	-0.000	-0.000	-0.000
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GR	1512.000	4000.000	1512.000	4360.000	1516.000	5070.000	1520.000	5540.000	-0.000	-0.000
NH	2.000	.060	3550.000	.035	5600.000	-0.000	-0.000	-0.000	-0.000	-0.000
ET	-0.000	-0.000	4.100	3570.000	5600.000	-0.000	-0.000	-0.000	-0.000	-0.000

X1	7.880	28.000	3320.000	5600.000	1300.000	800.000	1161.500	-0.000	-0.000	-0.000
X3	10.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	1525.000	1530.000	-0.000
GR	1538.000	1950.000	1535.000	2070.000	1532.000	2170.000	1528.000	2250.000	1532.000	2370.000
GR	1528.000	2900.000	1524.000	2970.000	1523.000	3000.000	1524.000	3050.000	1524.000	3270.000
GR	1525.000	3320.000	1524.000	3335.000	1523.000	3430.000	1524.000	3550.000	1528.000	3600.000
GR	1524.000	3940.000	1524.000	4000.000	1524.000	4050.000	1525.500	4200.000	1524.000	4290.000
GR	1524.000	4500.000	1520.000	4700.000	1524.000	4800.000	1525.300	4850.000	1524.000	4900.000
GR	1524.000	5050.000	1528.000	5400.000	1530.000	5500.000	-0.000	-0.000	-0.000	-0.000
NH	2.000	.060	3550.000	.035	5670.000	-0.000	-0.000	-0.000	-0.000	-0.000
ET	-0.000	-0.000	4.100	3510.000	5670.000	-0.000	-0.000	-0.000	-0.000	-0.000

X1	8.020	34.000	2100.000	5670.000	1450.000	850.000	1056.000	-0.000	-0.000	-0.000
X3	10.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	1541.000	1544.000	-0.000
GR	1544.000	1720.000	1540.000	1930.000	1540.000	2030.000	1541.000	2100.000	1540.000	2150.000
GR	1537.000	2500.000	1538.000	2770.000	1538.000	2820.000	1540.000	2820.000	1536.000	3120.000
GR	1534.700	3040.000	1536.000	3075.000	1536.800	3290.000	1535.000	3400.000	1536.000	3520.000

GR	1540.000	3500.000	1540.000	3510.000	1540.000	3530.000	1536.000	3650.000	1534.000	3590.000
GR	1536.000	3750.000	1537.000	3920.000	1535.000	3900.000	1535.000	3985.000	1534.500	4000.000
GR	1536.000	4150.000	1535.000	4440.000	1532.000	4950.000	1532.000	4340.000	1536.000	5050.000
GR	1540.000	5100.000	1539.500	5300.000	1540.000	5500.000	1544.000	5670.000	-0.000	-0.000
NH	2.000	.060	3550.000	.035	5670.000	-0.000	-0.000	-0.000	-0.000	-0.000
ET	-0.000	-0.000	4.100	3510.000	5210.000	-0.000	-0.000	-0.000	-0.000	-0.000
X1	8.260	27.000	3140.000	5210.000	1000.000	800.000	1056.000	-0.000	-0.000	-0.000
X3	10.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	1548.000	1556.000	-0.000
GR	1556.000	1000.000	1552.000	1300.000	1551.500	1900.000	1548.000	2010.000	1548.000	2350.000
GR	1549.500	2400.000	1548.500	2470.000	1549.000	2530.000	1548.000	2650.000	1547.400	2725.000
GR	1548.000	3030.000	1548.000	3140.000	1546.500	3190.000	1548.000	3270.000	1549.300	3400.000
GR	1546.000	3430.000	1548.000	3460.000	1551.200	3430.000	1549.000	3510.000	1547.000	3630.000
GR	1548.000	3800.000	1546.000	4000.000	1544.000	4070.000	1548.000	4400.000	1552.000	4770.000
GR	1552.000	5020.000	1556.000	5210.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000
NH	2.000	.060	3550.000	.035	5210.000	-0.000	-0.000	-0.000	-0.000	-0.000
ET	-0.000	-0.000	4.100	3650.000	4730.000	-0.000	-0.000	-0.000	-0.000	-0.000
X1	8.480	19.000	3200.000	4730.000	1100.000	1100.000	1056.000	-0.000	-0.000	-0.000
X3	10.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	1560.000	1568.000	-0.000
GR	1580.000	1250.000	1564.000	1300.000	1563.000	1340.000	1563.000	2150.000	1560.000	2410.000
GR	1561.200	2570.000	1560.000	2595.000	1560.000	3200.000	1558.300	3350.000	1560.000	3550.000
GR	1555.400	3600.000	1563.300	3650.000	1560.000	3670.000	1557.000	3940.000	1558.500	4000.000
GR	1557.800	4200.000	1560.000	4600.000	1564.000	4650.000	1568.000	4730.000	-0.000	-0.000
NH	2.000	.060	2500.000	.035	4780.000	-0.000	-0.000	-0.000	-0.000	-0.000
ET	-0.000	-0.000	4.100	2570.000	4790.000	-0.000	-0.000	-0.000	-0.000	-0.000
X1	8.560	20.000	2550.000	4790.000	750.000	1000.000	1056.000	-0.000	-0.000	-0.000
X3	10.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	1572.000	1580.000	-0.000
GR	1572.000	1500.000	1568.000	1630.000	1568.000	1790.000	1570.000	2200.000	1572.000	2550.000
GR	1568.000	2450.000	1556.500	3050.000	1568.000	3170.000	1560.000	3250.000	1572.000	3300.000
GR	1576.000	3640.000	1568.000	3700.000	1571.000	3900.000	1568.000	4000.000	1568.000	4050.000
GR	1571.000	4150.000	1570.000	4550.000	1572.000	4650.000	1572.000	4750.000	1580.000	4790.000
ET	-0.000	-0.000	4.100	2750.000	4400.000	-0.000	-0.000	-0.000	-0.000	-0.000
X1	8.620	19.000	2750.000	4400.000	650.000	850.000	739.200	-0.000	-0.000	-0.000
X3	10.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	1579.500	1580.000	-0.000
GR	1580.000	1900.000	1576.000	2030.000	1576.000	2420.000	1579.500	2720.000	1576.000	2790.000
GR	1568.000	2810.000	1555.800	2870.000	1568.000	2930.000	1576.000	2950.000	1580.000	2950.000
GR	1580.000	3100.000	1576.000	3470.000	1590.000	3500.000	1580.000	3530.000	1577.000	4000.000
GR	1576.000	4100.000	1576.000	4180.000	1590.000	4350.000	1588.000	4400.000	-0.000	-0.000
X1	9.010	24.000	3130.000	4700.000	1050.000	1200.000	1214.400	-0.000	-0.000	-0.000
X3	10.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	1596.500	1600.000	-0.000
GR	1600.000	2955.000	1596.000	2980.000	1596.000	3070.000	1595.300	3130.000	1596.000	3150.000
GR	1593.000	3200.000	1593.000	3430.000	1592.000	3470.000	1590.300	3530.000	1592.000	3575.000
GR	1595.500	3610.000	1592.000	3640.000	1590.000	3770.000	1592.000	3910.000	1596.000	3950.000
GR	1588.000	3990.000	1587.500	4000.000	1598.000	4070.000	1592.000	4175.000	1596.000	4190.000
GR	1596.000	4250.000	1594.000	4490.000	1595.000	4550.000	1600.000	4700.000	-0.000	-0.000

ESPERANZA CROSSING

X1	9.120	8.000	3550.000	4670.000	450.000	700.000	363.600	-0.000	-0.000	-0.000
GR	1620.000	3550.000	1600.000	3590.000	1595.000	3690.000	1594.000	3940.000	1593.000	4000.000
GR	1595.000	4100.000	1595.000	4340.000	1600.000	4570.000	-0.000	-0.000	-0.000	-0.000

XL	9.280	10.000	3640.000	4900.000	900.000	940.000	944.100	-0.000	-0.000	-0.000
GR	1620.000	3530.000	1604.000	3720.000	1602.300	3710.000	1604.000	3900.000	1602.000	4000.000
GR	1603.500	4030.000	1602.000	4140.000	1604.000	4310.000	1605.000	4550.000	1610.000	4900.000
EJ	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000

FLOW DISTRIBUTION FOR SECNO= 6.55 CWSEL= 1447.55

STA= 3961 5150
PER Q= 100.0
AREA= 2970.8
VEL= 10.1

FLOW DISTRIBUTION FOR SECNO= 6.74 CWSEL= 1458.01

STA= 3080 5350
PER Q= 100.0
AREA= 4754.1
VEL= 6.3

FLOW DISTRIBUTION FOR SECNO= 6.90 CWSEL= 1467.32

STA= 1780 5600
PER Q= 100.0
AREA= 3968.5
VEL= 7.6

FLOW DISTRIBUTION FOR SECNO= 7.10 CWSEL= 1481.54

STA= 1804 5850
PER Q= 100.0
AREA= 4764.0
VEL= 6.3

FLOW DISTRIBUTION FOR SECNO= 7.30 CWSEL= 1492.83

STA= 2341 5920
PER Q= 100.0
AREA= 1201.2
VEL= 5.8

FLOW DISTRIBUTION FOR SECNO= 7.49 CWSEL= 1504.52

STA= 2735 5600
PER Q= 100.0
AREA= 4280.1
VEL= 7.0

FLOW DISTRIBUTION FOR SECNO= 7.66 CWSEL= 1514.52

STA= 2669 5640
PER Q= 100.0
AREA= 4594.8
VEL= 6.5

FLOW DISTRIBUTION FOR SECNO= 7.88 CWSEL= 1525.08

STA= 2843 3050 3270 3320 5600

```
  PER Q=      12.5      51.9       .1      35.4
   AREA=    694.9    2437.6     29.0    2128.0
    VEL=      5.5       6.4       .9       3.1

FLOW DISTRIBUTION FOR SECNO=       8.08          CWSEL=   1537.22

STA=      2567      5670
  PER Q=     100.0
   AREA=    3754.5
    VEL=       8.0

FLOW DISTRIBUTION FOR SECNO=       8.28          CWSEL=   1549.53

STA=      1962      2350      2725      3030      3140      5210
  PER Q=       1.8       3.4       6.7       1.8      92.4
   AREA=     554.9     376.8     556.5     167.7    3239.1
    VEL=       3.1       2.7       3.6       3.2       7.5

FLOW DISTRIBUTION FOR SECNO=       8.48          CWSEL=   1561.09

STA=      2317      3200      4730
  PER Q=       6.9      93.1
   AREA=     789.9    3305.5
    VEL=       2.6       8.4

FLOW DISTRIBUTION FOR SECNO=       8.58          CWSEL=   1571.45

STA=      2591      4790
  PER Q=     100.0
   AREA=    3421.1
    VEL=       8.9

FLOW DISTRIBUTION FOR SECNO=       8.82          CWSEL=   1578.82

STA=      2734      4400
  PER Q=     100.0
   AREA=    3071.3
    VEL=       9.8

FLOW DISTRIBUTION FOR SECNO=       9.05          CWSEL=   1594.19

STA=      3184      4700
  PER Q=     100.0
   AREA=    2981.2
    VEL=      10.1


FLOW DISTRIBUTION FOR SECNO=       9.12          CWSEL=   1598.71

STA=      3619      4670
  PER Q=     100.0
   AREA=    2960.6
    VEL=      10.1

FLOW DISTRIBUTION FOR SECNO=       9.28          CWSEL=   1607.58
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*****************************************
 HEC2 RELEASE DATED NOV 76 UPDATED AUG 1977
 ERROR CORR -  01,02
 MODIFICATION -  50,51,52,53
*****************************************

T1      CABAZON STUDY 100 YEAR FLOODWAY METHOD 1
T2      SAN GORGONIO RIVER
T3      CH TOUFS.VENTURA

J1  ICHECK    INQ       NINV      IDIR      STRT      METRIC    HVINS     Q         WSEL      FQ
       -0        3        -0        -0 -0.000000     -0.00      -0.0        -0  1447.550    -0.000

J2  NPROF     IPLOT     PRFVS     XSECV     XSECH     FN        ALLOC     IBW       CHNIM     ITRACE
     15.000    -0.000    -1.000    -0.000    -0.000    -0.000    -0.000    -0.000    -0.000    15.000


FLOW DISTRIBUTION FOR SECNO=      6.55          CWSEL=   1447.56

STA=      3981      5160
  PER Q=    100.0
   AREA=   2978.9
    VEL=     10.1

FLOW DISTRIBUTION FOR SECNO=      6.74          CWSEL=   1458.00

STA=      3080      5350
  PER Q=    100.0
   AREA=   4745.3
    VEL=      6.3

FLOW DISTRIBUTION FOR SECNO=      6.90          CWSEL=   1468.27

STA=      2800      5600
  PER Q=    100.0
   AREA=   4094.0
    VEL=      7.3

FLOW DISTRIBUTION FOR SECNO=      7.10          CWSEL=   1482.02

STA=      2630      5650
  PER Q=    100.0
   AREA=   4226.0
    VEL=      7.1

FLOW DISTRIBUTION FOR SECNO=      7.30          CWSEL=   1497.95
```

FLOW DISTRIBUTION FOR SECNO= 7.47 CWSEL= 1504.50

STA= 3010 5100
PER Q= 100.0
AREA= 4046.9
VEL= 7.4

FLOW DISTRIBUTION FOR SECNO= 7.56 CWSEL= 1515.13

STA= 3350 5640
PER Q= 100.0
AREA= 3963.4
VEL= 7.6

FLOW DISTRIBUTION FOR SECNO= 7.84 CWSEL= 1526.49

STA= 3575 5600
PER Q= 100.0
AREA= 3836.6
VEL= 7.8

FLOW DISTRIBUTION FOR SECNO= 8.08 CWSEL= 1537.58

STA= 3642 5670
PER Q= 100.0
AREA= 3655.1
VEL= 8.2

FLOW DISTRIBUTION FOR SECNO= 8.28 CWSEL= 1549.89

STA= 3510 5210
PER Q= 100.0
AREA= 3057.9
VEL= 9.8

FLOW DISTRIBUTION FOR SECNO= 8.48 CWSEL= 1561.96

STA= 3658 4730
PER Q= 100.0
AREA= 3207.6
VEL= 9.4

FLOW DISTRIBUTION FOR SECNO= 8.68 CWSEL= 1571.44

STA= 2592 4790
PER Q= 100.0
AREA= 3407.2
VEL= 8.8

FLOW DISTRIBUTION FOR SECNO= 8.82 CWSEL= 1579.94

STA= 2750 4400
PER Q= 100.0
AREA= 3047.4
VEL= 9.7

```
FLOW DISTRIBUTION FOR SECNO=      9.12          CWSEL=   1598.71

STA=      3619      4670
  PER Q=    100.0
   AREA=   2960.6
    VEL=     10.1

FLOW DISTRIBUTION FOR SECNO=      9.29          CWSEL=   1607.58

STA=      3711      4600
  PER Q=    100.0
   AREA=   3296.9
    VEL=      9.1
```

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*****************************************
HEC2 RELEASE DATED NOV 76 UPDATED AUG 1977
ERROR CORR -  01,02
MODIFICATION -  50,51,52,53
*****************************************
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NOTE- ASTERISK (*) AT LEFT OF CROSS-SECTION NUMBER INDICATES MESSAGE IN SUMMARY OF ERRORS LIST

CH TOUPS VENTURA

SUMMARY PRINTOUT

	SECNO	ELMIN	XLCH	ELMX	CWSEL	CRIWS	AREA	10K*S	HV	Q	TOPWID	SSTA	ESTA
	FLOW LINE SET AT 4000												
	STATIONING FROM LEFT TO RIGHT LOOKING UPSTREAM												
*	6.550	1443.00	-0.00	1450.00	1447.55	1447.55	2978.77	125.79	1.58	30000.00	950.69	3981.13	4941.82
*	6.550	1443.00	-0.00	1450.00	1447.56	1447.56	2978.91	124.68	1.57	30000.00	950.69	3981.13	4941.82
	6.740	1452.00	1003.20	1464.00	1458.01	0.00	4754.08	71.20	.62	30000.00	2032.43	3079.97	5237.51
	6.740	1452.00	1003.20	1464.00	1458.00	0.00	4745.26	71.60	.62	30000.00	2032.01	3080.03	5237.49
*	6.900	1464.00	844.40	1472.00	1467.32	1467.32	3968.47	150.79	.89	30000.00	2272.73	1779.98	5266.37
*	6.900	1464.00	844.80	1472.00	1468.27	1468.27	4093.98	136.04	.83	30000.00	2273.84	2900.00	5301.23
	7.100	1478.00	1056.00	1488.00	1481.54	0.00	4753.95	115.89	.62	30000.00	2945.11	1804.00	5381.60
	7.100	1478.00	1056.00	1488.00	1482.02	0.00	4225.99	123.79	.78	30000.00	2290.53	2630.00	5385.19
	7.300	1488.00	1056.00	1496.00	1492.83	0.00	5201.18	96.94	.52	30000.00	3208.96	2341.30	5745.12
	7.300	1488.00	1056.00	1496.00	1492.95	0.00	5171.19	83.25	.52	30000.00	2820.55	2770.00	5752.11
	7.490	1501.30	1003.20	1508.00	1504.52	1504.47	4280.06	146.63	.75	30000.00	2688.56	2735.19	5478.05
*	7.490	1501.30	1003.20	1508.00	1504.50	1504.50	4046.79	157.69	.85	30000.00	2467.49	3010.00	5477.48
	7.660	1510.00	897.60	1520.00	1514.52	0.00	4505.81	85.72	.65	30000.00	2144.65	2659.05	4807.70
	7.660	1510.00	897.60	1520.00	1515.13	0.00	3963.42	92.51	.89	30000.00	1565.31	3350.00	4915.31
*	7.880	1520.00	1161.60	1530.00	1525.08	1525.05	5269.60	27.03	.51	30000.00	2001.30	2843.09	5144.50
	7.880	1520.00	1161.60	1530.00	1526.49	0.00	3836.57	104.32	.95	30000.00	1584.00	3575.00	5269.20
*	8.080	1532.00	1056.00	1544.00	1537.22	1537.22	3754.48	140.47	.99	30000.00	2060.28	2567.12	5065.24
	8.080	1532.00	1056.00	1544.00	1537.58	0.00	3635.03	106.74	1.05	30000.00	1427.56	3642.13	5069.69
	8.280	1544.00	1056.00	1556.00	1549.53	0.00	4895.14	95.19	.77	30000.00	2552.78	1952.08	4541.04
*	8.280	1544.00	1056.00	1556.00	1549.89	1549.83	3057.86	131.08	1.49	30000.00	1064.44	3510.00	4574.44
*	8.480	1555.40	1056.00	1568.00	1561.08	1561.08	4093.48	116.83	1.04	30000.00	2249.89	2316.70	4513.44
	8.480	1557.30	1056.00	1568.00	1561.95	0.00	3207.63	99.03	1.35	30000.00	966.36	3658.13	4624.49
*	8.680	1565.50	1056.00	1572.00	1571.45	1571.45	3421.11	47.85	1.19	30000.00	1550.25	2591.16	4622.55
*	8.680	1565.00	1056.00	1580.00	1571.44	1571.44	3407.24	48.34	1.20	30000.00	1549.00	2591.95	4622.10

CH TOUPS VENTURA

SUMMARY PRINTOUT

FLOW LINE SET AT 4000

STATIONING FROM LEFT TO RIGHT LOOKING UPSTREAM

	SECNO	Q	DIFWSP	VLOB	VCH	VROB	QLOB	QCH	QROB	PERENO	STENOL	STENOR	DEPTH
*	6.550	30000.00	0.00	0.00	10.10	0.00	0.00	30000.00	0.00	0.00	0.00	0.00	4.55
*	6.550	30000.00	.01	0.00	10.07	0.00	0.00	30000.00	0.00	950.69	3981.13	4941.82	4.56
	6.740	30000.00	0.00	0.00	5.31	0.00	0.00	30000.00	0.00	0.00	0.00	0.00	6.01
	6.740	30000.00	-.01	0.00	6.32	0.00	0.00	30000.00	0.00	2270.00	3080.00	5350.00	6.00
*	6.900	30000.00	0.00	0.00	7.56	0.00	0.00	30000.00	0.00	0.00	0.00	0.00	3.32
*	6.900	30000.00	.95	0.00	7.33	0.00	0.00	30000.00	0.00	2800.00	2800.00	5600.00	4.27
	7.100	30000.00	0.00	0.00	6.30	0.00	0.00	30000.00	0.00	0.00	0.00	0.00	3.54
	7.100	30000.00	.49	0.00	7.10	0.00	0.00	30000.00	0.00	3220.00	2630.00	5850.00	4.02
	7.300	30000.00	0.00	0.00	5.77	0.00	0.00	30000.00	0.00	0.00	0.00	0.00	4.83
	7.300	30000.00	.12	0.00	5.80	0.00	0.00	30000.00	0.00	3150.00	2770.00	5920.00	4.95
	7.490	30000.00	0.00	0.00	7.01	0.00	0.00	30000.00	0.00	0.00	0.00	0.00	3.22
*	7.490	30000.00	-.02	0.00	7.41	0.00	0.00	30000.00	0.00	2590.00	3010.00	5600.00	3.20
	7.660	30000.00	0.00	0.00	6.53	0.00	0.00	30000.00	0.00	0.00	0.00	0.00	4.52
	7.660	30000.00	.60	0.00	7.57	0.00	0.00	30000.00	0.00	2230.00	3350.00	5640.00	5.13
*	7.880	30000.00	0.00	6.13	4.99	0.00	19372.86	10627.14	0.00	0.00	0.00	0.00	5.08
	7.880	30000.00	1.41	0.00	7.82	0.00	0.00	30000.00	0.00	2025.00	3575.00	5600.00	6.49
*	8.080	30000.00	0.00	0.00	7.99	0.00	0.00	30000.00	0.00	0.00	0.00	0.00	5.22
	8.080	30000.00	.36	0.00	8.21	0.00	0.00	30000.00	0.00	2050.00	3610.00	5670.00	5.58
	8.280	30000.00	0.00	3.19	7.63	0.00	5285.65	24713.34	0.00	0.00	0.00	0.00	5.53
*	8.280	30000.00	.35	0.00	9.81	0.00	0.00	30000.00	0.00	1700.00	3510.00	5210.00	5.89
*	8.480	30000.00	0.00	2.63	9.46	0.00	2075.09	27924.91	0.00	0.00	0.00	0.00	5.60
	8.480	30000.00	.88	0.00	9.35	0.00	0.00	30000.00	0.00	1080.00	3650.00	4730.00	4.95
*	8.680	30000.00	0.00	0.00	8.77	0.00	0.00	30000.00	0.00	0.00	0.00	0.00	5.95
*	8.680	30000.00	-.01	0.00	8.80	0.00	0.00	30000.00	0.00	2220.00	2570.00	4790.00	5.94
*	8.820	30000.00	0.00	0.00	9.77	0.00	0.00	30000.00	0.00	0.00	0.00	0.00	13.02
*	8.820	30000.00	.02	0.00	9.72	0.00	0.00	30000.00	0.00	1550.00	2750.00	4400.00	13.04
*	9.050	30000.00	0.00	0.00	10.05	0.00	0.00	30000.00	0.00	0.00	0.00	0.00	6.69
*	9.050	30000.00	.00	0.00	10.06	0.00	0.00	30000.00	0.00	0.00	0.00	0.00	6.69
	ESPERANZA CROSSING												
*	9.120	30000.00	0.00	0.00	10.13	0.00	0.00	30000.00	0.00	0.00	0.00	0.00	5.71
*	9.120	30000.00	-.00	0.00	10.13	0.00	0.00	30000.00	0.00	0.00	0.00	0.00	5.71
	9.280	30000.00	0.00	0.00	9.10	0.00	0.00	30000.00	0.00	0.00	0.00	0.00	5.58
	9.280	30000.00	.01	0.00	9.10	0.00	0.00	30000.00	0.00	0.00	0.00	0.00	5.58

CH TOUPS VENTURA

SUMMARY PRINTOUT TABLE 100

SECNO	ELEVO	ELLO	EGRPS	FLTPO	QPO	QWEIR	CLASS	HS	DEPTH	CWSEL	VCH	CG

SUMMARY OF ERRORS

```
CAUTION  SECNO=    6.550  PROFILE= 1  CRITICAL DEPTH ASSUMED
CAUTION  SECNO=    6.550  PROFILE= 2  CRITICAL DEPTH ASSUMED

CAUTION  SECNO=    6.900  PROFILE= 1  CRITICAL DEPTH ASSUMED
CAUTION  SECNO=    6.900  PROFILE= 1  MINIMUM SPECIFIC ENERGY
CAUTION  SECNO=    6.900  PROFILE= 2  CRITICAL DEPTH ASSUMED
CAUTION  SECNO=    6.900  PROFILE= 2  MINIMUM SPECIFIC ENERGY

CAUTION  SECNO=    7.490  PROFILE= 2  CRITICAL DEPTH ASSUMED
CAUTION  SECNO=    7.490  PROFILE= 2  MINIMUM SPECIFIC ENERGY

CAUTION  SECNO=    7.880  PROFILE= 1  CRITICAL DEPTH ASSUMED
CAUTION  SECNO=    7.880  PROFILE= 1  MINIMUM SPECIFIC ENERGY

CAUTION  SECNO=    8.080  PROFILE= 1  CRITICAL DEPTH ASSUMED
CAUTION  SECNO=    8.080  PROFILE= 1  PROBABLE MINIMUM SPECIFIC ENERGY
CAUTION  SECNO=    8.080  PROFILE= 1  20 TRIALS ATTEMPTED TO BALANCE WSEL

CAUTION  SECNO=    8.280  PROFILE= 2  CRITICAL DEPTH ASSUMED
CAUTION  SECNO=    8.280  PROFILE= 2  MINIMUM SPECIFIC ENERGY

CAUTION  SECNO=    8.480  PROFILE= 1  CRITICAL DEPTH ASSUMED
CAUTION  SECNO=    8.480  PROFILE= 1  MINIMUM SPECIFIC ENERGY

CAUTION  SECNO=    8.680  PROFILE= 1  CRITICAL DEPTH ASSUMED
CAUTION  SECNO=    8.680  PROFILE= 1  MINIMUM SPECIFIC ENERGY
CAUTION  SECNO=    8.680  PROFILE= 2  CRITICAL DEPTH ASSUMED
CAUTION  SECNO=    8.680  PROFILE= 2  PROBABLE MINIMUM SPECIFIC ENERGY
CAUTION  SECNO=    8.680  PROFILE= 2  20 TRIALS ATTEMPTED TO BALANCE WSEL

CAUTION  SECNO=    8.820  PROFILE= 1  CRITICAL DEPTH ASSUMED
CAUTION  SECNO=    8.820  PROFILE= 1  PROBABLE MINIMUM SPECIFIC ENERGY
CAUTION  SECNO=    8.820  PROFILE= 1  20 TRIALS ATTEMPTED TO BALANCE WSEL
CAUTION  SECNO=    8.820  PROFILE= 2  CRITICAL DEPTH ASSUMED
CAUTION  SECNO=    8.820  PROFILE= 2  PROBABLE MINIMUM SPECIFIC ENERGY
CAUTION  SECNO=    8.820  PROFILE= 2  20 TRIALS ATTEMPTED TO BALANCE WSEL

CAUTION  SECNO=    9.050  PROFILE= 1  CRITICAL DEPTH ASSUMED
CAUTION  SECNO=    9.050  PROFILE= 1  PROBABLE MINIMUM SPECIFIC ENERGY
CAUTION  SECNO=    9.050  PROFILE= 1  20 TRIALS ATTEMPTED TO BALANCE WSEL
CAUTION  SECNO=    9.050  PROFILE= 2  CRITICAL DEPTH ASSUMED
CAUTION  SECNO=    9.050  PROFILE= 2  PROBABLE MINIMUM SPECIFIC ENERGY
CAUTION  SECNO=    9.050  PROFILE= 2  20 TRIALS ATTEMPTED TO BALANCE WSEL

CAUTION  SECNO=    9.120  PROFILE= 1  CRITICAL DEPTH ASSUMED
CAUTION  SECNO=    9.120  PROFILE= 1  PROBABLE MINIMUM SPECIFIC ENERGY
CAUTION  SECNO=    9.120  PROFILE= 1  20 TRIALS ATTEMPTED TO BALANCE WSEL
CAUTION  SECNO=    9.120  PROFILE= 2  CRITICAL DEPTH ASSUMED
CAUTION  SECNO=    9.120  PROFILE= 2  PROBABLE MINIMUM SPECIFIC ENERGY
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N

CAUTION SECRO= 9.121 PROFILE= 2 20 TRIALS ATTEMPTED TO BALANCE WSF.

Appendix B

PRC Toups

ORDINANCE NO 458
AN ORDINANCE OF THE COUNTY OF RIVERSIDE REGULATING FLOOD HAZARD AREAS AND IMPLEMENTING THE NATIONAL FLOOD INSURANCE PROGRAM

The Board of Supervisors of the County of Riverside, State of California, do ordain as follows:

Section 1. This ordinance is adopted pursuant to the requirements of the National Flood Insurance Program, 42 United States Code 4001 et seq., as amended, including all regulations adopted pursuant thereto. The purpose of the ordinance is to protect the public health, safety, and welfare and minimize public and private costs caused by flooding by regulating development within flood hazard areas.

Section 2. Definitions. As used in this ordinance, the following terms shall have the following meanings.

a. 100 Year Flood/Base Flood: A flood that has a 1% chance of being equalled or exceeded in any given year.

b. Floodway: The channel of a river or other watercourse and adjacent land areas necessary to discharge the waters from the 100 year flood without increasing the water surface elevation of that flood more than one foot at any one point.

c. Floodplain: The land areas that are subject to flooding from the 100 year flood, but not including any actual floodway.

d. Structure: All buildings and structures, including mobilehomes, agricultural buildings that require a registration certificate and solid walls and fences, the use of which requires a more or less permanent location on the ground, or an attachment to something having a permanent location on the ground.

e. Substantial Improvements/Substantially Improved: Any improvement or repair of a structure, the cost of which equals or exceeds 50% of the market value of the structure either before the improvement is commenced or, if the structure has been damaged, before the damage occurred. The term does not include any alterations necessary to comply with state or local health, sanitary or safety code specifications or regulations, or any alterations of a structure listed on the National Register of Historic Places or a State Inventory of Historic Places.

f. Existing mobilehome park or subdivision: A parcel, or contiguous parcels of land divided into two or more mobilehome lots for rent or sale, for which the construction of facilities for servicing the lot on which the mobilehome is to be affixed, including the installation of utilities, either final site grading or the pouring of concrete pads, and the construction of streets in completed prior to the effective date of this Ordinance.

Section 3. This ordinance shall apply to all the following unincorporated areas of the County of Riverside.

a. The flood hazard areas shown on the maps prepared by the Federal Insurance Administration entitled "The Flood Insurance Study for the County of Riverside"

b. The flood hazard areas shown on the maps prepared by the U.S Army Corps of Engineers entitled:

(1) Salt Creek (Hemet to Railroad Canyon Reservoir), June 1971

(2) San Gorgonio River and Smith Creek, June 1973

(3) San Gorgonio River and Tributaries, October 1972

(4) San Jacinto River (San Jacinto to Railroad Canyon), May 1970

(5) Santa Ana River (Imperial Highway to Prado Dam), June 1971

c. The flood hazard areas shown on the map prepared by the Department of Water Resources of the State of California entitled "Riverside County Flood Hazard Investigation: Murrieta Creek" dated May, 1975

d. Any maps of flood hazard areas hereafter adopted by resolution of the Board of Supervisors after a public hearing on the proposed adoption.

Section 4. Notwithstanding the provisions of any other ordinance to the contrary, within the unincorporated area of Riverside County shown on the maps referred to in Section 3, no structure shall be contructed, located or substantially improved and no land shall be graded or developed, and no permit or approval shall be granted therefor, unless it complies with all the applicable requirements of this ordinance and all other applicable ordinances. If there is any conflict in the requirements of this ordinance or between the requirements of this and any other ordinance, the more stringent requirements shall apply.

Section 5. Procedure.

a. Insofar as it is feasible, it is intended that the requirements of this ordinance shall be integrated into the processing of applications for permits under the provisions of Ordinances No. 348, 457, 460 and 555. When the information required, or the procedures involved, in the processing of such applications is not sufficient to address the matters required by this ordinance, a separate application shall be filed as hereinafter provided.

b. Whenever an application for a permit involves land which lies within the boundaries of any maps referred to in Section 3 of this ordinance, the department head that accepts the application shall determine if a separate application should be filed. If a permit shall approve the location of any structure or substantial improvement thereto, or permit the alteration of land by grading or otherwise, and the existing procedure does not provide for a specific recommendation by a flood control district, a separate application shall be filed by the applicant.

c. All separate applications shall be filed with the department head that accepts the basic application, accompanied by a fee of $200.00 plus $10.00 per lot or $10.00 per acre, whichever is larger, and shall contain plans drawn to scale, by a civil engineer registered in the State of California, which include the following:

(1) A plot map of the property proposed to be developed showing floodways and floodplains, including

(2) Contours, with maximum interval of:

Slope	Interval
0 — 2%	2'
2 — 9%	4'
10% plus	10'

(3) Elevations, in relation to mean sea level, of the area to be developed, including adjoining properties necessary to be shown for continuity.

(4) The method by which the applicant proposes to comply with the requirements of this ordinance, including proposed elevations of any structures or fills, floodproofing, any proposals to modify existing flow of stormwaters, and any other relevant information.

d. Upon acceptance of both applications as being complete for filing, the department head shall forward copies of the basic application and the separate application to the Chief Engineer of the Riverside County Flood Control and Water Conservation District, unless the proposed development lies within the area jurisdiction of the Coachella Valley County Water District, in which case it shall be forwarded to the General Manager of that District.

e. Within 30 days of receipt thereof, the Chief Engineer or General Manager, respectively, shall determine if any further information is required in order to process the application and, if required, shall inform the applicant or his representative by regular mail of the need for additional information.

f. Within 30 days after determining that all required information has been obtained, the Chief Engineer or General Manager shall issue a report approving, with conditions or modifications, or denying the proposed plan.

Section 6. Within the areas shown on the maps listed in Section 3, the following requirements shall apply:

a. Floodways. No structure shall be constructed, located or substantially improved and no land shall be graded or developed in the areas designated as floodways, except upon approval of a plan which provides that the proposed development will not result in any increase in flood levels during the occurence of the base flood discharge. If a proposed permit qualifies for approval in the floodway, it shall then meet all the requirements necessary for approval of a permit in the floodplain area.

b. Floodplain. Within the areas shown on the maps as floodplains, all proposed developments shall meet the following requirements.

(1) All new structures and substantial improvements to existing structures shall be constructed on a pad the elevaton of which is up to or above the base flood elevation, except that:

(a) Nonresidential structures may alternatively comply with the following requirements upon approval of the flood control district having jurisdiction:

i. Utilize structural components capable of resisting the pressures, velocities, impact and uplift forces associated with floodwaters.

ii. Be floodproofed so that the structure is

b. Mobilehomes placed in existing mobilehome subdivisions or parks may alternatively comply with the following requirements upon approval of the flood control district having jurisdiction:

i. Over-the-top ties shall be provided at each of the four corners of a mobilehome, with two additional ties per side at intermediate locations, except that mobilehomes less than 50 feet in length shall require only one additional tie per side.

ii. Frame ties shall be provided at each corner of a mobilehome, with five additional ties per side at intermediate points, except that mobilehomes less than 50 feet in length shall require only four additional ties per side.

iii. All components of the anchoring system shall be capable of carrying a force of 4,800 pounds.

(2) All new structures and substantial improvements to existing structures shall:

(a) Be constructed and adequately anchored to prevent flotation, collapse or lateral movement of the structure.

(b) Be constructed with materials and utility equipment resistant to flood damage.

(c) Be constructed by methods and practices that minimize flood damage.

(3) All on-site water supply and waste disposal systems shall be constructed and located to minimize infiltration of flood waters and to avoid impairment to, or contamination to or from, utilities during flooding.

Section 7. Appeals and Requests for Variances.

a. An applicant, or any interested party, shall have the right to appeal the decision that is made on an application if he believes that an error has been made by the Chief Engineer or General Manager. An applicant shall also have the right to request that a variance be granted to the requirements of this ordinance, or to the conditions imposed upon a permit.

b. Applications for an appeal or for a variance shall be made to the Board of Supervisors, upon the form provided by the Clerk of the Board, accompanied by a fee of $60.00. Upon receipt of a completed application, the Clerk of the Board shall set the matter for hearing before the Board not less than 5 nor more than 45 days thereafter and shall give notice, by mail, to the applicant, the appellant, the department head with whom the application was originally filed and the Chief Engineer or the General Manager. The Board shall render its decision on the matter within 30 days after the close of the hearing on the matter.

c. Appeals may be granted by the Board if there has been an error in any requirement, decision or determination relating to the application for the permit.

d. Variances on the requirements of this ordinance or the conditions of an approved permit may only be granted if the Board finds:

(1) that there is good and sufficient cause.

(2) that failure to grant the variance would result in exceptional hardship to the applicant.

(3) that the granting of a variance will not result in increased flood heights, additional threats to public safety, extraordinary public expense, create nuisances, cause fraud on or victimize the public or conflict with existing laws or ordinances.

(4) that the variance is the minimum necessary, considering the flood hazard, to afford relief.

e. Any applicant to whom a variance is granted shall be given written notice that the cost of flood insurance will be commensurate with the increased risk resulting from the granting of the variance.

Section 8. Disclaimer of Liability. The degree of flood protection required by this ordinance is considered reasonable for regulatory purposes and is based on scientific and engineering considerations. Flood heights may be increased by man-made or natural causes, and this ordinance does not imply that land outside the areas of special flood hazards or uses permitted within such areas will be free from flooding or flood damages. This ordinance shall not create liability on the part of the County of Riverside, any officer or employee thereof, or the Federal Insurance Administration, or the Riverside County Flood Control and Water Conservation District, or the Coachella Valley County Water District, for any flood damages resulting from reliance on this ordinance or any determination made thereunder.

Section 9. This ordinance shall take effect 30 days after its adoption.

BOARD OF SUPERVISORS OF THE COUNTY OF RIVERSIDE, STATE OF CALIFORNIA

By WALT ABRAHAM
Chairman, Board of Supervisors

ATTEST: (SEAL)
DONALD D. SULLIVAN
Clerk
By DeWana Waples
Deputy

I HEREBY CERTIFY that at a regular meeting of the board of Supervisors of said county held on June 5, 1979, the foregoing ordinance consisting of Nine (9) sections was adopted by said Board by the following vote:

AYES: Supervisors Schroeder, McCandless, Youngiove and Abraham.

NOES: None.

ABSENT: Supervisor Record.

Dated: June 5, 1979

(SEAL)
DONALD D. SULLIVAN
Clerk of the Board
By DeWana Waples
Deputy

6/11

ARTICLE XVI

W-1 ZONE

SHDL2

(WATERCOURSE, WATERSHED AND CONSERVATION AREAS)

SECTION 16.1. W-1 ZONE (WATERCOURSE AREA) STATEMENT OF POLICY. There are some areas of the County which under present conditions are not suited for permanent occupancy or residency by persons for the reason that they are subject to periodic flooding and other hazards.

The provisions of this Article are temporary in nature, awaiting detailed plans of development for the lands and areas so classified. The regulations of this Article shall apply to lands so classified until either (1) a drainage and storm water control plan approved by the Planning Commission and the Board of Supervisors shall have been carried out and put into effect, or (2) the lands have been subdivided and a final subdivision map placed on record in accordance with the applicable state and county regulations, including approval by the Planning Commission and Board of Supervisors. In either of these two instances, the property may thereafter be reclassified into any other zone pursuant to regular zoning procedure.

SECTION 16.2. USES PERMITTED.

(a) The following uses are permitted in the W-1 Zone:

(1) Field, tree and bush crops; flower and herb gardening.
(2) Apiaries.
(3) The grazing only, of cattle, horses, sheep and goats and similar livestock, subject to the restrictions as to the number of animals per acre set forth in Section 13.1 (b) (4) of this Ordinance.
(4) Golf courses, not including the construction of buildings.
(5) Water works facilities, both public and private intended primarily for the production and distribution of water for agricultural purposes.
(6) Utilities, both public and private.

(b) The following uses are permitted provided a conditional use permit has been granted:

(1) Airports and heliports.
(2) Borrow pits and quarrying.
(3) Exploratory oil drilling, producing oil wells, oil storage tanks and appurtenant facilities, but not including refineries.
(4) Racing and competition events other than between humans.
(5) Hunting clubs, skeet, trap, rifle and pistol ranges.
(6) Travel trailer parks.
(7) Recreational trailer parks.

(8) Tennis, badminton, volleyball, squash, lacrosse, handball, baseball, racketball and football, courts and sport and recreation fields and uses.

(9) Buildings and structures in conjunction with any use that is permitted under Section 16.2 (a) of this ordinance.

(c) The following uses are permitted upon approval of a plot plan pursuant to Section 18.30 of this ordinance.

(1) Signs, on-site advertising, unless previously approved as a part of a granted conditional use permit.

SECTION 16.3. Automobile storage space shall be provided as required by Section 18.12 of this ordinance.

SECTION 16.4. STRUCTURE HEIGHT. All buildings and structures shall not exceed 50 feet in height, unless a height up to 105 feet is specifically permitted for structures other than buildings under the provisions of Section 18.34 of this ordinance.

Amended Effective:	February 19, 1962	
	May 4, 1972	(Ord. 348.1023)
	August 23, 1973	(Ord. 348.1190)
	September 13, 1973	(Ord. 348.1201)
	May 30, 1974	(Ord. 348.1327)
	April 3, 1975	(Ord. 348.1435)
	December 10, 1975	(Ord. 348.1481)

Appendix C

PRC Toups

prc

PRC Toups Corporation

CONSULTING ENGINEERS AND PLANNERS

BY JT DATE 3/4/80 CLIENT RCFCD SHEET NO. 1 OF 19

CHECKED _____ DATE _____ JOB CABAZON JOB NO. _____

DERIVATION OF EQUATIONS

ASSUMPTIONS:

1) MANNINGS EQUATION: $Q = \frac{1.49\, W D^{5/3} S^{1/2}}{n}$

2) $dD/dW = -0.005$

SOLVING FOR W:

$$W = \frac{Qn}{1.49\, D^{5/3} S^{1/2}}$$

DIFFERENTIATING:

$$dW/dD = \left(\frac{Qn}{1.49\, S^{1/2}}\right)\left(-\frac{5}{3}\right) D^{-8/3}$$

OR:

$$dD/dW = -\left(\frac{1.49\, S^{1/2}}{Qn} \times \frac{3}{5}\right)\left(D^{8/3}\right)$$

COMBINING:

$$\left(\frac{1.49\, S^{1/2}}{Qn}\right)\frac{3}{5} D^{8/3} = 0.005$$

$$\boxed{D = \left(\frac{Qn}{178\, S^{1/2}}\right)^{3/8}}$$

SUBSITUTING FOR D IN MANNINGS EQ.:

$$\boxed{W = \frac{17.2\,(Qn)^{3/8}}{S^{3/16}}}$$

prc

PRC Toups Corporation

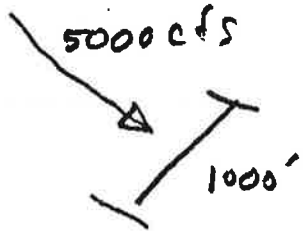
CONSULTING ENGINEERS AND PLANNERS

BY _____ DATE _____ CLIENT _____ SHEET NO. 2 OF ____

CHECKED _____ DATE _____ JOB _____ JOB NO. _____

Land Density Calculations

Jenson Fan



from topo map, 1000' appear widest width that flows could diverge over

At the 12 fps velocity zone $E = 4.1'$

Length required to pass flow between houses $= L = \frac{Q}{C H^{1.5}} = \frac{5000}{2.5(4.1)^{1.5}} = 241'$

Using scoured channel equations $L = 220'$

then max width $= 241'$ and with 50% uncertainty factor $\frac{241(1.15)}{1000} = 36\%$

Using typical lot obstruction of 80', then min lot size

$= \frac{80}{.64} = 125'$

$\frac{1252}{43560} = .36\ Ac \rightarrow$

use ½ min lot size

prc

PRC Toups

CONSULTING ENGINEERS AND PLANNERS

BY CT DATE _____ CLIENT RCFCD SHEET NO. 4 OF ____

CHECKED _____ DATE _____ JOB CARAZON STUDY JOB NO. _____

ANALYSIS OF FREEWAY & RAILROAD CROSSING AT MILLAR CANYON WASH IS COVERED ON PAGES 6 TO 14. TOPO MAPS AND FIELD INVESTIGATIONS WERE USED TO DETERMINE THE DISTRIBUTION OF THE TOTAL 100 YR STORM APPROACHING THE SYSTEM. STANDARD CULVERT, WEIR, AND CHANNEL EQUATIONS [illegible] CALCULATE THE DISTRIBUTION WITHIN THE SYSTEM AND LOCAL [illegible] OUT POINTS.

ANALYSIS OF THE FREEWAY AND RAILROAD CROSSING AT THE SAN GORGONIO RIVER IS COVERED ON PAGES 15 TO 17. ALTHOUGH THE RAILROAD CROSSING ACTS AS A CHANNEL, THE 100 YR STORM CAN BE PASSED WITHOUT BLOCKAGE.

prc

PRC Toups

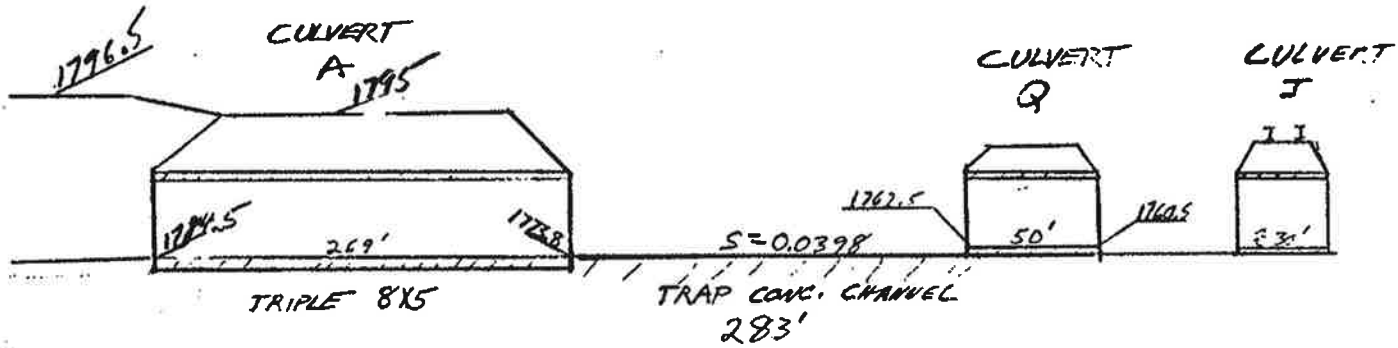
CONSULTING ENGINEERS AND PLANNERS

BY CJ DATE 4/10 CLIENT RCFCD SHEET NO. 6 OF ___

CHECKED ___ DATE ___ JOB CANYON STUDY JOB NO. ___

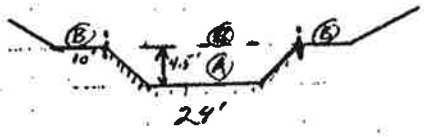
FREEWAY ANALYSIS AT
MILLARD CANYON WASH

SEE DIAGRAM FOR CULVERT LABELS AND FLOW DISTRIBUTION



$Q_{TOTAL} = 2750$ CFS

1) CHECK CAPACITY OF CHANNEL



$Q = 2750$ CFS
$S = 0.0398$
$b = 24'$
$z = 1.5:1$
$n = 0.015$

$d_n = 2.8'$

$V_n = 34.7$

$Q(d=4.5) = 6257$ CFS
$V = 45$ F/S

IF $Q > 6257$ EROSION IN OVERBANKS WILL OCCUR AND CHANNEL WILL BE UNDERMINED

CHECK CULVERT A

$Q_{TOTAL} = 2750$ CFS

ASSUME NO CLOGGING AND EVEN DISTRIBUTION OF FLOW IN EACH BARREL:

CONTINUED

prc

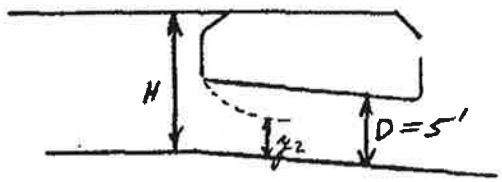
PRC Toups

CONSULTING ENGINEERS AND PLANNERS

BY _____ DATE _____ CLIENT _____ SHEET NO. 7 OF ____

CHECKED _____ DATE _____ JOB _____ JOB NO. _____

SINCE THE CULVERT SLOPE IS STEEP, ASSUME A FREE DISCHARGE AND CALC. Q BASED ON ENTRANCE CONTROL



$H = 1795.0 - 1784.5 = 10.5'$

$H/D = 2.1$

$Q = C_1 B D \sqrt{2g(H - C_1 D)}$ HENDERSON (7-[illegible])

$C_1 = 0.8$ (ROUNDED SOFFIT) $y_2 = 4'$

$Q_{PER\ BARREL} = 654$ CFS $> d_c = 5.9$ $d_n = 2.9$

$D > d_n$

$Q_T = 1962$ CFS $\Rightarrow d = 2.3'$ IN D/S CHANNEL

$\therefore$ CULVERT WILL FLOW FREE FOR 1962 CFS

SINCE $Q = 2750$ CFS FLOW WILL OVERTOP FWY

$\therefore$ BALENCE WEIR FLOW ONTO FWY WITH FLOW THRU CULVERT

NOTE: FLOW WILL GO OVER FREEWAY @ ELV 1794.8
FLOW WILL GO INTO DRAINAGE DITCH ALONG FREEWAY @ ELV 1796.5

$1796.5 - 1794.8 = 2' \Rightarrow Q = 1488 + 1962 = 3450 > 2750$

$Q = CLH^{3/2}$ $L = 200'$ $C = 2.63$ OVER FWY.

BALENCE FLOW THRU CULVERT, OVER FWY

prc

PRC Toups

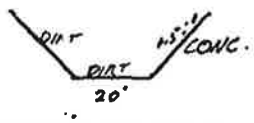
CONSULTING ENGINEERS AND PLANNERS

BY _____ DATE _____ CLIENT _____ SHEET NO. 9 OF ____

CHECKED _____ DATE _____ JOB _____ JOB NO. _____

CALC CAPACITY OF CULVERT (C)

$Q = 2750$ CFS

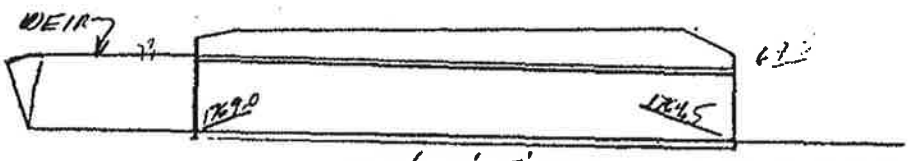


$$n = \left[\frac{(25.4)(.035)^{3/2} + 5.4(.015)^{3/2}}{29}\right]^{2/3}$$

FOR D=3'

$n = 0.033$

DEPTH OF FLOW APPROACHING THE CULVERT = 4.76 $V = 21.3$ F/S



409' 8'x5' RCS $S_o = 0.0110$

BALENCE FLOW THRU CULVERT WITH FLOW OVER WEIR

TRY ELV 1775

CULVERT:

$$Q = .8(8)5\sqrt{2g(6-4)} = 625 \text{ CFS}$$

$d_1 = 4.5$ VERY CLOSE TO 5' CULVERT WILL [illegible]

$\therefore Q = 450$ CFS

WEIR: $Q = 3.5(32)2^{3/2} = 316$ CFS

TRY 1778

CULVERT → 550 CFS

WEIR → 1252 CFS

1802 CFS

TRY 1780.0

CULVERT — 680 CFS

WEIR — 2070

2750

Q CULVERT (C) = 680 CFS (FULL)

Q CULVERT (B) = 2070 CFS ($d = 4.4'$) FLOWS FIRST

prc

PRC Toups

CONSULTING ENGINEERS AND PLANNERS

BY _____ DATE _____ CLIENT _____ SHEET NO. 8 OF ____

CHECKED _____ DATE _____ JOB _____ JOB NO. _____

TRY ELV. 1795.0

CULVERT : $Q = .8(8)5\sqrt{2g(11.5-4)} = 654.7$ CFS

$d_n = 2.92 < 5$

$Q_{TOTAL} = 3(654.7) = 1964$ CFS

FWY : $Q = CLH^{3/2}$

$= 2.63(200)(1795-1794) = 47.0$ CFS

$Q_{TOTAL} = 1964 + 47.0 < 2750$ CFS

TRY ELV 1796

CULVERT : $Q = 32\sqrt{2g(7.5)} = 703$ CFS $\Rightarrow$ 2107

$d_n = 3.1 < 5$

FWY : $Q = 2.63(200)1.2^{3/2} = 6784$

$Q_{TOTAL} = 2800$ CFS WITHIN 2% OF 2750

RATIO Q'S

$Q_{CULVERT} = \frac{2750}{2800}(2100) = 2071$ CFS

$Q_{FWY} = \frac{2}{2800}(6[illegible]) = 678$ CFS

CALC DEPTH OF FLOW ON FWY

$Q = 678$

$b = 85$

$S_o = 0.02[illegible]$

$n = 0.0[illegible]$

$d_n = .67$ $\quad$ $\bar{V}_n = 11.9$ F/S

FLOW IS SUPERCRITICAL

prc

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CONSULTING ENGINEERS AND PLANNERS

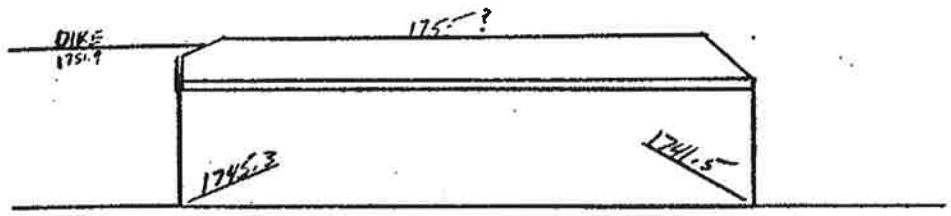
BY _____ DATE _____ CLIENT _____ SHEET NO. 10 OF ____

CHECKED _____ DATE _____ JOB _____ JOB NO. _____

CALC. CAPACITY OF CULVERT D

$Q = 2070 + 678 = 2748$ CFS $n = 0.027$ $S_c = .051$

DEPTH OF FLOW APPROACHING CULVERT : 4.6' $V = 21.7$ F/S



234' $S_o = 0.01632$

DBL 8X4

$H = 51.9 - 45.3 = 6.6$ (MAX HEAD BEFORE WATER FLOWS OVER DIKE)

$Q = .8(8)4\sqrt{2g(6.6-3.2)}(2) = 757$ CFS << 2070

$d_n = 2.72$

TRY ELV 1754

CULVERT ⇒ $Q = 954.8$ $d_n = 3.2'$ $Q_T = 1282.66$

FLOW OVER DIKE ⇒ $Q = 2.7(40)2.1^{3/2} = 328$

$C = 2.7$ $L = 40$

TRY ELV 1755

CULVERT ⇒ ~~Q = 15.42~~ $d_n = 3.44$ CULVERT WILL ~~[illegible]~~

$Q = 1120$ CFS

FLOW OVER DIKE $Q = 2.7(50)3.1^{3/2} = 736$ CFS ⇒ 1856 CFS

TRY ELV 1755.7

(NOMOGRAPH)

CULVERT ⇒ $Q = 1200$ CFS

FLOW OVER DIKE ⇒ $Q = 2.7(76)3.8^{3/2} = 1520$ ⇒ 2720 CFS

RATIO $Q_c = 1212$

$Q_o = 1535$

prc

PRC Toups

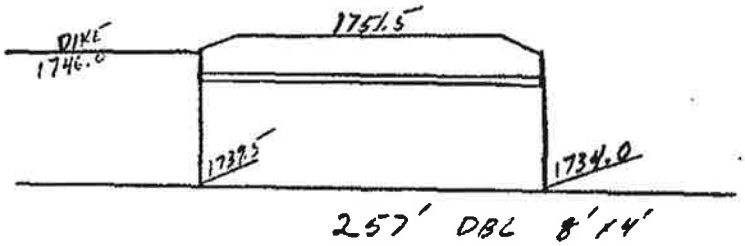
CONSULTING ENGINEERS AND PLANNERS

BY _____ DATE _____ CLIENT _____ SHEET NO. 11 OF ___

CHECKED _____ DATE _____ JOB _____ JOB NO. _____

CALC CAPACITY OF CULVERT (E)

Q = 1520 CFS



WSE 1750

CULVERT ⇒ 1170 CFS

FLOW OVER DIKE ⇒ $2.7(52)4^{3/2} = 1123$

TOTAL FLOW = 2293

TRY 1748

CULVERT ⇒ 1120 CFS

FLOW OVER DIKE ⇒ $2.7(52)2^{3/2} = 397.1$

TOTAL FLOW = 1517 CFS

CULVERT Q

Q = 2070 CFS

TRIPLE 8'x5' RCB L = 60' INLET @ 1762.5 OUT LET 1760.5
4' H.W.

$Q = .8(8)5\sqrt{2g(9-4)} = 574$ CFS / BARREL

FLOW WILL OVERTOP ROAD & SUBMERGE CULVERT

TRY 1.0' DEPTH OVER ROAD H = 1772.5 − 1767.5 = 5'

CULVERT = 1732 CFS NOMOGRAPH USED.

FLOW OVER ROAD = $2.67(135)1.0^{3/2} = 360$

Q_T = 2092 CFS

Q_C = 1713 CFS

Q_W = 356 CFS

prc

PRC Toups

CONSULTING ENGINEERS AND PLANNERS

BY _____ DATE _____ CLIENT _____ SHEET NO. 12 OF ___

CHECKED _____ DATE _____ JOB _____ JOB NO. _____

CULVERT J

$Q = 2070$ CFS

$Q_{CULVERT} = .8(11)5\sqrt{2g(8-4)} = 706/\text{BARREL} \Rightarrow 1410$ CFS

$Q_{OVERFLOW} = \underline{660}$ CFS

CULVERT K

$Q_{CAP.} = .6(10.5)5\sqrt{2g(8-3)} = 565$ CFS

Q APPROACH = 1340 CFS

OVERFLOW = 775.0 CFS

CULVERT L

$Q_{CAP} = .6(10.5)5\sqrt{2g(8.3)} = 565$ CFS

$Q_{APPROACH} = 1212 + 775.0 = 1987$ CFS

OVERFLOW = 1422 CFS

CULVERT M

$Q_{CAP} = 565$ CFS

$Q_{APPROACH} = 1120 + 1422 = 2542$ CFS

OVERFLOW = 1977 CFS

CULVERT N

$Q_{CAP} = 1130$ (DBL. BARREL)

$Q_{APPROACH} = 1977 + 397 = 2374$

OVERFLOW = 1244.0

prc

PRC Toups

CONSULTING ENGINEERS AND PLANNERS

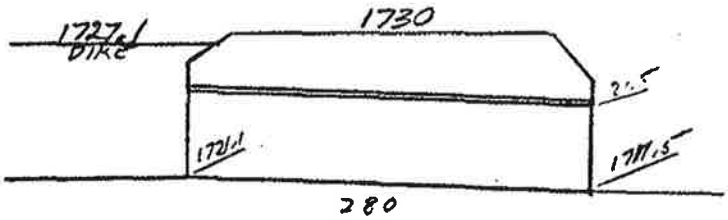
BY _____ DATE _____ CLIENT _____ SHEET NO. 13 OF ____

CHECKED _____ DATE _____ JOB _____ JOB NO. _____

CULVERT (G)

TRIPLE 6X4 INLET @ 1721.1 L = 280' DIKE ELV = 1727.1
OUTLET @ 1717.5 S_o = 0.0127

Q APPROACH 2750 CFS FWY @ 1730



@ WSE 1729.1

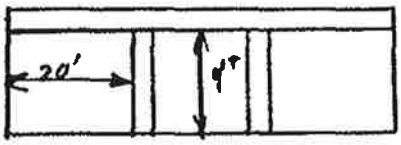
CULVERT (FULL) = 1010 CFS
OVER DIKE = 332
1340 CFS

WSE 1730 CULVERT = 1090 CFS
OVER DIKE = 660
1750 CFS

WSE 1731 CULVERT = 1120 CFS
OVER DIKE = 2.7(65) 3.9 $^{3/2}$ = 1372

WSE 1731.2 CULVERT = 1150 CFS
OVER DIKE = 2.7(70) 4.1 $^{3/2}$ = 1570
2720 CFS

BRIDGE (H)



S_o = 0.0200
n = 0.03

Q APPROACH = 4350 CFS d_n = 4.8' NO NEED TO DO PEAK ANALYSIS

prc

PRC Toups

CONSULTING ENGINEERS AND PLANNERS

BY _____ DATE _____ CLIENT _____ SHEET NO. 14 OF ____

CHECKED _____ DATE _____ JOB _____ JOB NO. _____

CULVERT O

$Q_{CAP} = 1130$ (SAME AS N)

APPROACH = 1244 + 1150 = 2394 CFS

$Q_{OVERFLOW}$ = 1264 CFS

CULVERT P

Q_{CAP} = 690 CFS

APPROACH = [illegible] + 1204 = 5614 CFS

$Q_{OVERFLOW}$ = 5614 − 690 = 4924

FLOW ALONG R.R. BETWEEN I & L = 775 CFS

Q = 775

b = 80'

n = .035

S_o = 0.01666

d_n = 1.4 V_n = 6.8

VEL. IS EROSSIVE. RAILROAD IS SUBJECT TO UNDERMINING IN THIS REACH (775 CFS WILL SPILL OVER)

VEL ALONG R.R. BETWEEN L & P VARIES FROM

6.3 TO 5.7 (BREAK OUT FROM I TOL ACCOUNTED FOR)

VEL IS ALSO EROSSIVE AND BREAK OUT WILL OCCUR

∴ THERE ARE THREE AREAS OF BREAKOUT FROM Q TO R

prc

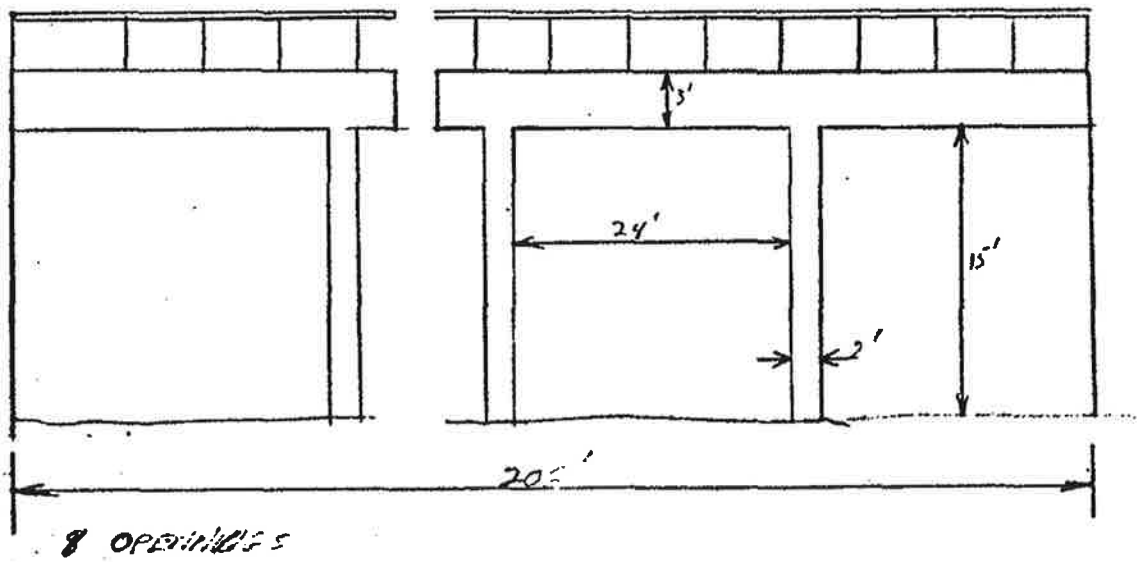
PRC Toups

CONSULTING ENGINEERS AND PLANNERS

BY CJ DATE 4/12 CLIENT RCFCD SHEET NO. 15 OF ___

CHECKED ___ DATE ___ JOB CABAZON STUDY JOB NO. ___

FREEWAY CROSSING @ SAN GORGONIO RIVER



$Q = \underline{21{,}000 \text{ CFS}}$

$b = 206'$

$n = 0.035$

$S = 0.030$

$d_n = 4.9'$

$d_c = 6.9'$

$V = 20.9$ F/S

USING MOMENTUM CURVES

$d_{u/s} = 4.9$

$d_{PIER} = 6.5$

$d_{d/s} = 5.6$

prc

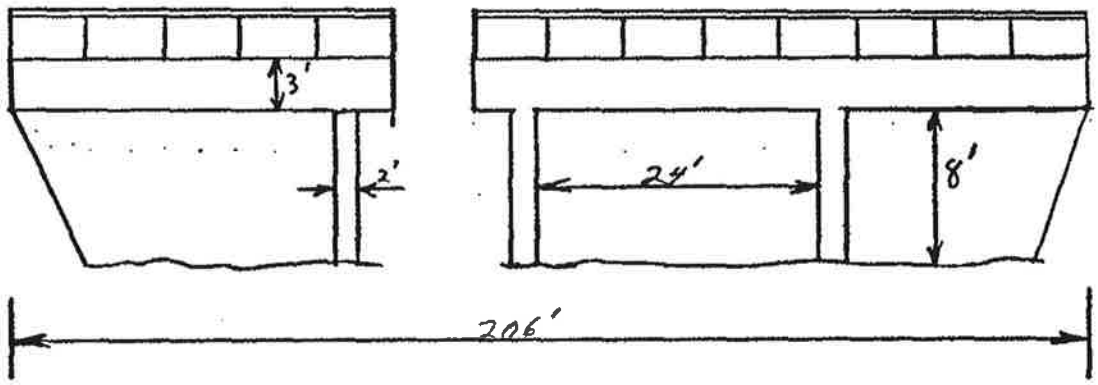
PRC Toups

CONSULTING ENGINEERS AND PLANNERS

BY _____ DATE _____ CLIENT _____ SHEET NO. 16 OF ____

CHECKED _____ DATE _____ JOB _____ JOB NO. _____

FRONTAGE RD CROSSING



8 OPENNINGS

U/S DEPTH OF FRONTAGE CROSSING = D/S DEPTH OF FREWAY CROSSING = 5.6'

MOMENTUM DIAGRAMS INDICATE FLOW DOES NOT HAVE ENOUGH MOMENTUM TO PASS THRU BRIDGE. A SLIGHT JUMP WILL FORM U/S OF PIER

$d_{PIER} = 7.6'$ (MIN. MOMENTUM) ⇒ VEL 15 F/S

$d_{u/s} = 9.4$

$d_{d/s} = 5.8$

VEL'S OF 15 TO 20 F/S. ARE HIGH ENOUGH TO BE ERROSIVE. ∴ AN OPENNING DEPTH > 8' WILL OCCUR

prc

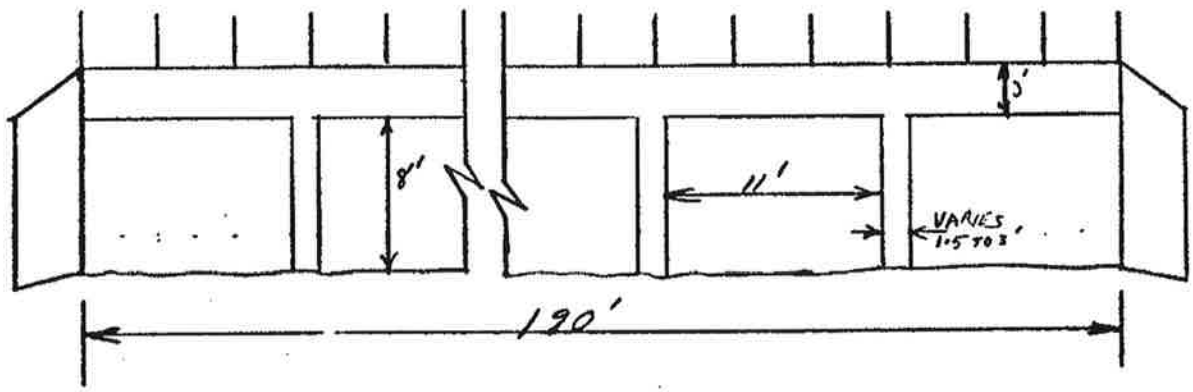
PRC Toups

CONSULTING ENGINEERS AND PLANNERS

BY _____ DATE _____ CLIENT _____ SHEET NO. 17 OF ____

CHECKED _____ DATE _____ JOB _____ JOB NO. _____

RAILROAD CROSSING



14 OPENNINGS

U/S DEPTH OF RR CROSSING = D/S DEPTH OF FRONTAGE CROSSING = 5.8'

MOMENTUM DIAGRAMS INDICATE FLOW DOES NOT HAVE ENOUGH MOMENTUM TO PASS THRU BRIDGE @ $P_{U/S}$ = 5.8'

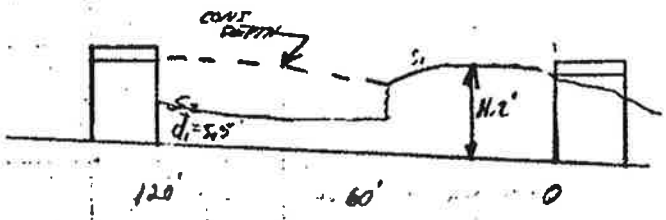
∴ A JUMP WILL OCCUR U/S OF CROSSING

d_{PIER} = 8.0' (MIN MOMENTUM)

$d_{U/S}$ = 11.2'

$d_{D/S}$ = 5.5'

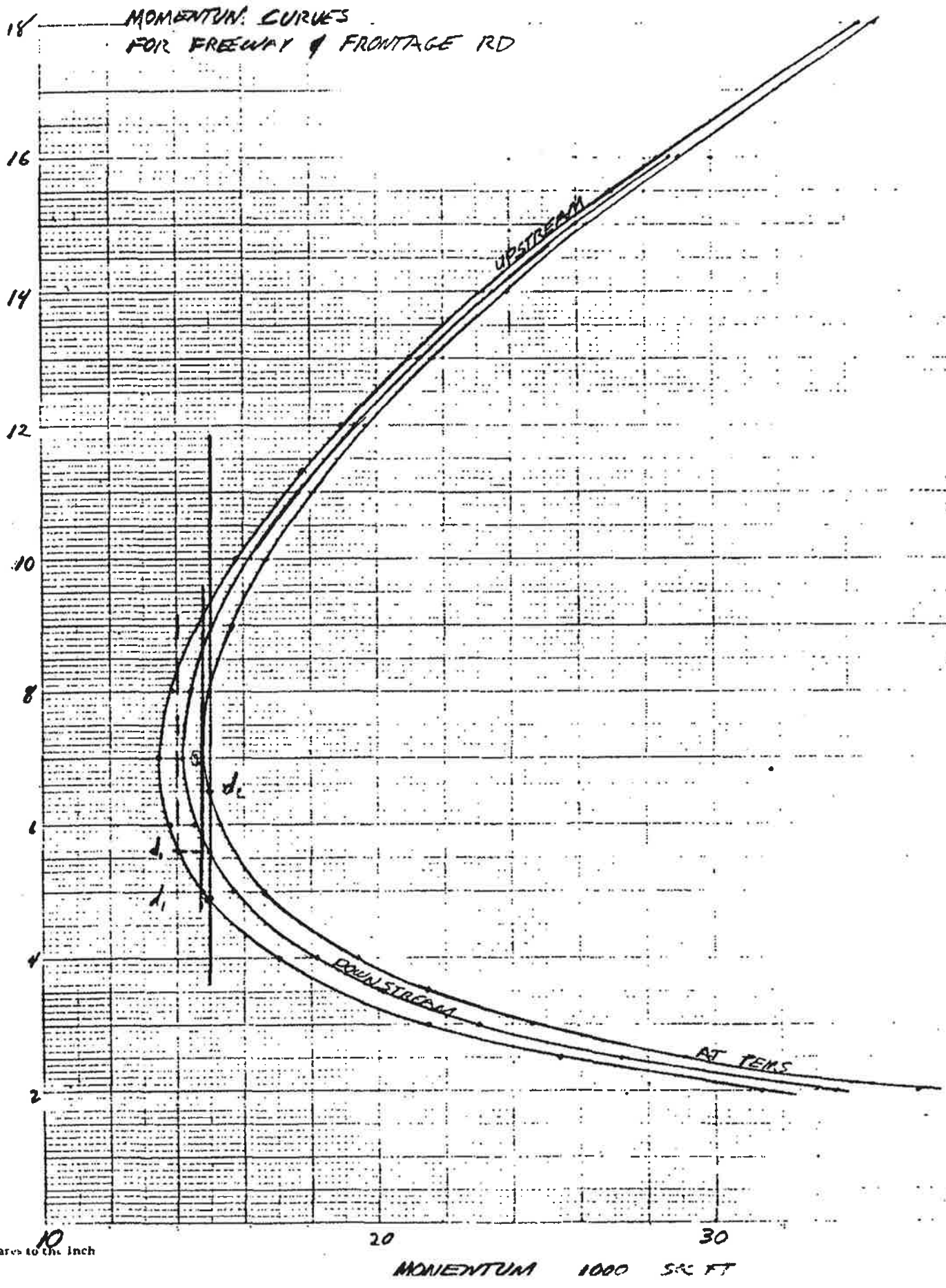
CHECK TO SEE IF JUMP WILL DROWN OUT D/S SIDE OF FRONTAGE ROAD



JUMP OCCURS @ 55' U/S OF R.R. CROSSING

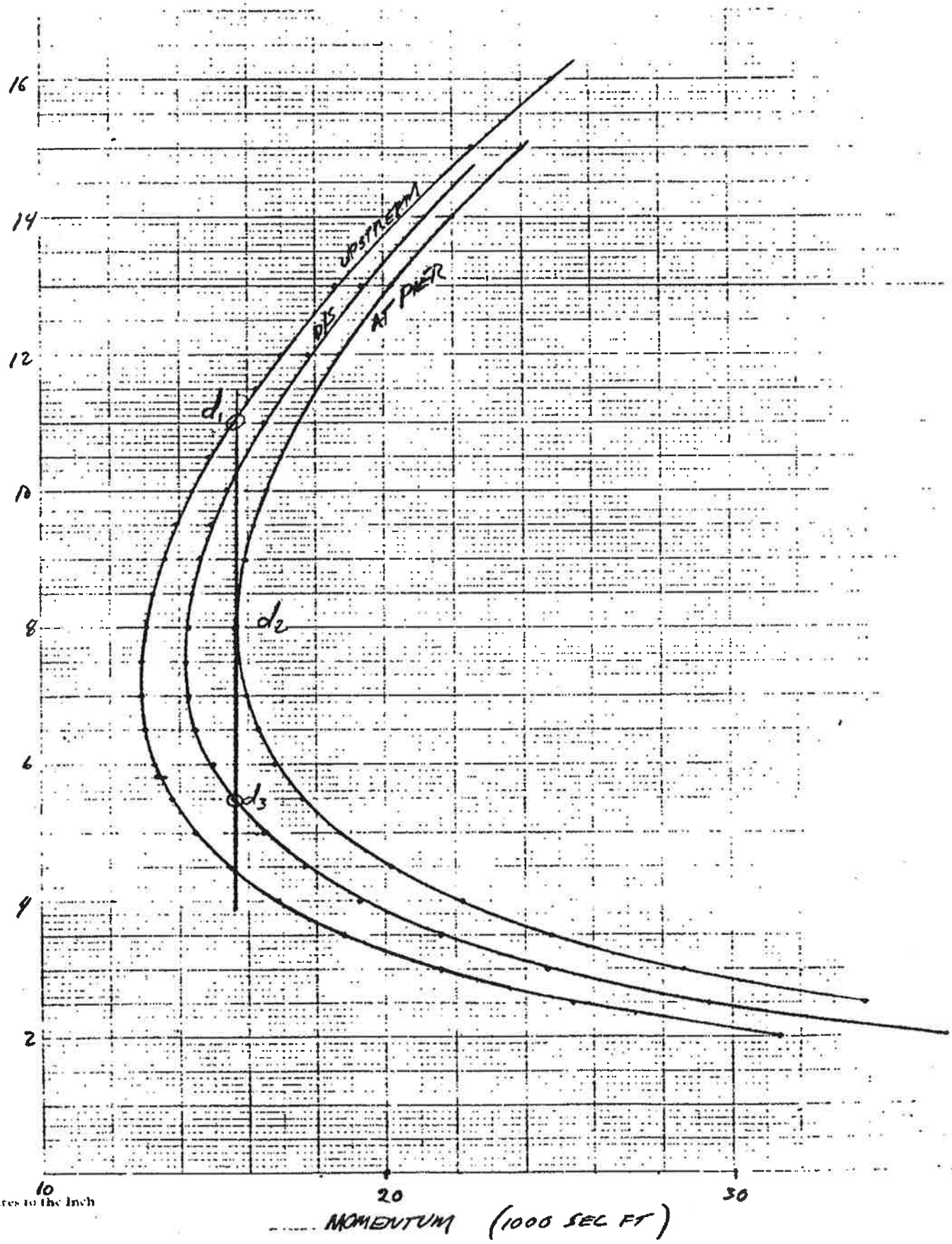
S_1 d	S_1 x	S_2 x	S_2 d
11.2	0	0	5.8
11.0	5.5	104'	5.5
10.5	13.43	70	5.0
10.0	12.86		
9.5	12.13		
9.0	11.16		
8.5	9.84		
8.0	7.95		
	Σ 62.8'		

9.31

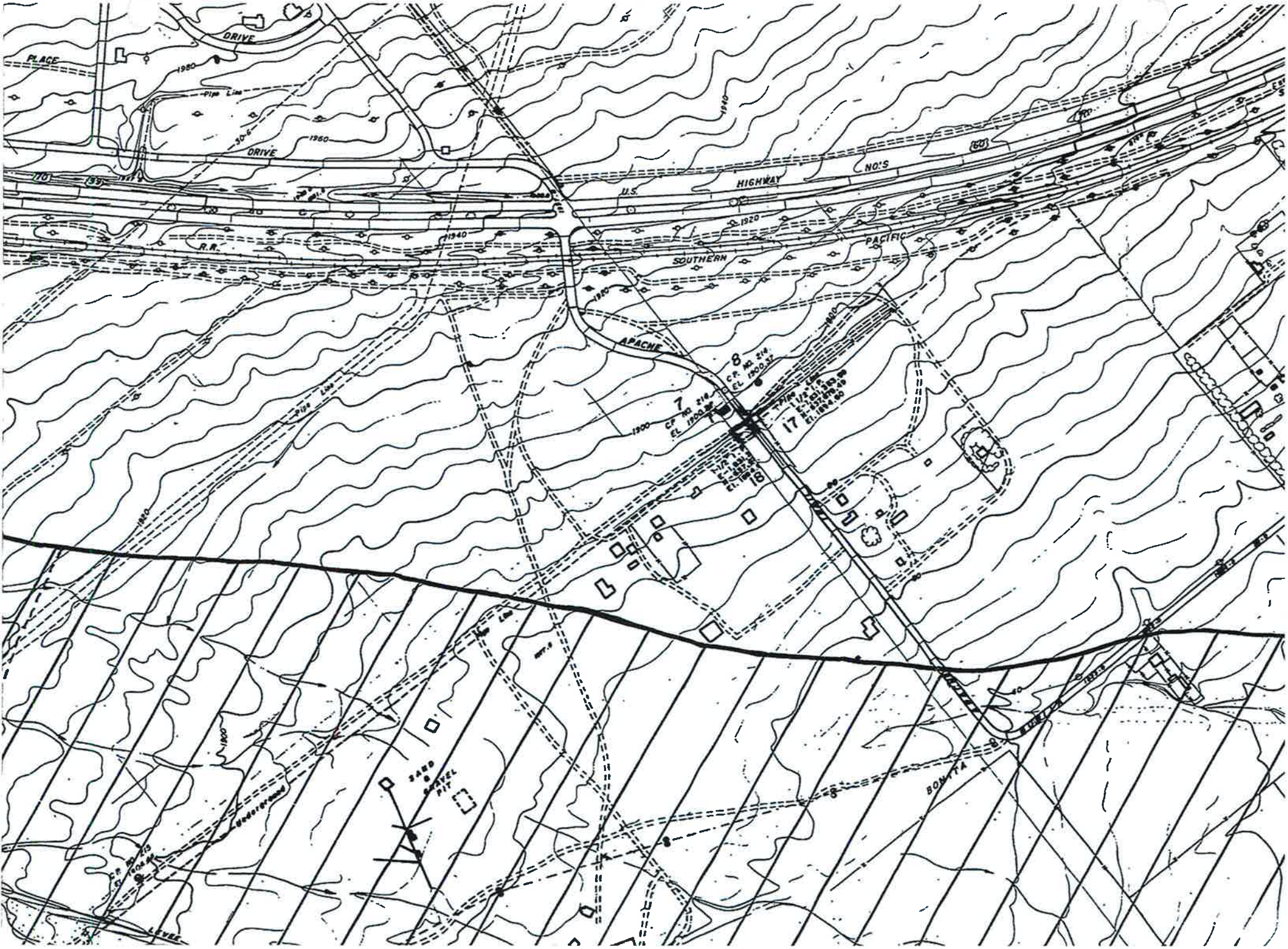


10 Squares to the Inch

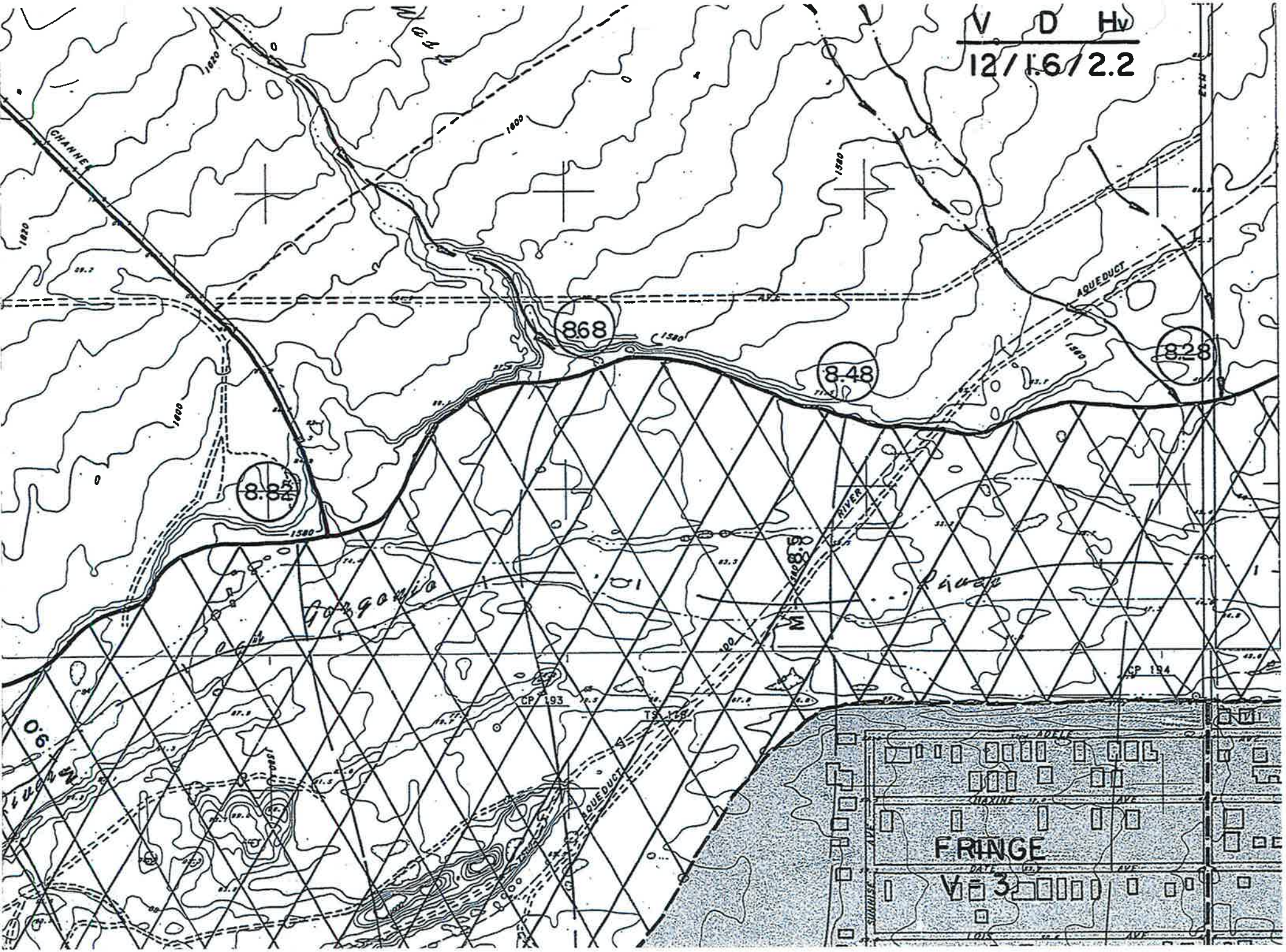
MOMENTUM CURVES
FOR RAILROAD CROSSING

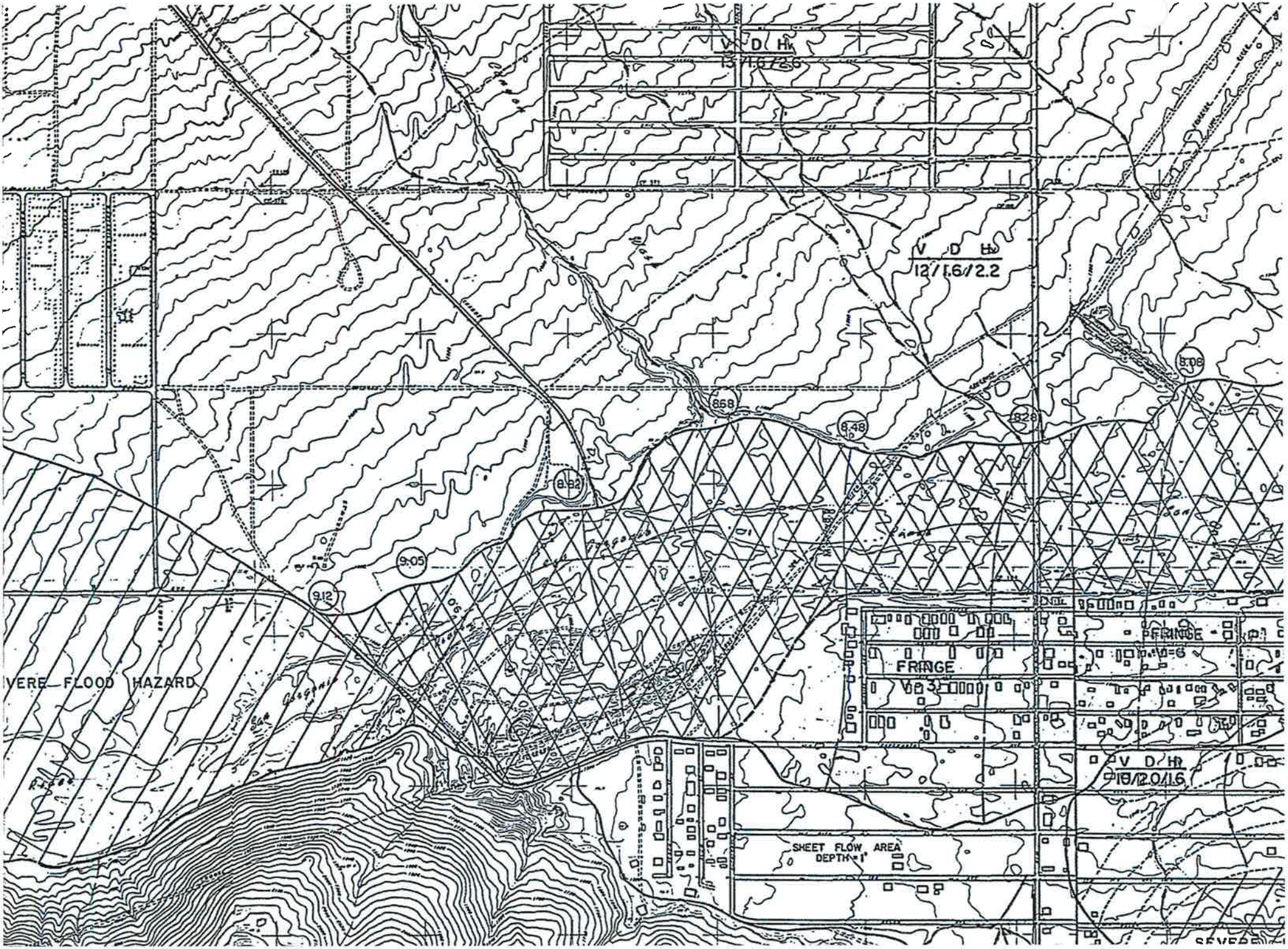


2- squares to the inch



PLACE
DRIVE
Pipe Line
DRIVE
U.S.
HIGHWAY
NO'S
R.R.
SOUTHERN
PACIFIC
APACHE
Pipe Line
SAND & GRAVEL PIT
BONITA
LEVEE


V D Hv
12/1.6/2.2
8.68
8.48
8.28
8.82
CHANNEL
AQUEDUCT
RIVER
CP 193
CP 194
TS 118
FRINGE
V=3
ADELE
MAXINE
DATE
LOIS
SUNRISE
1580
1600
1620


V D Hv
13/1.6/2.6
V D Hv
12/1.6/2.2
8.68
8.48
8.28
8.08
8.92
9.05
9.12
VERE FLOOD HAZARD
FRINGE
V=3
FRINGE
V=6
V D Hv
10/2.0/1.6
SHEET FLOW AREA
DEPTH=1'

EXHIBITS

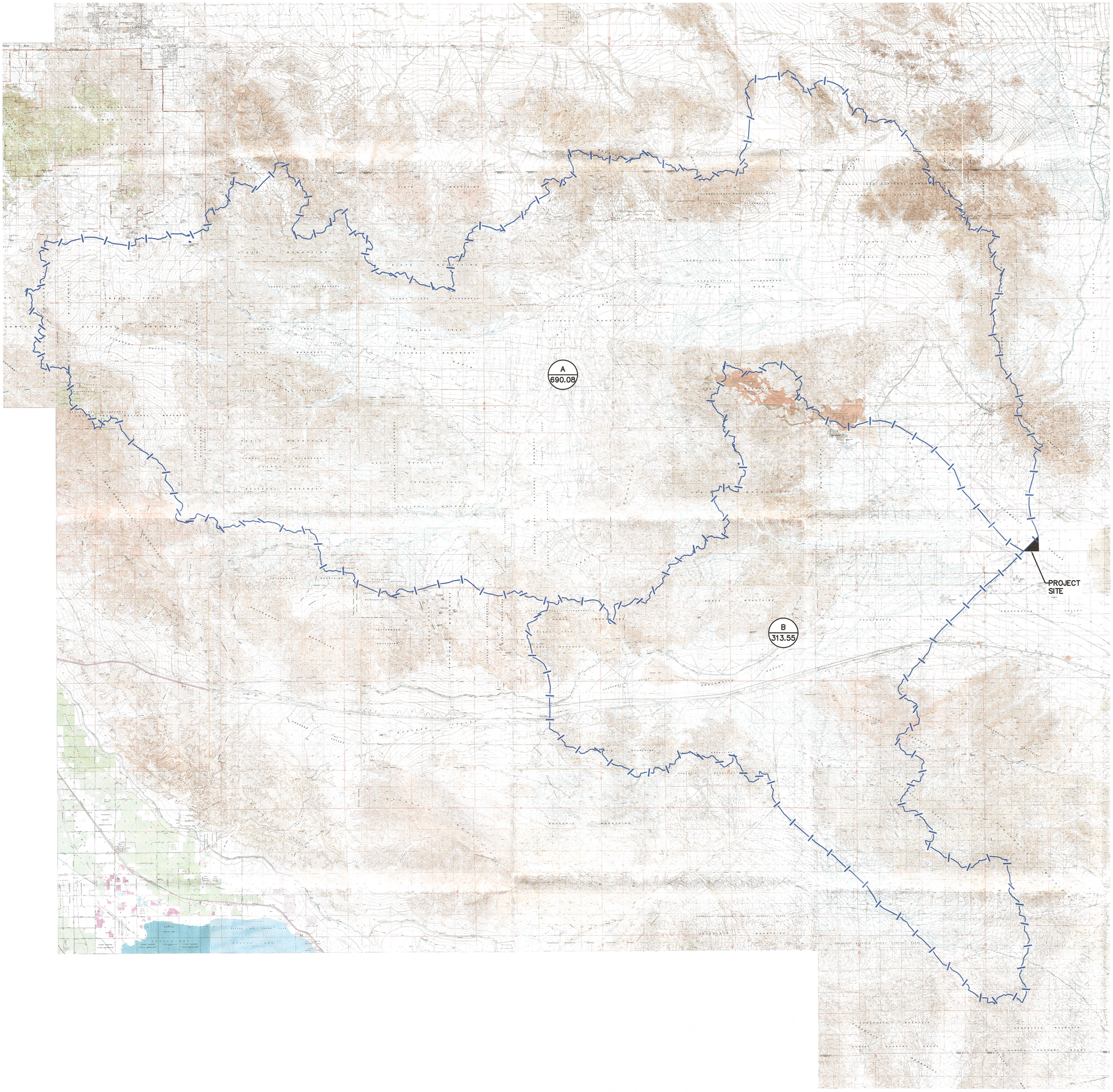
EXHIBIT A: TRIBUTARY WATERSHED MAP

EXHIBIT B: PROJECT IMPROVEMENT PLANS

PLS # 298145

COUNTY OF RIVERSIDE, STATE OF CALIFORNIA

EXISTING CONDITION WATERSHED MAP



LEGEND:

XXX / X.X — SUB AREA / SQ. MI.

WATERSHED BOUNDARY

N

GRAPHIC SCALE

10,000' 0 5,000' 10,000' 20,000'

1" = 10,000'

EXHIBIT "A"

PLS # 298145

EXISTING CONDITION WATERSHED MAP

JLC Engineering & Consulting, Inc.

36263 CALLE DE LOBO
MURRIETA, CA 92562
PH. 951.304.9552 FAX 951.304.3568

Appendix H.2

Onsite Drainage Report

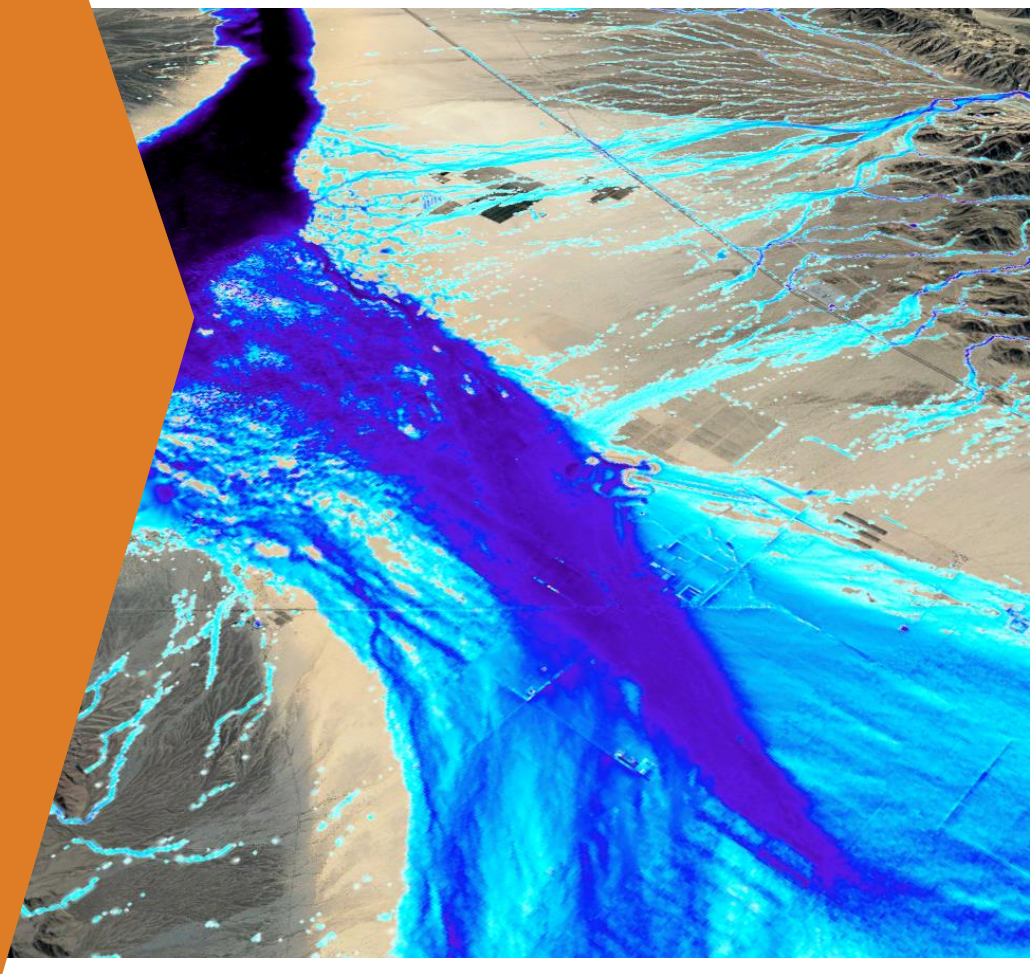
Westwood

Preliminary Onsite Drainage Study

Athos Solar Project

Riverside County, California

January 2019



Prepared For:

Intersect Power

Westwood

Preliminary Onsite Drainage Study for

Athos Solar Project

Prepared for:

Intersect Power, Inc.
2 Embarcadero Center, 7th Floor
San Francisco, CA 94111

Prepared by:

Tom Miller
Westwood Professional Services
12701 Whitewater Drive, Suite 300
Minnetonka, MN 55343

Project Number: 0013768.00
Date: 01/15/2019

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PROPOSED CONDITIONS 1
PEAK RUNOFF RATES 1
SUMMARY 9
REFERENCES 9

EXHIBITS

Exhibit 1: Location Map
Exhibit 2: Soils Map
Exhibit 3: Preliminary Hydrology Map

APPENDICES

Appendix A: NOAA Atlas 14 Rainfall Data
Appendix B: HydroCAD Reports

INTRODUCTION

The purpose of this preliminary onsite drainage study is to describe the hydrology of the proposed Athos Solar Project ("the project") and determine the impact to flow rates from the site due to development of the project. This report was created to support the client with California Fish and Wildlife permitting and streambed alteration agreements. The project premises encompasses approximately 5.04 square miles of land in Riverside County, California and consists of 10 parcels that were modeled.

EXISTING CONDITIONS

The project boundary consists of approximately 5.04 square miles of undeveloped agricultural fields and poor desert shrubland. The majority of the parcels drain to the northeast with one parcel draining to the southeast. The project is on a mild slope with offsite drainage entering the site and flowing adjacent to the site, this offsite drainage is not modeled in this study and was modeled in a different hydrology report.

PROPOSED CONDITIONS

The proposed use of the site will be a solar facility. The solar facility will consist of solar modules mounted above grade on a racking system, gravel access roads and transformers, and a perimeter security fence. The solar modules are located above the ground and the finished ground conditions will be completely pervious.

PEAK RUNOFF RATES

Each parcel was divided into different drainage areas to analyze the peak discharge rates. Based on the topography, there were numerous onsite drainage areas. HydroCAD modeling software was used to complete the hydrologic and hydraulic modeling. Atlas-14 precipitation data was downloaded and used as input for the analysis (Appendix A).

To calculate existing peak discharge rates, hydrologic soil groups were determined for the site area. USDA-NRCS SSURGO soils data provided a general idea of the soils in the area but did not cover the entire area. Soil types were estimated based on landcover and SSURGO data and were hand edited after being approved by Riverside County. Soils in the area are primarily classified as hydrologic group C and D in the watershed area and A soils in the project boundary (Exhibit 3). For the pre-development peak discharge, a curve number of 77 was selected based on the existing agricultural disturbed areas and soils belonging to HSG A and 91 if belonging to HSG C, a curve number of 63 was selected based on the existing poor desert shrubland areas and soils belonging to HSG A and 85 if belonging to HSG C.

For the post-development calculations, a curve number of curve number of 77 was selected based on the barren disturbed areas and soils belonging to HSG A and 91 if belonging to HSG C. Impervious areas were also added to the project with the assumed impervious areas such as gravel access roads and inverters being 5% of the parcel area. The lag-curve number method was used to calculate the time of concentration for each proposed area as well. The existing and proposed conditions peak discharge rates for the project are presented in Table 1 - 20 and Appendix B. Basins were input into the model where necessary to reduce the flow rates of the proposed conditions to less than existing. The 10-year flood event was modeled for all parcels.

Table 1. Parcel 1 Existing Condition HydroCAD peak flow rates

Existing Conditions					
Drainage Area	**Land Cover**	**HSG**	**CN**	**Area (Acres)**	**Peak Discharge Rate (cfs)**
					10-year
DA-1	Undeveloped Ag.	A	77	129.98	15.68
DA-2	Undeveloped Ag.	A	77	238.47	21.28
DA-3	Undeveloped Ag.	A	77	388.35	30.2
DA-4	Undeveloped Ag.	A	77	214.31	22.89
Total				**971.11**	**90.05**

Table 2. Parcel 1 Post-Development Conditions HydroCAD peak flow rates

Proposed Conditions							
Drainage Area	**Land Cover**	**HSG**	**CN**	**Area (Acres)**	**Peak Discharge Rate w/ basin (cfs)**	**Peak Discharge Rate w/o basin (cfs)**	**Basin Volume (Ac-Ft)**
					10-year	**10-Year**	
DA-1	Barren Soil	A	77	123.48			
	Impervious Area	A	96	6.5			
	DA-1 Total	A	78	129.98	15.64	17.71	1.40
DA-2	Barren Soil	A	77	226.55			
	Impervious Area	A	96	11.92			
	DA-2 Total	A	78	238.47	20.67	23.88	2.94
DA-3	Barren Soil	A	77	368.94			
	Impervious Area	A	96	19.41			
	DA-3 Total	A	78	388.35	30.16	34.02	5.03
DA-4	Barren Soil	A	77	203.59			
	Impervious Area	A	96	10.72			
	DA-4 Total	A	78	214.31	22.21	25.59	2.45
Total				**971.11**	**88.68**	**101.2**	**11.82**

Table 3. Parcel 2 Existing Condition HydroCAD peak flow rates

Existing Conditions					
Drainage Area	**Land Cover**	**HSG**	**CN**	**Area (Acres)**	**Peak Discharge Rate (cfs)**
					10-year
DA-1	Desert Shrubland	A	63	58.94	0.89
DA-2	Desert Shrubland	A	63	108.10	1.55
Total				**167.04**	**2.44**

Table 4. Parcel 2 Post-Development Conditions HydroCAD peak flow rates

Proposed Conditions							
Drainage Area	**Land Cover**	**HSG**	**CN**	**Area (Acres)**	**Peak Discharge Rate w/ basin (cfs)**	**Peak Discharge Rate w/o basin (cfs)**	**Basin Volume (Ac-Ft)**
					10-year	**10-Year**	
DA-1	Barren Soil	A	77	55.99			
	Impervious Area	A	96	2.95			
	DA-1 Total	A	78	58.94	0.82	8.06	2.67
DA-2	Barren Soil	A	77	102.69			
	Impervious Area	A	96	5.41			
	DA-2 Total	A	78	108.10	1.49	13.38	4.83
Total				**167.04**	**2.31**	**21.44**	**7.5**

Table 5. Parcel 3 Existing Condition HydroCAD peak flow rates

Existing Conditions					
Drainage Area	**Land Cover**	**HSG**	**CN**	**Area (Acres)**	**Peak Discharge Rate (cfs)**
					10-year
DA-1	Undeveloped Ag.	A	77	162.08	23.29
DA-2	Undeveloped Ag.	A	77	324.34	33.14
DA-3	Undeveloped Ag.	A	77	322.45	28.82
Total				**808.87**	**85.25**

Table 6. Parcel 3 Post-Development Conditions HydroCAD peak flow rates

Proposed Conditions							
Drainage Area	**Land Cover**	**HSG**	**CN**	**Area (Acres)**	**Peak Discharge Rate w/ basin (cfs)**	**Peak Discharge Rate w/o basin (cfs)**	**Basin Volume (Ac-Ft)**
					10-year	**10-Year**	
DA-1	Barren Soil	A	77	153.98			
	Impervious Area	A	96	8.10			
	DA-1 Total	A	78	162.08	22.26	26.07	1.56
DA-2	Barren Soil	A	77	308.12			
	Impervious Area	A	96	16.22			
	DA-2 Total	A	78	324.34	32.51	37.07	3.64
DA-3	Barren Soil	A	77	306.33			
	Impervious Area	A	96	16.12			
	DA-3 Total	A	78	322.45	28.39	31.99	3.78
Total				**808.87**	**83.16**	**95.13**	**8.98**

Table 7. Parcel 4 Existing Condition HydroCAD peak flow rates

Existing Conditions					
Drainage Area	**Land Cover**	**HSG**	**CN**	**Area (Acres)**	**Peak Discharge Rate (cfs)**
					10-year
DA-1	Desert Shrubland	A	63	52.61	1.03
DA-2	Desert Shrubland	A	63	58.00	1.14
Total				**110.61**	**2.17**

Table 8. Parcel 4 Post-Development Conditions HydroCAD peak flow rates

Proposed Conditions							
Drainage Area	**Land Cover**	**HSG**	**CN**	**Area (Acres)**	**Peak Discharge Rate w/ basin (cfs)**	**Peak Discharge Rate w/o basin (cfs)**	**Basin Volume (Ac-Ft)**
					10-year	**10-Year**	
DA-1	Barren Soil	A	77	49.98			
	Impervious Area	A	96	2.63			
	DA-1 Total	A	78	52.61	1.02	11.76	2.13
DA-2	Barren Soil	A	77	55.10			
	Impervious Area	A	96	2.90			
	DA-2 Total	A	78	58.00	1.10	13.14	2.34
Total				**110.61**	**2.12**	**24.9**	**4.47**

Table 9. Parcel 5 Existing Condition HydroCAD peak flow rates

Existing Conditions					
Drainage Area	**Land Cover**	**HSG**	**CN**	**Area (Acres)**	**Peak Discharge Rate (cfs)**
					10-year
DA-1	Desert Shrubland	C	85	105.01	47.42
DA-2	Desert Shrubland	C	85	143.02	63.99
DA-3	Desert Shrubland	C	85	33.01	19.18
Total				**281.04**	**130.59**

Table 10. Parcel 5 Post-Development Conditions HydroCAD peak flow rates

Proposed Conditions							
Drainage Area	**Land Cover**	**HSG**	**CN**	**Area (Acres)**	**Peak Discharge Rate w/ basin (cfs)**	**Peak Discharge Rate w/o basin (cfs)**	**Basin Volume (Ac-Ft)**
					10-year	**10-Year**	
DA-1	Barren Soil	C	91	99.76			
	Impervious Area	C	96	5.25			
	DA-1 Total	C	91	105.01	46.83	78.52	4.26
DA-2	Barren Soil	C	91	135.87			
	Impervious Area	C	96	7.15			
	DA-2 Total	C	91	143.02	61.71	106.23	5.88
DA-3	Barren Soil	C	91	31.36			
	Impervious Area	C	96	1.65			
	DA-3 Total	C	91	33.01	17.90	31.46	1.28
Total				**281.04**	**126.44**	**216.21**	**11.42**

Table 11. Parcel 6 Existing Condition HydroCAD peak flow rates

Existing Conditions					
Drainage Area	**Land Cover**	**HSG**	**CN**	**Area (Acres)**	**Peak Discharge Rate (cfs)**
					10-year
DA-1	Undeveloped Ag.	A	77	16.11	5.17
DA-2	Undeveloped Ag.	A	77	8.23	3.90
Total				**24.34**	**9.07**

Table 12. Parcel 6 Post-Development Conditions HydroCAD peak flow rates

Proposed Conditions							
Drainage Area	**Land Cover**	**HSG**	**CN**	**Area (Acres)**	**Peak Discharge Rate w/ basin (cfs)**	**Peak Discharge Rate w/o basin (cfs)**	**Basin Volume (Ac-Ft)**
					10-year	**10-Year**	
DA-1	Barren Soil	A	77	15.30			
	Impervious Area	A	96	0.81			
	DA-1 Total	A	78	16.11	5.09	5.79	0.11
DA-2	Barren Soil	A	77	7.82			
	Impervious Area	A	96	0.41			
	DA-2 Total	A	78	8.23	3.79	4.35	0.03
Total				**24.34**	**8.88**	**10.14**	**0.14**

Table 13. Parcel 7 Existing Condition HydroCAD peak flow rates

Existing Conditions					
Drainage Area	**Land Cover**	**HSG**	**CN**	**Area (Acres)**	**Peak Discharge Rate (cfs)**
					10-year
DA-1	Undeveloped Ag.	A	77	15.58	4.31
DA-2	Undeveloped Ag.	A	77	105.97	16.22
DA-3	Undeveloped Ag.	A	77	108.63	18.78
DA-4	Undeveloped Ag.	C	91	24.10	17.52
Total				**254.28**	**56.83**

Table 14. Parcel 7 Post-Development Conditions HydroCAD peak flow rates

Proposed Conditions							
Drainage Area	**Land Cover**	**HSG**	**CN**	**Area (Acres)**	**Peak Discharge Rate w/ basin (cfs)**	**Peak Discharge Rate w/o basin (cfs)**	**Basin Volume (Ac-Ft)**
					10-year	**10-Year**	
DA-1	Barren Soil	A	77	14.80			
	Impervious Area	A	96	0.78			
	DA-1 Total	A	78	15.58	4.28	4.87	0.12
DA-2	Barren Soil	A	77	100.68			
	Impervious Area	A	96	5.29			
	DA-2 Total	A	78	105.97	16.03	18.24	1.05
DA-3	Barren Soil	A	77	103.20			
	Impervious Area	A	96	5.43			
	DA-3 Total	A	78	108.63	18.73	21.08	1.00
DA-4	Barren Soil	C	91	22.89			
	Impervious Area	C	96	1.21			
	DA-4 Total	C	91	24.10	16.85	17.52	0.14
Total				**254.28**	**55.89**	**61.71**	**2.31**

Table 15. Parcel 8 Existing Condition HydroCAD peak flow rates

Existing Conditions					
Drainage Area	**Land Cover**	**HSG**	**CN**	**Area (Acres)**	**Peak Discharge Rate (cfs)**
					10-year
DA-1	Undeveloped Ag.	C	91	39.99	38.63
Total				**39.99**	**38.63**

Table 16. Parcel 8 Post-Development Conditions HydroCAD peak flow rates

Proposed Conditions							
Drainage Area	**Land Cover**	**HSG**	**CN**	**Area (Acres)**	**Peak Discharge Rate w/ basin (cfs)**	**Peak Discharge Rate w/o basin (cfs)**	**Basin Volume (Ac-Ft)**
					10-year	**10-Year**	
DA-1	Barren Soil	C	91	38.00			
	Impervious Area	C	96	1.99			
	DA-1 Total	C	91	39.99	35.03	38.63	0.32
Total				**39.99**	**35.03**	**38.63**	**0.32**

Table 17. Parcel 9 Existing Condition HydroCAD peak flow rates

Existing Conditions					
Drainage Area	**Land Cover**	**HSG**	**CN**	**Area (Acres)**	**Peak Discharge Rate (cfs)**
					10-year
DA-1	Undeveloped Ag.	A	77	137.25	18.58
DA-2	Undeveloped Ag.	A	77	32.09	6.54
Total				**169.34**	**25.12**

Table 18. Parcel 9 Post-Development Conditions HydroCAD peak flow rates

Proposed Conditions							
Drainage Area	**Land Cover**	**HSG**	**CN**	**Area (Acres)**	**Peak Discharge Rate w/ basin (cfs)**	**Peak Discharge Rate w/o basin (cfs)**	**Basin Volume (Ac-Ft)**
					10-year	**10-Year**	
DA-1	Barren Soil	A	77	130.39			
	Impervious Area	A	96	6.86			
	DA-1 Total	A	78	137.25	18.36	20.74	1.44
DA-2	Barren Soil	A	77	30.49			
	Impervious Area	A	96	1.60			
	DA-2 Total	A	78	32.09	6.49	7.35	0.29
Total				**169.34**	**24.85**	**28.09**	**1.73**

Table 19. Parcel 10 Existing Condition HydroCAD peak flow rates

Existing Conditions					
Drainage Area	**Land Cover**	**HSG**	**CN**	**Area (Acres)**	**Peak Discharge Rate (cfs)**
					10-year
DA-1	Undeveloped Ag.	A	77	52.64	10.37
DA-2	Undeveloped Ag.	A	77	158.91	23.58
DA-3	Undeveloped Ag.	A	77	36.45	8.23
DA-4	Undeveloped Ag.	A	77	152.53	23.64
Total				**400.53**	**65.82**

Table 20. Parcel 10 Post-Development Conditions HydroCAD peak flow rates

Proposed Conditions							
Drainage Area	**Land Cover**	**HSG**	**CN**	**Area (Acres)**	**Peak Discharge Rate w/ basin (cfs)**	**Peak Discharge Rate w/o basin (cfs)**	**Basin Volume (Ac-Ft)**
					10-year	**10-Year**	
DA-1	Barren Soil	A	77	50.01			
	Impervious Area	A	96	2.63			
	DA-1 Total	A	78	52.64	10.26	11.59	0.48
DA-2	Barren Soil	A	77	150.96			
	Impervious Area	A	96	7.95			
	DA-2 Total	A	78	158.91	23.31	26.46	1.59
DA-3	Barren Soil	A	77	34.63			
	Impervious Area	A	96	1.82			
	DA-3 Total	A	78	36.45	8.05	9.21	0.33
DA-4	Barren Soil	A	77	144.9			
	Impervious Area	A	96	7.63			
	DA-4 Total	A	78	152.53	23.52	26.47	1.45
Total				**400.53**	**64.14**	**62.14**	**3.85**

As shown in Tables 1-20, the change from undeveloped agricultural land and poor desert shrubland to a solar facility with infiltration basins creates post-development discharge rates lower than the pre-development conditions. This modeling should be updated when final plans and layouts have been completed for the project area.

SUMMARY

This analysis shows that runoff rates from the site increase marginally with creation of the solar facility. These increases are unlikely to impact downstream properties but if required, these increases can be mitigated by constructing detention basins of the sizes provided. This sizing is based on preliminary concepts and needs to be refined for construction. Additional stormwater management may be required to protect the site from flooding but flood control design was outside the scope of this study.

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Exhibits

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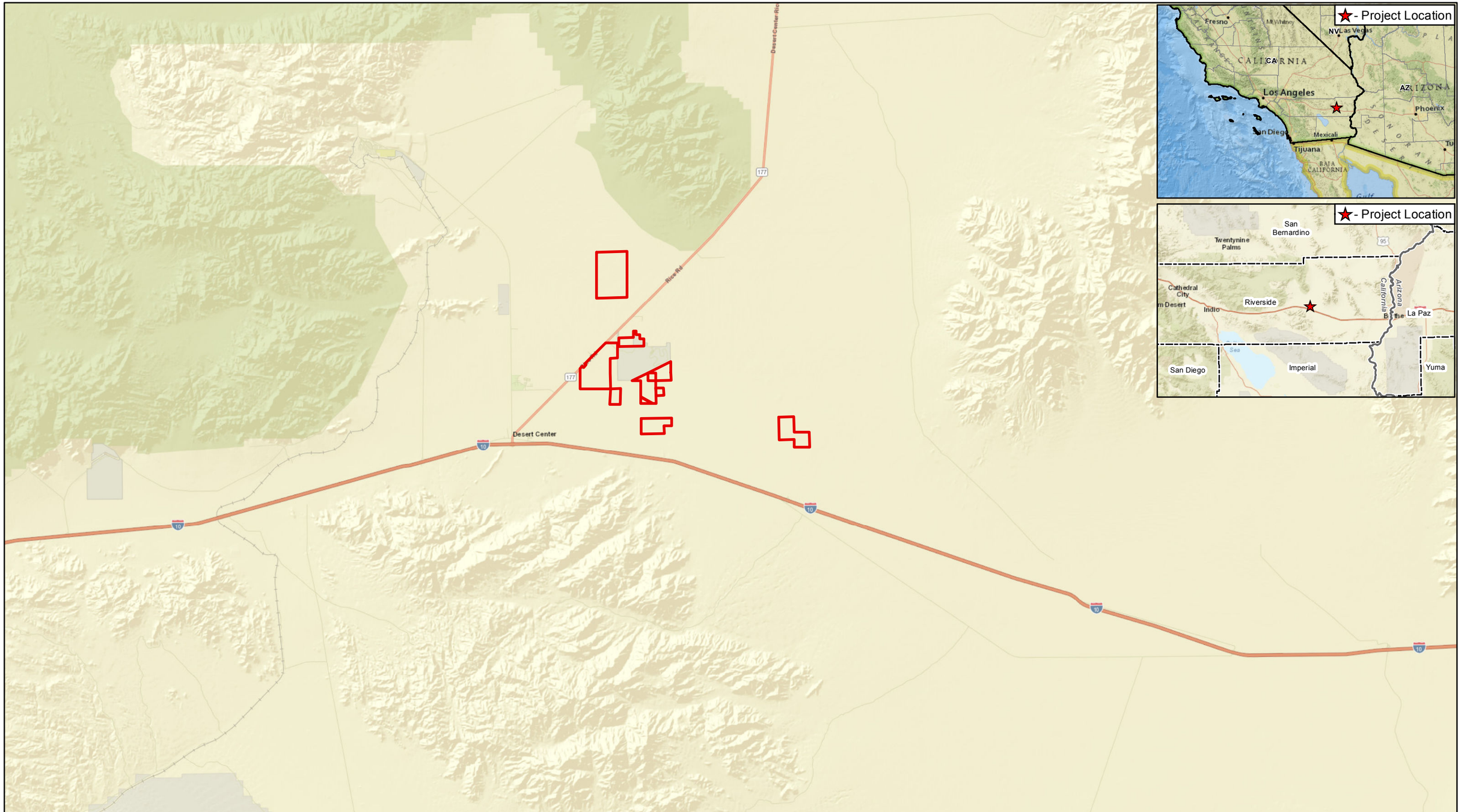

Data Source(s): Westwood (2019); ESRI WMS World Streets Basemap Imagery (Accessed 2019).

Legend

Project Boundary

County Boundary

N

0 3 Miles

Athos Solar Project

Riverside County, California

Exhibit 1: Location Map

January 14, 2019

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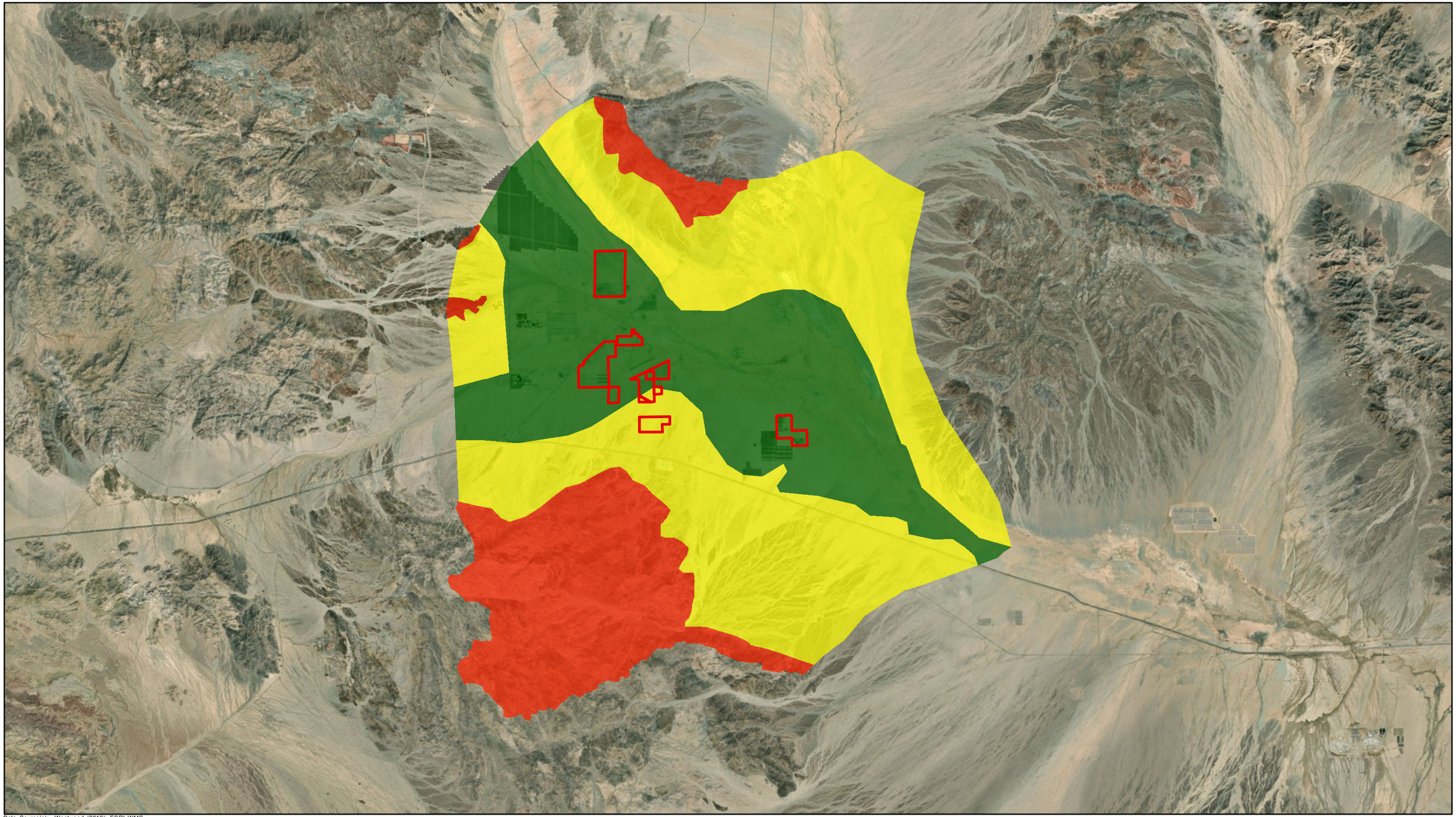

Data Source(s): Westwood (2019); ESRI WMS World Streets Basemap Imagery (Accessed 2019).

Legend

- Project Boundary
- County Boundary

Hydrologic Soils Group

- A
- C
- D

N

0 Miles 3

Athos Solar Project

Riverside County, California

Exhibit 2: Soils Map

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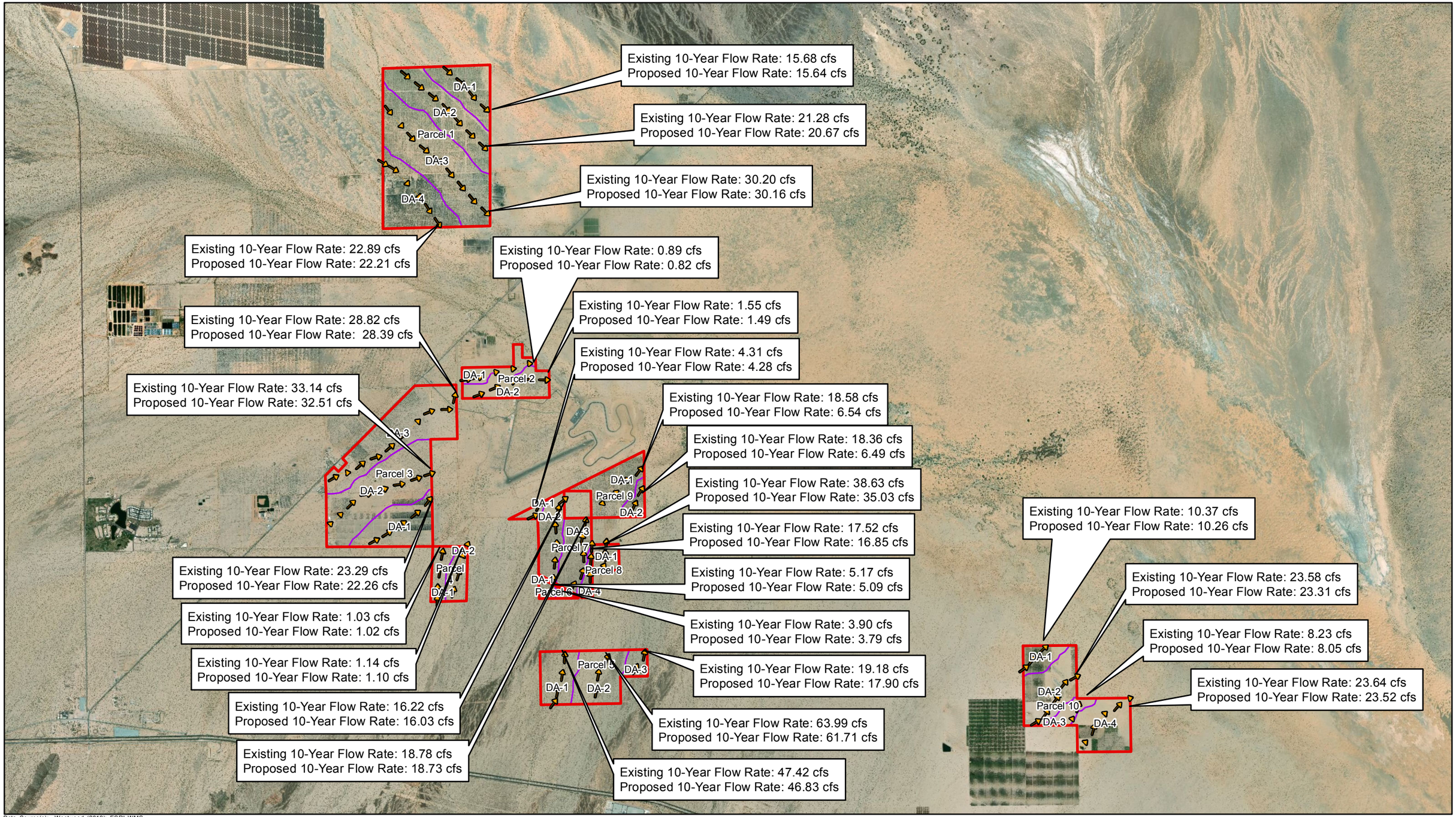

Data Source(s): Westwood (2019); ESRI WMS World Streets Basemap Imagery (Accessed 2019).

Legend

- Project Boundary
- Onsite Drainage Area
- County Boundary
- Onsite Flow Path

N

0 4,500 Feet

Athos Solar Project

Riverside County, California

Exhibit 3: Preliminary Drainage Map

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Appendix A

NOAA Atlas 14 Rainfall Data

NOAA Atlas 14, Volume 6, Version 2
Location name: Desert Center, California, USA*
Latitude: 33.7518°, Longitude: -115.3673°
Elevation: 625.2 ft**
* source: ESRI Maps
** source: USGS

POINT PRECIPITATION FREQUENCY ESTIMATES

Sanja Perica, Sarah Dietz, Sarah Heim, Lillian Hiner, Kazungu Maitaria, Deborah Martin, Sandra Pavlovic, Ishani Roy, Carl Trypaluk, Dale Unruh, Fenglin Yan, Michael Yekta, Tan Zhao, Geoffrey Bonnin, Daniel Brewer, Li-Chuan Chen, Tye Parzybok, John Yarchoan

NOAA, National Weather Service, Silver Spring, Maryland

PF_tabular | PF_graphical | Maps_&_aerials

PF tabular

PDS-based point precipitation frequency estimates with 90% confidence intervals (in inches)[1]

Duration	Average recurrence interval (years)									
	1	2	5	10	25	50	100	200	500	1000
5-min	0.081 (0.067-0.098)	0.127 (0.106-0.154)	0.192 (0.159-0.234)	0.248 (0.204-0.304)	0.329 (0.262-0.418)	0.396 (0.309-0.514)	0.468 (0.356-0.622)	0.548 (0.405-0.748)	0.663 (0.470-0.945)	0.760 (0.521-1.12)
10-min	0.116 (0.097-0.140)	0.182 (0.152-0.221)	0.275 (0.228-0.335)	0.355 (0.293-0.436)	0.472 (0.376-0.599)	0.568 (0.443-0.736)	0.671 (0.510-0.892)	0.785 (0.580-1.07)	0.951 (0.674-1.36)	1.09 (0.746-1.61)
15-min	0.140 (0.117-0.170)	0.221 (0.184-0.268)	0.333 (0.276-0.405)	0.430 (0.354-0.528)	0.571 (0.454-0.724)	0.687 (0.535-0.890)	0.812 (0.617-1.08)	0.949 (0.702-1.30)	1.15 (0.815-1.64)	1.32 (0.902-1.95)
30-min	0.195 (0.163-0.237)	0.307 (0.256-0.373)	0.464 (0.385-0.564)	0.599 (0.493-0.735)	0.795 (0.633-1.01)	0.957 (0.745-1.24)	1.13 (0.860-1.50)	1.32 (0.977-1.81)	1.60 (1.14-2.28)	1.84 (1.26-2.71)
60-min	0.264 (0.220-0.320)	0.415 (0.345-0.504)	0.626 (0.520-0.762)	0.809 (0.666-0.992)	1.07 (0.854-1.36)	1.29 (1.01-1.68)	1.53 (1.16-2.03)	1.79 (1.32-2.44)	2.16 (1.53-3.08)	2.48 (1.70-3.66)
2-hr	0.347 (0.289-0.421)	0.526 (0.438-0.638)	0.779 (0.646-0.948)	1.00 (0.823-1.23)	1.33 (1.06-1.68)	1.60 (1.25-2.07)	1.89 (1.44-2.52)	2.22 (1.64-3.04)	2.71 (1.92-3.86)	3.12 (2.13-4.60)
3-hr	0.397 (0.331-0.481)	0.594 (0.494-0.721)	0.874 (0.725-1.06)	1.12 (0.922-1.38)	1.49 (1.18-1.89)	1.79 (1.40-2.32)	2.13 (1.62-2.83)	2.50 (1.85-3.42)	3.06 (2.17-4.36)	3.53 (2.42-5.21)
6-hr	0.484 (0.403-0.587)	0.719 (0.598-0.873)	1.06 (0.875-1.28)	1.35 (1.11-1.66)	1.79 (1.43-2.27)	2.16 (1.69-2.80)	2.57 (1.96-3.42)	3.03 (2.24-4.14)	3.71 (2.63-5.29)	4.30 (2.94-6.34)
12-hr	0.564 (0.470-0.683)	0.851 (0.708-1.03)	1.26 (1.05-1.53)	1.62 (1.33-1.99)	2.15 (1.71-2.73)	2.59 (2.02-3.36)	3.08 (2.34-4.09)	3.62 (2.68-4.95)	4.42 (3.14-6.30)	5.11 (3.50-7.53)
24-hr	0.723 (0.640-0.834)	1.11 (0.984-1.29)	1.67 (1.47-1.93)	2.15 (1.88-2.51)	2.86 (2.42-3.44)	3.45 (2.86-4.23)	4.09 (3.32-5.13)	4.79 (3.79-6.18)	5.83 (4.43-7.82)	6.70 (4.93-9.29)
2-day	0.838 (0.741-0.966)	1.30 (1.15-1.51)	1.96 (1.73-2.27)	2.53 (2.22-2.95)	3.37 (2.86-4.05)	4.06 (3.38-4.99)	4.81 (3.91-6.04)	5.63 (4.46-7.27)	6.84 (5.20-9.17)	7.84 (5.77-10.9)
3-day	0.890 (0.788-1.03)	1.39 (1.23-1.60)	2.09 (1.84-2.42)	2.70 (2.37-3.15)	3.60 (3.05-4.33)	4.34 (3.60-5.32)	5.13 (4.17-6.45)	6.01 (4.75-7.76)	7.29 (5.54-9.78)	8.36 (6.15-11.6)
4-day	0.943 (0.835-1.09)	1.47 (1.30-1.70)	2.21 (1.95-2.56)	2.86 (2.50-3.33)	3.80 (3.22-4.57)	4.58 (3.81-5.62)	5.43 (4.41-6.82)	6.36 (5.03-8.20)	7.71 (5.86-10.4)	8.85 (6.51-12.3)
7-day	0.994 (0.880-1.15)	1.53 (1.35-1.77)	2.29 (2.02-2.65)	2.96 (2.59-3.45)	3.94 (3.34-4.74)	4.75 (3.95-5.83)	5.63 (4.58-7.08)	6.61 (5.23-8.53)	8.04 (6.11-10.8)	9.24 (6.80-12.8)
10-day	1.02 (0.905-1.18)	1.57 (1.38-1.81)	2.34 (2.06-2.71)	3.02 (2.64-3.52)	4.02 (3.40-4.83)	4.85 (4.03-5.95)	5.75 (4.67-7.23)	6.75 (5.34-8.71)	8.22 (6.25-11.0)	9.45 (6.95-13.1)
20-day	1.11 (0.984-1.28)	1.71 (1.51-1.97)	2.55 (2.25-2.95)	3.28 (2.87-3.83)	4.37 (3.70-5.26)	5.27 (4.38-6.46)	6.24 (5.07-7.84)	7.31 (5.78-9.43)	8.87 (6.75-11.9)	10.2 (7.49-14.1)
30-day	1.18 (1.05-1.36)	1.83 (1.62-2.11)	2.75 (2.42-3.18)	3.55 (3.11-4.14)	4.72 (4.00-5.68)	5.69 (4.73-6.98)	6.73 (5.46-8.45)	7.86 (6.22-10.1)	9.50 (7.22-12.7)	10.9 (7.99-15.1)
45-day	1.25 (1.11-1.44)	1.98 (1.75-2.28)	3.00 (2.65-3.48)	3.89 (3.41-4.54)	5.19 (4.40-6.25)	6.25 (5.20-7.68)	7.38 (6.00-9.28)	8.60 (6.80-11.1)	10.3 (7.87-13.9)	11.8 (8.66-16.3)
60-day	1.35 (1.19-1.55)	2.16 (1.91-2.49)	3.30 (2.91-3.82)	4.28 (3.75-5.00)	5.71 (4.84-6.87)	6.87 (5.71-8.43)	8.10 (6.58-10.2)	9.42 (7.45-12.1)	11.3 (8.58-15.1)	12.8 (9.41-17.7)

[1] Precipitation frequency (PF) estimates in this table are based on frequency analysis of partial duration series (PDS).

Numbers in parenthesis are PF estimates at low er and upper bounds of the 90% confidence interval. The probability that precipitation frequency estimates (for a given duration and average recurrence interval) w ill be greater than the upper bound (or less than the low er bound) is 5%. Estimates at upper bounds are not checked against probable maximum precipitation (PMP) estimates and may be higher than currently valid PMP values.

Please refer to NOAA Atlas 14 document for more information.

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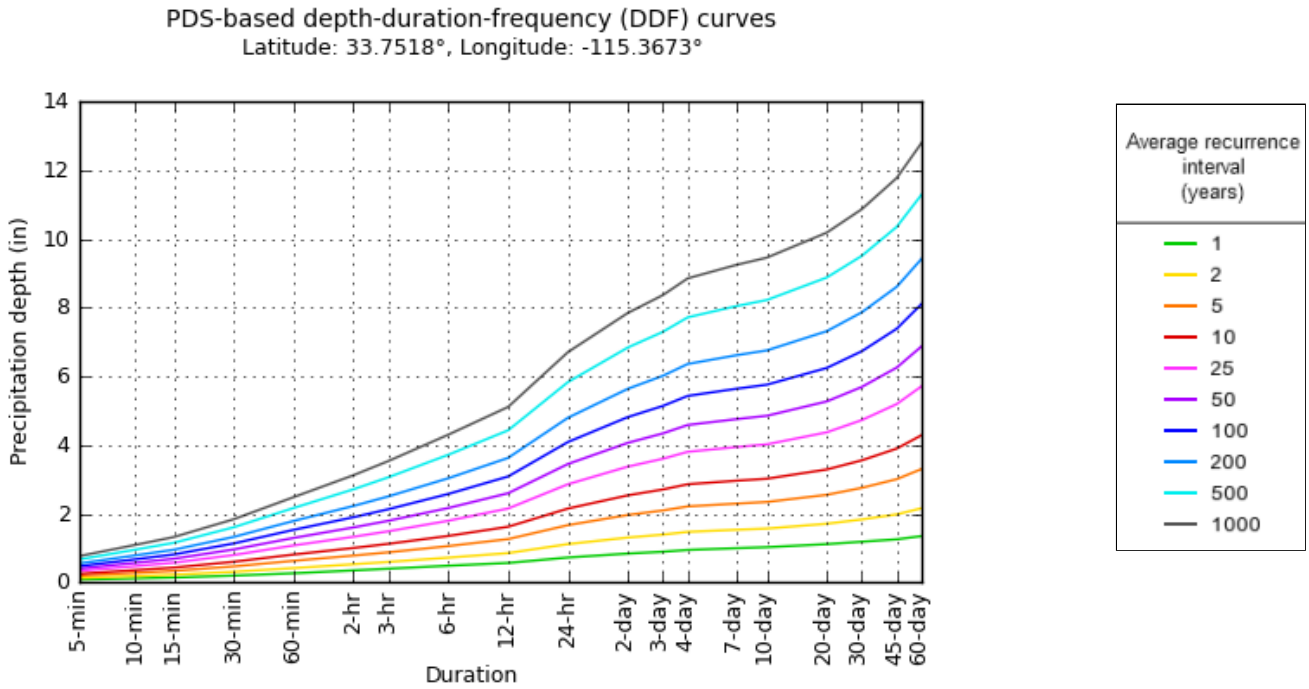
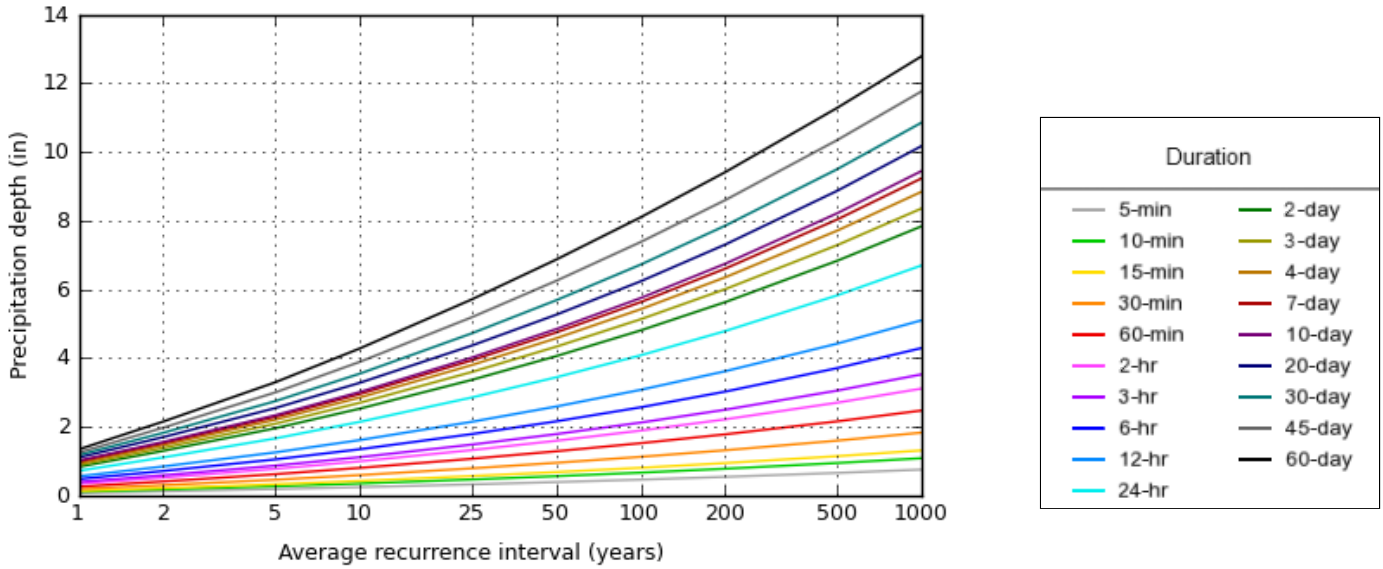
PF graphical





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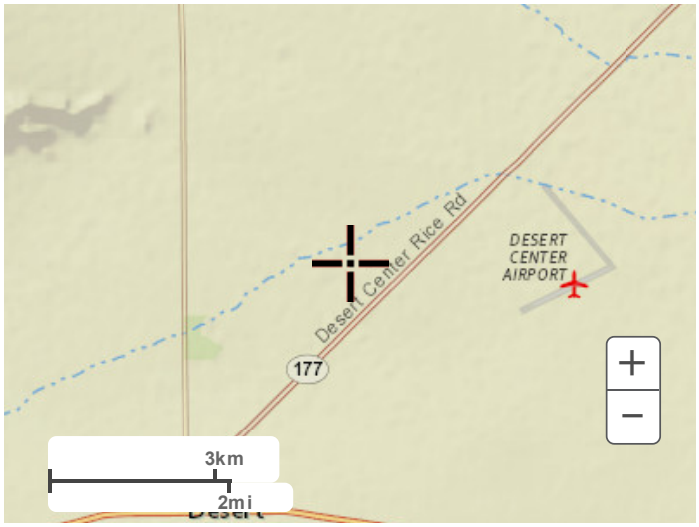
Maps & aerials

Small scale terrain



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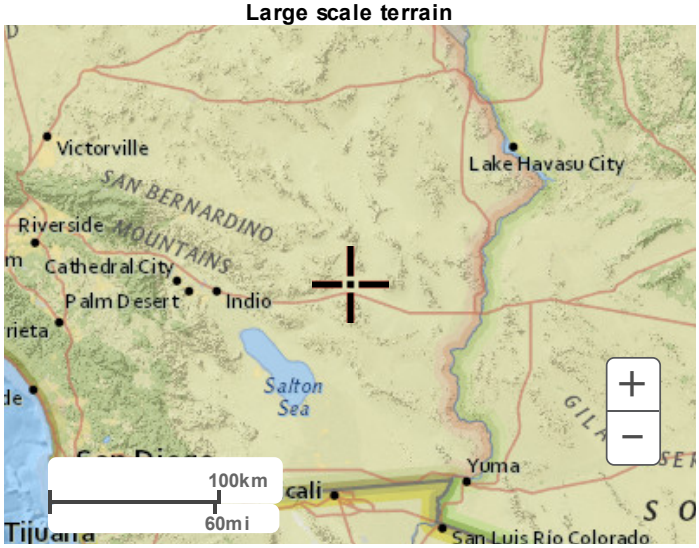

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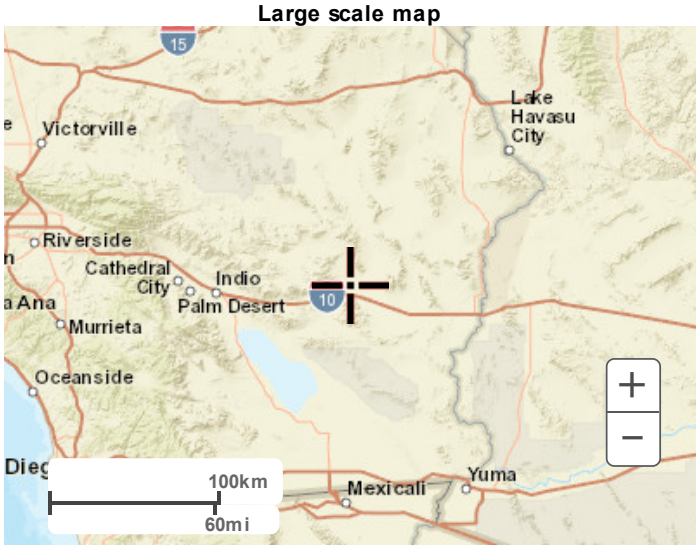

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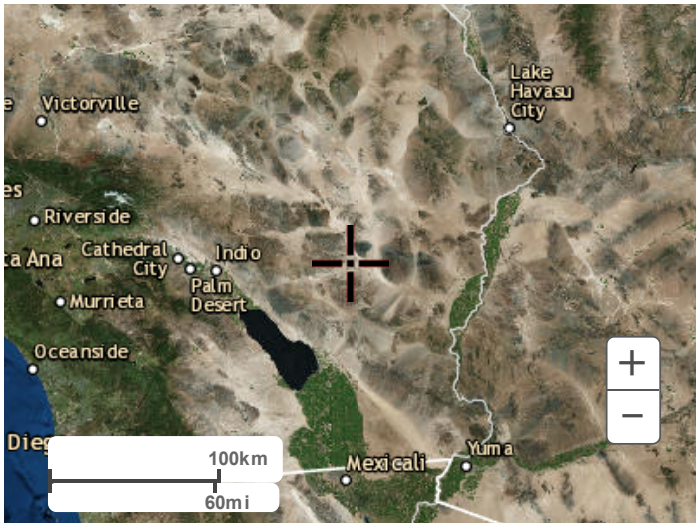

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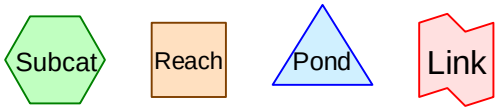
Appendix B

HydroCAD Reports



Routing Diagram for 2019-01-11_PrePost

Prepared by Westwood Professional Services, Inc., Printed 1/14/2019

HydroCAD® 10.00-19 s/n 10449 © 2016 HydroCAD Software Solutions LLC

Area Listing (all nodes)

Area (acres)	CN	Description (subcatchment-numbers)
277.650	63	Desert shrub range, Poor, HSG A (25S, 26S, 31S, 32S)
281.040	85	Desert shrub range, Poor, HSG C (33S, 34S, 35S)
5,342.300	77	Fallow, bare soil, HSG A (2S, 22S, 23S, 24S, 27S, 28S, 29S, 30S, 36S, 37S, 38S, 39S, 40S, 43S, 44S, 45S, 46S, 47S, 48S, 49S, 50S, 51S, 52S, 53S, 54S, 55S, 56S, 57S, 58S, 62S, 63S, 64S, 65S, 66S, 69S, 70S, 71S, 72S, 73S, 74S)
391.970	91	Fallow, bare soil, HSG C (41S, 42S, 59S, 60S, 61S, 67S, 68S)
144.090	96	Gravel surface, HSG A (27S, 49S, 50S, 51S, 52S, 53S, 54S, 55S, 56S, 57S, 58S, 62S, 63S, 64S, 65S, 66S, 69S, 70S, 71S, 72S, 73S, 74S)
17.250	96	Gravel surface, HSG C (59S, 60S, 61S, 67S, 68S)
6,454.300	**78**	**TOTAL AREA**

Soil Listing (all nodes)

Area (acres)	Soil Group	Subcatchment Numbers
5,764.040	HSG A	2S, 22S, 23S, 24S, 25S, 26S, 27S, 28S, 29S, 30S, 31S, 32S, 36S, 37S, 38S, 39S, 40S, 43S, 44S, 45S, 46S, 47S, 48S, 49S, 50S, 51S, 52S, 53S, 54S, 55S, 56S, 57S, 58S, 62S, 63S, 64S, 65S, 66S, 69S, 70S, 71S, 72S, 73S, 74S
0.000	HSG B	
690.260	HSG C	33S, 34S, 35S, 41S, 42S, 59S, 60S, 61S, 67S, 68S
0.000	HSG D	
0.000	Other	
6,454.300		**TOTAL AREA**

Ground Covers (all nodes)

HSG-A (acres)	HSG-B (acres)	HSG-C (acres)	HSG-D (acres)	Other (acres)	Total (acres)	Ground Cover	Subcatchment Numbers
277.650	0.000	281.040	0.000	0.000	558.690	Desert shrub range, Poor	25S, 26S, 31S, 32S, 33S, 34S, 35S
5,342.300	0.000	391.970	0.000	0.000	5,734.270	Fallow, bare soil	2S, 22S, 23S, 24S, 27S, 28S, 29S, 30S, 36S, 37S, 38S, 39S, 40S, 41S, 42S, 43S, 44S, 45S, 46S, 47S, 48S, 49S, 50S, 51S, 52S, 53S, 54S, 55S, 56S, 57S, 58S, 59S, 60S, 61S, 62S, 63S, 64S, 65S, 66S, 67S, 68S, 69S, 70S, 71S, 72S, 73S, 74S
144.090	0.000	17.250	0.000	0.000	161.340	Gravel surface	27S, 49S, 50S, 51S, 52S, 53S, 54S, 55S, 56S, 57S, 58S, 59S, 60S, 61S, 62S, 63S, 64S, 65S, 66S, 67S, 68S, 69S, 70S, 71S, 72S, 73S, 74S
5,764.040	**0.000**	**690.260**	**0.000**	**0.000**	**6,454.300**	**TOTAL AREA**	

Time span=0.00-48.00 hrs, dt=0.05 hrs, 961 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment 2S: DA-1 Runoff Area=129.980 ac 0.00% Impervious Runoff Depth=0.53"
Flow Length=3,625' Slope=0.0060 '/' Tc=125.9 min CN=77 Runoff=15.68 cfs 5.752 af

Subcatchment 22S: DA-2 Runoff Area=238.470 ac 0.00% Impervious Runoff Depth=0.53"
Flow Length=6,625' Slope=0.0066 '/' Tc=194.5 min CN=77 Runoff=21.28 cfs 10.552 af

Subcatchment 23S: DA-3 Runoff Area=388.350 ac 0.00% Impervious Runoff Depth=0.53"
Flow Length=7,950' Slope=0.0059 '/' Tc=238.0 min CN=77 Runoff=30.20 cfs 17.185 af

Subcatchment 24S: DA-4 Runoff Area=214.310 ac 0.00% Impervious Runoff Depth=0.53"
Flow Length=4,325' Slope=0.0054 '/' Tc=152.9 min CN=77 Runoff=22.89 cfs 9.483 af

Subcatchment 25S: DA-1 Runoff Area=58.940 ac 0.00% Impervious Runoff Depth=0.14"
Flow Length=3,700' Slope=0.0063 '/' Tc=182.9 min CN=63 Runoff=0.89 cfs 0.682 af

Subcatchment 26S: DA-2 Runoff Area=108.100 ac 0.00% Impervious Runoff Depth=0.14"
Flow Length=4,300' Slope=0.0060 '/' Tc=211.3 min CN=63 Runoff=1.55 cfs 1.251 af

Subcatchment 27S: DA-1 Runoff Area=129.980 ac 0.00% Impervious Runoff Depth=0.57"
Flow Length=3,625' Slope=0.0060 '/' Tc=122.2 min CN=78 Runoff=17.71 cfs 6.182 af

Subcatchment 28S: DA-1 Runoff Area=162.080 ac 0.00% Impervious Runoff Depth=0.53"
Flow Length=3,800' Slope=0.0107 '/' Tc=97.9 min CN=77 Runoff=23.29 cfs 7.172 af

Subcatchment 29S: DA-2 Runoff Area=324.340 ac 0.00% Impervious Runoff Depth=0.53"
Flow Length=6,530' Slope=0.0095 '/' Tc=160.2 min CN=77 Runoff=33.14 cfs 14.352 af

Subcatchment 30S: DA-3 Runoff Area=322.450 ac 0.00% Impervious Runoff Depth=0.53"
Flow Length=8,000' Slope=0.0086 '/' Tc=198.1 min CN=77 Runoff=28.82 cfs 14.269 af

Subcatchment 31S: DA-1 Runoff Area=52.610 ac 0.00% Impervious Runoff Depth=0.14"
Flow Length=2,700' Slope=0.0174 '/' Tc=85.5 min CN=63 Runoff=1.03 cfs 0.609 af

Subcatchment 32S: DA-2 Runoff Area=58.000 ac 0.00% Impervious Runoff Depth=0.14"
Flow Length=2,750' Slope=0.0185 '/' Tc=84.2 min CN=63 Runoff=1.14 cfs 0.671 af

Subcatchment 33S: DA-1 Runoff Area=105.010 ac 0.00% Impervious Runoff Depth=0.91"
Flow Length=2,700' Slope=0.0181 '/' Tc=44.3 min CN=85 Runoff=47.42 cfs 7.934 af

Subcatchment 34S: DA-2 Runoff Area=143.020 ac 0.00% Impervious Runoff Depth=0.91"
Flow Length=2,700' Slope=0.0177 '/' Tc=44.8 min CN=85 Runoff=63.99 cfs 10.806 af

Subcatchment 35S: DA-3 Runoff Area=33.010 ac 0.00% Impervious Runoff Depth=0.91"
Flow Length=1,350' Slope=0.0154 '/' Tc=27.6 min CN=85 Runoff=19.18 cfs 2.494 af

Subcatchment 36S: DA-1 Runoff Area=16.110 ac 0.00% Impervious Runoff Depth=0.53"
Flow Length=850' Slope=0.0167 '/' Tc=23.7 min CN=77 Runoff=5.17 cfs 0.713 af

Subcatchment 37S: DA-2 Runoff Area=8.230 ac 0.00% Impervious Runoff Depth=0.53"
Flow Length=400' Slope=0.0285 '/' Tc=9.9 min CN=77 Runoff=3.90 cfs 0.364 af

Subcatchment 38S: DA-1 Runoff Area=15.580 ac 0.00% Impervious Runoff Depth=0.53"
Flow Length=950' Slope=0.0112 '/' Tc=31.6 min CN=77 Runoff=4.31 cfs 0.689 af

Subcatchment 39S: DA-2 Runoff Area=105.970 ac 0.00% Impervious Runoff Depth=0.53"
Flow Length=4,150' Slope=0.0150 '/' Tc=88.7 min CN=77 Runoff=16.22 cfs 4.689 af

Subcatchment 40S: DA-3 Runoff Area=108.630 ac 0.00% Impervious Runoff Depth=0.53"
Flow Length=3,500' Slope=0.0165 '/' Tc=73.8 min CN=77 Runoff=18.78 cfs 4.807 af

Subcatchment 41S: DA-4 Runoff Area=24.100 ac 0.00% Impervious Runoff Depth=1.30"
Flow Length=2,600' Slope=0.0154 '/' Tc=37.0 min CN=91 Runoff=17.52 cfs 2.602 af

Subcatchment 42S: DA-1 Runoff Area=39.990 ac 0.00% Impervious Runoff Depth=1.30"
Flow Length=1,300' Slope=0.0153 '/' Tc=21.3 min CN=91 Runoff=38.63 cfs 4.318 af

Subcatchment 43S: DA-1 Runoff Area=137.250 ac 0.00% Impervious Runoff Depth=0.53"
Flow Length=3,800' Slope=0.0089 '/' Tc=107.4 min CN=77 Runoff=18.58 cfs 6.073 af

Subcatchment 44S: DA-2 Runoff Area=32.090 ac 0.00% Impervious Runoff Depth=0.53"
Flow Length=1,900' Slope=0.0107 '/' Tc=56.2 min CN=77 Runoff=6.54 cfs 1.420 af

Subcatchment 45S: DA-1 Runoff Area=52.640 ac 0.00% Impervious Runoff Depth=0.53"
Flow Length=2,050' Slope=0.0107 '/' Tc=59.8 min CN=77 Runoff=10.37 cfs 2.329 af

Subcatchment 46S: DA-2 Runoff Area=158.910 ac 0.00% Impervious Runoff Depth=0.53"
Flow Length=4,200' Slope=0.0137 '/' Tc=93.7 min CN=77 Runoff=23.58 cfs 7.032 af

Subcatchment 47S: DA-3 Runoff Area=36.450 ac 0.00% Impervious Runoff Depth=0.53"
Flow Length=1,800' Slope=0.0140 '/' Tc=47.1 min CN=77 Runoff=8.23 cfs 1.613 af

Subcatchment 48S: DA-4 Runoff Area=152.530 ac 0.00% Impervious Runoff Depth=0.53"
Flow Length=3,700' Slope=0.0127 '/' Tc=88.0 min CN=77 Runoff=23.64 cfs 6.750 af

Subcatchment 49S: DA-2 Runoff Area=238.470 ac 0.00% Impervious Runoff Depth=0.57"
Flow Length=6,625' Slope=0.0066 '/' Tc=188.8 min CN=78 Runoff=23.88 cfs 11.343 af

Subcatchment 50S: DA-3 Runoff Area=388.350 ac 0.00% Impervious Runoff Depth=0.57"
Flow Length=7,950' Slope=0.0059 '/' Tc=231.0 min CN=78 Runoff=34.02 cfs 18.472 af

Subcatchment 51S: DA-4 Runoff Area=214.310 ac 0.00% Impervious Runoff Depth=0.57"
Flow Length=4,325' Slope=0.0054 '/' Tc=148.4 min CN=78 Runoff=25.59 cfs 10.194 af

Subcatchment 52S: DA-1 Runoff Area=58.940 ac 0.00% Impervious Runoff Depth=0.57"
Flow Length=3,700' Slope=0.0063 '/' Tc=121.2 min CN=78 Runoff=8.06 cfs 2.803 af

Subcatchment 53S: DA-2 Runoff Area=108.100 ac 0.00% Impervious Runoff Depth=0.57"
Flow Length=4,300' Slope=0.0060 '/' Tc=140.1 min CN=78 Runoff=13.38 cfs 5.142 af

Subcatchment 54S: DA-1 Runoff Area=162.080 ac 0.00% Impervious Runoff Depth=0.57"
Flow Length=3,800' Slope=0.0107 '/' Tc=95.0 min CN=78 Runoff=26.07 cfs 7.709 af

Subcatchment 55S: DA-2 Runoff Area=324.340 ac 0.00% Impervious Runoff Depth=0.57"
Flow Length=6,530' Slope=0.0095 '/' Tc=155.5 min CN=78 Runoff=37.07 cfs 15.427 af

Subcatchment 56S: DA-3 Runoff Area=322.450 ac 0.00% Impervious Runoff Depth=0.57"
Flow Length=8,000' Slope=0.0086 '/' Tc=192.3 min CN=78 Runoff=31.99 cfs 15.337 af

Subcatchment 57S: DA-1 Runoff Area=52.610 ac 0.00% Impervious Runoff Depth=0.57"
Flow Length=2,700' Slope=0.0174 '/' Tc=56.7 min CN=78 Runoff=11.76 cfs 2.502 af

Subcatchment 58S: DA-2 Runoff Area=58.000 ac 0.00% Impervious Runoff Depth=0.57"
Flow Length=2,750' Slope=0.0185 '/' Tc=55.8 min CN=78 Runoff=13.14 cfs 2.759 af

Subcatchment 59S: DA-1 Runoff Area=105.010 ac 0.00% Impervious Runoff Depth=1.30"
Flow Length=2,700' Slope=0.0181 '/' Tc=35.2 min CN=91 Runoff=78.52 cfs 11.339 af

Subcatchment 60S: DA-2 Runoff Area=143.020 ac 0.00% Impervious Runoff Depth=1.30"
Flow Length=2,700' Slope=0.0177 '/' Tc=35.6 min CN=91 Runoff=106.23 cfs 15.443 af

Subcatchment 61S: DA-3 Runoff Area=33.010 ac 0.00% Impervious Runoff Depth=1.30"
Flow Length=1,350' Slope=0.0154 '/' Tc=21.9 min CN=91 Runoff=31.46 cfs 3.564 af

Subcatchment 62S: DA-1 Runoff Area=16.110 ac 0.00% Impervious Runoff Depth=0.57"
Flow Length=850' Slope=0.0167 '/' Tc=23.0 min CN=78 Runoff=5.79 cfs 0.766 af

Subcatchment 63S: DA-2 Runoff Area=8.230 ac 0.00% Impervious Runoff Depth=0.57"
Flow Length=400' Slope=0.0285 '/' Tc=9.6 min CN=78 Runoff=4.35 cfs 0.391 af

Subcatchment 64S: DA-1 Runoff Area=15.580 ac 0.00% Impervious Runoff Depth=0.57"
Flow Length=950' Slope=0.0112 '/' Tc=30.6 min CN=78 Runoff=4.87 cfs 0.741 af

Subcatchment 65S: DA-2 Runoff Area=105.970 ac 0.00% Impervious Runoff Depth=0.57"
Flow Length=4,150' Slope=0.0150 '/' Tc=86.1 min CN=78 Runoff=18.24 cfs 5.040 af

Subcatchment 66S: DA-3 Runoff Area=108.630 ac 0.00% Impervious Runoff Depth=0.57"
Flow Length=3,500' Slope=0.0165 '/' Tc=71.7 min CN=78 Runoff=21.08 cfs 5.167 af

Subcatchment 67S: DA-4 Runoff Area=24.100 ac 0.00% Impervious Runoff Depth=1.30"
Flow Length=2,600' Slope=0.0154 '/' Tc=37.0 min CN=91 Runoff=17.52 cfs 2.602 af

Subcatchment 68S: DA-1 Runoff Area=39.990 ac 0.00% Impervious Runoff Depth=1.30"
Flow Length=1,300' Slope=0.0153 '/' Tc=21.3 min CN=91 Runoff=38.63 cfs 4.318 af

Subcatchment 69S: DA-1 Runoff Area=137.250 ac 0.00% Impervious Runoff Depth=0.57"
Flow Length=3,800' Slope=0.0089 '/' Tc=104.2 min CN=78 Runoff=20.74 cfs 6.528 af

Subcatchment 70S: DA-2 Runoff Area=32.090 ac 0.00% Impervious Runoff Depth=0.57"
Flow Length=1,900' Slope=0.0107 '/' Tc=54.6 min CN=78 Runoff=7.35 cfs 1.526 af

Subcatchment 71S: DA-1 Runoff Area=52.640 ac 0.00% Impervious Runoff Depth=0.57"
Flow Length=2,050' Slope=0.0107 '/' Tc=58.0 min CN=78 Runoff=11.59 cfs 2.504 af

Subcatchment 72S: DA-2 Runoff Area=158.910 ac 0.00% Impervious Runoff Depth=0.57"
Flow Length=4,200' Slope=0.0137 '/' Tc=91.0 min CN=78 Runoff=26.46 cfs 7.558 af

Subcatchment 73S: DA-3 Runoff Area=36.450 ac 0.00% Impervious Runoff Depth=0.57"
Flow Length=1,800' Slope=0.0140 '/' Tc=45.7 min CN=78 Runoff=9.21 cfs 1.734 af

Subcatchment 74S: DA-4 Runoff Area=152.530 ac 0.00% Impervious Runoff Depth=0.57"
Flow Length=3,700' Slope=0.0127 '/' Tc=85.4 min CN=78 Runoff=26.47 cfs 7.255 af

Pond 22P: P-1 DA-1 Peak Elev=574.41' Storage=1.398 af Inflow=17.71 cfs 6.182 af
Outflow=15.64 cfs 5.132 af

Pond 23P: P-1 DA-2 Peak Elev=574.49' Storage=2.935 af Inflow=23.88 cfs 11.343 af
Outflow=20.67 cfs 9.243 af

Pond 24P: P-1 DA-3 Peak Elev=574.62' Storage=5.034 af Inflow=34.02 cfs 18.472 af
Outflow=30.16 cfs 14.722 af

Pond 26P: P-1 DA-4 Peak Elev=574.51' Storage=2.446 af Inflow=25.59 cfs 10.194 af
Outflow=22.21 cfs 8.394 af

Pond 27P: P-2 DA-1 Peak Elev=574.06' Storage=2.670 af Inflow=8.06 cfs 2.803 af
Outflow=0.82 cfs 0.203 af

Pond 28P: P-2 DA-2 Peak Elev=574.09' Storage=4.827 af Inflow=13.38 cfs 5.142 af
Outflow=1.49 cfs 0.517 af

Pond 29P: P-3 DA-1 Peak Elev=574.51' Storage=1.564 af Inflow=26.07 cfs 7.709 af
Outflow=22.26 cfs 6.634 af

Pond 30P: P-3 DA-2 Peak Elev=574.65' Storage=3.641 af Inflow=37.07 cfs 15.427 af
Outflow=32.51 cfs 12.802 af

Pond 31P: P-3 DA-3 Peak Elev=574.60' Storage=3.779 af Inflow=31.99 cfs 15.337 af
Outflow=28.39 cfs 12.587 af

Pond 32P: P-4 DA-1 Peak Elev=574.07' Storage=2.128 af Inflow=11.76 cfs 2.502 af
Outflow=1.02 cfs 0.452 af

Pond 33P: P-4 DA-2 Peak Elev=574.07' Storage=2.337 af Inflow=13.14 cfs 2.759 af
Outflow=1.10 cfs 0.534 af

Pond 34P: P-5 DA-1 Peak Elev=574.80' Storage=4.261 af Inflow=78.52 cfs 11.339 af
Outflow=46.83 cfs 8.589 af

Pond 35P: P-5 DA-2 Peak Elev=574.95' Storage=5.883 af Inflow=106.23 cfs 15.443 af
Outflow=61.71 cfs 11.693 af

Pond 36P: P-5 DA-3 Peak Elev=574.45' Storage=1.278 af Inflow=31.46 cfs 3.564 af
Outflow=17.90 cfs 2.714 af

Pond 37P: P-6 DA-1 Peak Elev=574.20' Storage=0.110 af Inflow=5.79 cfs 0.766 af
Outflow=5.09 cfs 0.686 af

Pond 38P: P-6 DA-2 Peak Elev=574.17' Storage=0.034 af Inflow=4.35 cfs 0.391 af
Outflow=3.79 cfs 0.374 af

Pond 39P: P-7 DA-1 Peak Elev=574.18' Storage=0.121 af Inflow=4.87 cfs 0.741 af
Outflow=4.28 cfs 0.646 af

Pond 40P: P-7 DA-2 Peak Elev=574.42' Storage=1.054 af Inflow=18.24 cfs 5.040 af
Outflow=16.03 cfs 4.240 af

Pond 41P: P-7 DA-3 Peak Elev=574.46' Storage=0.999 af Inflow=21.08 cfs 5.167 af
Outflow=18.73 cfs 4.417 af

Pond 42P: P-7 DA-4 Peak Elev=574.43' Storage=0.144 af Inflow=17.52 cfs 2.602 af
Outflow=16.85 cfs 2.562 af

Pond 43P: P-8 DA-1 Peak Elev=574.67' Storage=0.320 af Inflow=38.63 cfs 4.318 af
Outflow=35.03 cfs 4.243 af

Pond 44P: P-9 DA-1 Peak Elev=574.46' Storage=1.441 af Inflow=20.74 cfs 6.528 af
Outflow=18.36 cfs 5.403 af

Pond 45P: P-9 DA-2 Peak Elev=574.24' Storage=0.294 af Inflow=7.35 cfs 1.526 af
Outflow=6.49 cfs 1.291 af

Pond 46P: P-10 DA-1 Peak Elev=574.32' Storage=0.479 af Inflow=11.59 cfs 2.504 af
Outflow=10.26 cfs 2.129 af

Pond 47P: P-10 DA-2 Peak Elev=574.53' Storage=1.588 af Inflow=26.46 cfs 7.558 af
Outflow=23.31 cfs 6.383 af

Pond 48P: P-10 DA-3 Peak Elev=574.27' Storage=0.330 af Inflow=9.21 cfs 1.734 af
Outflow=8.05 cfs 1.469 af

Pond 49P: P-10 DA-4 Peak Elev=574.53' Storage=1.446 af Inflow=26.47 cfs 7.255 af
Outflow=23.52 cfs 6.205 af

Total Runoff Area = 6,454.300 ac Runoff Volume = 320.963 af Average Runoff Depth = 0.60"
100.00% Pervious = 6,454.300 ac 0.00% Impervious = 0.000 ac

Summary for Subcatchment 2S: DA-1

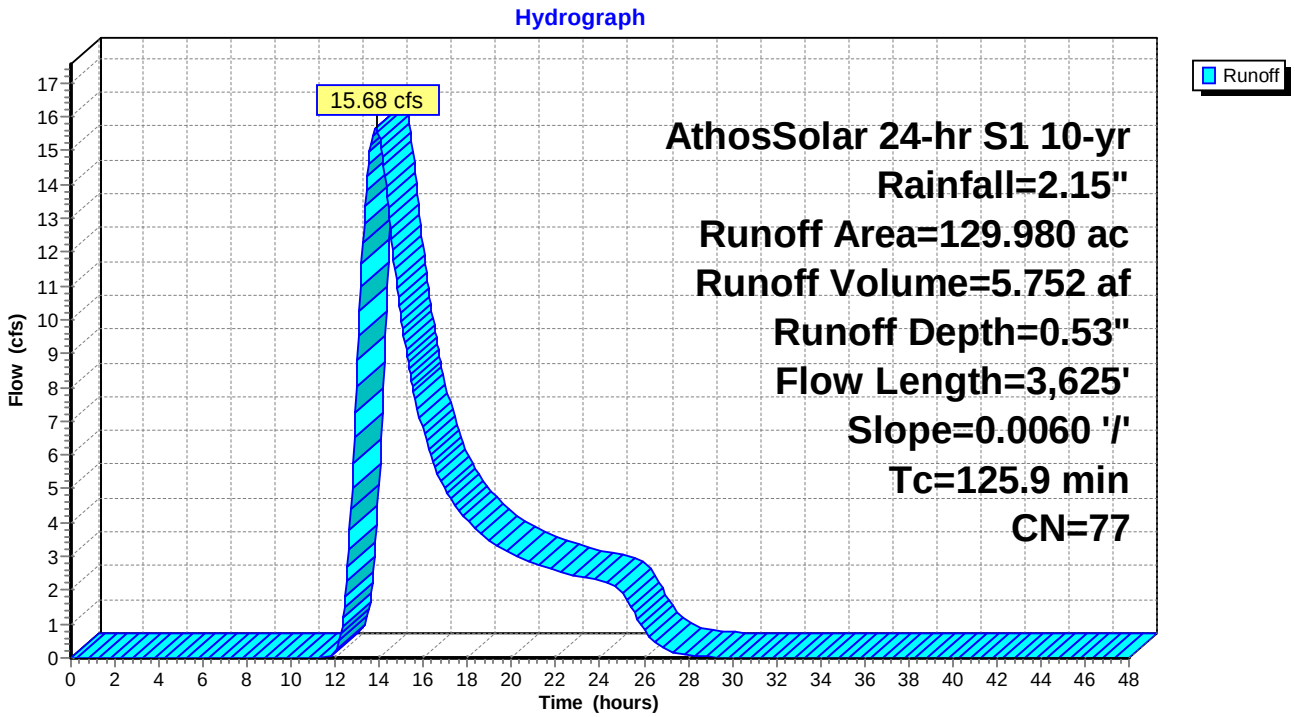
Runoff = 15.68 cfs @ 13.84 hrs, Volume= 5.752 af, Depth= 0.53"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs
AthosSolar 24-hr S1 10-yr Rainfall=2.15"

Area (ac)	CN	Description
129.980	77	Fallow, bare soil, HSG A
129.980		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
125.9	3,625	0.0060	0.48		**Lag/CN Method,**

Subcatchment 2S: DA-1



Summary for Subcatchment 22S: DA-2

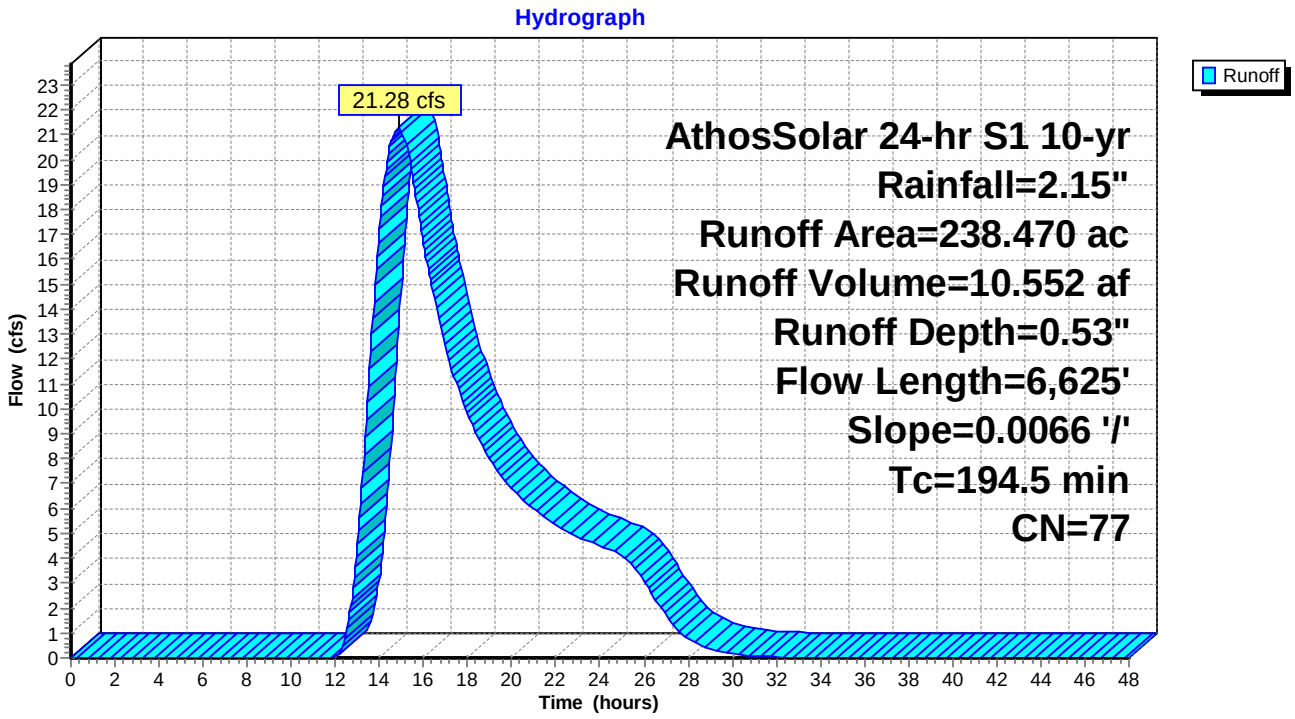
Runoff = 21.28 cfs @ 14.89 hrs, Volume= 10.552 af, Depth= 0.53"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs
AthosSolar 24-hr S1 10-yr Rainfall=2.15"

Area (ac)	CN	Description
238.470	77	Fallow, bare soil, HSG A
238.470		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
194.5	6,625	0.0066	0.57		**Lag/CN Method,**

Subcatchment 22S: DA-2



Summary for Subcatchment 23S: DA-3

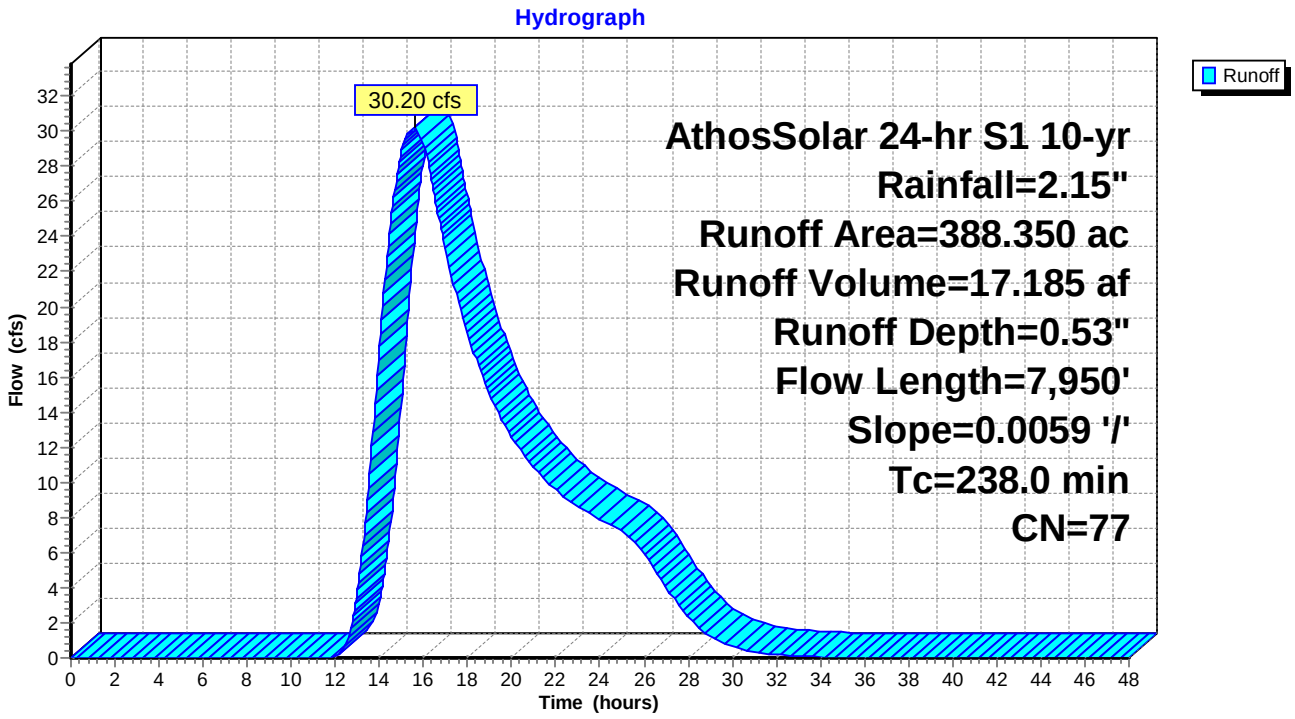
Runoff = 30.20 cfs @ 15.59 hrs, Volume= 17.185 af, Depth= 0.53"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs
AthosSolar 24-hr S1 10-yr Rainfall=2.15"

Area (ac)	CN	Description
388.350	77	Fallow, bare soil, HSG A
388.350		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
238.0	7,950	0.0059	0.56		**Lag/CN Method,**

Subcatchment 23S: DA-3



Summary for Subcatchment 24S: DA-4

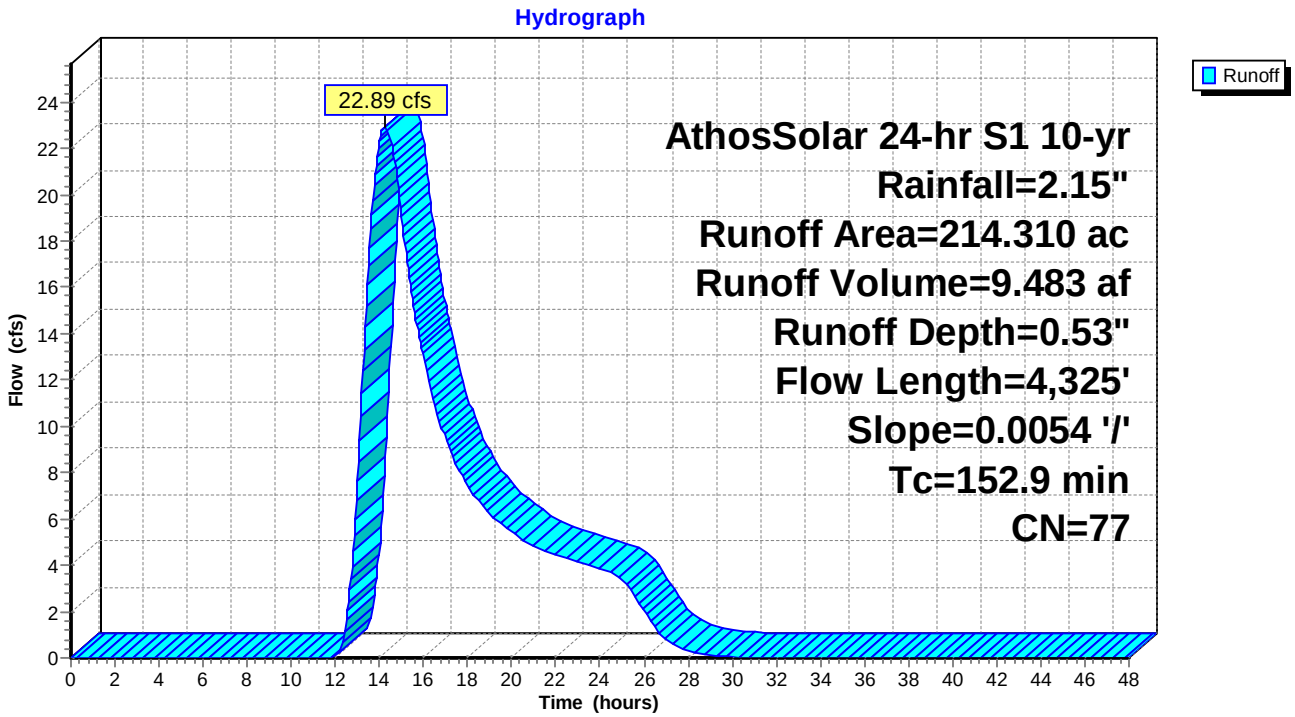
Runoff = 22.89 cfs @ 14.24 hrs, Volume= 9.483 af, Depth= 0.53"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs
AthosSolar 24-hr S1 10-yr Rainfall=2.15"

Area (ac)	CN	Description
214.310	77	Fallow, bare soil, HSG A
214.310		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
152.9	4,325	0.0054	0.47		**Lag/CN Method,**

Subcatchment 24S: DA-4



Summary for Subcatchment 25S: DA-1

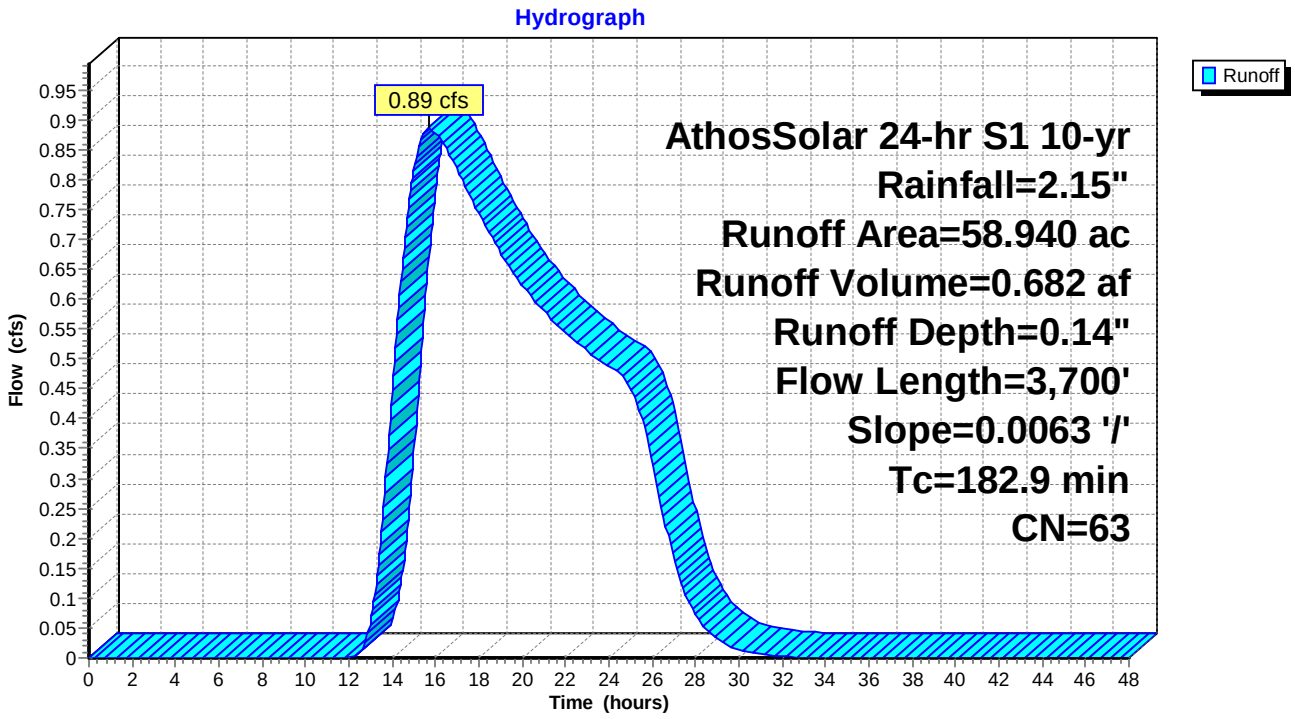
Runoff = 0.89 cfs @ 15.66 hrs, Volume= 0.682 af, Depth= 0.14"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs
AthosSolar 24-hr S1 10-yr Rainfall=2.15"

Area (ac)	CN	Description
58.940	63	Desert shrub range, Poor, HSG A
58.940		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
182.9	3,700	0.0063	0.34		**Lag/CN Method,**

Subcatchment 25S: DA-1



Summary for Subcatchment 26S: DA-2

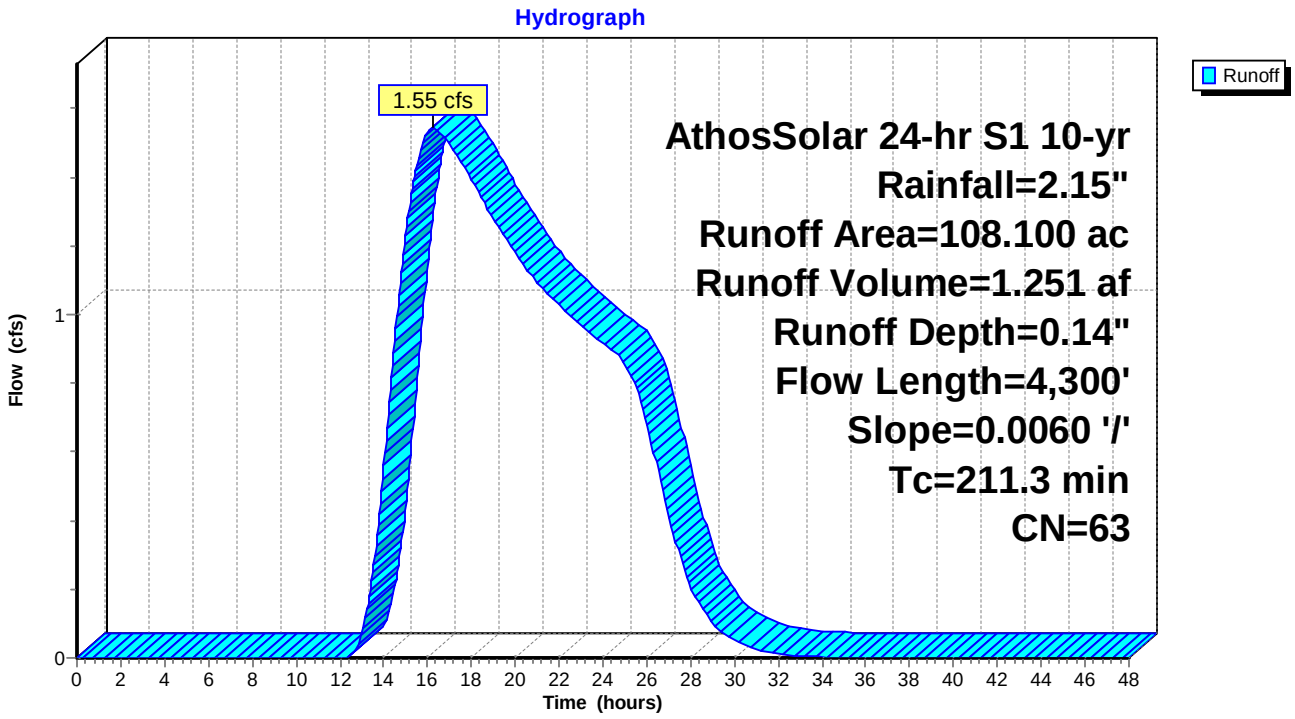
Runoff = 1.55 cfs @ 16.21 hrs, Volume= 1.251 af, Depth= 0.14"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs
AthosSolar 24-hr S1 10-yr Rainfall=2.15"

Area (ac)	CN	Description
108.100	63	Desert shrub range, Poor, HSG A
108.100		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
211.3	4,300	0.0060	0.34		**Lag/CN Method,**

Subcatchment 26S: DA-2



Summary for Subcatchment 27S: DA-1

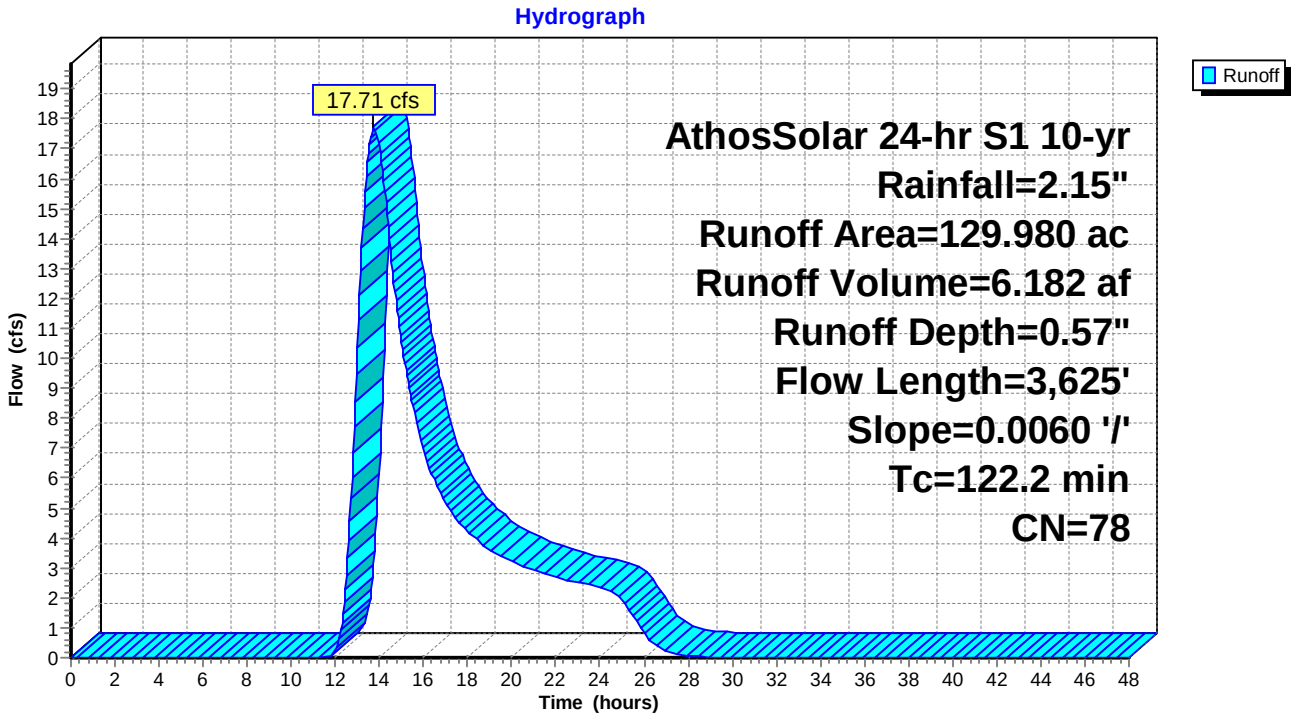
Runoff = 17.71 cfs @ 13.74 hrs, Volume= 6.182 af, Depth= 0.57"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs
AthosSolar 24-hr S1 10-yr Rainfall=2.15"

Area (ac)	CN	Description
123.480	77	Fallow, bare soil, HSG A
6.500	96	Gravel surface, HSG A
129.980	78	Weighted Average
129.980		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
122.2	3,625	0.0060	0.49		**Lag/CN Method,**

Subcatchment 27S: DA-1



Summary for Subcatchment 28S: DA-1

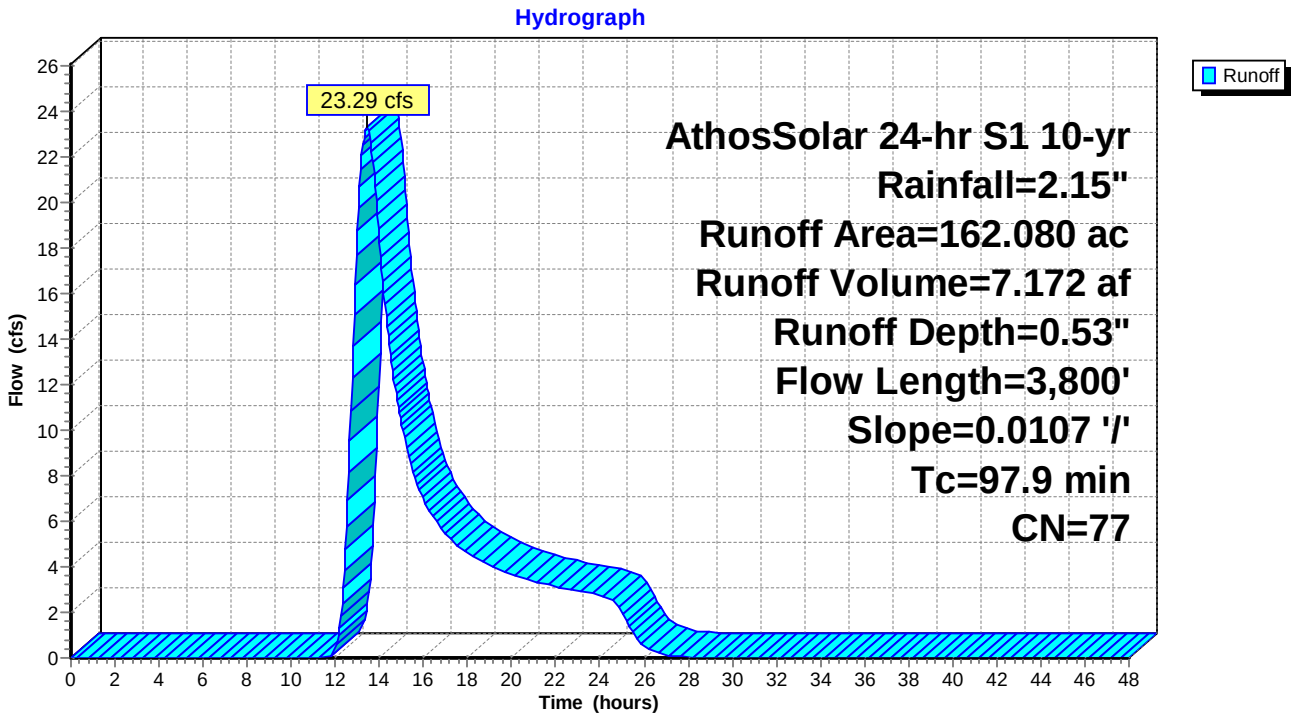
Runoff = 23.29 cfs @ 13.41 hrs, Volume= 7.172 af, Depth= 0.53"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs
AthosSolar 24-hr S1 10-yr Rainfall=2.15"

Area (ac)	CN	Description
162.080	77	Fallow, bare soil, HSG A
162.080		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
97.9	3,800	0.0107	0.65		**Lag/CN Method,**

Subcatchment 28S: DA-1



Summary for Subcatchment 29S: DA-2

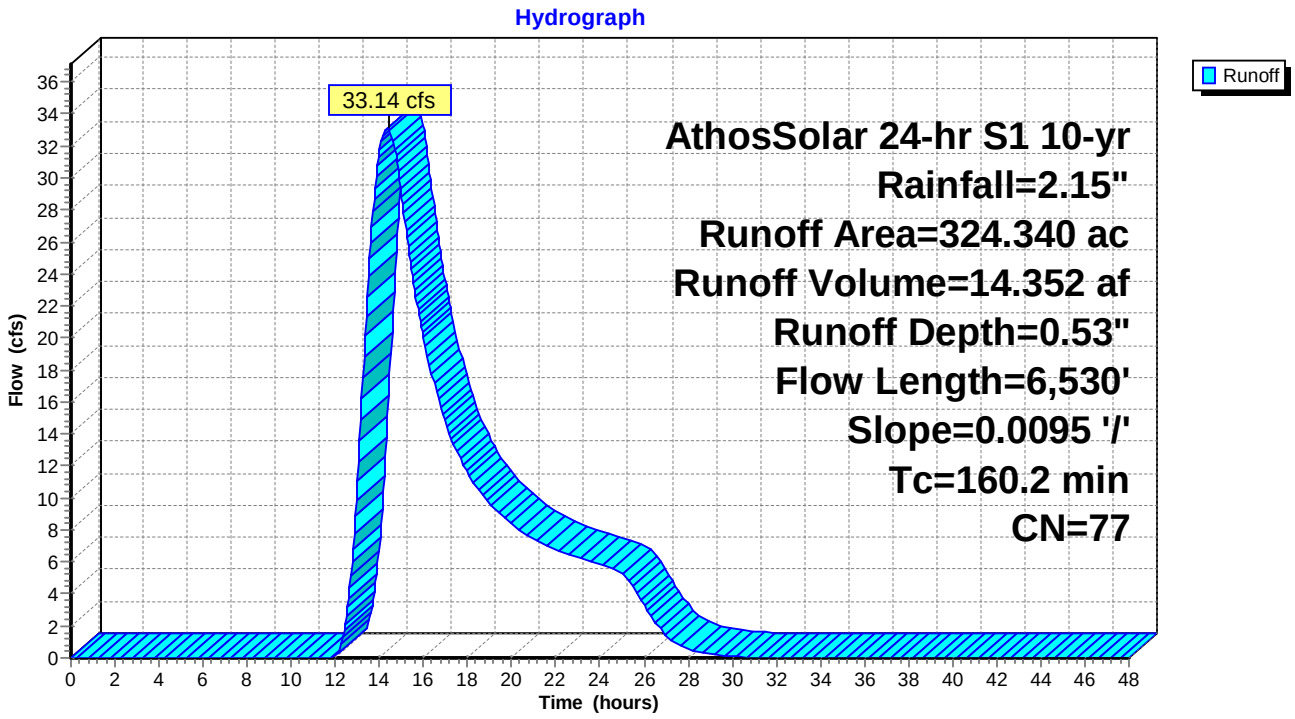
Runoff = 33.14 cfs @ 14.39 hrs, Volume= 14.352 af, Depth= 0.53"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs
AthosSolar 24-hr S1 10-yr Rainfall=2.15"

Area (ac)	CN	Description
324.340	77	Fallow, bare soil, HSG A
324.340		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
160.2	6,530	0.0095	0.68		**Lag/CN Method,**

Subcatchment 29S: DA-2



Summary for Subcatchment 30S: DA-3

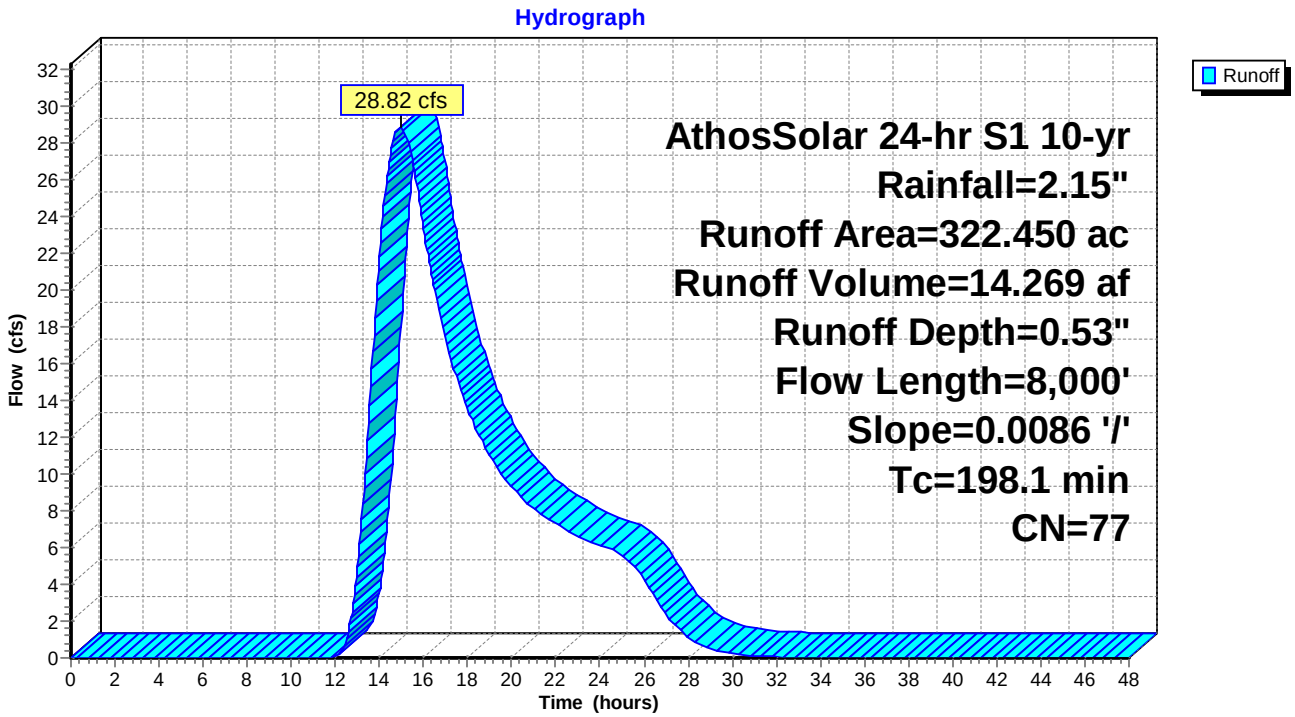
Runoff = 28.82 cfs @ 14.94 hrs, Volume= 14.269 af, Depth= 0.53"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs
AthosSolar 24-hr S1 10-yr Rainfall=2.15"

Area (ac)	CN	Description
322.450	77	Fallow, bare soil, HSG A
322.450		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
198.1	8,000	0.0086	0.67		**Lag/CN Method,**

Subcatchment 30S: DA-3



Summary for Subcatchment 31S: DA-1

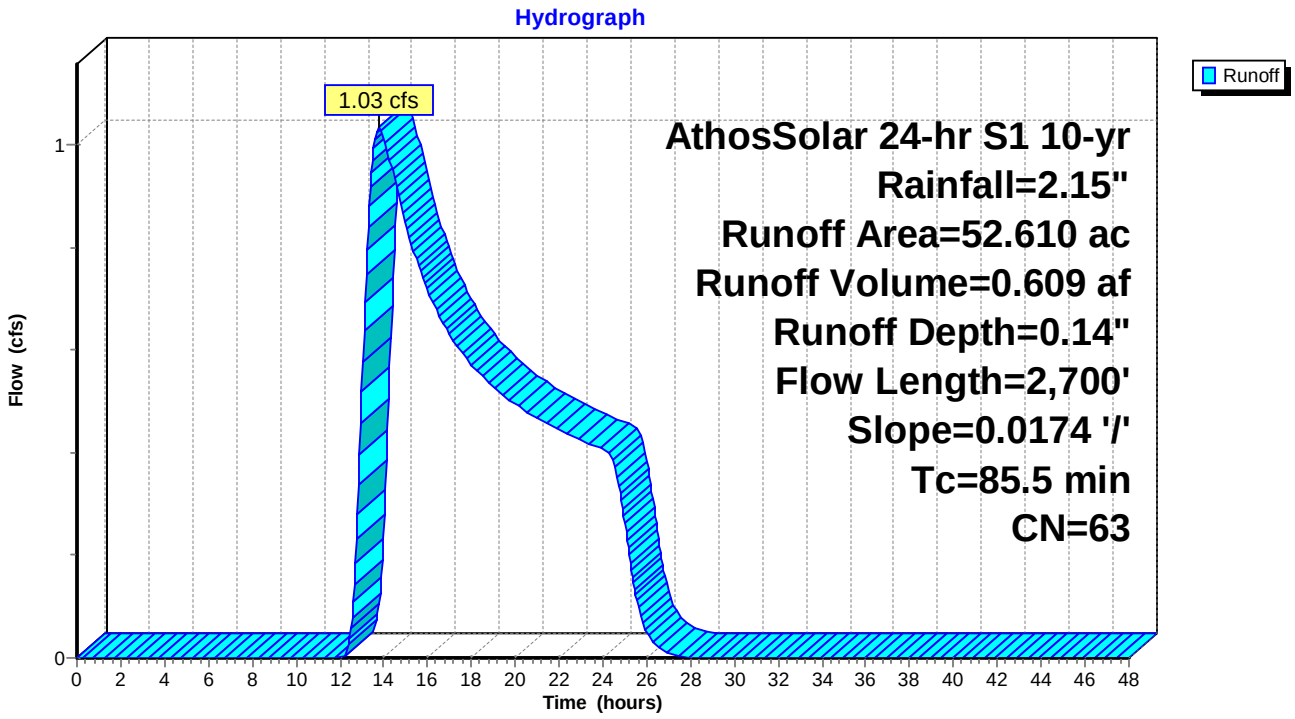
Runoff = 1.03 cfs @ 13.79 hrs, Volume= 0.609 af, Depth= 0.14"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs
AthosSolar 24-hr S1 10-yr Rainfall=2.15"

Area (ac)	CN	Description
52.610	63	Desert shrub range, Poor, HSG A
52.610		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
85.5	2,700	0.0174	0.53		**Lag/CN Method,**

Subcatchment 31S: DA-1



Summary for Subcatchment 32S: DA-2

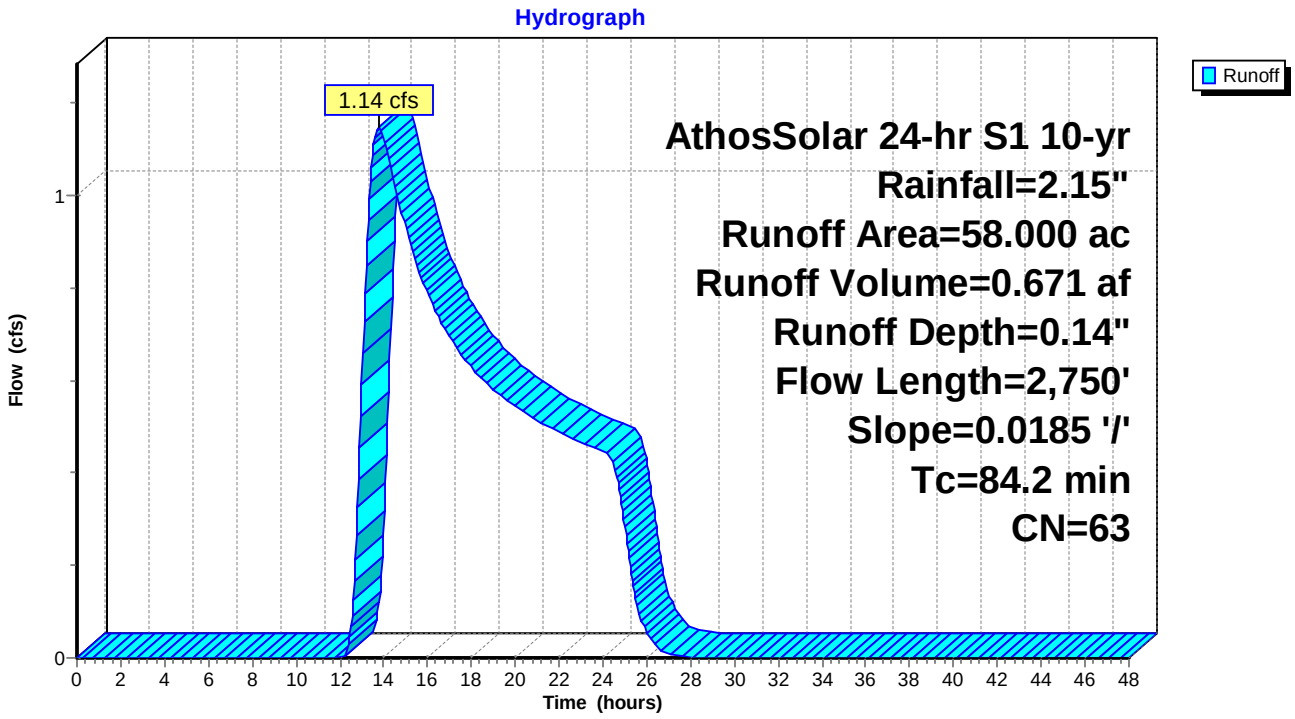
Runoff = 1.14 cfs @ 13.76 hrs, Volume= 0.671 af, Depth= 0.14"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs
AthosSolar 24-hr S1 10-yr Rainfall=2.15"

Area (ac)	CN	Description
58.000	63	Desert shrub range, Poor, HSG A
58.000		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
84.2	2,750	0.0185	0.54		**Lag/CN Method,**

Subcatchment 32S: DA-2



Summary for Subcatchment 33S: DA-1

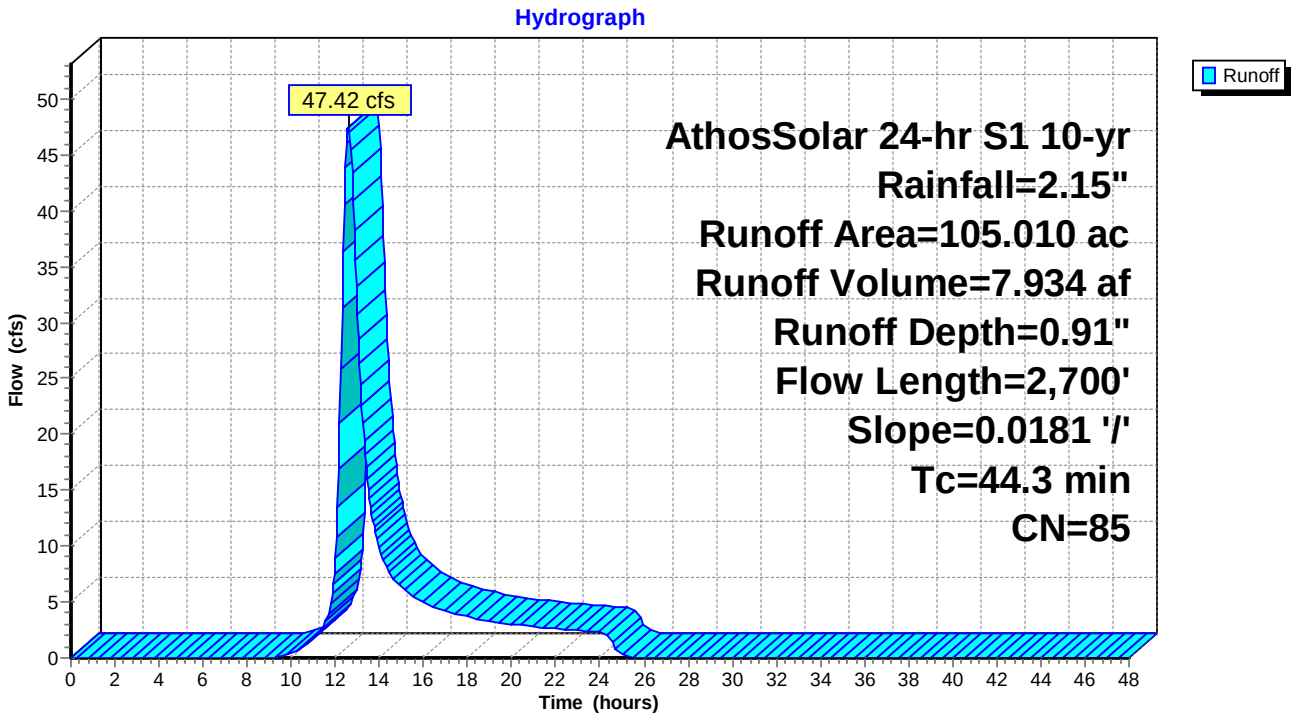
Runoff = 47.42 cfs @ 12.58 hrs, Volume= 7.934 af, Depth= 0.91"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs
AthosSolar 24-hr S1 10-yr Rainfall=2.15"

Area (ac)	CN	Description
105.010	85	Desert shrub range, Poor, HSG C
105.010		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
44.3	2,700	0.0181	1.02		**Lag/CN Method,**

Subcatchment 33S: DA-1



Summary for Subcatchment 34S: DA-2

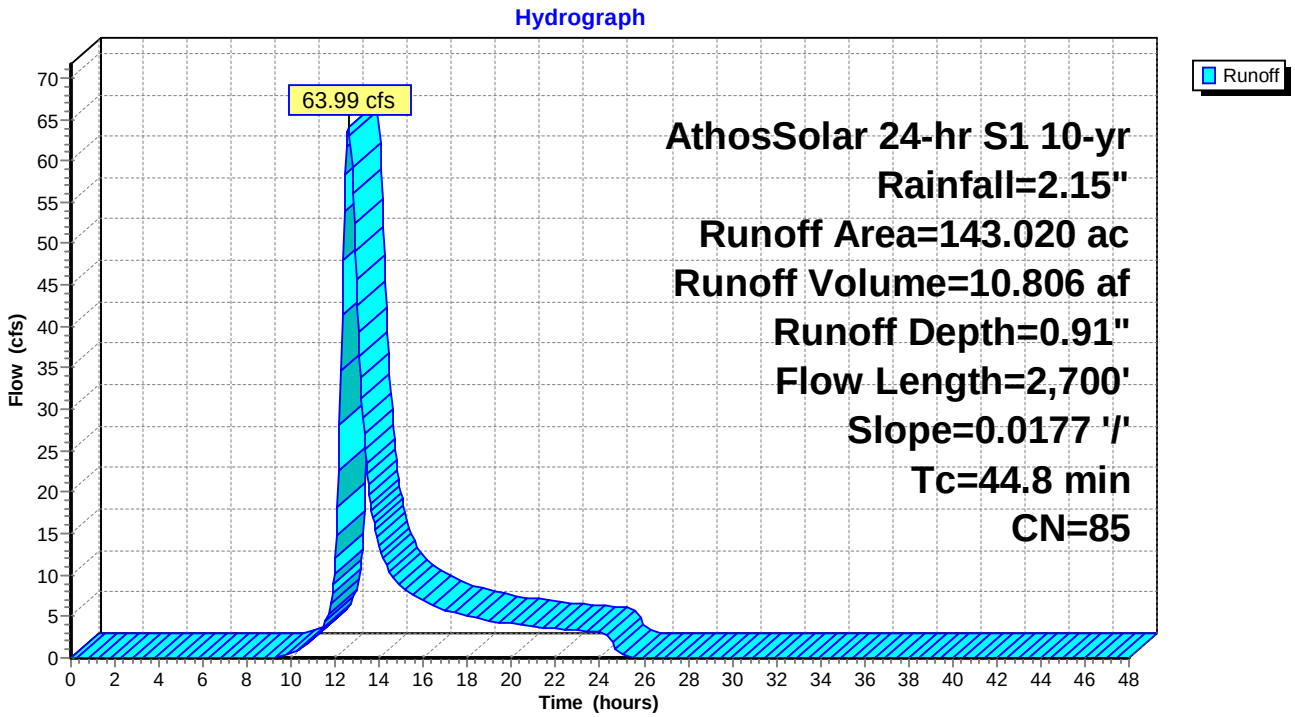
Runoff = 63.99 cfs @ 12.60 hrs, Volume= 10.806 af, Depth= 0.91"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs
AthosSolar 24-hr S1 10-yr Rainfall=2.15"

Area (ac)	CN	Description
143.020	85	Desert shrub range, Poor, HSG C
143.020		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
44.8	2,700	0.0177	1.00		**Lag/CN Method,**

Subcatchment 34S: DA-2



Summary for Subcatchment 35S: DA-3

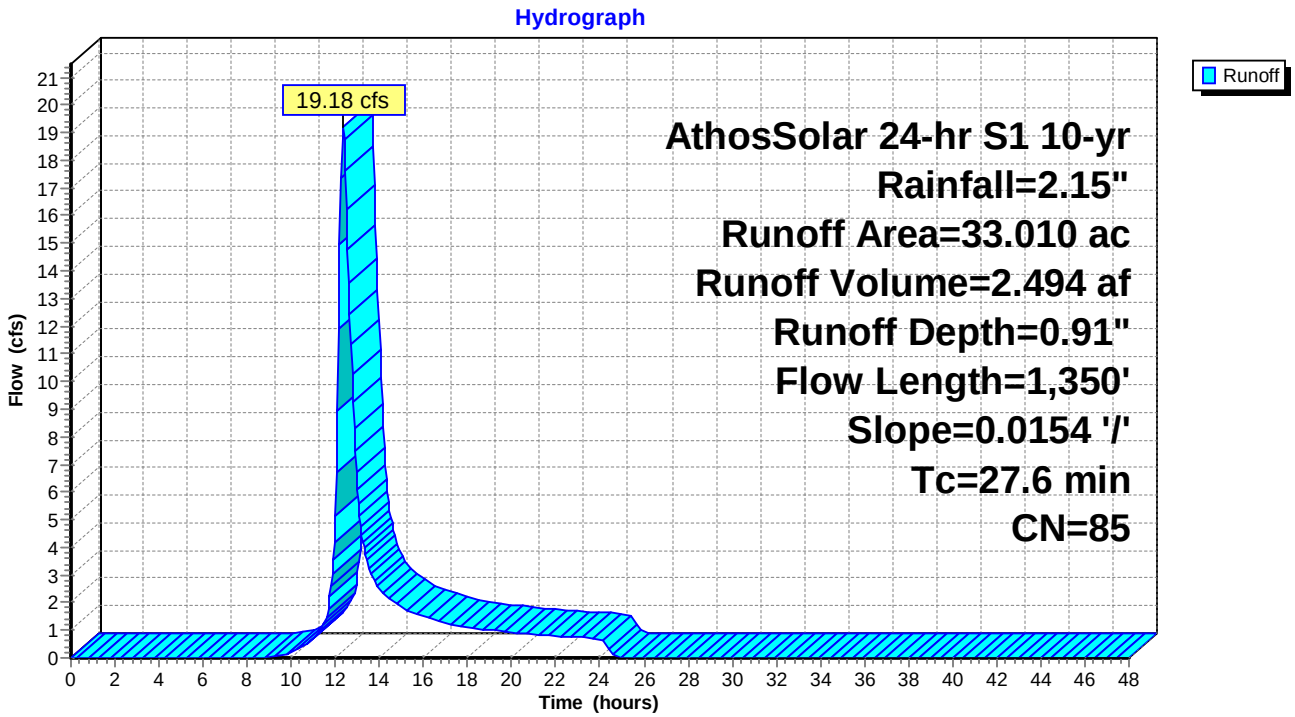
Runoff = 19.18 cfs @ 12.35 hrs, Volume= 2.494 af, Depth= 0.91"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs
AthosSolar 24-hr S1 10-yr Rainfall=2.15"

Area (ac)	CN	Description
33.010	85	Desert shrub range, Poor, HSG C
33.010		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
27.6	1,350	0.0154	0.82		**Lag/CN Method,**

Subcatchment 35S: DA-3



Summary for Subcatchment 36S: DA-1

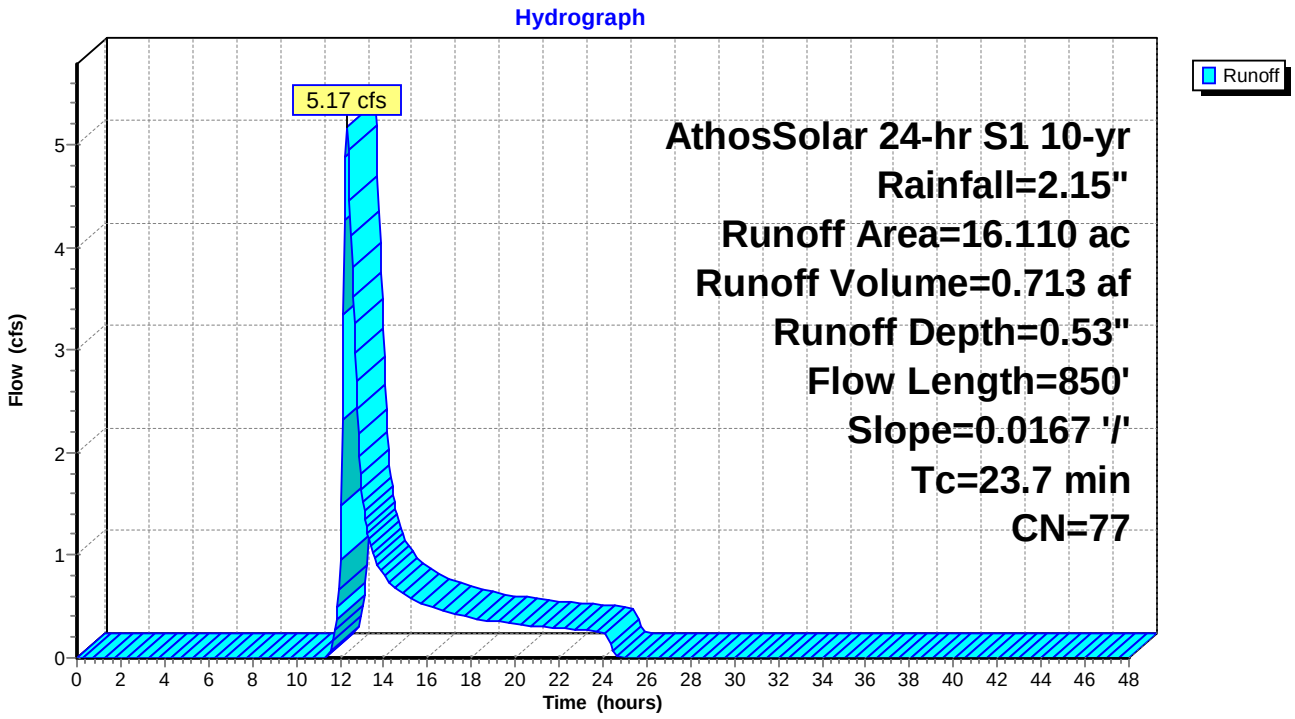
Runoff = 5.17 cfs @ 12.32 hrs, Volume= 0.713 af, Depth= 0.53"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs
AthosSolar 24-hr S1 10-yr Rainfall=2.15"

Area (ac)	CN	Description
16.110	77	Fallow, bare soil, HSG A
16.110		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
23.7	850	0.0167	0.60		**Lag/CN Method,**

Subcatchment 36S: DA-1



Summary for Subcatchment 37S: DA-2

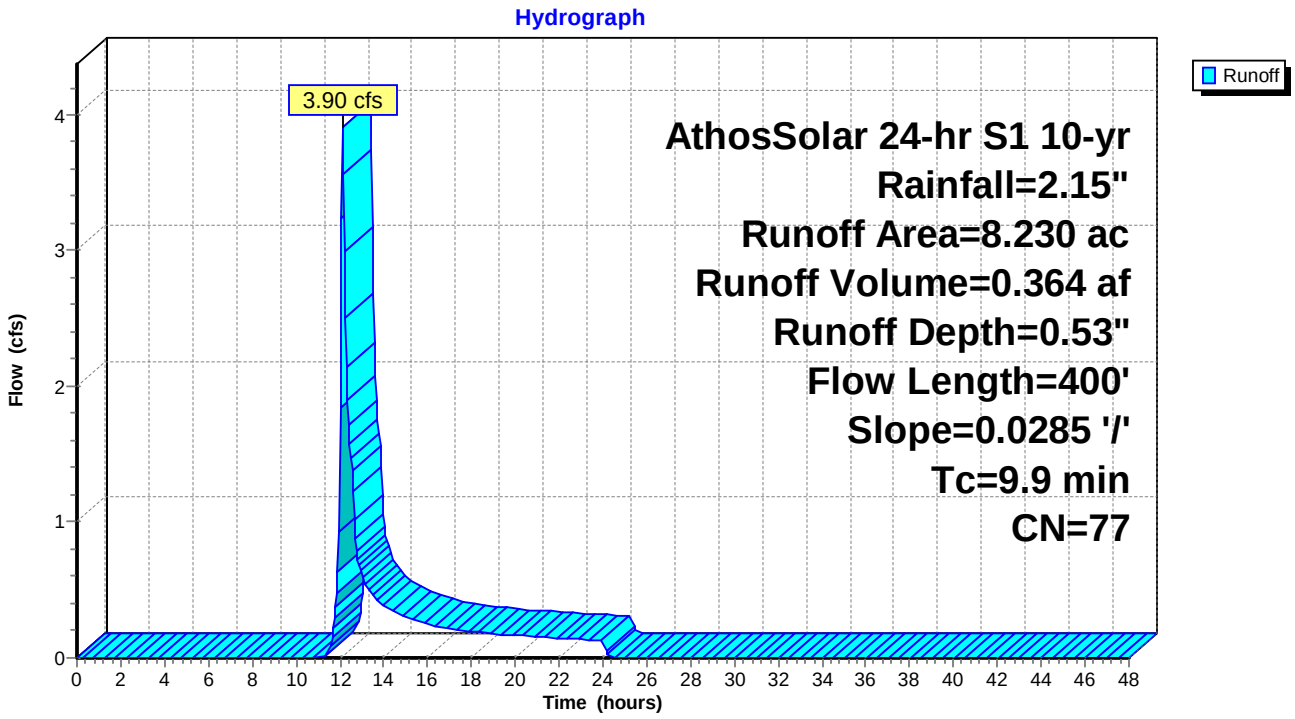
Runoff = 3.90 cfs @ 12.11 hrs, Volume= 0.364 af, Depth= 0.53"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs
AthosSolar 24-hr S1 10-yr Rainfall=2.15"

Area (ac)	CN	Description
8.230	77	Fallow, bare soil, HSG A
8.230		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
9.9	400	0.0285	0.67		**Lag/CN Method,**

Subcatchment 37S: DA-2



Summary for Subcatchment 38S: DA-1

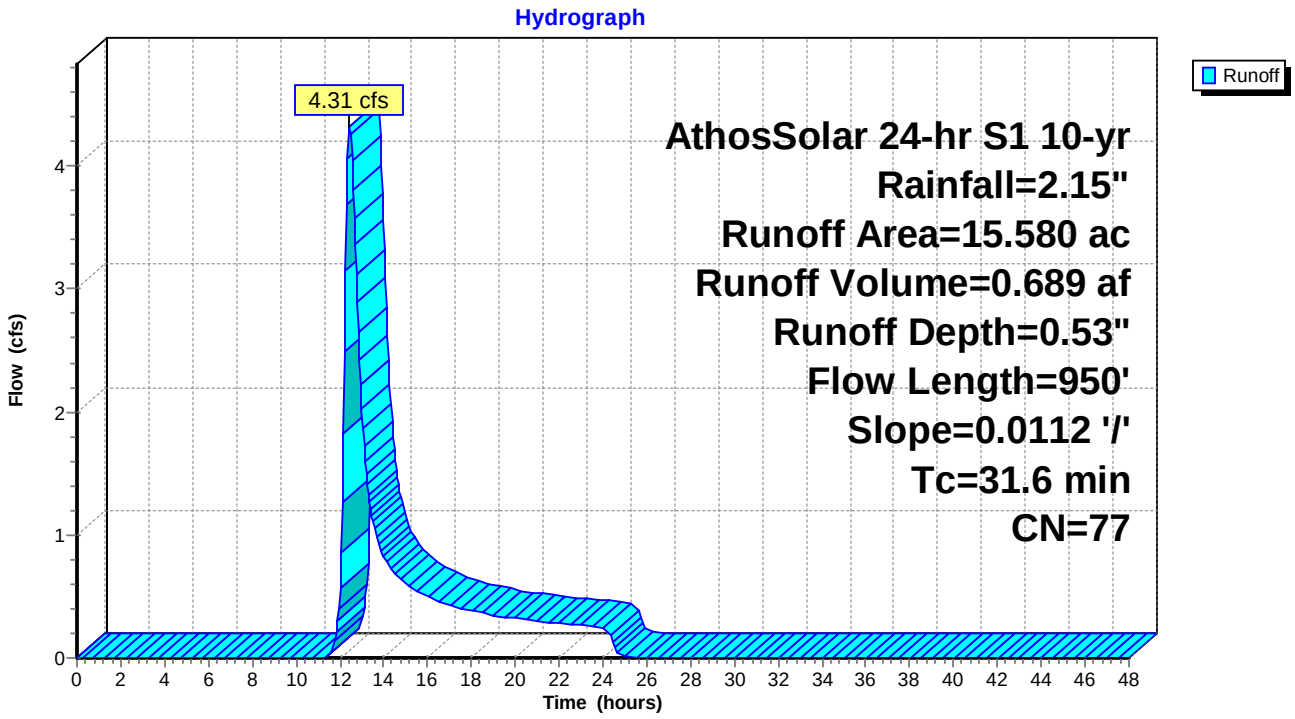
Runoff = 4.31 cfs @ 12.44 hrs, Volume= 0.689 af, Depth= 0.53"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs
AthosSolar 24-hr S1 10-yr Rainfall=2.15"

Area (ac)	CN	Description
15.580	77	Fallow, bare soil, HSG A
15.580		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
31.6	950	0.0112	0.50		**Lag/CN Method,**

Subcatchment 38S: DA-1



Summary for Subcatchment 39S: DA-2

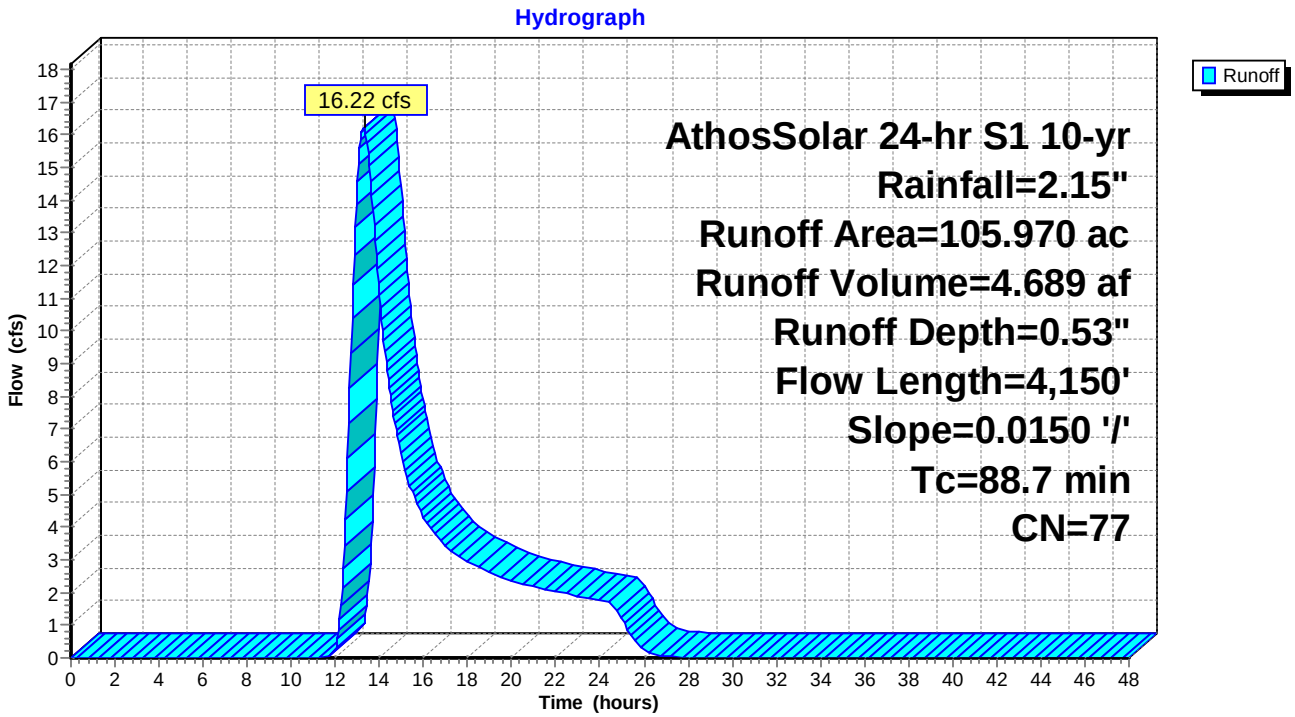
Runoff = 16.22 cfs @ 13.29 hrs, Volume= 4.689 af, Depth= 0.53"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs
AthosSolar 24-hr S1 10-yr Rainfall=2.15"

Area (ac)	CN	Description
105.970	77	Fallow, bare soil, HSG A
105.970		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
88.7	4,150	0.0150	0.78		**Lag/CN Method,**

Subcatchment 39S: DA-2



Summary for Subcatchment 40S: DA-3

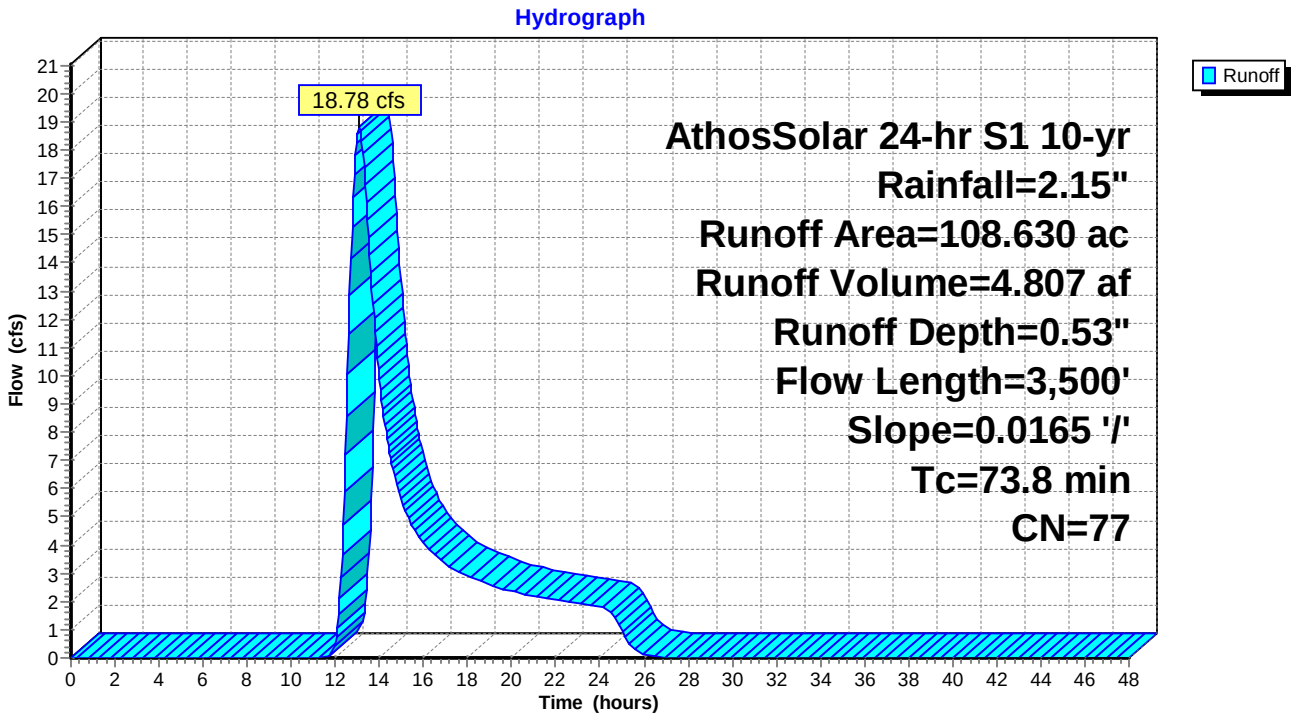
Runoff = 18.78 cfs @ 13.07 hrs, Volume= 4.807 af, Depth= 0.53"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs
AthosSolar 24-hr S1 10-yr Rainfall=2.15"

Area (ac)	CN	Description
108.630	77	Fallow, bare soil, HSG A
108.630		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
73.8	3,500	0.0165	0.79		**Lag/CN Method,**

Subcatchment 40S: DA-3



Summary for Subcatchment 41S: DA-4

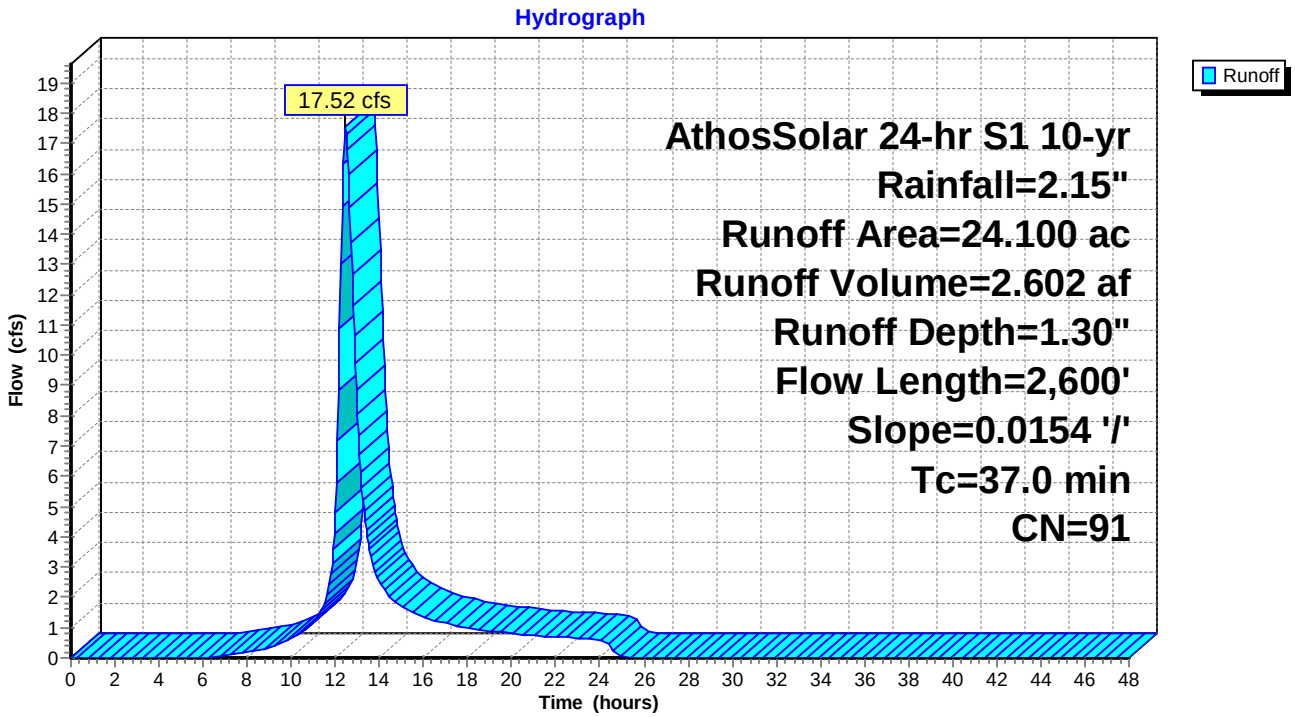
Runoff = 17.52 cfs @ 12.46 hrs, Volume= 2.602 af, Depth= 1.30"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs
AthosSolar 24-hr S1 10-yr Rainfall=2.15"

Area (ac)	CN	Description
24.100	91	Fallow, bare soil, HSG C
24.100		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
37.0	2,600	0.0154	1.17		**Lag/CN Method,**

Subcatchment 41S: DA-4



Summary for Subcatchment 42S: DA-1

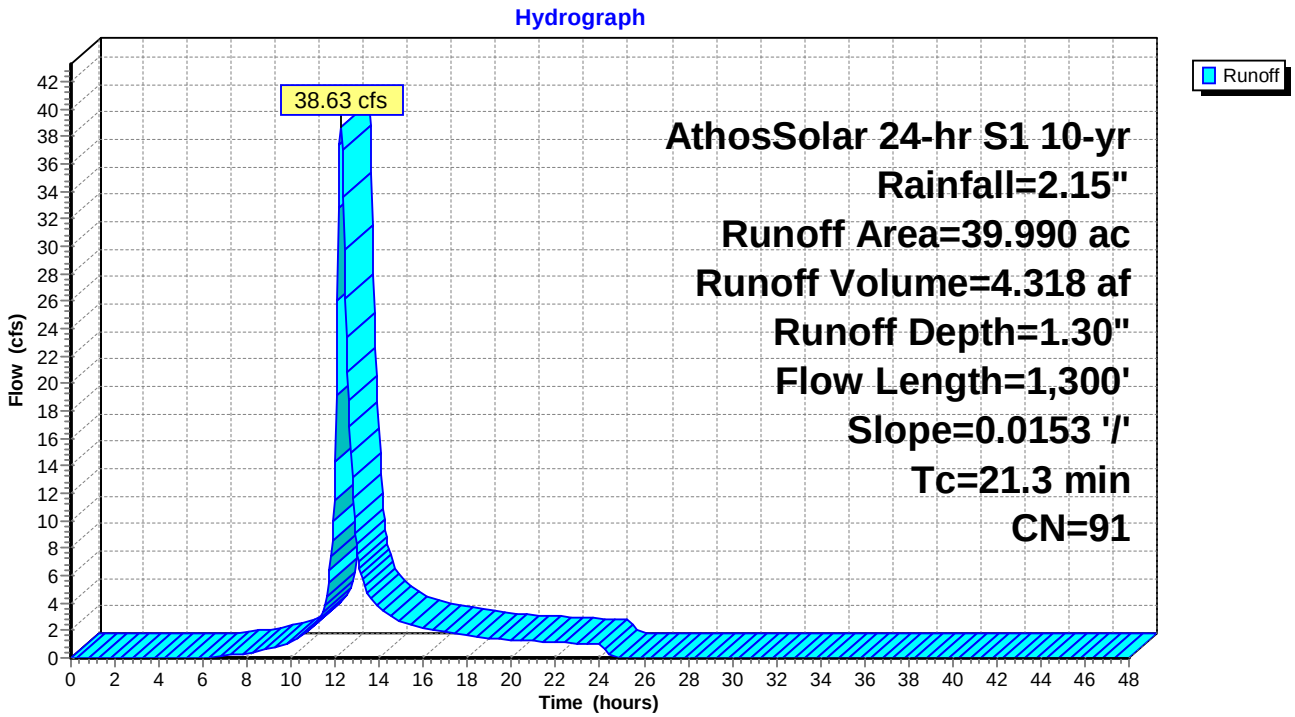
Runoff = 38.63 cfs @ 12.25 hrs, Volume= 4.318 af, Depth= 1.30"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs
AthosSolar 24-hr S1 10-yr Rainfall=2.15"

Area (ac)	CN	Description
39.990	91	Fallow, bare soil, HSG C
39.990		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
21.3	1,300	0.0153	1.02		**Lag/CN Method,**

Subcatchment 42S: DA-1



Summary for Subcatchment 43S: DA-1

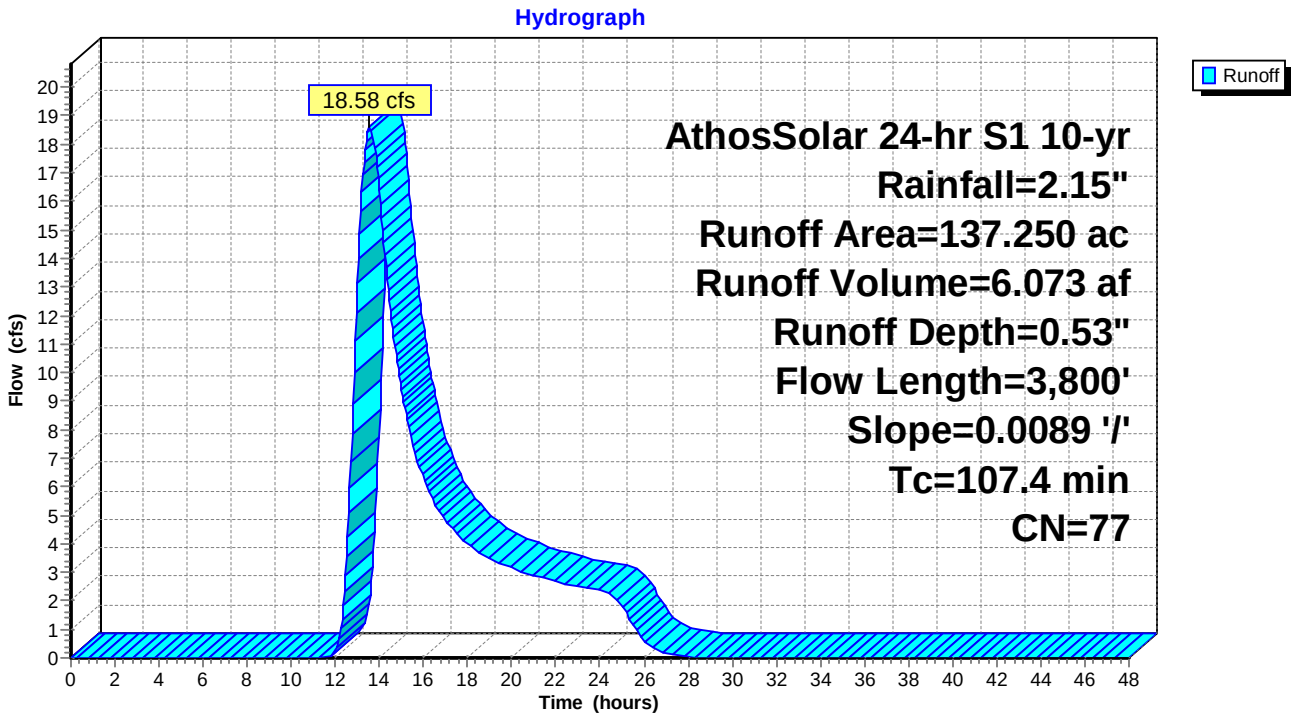
Runoff = 18.58 cfs @ 13.54 hrs, Volume= 6.073 af, Depth= 0.53"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs
AthosSolar 24-hr S1 10-yr Rainfall=2.15"

Area (ac)	CN	Description
137.250	77	Fallow, bare soil, HSG A
137.250		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
107.4	3,800	0.0089	0.59		**Lag/CN Method,**

Subcatchment 43S: DA-1



Summary for Subcatchment 44S: DA-2

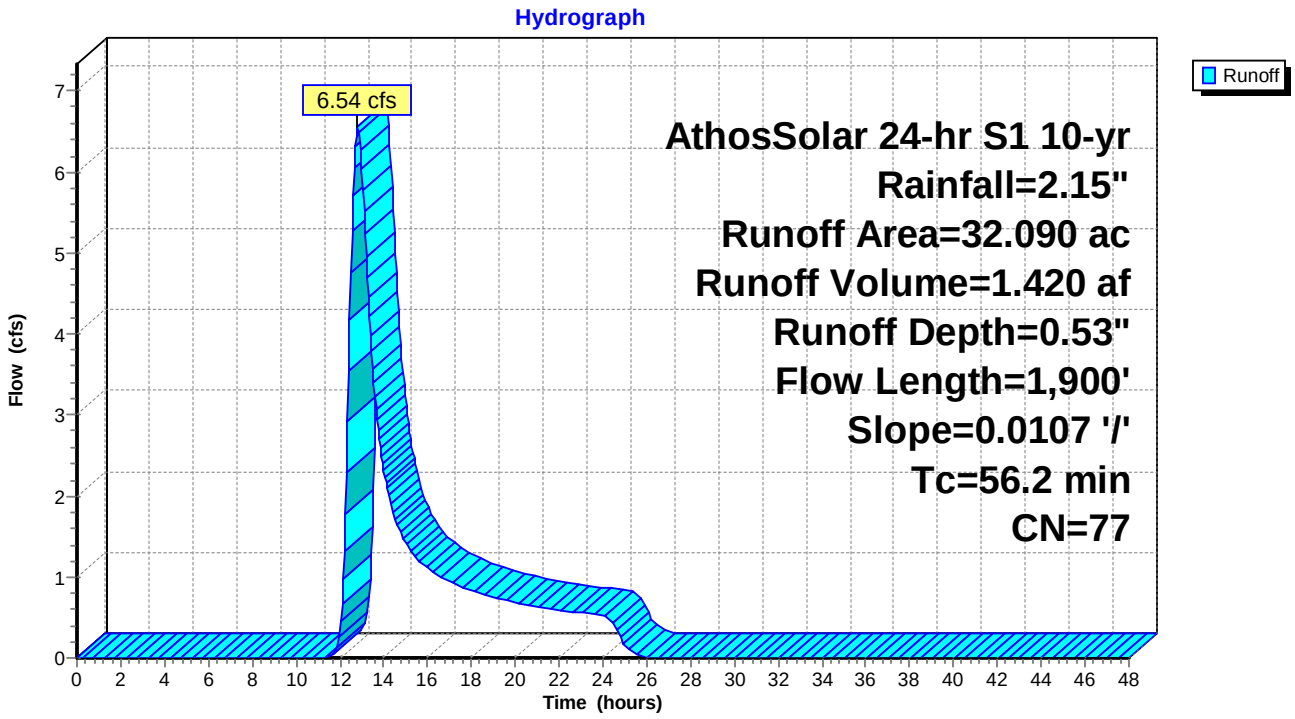
Runoff = 6.54 cfs @ 12.82 hrs, Volume= 1.420 af, Depth= 0.53"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs
AthosSolar 24-hr S1 10-yr Rainfall=2.15"

Area (ac)	CN	Description
32.090	77	Fallow, bare soil, HSG A
32.090		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
56.2	1,900	0.0107	0.56		**Lag/CN Method,**

Subcatchment 44S: DA-2



Summary for Subcatchment 45S: DA-1

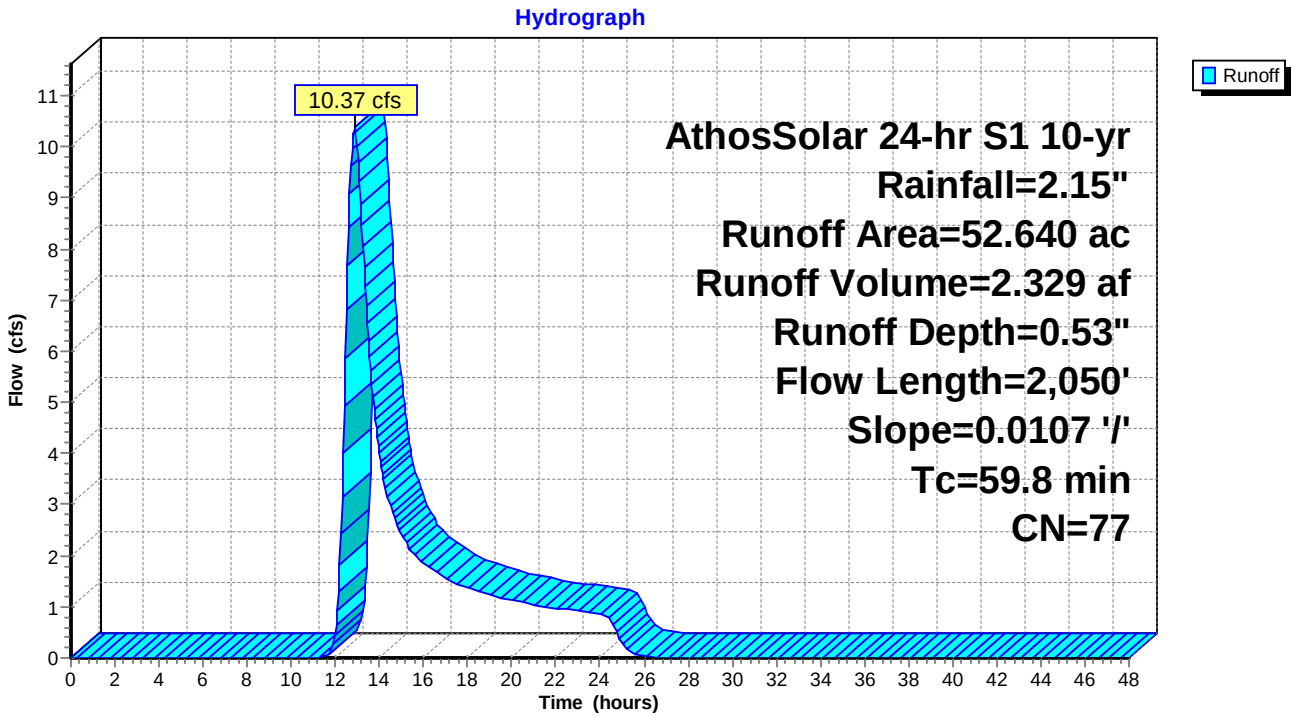
Runoff = 10.37 cfs @ 12.87 hrs, Volume= 2.329 af, Depth= 0.53"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs
AthosSolar 24-hr S1 10-yr Rainfall=2.15"

Area (ac)	CN	Description
52.640	77	Fallow, bare soil, HSG A
52.640		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
59.8	2,050	0.0107	0.57		**Lag/CN Method,**

Subcatchment 45S: DA-1



Summary for Subcatchment 46S: DA-2

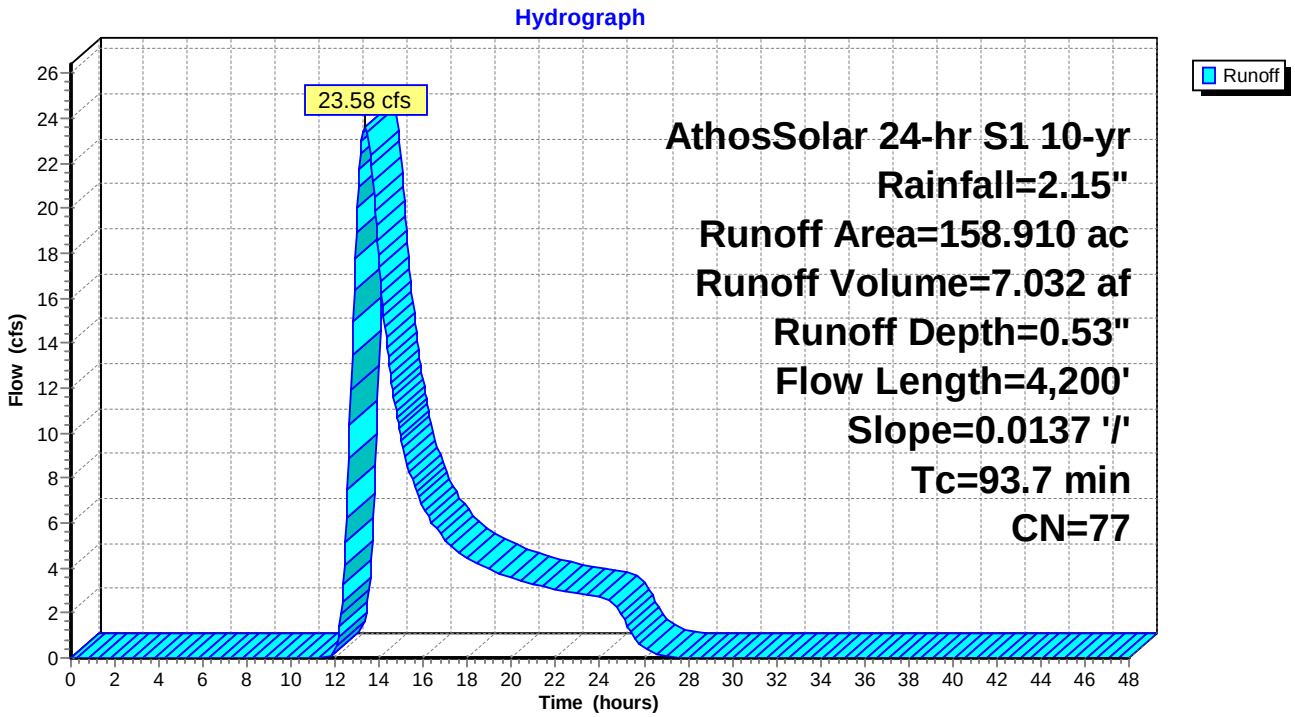
Runoff = 23.58 cfs @ 13.37 hrs, Volume= 7.032 af, Depth= 0.53"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs
AthosSolar 24-hr S1 10-yr Rainfall=2.15"

Area (ac)	CN	Description
158.910	77	Fallow, bare soil, HSG A
158.910		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
93.7	4,200	0.0137	0.75		**Lag/CN Method,**

Subcatchment 46S: DA-2



Summary for Subcatchment 47S: DA-3

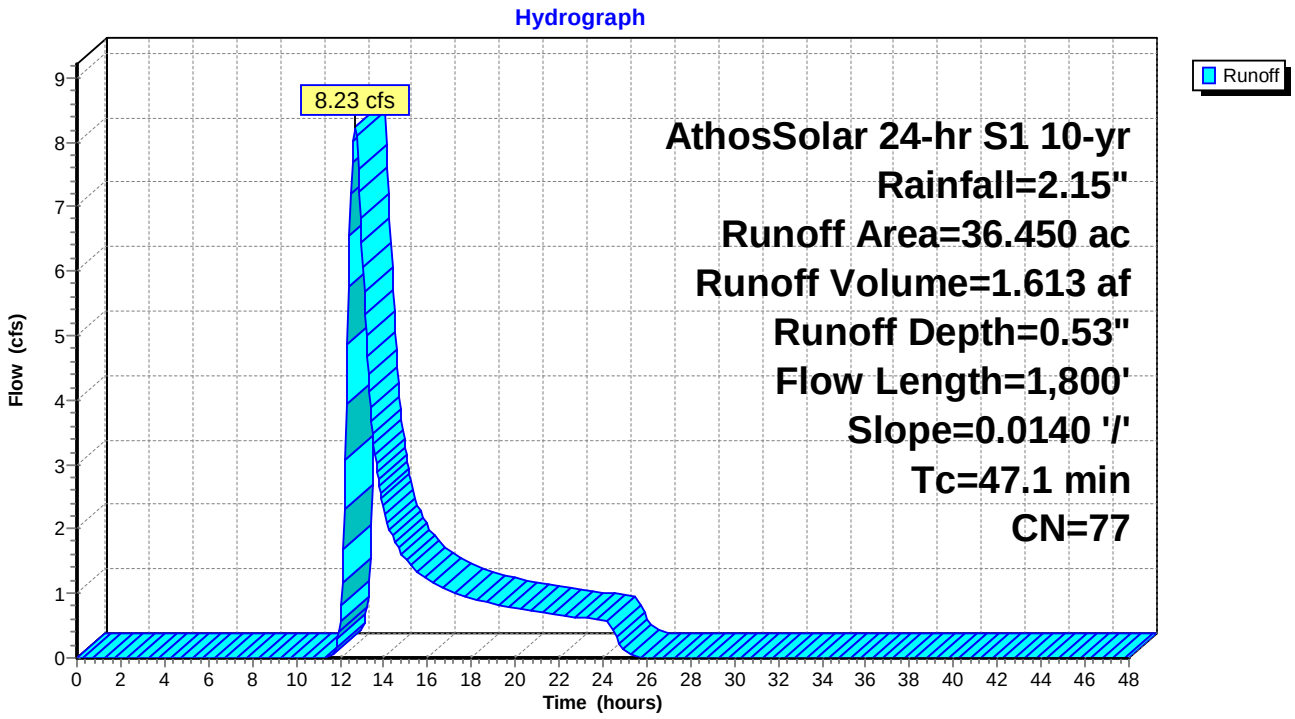
Runoff = 8.23 cfs @ 12.69 hrs, Volume= 1.613 af, Depth= 0.53"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs
AthosSolar 24-hr S1 10-yr Rainfall=2.15"

Area (ac)	CN	Description
36.450	77	Fallow, bare soil, HSG A
36.450		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
47.1	1,800	0.0140	0.64		**Lag/CN Method,**

Subcatchment 47S: DA-3



Summary for Subcatchment 48S: DA-4

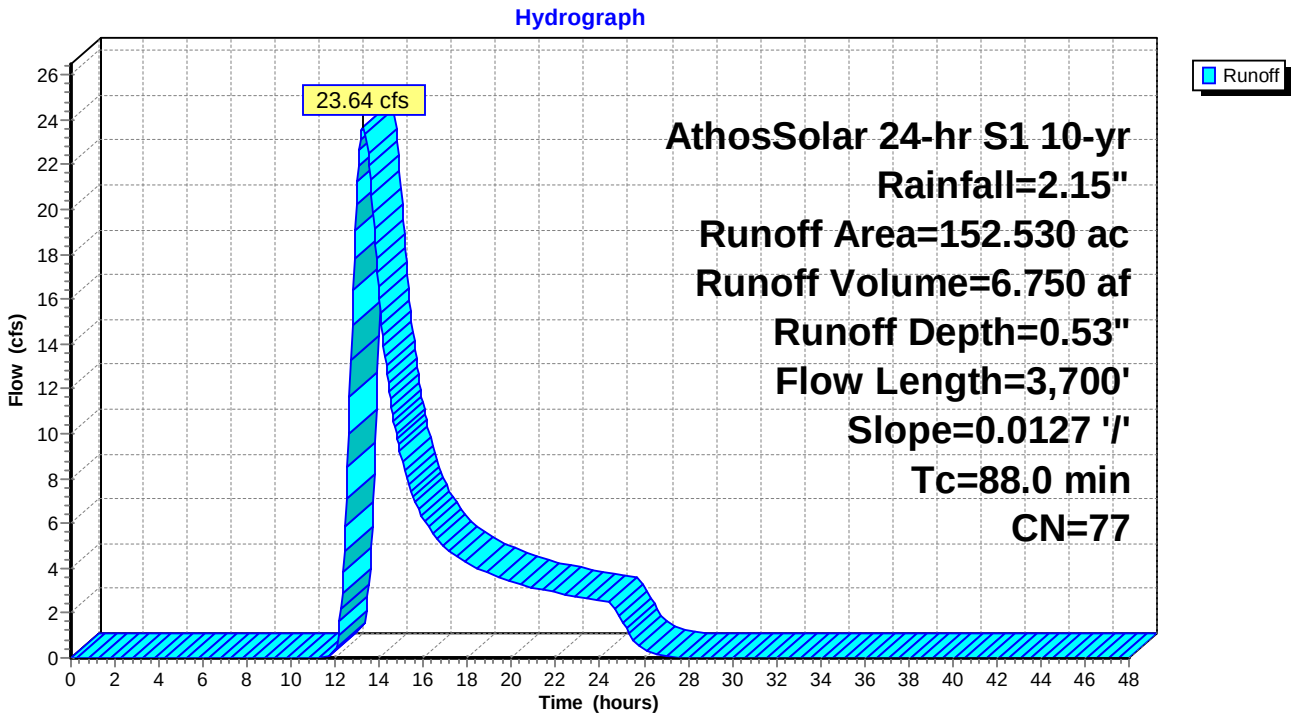
Runoff = 23.64 cfs @ 13.28 hrs, Volume= 6.750 af, Depth= 0.53"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs
AthosSolar 24-hr S1 10-yr Rainfall=2.15"

Area (ac)	CN	Description
152.530	77	Fallow, bare soil, HSG A
152.530		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
88.0	3,700	0.0127	0.70		**Lag/CN Method,**

Subcatchment 48S: DA-4



Summary for Subcatchment 49S: DA-2

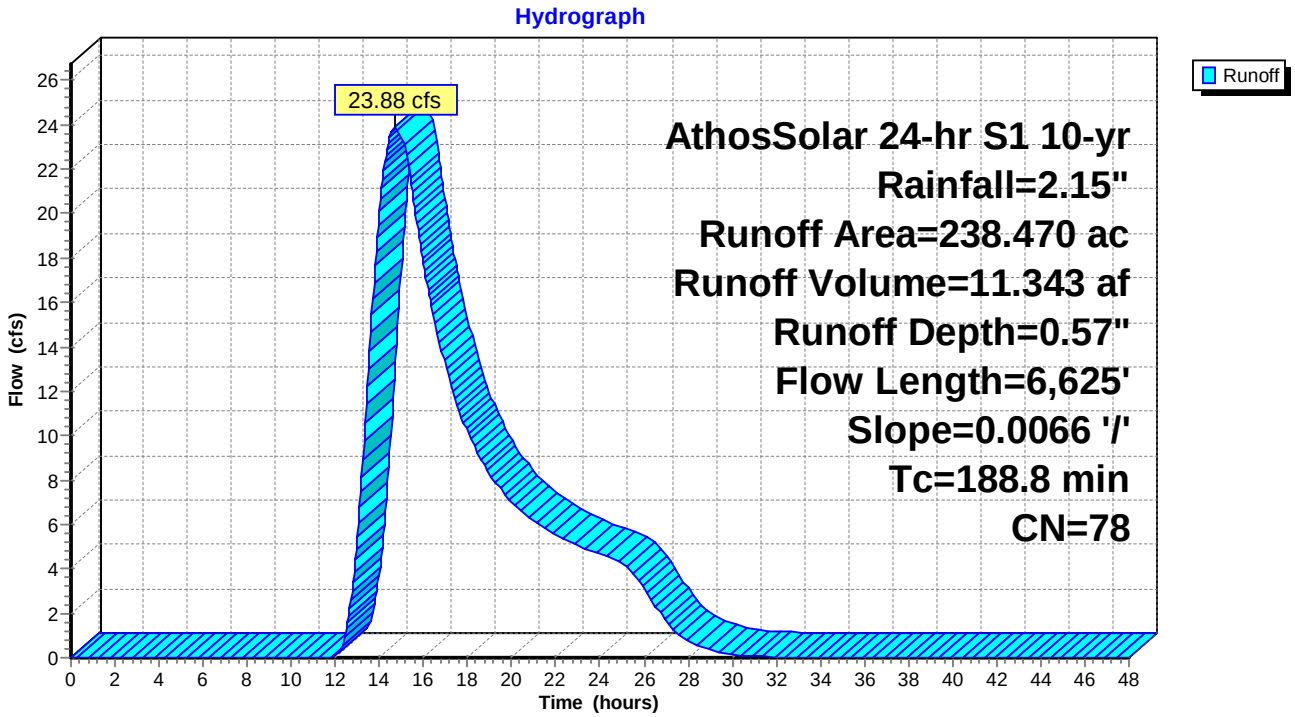
Runoff = 23.88 cfs @ 14.71 hrs, Volume= 11.343 af, Depth= 0.57"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs
AthosSolar 24-hr S1 10-yr Rainfall=2.15"

Area (ac)	CN	Description
226.550	77	Fallow, bare soil, HSG A
11.920	96	Gravel surface, HSG A
238.470	78	Weighted Average
238.470		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
188.8	6,625	0.0066	0.58		**Lag/CN Method,**

Subcatchment 49S: DA-2



Summary for Subcatchment 50S: DA-3

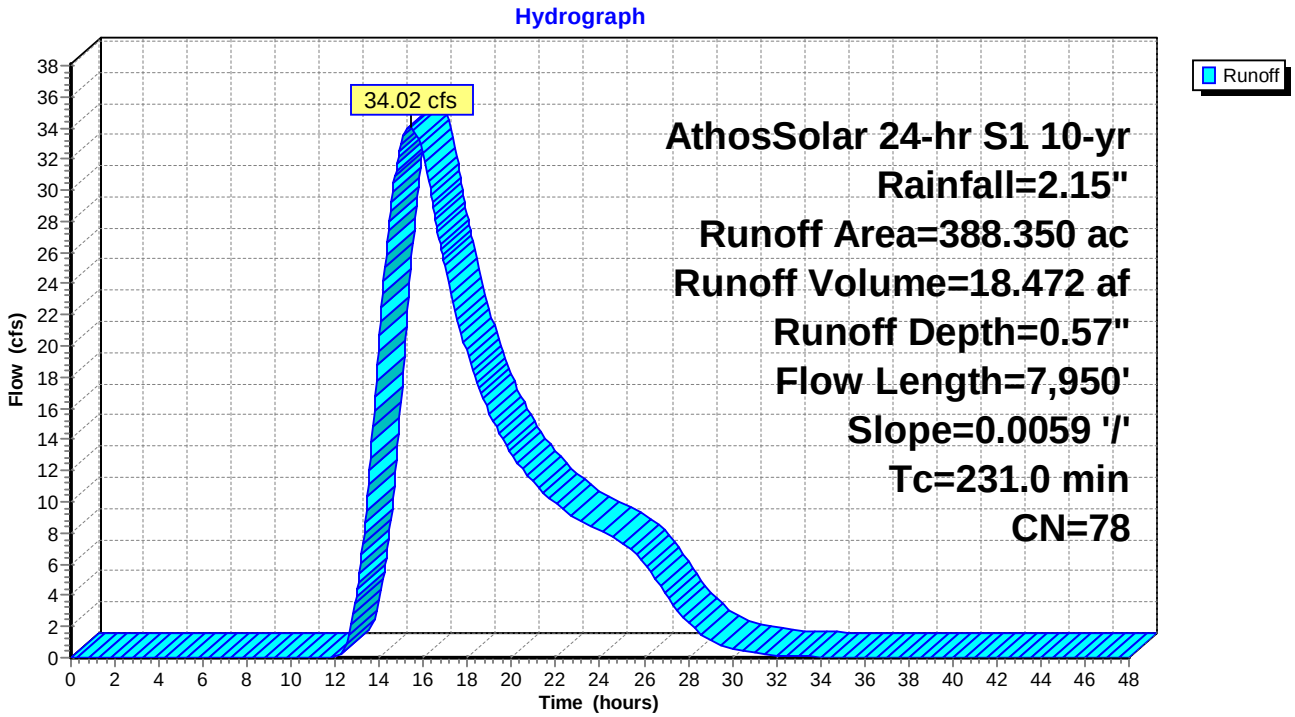
Runoff = 34.02 cfs @ 15.39 hrs, Volume= 18.472 af, Depth= 0.57"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs
AthosSolar 24-hr S1 10-yr Rainfall=2.15"

Area (ac)	CN	Description
368.940	77	Fallow, bare soil, HSG A
19.410	96	Gravel surface, HSG A
388.350	78	Weighted Average
388.350		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
231.0	7,950	0.0059	0.57		**Lag/CN Method,**

Subcatchment 50S: DA-3



Summary for Subcatchment 51S: DA-4

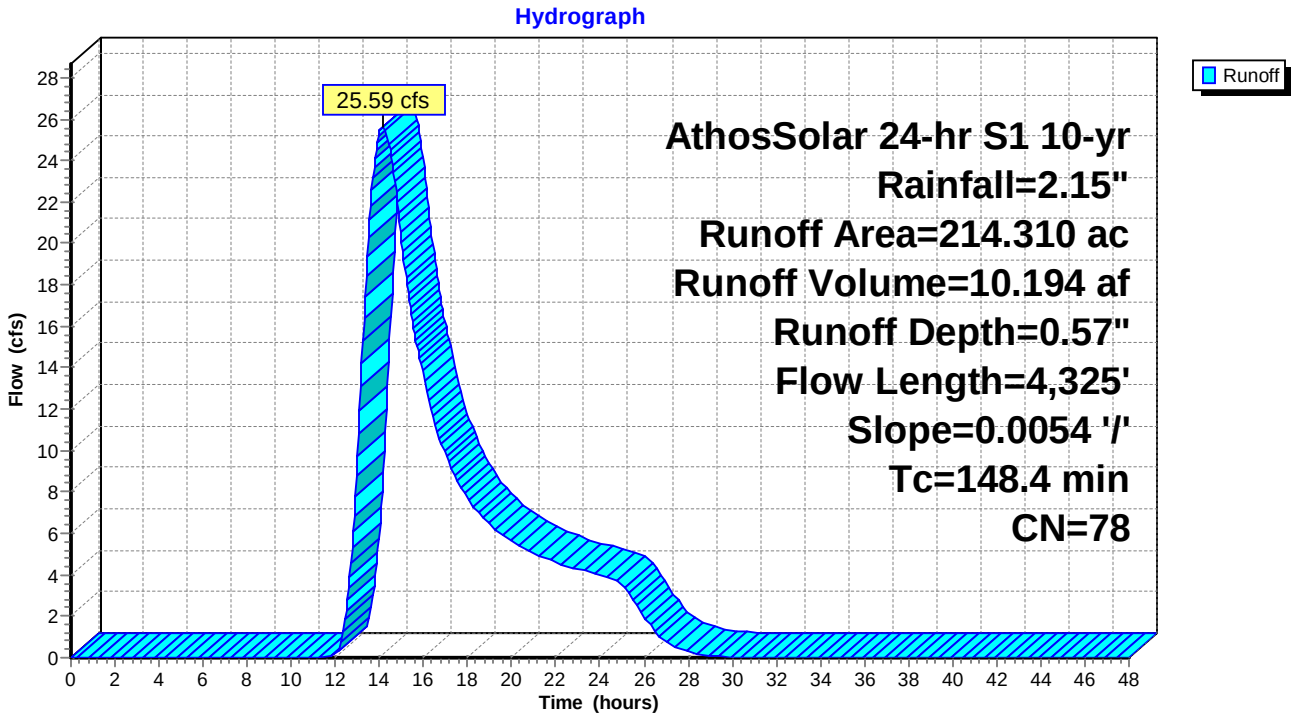
Runoff = 25.59 cfs @ 14.14 hrs, Volume= 10.194 af, Depth= 0.57"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs
AthosSolar 24-hr S1 10-yr Rainfall=2.15"

Area (ac)	CN	Description
203.590	77	Fallow, bare soil, HSG A
10.720	96	Gravel surface, HSG A
214.310	78	Weighted Average
214.310		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
148.4	4,325	0.0054	0.49		**Lag/CN Method,**

Subcatchment 51S: DA-4



Summary for Subcatchment 52S: DA-1

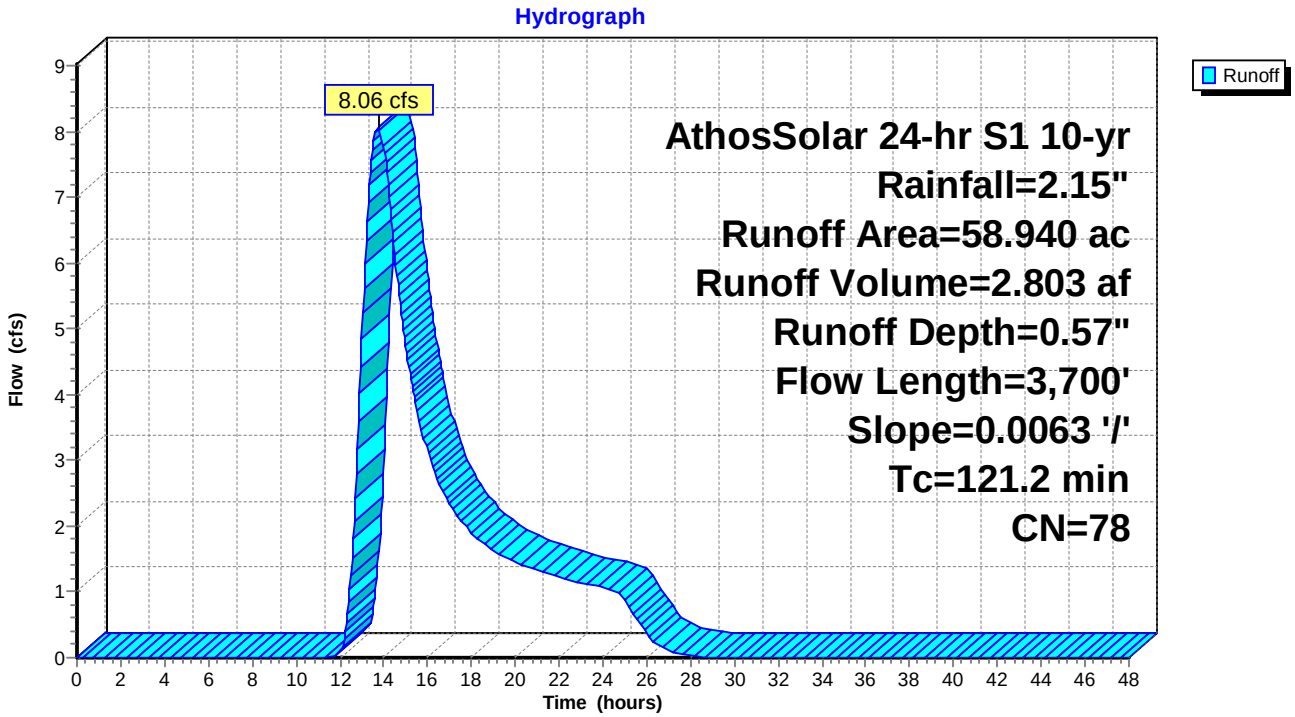
Runoff = 8.06 cfs @ 13.74 hrs, Volume= 2.803 af, Depth= 0.57"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs
AthosSolar 24-hr S1 10-yr Rainfall=2.15"

Area (ac)	CN	Description
55.990	77	Fallow, bare soil, HSG A
2.950	96	Gravel surface, HSG A
58.940	78	Weighted Average
58.940		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
121.2	3,700	0.0063	0.51		**Lag/CN Method,**

Subcatchment 52S: DA-1



Summary for Subcatchment 53S: DA-2

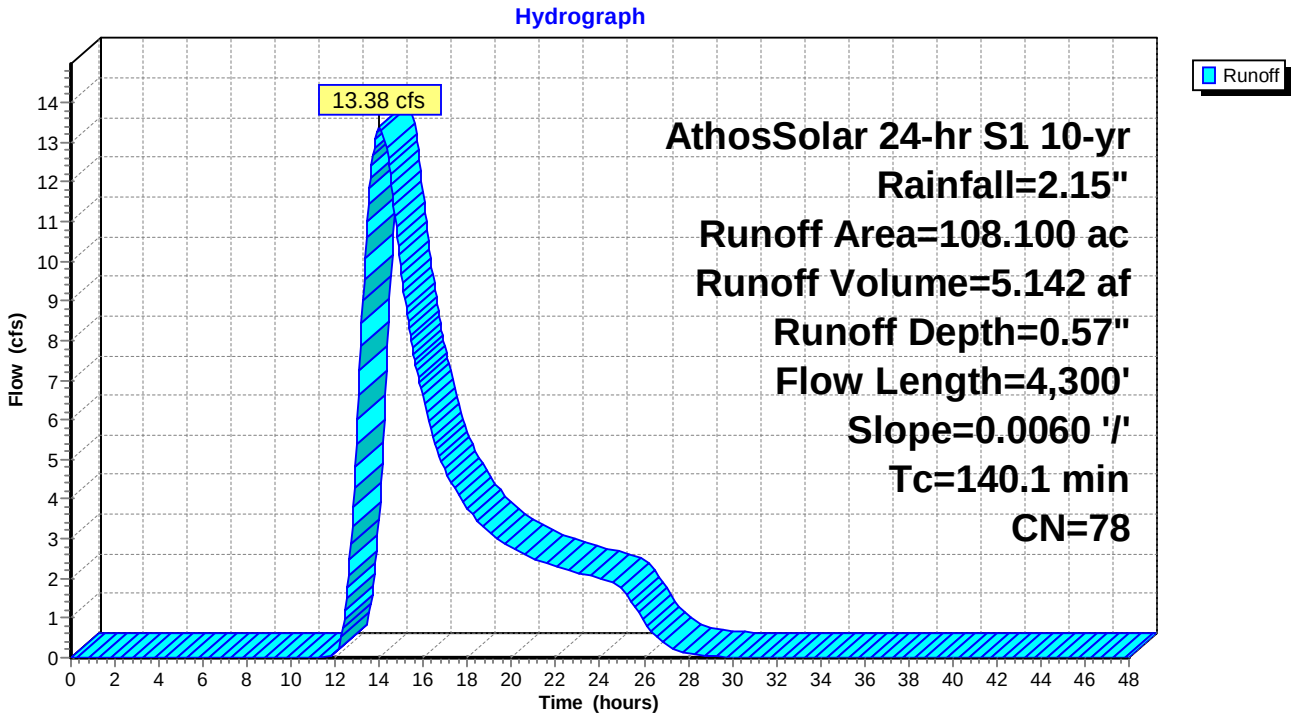
Runoff = 13.38 cfs @ 14.01 hrs, Volume= 5.142 af, Depth= 0.57"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs
AthosSolar 24-hr S1 10-yr Rainfall=2.15"

Area (ac)	CN	Description
102.690	77	Fallow, bare soil, HSG A
5.410	96	Gravel surface, HSG A
108.100	78	Weighted Average
108.100		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
140.1	4,300	0.0060	0.51		**Lag/CN Method,**

Subcatchment 53S: DA-2



Summary for Subcatchment 54S: DA-1

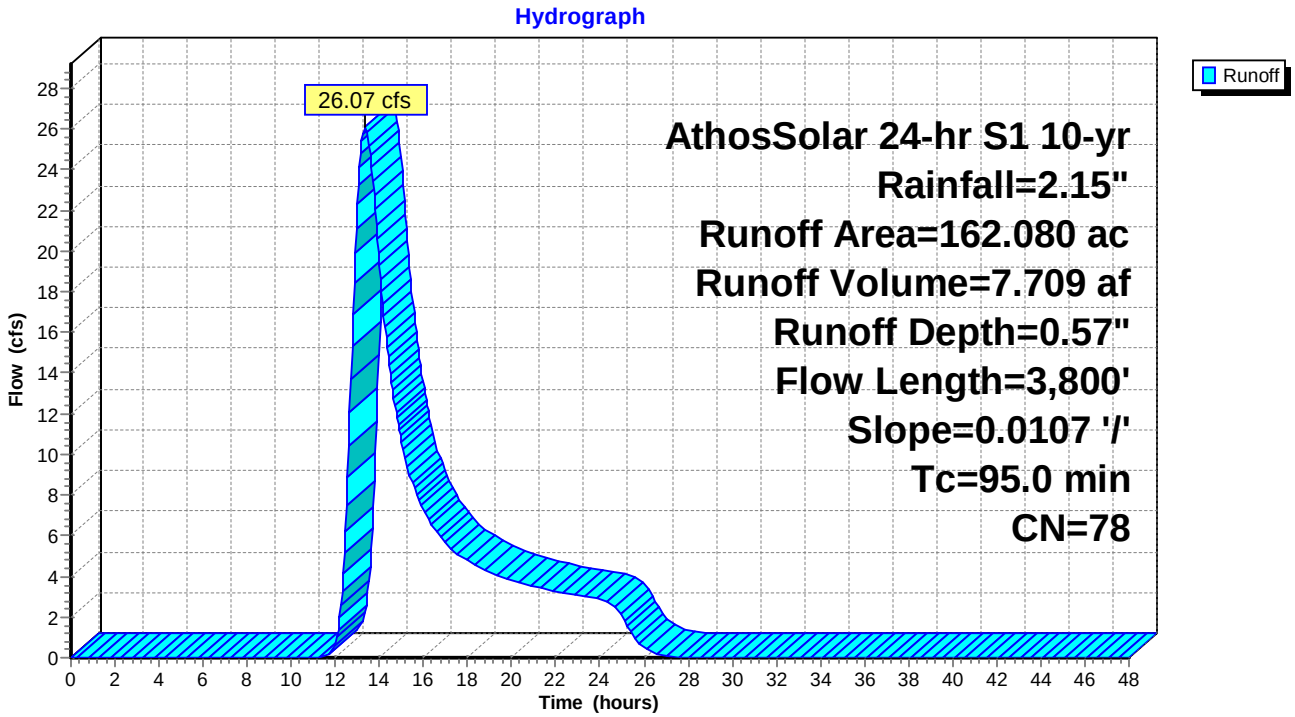
Runoff = 26.07 cfs @ 13.38 hrs, Volume= 7.709 af, Depth= 0.57"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs
AthosSolar 24-hr S1 10-yr Rainfall=2.15"

Area (ac)	CN	Description
153.980	77	Fallow, bare soil, HSG A
8.100	96	Gravel surface, HSG A
162.080	78	Weighted Average
162.080		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
95.0	3,800	0.0107	0.67		**Lag/CN Method,**

Subcatchment 54S: DA-1



Summary for Subcatchment 55S: DA-2

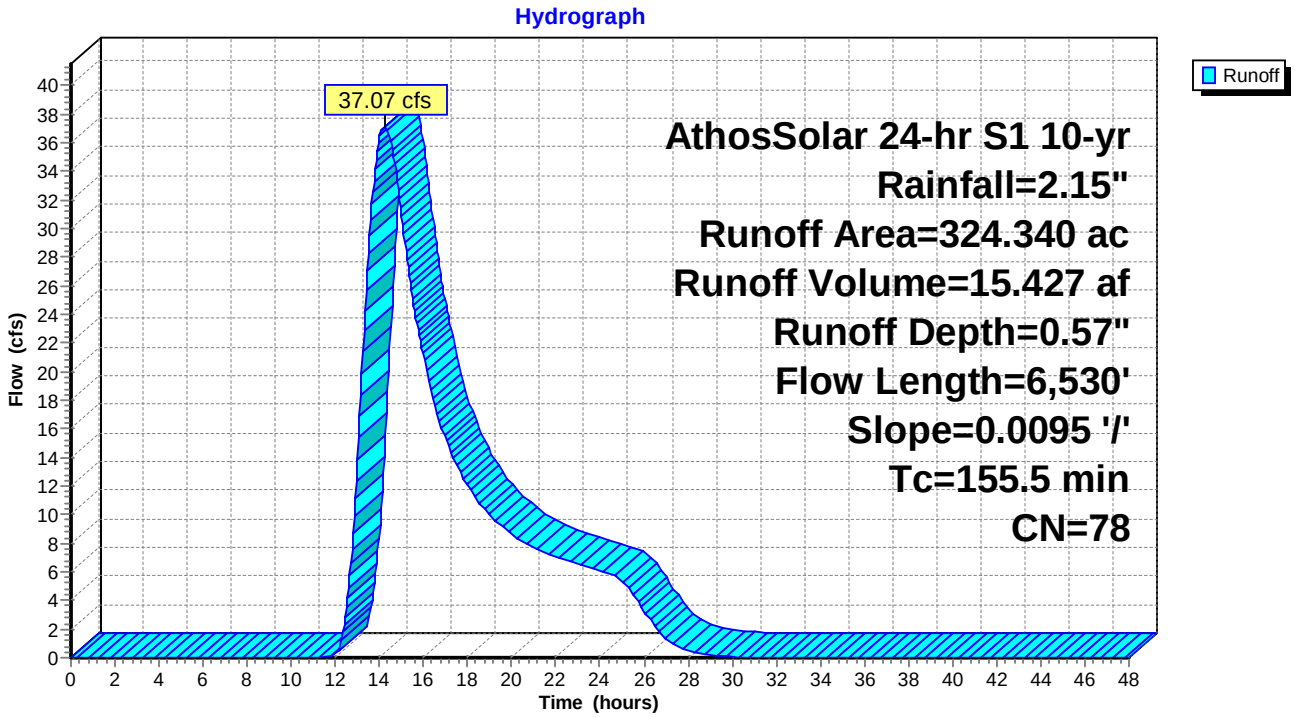
Runoff = 37.07 cfs @ 14.28 hrs, Volume= 15.427 af, Depth= 0.57"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs
AthosSolar 24-hr S1 10-yr Rainfall=2.15"

Area (ac)	CN	Description
308.120	77	Fallow, bare soil, HSG A
16.220	96	Gravel surface, HSG A
324.340	78	Weighted Average
324.340		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
155.5	6,530	0.0095	0.70		**Lag/CN Method,**

Subcatchment 55S: DA-2



Summary for Subcatchment 56S: DA-3

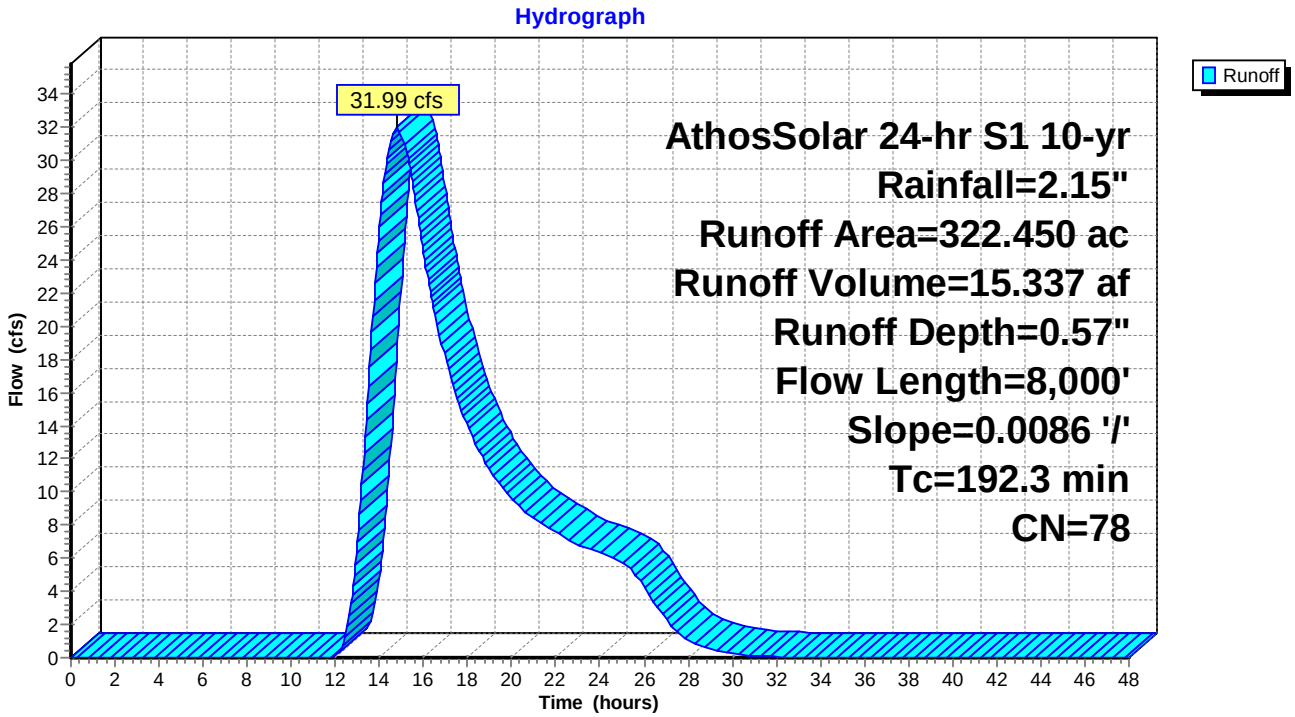
Runoff = 31.99 cfs @ 14.76 hrs, Volume= 15.337 af, Depth= 0.57"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs
AthosSolar 24-hr S1 10-yr Rainfall=2.15"

Area (ac)	CN	Description
306.330	77	Fallow, bare soil, HSG A
16.120	96	Gravel surface, HSG A
322.450	78	Weighted Average
322.450		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
192.3	8,000	0.0086	0.69		**Lag/CN Method,**

Subcatchment 56S: DA-3



Summary for Subcatchment 57S: DA-1

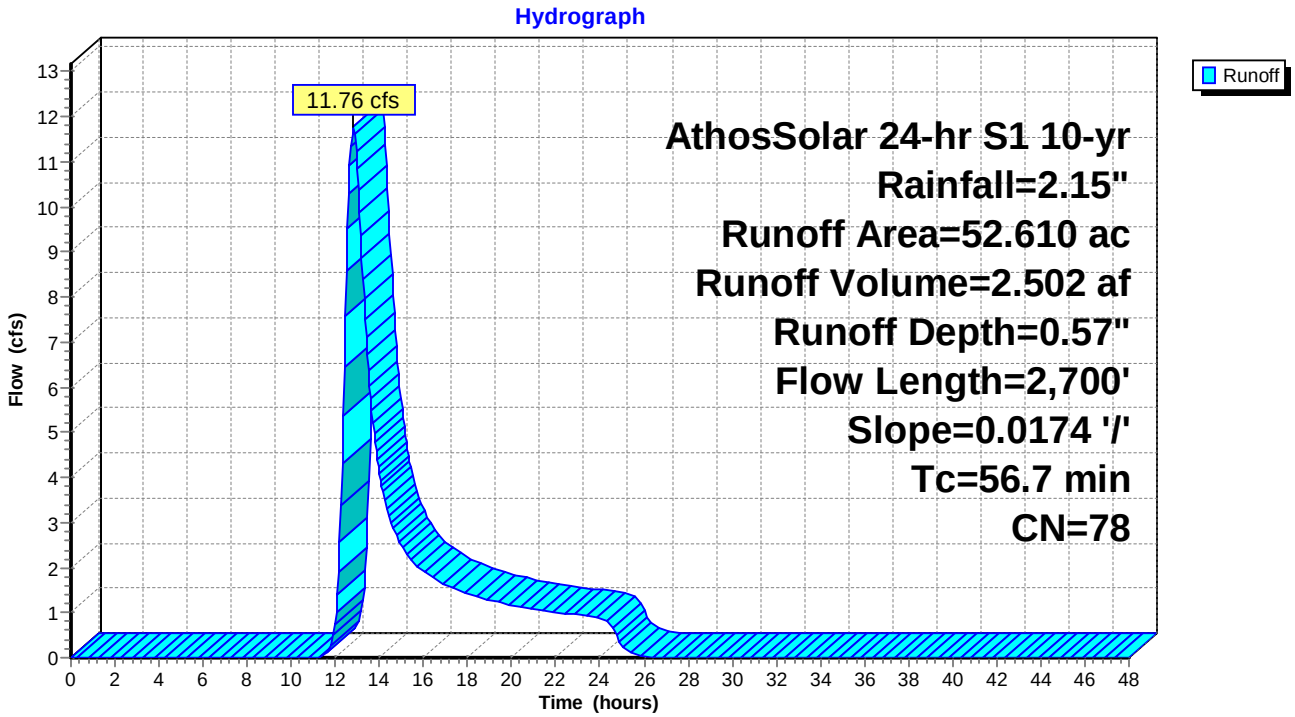
Runoff = 11.76 cfs @ 12.81 hrs, Volume= 2.502 af, Depth= 0.57"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs
AthosSolar 24-hr S1 10-yr Rainfall=2.15"

Area (ac)	CN	Description
49.980	77	Fallow, bare soil, HSG A
2.630	96	Gravel surface, HSG A
52.610	78	Weighted Average
52.610		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
56.7	2,700	0.0174	0.79		**Lag/CN Method,**

Subcatchment 57S: DA-1



Summary for Subcatchment 58S: DA-2

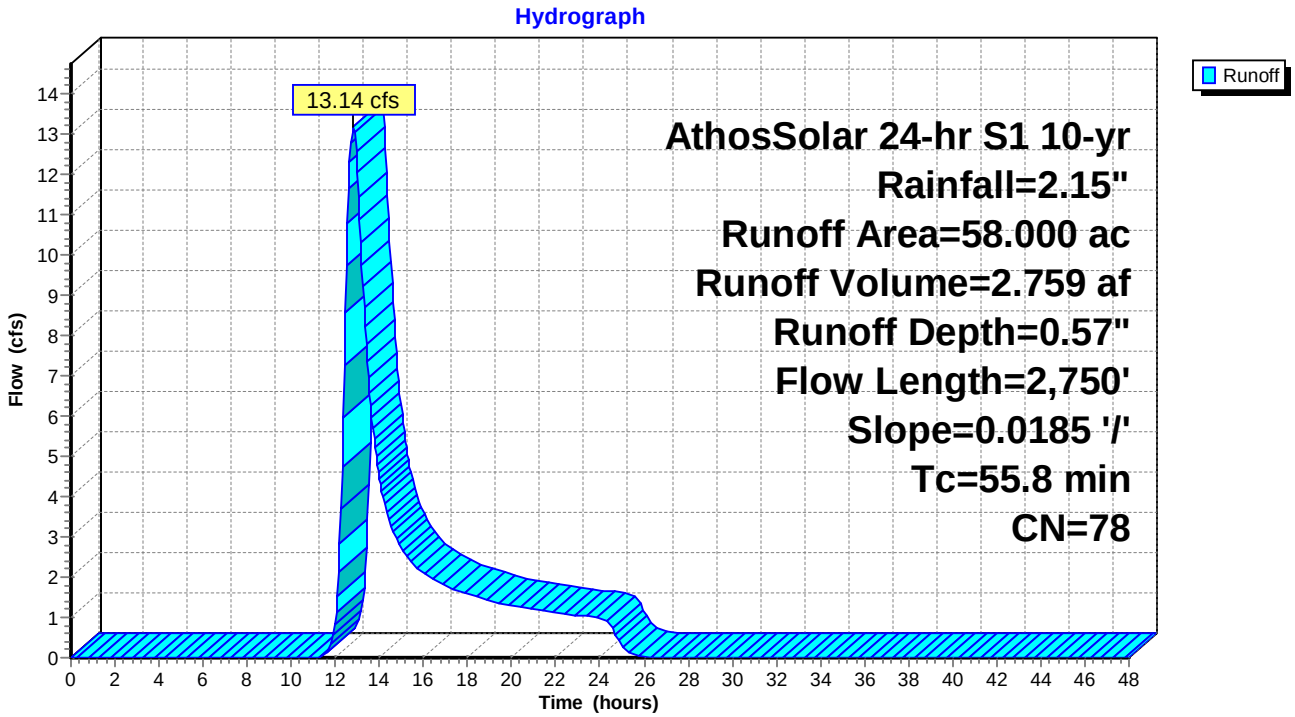
Runoff = 13.14 cfs @ 12.81 hrs, Volume= 2.759 af, Depth= 0.57"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs
AthosSolar 24-hr S1 10-yr Rainfall=2.15"

Area (ac)	CN	Description
55.100	77	Fallow, bare soil, HSG A
2.900	96	Gravel surface, HSG A
58.000	78	Weighted Average
58.000		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
55.8	2,750	0.0185	0.82		**Lag/CN Method,**

Subcatchment 58S: DA-2



Summary for Subcatchment 59S: DA-1

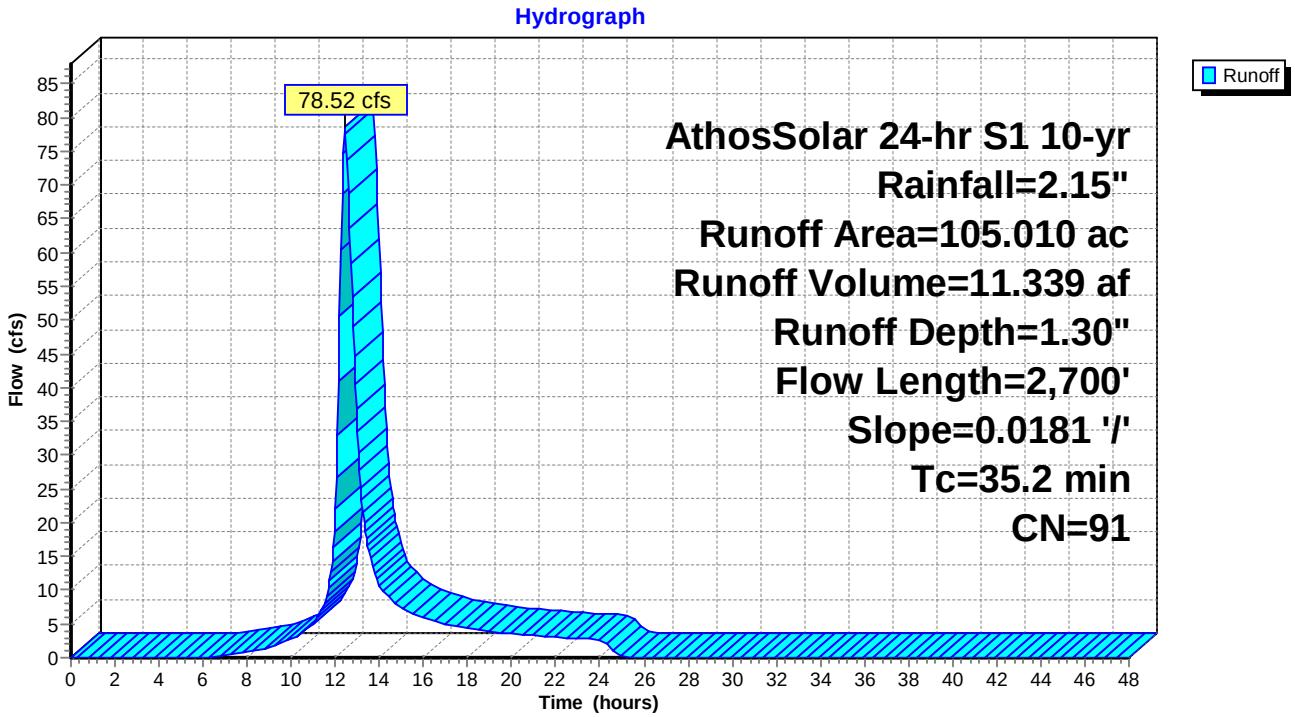
Runoff = 78.52 cfs @ 12.44 hrs, Volume= 11.339 af, Depth= 1.30"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs
AthosSolar 24-hr S1 10-yr Rainfall=2.15"

Area (ac)	CN	Description
99.760	91	Fallow, bare soil, HSG C
5.250	96	Gravel surface, HSG C
105.010	91	Weighted Average
105.010		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
35.2	2,700	0.0181	1.28		**Lag/CN Method,**

Subcatchment 59S: DA-1



Summary for Subcatchment 60S: DA-2

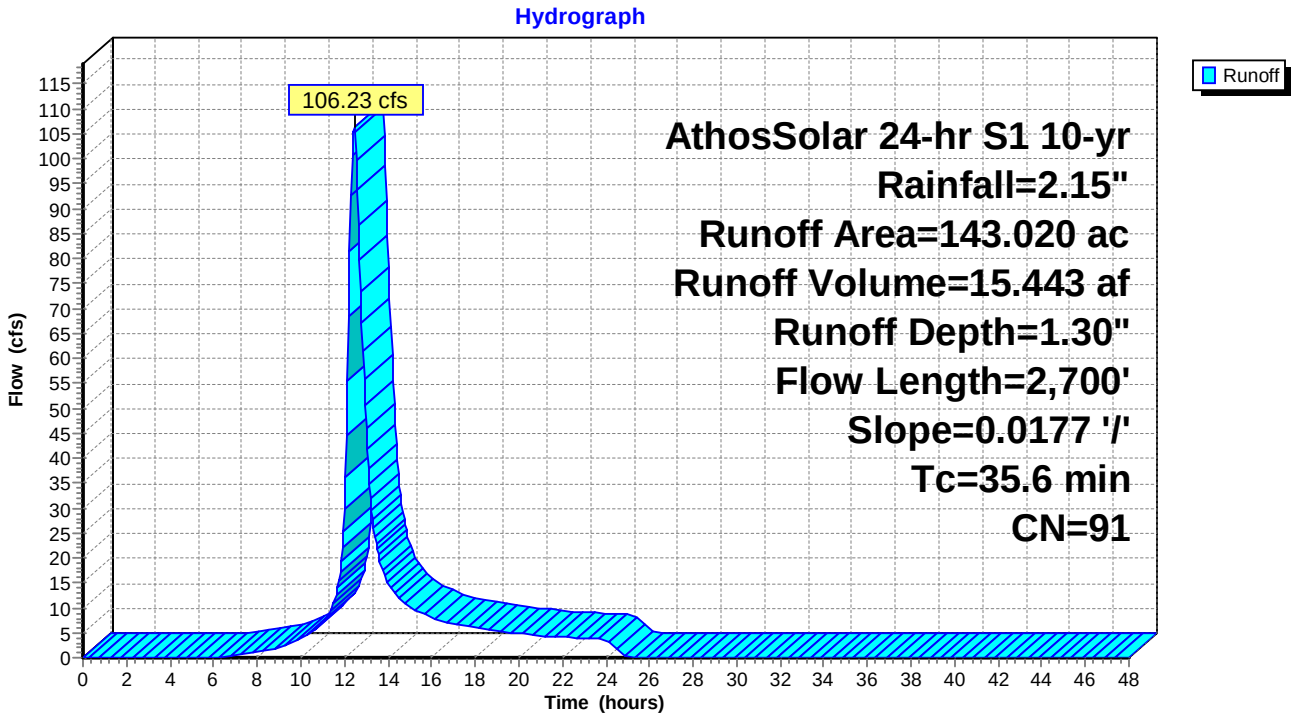
Runoff = 106.23 cfs @ 12.44 hrs, Volume= 15.443 af, Depth= 1.30"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs
AthosSolar 24-hr S1 10-yr Rainfall=2.15"

Area (ac)	CN	Description
135.870	91	Fallow, bare soil, HSG C
7.150	96	Gravel surface, HSG C
143.020	91	Weighted Average
143.020		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
35.6	2,700	0.0177	1.26		**Lag/CN Method,**

Subcatchment 60S: DA-2



Summary for Subcatchment 61S: DA-3

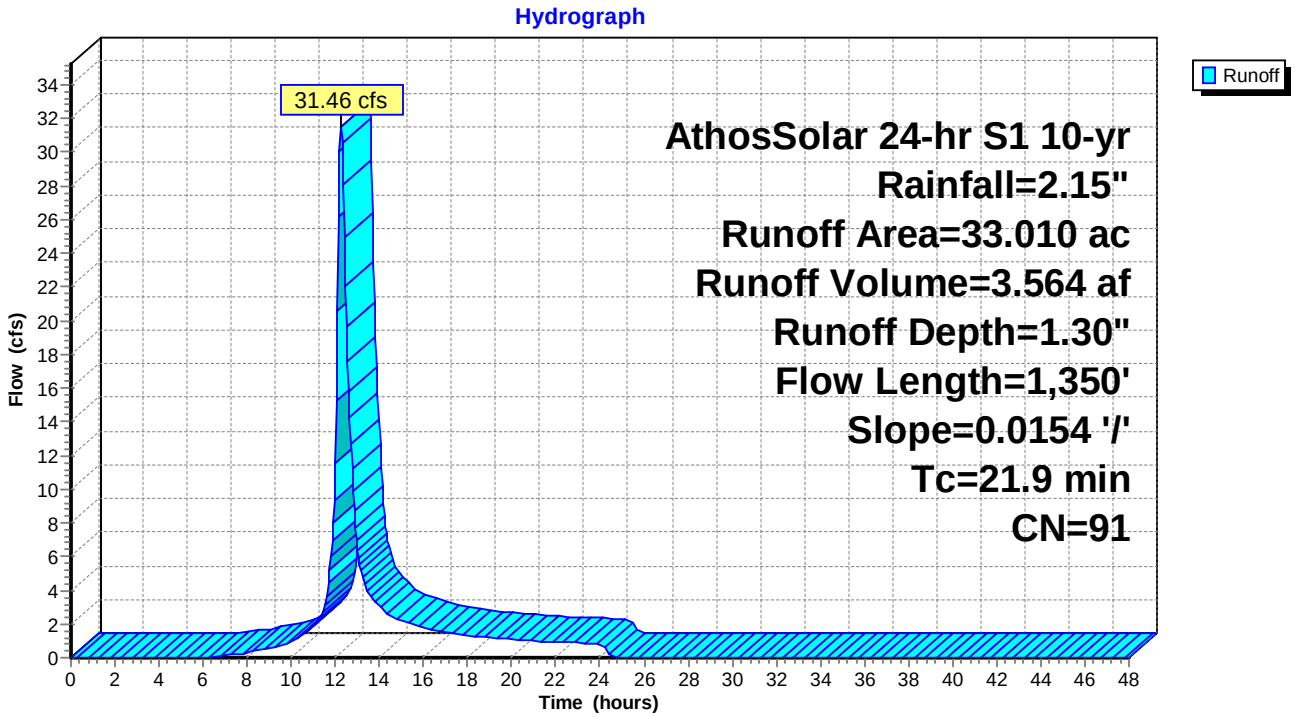
Runoff = 31.46 cfs @ 12.26 hrs, Volume= 3.564 af, Depth= 1.30"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs
AthosSolar 24-hr S1 10-yr Rainfall=2.15"

Area (ac)	CN	Description
31.360	91	Fallow, bare soil, HSG C
1.650	96	Gravel surface, HSG C
33.010	91	Weighted Average
33.010		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
21.9	1,350	0.0154	1.03		**Lag/CN Method,**

Subcatchment 61S: DA-3



Summary for Subcatchment 62S: DA-1

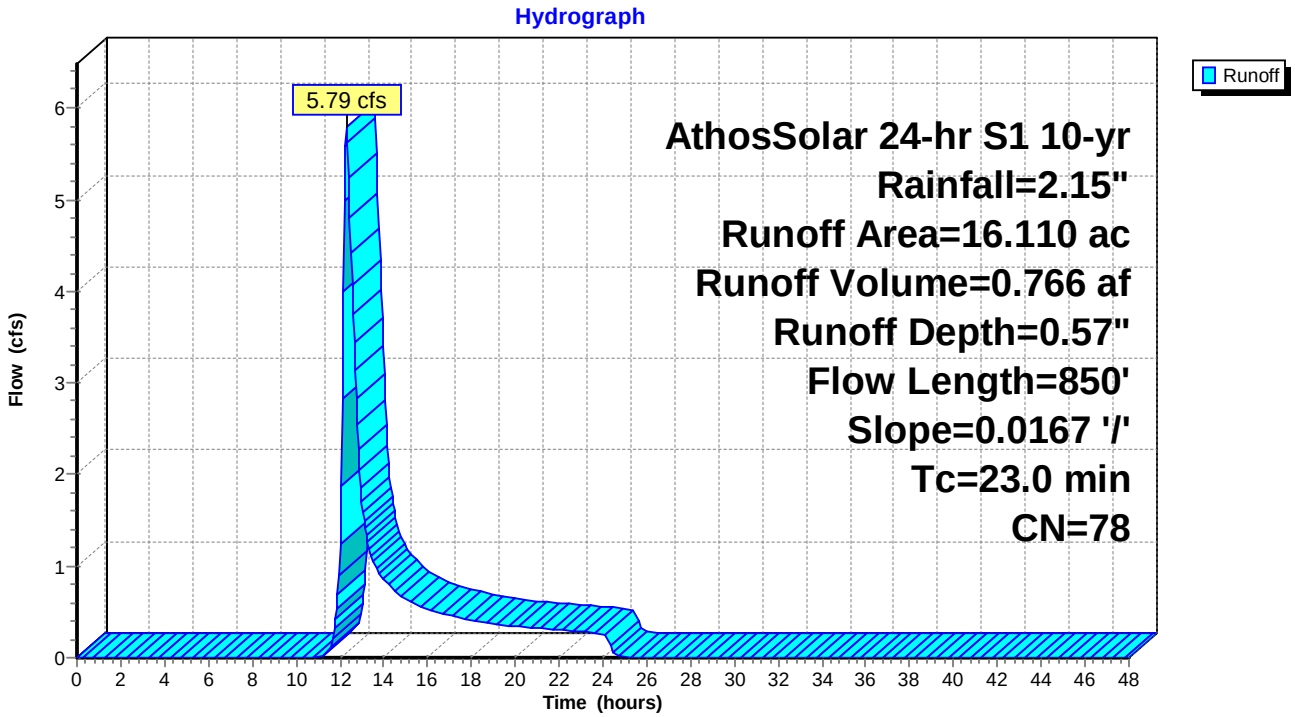
Runoff = 5.79 cfs @ 12.30 hrs, Volume= 0.766 af, Depth= 0.57"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs
AthosSolar 24-hr S1 10-yr Rainfall=2.15"

Area (ac)	CN	Description
15.300	77	Fallow, bare soil, HSG A
0.810	96	Gravel surface, HSG A
16.110	78	Weighted Average
16.110		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
23.0	850	0.0167	0.62		**Lag/CN Method,**

Subcatchment 62S: DA-1



Summary for Subcatchment 63S: DA-2

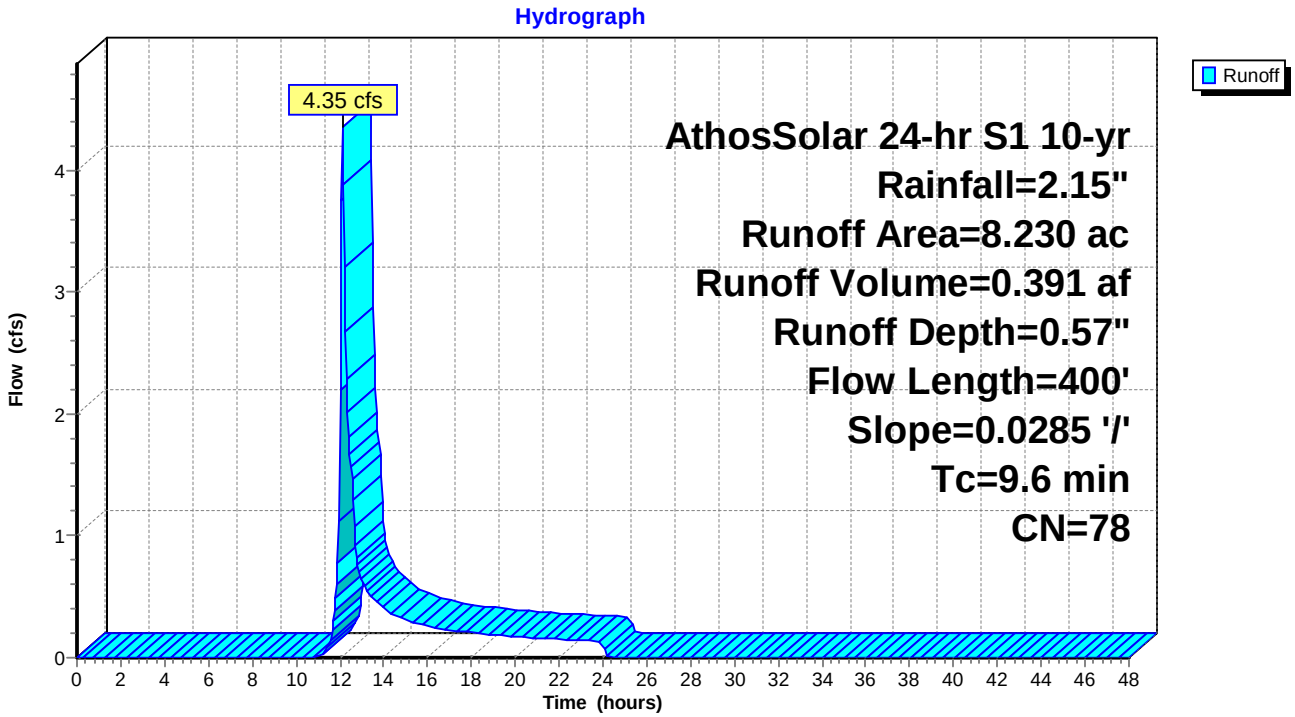
Runoff = 4.35 cfs @ 12.10 hrs, Volume= 0.391 af, Depth= 0.57"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs
AthosSolar 24-hr S1 10-yr Rainfall=2.15"

Area (ac)	CN	Description
7.820	77	Fallow, bare soil, HSG A
0.410	96	Gravel surface, HSG A
8.230	78	Weighted Average
8.230		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
9.6	400	0.0285	0.69		**Lag/CN Method,**

Subcatchment 63S: DA-2



Summary for Subcatchment 64S: DA-1

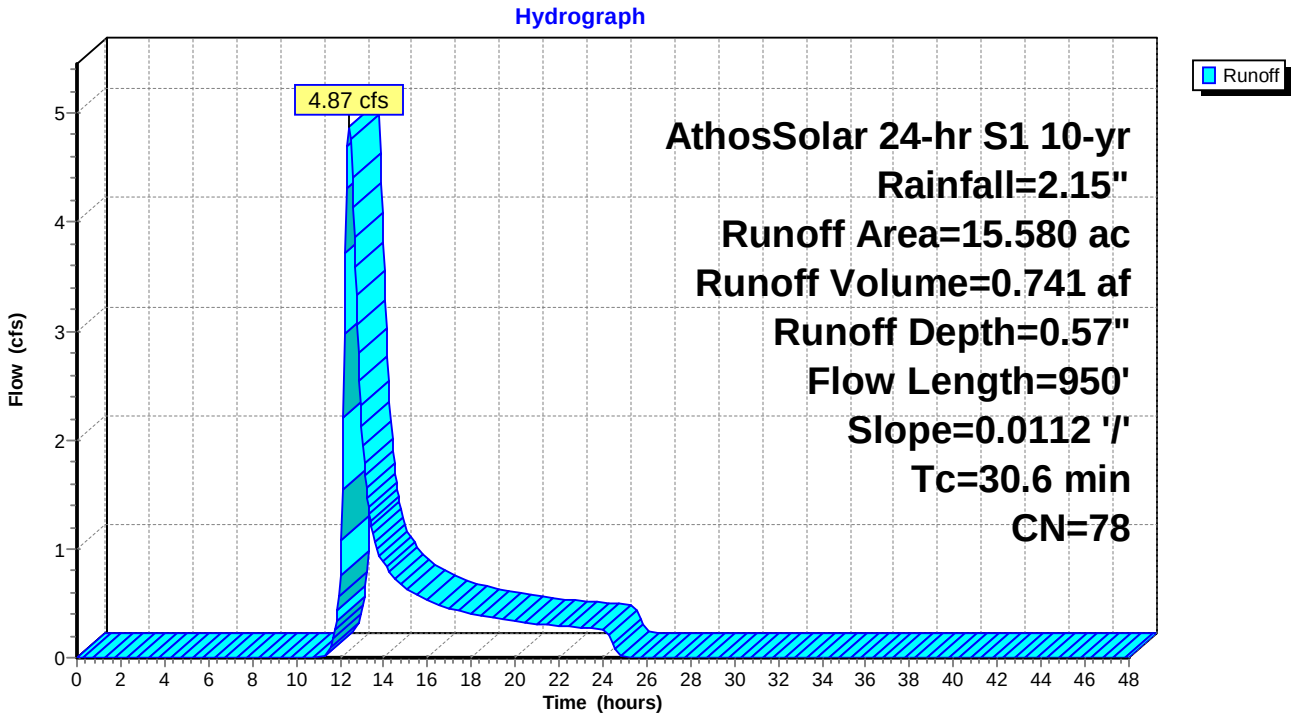
Runoff = 4.87 cfs @ 12.42 hrs, Volume= 0.741 af, Depth= 0.57"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs
AthosSolar 24-hr S1 10-yr Rainfall=2.15"

Area (ac)	CN	Description
14.800	77	Fallow, bare soil, HSG A
0.780	96	Gravel surface, HSG A
15.580	78	Weighted Average
15.580		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
30.6	950	0.0112	0.52		**Lag/CN Method,**

Subcatchment 64S: DA-1



Summary for Subcatchment 65S: DA-2

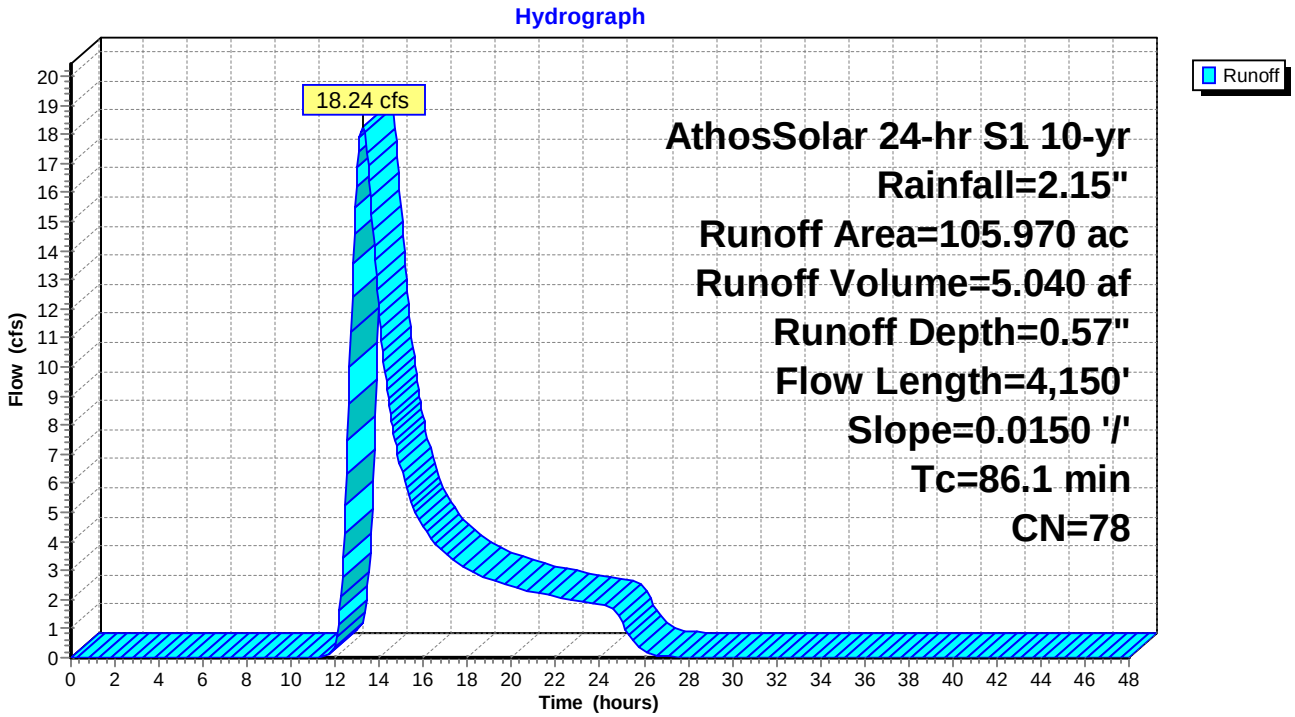
Runoff = 18.24 cfs @ 13.24 hrs, Volume= 5.040 af, Depth= 0.57"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs
AthosSolar 24-hr S1 10-yr Rainfall=2.15"

Area (ac)	CN	Description
100.680	77	Fallow, bare soil, HSG A
5.290	96	Gravel surface, HSG A
105.970	78	Weighted Average
105.970		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
86.1	4,150	0.0150	0.80		**Lag/CN Method,**

Subcatchment 65S: DA-2



Summary for Subcatchment 66S: DA-3

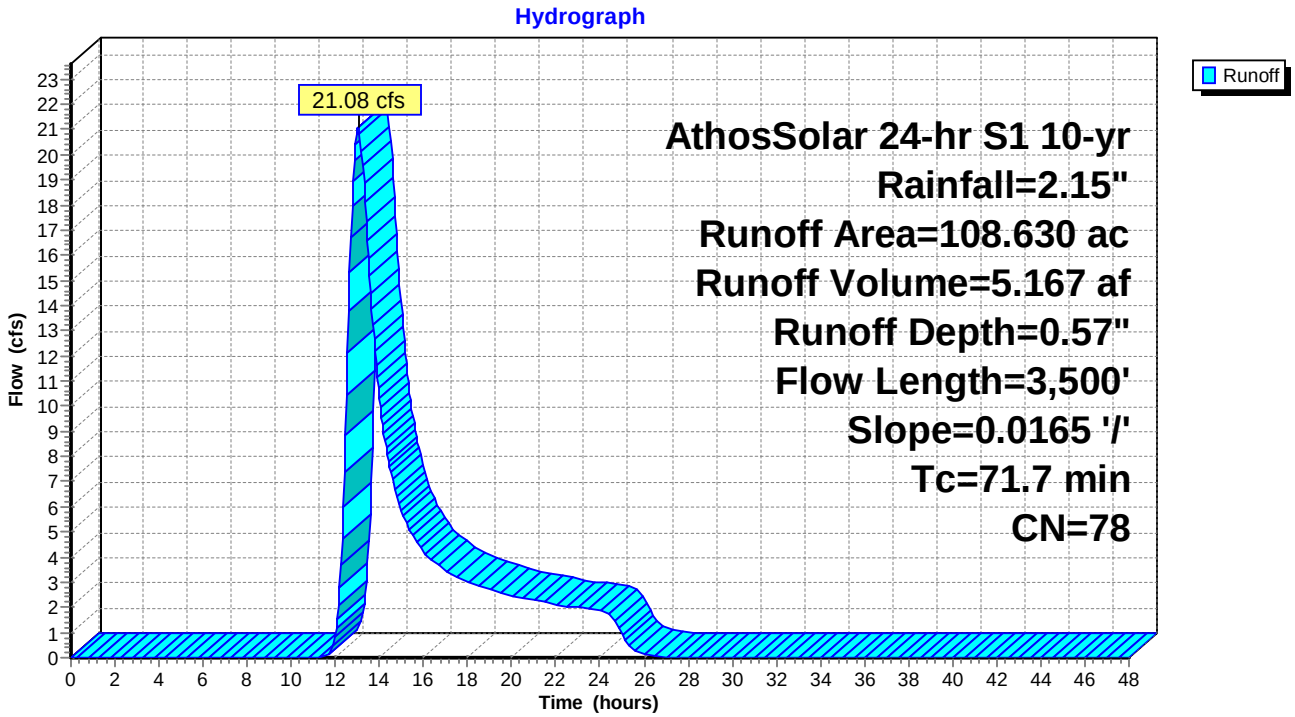
Runoff = 21.08 cfs @ 13.02 hrs, Volume= 5.167 af, Depth= 0.57"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs
AthosSolar 24-hr S1 10-yr Rainfall=2.15"

Area (ac)	CN	Description
103.200	77	Fallow, bare soil, HSG A
5.430	96	Gravel surface, HSG A
108.630	78	Weighted Average
108.630		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
71.7	3,500	0.0165	0.81		**Lag/CN Method,**

Subcatchment 66S: DA-3



Summary for Subcatchment 67S: DA-4

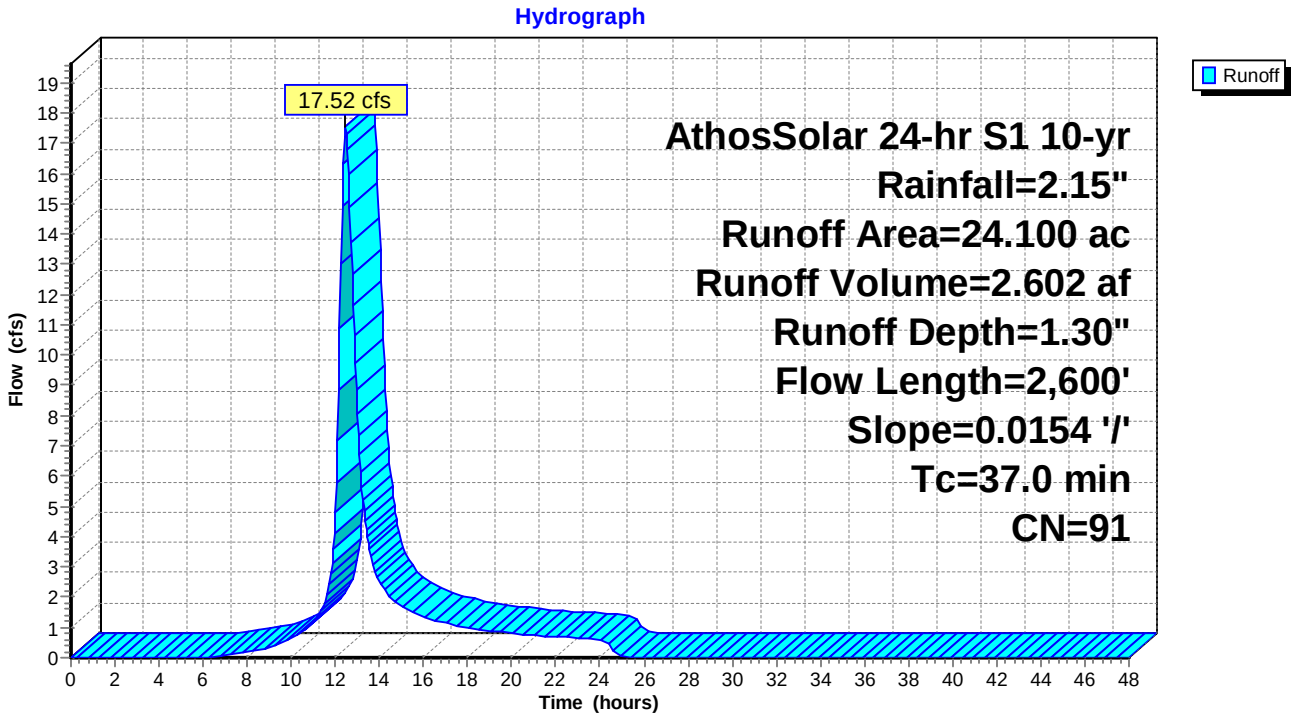
Runoff = 17.52 cfs @ 12.46 hrs, Volume= 2.602 af, Depth= 1.30"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs
AthosSolar 24-hr S1 10-yr Rainfall=2.15"

Area (ac)	CN	Description
22.890	91	Fallow, bare soil, HSG C
1.210	96	Gravel surface, HSG C
24.100	91	Weighted Average
24.100		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
37.0	2,600	0.0154	1.17		**Lag/CN Method,**

Subcatchment 67S: DA-4



Summary for Subcatchment 68S: DA-1

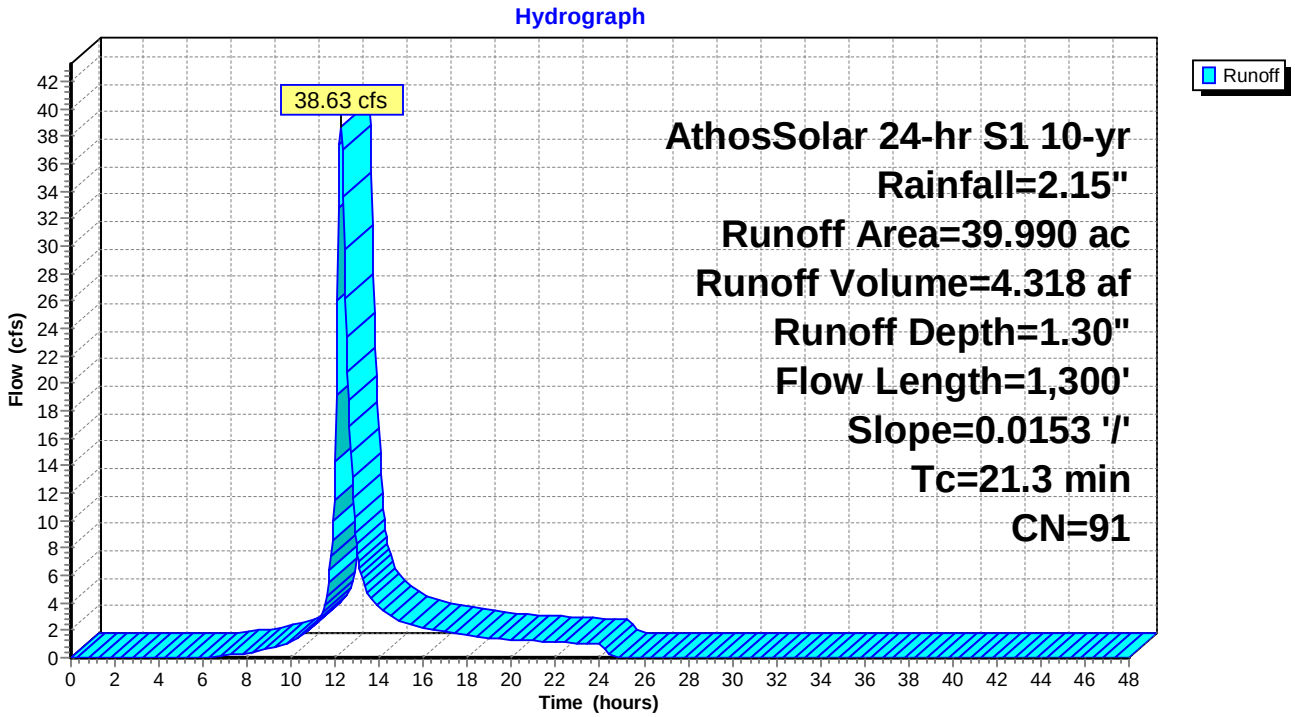
Runoff = 38.63 cfs @ 12.25 hrs, Volume= 4.318 af, Depth= 1.30"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs
AthosSolar 24-hr S1 10-yr Rainfall=2.15"

Area (ac)	CN	Description
38.000	91	Fallow, bare soil, HSG C
1.990	96	Gravel surface, HSG C
39.990	91	Weighted Average
39.990		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
21.3	1,300	0.0153	1.02		**Lag/CN Method,**

Subcatchment 68S: DA-1



Summary for Subcatchment 69S: DA-1

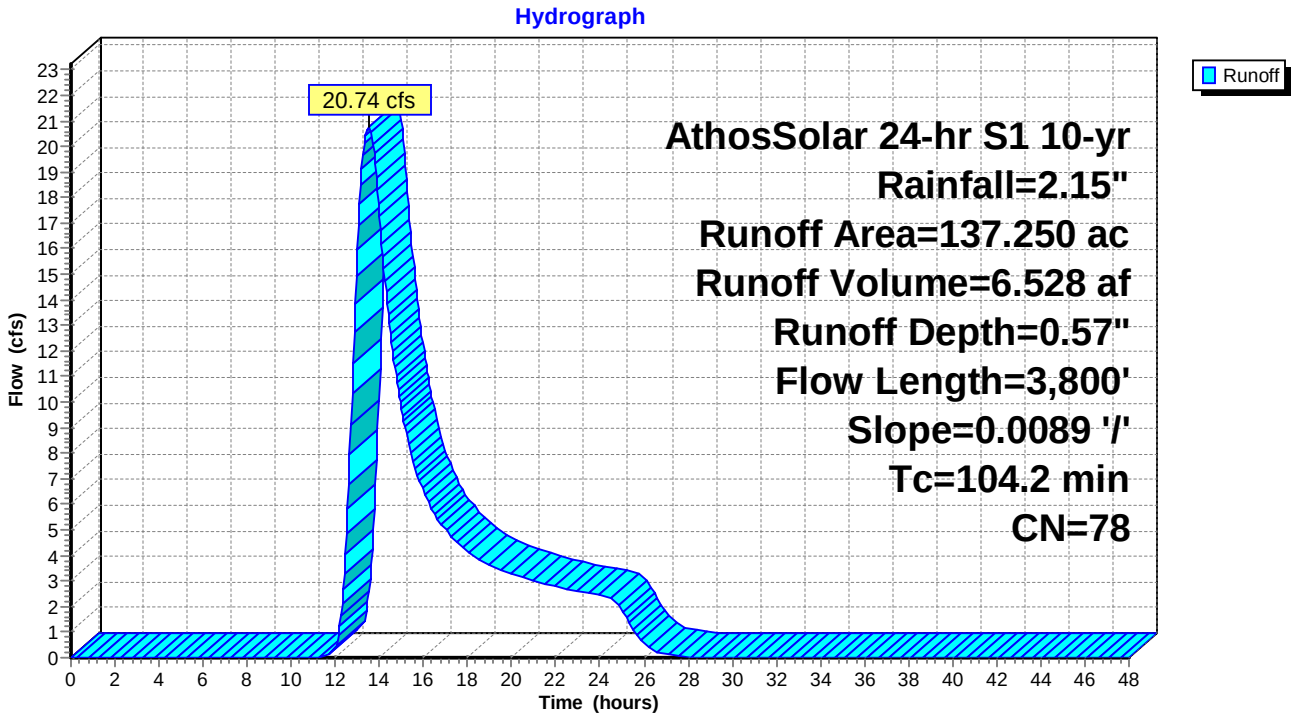
Runoff = 20.74 cfs @ 13.51 hrs, Volume= 6.528 af, Depth= 0.57"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs
AthosSolar 24-hr S1 10-yr Rainfall=2.15"

Area (ac)	CN	Description
130.390	77	Fallow, bare soil, HSG A
6.860	96	Gravel surface, HSG A
137.250	78	Weighted Average
137.250		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
104.2	3,800	0.0089	0.61		**Lag/CN Method,**

Subcatchment 69S: DA-1



Summary for Subcatchment 70S: DA-2

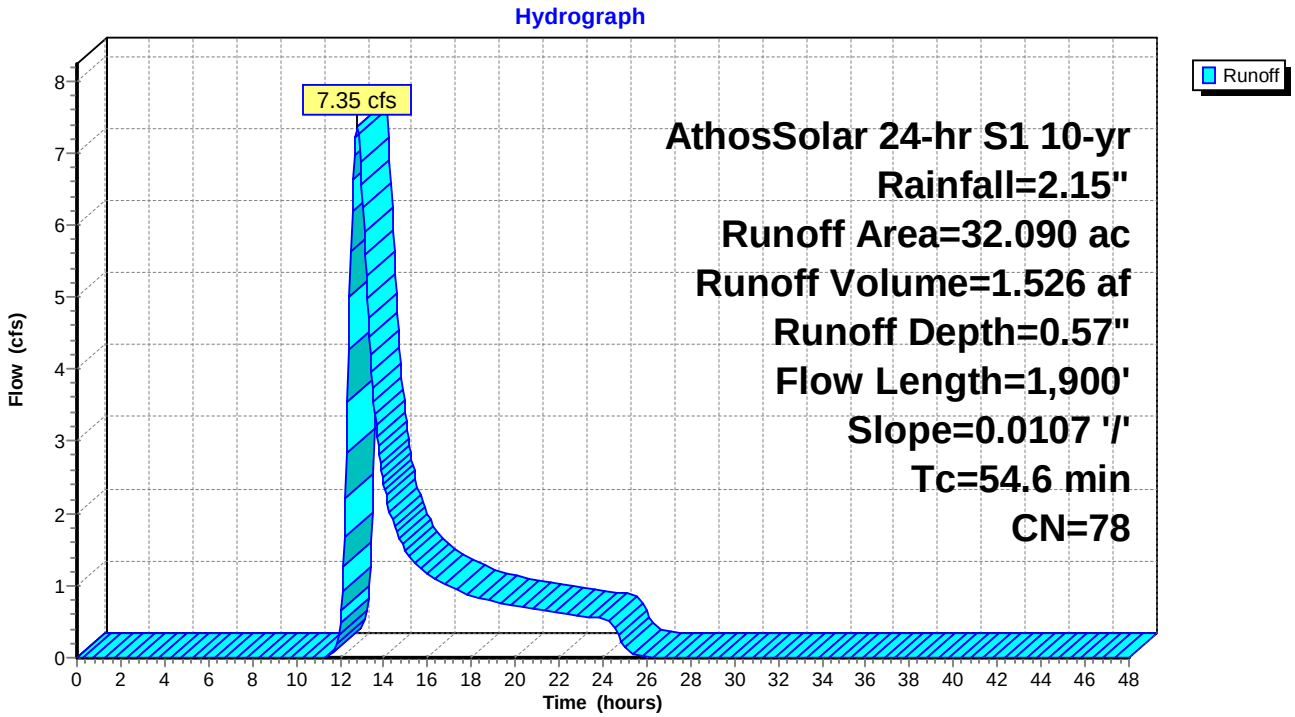
Runoff = 7.35 cfs @ 12.79 hrs, Volume= 1.526 af, Depth= 0.57"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs
AthosSolar 24-hr S1 10-yr Rainfall=2.15"

Area (ac)	CN	Description
30.490	77	Fallow, bare soil, HSG A
1.600	96	Gravel surface, HSG A
32.090	78	Weighted Average
32.090		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
54.6	1,900	0.0107	0.58		**Lag/CN Method,**

Subcatchment 70S: DA-2



Summary for Subcatchment 71S: DA-1

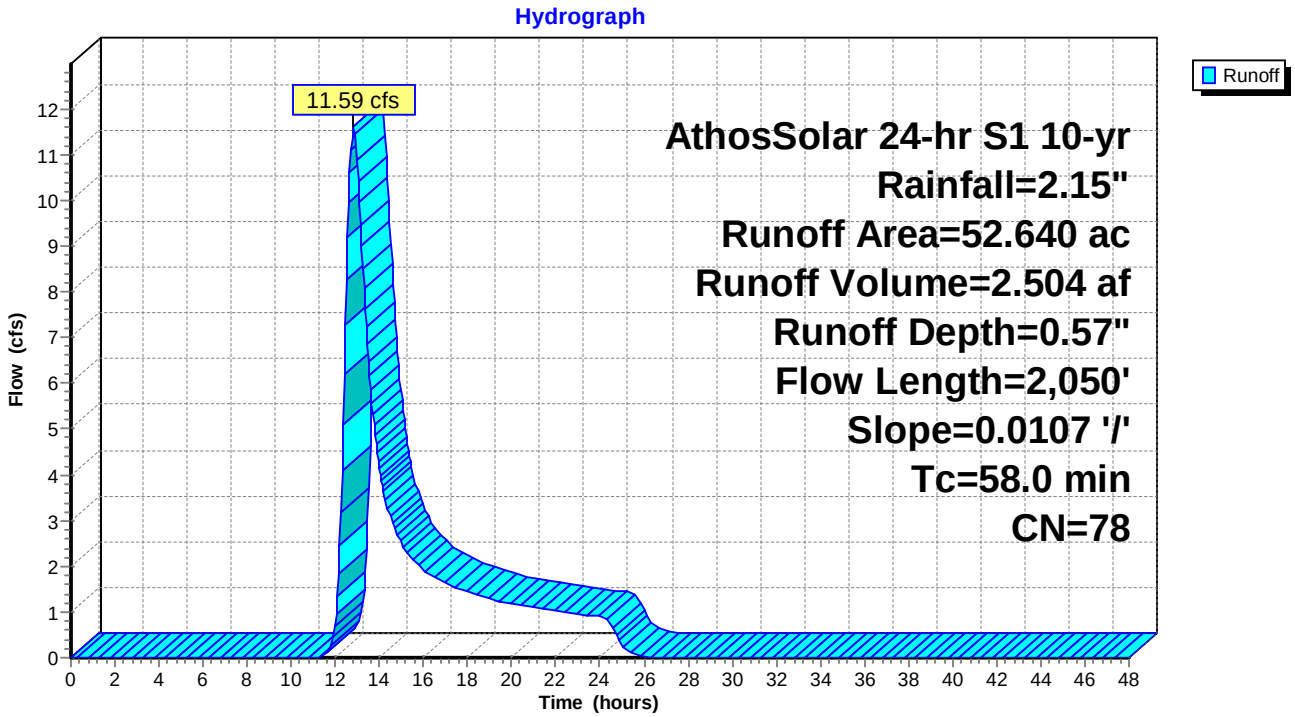
Runoff = 11.59 cfs @ 12.84 hrs, Volume= 2.504 af, Depth= 0.57"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs
AthosSolar 24-hr S1 10-yr Rainfall=2.15"

Area (ac)	CN	Description
50.010	77	Fallow, bare soil, HSG A
2.630	96	Gravel surface, HSG A
52.640	78	Weighted Average
52.640		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
58.0	2,050	0.0107	0.59		**Lag/CN Method,**

Subcatchment 71S: DA-1



Summary for Subcatchment 72S: DA-2

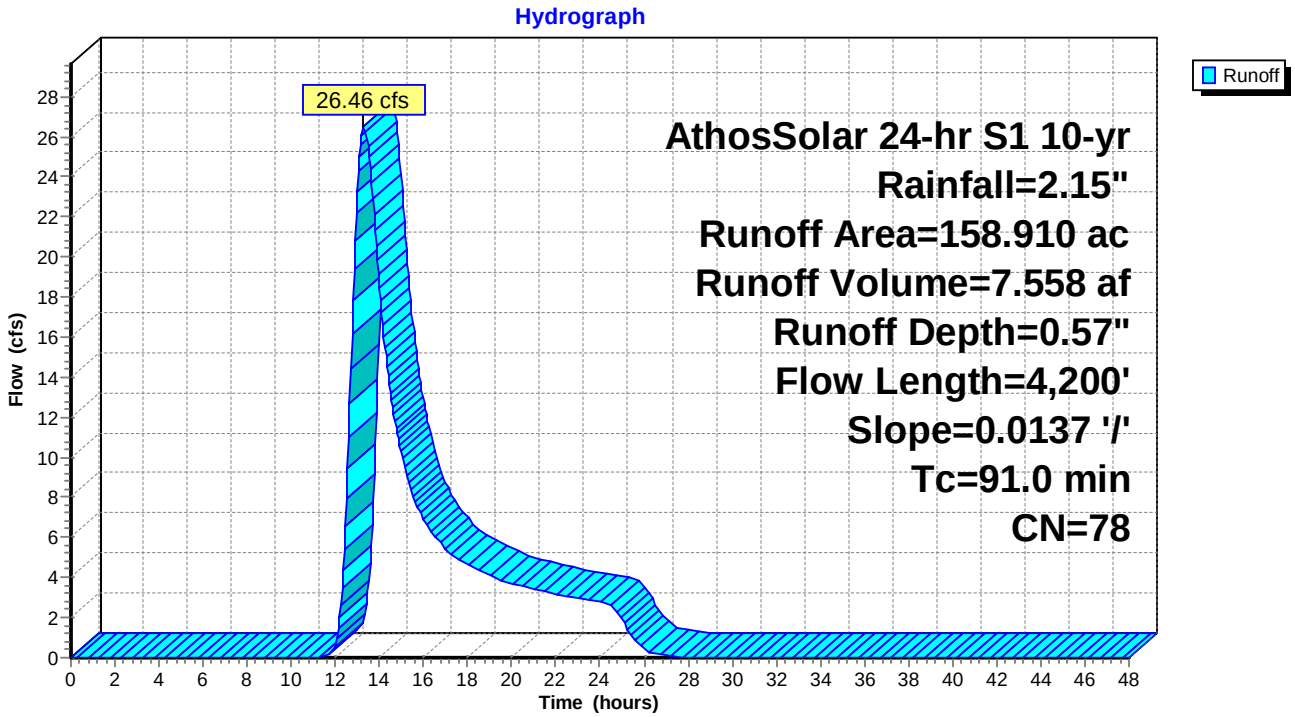
Runoff = 26.46 cfs @ 13.29 hrs, Volume= 7.558 af, Depth= 0.57"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs
AthosSolar 24-hr S1 10-yr Rainfall=2.15"

Area (ac)	CN	Description
150.960	77	Fallow, bare soil, HSG A
7.950	96	Gravel surface, HSG A
158.910	78	Weighted Average
158.910		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
91.0	4,200	0.0137	0.77		**Lag/CN Method,**

Subcatchment 72S: DA-2



Summary for Subcatchment 73S: DA-3

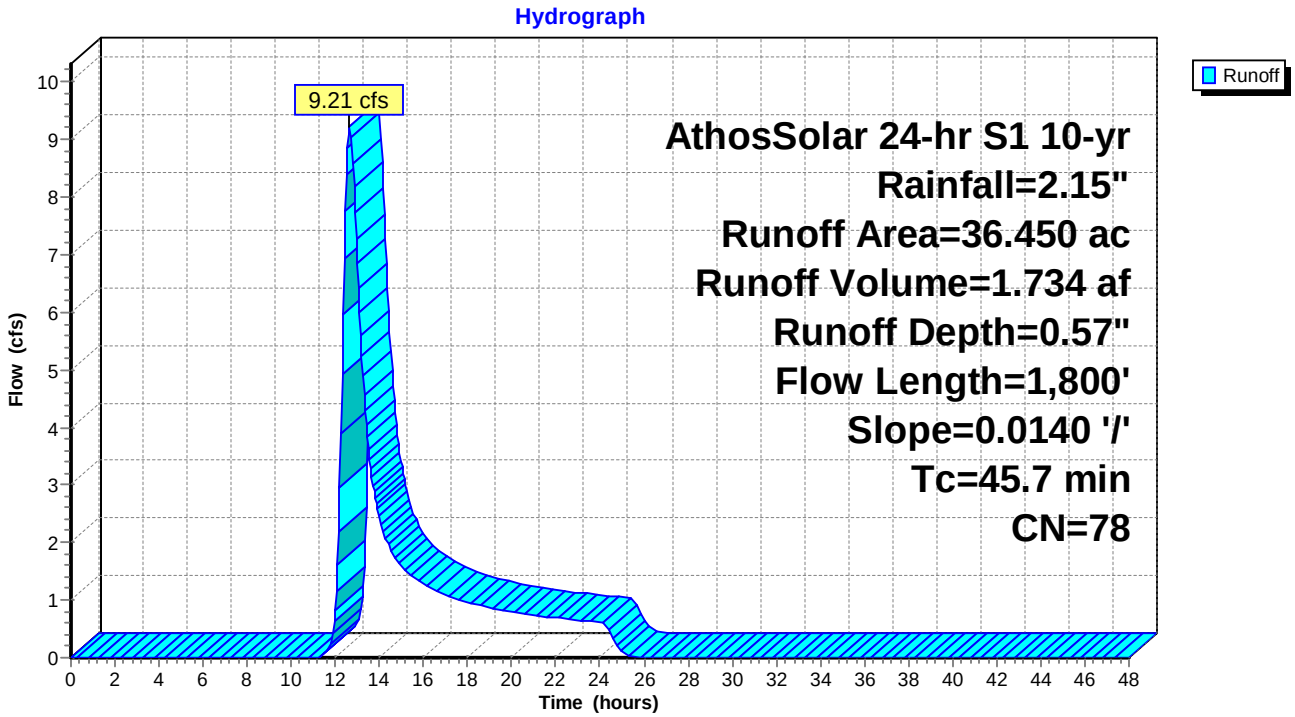
Runoff = 9.21 cfs @ 12.66 hrs, Volume= 1.734 af, Depth= 0.57"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs
AthosSolar 24-hr S1 10-yr Rainfall=2.15"

Area (ac)	CN	Description
34.630	77	Fallow, bare soil, HSG A
1.820	96	Gravel surface, HSG A
36.450	78	Weighted Average
36.450		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
45.7	1,800	0.0140	0.66		**Lag/CN Method,**

Subcatchment 73S: DA-3



Summary for Subcatchment 74S: DA-4

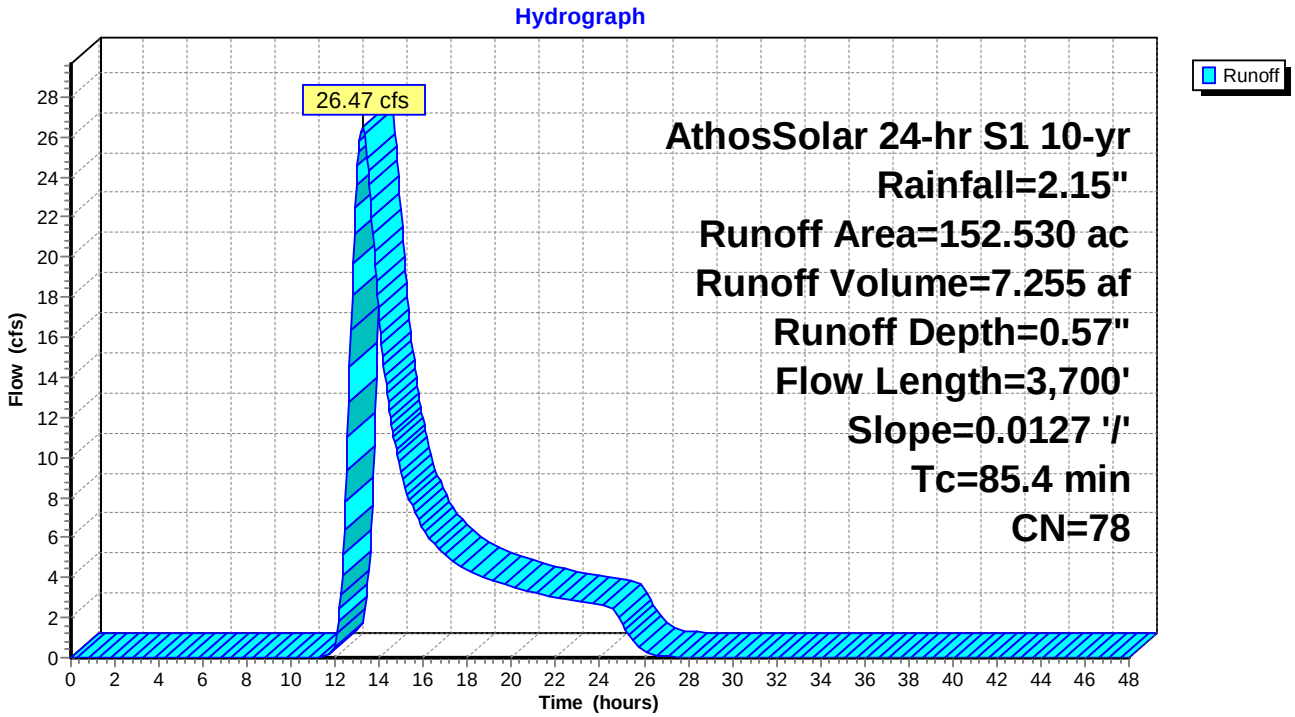
Runoff = 26.47 cfs @ 13.21 hrs, Volume= 7.255 af, Depth= 0.57"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs
AthosSolar 24-hr S1 10-yr Rainfall=2.15"

Area (ac)	CN	Description
144.900	77	Fallow, bare soil, HSG A
7.630	96	Gravel surface, HSG A
152.530	78	Weighted Average
152.530		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
85.4	3,700	0.0127	0.72		**Lag/CN Method,**

Subcatchment 74S: DA-4



Summary for Pond 22P: P-1 DA-1

Inflow Area = 129.980 ac, 0.00% Impervious, Inflow Depth = 0.57" for 10-yr event
Inflow = 17.71 cfs @ 13.74 hrs, Volume= 6.182 af
Outflow = 15.64 cfs @ 14.24 hrs, Volume= 5.132 af, Atten= 12%, Lag= 30.5 min
Primary = 15.64 cfs @ 14.24 hrs, Volume= 5.132 af

Routing by Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs
Peak Elev= 574.41' @ 14.24 hrs Surf.Area= 0.883 ac Storage= 1.398 af

Plug-Flow detention time= 147.1 min calculated for 5.127 af (83% of inflow)
Center-of-Mass det. time= 67.6 min (1,074.1 - 1,006.4)

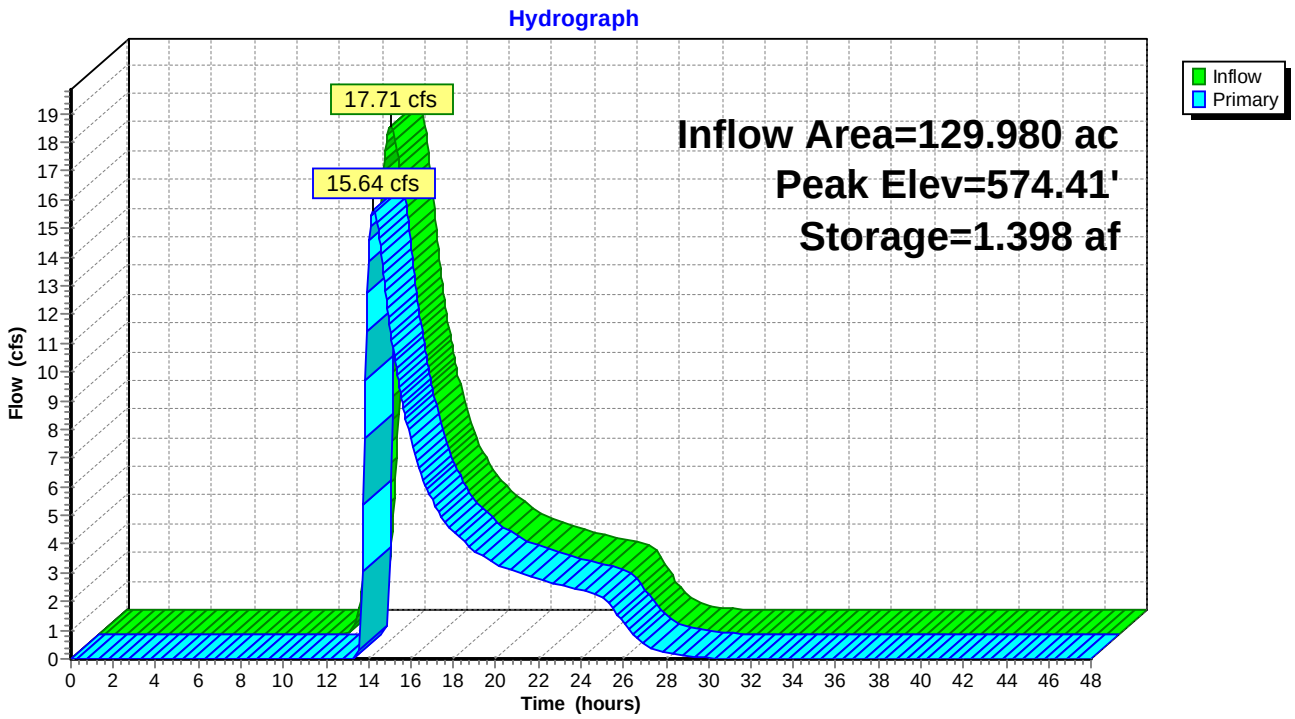
Volume	Invert	Avail.Storage	Storage Description
#1	571.00'	1.950 af	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (acres)	Inc.Store (acre-feet)	Cum.Store (acre-feet)
571.00	0.100	0.000	0.000
572.00	0.200	0.150	0.150
573.00	0.400	0.300	0.450
574.00	0.800	0.600	1.050
575.00	1.000	0.900	1.950

Device	Routing	Invert	Outlet Devices
#1	Primary	574.00'	**20.0' long x 0.5' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 Coef. (English) 2.80 2.92 3.08 3.30 3.32

Primary OutFlow Max=15.62 cfs @ 14.24 hrs HW=574.41' (Free Discharge)
└**1=Broad-Crested Rectangular Weir** (Weir Controls 15.62 cfs @ 1.89 fps)

Pond 22P: P-1 DA-1



Summary for Pond 23P: P-1 DA-2

Inflow Area = 238.470 ac, 0.00% Impervious, Inflow Depth = 0.57" for 10-yr event
Inflow = 23.88 cfs @ 14.71 hrs, Volume= 11.343 af
Outflow = 20.67 cfs @ 15.54 hrs, Volume= 9.243 af, Atten= 13%, Lag= 49.7 min
Primary = 20.67 cfs @ 15.54 hrs, Volume= 9.243 af

Routing by Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs
Peak Elev= 574.49' @ 15.54 hrs Surf.Area= 1.797 ac Storage= 2.935 af

Plug-Flow detention time= 181.2 min calculated for 9.233 af (81% of inflow)
Center-of-Mass det. time= 94.2 min (1,162.2 - 1,068.0)

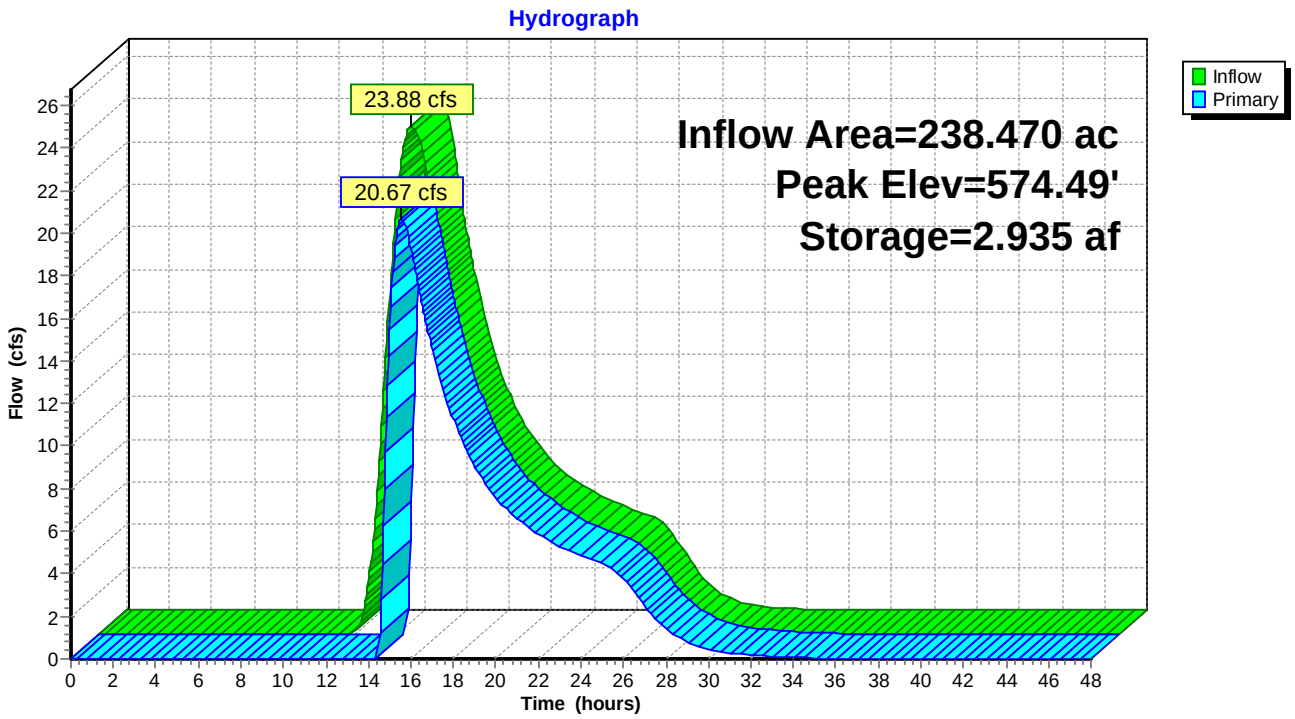
Volume	Invert	Avail.Storage	Storage Description
#1	571.00'	3.900 af	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (acres)	Inc.Store (acre-feet)	Cum.Store (acre-feet)
571.00	0.200	0.000	0.000
572.00	0.400	0.300	0.300
573.00	0.800	0.600	0.900
574.00	1.600	1.200	2.100
575.00	2.000	1.800	3.900

Device	Routing	Invert	Outlet Devices
#1	Primary	574.00'	**20.0' long x 0.5' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 Coef. (English) 2.80 2.92 3.08 3.30 3.32

Primary OutFlow Max=20.65 cfs @ 15.54 hrs HW=574.49' (Free Discharge)
└**1=Broad-Crested Rectangular Weir** (Weir Controls 20.65 cfs @ 2.10 fps)

Pond 23P: P-1 DA-2



Summary for Pond 24P: P-1 DA-3

Inflow Area = 388.350 ac, 0.00% Impervious, Inflow Depth = 0.57" for 10-yr event
Inflow = 34.02 cfs @ 15.39 hrs, Volume= 18.472 af
Outflow = 30.16 cfs @ 16.30 hrs, Volume= 14.722 af, Atten= 11%, Lag= 54.3 min
Primary = 30.16 cfs @ 16.30 hrs, Volume= 14.722 af

Routing by Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs
Peak Elev= 574.62' @ 16.30 hrs Surf.Area= 2.155 ac Storage= 5.034 af

Plug-Flow detention time= 202.3 min calculated for 14.722 af (80% of inflow)
Center-of-Mass det. time= 105.9 min (1,213.9 - 1,107.9)

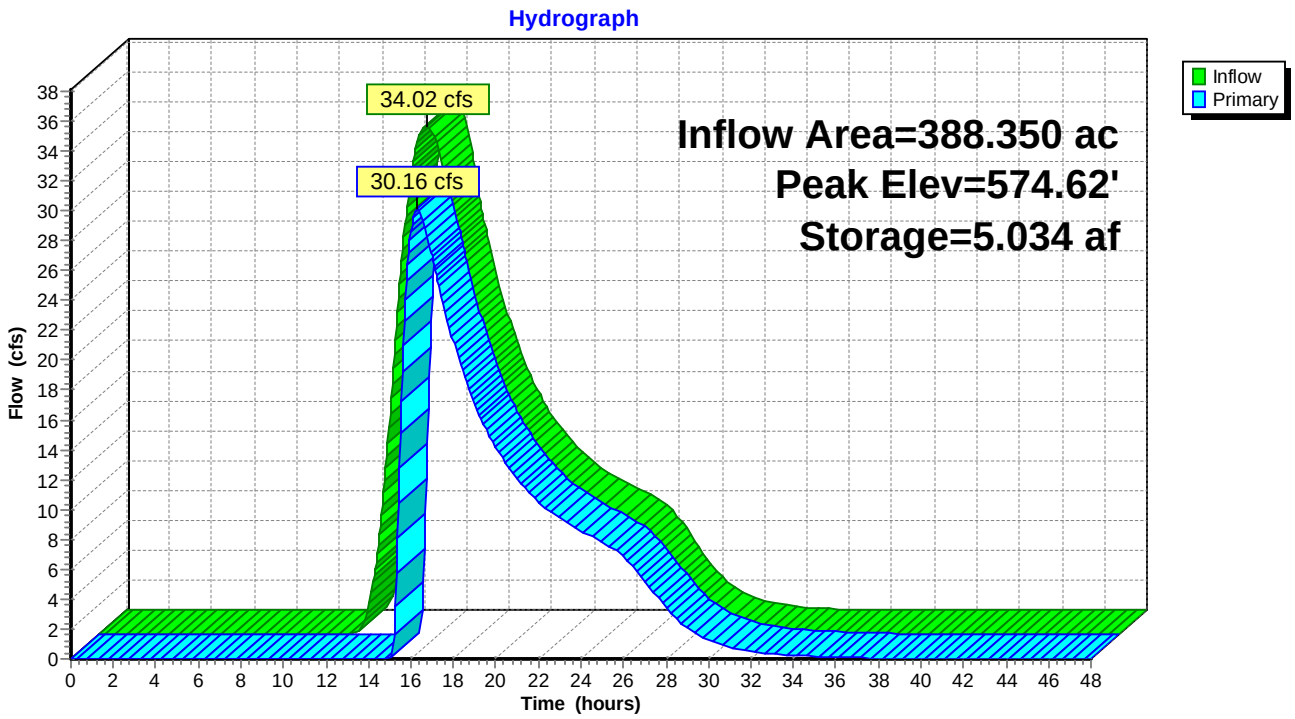
Volume	Invert	Avail.Storage	Storage Description
#1	571.00'	5.875 af	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (acres)	Inc.Store (acre-feet)	Cum.Store (acre-feet)
571.00	0.500	0.000	0.000
572.00	1.000	0.750	0.750
573.00	1.500	1.250	2.000
574.00	2.000	1.750	3.750
575.00	2.250	2.125	5.875

Device	Routing	Invert	Outlet Devices
#1	Primary	574.00'	**20.0' long x 0.5' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 Coef. (English) 2.80 2.92 3.08 3.30 3.32

Primary OutFlow Max=30.14 cfs @ 16.30 hrs HW=574.62' (Free Discharge)
└**1=Broad-Crested Rectangular Weir** (Weir Controls 30.14 cfs @ 2.44 fps)

Pond 24P: P-1 DA-3



Summary for Pond 26P: P-1 DA-4

Inflow Area = 214.310 ac, 0.00% Impervious, Inflow Depth = 0.57" for 10-yr event
Inflow = 25.59 cfs @ 14.14 hrs, Volume= 10.194 af
Outflow = 22.21 cfs @ 14.78 hrs, Volume= 8.394 af, Atten= 13%, Lag= 38.3 min
Primary = 22.21 cfs @ 14.78 hrs, Volume= 8.394 af

Routing by Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs
Peak Elev= 574.51' @ 14.78 hrs Surf.Area= 1.514 ac Storage= 2.446 af

Plug-Flow detention time= 158.4 min calculated for 8.385 af (82% of inflow)
Center-of-Mass det. time= 75.9 min (1,106.9 - 1,031.0)

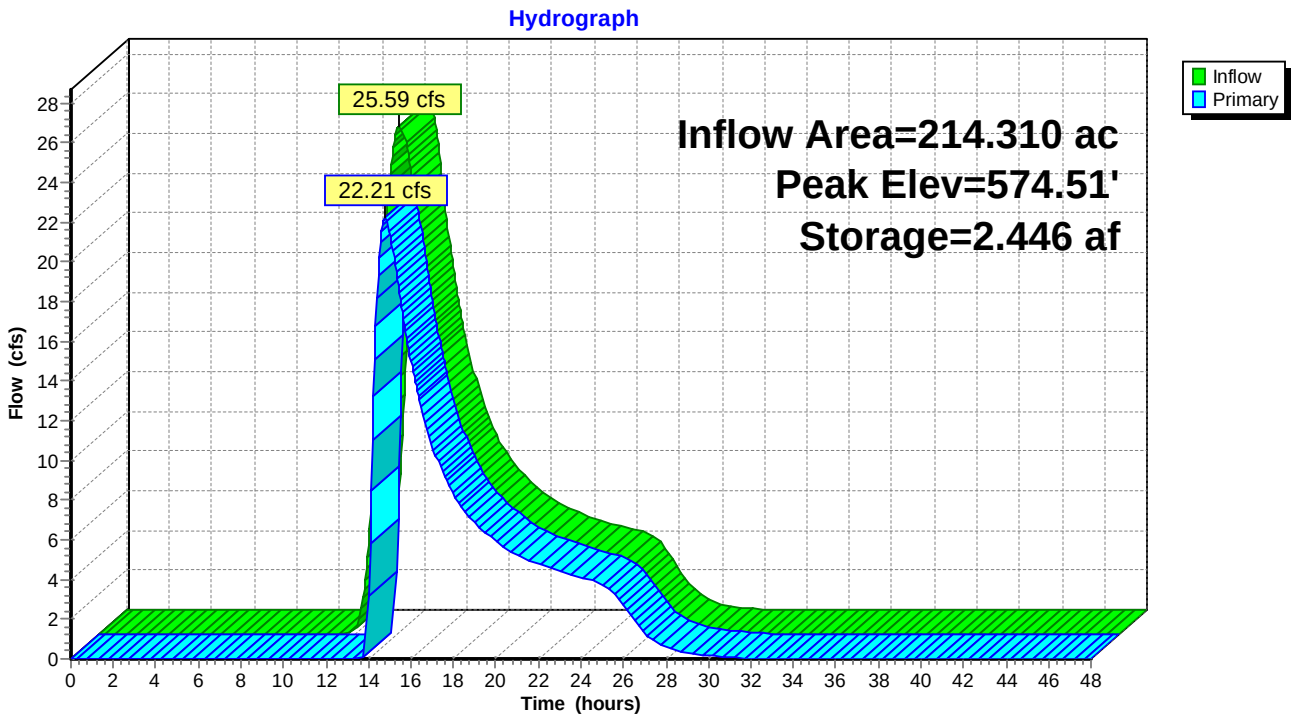
Volume	Invert	Avail.Storage	Storage Description
#1	571.00'	3.300 af	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (acres)	Inc.Store (acre-feet)	Cum.Store (acre-feet)
571.00	0.200	0.000	0.000
572.00	0.400	0.300	0.300
573.00	0.800	0.600	0.900
574.00	1.000	0.900	1.800
575.00	2.000	1.500	3.300

Device	Routing	Invert	Outlet Devices
#1	Primary	574.00'	**20.0' long x 0.5' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 Coef. (English) 2.80 2.92 3.08 3.30 3.32

Primary OutFlow Max=22.19 cfs @ 14.78 hrs HW=574.51' (Free Discharge)
└**1=Broad-Crested Rectangular Weir** (Weir Controls 22.19 cfs @ 2.16 fps)

Pond 26P: P-1 DA-4



Summary for Pond 27P: P-2 DA-1

Inflow Area = 58.940 ac, 0.00% Impervious, Inflow Depth = 0.57" for 10-yr event
Inflow = 8.06 cfs @ 13.74 hrs, Volume= 2.803 af
Outflow = 0.82 cfs @ 25.15 hrs, Volume= 0.203 af, Atten= 90%, Lag= 684.5 min
Primary = 0.82 cfs @ 25.15 hrs, Volume= 0.203 af

Routing by Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs
Peak Elev= 574.06' @ 25.15 hrs Surf.Area= 1.206 ac Storage= 2.670 af

Plug-Flow detention time= 790.4 min calculated for 0.203 af (7% of inflow)
Center-of-Mass det. time= 554.9 min (1,560.4 - 1,005.5)

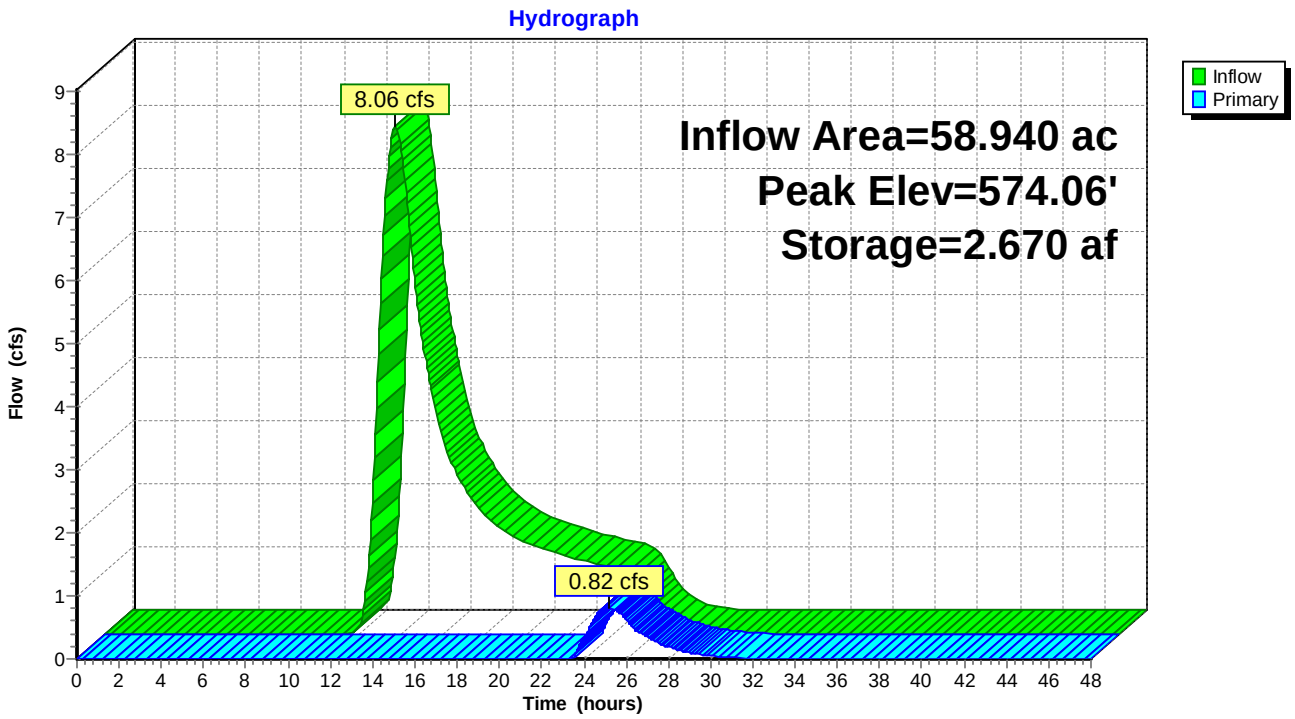
Volume	Invert	Avail.Storage	Storage Description
#1	571.00'	3.850 af	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (acres)	Inc.Store (acre-feet)	Cum.Store (acre-feet)
571.00	0.500	0.000	0.000
572.00	0.750	0.625	0.625
573.00	1.000	0.875	1.500
574.00	1.200	1.100	2.600
575.00	1.300	1.250	3.850

Device	Routing	Invert	Outlet Devices
#1	Primary	574.00'	**20.0' long x 0.5' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 Coef. (English) 2.80 2.92 3.08 3.30 3.32

Primary OutFlow Max=0.78 cfs @ 25.15 hrs HW=574.06' (Free Discharge)
└**1=Broad-Crested Rectangular Weir** (Weir Controls 0.78 cfs @ 0.67 fps)

Pond 27P: P-2 DA-1



Summary for Pond 28P: P-2 DA-2

Inflow Area = 108.100 ac, 0.00% Impervious, Inflow Depth = 0.57" for 10-yr event
Inflow = 13.38 cfs @ 14.01 hrs, Volume= 5.142 af
Outflow = 1.49 cfs @ 25.35 hrs, Volume= 0.517 af, Atten= 89%, Lag= 680.5 min
Primary = 1.49 cfs @ 25.35 hrs, Volume= 0.517 af

Routing by Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs
Peak Elev= 574.09' @ 25.35 hrs Surf.Area= 2.316 ac Storage= 4.827 af

Plug-Flow detention time= 810.9 min calculated for 0.516 af (10% of inflow)
Center-of-Mass det. time= 574.7 min (1,597.7 - 1,023.0)

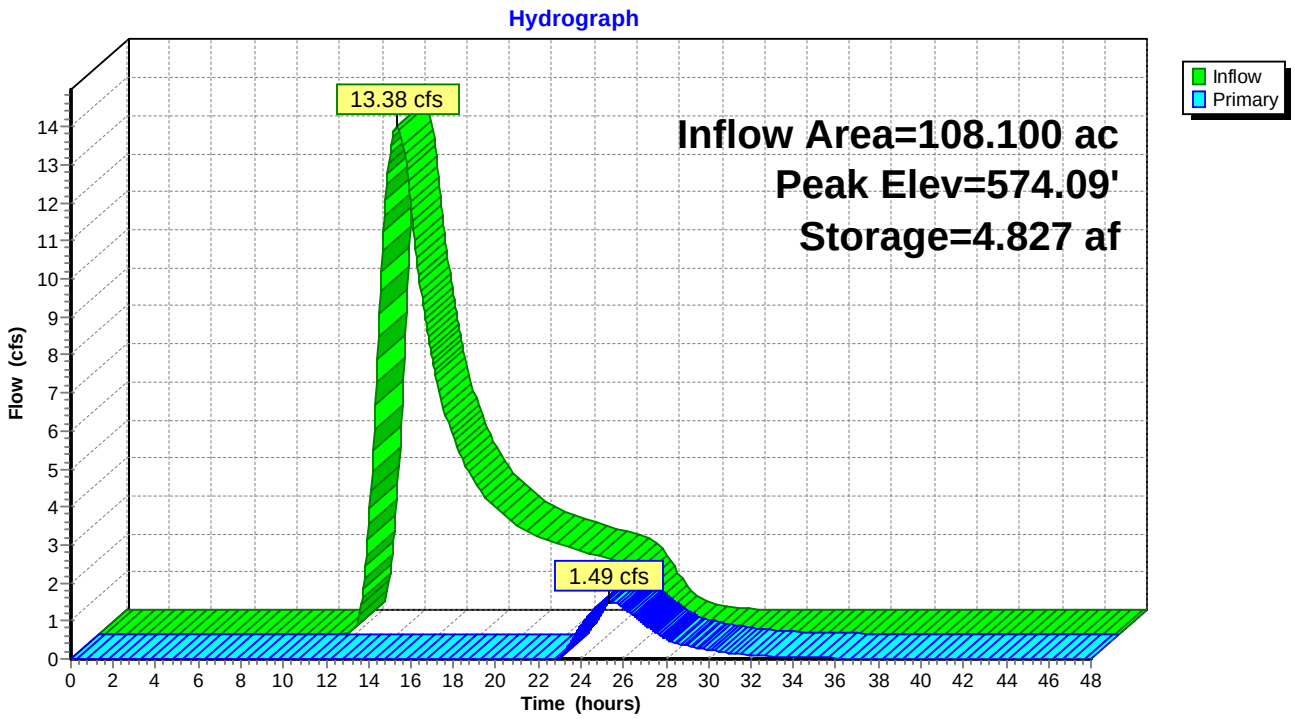
Volume	Invert	Avail.Storage	Storage Description
#1	571.00'	7.250 af	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (acres)	Inc.Store (acre-feet)	Cum.Store (acre-feet)
571.00	0.500	0.000	0.000
572.00	1.250	0.875	0.875
573.00	2.000	1.625	2.500
574.00	2.250	2.125	4.625
575.00	3.000	2.625	7.250

Device	Routing	Invert	Outlet Devices
#1	Primary	574.00'	**20.0' long x 0.5' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 Coef. (English) 2.80 2.92 3.08 3.30 3.32

Primary OutFlow Max=1.48 cfs @ 25.35 hrs HW=574.09' (Free Discharge)
└**1=Broad-Crested Rectangular Weir** (Weir Controls 1.48 cfs @ 0.83 fps)

Pond 28P: P-2 DA-2



Summary for Pond 29P: P-3 DA-1

Inflow Area = 162.080 ac, 0.00% Impervious, Inflow Depth = 0.57" for 10-yr event
Inflow = 26.07 cfs @ 13.38 hrs, Volume= 7.709 af
Outflow = 22.26 cfs @ 13.79 hrs, Volume= 6.634 af, Atten= 15%, Lag= 24.3 min
Primary = 22.26 cfs @ 13.79 hrs, Volume= 6.634 af

Routing by Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs
Peak Elev= 574.51' @ 13.79 hrs Surf.Area= 1.401 ac Storage= 1.564 af

Plug-Flow detention time= 120.6 min calculated for 6.634 af (86% of inflow)
Center-of-Mass det. time= 52.9 min (1,033.9 - 981.0)

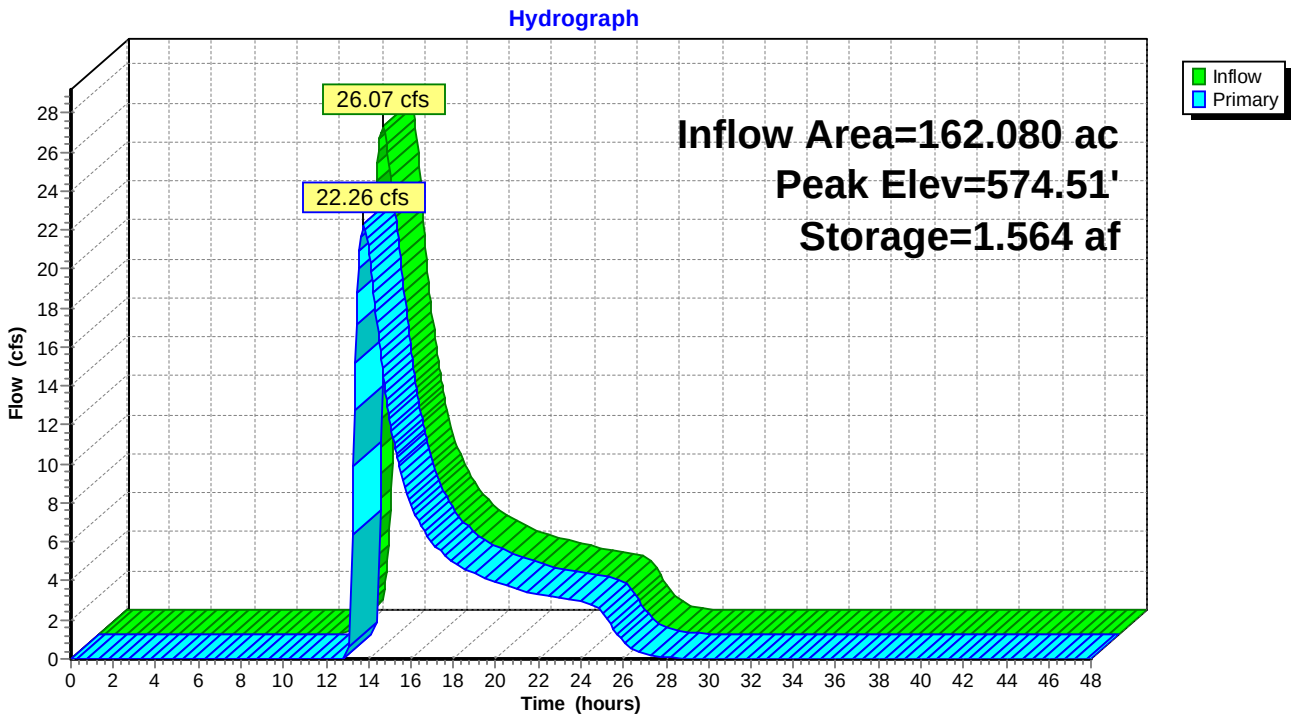
Volume	Invert	Avail.Storage	Storage Description
#1	571.00'	2.450 af	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (acres)	Inc.Store (acre-feet)	Cum.Store (acre-feet)
571.00	0.250	0.000	0.000
572.00	0.300	0.275	0.275
573.00	0.400	0.350	0.625
574.00	0.500	0.450	1.075
575.00	2.250	1.375	2.450

Device	Routing	Invert	Outlet Devices
#1	Primary	574.00'	**20.0' long x 0.5' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 Coef. (English) 2.80 2.92 3.08 3.30 3.32

Primary OutFlow Max=22.23 cfs @ 13.79 hrs HW=574.51' (Free Discharge)
└**1=Broad-Crested Rectangular Weir** (Weir Controls 22.23 cfs @ 2.16 fps)

Pond 29P: P-3 DA-1



Summary for Pond 30P: P-3 DA-2

Inflow Area = 324.340 ac, 0.00% Impervious, Inflow Depth = 0.57" for 10-yr event
Inflow = 37.07 cfs @ 14.28 hrs, Volume= 15.427 af
Outflow = 32.51 cfs @ 14.87 hrs, Volume= 12.802 af, Atten= 12%, Lag= 35.0 min
Primary = 32.51 cfs @ 14.87 hrs, Volume= 12.802 af

Routing by Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs
Peak Elev= 574.65' @ 14.87 hrs Surf.Area= 1.896 ac Storage= 3.641 af

Plug-Flow detention time= 157.5 min calculated for 12.789 af (83% of inflow)
Center-of-Mass det. time= 77.2 min (1,114.1 - 1,036.9)

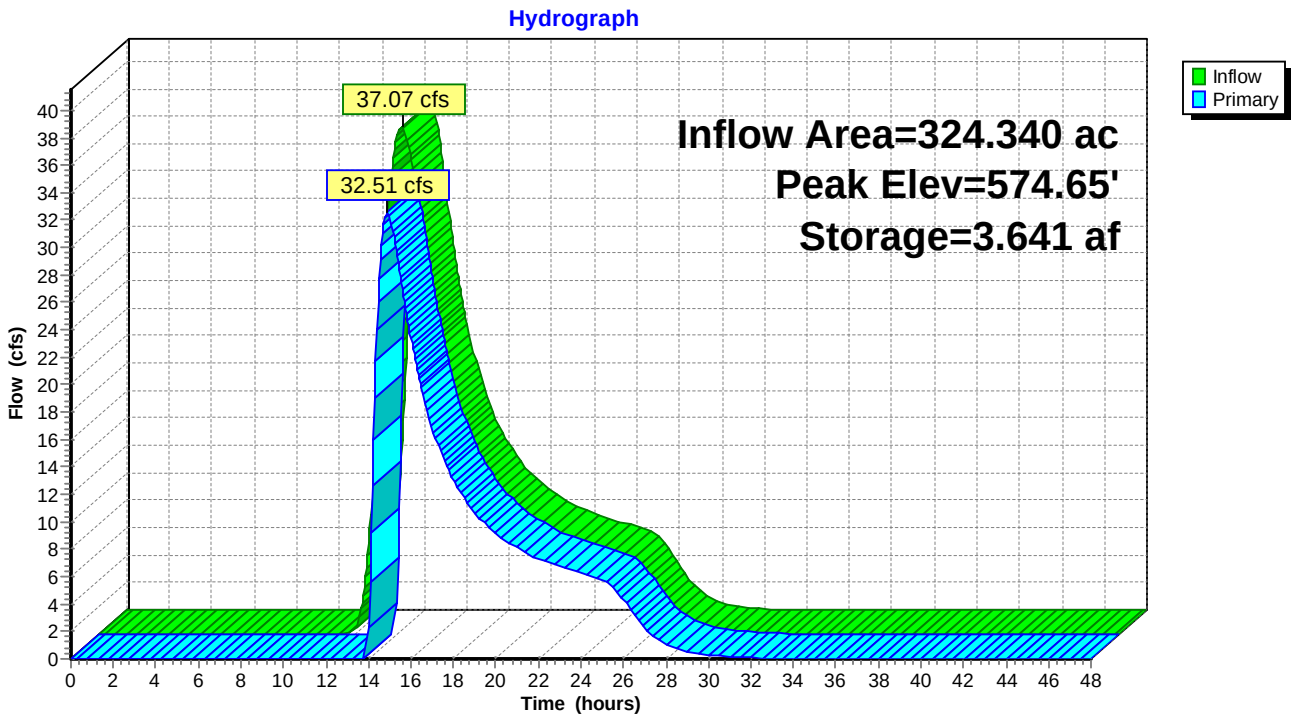
Volume	Invert	Avail.Storage	Storage Description
#1	571.00'	4.375 af	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (acres)	Inc.Store (acre-feet)	Cum.Store (acre-feet)
571.00	0.500	0.000	0.000
572.00	0.750	0.625	0.625
573.00	1.000	0.875	1.500
574.00	1.250	1.125	2.625
575.00	2.250	1.750	4.375

Device	Routing	Invert	Outlet Devices
#1	Primary	574.00'	**20.0' long x 0.5' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 Coef. (English) 2.80 2.92 3.08 3.30 3.32

Primary OutFlow Max=32.49 cfs @ 14.87 hrs HW=574.65' (Free Discharge)
└**1=Broad-Crested Rectangular Weir** (Weir Controls 32.49 cfs @ 2.52 fps)

Pond 30P: P-3 DA-2



Summary for Pond 31P: P-3 DA-3

Inflow Area = 322.450 ac, 0.00% Impervious, Inflow Depth = 0.57" for 10-yr event
Inflow = 31.99 cfs @ 14.76 hrs, Volume= 15.337 af
Outflow = 28.39 cfs @ 15.54 hrs, Volume= 12.587 af, Atten= 11%, Lag= 46.9 min
Primary = 28.39 cfs @ 15.54 hrs, Volume= 12.587 af

Routing by Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs
Peak Elev= 574.60' @ 15.54 hrs Surf.Area= 1.948 ac Storage= 3.779 af

Plug-Flow detention time= 172.7 min calculated for 12.574 af (82% of inflow)
Center-of-Mass det. time= 87.9 min (1,159.3 - 1,071.4)

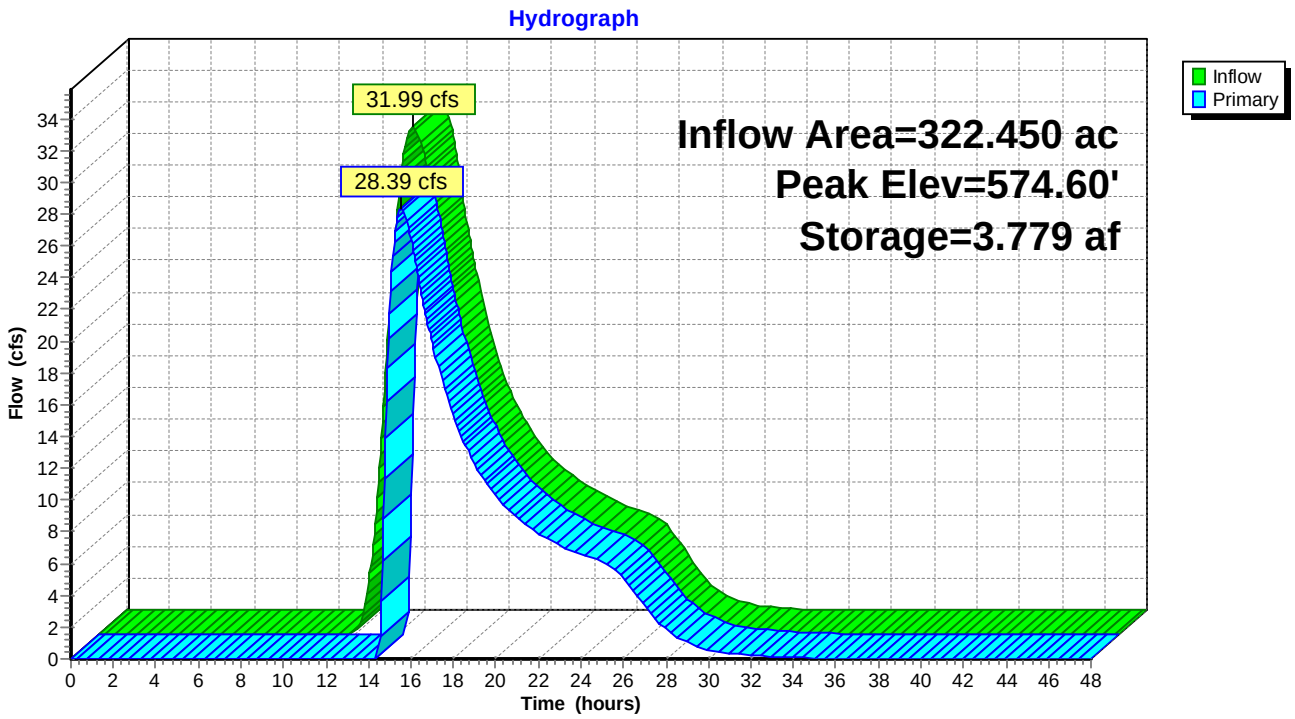
Volume	Invert	Avail.Storage	Storage Description
#1	571.00'	4.625 af	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (acres)	Inc.Store (acre-feet)	Cum.Store (acre-feet)
571.00	0.500	0.000	0.000
572.00	0.750	0.625	0.625
573.00	1.000	0.875	1.500
574.00	1.500	1.250	2.750
575.00	2.250	1.875	4.625

Device	Routing	Invert	Outlet Devices
#1	Primary	574.00'	**20.0' long x 0.5' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 Coef. (English) 2.80 2.92 3.08 3.30 3.32

Primary OutFlow Max=28.38 cfs @ 15.54 hrs HW=574.60' (Free Discharge)
└**1=Broad-Crested Rectangular Weir** (Weir Controls 28.38 cfs @ 2.38 fps)

Pond 31P: P-3 DA-3



Summary for Pond 32P: P-4 DA-1

Inflow Area = 52.610 ac, 0.00% Impervious, Inflow Depth = 0.57" for 10-yr event
Inflow = 11.76 cfs @ 12.81 hrs, Volume= 2.502 af
Outflow = 1.02 cfs @ 21.94 hrs, Volume= 0.452 af, Atten= 91%, Lag= 547.4 min
Primary = 1.02 cfs @ 21.94 hrs, Volume= 0.452 af

Routing by Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs
Peak Elev= 574.07' @ 21.94 hrs Surf.Area= 1.160 ac Storage= 2.128 af

Plug-Flow detention time= 631.0 min calculated for 0.452 af (18% of inflow)
Center-of-Mass det. time= 437.1 min (1,382.7 - 945.6)

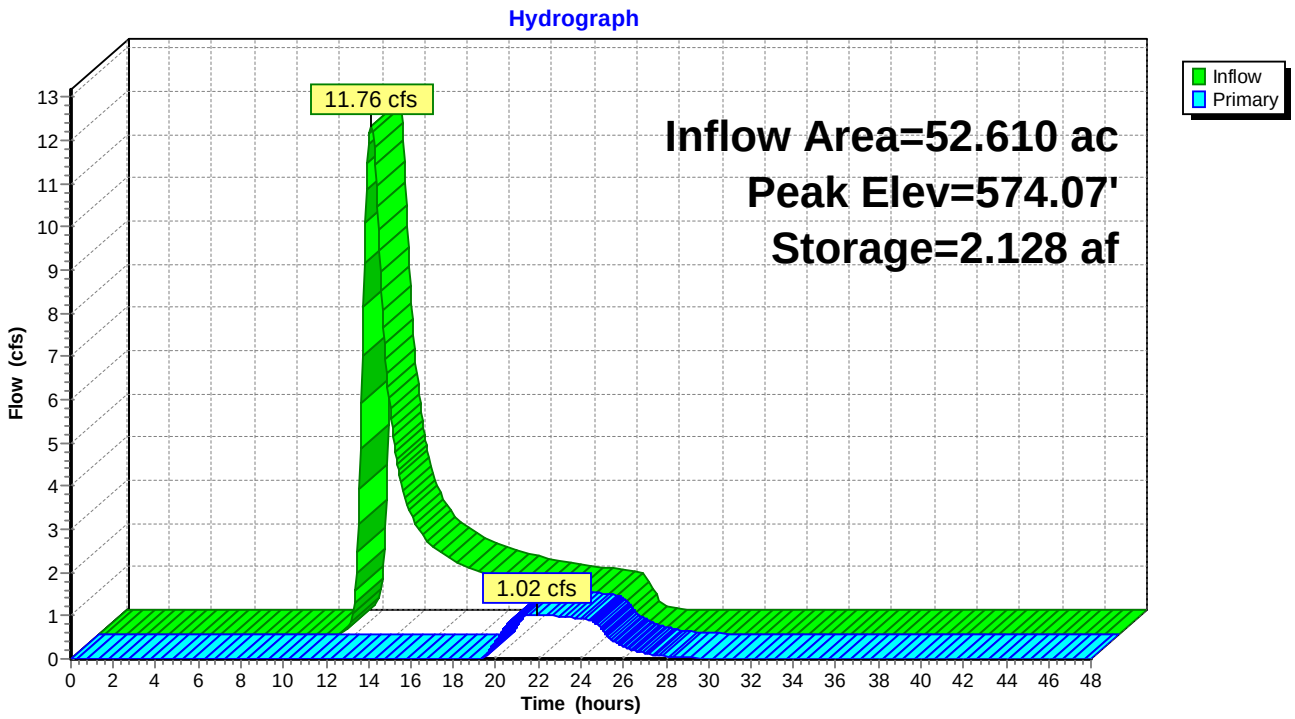
Volume	Invert	Avail.Storage	Storage Description
#1	571.00'	3.275 af	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (acres)	Inc.Store (acre-feet)	Cum.Store (acre-feet)
571.00	0.250	0.000	0.000
572.00	0.500	0.375	0.375
573.00	0.850	0.675	1.050
574.00	1.150	1.000	2.050
575.00	1.300	1.225	3.275

Device	Routing	Invert	Outlet Devices
#1	Primary	574.00'	**20.0' long x 0.5' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 Coef. (English) 2.80 2.92 3.08 3.30 3.32

Primary OutFlow Max=0.99 cfs @ 21.94 hrs HW=574.07' (Free Discharge)
└**1=Broad-Crested Rectangular Weir** (Weir Controls 0.99 cfs @ 0.73 fps)

Pond 32P: P-4 DA-1



Summary for Pond 33P: P-4 DA-2

Inflow Area = 58.000 ac, 0.00% Impervious, Inflow Depth = 0.57" for 10-yr event
Inflow = 13.14 cfs @ 12.81 hrs, Volume= 2.759 af
Outflow = 1.10 cfs @ 22.20 hrs, Volume= 0.534 af, Atten= 92%, Lag= 563.6 min
Primary = 1.10 cfs @ 22.20 hrs, Volume= 0.534 af

Routing by Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs
Peak Elev= 574.07' @ 22.20 hrs Surf.Area= 1.608 ac Storage= 2.337 af

Plug-Flow detention time= 636.9 min calculated for 0.533 af (19% of inflow)
Center-of-Mass det. time= 445.9 min (1,390.7 - 944.8)

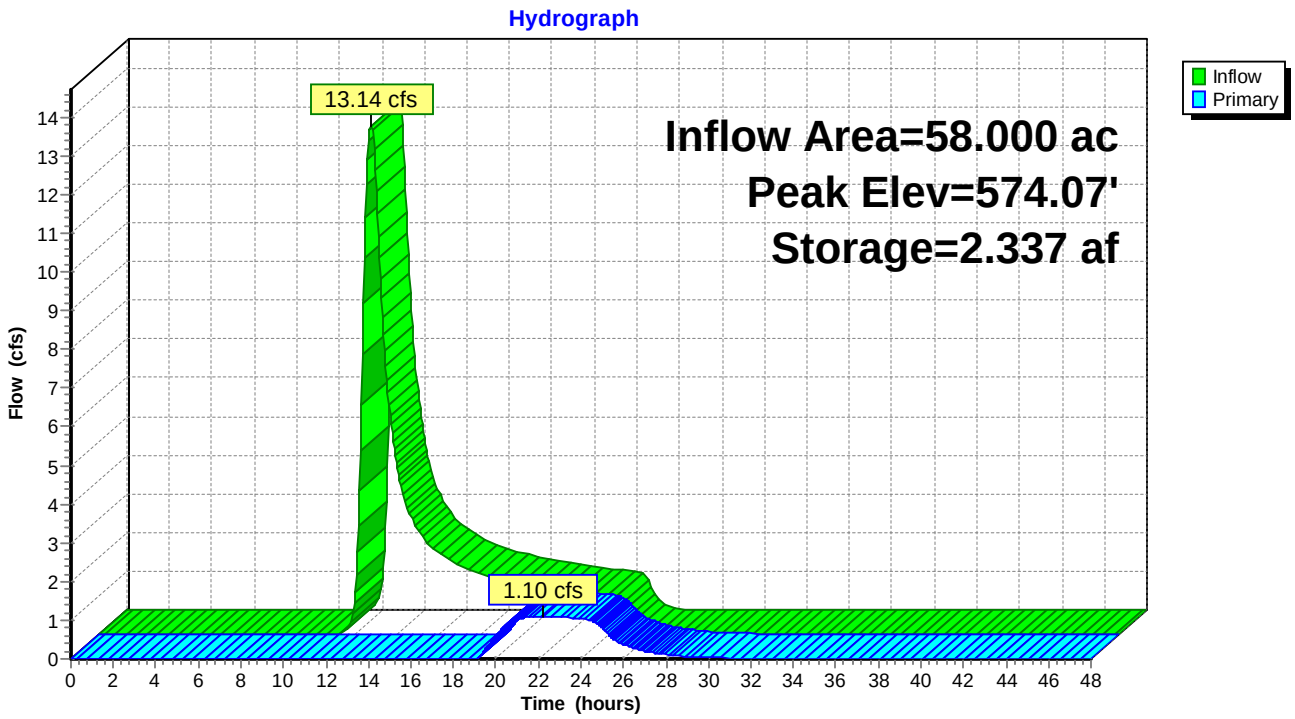
Volume	Invert	Avail.Storage	Storage Description
#1	571.00'	4.475 af	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (acres)	Inc.Store (acre-feet)	Cum.Store (acre-feet)
571.00	0.250	0.000	0.000
572.00	0.500	0.375	0.375
573.00	0.850	0.675	1.050
574.00	1.500	1.175	2.225
575.00	3.000	2.250	4.475

Device	Routing	Invert	Outlet Devices
#1	Primary	574.00'	**20.0' long x 0.5' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 Coef. (English) 2.80 2.92 3.08 3.30 3.32

Primary OutFlow Max=1.08 cfs @ 22.20 hrs HW=574.07' (Free Discharge)
└**1=Broad-Crested Rectangular Weir** (Weir Controls 1.08 cfs @ 0.75 fps)

Pond 33P: P-4 DA-2



Summary for Pond 34P: P-5 DA-1

Inflow Area = 105.010 ac, 0.00% Impervious, Inflow Depth = 1.30" for 10-yr event
Inflow = 78.52 cfs @ 12.44 hrs, Volume= 11.339 af
Outflow = 46.83 cfs @ 12.83 hrs, Volume= 8.589 af, Atten= 40%, Lag= 23.4 min
Primary = 46.83 cfs @ 12.83 hrs, Volume= 8.589 af

Routing by Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs
Peak Elev= 574.80' @ 12.83 hrs Surf.Area= 2.296 ac Storage= 4.261 af

Plug-Flow detention time= 191.0 min calculated for 8.580 af (76% of inflow)
Center-of-Mass det. time= 92.4 min (951.8 - 859.4)

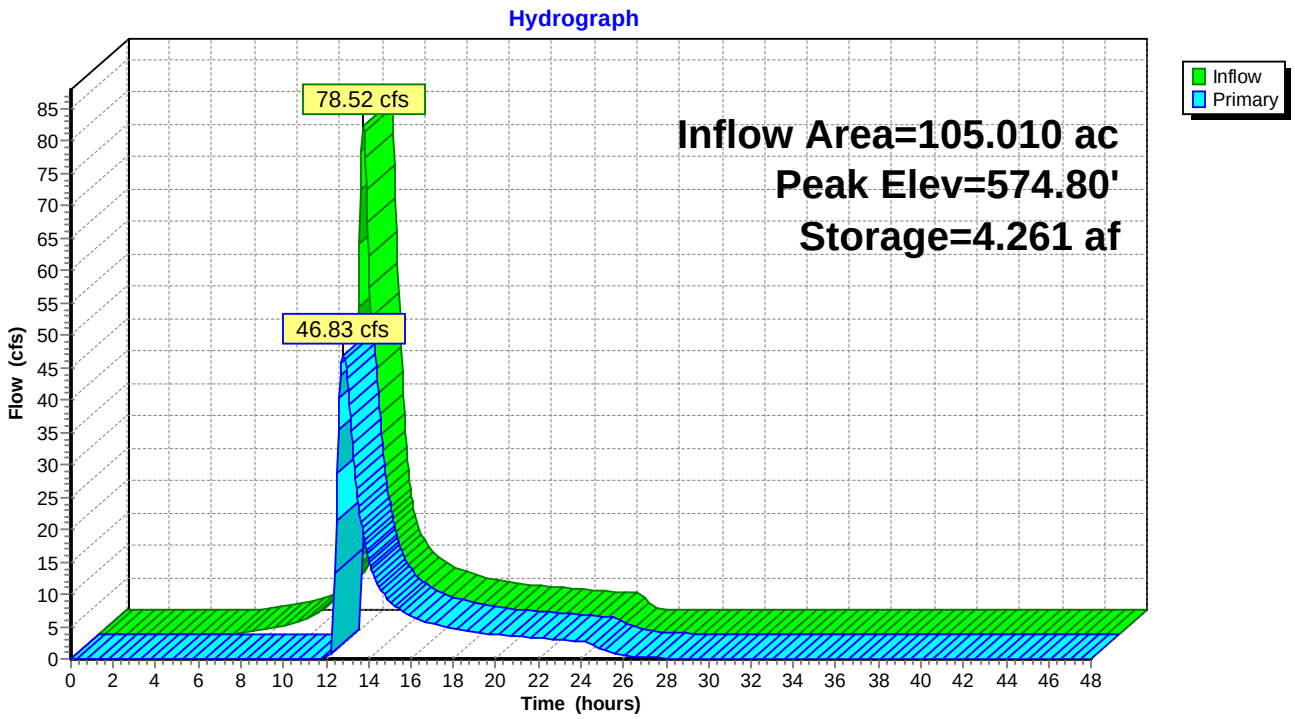
Volume	Invert	Avail.Storage	Storage Description
#1	571.00'	4.750 af	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (acres)	Inc.Store (acre-feet)	Cum.Store (acre-feet)
571.00	0.500	0.000	0.000
572.00	0.750	0.625	0.625
573.00	1.000	0.875	1.500
574.00	1.500	1.250	2.750
575.00	2.500	2.000	4.750

Device	Routing	Invert	Outlet Devices
#1	Primary	574.00'	**20.0' long x 0.5' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 Coef. (English) 2.80 2.92 3.08 3.30 3.32

Primary OutFlow Max=46.73 cfs @ 12.83 hrs HW=574.80' (Free Discharge)
└**1=Broad-Crested Rectangular Weir** (Weir Controls 46.73 cfs @ 2.94 fps)

Pond 34P: P-5 DA-1



Summary for Pond 35P: P-5 DA-2

Inflow Area = 143.020 ac, 0.00% Impervious, Inflow Depth = 1.30" for 10-yr event
Inflow = 106.23 cfs @ 12.44 hrs, Volume= 15.443 af
Outflow = 61.71 cfs @ 12.85 hrs, Volume= 11.693 af, Atten= 42%, Lag= 24.5 min
Primary = 61.71 cfs @ 12.85 hrs, Volume= 11.693 af

Routing by Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs
Peak Elev= 574.95' @ 12.85 hrs Surf.Area= 2.477 ac Storage= 5.883 af

Plug-Flow detention time= 197.6 min calculated for 11.693 af (76% of inflow)
Center-of-Mass det. time= 97.8 min (957.5 - 859.7)

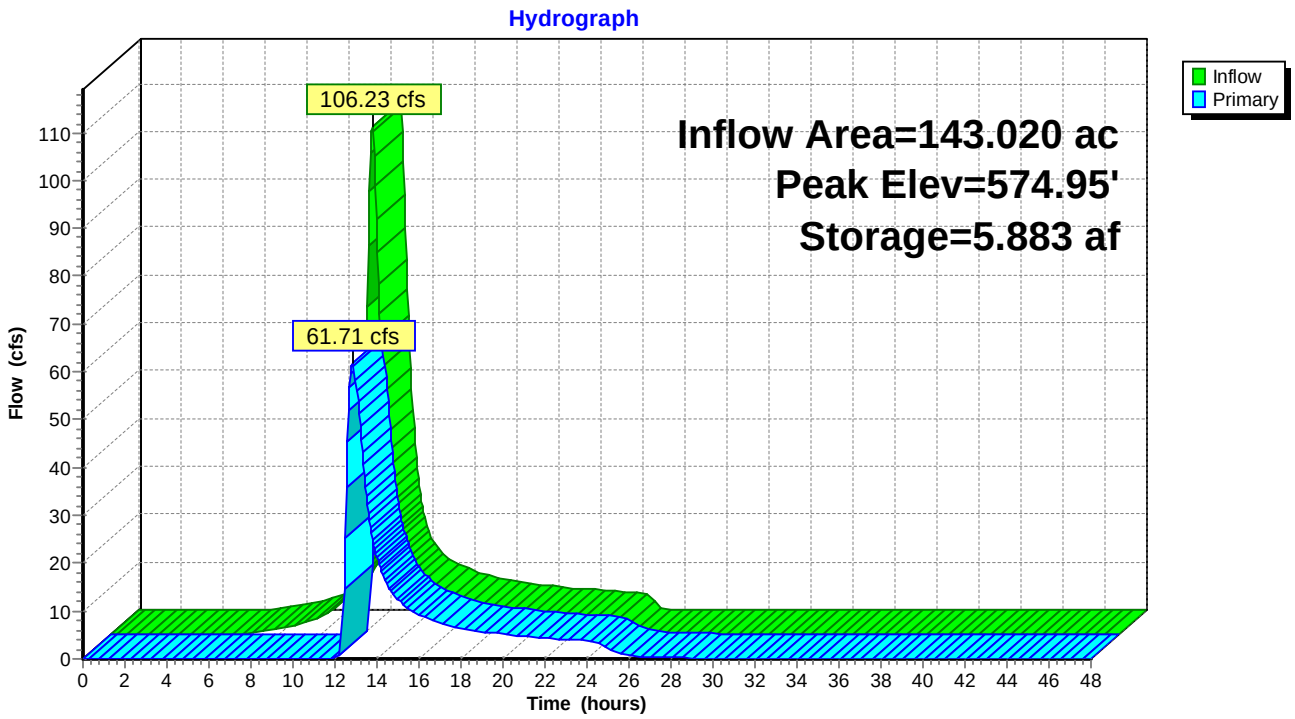
Volume	Invert	Avail.Storage	Storage Description
#1	571.00'	6.000 af	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (acres)	Inc.Store (acre-feet)	Cum.Store (acre-feet)
571.00	0.500	0.000	0.000
572.00	1.000	0.750	0.750
573.00	1.500	1.250	2.000
574.00	2.000	1.750	3.750
575.00	2.500	2.250	6.000

Device	Routing	Invert	Outlet Devices
#1	Primary	574.00'	**20.0' long x 0.5' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 Coef. (English) 2.80 2.92 3.08 3.30 3.32

Primary OutFlow Max=61.70 cfs @ 12.85 hrs HW=574.95' (Free Discharge)
└**1=Broad-Crested Rectangular Weir** (Weir Controls 61.70 cfs @ 3.24 fps)

Pond 35P: P-5 DA-2



Summary for Pond 36P: P-5 DA-3

Inflow Area = 33.010 ac, 0.00% Impervious, Inflow Depth = 1.30" for 10-yr event
Inflow = 31.46 cfs @ 12.26 hrs, Volume= 3.564 af
Outflow = 17.90 cfs @ 12.55 hrs, Volume= 2.714 af, Atten= 43%, Lag= 17.4 min
Primary = 17.90 cfs @ 12.55 hrs, Volume= 2.714 af

Routing by Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs
Peak Elev= 574.45' @ 12.55 hrs Surf.Area= 1.401 ac Storage= 1.278 af

Plug-Flow detention time= 173.1 min calculated for 2.712 af (76% of inflow)
Center-of-Mass det. time= 75.3 min (922.4 - 847.0)

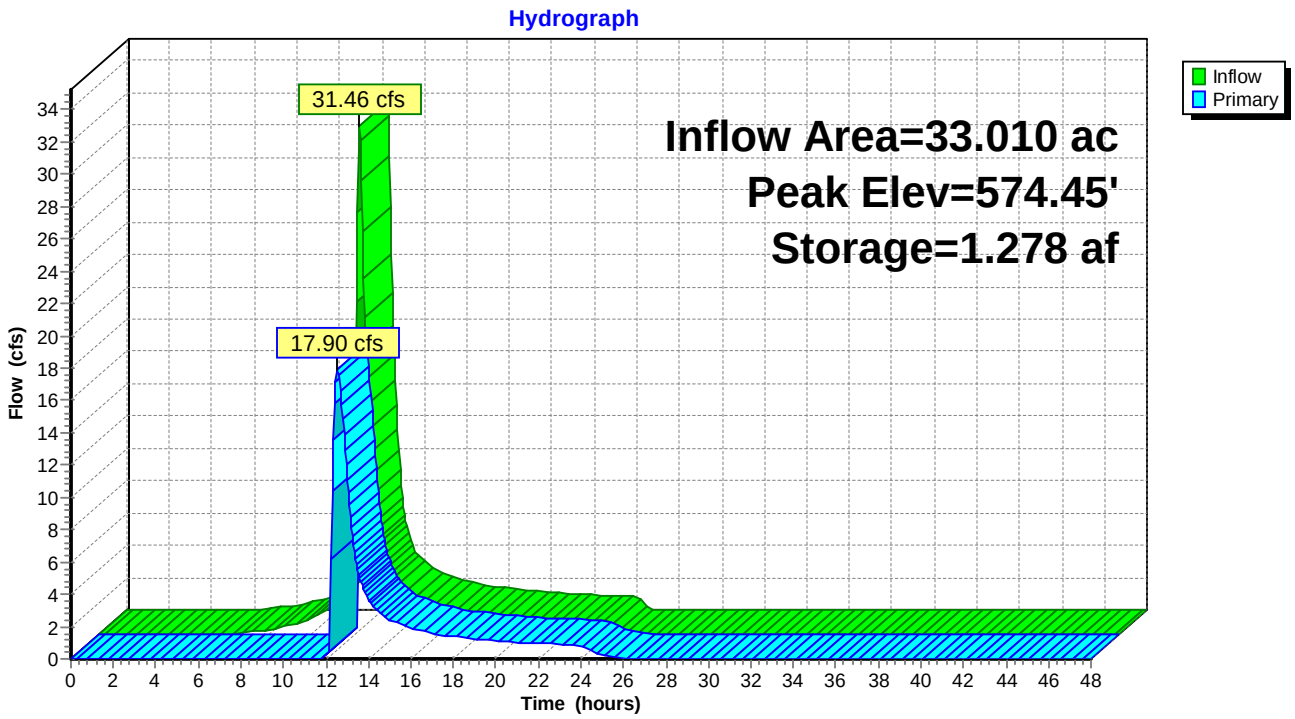
Volume	Invert	Avail.Storage	Storage Description
#1	571.00'	2.350 af	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (acres)	Inc.Store (acre-feet)	Cum.Store (acre-feet)
571.00	0.100	0.000	0.000
572.00	0.250	0.175	0.175
573.00	0.300	0.275	0.450
574.00	0.500	0.400	0.850
575.00	2.500	1.500	2.350

Device	Routing	Invert	Outlet Devices
#1	Primary	574.00'	**20.0' long x 0.5' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 Coef. (English) 2.80 2.92 3.08 3.30 3.32

Primary OutFlow Max=17.87 cfs @ 12.55 hrs HW=574.45' (Free Discharge)
└**1=Broad-Crested Rectangular Weir** (Weir Controls 17.87 cfs @ 1.99 fps)

Pond 36P: P-5 DA-3



Summary for Pond 37P: P-6 DA-1

Inflow Area = 16.110 ac, 0.00% Impervious, Inflow Depth = 0.57" for 10-yr event
Inflow = 5.79 cfs @ 12.30 hrs, Volume= 0.766 af
Outflow = 5.09 cfs @ 12.42 hrs, Volume= 0.686 af, Atten= 12%, Lag= 7.3 min
Primary = 5.09 cfs @ 12.42 hrs, Volume= 0.686 af

Routing by Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs
Peak Elev= 574.20' @ 12.42 hrs Surf.Area= 0.242 ac Storage= 0.110 af

Plug-Flow detention time= 78.2 min calculated for 0.686 af (90% of inflow)
Center-of-Mass det. time= 26.4 min (940.8 - 914.4)

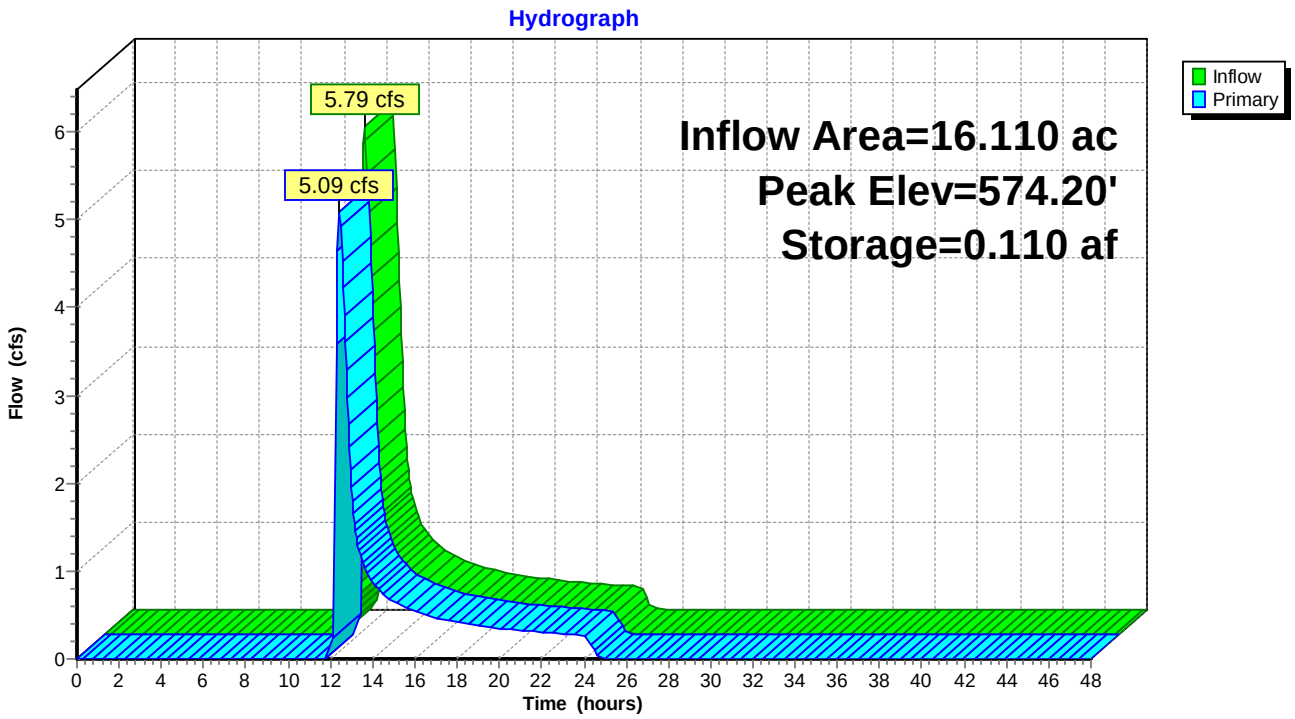
Volume	Invert	Avail.Storage	Storage Description
#1	571.00'	0.605 af	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (acres)	Inc.Store (acre-feet)	Cum.Store (acre-feet)
571.00	0.010	0.000	0.000
572.00	0.020	0.015	0.015
573.00	0.030	0.025	0.040
574.00	0.050	0.040	0.080
575.00	1.000	0.525	0.605

Device	Routing	Invert	Outlet Devices
#1	Primary	574.00'	**20.0' long x 0.5' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 Coef. (English) 2.80 2.92 3.08 3.30 3.32

Primary OutFlow Max=5.04 cfs @ 12.42 hrs HW=574.20' (Free Discharge)
└**1=Broad-Crested Rectangular Weir** (Weir Controls 5.04 cfs @ 1.25 fps)

Pond 37P: P-6 DA-1



Summary for Pond 38P: P-6 DA-2

Inflow Area = 8.230 ac, 0.00% Impervious, Inflow Depth = 0.57" for 10-yr event
Inflow = 4.35 cfs @ 12.10 hrs, Volume= 0.391 af
Outflow = 3.79 cfs @ 12.16 hrs, Volume= 0.374 af, Atten= 13%, Lag= 3.7 min
Primary = 3.79 cfs @ 12.16 hrs, Volume= 0.374 af

Routing by Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs
Peak Elev= 574.17' @ 12.16 hrs Surf.Area= 0.183 ac Storage= 0.034 af

Plug-Flow detention time= 35.4 min calculated for 0.374 af (96% of inflow)
Center-of-Mass det. time= 11.9 min (913.9 - 901.9)

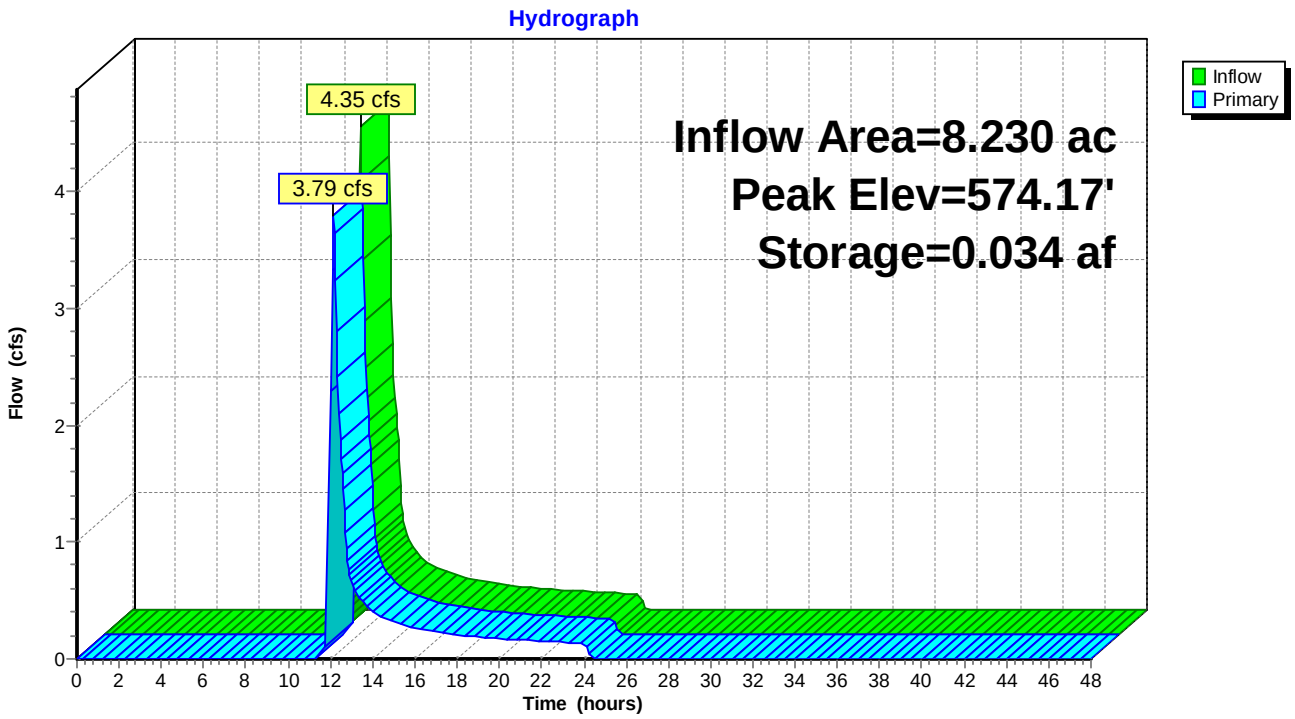
Volume	Invert	Avail.Storage	Storage Description
#1	573.00'	0.527 af	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (acres)	Inc.Store (acre-feet)	Cum.Store (acre-feet)
573.00	0.015	0.000	0.000
574.00	0.020	0.017	0.017
575.00	1.000	0.510	0.527

Device	Routing	Invert	Outlet Devices
#1	Primary	574.00'	**20.0' long x 0.5' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 Coef. (English) 2.80 2.92 3.08 3.30 3.32

Primary OutFlow Max=3.73 cfs @ 12.16 hrs HW=574.16' (Free Discharge)
└**1=Broad-Crested Rectangular Weir** (Weir Controls 3.73 cfs @ 1.14 fps)

Pond 38P: P-6 DA-2



Summary for Pond 39P: P-7 DA-1

Inflow Area = 15.580 ac, 0.00% Impervious, Inflow Depth = 0.57" for 10-yr event
Inflow = 4.87 cfs @ 12.42 hrs, Volume= 0.741 af
Outflow = 4.28 cfs @ 12.58 hrs, Volume= 0.646 af, Atten= 12%, Lag= 9.3 min
Primary = 4.28 cfs @ 12.58 hrs, Volume= 0.646 af

Routing by Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs
Peak Elev= 574.18' @ 12.58 hrs Surf.Area= 0.229 ac Storage= 0.121 af

Plug-Flow detention time= 94.6 min calculated for 0.645 af (87% of inflow)
Center-of-Mass det. time= 32.7 min (954.2 - 921.4)

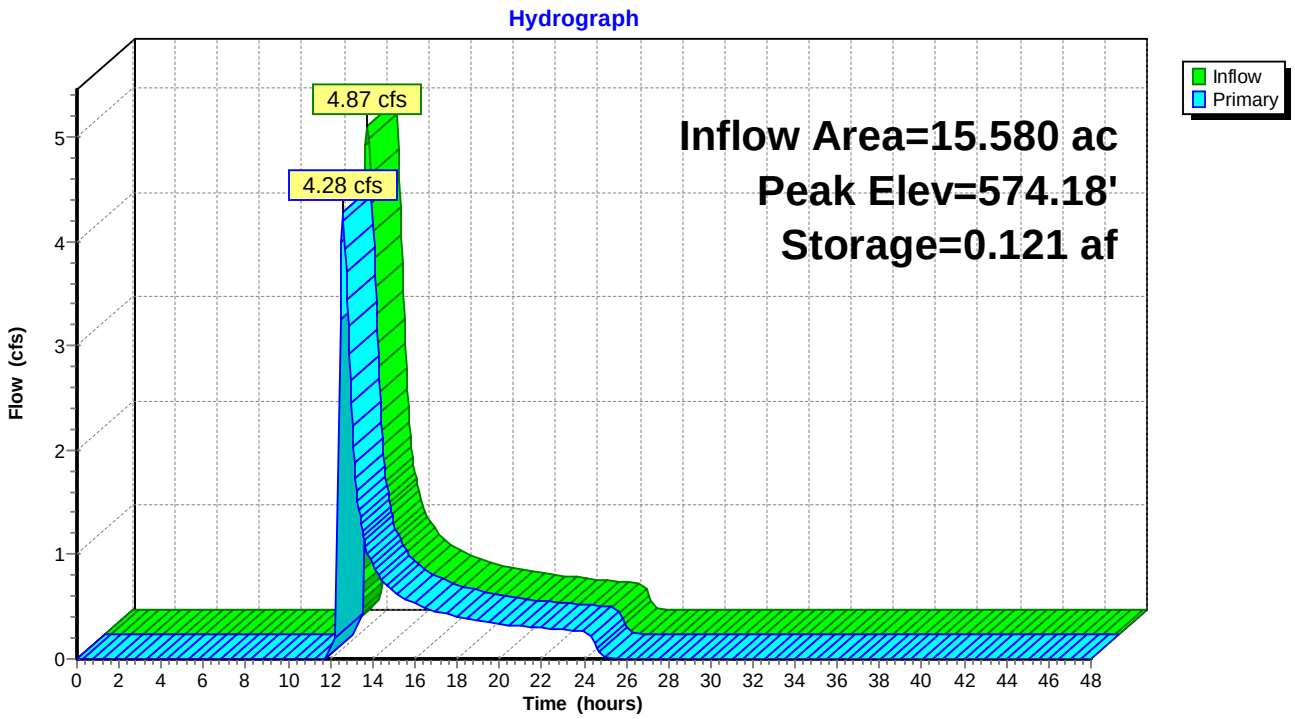
Volume	Invert	Avail.Storage	Storage Description
#1	571.00'	0.625 af	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (acres)	Inc.Store (acre-feet)	Cum.Store (acre-feet)
571.00	0.010	0.000	0.000
572.00	0.020	0.015	0.015
573.00	0.040	0.030	0.045
574.00	0.060	0.050	0.095
575.00	1.000	0.530	0.625

Device	Routing	Invert	Outlet Devices
#1	Primary	574.00'	**20.0' long x 0.5' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 Coef. (English) 2.80 2.92 3.08 3.30 3.32

Primary OutFlow Max=4.25 cfs @ 12.58 hrs HW=574.18' (Free Discharge)
└**1=Broad-Crested Rectangular Weir** (Weir Controls 4.25 cfs @ 1.19 fps)

Pond 39P: P-7 DA-1



Summary for Pond 40P: P-7 DA-2

Inflow Area = 105.970 ac, 0.00% Impervious, Inflow Depth = 0.57" for 10-yr event
Inflow = 18.24 cfs @ 13.24 hrs, Volume= 5.040 af
Outflow = 16.03 cfs @ 13.58 hrs, Volume= 4.240 af, Atten= 12%, Lag= 20.7 min
Primary = 16.03 cfs @ 13.58 hrs, Volume= 4.240 af

Routing by Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs
Peak Elev= 574.42' @ 13.58 hrs Surf.Area= 0.710 ac Storage= 1.054 af

Plug-Flow detention time= 130.4 min calculated for 4.240 af (84% of inflow)
Center-of-Mass det. time= 55.0 min (1,027.9 - 972.9)

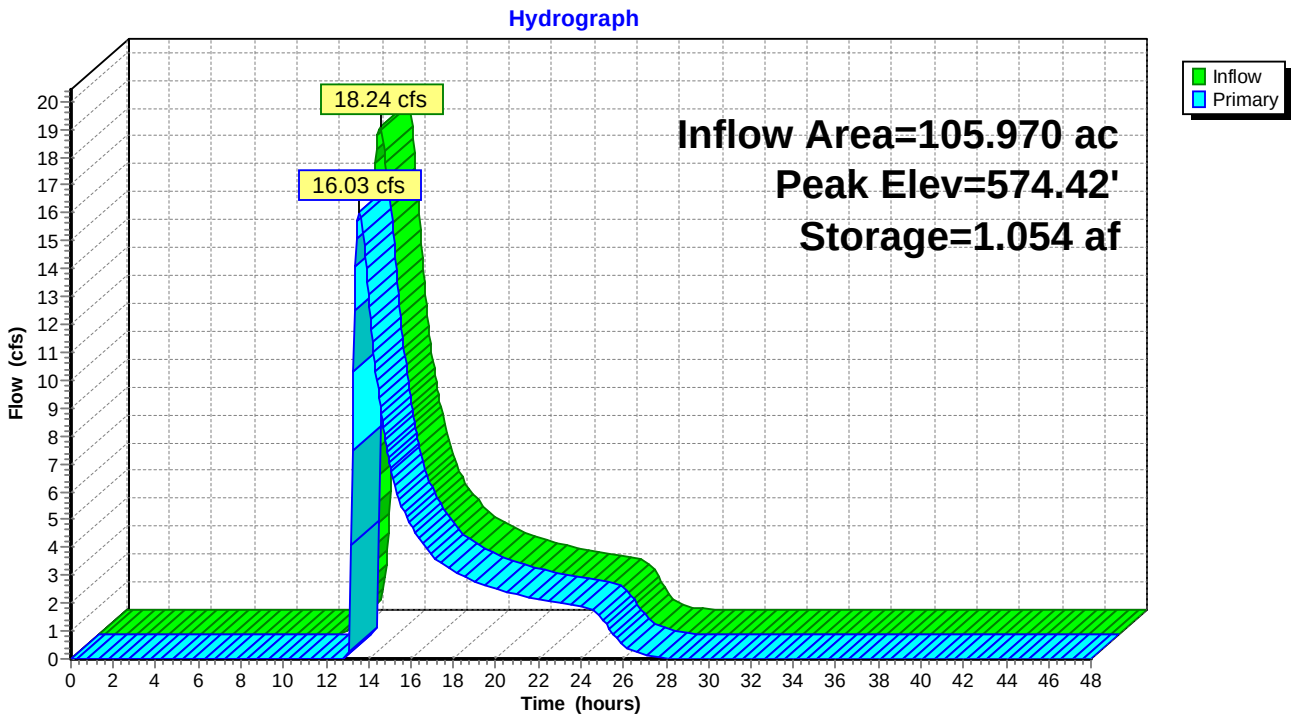
Volume	Invert	Avail.Storage	Storage Description
#1	571.00'	1.550 af	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (acres)	Inc.Store (acre-feet)	Cum.Store (acre-feet)
571.00	0.100	0.000	0.000
572.00	0.200	0.150	0.150
573.00	0.300	0.250	0.400
574.00	0.500	0.400	0.800
575.00	1.000	0.750	1.550

Device	Routing	Invert	Outlet Devices
#1	Primary	574.00'	**20.0' long x 0.5' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 Coef. (English) 2.80 2.92 3.08 3.30 3.32

Primary OutFlow Max=15.99 cfs @ 13.58 hrs HW=574.42' (Free Discharge)
└**1=Broad-Crested Rectangular Weir** (Weir Controls 15.99 cfs @ 1.90 fps)

Pond 40P: P-7 DA-2



Summary for Pond 41P: P-7 DA-3

Inflow Area = 108.630 ac, 0.00% Impervious, Inflow Depth = 0.57" for 10-yr event
Inflow = 21.08 cfs @ 13.02 hrs, Volume= 5.167 af
Outflow = 18.73 cfs @ 13.31 hrs, Volume= 4.417 af, Atten= 11%, Lag= 17.5 min
Primary = 18.73 cfs @ 13.31 hrs, Volume= 4.417 af

Routing by Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs
Peak Elev= 574.46' @ 13.31 hrs Surf.Area= 0.678 ac Storage= 0.999 af

Plug-Flow detention time= 116.7 min calculated for 4.412 af (85% of inflow)
Center-of-Mass det. time= 47.7 min (1,007.2 - 959.5)

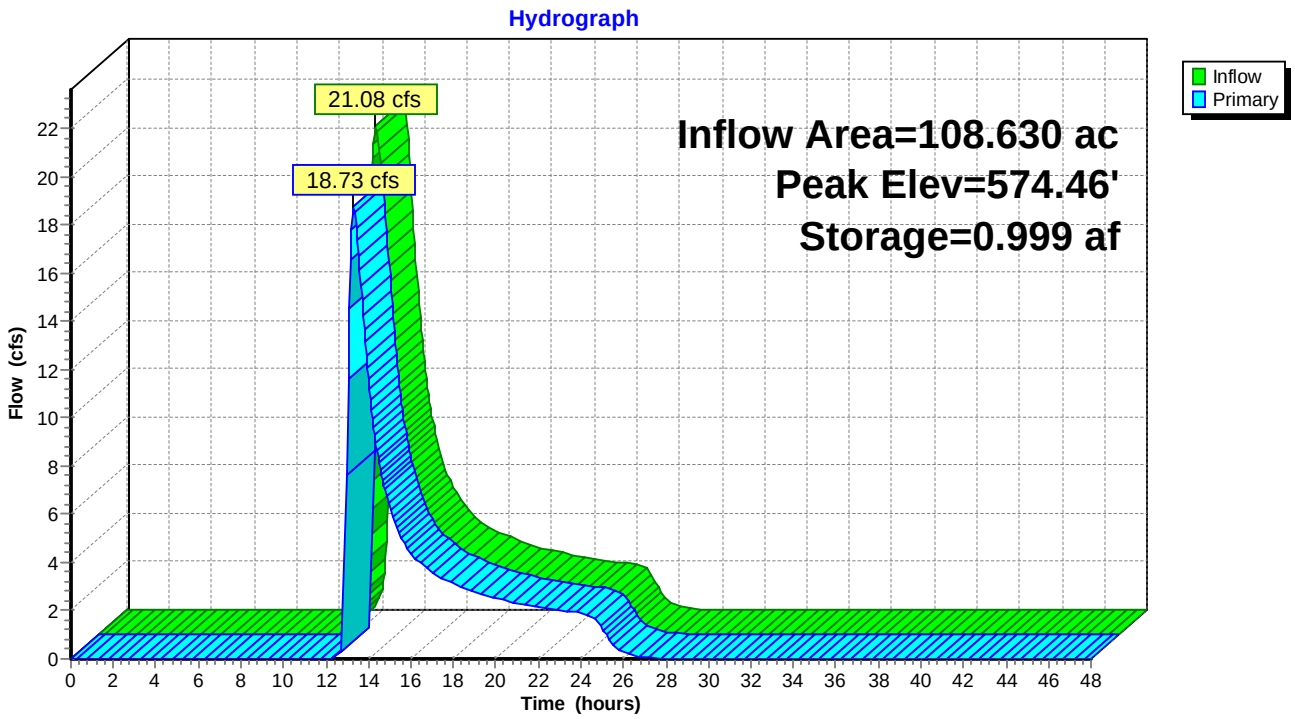
Volume	Invert	Avail.Storage	Storage Description
#1	571.00'	1.450 af	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (acres)	Inc.Store (acre-feet)	Cum.Store (acre-feet)
571.00	0.100	0.000	0.000
572.00	0.200	0.150	0.150
573.00	0.300	0.250	0.400
574.00	0.400	0.350	0.750
575.00	1.000	0.700	1.450

Device	Routing	Invert	Outlet Devices
#1	Primary	574.00'	**20.0' long x 0.5' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 Coef. (English) 2.80 2.92 3.08 3.30 3.32

Primary OutFlow Max=18.68 cfs @ 13.31 hrs HW=574.46' (Free Discharge)
└**1=Broad-Crested Rectangular Weir** (Weir Controls 18.68 cfs @ 2.02 fps)

Pond 41P: P-7 DA-3



Summary for Pond 42P: P-7 DA-4

Inflow Area = 24.100 ac, 0.00% Impervious, Inflow Depth = 1.30" for 10-yr event
Inflow = 17.52 cfs @ 12.46 hrs, Volume= 2.602 af
Outflow = 16.85 cfs @ 12.55 hrs, Volume= 2.562 af, Atten= 4%, Lag= 5.4 min
Primary = 16.85 cfs @ 12.55 hrs, Volume= 2.562 af

Routing by Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs
Peak Elev= 574.43' @ 12.55 hrs Surf.Area= 0.451 ac Storage= 0.144 af

Plug-Flow detention time= 18.6 min calculated for 2.562 af (98% of inflow)
Center-of-Mass det. time= 9.4 min (870.4 - 861.0)

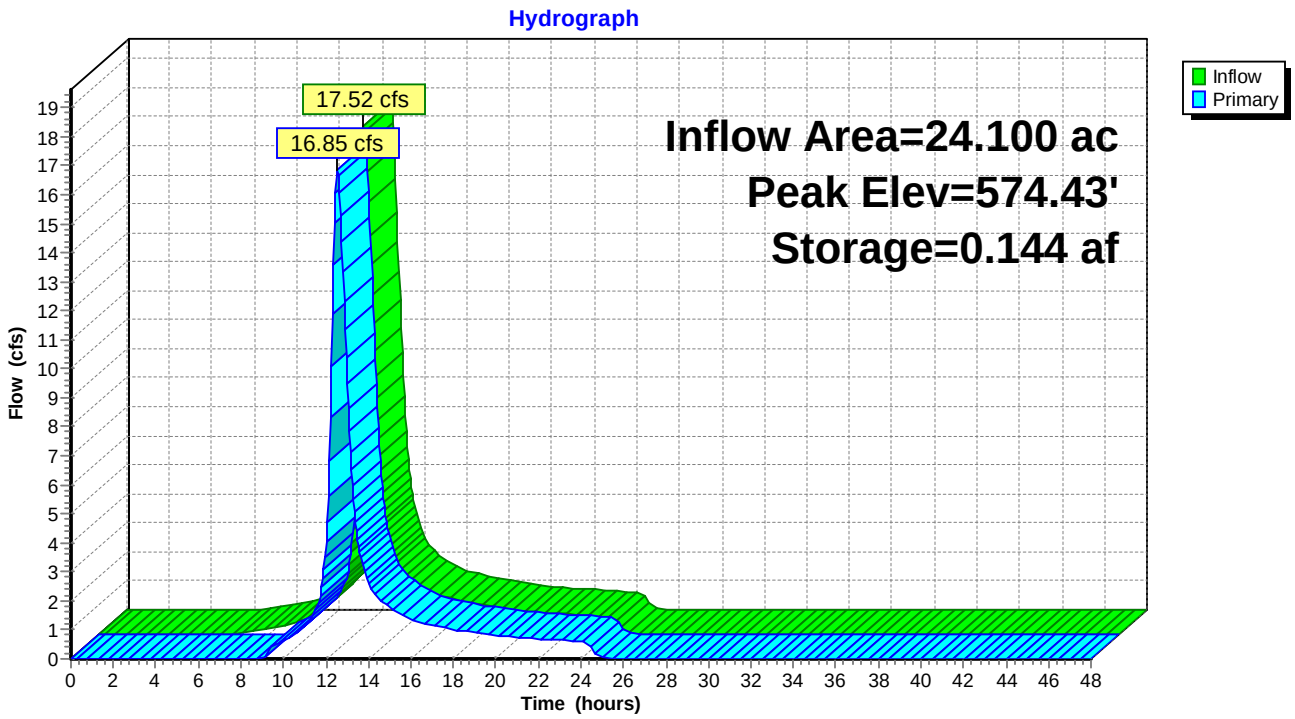
Volume	Invert	Avail.Storage	Storage Description
#1	572.00'	0.555 af	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (acres)	Inc.Store (acre-feet)	Cum.Store (acre-feet)
572.00	0.010	0.000	0.000
573.00	0.020	0.015	0.015
574.00	0.030	0.025	0.040
575.00	1.000	0.515	0.555

Device	Routing	Invert	Outlet Devices
#1	Primary	574.00'	**20.0' long x 0.5' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 Coef. (English) 2.80 2.92 3.08 3.30 3.32

Primary OutFlow Max=16.83 cfs @ 12.55 hrs HW=574.43' (Free Discharge)
└**1=Broad-Crested Rectangular Weir** (Weir Controls 16.83 cfs @ 1.94 fps)

Pond 42P: P-7 DA-4



Summary for Pond 43P: P-8 DA-1

Inflow Area = 39.990 ac, 0.00% Impervious, Inflow Depth = 1.30" for 10-yr event
Inflow = 38.63 cfs @ 12.25 hrs, Volume= 4.318 af
Outflow = 35.03 cfs @ 12.33 hrs, Volume= 4.243 af, Atten= 9%, Lag= 5.2 min
Primary = 35.03 cfs @ 12.33 hrs, Volume= 4.243 af

Routing by Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs
Peak Elev= 574.67' @ 12.33 hrs Surf.Area= 0.687 ac Storage= 0.320 af

Plug-Flow detention time= 20.8 min calculated for 4.239 af (98% of inflow)
Center-of-Mass det. time= 10.5 min (857.0 - 846.5)

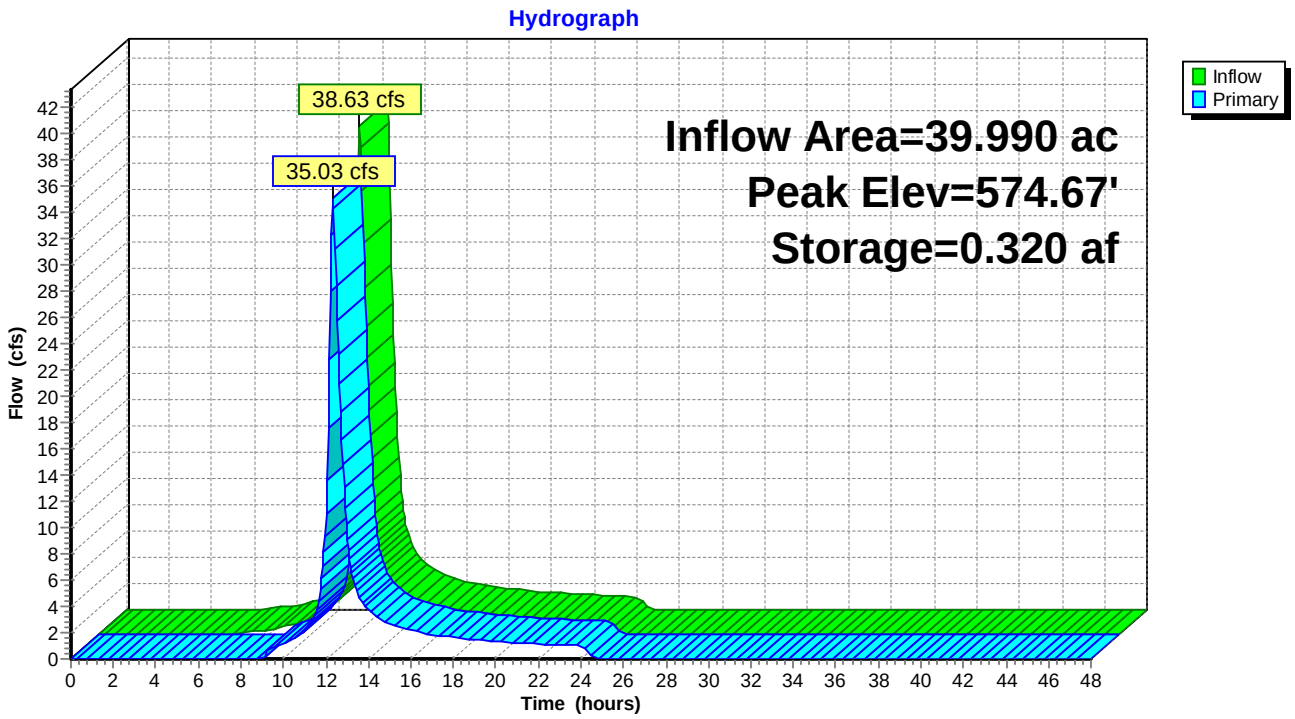
Volume	Invert	Avail.Storage	Storage Description
#1	571.00'	0.595 af	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (acres)	Inc.Store (acre-feet)	Cum.Store (acre-feet)
571.00	0.010	0.000	0.000
572.00	0.020	0.015	0.015
573.00	0.030	0.025	0.040
574.00	0.040	0.035	0.075
575.00	1.000	0.520	0.595

Device	Routing	Invert	Outlet Devices
#1	Primary	574.00'	**20.0' long x 0.5' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 Coef. (English) 2.80 2.92 3.08 3.30 3.32

Primary OutFlow Max=34.83 cfs @ 12.33 hrs HW=574.67' (Free Discharge)
└**1=Broad-Crested Rectangular Weir** (Weir Controls 34.83 cfs @ 2.59 fps)

Pond 43P: P-8 DA-1



Summary for Pond 44P: P-9 DA-1

Inflow Area = 137.250 ac, 0.00% Impervious, Inflow Depth = 0.57" for 10-yr event
Inflow = 20.74 cfs @ 13.51 hrs, Volume= 6.528 af
Outflow = 18.36 cfs @ 13.89 hrs, Volume= 5.403 af, Atten= 11%, Lag= 23.1 min
Primary = 18.36 cfs @ 13.89 hrs, Volume= 5.403 af

Routing by Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs
Peak Elev= 574.46' @ 13.89 hrs Surf.Area= 0.783 ac Storage= 1.441 af

Plug-Flow detention time= 142.6 min calculated for 5.403 af (83% of inflow)
Center-of-Mass det. time= 61.5 min (1,051.0 - 989.5)

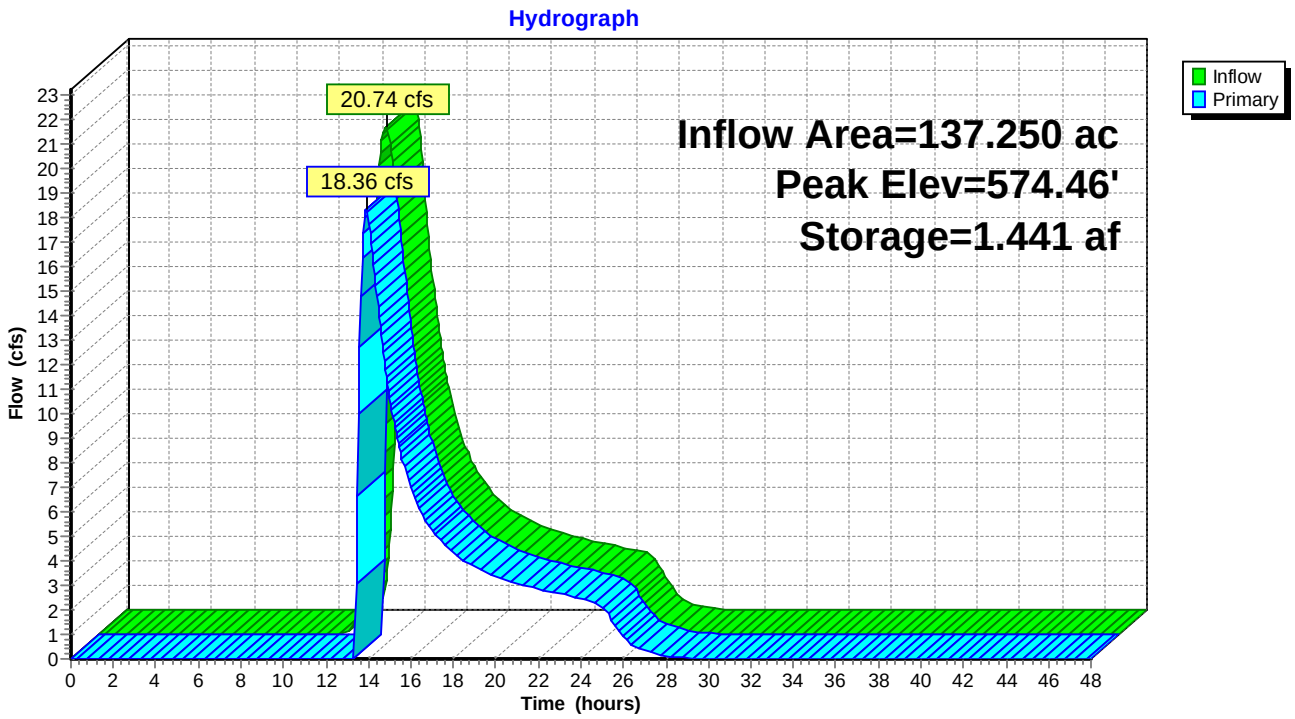
Volume	Invert	Avail.Storage	Storage Description
#1	571.00'	1.925 af	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (acres)	Inc.Store (acre-feet)	Cum.Store (acre-feet)
571.00	0.250	0.000	0.000
572.00	0.300	0.275	0.275
573.00	0.400	0.350	0.625
574.00	0.600	0.500	1.125
575.00	1.000	0.800	1.925

Device	Routing	Invert	Outlet Devices
#1	Primary	574.00'	**20.0' long x 0.5' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 Coef. (English) 2.80 2.92 3.08 3.30 3.32

Primary OutFlow Max=18.34 cfs @ 13.89 hrs HW=574.46' (Free Discharge)
└**1=Broad-Crested Rectangular Weir** (Weir Controls 18.34 cfs @ 2.01 fps)

Pond 44P: P-9 DA-1



Summary for Pond 45P: P-9 DA-2

Inflow Area = 32.090 ac, 0.00% Impervious, Inflow Depth = 0.57" for 10-yr event
Inflow = 7.35 cfs @ 12.79 hrs, Volume= 1.526 af
Outflow = 6.49 cfs @ 13.02 hrs, Volume= 1.291 af, Atten= 12%, Lag= 13.5 min
Primary = 6.49 cfs @ 13.02 hrs, Volume= 1.291 af

Routing by Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs
Peak Elev= 574.24' @ 13.02 hrs Surf.Area= 0.351 ac Storage= 0.294 af

Plug-Flow detention time= 116.3 min calculated for 1.290 af (85% of inflow)
Center-of-Mass det. time= 43.8 min (987.4 - 943.6)

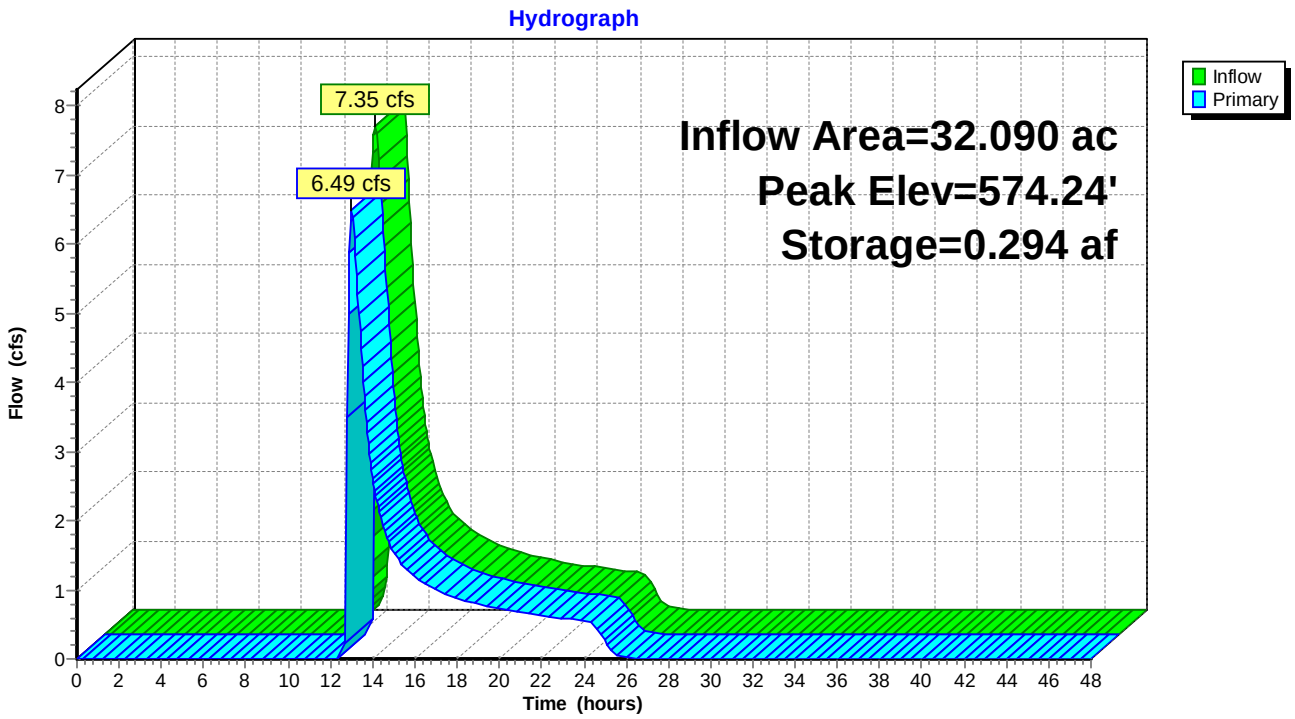
Volume	Invert	Avail.Storage	Storage Description
#1	571.00'	0.810 af	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (acres)	Inc.Store (acre-feet)	Cum.Store (acre-feet)
571.00	0.020	0.000	0.000
572.00	0.050	0.035	0.035
573.00	0.100	0.075	0.110
574.00	0.150	0.125	0.235
575.00	1.000	0.575	0.810

Device	Routing	Invert	Outlet Devices
#1	Primary	574.00'	**20.0' long x 0.5' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 Coef. (English) 2.80 2.92 3.08 3.30 3.32

Primary OutFlow Max=6.46 cfs @ 13.02 hrs HW=574.24' (Free Discharge)
└**1=Broad-Crested Rectangular Weir** (Weir Controls 6.46 cfs @ 1.37 fps)

Pond 45P: P-9 DA-2



Summary for Pond 46P: P-10 DA-1

Inflow Area = 52.640 ac, 0.00% Impervious, Inflow Depth = 0.57" for 10-yr event
Inflow = 11.59 cfs @ 12.84 hrs, Volume= 2.504 af
Outflow = 10.26 cfs @ 13.07 hrs, Volume= 2.129 af, Atten= 11%, Lag= 14.2 min
Primary = 10.26 cfs @ 13.07 hrs, Volume= 2.129 af

Routing by Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs
Peak Elev= 574.32' @ 13.07 hrs Surf.Area= 0.454 ac Storage= 0.479 af

Plug-Flow detention time= 115.2 min calculated for 2.129 af (85% of inflow)
Center-of-Mass det. time= 44.0 min (990.7 - 946.7)

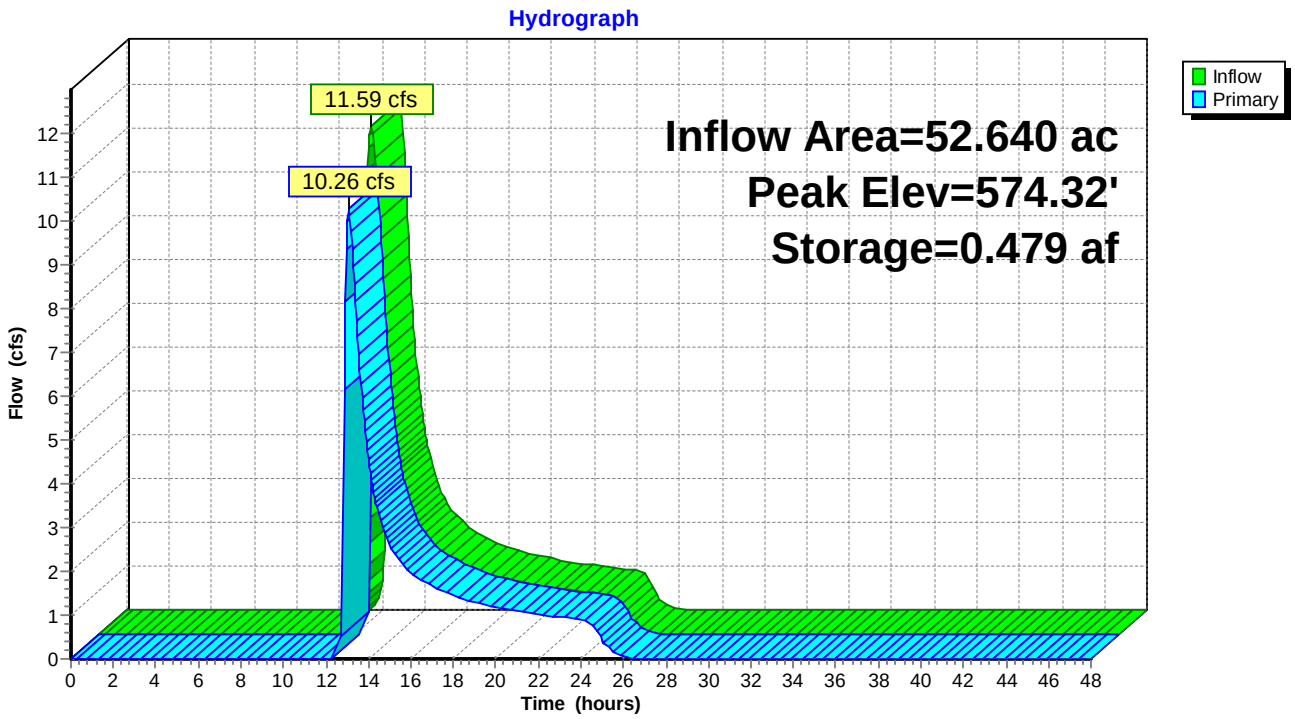
Volume	Invert	Avail.Storage	Storage Description
#1	571.00'	0.975 af	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (acres)	Inc.Store (acre-feet)	Cum.Store (acre-feet)
571.00	0.050	0.000	0.000
572.00	0.100	0.075	0.075
573.00	0.150	0.125	0.200
574.00	0.200	0.175	0.375
575.00	1.000	0.600	0.975

Device	Routing	Invert	Outlet Devices
#1	Primary	574.00'	**20.0' long x 0.5' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 Coef. (English) 2.80 2.92 3.08 3.30 3.32

Primary OutFlow Max=10.22 cfs @ 13.07 hrs HW=574.32' (Free Discharge)
└**1=Broad-Crested Rectangular Weir** (Weir Controls 10.22 cfs @ 1.61 fps)

Pond 46P: P-10 DA-1



Summary for Pond 47P: P-10 DA-2

Inflow Area = 158.910 ac, 0.00% Impervious, Inflow Depth = 0.57" for 10-yr event
Inflow = 26.46 cfs @ 13.29 hrs, Volume= 7.558 af
Outflow = 23.31 cfs @ 13.68 hrs, Volume= 6.383 af, Atten= 12%, Lag= 23.3 min
Primary = 23.31 cfs @ 13.68 hrs, Volume= 6.383 af

Routing by Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs
Peak Elev= 574.53' @ 13.68 hrs Surf.Area= 0.859 ac Storage= 1.588 af

Plug-Flow detention time= 130.6 min calculated for 6.377 af (84% of inflow)
Center-of-Mass det. time= 57.3 min (1,034.8 - 977.5)

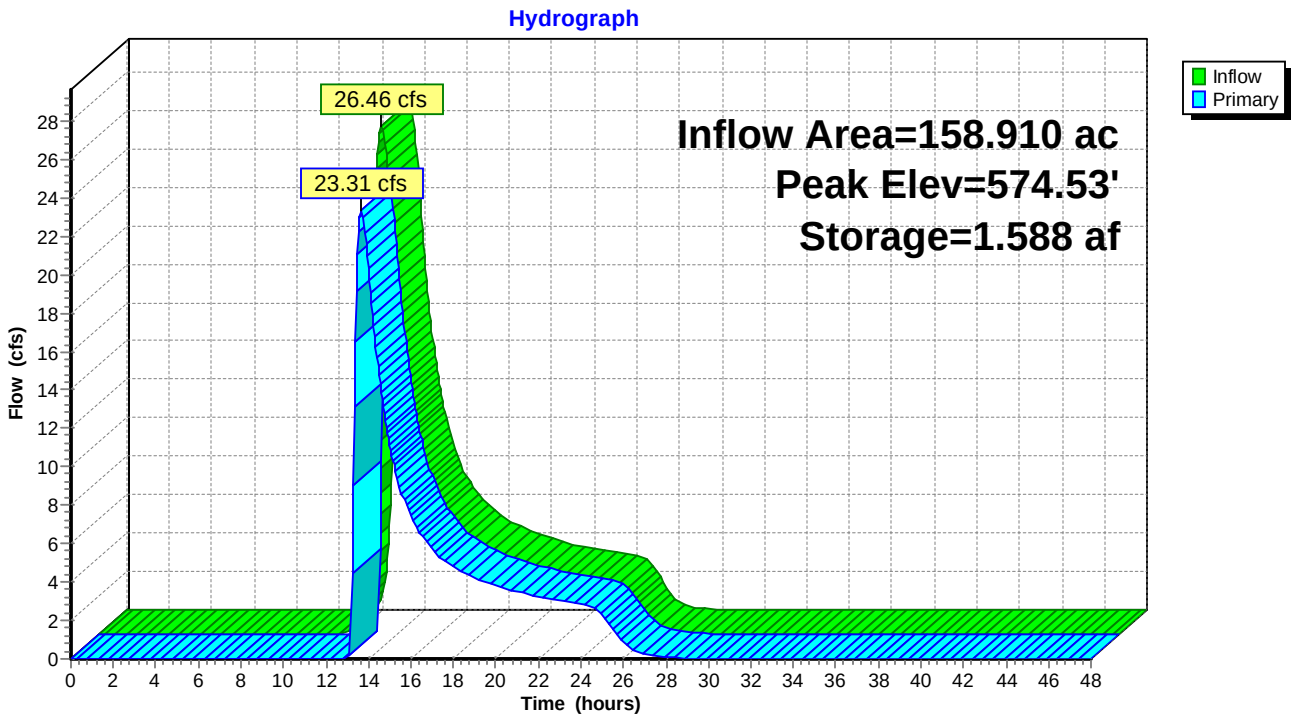
Volume	Invert	Avail.Storage	Storage Description
#1	571.00'	2.025 af	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (acres)	Inc.Store (acre-feet)	Cum.Store (acre-feet)
571.00	0.150	0.000	0.000
572.00	0.250	0.200	0.200
573.00	0.500	0.375	0.575
574.00	0.700	0.600	1.175
575.00	1.000	0.850	2.025

Device	Routing	Invert	Outlet Devices
#1	Primary	574.00'	**20.0' long x 0.5' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 Coef. (English) 2.80 2.92 3.08 3.30 3.32

Primary OutFlow Max=23.27 cfs @ 13.68 hrs HW=574.53' (Free Discharge)
└**1=Broad-Crested Rectangular Weir** (Weir Controls 23.27 cfs @ 2.20 fps)

Pond 47P: P-10 DA-2



Summary for Pond 48P: P-10 DA-3

Inflow Area = 36.450 ac, 0.00% Impervious, Inflow Depth = 0.57" for 10-yr event
Inflow = 9.21 cfs @ 12.66 hrs, Volume= 1.734 af
Outflow = 8.05 cfs @ 12.87 hrs, Volume= 1.469 af, Atten= 13%, Lag= 12.9 min
Primary = 8.05 cfs @ 12.87 hrs, Volume= 1.469 af

Routing by Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs
Peak Elev= 574.27' @ 12.87 hrs Surf.Area= 0.359 ac Storage= 0.330 af

Plug-Flow detention time= 114.0 min calculated for 1.469 af (85% of inflow)
Center-of-Mass det. time= 41.6 min (977.0 - 935.4)

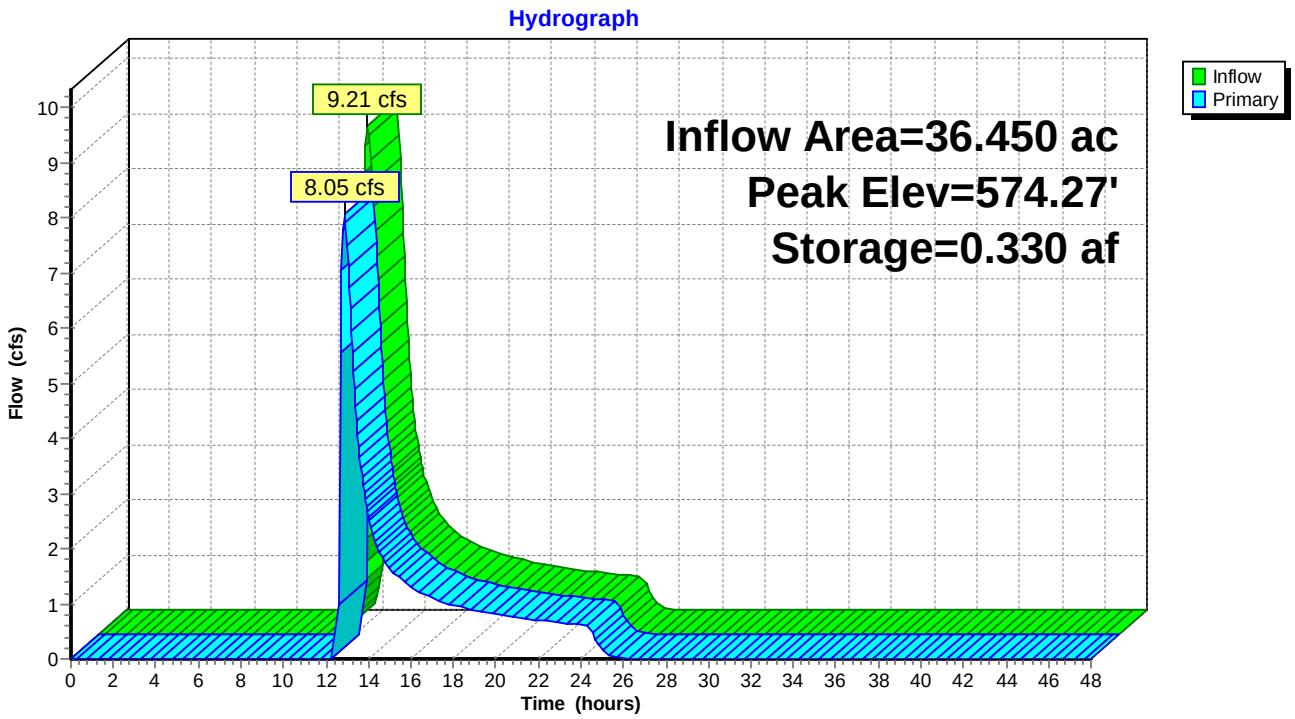
Volume	Invert	Avail.Storage	Storage Description
#1	571.00'	0.825 af	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (acres)	Inc.Store (acre-feet)	Cum.Store (acre-feet)
571.00	0.050	0.000	0.000
572.00	0.080	0.065	0.065
573.00	0.100	0.090	0.155
574.00	0.120	0.110	0.265
575.00	1.000	0.560	0.825

Device	Routing	Invert	Outlet Devices
#1	Primary	574.00'	**20.0' long x 0.5' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 Coef. (English) 2.80 2.92 3.08 3.30 3.32

Primary OutFlow Max=8.00 cfs @ 12.87 hrs HW=574.27' (Free Discharge)
└**1=Broad-Crested Rectangular Weir** (Weir Controls 8.00 cfs @ 1.48 fps)

Pond 48P: P-10 DA-3



Summary for Pond 49P: P-10 DA-4

Inflow Area = 152.530 ac, 0.00% Impervious, Inflow Depth = 0.57" for 10-yr event
Inflow = 26.47 cfs @ 13.21 hrs, Volume= 7.255 af
Outflow = 23.52 cfs @ 13.56 hrs, Volume= 6.205 af, Atten= 11%, Lag= 20.5 min
Primary = 23.52 cfs @ 13.56 hrs, Volume= 6.205 af

Routing by Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs
Peak Elev= 574.53' @ 13.56 hrs Surf.Area= 0.836 ac Storage= 1.446 af

Plug-Flow detention time= 123.0 min calculated for 6.205 af (86% of inflow)
Center-of-Mass det. time= 53.1 min (1,025.3 - 972.2)

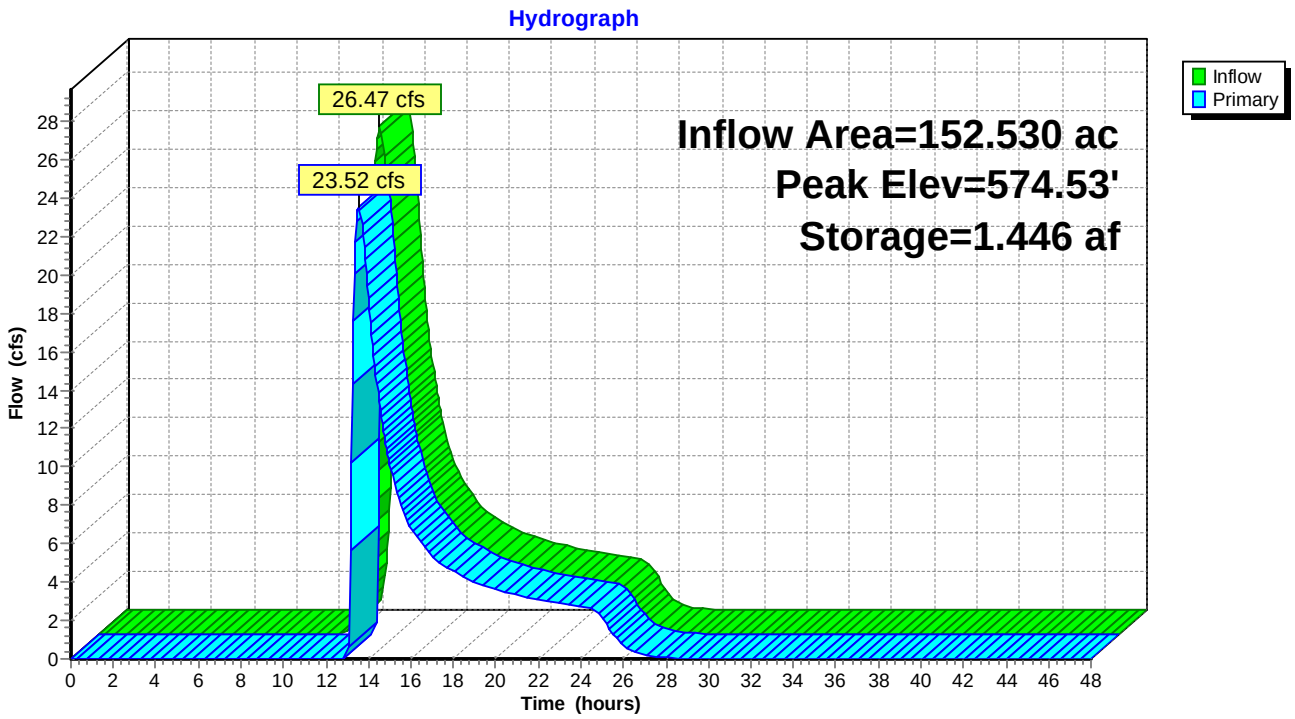
Volume	Invert	Avail.Storage	Storage Description
#1	571.00'	1.875 af	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (acres)	Inc.Store (acre-feet)	Cum.Store (acre-feet)
571.00	0.150	0.000	0.000
572.00	0.250	0.200	0.200
573.00	0.400	0.325	0.525
574.00	0.650	0.525	1.050
575.00	1.000	0.825	1.875

Device	Routing	Invert	Outlet Devices
#1	Primary	574.00'	**20.0' long x 0.5' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 Coef. (English) 2.80 2.92 3.08 3.30 3.32

Primary OutFlow Max=23.48 cfs @ 13.56 hrs HW=574.53' (Free Discharge)
└**1=Broad-Crested Rectangular Weir** (Weir Controls 23.48 cfs @ 2.21 fps)

Pond 49P: P-10 DA-4



Appendix I

Traffic Impact Study Report

FEHR PEERS

MEMORANDUM

Date: April 16, 2017

To: Hedy Koczwara, Aspen Environmental Group

From: Jason D. Pack, PE
Andrew Scher

Subject: Athos Renewable Energy Transportation Impact Assessment

OC17-0531

This memorandum summarizes the results of the transportation impact analysis that Fehr & Peers completed for the proposed Athos Renewable Energy site located near Desert Center, California. Our assessment consists of the following:

- Review of intersection sightlines near the proposed Project driveways
- Evaluation of potential construction traffic routes
- Level of Service assessment under Existing, Ambient No Project, and Ambient Plus Project conditions

The remainder of this memorandum is divided into the following key topic areas:

- Introduction
- Existing Conditions
- Project Characteristics
- Ambient No Project Conditions
- Ambient Plus Project Conditions
- Mitigations

Construction of the proposed Project would cause significant impacts, including working with adjacent developments to stagger arrival/departure times or the potential installation of temporary traffic control signals during the duration of the project.

Introduction

Figure 1 displays the project location and the surrounding roadway network. Fehr & Peers evaluated roadway and intersection operations for the following scenarios:

- **Existing Conditions** – Existing roadway volumes obtained from counts taken on March 22, 2018
- **Ambient No Project Conditions** – Existing roadway volumes plus traffic expected from approved and pending development in the area near the Project
- **Ambient Plus Project Conditions** – Ambient No Project Conditions plus traffic expected from construction related activity for the Project

Existing Conditions

Analysis Methodologies

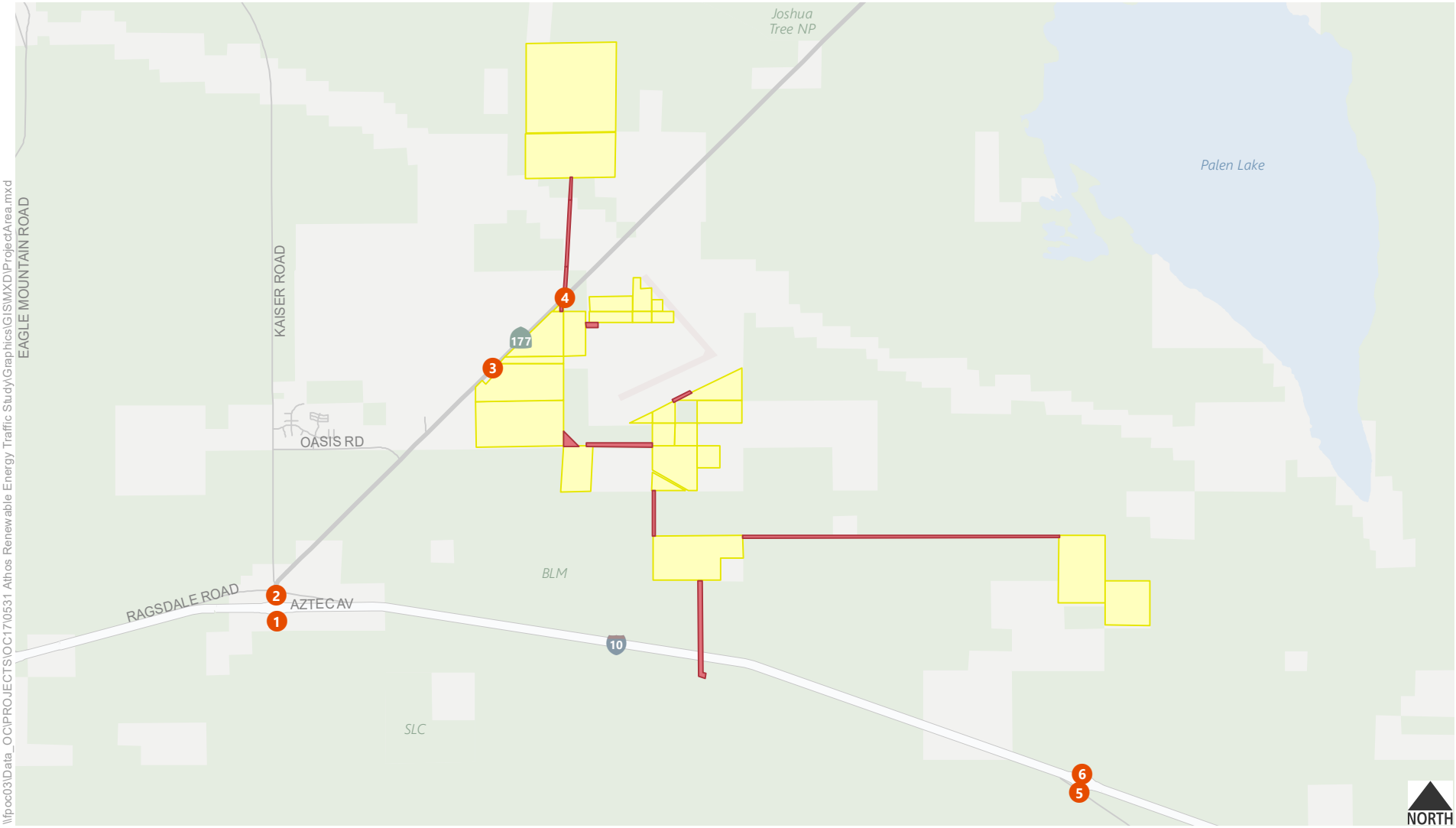
Fehr & Peers calculated the Level of Service (LOS) at the study intersections using Transportation Research Board (TRB) Highway Capacity Manual (HCM) 6th Edition methodologies, 2016. All study intersections are Caltrans facilities, and Caltrans considers LOS C as the lowest acceptable LOS for its facilities. Table 1 shows the HCM LOS criteria.

Roadways

Interstate 10 (I-10): I-10 is a major east/west interstate freeway spanning the United States from Santa Monica, CA to Jacksonville, FL. It connects Southern California to Phoenix, AZ and destinations further east. I-10 is a four-lane freeway with interchanges near the Project site at SR-177 and Corn Springs Road. The posted speed limit on I-10 is 70 mph. In the study area, I-10 carries roughly 26,000 average daily trips (ADT).

State Route 177 (SR-177): SR-177 is a north/south highway running between Desert Center/I-10 and State Route 62 (approximately 25 miles northeast of Desert Center). SR-177 is a two-lane road, and the posted speed limit is 65 mph. It carries approximately 2,800 ADT.

Corn Springs Road: Corn Springs Road is a rural road with little connectivity. Its interchange with I-10 is nine miles east of the I-10/SR-177 interchange. It connects to rural roads which provide access to a nearby substation and is a proposed access site for solar projects in the area, including Athos.



Solar Facility Easements # Study Intersection

Figure 1

Study Area

TABLE 1 – INTERSECTION LEVEL OF SERVICE CRITERIA

Level of Service	Description	Signalized Delay (Seconds)	Unsignalized Delay (Seconds)
A	Progression is extremely favorable and most vehicles arrive during the green phase. Most vehicles do not stop at all. Short cycle lengths may also contribute to low delay.	≤ 10.0	≤ 10.0
B	Progression is good, cycle lengths are short, or both. More vehicles stop than with LOS A, causing higher levels of average delay.	> 10.0 to 20.0	> 10.0 to 15.0
C	Higher congestion may result from fair progression, longer cycle lengths, or both. Individual cycle failures may begin to appear at this level, though many still pass through the intersection without stopping.	> 20.0 to 35.0	> 15.0 to 25.0
D	The influence of congestion becomes more noticeable. Longer delays may result from some combination of unfavorable progression, long cycle lengths, or high V/C ratios. Many vehicles stop, and the proportion of vehicles not stopping declines. Individual cycle failures are noticeable.	> 35.0 to 55.0	> 25.0 to 35.0
E	This level is considered by many agencies to be the limit of acceptable delay. These high delay values generally indicate poor progression, long cycle lengths, and high V/C ratios. Individual cycle failures are frequent occurrences.	> 55.0 to 80.0	> 35.0 to 50.0
F	This level is considered unacceptable with oversaturation, which is when arrival flow rates exceed the capacity of the intersection. This level may also occur at high V/C ratios below 1.0 with many individual cycle failures. Poor progression and long cycle lengths may also be contributing factors to such delay levels.	> 80.0	> 50.0

Source: Highway Capacity Manual (Transportation Research Board, 2016).

Intersections

Field observations were completed on March 1, 2018. Figure 2 shows the locations of the study intersections. While specific access points have not yet been chosen for the site, field observations along SR-177 north of Oasis Drive indicate that most locations along the road are suitable for driveways, and that no sightlines are obstructed. The study locations of the North Access Driveway and South Access Driveway (Intersections 3 and 4) both meet these criteria, as shown on Figures 3 and 4.

Existing Traffic Volumes

Existing traffic volumes and intersection configurations are shown on Figure 5. Field work phots at key access locations are presented on Figure 3.

LOS results for existing conditions are shown in Table 1. The results indicate that all of the intersections operate acceptably at LOS A during both peak hours.

TABLE 1: EXISTING (2018) CONDITIONS LOS

Intersection Name	Control	Peak Period	Delay	LOS
I-10 EB Ramps & SR-177	SSSC	AM	9.2	A
	SSSC	PM	9.0	A
I-10 WB Ramps & SR-177	SSSC	AM	8.8	A
	SSSC	PM	8.8	A
SR-177 & South Access Driveway	SSSC	AM	N/A	N/A
	SSSC	PM	N/A	N/A
SR-177 & North Access Driveway	SSSC	AM	N/A	N/A
	SSSC	PM	N/A	N/A
I-10 EB Ramps & Corn Springs Road	SSSC	AM	8.4	A
	SSSC	PM	8.4	A
I-10 WB Ramps & Corn Springs Road	SSSC	AM	8.5	A

Notes:
Calculated using methodologies consistent with HCM 6th Edition
N/A – Not Applicable as driveways only exist with the project
SSSC = Side Street Stop Control
Source: Fehr & Peers, 2018

Study Intersection

Figure 2

Study Intersections

Figure 3

Study Intersection 3 Site Photos

Figure 4

Study Intersection 4 Site Photos

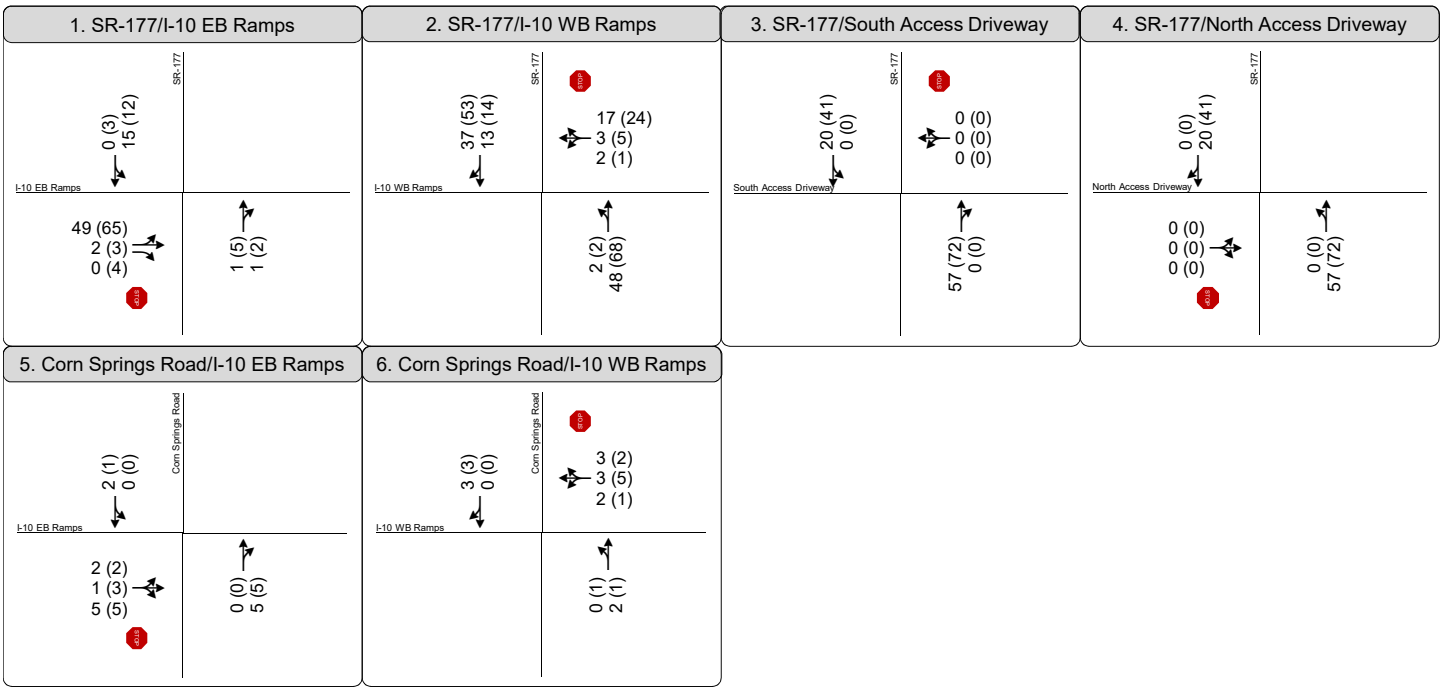


Figure 3

Peak Hour Traffic Volumes
Existing (2018) Volumes

Project Conditions

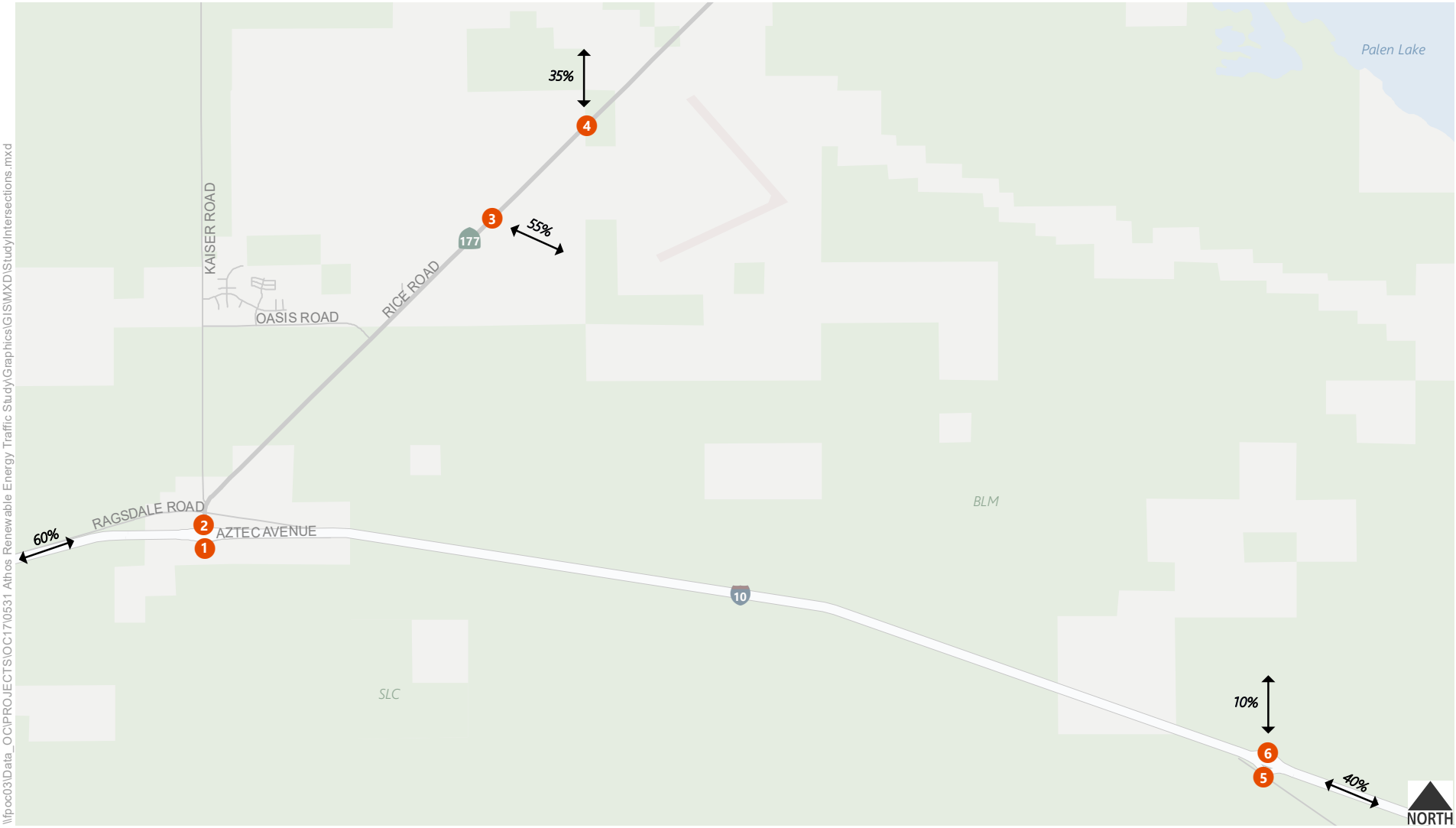
Trip Generation

Trip generation for the proposed Athos Renewable Energy Project was developed for the construction phase of the project using information provided by the applicant. Peak hour trips generated for the construction period of the project are shown in Table 2. Please note that delivery trucks for the proposed project represent just over 1% of the total trips generated by the project. The technical assessment has assumed that the heavy vehicle percentage is 2% of the total trips through the intersection. As such, the presence of the project's heavy vehicles are accounted for in the capacity adjustments at the study intersections through the heavy vehicle percentage.

TABLE 2: CONGESTION TRIP GENERATION

Description	Quantity	ADT	AM Peak Hour			PM Peak Hour		
			In	Out	Total	In	Out	Total
Workers	530	1060	530	0	530	0	530	530
Delivery Trucks	40	80	3	3	6	3	3	6
Total		1140	533	3	536	3	533	536

Trip distribution for the project is shown on Figure 6. Project added trips at the study intersections are shown on Figure 7. It should be noted that the site will generate minimal trips during operation phase so it does not warrant analysis.



Study Intersection XX% Regional Trip Distribution XX% Site Access Distribution

Figure X

Trip Distribution

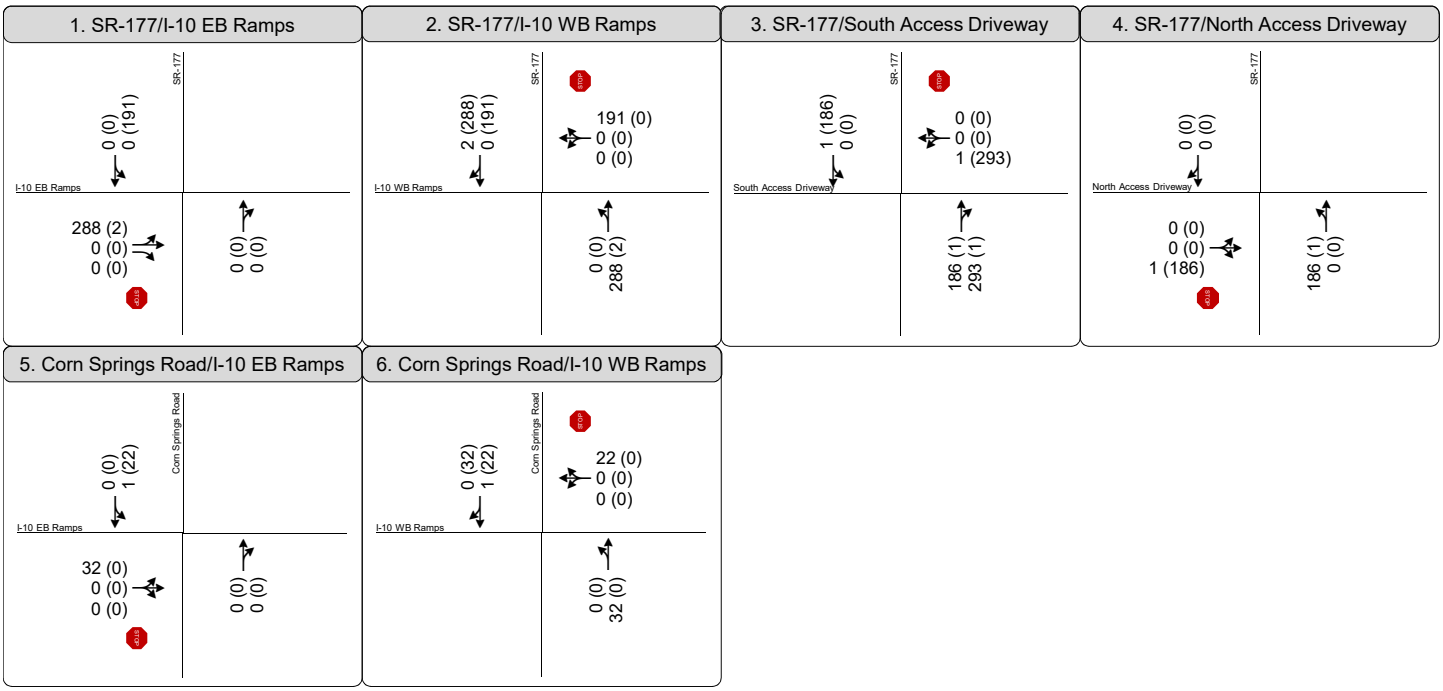


Figure 4

Peak Hour Traffic Volumes
Project Volumes

Ambient Conditions

Concurrently Constructed Projects

Table 3 shows the approved and pending projects near the study area. Projects were included in the Ambient Conditions analysis if they were determined to likely overlap with the late 2019 to late 2021 construction schedule for the Athos Renewable Energy Project.

TABLE 3: APPROVED AND PENDING PROJECTS

Nearby Projects	Included in Ambient Conditions?	Reason
SunPower Project(s)	Included	Potentially Overlapping Construction Schedule
Palen Solar Project	Included	Potentially Overlapping Construction Schedule
EDF's 150 MW Desert Harvest Project	Included	Potentially Overlapping Construction Schedule
CUP3788	Included	Potentially Overlapping Construction Schedule
Desert Southwest 500 kV Transmission Line	Included	Potentially Overlapping Construction Schedule
Plot Plan No. 23577, Revised Permit No 2.	Not Included	Non-Overlapping Construction Schedule
California Jupiter LLC, Jupiter Project (CACA 56577)	Not Included	Non-Overlapping Construction Schedule
IO Solar Project (CACA 56782)	Not Included	Non-Overlapping Construction Schedule
DC 50 Solar	Not Included	Non-Overlapping Construction Schedule

The peak hour trips generated for each of the included projects are shown in Table 4:

TABLE 4: TRIP GENERATION FOR PROJECTS INCLUDED IN AMBIENT CONDITIONS

Nearby Projects	AM Peak Hour			PM Peak Hour		
	In	Out	Total	In	Out	Total
SunPower Project(s)	426	2	428	2	426	428
Palen Solar Project	1,148	3	1,151	3	1,148	1,151
EDF's 150 MW Desert Harvest Project	143	20	163	0	125	125
CUP3788	213	1	214	1	213	214
Desert Southwest 500 kV Transmission Line	144	0	144	0	144	144

Trip generation and distribution was taken from available EIR documents. When not available, trips generated was estimated per MW based on the Athos Renewable Energy Project trip generation rate, and trip distribution was based on Athos' trip distribution. Figure 8 shows the Ambient Volumes for the study intersections.

Table 5 shows the LOS results at the study intersections for Ambient Conditions.

TABLE 5: AMBIENT CONDITIONS LOS

Intersection Name	Control	Peak Period	Existing		Ambient	
			Delay	LOS	Delay	LOS
I-10 EB Ramps & SR-177	SSSC	AM	9.2	A	11.7	B
	SSSC	PM	9.0	A	12.9	B
I-10 WB Ramps & SR-177	SSSC	AM	8.8	A	13.3	B
	SSSC	PM	8.8	A	8.9	A
SR-177 & South Access Driveway	SSSC	AM	N/A	N/A	N/A	N/A
	SSSC	PM	N/A	N/A	N/A	N/A
SR-177 & North Access Driveway	SSSC	AM	N/A	N/A	N/A	N/A
	SSSC	PM	N/A	N/A	N/A	N/A
I-10 EB Ramps & Corn Springs Road	SSSC	AM	8.4	A	30.5	**D**
	SSSC	PM	8.4	A	44.1	**E**
I-10 WB Ramps & Corn Springs Road	SSSC	AM	8.5	A	>180.0	**F**
	SSSC	PM	8.4	A	11.1	B

Notes:
Calculated using methodologies consistent with HCM 6th Edition
N/A – Not Applicable as driveways only exist with the project
SSSC = Side Street Stop Control
Source: Fehr & Peers, 2018

The following intersections are projected to operate unacceptably in the Ambient Condition:

- I-10 EB Ramps & Corn Springs Road – LOS D (AM Peak Hour), LOS E (PM Peak Hour)
- I-10 WB Ramps & Corn Springs Road – LOS F (AM Peak Hour)

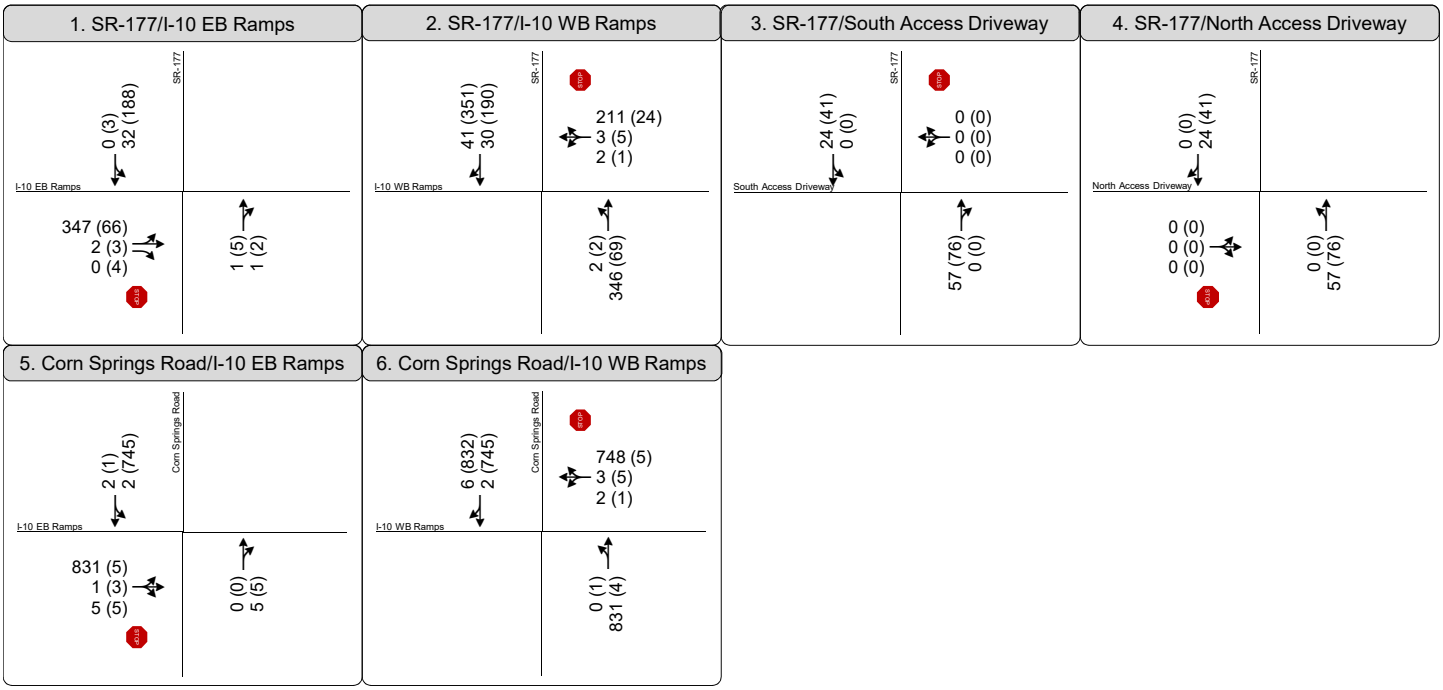


Figure 4

Peak Hour Traffic Volumes
Ambient Volumes

Ambient Plus Project Conditions

Figure 9 shows the Ambient Plus Project Volumes for the study intersections.

Table 6 shows the LOS results at the study intersections for Ambient Plus Project Conditions.

TABLE 6: AMBIENT PLUS PROJECT CONDITIONS LOS

Intersection Name	Control	Peak Period	Ambient		Ambient+Project	
			Delay	LOS	Delay	LOS
I-10 EB Ramps & SR-177	SSSC	AM	11.7	B	20.3	C
	SSSC	PM	12.9	B	24.7	C
I-10 WB Ramps & SR-177	SSSC	AM	13.3	B	71.3	**F**
	SSSC	PM	8.9	A	9.1	A
SR-177 & South Access Driveway	SSSC	AM	N/A	N/A	11.4	B
	SSSC	PM	N/A	N/A	15.3	C
SR-177 & North Access Driveway	SSSC	AM	N/A	N/A	8.4	A
	SSSC	PM	N/A	N/A	9.4	A
I-10 EB Ramps & Corn Springs Road	SSSC	AM	30.5	**D**	36.1	**E**
	SSSC	PM	44.1	**E**	48.3	**E**
I-10 WB Ramps & Corn Springs Road	SSSC	AM	>180.0	**F**	>180.0	**F**
	SSSC	PM	11.1	B	11.4	B

Notes:
Calculated using methodologies consistent with HCM 6th Edition
N/A – Not Applicable as driveways only exist with the project
SSSC = Side Street Stop Control
Source: Fehr & Peers, 2018

The following intersections are projected to operate unacceptably in the Ambient Plus Project Condition:

- I-10 EB Ramps & Corn Springs Road – LOS E (AM Peak Hour), LOS E (PM Peak Hour)
- I-10 WB Ramps & Corn Springs Road – LOS F (AM Peak Hour)

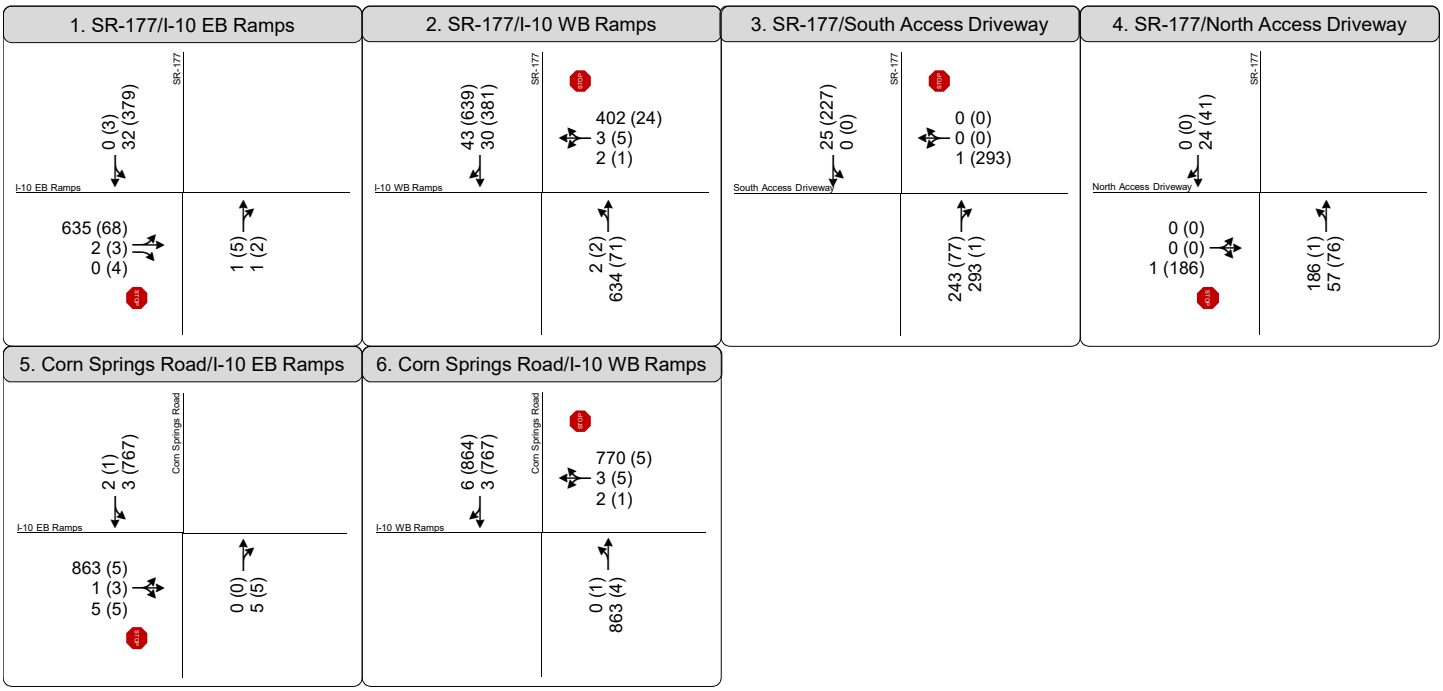


Figure 4

Peak Hour Traffic Volumes
Ambient+Project Volumes

Mitigations

The addition of Project Traffic to the Ambient Conditions causes potential impacts under Caltrans TIA guidelines. Fehr & Peers evaluated several measures to mitigate project impacts. These measures include coordination with adjacent development projects to spread work shifts into multiple hours (instead of peak hour) or the installation of temporary traffic signals or manual traffic control officers during peak hours to mitigate the temporary impacts. Under Ambient Plus Project Conditions, the worst performing intersection fails at 78% of total volumes in the AM and 50% of total volumes in the PM. As previously noted, the project sponsor should coordinate with the projects concurrently being constructed such that enough trips are spread outside the peak hour to reduce the intersection impacts. Our analysis conservatively assumes that all commute trips are already taking place during the peak hour. Commute trips often are spread out over two or more hours. Table 7 shows the LOS results of reducing traffic volumes.

Table 7: Ambient Plus Project Mitigation Measure (Reduced Traffic) Conditions

Intersection Name	Control	Peak Period	Ambient+Project		Ambient+Project Mitigation-Traffic Sensitivity Test		Delta Delay
			Delay	LOS	Delay	LOS	
I-10 EB Ramps & SR-177	SSSC	AM	20.3	C	10.8	B	-9.5
	SSSC	PM	24.7	C	17.1	C	-7.6
I-10 WB Ramps & SR-177	SSSC	AM	71.3	**F**	12.5	B	-58.8
	SSSC	PM	9.1	A	8.9	A	-0.2
SR-177 & South Access Driveway	SSSC	AM	11.4	B	9.7	A	-1.7
	SSSC	PM	15.3	C	12.4	B	-2.9
SR-177 & North Access Driveway	SSSC	AM	8.4	A	8.4	A	0
	SSSC	PM	9.4	A	9.1	A	-0.3
I-10 EB Ramps & Corn Springs Road	SSSC	AM	36.1	**E**	11.6	B	-24.5
	SSSC	PM	48.3	**E**	24.8	C	-23.5
I-10 WB Ramps & Corn Springs Road	SSSC	AM	764.8	**F**	24.5	C	-740.3
	SSSC	PM	11.4	B	10.2	B	-1.2

Notes:
Calculated using methodologies consistent with HCM 6th Edition
SSSC = Side Street Stop Control
Source: Fehr & Peers, 2018

Intersection impacts can also be mitigated by the installation of a temporary signal or use of manual intersection control during the construction period. I-10 WB Ramps & SR-177 (Intersection 6) required geometry changes in addition to signalization. A 50-foot westbound right turn pocket was added, as well as a southbound 50-foot right turn pocket. If manual intersection control is used in the AM peak hour, no manual intersection control is needed in the PM peak hour, and the southbound right turn pocket isn't needed. Table 8 shows the LOS results of using a traffic signal at the impacted intersections.

Table 8: Ambient Plus Project Mitigation Measure (Signalized) Conditions

Intersection Name	Control	Peak Period	Ambient+Project		Ambient+Project Mitigation-Signalized		Delta Delay
			Delay	LOS	Delay	LOS	
I-10 WB Ramps & SR-177	Signalized	AM	71.3	**F**	14.5	B	-56.8
	Signalized	PM	9.1	A	6.6	A	-2.5
I-10 EB Ramps & Corn Springs Road	Signalized	AM	36.1	**E**	6.8	A	-29.3
	Signalized	PM	48.3	**E**	4.4	A	-43.9
I-10 WB Ramps & Corn Springs Road	Signalized	AM	<180.0	**F**	25.4	C	-154.6
	Signalized	PM	11.4	B	3.9	A	-10.5

Notes:
Calculated using methodologies consistent with HCM 6th Edition
SSSC = Side Street Stop Control
Source: Fehr & Peers, 2018

With implementation of the proposed mitigation measures, operations are improved to acceptable levels and the impacts are reduced to a less-than-significant level.

As the project moves into an operations and maintenance phase, project trips are dramatically reduced and the project would not have the potential to impact study facilities during that phase of the project.

Appendix A: HCM 6th Addition Results

Intersection	
Int Delay, s/veh	8.5

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	49	2	0	0	0	0	0	1	1	15	0	0
Future Vol, veh/h	49	2	0	0	0	0	0	1	1	15	0	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	20	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	-	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	62	62	62	62	62	62	62	62	62	62	62	62
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	79	3	0	0	0	0	0	2	2	24	0	0

Major/Minor	Minor2			Major1			Major2		
Conflicting Flow All	51	52	0	-	0	0	4	0	0
Stage 1	48	48	-	-	-	-	-	-	-
Stage 2	3	4	-	-	-	-	-	-	-
Critical Hdwy	6.42	6.52	6.22	-	-	-	4.12	-	-
Critical Hdwy Stg 1	5.42	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	5.42	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	-	-	-	2.218	-	-
Pot Cap-1 Maneuver	958	839	-	0	-	-	1618	-	0
Stage 1	974	855	-	0	-	-	-	-	0
Stage 2	1020	892	-	0	-	-	-	-	0
Platoon blocked, %					-	-		-	
Mov Cap-1 Maneuver	944	0	-	-	-	-	1618	-	-
Mov Cap-2 Maneuver	944	0	-	-	-	-	-	-	-
Stage 1	959	0	-	-	-	-	-	-	-
Stage 2	1020	0	-	-	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	9.2	0	7.3
HCM LOS	A		

Minor Lane/Major Mvmt	NBT	NBR	EBLn1	EBLn2	SBL	SBT
Capacity (veh/h)	-	-	944	-	1618	-
HCM Lane V/C Ratio	-	-	0.087	-	0.015	-
HCM Control Delay (s)	-	-	9.2	0	7.3	0
HCM Lane LOS	-	-	A	A	A	A
HCM 95th %tile Q(veh)	-	-	0.3	-	0	-

Intersection	
Int Delay, s/veh	1.7

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	0	0	0	2	3	17	2	48	0	0	13	37
Future Vol, veh/h	0	0	0	2	3	17	2	48	0	0	13	37
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	-	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	75	75	75	75	75	75	75	75	75	75	75	75
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	0	0	3	4	23	3	64	0	0	17	49

Major/Minor	Minor1			Major1			Major2		
Conflicting Flow All	112	136	64	66	0	-	-	-	0
Stage 1	70	70	-	-	-	-	-	-	-
Stage 2	42	66	-	-	-	-	-	-	-
Critical Hdwy	6.42	6.52	6.22	4.12	-	-	-	-	-
Critical Hdwy Stg 1	5.42	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	5.42	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	2.218	-	-	-	-	-
Pot Cap-1 Maneuver	885	755	1000	1536	-	0	0	-	-
Stage 1	953	837	-	-	-	0	0	-	-
Stage 2	980	840	-	-	-	0	0	-	-
Platoon blocked, %					-			-	-
Mov Cap-1 Maneuver	883	0	1000	1536	-	-	-	-	-
Mov Cap-2 Maneuver	883	0	-	-	-	-	-	-	-
Stage 1	951	0	-	-	-	-	-	-	-
Stage 2	980	0	-	-	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	8.8	0.3	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBL	NBT	WBLn1	SBT	SBR
Capacity (veh/h)	1536	-	986	-	-
HCM Lane V/C Ratio	0.002	-	0.03	-	-
HCM Control Delay (s)	7.3	0	8.8	-	-
HCM Lane LOS	A	A	A	-	-
HCM 95th %tile Q(veh)	0	-	0.1	-	-

Intersection	
Int Delay, s/veh	0

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	0	0	57	0	0	20
Future Vol, veh/h	0	0	57	0	0	20
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	65	65	65	65	65	65
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	0	88	0	0	31

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	119	88	0	0	88	0
Stage 1	88	-	-	-	-	-
Stage 2	31	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218	-
Pot Cap-1 Maneuver	877	970	-	-	1508	-
Stage 1	935	-	-	-	-	-
Stage 2	992	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	877	970	-	-	1508	-
Mov Cap-2 Maneuver	877	-	-	-	-	-
Stage 1	935	-	-	-	-	-
Stage 2	992	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	0	0	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	-	1508	-
HCM Lane V/C Ratio	-	-	-	-	-
HCM Control Delay (s)	-	-	0	0	-
HCM Lane LOS	-	-	A	A	-
HCM 95th %tile Q(veh)	-	-	-	0	-

Intersection	
Int Delay, s/veh	0

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	0	0	0	57	20	0
Future Vol, veh/h	0	0	0	57	20	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	65	65	65	65	65	65
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	0	0	88	31	0

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	119	31	31	0	-	0
Stage 1	31	-	-	-	-	-
Stage 2	88	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	877	1043	1582	-	-	-
Stage 1	992	-	-	-	-	-
Stage 2	935	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	877	1043	1582	-	-	-
Mov Cap-2 Maneuver	877	-	-	-	-	-
Stage 1	992	-	-	-	-	-
Stage 2	935	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	0	0	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1582	-	-	-	-
HCM Lane V/C Ratio	-	-	-	-	-
HCM Control Delay (s)	0	-	0	-	-
HCM Lane LOS	A	-	A	-	-
HCM 95th %tile Q(veh)	0	-	-	-	-

Intersection	
Int Delay, s/veh	4.5

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	2	1	5	0	0	0	0	0	5	0	2	0
Future Vol, veh/h	2	1	5	0	0	0	0	0	5	0	2	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	-	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	70	70	70	70	70	70	70	70	70	70	70	70
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	3	1	7	0	0	0	0	0	7	0	3	0

Major/Minor	Minor2			Major1			Major2		
Conflicting Flow All	7	10	3	-	0	0	7	0	0
Stage 1	3	3	-	-	-	-	-	-	-
Stage 2	4	7	-	-	-	-	-	-	-
Critical Hdwy	6.42	6.52	6.22	-	-	-	4.12	-	-
Critical Hdwy Stg 1	5.42	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	5.42	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	-	-	-	2.218	-	-
Pot Cap-1 Maneuver	1014	885	1081	0	-	-	1614	-	0
Stage 1	1020	893	-	0	-	-	-	-	0
Stage 2	1019	890	-	0	-	-	-	-	0
Platoon blocked, %					-	-		-	
Mov Cap-1 Maneuver	1014	0	1081	-	-	-	1614	-	-
Mov Cap-2 Maneuver	1014	0	-	-	-	-	-	-	-
Stage 1	1020	0	-	-	-	-	-	-	-
Stage 2	1019	0	-	-	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	8.4	0	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBT	NBR	EBLn1	SBL	SBT
Capacity (veh/h)	-	-	1061	1614	-
HCM Lane V/C Ratio	-	-	0.011	-	-
HCM Control Delay (s)	-	-	8.4	0	-
HCM Lane LOS	-	-	A	A	-
HCM 95th %tile Q(veh)	-	-	0	0	-

Intersection	
Int Delay, s/veh	5.2

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	0	0	0	2	3	3	0	2	0	0	0	3
Future Vol, veh/h	0	0	0	2	3	3	0	2	0	0	0	3
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	-	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	65	65	65	65	65	65	65	65	65	65	65	65
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	0	0	3	5	5	0	3	0	0	0	5

Major/Minor	Minor1		Major1			Major2			
Conflicting Flow All	6	8	3	5	0	-	-	-	0
Stage 1	3	3	-	-	-	-	-	-	-
Stage 2	3	5	-	-	-	-	-	-	-
Critical Hdwy	6.42	6.52	6.22	4.12	-	-	-	-	-
Critical Hdwy Stg 1	5.42	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	5.42	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	2.218	-	-	-	-	-
Pot Cap-1 Maneuver	1015	887	1081	1616	-	0	0	-	-
Stage 1	1020	893	-	-	-	0	0	-	-
Stage 2	1020	892	-	-	-	0	0	-	-
Platoon blocked, %					-			-	-
Mov Cap-1 Maneuver	1015	0	1081	1616	-	-	-	-	-
Mov Cap-2 Maneuver	1015	0	-	-	-	-	-	-	-
Stage 1	1020	0	-	-	-	-	-	-	-
Stage 2	1020	0	-	-	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	8.5	0	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBL	NBT	WBLn1	SBT	SBR
Capacity (veh/h)	1616	-	1054	-	-
HCM Lane V/C Ratio	-	-	0.012	-	-
HCM Control Delay (s)	0	-	8.5	-	-
HCM Lane LOS	A	-	A	-	-
HCM 95th %tile Q(veh)	0	-	0	-	-

Intersection	
Int Delay, s/veh	8.5

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	49	2	0	0	0	0	0	1	1	15	0	0
Future Vol, veh/h	49	2	0	0	0	0	0	1	1	15	0	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	20	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	-	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	62	62	62	62	62	62	62	62	62	62	62	62
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	79	3	0	0	0	0	0	2	2	24	0	0

Major/Minor	Minor2			Major1			Major2		
Conflicting Flow All	51	52	0	-	0	0	4	0	0
Stage 1	48	48	-	-	-	-	-	-	-
Stage 2	3	4	-	-	-	-	-	-	-
Critical Hdwy	6.42	6.52	6.22	-	-	-	4.12	-	-
Critical Hdwy Stg 1	5.42	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	5.42	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	-	-	-	2.218	-	-
Pot Cap-1 Maneuver	958	839	-	0	-	-	1618	-	0
Stage 1	974	855	-	0	-	-	-	-	0
Stage 2	1020	892	-	0	-	-	-	-	0
Platoon blocked, %					-	-		-	
Mov Cap-1 Maneuver	944	0	-	-	-	-	1618	-	-
Mov Cap-2 Maneuver	944	0	-	-	-	-	-	-	-
Stage 1	959	0	-	-	-	-	-	-	-
Stage 2	1020	0	-	-	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	9.2	0	7.3
HCM LOS	A		

Minor Lane/Major Mvmt	NBT	NBR	EBLn1	EBLn2	SBL	SBT
Capacity (veh/h)	-	-	944	-	1618	-
HCM Lane V/C Ratio	-	-	0.087	-	0.015	-
HCM Control Delay (s)	-	-	9.2	0	7.3	0
HCM Lane LOS	-	-	A	A	A	A
HCM 95th %tile Q(veh)	-	-	0.3	-	0	-

Intersection	
Int Delay, s/veh	1.7

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	0	0	0	2	3	17	2	48	0	0	13	37
Future Vol, veh/h	0	0	0	2	3	17	2	48	0	0	13	37
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	-	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	75	75	75	75	75	75	75	75	75	75	75	75
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	0	0	3	4	23	3	64	0	0	17	49

Major/Minor	Minor1			Major1			Major2		
Conflicting Flow All	112	136	64	66	0	-	-	-	0
Stage 1	70	70	-	-	-	-	-	-	-
Stage 2	42	66	-	-	-	-	-	-	-
Critical Hdwy	6.42	6.52	6.22	4.12	-	-	-	-	-
Critical Hdwy Stg 1	5.42	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	5.42	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	2.218	-	-	-	-	-
Pot Cap-1 Maneuver	885	755	1000	1536	-	0	0	-	-
Stage 1	953	837	-	-	-	0	0	-	-
Stage 2	980	840	-	-	-	0	0	-	-
Platoon blocked, %					-			-	-
Mov Cap-1 Maneuver	883	0	1000	1536	-	-	-	-	-
Mov Cap-2 Maneuver	883	0	-	-	-	-	-	-	-
Stage 1	951	0	-	-	-	-	-	-	-
Stage 2	980	0	-	-	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	8.8	0.3	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBL	NBT	WBLn1	SBT	SBR
Capacity (veh/h)	1536	-	986	-	-
HCM Lane V/C Ratio	0.002	-	0.03	-	-
HCM Control Delay (s)	7.3	0	8.8	-	-
HCM Lane LOS	A	A	A	-	-
HCM 95th %tile Q(veh)	0	-	0.1	-	-

Intersection	
Int Delay, s/veh	4.5

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	2	1	5	0	0	0	0	0	5	0	2	0
Future Vol, veh/h	2	1	5	0	0	0	0	0	5	0	2	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	-	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	70	70	70	70	70	70	70	70	70	70	70	70
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	3	1	7	0	0	0	0	0	7	0	3	0

Major/Minor	Minor2			Major1			Major2		
Conflicting Flow All	7	10	3	-	0	0	7	0	0
Stage 1	3	3	-	-	-	-	-	-	-
Stage 2	4	7	-	-	-	-	-	-	-
Critical Hdwy	6.42	6.52	6.22	-	-	-	4.12	-	-
Critical Hdwy Stg 1	5.42	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	5.42	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	-	-	-	2.218	-	-
Pot Cap-1 Maneuver	1014	885	1081	0	-	-	1614	-	0
Stage 1	1020	893	-	0	-	-	-	-	0
Stage 2	1019	890	-	0	-	-	-	-	0
Platoon blocked, %					-	-		-	
Mov Cap-1 Maneuver	1014	0	1081	-	-	-	1614	-	-
Mov Cap-2 Maneuver	1014	0	-	-	-	-	-	-	-
Stage 1	1020	0	-	-	-	-	-	-	-
Stage 2	1019	0	-	-	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	8.4	0	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBT	NBR	EBLn1	SBL	SBT
Capacity (veh/h)	-	-	1061	1614	-
HCM Lane V/C Ratio	-	-	0.011	-	-
HCM Control Delay (s)	-	-	8.4	0	-
HCM Lane LOS	-	-	A	A	-
HCM 95th %tile Q(veh)	-	-	0	0	-

Intersection	
Int Delay, s/veh	5.2

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	0	0	0	2	3	3	0	2	0	0	0	3
Future Vol, veh/h	0	0	0	2	3	3	0	2	0	0	0	3
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	-	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	65	65	65	65	65	65	65	65	65	65	65	65
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	0	0	3	5	5	0	3	0	0	0	5

Major/Minor	Minor1		Major1			Major2			
Conflicting Flow All	6	8	3	5	0	-	-	-	0
Stage 1	3	3	-	-	-	-	-	-	-
Stage 2	3	5	-	-	-	-	-	-	-
Critical Hdwy	6.42	6.52	6.22	4.12	-	-	-	-	-
Critical Hdwy Stg 1	5.42	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	5.42	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	2.218	-	-	-	-	-
Pot Cap-1 Maneuver	1015	887	1081	1616	-	0	0	-	-
Stage 1	1020	893	-	-	-	0	0	-	-
Stage 2	1020	892	-	-	-	0	0	-	-
Platoon blocked, %					-			-	-
Mov Cap-1 Maneuver	1015	0	1081	1616	-	-	-	-	-
Mov Cap-2 Maneuver	1015	0	-	-	-	-	-	-	-
Stage 1	1020	0	-	-	-	-	-	-	-
Stage 2	1020	0	-	-	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	8.5	0	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBL	NBT	WBLn1	SBT	SBR
Capacity (veh/h)	1616	-	1054	-	-
HCM Lane V/C Ratio	-	-	0.012	-	-
HCM Control Delay (s)	0	-	8.5	-	-
HCM Lane LOS	A	-	A	-	-
HCM 95th %tile Q(veh)	0	-	0	-	-

Intersection	
Int Delay, s/veh	7.8

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	65	3	4	0	0	0	0	5	2	12	3	0
Future Vol, veh/h	65	3	4	0	0	0	0	5	2	12	3	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	20	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	-	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	98	98	98	98	98	98	98	98	98	98	98	98
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	66	3	4	0	0	0	0	5	2	12	3	0

Major/Minor	Minor2			Major1			Major2		
Conflicting Flow All	33	34	3	-	0	0	7	0	0
Stage 1	27	27	-	-	-	-	-	-	-
Stage 2	6	7	-	-	-	-	-	-	-
Critical Hdwy	6.42	6.52	6.22	-	-	-	4.12	-	-
Critical Hdwy Stg 1	5.42	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	5.42	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	-	-	-	2.218	-	-
Pot Cap-1 Maneuver	980	859	1081	0	-	-	1614	-	0
Stage 1	996	873	-	0	-	-	-	-	0
Stage 2	1017	890	-	0	-	-	-	-	0
Platoon blocked, %					-	-		-	
Mov Cap-1 Maneuver	973	0	1081	-	-	-	1614	-	-
Mov Cap-2 Maneuver	973	0	-	-	-	-	-	-	-
Stage 1	989	0	-	-	-	-	-	-	-
Stage 2	1017	0	-	-	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	9	0	5.8
HCM LOS	A		

Minor Lane/Major Mvmt	NBT	NBR	EBLn1	EBLn2	SBL	SBT
Capacity (veh/h)	-	-	973	1081	1614	-
HCM Lane V/C Ratio	-	-	0.071	0.004	0.008	-
HCM Control Delay (s)	-	-	9	8.3	7.2	0
HCM Lane LOS	-	-	A	A	A	A
HCM 95th %tile Q(veh)	-	-	0.2	0	0	-

Intersection	
Int Delay, s/veh	1.7

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	0	0	0	1	5	24	2	68	0	0	14	53
Future Vol, veh/h	0	0	0	1	5	24	2	68	0	0	14	53
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	-	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	93	93	93	93	93	93	93	93	93	93	93	93
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	0	0	1	5	26	2	73	0	0	15	57

Major/Minor	Minor1		Major1			Major2			
Conflicting Flow All	121	149	73	72	0	-	-	-	0
Stage 1	77	77	-	-	-	-	-	-	-
Stage 2	44	72	-	-	-	-	-	-	-
Critical Hdwy	6.42	6.52	6.22	4.12	-	-	-	-	-
Critical Hdwy Stg 1	5.42	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	5.42	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	2.218	-	-	-	-	-
Pot Cap-1 Maneuver	874	743	989	1528	-	0	0	-	-
Stage 1	946	831	-	-	-	0	0	-	-
Stage 2	978	835	-	-	-	0	0	-	-
Platoon blocked, %					-			-	-
Mov Cap-1 Maneuver	873	0	989	1528	-	-	-	-	-
Mov Cap-2 Maneuver	873	0	-	-	-	-	-	-	-
Stage 1	945	0	-	-	-	-	-	-	-
Stage 2	978	0	-	-	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	8.8	0.2	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBL	NBT	WBLn1	SBT	SBR
Capacity (veh/h)	1528	-	984	-	-
HCM Lane V/C Ratio	0.001	-	0.033	-	-
HCM Control Delay (s)	7.4	0	8.8	-	-
HCM Lane LOS	A	A	A	-	-
HCM 95th %tile Q(veh)	0	-	0.1	-	-

Intersection	
Int Delay, s/veh	0

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	0	0	72	0	0	41
Future Vol, veh/h	0	0	72	0	0	41
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	75	75	75	75	75	75
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	0	96	0	0	55

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	151	96	0	0	96	0
Stage 1	96	-	-	-	-	-
Stage 2	55	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218	-
Pot Cap-1 Maneuver	841	960	-	-	1498	-
Stage 1	928	-	-	-	-	-
Stage 2	968	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	841	960	-	-	1498	-
Mov Cap-2 Maneuver	841	-	-	-	-	-
Stage 1	928	-	-	-	-	-
Stage 2	968	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	0	0	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	-	1498	-
HCM Lane V/C Ratio	-	-	-	-	-
HCM Control Delay (s)	-	-	0	0	-
HCM Lane LOS	-	-	A	A	-
HCM 95th %tile Q(veh)	-	-	-	0	-

Intersection	
Int Delay, s/veh	0

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	0	0	0	72	41	0
Future Vol, veh/h	0	0	0	72	41	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	75	75	75	75	75	75
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	0	0	96	55	0

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	151	55	55	0	-	0
Stage 1	55	-	-	-	-	-
Stage 2	96	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	841	1012	1550	-	-	-
Stage 1	968	-	-	-	-	-
Stage 2	928	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	841	1012	1550	-	-	-
Mov Cap-2 Maneuver	841	-	-	-	-	-
Stage 1	968	-	-	-	-	-
Stage 2	928	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	0	0	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1550	-	-	-	-
HCM Lane V/C Ratio	-	-	-	-	-
HCM Control Delay (s)	0	-	0	-	-
HCM Lane LOS	A	-	A	-	-
HCM 95th %tile Q(veh)	0	-	-	-	-

Intersection	
Int Delay, s/veh	5.3

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	2	3	5	0	0	0	0	0	5	0	1	0
Future Vol, veh/h	2	3	5	0	0	0	0	0	5	0	1	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	-	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	67	67	67	67	67	67	67	67	67	67	67	67
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	3	4	7	0	0	0	0	0	7	0	1	0

Major/Minor	Minor2			Major1			Major2		
Conflicting Flow All	5	8	1	-	0	0	7	0	0
Stage 1	1	1	-	-	-	-	-	-	-
Stage 2	4	7	-	-	-	-	-	-	-
Critical Hdwy	6.42	6.52	6.22	-	-	-	4.12	-	-
Critical Hdwy Stg 1	5.42	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	5.42	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	-	-	-	2.218	-	-
Pot Cap-1 Maneuver	1017	887	1084	0	-	-	1614	-	0
Stage 1	1022	895	-	0	-	-	-	-	0
Stage 2	1019	890	-	0	-	-	-	-	0
Platoon blocked, %					-	-		-	
Mov Cap-1 Maneuver	1017	0	1084	-	-	-	1614	-	-
Mov Cap-2 Maneuver	1017	0	-	-	-	-	-	-	-
Stage 1	1022	0	-	-	-	-	-	-	-
Stage 2	1019	0	-	-	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	8.4	0	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBT	NBR	EBLn1	SBL	SBT
Capacity (veh/h)	-	-	1064	1614	-
HCM Lane V/C Ratio	-	-	0.014	-	-
HCM Control Delay (s)	-	-	8.4	0	-
HCM Lane LOS	-	-	A	A	-
HCM 95th %tile Q(veh)	-	-	0	0	-

Intersection	
Int Delay, s/veh	5.7

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	0	0	0	1	5	2	1	1	0	0	0	3
Future Vol, veh/h	0	0	0	1	5	2	1	1	0	0	0	3
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	-	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	81	81	81	81	81	81	81	81	81	81	81	81
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	0	0	1	6	2	1	1	0	0	0	4

Major/Minor	Minor1		Major1			Major2			
Conflicting Flow All	5	7	1	4	0	-	-	-	0
Stage 1	3	3	-	-	-	-	-	-	-
Stage 2	2	4	-	-	-	-	-	-	-
Critical Hdwy	6.42	6.52	6.22	4.12	-	-	-	-	-
Critical Hdwy Stg 1	5.42	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	5.42	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	2.218	-	-	-	-	-
Pot Cap-1 Maneuver	1017	888	1084	1618	-	0	0	-	-
Stage 1	1020	893	-	-	-	0	0	-	-
Stage 2	1021	892	-	-	-	0	0	-	-
Platoon blocked, %					-			-	-
Mov Cap-1 Maneuver	1016	0	1084	1618	-	-	-	-	-
Mov Cap-2 Maneuver	1016	0	-	-	-	-	-	-	-
Stage 1	1019	0	-	-	-	-	-	-	-
Stage 2	1021	0	-	-	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	8.4	3.6	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBL	NBT	WBLn1	SBT	SBR
Capacity (veh/h)	1618	-	1060	-	-
HCM Lane V/C Ratio	0.001	-	0.009	-	-
HCM Control Delay (s)	7.2	0	8.4	-	-
HCM Lane LOS	A	A	A	-	-
HCM 95th %tile Q(veh)	0	-	0	-	-

Intersection	
Int Delay, s/veh	11.3

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	347	2	0	0	0	0	0	1	1	32	0	0
Future Vol, veh/h	347	2	0	0	0	0	0	1	1	32	0	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	20	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	-	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	377	2	0	0	0	0	0	1	1	35	0	0

Major/Minor	Minor2			Major1			Major2		
Conflicting Flow All	72	72	0	-	0	0	2	0	0
Stage 1	70	70	-	-	-	-	-	-	-
Stage 2	2	2	-	-	-	-	-	-	-
Critical Hdwy	6.42	6.52	6.22	-	-	-	4.12	-	-
Critical Hdwy Stg 1	5.42	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	5.42	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	-	-	-	2.218	-	-
Pot Cap-1 Maneuver	932	818	-	0	-	-	1620	-	0
Stage 1	953	837	-	0	-	-	-	-	0
Stage 2	1021	894	-	0	-	-	-	-	0
Platoon blocked, %					-	-		-	
Mov Cap-1 Maneuver	911	0	-	-	-	-	1620	-	-
Mov Cap-2 Maneuver	911	0	-	-	-	-	-	-	-
Stage 1	932	0	-	-	-	-	-	-	-
Stage 2	1021	0	-	-	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	11.7	0	7.3
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBR	EBLn1	EBLn2	SBL	SBT
Capacity (veh/h)	-	-	911	-	1620	-
HCM Lane V/C Ratio	-	-	0.416	-	0.021	-
HCM Control Delay (s)	-	-	11.7	0	7.3	0
HCM Lane LOS	-	-	B	A	A	A
HCM 95th %tile Q(veh)	-	-	2.1	-	0.1	-

Intersection	
Int Delay, s/veh	4.5

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	0	0	0	2	3	211	2	346	0	0	30	41
Future Vol, veh/h	0	0	0	2	3	211	2	346	0	0	30	41
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	-	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	0	0	2	3	229	2	376	0	0	33	45

Major/Minor	Minor1			Major1			Major2		
Conflicting Flow All	436	458	376	78	0	-	-	-	0
Stage 1	380	380	-	-	-	-	-	-	-
Stage 2	56	78	-	-	-	-	-	-	-
Critical Hdwy	6.42	6.52	6.22	4.12	-	-	-	-	-
Critical Hdwy Stg 1	5.42	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	5.42	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	2.218	-	-	-	-	-
Pot Cap-1 Maneuver	578	499	670	1520	-	0	0	-	-
Stage 1	691	614	-	-	-	0	0	-	-
Stage 2	967	830	-	-	-	0	0	-	-
Platoon blocked, %					-			-	-
Mov Cap-1 Maneuver	577	0	670	1520	-	-	-	-	-
Mov Cap-2 Maneuver	577	0	-	-	-	-	-	-	-
Stage 1	690	0	-	-	-	-	-	-	-
Stage 2	967	0	-	-	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	13.3	0	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBL	NBT	WBLn1	SBT	SBR
Capacity (veh/h)	1520	-	669	-	-
HCM Lane V/C Ratio	0.001	-	0.351	-	-
HCM Control Delay (s)	7.4	0	13.3	-	-
HCM Lane LOS	A	A	B	-	-
HCM 95th %tile Q(veh)	0	-	1.6	-	-

Intersection	
Int Delay, s/veh	0

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	0	0	57	0	0	24
Future Vol, veh/h	0	0	57	0	0	24
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	0	62	0	0	26

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	88	62	0	0	62	0
Stage 1	62	-	-	-	-	-
Stage 2	26	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218	-
Pot Cap-1 Maneuver	913	1003	-	-	1541	-
Stage 1	961	-	-	-	-	-
Stage 2	997	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	913	1003	-	-	1541	-
Mov Cap-2 Maneuver	913	-	-	-	-	-
Stage 1	961	-	-	-	-	-
Stage 2	997	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	0	0	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	-	1541	-
HCM Lane V/C Ratio	-	-	-	-	-
HCM Control Delay (s)	-	-	0	0	-
HCM Lane LOS	-	-	A	A	-
HCM 95th %tile Q(veh)	-	-	-	0	-

Intersection	
Int Delay, s/veh	0

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	0	0	0	57	24	0
Future Vol, veh/h	0	0	0	57	24	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	0	0	62	26	0

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	88	26	26	0	-	0
Stage 1	26	-	-	-	-	-
Stage 2	62	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	913	1050	1588	-	-	-
Stage 1	997	-	-	-	-	-
Stage 2	961	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	913	1050	1588	-	-	-
Mov Cap-2 Maneuver	913	-	-	-	-	-
Stage 1	997	-	-	-	-	-
Stage 2	961	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	0	0	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1588	-	-	-	-
HCM Lane V/C Ratio	-	-	-	-	-
HCM Control Delay (s)	0	-	0	-	-
HCM Lane LOS	A	-	A	-	-
HCM 95th %tile Q(veh)	0	-	-	-	-

Intersection	
Int Delay, s/veh	30

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	831	1	5	0	0	0	0	0	5	2	2	0
Future Vol, veh/h	831	1	5	0	0	0	0	0	5	2	2	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	-	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	903	1	5	0	0	0	0	0	5	2	2	0

Major/Minor	Minor2			Major1			Major2		
Conflicting Flow All	9	11	2	-	0	0	5	0	0
Stage 1	6	6	-	-	-	-	-	-	-
Stage 2	3	5	-	-	-	-	-	-	-
Critical Hdwy	6.42	6.52	6.22	-	-	-	4.12	-	-
Critical Hdwy Stg 1	5.42	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	5.42	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	-	-	-	2.218	-	-
Pot Cap-1 Maneuver	1011	884	1082	0	-	-	1616	-	0
Stage 1	1017	891	-	0	-	-	-	-	0
Stage 2	1020	892	-	0	-	-	-	-	0
Platoon blocked, %					-	-		-	
Mov Cap-1 Maneuver	1010	0	1082	-	-	-	1616	-	-
Mov Cap-2 Maneuver	1010	0	-	-	-	-	-	-	-
Stage 1	1016	0	-	-	-	-	-	-	-
Stage 2	1020	0	-	-	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	30.3	0	3.6
HCM LOS	D		

Minor Lane/Major Mvmt	NBT	NBR	EBLn1	SBL	SBT
Capacity (veh/h)	-	-	1010	1616	-
HCM Lane V/C Ratio	-	-	0.901	0.001	-
HCM Control Delay (s)	-	-	30.3	7.2	0
HCM Lane LOS	-	-	D	A	A
HCM 95th %tile Q(veh)	-	-	13.2	0	-

Intersection	
Int Delay, s/veh	321.4

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	0	0	0	2	3	748	0	831	0	0	2	6
Future Vol, veh/h	0	0	0	2	3	748	0	831	0	0	2	6
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	-	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	0	0	2	3	813	0	903	0	0	2	7

Major/Minor	Minor1		Major1			Major2			
Conflicting Flow All	909	912	903	9	0	-	-	-	0
Stage 1	903	903	-	-	-	-	-	-	-
Stage 2	6	9	-	-	-	-	-	-	-
Critical Hdwy	6.42	6.52	6.22	4.12	-	-	-	-	-
Critical Hdwy Stg 1	5.42	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	5.42	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	2.218	-	-	-	-	-
Pot Cap-1 Maneuver	305	274	~ 336	1611	-	0	0	-	-
Stage 1	396	356	-	-	-	0	0	-	-
Stage 2	1017	888	-	-	-	0	0	-	-
Platoon blocked, %					-			-	-
Mov Cap-1 Maneuver	305	0	~ 336	1611	-	-	-	-	-
Mov Cap-2 Maneuver	305	0	-	-	-	-	-	-	-
Stage 1	396	0	-	-	-	-	-	-	-
Stage 2	1017	0	-	-	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	$ 679.6	0	0
HCM LOS	F		

Minor Lane/Major Mvmt	NBL	NBT	WBLn1	SBT	SBR
Capacity (veh/h)	1611	-	336	-	-
HCM Lane V/C Ratio	-	-	2.436	-	-
HCM Control Delay (s)	0	-	$ 679.6	-	-
HCM Lane LOS	A	-	F	-	-
HCM 95th %tile Q(veh)	0	-	65	-	-

Notes

~: Volume exceeds capacity $: Delay exceeds 300s +: Computation Not Defined *: All major volume in platoon

Intersection	
Int Delay, s/veh	8.7

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	66	3	4	0	0	0	0	5	2	188	3	0
Future Vol, veh/h	66	3	4	0	0	0	0	5	2	188	3	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	20	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	-	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	72	3	4	0	0	0	0	5	2	204	3	0

Major/Minor	Minor2			Major1			Major2		
Conflicting Flow All	417	418	3	-	0	0	7	0	0
Stage 1	411	411	-	-	-	-	-	-	-
Stage 2	6	7	-	-	-	-	-	-	-
Critical Hdwy	6.42	6.52	6.22	-	-	-	4.12	-	-
Critical Hdwy Stg 1	5.42	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	5.42	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	-	-	-	2.218	-	-
Pot Cap-1 Maneuver	592	526	1081	0	-	-	1614	-	0
Stage 1	669	595	-	0	-	-	-	-	0
Stage 2	1017	890	-	0	-	-	-	-	0
Platoon blocked, %					-	-		-	
Mov Cap-1 Maneuver	517	0	1081	-	-	-	1614	-	-
Mov Cap-2 Maneuver	517	0	-	-	-	-	-	-	-
Stage 1	584	0	-	-	-	-	-	-	-
Stage 2	1017	0	-	-	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	12.8	0	7.4
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBR	EBLn1	EBLn2	SBL	SBT
Capacity (veh/h)	-	-	517	1081	1614	-
HCM Lane V/C Ratio	-	-	0.145	0.004	0.127	-
HCM Control Delay (s)	-	-	13.1	8.3	7.6	0
HCM Lane LOS	-	-	B	A	A	A
HCM 95th %tile Q(veh)	-	-	0.5	0	0.4	-

Intersection	
Int Delay, s/veh	0.4

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	0	0	0	1	5	24	2	69	0	0	190	351
Future Vol, veh/h	0	0	0	1	5	24	2	69	0	0	190	351
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	-	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	0	0	1	5	26	2	75	0	0	207	382

Major/Minor	Minor1			Major1			Major2		
Conflicting Flow All	477	668	75	589	0	-	-	-	0
Stage 1	79	79	-	-	-	-	-	-	-
Stage 2	398	589	-	-	-	-	-	-	-
Critical Hdwy	6.42	6.52	6.22	4.12	-	-	-	-	-
Critical Hdwy Stg 1	5.42	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	5.42	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	2.218	-	-	-	-	-
Pot Cap-1 Maneuver	547	379	986	986	-	0	0	-	-
Stage 1	944	829	-	-	-	0	0	-	-
Stage 2	678	495	-	-	-	0	0	-	-
Platoon blocked, %					-			-	-
Mov Cap-1 Maneuver	546	0	986	986	-	-	-	-	-
Mov Cap-2 Maneuver	546	0	-	-	-	-	-	-	-
Stage 1	942	0	-	-	-	-	-	-	-
Stage 2	678	0	-	-	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	8.9	0.2	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBL	NBT	WBLn1	SBT	SBR
Capacity (veh/h)	986	-	955	-	-
HCM Lane V/C Ratio	0.002	-	0.034	-	-
HCM Control Delay (s)	8.7	0	8.9	-	-
HCM Lane LOS	A	A	A	-	-
HCM 95th %tile Q(veh)	0	-	0.1	-	-

Intersection	
Int Delay, s/veh	0

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	0	0	76	0	0	41
Future Vol, veh/h	0	0	76	0	0	41
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	0	83	0	0	45

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	128	83	0	0	83	0
Stage 1	83	-	-	-	-	-
Stage 2	45	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218	-
Pot Cap-1 Maneuver	866	976	-	-	1514	-
Stage 1	940	-	-	-	-	-
Stage 2	977	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	866	976	-	-	1514	-
Mov Cap-2 Maneuver	866	-	-	-	-	-
Stage 1	940	-	-	-	-	-
Stage 2	977	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	0	0	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	-	1514	-
HCM Lane V/C Ratio	-	-	-	-	-
HCM Control Delay (s)	-	-	0	0	-
HCM Lane LOS	-	-	A	A	-
HCM 95th %tile Q(veh)	-	-	-	0	-

Intersection	
Int Delay, s/veh	0

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	0	0	0	76	41	0
Future Vol, veh/h	0	0	0	76	41	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	0	0	83	45	0

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	128	45	45	0	-	0
Stage 1	45	-	-	-	-	-
Stage 2	83	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	866	1025	1563	-	-	-
Stage 1	977	-	-	-	-	-
Stage 2	940	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	866	1025	1563	-	-	-
Mov Cap-2 Maneuver	866	-	-	-	-	-
Stage 1	977	-	-	-	-	-
Stage 2	940	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	0	0	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1563	-	-	-	-
HCM Lane V/C Ratio	-	-	-	-	-
HCM Control Delay (s)	0	-	0	-	-
HCM Lane LOS	A	-	A	-	-
HCM 95th %tile Q(veh)	0	-	-	-	-

Intersection	
Int Delay, s/veh	9.9

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	5	3	5	0	0	0	0	0	5	745	1	0
Future Vol, veh/h	5	3	5	0	0	0	0	0	5	745	1	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	-	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	5	3	5	0	0	0	0	0	5	810	1	0

Major/Minor	Minor2			Major1			Major2		
Conflicting Flow All	1624	1626	1	-	0	0	5	0	0
Stage 1	1621	1621	-	-	-	-	-	-	-
Stage 2	3	5	-	-	-	-	-	-	-
Critical Hdwy	6.42	6.52	6.22	-	-	-	4.12	-	-
Critical Hdwy Stg 1	5.42	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	5.42	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	-	-	-	2.218	-	-
Pot Cap-1 Maneuver	113	102	1084	0	-	-	1616	-	0
Stage 1	178	161	-	0	-	-	-	-	0
Stage 2	1020	892	-	0	-	-	-	-	0
Platoon blocked, %					-	-		-	
Mov Cap-1 Maneuver	56	0	1084	-	-	-	1616	-	-
Mov Cap-2 Maneuver	56	0	-	-	-	-	-	-	-
Stage 1	89	0	-	-	-	-	-	-	-
Stage 2	1020	0	-	-	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	44.1	0	9.4
HCM LOS	E		

Minor Lane/Major Mvmt	NBT	NBR	EBLn1	SBL	SBT
Capacity (veh/h)	-	-	106	1616	-
HCM Lane V/C Ratio	-	-	0.133	0.501	-
HCM Control Delay (s)	-	-	44.1	9.4	0
HCM Lane LOS	-	-	E	A	A
HCM 95th %tile Q(veh)	-	-	0.4	2.9	-

Intersection	
Int Delay, s/veh	0.1

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	0	0	0	1	5	5	1	4	0	0	745	832
Future Vol, veh/h	0	0	0	1	5	5	1	4	0	0	745	832
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	-	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	0	0	1	5	5	1	4	0	0	810	904

Major/Minor	Minor1		Major1			Major2			
Conflicting Flow All	1268	1720	4	1714	0	-	-	-	0
Stage 1	6	6	-	-	-	-	-	-	-
Stage 2	1262	1714	-	-	-	-	-	-	-
Critical Hdwy	6.42	6.52	6.22	4.12	-	-	-	-	-
Critical Hdwy Stg 1	5.42	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	5.42	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	2.218	-	-	-	-	-
Pot Cap-1 Maneuver	186	89	1080	370	-	0	0	-	-
Stage 1	1017	891	-	-	-	0	0	-	-
Stage 2	266	145	-	-	-	0	0	-	-
Platoon blocked, %					-			-	-
Mov Cap-1 Maneuver	185	0	1080	370	-	-	-	-	-
Mov Cap-2 Maneuver	185	0	-	-	-	-	-	-	-
Stage 1	1014	0	-	-	-	-	-	-	-
Stage 2	266	0	-	-	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	11.1	3	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBL	NBT	WBLn1	SBT	SBR
Capacity (veh/h)	370	-	598	-	-
HCM Lane V/C Ratio	0.003	-	0.02	-	-
HCM Control Delay (s)	14.8	0	11.1	-	-
HCM Lane LOS	B	A	B	-	-
HCM 95th %tile Q(veh)	0	-	0.1	-	-

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	635	2	0	0	0	0	0	1	1	32	0	0
Future Volume (veh/h)	635	2	0	0	0	0	0	1	1	32	0	0
Initial Q (Qb), veh	0	0	0				0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00				1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No						No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870				0	1870	1870	1870	1870	0
Adj Flow Rate, veh/h	690	2	0				0	1	1	35	0	0
Peak Hour Factor	0.92	0.92	0.92				0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2				0	2	2	2	2	0
Cap, veh/h	948	3	846				0	143	143	474	0	0
Arrive On Green	0.53	0.53	0.00				0.00	0.17	0.17	0.17	0.00	0.00
Sat Flow, veh/h	1776	5	1585				0	858	858	1407	0	0
Grp Volume(v), veh/h	692	0	0				0	0	2	35	0	0
Grp Sat Flow(s),veh/h/ln	1782	0	1585				0	0	1716	1407	0	0
Q Serve(g_s), s	8.9	0.0	0.0				0.0	0.0	0.0	0.6	0.0	0.0
Cycle Q Clear(g_c), s	8.9	0.0	0.0				0.0	0.0	0.0	0.7	0.0	0.0
Prop In Lane	1.00		1.00				0.00		0.50	1.00		0.00
Lane Grp Cap(c), veh/h	951	0	846				0	0	286	474	0	0
V/C Ratio(X)	0.73	0.00	0.00				0.00	0.00	0.01	0.07	0.00	0.00
Avail Cap(c_a), veh/h	1928	0	1716				0	0	1057	1110	0	0
HCM Platoon Ratio	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00				0.00	0.00	1.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	5.3	0.0	0.0				0.0	0.0	10.4	10.7	0.0	0.0
Incr Delay (d2), s/veh	1.1	0.0	0.0				0.0	0.0	0.0	0.1	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0				0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.4	0.0	0.0				0.0	0.0	0.0	0.2	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	6.4	0.0	0.0				0.0	0.0	10.5	10.8	0.0	0.0
LnGrp LOS	A	A	A				A	A	B	B	A	A
Approach Vol, veh/h		692						2			35	
Approach Delay, s/veh		6.4						10.5			10.8	
Approach LOS		A						B			B	

Timer - Assigned Phs		2		4		6
Phs Duration (G+Y+Rc), s		9.5		20.5		9.5
Change Period (Y+Rc), s		4.5		4.5		4.5
Max Green Setting (Gmax), s		18.5		32.5		18.5
Max Q Clear Time (g_c+I1), s		2.0		10.9		2.7
Green Ext Time (p_c), s		0.0		5.2		0.1

Intersection Summary	
HCM 6th Ctrl Delay	6.6
HCM 6th LOS	A

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	0	0	2	3	402	2	634	0	0	30	43
Future Volume (veh/h)	0	0	0	2	3	402	2	634	0	0	30	43
Initial Q (Qb), veh				0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)				1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach					No			No			No	
Adj Sat Flow, veh/h/ln				1900	1870	1900	1870	1870	0	0	1870	1870
Adj Flow Rate, veh/h				2	3	437	2	689	0	0	33	47
Peak Hour Factor				0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %				0	2	0	2	2	0	0	2	2
Cap, veh/h				2	4	522	83	865	0	0	323	460
Arrive On Green				0.33	0.33	0.33	0.46	0.46	0.00	0.00	0.46	0.46
Sat Flow, veh/h				7	11	1570	1	1869	0	0	698	994
Grp Volume(v), veh/h				442	0	0	691	0	0	0	0	80
Grp Sat Flow(s),veh/h/ln				1587	0	0	1870	0	0	0	0	1691
Q Serve(g_s), s				11.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.2
Cycle Q Clear(g_c), s				11.3	0.0	0.0	13.8	0.0	0.0	0.0	0.0	1.2
Prop In Lane				0.00		0.99	0.00		0.00	0.00		0.59
Lane Grp Cap(c), veh/h				528	0	0	947	0	0	0	0	783
V/C Ratio(X)				0.84	0.00	0.00	0.73	0.00	0.00	0.00	0.00	0.10
Avail Cap(c_a), veh/h				668	0	0	1464	0	0	0	0	1251
HCM Platoon Ratio				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)				1.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	1.00
Uniform Delay (d), s/veh				13.6	0.0	0.0	10.1	0.0	0.0	0.0	0.0	6.7
Incr Delay (d2), s/veh				7.5	0.0	0.0	1.1	0.0	0.0	0.0	0.0	0.1
Initial Q Delay(d3),s/veh				0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln				4.3	0.0	0.0	4.3	0.0	0.0	0.0	0.0	0.3
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh				21.0	0.0	0.0	11.2	0.0	0.0	0.0	0.0	6.7
LnGrp LOS				C	A	A	B	A	A	A	A	A
Approach Vol, veh/h					442			691			80	
Approach Delay, s/veh					21.0			11.2			6.7	
Approach LOS					C			B			A	

Timer - Assigned Phs	2				6		8					
Phs Duration (G+Y+Rc), s	24.8				24.8		19.1					
Change Period (Y+Rc), s	4.5				4.5		4.5					
Max Green Setting (Gmax), s	32.5				32.5		18.5					
Max Q Clear Time (g_c+I1), s	15.8				3.2		13.3					
Green Ext Time (p_c), s	4.5				0.4		1.4					

Intersection Summary		
HCM 6th Ctrl Delay		14.5
HCM 6th LOS		B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	863	1	5	0	0	0	0	0	5	3	2	0
Future Volume (veh/h)	863	1	5	0	0	0	0	0	5	3	2	0
Initial Q (Qb), veh	0	0	0				0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00				1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No						No			No	
Adj Sat Flow, veh/h/ln	1900	1870	1900				0	1870	1870	1870	1870	0
Adj Flow Rate, veh/h	938	1	5				0	0	5	3	2	0
Peak Hour Factor	0.92	0.92	0.92				0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	0	2	0				0	2	2	2	2	0
Cap, veh/h	1156	1	6				0	0	196	231	114	0
Arrive On Green	0.65	0.65	0.65				0.00	0.00	0.12	0.12	0.12	0.00
Sat Flow, veh/h	1769	2	9				0	0	1585	714	924	0
Grp Volume(v), veh/h	944	0	0				0	0	5	5	0	0
Grp Sat Flow(s),veh/h/ln	1780	0	0				0	0	1585	1638	0	0
Q Serve(g_s), s	15.8	0.0	0.0				0.0	0.0	0.1	0.0	0.0	0.0
Cycle Q Clear(g_c), s	15.8	0.0	0.0				0.0	0.0	0.1	0.1	0.0	0.0
Prop In Lane	0.99		0.01				0.00		1.00	0.60		0.00
Lane Grp Cap(c), veh/h	1163	0	0				0	0	196	345	0	0
V/C Ratio(X)	0.81	0.00	0.00				0.00	0.00	0.03	0.01	0.00	0.00
Avail Cap(c_a), veh/h	1830	0	0				0	0	765	907	0	0
HCM Platoon Ratio	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00				0.00	0.00	1.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	5.2	0.0	0.0				0.0	0.0	15.5	15.5	0.0	0.0
Incr Delay (d2), s/veh	1.6	0.0	0.0				0.0	0.0	0.1	0.0	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0				0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.5	0.0	0.0				0.0	0.0	0.0	0.0	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	6.7	0.0	0.0				0.0	0.0	15.6	15.6	0.0	0.0
LnGrp LOS	A	A	A				A	A	B	B	A	A
Approach Vol, veh/h		944						5			5	
Approach Delay, s/veh		6.7						15.6			15.6	
Approach LOS		A						B			B	

Timer - Assigned Phs		2		4		6
Phs Duration (G+Y+Rc), s		9.5		30.9		9.5
Change Period (Y+Rc), s		4.5		4.5		4.5
Max Green Setting (Gmax), s		19.5		41.5		19.5
Max Q Clear Time (g_c+I1), s		2.1		17.8		2.1
Green Ext Time (p_c), s		0.0		8.6		0.0

Intersection Summary	
HCM 6th Ctrl Delay	6.8
HCM 6th LOS	A

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	0	0	2	3	770	0	863	0	0	3	6
Future Volume (veh/h)	0	0	0	2	3	770	0	863	0	0	3	6
Initial Q (Qb), veh				0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)				1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach					No			No			No	
Adj Sat Flow, veh/h/ln				1870	1870	1870	1870	1870	0	0	1870	1870
Adj Flow Rate, veh/h				0	0	841	0	938	0	0	3	7
Peak Hour Factor				0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %				2	2	2	2	2	0	0	2	2
Cap, veh/h				0	554	938	0	1050	0	0	1050	890
Arrive On Green				0.00	0.00	0.30	0.00	0.56	0.00	0.00	0.56	0.56
Sat Flow, veh/h				0	1870	3170	0	1870	0	0	1870	1585
Grp Volume(v), veh/h				0	0	841	0	938	0	0	3	7
Grp Sat Flow(s),veh/h/ln				0	1870	1585	0	1870	0	0	1870	1585
Q Serve(g_s), s				0.0	0.0	16.0	0.0	27.8	0.0	0.0	0.0	0.1
Cycle Q Clear(g_c), s				0.0	0.0	16.0	0.0	27.8	0.0	0.0	0.0	0.1
Prop In Lane				0.00		1.00	0.00		0.00	0.00		1.00
Lane Grp Cap(c), veh/h				0	554	938	0	1050	0	0	1050	890
V/C Ratio(X)				0.00	0.00	0.90	0.00	0.89	0.00	0.00	0.00	0.01
Avail Cap(c_a), veh/h				0	578	980	0	1231	0	0	1231	1043
HCM Platoon Ratio				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)				0.00	0.00	1.00	0.00	1.00	0.00	0.00	1.00	1.00
Uniform Delay (d), s/veh				0.0	0.0	21.3	0.0	12.2	0.0	0.0	6.1	6.1
Incr Delay (d2), s/veh				0.0	0.0	10.5	0.0	7.8	0.0	0.0	0.0	0.0
Initial Q Delay(d3),s/veh				0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln				0.0	0.0	6.8	0.0	11.3	0.0	0.0	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh				0.0	0.0	31.8	0.0	19.9	0.0	0.0	6.1	6.1
LnGrp LOS				A	A	C	A	B	A	A	A	A
Approach Vol, veh/h					841			938			10	
Approach Delay, s/veh					31.8			19.9			6.1	
Approach LOS					C			B			A	

Timer - Assigned Phs	2				6		8					
Phs Duration (G+Y+Rc), s	39.9				39.9		23.2					
Change Period (Y+Rc), s	4.5				4.5		4.5					
Max Green Setting (Gmax), s	41.5				41.5		19.5					
Max Q Clear Time (g_c+I1), s	29.8				2.1		18.0					
Green Ext Time (p_c), s	5.6				0.0		0.6					

Intersection Summary		
HCM 6th Ctrl Delay		25.4
HCM 6th LOS		C

Notes

User approved volume balancing among the lanes for turning movement.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	68	3	4	0	0	0	0	5	2	379	3	0
Future Volume (veh/h)	68	3	4	0	0	0	0	5	2	379	3	0
Initial Q (Qb), veh	0	0	0				0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00				1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No						No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870				0	1870	1870	1870	1870	0
Adj Flow Rate, veh/h	74	3	4				0	5	2	412	3	0
Peak Hour Factor	0.92	0.92	0.92				0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2				0	2	2	2	2	0
Cap, veh/h	156	6	144				0	581	232	998	6	0
Arrive On Green	0.09	0.09	0.09				0.00	0.46	0.46	0.46	0.46	0.00
Sat Flow, veh/h	1715	70	1585				0	1271	508	1394	13	0
Grp Volume(v), veh/h	77	0	4				0	0	7	415	0	0
Grp Sat Flow(s),veh/h/ln	1785	0	1585				0	0	1779	1407	0	0
Q Serve(g_s), s	0.8	0.0	0.0				0.0	0.0	0.0	4.5	0.0	0.0
Cycle Q Clear(g_c), s	0.8	0.0	0.0				0.0	0.0	0.0	4.5	0.0	0.0
Prop In Lane	0.96		1.00				0.00		0.29	0.99		0.00
Lane Grp Cap(c), veh/h	162	0	144				0	0	813	1004	0	0
V/C Ratio(X)	0.48	0.00	0.03				0.00	0.00	0.01	0.41	0.00	0.00
Avail Cap(c_a), veh/h	1622	0	1441				0	0	2493	2336	0	0
HCM Platoon Ratio	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00				0.00	0.00	1.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	8.6	0.0	8.3				0.0	0.0	2.9	4.2	0.0	0.0
Incr Delay (d2), s/veh	2.2	0.0	0.1				0.0	0.0	0.0	0.3	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0				0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.3	0.0	0.0				0.0	0.0	0.0	0.2	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	10.8	0.0	8.3				0.0	0.0	2.9	4.4	0.0	0.0
LnGrp LOS	B	A	A				A	A	A	A	A	A
Approach Vol, veh/h		81						7			415	
Approach Delay, s/veh		10.6						2.9			4.4	
Approach LOS		B						A			A	

Timer - Assigned Phs		2		4		6
Phs Duration (G+Y+Rc), s		13.6		6.3		13.6
Change Period (Y+Rc), s		4.5		4.5		4.5
Max Green Setting (Gmax), s		27.9		18.1		27.9
Max Q Clear Time (g_c+I1), s		2.0		2.8		6.5
Green Ext Time (p_c), s		0.0		0.3		2.6

Intersection Summary	
HCM 6th Ctrl Delay	5.4
HCM 6th LOS	A

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	0	0	1	5	24	2	71	0	0	381	639
Future Volume (veh/h)	0	0	0	1	5	24	2	71	0	0	381	639
Initial Q (Qb), veh				0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)				1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach					No			No			No	
Adj Sat Flow, veh/h/ln				1900	1870	1900	1870	1870	0	0	1870	1870
Adj Flow Rate, veh/h				1	5	26	2	77	0	0	414	695
Peak Hour Factor				0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %				0	2	0	2	2	0	0	2	2
Cap, veh/h				2	9	48	86	1415	0	0	484	812
Arrive On Green				0.04	0.04	0.04	0.77	0.77	0.00	0.00	0.77	0.77
Sat Flow, veh/h				51	255	1324	9	1836	0	0	627	1053
Grp Volume(v), veh/h				32	0	0	79	0	0	0	0	1109
Grp Sat Flow(s),veh/h/ln				1630	0	0	1846	0	0	0	0	1681
Q Serve(g_s), s				0.9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	20.7
Cycle Q Clear(g_c), s				0.9	0.0	0.0	0.5	0.0	0.0	0.0	0.0	20.7
Prop In Lane				0.03		0.81	0.03		0.00	0.00		0.63
Lane Grp Cap(c), veh/h				59	0	0	1502	0	0	0	0	1295
V/C Ratio(X)				0.54	0.00	0.00	0.05	0.00	0.00	0.00	0.00	0.86
Avail Cap(c_a), veh/h				632	0	0	2137	0	0	0	0	1905
HCM Platoon Ratio				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)				1.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	1.00
Uniform Delay (d), s/veh				22.1	0.0	0.0	1.3	0.0	0.0	0.0	0.0	3.6
Incr Delay (d2), s/veh				7.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2.7
Initial Q Delay(d3),s/veh				0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln				0.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh				29.5	0.0	0.0	1.3	0.0	0.0	0.0	0.0	6.3
LnGrp LOS				C	A	A	A	A	A	A	A	A
Approach Vol, veh/h					32			79			1109	
Approach Delay, s/veh					29.5			1.3			6.3	
Approach LOS					C			A			A	

Timer - Assigned Phs	2				6		8					
Phs Duration (G+Y+Rc), s	40.5				40.5		6.2					
Change Period (Y+Rc), s	4.5				4.5		4.5					
Max Green Setting (Gmax), s	52.9				52.9		18.1					
Max Q Clear Time (g_c+I1), s	2.5				22.7		2.9					
Green Ext Time (p_c), s	0.5				13.2		0.1					

Intersection Summary		
HCM 6th Ctrl Delay		6.6
HCM 6th LOS		A

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	5	3	5	0	0	0	0	0	5	767	1	0
Future Volume (veh/h)	5	3	5	0	0	0	0	0	5	767	1	0
Initial Q (Qb), veh	0	0	0				0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00				1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No						No			No	
Adj Sat Flow, veh/h/ln	1900	1870	1900				0	1870	1870	1870	1870	0
Adj Flow Rate, veh/h	5	3	5				0	0	5	834	1	0
Peak Hour Factor	0.92	0.92	0.92				0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	0	2	0				0	2	2	2	2	0
Cap, veh/h	11	7	11				0	0	1132	1220	1	0
Arrive On Green	0.02	0.02	0.02				0.00	0.00	0.71	0.71	0.71	0.00
Sat Flow, veh/h	661	397	661				0	0	1585	1408	2	0
Grp Volume(v), veh/h	13	0	0				0	0	5	835	0	0
Grp Sat Flow(s),veh/h/ln	1718	0	0				0	0	1585	1409	0	0
Q Serve(g_s), s	0.3	0.0	0.0				0.0	0.0	0.0	13.9	0.0	0.0
Cycle Q Clear(g_c), s	0.3	0.0	0.0				0.0	0.0	0.0	14.0	0.0	0.0
Prop In Lane	0.38		0.38				0.00		1.00	1.00		0.00
Lane Grp Cap(c), veh/h	29	0	0				0	0	1133	1222	0	0
V/C Ratio(X)	0.45	0.00	0.00				0.00	0.00	0.00	0.68	0.00	0.00
Avail Cap(c_a), veh/h	923	0	0				0	0	2979	2866	0	0
HCM Platoon Ratio	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00				0.00	0.00	1.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	16.3	0.0	0.0				0.0	0.0	1.4	3.4	0.0	0.0
Incr Delay (d2), s/veh	10.3	0.0	0.0				0.0	0.0	0.0	0.7	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0				0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.2	0.0	0.0				0.0	0.0	0.0	0.2	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	26.6	0.0	0.0				0.0	0.0	1.4	4.1	0.0	0.0
LnGrp LOS	C	A	A				A	A	A	A	A	A
Approach Vol, veh/h		13						5			835	
Approach Delay, s/veh		26.6						1.4			4.1	
Approach LOS		C						A			A	

Timer - Assigned Phs		2		4		6
Phs Duration (G+Y+Rc), s		28.5		5.1		28.5
Change Period (Y+Rc), s		4.5		4.5		4.5
Max Green Setting (Gmax), s		63.0		18.0		63.0
Max Q Clear Time (g_c+I1), s		2.0		2.3		16.0
Green Ext Time (p_c), s		0.0		0.0		8.0

Intersection Summary	
HCM 6th Ctrl Delay	4.4
HCM 6th LOS	A

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	0	0	1	5	6	1	4	0	0	767	864
Future Volume (veh/h)	0	0	0	1	5	6	1	4	0	0	767	864
Initial Q (Qb), veh				0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)				1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach					No			No			No	
Adj Sat Flow, veh/h/ln				1870	1870	1870	1870	1870	0	0	1870	1870
Adj Flow Rate, veh/h				1	6	6	1	4	0	0	834	925
Peak Hour Factor				0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %				2	2	2	2	2	0	0	2	2
Cap, veh/h				4	27	27	208	751	0	0	1383	1172
Arrive On Green				0.02	0.02	0.02	0.74	0.74	0.00	0.00	0.74	0.74
Sat Flow, veh/h				265	1592	1585	123	1015	0	0	1870	1585
Grp Volume(v), veh/h				7	0	6	5	0	0	0	834	925
Grp Sat Flow(s),veh/h/ln				1857	0	1585	1138	0	0	0	1870	1585
Q Serve(g_s), s				0.1	0.0	0.1	0.0	0.0	0.0	0.0	7.7	13.5
Cycle Q Clear(g_c), s				0.1	0.0	0.1	7.7	0.0	0.0	0.0	7.7	13.5
Prop In Lane				0.14		1.00	0.20		0.00	0.00		1.00
Lane Grp Cap(c), veh/h				31	0	27	959	0	0	0	1383	1172
V/C Ratio(X)				0.22	0.00	0.22	0.01	0.00	0.00	0.00	0.60	0.79
Avail Cap(c_a), veh/h				904	0	772	1207	0	0	0	1923	1630
HCM Platoon Ratio				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)				1.00	0.00	1.00	1.00	0.00	0.00	0.00	1.00	1.00
Uniform Delay (d), s/veh				17.9	0.0	17.9	1.3	0.0	0.0	0.0	2.3	3.0
Incr Delay (d2), s/veh				3.5	0.0	4.1	0.0	0.0	0.0	0.0	0.4	1.8
Initial Q Delay(d3),s/veh				0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln				0.1	0.0	0.1	0.0	0.0	0.0	0.0	0.2	0.6
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh				21.4	0.0	22.1	1.3	0.0	0.0	0.0	2.7	4.8
LnGrp LOS				C	A	C	A	A	A	A	A	A
Approach Vol, veh/h					13			5			1759	
Approach Delay, s/veh					21.7			1.3			3.8	
Approach LOS					C			A			A	

Timer - Assigned Phs	2				6		8					
Phs Duration (G+Y+Rc), s	31.8				31.8		5.1					
Change Period (Y+Rc), s	4.5				4.5		4.5					
Max Green Setting (Gmax), s	38.0				38.0		18.0					
Max Q Clear Time (g_c+I1), s	9.7				15.5		2.1					
Green Ext Time (p_c), s	0.0				11.8		0.0					

Intersection Summary												
HCM 6th Ctrl Delay			3.9									
HCM 6th LOS			A									

Notes

User approved volume balancing among the lanes for turning movement.

Intersection	
Int Delay, s/veh	10.6

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	318	1	0	0	0	0	0	1	1	16	0	0
Future Vol, veh/h	318	1	0	0	0	0	0	1	1	16	0	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	20	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	-	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	346	1	0	0	0	0	0	1	1	17	0	0

Major/Minor	Minor2			Major1			Major2		
Conflicting Flow All	36	36	0	-	0	0	2	0	0
Stage 1	34	34	-	-	-	-	-	-	-
Stage 2	2	2	-	-	-	-	-	-	-
Critical Hdwy	6.42	6.52	6.22	-	-	-	4.12	-	-
Critical Hdwy Stg 1	5.42	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	5.42	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	-	-	-	2.218	-	-
Pot Cap-1 Maneuver	977	856	-	0	-	-	1620	-	0
Stage 1	988	867	-	0	-	-	-	-	0
Stage 2	1021	894	-	0	-	-	-	-	0
Platoon blocked, %					-	-		-	
Mov Cap-1 Maneuver	967	0	-	-	-	-	1620	-	-
Mov Cap-2 Maneuver	967	0	-	-	-	-	-	-	-
Stage 1	978	0	-	-	-	-	-	-	-
Stage 2	1021	0	-	-	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	10.8	0	7.2
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBR	EBLn1	EBLn2	SBL	SBT
Capacity (veh/h)	-	-	967	-	1620	-
HCM Lane V/C Ratio	-	-	0.359	-	0.011	-
HCM Control Delay (s)	-	-	10.8	0	7.2	0
HCM Lane LOS	-	-	B	A	A	A
HCM 95th %tile Q(veh)	-	-	1.6	-	0	-

Intersection	
Int Delay, s/veh	4.6

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	0	0	0	1	2	201	1	317	0	0	15	22
Future Vol, veh/h	0	0	0	1	2	201	1	317	0	0	15	22
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	-	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	0	0	1	2	218	1	345	0	0	16	24

Major/Minor	Minor1			Major1			Major2		
Conflicting Flow All	375	387	345	40	0	-	-	-	0
Stage 1	347	347	-	-	-	-	-	-	-
Stage 2	28	40	-	-	-	-	-	-	-
Critical Hdwy	6.42	6.52	6.22	4.12	-	-	-	-	-
Critical Hdwy Stg 1	5.42	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	5.42	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	2.218	-	-	-	-	-
Pot Cap-1 Maneuver	626	547	698	1570	-	0	0	-	-
Stage 1	716	635	-	-	-	0	0	-	-
Stage 2	995	862	-	-	-	0	0	-	-
Platoon blocked, %					-			-	-
Mov Cap-1 Maneuver	625	0	698	1570	-	-	-	-	-
Mov Cap-2 Maneuver	625	0	-	-	-	-	-	-	-
Stage 1	715	0	-	-	-	-	-	-	-
Stage 2	995	0	-	-	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	12.5	0	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBL	NBT	WBLn1	SBT	SBR
Capacity (veh/h)	1570	-	698	-	-
HCM Lane V/C Ratio	0.001	-	0.318	-	-
HCM Control Delay (s)	7.3	0	12.5	-	-
HCM Lane LOS	A	A	B	-	-
HCM 95th %tile Q(veh)	0	-	1.4	-	-

Intersection	
Int Delay, s/veh	0

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	1	0	122	147	0	13
Future Vol, veh/h	1	0	122	147	0	13
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	1	0	133	160	0	14

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	227	213	0	0	293	0
Stage 1	213	-	-	-	-	-
Stage 2	14	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218	-
Pot Cap-1 Maneuver	761	827	-	-	1269	-
Stage 1	823	-	-	-	-	-
Stage 2	1009	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	761	827	-	-	1269	-
Mov Cap-2 Maneuver	761	-	-	-	-	-
Stage 1	823	-	-	-	-	-
Stage 2	1009	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	9.7	0	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	761	1269	-
HCM Lane V/C Ratio	-	-	0.001	-	-
HCM Control Delay (s)	-	-	9.7	0	-
HCM Lane LOS	-	-	A	A	-
HCM 95th %tile Q(veh)	-	-	0	0	-

Intersection	
Int Delay, s/veh	5.1

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	0	1	93	29	12	0
Future Vol, veh/h	0	1	93	29	12	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	1	101	32	13	0

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	247	13	13	0	-	0
Stage 1	13	-	-	-	-	-
Stage 2	234	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	741	1067	1606	-	-	-
Stage 1	1010	-	-	-	-	-
Stage 2	805	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	694	1067	1606	-	-	-
Mov Cap-2 Maneuver	694	-	-	-	-	-
Stage 1	945	-	-	-	-	-
Stage 2	805	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	8.4	5.6	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1606	-	1067	-	-
HCM Lane V/C Ratio	0.063	-	0.001	-	-
HCM Control Delay (s)	7.4	0	8.4	-	-
HCM Lane LOS	A	A	A	-	-
HCM 95th %tile Q(veh)	0.2	-	0	-	-

Intersection	
Int Delay, s/veh	11.5

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	432	1	3	0	0	0	0	0	3	2	1	0
Future Vol, veh/h	432	1	3	0	0	0	0	0	3	2	1	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	-	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	470	1	3	0	0	0	0	0	3	2	1	0

Major/Minor	Minor2			Major1			Major2		
Conflicting Flow All	7	8	1	-	0	0	3	0	0
Stage 1	5	5	-	-	-	-	-	-	-
Stage 2	2	3	-	-	-	-	-	-	-
Critical Hdwy	6.42	6.52	6.22	-	-	-	4.12	-	-
Critical Hdwy Stg 1	5.42	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	5.42	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	-	-	-	2.218	-	-
Pot Cap-1 Maneuver	1014	887	1084	0	-	-	1619	-	0
Stage 1	1018	892	-	0	-	-	-	-	0
Stage 2	1021	893	-	0	-	-	-	-	0
Platoon blocked, %					-	-		-	
Mov Cap-1 Maneuver	1013	0	1084	-	-	-	1619	-	-
Mov Cap-2 Maneuver	1013	0	-	-	-	-	-	-	-
Stage 1	1017	0	-	-	-	-	-	-	-
Stage 2	1021	0	-	-	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	11.6	0	4.8
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBR	EBLn1	SBL	SBT
Capacity (veh/h)	-	-	1013	1619	-
HCM Lane V/C Ratio	-	-	0.468	0.001	-
HCM Control Delay (s)	-	-	11.6	7.2	0
HCM Lane LOS	-	-	B	A	A
HCM 95th %tile Q(veh)	-	-	2.5	0	-

Intersection	
Int Delay, s/veh	11.5

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	0	0	0	1	2	385	0	432	0	0	2	3
Future Vol, veh/h	0	0	0	1	2	385	0	432	0	0	2	3
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	-	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	0	0	1	2	418	0	470	0	0	2	3

Major/Minor	Minor1			Major1			Major2		
Conflicting Flow All	474	475	470	5	0	-	-	-	0
Stage 1	470	470	-	-	-	-	-	-	-
Stage 2	4	5	-	-	-	-	-	-	-
Critical Hdwy	6.42	6.52	6.22	4.12	-	-	-	-	-
Critical Hdwy Stg 1	5.42	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	5.42	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	2.218	-	-	-	-	-
Pot Cap-1 Maneuver	549	488	594	1616	-	0	0	-	-
Stage 1	629	560	-	-	-	0	0	-	-
Stage 2	1019	892	-	-	-	0	0	-	-
Platoon blocked, %					-			-	-
Mov Cap-1 Maneuver	549	0	594	1616	-	-	-	-	-
Mov Cap-2 Maneuver	549	0	-	-	-	-	-	-	-
Stage 1	629	0	-	-	-	-	-	-	-
Stage 2	1019	0	-	-	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	24.5	0	0
HCM LOS	C		

Minor Lane/Major Mvmt	NBL	NBT	WBLn1	SBT	SBR
Capacity (veh/h)	1616	-	594	-	-
HCM Lane V/C Ratio	-	-	0.71	-	-
HCM Control Delay (s)	0	-	24.5	-	-
HCM Lane LOS	A	-	C	-	-
HCM 95th %tile Q(veh)	0	-	5.8	-	-

Intersection	
Int Delay, s/veh	9.1

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	53	2	3	0	0	0	0	4	2	296	2	0
Future Vol, veh/h	53	2	3	0	0	0	0	4	2	296	2	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	20	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	-	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	58	2	3	0	0	0	0	4	2	322	2	0

Major/Minor	Minor2			Major1			Major2		
Conflicting Flow All	651	652	2	-	0	0	6	0	0
Stage 1	646	646	-	-	-	-	-	-	-
Stage 2	5	6	-	-	-	-	-	-	-
Critical Hdwy	6.42	6.52	6.22	-	-	-	4.12	-	-
Critical Hdwy Stg 1	5.42	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	5.42	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	-	-	-	2.218	-	-
Pot Cap-1 Maneuver	433	387	1082	0	-	-	1615	-	0
Stage 1	522	467	-	0	-	-	-	-	0
Stage 2	1018	891	-	0	-	-	-	-	0
Platoon blocked, %					-	-		-	
Mov Cap-1 Maneuver	346	0	1082	-	-	-	1615	-	-
Mov Cap-2 Maneuver	346	0	-	-	-	-	-	-	-
Stage 1	418	0	-	-	-	-	-	-	-
Stage 2	1018	0	-	-	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	17.1	0	7.7
HCM LOS	C		

Minor Lane/Major Mvmt	NBT	NBR	EBLn1	EBLn2	SBL	SBT
Capacity (veh/h)	-	-	346	1082	1615	-
HCM Lane V/C Ratio	-	-	0.173	0.003	0.199	-
HCM Control Delay (s)	-	-	17.6	8.3	7.8	0
HCM Lane LOS	-	-	C	A	A	A
HCM 95th %tile Q(veh)	-	-	0.6	0	0.7	-

Intersection	
Int Delay, s/veh	0.3

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	0	0	0	1	4	19	2	55	0	0	297	498
Future Vol, veh/h	0	0	0	1	4	19	2	55	0	0	297	498
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	-	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	0	0	1	4	21	2	60	0	0	323	541

Major/Minor	Minor1			Major1			Major2		
Conflicting Flow All	658	928	60	864	0	-	-	-	0
Stage 1	64	64	-	-	-	-	-	-	-
Stage 2	594	864	-	-	-	-	-	-	-
Critical Hdwy	6.42	6.52	6.22	4.12	-	-	-	-	-
Critical Hdwy Stg 1	5.42	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	5.42	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	2.218	-	-	-	-	-
Pot Cap-1 Maneuver	429	268	1005	779	-	0	0	-	-
Stage 1	959	842	-	-	-	0	0	-	-
Stage 2	552	371	-	-	-	0	0	-	-
Platoon blocked, %					-			-	-
Mov Cap-1 Maneuver	428	0	1005	779	-	-	-	-	-
Mov Cap-2 Maneuver	428	0	-	-	-	-	-	-	-
Stage 1	956	0	-	-	-	-	-	-	-
Stage 2	552	0	-	-	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	8.9	0.3	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBL	NBT	WBLn1	SBT	SBR
Capacity (veh/h)	779	-	942	-	-
HCM Lane V/C Ratio	0.003	-	0.028	-	-
HCM Control Delay (s)	9.6	0	8.9	-	-
HCM Lane LOS	A	A	A	-	-
HCM 95th %tile Q(veh)	0	-	0.1	-	-

Intersection	
Int Delay, s/veh	6.1

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	229	0	60	1	0	177
Future Vol, veh/h	229	0	60	1	0	177
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	249	0	65	1	0	192

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	258	66	0	0	66	0
Stage 1	66	-	-	-	-	-
Stage 2	192	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218	-
Pot Cap-1 Maneuver	731	998	-	-	1536	-
Stage 1	957	-	-	-	-	-
Stage 2	841	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	731	998	-	-	1536	-
Mov Cap-2 Maneuver	731	-	-	-	-	-
Stage 1	957	-	-	-	-	-
Stage 2	841	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	12.4	0	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	731	1536	-
HCM Lane V/C Ratio	-	-	0.341	-	-
HCM Control Delay (s)	-	-	12.4	0	-
HCM Lane LOS	-	-	B	A	-
HCM 95th %tile Q(veh)	-	-	1.5	0	-

Intersection	
Int Delay, s/veh	5.6

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	0	145	1	59	32	0
Future Vol, veh/h	0	145	1	59	32	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	158	1	64	35	0

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	101	35	35	0	-	0
Stage 1	35	-	-	-	-	-
Stage 2	66	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	898	1038	1576	-	-	-
Stage 1	987	-	-	-	-	-
Stage 2	957	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	897	1038	1576	-	-	-
Mov Cap-2 Maneuver	897	-	-	-	-	-
Stage 1	986	-	-	-	-	-
Stage 2	957	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	9.1	0.1	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1576	-	1038	-	-
HCM Lane V/C Ratio	0.001	-	0.152	-	-
HCM Control Delay (s)	7.3	0	9.1	-	-
HCM Lane LOS	A	A	A	-	-
HCM 95th %tile Q(veh)	0	-	0.5	-	-

Intersection	
Int Delay, s/veh	8.9

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	4	2	4	0	0	0	0	0	4	598	1	0
Future Vol, veh/h	4	2	4	0	0	0	0	0	4	598	1	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	-	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	4	2	4	0	0	0	0	0	4	650	1	0

Major/Minor	Minor2			Major1			Major2		
Conflicting Flow All	1303	1305	1	-	0	0	4	0	0
Stage 1	1301	1301	-	-	-	-	-	-	-
Stage 2	2	4	-	-	-	-	-	-	-
Critical Hdwy	6.42	6.52	6.22	-	-	-	4.12	-	-
Critical Hdwy Stg 1	5.42	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	5.42	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	-	-	-	2.218	-	-
Pot Cap-1 Maneuver	177	160	1084	0	-	-	1618	-	0
Stage 1	255	231	-	0	-	-	-	-	0
Stage 2	1021	892	-	0	-	-	-	-	0
Platoon blocked, %					-	-		-	
Mov Cap-1 Maneuver	106	0	1084	-	-	-	1618	-	-
Mov Cap-2 Maneuver	106	0	-	-	-	-	-	-	-
Stage 1	152	0	-	-	-	-	-	-	-
Stage 2	1021	0	-	-	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	24.8	0	8.7
HCM LOS	C		

Minor Lane/Major Mvmt	NBT	NBR	EBLn1	SBL	SBT
Capacity (veh/h)	-	-	193	1618	-
HCM Lane V/C Ratio	-	-	0.056	0.402	-
HCM Control Delay (s)	-	-	24.8	8.7	0
HCM Lane LOS	-	-	C	A	A
HCM 95th %tile Q(veh)	-	-	0.2	2	-

Intersection	
Int Delay, s/veh	0.1

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	0	0	0	1	4	5	1	3	0	0	598	674
Future Vol, veh/h	0	0	0	1	4	5	1	3	0	0	598	674
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	-	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	0	0	1	4	5	1	3	0	0	650	733

Major/Minor	Minor1		Major1			Major2			
Conflicting Flow All	1022	1388	3	1383	0	-	-	-	0
Stage 1	5	5	-	-	-	-	-	-	-
Stage 2	1017	1383	-	-	-	-	-	-	-
Critical Hdwy	6.42	6.52	6.22	4.12	-	-	-	-	-
Critical Hdwy Stg 1	5.42	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	5.42	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	2.218	-	-	-	-	-
Pot Cap-1 Maneuver	261	143	1081	495	-	0	0	-	-
Stage 1	1018	892	-	-	-	0	0	-	-
Stage 2	349	211	-	-	-	0	0	-	-
Platoon blocked, %					-			-	-
Mov Cap-1 Maneuver	260	0	1081	495	-	-	-	-	-
Mov Cap-2 Maneuver	260	0	-	-	-	-	-	-	-
Stage 1	1016	0	-	-	-	-	-	-	-
Stage 2	349	0	-	-	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	10.2	3.1	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBL	NBT	WBLn1	SBT	SBR
Capacity (veh/h)	495	-	708	-	-
HCM Lane V/C Ratio	0.002	-	0.015	-	-
HCM Control Delay (s)	12.3	0	10.2	-	-
HCM Lane LOS	B	A	B	-	-
HCM 95th %tile Q(veh)	0	-	0	-	-

Appendix B: Counts

Prepared by National Data & Surveying Services

SR 177 & I 10 EB Ramps

Peak Hour Turning Movement Count

ID: 18-06034-001
City: Desert Center

Day: Thursday
Date: 03/22/2018

PEAK HOURS		COUNT PERIODS
08:00 AM - 09:00 AM	AM	07:00 AM - 09:00 AM
NONE	NOON	NONE
04:15 PM - 05:15 PM	PM	04:00 PM - 06:00 PM

SR 177 — SOUTHBOUND

AM	0	0	15	0	50	AM
NOON	0	0	0	0	0	NOON
PM	0	3	12	0	70	PM
	0	1	0	0		

I 10 EB Ramps — EASTBOUND

AM	NOON	PM	
0	0	0	
0	0	0	0
49	0	65	0.5
2	0	3	0.5
0	0	4	1
AM	NOON	PM	

CONTROL

1-Way Stop(EB)

	AM	NOON	PM
TEV	69	0	94
PHF	0.62		0.98

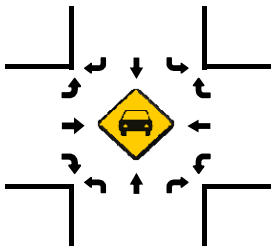
WESTBOUND — I 10 EB Ramps

	PM	NOON	AM
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
	17	0	18
	PM	NOON	AM

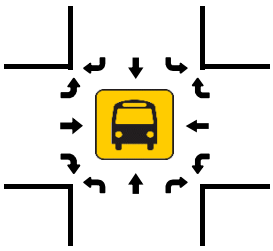
NORTHBOUND — SR 177

		0	0	1	0	
PM	7	0	0	5	2	PM
NOON	0	0	0	0	0	NOON
AM	1	1	0	1	1	AM

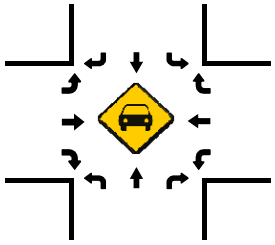
Total Vehicles (AM)



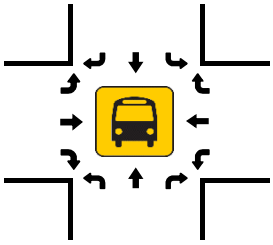
Total Vehicles (AM)



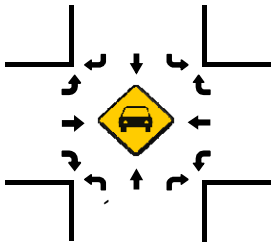
Total Vehicles (NOON)



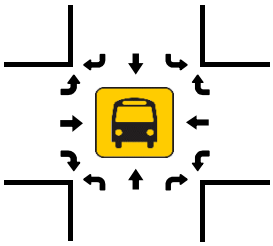
Total Vehicles (NOON)



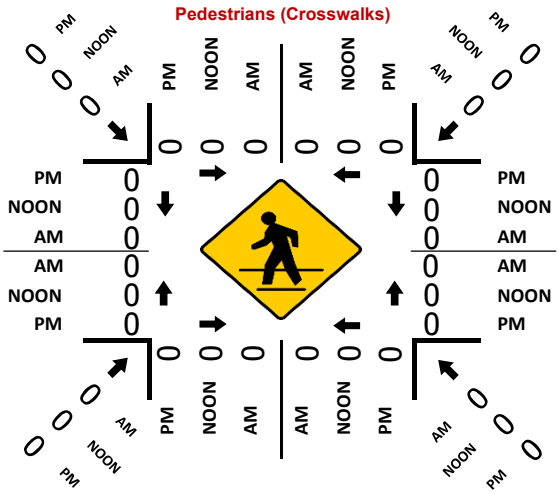
Total Vehicles (PM)



Total Vehicles (PM)



Pedestrians (Crosswalks)



Prepared by National Data & Surveying Services

Corn Springs Rd & I 10 EB Ramps

Peak Hour Turning Movement Count

ID: 18-06034-003
City: Desert Center

Day: Thursday
Date: 03/22/2018

PEAK HOURS	COUNT PERIODS
07:15 AM - 08:15 AM	07:00 AM - 09:00 AM
NONE	NONE
04:15 PM - 05:15 PM	04:00 PM - 06:00 PM

Corn Springs Rd — SOUTHBOUND

AM	0	2	0	0	1	AM
NOON	0	0	0	0	0	NOON
PM	0	1	0	0	2	PM

I 10 EB Ramps — EASTBOUND

AM	NOON	PM	
0	0	0	
0	0	0	0
1	0	2	0
1	0	3	1
5	0	5	0
AM	NOON	PM	

I 10 EB Ramps — WESTBOUND

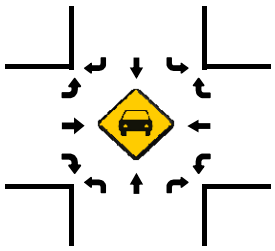
PM	NOON	AM	
	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
8	0	6	
PM	NOON	AM	

Corn Springs Rd — NORTHBOUND

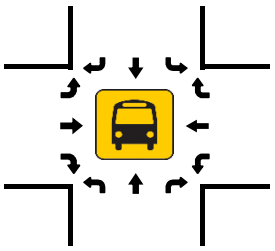
PM	6	0	0	0	5	PM
NOON	0	0	0	0	0	NOON
AM	7	0	0	0	5	AM

CONTROL			
1-Way Stop(EB)			
TEV	14	0	16
	AM	NOON	PM
PHF	0.70		0.67

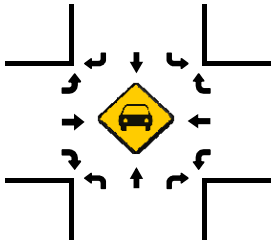
Total Vehicles (AM)



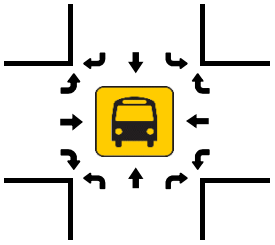
Total Vehicles (AM)



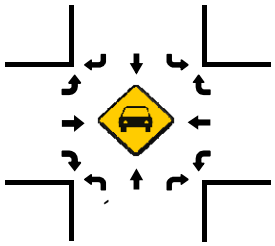
Total Vehicles (NOON)



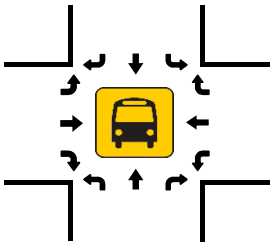
Total Vehicles (NOON)



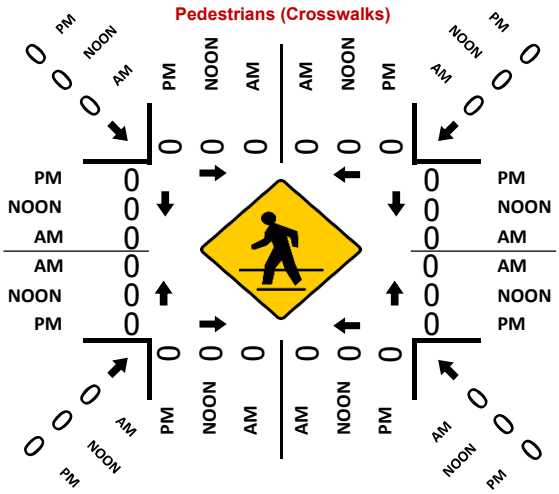
Total Vehicles (PM)



Total Vehicles (PM)



Pedestrians (Crosswalks)



Prepared by National Data & Surveying Services

SR 177 & I 10 WB Ramps

Peak Hour Turning Movement Count

ID: 18-06034-002
City: Desert Center

Day: Thursday
Date: 03/22/2018

PEAK HOURS		COUNT PERIODS
07:45 AM - 08:45 AM	AM	07:00 AM - 09:00 AM
NONE	NOON	NONE
04:00 PM - 05:00 PM	PM	04:00 PM - 06:00 PM

SR 177 — SOUTHBOUND

AM	37	13	0	0	60	AM
NOON	0	0	0	0	0	NOON
PM	53	11	0	0	91	PM
	0	1	0	0		

I 10 WB Ramps — EASTBOUND

AM	NOON	PM	
42	0	60	
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
AM	NOON	PM	

CONTROL

1-Way Stop(WB)

	AM	NOON	PM
TEV	117	0	163
PHF	0.75		0.93

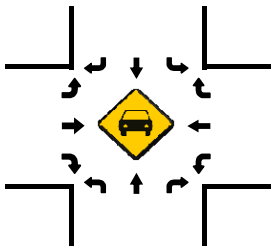
I 10 WB Ramps — WESTBOUND

	PM	NOON	AM
0	24	0	17
1	5	0	3
0	1	0	2
0	0	0	0
	0	0	0
	PM	NOON	AM

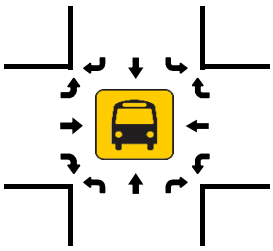
SR 177 — NORTHBOUND

		0	0	1	0	
PM	12	0	2	67	0	PM
NOON	0	0	0	0	0	NOON
AM	15	0	2	43	0	AM

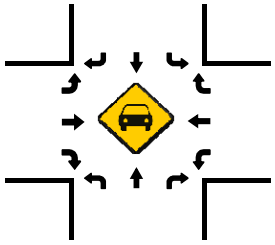
Total Vehicles (AM)



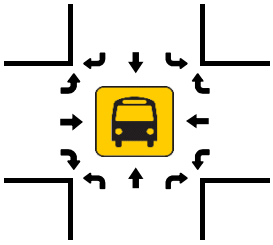
Total Vehicles (AM)



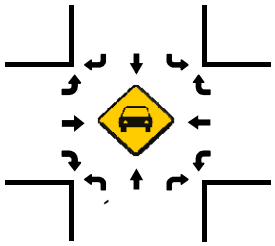
Total Vehicles (NOON)



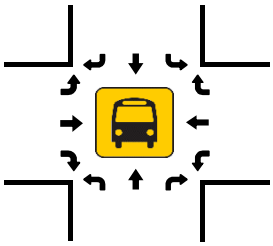
Total Vehicles (NOON)



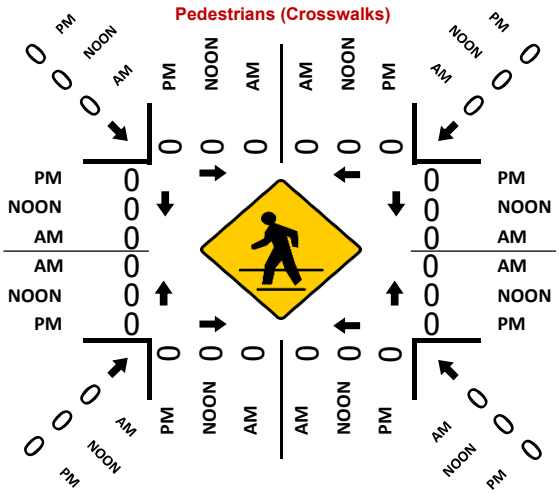
Total Vehicles (PM)



Total Vehicles (PM)



Pedestrians (Crosswalks)



Prepared by National Data & Surveying Services

SR 177 & Oasis Rd

Peak Hour Turning Movement Count

ID: 18-06034-005
City: Desert Center

Day: Thursday
Date: 03/22/2018

PEAK HOURS		COUNT PERIODS
08:00 AM - 09:00 AM	AM	07:00 AM - 09:00 AM
NONE	NOON	NONE
04:15 PM - 05:15 PM	PM	04:00 PM - 06:00 PM

SR 177 — SOUTHBOUND

AM	3	17	0	0	57	AM
NOON	0	0	0	0	0	NOON
PM	1	40	0	0	72	PM

0 1 0 0

EASTBOUND — Oasis Rd

AM	NOON	PM	
3	0	2	
0	0	0	0
2	0	3	0
0	0	0	1
1	0	0	0
AM	NOON	PM	

WESTBOUND — Oasis Rd

	PM	NOON	AM
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
	0	0	0
	PM	NOON	AM

CONTROL

1-Way Stop(EB)

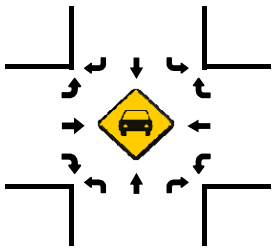
	AM	NOON	PM
TEV	78	0	114
PHF	0.65		0.75

0 0 1 0

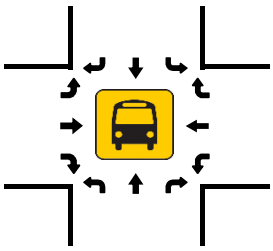
PM	40	0	1	69	0	PM
NOON	0	0	0	0	0	NOON
AM	18	0	0	55	0	AM

NORTHBOUND — SR 177

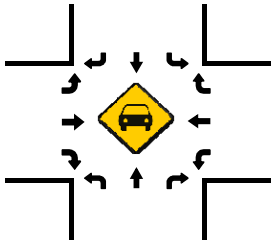
Total Vehicles (AM)



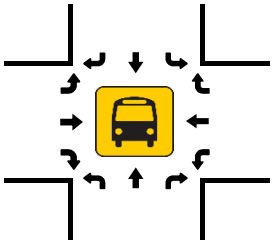
Total Vehicles (AM)



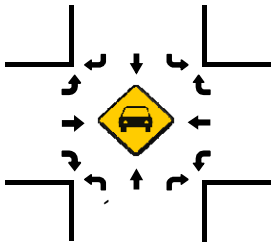
Total Vehicles (NOON)



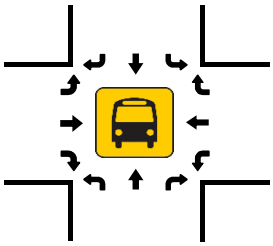
Total Vehicles (NOON)



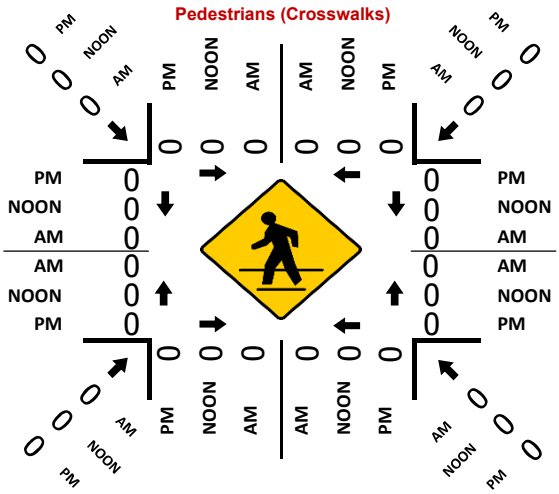
Total Vehicles (PM)



Total Vehicles (PM)



Pedestrians (Crosswalks)



Prepared by National Data & Surveying Services

Corn Springs Rd & I 10 WB Ramps

Peak Hour Turning Movement Count

ID: 18-06034-004
City: Desert Center

Day: Thursday
Date: 03/22/2018

PEAK HOURS	COUNT PERIODS
07:30 AM - 08:30 AM	07:00 AM - 09:00 AM
NONE	NONE
04:15 PM - 05:15 PM	04:00 PM - 06:00 PM

Corn Springs Rd — SOUTHBOUND

AM	3	0	0	0	5	AM
NOON	0	0	0	0	0	NOON
PM	3	0	0	0	3	PM

I 10 WB Ramps — EASTBOUND

AM	NOON	PM
6	0	9
0	0	0
0	0	0
0	0	0
0	0	0
AM	NOON	PM

I 10 WB Ramps — WESTBOUND

PM	NOON	AM
2	0	3
5	0	3
1	0	2
0	0	0
0	0	0
PM	NOON	AM

Corn Springs Rd — NORTHBOUND

PM	1	0	1	1	0	PM
NOON	0	0	0	0	0	NOON
AM	2	0	0	2	0	AM

	0	1	0	0
0				
1				
0				
0				
	0	0	1	0

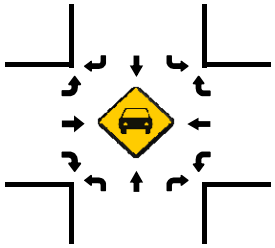
0				
0				
0				
0				

CONTROL

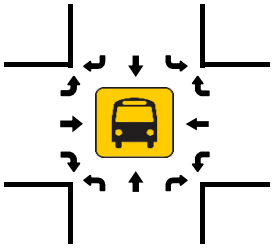
1-Way Stop(WB)

TEV	13	0	13
	AM	NOON	PM
PHF	0.65		0.81

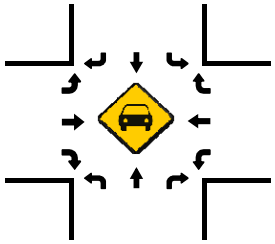
Total Vehicles (AM)



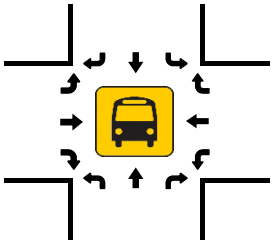
Total Vehicles (AM)



Total Vehicles (NOON)



Total Vehicles (NOON)



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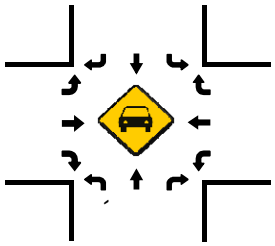

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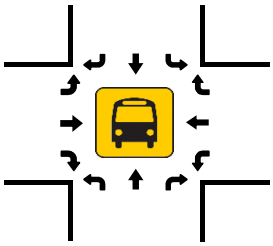
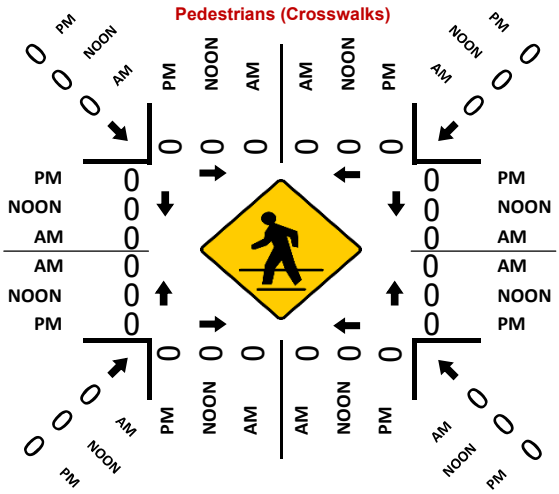


Pedestrians (Crosswalks)



Appendix J

Visual Resources

Visual Contrast Rating Data Sheet

Athos Renewable Energy Project EIR and EA

KEY VIEWPOINT DESCRIPTION

Key Observation Point **1**	
Location Eastbound I-10, approximately one mile east of Desert Center, viewing northeast toward the central Chuckwalla Valley and proposed central project area.	
VRM Class **IV**	
Analyst Michael Clayton	
Date March 8, 2018	

CHARACTERISTIC LANDSCAPE DESCRIPTION

	LANDFORM / WATER	VEGETATION	STRUCTURES
Form	Horizontal valley floor to rugged angular background mountains	Patchy clumps to irregular and continuous at distance	Linear road and utility poles
Line	Horizontal to diagonal and irregular	Irregular and indistinct to horizontal as defined by valley floor	Diagonal to vertical
Color	Tan to lavender and bluish hues at distance	Tans and pale to golden yellow grasses, muted to dark greens for shrubs	Light to medium gray and white (road), white, tans, and brown (utility poles)
Texture	Smooth to granular and coarse	Matte	Smooth to matte and rough-hewn

PROPOSED ACTIVITY DESCRIPTION – GEN-TIE LINE

	LANDFORM / WATER	VEGETATION	STRUCTURES
Form	Same	Same	Simple linear
Line	Same	Same	Barely discernable vertical
Color	Same	Same	Light gray
Texture	Same	Same	Smooth

DEGREE OF CONTRAST

	LANDFORM / WATER				VEGETATION				STRUCTURES			
	NONE	WEAK	MODERATE	STRONG	NONE	WEAK	MODERATE	STRONG	NONE	WEAK	MODERATE	STRONG
Form	☐				☐					☐		
Line	☐				☐					☐		
Color	☐				☐					☐		
Texture	☐				☐					☐		

LEVEL OF CHANGE & VRM CLASS CONSISTENCY

Term: ☐ **Short** ☒ **Long** | **Level of Change:** ☐ **Very Low** ☒ **Low** ☐ **Moderate** ☐ **High**

Does the Project Design Meet VRM Objectives? ☒ **Yes** ☐ **No** ☐ **Not Applicable**

Visual Contrast Rating Data Sheet

Athos Renewable Energy Project EIR and EA

KEY VIEWPOINT DESCRIPTION

Key Observation Point **2**	
Location Northbound SR 177, approximately 1.5 miles northeast of Desert Center, viewing northeast across Chuckwalla Valley toward the Coxcomb and Granite mountains.	Latitude: 33.710406° Longitude: -115.383304°
VRM Class **IV**	
Analyst Michael Clayton	
Date September 4, 2018	

CHARACTERISTIC LANDSCAPE DESCRIPTION

	LANDFORM / WATER	VEGETATION	STRUCTURES
Form	Horizontal valley floor with horizontal to slightly angular and rounded mountains	Patchy to sequential clumps to irregular and continuous at distance	Linear road and utility poles
Line	Horizontal to diagonal and irregular	Irregular and indistinct to horizontal and diagonal as defined by valley floor/road	Diagonal to vertical
Color	Tan to lavender and bluish hues at distance	Tans and pale to golden yellow grasses, muted to dark greens for shrubs	Light to medium gray (road), dark brown (poles)
Texture	Smooth to granular and coarse	Matte	Smooth to matte

PROPOSED ACTIVITY DESCRIPTION – GEN-TIE LINE

	LANDFORM / WATER	VEGETATION	STRUCTURES
Form	Same	Same	Simple linear
Line	Same	Same	Barely discernable vertical
Color	Same	Same	Light gray
Texture	Same	Same	Smooth

DEGREE OF CONTRAST

	LANDFORM / WATER				VEGETATION				STRUCTURES			
	NONE	WEAK	MODERATE	STRONG	NONE	WEAK	MODERATE	STRONG	NONE	WEAK	MODERATE	STRONG
Form	☐				☐					☐		
Line	☐				☐					☐		
Color	☐				☐					☐		
Texture	☐				☐					☐		

LEVEL OF CHANGE & VRM CLASS CONSISTENCY

Term: ☐ **Short** ☒ **Long** | **Level of Change:** ☐ **Very Low** ☒ **Low** ☐ **Moderate** ☐ **High**

Does the Project Design Meet VRM Objectives? ☒ **Yes** ☐ **No** ☐ **Not Applicable**

Visual Contrast Rating Data Sheet

Athos Renewable Energy Project EIR and EA

KEY VIEWPOINT DESCRIPTION

Key Observation Point **3**	
Location Approximately two miles north of I-10 on the east side of the Lake Tamarisk Desert Resort, viewing east across Chuckwalla Valley toward the Palen Mountains.	Latitude: 33.740178° Longitude: -115.388496°
VRM Class **IV**	
Analyst Michael Clayton	
Date March 8, 2018	

CHARACTERISTIC LANDSCAPE DESCRIPTION

	LANDFORM / WATER	VEGETATION	STRUCTURES
Form	Horizontal valley floor, horizontal to angular mountains	Patchy clumps to irregular and continuous at distance	Indistinct geometric
Line	Horizontal to diagonal and irregular	Irregular and indistinct to horizontal as defined by valley floor	Indistinct horizontal
Color	Tan to lavender and bluish hues at distance	Tans and muted to dark greens for shrubs	Tan and white
Texture	Smooth to granular and coarse	Matte	Smooth

PROPOSED ACTIVITY DESCRIPTION – GEN-TIE LINE

	LANDFORM / WATER	VEGETATION	STRUCTURES
Form	Same	Same	Simple linear
Line	Same	Same	Barely discernable vertical
Color	Same	Same	Light gray
Texture	Same	Same	Smooth

DEGREE OF CONTRAST

	LANDFORM / WATER				VEGETATION				STRUCTURES			
	NONE	WEAK	MODERATE	STRONG	NONE	WEAK	MODERATE	STRONG	NONE	WEAK	MODERATE	STRONG
Form	☐				☐					☐		
Line	☐				☐					☐		
Color	☐				☐					☐		
Texture	☐				☐					☐		

LEVEL OF CHANGE & VRM CLASS CONSISTENCY

Term: ☐ **Short** ☒ **Long** | **Level of Change:** ☐ **Very Low** ☒ **Low** ☐ **Moderate** ☐ **High**

Does the Project Design Meet VRM Objectives? ☒ **Yes** ☐ **No** ☐ **Not Applicable**

Visual Contrast Rating Data Sheet

Athos Renewable Energy Project EIR and EA

KEY VIEWPOINT DESCRIPTION

Key Observation Point **4**	
Location Northbound SR 177, approximately four miles northeast of Desert Center, viewing northeast across Chuckwalla Valley toward the Granite and Palen mountains.	
VRM Class **IV**	
Analyst Michael Clayton	
Date March 8, 2018	

CHARACTERISTIC LANDSCAPE DESCRIPTION

	LANDFORM / WATER	VEGETATION	STRUCTURES
Form	Horizontal valley floor; horizontal to angular rugged ridges and mountains	Fairly even distribution with some patchiness	Linear for road, utility poles, and communication tower
Line	Horizontal to irregular	Irregular for individuals to horizontal as defined by the valley floor	Diagonal to vertical
Color	Tan to bluish hues at distance	Tannish-gray to pale-yellow grasses, tannish-gray to pale-green for shrubs	Medium gray, yellow, and white (road); light gray (communications tower); brown (utility poles)
Texture	Smooth to matte	Matte	Smooth to matte and rough-hewn

PROPOSED ACTIVITY DESCRIPTION – GEN-TIE LINE

	LANDFORM / WATER	VEGETATION	STRUCTURES
Form	Same	Same	Noticeable simple linear for poles and conductors
Line	Same	Same	Noticeable vertical (poles), and curvilinear (conductors)
Color	Same	Same	Light-gray to medium-gray
Texture	Same	Same	Smooth

DEGREE OF CONTRAST

	LANDFORM / WATER				VEGETATION				STRUCTURES			
	NONE	WEAK	MODERATE	STRONG	NONE	WEAK	MODERATE	STRONG	NONE	WEAK	MODERATE	STRONG
Form	☐				☐						☐	
Line	☐				☐						☐	
Color	☐				☐					☐	☐	
Texture	☐				☐					☐		

LEVEL OF CHANGE & VRM CLASS CONSISTENCY

Term: ☐ **Short** ☒ **Long** | **Level of Change:** ☐ **Very Low** ☐ **Low** ☒ **Moderate** ☐ **High**

Does the Project Design Meet VRM Objectives? ☒ **Yes** ☐ **No** ☐ **Not Applicable**

Visual Contrast Rating Data Sheet

Athos Renewable Energy Project EIR and EA

KEY VIEWPOINT DESCRIPTION

Key Observation Point **5**	
Location Northbound SR 177, approximately 4.7 miles northeast of Desert Center, viewing north across Chuckwalla Valley toward the Eagle and Coxcomb mountains.	
VRM Class **IV**	
Analyst Michael Clayton	
Date September 4, 2018	Latitude: 33.761507° Longitude: -115.342931°

CHARACTERISTIC LANDSCAPE DESCRIPTION

	LANDFORM / WATER	VEGETATION	STRUCTURES
Form	Horizontal valley floor, horizontal to angular mountains	Patchy clumps to irregular and continuous at distance	Linear road (SR 177)
Line	Horizontal to diagonal and irregular	Irregular and indistinct to horizontal as defined by valley floor	Diagonal
Color	Tan to lavender and bluish hues at distance	Tans and reddish-browns to muted greens for shrubs	Medium gray and white
Texture	Smooth to granular and coarse	Matte	Matte

PROPOSED ACTIVITY DESCRIPTION – GEN-TIE LINE

	LANDFORM / WATER	VEGETATION	STRUCTURES
Form	Same	Same	Simple linear
Line	Same	Same	Prominent vertical (poles) to curvilinear (conductors)
Color	Same	Same	Light gray
Texture	Same	Same	Smooth

DEGREE OF CONTRAST

	LANDFORM / WATER				VEGETATION				STRUCTURES			
	NONE	WEAK	MODERATE	STRONG	NONE	WEAK	MODERATE	STRONG	NONE	WEAK	MODERATE	STRONG
Form	☐				☐						☐	☐
Line	☐				☐						☐	☐
Color	☐				☐					☐	☐	
Texture	☐				☐					☐		

LEVEL OF CHANGE & VRM CLASS CONSISTENCY

Term: ☐ **Short** ☒ **Long** | **Level of Change:** ☐ **Very Low** ☐ **Low** ☒ **Moderate** ☒ **High**

Does the Project Design Meet VRM Objectives? ☒ **Yes** ☐ **No** ☐ **Not Applicable**

Visual Contrast Rating Data Sheet

Athos Renewable Energy Project EIR and EA

KEY VIEWPOINT DESCRIPTION

Key Observation Point **6**	
Location Corn Springs Road, approximately 1.1 miles south of Chuckwalla Valley Road, viewing north across the central Chuckwalla Valley.	
VRM Class **IV**	
Analyst Michael Clayton	
Date September 5, 2018	

CHARACTERISTIC LANDSCAPE DESCRIPTION

	LANDFORM / WATER	VEGETATION	STRUCTURES
Form	Horizontal valley floor, horizontal to angular mountains	Patchy clumps to irregular and continuous at distance	Geometric to linear
Line	Horizontal to diagonal and irregular	Irregular and indistinct to horizontal as defined by valley floor	Diagonal to vertical (utility structures), curvilinear (conductors)
Color	Tan to lavender and bluish hues at distance	Tans and reddish-browns to muted greens for shrubs	Light to medium gray (structures and conductors)
Texture	Smooth to granular and coarse	Matte	Smooth

PROPOSED ACTIVITY DESCRIPTION – GEN-TIE LINE

	LANDFORM / WATER	VEGETATION	STRUCTURES
Form	Same	Same	Simple linear
Line	Same	Same	Vertical
Color	Same	Same	Medium gray
Texture	Same	Same	Smooth

DEGREE OF CONTRAST

	LANDFORM / WATER				VEGETATION				STRUCTURES			
	NONE	WEAK	MODERATE	STRONG	NONE	WEAK	MODERATE	STRONG	NONE	WEAK	MODERATE	STRONG
Form	☐				☐					☐		
Line	☐				☐					☐	☐	
Color	☐				☐					☐	☐	
Texture	☐				☐				☐			

LEVEL OF CHANGE & VRM CLASS CONSISTENCY

Term: ☐ **Short** ☒ **Long** | **Level of Change:** ☐ **Very Low** ☒ **Low** ☒ **Moderate** ☐ **High**

Does the Project Design Meet VRM Objectives? ☒ **Yes** ☐ **No** ☐ **Not Applicable**

Appendix K

Phase I Environmental Site Assessment

Phase I Environmental Site Assessment

IP Athos, LLC
Desert Center, California

Prepared for:
IP Athos, LLC
2 Embarcadero Center
7th Floor
San Francisco, California 94118

Prepared by:
Stantec Consulting Services Inc.
25864-F Business Center Drive
Redlands, California 92374

Project No. 185804152

April 18, 2018

Sign-off Sheet and Signatures of Environmental Professionals

This document entitled Phase I Environmental Site Assessment was prepared by Stantec Consulting Services Inc. (Stantec) for the account of Intersect Power, LLC, IPREH, LLC, and IP Athos, LLC. The material in it reflects Stantec's best judgment in light of the information available to it at the time of preparation. Any use which a third party makes of this report, or any reliance on or decisions made based on it, are the responsibilities of such third parties. Stantec accepts no responsibility for damages, if any, suffered by any third party as a result of decisions made or actions based on this report.

All information, conclusions, and recommendations provided by Stantec in this document regarding the Phase I ESA have been prepared under the supervision of and reviewed by the professionals whose signatures appear below.

Prepared by _____
(signature)

Dion Monge
Senior Scientist

I declare that, to the best of my professional knowledge and belief, I meet the definition of Environmental Professional as defined in § 312.10 of 40 CFR 312. I have the specific qualifications based on education, training, and experience to assess a property of the nature, history, and setting of the Property. I have developed and performed all the appropriate inquiries in conformance with the standards and practices set forth in 40 CFR Part 312.

Reviewed by _____
(signature)

Anne Perez
Geologic Associate

Approved by _____
(signature)

Kyle Emerson
Managing Principal Geologist

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Abbreviations

AAI	All Appropriate Inquiry
ACM	Asbestos containing material
AST	Aboveground Storage Tank
ASTM	American Society for Testing and Materials
BER	Business Environmental Risk
CAA	Clean Air Act
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act
CFR	Code of Federal Regulation
CREC	Controlled Recognized Environmental Conditions
CWA	Clean Water Act
ELUC	Environmental Land Use Control
EP	Environmental Professional
EPA	Environmental Protection Agency
ESA	Environmental Site Assessment
FEMA	Federal Emergency Management Agency
ft msl	Feet above mean sea level
HREC	Historical Recognized Environmental Conditions
HWMU	Hazardous Waste Management Unit
LBP	Lead-based Paint
LUST	Leaking Underground Storage Tank
MEC	Munitions and Explosives of Concern
NESHAP	National Emissions Standard for Hazardous Air Pollutants
PAHs	Polynuclear Aromatic Hydrocarbons
PCBs	Polychlorinated Biphenyls
pVEC	Potential Vapor Encroachment Condition
RCRA	Resource Conservation and Recovery Act
REC	Recognized Environmental Conditions
SWMU	Solid Waste Management Unit
TSCA	Toxic Substance Control Act
USDA	United States Department of Agriculture
USGS	United States Geological Survey
UST	Underground Storage Tank
UXO	Unexploded Ordnance
VOCs	Volatile Organic Compounds

1.0 SUMMARY

Stantec Consulting Services Inc. (Stantec) has completed a Phase I Environmental Site Assessment (ESA) report for the property located on approximately 3,388 acres near the town of Desert Center in Riverside County, California (the "Property"), on behalf of IP Athos, LLC (the "Client").

The Phase I ESA was conducted in conformance with the requirements of American Society for Testing and Materials (ASTM) Designation E 1527-13 and All Appropriate Inquiries (AAI) Final Rule 40 CFR Part 312, except as may have been modified by the scope of work, and terms and conditions, requested by the Client. Any exceptions to, or deletions from, the ASTM practice are described in Section 2.3. The work was performed according to Stantec's proposal and terms and conditions dated November 21, 2017.

The Property consists of a total of approximately 3,388 acres of land along State Route-177 (SR-177), north of Interstate-10 (I-10), near the town of Desert Center in Riverside County, California. Due to the size of the Property, and in order to identify specific Property features and land use activities, Stantec broke down the Property into six designated areas (Areas A through F). The boundaries of Areas A through F are shown on Figure 1. Greater detail within each designated area is depicted on Figures 2 through 5. The Property is mostly undeveloped desert land with scattered parcels formerly used for agriculture (row crops). Limited agricultural row cropping activities are ongoing in the eastern portion of the Property (Area F), as discussed in later sections of this summary. The Property is proposed for development as a photovoltaic facility with interconnecting aboveground power lines (i.e. "gen-tie lines).

Portions of the Properties are accessible via dirt roads used by the aforementioned agricultural operations in the area or by open dirt roads designated by the Bureau of Land Management (BLM). Due to the potential presence of sensitive plant and animal species in the area, certain areas could not be accessed by vehicle and had to be traversed by foot. As a result, Stantec made a concerted effort to traverse specific areas (i.e. areas with debris, signs of surface disturbance, or structures) by foot to obtain a general understanding of Property conditions. However, it should be noted that not all areas that appeared as vacant desert land were traversed due to the Property size, time, and project constraints. Surrounding properties also consist of undeveloped land. A Property Location Map showing the Property boundaries is illustrated on Figure 1. Property maps illustrating the main features of Areas A through F are provided as Figures 2 through 5. Photographs taken during the site reconnaissance visit are provided in Appendix A.

We have performed a Phase I ESA in conformance with the scope and limitations of ASTM Practice E-1527-13 and the requirements of AAI for the "Property". Any exceptions to, or deletions from, this practice are described in the Data Gaps section of this report. This assessment has revealed no evidence of recognized environmental conditions (RECs) in connection with the Property except for the following:

- **Munitions and Explosives of Concern and Unexploded Ordnance**. There are two formerly used defense sites (FUDS) in the vicinity that overlap into areas of the Property. Historical documentation obtained through the Department of Toxic Substances Control (DTSC) Envirostor website indicate that the Desert Center area was used by the U.S. Government for military training in the early 1940s (World War II). These two sites are known as the Desert Center Division Camp and the Desert Center Army Airfield (formerly the Desert Center Airport). Historic hand drawn maps of these FUDS sites are included in Appendix E and a detailed discussion of each site is provided in Section 4.2.2. The Envirostor database lists these sites as having the potential for munitions and explosives of concern ("MEC") and Unexploded Ordnance ("UXO") remaining from past military training exercises.

  Records indicate that the area approximately 1.5. miles west of Rice Road (SR-177) was occupied by the Desert Center Division Camp and included an encampment area with temporary housing structures, an evacuation hospital, and a maneuver area associated with the surrounding Desert Training Center (DTC). The DTC was a collection of desert camps in the region that were appointed by the U.S. Government with the intent to train military troops for desert warfare in North Africa. Although the Desert Center Division Camp was approximately 1.5 miles west of Rice Road, an archive map retrieved from militarymuseum.com shows that the surrounding area, outside of the camp boundaries, was also used to support the camp. The uses include "Ammunition Depot No. 1" in the vicinity of Area A, and "18th Ordnance Battalion" near Areas D and E.

  The Desert Center Army Airfield occupied the former Desert Center Airport and present-day Chuckwalla Valley Raceway (Figure 3). The former airport site consisted of 1,958 acres and included two main runways, taxiways, base housing, storage and maintenance buildings, and fueling systems. The western portion of the former Desert Center Army Airfield overlaps onto the east half of Area C and into the northern parcels of Area D. While it does not appear to overlap with Area B, the former airfield is in close proximity to it. Therefore, undocumented military activities in Area B cannot be ruled out.

  Based on past conversations with the DTSC and United Stated Army Corps of Engineers (USACOE) on similar sites in the region, Stantec recommends the following with regard to the potential existence of UXO and MEC:

  - Consultation and guidance from a certified MEC/UXO professional to evaluate the appropriate course of action and associated costs related to assessment, remediation, and construction support;
  - Where ground disturbance work is involved, contractors should be OSHA HAZWOPER-trained in accordance with standard 29CFR 1910.120 and hold a current certification;
  - Where ground disturbance work is involved, contractors should be trained in identifying UXO/MEC;
  - If suspected munitions are encountered at any point by any onsite individual, the "3R's of Explosives Safety" should be followed. The "3R's" include:

- Recognize – when something may be a munition and the dangers involved.
- Retreat – do not touch the potential munition and carefully leave the area.
- Report – immediately report the finding to local law enforcement.

NOTE: Based on an interview conducted with Mr. Micky Grana of Chuckwalla Valley Raceway, a full-time certified UXO technician was required to monitor the site for potential munitions debris during earth moving activities when the raceway was developed. It should be anticipated that such measures may be required by the enforcing agency (DTSC, USACOE, or Riverside County) during Property redevelopment due to the FUDS designation. However, at a minimum the above recommendations would apply.

- **Former (Areas A, B, and D) and Current Agricultural Uses (Area F).** Areas A, B, and D were farmed with row crops since at least 1979 but appeared abandoned during Stantec's Property reconnaissance. Aerial photographs show dry row crops and irrigation ponds in these areas by the middle to late 2000s. Area C appears to have been dry farmed in the 1980s and 1990s. Area F is actively farmed with numerous rows of palm trees.

  The former and current use of the Property for agricultural purposes is considered a REC due to the potential for residual pesticides and metals-based herbicides (arsenic and lead) to persist in soils above regulatory thresholds or hazardous waste levels. As a result, Stantec recommends that shallow soil sampling be performed throughout Areas A, B, D, C, and F to evaluate if organochlorine pesticides, lead, and arsenic concentrations exceed regulatory thresholds or hazardous waste levels.

- **Secondary Containment Sump and Drum/Oil Stained Areas (Area B).** A former produce packing house is located in the southwest portion of Area B. Six (6) 55-gallon drums were contained in a concrete sump located along the east wall, inside the former packing warehouse.

  To the north of the packing warehouse location, along Rice Road, one (1) 55-gallon drum was observed. The drum was surrounded by approximately 25 square feet (5 feet by 5 feet) of visibly stained soil. Additionally, one (1) 55-gallon drum with no lid was tipped over near a concrete pad and irrigation well location observed in the central portion of Area B. Slight staining was noted on the soil immediately north of the concrete pad. Each of the three areas are illustrated on Figure 3.

  Stantec recommends that shallow soil sampling be performed at the location of the packing warehouse sump, and at the two areas where soil staining was noted around the 55-gallon drums, in order to assess whether TPH and VOCs are present above regulatory thresholds.

- **Underground Storage Tank (Area C)**. As discussed above, the former Desert Center Army Airfield operated fueling systems which included underground storage tanks ("USTs").

Based on an archived airport map reviewed by Stantec, there were three USTs on the outskirts of the airport runways. The referenced map is included in Appendix E of this Phase I ESA report. One of these USTs appears to have been located within the eastern portion of Area C at the Property, as shown on Figure 3. The other two USTs were located at least 250 feet north of the Area D Property boundary based on the scale of the archived map. The FUDS database vaguely suggests that the fuel USTs were not used after the government transferred the site to Riverside County in 1965. Stantec has uncovered no evidence during this Phase I ESA that indicates the USTs were ever removed.

The potential presence of a former UST on the Property (Area C) is considered a REC. Stantec recommends that a geophysical survey be performed to evaluate if the UST may potentially remain in place. In addition, Stantec recommends a subsurface assessment (soil sampling) be performed to evaluate if a release occurred at the reported UST location.

- **Leaking Aboveground Storage Tank ("AST") and Drum/Oil Stained Area (Area D)**. An approximate 12,000-gallon AST was observed in the northern portion of Area D (Figure 3) adjacent to a fenced enclosure containing an irrigation well and several 55-gallon drums. Staining and strong petroleum hydrocarbon odors were observed around the east end of the AST. It also appeared that a mound of sand had deliberately been placed at the east end of the tank for the purpose of slowing the release of fuel leaking from the tank. In addition, several of the 55-gallon drums were tipped over and stained pavement was observed that extended off of the concrete pad toward the location of the AST. Stantec recommends that soil samples be collected at the east end of the AST and immediately north of the concrete pad where staining and odors were observed.

- **Shooting Ranges (Area F).** A large shooting/gun range was observed in the east-central portion of Area F, as shown on Figure 5. A second shooting range was observed approximately 350 feet southwest of the large range. Heavy metals associated with spent bullet casings are sometimes found to accumulate in shallow soils at shooting ranges. As a result, Stantec recommends that shallow soil sampling for heavy metals be performed throughout the two areas used as shooting ranges to evaluate if metals concentrations exceed regulatory thresholds or hazardous waste levels.

Stantec identified the following non-ASTM environmental issue associated with the Property:

- **Lead Based Paint (LBP).** With the exception of the residential and commercial structures in Area F, the Property structures were built prior to 1977. Accordingly, Stantec recommends an LBP survey at the Property to identify the condition of painted surfaces and whether the paint would be classified as LBP based on lead content. All LBP should be removed from the Property prior to construction/demolition activities with the potential to disturb painted surfaces, in accordance with all applicable laws.

- **Asbestos Containing Materials (ACMs).** Several residential and commercial buildings are located throughout the Property. In addition, a pile of construction debris was located in

the southwest portion of Area A that contained plastered and wall board, among other construction materials. Demolition or partial demolition of any structure, or disposal of construction debris, requires compliance with the National Emission Standards for Hazardous Air Pollutants (NESHAP) in accordance with the South Coast Air Quality Management District (SCAQMD) Rule 1403 (Asbestos Demolition and Removal). Therefore, Stantec recommends that a pre-demolition survey be performed for all Property structures and any debris piles containing suspect ACM.

Although not considered a REC, the following items of note were identified during this Phase I ESA:

- **Indistinguishable Surface Feature, 1948 Aerial Photograph.** A discolored area of land amidst the otherwise vacant desert terrain was noted on the 1948 aerial photograph within the proposed gen-tie line area that connects Areas D and E. This discolored area covers roughly a ½ acre and is approximately 1,100 feet south of the southwest corner of Area D (approximately 1,400 feet north of the northwest corner of Area E). It is unclear whether this is a blemish in the photograph, salt accumulation from a dry area of surface ponding, or is some sort of surface disturbance. It should be noted a military map of the Desert Center Division Camp (Appendix E) indicates that the 18th Ordnance Battalion was located in this general area in the early 1940s. The referenced discolored area does not appear to be present in any subsequent photographs.

- **Drum Storage**. Several drums were located in various locations within Areas A, B, C, D, and F of the Property. None of the drums were labeled. Unless discussed specifically above, the drums exhibited no staining, no evidence of a release, or they appeared to be empty. Therefore, they are considered de minimis and no further assessment is recommended. Stantec recommends that the drums be removed and properly disposed of in accordance with applicable laws and regulations prior to Property redevelopment activities.

- **ASTs.** An approximate 8,000-gallon fuel AST with a dispenser pump was observed in the west-central portion of Area F. The AST and dispenser pump were within a concrete secondary containment area. Only minimal staining was noted on the concrete floor of the containment area. No stained or odorous soil was observed on surfaces outside of the secondary containment structure.

  Additionally, there were two fuel ASTs in the west-central portion of Area A and two fuel ASTs in Area F that were being stored above ground (Appendix A). The tanks were positioned on their sides, not on plastic, and there was no secondary containment. The tanks ranged from approximately 8,000 to 10,000-gallons in capacity. It is unclear whether these tanks were formerly USTs that were removed and are now just stored onsite, or whether these tanks originally functioned as ASTs. One of the tanks in Area F was labeled "Empty". Since there was no fuel dispensing equipment related to the three remaining ASTs, it is unlikely that they are still being used for fuel storage. No staining or odors were associated with these ASTs. Given that there was no evidence of a release to soil around the ASTs, no further assessment is recommended. However, Stantec recommends that the

ASTs discussed above be removed and properly disposed of in accordance with applicable regulations. In addition, upon removal of the tanks during Property demolition activities, Stantec recommends that the tanks be inspected for any signs of a release. If any impacted soil or leaks are observed, Stantec should be contacted for further assessment.

- **Potential Farm and Residential Heating Oil USTs.** No evidence of farm or residential heating oil USTs were noted during the Property reconnaissance, interviews with property owners, or through review of historic records. However, due to the remoteness of the Property and past agricultural uses, there is the potential for unknown farm USTs or residential heating oil USTs to be uncovered at the Property during grading activities. Such USTs are considered exempt from state UST regulations, so their presence is generally unknown without specific information provided by knowledgeable parties. In the event that such USTs are encountered, work should be immediately stopped in that area and the suspect structure should be left in place for assessment/evaluation by an environmental professional.

- **Solid Waste Disposal.** Solid waste disposal consisted of piles containing primarily construction debris, wood, and discarded irrigation lines and irrigation well casing. The construction debris was observed primarily in the west-central portion of Area A and southwest portion of Area B. Discarded irrigation lines were scattered throughout portions of Areas A, B, D, and F that were, or are currently used for agriculture. Stantec recommends that the debris is properly disposed prior to the proposed Property development. Areas containing construction debris should be sampled concurrently with an asbestos and lead based paint survey, as recommended in the non-ASTM section of this report.

- **Irrigation/Water Wells**. At least 7 irrigation wells were observed at the Property. Given the past Property usage for agricultural purposes, additional irrigation wells may be present that are unknown. Stantec recommends that all known and unknown (those encountered during proposed development activities) irrigation/water wells be abandoned in accordance with applicable regulations unless the wells will be used by the proposed development.

- **Septic Tanks and Leach Fields.** Riverside County Building Department records (Section 4.3.3) indicate that septic tanks and leach fields were permitted for 26440 Rice Road, 23405 Rice Rd, and APN: 807-690-025 (41750 Beekley Rd). Since the septic tanks were associated with the former residential mobile homes, Stantec recommends no further assessment. However, the geotechnical engineer and grading contractor should be made aware that such structures may be encountered at these locations and other potential locations on the Property where residential structures were historically located.

The preceding summary is intended for informational purposes only. Reading of the full body of this report is recommended.

2.0 INTRODUCTION

The objective of this Phase I ESA was to perform appropriate inquiry into the past ownership and uses of the Property consistent with good commercial or customary practice as outlined by the ASTM in "Standard Practice for Environmental Site Assessments: Phase I Environmental Site Assessment Process", Designation E1527-13. The purpose of this Phase I ESA was to identify adverse environmental conditions including recognized environmental conditions ("RECs") of the Property.

The ASTM E1527-13 standard indicates that the purpose of the Phase I ESA is to identify RECs, including historical recognized environmental conditions ("HRECs"), and controlled recognized environmental conditions ("CRECs") that may exist at a property. The term "recognized environmental conditions" means the presence or likely presence of any hazardous substances or petroleum products in, on, or at a property:

(1) Due to any release to the environment;

(2) Under conditions indicative of a release to the environment; or

(3) Under conditions that pose a material threat of a future release to the environment.

ASTM defines a "HREC" as a REC that has occurred in connection with the property; but has been addressed to the satisfaction of the applicable regulatory authority and meets unrestricted use criteria established by a regulatory authority, without subjecting the property to any required controls (for example, property use restrictions, activity and use limitations, institutional controls, or engineering controls). Before calling the past release a HREC, the environmental professional must determine whether the past release is a REC when the current Phase I ESA is conducted (for example, if there has been a change in the regulations). If the EP considers the past release to be a REC at the time the Phase I ESA is conducted, the condition shall be included in the conclusions section of the report as a REC.

ASTM defines a "CREC" as a REC resulting from a past release of hazardous substances or petroleum products that has been addressed to the satisfaction of the applicable regulatory authority (for example, as evidenced by the issuance of a no further action letter or equivalent, or meeting risk-based criteria established by regulatory authority), but with hazardous substances or petroleum products allowed to remain in place subject to the implementation of required controls (for example, property use restrictions, activity and use limitations, institutional controls, or engineering controls).

De minimis conditions are not RECs. The term includes hazardous substances or petroleum products even under conditions in compliance with laws. As indicated, the term REC does not include de minimis conditions, which generally do not present a material risk to human health and would not likely be subject to enforcement action if brought to the attention of governmental agencies.

This ESA was conducted in accordance with our proposal to IP Athos, LLC dated November 10, 2017 and the Master Services Agreement (MSA) between Stantec and IP Titan, LLC dated November 21, 2017. The scope of work conducted during this Phase I ESA consisted of a visual reconnaissance of the Property, interviews with key individuals, and review of reasonably ascertainable documents. The scope of work did not include an assessment for environmental regulatory compliance of any facility ever operated at the Property (past or present), or sampling and analyzing of environmental media. Stantec was not contracted to perform any independent evaluation of the purchase or lease price of the Property and its relationship to current fair market value. The conclusions presented in this ESA Report are professional opinions based on data described herein. The opinions are subject to the limitations described in Section 2.3.

ASTM E1527-13 notes that the availability of record information varies from source to source. The User or Environmental Professional is not obligated to identify, obtain, or review every possible source that might exist with respect to a property. Instead, ASTM identifies record information that is reasonably ascertainable from standard sources. "Reasonably ascertainable" means:

(1) Information that is publicly available;

(2) Information that is obtainable from its source within reasonable time and cost constraints; and

(3) Information that is practicably reviewable.

2.1 PROPERTY DESCRIPTION

The Property consists of a total of approximately 3,388 acres along State Route-177 (SR-177), north of Interstate-10 (I-10), near the town of Desert Center in Riverside County, California. A small leg of the Property, extends to the west side of a substation that is along the southside of I-10. The Property is mostly undeveloped desert land with scattered parcels used for agriculture (row crops). The Property is proposed for development as a photovoltaic facility with interconnecting power lines (i.e. "gen-tie lines). For the purpose of referencing specific portions of the Property in this report, Stantec broke down the Property into six areas - Areas A through F. The boundaries of Areas A through F are shown on Figure 2.

Portions of the Property are accessible via dirt roads used by the aforementioned agricultural operations in the area or by open dirt roads designated by the Bureau of Land Management (BLM). Due to the potential presence of sensitive plant and animal species in the area, certain areas cannot be accessed by vehicle and must be traversed by foot. As a result, Stantec made a concerted effort to traverse specific areas (i.e. areas with debris or signs of surface disturbance) by foot to obtain a general understanding of Property conditions but could not inspect all areas of the Property due to its size and time constraints. Surrounding properties also consist of undeveloped land. A Property location map showing the Property boundaries is illustrated on Figure 1. Property maps illustrating the main features are provided as Figures 2 through 5. Photographs taken during the site reconnaissance visit are provided in Appendix A.

2.2 SPECIAL TERMS, CONDITIONS, AND SIGNIFICANT ASSUMPTIONS

There were no special terms, conditions, associated with the Phase I ESA. However, there is an unknown condition, where it is unclear as of this date if certain features (pipeline and wells) are part of the property to be acquired.

2.3 EXCEPTIONS AND LIMITING CONDITIONS

This report documents work that was performed in accordance with generally accepted professional standards at the time and location in which the services were provided. No other representations, warranties or guarantees are made concerning the accuracy or completeness of the data or conclusions contained within this report, including no assurance that this work has uncovered all potential and actual liabilities and conditions associated with the identified property.

This report provides an evaluation of selected environmental conditions associated with the identified portion of the property that was assessed at the time the work was conducted and is based on information obtained by and/or provided to Stantec at that time. (40 CFR 312.20(f)(2) requires that the Environmental Professional evaluate the thoroughness and reliability of provided information.) All information received from the client or third parties in the preparation of this report has been assumed by Stantec to be correct. Stantec assumes no responsibility for any deficiency or inaccuracy in information received from others.

If a service is not expressly indicated, do not assume it has been provided. If a matter is not addressed, do not assume that any determination has been made by Stantec in regard to it.

Conclusions made within this report consist of Stantec's professional opinion as of the time of the writing of this report; and are based solely on the scope of work described in the report, the limited data available and the results of the work. They are not a certification of the property's environmental condition.

This report relates solely to the specific project for which Stantec was retained and the stated purpose for which this report was prepared and shall not be used or relied upon by the client identified herein for any variation or extension of this project, any other project, or any other purpose.

This report has been prepared for the exclusive use of the client identified herein and any use of or reliance on this report by any third party is prohibited, except as may be consented to in writing by Stantec or as required by law or by the MSA. The provision of any such consent with the MSA. Stantec assumes no responsibility for losses, damages, liabilities, or claims, howsoever arising, from third party use of this report that was not granted by Stantec.

Project Specific limiting conditions are provided in Section 2.2.

The locations of any utilities, buildings and structures, and property boundaries illustrated in or described within this report, if any, including pole lines, conduits, water mains, sewers and other surface or sub-surface utilities and structures are not guaranteed. Before starting work, the exact location of all such utilities and structures must be confirmed by the client and Stantec assumes no liability resulting from damage to such utilities and structures.

The conclusions are based on the site conditions encountered by Stantec at the time the work. Accordingly, additional studies and actions may be required. As the purpose of this report is to identify selected site conditions which may pose an environmental risk; the identification of non-environmental risks to structures or people on the site is beyond the scope of this assessment. The findings, observations, and conclusions expressed by Stantec in this report are not an opinion concerning the compliance of any past or present owner or operator of the site which is the subject of this report with any Federal, state, provincial or local law or regulation.

This report presents professional opinions and findings of a scientific and technical nature. It does not and shall not be construed to offer a legal opinion or representations as to the requirements of, nor compliance with, environmental laws, rules, regulations, or policies of Federal, state, provincial or local governmental agencies. Issues raised by the report should be reviewed by client legal counsel.

Stantec specifically disclaims any responsibility to update the conclusions in this report if new or different information later becomes available or if the conditions or activities on the property subsequently change.

2.4 PERSONNEL QUALIFICATIONS

This Phase I ESA was conducted by, or under the supervision of, an individual that meets the ASTM definition of an Environmental Professional (EP). The credentials of the EP and other key Stantec personnel involved in conducting this Phase I ESA are provided in Appendix B.

3.0 USER-PROVIDED INFORMATION

ASTM E1527-13 describes responsibilities of the User to complete certain tasks in connection with the performance of "All Appropriate Inquiries" into the Property. The ASTM standard requires that the Environmental Professional request information from the User on the results of those tasks because that information can assist in the identification of RECs, CRECs, HRECs, or de minimis conditions in connection with the Property. Towards that end, Stantec requested that the User provide the following documents and information:

Description of Information	Provided (Yes / No)	Description and/or Key Findings
User Questionnaire	Yes	The questionnaires were returned but contained no Property specific information.
Environmental Liens or Activity Use Limitations	Yes	IP Athos, LLC provided preliminary title reports to Stantec for review. The preliminary title reports listed various easements for power lines, natural gas lines, water wells, and local, state, and federal access roads. Most notably, the preliminary title report indicated an easement to the war department (United States) for APN 811-122-001. This parcel overlaps the roadway leading to the former Desert Center Army Airfield (current Chuckwalla Raceway). In addition, a mechanics lien claim in the amount of $1,619.69 is associated with APN 811-150-001 and was filed by Pacific Agricultural Holding, Inc. No environmental liens or activity use limitations were identified in the Preliminary Title Reports provided.
Previous Environmental Permits or Reports Provided by User	Yes	The questionnaire indicate that certain reports were available. However, only one of the reports was a Phase 1 ESA report. That report is summarized in Section 4.4.6.
Purpose of the Phase I ESA	Yes	Due diligence

Stantec forwarded the ASTM recommended User Questionnaires to Ms. Marisa Mitchell of IP Athos, LLC. The completed User Questionnaires were returned to Stantec by Ms. Mitchell and are included in Appendix D.

The User provided information is included in Appendix D.

4.0 RECORDS REVIEW

The objective of consulting historical sources of information is to develop the history of the Property and surrounding area, in order to evaluate if past uses may have resulted in RECs. Physical setting records are evaluated to determine if the physical setting may have contributed to adverse environmental conditions in connection with the Property. During the review of historical records, Stantec attempted to identify uses of the Property from the present to the Properties first developed use. Stantec's research included the reasonably ascertainable and useful records described in this section.

4.1 PHYSICAL SETTING

A summary of the physical setting of the Property is provided in the table below with additional details in the following subsections

Topography:	The Property is located within the Mojave Desert Geomorphic Province and falls within portions of the Desert Center, Victory Pass, East of Victory Pass, Chuckwalla Mountains, and Corn Spring Quadrangles. The northern portion of the Property (Area A) slopes southeast while the southern portion of the Property (Areas B through F) slope northeast. The lowest lying areas are in the central and southeast portions of the Property.
Soil/Bedrock Data:	Soils in the Property vicinity are derived from Pleistocene-Halocene aged alluvium, lake, playa, and terrace deposits. Soils at the Property consist primarily of alluvial sand, silt, clay, and gravel.
Estimated Depth to Groundwater/ Estimated Direction of Gradient:	Ground water in the Property vicinity is expected to range between 70 and 90 feet bgsin the lower elevations, and deeper than 120 feet bgs in the higher elevations near I-10. No site-specific information was obtained from the records regarding gradient. However, as discussed in Section 4.1.3, groundwater is expected to generally flow east/southeast toward the Colorado River.
Note: Site-specific groundwater direction and depth can only be determined by conducting site-specific testing, which Stantec has not conducted.	

4.1.1 Property Topography and Surface Water Flow

Based on a review of available topographic maps, the Property is at an average elevation of approximately 570 feet above mean sea level (msl). The northern portion of the Property (Area A) slopes southeast while the southern portion of the Property (Areas B through F) slopes northeast.

The lowest lying areas are in the central and southeast portions of the Property at approximately 500 feet amsl. The highest elevations exist at approximately 800 feet amsl in the southern leg of the Property that extends south of I-10, toward the substation. Based on the topography, surface water on the Property infiltrates the ground surface or flows overland toward the lower lying areas in the central portions of the Property and eventually follows the regional gradient to the southeast. Groundwater is expected to follow this gradient.

4.1.2 Regional and Property Geology

The Property is located in Riverside County. The area is located within the Mojave Desert Geomorphic Province, which is characterized by an interior region of isolated mountain ranges separated by expanses of desert plains. In general, the province has an interior enclosed drainage and many playas. Two important fault trends control topography in the Mojave province, one being a prominent northwest/southeast trend and the other a secondary east-west trend (California Geological Survey [CGS], 2002). According to the Geologic Map of California, Needles Sheet, soils in the Property vicinity are derived from Pleistocene-Halocene aged alluvium, lake, playa, and terrace deposits. Soils at the Property consist primarily of alluvial sand, silt, clay, and gravel (CDMG, 1963).

The closest mapped fault is the Blue Cut Fault zone located approximately 10 miles northwest (CGS, 2010). According to official maps of California, the Property is not located within an Alquist-Priolo (AP) Earthquake Fault Zone boundary or a liquefaction zone (CDMG, 2000).

4.1.3 Regional and Property Hydrogeology

The Property is located within the Chuckwalla Valley Groundwater Basin. The basin is bound to the south by the consolidated rocks of the Chuckwalla, Little Chuckwalla, and Mule Mountains; to the west by the Eagle Mountains; to the east by the Mule and McCoy Mountains; and to the north by rocks of the Coxcomb, Granite, Palen, and Little Maria Mountains. Water-bearing units consist of consist of Pliocene to Quaternary age continental deposits that are divided into three formations - Quaternary alluvium, the Pinto Formation, and the Bouse Formation. The Quaternary alluvium aquifer is believed to be the most important in the area (Department of Water Resources [DWR], 2004). Groundwater in the Property vicinity is expected to range between 70 and 90 feet bgsin the lower elevations, and deeper than 120 feet bgs in the higher elevations near I-10. Groundwater contours for the basin suggest that groundwater flows from the north and west toward the gap between the Mule and McCoy Mountains near Blythe. As such, groundwater flow direction is believed to generally be to the east/southeast (DWR, 1979).

4.2 FEDERAL, STATE AND TRIBAL ENVIRONMENTAL RECORDS

A regulatory agency database search report was obtained from Environmental Data Resources Inc. (EDR), a third-party environmental database search firm. A complete copy of the database search report, including the date the report was prepared, the date the information was last updated, and the definition of databases searched, is provided in Appendix C.

Stantec evaluated the information listed within the database relative to potential impact to the Property, assessing the potential for impacts based in part on the physical setting. As part of this process, inferences have been made regarding the likely groundwater flow direction at or near the Property. As described in 4.1.3, the groundwater flow direction in the Property vicinity is generally toward the east/southeast. Observations about the Property and surrounding properties made during the Property reconnaissance are provided in more detail in section 5.

4.2.1 Listings for Property

No listings for the Property were identified in the EDR database review. However, based on Stantec's review of locational information for the Desert Center Airport, a portion of the Property extends into the former boundaries of the airport during the time period (early 1940s) when it was owned by the US Government and used for training exercises and maneuvers during World War II. Further discussion regarding this use is provided in Section 4.4.6.

4.2.2 Listings for Nearby Sites with Potential to Impact Property

Stantec assessed data presented in the environmental agency database search report to evaluate the potential for conditions to pose a REC, CREC, or HREC for the Property.

Based on this evaluation, the following individual facilities were identified as the most likely potential sources of impact to the Property. The basis for why each of the following listed databases does or does not create a REC for the property is also provided.

Listed Facility Name/Address	Database Listing	Distance/Direction from Property	REC? (YES / NO)
Desert Center Division Camp DTSC Case 80000236 No address	Envirostor, FUDS	>3 miles NE	No – based on EDR location information
This Desert Center Division Camp is a formerly used defense site (FUDS). The Envirostor database lists the site as having the potential for munitions and explosives of concern ("MEC") to remain from past military training exercises in the early 1940s. No specific locational information with regard to boundaries are provided in the EDR report but the case status is listed as "inactive - needs evaluation" as of July 1, 2005. Based on this listing and the lack of available data provided in the EDR report, Stantec researched militarymuseum.com, a website that includes archived information and maps on former military sites. According to militarymuseum.com, the Desert Center Division Camp consisted of a total of 34,000 acres used by the U.S. Army for training and as campsites. The installation reportedly included an encampment area with temporary housing structures, an evacuation hospital, and a maneuver area associated with the surrounding Desert Training Center (DTC). The DTC was a collection of desert camps in the region that were appointed by the United States Government with the intent to train military troops for desert warfare in North Africa. The entire camp was declared surplus in 1944. Approximately 28,700 acres of the former Desert Center Division Camp is currently under the control of the Bureau of Land Management (BLM). The remaining 5,300 acres are under private ownership, some of which are devoted to mining and grazing uses. Based on an			

Listed Facility Name/Address	Database Listing	Distance/Direction from Property	REC? (YES / NO)
archived map created by the U.S. Army Corps of Engineers (USACE) depicting the layout of the camp in 1943, the camp boundaries were approximately 1.5 miles west of the Property. However, the map shows that there were uses in the surrounding area that supported the camp. These uses include "Ammunition Depot No. 1" in the vicinity of Area A, and "18th Ordnance Battalion" near Areas D and E. The map is included in Appendix E of this Phase I ESA report. Based on the scale of the map, there is potential that these uses overlapped onto Areas A, D, and E. As a result, there is potential for MEC and unexploded ordnance ("UXO") to remain in these areas of the Property. The potential presence of UXO/MEC is considered an REC. Stantec recommends consultation with a certified MEC/UXO professional regarding assessment, remediation, and construction support. Stantec also recommends that precautions be taken during Property redevelopment activities to protect worker safety and follow necessary reporting requirements related to potential MEC and UXO. Specific recommendations related to this REC are provided in Sections 1.0 and 7.3.			
Desert Center Airport DTSC Case 33970010 No address	MCS, FUDS	Adjacent	Yes
A portion of the Desert Center Airport overlaps portions of Areas C and D of the Property. The Desert Center Airport is a formerly used defense site (FUDS). The airport was acquired by the US Government in 1942 and used for training exercises and maneuvers in the early 1940s, during World War II. It was declared as excess by 1945 and disposed to Riverside County in 1965. The former airport site consists of 1,958 acres and included base housing, storage and maintenance buildings, and fueling systems (including USTs). The FUDS database indicates that many of the buildings were used for various purposes in the years that followed the military's occupation of the airport, but that the fuel USTs were not used after the government disposed the site to Riverside County. Based on an archived airport map available online through militarymuseum.com, there were three USTs on the outskirts of the airport runways. One of these USTs appears to fall within the boundaries of the Property, as shown on Figure 3. The other two USTs were located at least 250 feet north of the Property boundary based on the scale of the archive map. The referenced map is included in Appendix E of this Phase I ESA report. Stantec has uncovered no evidence during this Phase I ESA that indicates the USTs were ever removed. Based on the past military use and the potential presence of a fuel UST on the Property, there are concerns related to contamination MEC, UXO, and former (or remnant) fueling systems. The potential presence of UXO/MEC and former fueling systems is considered an REC. Stantec recommends that a geophysical survey be performed to evaluate if the UST may potentially remain in place, and that a subsurface assessment be performed to evaluate if a release occurred at the reported UST location. Additionally, Stantec recommends consultation with a certified MEC/UXO professional regarding assessment, remediation, and construction support. It is also recommended that precautions be taken during Property redevelopment activities to protect worker safety and follow necessary reporting requirements related to potential MEC and UXO. Specific recommendations related to this REC are provided in Sections 1.0 and 7.3.			
Chuckwalla Valley Raceway 25300 Rice Road	FINDS, AST, NPDES	adjacent	No
This site is at the location of the former Desert Center Airport, an airport site that was used by the military for training exercises during World War II. The raceway does not enter into the Property boundaries, but the former Desert Center Airport did, as discussed briefly in this section and in further detail in Section 4.4.6. The Chuckwalla Valley Raceway is listed in the AST database with no specific data regarding the size or			

Listed Facility Name/Address	Database Listing	Distance/Direction from Property	REC? (YES / NO)
contents of ASTs. There are no spills or releases listed in the EDR report for this facility. The Chuckwalla Valley Raceway is also listed in the NPDES database as having a "construction permit" – most likely related to storm water management which was first issued in 2015, likely during the construction of the raceway. Due to the lack of a reported release, the Chuckwalla Valley Raceway does not represent an environmental concern to the Property.			
William W Heath DBA The Wate 25940 Rice Road	HIST UST	Adjacent	No
This site is listed under the historical UST (HIST UST) database as formerly being a gasoline station with four former fuel USTs. State Water Resources Control Board (SWRCB) documents were accessible through a link provided in the EDR report. According SWRCB documents that were prepared on June 1, 1988, this gasoline station facility reportedly operated one diesel tank (2,000-gallon), one unleaded gasoline tank (1,000-gallon), and two leaded gasoline tanks (1,000-gallon and 4,000-gallon). There is no installation date provided for any of the USTs and even though the EDR report lists them as "historical" there is no indication that they have been removed. Although this facility is adjacent to the Property and historically operated fueling systems, there are no reported spills or releases. Given intended use of the Property as a photovoltaic facility, the adjacent former gasoline station is considered unlikely to represent an environmental concern to the Property and no further assessment is recommended.			

The remaining listings in the database search report provided in Appendix C do not constitute a REC for the Property.

4.3 LOCAL/REGIONAL ENVIRONMENTAL RECORDS

Stantec checked the following sources to obtain information pertaining to Property use and/or indications of RECs in connection with the Property:

4.3.1 Local Health Department

Agency Name Contact Information	Finding
County of Riverside Department of Environmental Health (CRDEH), 4065 County Circle Dr, Room 104 Riverside, CA 92503 Telephone: (951) 358-5055	As of the date of this report Stantec has not received a response from the Riverside County Department of Environmental Health regarding an inquiry on archived records. However, sufficient information has been obtained through other third-party sources and online databases. In the event that records are made available at a later date that change the conclusions of this report, Stantec will issue an addendum summarizing the finding and any further recommendations.

4.3.2 State Departments

Agency Name Contact Information	Finding

Regional Water Quality Control Board (RWQCB), Colorado River Region 73-720 Fred Waring Drive, Suite 100 Palm Desert, CA 92260 Phone: 760-346-7491	A "Request for Records" form was submitted to RWQCB on April 9, 2018 for the following addresses: • 23405 Rice Road • 25850 Rice Road • 26440 Rice Road • 25250 Rice Road • 25300 Rice Road Records request were not submitted for the remaining properties/parcels since the RWQCB does not file public records using parcel numbers. No response has been received from the Regional Water Quality Control Board regarding potential records not on GeoTracker. However, sufficient information has been obtained through other third-party sources and online databases. In the event that records are made available at a later date that change the conclusions of this report, Stantec will issue an addendum summarizing the finding and any further recommendations. Additionally, Stantec searched the available documentation through the State Water Resources Control Board's Geotracker website (http://geotracker.swrcb.ca.gov) for the Property and the area immediately adjacent to the Property. The GeoTracker website shows no release sites within a one-mile radius of the Property. However, the Desert Center Airport is listed as a "Military Cleanup Site" that is under the oversight of the Department of Toxic Substances Control (DTSC) oversight. Further discussion of this site and other former military uses in the Property vicinity are discussed below and in Section 4.4.6.

Department of Toxic Substances Control 9211 Oakdale Avenue Chatsworth, CA 91311 Phone: (818) 717-6500 Website: http:// http://www.envirostor.dtsc.ca.gov/public	Stantec searched the DTSC Envirostor website for the Property and the surrounding area within one mile of the Property boundaries. Stantec identified the following sites that were historically used for by the military in the early 1940s as part of combat and flight training during World War II: • Desert Center Airport (case number J09CA034100) • Desert Center Division Camp (case number 80000236) No specific information was provided on Envirostor regarding the above sites other than a status of "Needs Evaluation" for Desert Center Division Camp, and a status of "Open – Inactive" for Desert Center Airport. A complete discussion regarding these two former military sites based on the EDR report and archived information available through militarymuseum.com, is provided in Section 4.2.2.
Division of Oil, Gas, and Geothermal Resources (DOGGR), District 4 4800 Stockdale Highway, Suite 100 Bakersfield, CA 93309 Well Finder Database Website: http://www.conservation.ca.gov	Stantec reviewed the Well Finder provided on the Department of Oil, Gas, and Geothermal Resources (DOGGR) website in an effort to evaluate if there are any known oil, gas, or geothermal wells in the Property vicinity. According to the Well Finder there are no oil, gas, or geothermal wells within 10 miles of the Property. Due to the lack of known wells at the Property or in the vicinity, Stantec considers it unlikely that oil, gas, or geothermal wells represent an environmental concern to the Property and recommends no further investigation regarding this issue.

4.3.3 Local Building and/or Planning Department Records

Agency Name, Contact Information	Findings
Riverside County Department of Building and Safety 4080 Lemon St, 9th Floor PO Box 1629 Riverside, CA 92502 Telephone: (951) 955-2021 http://rctlma.org/building/bs_records	Building department records were requested for addresses and parcels were there was evidence of present or past developed structures. These properties included: • 23405 Rice Road • 25850 Rice Road • 26440 Rice Road • 25250 Rice Road • APN: 807-690-025 (41750 Beekley Rd) • APN: 811-150-001 • APN: 810-110-001 • APN: 810-110-006 The results of the records search is summarized below. <u>26440 Rice Road</u>

Agency Name, Contact Information	Findings
	A permit was issued to the property owner in 1982 for the installation of a 1,000-gallon septic tank and leach line to the south of the onsite mobile home. The permit indicates that the property is served by a private well. A permit was also issued in 1984 for electrical work to support the well and in 1985 for the construction of a dining room and kitchen for a "labor camp". A permit was issued in 1986 for the "relocation of buildings". <u>25850 Rice Road</u> A permit was issued for electrical work related to a pump. A permit was issued for the demolition of a structure and the removal of a trailer. <u>APN: 807-690-025 (41750 Beekley Rd)</u> A permit was issued to the property owner in 1984 for the installation of a 750 -gallon septic tank and leach line. The location of the tank and leach line is not legible. The permit indicates that the property is served by a private well. <u>23405 Rice Rd</u> A permit was issued in 1979 for the installation of a septic system and well service. Another permit was later issued for the installation of a mobile home. An electrical permit was issued in 1997 to service an irrigation well. In the addition to the above records, Riverside County indicated that several more permits were issued for the two parcels that comprise Area F (reference on the permit as 27995 Corn Springs Road) related to the installation of solar arrays. However, these permits were either voided or expired.

4.4 HISTORICAL RECORDS REVIEW

4.4.1 Land Title Records/Deeds

A search for environmental liens and activity use limitations was not obtained from a third party source. However, IP Athos, LLC provided preliminary title reports to Stantec for the following addresses or APNs:

- 23405 Rice Road/APN: 807-91-004
- 25850 Rice Rd/APN: 811-260-013
- 26440 Rice Road/APN: 811-170-013
- 25250 Rice Road/APN: 811-142-005
- APN: 807-680-001 through -013
- APN: 807-690-001 through -004
- APN: 807-690-026 through -028
- APN: 807-690-011 through -025
- APN: 810-110-001
- APN: 810-110-006
- APN: 810-180-004
- APN: 810-180-005
- APN: 810-180-024
- APN: 811-122-002
- APN: 811-122-009
- APN: 811-130-010

- APN: 811-142-006
- APN: 811-142-015
- APN: 811-150-001
- APN: 811-150-002
- APN: 811-150-004
- APN: 811-170-002
- APN: 811-170-007
- APN: 811-170-008
- APN: 811-170-009
- APN: 811-180-001
- APN: 811-180-002
- APN: 811-180-003
- APN: 811-180-013
- APN: 811-190-001

The preliminary title reports listed various easements for power lines, natural gas lines, water wells, and local, state, and federal access roads. Most notably, the preliminary title report indicated an easement to the war department (United States) for APN 811-122-001. This parcel overlaps the roadway to the former Desert Center Army Airfield (current Chuckwalla Raceway). In addition, a mechanics lien claim in the amount of $1,619.69 is associated with APN 811-150-001 and was filed by Pacific Agricultural Holding, Inc. No environmental liens or activity use limitations were identified in the Preliminary Title Reports provided.

4.4.2 Aerial Photographs

Stantec reviewed historical aerial photographs provided by EDR. The general type of activity on a property and land use changes can often be discerned from the type and layout of structures visible in the photographs. However, specific elements of a facility's operation usually cannot be discerned from aerial photographs alone. The following table summarizes Stantec's observations of the reviewed historical aerial photographs. Due to file size, electronic copies of the aerial photographs are provided on compact disc in Appendix F.

Year	Observations, Property, and Adjoining Properties
1948	Aerial photographs were available for all areas of the Property. However, the photograph covering Area A was taken in very poor resolution which would make small feature indistinguishable. Based on what is discernable, Area A appears to be vacant land and there is no remnant remains of "Ammunition Depot No. 1" which was reported to be in this area based on the archived military maps that were discussed previously in Section 4.2.2 and provided in Appendix E. The photographs for the remainder of the Property are with clearer resolution. Area B is vacant desert land and there is no evidence of any specific use other that a paved roadway that connect Rice Rd (SR-177) to the Desert Center Airport (former Desert Center Army Air Field). The configuration of the airport is very clear and is in the shape of a ">" sign, identical to how the airport is depicted on the military map provided in Appendix E. When comparing the photograph to the military map, it is clear that Area C overlaps into an area of the former airport that included one of three fuel USTs. The northern boundary of Area D overlaps slightly with some of the taxi ways that branch to the south off the southern runway. The remainder of Area D appears to be vacant

Year	Observations, Property, and Adjoining Properties
	desert land. The other two fuel USTs noted on the military map appear to be outside of the boundaries of the Property (north boundary of Area D) by several hundred feet. Areas E and F appear to be vacant desert land with no observable use or structures. However, there is a discolored area of land amidst the otherwise vacant desert terrain that is within the proposed gen-tie line area that connects Areas D and E. This discolored area covers roughly ½ acre and is approximately 1,100 feet south of the southwest corner of Area D (approximately 1,400 feet north of the northwest corner of Area E. It is unclear whether this is a blemish in the photograph or is some surface disturbance. It should be noted a military map of the Desert Center Division Camp (Appendix E) indicates that the 18th Ordnance Battalion was located in this area in the early 1940s. NOTE: the referenced discolored area does not appear to be present in any subsequent photographs.
1956	Aerial photographs were available for all areas of the Property. However, similar to the 1948 photograph, the photograph showing Area A and the west end of Area B is in very poor resolution making small feature indistinguishable. Based on what is discernable, Area A and the west portion of Area B appear to be vacant land. Clearer photographs of the other areas of the Property show the remainder of Area B similar to the previous photograph – i.e. vacant desert land. Area C also appears similar to the previous photograph, including the configuration of the Desert Center Airport. Two small features appear to be located in the northeast portion of Area D. These features are too small to be distinguishable in use. Areas E and F appear to be vacant desert land. The discolored area within the proposed gen-tie between Areas D and E is no longer evident.
1968	This photograph is in poor resolution and only includes Areas B, D, E, and portions of C and F. The only visible features are the Desert Center Airport in Area C and agricultural row crops in the west portion of Area B, along Rice Rd (SR-177).
1979	Aerial photographs were available for all areas of the Property. However, the photographs are very "washed out" and light in color. There appears to be slight evidence of row crops on Area A and the west and central portions are lined with trees, likely for use as a wind break. The northwest portion of Area B (along Rice Rd) and a location in the south/southwest of Area B are row cropped. The remainder of Area B appears as vacant desert land. The northern runway of the Desert Center Airport that was closest to Area C appears to have been removed, although there remains surficial evidence of the former runway. The remainder of Area C appears as vacant desert land.

Year	Observations, Property, and Adjoining Properties
	Areas D, E, and F appears as vacant desert land.
1984	Aerial photographs were available for all areas of the Property. The majority of Areas A, B, C, and D were used for agriculture (row crops). Residential structures and the packing house in the western portion of Area B have been constructed. The gasoline service station along Rice Rd, and adjacent to the west side of Area B, has been developed. The irrigation pond, water well, and AST site along the northern boundary of Area D is visible. Areas E and F remain vacant undeveloped desert land.
1996	Aerial photographs were available for all areas of the Property. The configuration of the Property appears similar to the present day, except that agricultural activities appear to be active in Areas A, B, and D. The fish tanks and irrigation ponds in the west portions of Areas A and B appear to contain water. Area B includes all of the existing structures, including the numerous small houses that are located in the southwest portion. The Desert Center Airport near Area C appears to not be in use. Area E is vacant desert land. Area F is mostly vacant land with three irrigation ponds which are likely used to support for nearby agricultural activities to the west. The remainder of Area F is vacant desert land.
2005	Agricultural activities appear to have been abandoned in Areas A and D, as evident by visible row crops that are much thinner and brown when compared to the ongoing agricultural activities in Areas B and F. There are now eleven irrigation ponds and the current storage building and residences in the northwest and southern portions of Area F.
2010	The Property appears similar to the 2005 photograph except that The Chuckwalla Valley Raceway has been developed to the east of Area C. An asphalt paved access roadway passes through a small area in the east portion of Area C. In addition, row cropping is visible on portions of Area F.
2014	The Property and surrounding area appears identical to the 2010 photograph and consistent with observations made during the Property visit.

Name of aerial photograph source: Georeferenced Aerial Photographs provided by EDR.net.

4.4.3 City Directories

City directories were available for the Property and vicinity for the years of 1977 through 2010. The directories include addresses of various residences, irrigation companies, farms, and the existing Chuckwalla Valley Raceway between 1982 and 2010. Desert Enterprises Union 76, which is presumed to be the former gas station adjacent to Area B, is listed in the 1977 and 1982 directories with the address of 25940 Rice Road. Due to distance of the former fueling area (at least 160 feet) from the Property boundary, no further assessment is recommended.

4.4.4 Historical Fire Insurance Maps

Fire insurance maps were developed for use by insurance companies to depict facilities, properties, and their uses for many locations throughout the United States. These maps provide information on the history of prior land use and are useful in assessing whether there may be potential environmental contamination on or near the Property. These maps, which have been periodically updated since the late 19th century, often provide valuable insight into historical Property uses.

Due to the Property and surrounding areas being vacant, historical fire insurance maps are not available.

4.4.5 Historical Topographic Maps

Stantec reviewed historical topographic maps of the area to help identify past Property usage and areas of potential environmental concern.

No RECs were noted during our review of the topographic maps. However, several irrigation wells were noted across the Property. If not required to be left in place, the wells should be abandoned in accordance with state standards. Copies of the historical maps are provided in Appendix E. The following table summarizes the maps reviewed and our observations.

Year	Scale	Observations, Property, and Adjoining Properties
1943, 1943/1944	1:62,500	These topographic maps cover the Areas A, B, C, D, and E. No maps were available during this time period for Area F. The Property in these areas is mostly unlabeled and likely vacant desert land. Rice Road is labeled as "Parker Dam Highway" and the Desert Center Airport is labeled as "CAA Intermediate Landing Field". A well (presumed to be for irrigation) is labeled as "Gruendike Well" and is located in the vicinity of the eastern boundary of Area D. The roadway that is presently I-10 is illustrate but is unlabeled. A dry lake bed is illustrated to the northeast of Area D.
1947	1:50,000	The same level of coverage for the Property is provided on the 1947 set of topographic maps. There are no substantial changes to the Property other than the Desert Center Airport is labeled as "Military Reserve".
1952	1:62,500	This topographic map depicts Area F of the Property. There is no development in the area except for a dirt road that passes through the central portion of Area F and terminates approximately ¾ mile northeast of the Property a water well labeled "Sidewinder Well".

Year	Scale	Observations, Property, and Adjoining Properties
1963	1:62,500	This topographic map set depicts Areas A through E only. The Desert Center Airport is now labeled "Landing Field". Agricultural row cropping is illustrated along Rice Road in Area B. Two water wells are depicted on Area A and one on Area B and are consistent with some of the irrigation wells observed during the Property visit. A power line easement extends through Areas B and D in the same present-day alignment.
1983, 1986, 1987	1:24,000	This topographic map set depicts all areas of the Property. The maps illustrated approximately 4 water/irrigation wells in Area A, two in Area B, two in Area D, and one well in Area F. A trailer park is illustrated in the west portion of Area B along Rice Road. The airport is now labeled as "Desert Center Airport" and has only one runway that trends northeast-southwest. Several dikes have been constructed throughout the Area A, B, and C portions of the Property.
2002	1:50,000	This topographic map set depicts Areas A through E only. Two water wells are depicted in Area B and are consistent with some of the irrigation wells observed during the Property visit. Two irrigation ponds and some small structures are illustrated in the southwest portion of Area B, where packing house and residence with multiple fish tanks were noted during the Property visit. A power line easement extends through Areas B and D in the same present-day alignment.
2012	1:24,000	This topographic map set depicts all areas of the Property. There are six irrigation ponds in the southwest portion of Area A, and three irrigation ponds illustrated on Area F. These ponds were dry (except for one on Area F) but observable during the Property visit.

Name of topographic source: EDR Historical Topo Map Report, 5224816.4, 2018.

4.4.6 Other Historical Sources

Allstate Services Environmental, Inc (ASEI), 2005, Phase I Environmental Site Assessment, Vacant Property Located at Desert Center, APN# 811-170-007, 811-170-008, and 811-170-009, Desert Center, California, dated March 25.

This Phase I ESA was performed for the three above referenced parcels totaling approximately 108 acres of native desert land. The report concluded that there were no RECs related to the site parcels or the surrounding parcels.

5.0 PROPERTY RECONNAISSANCE

A visit to the Property and its vicinity was conducted by Dion Monge and Anne Perez on March 27 and 28, 2018. Access to the Property was assured by Marisa Mitchell of IP Athos, LLC. Email notification was provided current property owners that Stantec would be onsite. Stantec was unaccompanied during the Property visit. Figure 1 provides information about the Property and adjoining properties. Figures 2 through 5 show the location of potential areas of environmental concern. Photographs collected during the Property visit are included in Appendix A.

5.1 PROPERTY RECONNAISSANCE METHODOLOGY

The Property reconnaissance focused on observation of current conditions and observable indications of past uses and conditions that may indicate the presence of a RECs. The Property reconnaissance was conducted by vehicle on Bureau of Land Management BLM open roads and on foot in areas where there was no vehicle access either due to BLM restrictions, overgrown vegetation, or lose ground/sand. Areas travelled by foot were limited due to the size of the Property. Stantec utilized the following methodology to observe the Property:

- Traverse transects across the Property where accessible.
- Traverse the periphery of all structures on the Property where access was attainable.
- Stantec was unable to observe some areas that were obstructed by tall weeds and scrub brush vegetation.
- Areas where there were indications of potential structures or uses of concern based on aerial photographs and observations in the field were specifically visited and evaluated.
- Open areas of native desert land for which there was no evidence of current or prior use were generally photograph but not traversed by foot in its entirety. These areas include most of Area E, the southeast portion of Area B, and longer gen-tie line segments through native desert land in Areas A, D, and E.

Weather conditions during the visit to the Property were windy and warm. Other than warm mid-day temperatures, there were no significant weather-related property access restrictions encountered during the reconnaissance visit.

5.2 GENERAL DESCRIPTION

Property and Area Description:	The Property is near an unincorporated area of Riverside County known as Desert Center. Desert Center is located approximately 40 miles west of Blythe near the confluence of I-10 and Rice Road (SR-177). The Property consists of approximately 3,388 acres of developed and undeveloped land. The surrounding properties also consist mostly of vacant land. However, residential properties and agricultural land are scattered throughout the area. A photovoltaic facility is located to the northwest and the

	Chuckwalla Raceway (formerly Desert Center Airport) is located adjacent to portions of the Property (Areas B, C, and D).
Property Operations.	Property operations include agricultural farmland, residential, a shooting range, and former commercial uses (packing/shipping warehouse or maintenance buildings) related to the aforementioned agricultural uses.
Structures, Roads, Other Improvements:	<u>Area A</u> As indicated by the owner, the parcels comprising Area A have been abandoned but included the following structural remains: • Two abandoned residential trailers • Greenhouse • Basketball court • Forty-eight (48) in-ground, open top concrete fish tanks (roughly 4 feet deep and 18 feet in diameter) • At least two irrigation wells • Multiple dry irrigation basins <u>Area B</u> Area B appeared to be vacant as no ongoing agricultural, commercial, or residential uses were observed. However, the following structures were noted Area B (see Figure 3): • At least 6 residential and related buildings (garages and storage sheds) • A maintenance/shop building • A former packing warehouse • Twenty-seven (27) in-ground, open top concrete fish tanks (roughly 4 feet deep and 18 feet in diameter) • A cluster of approximately sixty-nine (69) small abandoned houses staged in rows • At least two irrigation wells • Multiple dry irrigation basins • A suspect water pumping station • Remnant irrigation equipment • A segment of a power line easement • Abandoned dilapidate residence (southeastern portion of Area B) <u>Area C</u> Area C consists of vacant land with a few mulch piles. An asphalt pave roadway belonging to the Chuckwalla Valley Raceway is located in the southeast corner of Area C.

	Area D Past agricultural activities have been abandoned. Remaining structures include a former fuel AST, several drums, an irrigation well, and chain link fencing. The fuel AST appeared to be leaking and is discussed further in Section 5.7. Area E A power line easement crossed over the proposed gen-tie line that connects Areas E and F. Interstate-10 (I-10) crosses through the southernmost proposed gen-tie line that connects the Property to the substation south of the freeway. Area F Area F is developed with residential structures and warehouse buildings that support ongoing agricultural operations (palm tree grove). the following structures were noted Area F (see Figure 5): • Two residential buildings • A warehouse building that is used for storage of farming equipment • A storage trailer associated with a shooting range • Generator sheds • At least one irrigation well • Multiple dry irrigation basins • One irrigation pond containing water
Property Size (acres):	Approximately 3,388 acres
Estimated % of Property Covered by Buildings and/or Pavement:	Less than 1% of the Property is occupied by structures or pavement.
Observed Current Property Use/Operations:	Current Property operations include limited agricultural and residential uses in Areas B and F. A shooting range, which appears to still be used, is located in Area F. A portion of Area C is developed with the entrance road for the Chuckwalla Raceway. All former residential and agricultural operations in Areas A and D have been abandoned. Area E is vacant desert land with the exception of power lines that cross through an area proposed for a gen-tie line.
Observed Evidence of Past Property Use(s):	Evidence of past Property operations include agricultural row cropping, residences, a shooting range, and commercial uses

	(packing/shipping warehouse or maintenance buildings) related to the aforementioned agricultural uses.
Electric Utility:	Southern California Edison

5.3 HAZARDOUS SUBSTANCES AND PETROLEUM PRODUCTS

The following table summarizes Stantec's observations during the Property reconnaissance.

Observations	Description/Location
Hazardous Substances and Petroleum Products as Defined by CERCLA 42 U.S.C. § 9601(14):	Area A Two approximately 8,000-gallon petroleum tanks were observed near the west-central portion of Area A. It is unclear if the tanks contained product or were empty. The tanks were situated on dirt and no staining or odors were observed. A photograph of the tanks is provided in Appendix A. Area B Several 55-gallon drums were observed throughout Area B, as discussed under the "Drums" heading below. Area C None observed Area D An AST and several drums were observed in the northern portion of Area D. The AST is discussed further in Section 5.7 and the drums are discussed under the "Drums" heading below. Area E None observed Area F One AST containing fuel is located in the western portion of Area F and two empty ASTs were located in the north-central portion of Area F. In addition, several empty plastic totes, two metal ASTs (~250-gallons), and other farming related equipment was observed along with, around the exterior perimeter of the warehouse building in the central portion of Area F. These ASTs are discussed further in Section 5.7
Drums (≥ 5 gallons):	Area A

Observations	Description/Location
	A 55-gallon drum was observed in the west-central portion of Area A, near the green house. No confirmation could be made regarding whether the drum was full or empty due to a dense overgrowth of thorny vegetation. The exterior of the drum was stained but the surrounding soil exhibited no staining or evidence of a release. Due to the absence of stained soil around the drum, no further assessment is recommended. However, Stantec recommends that the drum be properly disposed of in accordance with applicable laws and regulations. A photograph of the drum is provided in Appendix A. <u>Area B</u> • Six (6) 55-gallon drums were contained in a concrete sump located along the east wall inside of the former packing warehouse. • One (1) 55-gallon drum was located in the northwest portion of Area B near Rice Road. The drum was surrounding by approximately 25 square feet (5 feet by 5 feet) of visibly stained soil. • One (1) 55-gallon drum with no lid was tipped over near a concrete pad and irrigation well location observed in the central portion of Area B. Slight staining was noted on the soil immediately north of the concrete pad. Stantec recommends that soil sampling be performed at the location of the packing warehouse sump and the two areas where soil staining was noted around the 55-gallon drums in order to assess whether TPH and VOCs are present above regulatory thresholds. <u>Area C</u> None observed <u>Area D</u> Several 55-gallon drums were located within a fenced concrete slab containing an irrigation well. All of the drums were rusted and two of them were tipped over. Staining was observed on the concrete slab leading toward exposed soil to the north of the slab and adjacent to a 12,000-gallon AST which also exhibited staining.

Observations	Description/Location
	Stantec recommends that soil sampling be performed at the location of the drums and the AST (as mentioned in Section 5.7) in order to assess whether TPH and VOCs are present in soil above regulatory thresholds. <u>Area F</u> None observed
Strong, Pungent, or Noxious Odors:	<u>Area D</u> Strong petroleum hydrocarbons odors were observed around the east end of the AST located in the northern portion of Area D. It also appeared that a mound of sand had deliberately been placed at the east end of the tank for the purpose of slowing the release of fuel. Recommendations for further assessment in the area are provided in Section 5.7.
Pools of Liquid:	None observed.
Unidentified Substance Containers:	<u>Area A</u> A 5-gallon bucket containing a small quantity of unknown liquid was observed in close proximity to the drum. No staining or evidence of a release was noted. Due to the absence of stained soil around the drum, no further assessment is recommended. However, Stantec recommends that the drum be properly disposed of in accordance with applicable laws and regulations. As discussed under the "Drums" heading above, several drums were located elsewhere throughout the Property. None of the drums were labeled. Stantec recommends that the drums be removed and properly disposed of in accordance with applicable laws and regulations prior to Property redevelopment activities. Further assessment, as deemed necessary, is discussed in applicable sections of this report.
PCB-Containing Equipment:	Pole-mounted electrical transformers were observed at various locations where power lines passed through the Property. The transformers appeared in good condition with no evidence of a release.
Other Observed Evidence of Hazardous Substances or Petroleum Products:	None observed other than what was contained in the storage tanks and 55-gallon drums that were discussed previously.

5.4 INTERIOR OBSERVATIONS

Interior portions of existing and abandoned residential structures were not observed due to privacy and safety considerations but are anticipated to be in line with typical residential uses. The only commercial structures at the Property were in Areas B and F. Interior inspection of these structures are summarized in the following table.

Observations	Description
Heating/Cooling Method:	None observed.
Surface Stains or Corrosion:	None observed.
Floor Drains and Sumps:	Area B A concrete sump is located along the east wall inside of the former packing warehouse. The sump contains six 55-gallon drums. The drums were tightly packed within the sump and no observation of the sump bottom could be made. As mentioned in Section 5.3, Stantec recommends further assessment/sampling for contaminants of concern at the location of the packing house sump. No other floor drains or sumps were observed at the Property.
Other Interior Observations:	Area B A former packing house and small maintenance building were observed in the west portion of Area B. The former packing house contained a large storage area, a cold storage room, office area, and shipping dock. Multiple remnant produce boxes were observed in the former storage areas. A sump was observed inside the building along the east wall, as discussed under the "Floor Drains and Sumps" section above. Area F An approximate 2,400 square foot warehouse building is located in the west-central portion of Area E. The building is used for storage of irrigation equipment (piping, pipe glue, etc) and two small all-terrain vehicles (ATVs) used to support agricultural operations. A work bench was located along the north wall of the building.

5.5 EXTERIOR OBSERVATIONS

Stantec made the following observations during the site reconnaissance of exterior areas of the Property and/or identified the following information during the interview or records review portions of the assessment:

Observations	Description
On-site Pits, Ponds, or Lagoons:	Several irrigation ponds were observed in Areas A, B, and F. The ponds in Areas A and B were dry and no longer in use. Certain irrigation ponds in Area F were still in use by ongoing agricultural operations. The irrigation ponds are not considered an environmental concern.
Stained Soil or Pavement:	Area B One (1) 55-gallon drum was located in the northwest portion of Area B near Rice Road. The drum was surrounding by approximately 25 square feet (5 feet by 5 feet) of visibly stained soil. One (1) 55-gallon drum with no lid was tipped over near a concrete pad and irrigation well location observed in the central portion of Area B. Slight staining was noted on the soil immediately north of the concrete pad. Area D Several 55-gallon drums were located within a fenced concrete slab containing an irrigation well. All of the drums were rusted and two of them were tipped over. Staining was observed on the concrete slab leading toward exposed soil to the north of the slab and adjacent to a 12,000-gallon AST which also exhibited staining. Stantec recommends that soil samples be collected at areas were staining was observed near the drums and AST in Areas B and D. Area F An approximate 8,000-gallon fuel AST with a dispenser pump was observed in the west-central portion of Area F. The AST and dispenser pump were within a concrete secondary containment area. Only minimal staining was noted on the concrete floor of the containment area. No stained or odorous soil was observed on surfaces outside of the secondary containment structure. Given that there was no evidence of a release to soil around the AST, no further assessment is recommended. No stained soil or pavement was observed in the remaining areas of the Property
Stressed Vegetation:	None observed.

Observations	Description
Waste Streams and Waste Collection Areas:	None observed.
Solid Waste Disposal:	Solid waste disposal consisted of piles containing primarily construction debris, wood, and discarded irrigation lines and irrigation well casing. The construction debris was observed primarily in the west-central portion of Area A and southwest portion of Area B. Discarded irrigation lines were scattered through portions of Areas A, B, D, and F that were, or are currently used for agriculture. Stantec recommends that the debris is properly disposed prior to the proposed Property development. Areas containing construction debris should be sampled concurrently with an asbestos and lead based paint survey, as recommended in Sections 8.1 and 8.2.
Potential Areas of Fill Placement:	No mounds, piles or depressions suggesting the placement of fill material were observed on the Property.
Wastewater:	No exterior wastewater discharge was observed.
Stormwater:	None observed.
Wells:	At least 7 irrigation wells were observed at the Property. Stantec recommends that the wells be abandoned in accordance with applicable regulations unless the wells are intended to be used by the proposed development.
Septic Systems:	No septic tanks were observed during the Property reconnaissance. However, Riverside County Building Department records (Section 4.3.3) indicate that septic tanks and leach field were permitted for 26440 Rice Road, 23405 Rice Rd, and APN: 807-690-025 (41750 Beekley Rd). Since the septic tanks were associated with the former residential mobile homes, Stantec recommends no further assessment.
Other exterior observations	Exterior observations at the Property included structures and equipment related to former and current agricultural, residential, and commercial uses. Exterior observations different from these uses are described below: <u>Area F</u> A large shooting range was observed in the east-central portion of Area F, as shown on Figure 5. A second smaller shooting range was observed approximately 350 feet southwest of the large range. Heavy metals associated with spent bullet casings are sometimes found to accumulate in shallow soils at shooting ranges. As a

Observations	Description
	result, Stantec recommends that shallow soil sampling for lead copper and zinc be performed throughout the areas used as shooting ranges to evaluate if concentrations exceed regulatory thresholds or hazardous waste levels.

5.6 UNDERGROUND STORAGE TANKS/STRUCTURES

Existing USTs:	No visible evidence (fill pipes, vent pipes, dispensers, surface patches), which would indicate the presence of USTs, was discovered during the site reconnaissance.
Former USTs:	No visible evidence (fill pipes, vent pipes, dispensers, surface patches), which would indicate the presence of USTs, was discovered during the site reconnaissance. However, there were two fuel tanks in the west-central portion of Area A and two fuel tanks in Area F that may have at one time been USTs that were removed and now stored above ground. Further discussion and recommendations for further assessment are provided in Section 5.7.
Other Underground Structures:	None observed.

5.7 ABOVEGROUND STORAGE TANKS

Existing ASTs:	An approximately 12,000-gallon AST was observed in the northern portion of Area D (Figure 3) adjacent to fenced enclosure containing an irrigation well and several drums. Staining and strong petroleum hydrocarbons odors were observed around the east end of the tank. It also appeared that a mound of sand had deliberately been placed at the east end of the tank for the purpose of slowing the release of fuel. Stantec recommends that soil samples be collected at the east end of the tank where staining and odors were observed. An approximate 8,000-gallon fuel AST with a dispenser pump was observed in the west-central portion of Area F. The AST and dispenser pump were within a concrete secondary containment area. Only minimal staining was noted on the concrete floor of the containment area. No stained or odorous soil was observed on surfaces outside of the secondary containment structure. Given that there was no evidence of a release to soil around the AST, no further assessment is recommended. Stantec recommends that the AST be removed and properly disposed of in accordance with applicable regulations. In addition, upon removal of the tank during Property demolition activities, Stantec recommends that the tank be inspected for any signs of a release. If any impacted soil or leaks are observed, Stantec should be contacted for further assessment.

	As mentioned in Section 5.6, there were two fuel ASTs in the west-central portion of Area A and two fuel ASTs in Area F that were being stored above ground (Appendix A). The tanks were positioned on their sides, not on plastic, and there was no secondary containment. The tanks ranged from approximately 8,000 to 10,000-gallons in capacity. It is unclear whether these tanks were formerly USTs that were removed and are now just staged onsite, or whether these tanks originally functioned as ASTs. One of the tanks in Area F was labeled "Empty". Since there was no fuel dispensing equipment related to the three remaining ASTs, it is unlikely that they are still being used for fuel storage. No staining or odors were associated with these ASTs. Given that there was no evidence of a release to soil around the ASTs, no further assessment is recommended. However, Stantec recommends that the ASTs be removed and properly disposed of in accordance with applicable regulations. In addition, upon removal of the tanks during Property demolition activities, Stantec recommends that the tank be inspected for any signs of a release. If any impacted soil or leaks are observed, Stantec should be contacted for further assessment. Several empty plastic totes and two metal ASTs (~250-gallons) were being stored, along with other farming related equipment, around the exterior perimeter of the warehouse building in the central portion of Area F. This location of the plastic totes and ASTs does not appear to be their original location when they were in use. No staining or odors were observed in connection with the totes and ASTs. As a result, no further investigation is recommended.
Former ASTs:	No visible evidence (fill pipes, vent pipes, dispensers, surface stains), reports, or other evidence of the former presence of ASTs was discovered during this Phase I ESA.

5.8 ADJOINING PROPERTIES

5.8.1 Current Uses of Adjoining Properties

Adjoining properties consisted primarily of native desert land, residential properties, agricultural properties, and a limited amount of commercial businesses. Commercial businesses of note that are adjacent to the Property are discussed below.

<u>Chuckwalla Raceway (Former Desert Center Airport)</u>
The Property surrounds the Chuckwalla Raceway property and therefore is adjacent to the east of Area B, south of Area C, and north of Area D. Stantec observed no environmental concerns associated with the raceway. However, the raceway was historically developed as the Desert Center Airport and used in the early 1940s by the US Government to support activities related to the Desert Training Center – a collection of combat training camps designed to prepared troops

for desert warfare in North Africa during World War II. Further discussion of the airport and potential environmental issues related to this use is discussed in Section 4.4.6.

5.8.2 Observed Evidence of Past Uses of Adjoining Properties

Evidence of past uses on adjoining properties consisted of dilapidated residential structures, remnant agricultural crops, and abandoned commercial structures. Past commercial businesses of note that are adjacent to the Property are discussed below.

Former Gasoline Station

A former gasoline station is located at 25940 Rice Road and adjacent to the west of Area B. There are no reported releases associated with the former service station. The dispenser pumps and vent lines have been removed but the former dispenser canopy remains. There is no evidence of where the USTs were located, and it is unclear whether the USTs have been removed. However, the former service station property is more than 3 acres and there is a distance of at least 160 feet between the fuel dispensing area and the nearest Property boundary. Due to the absence of a reported release, distance of the fuel dispensing area to the Property boundary, and intended use of the Property, no further assessment is recommended.

5.8.3 Pits, Ponds, or Lagoons on Adjoining Properties

As viewed from the Property and/or from public rights-of-way, Stantec made the following observations about the presence of pits, ponds, and lagoons on adjoining properties:

NORTH	None observed.
SOUTH	None observed.
EAST	A dry, unused irrigation pond was observed on the adjoining property to the east of Area D.
WEST	None observed.

5.9 OBSERVED PHYSICAL SETTING

Topography of the Property and Surrounding Area:	The Property slopes toward a large regional drainage that trends northwest to southeast between Area A and Areas B through F. Therefore, Area A slopes to the south/southeast. Areas B through F of the Property slope to the north/northeast.

6.0 INTERVIEWS

The AAI final rule requires that a Property interview be conducted with the owner or Property occupants that are most familiar with the Site. Interviews with available parties are discussed below.

Name and Phone Number	Associated Address or Parcel Number(s)	Findings
Tak Kuen Mau (626) 215-9692	23405 Rice Road (Area A)	Mr. Mau was interviewed by Stantec via telephone on March 26, 2018. Mr. Mau stated that the Property has been vacated for approximately 7 years and that he has no knowledge of chemical storage or fuel tanks that he is aware of. He indicated that there are several concrete fish tanks onsite and that the parcels were historically used for agricultural crop cultivation. Mr. Mak mentioned that he has never heard of nor found any munitions debris at the parcel.
Micky Grana (760) 275-3883	811-122-009, 811-142-015, 811-130-010 & 811-150-002 (portion of Area C)	Mr. Grana was interviewed by Stantec via telephone on March 26, 2018. Mr. Grana said that he was not aware of any fuel tanks or environmental issues associated with the Property parcels. However, he did indicate that he was aware that army formerly occupied the Desert Center airstrip that is currently owned and operated by Chuckwalla Valley Raceway. Mr. Grana mentioned that a full-time project monitor was required during earth moving when raceway was developed in order to monitor the site for potential munitions debris.
Lorraine Lazerson (562) 760-1687	26440 Rice Road (portion of Area B)	Ms. Lazerson was interviewed by Stantec via telephone on March 26, 2018. She indicated that she has only been familiar with the property for 1 year but that the structures at the west end of her property will remain and are not being sold. Ms. Lazerson is not aware of environmental issues or fuel tanks at the property. She indicated that the prior use was an asparagus farm and fish farm (concrete ASTs),

Om Garg (714) 273-0402	25850 Rice Road (portion of Area B)	Mr. Garg indicated that the property was formerly used for agriculture (row crops) and that he knows of no environmental issues related to the property or the surrounding area.
Duane Young (760) 347-7906	810-110-001 & 810-110-006 (Area F)	Mr. Young indicated that the property was still in use as a palm tree farm. He indicated that the warehouse building has the appearance of a maintenance shop but has only ever been used for storage since the time it was constructed. He is not aware of any USTs or other subsurface structures. Mr. Young was not aware of any environmental issues at the Property or the surrounding area.
Raymond Paglia (702) 592-7400	811-170-002 & 811-180-001	Mr. Paglia was interviewed by Stantec via telephone on March 26, 2018. Mr. Paglia inherited the property was inherited and that he has never visited the area. He mentioned that his parents purchased the property from the US government and has been paying taxes on it since. He does not believe it has been used for any specific purpose. Note: these parcels were historically part of the south end of the Desert Center Army Airfield.

7.0 DATA GAPS

The federal AAI rule [40 CFR 312.10(a)] and ASTM E1527-13 identify a "data gap" as the lack or inability to obtain information required by the standards and practices of the rule despite good faith efforts by the Environmental Professional or the User.

Any data gaps resulting from the Phase I ESA described in this report are listed and discussed below.

Gap	Discussion
Deletions or Exceptions from Scope of Work Referenced in Section 1:	None.
Weather-Related Restrictions to Site Reconnaissance:	None.
Facility Access Restrictions to Site Reconnaissance:	None.
Other Site Reconnaissance Restrictions:	Due to the potential presence of sensitive plant and animal species in the area, certain areas could not be accessed by vehicle and had to be traversed by foot. As a result, Stantec made a concerted effort to traverse specific areas (i.e. areas with debris, signs of surface disturbance, or structures) by foot to obtain a general understanding of Property conditions. However, it should be noted that not all areas that appeared as vacant desert land were traversed due to the Property size and time constraints. The areas not traversed are expected to be undeveloped desert land.
Data Gaps from Environmental Records Review:	No Preliminary Title Report provided.
Data Gaps from Historical Records Review:	As of the date of this report Stantec has not received a response from the Riverside County Department of Environmental Health regarding an inquiry on archived records. Additionally, no response has been received from the Regional Water Quality Control Board regarding potential records not on GeoTracker. However, sufficient information has been obtained through other third-party sources and online databases. In the event that records are made available at a later date that change the conclusions of this report, Stantec will issue an addendum summarizing the finding and any further recommendations.
Data Gaps from Interviews:	Interviews were not conducted with owners of properties that are vacant desert land, or agricultural land with no structures.
Other Data Gaps:	None.

8.0 CONCLUSIONS

We have performed a Phase I ESA in conformance with the scope and limitations of ASTM Practice E-1527-13 and the requirements of AAI for the "Property". Any exceptions to, or deletions from, this practice are described in the Data Gaps section of this report. This assessment has revealed no evidence of recognized environmental conditions (RECs) in connection with the Property except for the following:

- **Munitions and Explosives of Concern and Unexploded Ordnance**. There are two formerly used defense sites (FUDS) in the vicinity that overlap into areas of the Property. Historical documentation obtained through the Department of Toxic Substances Control (DTSC) Envirostor website indicate that the Desert Center area was used by the U.S. Government for military training in the early 1940s (World War II). These two sites are known as the Desert Center Division Camp and the Desert Center Army Airfield (formerly the Desert Center Airport). Historic hand drawn maps of these FUDS sites are included in Appendix E and a detailed discussion of each site is provided in Section 4.2.2. The Envirostor database lists these sites as having the potential for munitions and explosives of concern ("MEC") and Unexploded Ordnance ("UXO") remaining from past military training exercises.

  Records indicate that the area approximately 1.5. miles west of Rice Road (SR-177) was occupied by the Desert Center Division Camp and included an encampment area with temporary housing structures, an evacuation hospital, and a maneuver area associated with the surrounding Desert Training Center (DTC). The DTC was a collection of desert camps in the region that were appointed by the U.S. Government with the intent to train military troops for desert warfare in North Africa. Although the Desert Center Division Camp was approximately 1.5 miles west of Rice Road, an archive map retrieved from militarymuseum.com shows that the surrounding area, outside of the camp boundaries, was also used to support the camp. The uses include "Ammunition Depot No. 1" in the vicinity of Area A, and "18th Ordnance Battalion" near Areas D and E.

  The Desert Center Army Airfield occupied the former Desert Center Airport and present-day Chuckwalla Valley Raceway (Figure 3). The former airport site consisted of 1,958 acres and included two main runways, taxiways, base housing, storage and maintenance buildings, and fueling systems. The western portion of the former Desert Center Army Airfield overlaps onto the east half of Area C and into the northern parcels of Area D. While it does not appear to overlap with Area B, the former airfield is in close proximity to it. Therefore, undocumented military activities in Area B cannot be ruled out.

  Based on past conversations with the DTSC and United Stated Army Corps of Engineers (USACOE) on similar sites in the region, Stantec recommends the following with regard to the potential existence of UXO and MEC:

- Consultation and guidance from a certified MEC/UXO professional to evaluate the appropriate course of action and associated costs related to assessment, remediation, and construction support;
- Where ground disturbance work is involved, contractors should be OSHA HAZWOPER-trained in accordance with standard 29CFR 1910.120 and hold a current certification;
- Where ground disturbance work is involved, contractors should be trained in identifying UXO/MEC;
- If suspected munitions are encountered at any point by any onsite individual, the "3R's of Explosives Safety" should be followed. The "3R's" include:
  - Recognize – when something may be a munition and the dangers involved.
  - Retreat – do not touch the potential munition and carefully leave the area.
  - Report – immediately report the finding to local law enforcement.

NOTE: Based on an interview conducted with Mr. Micky Grana of Chuckwalla Valley Raceway, a full-time certified UXO technician was required to monitor the site for potential munitions debris during earth moving activities when the raceway was developed. It should be anticipated that such measures may be required by the enforcing agency (DTSC, USACOE, or Riverside County) during Property redevelopment due to the FUDS designation. However, at a minimum the above recommendations would apply.

- **Former (Areas A, B, and D) and Current Agricultural Uses (Area F).** Areas A, B, and D were farmed with row crops since at least 1979 but appeared abandoned during Stantec's Property reconnaissance. Aerial photographs show dry row crops and irrigation ponds in these areas by the middle to late 2000s. Area C appears to have been dry farmed in the 1980s and 1990s. Area F is actively farmed with numerous rows of palm trees.

  The former and current use of the Property for agricultural purposes is considered a REC due to the potential for residual pesticides and metals-based herbicides (arsenic and lead) to persist in soils above regulatory thresholds or hazardous waste levels. As a result, Stantec recommends that shallow soil sampling be performed throughout Areas A, B, D, C, and F to evaluate if organochlorine pesticides, lead, and arsenic concentrations exceed regulatory thresholds or hazardous waste levels.

- **Secondary Containment Sump and Drum/Oil Stained Areas (Area B).** A former produce packing house is located in the southwest portion of Area B. Six (6) 55-gallon drums were contained in a concrete sump located along the east wall, inside the former packing warehouse.

  To the north of the packing warehouse location, along Rice Road, one (1) 55-gallon drum was observed. The drum was surrounded by approximately 25 square feet (5 feet by 5 feet) of visibly stained soil. Additionally, one (1) 55-gallon drum with no lid was tipped over near a concrete pad and irrigation well location observed in the central portion of Area

B. Slight staining was noted on the soil immediately north of the concrete pad. Each of the three areas are illustrated on Figure 3.

Stantec recommends that shallow soil sampling be performed at the location of the packing warehouse sump, and at the two areas where soil staining was noted around the 55-gallon drums, in order to assess whether TPH and VOCs are present above regulatory thresholds.

- **Underground Storage Tank (Area C)**. As discussed above, the former Desert Center Army Airfield operated fueling systems which included underground storage tanks ("USTs"). Based on an archived airport map reviewed by Stantec, there were three USTs on the outskirts of the airport runways. The referenced map is included in Appendix E of this Phase I ESA report. One of these USTs appears to have been located within the eastern portion of Area C at the Property, as shown on Figure 3. The other two USTs were located at least 250 feet north of the Area D Property boundary based on the scale of the archived map. The FUDS database vaguely suggests that the fuel USTs were not used after the government transferred the site to Riverside County in 1965. Stantec has uncovered no evidence during this Phase I ESA that indicates the USTs were ever removed.

  The potential presence of a former UST on the Property (Area C) is considered a REC. Stantec recommends that a geophysical survey be performed to evaluate if the UST may potentially remain in place. In addition, Stantec recommends a subsurface assessment (soil sampling) be performed to evaluate if a release occurred at the reported UST location.

- **Leaking Aboveground Storage Tank ("AST") and Drum/Oil Stained Area (Area D)**. An approximate 12,000-gallon AST was observed in the northern portion of Area D (Figure 3) adjacent to a fenced enclosure containing an irrigation well and several 55-gallon drums. Staining and strong petroleum hydrocarbon odors were observed around the east end of the AST. It also appeared that a mound of sand had deliberately been placed at the east end of the tank for the purpose of slowing the release of fuel leaking from the tank. In addition, several of the 55-gallon drums were tipped over and stained pavement was observed that extended off of the concrete pad toward the location of the AST. Stantec recommends that soil samples be collected at the east end of the AST and immediately north of the concrete pad where staining and odors were observed.

- **Shooting Ranges (Area F).** A large shooting/gun range was observed in the east-central portion of Area F, as shown on Figure 5. A second shooting range was observed approximately 350 feet southwest of the large range. Heavy metals associated with spent bullet casings are sometimes found to accumulate in shallow soils at shooting ranges. As a result, Stantec recommends that shallow soil sampling for heavy metals be performed throughout the two areas used as shooting ranges to evaluate if metals concentrations exceed regulatory thresholds or hazardous waste levels.

Stantec identified the following non-ASTM environmental issue associated with the Property:

- **Lead Based Paint (LBP).** With the exception of the residential and commercial structures in Area F, the Property structures were built prior to 1977. Accordingly, Stantec recommends an LBP survey at the Property to identify the condition of painted surfaces and whether the paint would be classified as LBP based on lead content. All LBP should be removed from the Property prior to construction/demolition activities with the potential to disturb painted surfaces, in accordance with all applicable laws.

- **Asbestos Containing Materials (ACMs).** Several residential and commercial buildings are located throughout the Property. In addition, a pile of construction debris was located in the southwest portion of Area A that contained plastered and wall board, among other construction materials. Demolition or partial demolition of any structure, or disposal of construction debris, requires compliance with the National Emission Standards for Hazardous Air Pollutants (NESHAP) in accordance with the South Coast Air Quality Management District (SCAQMD) Rule 1403 (Asbestos Demolition and Removal). Therefore, Stantec recommends that a pre-demolition survey be performed for all Property structures and any debris piles containing suspect ACM.

Although not considered a REC, the following items of note were identified during this Phase I ESA:

- **Indistinguishable Surface Feature, 1948 Aerial Photograph.** A discolored area of land amidst the otherwise vacant desert terrain was noted on the 1948 aerial photograph within the proposed gen-tie line area that connects Areas D and E. This discolored area covers roughly a ½ acre and is approximately 1,100 feet south of the southwest corner of Area D (approximately 1,400 feet north of the northwest corner of Area E). It is unclear whether this is a blemish in the photograph, salt accumulation from a dry area of surface ponding, or is some sort of surface disturbance. It should be noted a military map of the Desert Center Division Camp (Appendix E) indicates that the 18th Ordnance Battalion was located in this general area in the early 1940s. The referenced discolored area does not appear to be present in any subsequent photographs.

- **Drum Storage**. Several drums were located in various locations within Areas A, B, C, D, and F of the Property. None of the drums were labeled. Unless discussed specifically above, the drums exhibited no staining, no evidence of a release, or they appeared to be empty. Therefore, they are considered de minimis and no further assessment is recommended. Stantec recommends that the drums be removed and properly disposed of in accordance with applicable laws and regulations prior to Property redevelopment activities.

- **ASTs.** An approximate 8,000-gallon fuel AST with a dispenser pump was observed in the west-central portion of Area F. The AST and dispenser pump were within a concrete secondary containment area. Only minimal staining was noted on the concrete floor of the containment area. No stained or odorous soil was observed on surfaces outside of the secondary containment structure.

Additionally, there were two fuel ASTs in the west-central portion of Area A and two fuel ASTs in Area F that were being stored above ground (Appendix A). The tanks were positioned on their sides, not on plastic, and there was no secondary containment. The tanks ranged from approximately 8,000 to 10,000-gallons in capacity. It is unclear whether these tanks were formerly USTs that were removed and are now just stored onsite, or whether these tanks originally functioned as ASTs. One of the tanks in Area F was labeled "Empty". Since there was no fuel dispensing equipment related to the three remaining ASTs, it is unlikely that they are still being used for fuel storage. No staining or odors were associated with these ASTs. Given that there was no evidence of a release to soil around the ASTs, no further assessment is recommended. However, Stantec recommends that the ASTs discussed above be removed and properly disposed of in accordance with applicable regulations. In addition, upon removal of the tanks during Property demolition activities, Stantec recommends that the tanks be inspected for any signs of a release. If any impacted soil or leaks are observed, Stantec should be contacted for further assessment.

- **Potential Farm and Residential Heating Oil USTs.** No evidence of farm or residential heating oil USTs were noted during the Property reconnaissance, interviews with property owners, or through review of historic records. However, due to the remoteness of the Property and past agricultural uses, there is the potential for unknown farm USTs or residential heating oil USTs to be uncovered at the Property during grading activities. Such USTs are considered exempt from state UST regulations, so their presence is generally unknown without specific information provided by knowledgeable parties. In the event that such USTs are encountered, work should be immediately stopped in that area and the suspect structure should be left in place for assessment/evaluation by an environmental professional.

- **Solid Waste Disposal.** Solid waste disposal consisted of piles containing primarily construction debris, wood, and discarded irrigation lines and irrigation well casing. The construction debris was observed primarily in the west-central portion of Area A and southwest portion of Area B. Discarded irrigation lines were scattered throughout portions of Areas A, B, D, and F that were, or are currently used for agriculture. Stantec recommends that the debris is properly disposed prior to the proposed Property development. Areas containing construction debris should be sampled concurrently with an asbestos and lead based paint survey, as recommended in the non-ASTM section of this report.

- **Irrigation/Water Wells**. At least 7 irrigation wells were observed at the Property. Given the past Property usage for agricultural purposes, additional irrigation wells may be present that are unknown. Stantec recommends that all known and unknown (those encountered during proposed development activities) irrigation/water wells be abandoned in accordance with applicable regulations unless the wells will be used by the proposed development.

- **Septic Tanks and Leach Fields.** Riverside County Building Department records (Section 4.3.3) indicate that septic tanks and leach fields were permitted for 26440 Rice Road, 23405 Rice Rd, and APN: 807-690-025 (41750 Beekley Rd). Since the septic tanks were associated with the former residential mobile homes, Stantec recommends no further assessment. However, the geotechnical engineer and grading contractor should be made aware that such structures may be encountered at these locations and other potential locations on the Property where residential structures were historically located.

9.0 NON-SCOPE CONSIDERATIONS

The scope of work completed was limited solely to those items in the ASTM E1527-13 standard. No ASTM E1527-13 non-scope services were performed as part of this Phase I ESA.

9.1 LEAD-BASED PAINT

Concern for lead-based paint (LBP) is primarily related to residential structures. The EPA's Final Rule on Disclosure of Lead-Based Paint in Housing (40 CFR Part 745) defines LBP as paint or other surface coatings that contain lead equal to or in excess of 1.0 milligram per square centimeter or 0.5 percent by weight.

The risk of lead toxicity in LBP varies based upon the condition of the paint and the year of its application. The U.S. Department of Housing and Urban Development (HUD) has identified the following risk factors:

The age of the dwelling as follows: maximum risk is from paint applied before 1950.

There is severe risk from paint applied before 1960.

There is moderate risk from deteriorated paint applied before 1970.

There is slight risk from the paint that is intact but applied before 1977.

The condition of the painted surfaces.

The presence of children and certain types of households in the building.

Previously reported cases of lead poisoning in the building or area.

Construction Date	Residential (Yes/No)	Observed Condition of Painted Surfaces
Late 1970s (Areas A and B) Early 1990s (Area F)	Yes	With the exception of the residential and commercial structures in Area F, the Property structures were built prior to 1977. Accordingly, Stantec recommends an LBP survey at the Property to identify the condition of painted surfaces and whether the paint would be classified as LBP based on lead content. All LBP should be removed from the Property prior to construction/demolition activities with the potential to disturb painted surfaces, in accordance with all applicable laws.

9.2 ASBESTOS

Asbestos can be found in many applications, including sprayed-on or blanket-type insulation, pipe wraps, mastics, floor and ceiling tiles, wallboard, mortar, roofing materials, and a variety of other materials commonly used in construction. The greatest asbestos-related human health risks are associated with friable asbestos, which is ACM that can be reduced to powder by hand pressure. Friable asbestos can become airborne and be inhaled; and has been associated with specific types of respiratory disease. The manufacturing and use of asbestos in most building products was curtailed during the late 1970s.

Several residential and commercial buildings are located throughout the Property. In addition, a pile of construction debris was located in the southwest portion of Area A that contained plastered and wall board, among other construction materials. Demolition or partial demolition of any structure, or disposal of construction debris, requires compliance with the National Emission Standards for Hazardous Air Pollutants (NESHAP) in accordance with the South Coast Air Quality Management District (SCAQMD) Rule 1403 (Asbestos Demolition and Removal). Therefore, Stantec recommends that a pre-demolition survey be performed for all Property structures and any debris piles containing suspect ACM.

9.3 RADON

Radon is a colorless, tasteless radioactive gas with an EPA-specified action level of 4.0 PicoCuries per liter of air (pCi/L) for residential properties. Radon gas has a very short half-life of 3.8 days. The health risk potential of radon is primarily associated with its rate of accumulation within confined areas near or in the ground, such as basements, where vapors can readily transfer to indoor air from the ground through foundation cracks or other pathways. Large, adequately ventilated rooms generally present limited risk for radon exposure. The radon concentrations in buildings and homes depend on many factors, including soil types, temperature, barometric pressure, and building construction (EPA, 1993).

Stantec reviewed regional data published by the EPA (http://www.epa.gov/radon/zonemap.html) on average indoor radon concentrations in the vicinity of the Property.

Zip Code 92239	Riverside County
EPA Radon Zones (w/Average Measured Indoor Radon concentrations)	
100% below 4 pCi/L	Zone 2 – moderate (>=2 pCi/L and <=4 pCi/L); average first floor concentration 0.117 pCi/L
Normally-occupied sub grade areas (i.e. basement apartments, offices, stores, etc.).	
No subgrade areas are present or proposed at the Property.	

The property is located in Zone 2 and is considered to have only a moderate potential for radon. Stantec concludes that radon is unlikely to represent an environmental concern to the Property and recommends no further investigation regarding this issue.

9.4 FLOOD ZONES

According to the Physical Setting summary portion of the EDR report, the Property is not located within a flood plain. Stantec also searched the FEMA flood plain map service at www.msc.fema.gov and the Property is not located in a flood plain.

10.0 REFERENCES

Allstate Services Environmental, Inc (ASEI), 2005, Phase I Environmental Site Assessment, Vacant Property Located at Desert Center, APN# 811-170-007, 811-170-008, and 811-170-009, Desert Center, California, dated March 25.

California Department of Conservation Division of Mines and Geology (CDMG), 1963, Geologic Map of California: Needles Sheet.

California Department of Conservation Division of Mines and Geology (CDMG), 1986, Note 36 Geomorphic Provinces of California, May.

Environmental Data Resources, Inc. (EDR), EDR Radius Atlas with Geocheck, Inquiry Number 5224815.2s, dated March 21, 2018.

_____, EDR Radius Atlas with Geocheck, Inquiry Number 5224824.5s, dated March 21, 2018.

_____, Historical Topographic Map Report, Inquiry Number 5224815.4, dated March 20, 2018.

_____, Aerial Photo Decade Package (Georeferenced), Inquiry Number 5224815, dated March 26, 2018.

_____, City Directory Image Report, Inquiry Number 5224815.5, dated March 22, 2018.

Website References

California Military Department, State Military Museums website:
http://www.militarymuseum.org

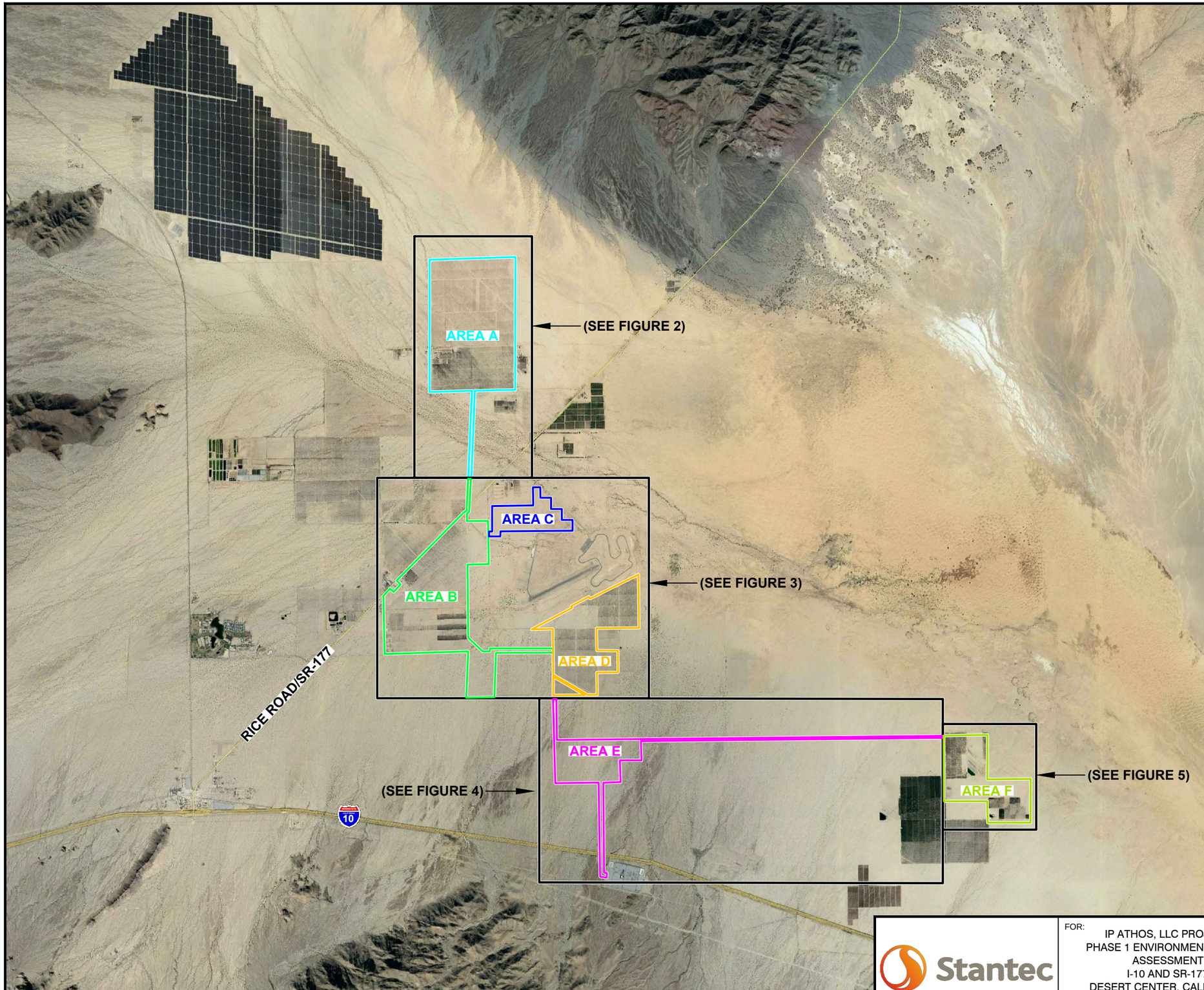
Department of Toxic Substances Control, Envirostor website:
https://www.envirostor.dtsc.ca.gov/public/

State Water Resources Control Board, GeoTracker website:
https://geotracker.waterboards.ca.gov/

US EPA, Map of Radon Zones, Interactive Radon Map, website:
https://www.epa.gov/radon/epa-map-radon-zones

Division of Oil, Gas, and Geothermal Resources, Well Finder website:
http://www.conservation.ca.gov/dog/Pages/Wellfinder.aspx

Figures



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APPROXIMATE SCALE IN FEET

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REFERENCE: GOOGLE EARTH PRO AERIAL IMAGE AND STANTEC FIELD NOTES.

Stantec

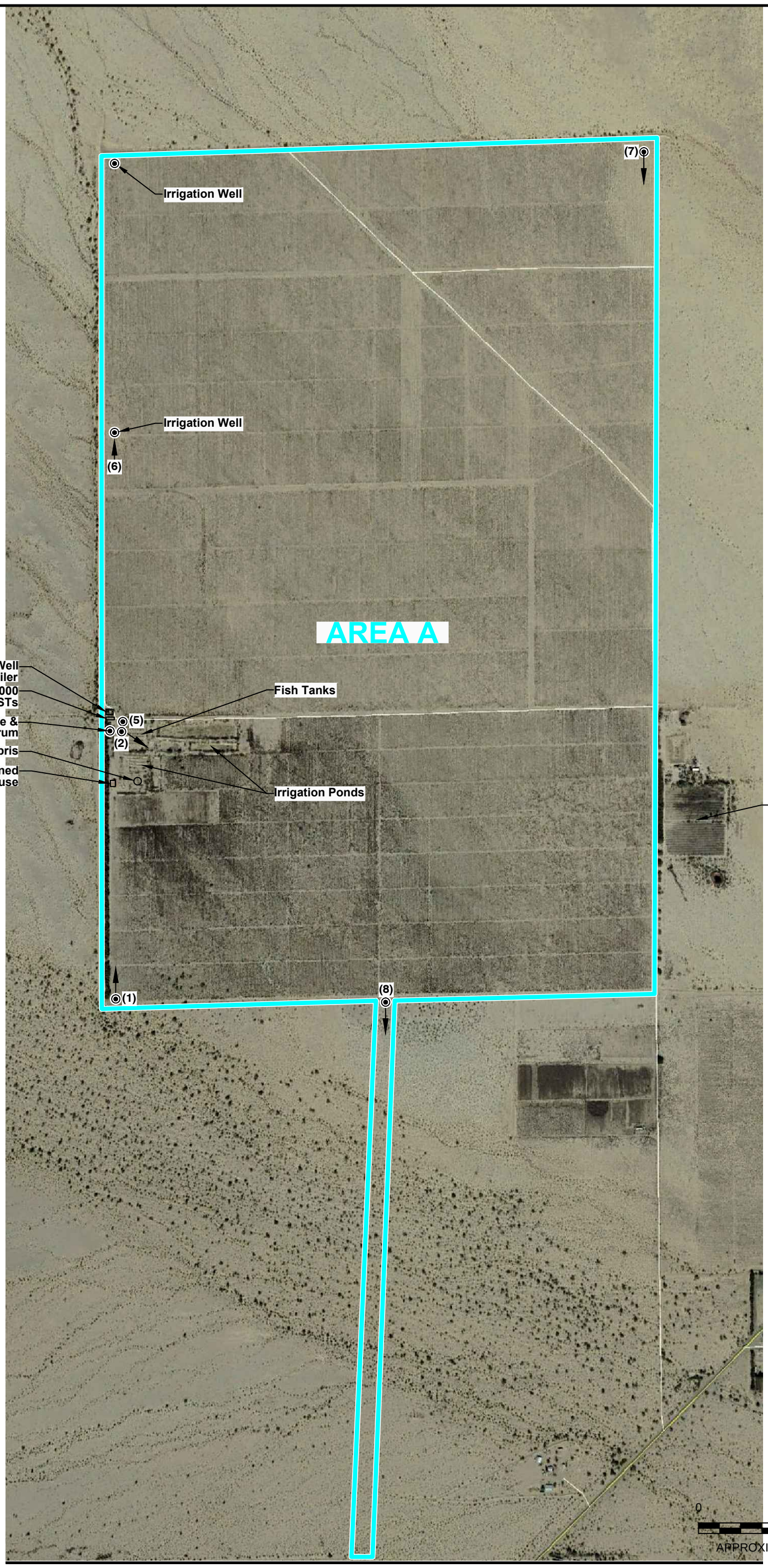
FOR:
IP ATHOS, LLC PROJECT
PHASE 1 ENVIRONMENTAL SITE ASSESSMENT
I-10 AND SR-177
DESERT CENTER, CALIFORNIA

PROPERTY VICINITY MAP, AREAS A THROUGH F

FIGURE: **1**

JOB NUMBER:	DRAWN BY:	CHECKED BY:	APPROVED BY:	DATE:
185804152	STA	DM	KM	04/09/18

FILEPATH:V:\1858\active\185804152\FIG 1_IP ATHOS LLC_DESERT CENTER_PROPERTY MAP_04-09-2018.dwg | Layout Tab: 1 | Drafter: saguinaldo | May 11, 2018 at 13:41



LEGEND:

(1) PHOTOGRAPH NUMBER, APPENDIX A

REFERENCE: GOOGLE EARTH PRO AERIAL IMAGE AND STANTEC FIELD NOTES.

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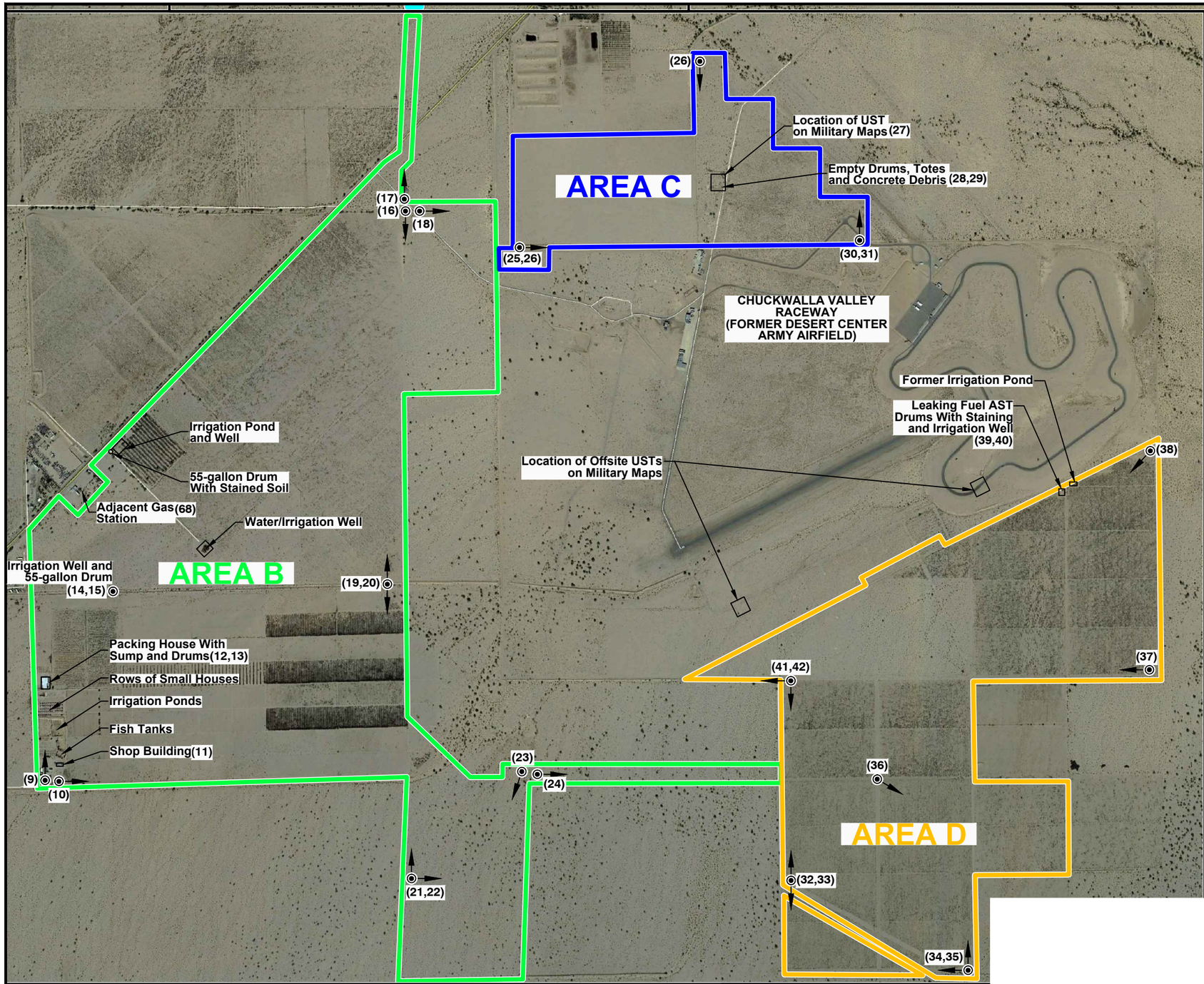
Stantec

FOR: IP ATHOS, LLC PROJECT PHASE 1 ENVIRONMENTAL SITE ASSESSMENT I-10 AND SR-177 DESERT CENTER, CALIFORNIA		**PROPERTY MAP, AREA A**		FIGURE: **2**
JOB NUMBER: 185804152	DRAWN BY: STA	CHECKED BY: DM	APPROVED BY: KM	DATE: 04/09/18

FILEPATH:V:\1858\active\185804152\FIG 2_IP ATHOS LLC_DESERT CENTER_PROPERTY MAP_04-09-2018.dwg | Layout Tab: 2 | Drafter: saguinaldo | May 11, 2018 at 13:44



LEGEND:

(9) PHOTOGRAPH NUMBER, APPENDIX A

N

0 1500 3000

APPROXIMATE SCALE IN FEET

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REFERENCE: GOOGLE EARTH PRO AERIAL IMAGE AND STANTEC FIELD NOTES.

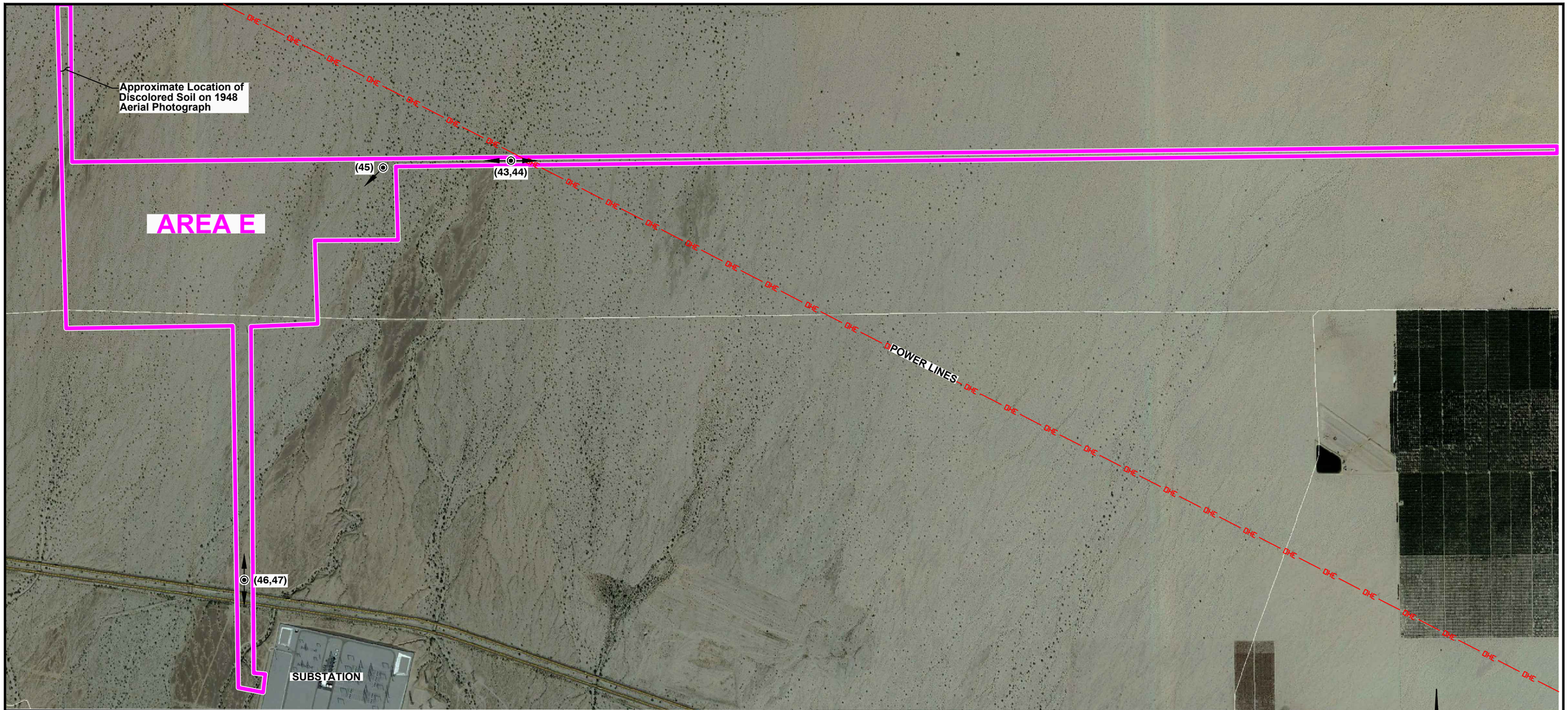
Stantec

FOR:
IP ATHOS, LLC PROJECT
PHASE 1 ENVIRONMENTAL SITE ASSESSMENT
I-10 AND SR-177
DESERT CENTER, CALIFORNIA

PROPERTY MAP, AREAS B THROUGH D

FIGURE: **3**

JOB NUMBER:	DRAWN BY:	CHECKED BY:	APPROVED BY:	DATE:
185804152	STA	DM	KM	04/09/18



LEGEND:

(45) PHOTOGRAPH NUMBER, APPENDIX A

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REFERENCE: GOOGLE EARTH PRO AERIAL IMAGE AND STANTEC FIELD NOTES.

Stantec

FOR:
IP ATHOS, LLC PROJECT
PHASE 1 ENVIRONMENTAL SITE ASSESSMENT
I-10 AND SR-177
DESERT CENTER, CALIFORNIA

PROPERTY MAP, AREA E

FIGURE: **4**

JOB NUMBER:	DRAWN BY:	CHECKED BY:	APPROVED BY:	DATE:
185804152	STA	DM	KM	04/09/18

LEGEND:

(49) PHOTOGRAPH NUMBER, APPENDIX A

N

0 600 1200

APPROXIMATE SCALE IN FEET

REFERENCE: GOOGLE EARTH PRO AERIAL IMAGE AND STANTEC FIELD NOTES.

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Stantec

FOR: IP ATHOS, LLC PROJECT PHASE 1 ENVIRONMENTAL SITE ASSESSMENT I-10 AND SR-177 DESERT CENTER, CALIFORNIA		**PROPERTY MAP, AREA F**		FIGURE: **5**
JOB NUMBER: 185804152	DRAWN BY: STA	CHECKED BY: DM	APPROVED BY: KM	DATE: 04/09/18

FILEPATH:V:\1858\active\185804152\FIG 2_IP ATHOS LLC_DESERT CENTER_PROPERTY MAP_04-09-2018.dwg | Layout Tab: 5 | Drafter: saguinaldo | May 11, 2018 at 13:46

N

0 600 1200

APPROXIMATE SCALE IN FEET

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Stantec

FOR: IP ATHOS, LLC PROJECT PHASE 1 ENVIRONMENTAL SITE ASSESSMENT I-10 AND SR-177 DESERT CENTER, CALIFORNIA		AREA F		FIGURE: 6
JOB NUMBER: 185804152	DRAWN BY: STA	CHECKED BY: DM	APPROVED BY: KM	DATE: 03/30/18

FILEPATH:V:\1858\active\185804152\FIG 1_IP ATHOS LLC_DESERT CENTER_PROPERTY MAP_04-09-2018.dwg | Layout Tab: 6 | Drafter: saguinaldo | May 11, 2018 at 13:43

Appendix A
PHOTOGRAPHS OF THE PROPERTY AND VICINITY

STANTEC CONSULTING SERVICES, INC PHOTOGRAPHIC RECORD	
Client: IP Athos, LLC	**Job Number:** 185804152
Site Name: IP Athos, LLC	**Location:** Desert Center, California
Photographer: Dion Monge	**Date:** March 27 and 28, 2018

Photograph No. 1

AREA A: Facing north at the southwest corner of Area A. Note the former agricultural rows to the right of the dirt road.

Photograph No. 2

AREA A: Concrete fish tanks in west-central portion of Area A.

STANTEC CONSULTING SERVICES, INC PHOTOGRAPHIC RECORD	
Client: IP Athos, LLC	**Job Number:** 185804152
Site Name: IP Athos, LLC	**Location:** Desert Center, California
Photographer: Dion Monge	**Date:** March 27 and 28, 2018

Photograph No. 3

AREA A: View of 55-gallon drum in the west-central portion of Area A.

Photograph No. 4

AREA A: View of greenhouse in the west-central portion of Area A.

STANTEC CONSULTING SERVICES, INC PHOTOGRAPHIC RECORD	
Client: IP Athos, LLC	**Job Number:** 185804152
Site Name: IP Athos, LLC	**Location:** Desert Center, California
Photographer: Dion Monge	**Date:** March 27 and 28, 2018

Photograph No. 5

AREA A: View of fuel ASTs in the west-central portion of Area A. They appeared to currently be unused.

Photograph No. 6

AREA A: View of irrigation well and removed casing in the northwest portion of Area A.

STANTEC CONSULTING SERVICES, INC PHOTOGRAPHIC RECORD	
Client: IP Athos, LLC	**Job Number:** 185804152
Site Name: IP Athos, LLC	**Location:** Desert Center, California
Photographer: Dion Monge	**Date:** March 27 and 28, 2018

Photograph No. 7

AREA A: Facing south from the northeast corner of Area A. The dirt road represents area of land to the right of the dirt road is part of the Property.

Photograph No. 8

AREA A: Facing south along the gen-tie line that connects Area A to Area B. Native desert land.

STANTEC CONSULTING SERVICES, INC PHOTOGRAPHIC RECORD	
Client: IP Athos, LLC	**Job Number:** 185804152
Site Name: IP Athos, LLC	**Location:** Desert Center, California
Photographer: Dion Monge	**Date:** March 27 and 28, 2018

Photograph No. 9

AREA B: Facing north at the southwest corner of Area B. Residential building at the right hand side of the photograph.

Photograph No. 10

AREA B: Facing east at the southwest corner of Area B.

STANTEC CONSULTING SERVICES, INC PHOTOGRAPHIC RECORD	
Client: IP Athos, LLC	**Job Number:** 185804152
Site Name: IP Athos, LLC	**Location:** Desert Center, California
Photographer: Dion Monge	**Date:** March 27 and 28, 2018

Photograph No. 11

AREA B: Apparent shop building in the southwest portion of Area B. No staining or subsurface structures were noted.

Photograph No. 12

AREA B: View of former packing house in the southwest portion of Area B.

STANTEC CONSULTING SERVICES, INC PHOTOGRAPHIC RECORD	
Client: IP Athos, LLC	**Job Number:** 185804152
Site Name: IP Athos, LLC	**Location:** Desert Center, California
Photographer: Dion Monge	**Date:** March 27 and 28, 2018

Photograph No. 13

AREA B: View of sump with 55-gallond drum storage.

Photograph No. 14

AREA B: View of irrigation well.

STANTEC CONSULTING SERVICES, INC PHOTOGRAPHIC RECORD	
Client: IP Athos, LLC	**Job Number:** 185804152
Site Name: IP Athos, LLC	**Location:** Desert Center, California
Photographer: Dion Monge	**Date:** March 27 and 28, 2018

Photograph No. 15

AREA B: Tipped over 55-gallon drum with dried oil near irrigation well shown in Photograph 15.

Photograph No. 16

AREA B: Facing south in north portion of Area B.

STANTEC CONSULTING SERVICES, INC PHOTOGRAPHIC RECORD	
Client: IP Athos, LLC	**Job Number:** 185804152
Site Name: IP Athos, LLC	**Location:** Desert Center, California
Photographer: Dion Monge	**Date:** March 27 and 28, 2018

Photograph No. 17

AREA B: Facing north toward the gen-tie line segment that connects to Area A (as shown in Photograph 8)

Photograph No. 18

AREA B: Facing east in the northern portion of Area B.

STANTEC CONSULTING SERVICES, INC PHOTOGRAPHIC RECORD	
Client: IP Athos, LLC	**Job Number:** 185804152
Site Name: IP Athos, LLC	**Location:** Desert Center, California
Photographer: Dion Monge	**Date:** March 27 and 28, 2018

Photograph No. 19

AREA B: Facing north along the east boundary of Area B.

Photograph No. 20

AREA B: Facing south/southeast along the eastern boundary of Area B. Note the abandoned residential building.

STANTEC CONSULTING SERVICES, INC PHOTOGRAPHIC RECORD	
Client: IP Athos, LLC	**Job Number:** 185804152
Site Name: IP Athos, LLC	**Location:** Desert Center, California
Photographer: Dion Monge	**Date:** March 27 and 28, 2018

Photograph No. 21

AREA B: Facing north in the southeast portion of Area B.

Photograph No. 22

AREA B: Facing east in the southeast portion of Area B.

STANTEC CONSULTING SERVICES, INC PHOTOGRAPHIC RECORD	
Client: IP Athos, LLC	**Job Number:** 185804152
Site Name: IP Athos, LLC	**Location:** Desert Center, California
Photographer: Dion Monge	**Date:** March 27 and 28, 2018

Photograph No. 23

AREA B: Facing southwest in the southeast portion of Area B.

Photograph No. 24

AREA B: Facing east along the proposed gen-tie line area that connects Area B to Area D.

STANTEC CONSULTING SERVICES, INC PHOTOGRAPHIC RECORD	
Client: IP Athos, LLC	**Job Number:** 185804152
Site Name: IP Athos, LLC	**Location:** Desert Center, California
Photographer: Dion Monge	**Date:** March 27 and 28, 2018

Photograph No. 25

AREA C: Facing east in the southwest portion of Area C.

Photograph No. 26

AREA C: Facing south in the north portion of Area C.

STANTEC CONSULTING SERVICES, INC PHOTOGRAPHIC RECORD	
Client: IP Athos, LLC	**Job Number:** 185804152
Site Name: IP Athos, LLC	**Location:** Desert Center, California
Photographer: Dion Monge	**Date:** March 27 and 28, 2018

Photograph No. 27

AREA C: Area of UST indicated on "Desert Center Army Airport" map from the 1940s.

Photograph No. 28

AREA C: Empty drums, totes, and other equipment in the northern portion of Area C.

STANTEC CONSULTING SERVICES, INC PHOTOGRAPHIC RECORD	
Client: IP Athos, LLC	**Job Number:** 185804152
Site Name: IP Athos, LLC	**Location:** Desert Center, California
Photographer: Dion Monge	**Date:** March 27 and 28, 2018

Photograph No. 29

AREA C: Concrete debris and asphalt piles in the northern portion of Area C.

Photograph No. 30

AREA C: Facing west at the southeast corner of Area C.

STANTEC CONSULTING SERVICES, INC PHOTOGRAPHIC RECORD	
Client: IP Athos, LLC	**Job Number:** 185804152
Site Name: IP Athos, LLC	**Location:** Desert Center, California
Photographer: Dion Monge	**Date:** March 27 and 28, 2018

Photograph No. 31

AREA C: Facing north at the southeast corner of Area C.

Photograph No. 32

AREA D: Facing south in the southwest portion of Area D.

STANTEC CONSULTING SERVICES, INC PHOTOGRAPHIC RECORD	
Client: IP Athos, LLC	**Job Number:** 185804152
Site Name: IP Athos, LLC	**Location:** Desert Center, California
Photographer: Dion Monge	**Date:** March 27 and 28, 2018

Photograph No. 33

AREA D: Facing north in the southwest portion of Area D.

Photograph No. 34

AREA D: Facing west at the southeast corner of Area D.

STANTEC CONSULTING SERVICES, INC PHOTOGRAPHIC RECORD	
Client: IP Athos, LLC	**Job Number:** 185804152
Site Name: IP Athos, LLC	**Location:** Desert Center, California
Photographer: Dion Monge	**Date:** March 27 and 28, 2018

Photograph No. 35

AREA D: Facing north at the southeast corner of Area D.

Photograph No. 36

AREA D: Facing southeast in the central portion of Area D.

STANTEC CONSULTING SERVICES, INC PHOTOGRAPHIC RECORD	
Client: IP Athos, LLC	**Job Number:** 185804152
Site Name: IP Athos, LLC	**Location:** Desert Center, California
Photographer: Dion Monge	**Date:** March 27 and 28, 2018

Photograph No. 37

AREA D: Facing west in the eastern portion of Area D.

Photograph No. 38

AREA D: Facing southwest at the northeast tip of Area D.

STANTEC CONSULTING SERVICES, INC PHOTOGRAPHIC RECORD	
Client: IP Athos, LLC	**Job Number:** 185804152
Site Name: IP Athos, LLC	**Location:** Desert Center, California
Photographer: Dion Monge	**Date:** March 27 and 28, 2018

Photograph No. 39

AREA D: View of 12,000-gallon fuel AST and 55-gallon drums with staining and odors near the northern boundary of Area D.

Photograph No. 40

AREA D: Irrigation well near the northern boundary of Area D.

STANTEC CONSULTING SERVICES, INC PHOTOGRAPHIC RECORD	
Client: IP Athos, LLC	**Job Number:** 185804152
Site Name: IP Athos, LLC	**Location:** Desert Center, California
Photographer: Dion Monge	**Date:** March 27 and 28, 2018

Photograph No. 41

AREA D: Facing south along the west boundary of Area D.

Photograph No. 42

AREA D: Facing west along the west boundary of Area D.

STANTEC CONSULTING SERVICES, INC PHOTOGRAPHIC RECORD	
Client: IP Athos, LLC	**Job Number:** 185804152
Site Name: IP Athos, LLC	**Location:** Desert Center, California
Photographer: Dion Monge	**Date:** March 27 and 28, 2018

Photograph No. 43

AREA E: Facing west along proposed gen-tie line that connects Area E to Area F.

Photograph No. 44

AREA E: Facing east along proposed gen-tie line that connects Area E to Area F.

STANTEC CONSULTING SERVICES, INC PHOTOGRAPHIC RECORD	
Client: IP Athos, LLC	**Job Number:** 185804152
Site Name: IP Athos, LLC	**Location:** Desert Center, California
Photographer: Dion Monge	**Date:** March 27 and 28, 2018

Photograph No. 45

AREA E: Facing southwest near the northwest corner of Area E.

Photograph No. 46

AREA E: Facing north along proposed gen-tie line that connects the Property to the sub-station south of I-10.

STANTEC CONSULTING SERVICES, INC PHOTOGRAPHIC RECORD	
Client: IP Athos, LLC	**Job Number:** 185804152
Site Name: IP Athos, LLC	**Location:** Desert Center, California
Photographer: Dion Monge	**Date:** March 27 and 28, 2018

Photograph No. 47

AREA E: Facing south along proposed gen-tie line that connects the Property to the sub-station south of I-10 (at the left-hand side of the photograph.

Photograph No. 48

AREA F: Facing northeast in the southwest portion of Area F. Dry irrigation pond in the foreground.

STANTEC CONSULTING SERVICES, INC PHOTOGRAPHIC RECORD	
Client: IP Athos, LLC	**Job Number:** 185804152
Site Name: IP Athos, LLC	**Location:** Desert Center, California
Photographer: Dion Monge	**Date:** March 27 and 28, 2018

Photograph No. 49

AREA F: Fuel AST with secondary containment, irrigation well, pumping, and filtration equipment.

Photograph No. 50

AREA F: Facing south at the northwest corner of Area F.

STANTEC CONSULTING SERVICES, INC PHOTOGRAPHIC RECORD	
Client: IP Athos, LLC	**Job Number:** 185804152
Site Name: IP Athos, LLC	**Location:** Desert Center, California
Photographer: Dion Monge	**Date:** March 27 and 28, 2018

Photograph No. 51

AREA F: Facing east at the northwest corner of Area F.

Photograph No. 52

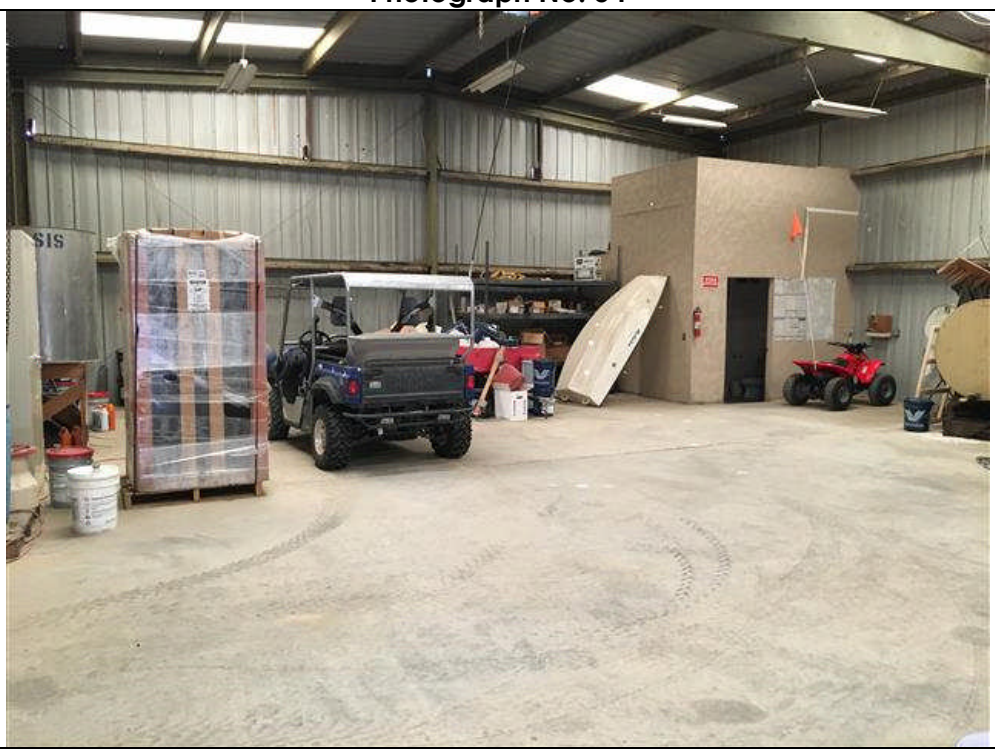
AREA F: View of empty ASTs (red arrows), abandoned vehicles, and hoppers in the east/northeast portion of Area F.

STANTEC CONSULTING SERVICES, INC PHOTOGRAPHIC RECORD	
Client: IP Athos, LLC	**Job Number:** 185804152
Site Name: IP Athos, LLC	**Location:** Desert Center, California
Photographer: Dion Monge	**Date:** March 27 and 28, 2018

Photograph No. 53

AREA F: Warehouse building and exterior equipment storage area. No staining or evidence of a release was noted and the containers appeared empty.

Photograph No. 54



AREA F: Interior of warehouse building. No evidence of drains, subsurface structures, or maintenance areas were observed.

STANTEC CONSULTING SERVICES, INC PHOTOGRAPHIC RECORD	
Client: IP Athos, LLC	**Job Number:** 185804152
Site Name: IP Athos, LLC	**Location:** Desert Center, California
Photographer: Dion Monge	**Date:** March 27 and 28, 2018

Photograph No. 55

AREA F: Residence in the central portion of Area F.

Photograph No. 56

AREA F: View of generator shed north of the residence in the central portion of Area F. No staining or evidence of a release was observed.

STANTEC CONSULTING SERVICES, INC PHOTOGRAPHIC RECORD	
Client: IP Athos, LLC	**Job Number:** 185804152
Site Name: IP Athos, LLC	**Location:** Desert Center, California
Photographer: Dion Monge	**Date:** March 27 and 28, 2018

Photograph No. 57

AREA F: View of small shooting range (i.e Range A) in the central portion of Area F.

Photograph No. 58

AREA F: View of large shooting range (i.e Range B) in the central portion of Area F.

STANTEC CONSULTING SERVICES, INC PHOTOGRAPHIC RECORD	
Client: IP Athos, LLC	**Job Number:** 185804152
Site Name: IP Athos, LLC	**Location:** Desert Center, California
Photographer: Dion Monge	**Date:** March 27 and 28, 2018

Photograph No. 59

Area F: Facing east from the central portion of Area F.

Photograph No. 60

Area F: Facing east from the south-central portion of Area F.

STANTEC CONSULTING SERVICES, INC PHOTOGRAPHIC RECORD	
Client: IP Athos, LLC	**Job Number:** 185804152
Site Name: IP Athos, LLC	**Location:** Desert Center, California
Photographer: Dion Monge	**Date:** March 27 and 28, 2018

Photograph No. 61

Area F: Facing west from the south-central portion of Area F.

Photograph No. 62

Area F: Facing northeast at a former residence and pond that are in the southern portion of Area F.

STANTEC CONSULTING SERVICES, INC PHOTOGRAPHIC RECORD	
Client: IP Athos, LLC	**Job Number:** 185804152
Site Name: IP Athos, LLC	**Location:** Desert Center, California
Photographer: Dion Monge	**Date:** March 27 and 28, 2018

Photograph No. 63

Area F: Facing west at the southeast corner of Area F.

Photograph No. 64

Area F: Facing north at the southeast corner of Area F.

STANTEC CONSULTING SERVICES, INC PHOTOGRAPHIC RECORD	
Client: IP Athos, LLC	**Job Number:** 185804152
Site Name: IP Athos, LLC	**Location:** Desert Center, California
Photographer: Dion Monge	**Date:** March 27 and 28, 2018

Photograph No. 65

Area F: Facing south in the east/southeast portion of Area F.

Photograph No. 66

Area F: Facing east in the east/southeast portion of Area F.

STANTEC CONSULTING SERVICES, INC PHOTOGRAPHIC RECORD	
Client: IP Athos, LLC	**Job Number:** 185804152
Site Name: IP Athos, LLC	**Location:** Desert Center, California
Photographer: Dion Monge	**Date:** March 27 and 28, 2018

Photograph No. 67

Area F: Facing west in the east/southeast portion of Area F.

Photograph No. 68

Adjacent Land: Former gasoline station along Rice Rd (SR-177) that is adjacent to the west of Area B.

Appendix B
STANTEC RESUMES

Dion Monge

Project Scientist

Dion has extensive knowledge of underground storage tank investigations, Phase I and II environmental site assessment, groundwater monitoring and reporting, soil, soil vapor, and groundwater quality assessments, and testing for asbestos and lead based paint. His project experience is extensive and wide ranging and includes many types of soil, soil vapor, and groundwater assessment and monitoring for planned, existing, and former sites. Dion also has experience in testing fill soils placed on grading sites.

He has experience on redevelopment of former oil field sites that include submittal of construction site review plans, oil well mitigation (venting and casing alterations), abandonment of oil wells, and remedial investigations and remediation involving soil contamination.

Dion also has experience working with 1166 AQMD air monitoring on projects ranging from limited access dry cleaner excavations, solvent excavations, and petroleum excavations related to underground storage tank releases. Included in this type of monitoring is the assessment of a safe work environment for the contractors involved with this type of work.

He has considerable knowledge in asbestos and lead based paint sampling as a building inspector and lead sampling technician. Asbestos and lead based paint surveys have ranged from large office buildings to sampling highway bridges.

EDUCATION

BS, Soil Science, California Polytechnic University, Pomona, Pomona, California, 2004

Health & Safety Certification (29 CFR 1910.120),, 40-Hour OSHA Health & Safety Certification, Redlands, California, 2005

Health & Safety Annual Update Certification, 8-Hour OSHA, Redlands, California, 2009

First Aid/CPR, American Red Cross, Redlands, California, 2009

Certified Building Inspector, AHERA 8-Hour Refresher, Redlands, California, 2009

PROJECT EXPERIENCE

Asbestos, Lead Based Paint, and Hazardous Material Management

Haller Wash Bridge No. 54-0891R&L, San Bernardino County, California (Asbestos and Lead-Based Paint Sampling Assistant)

Dion conducted asbestos and lead based paint survey on highway bridge. He assisted with planning field operations, measuring bridge dimensions, and collecting samples. Tasks included sample collection, bridge measurements, and documentation.

Project Management Oversight

Magnolia Plaza, Fountain Valley, California

Dion is providing project management of soil, soil vapor, and quarterly groundwater sampling related to a solvent release at a former dry cleaning facility. Tasks include preparation of work plans for approval by the Regional Water Quality Control Board and oversight of field sampling, including lithologic logging, for soil and soil vapor investigations performed within a multi-tenant strip center. Additional tasks include preparation of investigative reports and quarterly groundwater monitoring reports. The site remains an open case and preparation of a work plan to use electrical resistive heating ("ERH") will be prepared in the coming weeks.

Dion Monge

Project Scientist

Former Superb Dry Cleaners, Anaheim, California

Dion performed field oversight, direction, and confirmation soil sampling of a limited access excavation within a former dry cleaner unit. Post excavation field activities included application of a barrier type floor sealant along with post excavation indoor air sampling. Remedial work led to regulatory closure being granted from the local agency.

Site Assessment

I-15/I-215 Interchange Improvements, San Bernardino County, California (Sampling Technician)

Dion helped conduct site investigations and surveys for potentially hazardous materials. His efforts supported Caltrans' plans to improve and widen the existing freeway lanes, entrance and exit ramps, and vehicle and railroad bridges along a 6-mile stretch of the I-15 and I-215 freeways in the Devore area of San Bernardino County. Dion's efforts included Environmental Evaluation of Recognized Environmental Concerns identified in ISAs

Highway 138 Environmental Investigations, San Bernardino County, California (Field Assessment and Reporting)

Dion helped complete hazardous material site investigations on five bridges along State Highway 138 along a 20-mile segment through portions of Los Angeles and San Bernardino Counties, California. The investigation was conducted in accordance with Caltrans protocols and was compliant with EPA's all appropriate inquiries guidance and ASTM Standard Practice E1527. He performed site reconnaissance, conducted regulatory and agency field reviews, and reviewed environmental databases and historical fire insurance, telephone directories, aerial photographs, topographic maps, and other environmental records for properties within one half mile of the proposed 20-mile segment of Highway 138. Dion compiled an report summarizing findings and identifying recognized environmental conditions.

Proposed Friends Christian High School, Yorba Linda, California

Dion prepared preliminary site assessment (PSA) report for future private school site to identify recognized environmental conditions ("RECs") related to past property usage as an oil field with 21 oil wells abandoned prior to 1990. Completion of the PSA led to his management of the project through site closure. Field investigations and reporting by Dion included Phase II investigations, methane survey, oil well leak testing and venting, backfill and compaction (including soils testing), DOGGR Construction Site Review, and excavation and onsite management of more than 5,000 cubic yards of petroleum impacted soils.

SR-58 Widening, San Bernardino County, California

Dion performed Initial Site Assessment (ISA) for Caltran at Kramer Junction for the proposed widening of State Route 58. The ISA was performed in accordance with guidelines promulgated by the American Society for Testing and Materials (ASTM) and included historical research and coordination of permit/file reviews with local building/planning departments and environmental agencies. Dion's role included the field visit, observation documentation, agency reviews, and reporting.

Soil Sampling

Caltrans I-15, Task Order 28, Hesperia, California

Dion conducted a soil investigation for metals analysis alongside I-15 for disposal recommendations during construction of mortar-lined channels at several locations. He assisted with planning field operations and collected soil samples. Tasks included sample collection, preservation, and documentation.

** denotes projects completed with other firms*

Anne E. Perez

Geologic Associate

Ms. Perez has more than 10 years of professional experience in the environmental and geotechnical engineering fields as both a geologist and a project manager. She serves as office health and safety coordinator for Stantec's Redlands, California, office—providing overall health and safety direction to the project managers and field staff as they implement assignments associated with CVOC; SVOC; and metal impacts to soil, groundwater, and/or air. Ms. Perez has extensive experience in the installation and logging of monitoring wells, soil borings, and groundwater sampling. She has also been involved in the development of remedial investigation plans, health and safety plans, and corrective action plans. Ms. Perez is also the project manager on several underground storage tank (UST) sites, chlorinated solvent release sites, and wastewater sampling sites.

EDUCATION

MS, Geology, University of California, Riverside, Riverside, California, 2003

BS, Geology, University of California, Riverside, Riverside, California, 2000

MEMBERSHIPS

Earth Science Department Fellowship, University of California, Riverside

Member, Golden Key International Honour Society

PROJECT EXPERIENCE

Education

Project Unknown* (Teaching Assistant)

Ms. Perez's duties included conducting class/field instruction during the chairman of the Geology Department's absence, instructing students on the methods of measuring sedimentary sections in the field, and assisting students with their final field mapping projects.

Natural Hazards and Disasters* (Teaching Assistant)

Ms. Perez's duties included independently conducting four one-hour weekly discussion sessions, grading weekly homework assignments and midterms, holding office hours to assist students with lecture concepts/homework/exam preparation, and maintaining extensive grade reports (Excel).

Advanced Petrogenesis* (Teaching Assistant)

Ms. Perez's duties included assisting the professor and students on weekly field trips, obtaining journals/maps relevant to the lecture topic, assisting in writing and correcting exams, and assisting students with their project reports.

Igneous Petrology* (Teaching Assistant)

Ms. Perez's duties included assisting with lecture preparation, administering the laboratory section of the course (80 percent dealt with mineral identification using microscopes, 20 percent dealt with hand sample identification), writing the laboratory exams, grading the lab exams and twice-weekly exercises, and assisting the professor and students on field trips.

Environmental Assessments

Environmental Site Assessments, Various Locations, California

Ms. Perez performed Phase I, Phase II, and Additional Environmental Site Assessments on properties ranging from residential sites to former military parts manufacturing facilities in California. Tasks performed included subsurface soil investigations with direct push geoprobe drill rigs, soil classification, sample collections, and documentation.

Geologic Mapping

Southern California Area Mapping Project (SCAMP)* (Undergraduate Student Employee)

Ms. Perez assisted on the Southern California Area Mapping Project (SCAMP), utilizing GIS and ARC/INFO for map digitization.

Southern California Area Mapping Project (SCAMP)* (Graduate Student Employee)

Ms. Perez's duties included construction of map description and correlation for Open-file/DMG/USGS projects utilizing Adobe Illustrator; digitizing with GIS and ARC/INFO; and assisting the USGS supervisor with specific research projects which included Excel flowchart presentations (rock type flowcharts), soil data map integration with geologic maps, aerial photo reviews (recent landslides), and sample collection for Helium-3 absolute age dating research.

** denotes projects completed with other firms*

Anne E. Perez

Geologic Associate

Geologic Studies

Multiple Projects* (Geologist)

Ms. Perez's field duties included drilling oversight (hollow stem auger, direct push, AirVac); borehole logging and soil sampling; groundwater monitoring, well installation, development, gauging, and sample collecting; seismic survey oversight; and oversight on the installation of an ozone system.

Multiple Projects* (Geologist)

Ms. Perez's duties included report writing/preparation (work plans, investigation, reports, letter reports, data summary reports, health and safety plans); preparing and gathering report supporting documents (figures/tables); data collection/research/evaluation; groundwater/plume contouring; constructed geologic and hydrogeologic cross-sections; managing refinery remediation file database (Excel); aerial photo review/interpretation; and QA/QC reports/figures/tables.

Geotechnical Engineering

Project Unknown* (Summer Intern for Senior County Engineering Geologist)

Ms. Perez's duties included filing, geotechnical documents, reading and commenting on geotechnical/EIR reports, meeting with clients, updating county maps to note known faults and liquefaction concerns, attending planning commission meetings, and assisting a geotechnical firm with trench cleaning/logging (trench dimensions: 300 feet long, 25 feet wide, and 15 feet deep).

Multiple Projects* (Junior Engineering Geologist)

Working directly with the senior County engineering geologist, Ms. Perez reviewed and commented on geotechnical/soils/EIR/mining/mining reclamation reports and maps; verified slopes on grading , provided aerial photo analysis/interpretation, interacted with clients (both in the office and out in the field) regarding job site status, updated county maps to note location of faults and liquefaction concerns, attended planning commission meetings, logged boreholes during groundwater monitoring well installations at waste/dump sites (assisted the Water Department), updated clients and the public with regard to the status of their projects/property, and handled the requests/questions of visitors to the county office (retrieved maps/file information and project information).

Multiple Projects* (Junior Engineering Geologist)

Working directly with the senior county engineering geologist, Ms. Perez reviewed and commented on geotechnical/soils/EIR/mining/mining reclamation reports and maps, verified slopes on grading plans, provided aerial photo analysis/interpretation, interacted with clients (in office and field) regarding job site status, updated county maps to note location of faults and liquefaction concerns, attended planning commission meetings, and logged boreholes during groundwater monitoring well installations at waste/dump sites (assisted the Water Department).

Research / Laboratories

Project Unknown* (Research Assistant)

Ms. Perez analyzed and described approximately 100 thin sections in support of paleontology research (led by Dr. Mary Droser, graduate advisor for the Department of Geology).

Multiple Projects* (Research Assistant)

Ms. Perez worked with such chemicals as HCL, HF, HNO, and Perchloric Acid in the rock dissolution and quartz purification processes.

Project Unknown* (Research Assistant)

Ms. Perez collected and processed rock samples for cosmogenic radionuclide surface exposure age dating, using the chemistry lab facilities at Lawrence Livermore National Laboratory.

Retail

Chevron Litigation Case, California

Ms. Perez assisted the expert witness with the collection of data relevant to the case. Tasks included extensive file reviews, meetings with the attorneys involved with the case, generation of file and cost information databases, and attendance and assistance at the mediation.

Roadways

I-15 Widening, San Bernardino County, California (Site Assessment)

Anne conducted site investigations and surveys for potentially hazardous materials. Her efforts supported Caltrans' plans to widen I-15 from Baker to Mountain Pass. Her efforts included aerially deposited lead surveys; Site Investigations to evaluate environmental concerns related to railroad property; and Asbestos Containing Materials surveys; and Lead-Based Paint surveys.

** denotes projects completed with other firms*

Anne E. Perez

Geologic Associate

I-215 Bi-county HOV Gap Closure, Riverside and San Bernardino County, California (Site Assessment)

Anne conducted site investigations and surveys for potentially hazardous materials. Her efforts supported Caltrans' plans to widen I-215 in the median and outside shoulders on the northbound and southbound shoulders of a 7.3-mile segment through Riverside, Colton, and San Bernardino. Anne's efforts included aerially deposited lead surveys; Site Investigations to evaluate environmental concerns related to railroad property; and Asbestos Containing Materials surveys; and Lead-
Based Paint surveys on 13 bridges.

I-15/I-215 Interchange Improvement, Devore, California (Site Assessment)

Anne helped conduct site investigations and surveys for potentially hazardous materials. Her efforts supported Caltrans' plans to improve and widen the existing freeway lanes, entrance and exit ramps, and vehicle and railroad bridges along a 6-mile stretch of the I-15 and I-215 freeways. Anne's efforts included environmental evaluation of recognized environmental concerns identified in ISAs.

I-10/Tippecanoe Avenue Interchange Improvements, San Bernardino, California (Site Assessment)

Anne helped conduct site assessments, site investigations, and surveys for potentially hazardous materials to support SANBAG/Caltrans' plans to realign freeway access routes and widen Tippecanoe Avenue in San Bernardino. Work included aerially deposited lead surveys; Site Investigations on five existing and former gasoline service stations, an ISA Addendum, remedial feasibility studies, human health risk evaluations, and remedial actions by soil vapor extraction and site closure.

Caltrans District 8, San Bernardino, California (Task Manager)

Ms. Perez was responsible for the preparation of proposals, work plans, reports, staff scheduling, invoicing, site visits, correspondence with the District 8 office, amendment requests, monthly task progress reports, monthly invoicing/budget progress reports, and all task order management duties for each project.

** denotes projects completed with other firms*

Kyle D. Emerson PG, CEG

Managing Principal Geologist

Kyle has more than 35 years of professional experience—25 of those years with Stantec—providing geotechnical and environmental consulting. During the course of his experience, he has been involved with a wide variety of geological and engineering projects. He has been in direct charge of quality control/quality assurance (QA/QC) work for Stantec and previous firms for geological, engineering geological, and environmental services primarily in California. Additionally, Kyle has been a primary contact for Stantec with many different clients (including multi-party actions) and regulatory bodies involving contracting, workplan approvals, site assessments and closures, permitting, remedial action, and litigation support. With regard to litigation services, Kyle has extensive experience providing expert witness testimony, second-party review, and litigation support and analysis.

Kyle's extensive experience includes assessment and remediation of property-specific and regional issues involving soil and groundwater contaminated with petroleum hydrocarbons, chlorinated solvents, heavy metals, pesticides, and PCBs.

He currently serves as the managing principal geologist in Stantec's Redlands, California office.

EDUCATION

Engineering Geology/Hydrogeology, California State University, Los Angeles, California, 1984

AS, General Science, Crafton Hills College, Yucaipa, California, 1975

BS, Geological Sciences, California State University, Long Beach, California, 1982

REGISTRATIONS

Certified Engineering Geologist #1271, State of California

Professional Geologist #4066, State of California

PROJECT EXPERIENCE

Bioremediation

Excavation and Treatment of Petroleum-Contaminated Soil

Kyle designed the excavation and treatment of 45,000 cubic yards of petroleum-contaminated soil. Soil treatment included utilizing vapor extraction, combined with bioremediation.

Chemicals & Polymers

Two Former Chemical Plants, Environmental Site Assessments and Remediation, Vernon, California

Mr. Emerson was part of the team for conducting Phase I and Phase II Environmental Site Assessments (ESA) and developing remedial action plans for two former chemical plant sites with 80-year industrial histories. Phase I ESAs used historical files, maps, aerial photographs, available documents, and data from public agencies and historical directories for identifying recognized environmental concerns. Extensive Phase II ESA survey activities aided in identifying below-grade structures such as vaults/USTs, as well as assessing the extent of influence and nature of the contamination. These investigations confirmed the presence of heavy metals, petroleum hydrocarbons, volatile organic compounds, polychlorinated biphenyls, radioactive materials, semi-volatile organic compounds, and polycyclic aromatic compounds in the soils for these sites. Specific areas of concern included former settling ponds, a bone yard, maintenance areas, transformer and substations, wastewater treatment facilities, and above-ground storage tank farms. A conceptual mode was developedl for use in a health risk assessment and developed risk-based corrective actions to address potential health and environmental concerns. He assisted with the development and implementation of a remedial action plan, combined administrative controls, engineering controls, and active remediation; this resulted in the cost-effective return of one site to active use, and is reducing health risks to occupants and the public at the second site.

Kyle D. Emerson PG, CEG

Managing Principal Geologist

CONFIDENTIAL: Aerospace Adhesives and Coatings Plant, Glendale, California

Mr. Emerson was part of the team that conducted feasibility studies to evaluate remedial alternatives for remediation of chlorinated VOCs, 1,4 dioxane, and hexavalent chromium (CrVI) in soil, soil vapor, and groundwater. Feasibility studies included groundwater pump testing, benchscale column testing to evaluate in situ alternatives for reducing CrVI to the less mobile CrIII valence state, soil vapor extraction, capping, and excavation. Field pilot studies were performed to evaluate the efficiency of various CrVI reductants including the use of ferrous sulfate, calcium polysulfide, emulsified oil, and fructose. Extensive multi-depth soil vapor testing was conducted to evaluate the distribution of VOCs in the subsurface and to support vapor intrusion risk assessment. Feasibility studies were completed in 2008. Remedial actions are expected to be completed in 2011.

Condition Assessments

Assessment and Mitigation of Manufacturing Facility

Kyle managed the assessment and mitigation of an ammunition manufacturing facility covering 1,100 acres in a complex geologic environment. The contaminates involved red and white phosphorous, TNT, chlorinated solvents, solid wastes, and live ordinance.

Soil Contamination Assessment Supervision and Management

Kyle managed and supervised soil contamination assessment and in-situ remediation of heavy metals involving chromium, cadmium, nickel and zinc by chemical fixation to depths in excess of 40 feet below ground surface beneath existing structures within several manufacturing facilities.

Litigation Support and Expert Testimony

Kyle provided litigation support and expert testimony on more than 20 separate projects involving service stations, chlorinated solvent cases, heavy metal, and semi-volatile releases.

Corporate / Office

CT Realty Environmental Remediation of Former Dry Cleaners, El Centro, California

Mr. Emerson was responsible for assessments and remediation at this former dry cleaners which released the dry cleaning chemical tetrachloroethene (PCE) to the ground and underlying groundwater. The work included initial site assessment, agency interaction and negotiations with the California Regional Water Quality Control Board (CRWQCB), and Colorado Basin Region human health risk assessment (HHRA), design and implementation of remedial investigations, feasibility studies, remedial action plans, and implementation of remediation in mitigating chlorinated solvent contamination in vadose and saturated zones at concentrations indicative of DNAPL. The results of the completed remediation, as well as continued confirmation sampling and monitoring, allowed the CRWQCB to issue site closure in 2008. The site has since been redeveloped into a new commercial development.

Environmental Assessments

Siting Studies

Kyle performed initial siting studies for potential Class I, II, and III landfills. The project included detailed geologic mapping, hydrogeological studies, and permeability studies of caps and liners.

Environmental Site Remediation

Assessment and Remedial Design, California (Project Supervisor)

Kyle supervised the assessment and remedial design of a system to eliminate salt brine contamination in shallow perched water horizons in the Yucaipa, San Bernardino, and Riverside areas of southern California.

Design and Installation of Recovery Systems*

Kyle designed and installed numerous free-product recovery systems that successfully recovered product. One of the sites contained product up to 11-feet thick covering more than three city blocks. The dissolved phase had affected a multi-aquifer system and a public drinking water system.

Geophysical Characterizations*

Kyle performed and supervised numerous geophysical characterizations to determine the extent of old landfills. He provided classification studies, landfill gas monitoring, removal verification during grading, methane collection and mitigation plans, permitting, and closure plans.

** denotes projects completed with other firms*

Kyle D. Emerson PG, CEG

Managing Principal Geologist

Domestic Landfill Development*

Kyle designed and supervised the dynamic consolidation of a domestic landfill for development. He used this process to minimize expected settlement to overlying structures. Kyle designed commercial developments on closed landfills that involved complex methane collection and monitoring systems and building settlement controls.

Clay Borrow Site Studies

Kyle performed more than 10 separate clay borrow site studies for determining sources of material to cap landfills; ranged from a 20-acre dry lakebed to a 450-acre parcel in complex folded marine sediments.

Assessment, Clean Up, and Regulatory Support Management, Santa, Monica (Project Manager)

Kyle managed the assessment, clean up, and complex regulatory support of a PRP site in an MTBE case (Charnock subbasin). His work involved more than 20 environmental professionals working full time for two years to complete the assessment and clean up mandated by the regulatory agencies.

Hazardous Waste

San Gabriel Valley Superfund Site, Remediation & Closure of Multiple Source Areas, Industry, California

Mr. Emerson performed feasibility studies to evaluate appropriate and relevant remedial alternatives to mitigate constituents of concern in five AOCs contaminated with chlorinated hydrocarbons, heavy metals, petroleum fuel, and cutting oils. Ultimately, a combination of remedial alternatives was implemented that included large-diameter auger excavation to 45 feet to minimize impacts on facility operations, vapor extraction, vapor intrusion risk assessment, deed restriction, and monitored natural attenuation. At the completion of remedial actions, confirmation soil, soil vapor, and groundwater sampling were conducted and followed with risk assessment to demonstrate that remedial objectives had been achieved. No further action was recently granted by the US EPA and Los Angeles Regional Water Quality Control Board.

Mixed-Use

Port of San Diego Rohr Facility, Chula Vista, California

Mr. Enerson assisted in a detailed subsurface assessment of the Rohr facility. The intent of the assessment was to evaluate the 40-acre former aircraft part manufacturing facility for acquisition by the Port of San Diego for redevelopment into a business park and entertainment complex. The assessment identified the presence of soil, soil vapor, and groundwater impacts by petroleum hydrocarbons, VOCs, heavy metals, PCBs, and semi-volatile organic compounds. He utilized many sampling techniques to assess the limits and concentrations of contaminants in the subsurface. Ultimately, the team was able to develop a cost estimate for potential remedial action cost associated to corrective action to allow redevelopment.

Master Planned Commercial/Residential Redevelopment Project, Whittier, California (Project Manager)

Kyle oversaw the assessment of 26 contiguous properties that are part of a 21-acre master planned commercial/residential redevelopment project. The properties included industrial facilities, platting lines, fuel USTs, and metal processing plants, among others. The estimated cleanup costs are approximately $2 million.

Multi-Unit / Family Residential

Residential Development Assessment, Ventura, California (Project Director)

Kyle directed an assessment of a 40-acre former agricultural property proposed for residential development. Pesticides were identified above hazardous waste levels and preliminary remediation goals established by the U.S. Environmental Protection Agency. Through corrective grading methods and onsite placement of the pesticide impacted soils, all material were re-used on site without offsite disposal. The over all cost savings for the client was more than $1 million. Total cost was less than $250,000 for all necessary activities.

Oil & Gas

Oil Field Site Assessments*

Kyle performed site assessments at oil field leases involving refineries, bulk storage areas, piping systems and wellhead, and drilling mud pit contamination.

** denotes projects completed with other firms*

Kyle D. Emerson PG, CEG

Managing Principal Geologist

Environmental Protection Agency Superfund Action, Culver City, California (Project Manager)

Kyle served as the project manager representing a major oil company in the assessment, remedial action, and litigation support in a multi-party contamination case affecting a City water supply. The assessment involved more than 250 continuous core borings up to 100 feet, as well as extensive remedial actions. The total cost for all related activities was $22 million. The case is settled and the closure of the site is pending.

Project Management

Liability and Property Management Consulting Services

Kyle is providing liability and property management consulting services to more than 10 medium to large property development firms in the US. His work involves property transaction assessments, contract review, acquisition guideline development, liability management evaluation, insurance acquisition, and strategic planning.

Residential Development

Environmental Development Management and Review (Project Manager)

Kyle manages and reviews environmental development issues for a large residential developer specializing in development of contaminated industrial properties by providing innovative solutions in developing contaminated properties for residential use through risk assessment, engineering, and administrative and property development controls.

Site Management and Remediation

Design and Implementation of Biodegradation Programs*, California

Kyle designed and implemented one of the first in-situ biodegradation programs in California; it involved 50,000 cubic yards of diesel-contaminated soils, and groundwater to depths of 70 feet below ground surface.

Soil and Groundwater Remediation Systems

Soil and Groundwater Contamination Assessments and Mitigation*, California (Project Manger)

Kyle managed numerous chlorinated solvent soil and groundwater contamination assessments and mitigation programs in southern California. The projects involved releases that impacted soil and groundwater to depth of groundwater more than 700 feet in multi-aquifer systems. One case involved with plume dimensions more than 1 mile from the source affecting residential properties.

Soil and Groundwater Assessment and Remediation Programs*

Implemented hundreds of soil and groundwater assessment and remediation programs at various service station facilities in Southern and Northern California, and Nevada. Work involved assessment, remedial design, installation, maintenance and monitoring. Closure has been received on a majority of these sites.

Assessment and Remediation Management*

Kyle managed the assessment and remediation of soil and groundwater manufacturing at dry cleaning facilities contaminated with chlorinated solvents.

Warehouse / Light Industrial

Glendale Redevelopment Project, Glendale, California (Project Manager)

Kyle managed the assessment and remedial actions during the redevelopment of and industrial property. The project involved the demolition of a historic manufacturing facility and a commercial dry cleaner. Each of these facilities were associated with releases of solvents and petroleum hydrocarbons. Remedial actions involved excavation by pattern drilling and off site disposal along with removal of former USTs. The total cost of remediation and assessment was $450,000.00.

** denotes projects completed with other firms*

Kyle D. Emerson PG, CEG

Managing Principal Geologist

Compton Redevelopment Project, Compton, California (Project Manager)

Kyle is serving as project manager for the assessment and remedial actions for a large redevelopment project. The project involves the redevelopment of a historic manufacturing facility and a former dry cleaner. Each of these facilities were associated with releases of solvents and petroleum hydrocarbons. The industrial facility was also associated with significant volumes of buried waste that required removal and disposal. These wastes also included the chemical referenced above, as well as PCBs and heavy metals. Remediation has included excavation, vapor extraction, and chemical fixation. The total cost of this project has been $2.8 million to date.

** denotes projects completed with other firms*

Kyle D. Emerson PG, CEG

Managing Principal Geologist

PUBLICATIONS

In-Situ Bioremediation of an Underground Diesel Fuel Spill: A Case Study. *Environmental Management*, 1989.

Appendix C
ENVIRONMENTAL AGENCY DATABASE SEARCH REPORT

Aragorn-Athos Project
Riverside County
Desert Center, CA 92239

Inquiry Number: 5224815.2s
March 19, 2018

The EDR Radius Atlas™ with GeoCheck®

6 Armstrong Road, 4th floor
Shelton, CT 06484
Toll Free: 800.352.0050
www.edrnet.com

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GEOCHECK ADDENDUM

Physical Setting Source Addendum	A-1
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Thank you for your business.
Please contact EDR at 1-800-352-0050
with any questions or comments.

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EXECUTIVE SUMMARY

A search of available environmental records was conducted by Environmental Data Resources, Inc (EDR). The report was designed to assist parties seeking to meet the search requirements of EPA's Standards and Practices for All Appropriate Inquiries (40 CFR Part 312), the ASTM Standard Practice for Environmental Site Assessments (E 1527-13), the ASTM Standard Practice for Environmental Site Assessments for Forestland or Rural Property (E 2247-16), the ASTM Standard Practice for Limited Environmental Due Diligence: Transaction Screen Process (E 1528-14) or custom requirements developed for the evaluation of environmental risk associated with a parcel of real estate.

TARGET PROPERTY INFORMATION

ADDRESS

RIVERSIDE COUNTY
DESERT CENTER, CA 92239

COORDINATES

Latitude (North):	33.7638360 - 33˚ 45' 49.80''
Longitude (West):	115.3431530 - 115˚ 20' 35.35''
Universal Tranverse Mercator:	Zone 11
UTM X (Meters):	653440.0
UTM Y (Meters):	3737010.5
Elevation:	560 ft. above sea level

USGS TOPOGRAPHIC MAP ASSOCIATED WITH TARGET PROPERTY

Target Property Map:	5640284 EAST OF VICTORY PASS, CA
Version Date:	2012
South Map:	5640274 CORN SPRING, CA
Version Date:	2012
Southwest Map:	5641072 DESERT CENTER, CA
Version Date:	2012
Northwest Map:	5639800 VICTORY PASS, CA
Version Date:	2012

TARGET PROPERTY SEARCH RESULTS

The target property was not listed in any of the databases searched by EDR.

DATABASES WITH NO MAPPED SITES

No mapped sites were found in EDR's search of available ("reasonably ascertainable ") government records either on the target property or within the search radius around the target property for the following databases:

STANDARD ENVIRONMENTAL RECORDS

Federal NPL site list

NPL---------- National Priority List

EXECUTIVE SUMMARY

Proposed NPL ..... Proposed National Priority List Sites
NPL LIENS ..... Federal Superfund Liens

Federal Delisted NPL site list

Delisted NPL ..... National Priority List Deletions

Federal CERCLIS list

FEDERAL FACILITY ..... Federal Facility Site Information listing
SEMS ..... Superfund Enterprise Management System

Federal CERCLIS NFRAP site list

SEMS-ARCHIVE ..... Superfund Enterprise Management System Archive

Federal RCRA CORRACTS facilities list

CORRACTS ..... Corrective Action Report

Federal RCRA non-CORRACTS TSD facilities list

RCRA-TSDF ..... RCRA - Treatment, Storage and Disposal

Federal RCRA generators list

RCRA-LQG ..... RCRA - Large Quantity Generators
RCRA-CESQG ..... RCRA - Conditionally Exempt Small Quantity Generator

Federal institutional controls / engineering controls registries

LUCIS ..... Land Use Control Information System
US ENG CONTROLS ..... Engineering Controls Sites List
US INST CONTROL ..... Sites with Institutional Controls

Federal ERNS list

ERNS ..... Emergency Response Notification System

State- and tribal - equivalent NPL

RESPONSE ..... State Response Sites

State and tribal landfill and/or solid waste disposal site lists

SWF/LF ..... Solid Waste Information System

State and tribal leaking storage tank lists

LUST ..... Geotracker's Leaking Underground Fuel Tank Report
INDIAN LUST ..... Leaking Underground Storage Tanks on Indian Land
SLIC ..... Statewide SLIC Cases

State and tribal registered storage tank lists

FEMA UST ..... Underground Storage Tank Listing

EXECUTIVE SUMMARY

INDIAN UST..... Underground Storage Tanks on Indian Land

State and tribal voluntary cleanup sites

VCP..... Voluntary Cleanup Program Properties
INDIAN VCP..... Voluntary Cleanup Priority Listing

State and tribal Brownfields sites

BROWNFIELDS..... Considered Brownfieds Sites Listing

ADDITIONAL ENVIRONMENTAL RECORDS

Local Brownfield lists

US BROWNFIELDS..... A Listing of Brownfields Sites

Local Lists of Landfill / Solid Waste Disposal Sites

WMUDS/SWAT..... Waste Management Unit Database
SWRCY..... Recycler Database
HAULERS..... Registered Waste Tire Haulers Listing
INDIAN ODI..... Report on the Status of Open Dumps on Indian Lands
DEBRIS REGION 9..... Torres Martinez Reservation Illegal Dump Site Locations
ODI..... Open Dump Inventory
IHS OPEN DUMPS..... Open Dumps on Indian Land

Local Lists of Hazardous waste / Contaminated Sites

US HIST CDL..... Delisted National Clandestine Laboratory Register
HIST Cal-Sites..... Historical Calsites Database
SCH..... School Property Evaluation Program
CDL..... Clandestine Drug Labs
Toxic Pits..... Toxic Pits Cleanup Act Sites
US CDL..... National Clandestine Laboratory Register

Local Lists of Registered Storage Tanks

SWEEPS UST..... SWEEPS UST Listing
CA FID UST..... Facility Inventory Database

Local Land Records

LIENS..... Environmental Liens Listing
LIENS 2..... CERCLA Lien Information
DEED..... Deed Restriction Listing

Records of Emergency Release Reports

HMIRS..... Hazardous Materials Information Reporting System
CHMIRS..... California Hazardous Material Incident Report System
LDS..... Land Disposal Sites Listing
SPILLS 90..... SPILLS 90 data from FirstSearch

Other Ascertainable Records

RCRA NonGen / NLR..... RCRA - Non Generators / No Longer Regulated

EXECUTIVE SUMMARY

DOD	Department of Defense Sites
SCRD DRYCLEANERS	State Coalition for Remediation of Drycleaners Listing
US FIN ASSUR	Financial Assurance Information
EPA WATCH LIST	EPA WATCH LIST
2020 COR ACTION	2020 Corrective Action Program List
TSCA	Toxic Substances Control Act
TRIS	Toxic Chemical Release Inventory System
SSTS	Section 7 Tracking Systems
ROD	Records Of Decision
RMP	Risk Management Plans
RAATS	RCRA Administrative Action Tracking System
PRP	Potentially Responsible Parties
PADS	PCB Activity Database System
ICIS	Integrated Compliance Information System
FTTS	FIFRA/ TSCA Tracking System - FIFRA (Federal Insecticide, Fungicide, & Rodenticide Act)/TSCA (Toxic Substances Control Act)
MLTS	Material Licensing Tracking System
COAL ASH DOE	Steam-Electric Plant Operation Data
COAL ASH EPA	Coal Combustion Residues Surface Impoundments List
PCB TRANSFORMER	PCB Transformer Registration Database
RADINFO	Radiation Information Database
HIST FTTS	FIFRA/TSCA Tracking System Administrative Case Listing
DOT OPS	Incident and Accident Data
CONSENT	Superfund (CERCLA) Consent Decrees
INDIAN RESERV	Indian Reservations
FUSRAP	Formerly Utilized Sites Remedial Action Program
UMTRA	Uranium Mill Tailings Sites
LEAD SMELTERS	Lead Smelter Sites
US AIRS	Aerometric Information Retrieval System Facility Subsystem
US MINES	Mines Master Index File
ABANDONED MINES	Abandoned Mines
UXO	Unexploded Ordnance Sites
ECHO	Enforcement & Compliance History Information
DOCKET HWC	Hazardous Waste Compliance Docket Listing
FUELS PROGRAM	EPA Fuels Program Registered Listing
CA BOND EXP. PLAN	Bond Expenditure Plan
Cortese	"Cortese" Hazardous Waste & Substances Sites List
CUPA Listings	CUPA Resources List
DRYCLEANERS	Cleaner Facilities
EMI	Emissions Inventory Data
ENF	Enforcement Action Listing
Financial Assurance	Financial Assurance Information Listing
ICE	ICE
HIST CORTESE	Hazardous Waste & Substance Site List
HWP	EnviroStor Permitted Facilities Listing
HWT	Registered Hazardous Waste Transporter Database
MINES	Mines Site Location Listing
MWMP	Medical Waste Management Program Listing
PEST LIC	Pesticide Regulation Licenses Listing
PROC	Certified Processors Database
Notify 65	Proposition 65 Records
UIC	UIC Listing
WASTEWATER PITS	Oil Wastewater Pits Listing
WDS	Waste Discharge System
WIP	Well Investigation Program Case List

EXECUTIVE SUMMARY

EDR HIGH RISK HISTORICAL RECORDS

EDR Exclusive Records

EDR MGP..... EDR Proprietary Manufactured Gas Plants
EDR Hist Cleaner..... EDR Exclusive Historical Cleaners

EDR RECOVERED GOVERNMENT ARCHIVES

Exclusive Recovered Govt. Archives

RGA LF..... Recovered Government Archive Solid Waste Facilities List
RGA LUST..... Recovered Government Archive Leaking Underground Storage Tank

SURROUNDING SITES: SEARCH RESULTS

Surrounding sites were identified in the following databases.

Elevations have been determined from the USGS Digital Elevation Model and should be evaluated on a relative (not an absolute) basis. Relative elevation information between sites of close proximity should be field verified. Sites with an elevation equal to or higher than the target property have been differentiated below from sites with an elevation lower than the target property.
Page numbers and map identification numbers refer to the EDR Radius Map report where detailed data on individual sites can be reviewed.

Sites listed in ***bold italics*** are in multiple databases.

Unmappable (orphan) sites are not considered in the foregoing analysis.

STANDARD ENVIRONMENTAL RECORDS

Federal RCRA generators list

RCRA-SQG: RCRAInfo is EPA's comprehensive information system, providing access to data supporting the Resource Conservation and Recovery Act (RCRA) of 1976 and the Hazardous and Solid Waste Amendments (HSWA) of 1984. The database includes selective information on sites which generate, transport, store, treat and/or dispose of hazardous waste as defined by the Resource Conservation and Recovery Act (RCRA). Small quantity generators (SQGs) generate between 100 kg and 1,000 kg of hazardous waste per month.

A review of the RCRA-SQG list, as provided by EDR, and dated 12/11/2017 has revealed that there is 1 RCRA-SQG site within approximately 3.25 miles of the target property.

Lower Elevation	Address	Direction / Distance	Map ID	Page
IRON MOUNTAIN PUMPIN	6001 IRON MOUNTAIN P	ESE 1 - 2 (1.366 mi.)	7	37

State- and tribal - equivalent CERCLIS

ENVIROSTOR: The Department of Toxic Substances Control's (DTSC's) Site Mitigation and Brownfields Reuse Program's (SMBRP's) EnviroStor database identifes sites that have known contamination or sites for which there may be reasons to investigate further. The database includes the following site types: Federal Superfund sites (National Priorities List (NPL)); State Response, including Military Facilities and State Superfund; Voluntary Cleanup; and School sites. EnviroStor provides similar information to the information that was available in CalSites, and provides additional site information, including, but not limited to, identification of formerly-contaminated properties that have been released for reuse, properties where environmental deed restrictions have been recorded to prevent inappropriate land uses, and risk characterization information that is used to assess potential impacts to public health and the environment at contaminated sites.

A review of the ENVIROSTOR list, as provided by EDR, and dated 10/30/2017 has revealed that there is 1 ENVIROSTOR site within approximately 4 miles of the target property.

Equal/Higher Elevation	Address	Direction / Distance	Map ID	Page
DESERT CEN DIV CP Facility Id: 80000236 Status: Inactive - Needs Evaluation		WNW >2 (3.994 mi.)	D13	45

State and tribal registered storage tank lists

UST: The Underground Storage Tank database contains registered USTs. USTs are regulated under Subtitle I of the Resource Conservation and Recovery Act (RCRA). The data come from the State Water Resources Control Board's Hazardous Substance Storage Container Database.

A review of the UST list, as provided by EDR, has revealed that there are 2 UST sites within approximately 3.25 miles of the target property.

Equal/Higher Elevation	Address	Direction / Distance	Map ID	Page
IRON MOUNTAIN PUMPIN Database: UST, Date of Government Version: 12/11/2017 Facility Id: 86012468	6001 IRON MTN PUMPIN	NW 1 - 2 (1.324 mi.)	B5	36
MWD/EAGLE MOUNTAIN P Database: UST, Date of Government Version: 12/11/2017 Facility Id: 459	EAGLE MOUNTAIN RD	NW 1 - 2 (1.324 mi.)	B6	37

AST: A listing of aboveground storage tank petroleum storage tank locations.

A review of the AST list, as provided by EDR, and dated 07/06/2016 has revealed that there is 1 AST site within approximately 3.25 miles of the target property.

Equal/Higher Elevation	Address	Direction / Distance	Map ID	Page
CHUCKWALLA VALLEY RA	***25300 RICE ROAD***	***SW 1 - 2 (1.128 mi.)***	***A3***	***33***

EXECUTIVE SUMMARY

ADDITIONAL ENVIRONMENTAL RECORDS

Local Lists of Registered Storage Tanks

HIST UST: Historical UST Registered Database.

A review of the HIST UST list, as provided by EDR, and dated 10/15/1990 has revealed that there is 1 HIST UST site within approximately 3.25 miles of the target property.

Equal/Higher Elevation	Address	Direction / Distance	Map ID	Page
WILLIAM W HEATH DBA Facility Id: 00000040696	25940 RICE RD	SW 1 - 2 (1.442 mi.)	C8	42

Records of Emergency Release Reports

MCS: Military sites (consisting of: Military UST sites; Military Privatized sites; and Military Cleanup sites [formerly known as DoD non UST]) included in GeoTracker. GeoTracker is the Water Boards data management system for sites that impact, or have the potential to impact, water quality in California, with emphasis on groundwater.

A review of the MCS list, as provided by EDR, and dated 12/11/2017 has revealed that there is 1 MCS site within approximately 3 miles of the target property.

Lower Elevation	Address	Direction / Distance	Map ID	Page
DESERT CENTER AIRPOR Global Id: DOD100093300 Status: Open - Inactive	DESERT CENTER	SE 1 - 2 (1.564 mi.)	11	44

Other Ascertainable Records

FUDS: The Listing includes locations of Formerly Used Defense Sites Properties where the US Army Corps Of Engineers is actively working or will take necessary cleanup actions.

A review of the FUDS list, as provided by EDR, and dated 01/31/2015 has revealed that there are 2 FUDS sites within approximately 4 miles of the target property.

Equal/Higher Elevation	Address	Direction / Distance	Map ID	Page
DESERT CENTER DIVISI		WNW >2 (3.994 mi.)	D14	46

Lower Elevation	Address	Direction / Distance	Map ID	Page
DESERT CNTR ARPT		SE 1/2 - 1 (0.985 mi.)	2	32

EXECUTIVE SUMMARY

FINDS: The Facility Index System contains both facility information and "pointers" to other sources of information that contain more detail. These include: RCRIS; Permit Compliance System (PCS); Aerometric Information Retrieval System (AIRS); FATES (FIFRA [Federal Insecticide Fungicide Rodenticide Act] and TSCA Enforcement System, FTTS [FIFRA/TSCA Tracking System]; CERCLIS; DOCKET (Enforcement Docket used to manage and track information on civil judicial enforcement cases for all environmental statutes); Federal Underground Injection Control (FURS); Federal Reporting Data System (FRDS); Surface Impoundments (SIA); TSCA Chemicals in Commerce Information System (CICS); PADS; RCRA-J (medical waste transporters/disposers); TRIS; and TSCA. The source of this database is the U.S. EPA/NTIS.

A review of the FINDS list, as provided by EDR, and dated 07/23/2017 has revealed that there are 2 FINDS sites within approximately 3 miles of the target property.

Equal/Higher Elevation	Address	Direction / Distance	Map ID	Page
CHUCKWALLA VALLEY RA	25300 RICE RD	SW 1 - 2 (1.128 mi.)	A4	36

Lower Elevation	Address	Direction / Distance	Map ID	Page
DESERT CENTER	UNKNOWN	SE 1 - 2 (1.518 mi.)	10	44

HAZNET: The data is extracted from the copies of hazardous waste manifests received each year by the DTSC. The annual volume of manifests is typically 700,000-1,000,000 annually, representing approximately 350,000-500,000 shipments. Data from non-California manifests & continuation sheets are not included at the present time. Data are from the manifests submitted without correction, and therefore many contain some invalid values for data elements such as generator ID, TSD ID, waste category, & disposal method. The source is the Department of Toxic Substance Control is the agency. This database begins with calendar year 1993.

A review of the HAZNET list, as provided by EDR, and dated 12/31/2016 has revealed that there is 1 HAZNET site within approximately 3 miles of the target property.

Equal/Higher Elevation	Address	Direction / Distance	Map ID	Page
TITAN CORP GEPAID: CAC002587075	24050 RICE RD	SSW 1/4 - 1/2 (0.387 mi.)	1	32

NPDES: A listing of NPDES permits, including stormwater.

A review of the NPDES list, as provided by EDR, and dated 02/14/2018 has revealed that there is 1 NPDES site within approximately 3 miles of the target property.

Equal/Higher Elevation	Address	Direction / Distance	Map ID	Page
CHUCKWALLA VALLEY RA Facility Status: Active	***25300 RICE ROAD***	***SW 1 - 2 (1.128 mi.)***	***A3***	***33***

EDR HIGH RISK HISTORICAL RECORDS

EDR Exclusive Records

EDR Hist Auto: EDR has searched selected national collections of business directories and has collected

listings of potential gas station/filling station/service station sites that were available to EDR researchers. EDR's review was limited to those categories of sources that might, in EDR's opinion, include gas station/filling station/service station establishments. The categories reviewed included, but were not limited to gas, gas station, gasoline station, filling station, auto, automobile repair, auto service station, service station, etc. This database falls within a category of information EDR classifies as "High Risk Historical Records", or HRHR. EDR's HRHR effort presents unique and sometimes proprietary data about past sites and operations that typically create environmental concerns, but may not show up in current government records searches.

A review of the EDR Hist Auto list, as provided by EDR, has revealed that there are 2 EDR Hist Auto sites within approximately 3.125 miles of the target property.

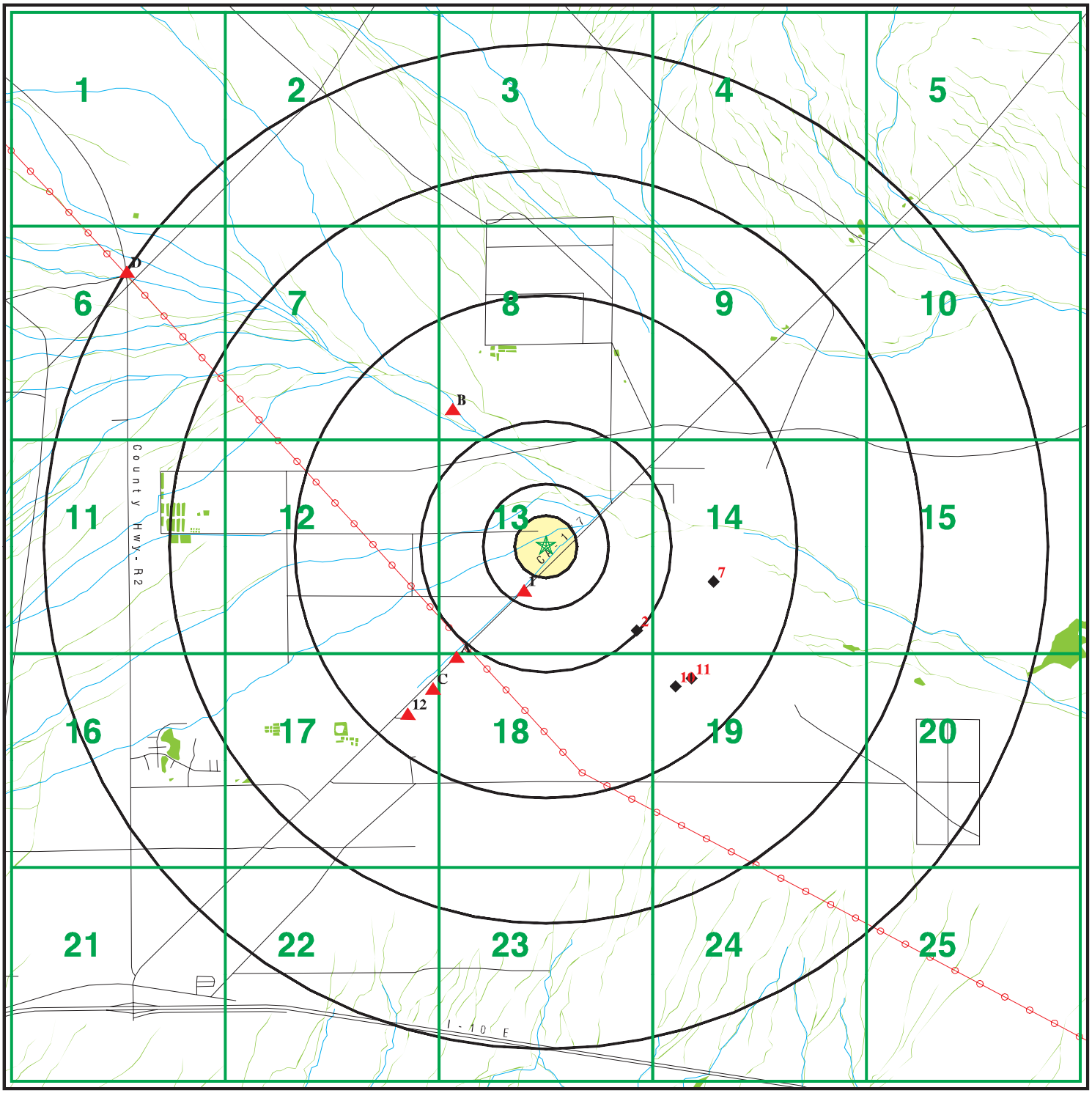
Equal/Higher Elevation	Address	Direction / Distance	Map ID	Page
DESERT ENTERPRISES U	25940 RICE RD	SW 1 - 2 (1.442 mi.)	C9	43
GREEN ACRES MOBILE P	25950 RICE RD	SW 1 - 2 (1.725 mi.)	12	44

EXECUTIVE SUMMARY

Due to poor or inadequate address information, the following sites were not mapped. Count: 20 records.

Site Name	Database(s)
CALTRANS DESERT CENTER	RGA LUST
CALTRANS-DESERT CENTER	RGA LUST
CALTRANS-DESERT CENTER	RGA LUST
CALTRANS DESERT CENTER MAIN.	RGA LUST
CALTRANS-DESERT CENTER	RGA LUST
CRA SAND TRAP REPLACEMENT EAGLE MO	CHMIRS, ENF, NPDES
INDIGO SOLAR FARM	NPDES
ST HWY 111 NE PALM SPRINGS	NPDES
	CDL
	CDL
PAR ELECTRIC CONTRACTORS	CHMIRS, HAZNET
IRON MOUNTAIN PUMPING PLANT	HIST UST
RCIT - ROAD 62 #44	AST
CALTRANS D-8/CONSTR/EA08-0K6304	HAZNET
PETERS PROPERTY	HAZNET
PALEN SOLAR POWER PROJECT	FINDS
RICE SOLAR ENERGY PROJECT	FINDS
PACIFIC CLAY PRODS CO	US MINES
MWD - IRON MT. PUMPING STATION	EMI
KAISER EAGLE MOUNTAIN	DOCKET HWC

OVERVIEW MAP - 5224815.2S



- Target Property
- Sites at elevations higher than or equal to the target property
- Sites at elevations lower than the target property
- Manufactured Gas Plants
- National Priority List Sites
- Dept. Defense Sites

0 1 2 4 Miles

- Indian Reservations BIA
- Power transmission lines
- 100-year flood zone
- 500-year flood zone
- National Wetland Inventory
- State Wetlands
- Upgradient Area
- Areas of Concern

N

SITE NAME: Aragorn-Athos Project	CLIENT: Stantec
ADDRESS: Riverside County Desert Center CA 92239	CONTACT: Dion Monge INQUIRY #: 5224815.2s
LAT/LONG: 33.763836 / 115.343153	DATE: March 19, 2018 5:01 pm

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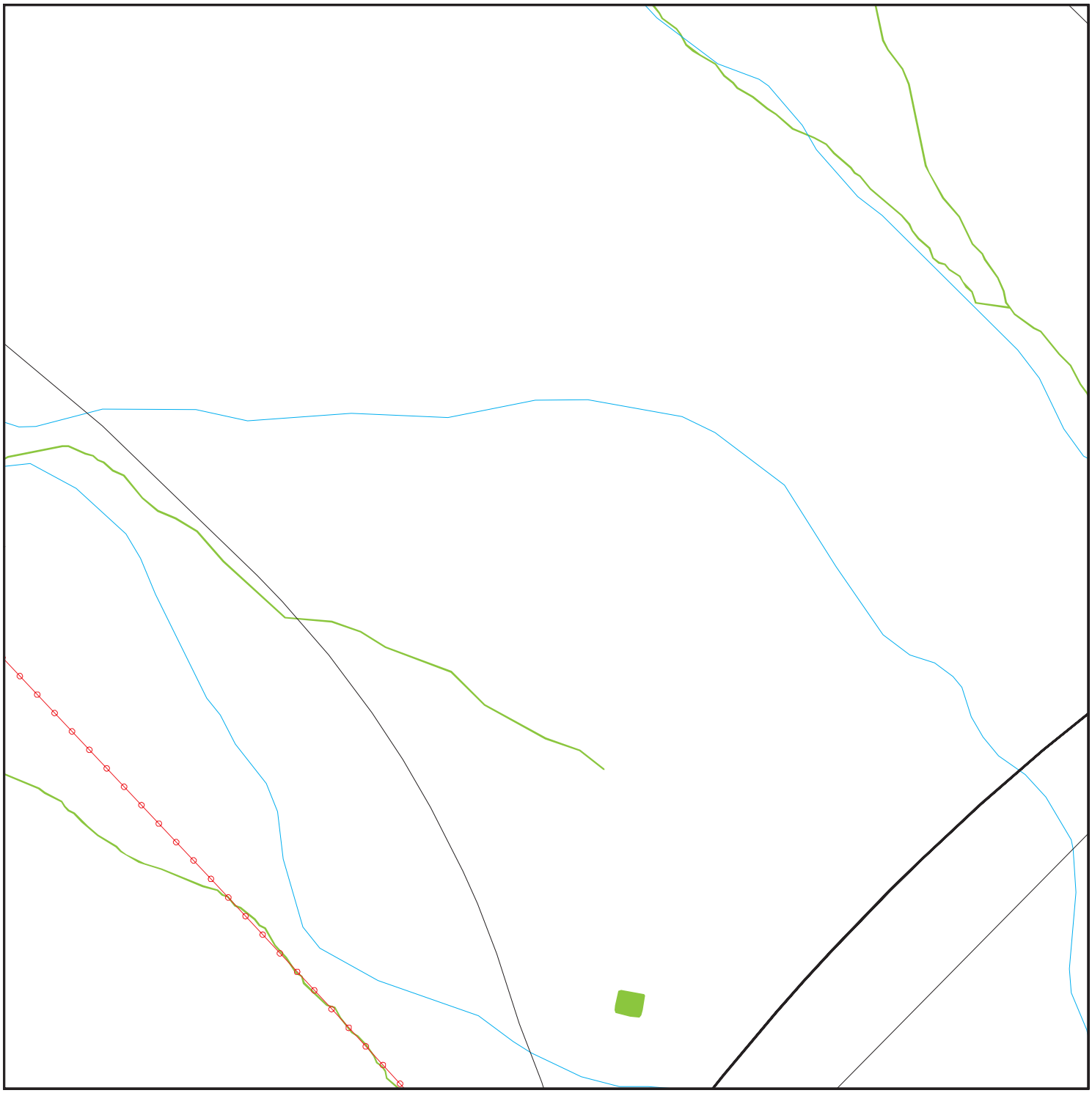
DETAIL MAP 1 OF 25 - 5224815.2S



Target Property

Sites at elevations higher than or equal to the target property

Sites at elevations lower than the target property

Manufactured Gas Plants

Sensitive Receptors

National Priority List Sites

Dept. Defense Sites

0 1/8 1/4 1/2 Miles

Indian Reservations BIA

Power transmission lines

100-year flood zone

500-year flood zone

National Wetland Inventory

State Wetlands

Areas of Concern

N

SITE NAME: Aragorn-Athos Project ADDRESS: Riverside County Desert Center CA 92239 LAT/LONG: 33.763836 / 115.343153	CLIENT: Stantec CONTACT: Dion Monge INQUIRY #: 5224815.2s DATE: March 19, 2018 5:07 pm

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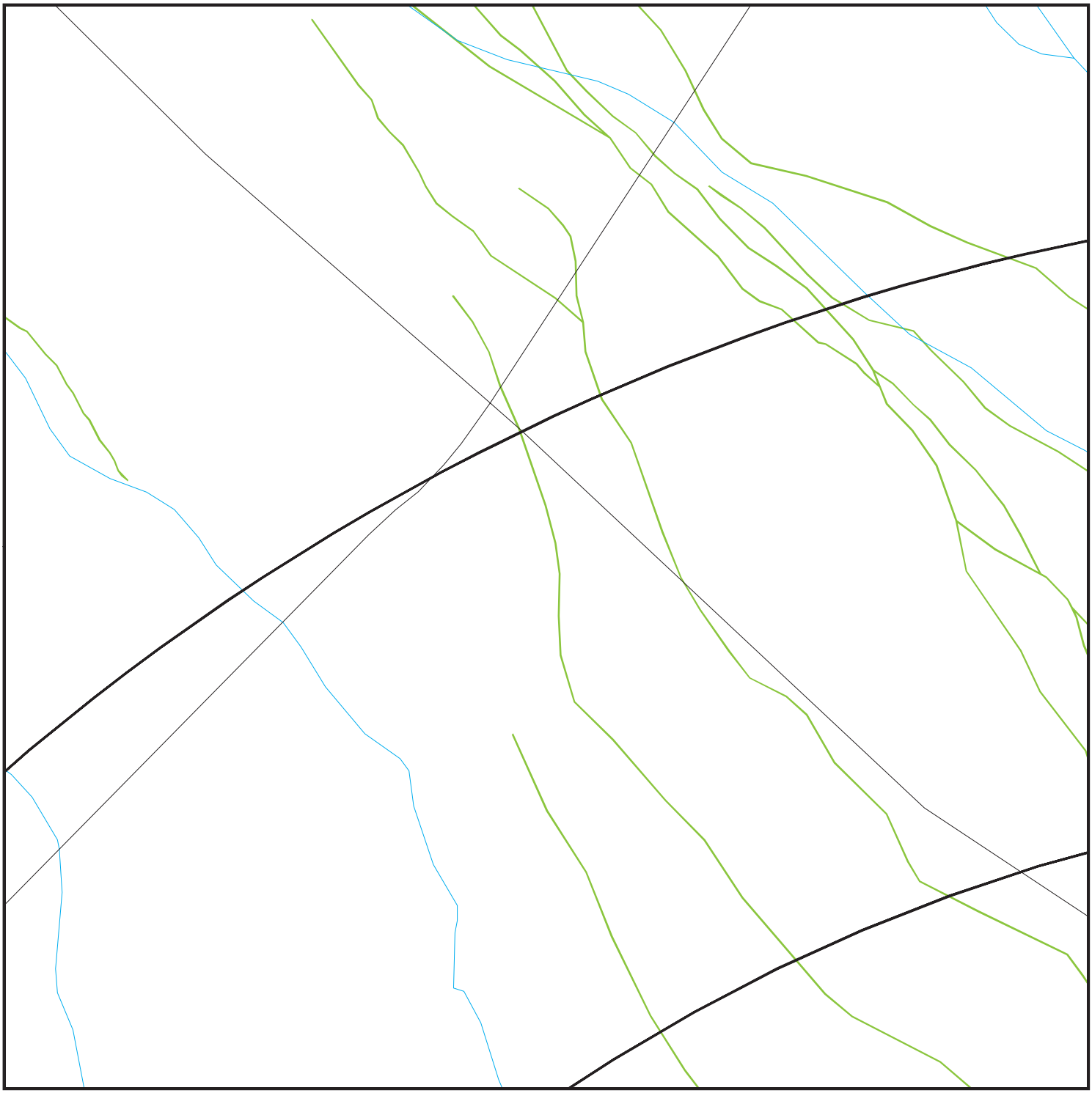
DETAIL MAP 2 OF 25 - 5224815.2S



Target Property

Sites at elevations higher than or equal to the target property

Sites at elevations lower than the target property

Manufactured Gas Plants

Sensitive Receptors

National Priority List Sites

Dept. Defense Sites

0 1/8 1/4 1/2 Miles

Indian Reservations BIA

100-year flood zone

500-year flood zone

National Wetland Inventory

State Wetlands

Areas of Concern

N

SITE NAME: Aragorn-Athos Project ADDRESS: Riverside County Desert Center CA 92239 LAT/LONG: 33.763836 / 115.343153	CLIENT: Stantec CONTACT: Dion Monge INQUIRY #: 5224815.2s DATE: March 19, 2018 5:08 pm

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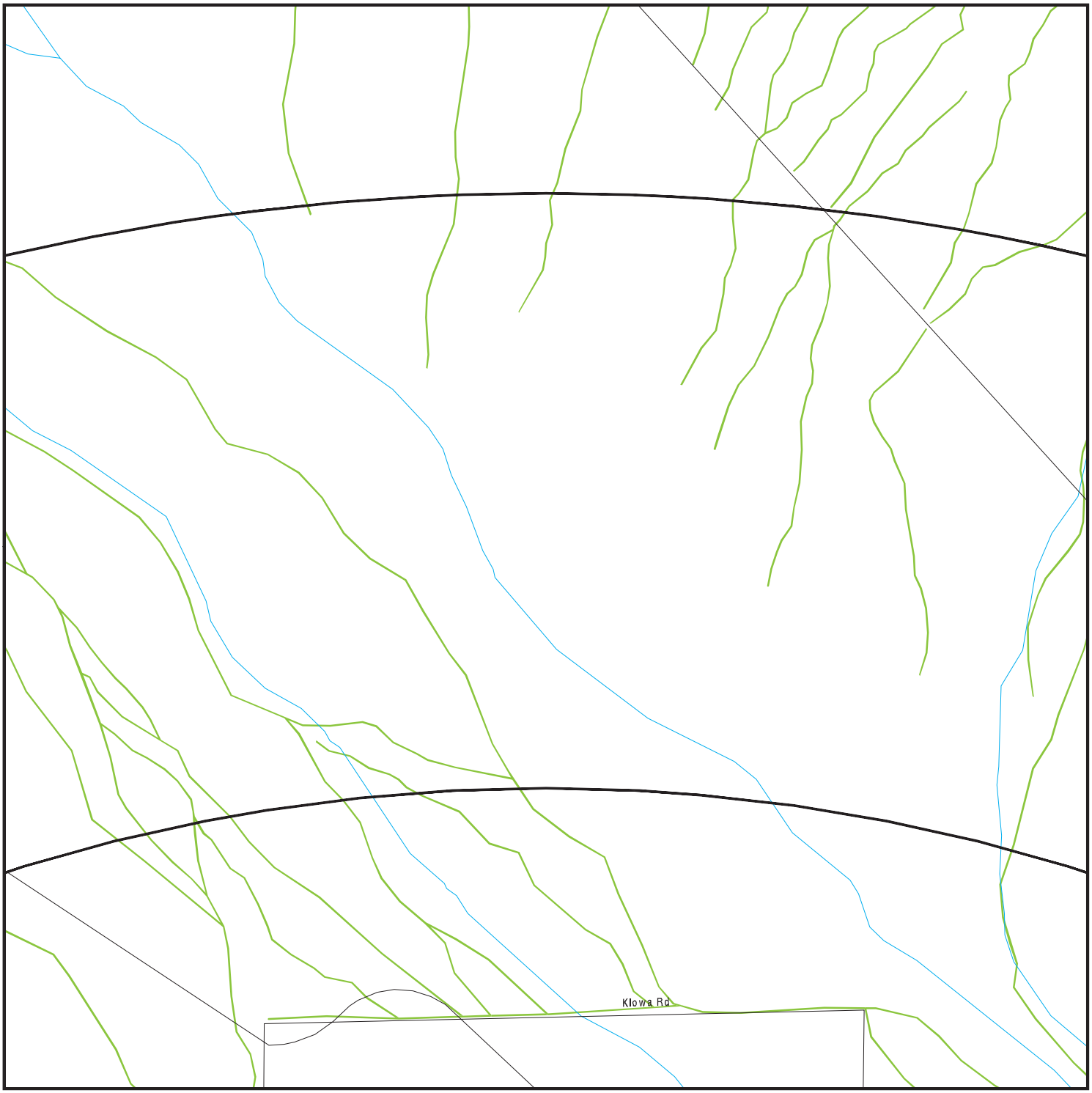
DETAIL MAP 3 OF 25 - 5224815.2S



0 1/8 1/4 1/2 Miles

- Target Property
- Sites at elevations higher than or equal to the target property
- Sites at elevations lower than the target property
- Manufactured Gas Plants
- Sensitive Receptors
- National Priority List Sites
- Dept. Defense Sites
- Indian Reservations BIA
- 100-year flood zone
- 500-year flood zone
- National Wetland Inventory
- State Wetlands
- Areas of Concern

SITE NAME: Aragorn-Athos Project ADDRESS: Riverside County Desert Center CA 92239 LAT/LONG: 33.763836 / 115.343153	CLIENT: Stantec CONTACT: Dion Monge INQUIRY #: 5224815.2s DATE: March 19, 2018 5:10 pm

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DETAIL MAP 4 OF 25 - 5224815.2S

Target Property

Sites at elevations higher than or equal to the target property

Sites at elevations lower than the target property

Manufactured Gas Plants

Sensitive Receptors

National Priority List Sites

Dept. Defense Sites

0 1/8 1/4 1/2 Miles

Indian Reservations BIA

100-year flood zone

500-year flood zone

National Wetland Inventory

State Wetlands

Areas of Concern

N

SITE NAME: Aragorn-Athos Project ADDRESS: Riverside County Desert Center CA 92239 LAT/LONG: 33.763836 / 115.343153	CLIENT: Stantec CONTACT: Dion Monge INQUIRY #: 5224815.2s DATE: March 19, 2018 5:12 pm

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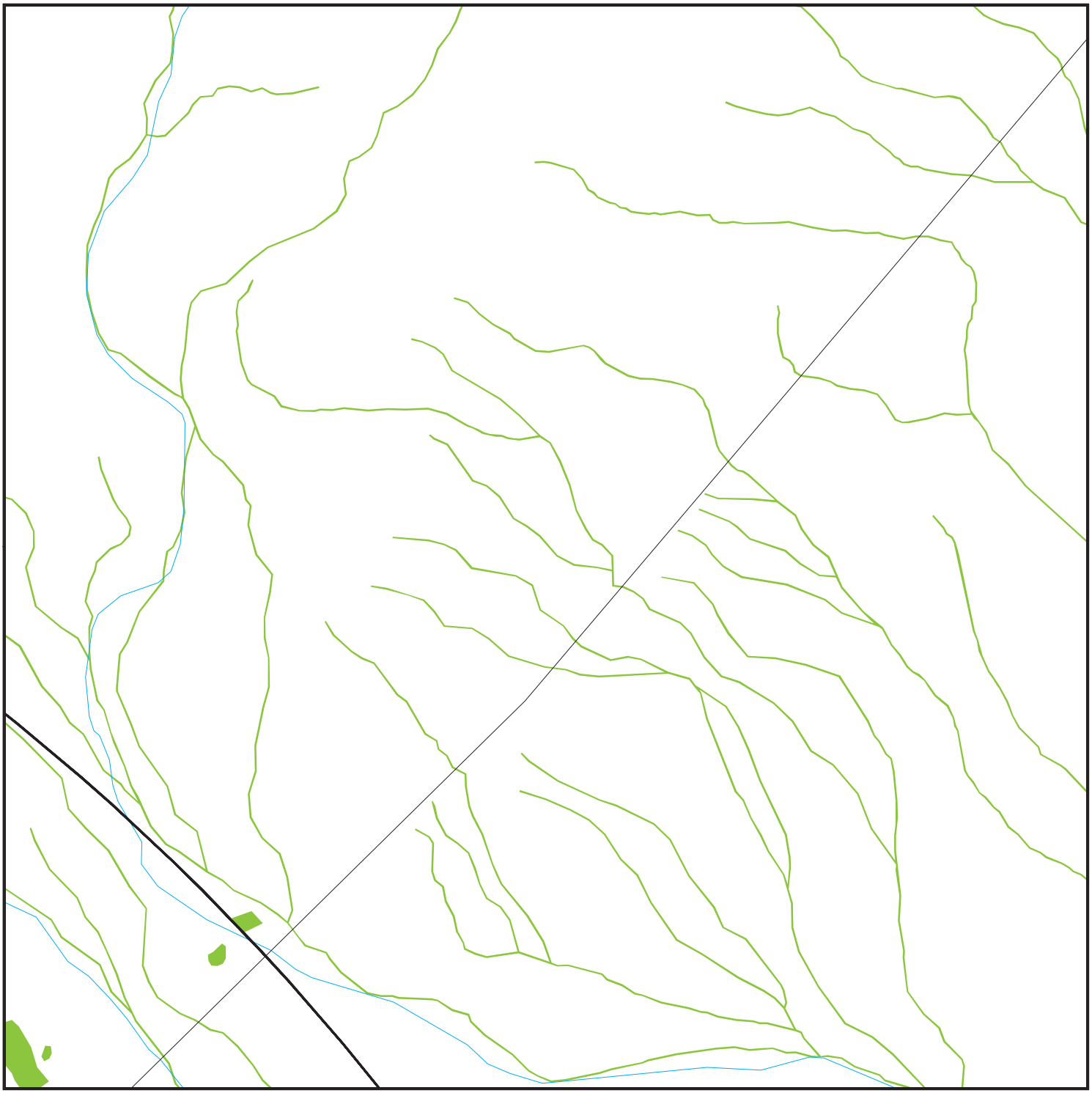
DETAIL MAP 5 OF 25 - 5224815.2S



Target Property

Sites at elevations higher than or equal to the target property

Sites at elevations lower than the target property

Manufactured Gas Plants

Sensitive Receptors

National Priority List Sites

Dept. Defense Sites

0 1/8 1/4 1/2 Miles

Indian Reservations BIA

100-year flood zone

500-year flood zone

National Wetland Inventory

State Wetlands

Areas of Concern

N

SITE NAME: Aragorn-Athos Project ADDRESS: Riverside County Desert Center CA 92239 LAT/LONG: 33.763836 / 115.343153	CLIENT: Stantec CONTACT: Dion Monge INQUIRY #: 5224815.2s DATE: March 19, 2018 5:15 pm

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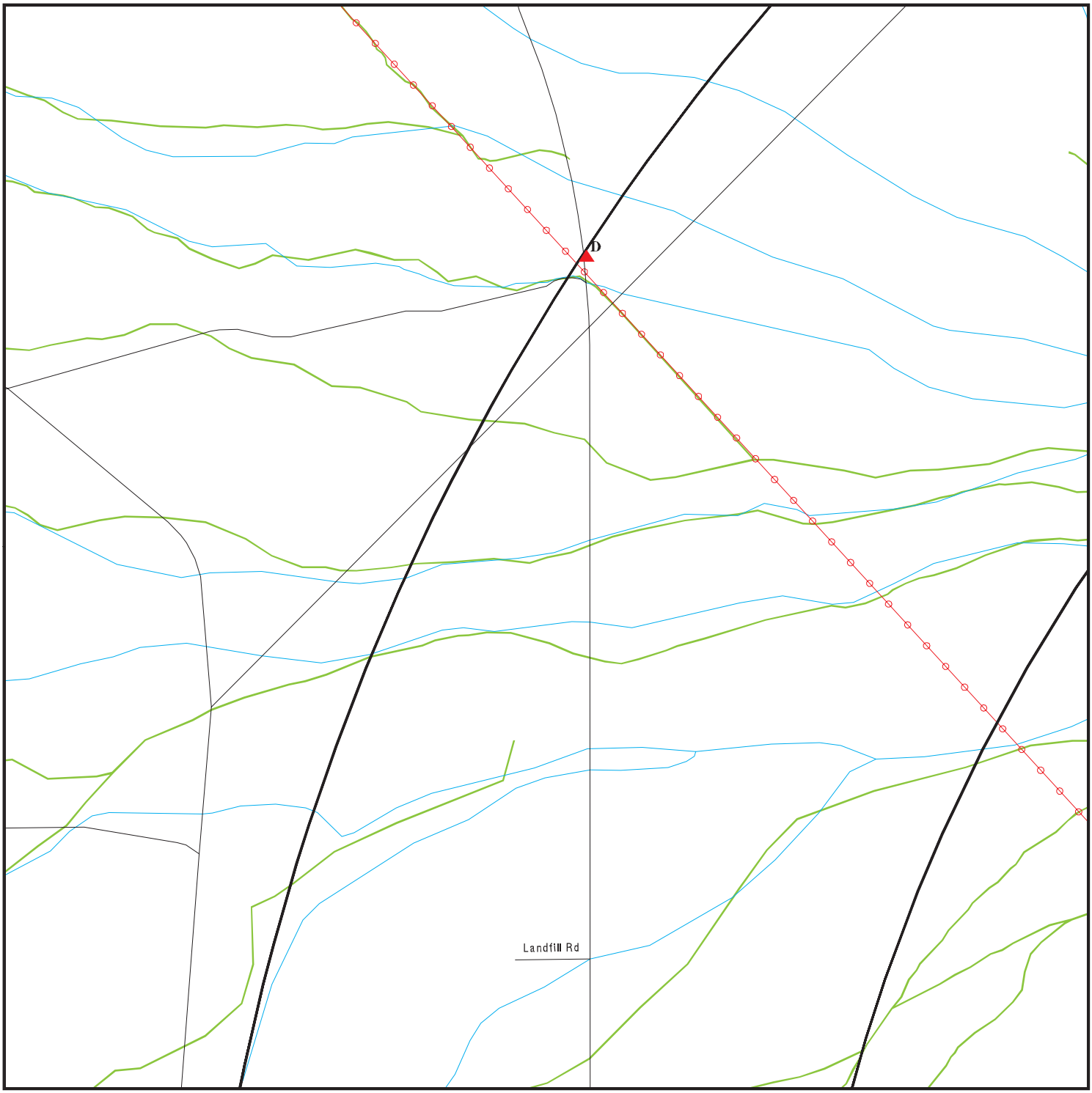
DETAIL MAP 6 OF 25 - 5224815.2S



- Target Property
- Sites at elevations higher than or equal to the target property
- Sites at elevations lower than the target property
- Manufactured Gas Plants
- Sensitive Receptors
- National Priority List Sites
- Dept. Defense Sites

0 1/8 1/4 1/2 Miles

- Indian Reservations BIA
- Power transmission lines
- 100-year flood zone
- 500-year flood zone
- National Wetland Inventory
- State Wetlands
- Areas of Concern

N

SITE NAME: Aragorn-Athos Project ADDRESS: Riverside County Desert Center CA 92239 LAT/LONG: 33.763836 / 115.343153	CLIENT: Stantec CONTACT: Dion Monge INQUIRY #: 5224815.2s DATE: March 19, 2018 5:17 pm

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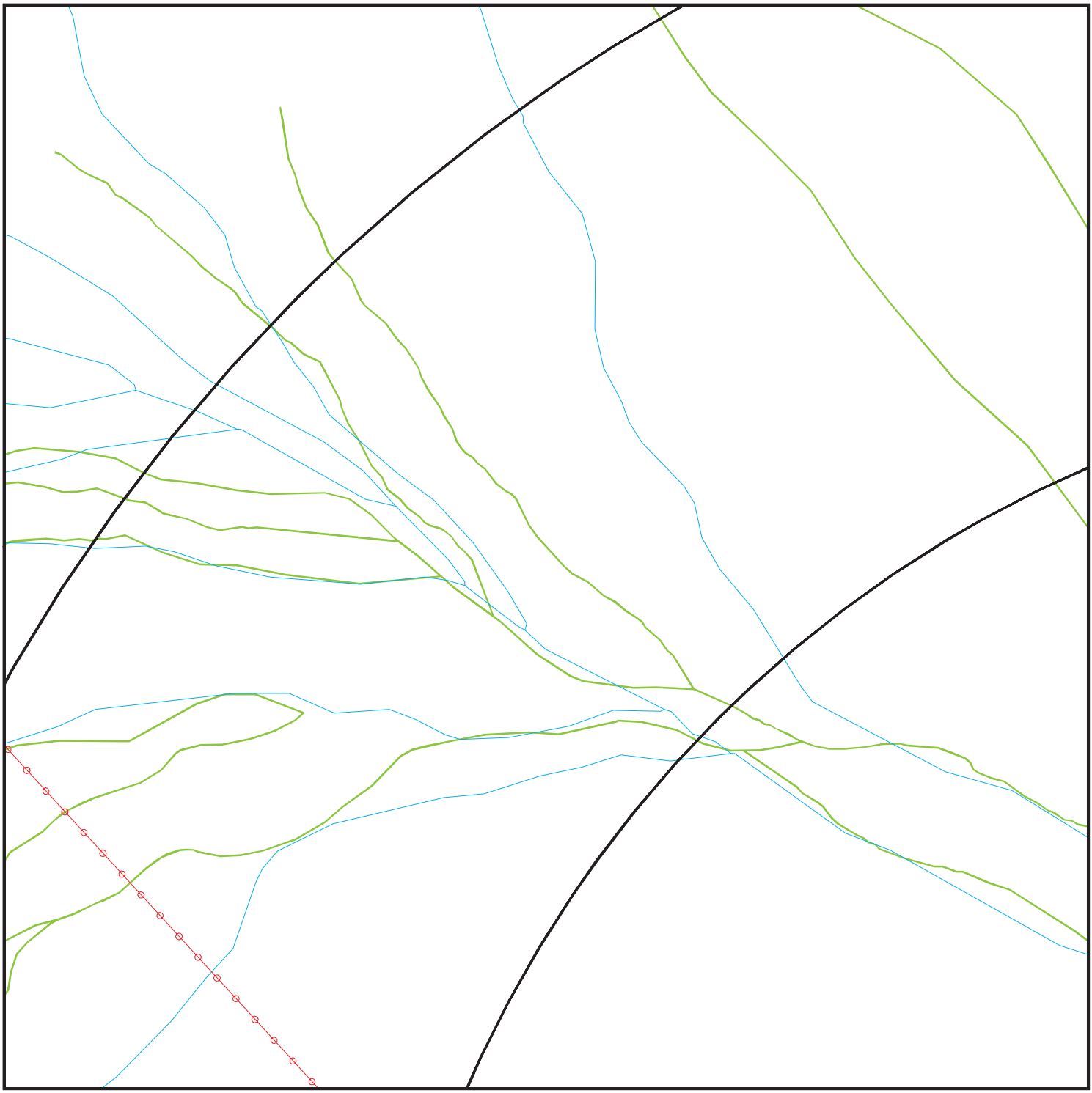
DETAIL MAP 7 OF 25 - 5224815.2S



Target Property

Sites at elevations higher than or equal to the target property

Sites at elevations lower than the target property

Manufactured Gas Plants

Sensitive Receptors

National Priority List Sites

Dept. Defense Sites

0 1/8 1/4 1/2 Miles

Indian Reservations BIA

Power transmission lines

100-year flood zone

500-year flood zone

National Wetland Inventory

State Wetlands

Areas of Concern

N

SITE NAME: Aragorn-Athos Project ADDRESS: Riverside County Desert Center CA 92239 LAT/LONG: 33.763836 / 115.343153	CLIENT: Stantec CONTACT: Dion Monge INQUIRY #: 5224815.2s DATE: March 19, 2018 5:18 pm

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DETAIL MAP 8 OF 25 - 5224815.2S

Target Property

Sites at elevations higher than or equal to the target property

Sites at elevations lower than the target property

Manufactured Gas Plants

Sensitive Receptors

National Priority List Sites

Dept. Defense Sites

0 1/8 1/4 1/2 Miles

Indian Reservations BIA

100-year flood zone

500-year flood zone

National Wetland Inventory

State Wetlands

Areas of Concern

SITE NAME: Aragorn-Athos Project ADDRESS: Riverside County Desert Center CA 92239 LAT/LONG: 33.763836 / 115.343153	CLIENT: Stantec CONTACT: Dion Monge INQUIRY #: 5224815.2s DATE: March 19, 2018 5:19 pm

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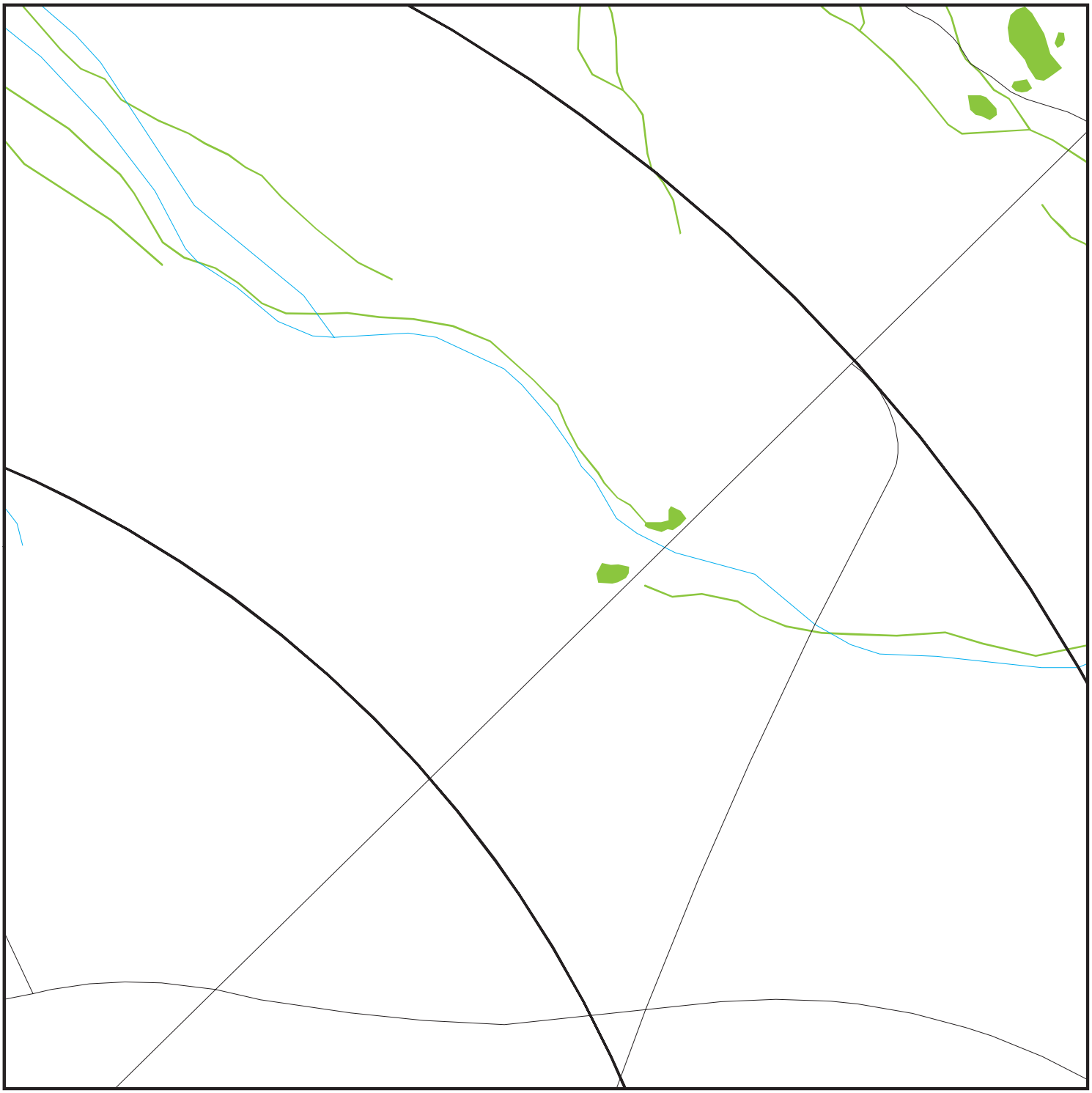
DETAIL MAP 9 OF 25 - 5224815.2S



Target Property

Sites at elevations higher than or equal to the target property

Sites at elevations lower than the target property

Manufactured Gas Plants

Sensitive Receptors

National Priority List Sites

Dept. Defense Sites

0 1/8 1/4 1/2 Miles

Indian Reservations BIA

100-year flood zone

500-year flood zone

National Wetland Inventory

State Wetlands

Areas of Concern

N

SITE NAME: Aragorn-Athos Project ADDRESS: Riverside County Desert Center CA 92239 LAT/LONG: 33.763836 / 115.343153	CLIENT: Stantec CONTACT: Dion Monge INQUIRY #: 5224815.2s DATE: March 19, 2018 5:22 pm

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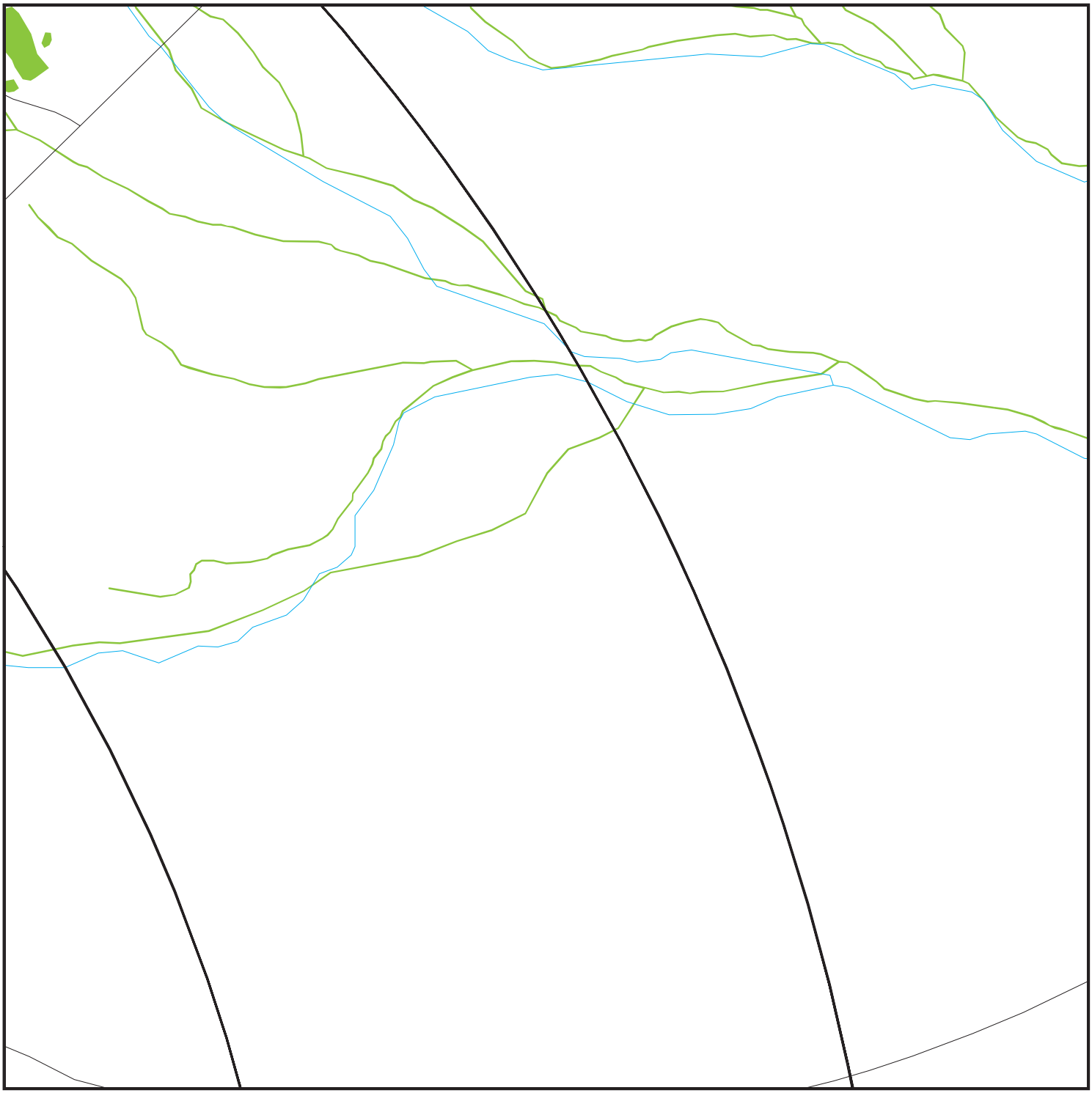
DETAIL MAP 10 OF 25 - 5224815.2S



Target Property

Sites at elevations higher than or equal to the target property

Sites at elevations lower than the target property

Manufactured Gas Plants

Sensitive Receptors

National Priority List Sites

Dept. Defense Sites

0 1/8 1/4 1/2 Miles

Indian Reservations BIA

100-year flood zone

500-year flood zone

National Wetland Inventory

State Wetlands

Areas of Concern

N

SITE NAME:	Aragorn-Athos Project	CLIENT:	Stantec
ADDRESS:	Riverside County Desert Center CA 92239	CONTACT:	Dion Monge
		INQUIRY #:	5224815.2s
LAT/LONG:	33.763836 / 115.343153	DATE:	March 19, 2018 5:25 pm

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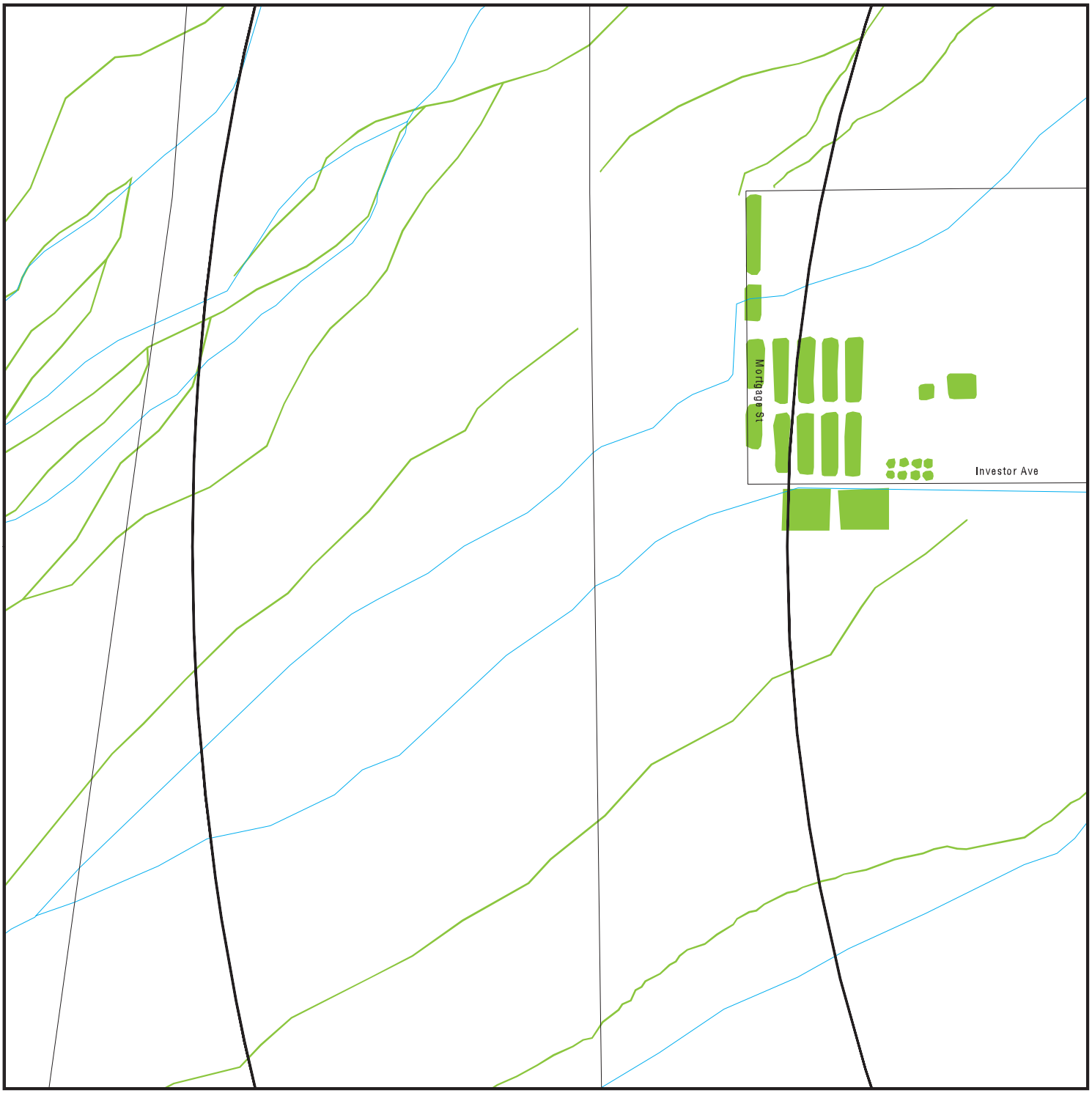
DETAIL MAP 11 OF 25 - 5224815.2S



- Target Property
- Sites at elevations higher than or equal to the target property
- Sites at elevations lower than the target property
- Manufactured Gas Plants
- Sensitive Receptors
- National Priority List Sites
- Dept. Defense Sites

0 1/8 1/4 1/2 Miles

- Indian Reservations BIA
- 100-year flood zone
- 500-year flood zone
- National Wetland Inventory
- State Wetlands
- Areas of Concern

SITE NAME: Aragorn-Athos Project ADDRESS: Riverside County Desert Center CA 92239 LAT/LONG: 33.763836 / 115.343153	CLIENT: Stantec CONTACT: Dion Monge INQUIRY #: 5224815.2s DATE: March 19, 2018 5:28 pm

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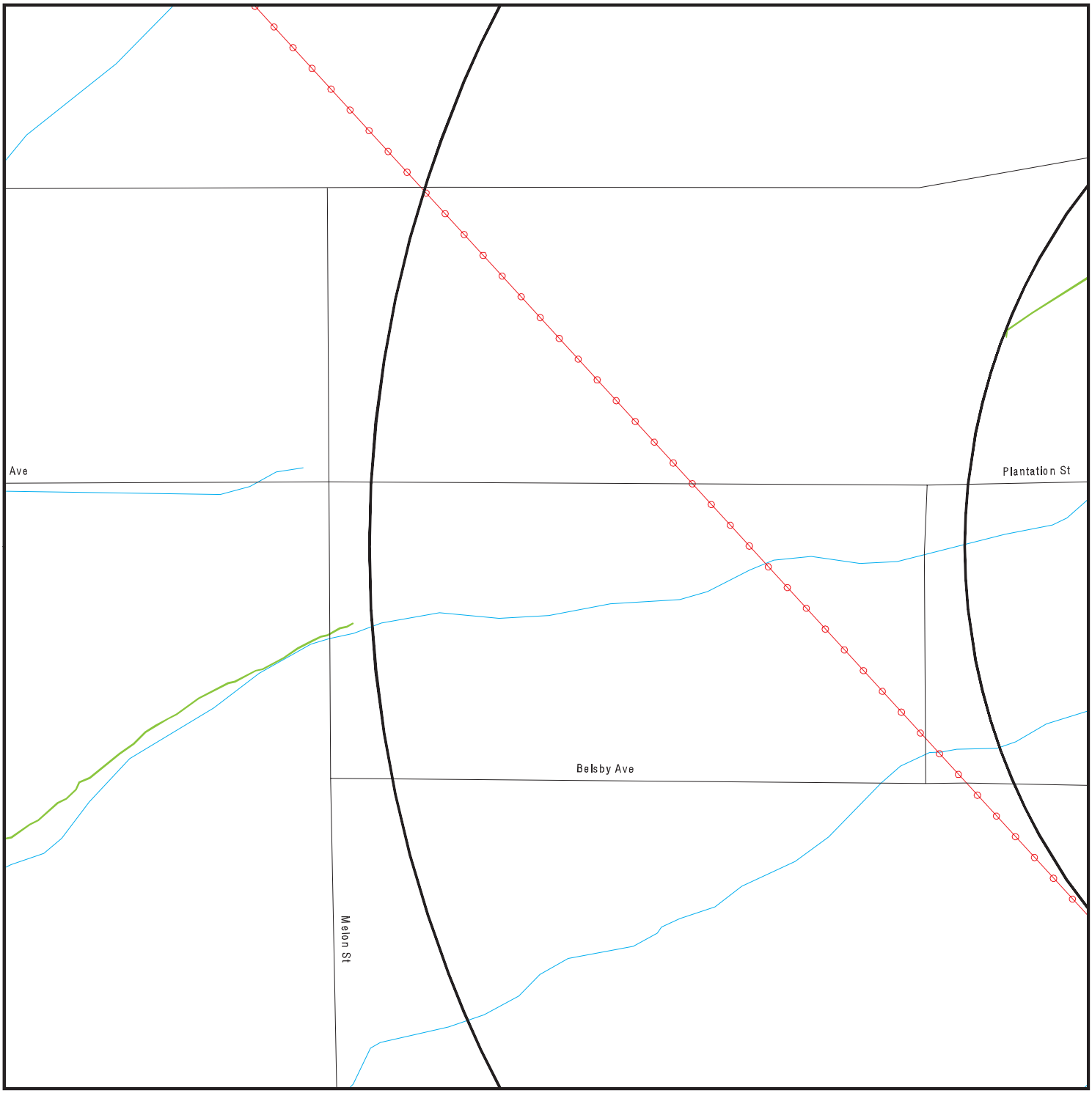
DETAIL MAP 12 OF 25 - 5224815.2S



- Target Property
- Sites at elevations higher than or equal to the target property
- Sites at elevations lower than the target property
- Manufactured Gas Plants
- Sensitive Receptors
- National Priority List Sites
- Dept. Defense Sites

0 1/8 1/4 1/2 Miles

- Indian Reservations BIA
- Power transmission lines
- 100-year flood zone
- 500-year flood zone
- National Wetland Inventory
- State Wetlands
- Areas of Concern

N

SITE NAME: Aragorn-Athos Project ADDRESS: Riverside County Desert Center CA 92239 LAT/LONG: 33.763836 / 115.343153	CLIENT: Stantec CONTACT: Dion Monge INQUIRY #: 5224815.2s DATE: March 19, 2018 5:31 pm

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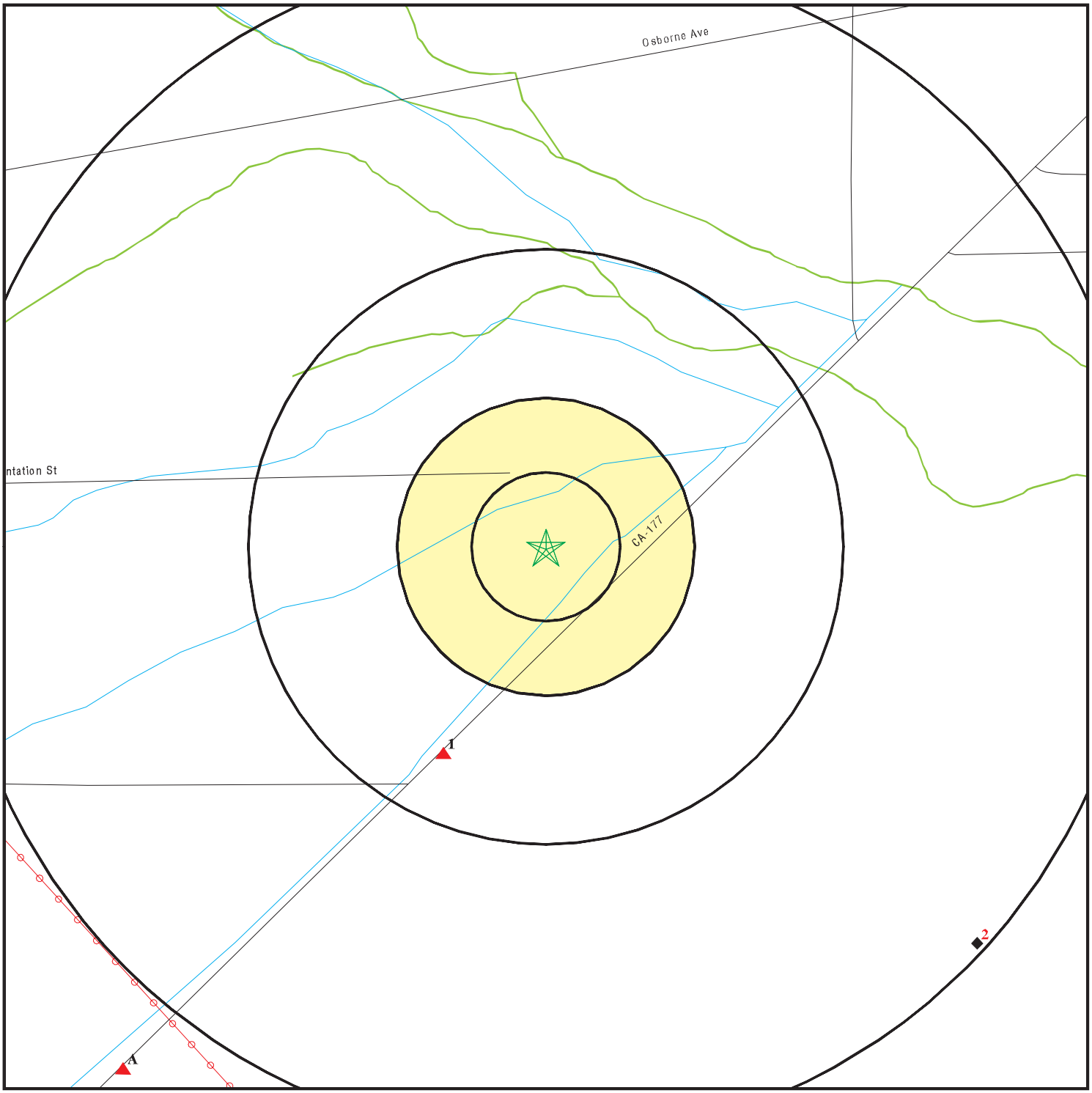
DETAIL MAP 13 OF 25 - 5224815.2S



- Target Property
- Sites at elevations higher than or equal to the target property
- Sites at elevations lower than the target property
- Manufactured Gas Plants
- Sensitive Receptors
- National Priority List Sites
- Dept. Defense Sites

0 1/8 1/4 1/2 Miles

- Indian Reservations BIA
- Power transmission lines
- 100-year flood zone
- 500-year flood zone
- National Wetland Inventory
- State Wetlands
- Areas of Concern

N

SITE NAME: Aragorn-Athos Project ADDRESS: Riverside County Desert Center CA 92239 LAT/LONG: 33.763836 / 115.343153	CLIENT: Stantec CONTACT: Dion Monge INQUIRY #: 5224815.2s DATE: March 19, 2018 5:33 pm

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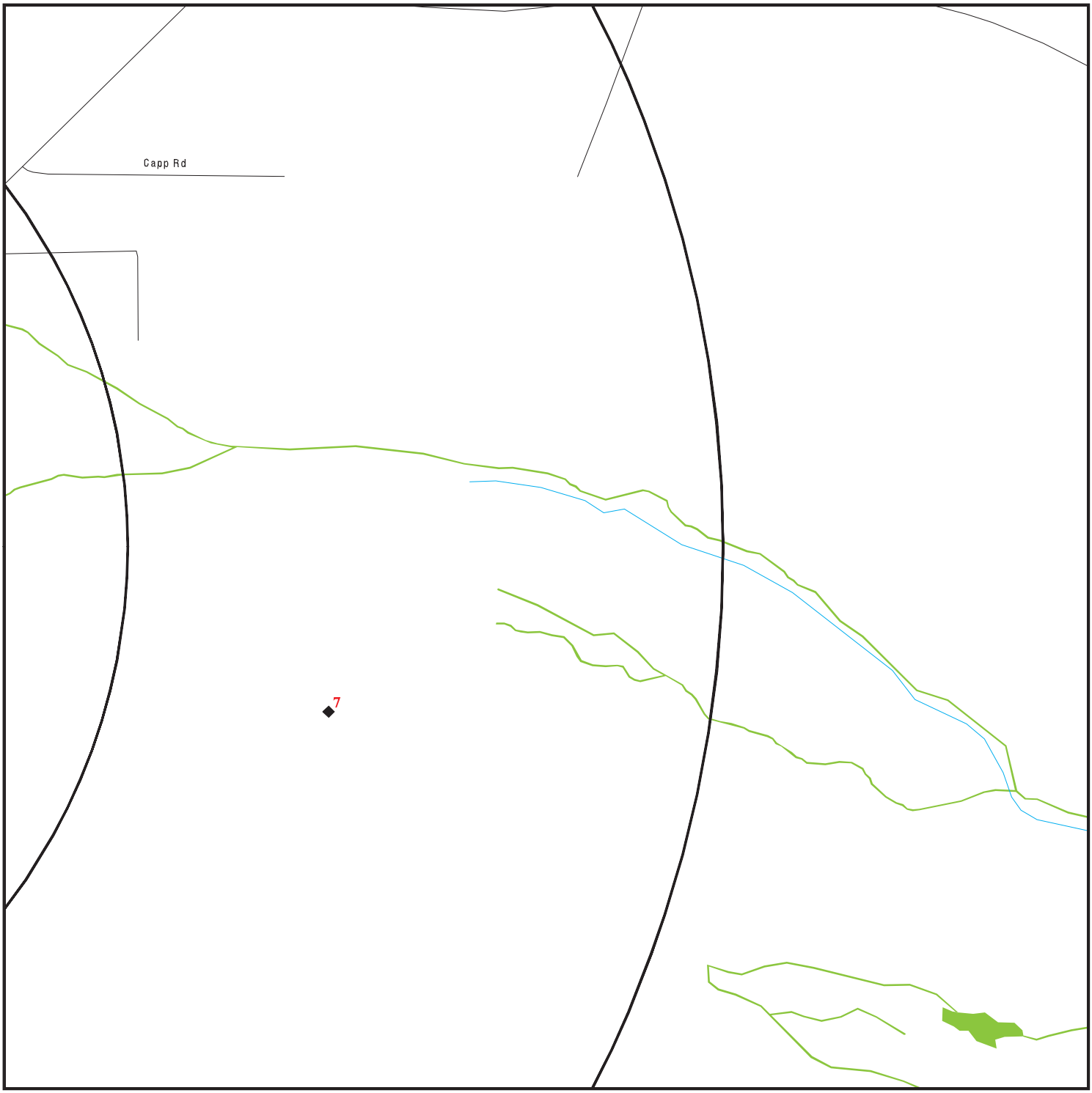
DETAIL MAP 14 OF 25 - 5224815.2S



- Target Property
- Sites at elevations higher than or equal to the target property
- Sites at elevations lower than the target property
- Manufactured Gas Plants
- Sensitive Receptors
- National Priority List Sites
- Dept. Defense Sites

0 1/8 1/4 1/2 Miles

- Indian Reservations BIA
- 100-year flood zone
- 500-year flood zone
- National Wetland Inventory
- State Wetlands
- Areas of Concern

N

SITE NAME: Aragorn-Athos Project ADDRESS: Riverside County Desert Center CA 92239 LAT/LONG: 33.763836 / 115.343153	CLIENT: Stantec CONTACT: Dion Monge INQUIRY #: 5224815.2s DATE: March 19, 2018 5:34 pm

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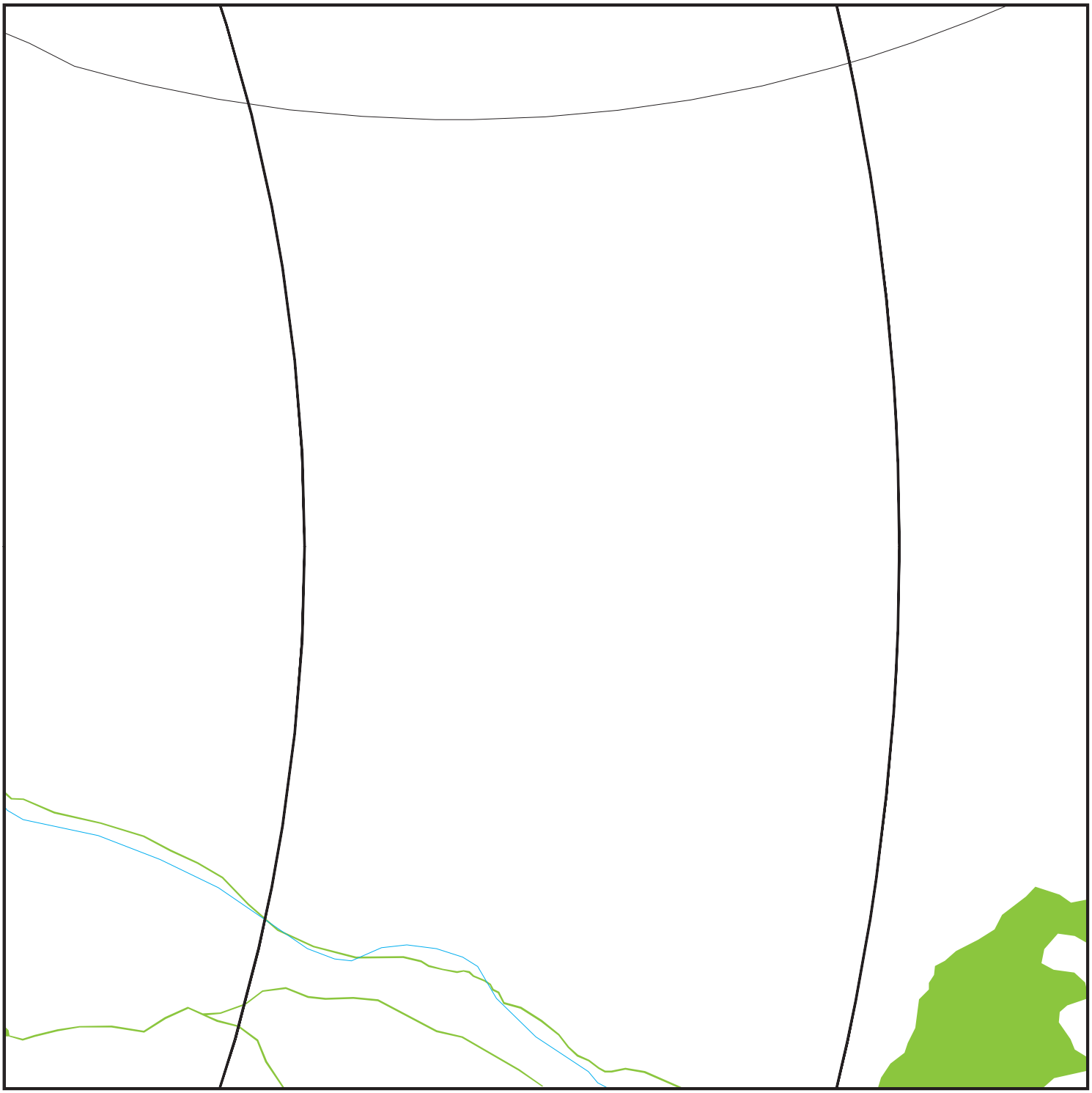
DETAIL MAP 15 OF 25 - 5224815.2S



Target Property

Sites at elevations higher than or equal to the target property

Sites at elevations lower than the target property

Manufactured Gas Plants

Sensitive Receptors

National Priority List Sites

Dept. Defense Sites

0 1/8 1/4 1/2 Miles

Indian Reservations BIA

100-year flood zone

500-year flood zone

National Wetland Inventory

State Wetlands

Areas of Concern

N

SITE NAME:	Aragorn-Athos Project	CLIENT:	Stantec
ADDRESS:	Riverside County Desert Center CA 92239	CONTACT:	Dion Monge
		INQUIRY #:	5224815.2s
LAT/LONG:	33.763836 / 115.343153	DATE:	March 19, 2018 5:35 pm

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DETAIL MAP 16 OF 25 - 5224815.2S

- Target Property
- Sites at elevations higher than or equal to the target property
- Sites at elevations lower than the target property
- Manufactured Gas Plants
- Sensitive Receptors
- National Priority List Sites
- Dept. Defense Sites

0 1/8 1/4 1/2 Miles

- Indian Reservations BIA
- 100-year flood zone
- 500-year flood zone
- National Wetland Inventory
- State Wetlands
- Areas of Concern

N

SITE NAME: Aragorn-Athos Project ADDRESS: Riverside County Desert Center CA 92239 LAT/LONG: 33.763836 / 115.343153	CLIENT: Stantec CONTACT: Dion Monge INQUIRY #: 5224815.2s DATE: March 19, 2018 5:36 pm

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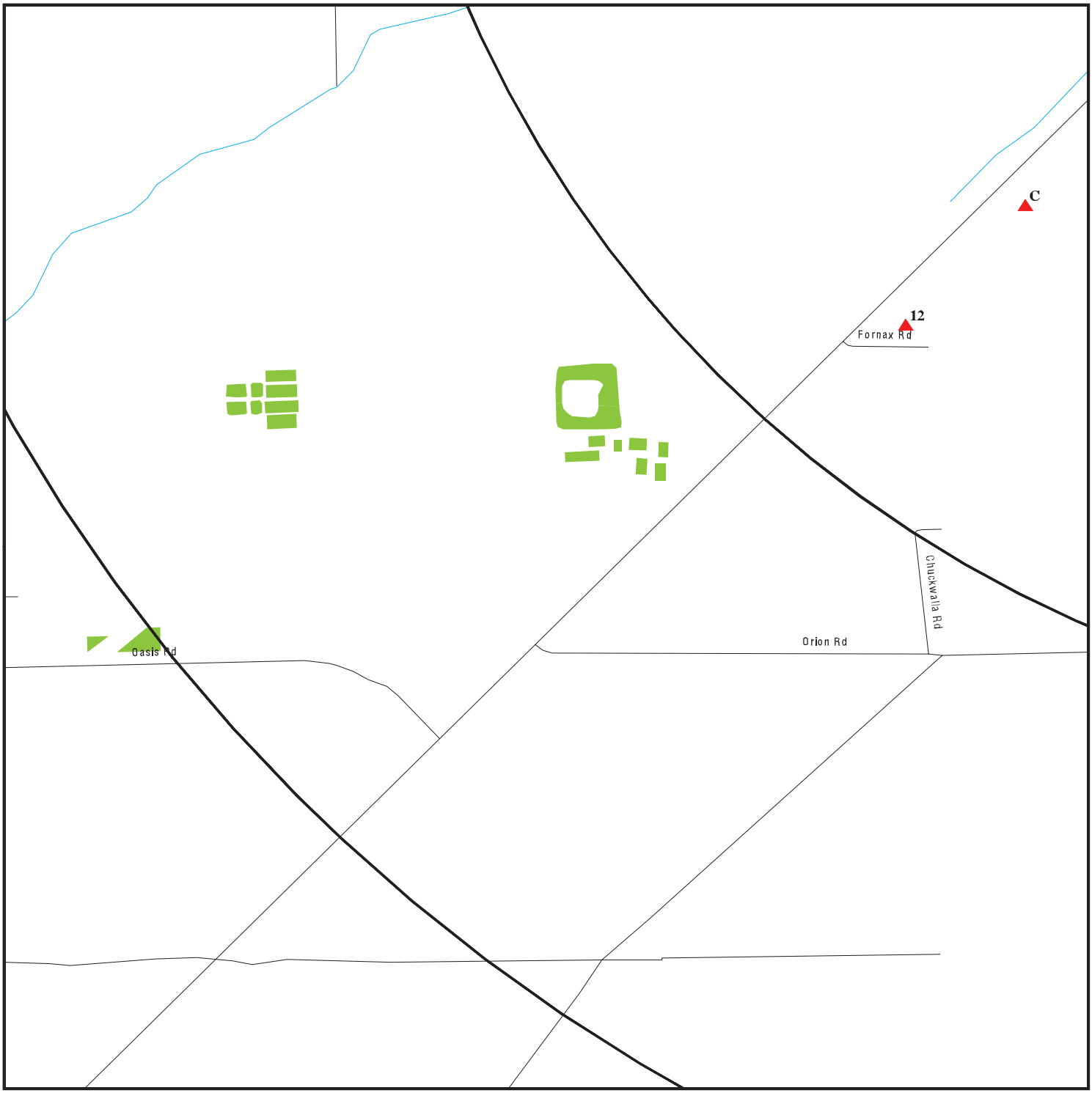
DETAIL MAP 17 OF 25 - 5224815.2S



- Target Property
- Sites at elevations higher than or equal to the target property
- Sites at elevations lower than the target property
- Manufactured Gas Plants
- Sensitive Receptors
- National Priority List Sites
- Dept. Defense Sites

0 1/8 1/4 1/2 Miles

- Indian Reservations BIA
- 100-year flood zone
- 500-year flood zone
- National Wetland Inventory
- State Wetlands
- Areas of Concern

N

SITE NAME: Aragorn-Athos Project ADDRESS: Riverside County Desert Center CA 92239 LAT/LONG: 33.763836 / 115.343153	CLIENT: Stantec CONTACT: Dion Monge INQUIRY #: 5224815.2s DATE: March 19, 2018 5:38 pm

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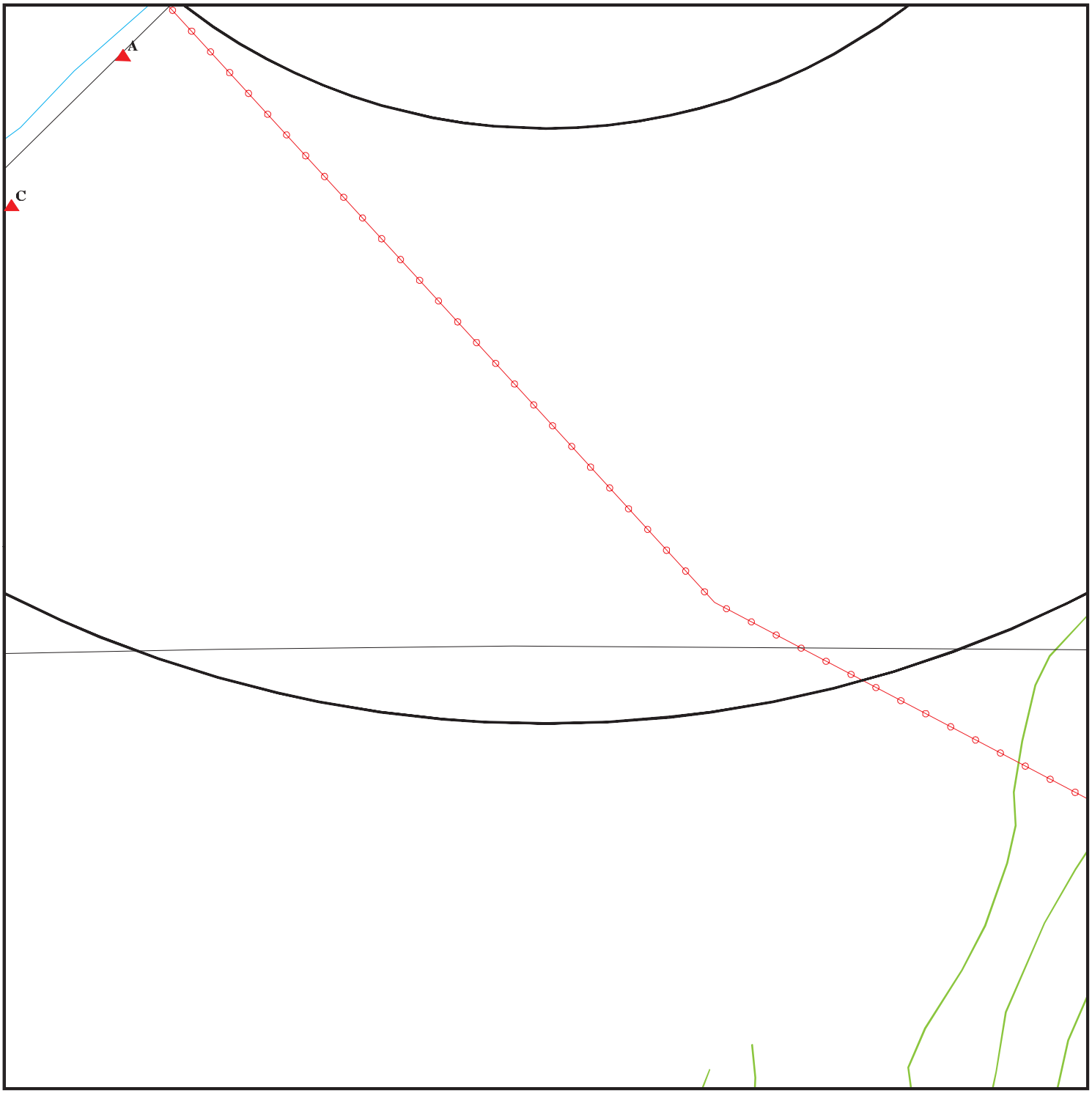
DETAIL MAP 18 OF 25 - 5224815.2S



Target Property

Sites at elevations higher than or equal to the target property

Sites at elevations lower than the target property

Manufactured Gas Plants

Sensitive Receptors

National Priority List Sites

Dept. Defense Sites

0 1/8 1/4 1/2 Miles

Indian Reservations BIA

Power transmission lines

100-year flood zone

500-year flood zone

National Wetland Inventory

State Wetlands

Areas of Concern

N

SITE NAME: Aragorn-Athos Project ADDRESS: Riverside County Desert Center CA 92239 LAT/LONG: 33.763836 / 115.343153	CLIENT: Stantec CONTACT: Dion Monge INQUIRY #: 5224815.2s DATE: March 19, 2018 5:39 pm

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DETAIL MAP 19 OF 25 - 5224815.2S

Target Property

Sites at elevations higher than or equal to the target property

Sites at elevations lower than the target property

Manufactured Gas Plants

Sensitive Receptors

National Priority List Sites

Dept. Defense Sites

0 1/8 1/4 1/2 Miles

Indian Reservations BIA

Power transmission lines

100-year flood zone

500-year flood zone

National Wetland Inventory

State Wetlands

Areas of Concern

N

SITE NAME: Aragorn-Athos Project ADDRESS: Riverside County Desert Center CA 92239 LAT/LONG: 33.763836 / 115.343153	CLIENT: Stantec CONTACT: Dion Monge INQUIRY #: 5224815.2s DATE: March 19, 2018 5:40 pm

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DETAIL MAP 20 OF 25 - 5224815.2S

- Target Property
- Sites at elevations higher than or equal to the target property
- Sites at elevations lower than the target property
- Manufactured Gas Plants
- Sensitive Receptors
- National Priority List Sites
- Dept. Defense Sites

0 1/8 1/4 1/2 Miles

- Indian Reservations BIA
- 100-year flood zone
- 500-year flood zone
- National Wetland Inventory
- State Wetlands
- Areas of Concern

N

SITE NAME: Aragorn-Athos Project ADDRESS: Riverside County Desert Center CA 92239 LAT/LONG: 33.763836 / 115.343153	CLIENT: Stantec CONTACT: Dion Monge INQUIRY #: 5224815.2s DATE: March 19, 2018 5:41 pm

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DETAIL MAP 21 OF 25 - 5224815.2S

- Target Property
- Sites at elevations higher than or equal to the target property
- Sites at elevations lower than the target property
- Manufactured Gas Plants
- Sensitive Receptors
- National Priority List Sites
- Dept. Defense Sites

0 1/8 1/4 1/2 Miles

- Indian Reservations BIA
- 100-year flood zone
- 500-year flood zone
- National Wetland Inventory
- State Wetlands
- Areas of Concern

N

SITE NAME: Aragorn-Athos Project ADDRESS: Riverside County Desert Center CA 92239 LAT/LONG: 33.763836 / 115.343153	CLIENT: Stantec CONTACT: Dion Monge INQUIRY #: 5224815.2s DATE: March 19, 2018 5:42 pm

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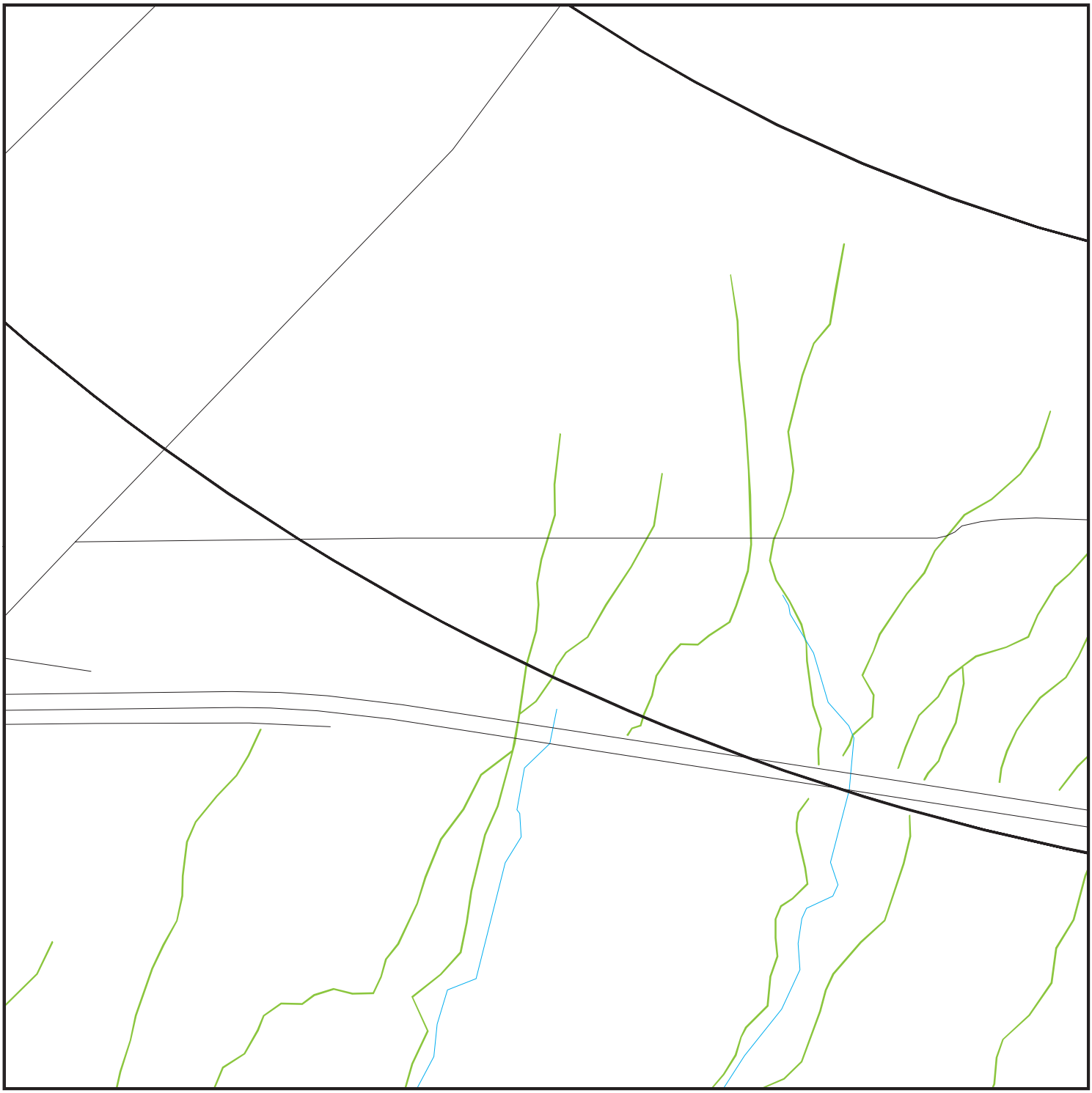
DETAIL MAP 22 OF 25 - 5224815.2S



Target Property

Sites at elevations higher than or equal to the target property

Sites at elevations lower than the target property

Manufactured Gas Plants

Sensitive Receptors

National Priority List Sites

Dept. Defense Sites

0 1/8 1/4 1/2 Miles

Indian Reservations BIA

100-year flood zone

500-year flood zone

National Wetland Inventory

State Wetlands

Areas of Concern

N

SITE NAME: Aragorn-Athos Project ADDRESS: Riverside County Desert Center CA 92239 LAT/LONG: 33.763836 / 115.343153	CLIENT: Stantec CONTACT: Dion Monge INQUIRY #: 5224815.2s DATE: March 19, 2018 5:43 pm

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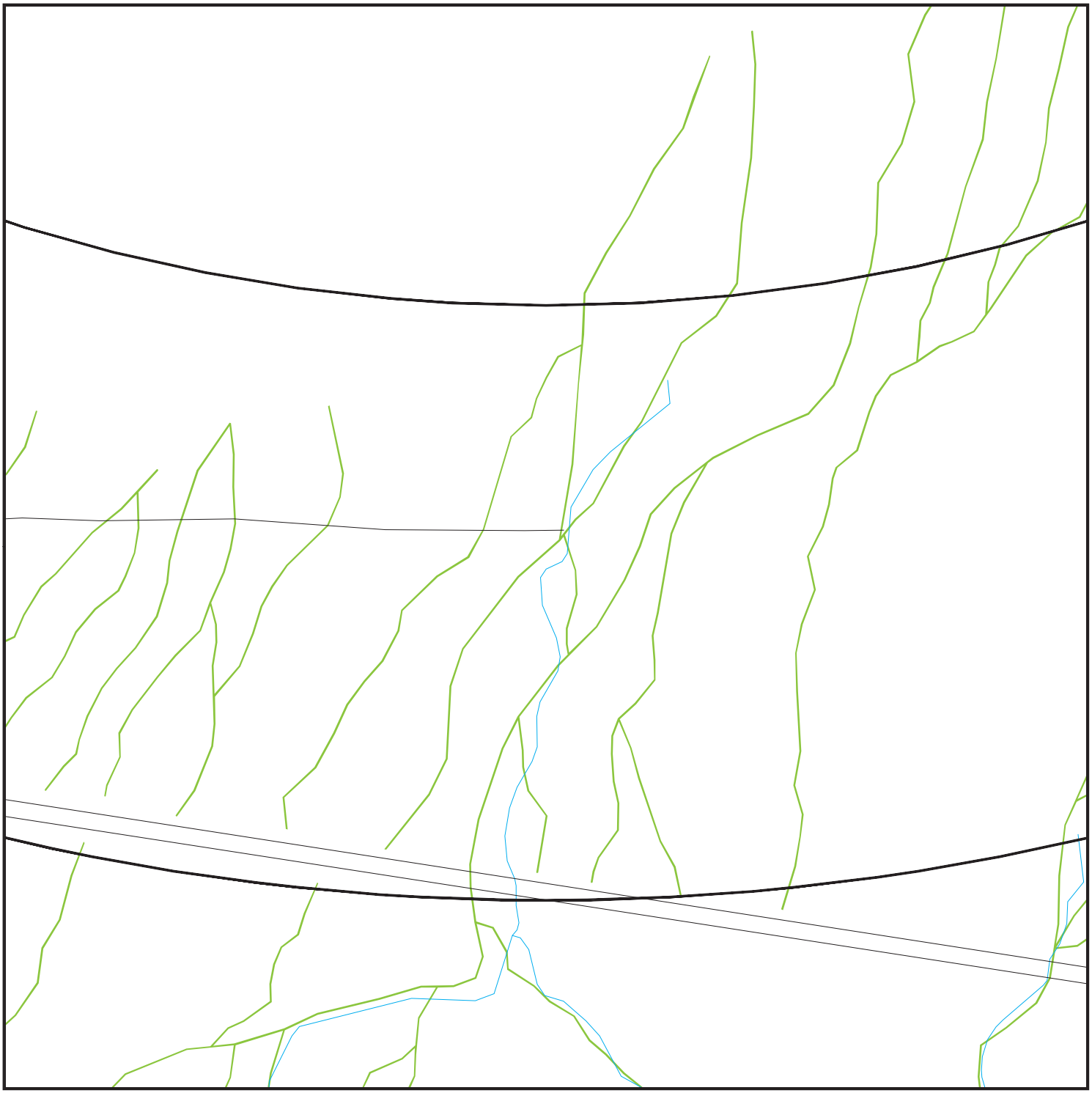
DETAIL MAP 23 OF 25 - 5224815.2S



Target Property

Sites at elevations higher than or equal to the target property

Sites at elevations lower than the target property

Manufactured Gas Plants

Sensitive Receptors

National Priority List Sites

Dept. Defense Sites

0 1/8 1/4 1/2 Miles

Indian Reservations BIA

100-year flood zone

500-year flood zone

National Wetland Inventory

State Wetlands

Areas of Concern

SITE NAME: Aragorn-Athos Project ADDRESS: Riverside County Desert Center CA 92239 LAT/LONG: 33.763836 / 115.343153	CLIENT: Stantec CONTACT: Dion Monge INQUIRY #: 5224815.2s DATE: March 19, 2018 5:44 pm

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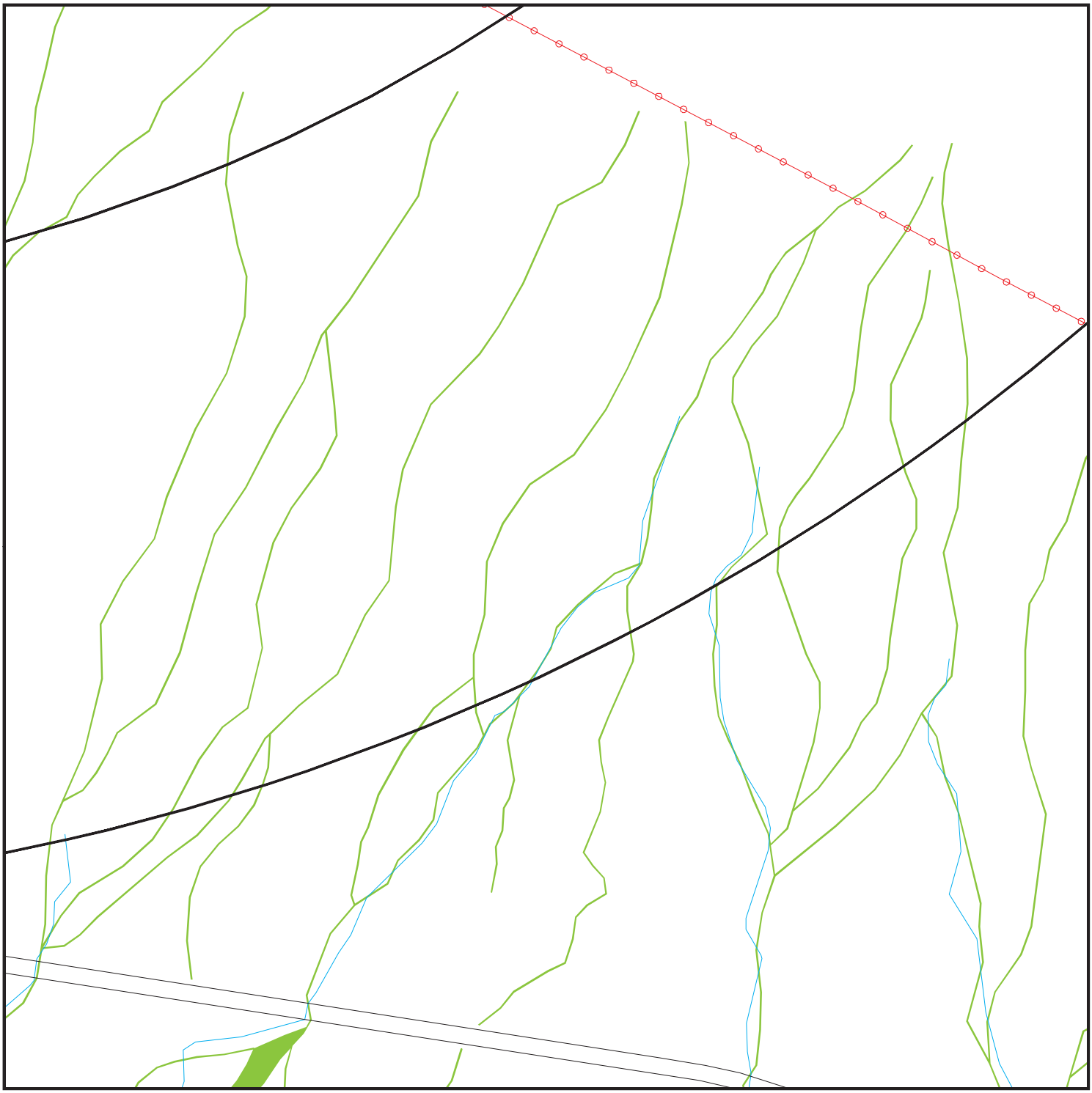
DETAIL MAP 24 OF 25 - 5224815.2S



Target Property

Sites at elevations higher than or equal to the target property

Sites at elevations lower than the target property

Manufactured Gas Plants

Sensitive Receptors

National Priority List Sites

Dept. Defense Sites

0 1/8 1/4 1/2 Miles

Indian Reservations BIA

Power transmission lines

100-year flood zone

500-year flood zone

National Wetland Inventory

State Wetlands

Areas of Concern

N

SITE NAME: Aragorn-Athos Project ADDRESS: Riverside County Desert Center CA 92239 LAT/LONG: 33.763836 / 115.343153	CLIENT: Stantec CONTACT: Dion Monge INQUIRY #: 5224815.2s DATE: March 19, 2018 5:45 pm

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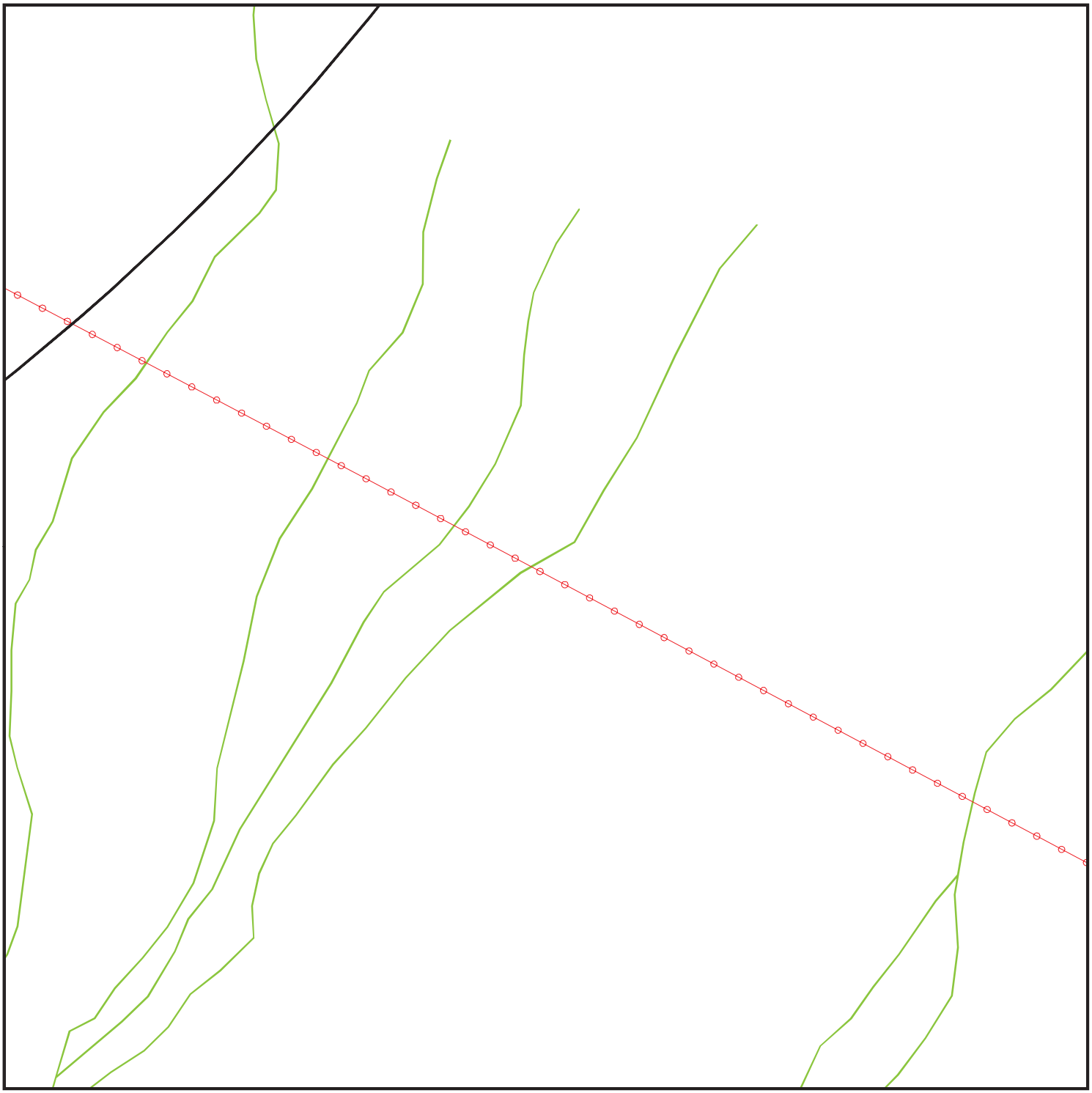
DETAIL MAP 25 OF 25 - 5224815.2S



Target Property

Sites at elevations higher than or equal to the target property

Sites at elevations lower than the target property

Manufactured Gas Plants

Sensitive Receptors

National Priority List Sites

Dept. Defense Sites

0 1/8 1/4 1/2 Miles

Indian Reservations BIA

Power transmission lines

100-year flood zone

500-year flood zone

National Wetland Inventory

State Wetlands

Areas of Concern

N

SITE NAME: Aragorn-Athos Project ADDRESS: Riverside County Desert Center CA 92239 LAT/LONG: 33.763836 / 115.343153	CLIENT: Stantec CONTACT: Dion Monge INQUIRY #: 5224815.2s DATE: March 19, 2018 5:46 pm

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MAP FINDINGS SUMMARY

Database	Search Distance (Miles)	Target Property	< 1/8	1/8 - 1/4	1/4 - 1/2	1/2 - 1	> 1	Total Plotted
STANDARD ENVIRONMENTAL RECORDS								
Federal NPL site list								
NPL	4.000		0	0	0	0	0	0
Proposed NPL	4.000		0	0	0	0	0	0
NPL LIENS	3.000		0	0	0	0	0	0
Federal Delisted NPL site list								
Delisted NPL	4.000		0	0	0	0	0	0
Federal CERCLIS list								
FEDERAL FACILITY	3.500		0	0	0	0	0	0
SEMS	3.500		0	0	0	0	0	0
Federal CERCLIS NFRAP site list								
SEMS-ARCHIVE	3.500		0	0	0	0	0	0
Federal RCRA CORRACTS facilities list								
CORRACTS	4.000		0	0	0	0	0	0
Federal RCRA non-CORRACTS TSD facilities list								
RCRA-TSDF	3.500		0	0	0	0	0	0
Federal RCRA generators list								
RCRA-LQG	3.250		0	0	0	0	0	0
RCRA-SQG	3.250		0	0	0	0	1	1
RCRA-CESQG	3.250		0	0	0	0	0	0
Federal institutional controls / engineering controls registries								
LUCIS	3.500		0	0	0	0	0	0
US ENG CONTROLS	3.500		0	0	0	0	0	0
US INST CONTROL	3.500		0	0	0	0	0	0
Federal ERNS list								
ERNS	3.000		0	0	0	0	0	0
State- and tribal - equivalent NPL								
RESPONSE	4.000		0	0	0	0	0	0
State- and tribal - equivalent CERCLIS								
ENVIROSTOR	4.000		0	0	0	0	1	1
State and tribal landfill and/or solid waste disposal site lists								
SWF/LF	3.500		0	0	0	0	0	0
State and tribal leaking storage tank lists								
LUST	3.500		0	0	0	0	0	0

MAP FINDINGS SUMMARY

Database	Search Distance (Miles)	Target Property	< 1/8	1/8 - 1/4	1/4 - 1/2	1/2 - 1	> 1	Total Plotted
INDIAN LUST	3.500		0	0	0	0	0	0
SLIC	3.500		0	0	0	0	0	0
State and tribal registered storage tank lists								
FEMA UST	3.250		0	0	0	0	0	0
UST	3.250		0	0	0	0	2	2
AST	3.250		0	0	0	0	1	1
INDIAN UST	3.250		0	0	0	0	0	0
State and tribal voluntary cleanup sites								
VCP	3.500		0	0	0	0	0	0
INDIAN VCP	3.500		0	0	0	0	0	0
State and tribal Brownfields sites								
BROWNFIELDS	3.500		0	0	0	0	0	0
ADDITIONAL ENVIRONMENTAL RECORDS								
Local Brownfield lists								
US BROWNFIELDS	3.500		0	0	0	0	0	0
Local Lists of Landfill / Solid Waste Disposal Sites								
WMUDS/SWAT	3.500		0	0	0	0	0	0
SWRCY	3.500		0	0	0	0	0	0
HAULERS	3.000		0	0	0	0	0	0
INDIAN ODI	3.500		0	0	0	0	0	0
DEBRIS REGION 9	3.500		0	0	0	0	0	0
ODI	3.500		0	0	0	0	0	0
IHS OPEN DUMPS	3.500		0	0	0	0	0	0
Local Lists of Hazardous waste / Contaminated Sites								
US HIST CDL	3.000		0	0	0	0	0	0
HIST Cal-Sites	4.000		0	0	0	0	0	0
SCH	3.250		0	0	0	0	0	0
CDL	3.000		0	0	0	0	0	0
Toxic Pits	4.000		0	0	0	0	0	0
US CDL	3.000		0	0	0	0	0	0
Local Lists of Registered Storage Tanks								
SWEEPS UST	3.250		0	0	0	0	0	0
HIST UST	3.250		0	0	0	0	1	1
CA FID UST	3.250		0	0	0	0	0	0
Local Land Records								
LIENS	3.000		0	0	0	0	0	0
LIENS 2	3.000		0	0	0	0	0	0
DEED	3.500		0	0	0	0	0	0
Records of Emergency Release Reports								
HMIRS	3.000		0	0	0	0	0	0

MAP FINDINGS SUMMARY

Database	Search Distance (Miles)	Target Property	< 1/8	1/8 - 1/4	1/4 - 1/2	1/2 - 1	> 1	Total Plotted
CHMIRS	3.000		0	0	0	0	0	0
LDS	3.000		0	0	0	0	0	0
MCS	3.000		0	0	0	0	1	1
SPILLS 90	3.000		0	0	0	0	0	0
Other Ascertainable Records								
RCRA NonGen / NLR	3.250		0	0	0	0	0	0
FUDS	4.000		0	0	0	1	1	2
DOD	4.000		0	0	0	0	0	0
SCRD DRYCLEANERS	3.500		0	0	0	0	0	0
US FIN ASSUR	3.000		0	0	0	0	0	0
EPA WATCH LIST	3.000		0	0	0	0	0	0
2020 COR ACTION	3.250		0	0	0	0	0	0
TSCA	3.000		0	0	0	0	0	0
TRIS	3.000		0	0	0	0	0	0
SSTS	3.000		0	0	0	0	0	0
ROD	4.000		0	0	0	0	0	0
RMP	3.000		0	0	0	0	0	0
RAATS	3.000		0	0	0	0	0	0
PRP	3.000		0	0	0	0	0	0
PADS	3.000		0	0	0	0	0	0
ICIS	3.000		0	0	0	0	0	0
FTTS	3.000		0	0	0	0	0	0
MLTS	3.000		0	0	0	0	0	0
COAL ASH DOE	3.000		0	0	0	0	0	0
COAL ASH EPA	3.500		0	0	0	0	0	0
PCB TRANSFORMER	3.000		0	0	0	0	0	0
RADINFO	3.000		0	0	0	0	0	0
HIST FTTS	3.000		0	0	0	0	0	0
DOT OPS	3.000		0	0	0	0	0	0
CONSENT	4.000		0	0	0	0	0	0
INDIAN RESERV	4.000		0	0	0	0	0	0
FUSRAP	4.000		0	0	0	0	0	0
UMTRA	3.500		0	0	0	0	0	0
LEAD SMELTERS	3.000		0	0	0	0	0	0
US AIRS	3.000		0	0	0	0	0	0
US MINES	3.250		0	0	0	0	0	0
ABANDONED MINES	3.250		0	0	0	0	0	0
FINDS	3.000		0	0	0	0	2	2
UXO	4.000		0	0	0	0	0	0
ECHO	3.000		0	0	0	0	0	0
DOCKET HWC	3.000		0	0	0	0	0	0
FUELS PROGRAM	3.250		0	0	0	0	0	0
CA BOND EXP. PLAN	4.000		0	0	0	0	0	0
Cortese	3.500		0	0	0	0	0	0
CUPA Listings	3.250		0	0	0	0	0	0
DRYCLEANERS	3.250		0	0	0	0	0	0
EMI	3.000		0	0	0	0	0	0
ENF	3.000		0	0	0	0	0	0
Financial Assurance	3.000		0	0	0	0	0	0
HAZNET	3.000		0	0	1	0	0	1

MAP FINDINGS SUMMARY

Database	Search Distance (Miles)	Target Property	< 1/8	1/8 - 1/4	1/4 - 1/2	1/2 - 1	> 1	Total Plotted
ICE	3.000		0	0	0	0	0	0
HIST CORTESE	3.500		0	0	0	0	0	0
HWP	4.000		0	0	0	0	0	0
HWT	3.250		0	0	0	0	0	0
MINES	3.250		0	0	0	0	0	0
MWMP	3.250		0	0	0	0	0	0
NPDES	3.000		0	0	0	0	1	1
PEST LIC	3.000		0	0	0	0	0	0
PROC	3.500		0	0	0	0	0	0
Notify 65	4.000		0	0	0	0	0	0
UIC	3.000		0	0	0	0	0	0
WASTEWATER PITS	3.500		0	0	0	0	0	0
WDS	3.000		0	0	0	0	0	0
WIP	3.250		0	0	0	0	0	0
EDR HIGH RISK HISTORICAL RECORDS								
EDR Exclusive Records								
EDR MGP	4.000		0	0	0	0	0	0
EDR Hist Auto	3.125		0	0	0	0	2	2
EDR Hist Cleaner	3.125		0	0	0	0	0	0
EDR RECOVERED GOVERNMENT ARCHIVES								
Exclusive Recovered Govt. Archives								
RGA LF	3.000		0	0	0	0	0	0
RGA LUST	3.000		0	0	0	0	0	0
- Totals --		0	0	0	1	1	13	15

NOTES:

TP = Target Property

NR = Not Requested at this Search Distance

Sites may be listed in more than one database

1
SSW
1/4-1/2
0.387 mi.
2042 ft.

TITAN CORP
24050 RICE RD
DESERT CENTER, CA 92239

HAZNET **S112943478**
N/A

Relative:
Higher

Actual:
567 ft.

HAZNET:

envid:	S112943478
Year:	2005
GEPAID:	CAC002587075
Contact:	MONTE DEBEL/X29
Telephone:	8585669829
Mailing Name:	Not reported
Mailing Address:	9925 CARROLL CANYON RD
Mailing City,St,Zip:	SAN DIEGO, CA 92131
Gen County:	Not reported
TSD EPA ID:	NVT330010000
TSD County:	Not reported
Waste Category:	Contaminated soil from site clean-up
Disposal Method:	Disposal, Land Fill
Tons:	24
Cat Decode:	Not reported
Method Decode:	Not reported
Facility County:	Riverside

2
SE
1/2-1
0.985 mi.
5199 ft.

DESERT CNTR ARPT
DESERT CENTER, CA

FUDS **1012129642**
N/A

Relative:
Lower

Actual:
537 ft.

FUDS:

EPA Region:	09
Congressional District:	36
FUDS Number:	J09CA0341
State:	CA
Facility Name:	DESERT CNTR ARPT
Fiscal Year:	2013
City:	DESERT CENTER
Federal Facility ID:	CA9799F5427
Telephone:	213-452-3920
INST ID:	61057
County:	RIVERSIDE
RAB:	Not reported
CORPS_DIST:	Los Angeles District (SPL)
NPL Status:	Not Listed
CTC:	134
Current Owner:	Local Government
Future Prog:	Not reported
Description:	SITE CONSISTED OF 1958.02 ACRES. IMPROVEMENTS INCL. STRUCTURES FOR BASE HOUSING, OPERATION, AIRCRAFT SERVICE STORAGE, FUEL SYS. PERSONNEL & MISC. MOST ARE CURRENTLY BEING USED. USTS HAVE NOT BEEN USED , HOWEVER.
Current Program:	Not reported
History:	US ARMY ACQUIRED THE PROPERTY IN 1942 THROUGH PURCHASE, TRANSFER & CONDEMNATION. IT WAS DECLARED AS EXCESS IN 1945 & DISPOSED TO RIVERSIDE COUNTY IN 1965. COUNTY OF RIVERSIDE IS THE PRESENT OWNER.
Latitude Degree:	33
Latitude Minute:	45
Latitude Second:	15

DESERT CNTR ARPT (Continued) **1012129642**

Latitude Direction:	N
Longitude Degree:	-115
Longitude Minute:	20
Longitude Second:	50
Longitude Direction:	E

A3 SW > 1 1.128 mi. 5957 ft. **CHUCKWALLA VALLEY RACEWAY** **AST** **S117697436**
25300 RICE ROAD **NPDES** **N/A**
DESERT CENTER, CA 92239

Site 1 of 2 in cluster A

Relative: Higher

Actual: 596 ft.

AST:

Certified Unified Program Agencies:	Not reported
Owner:	Micky Grana
Total Gallons:	Not reported
CERSID:	10328128
Facility ID:	FA0034749
Business Name:	Chuckwalla Valley Raceway
Phone:	(760) 227-3100
Fax:	(760) 227-3111
Mailing Address:	PO Box 307
Mailing Address City:	Desert Center
Mailing Address State:	CA
Mailing Address Zip Code:	92239
Operator Name:	Micky Grana
Operator Phone:	(760) 227-3100
Owner Phone:	(760) 227-3100
Owner Mail Address:	P.O. Box 307
Owner State:	CA
Owner Zip Code:	92239
Owner Country:	United States
Property Owner Name:	Chuckwalla Valley Associates LLC
Property Owner Phone:	(760) 227-3100
Property Owner Mailing Address:	P.O. Box 307
Property Owner City:	Desert Center
Property Owner Stat :	CA
Property Owner Zip Code:	92239
Property Owner Country:	United States
EPAID:	Not reported

NPDES:

Npdes Number:	CAS000002
Facility Status:	Active
Agency Id:	0
Region:	7
Regulatory Measure Id:	455073
Order No:	2009-0009-DWQ
Regulatory Measure Type:	Enrollee
Place Id:	Not reported
WDID:	7 33C373268
Program Type:	Construction
Adoption Date Of Regulatory Measure:	Not reported
Effective Date Of Regulatory Measure:	06/24/2015
Expiration Date Of Regulatory Measure:	Not reported
Termination Date Of Regulatory Measure:	Not reported
Discharge Name:	Chuckwalla Valley Associates

CHUCKWALLA VALLEY RACEWAY (Continued) **S117697436**

Discharge Address:	PO Box 307
Discharge City:	Desert Center
Discharge State:	California
Discharge Zip:	92239
RECEIVED DATE:	Not reported
PROCESSED DATE:	Not reported
STATUS CODE NAME:	Not reported
STATUS DATE:	Not reported
PLACE SIZE:	Not reported
PLACE SIZE UNIT:	Not reported
FACILITY CONTACT NAME:	Not reported
FACILITY CONTACT TITLE:	Not reported
FACILITY CONTACT PHONE:	Not reported
FACILITY CONTACT PHONE EXT:	Not reported
FACILITY CONTACT EMAIL:	Not reported
OPERATOR NAME:	Not reported
OPERATOR ADDRESS:	Not reported
OPERATOR CITY:	Not reported
OPERATOR STATE:	Not reported
OPERATOR ZIP:	Not reported
OPERATOR CONTACT NAME:	Not reported
OPERATOR CONTACT TITLE:	Not reported
OPERATOR CONTACT PHONE:	Not reported
OPERATOR CONTACT PHONE EXT:	Not reported
OPERATOR CONTACT EMAIL:	Not reported
OPERATOR TYPE:	Not reported
DEVELOPER NAME:	Not reported
DEVELOPER ADDRESS:	Not reported
DEVELOPER CITY:	Not reported
DEVELOPER STATE:	Not reported
DEVELOPER ZIP:	Not reported
DEVELOPER CONTACT NAME:	Not reported
DEVELOPER CONTACT TITLE:	Not reported
CONSTYPE LINEAR UTILITY IND:	Not reported
EMERGENCY PHONE NO:	Not reported
EMERGENCY PHONE EXT:	Not reported
CONSTYPE ABOVE GROUND IND:	Not reported
CONSTYPE BELOW GROUND IND:	Not reported
CONSTYPE CABLE LINE IND:	Not reported
CONSTYPE COMM LINE IND:	Not reported
CONSTYPE COMMERTIAL IND:	Not reported
CONSTYPE ELECTRICAL LINE IND:	Not reported
CONSTYPE GAS LINE IND:	Not reported
CONSTYPE INDUSTRIAL IND:	Not reported
CONSTYPE OTHER DESRIPTION:	Not reported
CONSTYPE OTHER IND:	Not reported
CONSTYPE RECONS IND:	Not reported
CONSTYPE RESIDENTIAL IND:	Not reported
CONSTYPE TRANSPORT IND:	Not reported
CONSTYPE UTILITY DESCRIPTION:	Not reported
CONSTYPE UTILITY IND:	Not reported
CONSTYPE WATER SEWER IND:	Not reported
DIR DISCHARGE USWATER IND:	Not reported
RECEIVING WATER NAME:	Not reported
CERTIFIER NAME:	Not reported
CERTIFIER TITLE:	Not reported
CERTIFICATION DATE:	Not reported

CHUCKWALLA VALLEY RACEWAY (Continued) **S117697436**

PRIMARY SIC:	Not reported
SECONDARY SIC:	Not reported
TERTIARY SIC:	Not reported
Npdes Number:	Not reported
Facility Status:	Not reported
Agency Id:	Not reported
Region:	7
Regulatory Measure Id:	455073
Order No:	Not reported
Regulatory Measure Type:	Construction
Place Id:	Not reported
WDID:	7 33C373268
Program Type:	Not reported
Adoption Date Of Regulatory Measure:	Not reported
Effective Date Of Regulatory Measure:	Not reported
Expiration Date Of Regulatory Measure:	Not reported
Termination Date Of Regulatory Measure:	Not reported
Discharge Name:	Not reported
Discharge Address:	Not reported
Discharge City:	Not reported
Discharge State:	Not reported
Discharge Zip:	Not reported
RECEIVED DATE:	06/18/2015
PROCESSED DATE:	06/24/2015
STATUS CODE NAME:	Active
STATUS DATE:	06/24/2015
PLACE SIZE:	1200
PLACE SIZE UNIT:	Acres
FACILITY CONTACT NAME:	Matthew Johnson
FACILITY CONTACT TITLE:	Managing Member
FACILITY CONTACT PHONE:	760-837-1880
FACILITY CONTACT PHONE EXT:	Not reported
FACILITY CONTACT EMAIL:	mjohnson@wilsonjohnson.net
OPERATOR NAME:	Chuckwalla Valley Associates
OPERATOR ADDRESS:	PO Box 307
OPERATOR CITY:	Desert Center
OPERATOR STATE:	California
OPERATOR ZIP:	92239
OPERATOR CONTACT NAME:	Matthew Johnson
OPERATOR CONTACT TITLE:	Managing Member
OPERATOR CONTACT PHONE:	760-837-1880
OPERATOR CONTACT PHONE EXT:	Not reported
OPERATOR CONTACT EMAIL:	mjohnson@wilsonjohnson.net
OPERATOR TYPE:	Private Business
DEVELOPER NAME:	Chuckwalla Valley Raceway
DEVELOPER ADDRESS:	25300 Rice Road
DEVELOPER CITY:	Desert Center
DEVELOPER STATE:	California
DEVELOPER ZIP:	92239
DEVELOPER CONTACT NAME:	Matthew Johnson
DEVELOPER CONTACT TITLE:	Managing Member
CONSTYPE LINEAR UTILITY IND:	N
EMERGENCY PHONE NO:	Not reported
EMERGENCY PHONE EXT:	Not reported
CONSTYPE ABOVE GROUND IND:	N
CONSTYPE BELOW GROUND IND:	N

CHUCKWALLA VALLEY RACEWAY (Continued) **S117697436**

CONSTYPE CABLE LINE IND:	N
CONSTYPE COMM LINE IND:	N
CONSTYPE COMMERTIAL IND:	Y
CONSTYPE ELECTRICAL LINE IND:	N
CONSTYPE GAS LINE IND:	N
CONSTYPE INDUSTRIAL IND:	N
CONSTYPE OTHER DESRIPTION:	Not reported
CONSTYPE OTHER IND:	N
CONSTYPE RECONS IND:	N
CONSTYPE RESIDENTIAL IND:	N
CONSTYPE TRANSPORT IND:	N
CONSTYPE UTILITY DESCRIPTION:	Not reported
CONSTYPE UTILITY IND:	N
CONSTYPE WATER SEWER IND:	N
DIR DISCHARGE USWATER IND:	N
RECEIVING WATER NAME:	Not reported
CERTIFIER NAME:	Matthew Johnson
CERTIFIER TITLE:	Managing Member
CERTIFICATION DATE:	18-JUN-15
PRIMARY SIC:	Not reported
SECONDARY SIC:	Not reported
TERTIARY SIC:	Not reported

A4 **CHUCKWALLA VALLEY RACEWAY** **FINDS** **1023314002**
SW **25300 RICE RD** **N/A**
> 1 **DESERT CENTER, CA 92239**
1.128 mi.
5957 ft. **Site 2 of 2 in cluster A**

Relative:
Higher

Actual:
596 ft.

FINDS:

Registry ID: 110066070432

Environmental Interest/Information System
STATE MASTER

Click this hyperlink while viewing on your computer to access additional FINDS: detail in the EDR Site Report.

B5 **IRON MOUNTAIN PUMPING STN** **UST** **U003976906**
NW **6001 IRON MTN PUMPING PLANT RD** **N/A**
> 1 **EARP, CA 92239**
1.324 mi.
6991 ft. **Site 1 of 2 in cluster B**

Relative:
Higher

Actual:
577 ft.

UST:

Facility ID:	86012468
Permitting Agency:	SAN BERNARDINO COUNTY
Latitude:	33.77975
Longitude:	-115.35604

B6 NW > 1 1.324 mi. 6991 ft. | **MWD/EAGLE MOUNTAIN PUMPING** | **UST** | **U003802897**
EAGLE MOUNTAIN RD | **N/A**
DESERT CENTER, CA 92239

Site 2 of 2 in cluster B

Relative: Higher
Actual: 577 ft.

UST:

Facility ID:	459
Permitting Agency:	RIVERSIDE COUNTY
Latitude:	33.77975
Longitude:	-115.35604

---

7 ESE > 1 1.366 mi. 7211 ft. | **IRON MOUNTAIN PUMPING PLANT** | **RCRA-SQG** | **1000120210**
6001 IRON MOUNTAIN PUMPING PLANT | **CAD981425655**
EARP, CA 92242

Relative: Lower
Actual: 521 ft.

RCRA-SQG:

Date form received by agency:	07/21/2016
Facility name:	IRON MOUNTAIN PUMPING PLANT
Facility address:	6001 IRON MOUNTAIN PUMPING PLANT EARP, CA 92242
EPA ID:	CAD981425655
Mailing address:	P.O. BOX 54153 LOS ANGELES, CA 90054
Contact:	EMERSON F LEGO
Contact address:	P.O. BOX 54153 LOS ANGELES, CA 90054
Contact country:	US
Contact telephone:	213-217-6281
Contact email:	ELEGO@MWDH2O.COM
EPA Region:	09
Land type:	District
Classification:	Small Small Quantity Generator
Description:	Handler: generates more than 100 and less than 1000 kg of hazardous waste during any calendar month and accumulates less than 6000 kg of hazardous waste at any time; or generates 100 kg or less of hazardous waste during any calendar month, and accumulates more than 1000 kg of hazardous waste at any time

Owner/Operator Summary:

Owner/operator name:	METROPOLITAN WATER DISTRICT
Owner/operator address:	P O BOX 54153 LOS ANGELES, CA 90054
Owner/operator country:	Not reported
Owner/operator telephone:	909-392-2911
Owner/operator email:	Not reported
Owner/operator fax:	Not reported
Owner/operator extension:	Not reported
Legal status:	Municipal
Owner/Operator Type:	Owner
Owner/Op start date:	Not reported
Owner/Op end date:	Not reported
Owner/operator name:	METROPOLITAN WATER DISTRICT OF S CALI
Owner/operator address:	Not reported Not reported
Owner/operator country:	Not reported

IRON MOUNTAIN PUMPING PLANT (Continued) **1000120210**

Owner/operator telephone: Not reported
Owner/operator email: Not reported
Owner/operator fax: Not reported
Owner/operator extension: Not reported
Legal status: District
Owner/Operator Type: Operator
Owner/Op start date: 01/07/1939
Owner/Op end date: Not reported

Owner/operator name: METROPOLITAN WATER DISTRICT OF S CALI
Owner/operator address: N ALAMEDA ST
LOS ANGELES, CA 90012
Owner/operator country: US
Owner/operator telephone: 213-217-6000
Owner/operator email: Not reported
Owner/operator fax: Not reported
Owner/operator extension: Not reported
Legal status: District
Owner/Operator Type: Owner
Owner/Op start date: 01/07/1939
Owner/Op end date: Not reported

Handler Activities Summary:
U.S. importer of hazardous waste: No
Mixed waste (haz. and radioactive): No
Recycler of hazardous waste: No
Transporter of hazardous waste: No
Treater, storer or disposer of HW: No
Underground injection activity: No
On-site burner exemption: No
Furnace exemption: No
Used oil fuel burner: No
Used oil processor: No
User oil refiner: No
Used oil fuel marketer to burner: No
Used oil Specification marketer: No
Used oil transfer facility: No
Used oil transporter: No

. Waste code: 122
. Waste name: Alkaline solution without metals (pH > 12.5)

. Waste code: 135
. Waste name: Unspecified aqueous solution

. Waste code: 141
. Waste name: Off-specification, aged, or surplus inorganics

. Waste code: 151
. Waste name: Asbestos-containing waste

. Waste code: 181
. Waste name: Other inorganic solid waste

. Waste code: 221
. Waste name: Waste oil and mixed oil

IRON MOUNTAIN PUMPING PLANT (Continued) **1000120210**

. Waste code: 223
. Waste name: Unspecified oil-containing waste

. Waste code: 261
. Waste name: Polychlorinated biphenyls and material containing PCB's

. Waste code: 291
. Waste name: Latex waste

. Waste code: 331
. Waste name: Off-specification, aged, or surplus organics

. Waste code: 343
. Waste name: Unspecified organic liquid mixture

. Waste code: 352
. Waste name: Other organic solids

. Waste code: 724
. Waste name: Liquids with lead > 500 mg/l

. Waste code: D001
. Waste name: IGNITABLE WASTE

. Waste code: D002
. Waste name: CORROSIVE WASTE

. Waste code: D008
. Waste name: LEAD

. Waste code: D018
. Waste name: BENZENE

Historical Generators:
Date form received by agency: 05/23/2008
Site name: METROPOLITAN WATER DISTRICT-IRON MOUNTAI
Classification: Large Quantity Generator

. Waste code: D001
. Waste name: IGNITABLE WASTE

. Waste code: D002
. Waste name: CORROSIVE WASTE

. Waste code: D009
. Waste name: MERCURY

. Waste code: D018
. Waste name: BENZENE

Date form received by agency: 03/01/2002
Site name: IRON MOUNTAIN PUMPING PLANT
Classification: Small Quantity Generator

Date form received by agency: 03/01/2002
Site name: IRON MOUNTAIN PUMPING PLANT
Classification: Large Quantity Generator

IRON MOUNTAIN PUMPING PLANT (Continued) **1000120210**

. Waste code: 214
. Waste name: Unspecified solvent mixture

. Waste code: 343
. Waste name: Unspecified organic liquid mixture

. Waste code: D001
. Waste name: IGNITABLE WASTE

. Waste code: D002
. Waste name: CORROSIVE WASTE

. Waste code: D039
. Waste name: TETRACHLOROETHYLENE

Date form received by agency: 10/12/2000
Site name: METROPOLITAN WATER DISTRICT OF S. CALIF
Classification: Large Quantity Generator

Date form received by agency: 03/04/1999
Site name: METROPOLITAN WATER DISTRICT OF SOUTHERN
Classification: Large Quantity Generator

Date form received by agency: 09/01/1996
Site name: IRON MOUNTAIN PUMPING PLANT
Classification: Small Quantity Generator

Date form received by agency: 02/29/1996
Site name: IRON MOUNTAIN
Classification: Large Quantity Generator

Date form received by agency: 03/30/1994
Site name: IRON MOUNTAIN
Classification: Large Quantity Generator

Date form received by agency: 01/31/1992
Site name: MWD IRON MT PUMPING PLANT
Classification: Large Quantity Generator

Date form received by agency: 11/15/1990
Site name: MWD IRON MT PUMPING PLANT
Classification: Large Quantity Generator

Biennial Reports:

Last Biennial Reporting Year: 2017

Annual Waste Handled:
Waste code: D001
Waste name: IGNITABLE HAZARDOUS WASTES ARE THOSE WASTES WHICH HAVE A FLASHPOINT OF LESS THAN 140 DEGREES FAHRENHEIT AS DETERMINED BY A PENSKY-MARTENS CLOSED CUP FLASH POINT TESTER. ANOTHER METHOD OF DETERMINING THE FLASH POINT OF A WASTE IS TO REVIEW THE MATERIAL SAFETY DATA SHEET, WHICH CAN BE OBTAINED FROM THE MANUFACTURER OR DISTRIBUTOR OF THE MATERIAL. LACQUER THINNER IS AN EXAMPLE OF A COMMONLY USED SOLVENT WHICH WOULD BE CONSIDERED AS IGNITABLE HAZARDOUS WASTE.
Amount (Lbs): 984.5

IRON MOUNTAIN PUMPING PLANT (Continued) **1000120210**

Waste code: D002
Waste name: A WASTE WHICH HAS A PH OF LESS THAN 2 OR GREATER THAN 12.5 IS CONSIDERED TO BE A CORROSIVE HAZARDOUS WASTE. SODIUM HYDROXIDE, A CAUSTIC SOLUTION WITH A HIGH PH, IS OFTEN USED BY INDUSTRIES TO CLEAN OR DEGREASE PARTS. HYDROCHLORIC ACID, A SOLUTION WITH A LOW PH, IS USED BY MANY INDUSTRIES TO CLEAN METAL PARTS PRIOR TO PAINTING. WHEN THESE CAUSTIC OR ACID SOLUTIONS BECOME CONTAMINATED AND MUST BE DISPOSED, THE WASTE WOULD BE A CORROSIVE HAZARDOUS WASTE.
Amount (Lbs): 41.7

Waste code: D008
Waste name: LEAD
Amount (Lbs): 17627.2

Waste code: D018
Waste name: BENZENE
Amount (Lbs): 834.5

Facility Has Received Notices of Violations:

Regulation violated: Not reported
Area of violation: Generators - Manifest
Date violation determined: 09/22/2016
Date achieved compliance: 09/22/2016
Violation lead agency: State
Enforcement action: SINGLE SITE CA/FO
Enforcement action date: 04/12/2017
Enf. disposition status: Not reported
Enf. disp. status date: Not reported
Enforcement lead agency: State
Proposed penalty amount: Not reported
Final penalty amount: 6250
Paid penalty amount: Not reported

Regulation violated: Not reported
Area of violation: Generators - General
Date violation determined: 09/22/2016
Date achieved compliance: 09/22/2016
Violation lead agency: State
Enforcement action: SINGLE SITE CA/FO
Enforcement action date: 04/12/2017
Enf. disposition status: Not reported
Enf. disp. status date: Not reported
Enforcement lead agency: State
Proposed penalty amount: Not reported
Final penalty amount: 6250
Paid penalty amount: Not reported

Regulation violated: Not reported
Area of violation: Generators - Manifest
Date violation determined: 09/22/2016
Date achieved compliance: 09/22/2016
Violation lead agency: State
Enforcement action: WRITTEN INFORMAL
Enforcement action date: 09/22/2016
Enf. disposition status: Not reported
Enf. disp. status date: Not reported

IRON MOUNTAIN PUMPING PLANT (Continued) **1000120210**

Enforcement lead agency: State
Proposed penalty amount: Not reported
Final penalty amount: Not reported
Paid penalty amount: Not reported

Regulation violated: Not reported
Area of violation: Generators - General
Date violation determined: 09/22/2016
Date achieved compliance: 09/22/2016
Violation lead agency: State
Enforcement action: WRITTEN INFORMAL
Enforcement action date: 09/22/2016
Enf. disposition status: Not reported
Enf. disp. status date: Not reported
Enforcement lead agency: State
Proposed penalty amount: Not reported
Final penalty amount: Not reported
Paid penalty amount: Not reported

Evaluation Action Summary:
Evaluation date: 09/22/2016
Evaluation: FACILITY SELF DISCLOSURE
Area of violation: Generators - General
Date achieved compliance: 09/22/2016
Evaluation lead agency: State

Evaluation date: 09/22/2016
Evaluation: FACILITY SELF DISCLOSURE
Area of violation: Generators - Manifest
Date achieved compliance: 09/22/2016
Evaluation lead agency: State

C8 **WILLIAM W HEATH DBA THE WATE** **HIST UST** **U001573857**
SW **25940 RICE RD** **N/A**
> 1 **DESERT CENTER, CA 92239**
1.442 mi.
7614 ft. **Site 1 of 2 in cluster C**

Relative:
Higher

Actual:
611 ft.

HIST UST:
File Number: 0001FB15
URL: http://geotracker.waterboards.ca.gov/ustpdfs/pdf/0001FB15.pdf
Region: STATE
Facility ID: 00000040696
Facility Type: Gas Station
Other Type: Not reported
Contact Name: Not reported
Telephone: 6192273311
Owner Name: WILLIAM W. HEATH DBA "THE WATE
Owner Address: 25940 RICE RD.,
Owner City,St,Zip: DESERT CENTER, CA 92239
Total Tanks: 0004

Tank Num: 001
Container Num: 1
Year Installed: Not reported
Tank Capacity: 00004000
Tank Used for: PRODUCT
Type of Fuel: UNLEADED

WILLIAM W HEATH DBA THE WATE (Continued) **U001573857**

Container Construction Thickness:	Not reported
Leak Detection:	None

Tank Num:	002
Container Num:	2
Year Installed:	Not reported
Tank Capacity:	00004000
Tank Used for:	PRODUCT
Type of Fuel:	REGULAR
Container Construction Thickness:	Not reported
Leak Detection:	None

Tank Num:	003
Container Num:	3
Year Installed:	Not reported
Tank Capacity:	00002000
Tank Used for:	PRODUCT
Type of Fuel:	DIESEL
Container Construction Thickness:	Not reported
Leak Detection:	None

Tank Num:	004
Container Num:	4
Year Installed:	Not reported
Tank Capacity:	00001000
Tank Used for:	PRODUCT
Type of Fuel:	REGULAR
Container Construction Thickness:	Not reported
Leak Detection:	None

Click here for Geo Tracker PDF:

C9 **DESERT ENTERPRISES UNION 76** **EDR Hist Auto** **1021420447**
SW **25940 RICE RD** **N/A**
> 1 **DESERT CENTER, CA 92239**
1.442 mi.
7614 ft. **Site 2 of 2 in cluster C**

Relative: EDR Hist Auto
Higher

Actual:
611 ft.

Year:	Name:	Type:
1975	DESERT ENTERPRISES UNION 76	Gasoline Service Stations
1976	DESERT ENTERPRISES UNION 76	Gasoline Service Stations
1977	DESERT ENTERPRISES UNION 76	Gasoline Service Stations
1978	DESERT ENTERPRISES UNION 76	Gasoline Service Stations
1979	DESERT ENTERPRISES UNION 76	Gasoline Service Stations
1980	DESERT ENTERPRISES UNION 76	Gasoline Service Stations
1982	DESERT ENTERPRISES UNION 76	Gasoline Service Stations
1983	DESERT ENTERPRISES UNION 76	Gasoline Service Stations
1985	DESERT ENTERPRISES UNION 76	Gasoline Service Stations
1988	DESERT FLATTS	Grocery Stores
1989	DESERT FLATTS	Convenience Stores

10 SE > 1 1.518 mi. 8015 ft. | **DESERT CENTER UNKNOWN DESERT CENTER, CA 00000** | **FINDS** | **1014674633 N/A**

Relative: Lower
Actual: 540 ft.

FINDS:

Registry ID: 110041363725

Environmental Interest/Information System
AIR MINOR

Click this hyperlink while viewing on your computer to access additional FINDS: detail in the EDR Site Report.

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11 SE > 1 1.564 mi. 8256 ft. | **DESERT CENTER AIRPORT - DESERT CENTER AIRPORT (J09 DESERT CENTER DESERT CENTER, CA 92057** | **MCS** | **S110167222 N/A**

Relative: Lower
Actual: 533 ft.

MCS:

Global Id:	DOD100093300
Latitude:	33.74862
Longitude:	-115.3230
Case Type:	Military Cleanup Site
Status:	Open - Inactive
Status Date:	05/12/2010
Lead Agency:	DEPARTMENT OF TOXIC SUBSTANCES CONTROL
Caseworker:	Not reported
Local Agency:	DEPARTMENT OF TOXIC SUBSTANCES CONTROL
RB Case Number:	Not reported
LOC Case Number:	33970010
File Location:	Not reported
Potential Media Affect:	Not reported
EDR Link ID:	DOD100093300
Potential Contaminants of Concern:	Not reported
Site History:	Not reported

Click here to access the California GeoTracker records for this facility:

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12 SW > 1 1.725 mi. 9107 ft. | **GREEN ACRES MOBILE PARK 25950 RICE RD DESERT CENTER, CA 92239** | **EDR Hist Auto** | **1020367322 N/A**

Relative: Higher
Actual: 628 ft.

EDR Hist Auto

Year:	Name:	Type:
1985	GREEN ACRES MOBILE HOME PARK	Mobile Home Site Operators
1986	GREEN ACRES MOBILE HOME PARK	Mobile Home Site Operators
1987	GREEN ACRES MOBILE HOME PARK	Mobile Home Site Operators
1988	GREEN ACRES MOBILE HOME PARK	Mobile Home Site Operators
1989	GREEN ACRES MOBILE HOME PARK	Mobile Home Site Operators
1990	GREEN ACRES MOBILE HOME PARK	Mobile Home Site Operators

GREEN ACRES MOBILE PARK (Continued) **1020367322**

1991	GREEN ACRES MOBILE HOME PARK	Mobile Home Site Operators
1992	GREEN ACRES MOBILE HOME PARK	Mobile Home Site Operators
1993	GREEN ACRES MOBILE HOME PARK	Mobile Home Site Operators
1994	GREEN ACRES MOBILE HOME PARK	Mobile Home Site Operators
1995	GREEN ACRES MOBILE HOME PARK	Mobile Home Site Operators
1996	GREEN ACRES MOBILE HOME PARK	Mobile Home Site Operators
1997	GREEN ACRES MOBILE HOME PARK	Mobile Home Site Operators
1998	GREEN ACRES MOBILE HOME PARK	Mobile Home Site Operators
1999	GREEN ACRES MOBILE PARK	Mobile Home Site Operators
2000	GREEN ACRES MOBILE PARK	Mobile Home Site Operators
2001	GREEN ACRES MOBILE PARK	Mobile Home Site Operators
2002	GREEN ACRES MOBILE PARK	Mobile Home Site Operators
2003	GREEN ACRES MOBILE PARK	Mobile Home Site Operators
2004	GREEN ACRES MOBILE PARK	Mobile Home Site Operators
2005	GREEN ACRES MOBILE PARK	Mobile Home Site Operators
2006	GREEN ACRES MOBILE PARK	Mobile Home Site Operators
2007	GREEN ACRES MOBILE PARK	Mobile Home Site Operators
2008	GREEN ACRES MOBILE PARK	Mobile Home Site Operators
2009	GREEN ACRES MOBILE PARK	Mobile Home Site Operators
2010	GREEN ACRES MOBILE PARK	Mobile Home Site Operators
2011	GREEN ACRES MOBILE PARK	Mobile Home Site Operators
2012	GREEN ACRES MOBILE PARK	Mobile Home Site Operators
2013	GREEN ACRES MOBILE PARK	Mobile Home Site Operators
2014	GREEN ACRES MOBILE PARK	Mobile Home Site Operators

D13 **DESERT CEN DIV CP** **ENVIROSTOR** **S107736217**
WNW **N/A**
> 1 **DESERT CENTER, CA**
3.994 mi.
21086 ft. **Site 1 of 2 in cluster D**

Relative:
Higher

Actual:
665 ft.

ENVIROSTOR:

Facility ID:	80000236
Status:	Inactive - Needs Evaluation
Status Date:	07/01/2005
Site Code:	Not reported
Site Type:	Military Evaluation
Site Type Detailed:	FUDS
Acres:	Not reported
NPL:	NO
Regulatory Agencies:	SMBRP
Lead Agency:	SMBRP
Program Manager:	Not reported
Supervisor:	Douglas Bautista
Division Branch:	Cleanup Cypress
Assembly:	56
Senate:	28
Special Program:	Not reported
Restricted Use:	NO
Site Mgmt Req:	NONE SPECIFIED
Funding:	DERA
Latitude:	33.79166
Longitude:	-115.4166
APN:	NONE SPECIFIED
Past Use:	NONE SPECIFIED
Potential COC:	Explosives (UXO, MEC
Confirmed COC:	NONE SPECIFIED
Potential Description:	NONE SPECIFIED

DESERT CEN DIV CP (Continued) **S107736217**

Alias Name: CA99799F542800
Alias Type: Federal Facility ID
Alias Name: J09CA0342
Alias Type: INPR
Alias Name: 80000236
Alias Type: Envirostor ID Number

Completed Info:
Completed Area Name: Not reported
Completed Sub Area Name: Not reported
Completed Document Type: Not reported
Completed Date: Not reported
Comments: Not reported

Future Area Name: Not reported
Future Sub Area Name: Not reported
Future Document Type: Not reported
Future Due Date: Not reported
Schedule Area Name: Not reported
Schedule Sub Area Name: Not reported
Schedule Document Type: Not reported
Schedule Due Date: Not reported
Schedule Revised Date: Not reported

D14 WNW > 1 3.994 mi. 21086 ft. **DESERT CENTER DIVISION CAMP** **FUDS** **1009484623** **N/A**

DESERT CENTER, CA

Site 2 of 2 in cluster D

Relative: Higher

Actual: 665 ft.

FUDS:
EPA Region: 09
Congressional District: 36
FUDS Number: J09CA0342
State: CA
Facility Name: DESERT CENTER DIVISION CAMP
Fiscal Year: 2013
City: DESERT CENTER
Federal Facility ID: CA9799F5428
Telephone: 213-452-3920
INST ID: 56250
County: RIVERSIDE
RAB: Not reported
CORPS_DIST: Los Angeles District (SPL)
NPL Status: Not Listed
CTC: 60
Current Owner: Other Federal Government; Private Sector
Future Prog: Not reported
Description: LOCATED IN AN UNDEVELOPED REGION OF RIVERSIDE COUNTY, CA, NORTH AND WEST OF DESERT CENTER, CA
Current Program: Not reported
History: THE DESERT CENTER DIVISION CAMP WAS USED BY THE US ARMY FOR MANEUVER PURPOSES AND CAMPSITES
Latitude Degree: 33
Latitude Minute: 46
Latitude Second: 45
Latitude Direction: N
Longitude Degree: -115

DESERT CENTER DIVISION CAMP (Continued) **1009484623**

Longitude Minute: 25
Longitude Second: 26
Longitude Direction: E

Count: 20 records.

ORPHAN SUMMARY

City	EDR ID	Site Name	Site Address	Zip	Database(s)
DESERT CENTER	S112974323	CALTRANS D-8/CONSTR/EA08-0K6304	RTE 177 PM 0.0-27.0	92239	HAZNET
DESERT CENTER	S108407375		I-10, 3 MILES W OF STATE ROUTE	92239	CDL
DESERT CENTER	S114590543	CALTRANS DESERT CENTER	129476 HIGHWAY 60		RGA LUST
DESERT CENTER	S114591008	CALTRANS-DESERT CENTER	129476 HIGHWAY 60		RGA LUST
DESERT CENTER	A100423762	RCIT - ROAD 62 #44	34505 HIGHWAY 62	92239	AST
DESERT CENTER	S117041466	INDIGO SOLAR FARM	42220 BELSBY AVE	92239	NPDES
DESERT CENTER	1014672120	PALEN SOLAR POWER PROJECT	CORN SPRINGS ROAD	92239	FINDS
DESERT CENTER	S111759643	PAR ELECTRIC CONTRACTORS	30855 CORN SPRINGS RD	92239	CHMIRS, HAZNET
DESERT CENTER	S114591009	CALTRANS-DESERT CENTER	129476 U.S. HIGHWAY 60		RGA LUST
DESERT CENTER	S114590542	CALTRANS DESERT CENTER MAIN.	129476 U.S. HIGHWAY 60		RGA LUST
DESERT CENTER	S114591010	CALTRANS-DESERT CENTER	129476 U.S. HWY 60		RGA LUST
DESERT CENTER	S106836075	MWD - IRON MT. PUMPING STATION	IRON MT. AND RICE ROAD		EMI
DESERT CENTER	S107144793	CRA SAND TRAP REPLACEMENT EAGLE MO	15500 KAISER TRUCK ROAD	92239	CHMIRS, ENF, NPDES
DESERT CENTER	1018132372	KAISER EAGLE MOUNTAIN	N OF HWY 10 8M OFF KAISER RD	92239	DOCKET HWC
DESERT CENTER	S113792925	PETERS PROPERTY	RIVERSIDE CTY APN 800-430-00	92239	HAZNET
EARP	U001573855	IRON MOUNTAIN PUMPING PLANT	NEAR RICE	92239	HIST UST
RICE	1023377596	RICE SOLAR ENERGY PROJECT	STATE RTE. 62	92239	FINDS
RIVERSIDE COUNTY	S107537885		BOX SPRINGS RD & HWY 215 (SEE		CDL
RIVERSIDE COUNTY	S117711495	ST HWY 111 NE PALM SPRINGS	ST HWY 111 NE OF PALM SPRINGS		NPDES
RIVERSIDE COUNTY	M300002452	PACIFIC CLAY PRODS CO	RIVERSIDE COUNTY PITS (5 OPERA		US MINES

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

To maintain currency of the following federal and state databases, EDR contacts the appropriate governmental agency on a monthly or quarterly basis, as required.

Number of Days to Update: Provides confirmation that EDR is reporting records that have been updated within 90 days from the date the government agency made the information available to the public.

STANDARD ENVIRONMENTAL RECORDS

Federal NPL site list

NPL: National Priority List

National Priorities List (Superfund). The NPL is a subset of CERCLIS and identifies over 1,200 sites for priority cleanup under the Superfund Program. NPL sites may encompass relatively large areas. As such, EDR provides polygon coverage for over 1,000 NPL site boundaries produced by EPA's Environmental Photographic Interpretation Center (EPIC) and regional EPA offices.

Date of Government Version: 12/11/2017
Date Data Arrived at EDR: 12/22/2017
Date Made Active in Reports: 01/05/2018
Number of Days to Update: 14

Source: EPA
Telephone: N/A
Last EDR Contact: 02/06/2018
Next Scheduled EDR Contact: 04/16/2018
Data Release Frequency: Quarterly

NPL Site Boundaries

Sources:

EPA's Environmental Photographic Interpretation Center (EPIC)
Telephone: 202-564-7333

EPA Region 1
Telephone 617-918-1143

EPA Region 6
Telephone: 214-655-6659

EPA Region 3
Telephone 215-814-5418

EPA Region 7
Telephone: 913-551-7247

EPA Region 4
Telephone 404-562-8033

EPA Region 8
Telephone: 303-312-6774

EPA Region 5
Telephone 312-886-6686

EPA Region 9
Telephone: 415-947-4246

EPA Region 10
Telephone 206-553-8665

Proposed NPL: Proposed National Priority List Sites

A site that has been proposed for listing on the National Priorities List through the issuance of a proposed rule in the Federal Register. EPA then accepts public comments on the site, responds to the comments, and places on the NPL those sites that continue to meet the requirements for listing.

Date of Government Version: 12/11/2017
Date Data Arrived at EDR: 12/22/2017
Date Made Active in Reports: 01/05/2018
Number of Days to Update: 14

Source: EPA
Telephone: N/A
Last EDR Contact: 02/06/2018
Next Scheduled EDR Contact: 05/21/2018
Data Release Frequency: Quarterly

NPL LIENS: Federal Superfund Liens

Federal Superfund Liens. Under the authority granted the USEPA by CERCLA of 1980, the USEPA has the authority to file liens against real property in order to recover remedial action expenditures or when the property owner received notification of potential liability. USEPA compiles a listing of filed notices of Superfund Liens.

Date of Government Version: 10/15/1991
Date Data Arrived at EDR: 02/02/1994
Date Made Active in Reports: 03/30/1994
Number of Days to Update: 56

Source: EPA
Telephone: 202-564-4267
Last EDR Contact: 08/15/2011
Next Scheduled EDR Contact: 11/28/2011
Data Release Frequency: No Update Planned

Federal Delisted NPL site list

Delisted NPL: National Priority List Deletions

The National Oil and Hazardous Substances Pollution Contingency Plan (NCP) establishes the criteria that the EPA uses to delete sites from the NPL. In accordance with 40 CFR 300.425.(e), sites may be deleted from the NPL where no further response is appropriate.

Date of Government Version: 12/11/2017	Source: EPA
Date Data Arrived at EDR: 12/22/2017	Telephone: N/A
Date Made Active in Reports: 01/05/2018	Last EDR Contact: 02/06/2018
Number of Days to Update: 14	Next Scheduled EDR Contact: 04/16/2018
	Data Release Frequency: Quarterly

Federal CERCLIS list

FEDERAL FACILITY: Federal Facility Site Information listing

A listing of National Priority List (NPL) and Base Realignment and Closure (BRAC) sites found in the Comprehensive Environmental Response, Compensation and Liability Information System (CERCLIS) Database where EPA Federal Facilities Restoration and Reuse Office is involved in cleanup activities.

Date of Government Version: 11/07/2016	Source: Environmental Protection Agency
Date Data Arrived at EDR: 01/05/2017	Telephone: 703-603-8704
Date Made Active in Reports: 04/07/2017	Last EDR Contact: 01/05/2018
Number of Days to Update: 92	Next Scheduled EDR Contact: 04/16/2018
	Data Release Frequency: Varies

SEMS: Superfund Enterprise Management System

SEMS (Superfund Enterprise Management System) tracks hazardous waste sites, potentially hazardous waste sites, and remedial activities performed in support of EPA's Superfund Program across the United States. The list was formerly know as CERCLIS, renamed to SEMS by the EPA in 2015. The list contains data on potentially hazardous waste sites that have been reported to the USEPA by states, municipalities, private companies and private persons, pursuant to Section 103 of the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA). This dataset also contains sites which are either proposed to or on the National Priorities List (NPL) and the sites which are in the screening and assessment phase for possible inclusion on the NPL.

Date of Government Version: 12/11/2017	Source: EPA
Date Data Arrived at EDR: 12/22/2017	Telephone: 800-424-9346
Date Made Active in Reports: 01/12/2018	Last EDR Contact: 02/06/2018
Number of Days to Update: 21	Next Scheduled EDR Contact: 04/30/2018
	Data Release Frequency: Quarterly

Federal CERCLIS NFRAP site list

SEMS-ARCHIVE: Superfund Enterprise Management System Archive

SEMS-ARCHIVE (Superfund Enterprise Management System Archive) tracks sites that have no further interest under the Federal Superfund Program based on available information. The list was formerly known as the CERCLIS-NFRAP, renamed to SEMS ARCHIVE by the EPA in 2015. EPA may perform a minimal level of assessment work at a site while it is archived if site conditions change and/or new information becomes available. Archived sites have been removed and archived from the inventory of SEMS sites. Archived status indicates that, to the best of EPA's knowledge, assessment at a site has been completed and that EPA has determined no further steps will be taken to list the site on the National Priorities List (NPL), unless information indicates this decision was not appropriate or other considerations require a recommendation for listing at a later time. The decision does not necessarily mean that there is no hazard associated with a given site; it only means that. based upon available information, the location is not judged to be potential NPL site.

Date of Government Version: 12/11/2017
Date Data Arrived at EDR: 12/22/2017
Date Made Active in Reports: 01/12/2018
Number of Days to Update: 21

Source: EPA
Telephone: 800-424-9346
Last EDR Contact: 02/06/2018
Next Scheduled EDR Contact: 04/30/2018
Data Release Frequency: Quarterly

Federal RCRA CORRACTS facilities list

CORRACTS: Corrective Action Report
CORRACTS identifies hazardous waste handlers with RCRA corrective action activity.

Date of Government Version: 12/11/2017
Date Data Arrived at EDR: 12/26/2017
Date Made Active in Reports: 02/09/2018
Number of Days to Update: 45

Source: EPA
Telephone: 800-424-9346
Last EDR Contact: 01/19/2018
Next Scheduled EDR Contact: 04/09/2018
Data Release Frequency: Quarterly

Federal RCRA non-CORRACTS TSD facilities list

RCRA-TSDF: RCRA - Treatment, Storage and Disposal
RCRAInfo is EPA's comprehensive information system, providing access to data supporting the Resource Conservation and Recovery Act (RCRA) of 1976 and the Hazardous and Solid Waste Amendments (HSWA) of 1984. The database includes selective information on sites which generate, transport, store, treat and/or dispose of hazardous waste as defined by the Resource Conservation and Recovery Act (RCRA). Transporters are individuals or entities that move hazardous waste from the generator offsite to a facility that can recycle, treat, store, or dispose of the waste. TSDFs treat, store, or dispose of the waste.

Date of Government Version: 12/11/2017
Date Data Arrived at EDR: 12/26/2017
Date Made Active in Reports: 02/09/2018
Number of Days to Update: 45

Source: Environmental Protection Agency
Telephone: (415) 495-8895
Last EDR Contact: 01/19/2018
Next Scheduled EDR Contact: 04/09/2018
Data Release Frequency: Quarterly

Federal RCRA generators list

RCRA-LQG: RCRA - Large Quantity Generators
RCRAInfo is EPA's comprehensive information system, providing access to data supporting the Resource Conservation and Recovery Act (RCRA) of 1976 and the Hazardous and Solid Waste Amendments (HSWA) of 1984. The database includes selective information on sites which generate, transport, store, treat and/or dispose of hazardous waste as defined by the Resource Conservation and Recovery Act (RCRA). Large quantity generators (LQGs) generate over 1,000 kilograms (kg) of hazardous waste, or over 1 kg of acutely hazardous waste per month.

Date of Government Version: 12/11/2017
Date Data Arrived at EDR: 12/26/2017
Date Made Active in Reports: 02/09/2018
Number of Days to Update: 45

Source: Environmental Protection Agency
Telephone: (415) 495-8895
Last EDR Contact: 01/19/2018
Next Scheduled EDR Contact: 04/09/2018
Data Release Frequency: Quarterly

RCRA-SQG: RCRA - Small Quantity Generators

RCRAInfo is EPA's comprehensive information system, providing access to data supporting the Resource Conservation and Recovery Act (RCRA) of 1976 and the Hazardous and Solid Waste Amendments (HSWA) of 1984. The database includes selective information on sites which generate, transport, store, treat and/or dispose of hazardous waste as defined by the Resource Conservation and Recovery Act (RCRA). Small quantity generators (SQGs) generate between 100 kg and 1,000 kg of hazardous waste per month.

Date of Government Version: 12/11/2017
Date Data Arrived at EDR: 12/26/2017
Date Made Active in Reports: 02/09/2018
Number of Days to Update: 45

Source: Environmental Protection Agency
Telephone: (415) 495-8895
Last EDR Contact: 01/19/2018
Next Scheduled EDR Contact: 04/09/2018
Data Release Frequency: Quarterly

RCRA-CESQG: RCRA - Conditionally Exempt Small Quantity Generators

RCRAInfo is EPA's comprehensive information system, providing access to data supporting the Resource Conservation and Recovery Act (RCRA) of 1976 and the Hazardous and Solid Waste Amendments (HSWA) of 1984. The database includes selective information on sites which generate, transport, store, treat and/or dispose of hazardous waste as defined by the Resource Conservation and Recovery Act (RCRA). Conditionally exempt small quantity generators (CESQGs) generate less than 100 kg of hazardous waste, or less than 1 kg of acutely hazardous waste per month.

Date of Government Version: 12/11/2017
Date Data Arrived at EDR: 12/26/2017
Date Made Active in Reports: 02/09/2018
Number of Days to Update: 45

Source: Environmental Protection Agency
Telephone: (415) 495-8895
Last EDR Contact: 01/19/2018
Next Scheduled EDR Contact: 04/09/2018
Data Release Frequency: Quarterly

Federal institutional controls / engineering controls registries

LUCIS: Land Use Control Information System

LUCIS contains records of land use control information pertaining to the former Navy Base Realignment and Closure properties.

Date of Government Version: 05/22/2017
Date Data Arrived at EDR: 06/13/2017
Date Made Active in Reports: 09/15/2017
Number of Days to Update: 94

Source: Department of the Navy
Telephone: 843-820-7326
Last EDR Contact: 02/09/2018
Next Scheduled EDR Contact: 05/28/2018
Data Release Frequency: Varies

US ENG CONTROLS: Engineering Controls Sites List

A listing of sites with engineering controls in place. Engineering controls include various forms of caps, building foundations, liners, and treatment methods to create pathway elimination for regulated substances to enter environmental media or effect human health.

Date of Government Version: 11/13/2017
Date Data Arrived at EDR: 11/27/2017
Date Made Active in Reports: 02/09/2018
Number of Days to Update: 74

Source: Environmental Protection Agency
Telephone: 703-603-0695
Last EDR Contact: 02/27/2018
Next Scheduled EDR Contact: 06/11/2018
Data Release Frequency: Varies

US INST CONTROL: Sites with Institutional Controls

A listing of sites with institutional controls in place. Institutional controls include administrative measures, such as groundwater use restrictions, construction restrictions, property use restrictions, and post remediation care requirements intended to prevent exposure to contaminants remaining on site. Deed restrictions are generally required as part of the institutional controls.

Date of Government Version: 11/13/2017
Date Data Arrived at EDR: 11/27/2017
Date Made Active in Reports: 02/09/2018
Number of Days to Update: 74

Source: Environmental Protection Agency
Telephone: 703-603-0695
Last EDR Contact: 02/27/2018
Next Scheduled EDR Contact: 06/11/2018
Data Release Frequency: Varies

Federal ERNS list

ERNS: Emergency Response Notification System

Emergency Response Notification System. ERNS records and stores information on reported releases of oil and hazardous substances.

Date of Government Version: 09/18/2017
Date Data Arrived at EDR: 09/21/2017
Date Made Active in Reports: 10/13/2017
Number of Days to Update: 22

Source: National Response Center, United States Coast Guard
Telephone: 202-267-2180
Last EDR Contact: 01/19/2018
Next Scheduled EDR Contact: 04/09/2018
Data Release Frequency: Quarterly

State- and tribal - equivalent NPL

RESPONSE: State Response Sites

Identifies confirmed release sites where DTSC is involved in remediation, either in a lead or oversight capacity. These confirmed release sites are generally high-priority and high potential risk.

Date of Government Version: 10/30/2017
Date Data Arrived at EDR: 10/31/2017
Date Made Active in Reports: 12/15/2017
Number of Days to Update: 45

Source: Department of Toxic Substances Control
Telephone: 916-323-3400
Last EDR Contact: 01/31/2018
Next Scheduled EDR Contact: 05/14/2018
Data Release Frequency: Quarterly

State- and tribal - equivalent CERCLIS

ENVIROSTOR: EnviroStor Database

The Department of Toxic Substances Control's (DTSC's) Site Mitigation and Brownfields Reuse Program's (SMBRP's) EnviroStor database identifes sites that have known contamination or sites for which there may be reasons to investigate further. The database includes the following site types: Federal Superfund sites (National Priorities List (NPL)); State Response, including Military Facilities and State Superfund; Voluntary Cleanup; and School sites. EnviroStor provides similar information to the information that was available in CalSites, and provides additional site information, including, but not limited to, identification of formerly-contaminated properties that have been released for reuse, properties where environmental deed restrictions have been recorded to prevent inappropriate land uses, and risk characterization information that is used to assess potential impacts to public health and the environment at contaminated sites.

Date of Government Version: 10/30/2017
Date Data Arrived at EDR: 10/31/2017
Date Made Active in Reports: 12/15/2017
Number of Days to Update: 45

Source: Department of Toxic Substances Control
Telephone: 916-323-3400
Last EDR Contact: 01/31/2018
Next Scheduled EDR Contact: 05/14/2018
Data Release Frequency: Quarterly

State and tribal landfill and/or solid waste disposal site lists

SWF/LF (SWIS): Solid Waste Information System

Active, Closed and Inactive Landfills. SWF/LF records typically contain an inve ntory of solid waste disposal facilities or landfills. These may be active or i nactive facilities or open dumps that failed to meet RCRA Section 4004 criteria for solid waste landfills or disposal sites.

Date of Government Version: 11/13/2017
Date Data Arrived at EDR: 11/14/2017
Date Made Active in Reports: 12/07/2017
Number of Days to Update: 23

Source: Department of Resources Recycling and Recovery
Telephone: 916-341-6320
Last EDR Contact: 02/14/2018
Next Scheduled EDR Contact: 05/28/2018
Data Release Frequency: Quarterly

State and tribal leaking storage tank lists

LUST REG 6V: Leaking Underground Storage Tank Case Listing
Leaking Underground Storage Tank locations. Inyo, Kern, Los Angeles, Mono, San Bernardino counties.

Date of Government Version: 06/07/2005
Date Data Arrived at EDR: 06/07/2005
Date Made Active in Reports: 06/29/2005
Number of Days to Update: 22

Source: California Regional Water Quality Control Board Victorville Branch Office (6)
Telephone: 760-241-7365
Last EDR Contact: 09/12/2011
Next Scheduled EDR Contact: 12/26/2011
Data Release Frequency: No Update Planned

LUST: Leaking Underground Fuel Tank Report (GEOTRACKER)
Leaking Underground Storage Tank (LUST) Sites included in GeoTracker. GeoTracker is the Water Boards data management system for sites that impact, or have the potential to impact, water quality in California, with emphasis on groundwater.

Date of Government Version: 12/11/2017
Date Data Arrived at EDR: 12/12/2017
Date Made Active in Reports: 01/11/2018
Number of Days to Update: 30

Source: State Water Resources Control Board
Telephone: see region list
Last EDR Contact: 03/14/2018
Next Scheduled EDR Contact: 06/25/2018
Data Release Frequency: Quarterly

LUST REG 9: Leaking Underground Storage Tank Report
Orange, Riverside, San Diego counties. For more current information, please refer to the State Water Resources Control Board's LUST database.

Date of Government Version: 03/01/2001
Date Data Arrived at EDR: 04/23/2001
Date Made Active in Reports: 05/21/2001
Number of Days to Update: 28

Source: California Regional Water Quality Control Board San Diego Region (9)
Telephone: 858-637-5595
Last EDR Contact: 09/26/2011
Next Scheduled EDR Contact: 01/09/2012
Data Release Frequency: No Update Planned

LUST REG 8: Leaking Underground Storage Tanks
California Regional Water Quality Control Board Santa Ana Region (8). For more current information, please refer to the State Water Resources Control Board's LUST database.

Date of Government Version: 02/14/2005
Date Data Arrived at EDR: 02/15/2005
Date Made Active in Reports: 03/28/2005
Number of Days to Update: 41

Source: California Regional Water Quality Control Board Santa Ana Region (8)
Telephone: 909-782-4496
Last EDR Contact: 08/15/2011
Next Scheduled EDR Contact: 11/28/2011
Data Release Frequency: Varies

LUST REG 7: Leaking Underground Storage Tank Case Listing
Leaking Underground Storage Tank locations. Imperial, Riverside, San Diego, Santa Barbara counties.

Date of Government Version: 02/26/2004
Date Data Arrived at EDR: 02/26/2004
Date Made Active in Reports: 03/24/2004
Number of Days to Update: 27

Source: California Regional Water Quality Control Board Colorado River Basin Region (7)
Telephone: 760-776-8943
Last EDR Contact: 08/01/2011
Next Scheduled EDR Contact: 11/14/2011
Data Release Frequency: No Update Planned

LUST REG 6L: Leaking Underground Storage Tank Case Listing
For more current information, please refer to the State Water Resources Control Board's LUST database.

Date of Government Version: 09/09/2003
Date Data Arrived at EDR: 09/10/2003
Date Made Active in Reports: 10/07/2003
Number of Days to Update: 27

Source: California Regional Water Quality Control Board Lahontan Region (6)
Telephone: 530-542-5572
Last EDR Contact: 09/12/2011
Next Scheduled EDR Contact: 12/26/2011
Data Release Frequency: No Update Planned

LUST REG 5: Leaking Underground Storage Tank Database
Leaking Underground Storage Tank locations. Alameda, Alpine, Amador, Butte, Colusa, Contra Costa, Calveras, El Dorado, Fresno, Glenn, Kern, Kings, Lake, Lassen, Madera, Mariposa, Merced, Modoc, Napa, Nevada, Placer, Plumas, Sacramento, San Joaquin, Shasta, Solano, Stanislaus, Sutter, Tehama, Tulare, Tuolumne, Yolo, Yuba counties.

Date of Government Version: 07/01/2008
Date Data Arrived at EDR: 07/22/2008
Date Made Active in Reports: 07/31/2008
Number of Days to Update: 9

Source: California Regional Water Quality Control Board Central Valley Region (5)
Telephone: 916-464-4834
Last EDR Contact: 07/01/2011
Next Scheduled EDR Contact: 10/17/2011
Data Release Frequency: No Update Planned

LUST REG 4: Underground Storage Tank Leak List

Los Angeles, Ventura counties. For more current information, please refer to the State Water Resources Control Board's LUST database.

Date of Government Version: 09/07/2004
Date Data Arrived at EDR: 09/07/2004
Date Made Active in Reports: 10/12/2004
Number of Days to Update: 35

Source: California Regional Water Quality Control Board Los Angeles Region (4)
Telephone: 213-576-6710
Last EDR Contact: 09/06/2011
Next Scheduled EDR Contact: 12/19/2011
Data Release Frequency: No Update Planned

LUST REG 3: Leaking Underground Storage Tank Database

Leaking Underground Storage Tank locations. Monterey, San Benito, San Luis Obispo, Santa Barbara, Santa Cruz counties.

Date of Government Version: 05/19/2003
Date Data Arrived at EDR: 05/19/2003
Date Made Active in Reports: 06/02/2003
Number of Days to Update: 14

Source: California Regional Water Quality Control Board Central Coast Region (3)
Telephone: 805-542-4786
Last EDR Contact: 07/18/2011
Next Scheduled EDR Contact: 10/31/2011
Data Release Frequency: No Update Planned

LUST REG 2: Fuel Leak List

Leaking Underground Storage Tank locations. Alameda, Contra Costa, Marin, Napa, San Francisco, San Mateo, Santa Clara, Solano, Sonoma counties.

Date of Government Version: 09/30/2004
Date Data Arrived at EDR: 10/20/2004
Date Made Active in Reports: 11/19/2004
Number of Days to Update: 30

Source: California Regional Water Quality Control Board San Francisco Bay Region (2)
Telephone: 510-622-2433
Last EDR Contact: 09/19/2011
Next Scheduled EDR Contact: 01/02/2012
Data Release Frequency: Quarterly

LUST REG 1: Active Toxic Site Investigation

Del Norte, Humboldt, Lake, Mendocino, Modoc, Siskiyou, Sonoma, Trinity counties. For more current information, please refer to the State Water Resources Control Board's LUST database.

Date of Government Version: 02/01/2001
Date Data Arrived at EDR: 02/28/2001
Date Made Active in Reports: 03/29/2001
Number of Days to Update: 29

Source: California Regional Water Quality Control Board North Coast (1)
Telephone: 707-570-3769
Last EDR Contact: 08/01/2011
Next Scheduled EDR Contact: 11/14/2011
Data Release Frequency: No Update Planned

INDIAN LUST R8: Leaking Underground Storage Tanks on Indian Land

LUSTs on Indian land in Colorado, Montana, North Dakota, South Dakota, Utah and Wyoming.

Date of Government Version: 05/01/2017
Date Data Arrived at EDR: 07/27/2017
Date Made Active in Reports: 10/13/2017
Number of Days to Update: 78

Source: EPA Region 8
Telephone: 303-312-6271
Last EDR Contact: 01/23/2018
Next Scheduled EDR Contact: 05/07/2018
Data Release Frequency: Varies

INDIAN LUST R9: Leaking Underground Storage Tanks on Indian Land

LUSTs on Indian land in Arizona, California, New Mexico and Nevada

Date of Government Version: 04/13/2017
Date Data Arrived at EDR: 07/27/2017
Date Made Active in Reports: 10/13/2017
Number of Days to Update: 78

Source: Environmental Protection Agency
Telephone: 415-972-3372
Last EDR Contact: 01/23/2018
Next Scheduled EDR Contact: 05/07/2018
Data Release Frequency: Varies

INDIAN LUST R7: Leaking Underground Storage Tanks on Indian Land
LUSTs on Indian land in Iowa, Kansas, and Nebraska

Date of Government Version: 04/14/2017
Date Data Arrived at EDR: 07/27/2017
Date Made Active in Reports: 10/06/2017
Number of Days to Update: 71

Source: EPA Region 7
Telephone: 913-551-7003
Last EDR Contact: 01/23/2018
Next Scheduled EDR Contact: 05/07/2018
Data Release Frequency: Varies

INDIAN LUST R6: Leaking Underground Storage Tanks on Indian Land
LUSTs on Indian land in New Mexico and Oklahoma.

Date of Government Version: 04/24/2017
Date Data Arrived at EDR: 07/27/2017
Date Made Active in Reports: 10/06/2017
Number of Days to Update: 71

Source: EPA Region 6
Telephone: 214-665-6597
Last EDR Contact: 01/23/2018
Next Scheduled EDR Contact: 05/07/2018
Data Release Frequency: Varies

INDIAN LUST R4: Leaking Underground Storage Tanks on Indian Land
LUSTs on Indian land in Florida, Mississippi and North Carolina.

Date of Government Version: 10/14/2016
Date Data Arrived at EDR: 01/27/2017
Date Made Active in Reports: 05/05/2017
Number of Days to Update: 98

Source: EPA Region 4
Telephone: 404-562-8677
Last EDR Contact: 01/19/2018
Next Scheduled EDR Contact: 05/07/2018
Data Release Frequency: Semi-Annually

INDIAN LUST R1: Leaking Underground Storage Tanks on Indian Land
A listing of leaking underground storage tank locations on Indian Land.

Date of Government Version: 04/14/2017
Date Data Arrived at EDR: 07/27/2017
Date Made Active in Reports: 10/06/2017
Number of Days to Update: 71

Source: EPA Region 1
Telephone: 617-918-1313
Last EDR Contact: 01/23/2018
Next Scheduled EDR Contact: 05/07/2018
Data Release Frequency: Varies

INDIAN LUST R5: Leaking Underground Storage Tanks on Indian Land
Leaking underground storage tanks located on Indian Land in Michigan, Minnesota and Wisconsin.

Date of Government Version: 04/26/2017
Date Data Arrived at EDR: 07/27/2017
Date Made Active in Reports: 10/13/2017
Number of Days to Update: 78

Source: EPA, Region 5
Telephone: 312-886-7439
Last EDR Contact: 01/23/2018
Next Scheduled EDR Contact: 05/07/2018
Data Release Frequency: Varies

INDIAN LUST R10: Leaking Underground Storage Tanks on Indian Land
LUSTs on Indian land in Alaska, Idaho, Oregon and Washington.

Date of Government Version: 04/25/2017
Date Data Arrived at EDR: 11/07/2017
Date Made Active in Reports: 12/08/2017
Number of Days to Update: 31

Source: EPA Region 10
Telephone: 206-553-2857
Last EDR Contact: 01/23/2018
Next Scheduled EDR Contact: 05/07/2018
Data Release Frequency: Varies

SLIC: Statewide SLIC Cases (GEOTRACKER)
Cleanup Program Sites (CPS; also known as Site Cleanups [SC] and formerly known as Spills, Leaks, Investigations, and Cleanups [SLIC] sites) included in GeoTracker. GeoTracker is the Water Boards data management system for sites that impact, or have the potential to impact, water quality in California, with emphasis on groundwater.

Date of Government Version: 12/11/2017
Date Data Arrived at EDR: 12/12/2017
Date Made Active in Reports: 01/12/2018
Number of Days to Update: 31

Source: State Water Resources Control Board
Telephone: 866-480-1028
Last EDR Contact: 12/12/2018
Next Scheduled EDR Contact: 06/25/2018
Data Release Frequency: Varies

SLIC REG 1: Active Toxic Site Investigations
The SLIC (Spills, Leaks, Investigations and Cleanup) program is designed to protect and restore water quality from spills, leaks, and similar discharges.

Date of Government Version: 04/03/2003
Date Data Arrived at EDR: 04/07/2003
Date Made Active in Reports: 04/25/2003
Number of Days to Update: 18

Source: California Regional Water Quality Control Board, North Coast Region (1)
Telephone: 707-576-2220
Last EDR Contact: 08/01/2011
Next Scheduled EDR Contact: 11/14/2011
Data Release Frequency: No Update Planned

SLIC REG 2: Spills, Leaks, Investigation & Cleanup Cost Recovery Listing
The SLIC (Spills, Leaks, Investigations and Cleanup) program is designed to protect and restore water quality from spills, leaks, and similar discharges.

Date of Government Version: 09/30/2004
Date Data Arrived at EDR: 10/20/2004
Date Made Active in Reports: 11/19/2004
Number of Days to Update: 30

Source: Regional Water Quality Control Board San Francisco Bay Region (2)
Telephone: 510-286-0457
Last EDR Contact: 09/19/2011
Next Scheduled EDR Contact: 01/02/2012
Data Release Frequency: Quarterly

SLIC REG 3: Spills, Leaks, Investigation & Cleanup Cost Recovery Listing
The SLIC (Spills, Leaks, Investigations and Cleanup) program is designed to protect and restore water quality from spills, leaks, and similar discharges.

Date of Government Version: 05/18/2006
Date Data Arrived at EDR: 05/18/2006
Date Made Active in Reports: 06/15/2006
Number of Days to Update: 28

Source: California Regional Water Quality Control Board Central Coast Region (3)
Telephone: 805-549-3147
Last EDR Contact: 07/18/2011
Next Scheduled EDR Contact: 10/31/2011
Data Release Frequency: Semi-Annually

SLIC REG 4: Spills, Leaks, Investigation & Cleanup Cost Recovery Listing
The SLIC (Spills, Leaks, Investigations and Cleanup) program is designed to protect and restore water quality from spills, leaks, and similar discharges.

Date of Government Version: 11/17/2004
Date Data Arrived at EDR: 11/18/2004
Date Made Active in Reports: 01/04/2005
Number of Days to Update: 47

Source: Region Water Quality Control Board Los Angeles Region (4)
Telephone: 213-576-6600
Last EDR Contact: 07/01/2011
Next Scheduled EDR Contact: 10/17/2011
Data Release Frequency: Varies

SLIC REG 5: Spills, Leaks, Investigation & Cleanup Cost Recovery Listing
The SLIC (Spills, Leaks, Investigations and Cleanup) program is designed to protect and restore water quality from spills, leaks, and similar discharges.

Date of Government Version: 04/01/2005
Date Data Arrived at EDR: 04/05/2005
Date Made Active in Reports: 04/21/2005
Number of Days to Update: 16

Source: Regional Water Quality Control Board Central Valley Region (5)
Telephone: 916-464-3291
Last EDR Contact: 09/12/2011
Next Scheduled EDR Contact: 12/26/2011
Data Release Frequency: Semi-Annually

SLIC REG 6V: Spills, Leaks, Investigation & Cleanup Cost Recovery Listing
The SLIC (Spills, Leaks, Investigations and Cleanup) program is designed to protect and restore water quality from spills, leaks, and similar discharges.

Date of Government Version: 05/24/2005
Date Data Arrived at EDR: 05/25/2005
Date Made Active in Reports: 06/16/2005
Number of Days to Update: 22

Source: Regional Water Quality Control Board, Victorville Branch
Telephone: 619-241-6583
Last EDR Contact: 08/15/2011
Next Scheduled EDR Contact: 11/28/2011
Data Release Frequency: Semi-Annually

SLIC REG 6L: SLIC Sites
The SLIC (Spills, Leaks, Investigations and Cleanup) program is designed to protect and restore water quality from spills, leaks, and similar discharges.

Date of Government Version: 09/07/2004
Date Data Arrived at EDR: 09/07/2004
Date Made Active in Reports: 10/12/2004
Number of Days to Update: 35

Source: California Regional Water Quality Control Board, Lahontan Region
Telephone: 530-542-5574
Last EDR Contact: 08/15/2011
Next Scheduled EDR Contact: 11/28/2011
Data Release Frequency: No Update Planned

SLIC REG 7: SLIC List
The SLIC (Spills, Leaks, Investigations and Cleanup) program is designed to protect and restore water quality from spills, leaks, and similar discharges.

Date of Government Version: 11/24/2004
Date Data Arrived at EDR: 11/29/2004
Date Made Active in Reports: 01/04/2005
Number of Days to Update: 36

Source: California Regional Quality Control Board, Colorado River Basin Region
Telephone: 760-346-7491
Last EDR Contact: 08/01/2011
Next Scheduled EDR Contact: 11/14/2011
Data Release Frequency: No Update Planned

SLIC REG 8: Spills, Leaks, Investigation & Cleanup Cost Recovery Listing
The SLIC (Spills, Leaks, Investigations and Cleanup) program is designed to protect and restore water quality from spills, leaks, and similar discharges.

Date of Government Version: 04/03/2008
Date Data Arrived at EDR: 04/03/2008
Date Made Active in Reports: 04/14/2008
Number of Days to Update: 11

Source: California Region Water Quality Control Board Santa Ana Region (8)
Telephone: 951-782-3298
Last EDR Contact: 09/12/2011
Next Scheduled EDR Contact: 12/26/2011
Data Release Frequency: Semi-Annually

SLIC REG 9: Spills, Leaks, Investigation & Cleanup Cost Recovery Listing
The SLIC (Spills, Leaks, Investigations and Cleanup) program is designed to protect and restore water quality from spills, leaks, and similar discharges.

Date of Government Version: 09/10/2007
Date Data Arrived at EDR: 09/11/2007
Date Made Active in Reports: 09/28/2007
Number of Days to Update: 17

Source: California Regional Water Quality Control Board San Diego Region (9)
Telephone: 858-467-2980
Last EDR Contact: 08/08/2011
Next Scheduled EDR Contact: 11/21/2011
Data Release Frequency: Annually

State and tribal registered storage tank lists

FEMA UST: Underground Storage Tank Listing
A listing of all FEMA owned underground storage tanks.

Date of Government Version: 05/15/2017
Date Data Arrived at EDR: 05/30/2017
Date Made Active in Reports: 10/13/2017
Number of Days to Update: 136

Source: FEMA
Telephone: 202-646-5797
Last EDR Contact: 01/09/2018
Next Scheduled EDR Contact: 04/23/2018
Data Release Frequency: Varies

UST: Active UST Facilities
Active UST facilities gathered from the local regulatory agencies

Date of Government Version: 12/11/2017
Date Data Arrived at EDR: 12/12/2017
Date Made Active in Reports: 01/17/2018
Number of Days to Update: 36

Source: SWRCB
Telephone: 916-341-5851
Last EDR Contact: 03/14/2018
Next Scheduled EDR Contact: 06/25/2018
Data Release Frequency: Semi-Annually

AST: Aboveground Petroleum Storage Tank Facilities
A listing of aboveground storage tank petroleum storage tank locations.

Date of Government Version: 07/06/2016
Date Data Arrived at EDR: 07/12/2016
Date Made Active in Reports: 09/19/2016
Number of Days to Update: 69

Source: California Environmental Protection Agency
Telephone: 916-327-5092
Last EDR Contact: 12/26/2017
Next Scheduled EDR Contact: 04/09/2018
Data Release Frequency: Quarterly

INDIAN UST R1: Underground Storage Tanks on Indian Land
The Indian Underground Storage Tank (UST) database provides information about underground storage tanks on Indian land in EPA Region 1 (Connecticut, Maine, Massachusetts, New Hampshire, Rhode Island, Vermont and ten Tribal Nations).

Date of Government Version: 04/14/2017
Date Data Arrived at EDR: 07/27/2017
Date Made Active in Reports: 10/06/2017
Number of Days to Update: 71

Source: EPA, Region 1
Telephone: 617-918-1313
Last EDR Contact: 01/23/2018
Next Scheduled EDR Contact: 05/07/2018
Data Release Frequency: Varies

INDIAN UST R8: Underground Storage Tanks on Indian Land
The Indian Underground Storage Tank (UST) database provides information about underground storage tanks on Indian land in EPA Region 8 (Colorado, Montana, North Dakota, South Dakota, Utah, Wyoming and 27 Tribal Nations).

Date of Government Version: 05/01/2017
Date Data Arrived at EDR: 07/27/2017
Date Made Active in Reports: 10/13/2017
Number of Days to Update: 78

Source: EPA Region 8
Telephone: 303-312-6137
Last EDR Contact: 01/23/2018
Next Scheduled EDR Contact: 05/07/2018
Data Release Frequency: Varies

INDIAN UST R7: Underground Storage Tanks on Indian Land
The Indian Underground Storage Tank (UST) database provides information about underground storage tanks on Indian land in EPA Region 7 (Iowa, Kansas, Missouri, Nebraska, and 9 Tribal Nations).

Date of Government Version: 05/02/2017
Date Data Arrived at EDR: 07/27/2017
Date Made Active in Reports: 10/06/2017
Number of Days to Update: 71

Source: EPA Region 7
Telephone: 913-551-7003
Last EDR Contact: 01/23/2018
Next Scheduled EDR Contact: 05/07/2018
Data Release Frequency: Varies

INDIAN UST R6: Underground Storage Tanks on Indian Land
The Indian Underground Storage Tank (UST) database provides information about underground storage tanks on Indian land in EPA Region 6 (Louisiana, Arkansas, Oklahoma, New Mexico, Texas and 65 Tribes).

Date of Government Version: 04/24/2017
Date Data Arrived at EDR: 07/27/2017
Date Made Active in Reports: 12/08/2017
Number of Days to Update: 134

Source: EPA Region 6
Telephone: 214-665-7591
Last EDR Contact: 01/23/2018
Next Scheduled EDR Contact: 05/07/2018
Data Release Frequency: Varies

INDIAN UST R9: Underground Storage Tanks on Indian Land
The Indian Underground Storage Tank (UST) database provides information about underground storage tanks on Indian land in EPA Region 9 (Arizona, California, Hawaii, Nevada, the Pacific Islands, and Tribal Nations).

Date of Government Version: 04/13/2017
Date Data Arrived at EDR: 07/27/2017
Date Made Active in Reports: 10/13/2017
Number of Days to Update: 78

Source: EPA Region 9
Telephone: 415-972-3368
Last EDR Contact: 01/23/2018
Next Scheduled EDR Contact: 05/07/2018
Data Release Frequency: Varies

INDIAN UST R10: Underground Storage Tanks on Indian Land
The Indian Underground Storage Tank (UST) database provides information about underground storage tanks on Indian land in EPA Region 10 (Alaska, Idaho, Oregon, Washington, and Tribal Nations).

Date of Government Version: 04/25/2017
Date Data Arrived at EDR: 07/27/2017
Date Made Active in Reports: 10/13/2017
Number of Days to Update: 78

Source: EPA Region 10
Telephone: 206-553-2857
Last EDR Contact: 01/23/2018
Next Scheduled EDR Contact: 05/07/2018
Data Release Frequency: Varies

INDIAN UST R4: Underground Storage Tanks on Indian Land
The Indian Underground Storage Tank (UST) database provides information about underground storage tanks on Indian land in EPA Region 4 (Alabama, Florida, Georgia, Kentucky, Mississippi, North Carolina, South Carolina, Tennessee and Tribal Nations)

Date of Government Version: 10/14/2016
Date Data Arrived at EDR: 01/27/2017
Date Made Active in Reports: 05/05/2017
Number of Days to Update: 98

Source: EPA Region 4
Telephone: 404-562-9424
Last EDR Contact: 01/19/2018
Next Scheduled EDR Contact: 05/07/2018
Data Release Frequency: Semi-Annually

INDIAN UST R5: Underground Storage Tanks on Indian Land
The Indian Underground Storage Tank (UST) database provides information about underground storage tanks on Indian land in EPA Region 5 (Michigan, Minnesota and Wisconsin and Tribal Nations).

Date of Government Version: 04/26/2017
Date Data Arrived at EDR: 07/27/2017
Date Made Active in Reports: 10/06/2017
Number of Days to Update: 71

Source: EPA Region 5
Telephone: 312-886-6136
Last EDR Contact: 01/23/2018
Next Scheduled EDR Contact: 05/07/2018
Data Release Frequency: Varies

State and tribal voluntary cleanup sites

VCP: Voluntary Cleanup Program Properties
Contains low threat level properties with either confirmed or unconfirmed releases and the project proponents have request that DTSC oversee investigation and/or cleanup activities and have agreed to provide coverage for DTSC's costs.

Date of Government Version: 10/30/2017
Date Data Arrived at EDR: 10/31/2017
Date Made Active in Reports: 12/15/2017
Number of Days to Update: 45

Source: Department of Toxic Substances Control
Telephone: 916-323-3400
Last EDR Contact: 01/31/2018
Next Scheduled EDR Contact: 05/14/2018
Data Release Frequency: Quarterly

INDIAN VCP R1: Voluntary Cleanup Priority Listing
A listing of voluntary cleanup priority sites located on Indian Land located in Region 1.

Date of Government Version: 07/27/2015
Date Data Arrived at EDR: 09/29/2015
Date Made Active in Reports: 02/18/2016
Number of Days to Update: 142

Source: EPA, Region 1
Telephone: 617-918-1102
Last EDR Contact: 12/20/2017
Next Scheduled EDR Contact: 04/09/2018
Data Release Frequency: Varies

INDIAN VCP R7: Voluntary Cleanup Priority Lisitng
A listing of voluntary cleanup priority sites located on Indian Land located in Region 7.

Date of Government Version: 03/20/2008
Date Data Arrived at EDR: 04/22/2008
Date Made Active in Reports: 05/19/2008
Number of Days to Update: 27

Source: EPA, Region 7
Telephone: 913-551-7365
Last EDR Contact: 04/20/2009
Next Scheduled EDR Contact: 07/20/2009
Data Release Frequency: Varies

State and tribal Brownfields sites

BROWNFIELDS: Considered Brownfieds Sites Listing
A listing of sites the SWRCB considers to be Brownfields since these are sites have come to them through the MOA Process.

Date of Government Version: 12/22/2017
Date Data Arrived at EDR: 12/26/2017
Date Made Active in Reports: 01/31/2018
Number of Days to Update: 36

Source: State Water Resources Control Board
Telephone: 916-323-7905
Last EDR Contact: 12/26/2017
Next Scheduled EDR Contact: 04/09/2018
Data Release Frequency: Quarterly

ADDITIONAL ENVIRONMENTAL RECORDS

Local Brownfield lists

US BROWNFIELDS: A Listing of Brownfields Sites
Brownfields are real property, the expansion, redevelopment, or reuse of which may be complicated by the presence or potential presence of a hazardous substance, pollutant, or contaminant. Cleaning up and reinvesting in these properties takes development pressures off of undeveloped, open land, and both improves and protects the environment. Assessment, Cleanup and Redevelopment Exchange System (ACRES) stores information reported by EPA Brownfields grant recipients on brownfields properties assessed or cleaned up with grant funding as well as information on Targeted Brownfields Assessments performed by EPA Regions. A listing of ACRES Brownfield sites is obtained from Cleanups in My Community. Cleanups in My Community provides information on Brownfields properties for which information is reported back to EPA, as well as areas served by Brownfields grant programs.

Date of Government Version: 01/19/2018
Date Data Arrived at EDR: 01/19/2018
Date Made Active in Reports: 02/09/2018
Number of Days to Update: 21

Source: Environmental Protection Agency
Telephone: 202-566-2777
Last EDR Contact: 01/19/2018
Next Scheduled EDR Contact: 04/02/2018
Data Release Frequency: Semi-Annually

Local Lists of Landfill / Solid Waste Disposal Sites

WMUDS/SWAT: Waste Management Unit Database
Waste Management Unit Database System. WMUDS is used by the State Water Resources Control Board staff and the Regional Water Quality Control Boards for program tracking and inventory of waste management units. WMUDS is composed of the following databases: Facility Information, Scheduled Inspections Information, Waste Management Unit Information, SWAT Program Information, SWAT Report Summary Information, SWAT Report Summary Data, Chapter 15 (formerly Subchapter 15) Information, Chapter 15 Monitoring Parameters, TPCA Program Information, RCRA Program Information, Closure Information, and Interested Parties Information.

Date of Government Version: 04/01/2000
Date Data Arrived at EDR: 04/10/2000
Date Made Active in Reports: 05/10/2000
Number of Days to Update: 30

Source: State Water Resources Control Board
Telephone: 916-227-4448
Last EDR Contact: 01/31/2018
Next Scheduled EDR Contact: 05/21/2018
Data Release Frequency: No Update Planned

SWRCY: Recycler Database
A listing of recycling facilities in California.

Date of Government Version: 12/11/2017
Date Data Arrived at EDR: 12/12/2017
Date Made Active in Reports: 01/17/2018
Number of Days to Update: 36

Source: Department of Conservation
Telephone: 916-323-3836
Last EDR Contact: 03/14/2018
Next Scheduled EDR Contact: 06/25/2018
Data Release Frequency: Quarterly

HAULERS: Registered Waste Tire Haulers Listing
A listing of registered waste tire haulers.

Date of Government Version: 05/30/2017
Date Data Arrived at EDR: 05/31/2017
Date Made Active in Reports: 08/15/2017
Number of Days to Update: 76

Source: Integrated Waste Management Board
Telephone: 916-341-6422
Last EDR Contact: 02/09/2018
Next Scheduled EDR Contact: 02/26/2018
Data Release Frequency: Varies

INDIAN ODI: Report on the Status of Open Dumps on Indian Lands
Location of open dumps on Indian land.

Date of Government Version: 12/31/1998
Date Data Arrived at EDR: 12/03/2007
Date Made Active in Reports: 01/24/2008
Number of Days to Update: 52

Source: Environmental Protection Agency
Telephone: 703-308-8245
Last EDR Contact: 01/30/2018
Next Scheduled EDR Contact: 05/14/2018
Data Release Frequency: Varies

ODI: Open Dump Inventory
An open dump is defined as a disposal facility that does not comply with one or more of the Part 257 or Part 258 Subtitle D Criteria.

Date of Government Version: 06/30/1985
Date Data Arrived at EDR: 08/09/2004
Date Made Active in Reports: 09/17/2004
Number of Days to Update: 39

Source: Environmental Protection Agency
Telephone: 800-424-9346
Last EDR Contact: 06/09/2004
Next Scheduled EDR Contact: N/A
Data Release Frequency: No Update Planned

DEBRIS REGION 9: Torres Martinez Reservation Illegal Dump Site Locations
A listing of illegal dump sites location on the Torres Martinez Indian Reservation located in eastern Riverside County and northern Imperial County, California.

Date of Government Version: 01/12/2009
Date Data Arrived at EDR: 05/07/2009
Date Made Active in Reports: 09/21/2009
Number of Days to Update: 137

Source: EPA, Region 9
Telephone: 415-947-4219
Last EDR Contact: 01/22/2018
Next Scheduled EDR Contact: 05/07/2018
Data Release Frequency: No Update Planned

IHS OPEN DUMPS: Open Dumps on Indian Land
A listing of all open dumps located on Indian Land in the United States.

Date of Government Version: 04/01/2014
Date Data Arrived at EDR: 08/06/2014
Date Made Active in Reports: 01/29/2015
Number of Days to Update: 176

Source: Department of Health & Human Serivces, Indian Health Service
Telephone: 301-443-1452
Last EDR Contact: 02/02/2018
Next Scheduled EDR Contact: 05/14/2018
Data Release Frequency: Varies

Local Lists of Hazardous waste / Contaminated Sites

US HIST CDL: National Clandestine Laboratory Register
A listing of clandestine drug lab locations that have been removed from the DEAs National Clandestine Laboratory Register.

Date of Government Version: 01/19/2018
Date Data Arrived at EDR: 01/24/2018
Date Made Active in Reports: 02/09/2018
Number of Days to Update: 16

Source: Drug Enforcement Administration
Telephone: 202-307-1000
Last EDR Contact: 02/27/2018
Next Scheduled EDR Contact: 06/11/2018
Data Release Frequency: No Update Planned

HIST CAL-SITES: Calsites Database
The Calsites database contains potential or confirmed hazardous substance release properties. In 1996, California EPA reevaluated and significantly reduced the number of sites in the Calsites database. No longer updated by the state agency. It has been replaced by ENVIROSTOR.

Date of Government Version: 08/08/2005
Date Data Arrived at EDR: 08/03/2006
Date Made Active in Reports: 08/24/2006
Number of Days to Update: 21

Source: Department of Toxic Substance Control
Telephone: 916-323-3400
Last EDR Contact: 02/23/2009
Next Scheduled EDR Contact: 05/25/2009
Data Release Frequency: No Update Planned

SCH: School Property Evaluation Program

This category contains proposed and existing school sites that are being evaluated by DTSC for possible hazardous materials contamination. In some cases, these properties may be listed in the CalSites category depending on the level of threat to public health and safety or the environment they pose.

Date of Government Version: 10/30/2017
Date Data Arrived at EDR: 10/31/2017
Date Made Active in Reports: 12/15/2017
Number of Days to Update: 45

Source: Department of Toxic Substances Control
Telephone: 916-323-3400
Last EDR Contact: 01/31/2018
Next Scheduled EDR Contact: 05/14/2018
Data Release Frequency: Quarterly

CDL: Clandestine Drug Labs

A listing of drug lab locations. Listing of a location in this database does not indicate that any illegal drug lab materials were or were not present there, and does not constitute a determination that the location either requires or does not require additional cleanup work.

Date of Government Version: 06/30/2017
Date Data Arrived at EDR: 08/18/2017
Date Made Active in Reports: 09/21/2017
Number of Days to Update: 34

Source: Department of Toxic Substances Control
Telephone: 916-255-6504
Last EDR Contact: 02/22/2018
Next Scheduled EDR Contact: 04/23/2018
Data Release Frequency: Varies

TOXIC PITS: Toxic Pits Cleanup Act Sites

Toxic PITS Cleanup Act Sites. TOXIC PITS identifies sites suspected of containing hazardous substances where cleanup has not yet been completed.

Date of Government Version: 07/01/1995
Date Data Arrived at EDR: 08/30/1995
Date Made Active in Reports: 09/26/1995
Number of Days to Update: 27

Source: State Water Resources Control Board
Telephone: 916-227-4364
Last EDR Contact: 01/26/2009
Next Scheduled EDR Contact: 04/27/2009
Data Release Frequency: No Update Planned

US CDL: Clandestine Drug Labs

A listing of clandestine drug lab locations. The U.S. Department of Justice ("the Department") provides this web site as a public service. It contains addresses of some locations where law enforcement agencies reported they found chemicals or other items that indicated the presence of either clandestine drug laboratories or dumpsites. In most cases, the source of the entries is not the Department, and the Department has not verified the entry and does not guarantee its accuracy. Members of the public must verify the accuracy of all entries by, for example, contacting local law enforcement and local health departments.

Date of Government Version: 01/09/2018
Date Data Arrived at EDR: 01/24/2018
Date Made Active in Reports: 02/09/2018
Number of Days to Update: 16

Source: Drug Enforcement Administration
Telephone: 202-307-1000
Last EDR Contact: 02/27/2018
Next Scheduled EDR Contact: 06/11/2018
Data Release Frequency: Quarterly

Local Lists of Registered Storage Tanks

SWEEPS UST: SWEEPS UST Listing

Statewide Environmental Evaluation and Planning System. This underground storage tank listing was updated and maintained by a company contacted by the SWRCB in the early 1990's. The listing is no longer updated or maintained. The local agency is the contact for more information on a site on the SWEEPS list.

Date of Government Version: 06/01/1994
Date Data Arrived at EDR: 07/07/2005
Date Made Active in Reports: 08/11/2005
Number of Days to Update: 35

Source: State Water Resources Control Board
Telephone: N/A
Last EDR Contact: 06/03/2005
Next Scheduled EDR Contact: N/A
Data Release Frequency: No Update Planned

UST MENDOCINO: Mendocino County UST Database
A listing of underground storage tank locations in Mendocino County.

Date of Government Version: 11/27/2017
Date Data Arrived at EDR: 11/29/2017
Date Made Active in Reports: 12/18/2017
Number of Days to Update: 19

Source: Department of Public Health
Telephone: 707-463-4466
Last EDR Contact: 02/22/2018
Next Scheduled EDR Contact: 06/11/2018
Data Release Frequency: Annually

HIST UST: Hazardous Substance Storage Container Database
The Hazardous Substance Storage Container Database is a historical listing of UST sites. Refer to local/county source for current data.

Date of Government Version: 10/15/1990
Date Data Arrived at EDR: 01/25/1991
Date Made Active in Reports: 02/12/1991
Number of Days to Update: 18

Source: State Water Resources Control Board
Telephone: 916-341-5851
Last EDR Contact: 07/26/2001
Next Scheduled EDR Contact: N/A
Data Release Frequency: No Update Planned

CA FID UST: Facility Inventory Database
The Facility Inventory Database (FID) contains a historical listing of active and inactive underground storage tank locations from the State Water Resource Control Board. Refer to local/county source for current data.

Date of Government Version: 10/31/1994
Date Data Arrived at EDR: 09/05/1995
Date Made Active in Reports: 09/29/1995
Number of Days to Update: 24

Source: California Environmental Protection Agency
Telephone: 916-341-5851
Last EDR Contact: 12/28/1998
Next Scheduled EDR Contact: N/A
Data Release Frequency: No Update Planned

Local Land Records

LIENS: Environmental Liens Listing
A listing of property locations with environmental liens for California where DTSC is a lien holder.

Date of Government Version: 11/30/2017
Date Data Arrived at EDR: 12/01/2017
Date Made Active in Reports: 01/11/2018
Number of Days to Update: 41

Source: Department of Toxic Substances Control
Telephone: 916-323-3400
Last EDR Contact: 02/28/2018
Next Scheduled EDR Contact: 06/18/2018
Data Release Frequency: Varies

LIENS 2: CERCLA Lien Information
A Federal CERCLA ('Superfund') lien can exist by operation of law at any site or property at which EPA has spent Superfund monies. These monies are spent to investigate and address releases and threatened releases of contamination. CERCLIS provides information as to the identity of these sites and properties.

Date of Government Version: 12/11/2017
Date Data Arrived at EDR: 12/22/2017
Date Made Active in Reports: 01/12/2018
Number of Days to Update: 21

Source: Environmental Protection Agency
Telephone: 202-564-6023
Last EDR Contact: 02/06/2018
Next Scheduled EDR Contact: 05/21/2018
Data Release Frequency: Semi-Annually

DEED: Deed Restriction Listing

Site Mitigation and Brownfields Reuse Program Facility Sites with Deed Restrictions & Hazardous Waste Management Program Facility Sites with Deed / Land Use Restriction. The DTSC Site Mitigation and Brownfields Reuse Program (SMBRP) list includes sites cleaned up under the program's oversight and generally does not include current or former hazardous waste facilities that required a hazardous waste facility permit. The list represents deed restrictions that are active. Some sites have multiple deed restrictions. The DTSC Hazardous Waste Management Program (HWMP) has developed a list of current or former hazardous waste facilities that have a recorded land use restriction at the local county recorder's office. The land use restrictions on this list were required by the DTSC HWMP as a result of the presence of hazardous substances that remain on site after the facility (or part of the facility) has been closed or cleaned up. The types of land use restriction include deed notice, deed restriction, or a land use restriction that binds current and future owners.

Date of Government Version: 02/08/2018
Date Data Arrived at EDR: 02/08/2018
Date Made Active in Reports: 02/08/2018
Number of Days to Update: 0

Source: DTSC and SWRCB
Telephone: 916-323-3400
Last EDR Contact: 03/06/2018
Next Scheduled EDR Contact: 06/18/2018
Data Release Frequency: Semi-Annually

Records of Emergency Release Reports

HMIRS: Hazardous Materials Information Reporting System
Hazardous Materials Incident Report System. HMIRS contains hazardous material spill incidents reported to DOT.

Date of Government Version: 09/21/2017
Date Data Arrived at EDR: 09/21/2017
Date Made Active in Reports: 10/13/2017
Number of Days to Update: 22

Source: U.S. Department of Transportation
Telephone: 202-366-4555
Last EDR Contact: 01/19/2018
Next Scheduled EDR Contact: 04/09/2018
Data Release Frequency: Quarterly

CHMIRS: California Hazardous Material Incident Report System
California Hazardous Material Incident Reporting System. CHMIRS contains information on reported hazardous material incidents (accidental releases or spills).

Date of Government Version: 05/09/2017
Date Data Arrived at EDR: 07/26/2017
Date Made Active in Reports: 09/21/2017
Number of Days to Update: 57

Source: Office of Emergency Services
Telephone: 916-845-8400
Last EDR Contact: 02/20/2018
Next Scheduled EDR Contact: 05/07/2018
Data Release Frequency: Varies

LDS: Land Disposal Sites Listing (GEOTRACKER)
Land Disposal sites (Landfills) included in GeoTracker. GeoTracker is the Water Boards data management system for sites that impact, or have the potential to impact, water quality in California, with emphasis on groundwater.

Date of Government Version: 12/11/2017
Date Data Arrived at EDR: 12/12/2017
Date Made Active in Reports: 01/11/2018
Number of Days to Update: 30

Source: State Water Qualilty Control Board
Telephone: 866-480-1028
Last EDR Contact: 12/12/2018
Next Scheduled EDR Contact: 06/25/2018
Data Release Frequency: Quarterly

MCS: Military Cleanup Sites Listing (GEOTRACKER)
Military sites (consisting of: Military UST sites; Military Privatized sites; and Military Cleanup sites [formerly known as DoD non UST]) included in GeoTracker. GeoTracker is the Water Boards data management system for sites that impact, or have the potential to impact, water quality in California, with emphasis on groundwater.

Date of Government Version: 12/11/2017
Date Data Arrived at EDR: 12/12/2017
Date Made Active in Reports: 01/12/2018
Number of Days to Update: 31

Source: State Water Resources Control Board
Telephone: 866-480-1028
Last EDR Contact: 12/12/2018
Next Scheduled EDR Contact: 06/25/2018
Data Release Frequency: Quarterly

SPILLS 90: SPILLS90 data from FirstSearch

Spills 90 includes those spill and release records available exclusively from FirstSearch databases. Typically, they may include chemical, oil and/or hazardous substance spills recorded after 1990. Duplicate records that are already included in EDR incident and release records are not included in Spills 90.

Date of Government Version: 06/06/2012
Date Data Arrived at EDR: 01/03/2013
Date Made Active in Reports: 02/22/2013
Number of Days to Update: 50

Source: FirstSearch
Telephone: N/A
Last EDR Contact: 01/03/2013
Next Scheduled EDR Contact: N/A
Data Release Frequency: No Update Planned

Other Ascertainable Records

RCRA NonGen / NLR: RCRA - Non Generators / No Longer Regulated

RCRAInfo is EPA's comprehensive information system, providing access to data supporting the Resource Conservation and Recovery Act (RCRA) of 1976 and the Hazardous and Solid Waste Amendments (HSWA) of 1984. The database includes selective information on sites which generate, transport, store, treat and/or dispose of hazardous waste as defined by the Resource Conservation and Recovery Act (RCRA). Non-Generators do not presently generate hazardous waste.

Date of Government Version: 12/11/2017
Date Data Arrived at EDR: 12/26/2017
Date Made Active in Reports: 02/09/2018
Number of Days to Update: 45

Source: Environmental Protection Agency
Telephone: (415) 495-8895
Last EDR Contact: 01/19/2018
Next Scheduled EDR Contact: 04/09/2018
Data Release Frequency: Quarterly

FUDS: Formerly Used Defense Sites

The listing includes locations of Formerly Used Defense Sites properties where the US Army Corps of Engineers is actively working or will take necessary cleanup actions.

Date of Government Version: 01/31/2015
Date Data Arrived at EDR: 07/08/2015
Date Made Active in Reports: 10/13/2015
Number of Days to Update: 97

Source: U.S. Army Corps of Engineers
Telephone: 202-528-4285
Last EDR Contact: 02/21/2018
Next Scheduled EDR Contact: 06/04/2018
Data Release Frequency: Varies

DOD: Department of Defense Sites

This data set consists of federally owned or administered lands, administered by the Department of Defense, that have any area equal to or greater than 640 acres of the United States, Puerto Rico, and the U.S. Virgin Islands.

Date of Government Version: 12/31/2005
Date Data Arrived at EDR: 11/10/2006
Date Made Active in Reports: 01/11/2007
Number of Days to Update: 62

Source: USGS
Telephone: 888-275-8747
Last EDR Contact: 10/13/2017
Next Scheduled EDR Contact: 01/22/2018
Data Release Frequency: Semi-Annually

FEDLAND: Federal and Indian Lands

Federally and Indian administrated lands of the United States. Lands included are administrated by: Army Corps of Engineers, Bureau of Reclamation, National Wild and Scenic River, National Wildlife Refuge, Public Domain Land, Wilderness, Wilderness Study Area, Wildlife Management Area, Bureau of Indian Affairs, Bureau of Land Management, Department of Justice, Forest Service, Fish and Wildlife Service, National Park Service.

Date of Government Version: 12/31/2005
Date Data Arrived at EDR: 02/06/2006
Date Made Active in Reports: 01/11/2007
Number of Days to Update: 339

Source: U.S. Geological Survey
Telephone: 888-275-8747
Last EDR Contact: 10/11/2017
Next Scheduled EDR Contact: 01/22/2018
Data Release Frequency: N/A

SCRD DRYCLEANERS: State Coalition for Remediation of Drycleaners Listing

The State Coalition for Remediation of Drycleaners was established in 1998, with support from the U.S. EPA Office of Superfund Remediation and Technology Innovation. It is comprised of representatives of states with established drycleaner remediation programs. Currently the member states are Alabama, Connecticut, Florida, Illinois, Kansas, Minnesota, Missouri, North Carolina, Oregon, South Carolina, Tennessee, Texas, and Wisconsin.

Date of Government Version: 01/01/2017
Date Data Arrived at EDR: 02/03/2017
Date Made Active in Reports: 04/07/2017
Number of Days to Update: 63

Source: Environmental Protection Agency
Telephone: 615-532-8599
Last EDR Contact: 02/16/2018
Next Scheduled EDR Contact: 05/28/2018
Data Release Frequency: Varies

US FIN ASSUR: Financial Assurance Information

All owners and operators of facilities that treat, store, or dispose of hazardous waste are required to provide proof that they will have sufficient funds to pay for the clean up, closure, and post-closure care of their facilities.

Date of Government Version: 01/11/2018
Date Data Arrived at EDR: 01/19/2018
Date Made Active in Reports: 03/02/2018
Number of Days to Update: 42

Source: Environmental Protection Agency
Telephone: 202-566-1917
Last EDR Contact: 01/19/2018
Next Scheduled EDR Contact: 04/09/2018
Data Release Frequency: Quarterly

EPA WATCH LIST: EPA WATCH LIST

EPA maintains a "Watch List" to facilitate dialogue between EPA, state and local environmental agencies on enforcement matters relating to facilities with alleged violations identified as either significant or high priority. Being on the Watch List does not mean that the facility has actually violated the law only that an investigation by EPA or a state or local environmental agency has led those organizations to allege that an unproven violation has in fact occurred. Being on the Watch List does not represent a higher level of concern regarding the alleged violations that were detected, but instead indicates cases requiring additional dialogue between EPA, state and local agencies - primarily because of the length of time the alleged violation has gone unaddressed or unresolved.

Date of Government Version: 08/30/2013
Date Data Arrived at EDR: 03/21/2014
Date Made Active in Reports: 06/17/2014
Number of Days to Update: 88

Source: Environmental Protection Agency
Telephone: 617-520-3000
Last EDR Contact: 01/31/2018
Next Scheduled EDR Contact: 05/21/2018
Data Release Frequency: Quarterly

2020 COR ACTION: 2020 Corrective Action Program List

The EPA has set ambitious goals for the RCRA Corrective Action program by creating the 2020 Corrective Action Universe. This RCRA cleanup baseline includes facilities expected to need corrective action. The 2020 universe contains a wide variety of sites. Some properties are heavily contaminated while others were contaminated but have since been cleaned up. Still others have not been fully investigated yet, and may require little or no remediation. Inclusion in the 2020 Universe does not necessarily imply failure on the part of a facility to meet its RCRA obligations.

Date of Government Version: 04/22/2013
Date Data Arrived at EDR: 03/03/2015
Date Made Active in Reports: 03/09/2015
Number of Days to Update: 6

Source: Environmental Protection Agency
Telephone: 703-308-4044
Last EDR Contact: 02/08/2018
Next Scheduled EDR Contact: 05/21/2018
Data Release Frequency: Varies

TSCA: Toxic Substances Control Act

Toxic Substances Control Act. TSCA identifies manufacturers and importers of chemical substances included on the TSCA Chemical Substance Inventory list. It includes data on the production volume of these substances by plant site.

Date of Government Version: 12/31/2016
Date Data Arrived at EDR: 06/21/2017
Date Made Active in Reports: 01/05/2018
Number of Days to Update: 198

Source: EPA
Telephone: 202-260-5521
Last EDR Contact: 12/22/2017
Next Scheduled EDR Contact: 04/02/2018
Data Release Frequency: Every 4 Years

TRIS: Toxic Chemical Release Inventory System

Toxic Release Inventory System. TRIS identifies facilities which release toxic chemicals to the air, water and land in reportable quantities under SARA Title III Section 313.

Date of Government Version: 12/31/2016
Date Data Arrived at EDR: 01/10/2018
Date Made Active in Reports: 01/12/2018
Number of Days to Update: 2

Source: EPA
Telephone: 202-566-0250
Last EDR Contact: 02/23/2018
Next Scheduled EDR Contact: 06/04/2018
Data Release Frequency: Annually

SSTS: Section 7 Tracking Systems

Section 7 of the Federal Insecticide, Fungicide and Rodenticide Act, as amended (92 Stat. 829) requires all registered pesticide-producing establishments to submit a report to the Environmental Protection Agency by March 1st each year. Each establishment must report the types and amounts of pesticides, active ingredients and devices being produced, and those having been produced and sold or distributed in the past year.

Date of Government Version: 12/31/2009
Date Data Arrived at EDR: 12/10/2010
Date Made Active in Reports: 02/25/2011
Number of Days to Update: 77

Source: EPA
Telephone: 202-564-4203
Last EDR Contact: 01/25/2018
Next Scheduled EDR Contact: 05/07/2018
Data Release Frequency: Annually

ROD: Records Of Decision

Record of Decision. ROD documents mandate a permanent remedy at an NPL (Superfund) site containing technical and health information to aid in the cleanup.

Date of Government Version: 12/11/2017
Date Data Arrived at EDR: 12/22/2017
Date Made Active in Reports: 01/12/2018
Number of Days to Update: 21

Source: EPA
Telephone: 703-416-0223
Last EDR Contact: 03/09/2018
Next Scheduled EDR Contact: 06/18/2018
Data Release Frequency: Annually

RMP: Risk Management Plans

When Congress passed the Clean Air Act Amendments of 1990, it required EPA to publish regulations and guidance for chemical accident prevention at facilities using extremely hazardous substances. The Risk Management Program Rule (RMP Rule) was written to implement Section 112(r) of these amendments. The rule, which built upon existing industry codes and standards, requires companies of all sizes that use certain flammable and toxic substances to develop a Risk Management Program, which includes a(n): Hazard assessment that details the potential effects of an accidental release, an accident history of the last five years, and an evaluation of worst-case and alternative accidental releases; Prevention program that includes safety precautions and maintenance, monitoring, and employee training measures; and Emergency response program that spells out emergency health care, employee training measures and procedures for informing the public and response agencies (e.g the fire department) should an accident occur.

Date of Government Version: 11/02/2017
Date Data Arrived at EDR: 11/17/2017
Date Made Active in Reports: 12/08/2017
Number of Days to Update: 21

Source: Environmental Protection Agency
Telephone: 202-564-8600
Last EDR Contact: 01/19/2018
Next Scheduled EDR Contact: 05/07/2018
Data Release Frequency: Varies

RAATS: RCRA Administrative Action Tracking System

RCRA Administration Action Tracking System. RAATS contains records based on enforcement actions issued under RCRA pertaining to major violators and includes administrative and civil actions brought by the EPA. For administration actions after September 30, 1995, data entry in the RAATS database was discontinued. EPA will retain a copy of the database for historical records. It was necessary to terminate RAATS because a decrease in agency resources made it impossible to continue to update the information contained in the database.

Date of Government Version: 04/17/1995
Date Data Arrived at EDR: 07/03/1995
Date Made Active in Reports: 08/07/1995
Number of Days to Update: 35

Source: EPA
Telephone: 202-564-4104
Last EDR Contact: 06/02/2008
Next Scheduled EDR Contact: 09/01/2008
Data Release Frequency: No Update Planned

PRP: Potentially Responsible Parties
A listing of verified Potentially Responsible Parties

Date of Government Version: 10/25/2013
Date Data Arrived at EDR: 10/17/2014
Date Made Active in Reports: 10/20/2014
Number of Days to Update: 3

Source: EPA
Telephone: 202-564-6023
Last EDR Contact: 02/06/2018
Next Scheduled EDR Contact: 05/21/2018
Data Release Frequency: Quarterly

PADS: PCB Activity Database System
PCB Activity Database. PADS Identifies generators, transporters, commercial storers and/or brokers and disposers of PCB's who are required to notify the EPA of such activities.

Date of Government Version: 06/01/2017
Date Data Arrived at EDR: 06/09/2017
Date Made Active in Reports: 10/13/2017
Number of Days to Update: 126

Source: EPA
Telephone: 202-566-0500
Last EDR Contact: 01/12/2018
Next Scheduled EDR Contact: 04/23/2018
Data Release Frequency: Annually

ICIS: Integrated Compliance Information System
The Integrated Compliance Information System (ICIS) supports the information needs of the national enforcement and compliance program as well as the unique needs of the National Pollutant Discharge Elimination System (NPDES) program.

Date of Government Version: 11/18/2016
Date Data Arrived at EDR: 11/23/2016
Date Made Active in Reports: 02/10/2017
Number of Days to Update: 79

Source: Environmental Protection Agency
Telephone: 202-564-2501
Last EDR Contact: 01/09/2018
Next Scheduled EDR Contact: 04/23/2018
Data Release Frequency: Quarterly

FTTS: FIFRA/ TSCA Tracking System - FIFRA (Federal Insecticide, Fungicide, & Rodenticide Act)/TSCA (Toxic Substances Control Act)
FTTS tracks administrative cases and pesticide enforcement actions and compliance activities related to FIFRA, TSCA and EPCRA (Emergency Planning and Community Right-to-Know Act). To maintain currency, EDR contacts the Agency on a quarterly basis.

Date of Government Version: 04/09/2009
Date Data Arrived at EDR: 04/16/2009
Date Made Active in Reports: 05/11/2009
Number of Days to Update: 25

Source: EPA/Office of Prevention, Pesticides and Toxic Substances
Telephone: 202-566-1667
Last EDR Contact: 08/18/2017
Next Scheduled EDR Contact: 12/04/2017
Data Release Frequency: Quarterly

FTTS INSP: FIFRA/ TSCA Tracking System - FIFRA (Federal Insecticide, Fungicide, & Rodenticide Act)/TSCA (Toxic Substances Control Act)
A listing of FIFRA/TSCA Tracking System (FTTS) inspections and enforcements.

Date of Government Version: 04/09/2009
Date Data Arrived at EDR: 04/16/2009
Date Made Active in Reports: 05/11/2009
Number of Days to Update: 25

Source: EPA
Telephone: 202-566-1667
Last EDR Contact: 08/18/2017
Next Scheduled EDR Contact: 12/04/2017
Data Release Frequency: Quarterly

MLTS: Material Licensing Tracking System
MLTS is maintained by the Nuclear Regulatory Commission and contains a list of approximately 8,100 sites which possess or use radioactive materials and which are subject to NRC licensing requirements. To maintain currency, EDR contacts the Agency on a quarterly basis.

Date of Government Version: 08/30/2016
Date Data Arrived at EDR: 09/08/2016
Date Made Active in Reports: 10/21/2016
Number of Days to Update: 43

Source: Nuclear Regulatory Commission
Telephone: 301-415-7169
Last EDR Contact: 01/19/2018
Next Scheduled EDR Contact: 05/21/2018
Data Release Frequency: Quarterly

COAL ASH DOE: Steam-Electric Plant Operation Data
A listing of power plants that store ash in surface ponds.

Date of Government Version: 12/31/2005
Date Data Arrived at EDR: 08/07/2009
Date Made Active in Reports: 10/22/2009
Number of Days to Update: 76

Source: Department of Energy
Telephone: 202-586-8719
Last EDR Contact: 03/09/2018
Next Scheduled EDR Contact: 06/18/2018
Data Release Frequency: Varies

COAL ASH EPA: Coal Combustion Residues Surface Impoundments List
A listing of coal combustion residues surface impoundments with high hazard potential ratings.

Date of Government Version: 07/01/2014
Date Data Arrived at EDR: 09/10/2014
Date Made Active in Reports: 10/20/2014
Number of Days to Update: 40

Source: Environmental Protection Agency
Telephone: N/A
Last EDR Contact: 03/06/2018
Next Scheduled EDR Contact: 06/18/2018
Data Release Frequency: Varies

PCB TRANSFORMER: PCB Transformer Registration Database
The database of PCB transformer registrations that includes all PCB registration submittals.

Date of Government Version: 05/24/2017
Date Data Arrived at EDR: 11/30/2017
Date Made Active in Reports: 12/15/2017
Number of Days to Update: 15

Source: Environmental Protection Agency
Telephone: 202-566-0517
Last EDR Contact: 01/26/2018
Next Scheduled EDR Contact: 05/07/2018
Data Release Frequency: Varies

RADINFO: Radiation Information Database
The Radiation Information Database (RADINFO) contains information about facilities that are regulated by U.S. Environmental Protection Agency (EPA) regulations for radiation and radioactivity.

Date of Government Version: 10/02/2017
Date Data Arrived at EDR: 10/05/2017
Date Made Active in Reports: 10/13/2017
Number of Days to Update: 8

Source: Environmental Protection Agency
Telephone: 202-343-9775
Last EDR Contact: 01/04/2018
Next Scheduled EDR Contact: 04/16/2018
Data Release Frequency: Quarterly

HIST FTTS: FIFRA/TSCA Tracking System Administrative Case Listing
A complete administrative case listing from the FIFRA/TSCA Tracking System (FTTS) for all ten EPA regions. The information was obtained from the National Compliance Database (NCDB). NCDB supports the implementation of FIFRA (Federal Insecticide, Fungicide, and Rodenticide Act) and TSCA (Toxic Substances Control Act). Some EPA regions are now closing out records. Because of that, and the fact that some EPA regions are not providing EPA Headquarters with updated records, it was decided to create a HIST FTTS database. It included records that may not be included in the newer FTTS database updates. This database is no longer updated.

Date of Government Version: 10/19/2006
Date Data Arrived at EDR: 03/01/2007
Date Made Active in Reports: 04/10/2007
Number of Days to Update: 40

Source: Environmental Protection Agency
Telephone: 202-564-2501
Last EDR Contact: 12/17/2007
Next Scheduled EDR Contact: 03/17/2008
Data Release Frequency: No Update Planned

HIST FTTS INSP: FIFRA/TSCA Tracking System Inspection & Enforcement Case Listing
A complete inspection and enforcement case listing from the FIFRA/TSCA Tracking System (FTTS) for all ten EPA regions. The information was obtained from the National Compliance Database (NCDB). NCDB supports the implementation of FIFRA (Federal Insecticide, Fungicide, and Rodenticide Act) and TSCA (Toxic Substances Control Act). Some EPA regions are now closing out records. Because of that, and the fact that some EPA regions are not providing EPA Headquarters with updated records, it was decided to create a HIST FTTS database. It included records that may not be included in the newer FTTS database updates. This database is no longer updated.

Date of Government Version: 10/19/2006
Date Data Arrived at EDR: 03/01/2007
Date Made Active in Reports: 04/10/2007
Number of Days to Update: 40

Source: Environmental Protection Agency
Telephone: 202-564-2501
Last EDR Contact: 12/17/2008
Next Scheduled EDR Contact: 03/17/2008
Data Release Frequency: No Update Planned

DOT OPS: Incident and Accident Data

Department of Transporation, Office of Pipeline Safety Incident and Accident data.

Date of Government Version: 07/31/2012
Date Data Arrived at EDR: 08/07/2012
Date Made Active in Reports: 09/18/2012
Number of Days to Update: 42

Source: Department of Transporation, Office of Pipeline Safety
Telephone: 202-366-4595
Last EDR Contact: 01/19/2018
Next Scheduled EDR Contact: 05/14/2018
Data Release Frequency: Varies

CONSENT: Superfund (CERCLA) Consent Decrees

Major legal settlements that establish responsibility and standards for cleanup at NPL (Superfund) sites. Released periodically by United States District Courts after settlement by parties to litigation matters.

Date of Government Version: 09/30/2017
Date Data Arrived at EDR: 11/10/2017
Date Made Active in Reports: 01/12/2018
Number of Days to Update: 63

Source: Department of Justice, Consent Decree Library
Telephone: Varies
Last EDR Contact: 01/04/2018
Next Scheduled EDR Contact: 04/02/2018
Data Release Frequency: Varies

BRS: Biennial Reporting System

The Biennial Reporting System is a national system administered by the EPA that collects data on the generation and management of hazardous waste. BRS captures detailed data from two groups: Large Quantity Generators (LQG) and Treatment, Storage, and Disposal Facilities.

Date of Government Version: 12/31/2015
Date Data Arrived at EDR: 02/22/2017
Date Made Active in Reports: 09/28/2017
Number of Days to Update: 218

Source: EPA/NTIS
Telephone: 800-424-9346
Last EDR Contact: 02/23/2018
Next Scheduled EDR Contact: 06/04/2018
Data Release Frequency: Biennially

INDIAN RESERV: Indian Reservations

This map layer portrays Indian administered lands of the United States that have any area equal to or greater than 640 acres.

Date of Government Version: 12/31/2014
Date Data Arrived at EDR: 07/14/2015
Date Made Active in Reports: 01/10/2017
Number of Days to Update: 546

Source: USGS
Telephone: 202-208-3710
Last EDR Contact: 01/09/2018
Next Scheduled EDR Contact: 04/23/2018
Data Release Frequency: Semi-Annually

FUSRAP: Formerly Utilized Sites Remedial Action Program

DOE established the Formerly Utilized Sites Remedial Action Program (FUSRAP) in 1974 to remediate sites where radioactive contamination remained from Manhattan Project and early U.S. Atomic Energy Commission (AEC) operations.

Date of Government Version: 12/23/2016
Date Data Arrived at EDR: 12/27/2016
Date Made Active in Reports: 02/17/2017
Number of Days to Update: 52

Source: Department of Energy
Telephone: 202-586-3559
Last EDR Contact: 01/19/2018
Next Scheduled EDR Contact: 05/21/2018
Data Release Frequency: Varies

UMTRA: Uranium Mill Tailings Sites

Uranium ore was mined by private companies for federal government use in national defense programs. When the mills shut down, large piles of the sand-like material (mill tailings) remain after uranium has been extracted from the ore. Levels of human exposure to radioactive materials from the piles are low; however, in some cases tailings were used as construction materials before the potential health hazards of the tailings were recognized.

Date of Government Version: 06/23/2017
Date Data Arrived at EDR: 10/11/2017
Date Made Active in Reports: 11/03/2017
Number of Days to Update: 23

Source: Department of Energy
Telephone: 505-845-0011
Last EDR Contact: 02/23/2018
Next Scheduled EDR Contact: 06/04/2018
Data Release Frequency: Varies

LEAD SMELTER 1: Lead Smelter Sites
A listing of former lead smelter site locations.

Date of Government Version: 01/09/2018
Date Data Arrived at EDR: 02/06/2018
Date Made Active in Reports: 03/02/2018
Number of Days to Update: 24

Source: Environmental Protection Agency
Telephone: 703-603-8787
Last EDR Contact: 02/06/2018
Next Scheduled EDR Contact: 05/21/2018
Data Release Frequency: Varies

LEAD SMELTER 2: Lead Smelter Sites
A list of several hundred sites in the U.S. where secondary lead smelting was done from 1931and 1964. These sites may pose a threat to public health through ingestion or inhalation of contaminated soil or dust

Date of Government Version: 04/05/2001
Date Data Arrived at EDR: 10/27/2010
Date Made Active in Reports: 12/02/2010
Number of Days to Update: 36

Source: American Journal of Public Health
Telephone: 703-305-6451
Last EDR Contact: 12/02/2009
Next Scheduled EDR Contact: N/A
Data Release Frequency: No Update Planned

US AIRS (AFS): Aerometric Information Retrieval System Facility Subsystem (AFS)
The database is a sub-system of Aerometric Information Retrieval System (AIRS). AFS contains compliance data on air pollution point sources regulated by the U.S. EPA and/or state and local air regulatory agencies. This information comes from source reports by various stationary sources of air pollution, such as electric power plants, steel mills, factories, and universities, and provides information about the air pollutants they produce. Action, air program, air program pollutant, and general level plant data. It is used to track emissions and compliance data from industrial plants.

Date of Government Version: 10/12/2016
Date Data Arrived at EDR: 10/26/2016
Date Made Active in Reports: 02/03/2017
Number of Days to Update: 100

Source: EPA
Telephone: 202-564-2496
Last EDR Contact: 09/26/2017
Next Scheduled EDR Contact: 01/08/2018
Data Release Frequency: Annually

US AIRS MINOR: Air Facility System Data
A listing of minor source facilities.

Date of Government Version: 10/12/2016
Date Data Arrived at EDR: 10/26/2016
Date Made Active in Reports: 02/03/2017
Number of Days to Update: 100

Source: EPA
Telephone: 202-564-2496
Last EDR Contact: 09/26/2017
Next Scheduled EDR Contact: 01/08/2018
Data Release Frequency: Annually

US MINES: Mines Master Index File
Contains all mine identification numbers issued for mines active or opened since 1971. The data also includes violation information.

Date of Government Version: 10/29/2017
Date Data Arrived at EDR: 11/28/2017
Date Made Active in Reports: 01/12/2018
Number of Days to Update: 45

Source: Department of Labor, Mine Safety and Health Administration
Telephone: 303-231-5959
Last EDR Contact: 02/28/2018
Next Scheduled EDR Contact: 06/11/2018
Data Release Frequency: Semi-Annually

US MINES 2: Ferrous and Nonferrous Metal Mines Database Listing
This map layer includes ferrous (ferrous metal mines are facilities that extract ferrous metals, such as iron ore or molybdenum) and nonferrous (Nonferrous metal mines are facilities that extract nonferrous metals, such as gold, silver, copper, zinc, and lead) metal mines in the United States.

Date of Government Version: 12/05/2005
Date Data Arrived at EDR: 02/29/2008
Date Made Active in Reports: 04/18/2008
Number of Days to Update: 49

Source: USGS
Telephone: 703-648-7709
Last EDR Contact: 03/02/2018
Next Scheduled EDR Contact: 06/11/2018
Data Release Frequency: Varies

US MINES 3: Active Mines & Mineral Plants Database Listing

Active Mines and Mineral Processing Plant operations for commodities monitored by the Minerals Information Team of the USGS.

Date of Government Version: 04/14/2011
Date Data Arrived at EDR: 06/08/2011
Date Made Active in Reports: 09/13/2011
Number of Days to Update: 97

Source: USGS
Telephone: 703-648-7709
Last EDR Contact: 03/02/2018
Next Scheduled EDR Contact: 06/11/2018
Data Release Frequency: Varies

ABANDONED MINES: Abandoned Mines

An inventory of land and water impacted by past mining (primarily coal mining) is maintained by OSMRE to provide information needed to implement the Surface Mining Control and Reclamation Act of 1977 (SMCRA). The inventory contains information on the location, type, and extent of AML impacts, as well as, information on the cost associated with the reclamation of those problems. The inventory is based upon field surveys by State, Tribal, and OSMRE program officials. It is dynamic to the extent that it is modified as new problems are identified and existing problems are reclaimed.

Date of Government Version: 09/25/2017
Date Data Arrived at EDR: 09/26/2017
Date Made Active in Reports: 10/20/2017
Number of Days to Update: 24

Source: Department of Interior
Telephone: 202-208-2609
Last EDR Contact: 03/07/2018
Next Scheduled EDR Contact: 06/25/2018
Data Release Frequency: Quarterly

FINDS: Facility Index System/Facility Registry System

Facility Index System. FINDS contains both facility information and 'pointers' to other sources that contain more detail. EDR includes the following FINDS databases in this report: PCS (Permit Compliance System), AIRS (Aerometric Information Retrieval System), DOCKET (Enforcement Docket used to manage and track information on civil judicial enforcement cases for all environmental statutes), FURS (Federal Underground Injection Control), C-DOCKET (Criminal Docket System used to track criminal enforcement actions for all environmental statutes), FFIS (Federal Facilities Information System), STATE (State Environmental Laws and Statutes), and PADS (PCB Activity Data System).

Date of Government Version: 07/23/2017
Date Data Arrived at EDR: 09/06/2017
Date Made Active in Reports: 09/15/2017
Number of Days to Update: 9

Source: EPA
Telephone: (415) 947-8000
Last EDR Contact: 02/23/2018
Next Scheduled EDR Contact: 06/18/2018
Data Release Frequency: Quarterly

ECHO: Enforcement & Compliance History Information

ECHO provides integrated compliance and enforcement information for about 800,000 regulated facilities nationwide.

Date of Government Version: 01/13/2018
Date Data Arrived at EDR: 01/19/2018
Date Made Active in Reports: 03/02/2018
Number of Days to Update: 42

Source: Environmental Protection Agency
Telephone: 202-564-2280
Last EDR Contact: 03/07/2018
Next Scheduled EDR Contact: 06/18/2018
Data Release Frequency: Quarterly

UXO: Unexploded Ordnance Sites

A listing of unexploded ordnance site locations

Date of Government Version: 09/30/2016
Date Data Arrived at EDR: 10/31/2017
Date Made Active in Reports: 01/12/2018
Number of Days to Update: 73

Source: Department of Defense
Telephone: 703-704-1564
Last EDR Contact: 01/02/2018
Next Scheduled EDR Contact: 04/30/2018
Data Release Frequency: Varies

DOCKET HWC: Hazardous Waste Compliance Docket Listing
A complete list of the Federal Agency Hazardous Waste Compliance Docket Facilities.

Date of Government Version: 06/27/2017
Date Data Arrived at EDR: 11/21/2017
Date Made Active in Reports: 01/12/2018
Number of Days to Update: 52

Source: Environmental Protection Agency
Telephone: 202-564-0527
Last EDR Contact: 03/02/2018
Next Scheduled EDR Contact: 06/11/2018
Data Release Frequency: Varies

FUELS PROGRAM: EPA Fuels Program Registered Listing
This listing includes facilities that are registered under the Part 80 (Code of Federal Regulations) EPA Fuels Programs. All companies now are required to submit new and updated registrations.

Date of Government Version: 11/20/2017
Date Data Arrived at EDR: 11/20/2017
Date Made Active in Reports: 01/12/2018
Number of Days to Update: 53

Source: EPA
Telephone: 800-385-6164
Last EDR Contact: 02/21/2018
Next Scheduled EDR Contact: 06/04/2018
Data Release Frequency: Quarterly

CA BOND EXP. PLAN: Bond Expenditure Plan
Department of Health Services developed a site-specific expenditure plan as the basis for an appropriation of Hazardous Substance Cleanup Bond Act funds. It is not updated.

Date of Government Version: 01/01/1989
Date Data Arrived at EDR: 07/27/1994
Date Made Active in Reports: 08/02/1994
Number of Days to Update: 6

Source: Department of Health Services
Telephone: 916-255-2118
Last EDR Contact: 05/31/1994
Next Scheduled EDR Contact: N/A
Data Release Frequency: No Update Planned

CORTESE: "Cortese" Hazardous Waste & Substances Sites List
The sites for the list are designated by the State Water Resource Control Board (LUST), the Integrated Waste Board (SWF/LS), and the Department of Toxic Substances Control (Cal-Sites).

Date of Government Version: 02/08/2018
Date Data Arrived at EDR: 02/08/2018
Date Made Active in Reports: 02/08/2018
Number of Days to Update: 0

Source: CAL EPA/Office of Emergency Information
Telephone: 916-323-3400
Last EDR Contact: 02/08/2018
Next Scheduled EDR Contact: 04/09/2018
Data Release Frequency: Quarterly

DRYCLEANERS: Cleaner Facilities
A list of drycleaner related facilities that have EPA ID numbers. These are facilities with certain SIC codes: power laundries, family and commercial; garment pressing and cleaner's agents; linen supply; coin-operated laundries and cleaning; drycleaning plants, except rugs; carpet and upholster cleaning; industrial launderers; laundry and garment services.

Date of Government Version: 12/01/2017
Date Data Arrived at EDR: 02/02/2018
Date Made Active in Reports: 03/16/2018
Number of Days to Update: 42

Source: Department of Toxic Substance Control
Telephone: 916-327-4498
Last EDR Contact: 02/28/2018
Next Scheduled EDR Contact: 06/18/2018
Data Release Frequency: Annually

EMI: Emissions Inventory Data
Toxics and criteria pollutant emissions data collected by the ARB and local air pollution agencies.

Date of Government Version: 12/31/2015
Date Data Arrived at EDR: 03/21/2017
Date Made Active in Reports: 08/15/2017
Number of Days to Update: 147

Source: California Air Resources Board
Telephone: 916-322-2990
Last EDR Contact: 12/22/2017
Next Scheduled EDR Contact: 04/02/2018
Data Release Frequency: Varies

ENF: Enforcement Action Listing

A listing of Water Board Enforcement Actions. Formal is everything except Oral/Verbal Communication, Notice of Violation, Expedited Payment Letter, and Staff Enforcement Letter.

Date of Government Version: 11/01/2017
Date Data Arrived at EDR: 11/03/2017
Date Made Active in Reports: 12/07/2017
Number of Days to Update: 34

Source: State Water Resoruces Control Board
Telephone: 916-445-9379
Last EDR Contact: 01/22/2018
Next Scheduled EDR Contact: 05/07/2018
Data Release Frequency: Varies

Financial Assurance 1: Financial Assurance Information Listing

Financial Assurance information

Date of Government Version: 10/23/2017
Date Data Arrived at EDR: 10/24/2017
Date Made Active in Reports: 12/15/2017
Number of Days to Update: 52

Source: Department of Toxic Substances Control
Telephone: 916-255-3628
Last EDR Contact: 01/22/2018
Next Scheduled EDR Contact: 05/07/2018
Data Release Frequency: Varies

Financial Assurance 2: Financial Assurance Information Listing

A listing of financial assurance information for solid waste facilities. Financial assurance is intended to ensure that resources are available to pay for the cost of closure, post-closure care, and corrective measures if the owner or operator of a regulated facility is unable or unwilling to pay.

Date of Government Version: 11/14/2017
Date Data Arrived at EDR: 11/17/2017
Date Made Active in Reports: 12/18/2017
Number of Days to Update: 31

Source: California Integrated Waste Management Board
Telephone: 916-341-6066
Last EDR Contact: 02/08/2018
Next Scheduled EDR Contact: 05/28/2018
Data Release Frequency: Varies

HAZNET: Facility and Manifest Data

Facility and Manifest Data. The data is extracted from the copies of hazardous waste manifests received each year by the DTSC. The annual volume of manifests is typically 700,000 - 1,000,000 annually, representing approximately 350,000 - 500,000 shipments. Data are from the manifests submitted without correction, and therefore many contain some invalid values for data elements such as generator ID, TSD ID, waste category, and disposal method. This database begins with calendar year 1993.

Date of Government Version: 12/31/2016
Date Data Arrived at EDR: 07/12/2017
Date Made Active in Reports: 10/17/2017
Number of Days to Update: 97

Source: California Environmental Protection Agency
Telephone: 916-255-1136
Last EDR Contact: 01/08/2018
Next Scheduled EDR Contact: 04/23/2018
Data Release Frequency: Annually

ICE: ICE

Contains data pertaining to the Permitted Facilities with Inspections / Enforcements sites tracked in Envirostor.

Date of Government Version: 11/20/2017
Date Data Arrived at EDR: 11/20/2017
Date Made Active in Reports: 12/27/2017
Number of Days to Update: 37

Source: Department of Toxic Subsances Control
Telephone: 877-786-9427
Last EDR Contact: 02/21/2018
Next Scheduled EDR Contact: 06/04/2018
Data Release Frequency: Quarterly

HIST CORTESE: Hazardous Waste & Substance Site List

The sites for the list are designated by the State Water Resource Control Board [LUST], the Integrated Waste Board [SWF/LS], and the Department of Toxic Substances Control [CALSITES]. This listing is no longer updated by the state agency.

Date of Government Version: 04/01/2001
Date Data Arrived at EDR: 01/22/2009
Date Made Active in Reports: 04/08/2009
Number of Days to Update: 76

Source: Department of Toxic Substances Control
Telephone: 916-323-3400
Last EDR Contact: 01/22/2009
Next Scheduled EDR Contact: N/A
Data Release Frequency: No Update Planned

HWP: EnviroStor Permitted Facilities Listing
Detailed information on permitted hazardous waste facilities and corrective action ("cleanups") tracked in EnviroStor.

Date of Government Version: 11/20/2017
Date Data Arrived at EDR: 11/20/2017
Date Made Active in Reports: 12/27/2017
Number of Days to Update: 37

Source: Department of Toxic Substances Control
Telephone: 916-323-3400
Last EDR Contact: 02/21/2018
Next Scheduled EDR Contact: 06/04/2018
Data Release Frequency: Quarterly

HWT: Registered Hazardous Waste Transporter Database
A listing of hazardous waste transporters. In California, unless specifically exempted, it is unlawful for any person to transport hazardous wastes unless the person holds a valid registration issued by DTSC. A hazardous waste transporter registration is valid for one year and is assigned a unique registration number.

Date of Government Version: 01/08/2018
Date Data Arrived at EDR: 01/09/2018
Date Made Active in Reports: 02/06/2018
Number of Days to Update: 28

Source: Department of Toxic Substances Control
Telephone: 916-440-7145
Last EDR Contact: 01/09/2018
Next Scheduled EDR Contact: 04/23/2018
Data Release Frequency: Quarterly

MINES: Mines Site Location Listing
A listing of mine site locations from the Office of Mine Reclamation.

Date of Government Version: 12/11/2017
Date Data Arrived at EDR: 12/12/2017
Date Made Active in Reports: 01/12/2018
Number of Days to Update: 31

Source: Department of Conservation
Telephone: 916-322-1080
Last EDR Contact: 03/14/2018
Next Scheduled EDR Contact: 06/25/2018
Data Release Frequency: Quarterly

MWMP: Medical Waste Management Program Listing
The Medical Waste Management Program (MWMP) ensures the proper handling and disposal of medical waste by permitting and inspecting medical waste Offsite Treatment Facilities (PDF) and Transfer Stations (PDF) throughout the state. MWMP also oversees all Medical Waste Transporters.

Date of Government Version: 11/29/2017
Date Data Arrived at EDR: 12/05/2017
Date Made Active in Reports: 01/16/2018
Number of Days to Update: 42

Source: Department of Public Health
Telephone: 916-558-1784
Last EDR Contact: 03/06/2018
Next Scheduled EDR Contact: 06/18/2018
Data Release Frequency: Varies

NPDES: NPDES Permits Listing
A listing of NPDES permits, including stormwater.

Date of Government Version: 02/14/2018
Date Data Arrived at EDR: 02/14/2018
Date Made Active in Reports: 03/15/2018
Number of Days to Update: 29

Source: State Water Resources Control Board
Telephone: 916-445-9379
Last EDR Contact: 03/14/2018
Next Scheduled EDR Contact: 05/28/2018
Data Release Frequency: Quarterly

PEST LIC: Pesticide Regulation Licenses Listing
A listing of licenses and certificates issued by the Department of Pesticide Regulation. The DPR issues licenses and/or certificates to: Persons and businesses that apply or sell pesticides; Pest control dealers and brokers; Persons who advise on agricultural pesticide applications.

Date of Government Version: 12/04/2017
Date Data Arrived at EDR: 12/05/2017
Date Made Active in Reports: 01/16/2018
Number of Days to Update: 42

Source: Department of Pesticide Regulation
Telephone: 916-445-4038
Last EDR Contact: 03/05/2018
Next Scheduled EDR Contact: 06/18/2018
Data Release Frequency: Quarterly

PROC: Certified Processors Database
A listing of certified processors.

Date of Government Version: 12/11/2017
Date Data Arrived at EDR: 12/12/2017
Date Made Active in Reports: 01/16/2018
Number of Days to Update: 35

Source: Department of Conservation
Telephone: 916-323-3836
Last EDR Contact: 03/14/2018
Next Scheduled EDR Contact: 06/25/2018
Data Release Frequency: Quarterly

NOTIFY 65: Proposition 65 Records
Listings of all Proposition 65 incidents reported to counties by the State Water Resources Control Board and the Regional Water Quality Control Board. This database is no longer updated by the reporting agency.

Date of Government Version: 12/14/2017
Date Data Arrived at EDR: 12/15/2017
Date Made Active in Reports: 01/16/2018
Number of Days to Update: 32

Source: State Water Resources Control Board
Telephone: 916-445-3846
Last EDR Contact: 03/14/2018
Next Scheduled EDR Contact: 07/02/2018
Data Release Frequency: No Update Planned

UIC: UIC Listing
A listing of wells identified as underground injection wells, in the California Oil and Gas Wells database.

Date of Government Version: 12/11/2017
Date Data Arrived at EDR: 12/12/2017
Date Made Active in Reports: 01/17/2018
Number of Days to Update: 36

Source: Deaprtment of Conservation
Telephone: 916-445-2408
Last EDR Contact: 03/14/2018
Next Scheduled EDR Contact: 06/25/2018
Data Release Frequency: Varies

WASTEWATER PITS: Oil Wastewater Pits Listing
Water officials discovered that oil producers have been dumping chemical-laden wastewater into hundreds of unlined pits that are operating without proper permits. Inspections completed by the Central Valley Regional Water Quality Control Board revealed the existence of previously unidentified waste sites. The water board?s review found that more than one-third of the region?s active disposal pits are operating without permission.

Date of Government Version: 04/15/2015
Date Data Arrived at EDR: 04/17/2015
Date Made Active in Reports: 06/23/2015
Number of Days to Update: 67

Source: RWQCB, Central Valley Region
Telephone: 559-445-5577
Last EDR Contact: 01/12/2018
Next Scheduled EDR Contact: 04/23/2018
Data Release Frequency: Varies

WDS: Waste Discharge System
Sites which have been issued waste discharge requirements.

Date of Government Version: 06/19/2007
Date Data Arrived at EDR: 06/20/2007
Date Made Active in Reports: 06/29/2007
Number of Days to Update: 9

Source: State Water Resources Control Board
Telephone: 916-341-5227
Last EDR Contact: 02/15/2018
Next Scheduled EDR Contact: 06/04/2018
Data Release Frequency: Quarterly

WIP: Well Investigation Program Case List
Well Investigation Program case in the San Gabriel and San Fernando Valley area.

Date of Government Version: 07/03/2009
Date Data Arrived at EDR: 07/21/2009
Date Made Active in Reports: 08/03/2009
Number of Days to Update: 13

Source: Los Angeles Water Quality Control Board
Telephone: 213-576-6726
Last EDR Contact: 12/19/2017
Next Scheduled EDR Contact: 04/09/2018
Data Release Frequency: Varies

EDR HIGH RISK HISTORICAL RECORDS

EDR Exclusive Records

EDR MGP: EDR Proprietary Manufactured Gas Plants

The EDR Proprietary Manufactured Gas Plant Database includes records of coal gas plants (manufactured gas plants) compiled by EDR's researchers. Manufactured gas sites were used in the United States from the 1800's to 1950's to produce a gas that could be distributed and used as fuel. These plants used whale oil, rosin, coal, or a mixture of coal, oil, and water that also produced a significant amount of waste. Many of the byproducts of the gas production, such as coal tar (oily waste containing volatile and non-volatile chemicals), sludges, oils and other compounds are potentially hazardous to human health and the environment. The byproduct from this process was frequently disposed of directly at the plant site and can remain or spread slowly, serving as a continuous source of soil and groundwater contamination.

Date of Government Version: N/A
Date Data Arrived at EDR: N/A
Date Made Active in Reports: N/A
Number of Days to Update: N/A

Source: EDR, Inc.
Telephone: N/A
Last EDR Contact: N/A
Next Scheduled EDR Contact: N/A
Data Release Frequency: No Update Planned

EDR Hist Auto: EDR Exclusive Historical Auto Stations

EDR has searched selected national collections of business directories and has collected listings of potential gas station/filling station/service station sites that were available to EDR researchers. EDR's review was limited to those categories of sources that might, in EDR's opinion, include gas station/filling station/service station establishments. The categories reviewed included, but were not limited to gas, gas station, gasoline station, filling station, auto, automobile repair, auto service station, service station, etc. This database falls within a category of information EDR classifies as "High Risk Historical Records", or HRHR. EDR's HRHR effort presents unique and sometimes proprietary data about past sites and operations that typically create environmental concerns, but may not show up in current government records searches.

Date of Government Version: N/A
Date Data Arrived at EDR: N/A
Date Made Active in Reports: N/A
Number of Days to Update: N/A

Source: EDR, Inc.
Telephone: N/A
Last EDR Contact: N/A
Next Scheduled EDR Contact: N/A
Data Release Frequency: Varies

EDR Hist Cleaner: EDR Exclusive Historical Cleaners

EDR has searched selected national collections of business directories and has collected listings of potential dry cleaner sites that were available to EDR researchers. EDR's review was limited to those categories of sources that might, in EDR's opinion, include dry cleaning establishments. The categories reviewed included, but were not limited to dry cleaners, cleaners, laundry, laundromat, cleaning/laundry, wash & dry etc. This database falls within a category of information EDR classifies as "High Risk Historical Records", or HRHR. EDR's HRHR effort presents unique and sometimes proprietary data about past sites and operations that typically create environmental concerns, but may not show up in current government records searches.

Date of Government Version: N/A
Date Data Arrived at EDR: N/A
Date Made Active in Reports: N/A
Number of Days to Update: N/A

Source: EDR, Inc.
Telephone: N/A
Last EDR Contact: N/A
Next Scheduled EDR Contact: N/A
Data Release Frequency: Varies

EDR RECOVERED GOVERNMENT ARCHIVES

Exclusive Recovered Govt. Archives

RGA LF: Recovered Government Archive Solid Waste Facilities List

The EDR Recovered Government Archive Landfill database provides a list of landfills derived from historical databases and includes many records that no longer appear in current government lists. Compiled from Records formerly available from the Department of Resources Recycling and Recovery in California.

Date of Government Version: N/A
Date Data Arrived at EDR: 07/01/2013
Date Made Active in Reports: 01/13/2014
Number of Days to Update: 196

Source: Department of Resources Recycling and Recovery
Telephone: N/A
Last EDR Contact: 06/01/2012
Next Scheduled EDR Contact: N/A
Data Release Frequency: Varies

RGA LUST: Recovered Government Archive Leaking Underground Storage Tank

The EDR Recovered Government Archive Leaking Underground Storage Tank database provides a list of LUST incidents derived from historical databases and includes many records that no longer appear in current government lists. Compiled from Records formerly available from the State Water Resources Control Board in California.

Date of Government Version: N/A
Date Data Arrived at EDR: 07/01/2013
Date Made Active in Reports: 12/30/2013
Number of Days to Update: 182

Source: State Water Resources Control Board
Telephone: N/A
Last EDR Contact: 06/01/2012
Next Scheduled EDR Contact: N/A
Data Release Frequency: Varies

COUNTY RECORDS

ALAMEDA COUNTY:

Contaminated Sites

A listing of contaminated sites overseen by the Toxic Release Program (oil and groundwater contamination from chemical releases and spills) and the Leaking Underground Storage Tank Program (soil and ground water contamination from leaking petroleum USTs).

Date of Government Version: 01/09/2018
Date Data Arrived at EDR: 01/11/2018
Date Made Active in Reports: 02/22/2018
Number of Days to Update: 42

Source: Alameda County Environmental Health Services
Telephone: 510-567-6700
Last EDR Contact: 01/04/2018
Next Scheduled EDR Contact: 04/23/2018
Data Release Frequency: Semi-Annually

Underground Tanks

Underground storage tank sites located in Alameda county.

Date of Government Version: 10/11/2017
Date Data Arrived at EDR: 10/12/2017
Date Made Active in Reports: 11/08/2017
Number of Days to Update: 27

Source: Alameda County Environmental Health Services
Telephone: 510-567-6700
Last EDR Contact: 01/22/2018
Next Scheduled EDR Contact: 04/24/2047
Data Release Frequency: Semi-Annually

AMADOR COUNTY:

CUPA Facility List

Cupa Facility List

Date of Government Version: 03/01/2018
Date Data Arrived at EDR: 03/05/2018
Date Made Active in Reports: 03/15/2018
Number of Days to Update: 10

Source: Amador County Environmental Health
Telephone: 209-223-6439
Last EDR Contact: 02/28/2018
Next Scheduled EDR Contact: 06/18/2018
Data Release Frequency: Varies

BUTTE COUNTY:

CUPA Facility Listing

Cupa facility list.

Date of Government Version: 04/21/2017
Date Data Arrived at EDR: 04/25/2017
Date Made Active in Reports: 08/09/2017
Number of Days to Update: 106

Source: Public Health Department
Telephone: 530-538-7149
Last EDR Contact: 01/04/2018
Next Scheduled EDR Contact: 04/23/2018
Data Release Frequency: No Update Planned

CALVERAS COUNTY:

CUPA Facility Listing
Cupa Facility Listing

Date of Government Version: 01/25/2018
Date Data Arrived at EDR: 01/26/2018
Date Made Active in Reports: 03/14/2018
Number of Days to Update: 47

Source: Calveras County Environmental Health
Telephone: 209-754-6399
Last EDR Contact: 12/20/2017
Next Scheduled EDR Contact: 10/09/2017
Data Release Frequency: Quarterly

COLUSA COUNTY:

CUPA Facility List
Cupa facility list.

Date of Government Version: 02/26/2018
Date Data Arrived at EDR: 03/01/2018
Date Made Active in Reports: 03/15/2018
Number of Days to Update: 14

Source: Health & Human Services
Telephone: 530-458-0396
Last EDR Contact: 02/14/2018
Next Scheduled EDR Contact: 05/21/2018
Data Release Frequency: Semi-Annually

CONTRA COSTA COUNTY:

Site List
List includes sites from the underground tank, hazardous waste generator and business plan/2185 programs.

Date of Government Version: 11/20/2017
Date Data Arrived at EDR: 11/29/2017
Date Made Active in Reports: 01/19/2018
Number of Days to Update: 51

Source: Contra Costa Health Services Department
Telephone: 925-646-2286
Last EDR Contact: 01/29/2018
Next Scheduled EDR Contact: 05/14/2018
Data Release Frequency: Semi-Annually

DEL NORTE COUNTY:

CUPA Facility List
Cupa Facility list

Date of Government Version: 01/05/2018
Date Data Arrived at EDR: 02/02/2018
Date Made Active in Reports: 03/14/2018
Number of Days to Update: 40

Source: Del Norte County Environmental Health Division
Telephone: 707-465-0426
Last EDR Contact: 01/29/2018
Next Scheduled EDR Contact: 05/14/2018
Data Release Frequency: Varies

EL DORADO COUNTY:

CUPA Facility List
CUPA facility list.

Date of Government Version: 12/04/2017
Date Data Arrived at EDR: 12/06/2017
Date Made Active in Reports: 12/27/2017
Number of Days to Update: 21

Source: El Dorado County Environmental Management Department
Telephone: 530-621-6623
Last EDR Contact: 01/29/2018
Next Scheduled EDR Contact: 05/14/2018
Data Release Frequency: Varies

FRESNO COUNTY:

CUPA Resources List

Certified Unified Program Agency. CUPA's are responsible for implementing a unified hazardous materials and hazardous waste management regulatory program. The agency provides oversight of businesses that deal with hazardous materials, operate underground storage tanks or aboveground storage tanks.

Date of Government Version: 03/01/2018
Date Data Arrived at EDR: 03/05/2018
Date Made Active in Reports: 03/14/2018
Number of Days to Update: 9

Source: Dept. of Community Health
Telephone: 559-445-3271
Last EDR Contact: 02/22/2018
Next Scheduled EDR Contact: 04/16/2018
Data Release Frequency: Semi-Annually

GLENN COUNTY:

CUPA Facility List

Cupa facility list

Date of Government Version: 01/22/2018
Date Data Arrived at EDR: 01/24/2018
Date Made Active in Reports: 03/14/2018
Number of Days to Update: 49

Source: Glenn County Air Pollution Control District
Telephone: 830-934-6500
Last EDR Contact: 01/22/2018
Next Scheduled EDR Contact: 05/07/2018
Data Release Frequency: Varies

HUMBOLDT COUNTY:

CUPA Facility List

CUPA facility list.

Date of Government Version: 08/03/2017
Date Data Arrived at EDR: 08/08/2017
Date Made Active in Reports: 10/16/2017
Number of Days to Update: 69

Source: Humboldt County Environmental Health
Telephone: N/A
Last EDR Contact: 02/05/2018
Next Scheduled EDR Contact: 06/04/2018
Data Release Frequency: Semi-Annually

IMPERIAL COUNTY:

CUPA Facility List

Cupa facility list.

Date of Government Version: 01/22/2018
Date Data Arrived at EDR: 01/26/2018
Date Made Active in Reports: 03/14/2018
Number of Days to Update: 47

Source: San Diego Border Field Office
Telephone: 760-339-2777
Last EDR Contact: 01/22/2018
Next Scheduled EDR Contact: 05/07/2018
Data Release Frequency: Varies

INYO COUNTY:

CUPA Facility List
Cupa facility list.

Date of Government Version: 06/08/2017
Date Data Arrived at EDR: 06/09/2017
Date Made Active in Reports: 08/04/2017
Number of Days to Update: 56

Source: Inyo County Environmental Health Services
Telephone: 760-878-0238
Last EDR Contact: 02/14/2018
Next Scheduled EDR Contact: 06/04/2018
Data Release Frequency: Varies

KERN COUNTY:

Underground Storage Tank Sites & Tank Listing
Kern County Sites and Tanks Listing.

Date of Government Version: 11/02/2017
Date Data Arrived at EDR: 11/07/2017
Date Made Active in Reports: 12/20/2017
Number of Days to Update: 43

Source: Kern County Environment Health Services Department
Telephone: 661-862-8700
Last EDR Contact: 02/01/2018
Next Scheduled EDR Contact: 05/21/2018
Data Release Frequency: Quarterly

KINGS COUNTY:

CUPA Facility List
A listing of sites included in the county's Certified Unified Program Agency database. California's Secretary for Environmental Protection established the unified hazardous materials and hazardous waste regulatory program as required by chapter 6.11 of the California Health and Safety Code. The Unified Program consolidates the administration, permits, inspections, and enforcement activities.

Date of Government Version: 11/14/2017
Date Data Arrived at EDR: 11/17/2017
Date Made Active in Reports: 12/15/2017
Number of Days to Update: 28

Source: Kings County Department of Public Health
Telephone: 559-584-1411
Last EDR Contact: 03/14/2018
Next Scheduled EDR Contact: 06/04/2018
Data Release Frequency: Varies

LAKE COUNTY:

CUPA Facility List
Cupa facility list

Date of Government Version: 02/06/2018
Date Data Arrived at EDR: 02/09/2018
Date Made Active in Reports: 03/14/2018
Number of Days to Update: 33

Source: Lake County Environmental Health
Telephone: 707-263-1164
Last EDR Contact: 01/16/2018
Next Scheduled EDR Contact: 04/30/2018
Data Release Frequency: Varies

LASSEN COUNTY:

CUPA Facility List
Cupa facility list

Date of Government Version: 01/22/2018
Date Data Arrived at EDR: 01/24/2018
Date Made Active in Reports: 03/14/2018
Number of Days to Update: 49

Source: Lassen County Environmental Health
Telephone: 530-251-8528
Last EDR Contact: 01/22/2018
Next Scheduled EDR Contact: 05/07/2018
Data Release Frequency: Varies

LOS ANGELES COUNTY:

San Gabriel Valley Areas of Concern
San Gabriel Valley areas where VOC contamination is at or above the MCL as designated by region 9 EPA office.

Date of Government Version: 03/30/2009
Date Data Arrived at EDR: 03/31/2009
Date Made Active in Reports: 10/23/2009
Number of Days to Update: 206

Source: EPA Region 9
Telephone: 415-972-3178
Last EDR Contact: 03/14/2018
Next Scheduled EDR Contact: 07/02/2018
Data Release Frequency: No Update Planned

HMS: Street Number List
Industrial Waste and Underground Storage Tank Sites.

Date of Government Version: 10/11/2017
Date Data Arrived at EDR: 10/12/2017
Date Made Active in Reports: 10/17/2017
Number of Days to Update: 5

Source: Department of Public Works
Telephone: 626-458-3517
Last EDR Contact: 01/04/2018
Next Scheduled EDR Contact: 04/23/2018
Data Release Frequency: Semi-Annually

List of Solid Waste Facilities
Solid Waste Facilities in Los Angeles County.

Date of Government Version: 01/16/2018
Date Data Arrived at EDR: 01/16/2018
Date Made Active in Reports: 02/14/2018
Number of Days to Update: 29

Source: La County Department of Public Works
Telephone: 818-458-5185
Last EDR Contact: 01/16/2018
Next Scheduled EDR Contact: 04/30/2018
Data Release Frequency: Varies

City of Los Angeles Landfills
Landfills owned and maintained by the City of Los Angeles.

Date of Government Version: 01/01/2017
Date Data Arrived at EDR: 04/21/2017
Date Made Active in Reports: 10/09/2017
Number of Days to Update: 171

Source: Engineering & Construction Division
Telephone: 213-473-7869
Last EDR Contact: 01/10/2018
Next Scheduled EDR Contact: 04/30/2018
Data Release Frequency: Varies

Site Mitigation List
Industrial sites that have had some sort of spill or complaint.

Date of Government Version: 01/01/2018
Date Data Arrived at EDR: 01/17/2018
Date Made Active in Reports: 02/14/2018
Number of Days to Update: 28

Source: Community Health Services
Telephone: 323-890-7806
Last EDR Contact: 01/17/2018
Next Scheduled EDR Contact: 04/30/2018
Data Release Frequency: Annually

City of El Segundo Underground Storage Tank
Underground storage tank sites located in El Segundo city.

Date of Government Version: 01/21/2017
Date Data Arrived at EDR: 04/19/2017
Date Made Active in Reports: 05/10/2017
Number of Days to Update: 21

Source: City of El Segundo Fire Department
Telephone: 310-524-2236
Last EDR Contact: 01/10/2018
Next Scheduled EDR Contact: 04/30/2018
Data Release Frequency: Semi-Annually

City of Long Beach Underground Storage Tank
Underground storage tank sites located in the city of Long Beach.

Date of Government Version: 03/09/2017
Date Data Arrived at EDR: 03/10/2017
Date Made Active in Reports: 05/03/2017
Number of Days to Update: 54

Source: City of Long Beach Fire Department
Telephone: 562-570-2563
Last EDR Contact: 01/22/2018
Next Scheduled EDR Contact: 05/07/2018
Data Release Frequency: Annually

City of Torrance Underground Storage Tank
Underground storage tank sites located in the city of Torrance.

Date of Government Version: 01/04/2018
Date Data Arrived at EDR: 01/05/2018
Date Made Active in Reports: 01/18/2018
Number of Days to Update: 13

Source: City of Torrance Fire Department
Telephone: 310-618-2973
Last EDR Contact: 01/04/2018
Next Scheduled EDR Contact: 04/23/2018
Data Release Frequency: Semi-Annually

MADERA COUNTY:

CUPA Facility List
A listing of sites included in the county's Certified Unified Program Agency database. California's Secretary for Environmental Protection established the unified hazardous materials and hazardous waste regulatory program as required by chapter 6.11 of the California Health and Safety Code. The Unified Program consolidates the administration, permits, inspections, and enforcement activities.

Date of Government Version: 10/26/2017
Date Data Arrived at EDR: 10/27/2017
Date Made Active in Reports: 11/06/2017
Number of Days to Update: 10

Source: Madera County Environmental Health
Telephone: 559-675-7823
Last EDR Contact: 02/14/2018
Next Scheduled EDR Contact: 06/04/2018
Data Release Frequency: Varies

MARIN COUNTY:

Underground Storage Tank Sites
Currently permitted USTs in Marin County.

Date of Government Version: 01/02/2018
Date Data Arrived at EDR: 01/05/2018
Date Made Active in Reports: 01/17/2018
Number of Days to Update: 12

Source: Public Works Department Waste Management
Telephone: 415-473-6647
Last EDR Contact: 01/02/2018
Next Scheduled EDR Contact: 04/16/2018
Data Release Frequency: Semi-Annually

MERCED COUNTY:

CUPA Facility List
CUPA facility list.

Date of Government Version: 01/11/2018
Date Data Arrived at EDR: 01/12/2018
Date Made Active in Reports: 02/08/2018
Number of Days to Update: 27

Source: Merced County Environmental Health
Telephone: 209-381-1094
Last EDR Contact: 02/14/2018
Next Scheduled EDR Contact: 06/04/2018
Data Release Frequency: Varies

MONO COUNTY:

CUPA Facility List
CUPA Facility List

Date of Government Version: 02/22/2018
Date Data Arrived at EDR: 02/27/2018
Date Made Active in Reports: 03/14/2018
Number of Days to Update: 15

Source: Mono County Health Department
Telephone: 760-932-5580
Last EDR Contact: 02/22/2018
Next Scheduled EDR Contact: 06/11/2018
Data Release Frequency: Varies

MONTEREY COUNTY:

CUPA Facility Listing
CUPA Program listing from the Environmental Health Division.

Date of Government Version: 01/09/2018
Date Data Arrived at EDR: 01/11/2018
Date Made Active in Reports: 01/31/2018
Number of Days to Update: 20

Source: Monterey County Health Department
Telephone: 831-796-1297
Last EDR Contact: 02/20/2018
Next Scheduled EDR Contact: 06/04/2018
Data Release Frequency: Varies

NAPA COUNTY:

Sites With Reported Contamination
A listing of leaking underground storage tank sites located in Napa county.

Date of Government Version: 01/09/2017
Date Data Arrived at EDR: 01/11/2017
Date Made Active in Reports: 03/02/2017
Number of Days to Update: 50

Source: Napa County Department of Environmental Management
Telephone: 707-253-4269
Last EDR Contact: 02/22/2018
Next Scheduled EDR Contact: 06/11/2018
Data Release Frequency: No Update Planned

Closed and Operating Underground Storage Tank Sites
Underground storage tank sites located in Napa county.

Date of Government Version: 11/22/2017
Date Data Arrived at EDR: 11/27/2017
Date Made Active in Reports: 12/19/2017
Number of Days to Update: 22

Source: Napa County Department of Environmental Management
Telephone: 707-253-4269
Last EDR Contact: 02/22/2018
Next Scheduled EDR Contact: 06/11/2018
Data Release Frequency: No Update Planned

NEVADA COUNTY:

CUPA Facility List
CUPA facility list.

Date of Government Version: 01/31/2018
Date Data Arrived at EDR: 02/01/2018
Date Made Active in Reports: 03/14/2018
Number of Days to Update: 41

Source: Community Development Agency
Telephone: 530-265-1467
Last EDR Contact: 01/29/2018
Next Scheduled EDR Contact: 05/14/2018
Data Release Frequency: Varies

ORANGE COUNTY:

List of Industrial Site Cleanups
Petroleum and non-petroleum spills.

Date of Government Version: 11/02/2017
Date Data Arrived at EDR: 11/09/2017
Date Made Active in Reports: 12/07/2017
Number of Days to Update: 28

Source: Health Care Agency
Telephone: 714-834-3446
Last EDR Contact: 02/05/2018
Next Scheduled EDR Contact: 05/21/2018
Data Release Frequency: Annually

List of Underground Storage Tank Cleanups
Orange County Underground Storage Tank Cleanups (LUST).

Date of Government Version: 11/02/2017
Date Data Arrived at EDR: 11/09/2017
Date Made Active in Reports: 12/15/2017
Number of Days to Update: 36

Source: Health Care Agency
Telephone: 714-834-3446
Last EDR Contact: 02/05/2018
Next Scheduled EDR Contact: 05/21/2018
Data Release Frequency: Quarterly

List of Underground Storage Tank Facilities
Orange County Underground Storage Tank Facilities (UST).

Date of Government Version: 11/02/2017
Date Data Arrived at EDR: 11/07/2017
Date Made Active in Reports: 12/19/2017
Number of Days to Update: 42

Source: Health Care Agency
Telephone: 714-834-3446
Last EDR Contact: 02/07/2018
Next Scheduled EDR Contact: 05/21/2018
Data Release Frequency: Quarterly

PLACER COUNTY:

Master List of Facilities
List includes aboveground tanks, underground tanks and cleanup sites.

Date of Government Version: 12/08/2017
Date Data Arrived at EDR: 12/12/2017
Date Made Active in Reports: 01/31/2018
Number of Days to Update: 50

Source: Placer County Health and Human Services
Telephone: 530-745-2363
Last EDR Contact: 03/15/2018
Next Scheduled EDR Contact: 06/18/2018
Data Release Frequency: Semi-Annually

PLUMAS COUNTY:

CUPA Facility List
Plumas County CUPA Program facilities.

Date of Government Version: 01/22/2018
Date Data Arrived at EDR: 01/24/2018
Date Made Active in Reports: 03/15/2018
Number of Days to Update: 50

Source: Plumas County Environmental Health
Telephone: 530-283-6355
Last EDR Contact: 01/22/2018
Next Scheduled EDR Contact: 05/07/2018
Data Release Frequency: Varies

RIVERSIDE COUNTY:

Listing of Underground Tank Cleanup Sites
Riverside County Underground Storage Tank Cleanup Sites (LUST).

Date of Government Version: 10/11/2017
Date Data Arrived at EDR: 10/12/2017
Date Made Active in Reports: 11/09/2017
Number of Days to Update: 28

Source: Department of Environmental Health
Telephone: 951-358-5055
Last EDR Contact: 12/15/2017
Next Scheduled EDR Contact: 04/02/2018
Data Release Frequency: Quarterly

Underground Storage Tank Tank List
Underground storage tank sites located in Riverside county.

Date of Government Version: 10/12/2017
Date Data Arrived at EDR: 10/12/2017
Date Made Active in Reports: 11/08/2017
Number of Days to Update: 27

Source: Department of Environmental Health
Telephone: 951-358-5055
Last EDR Contact: 12/15/2017
Next Scheduled EDR Contact: 04/02/2018
Data Release Frequency: Quarterly

SACRAMENTO COUNTY:

Toxic Site Clean-Up List
List of sites where unauthorized releases of potentially hazardous materials have occurred.

Date of Government Version: 11/02/2017
Date Data Arrived at EDR: 01/03/2018
Date Made Active in Reports: 02/05/2018
Number of Days to Update: 33

Source: Sacramento County Environmental Management
Telephone: 916-875-8406
Last EDR Contact: 01/03/2018
Next Scheduled EDR Contact: 04/16/2018
Data Release Frequency: Quarterly

Master Hazardous Materials Facility List

Any business that has hazardous materials on site - hazardous material storage sites, underground storage tanks, waste generators.

Date of Government Version: 11/02/2017
Date Data Arrived at EDR: 01/03/2018
Date Made Active in Reports: 02/14/2018
Number of Days to Update: 42

Source: Sacramento County Environmental Management
Telephone: 916-875-8406
Last EDR Contact: 01/03/2018
Next Scheduled EDR Contact: 04/16/2018
Data Release Frequency: Quarterly

SAN BENITO COUNTY:

CUPA Facility List

Cupa facility list

Date of Government Version: 11/01/2017
Date Data Arrived at EDR: 11/03/2017
Date Made Active in Reports: 11/17/2017
Number of Days to Update: 14

Source: San Benito County Environmental Health
Telephone: N/A
Last EDR Contact: 02/15/2018
Next Scheduled EDR Contact: 05/21/2018
Data Release Frequency: Varies

SAN BERNARDINO COUNTY:

Hazardous Material Permits

This listing includes underground storage tanks, medical waste handlers/generators, hazardous materials handlers, hazardous waste generators, and waste oil generators/handlers.

Date of Government Version: 11/30/2017
Date Data Arrived at EDR: 12/01/2017
Date Made Active in Reports: 01/16/2018
Number of Days to Update: 46

Source: San Bernardino County Fire Department Hazardous Materials Division
Telephone: 909-387-3041
Last EDR Contact: 02/05/2018
Next Scheduled EDR Contact: 05/21/2018
Data Release Frequency: Quarterly

SAN DIEGO COUNTY:

Hazardous Materials Management Division Database

The database includes: HE58 - This report contains the business name, site address, business phone number, establishment 'H' permit number, type of permit, and the business status. HE17 - In addition to providing the same information provided in the HE58 listing, HE17 provides inspection dates, violations received by the establishment, hazardous waste generated, the quantity, method of storage, treatment/disposal of waste and the hauler, and information on underground storage tanks. Unauthorized Release List - Includes a summary of environmental contamination cases in San Diego County (underground tank cases, non-tank cases, groundwater contamination, and soil contamination are included.)

Date of Government Version: 12/04/2017
Date Data Arrived at EDR: 12/05/2017
Date Made Active in Reports: 01/11/2018
Number of Days to Update: 37

Source: Hazardous Materials Management Division
Telephone: 619-338-2268
Last EDR Contact: 03/07/2018
Next Scheduled EDR Contact: 06/18/2018
Data Release Frequency: Quarterly

Solid Waste Facilities
San Diego County Solid Waste Facilities.

Date of Government Version: 10/31/2015
Date Data Arrived at EDR: 11/07/2015
Date Made Active in Reports: 01/04/2016
Number of Days to Update: 58

Source: Department of Health Services
Telephone: 619-338-2209
Last EDR Contact: 02/01/2018
Next Scheduled EDR Contact: 05/07/2018
Data Release Frequency: Varies

Environmental Case Listing
The listing contains all underground tank release cases and projects pertaining to properties contaminated with hazardous substances that are actively under review by the Site Assessment and Mitigation Program.

Date of Government Version: 03/23/2010
Date Data Arrived at EDR: 06/15/2010
Date Made Active in Reports: 07/09/2010
Number of Days to Update: 24

Source: San Diego County Department of Environmental Health
Telephone: 619-338-2371
Last EDR Contact: 02/28/2018
Next Scheduled EDR Contact: 06/18/2018
Data Release Frequency: No Update Planned

SAN FRANCISCO COUNTY:

Local Oversite Facilities
A listing of leaking underground storage tank sites located in San Francisco county.

Date of Government Version: 09/19/2008
Date Data Arrived at EDR: 09/19/2008
Date Made Active in Reports: 09/29/2008
Number of Days to Update: 10

Source: Department Of Public Health San Francisco County
Telephone: 415-252-3920
Last EDR Contact: 02/01/2018
Next Scheduled EDR Contact: 05/21/2018
Data Release Frequency: Quarterly

Underground Storage Tank Information
Underground storage tank sites located in San Francisco county.

Date of Government Version: 11/02/2017
Date Data Arrived at EDR: 11/07/2017
Date Made Active in Reports: 12/19/2017
Number of Days to Update: 42

Source: Department of Public Health
Telephone: 415-252-3920
Last EDR Contact: 03/14/2018
Next Scheduled EDR Contact: 05/21/2018
Data Release Frequency: Quarterly

SAN JOAQUIN COUNTY:

San Joaquin Co. UST
A listing of underground storage tank locations in San Joaquin county.

Date of Government Version: 12/20/2017
Date Data Arrived at EDR: 12/21/2017
Date Made Active in Reports: 02/01/2018
Number of Days to Update: 42

Source: Environmental Health Department
Telephone: N/A
Last EDR Contact: 03/14/2018
Next Scheduled EDR Contact: 07/02/2018
Data Release Frequency: Semi-Annually

SAN LUIS OBISPO COUNTY:

CUPA Facility List
Cupa Facility List.

Date of Government Version: 11/16/2017
Date Data Arrived at EDR: 11/17/2017
Date Made Active in Reports: 12/18/2017
Number of Days to Update: 31

Source: San Luis Obispo County Public Health Department
Telephone: 805-781-5596
Last EDR Contact: 02/15/2018
Next Scheduled EDR Contact: 06/04/2018
Data Release Frequency: Varies

SAN MATEO COUNTY:

Business Inventory
List includes Hazardous Materials Business Plan, hazardous waste generators, and underground storage tanks.

Date of Government Version: 12/12/2017
Date Data Arrived at EDR: 12/14/2017
Date Made Active in Reports: 01/11/2018
Number of Days to Update: 28

Source: San Mateo County Environmental Health Services Division
Telephone: 650-363-1921
Last EDR Contact: 03/07/2018
Next Scheduled EDR Contact: 06/25/2018
Data Release Frequency: Annually

Fuel Leak List
A listing of leaking underground storage tank sites located in San Mateo county.

Date of Government Version: 12/12/2017
Date Data Arrived at EDR: 12/14/2017
Date Made Active in Reports: 01/12/2018
Number of Days to Update: 29

Source: San Mateo County Environmental Health Services Division
Telephone: 650-363-1921
Last EDR Contact: 03/07/2018
Next Scheduled EDR Contact: 06/25/2018
Data Release Frequency: Semi-Annually

SANTA BARBARA COUNTY:

CUPA Facility Listing
CUPA Program Listing from the Environmental Health Services division.

Date of Government Version: 09/08/2011
Date Data Arrived at EDR: 09/09/2011
Date Made Active in Reports: 10/07/2011
Number of Days to Update: 28

Source: Santa Barbara County Public Health Department
Telephone: 805-686-8167
Last EDR Contact: 02/15/2018
Next Scheduled EDR Contact: 06/04/2018
Data Release Frequency: Varies

SANTA CLARA COUNTY:

Cupa Facility List
Cupa facility list

Date of Government Version: 11/14/2017
Date Data Arrived at EDR: 11/16/2017
Date Made Active in Reports: 01/04/2018
Number of Days to Update: 49

Source: Department of Environmental Health
Telephone: 408-918-1973
Last EDR Contact: 02/15/2018
Next Scheduled EDR Contact: 06/04/2018
Data Release Frequency: Varies

HIST LUST - Fuel Leak Site Activity Report
A listing of open and closed leaking underground storage tanks. This listing is no longer updated by the county. Leaking underground storage tanks are now handled by the Department of Environmental Health.

Date of Government Version: 03/29/2005
Date Data Arrived at EDR: 03/30/2005
Date Made Active in Reports: 04/21/2005
Number of Days to Update: 22

Source: Santa Clara Valley Water District
Telephone: 408-265-2600
Last EDR Contact: 03/23/2009
Next Scheduled EDR Contact: 06/22/2009
Data Release Frequency: No Update Planned

LOP Listing
A listing of leaking underground storage tanks located in Santa Clara county.

Date of Government Version: 03/03/2014
Date Data Arrived at EDR: 03/05/2014
Date Made Active in Reports: 03/18/2014
Number of Days to Update: 13

Source: Department of Environmental Health
Telephone: 408-918-3417
Last EDR Contact: 02/22/2018
Next Scheduled EDR Contact: 06/11/2018
Data Release Frequency: Annually

Hazardous Material Facilities
Hazardous material facilities, including underground storage tank sites.

Date of Government Version: 11/01/2017
Date Data Arrived at EDR: 11/03/2017
Date Made Active in Reports: 12/07/2017
Number of Days to Update: 34

Source: City of San Jose Fire Department
Telephone: 408-535-7694
Last EDR Contact: 02/01/2018
Next Scheduled EDR Contact: 05/21/2018
Data Release Frequency: Annually

SANTA CRUZ COUNTY:

CUPA Facility List
CUPA facility listing.

Date of Government Version: 01/21/2017
Date Data Arrived at EDR: 02/22/2017
Date Made Active in Reports: 05/23/2017
Number of Days to Update: 90

Source: Santa Cruz County Environmental Health
Telephone: 831-464-2761
Last EDR Contact: 02/15/2018
Next Scheduled EDR Contact: 06/04/2018
Data Release Frequency: Varies

SHASTA COUNTY:

CUPA Facility List
Cupa Facility List.

Date of Government Version: 06/15/2017
Date Data Arrived at EDR: 06/19/2017
Date Made Active in Reports: 08/09/2017
Number of Days to Update: 51

Source: Shasta County Department of Resource Management
Telephone: 530-225-5789
Last EDR Contact: 02/15/2018
Next Scheduled EDR Contact: 06/04/2018
Data Release Frequency: Varies

SOLANO COUNTY:

Leaking Underground Storage Tanks
A listing of leaking underground storage tank sites located in Solano county.

Date of Government Version: 12/14/2017
Date Data Arrived at EDR: 12/15/2017
Date Made Active in Reports: 01/12/2018
Number of Days to Update: 28

Source: Solano County Department of Environmental Management
Telephone: 707-784-6770
Last EDR Contact: 02/28/2018
Next Scheduled EDR Contact: 06/18/2018
Data Release Frequency: Quarterly

Underground Storage Tanks
Underground storage tank sites located in Solano county.

Date of Government Version: 12/14/2017
Date Data Arrived at EDR: 12/15/2017
Date Made Active in Reports: 01/18/2018
Number of Days to Update: 34

Source: Solano County Department of Environmental Management
Telephone: 707-784-6770
Last EDR Contact: 02/28/2018
Next Scheduled EDR Contact: 06/18/2018
Data Release Frequency: Quarterly

SONOMA COUNTY:

Cupa Facility List
Cupa Facility list

Date of Government Version: 12/20/2017
Date Data Arrived at EDR: 12/21/2017
Date Made Active in Reports: 01/31/2018
Number of Days to Update: 41

Source: County of Sonoma Fire & Emergency Services Department
Telephone: 707-565-1174
Last EDR Contact: 12/19/2017
Next Scheduled EDR Contact: 04/09/2018
Data Release Frequency: Varies

Leaking Underground Storage Tank Sites
A listing of leaking underground storage tank sites located in Sonoma county.

Date of Government Version: 01/04/2018
Date Data Arrived at EDR: 01/09/2018
Date Made Active in Reports: 02/06/2018
Number of Days to Update: 28

Source: Department of Health Services
Telephone: 707-565-6565
Last EDR Contact: 01/04/2018
Next Scheduled EDR Contact: 04/09/2018
Data Release Frequency: Quarterly

STANISLAUS COUNTY:

CUPA Facility List
Cupa facility list

Date of Government Version: 02/06/2018
Date Data Arrived at EDR: 02/07/2018
Date Made Active in Reports: 03/16/2018
Number of Days to Update: 37

Source: Stanislaus County Department of Ennvironmental Protection
Telephone: 209-525-6751
Last EDR Contact: 01/16/2018
Next Scheduled EDR Contact: 04/30/2018
Data Release Frequency: Varies

SUTTER COUNTY:

Underground Storage Tanks
Underground storage tank sites located in Sutter county.

Date of Government Version: 12/01/2017
Date Data Arrived at EDR: 12/04/2017
Date Made Active in Reports: 12/19/2017
Number of Days to Update: 15

Source: Sutter County Department of Agriculture
Telephone: 530-822-7500
Last EDR Contact: 02/28/2018
Next Scheduled EDR Contact: 06/18/2018
Data Release Frequency: Semi-Annually

TEHAMA COUNTY:

CUPA Facility List
Cupa facilities

Date of Government Version: 11/16/2017
Date Data Arrived at EDR: 11/17/2017
Date Made Active in Reports: 12/18/2017
Number of Days to Update: 31

Source: Tehama County Department of Environmental Health
Telephone: 530-527-8020
Last EDR Contact: 02/01/2018
Next Scheduled EDR Contact: 05/21/2018
Data Release Frequency: Varies

TRINITY COUNTY:

CUPA Facility List
Cupa facility list

Date of Government Version: 10/23/2017
Date Data Arrived at EDR: 10/24/2017
Date Made Active in Reports: 11/16/2017
Number of Days to Update: 23

Source: Department of Toxic Substances Control
Telephone: 760-352-0381
Last EDR Contact: 01/22/2018
Next Scheduled EDR Contact: 05/07/2018
Data Release Frequency: Varies

TULARE COUNTY:

CUPA Facility List
Cupa program facilities

Date of Government Version: 09/27/2017
Date Data Arrived at EDR: 09/28/2017
Date Made Active in Reports: 10/16/2017
Number of Days to Update: 18

Source: Tulare County Environmental Health Services Division
Telephone: 559-624-7400
Last EDR Contact: 03/06/2018
Next Scheduled EDR Contact: 05/21/2018
Data Release Frequency: Varies

TUOLUMNE COUNTY:

CUPA Facility List
Cupa facility list

Date of Government Version: 01/22/2018
Date Data Arrived at EDR: 01/25/2018
Date Made Active in Reports: 03/16/2018
Number of Days to Update: 50

Source: Divison of Environmental Health
Telephone: 209-533-5633
Last EDR Contact: 01/22/2018
Next Scheduled EDR Contact: 05/07/2018
Data Release Frequency: Varies

VENTURA COUNTY:

Business Plan, Hazardous Waste Producers, and Operating Underground Tanks
The BWT list indicates by site address whether the Environmental Health Division has Business Plan (B), Waste Producer (W), and/or Underground Tank (T) information.

Date of Government Version: 12/26/2017
Date Data Arrived at EDR: 01/25/2018
Date Made Active in Reports: 03/14/2018
Number of Days to Update: 48

Source: Ventura County Environmental Health Division
Telephone: 805-654-2813
Last EDR Contact: 01/22/2018
Next Scheduled EDR Contact: 05/07/2018
Data Release Frequency: Quarterly

Inventory of Illegal Abandoned and Inactive Sites
Ventura County Inventory of Closed, Illegal Abandoned, and Inactive Sites.

Date of Government Version: 12/01/2011
Date Data Arrived at EDR: 12/01/2011
Date Made Active in Reports: 01/19/2012
Number of Days to Update: 49

Source: Environmental Health Division
Telephone: 805-654-2813
Last EDR Contact: 12/26/2017
Next Scheduled EDR Contact: 04/16/2018
Data Release Frequency: Annually

Listing of Underground Tank Cleanup Sites
Ventura County Underground Storage Tank Cleanup Sites (LUST).

Date of Government Version: 05/29/2008
Date Data Arrived at EDR: 06/24/2008
Date Made Active in Reports: 07/31/2008
Number of Days to Update: 37

Source: Environmental Health Division
Telephone: 805-654-2813
Last EDR Contact: 02/08/2018
Next Scheduled EDR Contact: 05/28/2018
Data Release Frequency: Quarterly

Medical Waste Program List
To protect public health and safety and the environment from potential exposure to disease causing agents, the Environmental Health Division Medical Waste Program regulates the generation, handling, storage, treatment and disposal of medical waste throughout the County.

Date of Government Version: 09/26/2017
Date Data Arrived at EDR: 10/25/2017
Date Made Active in Reports: 12/07/2017
Number of Days to Update: 43

Source: Ventura County Resource Management Agency
Telephone: 805-654-2813
Last EDR Contact: 01/22/2018
Next Scheduled EDR Contact: 05/07/2018
Data Release Frequency: Quarterly

Underground Tank Closed Sites List
Ventura County Operating Underground Storage Tank Sites (UST)/Underground Tank Closed Sites List.

Date of Government Version: 11/27/2017
Date Data Arrived at EDR: 12/13/2017
Date Made Active in Reports: 01/19/2018
Number of Days to Update: 37

Source: Environmental Health Division
Telephone: 805-654-2813
Last EDR Contact: 03/14/2018
Next Scheduled EDR Contact: 06/25/2018
Data Release Frequency: Quarterly

YOLO COUNTY:

Underground Storage Tank Comprehensive Facility Report
Underground storage tank sites located in Yolo county.

Date of Government Version: 01/02/2018
Date Data Arrived at EDR: 01/09/2018
Date Made Active in Reports: 01/19/2018
Number of Days to Update: 10

Source: Yolo County Department of Health
Telephone: 530-666-8646
Last EDR Contact: 01/02/2018
Next Scheduled EDR Contact: 04/16/2018
Data Release Frequency: Annually

YUBA COUNTY:

CUPA Facility List
CUPA facility listing for Yuba County.

Date of Government Version: 11/08/2017
Date Data Arrived at EDR: 11/10/2017
Date Made Active in Reports: 11/16/2017
Number of Days to Update: 6

Source: Yuba County Environmental Health Department
Telephone: 530-749-7523
Last EDR Contact: 01/29/2018
Next Scheduled EDR Contact: 05/14/2018
Data Release Frequency: Varies

OTHER DATABASE(S)

Depending on the geographic area covered by this report, the data provided in these specialty databases may or may not be complete. For example, the existence of wetlands information data in a specific report does not mean that all wetlands in the area covered by the report are included. Moreover, the absence of any reported wetlands information does not necessarily mean that wetlands do not exist in the area covered by the report.

CT MANIFEST: Hazardous Waste Manifest Data
Facility and manifest data. Manifest is a document that lists and tracks hazardous waste from the generator through transporters to a tsd facility.

Date of Government Version: 11/11/2017
Date Data Arrived at EDR: 11/14/2017
Date Made Active in Reports: 12/18/2017
Number of Days to Update: 34

Source: Department of Energy & Environmental Protection
Telephone: 860-424-3375
Last EDR Contact: 02/14/2018
Next Scheduled EDR Contact: 05/28/2018
Data Release Frequency: No Update Planned

NJ MANIFEST: Manifest Information
Hazardous waste manifest information.

Date of Government Version: 12/31/2016
Date Data Arrived at EDR: 04/11/2017
Date Made Active in Reports: 07/27/2017
Number of Days to Update: 107

Source: Department of Environmental Protection
Telephone: N/A
Last EDR Contact: 01/05/2018
Next Scheduled EDR Contact: 04/23/2018
Data Release Frequency: Annually

NY MANIFEST: Facility and Manifest Data
Manifest is a document that lists and tracks hazardous waste from the generator through transporters to a TSD facility.

Date of Government Version: 12/31/2017
Date Data Arrived at EDR: 01/31/2018
Date Made Active in Reports: 03/09/2018
Number of Days to Update: 37

Source: Department of Environmental Conservation
Telephone: 518-402-8651
Last EDR Contact: 01/31/2018
Next Scheduled EDR Contact: 05/14/2018
Data Release Frequency: Quarterly

PA MANIFEST: Manifest Information
Hazardous waste manifest information.

Date of Government Version: 12/31/2016
Date Data Arrived at EDR: 07/25/2017
Date Made Active in Reports: 09/25/2017
Number of Days to Update: 62

Source: Department of Environmental Protection
Telephone: 717-783-8990
Last EDR Contact: 01/16/2018
Next Scheduled EDR Contact: 04/30/2018
Data Release Frequency: Annually

RI MANIFEST: Manifest information
Hazardous waste manifest information

Date of Government Version: 12/31/2013
Date Data Arrived at EDR: 06/19/2015
Date Made Active in Reports: 07/15/2015
Number of Days to Update: 26

Source: Department of Environmental Management
Telephone: 401-222-2797
Last EDR Contact: 02/21/2018
Next Scheduled EDR Contact: 06/04/2018
Data Release Frequency: Annually

WI MANIFEST: Manifest Information
Hazardous waste manifest information.

Date of Government Version: 12/31/2016
Date Data Arrived at EDR: 04/13/2017
Date Made Active in Reports: 07/14/2017
Number of Days to Update: 92

Source: Department of Natural Resources
Telephone: N/A
Last EDR Contact: 03/08/2018
Next Scheduled EDR Contact: 06/25/2018
Data Release Frequency: Annually

Oil/Gas Pipelines
Source: PennWell Corporation
Petroleum Bundle (Crude Oil, Refined Products, Petrochemicals, Gas Liquids (LPG/NGL), and Specialty Gases (Miscellaneous)) N = Natural Gas Bundle (Natural Gas, Gas Liquids (LPG/NGL), and Specialty Gases (Miscellaneous)). This map includes information copyrighted by PennWell Corporation. This information is provided on a best effort basis and PennWell Corporation does not guarantee its accuracy nor warrant its fitness for any particular purpose. Such information has been reprinted with the permission of PennWell.

Electric Power Transmission Line Data
Source: PennWell Corporation
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Sensitive Receptors: There are individuals deemed sensitive receptors due to their fragile immune systems and special sensitivity to environmental discharges. These sensitive receptors typically include the elderly, the sick, and children. While the location of all sensitive receptors cannot be determined, EDR indicates those buildings and facilities - schools, daycares, hospitals, medical centers, and nursing homes - where individuals who are sensitive receptors are likely to be located.

AHA Hospitals:
Source: American Hospital Association, Inc.
Telephone: 312-280-5991
The database includes a listing of hospitals based on the American Hospital Association's annual survey of hospitals.

Medical Centers: Provider of Services Listing
Source: Centers for Medicare & Medicaid Services
Telephone: 410-786-3000
A listing of hospitals with Medicare provider number, produced by Centers of Medicare & Medicaid Services, a federal agency within the U.S. Department of Health and Human Services.

Nursing Homes
Source: National Institutes of Health
Telephone: 301-594-6248
Information on Medicare and Medicaid certified nursing homes in the United States.

Public Schools
Source: National Center for Education Statistics
Telephone: 202-502-7300
The National Center for Education Statistics' primary database on elementary and secondary public education in the United States. It is a comprehensive, annual, national statistical database of all public elementary and secondary schools and school districts, which contains data that are comparable across all states.

Private Schools
Source: National Center for Education Statistics
Telephone: 202-502-7300
The National Center for Education Statistics' primary database on private school locations in the United States.

Daycare Centers: Licensed Facilities
Source: Department of Social Services
Telephone: 916-657-4041

Flood Zone Data: This data was obtained from the Federal Emergency Management Agency (FEMA). It depicts 100-year and 500-year flood zones as defined by FEMA. It includes the National Flood Hazard Layer (NFHL) which incorporates Flood Insurance Rate Map (FIRM) data and Q3 data from FEMA in areas not covered by NFHL.
Source: FEMA
Telephone: 877-336-2627
Date of Government Version: 2003, 2015

NWI: National Wetlands Inventory. This data, available in select counties across the country, was obtained by EDR in 2002, 2005 and 2010 from the U.S. Fish and Wildlife Service.

State Wetlands Data: Wetland Inventory
Source: Department of Fish & Game
Telephone: 916-445-0411

STREET AND ADDRESS INFORMATION

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GEOCHECK ®- PHYSICAL SETTING SOURCE ADDENDUM

TARGET PROPERTY ADDRESS

ARAGORN-ATHOS PROJECT
RIVERSIDE COUNTY
DESERT CENTER, CA 92239

TARGET PROPERTY COORDINATES

Latitude (North):	33.763836 - 33˚ 45’ 49.81’’
Longitude (West):	115.343153 - 115˚ 20’ 35.35’’
Universal Tranverse Mercator:	Zone 11
UTM X (Meters):	653440.0
UTM Y (Meters):	3737010.5
Elevation:	560 ft. above sea level

USGS TOPOGRAPHIC MAP

Target Property Map:	5640284 EAST OF VICTORY PASS, CA
Version Date:	2012
South Map:	5640274 CORN SPRING, CA
Version Date:	2012
Southwest Map:	5641072 DESERT CENTER, CA
Version Date:	2012
Northwest Map:	5639800 VICTORY PASS, CA
Version Date:	2012

EDR’s GeoCheck Physical Setting Source Addendum is provided to assist the environmental professional in forming an opinion about the impact of potential contaminant migration.

Assessment of the impact of contaminant migration generally has two principal investigative components:

1. Groundwater flow direction, and
2. Groundwater flow velocity.

Groundwater flow direction may be impacted by surface topography, hydrology, hydrogeology, characteristics of the soil, and nearby wells. Groundwater flow velocity is generally impacted by the nature of the geologic strata.

GEOCHECK® - PHYSICAL SETTING SOURCE SUMMARY

GROUNDWATER FLOW DIRECTION INFORMATION

Groundwater flow direction for a particular site is best determined by a qualified environmental professional using site-specific well data. If such data is not reasonably ascertainable, it may be necessary to rely on other sources of information, such as surface topographic information, hydrologic information, hydrogeologic data collected on nearby properties, and regional groundwater flow information (from deep aquifers).

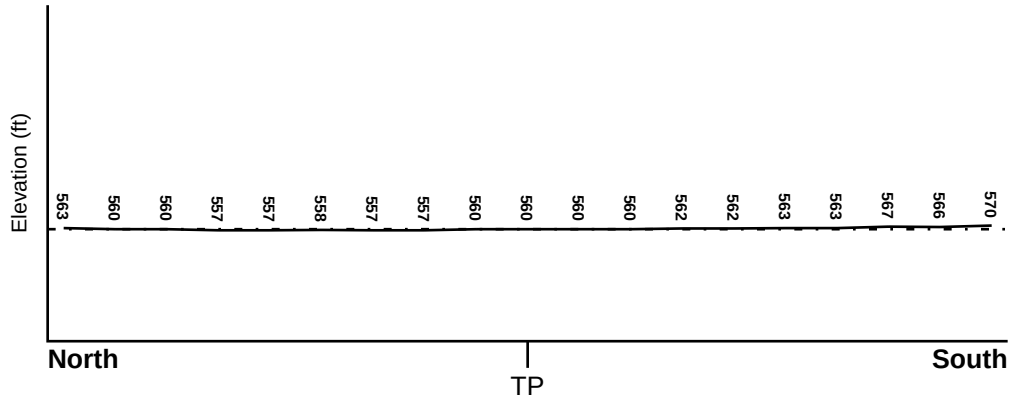
TOPOGRAPHIC INFORMATION

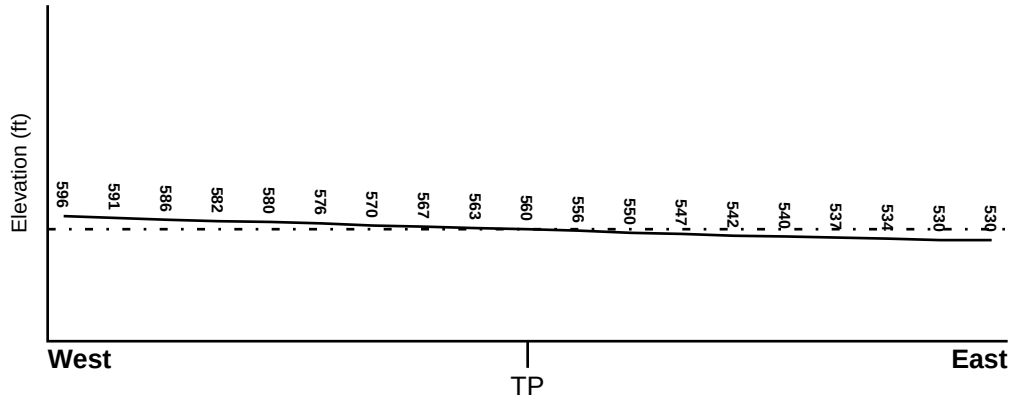
Surface topography may be indicative of the direction of surficial groundwater flow. This information can be used to assist the environmental professional in forming an opinion about the impact of nearby contaminated properties or, should contamination exist on the target property, what downgradient sites might be impacted.

TARGET PROPERTY TOPOGRAPHY

General Topographic Gradient: General East

SURROUNDING TOPOGRAPHY: ELEVATION PROFILES





Target Property Elevation: 560 ft.

0 1/2 1 Miles

Source: Topography has been determined from the USGS 7.5' Digital Elevation Model and should be evaluated on a relative (not an absolute) basis. Relative elevation information between sites of close proximity should be field verified.

GEOCHECK® - PHYSICAL SETTING SOURCE SUMMARY

HYDROLOGIC INFORMATION

Surface water can act as a hydrologic barrier to groundwater flow. Such hydrologic information can be used to assist the environmental professional in forming an opinion about the impact of nearby contaminated properties or, should contamination exist on the target property, what downgradient sites might be impacted.

Refer to the Physical Setting Source Map following this summary for hydrologic information (major waterways and bodies of water).

FEMA FLOOD ZONE

Flood Plain Panel at Target Property	FEMA Source Type
0602451825A	FEMA Q3 Flood data

Additional Panels in search area:	FEMA Source Type
0602451800A	FEMA Q3 Flood data
0602452475A	FEMA Q3 Flood data
0602452450A	FEMA Q3 Flood data

NATIONAL WETLAND INVENTORY

NWI Quad at Target Property	NWI Electronic Data Coverage
EAST OF VICTORY PASS	YES - refer to the Overview Map and Detail Map

HYDROGEOLOGIC INFORMATION

Hydrogeologic information obtained by installation of wells on a specific site can often be an indicator of groundwater flow direction in the immediate area. Such hydrogeologic information can be used to assist the environmental professional in forming an opinion about the impact of nearby contaminated properties or, should contamination exist on the target property, what downgradient sites might be impacted.

Site-Specific Hydrogeological Data*:

Search Radius:	1.25 miles
Status:	Not found

AQUIFLOW®

Search Radius: 1.000 Mile.

EDR has developed the AQUIFLOW Information System to provide data on the general direction of groundwater flow at specific points. EDR has reviewed reports submitted by environmental professionals to regulatory authorities at select sites and has extracted the date of the report, groundwater flow direction as determined hydrogeologically, and the depth to water table.

MAP ID	LOCATION FROM TP	GENERAL DIRECTION GROUNDWATER FLOW
Not Reported		

* ©1996 Site−specific hydrogeological data gathered by CERCLIS Alerts, Inc., Bainbridge Island, WA. All rights reserved. All of the information and opinions presented are those of the cited EPA report(s), which were completed under a Comprehensive Environmental Response Compensation and Liability Information System (CERCLIS) investigation.

GEOCHECK® - PHYSICAL SETTING SOURCE SUMMARY

GROUNDWATER FLOW VELOCITY INFORMATION

Groundwater flow velocity information for a particular site is best determined by a qualified environmental professional using site specific geologic and soil strata data. If such data are not reasonably ascertainable, it may be necessary to rely on other sources of information, including geologic age identification, rock stratigraphic unit and soil characteristics data collected on nearby properties and regional soil information. In general, contaminant plumes move more quickly through sandy-gravelly types of soils than silty-clayey types of soils.

GEOLOGIC INFORMATION IN GENERAL AREA OF TARGET PROPERTY

Geologic information can be used by the environmental professional in forming an opinion about the relative speed at which contaminant migration may be occurring.

ROCK STRATIGRAPHIC UNIT

Era:	Cenozoic
System:	Quaternary
Series:	Quaternary
Code:	Q *(decoded above as Era, System & Series)*

GEOLOGIC AGE IDENTIFICATION

Category: Stratifed Sequence

Geologic Age and Rock Stratigraphic Unit Source: P.G. Schruben, R.E. Arndt and W.J. Bawiec, Geology of the Conterminous U.S. at 1:2,500,000 Scale - a digital representation of the 1974 P.B. King and H.M. Beikman Map, USGS Digital Data Series DDS - 11 (1994).

DOMINANT SOIL COMPOSITION IN GENERAL AREA OF TARGET PROPERTY

The U.S. Department of Agriculture's (USDA) Soil Conservation Service (SCS) leads the National Cooperative Soil Survey (NCSS) and is responsible for collecting, storing, maintaining and distributing soil survey information for privately owned lands in the United States. A soil map in a soil survey is a representation of soil patterns in a landscape. Soil maps for STATSGO are compiled by generalizing more detailed (SSURGO) soil survey maps. The following information is based on Soil Conservation Service STATSGO data.

Soil Component Name:	CHERIONI
Soil Surface Texture:	very gravelly - sandy loam
Hydrologic Group:	Class D - Very slow infiltration rates. Soils are clayey, have a high water table, or are shallow to an impervious layer.
Soil Drainage Class:	Well drained. Soils have intermediate water holding capacity. Depth to water table is more than 6 feet.

Hydric Status: Soil does not meet the requirements for a hydric soil.

Corrosion Potential - Uncoated Steel:	HIGH
Depth to Bedrock Min:	> 6 inches
Depth to Bedrock Max:	> 20 inches

GEOCHECK® - PHYSICAL SETTING SOURCE SUMMARY

Soil Layer Information							
	Boundary			Classification			
Layer	Upper	Lower	Soil Texture Class	AASHTO Group	Unified Soil	Permeability Rate (in/hr)	Soil Reaction (pH)
1	0 inches	2 inches	very gravelly - sandy loam	Granular materials (35 pct. or less passing No. 200), Stone Fragments, Gravel and Sand.	COARSE-GRAINED SOILS, Sands, Sands with fines, Silty Sand.	Max: 2.00 Min: 0.60	Max: 8.40 Min: 7.90
2	2 inches	9 inches	very gravelly - very fine sandy loam	Granular materials (35 pct. or less passing No. 200), Stone Fragments, Gravel and Sand.	COARSE-GRAINED SOILS, Gravels, Gravels with fines, Silty Gravel	Max: 2.00 Min: 0.60	Max: 8.40 Min: 7.90
3	9 inches	11 inches	indurated	Not reported	Not reported	Max: 0.00 Min: 0.00	Max: 0.00 Min: 0.00
4	11 inches	20 inches	unweathered bedrock	Not reported	Not reported	Max: 0.00 Min: 0.00	Max: 0.00 Min: 0.00

OTHER SOIL TYPES IN AREA

Based on Soil Conservation Service STATSGO data, the following additional subordinant soil types may appear within the general area of target property.

Soil Surface Textures: extremely gravelly - sandy loam

Surficial Soil Types: extremely gravelly - sandy loam

Shallow Soil Types: cemented
extremely gravelly - sandy loam
very gravelly - sandy clay loam

Deeper Soil Types: stratified

LOCAL / REGIONAL WATER AGENCY RECORDS

EDR Local/Regional Water Agency records provide water well information to assist the environmental professional in assessing sources that may impact ground water flow direction, and in forming an opinion about the impact of contaminant migration on nearby drinking water wells.

GEOCHECK® - PHYSICAL SETTING SOURCE SUMMARY

WELL SEARCH DISTANCE INFORMATION

DATABASE	SEARCH DISTANCE (miles)
Federal USGS	4.000
Federal FRDS PWS	Nearest PWS within 3.000 miles
State Database	4.000

FEDERAL USGS WELL INFORMATION

MAP ID	WELL ID	LOCATION FROM TP
1	USGS40000128504	1/8 - 1/4 Mile NNW
A2	USGS40000128508	1/4 - 1/2 Mile NE
A3	USGS40000128510	1/4 - 1/2 Mile NE
5	USGS40000137888	1/2 - 1 Mile SSE
B7	USGS40000138113	1 - 2 Miles NNE
C8	USGS40000137835	1 - 2 Miles SW
D10	USGS40000137782	1 - 2 Miles SSW
D11	USGS40000128503	1 - 2 Miles SSW
13	USGS40000138195	2 - 3 Miles NE
14	USGS40000128502	2 - 3 Miles SW
15	USGS40000138290	2 - 3 Miles North

FEDERAL FRDS PUBLIC WATER SUPPLY SYSTEM INFORMATION

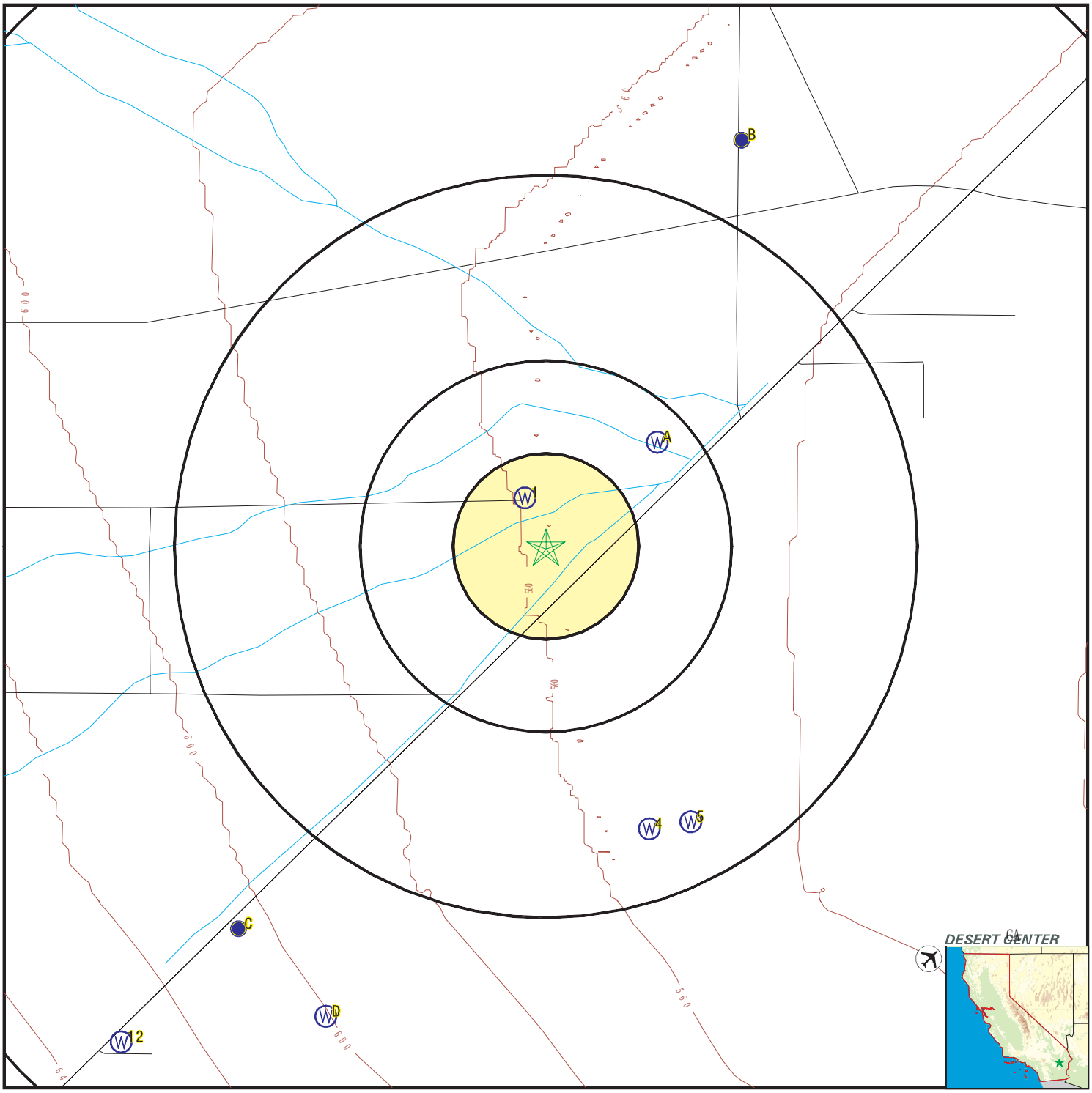
MAP ID	WELL ID	LOCATION FROM TP
No PWS System Found		

Note: PWS System location is not always the same as well location.

STATE DATABASE WELL INFORMATION

MAP ID	WELL ID	LOCATION FROM TP
4	6381	1/2 - 1 Mile SSE
B6	CADW60000001375	1 - 2 Miles NNE
C9	6380	1 - 2 Miles SW
12	6375	1 - 2 Miles SW
16	6376	3 - 4 Miles WSW

PHYSICAL SETTING SOURCE MAP - 5224815.2s



County Boundary
Major Roads
Contour Lines
Earthquake Fault Lines
Airports
Earthquake epicenter, Richter 5 or greater
Water Wells
Public Water Supply Wells
Cluster of Multiple Icons

0 1/4 1/2 1 Miles

Groundwater Flow Direction
GI Indeterminate Groundwater Flow at Location
GV Groundwater Flow Varies at Location
HD Closest Hydrogeological Data
Oil, gas or related wells

N

SITE NAME:	Aragorn-Athos Project	CLIENT:	Stantec
ADDRESS:	Riverside County Desert Center CA 92239	CONTACT:	Dion Monge
		INQUIRY #:	5224815.2s
LAT/LONG:	33.763836 / 115.343153	DATE:	March 19, 2018 5:47 pm

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Map ID Direction Distance Elevation	Database	EDR ID Number
1 **NNW** **1/8 - 1/4 Mile** **Higher**	**FED USGS**	**USGS40000128504**

Org. Identifier:	USGS-AZ		
Formal name:	USGS Arizona Water Science Center		
Monloc Identifier:	USGS-334557115203601		
Monloc name:	005S016E05M001S		
Monloc type:	Well		
Monloc desc:	24475 RICE ROAD		
Huc code:	18100100	Drainagearea value:	Not Reported
Drainagearea Units:	Not Reported	Contrib drainagearea:	Not Reported
Contrib drainagearea units:	Not Reported	Latitude:	33.765729
Longitude:	-115.3441312	Sourcemap scale:	24000
Horiz Acc measure:	.01	Horiz Acc measure units:	seconds
Horiz Collection method:	Differentially corrected Global Positioning System (DGPS)		
Horiz coord refsys:	NAD83	Vert measure val:	556.8
Vert measure units:	feet	Vertacc measure val:	0.1
Vert accmeasure units:	feet		
Vertcollection method:	Differential Global Positioning System (GPS)r		
Vert coord refsys:	NGVD29	Countrycode:	US
Aquifername:	Not Reported		
Formation type:	Not Reported		
Aquifer type:	Not Reported		
Construction date:	1915	Welldepth:	Not Reported
Welldepth units:	Not Reported	Wellholedepth:	Not Reported
Wellholedepth units:	Not Reported		

Ground-water levels, Number of Measurements: 1

Date	Feet below Surface	Feet to Sealevel
2000-10-17	90	

Note: Foreign substance was present on the surface of the water.

A2 **NE** **1/4 - 1/2 Mile** **Lower**	**FED USGS**	**USGS40000128508**

Org. Identifier:	USGS-AZ		
Formal name:	USGS Arizona Water Science Center		
Monloc Identifier:	USGS-334604115201401		
Monloc name:	005S016E05F002S		
Monloc type:	Well		
Monloc desc:	24475 RICE ROAD		
Huc code:	18100100	Drainagearea value:	Not Reported
Drainagearea Units:	Not Reported	Contrib drainagearea:	Not Reported
Contrib drainagearea units:	Not Reported	Latitude:	33.7678734
Longitude:	-115.3380088	Sourcemap scale:	24000
Horiz Acc measure:	.01	Horiz Acc measure units:	seconds
Horiz Collection method:	Differentially corrected Global Positioning System (DGPS)		
Horiz coord refsys:	NAD83	Vert measure val:	544.8
Vert measure units:	feet	Vertacc measure val:	0.1
Vert accmeasure units:	feet		
Vertcollection method:	Differential Global Positioning System (GPS)r		
Vert coord refsys:	NGVD29	Countrycode:	US
Aquifername:	Not Reported		
Formation type:	Not Reported		

Aquifer type:	Not Reported		
Construction date:	19990609	Welldepth:	250
Welldepth units:	ft	Wellholedepth:	250
Wellholedepth units:	ft		

Ground-water levels, Number of Measurements: 3

Date	Feet below Surface	Feet to Sealevel	Date	Feet below Surface	Feet to Sealevel
2000-10-17	79.62				
Note: The site had been pumped recently.					
2000-10-17	79.62				
Note: The site had been pumped recently.					
1999-06-10	81				

A3
NE
1/4 - 1/2 Mile
Lower

FED USGS **USGS40000128510**

Org. Identifier:	USGS-AZ		
Formal name:	USGS Arizona Water Science Center		
Monloc Identifier:	USGS-334605115201301		
Monloc name:	005S016E05F001S		
Monloc type:	Well		
Monloc desc:	24475 RICE ROAD		
Huc code:	18100100	Drainagearea value:	Not Reported
Drainagearea Units:	Not Reported	Contrib drainagearea:	Not Reported
Contrib drainagearea units:	Not Reported	Latitude:	33.7679373
Longitude:	-115.3378755	Sourcemap scale:	24000
Horiz Acc measure:	.01	Horiz Acc measure units:	seconds
Horiz Collection method:	Differentially corrected Global Positioning System (DGPS)		
Horiz coord refsys:	NAD83	Vert measure val:	543.5
Vert measure units:	feet	Vertacc measure val:	0.1
Vert accmeasure units:	feet		
Vertcollection method:	Differential Global Positioning System (GPS)r		
Vert coord refsys:	NGVD29	Countrycode:	US
Aquifername:	Not Reported		
Formation type:	Not Reported		
Aquifer type:	Not Reported		
Construction date:	Not Reported	Welldepth:	Not Reported
Welldepth units:	Not Reported	Wellholedepth:	Not Reported
Wellholedepth units:	Not Reported		

Ground-water levels, Number of Measurements: 1

Date	Feet below Surface	Feet to Sealevel
2000-10-17	79.38	

4
SSE
1/2 - 1 Mile
Lower

CA WELLS **6381**

Water System Information:

Prime Station Code:	05S/16E-08F01 S	User ID:	33C
FRDS Number:	3301554001	County:	Riverside
District Number:	63	Station Type:	WELL/AMBNT/MUN/INTAKE
Water Type:	Well/Groundwater	Well Status:	Active Raw
Source Lat/Long:	334510.0 1152015.0	Precision:	0.5 Mile (30 Seconds)
Source Name:	WELL 01		
System Number:	3301554		
System Name:	RIVERSIDE COUNTY DESERT CENTER AIRPORT		
Organization That Operates System:	Not Reported		
Pop Served:	Unknown, Small System	Connections:	Unknown, Small System
Area Served:	Not Reported		

5
SSE **FED USGS** **USGS40000137888**
1/2 - 1 Mile
Lower

Org. Identifier:	USGS-CA		
Formal name:	USGS California Water Science Center		
Monloc Identifier:	USGS-334511115200801		
Monloc name:	005S016E08F001S		
Monloc type:	Well		
Monloc desc:	Not Reported		
Huc code:	Not Reported	Drainagearea value:	Not Reported
Drainagearea Units:	Not Reported	Contrib drainagearea:	Not Reported
Contrib drainagearea units:	Not Reported	Latitude:	33.7530739
Longitude:	-115.3363698	Sourcemap scale:	62500
Horiz Acc measure:	5	Horiz Acc measure units:	seconds
Horiz Collection method:	Interpolated from map		
Horiz coord refsys:	NAD83	Vert measure val:	555
Vert measure units:	feet	Vertacc measure val:	25
Vert accmeasure units:	feet		
Vertcollection method:	Interpolated from topographic map		
Vert coord refsys:	NGVD29	Countrycode:	US
Aquifername:	Basin and Range basin-fill aquifers		
Formation type:	Not Reported		
Aquifer type:	Not Reported		
Construction date:	Not Reported	Welldepth:	212
Welldepth units:	ft	Wellholedepth:	Not Reported
Wellholedepth units:	Not Reported		

Ground-water levels, Number of Measurements: 0

B6
NNE **CA WELLS** **CADW60000001375**
1 - 2 Miles
Lower

Objectid:	1375
Latitude:	33.7797
Longitude:	-115.3344
Site code:	337797N1153344W001
State well numbe:	04S16E32M001S
Local well name:	”
Well use id:	6
Well use descrip:	Unknown
County id:	33
County name:	Riverside

Basin code:	'7-5'
Basin desc:	Chuckwalla Valley
Dwr region id:	80238
Dwr region:	Southern Region Office
Site id:	CADW60000001375

B7
NNE **FED USGS** **USGS40000138113**
1 - 2 Miles
Lower

Org. Identifier:	USGS-CA		
Formal name:	USGS California Water Science Center		
Monloc Identifier:	USGS-334647115195801		
Monloc name:	004S016E32M001S		
Monloc type:	Well		
Monloc desc:	Not Reported		
Huc code:	18100100	Drainagearea value:	Not Reported
Drainagearea Units:	Not Reported	Contrib drainagearea:	Not Reported
Contrib drainagearea units:	Not Reported	Latitude:	33.7797398
Longitude:	-115.333592	Sourcemap scale:	62500
Horiz Acc measure:	1	Horiz Acc measure units:	seconds
Horiz Collection method:	Interpolated from map		
Horiz coord refsys:	NAD83	Vert measure val:	548.00
Vert measure units:	feet	Vertacc measure val:	1
Vert accmeasure units:	feet		
Vertcollection method:	Interpolated from topographic map		
Vert coord refsys:	NGVD29	Countrycode:	US
Aquifername:	Basin and Range basin-fill aquifers		
Formation type:	Not Reported		
Aquifer type:	Not Reported		
Construction date:	19580515	Welldepth:	555
Welldepth units:	ft	Wellholedepth:	Not Reported
Wellholedepth units:	Not Reported		

Ground-water levels, Number of Measurements: 20

Date	Feet below Surface	Feet to Sealevel	Date	Feet below Surface	Feet to Sealevel
1985-02-27	120.80		1984-07-31	121.88	
1983-01-27	90.29		1982-04-15	82.01	
1981-10-01	86.90		1981-01-23	74.16	
1980-07-24	72.87		1979-04-19	66.95	
1970-05-01	77.25		1962-11-01	77.17	
1962-09-27	79.57		1962-08-24	79.95	
1962-05-07	73.82		1962-04-09	72.45	
1962-03-08	70.29		1962-02-07	69.32	
1961-06-14	73.46				
Note: The site had been pumped recently.					
1961-06-10	71.43		1961-04-21	71.61	
1961-04-10	71.41				

C8
SW **FED USGS** **USGS40000137835**
1 - 2 Miles
Higher

Org. Identifier:	USGS-CA		
Formal name:	USGS California Water Science Center		
Monloc Identifier:	USGS-334452115212801		
Monloc name:	005S016E07M001S		
Monloc type:	Well		
Monloc desc:	Not Reported		
Huc code:	18100100	Drainagearea value:	Not Reported
Drainagearea Units:	Not Reported	Contrib drainagearea:	Not Reported
Contrib drainagearea units:	Not Reported	Latitude:	33.749171
Longitude:	-115.3573315	Sourcemap scale:	24000
Horiz Acc measure:	.01	Horiz Acc measure units:	seconds
Horiz Collection method:	Differentially corrected Global Positioning System (DGPS)		
Horiz coord refsys:	NAD83	Vert measure val:	603.7
Vert measure units:	feet	Vertacc measure val:	0.1
Vert accmeasure units:	feet		
Vertcollection method:	Differential Global Positioning System (GPS)r		
Vert coord refsys:	NGVD29	Countrycode:	US
Aquifername:	Basin and Range basin-fill aquifers		
Formation type:	Not Reported		
Aquifer type:	Not Reported		
Construction date:	1958	Welldepth:	648
Welldepth units:	ft	Wellholedepth:	648
Wellholedepth units:	ft		

Ground-water levels, Number of Measurements: 25

Date	Feet below Surface	Feet to Sealevel	Date	Feet below Surface	Feet to Sealevel
2001-09-18					
Note: An obstruction was encountered in the well above the water surface (no water level recorded).					
1994-04-20	179.16		1993-09-16	182.34	
1993-04-21	183.00		1992-09-23	188.42	
1992-03-18	189.85		1992-02-18	189.10	
1991-10-03	194.37				
1970-04-29	128.13				
Note: Foreign substance was present on the surface of the water.					
1962-11-01	139.70				
Note: The site was being pumped.					
1962-08-24					
Note: The site was being pumped.					
1961-11-08	126.70		1961-10-09	124.90	
1961-10-09	124.93		1961-10-08	124.10	
1961-10-07	124.14		1961-08-06	126.93	
1961-06-19	129.19		1961-06-15	128.09	
1961-06-14	125.52		1961-06-13	127.20	
1961-06-11	126.84		1961-06-10	125.11	
1961-04-20	125.61				
Note: The site had been pumped recently.					
1961-04-09	121.14				

C9
SW
1 - 2 Miles
Higher

CA WELLS **6380**

Water System Information:

Prime Station Code:	05S/16E-07M04 S	User ID:	33C
FRDS Number:	3301857001	County:	Riverside
District Number:	63	Station Type:	WELL/AMBNT/MUN/INTAKE
Water Type:	Well/Groundwater	Well Status:	Active Raw
Source Lat/Long:	334455.0 1152125.0	Precision:	0.5 Mile (30 Seconds)
Source Name:	WELL 01		
System Number:	3301857		
System Name:	WATERHOLE		
Organization That Operates System:	Not Reported		
Pop Served:	Unknown, Small System	Connections:	Unknown, Small System
Area Served:	Not Reported		

D10
SSW **FED USGS** **USGS40000137782**
1 - 2 Miles
Higher

Org. Identifier:	USGS-CA		
Formal name:	USGS California Water Science Center		
Monloc Identifier:	USGS-334438115211101		
Monloc name:	005S016E07P001S		
Monloc type:	Well		
Monloc desc:	Not Reported		
Huc code:	18100100	Drainagearea value:	Not Reported
Drainagearea Units:	Not Reported	Contrib drainagearea:	Not Reported
Contrib drainagearea units:	Not Reported	Latitude:	33.745574
Longitude:	-115.3533147	Sourcemap scale:	24000
Horiz Acc measure:	1	Horiz Acc measure units:	seconds
Horiz Collection method:	Interpolated from map		
Horiz coord refsys:	NAD83	Vert measure val:	598.
Vert measure units:	feet	Vertacc measure val:	1
Vert accmeasure units:	feet		
Vertcollection method:	Interpolated from topographic map		
Vert coord refsys:	NGVD29	Countrycode:	US
Aquifername:	Basin and Range basin-fill aquifers		
Formation type:	Not Reported		
Aquifer type:	Not Reported		
Construction date:	19520919	Welldepth:	347
Welldepth units:	ft	Wellholedepth:	347
Wellholedepth units:	ft		

Ground-water levels, Number of Measurements: 7

Date	Feet below Surface	Feet to Sealevel	Date	Feet below Surface	Feet to Sealevel
1992-02-18	188.38				
1991-10-04					
Note: The measurement was discontinued.					
1991-10-03					
Note: An obstruction was encountered in the well above the water surface (no water level recorded).					
1991-03-14	199.29		1990-10-23	207.83	
1990-06-26	212.86		1952-09-19	108	

Map ID Direction Distance Elevation	Database	EDR ID Number
D11 **SSW** **1 - 2 Miles** **Higher**	**FED USGS**	**USGS40000128503**

Org. Identifier:	USGS-AZ		
Formal name:	USGS Arizona Water Science Center		
Monloc Identifier:	USGS-334444115210902		
Monloc name:	005S016E07P002S		
Monloc type:	Well		
Monloc desc:	Not Reported		
Huc code:	18100100	Drainagearea value:	Not Reported
Drainagearea Units:	Not Reported	Contrib drainagearea:	Not Reported
Contrib drainagearea units:	Not Reported	Latitude:	33.7453656
Longitude:	-115.3535703	Sourcemap scale:	24000
Horiz Acc measure:	.01	Horiz Acc measure units:	seconds
Horiz Collection method:	Differentially corrected Global Positioning System (DGPS)		
Horiz coord refsys:	NAD83	Vert measure val:	598.4
Vert measure units:	feet	Vertacc measure val:	0.1
Vert accmeasure units:	feet		
Vertcollection method:	Differential Global Positioning System (GPS)r		
Vert coord refsys:	NGVD29	Countrycode:	US
Aquifername:	Not Reported		
Formation type:	Not Reported		
Aquifer type:	Not Reported		
Construction date:	19850919	Welldepth:	767
Welldepth units:	ft	Wellholedepth:	767
Wellholedepth units:	ft		

Ground-water levels, Number of Measurements: 1

Date	Feet below Surface	Feet to Sealevel
2000-10-18	136.82	

---

12 **SW** **1 - 2 Miles** **Higher**	**CA WELLS**	**6375**

Water System Information:

Prime Station Code:	05S/15E-12R01 S	User ID:	33C
FRDS Number:	3301293001	County:	Riverside
District Number:	63	Station Type:	WELL/AMBNT/MUN/INTAKE
Water Type:	Well/Groundwater	Well Status:	Active Raw
Source Lat/Long:	334440.0 1152144.0	Precision:	1,000 Feet (10 Seconds)
Source Name:	WELL 01		
System Number:	3301293		
System Name:	GREEN ACRES MOBILE PARK		
Organization That Operates System:	Not Reported		
Pop Served:	Unknown, Small System	Connections:	Unknown, Small System
Area Served:	Not Reported		

Sample Collected:	05-JAN-12	Findings:	33. MG/L
Chemical:	NITRATE (AS NO3)		
Sample Collected:	05-APR-12	Findings:	25. MG/L
Chemical:	NITRATE (AS NO3)		
Sample Collected:	08-JAN-15	Findings:	21. MG/L
Chemical:	NITRATE (AS NO3)		
Sample Collected:	02-APR-15	Findings:	21. MG/L
Chemical:	NITRATE (AS NO3)		
Sample Collected:	09-JUL-15	Findings:	20. MG/L
Chemical:	NITRATE (AS NO3)		
Sample Collected:	01-OCT-15	Findings:	23. MG/L
Chemical:	NITRATE (AS NO3)		

13
NE **FED USGS** **USGS40000138195**
2 - 3 Miles
Lower

Org. Identifier:	USGS-CA		
Formal name:	USGS California Water Science Center		
Monloc Identifier:	USGS-334725115191001		
Monloc name:	004S016E29R001S		
Monloc type:	Well		
Monloc desc:	Not Reported		
Huc code:	Not Reported	Drainagearea value:	Not Reported
Drainagearea Units:	Not Reported	Contrib drainagearea:	Not Reported
Contrib drainagearea units:	Not Reported	Latitude:	33.7902952
Longitude:	-115.3202862	Sourcemap scale:	62500
Horiz Acc measure:	5	Horiz Acc measure units:	seconds
Horiz Collection method:	Interpolated from map		
Horiz coord refsys:	NAD83	Vert measure val:	540
Vert measure units:	feet	Vertacc measure val:	25
Vert accmeasure units:	feet		
Vertcollection method:	Interpolated from topographic map		
Vert coord refsys:	NGVD29	Countrycode:	US
Aquifername:	Basin and Range basin-fill aquifers		
Formation type:	Not Reported		
Aquifer type:	Not Reported		
Construction date:	Not Reported	Welldepth:	109.7
Welldepth units:	ft	Wellholedepth:	Not Reported
Wellholedepth units:	Not Reported		

Ground-water levels, Number of Measurements: 0

14
SW **FED USGS** **USGS40000128502**
2 - 3 Miles
Higher

Org. Identifier:	USGS-AZ		
Formal name:	USGS Arizona Water Science Center		
Monloc Identifier:	USGS-334437115223601		
Monloc name:	005S015E12N001S		
Monloc type:	Well		
Monloc desc:	Not Reported		
Huc code:	18100100	Drainagearea value:	Not Reported
Drainagearea Units:	Not Reported	Contrib drainagearea:	Not Reported
Contrib drainagearea units:	Not Reported	Latitude:	33.7440238
Longitude:	-115.3781377	Sourcemap scale:	24000

Horiz Acc measure:	.01	Horiz Acc measure units:	seconds
Horiz Collection method:	Differentially corrected Global Positioning System (DGPS)		
Horiz coord refsys:	NAD83	Vert measure val:	670.9
Vert measure units:	feet	Vertacc measure val:	0.1
Vert accmeasure units:	feet		
Vertcollection method:	Differential Global Positioning System (GPS)r		
Vert coord refsys:	NGVD29	Countrycode:	US
Aquifername:	Not Reported		
Formation type:	Not Reported		
Aquifer type:	Not Reported		
Construction date:	196104	Welldepth:	746
Welldepth units:	ft	Wellholedepth:	746
Wellholedepth units:	ft		

Ground-water levels, Number of Measurements: 6

Date	Feet below Surface	Feet to Sealevel	Date	Feet below Surface	Feet to Sealevel
2000-03-31	182.51		1992-03-26	189.90	
1992-03-24					
Note: The site was being pumped.					
1970-05-01	171.82		1967-06-20	171.80	
1961-04-28	173.07				

15
North **FED USGS** **USGS40000138290**
2 - 3 Miles
Higher

Org. Identifier:	USGS-CA		
Formal name:	USGS California Water Science Center		
Monloc Identifier:	USGS-334803115200201		
Monloc name:	004S016E30D001S		
Monloc type:	Well		
Monloc desc:	Not Reported		
Huc code:	Not Reported	Drainagearea value:	Not Reported
Drainagearea Units:	Not Reported	Contrib drainagearea:	Not Reported
Contrib drainagearea units:	Not Reported	Latitude:	33.8008503
Longitude:	-115.3347034	Sourcemap scale:	62500
Horiz Acc measure:	5	Horiz Acc measure units:	seconds
Horiz Collection method:	Interpolated from map		
Horiz coord refsys:	NAD83	Vert measure val:	603
Vert measure units:	feet	Vertacc measure val:	25
Vert accmeasure units:	feet		
Vertcollection method:	Interpolated from topographic map		
Vert coord refsys:	NGVD29	Countrycode:	US
Aquifername:	Basin and Range basin-fill aquifers		
Formation type:	Not Reported		
Aquifer type:	Not Reported		
Construction date:	Not Reported	Welldepth:	610
Welldepth units:	ft	Wellholedepth:	Not Reported
Wellholedepth units:	Not Reported		

Ground-water levels, Number of Measurements: 0

16
WSW **CA WELLS** **6376**
3 - 4 Miles
Higher

GEOCHECK® - PHYSICAL SETTING SOURCE MAP FINDINGS

Water System Information:

Prime Station Code:	05S/15E-14D01 S	User ID:	33C
FRDS Number:	3309999001	County:	Riverside
District Number:	63	Station Type:	WELL/AMBNT/MUN/INTAKE
Water Type:	Well/Groundwater	Well Status:	Active Raw
Source Lat/Long:	334430.0 1152350.0	Precision:	1,000 Feet (10 Seconds)
Source Name:	WELL 04		
System Number:	3309999		
System Name:	RIVERSIDE CO SERVICE AREA #51-LAKE TAMAR		
Organization That Operates System:			
	Not Reported		
Pop Served:	Unknown, Small System	Connections:	Unknown, Small System
Area Served:	Not Reported		

GEOCHECK® - PHYSICAL SETTING SOURCE MAP FINDINGS
RADON

AREA RADON INFORMATION

State Database: CA Radon

Radon Test Results

Zipcode	Num Tests	> 4 pCi/L
92239	1	0

Federal EPA Radon Zone for RIVERSIDE County: 2

Note: Zone 1 indoor average level > 4 pCi/L.
: Zone 2 indoor average level >= 2 pCi/L and <= 4 pCi/L.
: Zone 3 indoor average level < 2 pCi/L.

Federal Area Radon Information for RIVERSIDE COUNTY, CA

Number of sites tested: 12

Area	Average Activity	% <4 pCi/L	% 4-20 pCi/L	% >20 pCi/L
Living Area - 1st Floor	0.117 pCi/L	100%	0%	0%
Living Area - 2nd Floor	0.450 pCi/L	100%	0%	0%
Basement	1.700 pCi/L	100%	0%	0%

PHYSICAL SETTING SOURCE RECORDS SEARCHED

TOPOGRAPHIC INFORMATION

USGS 7.5' Digital Elevation Model (DEM)
Source: United States Geologic Survey
EDR acquired the USGS 7.5' Digital Elevation Model in 2002 and updated it in 2006. The 7.5 minute DEM corresponds to the USGS 1:24,000- and 1:25,000-scale topographic quadrangle maps. The DEM provides elevation data with consistent elevation units and projection.

HYDROLOGIC INFORMATION

Flood Zone Data: This data was obtained from the Federal Emergency Management Agency (FEMA). It depicts 100-year and 500-year flood zones as defined by FEMA. It includes the National Flood Hazard Layer (NFHL) which incorporates Flood Insurance Rate Map (FIRM) data and Q3 data from FEMA in areas not covered by NFHL.
Source: FEMA
Telephone: 877-336-2627
Date of Government Version: 2003, 2015

NWI: National Wetlands Inventory. This data, available in select counties across the country, was obtained by EDR in 2002, 2005 and 2010 from the U.S. Fish and Wildlife Service.

State Wetlands Data: Wetland Inventory
Source: Department of Fish & Game
Telephone: 916-445-0411

HYDROGEOLOGIC INFORMATION

AQUIFLOW^{R} Information System
Source: EDR proprietary database of groundwater flow information
EDR has developed the AQUIFLOW Information System (AIS) to provide data on the general direction of groundwater flow at specific points. EDR has reviewed reports submitted to regulatory authorities at select sites and has extracted the date of the report, hydrogeologically determined groundwater flow direction and depth to water table information.

GEOLOGIC INFORMATION

Geologic Age and Rock Stratigraphic Unit
Source: P.G. Schruben, R.E. Arndt and W.J. Bawiec, Geology of the Conterminous U.S. at 1:2,500,000 Scale - A digital representation of the 1974 P.B. King and H.M. Beikman Map, USGS Digital Data Series DDS - 11 (1994).

STATSGO: State Soil Geographic Database
Source: Department of Agriculture, Natural Resources Conservation Service (NRCS)
The U.S. Department of Agriculture's (USDA) Natural Resources Conservation Service (NRCS) leads the national Conservation Soil Survey (NCSS) and is responsible for collecting, storing, maintaining and distributing soil survey information for privately owned lands in the United States. A soil map in a soil survey is a representation of soil patterns in a landscape. Soil maps for STATSGO are compiled by generalizing more detailed (SSURGO) soil survey maps.

SSURGO: Soil Survey Geographic Database
Source: Department of Agriculture, Natural Resources Conservation Service (NRCS)
Telephone: 800-672-5559
SSURGO is the most detailed level of mapping done by the Natural Resources Conservation Service, mapping scales generally range from 1:12,000 to 1:63,360. Field mapping methods using national standards are used to construct the soil maps in the Soil Survey Geographic (SSURGO) database. SSURGO digitizing duplicates the original soil survey maps. This level of mapping is designed for use by landowners, townships and county natural resource planning and management.

PHYSICAL SETTING SOURCE RECORDS SEARCHED

LOCAL / REGIONAL WATER AGENCY RECORDS

FEDERAL WATER WELLS

PWS: Public Water Systems
Source: EPA/Office of Drinking Water
Telephone: 202-564-3750
Public Water System data from the Federal Reporting Data System. A PWS is any water system which provides water to at least 25 people for at least 60 days annually. PWSs provide water from wells, rivers and other sources.

PWS ENF: Public Water Systems Violation and Enforcement Data
Source: EPA/Office of Drinking Water
Telephone: 202-564-3750
Violation and Enforcement data for Public Water Systems from the Safe Drinking Water Information System (SDWIS) after August 1995. Prior to August 1995, the data came from the Federal Reporting Data System (FRDS).

USGS Water Wells: USGS National Water Inventory System (NWIS)
This database contains descriptive information on sites where the USGS collects or has collected data on surface water and/or groundwater. The groundwater data includes information on wells, springs, and other sources of groundwater.

STATE RECORDS

Water Well Database
Source: Department of Water Resources
Telephone: 916-651-9648

California Drinking Water Quality Database
Source: Department of Public Health
Telephone: 916-324-2319
The database includes all drinking water compliance and special studies monitoring for the state of California since 1984. It consists of over 3,200,000 individual analyses along with well and water system information.

OTHER STATE DATABASE INFORMATION

California Oil and Gas Well Locations
Source: Department of Conservation
Telephone: 916-323-1779
Oil and Gas well locations in the state.

RADON

State Database: CA Radon
Source: Department of Health Services
Telephone: 916-324-2208
Radon Database for California

Area Radon Information
Source: USGS
Telephone: 703-356-4020
The National Radon Database has been developed by the U.S. Environmental Protection Agency (USEPA) and is a compilation of the EPA/State Residential Radon Survey and the National Residential Radon Survey. The study covers the years 1986 - 1992. Where necessary data has been supplemented by information collected at private sources such as universities and research institutions.

EPA Radon Zones
Source: EPA
Telephone: 703-356-4020
Sections 307 & 309 of IRAA directed EPA to list and identify areas of U.S. with the potential for elevated indoor radon levels.

PHYSICAL SETTING SOURCE RECORDS SEARCHED

OTHER

Airport Landing Facilities: Private and public use landing facilities
Source: Federal Aviation Administration, 800-457-6656

Epicenters: World earthquake epicenters, Richter 5 or greater
Source: Department of Commerce, National Oceanic and Atmospheric Administration

California Earthquake Fault Lines: The fault lines displayed on EDR's Topographic map are digitized quaternary fault lines, prepared in 1975 by the United State Geological Survey. Additional information (also from 1975) regarding activity at specific fault lines comes from California's Preliminary Fault Activity Map prepared by the California Division of Mines and Geology.

STREET AND ADDRESS INFORMATION

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Aragorn-Athos Project
Riverside County
Desert Center, CA 92239

Inquiry Number: 5224824.5s
March 21, 2018

The EDR Radius Atlas™ with GeoCheck®

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Please contact EDR at 1-800-352-0050
with any questions or comments.

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EXECUTIVE SUMMARY

A search of available environmental records was conducted by Environmental Data Resources, Inc (EDR). The report was designed to assist parties seeking to meet the search requirements of EPA's Standards and Practices for All Appropriate Inquiries (40 CFR Part 312), the ASTM Standard Practice for Environmental Site Assessments (E 1527-13), the ASTM Standard Practice for Environmental Site Assessments for Forestland or Rural Property (E 2247-16), the ASTM Standard Practice for Limited Environmental Due Diligence: Transaction Screen Process (E 1528-14) or custom requirements developed for the evaluation of environmental risk associated with a parcel of real estate.

TARGET PROPERTY INFORMATION

ADDRESS

RIVERSIDE COUNTY
DESERT CENTER, CA 92239

COORDINATES

Latitude (North):	33.7218940 - 33˚ 43' 18.81''
Longitude (West):	115.2772460 - 115˚ 16' 38.08''
Universal Tranverse Mercator:	Zone 11
UTM X (Meters):	659622.1
UTM Y (Meters):	3732459.8
Elevation:	581 ft. above sea level

USGS TOPOGRAPHIC MAP ASSOCIATED WITH TARGET PROPERTY

Target Property Map:	5640274 CORN SPRING, CA
Version Date:	2012
North Map:	5640284 EAST OF VICTORY PASS, CA
Version Date:	2012
Northeast Map:	5639776 PALEN LAKE, CA
Version Date:	2012
Southeast Map:	5641100 SIDEWINDER WELL, CA
Version Date:	2012

TARGET PROPERTY SEARCH RESULTS

The target property was not listed in any of the databases searched by EDR.

DATABASES WITH NO MAPPED SITES

No mapped sites were found in EDR's search of available ("reasonably ascertainable ") government records either on the target property or within the search radius around the target property for the following databases:

STANDARD ENVIRONMENTAL RECORDS

Federal NPL site list

NPL---------- National Priority List

EXECUTIVE SUMMARY

Proposed NPL ..... Proposed National Priority List Sites
NPL LIENS ..... Federal Superfund Liens

Federal Delisted NPL site list

Delisted NPL ..... National Priority List Deletions

Federal CERCLIS list

FEDERAL FACILITY ..... Federal Facility Site Information listing
SEMS ..... Superfund Enterprise Management System

Federal CERCLIS NFRAP site list

SEMS-ARCHIVE ..... Superfund Enterprise Management System Archive

Federal RCRA CORRACTS facilities list

CORRACTS ..... Corrective Action Report

Federal RCRA non-CORRACTS TSD facilities list

RCRA-TSDF ..... RCRA - Treatment, Storage and Disposal

Federal RCRA generators list

RCRA-LQG ..... RCRA - Large Quantity Generators
RCRA-SQG ..... RCRA - Small Quantity Generators
RCRA-CESQG ..... RCRA - Conditionally Exempt Small Quantity Generator

Federal institutional controls / engineering controls registries

LUCIS ..... Land Use Control Information System
US ENG CONTROLS ..... Engineering Controls Sites List
US INST CONTROL ..... Sites with Institutional Controls

Federal ERNS list

ERNS ..... Emergency Response Notification System

State- and tribal - equivalent NPL

RESPONSE ..... State Response Sites

State- and tribal - equivalent CERCLIS

ENVIROSTOR ..... EnviroStor Database

State and tribal landfill and/or solid waste disposal site lists

SWF/LF ..... Solid Waste Information System

State and tribal leaking storage tank lists

LUST ..... Geotracker's Leaking Underground Fuel Tank Report

INDIAN LUST ..... Leaking Underground Storage Tanks on Indian Land
SLIC ..... Statewide SLIC Cases

State and tribal registered storage tank lists

FEMA UST ..... Underground Storage Tank Listing
UST ..... Active UST Facilities
AST ..... Aboveground Petroleum Storage Tank Facilities
INDIAN UST ..... Underground Storage Tanks on Indian Land

State and tribal voluntary cleanup sites

INDIAN VCP ..... Voluntary Cleanup Priority Listing
VCP ..... Voluntary Cleanup Program Properties

State and tribal Brownfields sites

BROWNFIELDS ..... Considered Brownfieds Sites Listing

ADDITIONAL ENVIRONMENTAL RECORDS

Local Brownfield lists

US BROWNFIELDS ..... A Listing of Brownfields Sites

Local Lists of Landfill / Solid Waste Disposal Sites

WMUDS/SWAT ..... Waste Management Unit Database
SWRCY ..... Recycler Database
HAULERS ..... Registered Waste Tire Haulers Listing
INDIAN ODI ..... Report on the Status of Open Dumps on Indian Lands
DEBRIS REGION 9 ..... Torres Martinez Reservation Illegal Dump Site Locations
ODI ..... Open Dump Inventory
IHS OPEN DUMPS ..... Open Dumps on Indian Land

Local Lists of Hazardous waste / Contaminated Sites

US HIST CDL ..... Delisted National Clandestine Laboratory Register
HIST Cal-Sites ..... Historical Calsites Database
SCH ..... School Property Evaluation Program
CDL ..... Clandestine Drug Labs
Toxic Pits ..... Toxic Pits Cleanup Act Sites
US CDL ..... National Clandestine Laboratory Register

Local Lists of Registered Storage Tanks

SWEEPS UST ..... SWEEPS UST Listing
HIST UST ..... Hazardous Substance Storage Container Database
CA FID UST ..... Facility Inventory Database

Local Land Records

LIENS ..... Environmental Liens Listing
LIENS 2 ..... CERCLA Lien Information

DEED	Deed Restriction Listing

Records of Emergency Release Reports

HMIRS	Hazardous Materials Information Reporting System
CHMIRS	California Hazardous Material Incident Report System
LDS	Land Disposal Sites Listing
MCS	Military Cleanup Sites Listing
SPILLS 90	SPILLS 90 data from FirstSearch

Other Ascertainable Records

RCRA NonGen / NLR	RCRA - Non Generators / No Longer Regulated
DOD	Department of Defense Sites
SCRD DRYCLEANERS	State Coalition for Remediation of Drycleaners Listing
US FIN ASSUR	Financial Assurance Information
EPA WATCH LIST	EPA WATCH LIST
2020 COR ACTION	2020 Corrective Action Program List
TSCA	Toxic Substances Control Act
TRIS	Toxic Chemical Release Inventory System
SSTS	Section 7 Tracking Systems
ROD	Records Of Decision
RMP	Risk Management Plans
RAATS	RCRA Administrative Action Tracking System
PRP	Potentially Responsible Parties
PADS	PCB Activity Database System
ICIS	Integrated Compliance Information System
FTTS	FIFRA/ TSCA Tracking System - FIFRA (Federal Insecticide, Fungicide, & Rodenticide Act)/TSCA (Toxic Substances Control Act)
MLTS	Material Licensing Tracking System
COAL ASH DOE	Steam-Electric Plant Operation Data
COAL ASH EPA	Coal Combustion Residues Surface Impoundments List
PCB TRANSFORMER	PCB Transformer Registration Database
RADINFO	Radiation Information Database
HIST FTTS	FIFRA/TSCA Tracking System Administrative Case Listing
DOT OPS	Incident and Accident Data
CONSENT	Superfund (CERCLA) Consent Decrees
INDIAN RESERV	Indian Reservations
FUSRAP	Formerly Utilized Sites Remedial Action Program
UMTRA	Uranium Mill Tailings Sites
LEAD SMELTERS	Lead Smelter Sites
US AIRS	Aerometric Information Retrieval System Facility Subsystem
US MINES	Mines Master Index File
ABANDONED MINES	Abandoned Mines
FINDS	Facility Index System/Facility Registry System
UXO	Unexploded Ordnance Sites
ECHO	Enforcement & Compliance History Information
DOCKET HWC	Hazardous Waste Compliance Docket Listing
FUELS PROGRAM	EPA Fuels Program Registered Listing
CA BOND EXP. PLAN	Bond Expenditure Plan
Cortese	"Cortese" Hazardous Waste & Substances Sites List
CUPA Listings	CUPA Resources List
DRYCLEANERS	Cleaner Facilities
EMI	Emissions Inventory Data
ENF	Enforcement Action Listing

EXECUTIVE SUMMARY

Financial Assurance..... Financial Assurance Information Listing
HAZNET..... Facility and Manifest Data
ICE..... ICE
HIST CORTESE..... Hazardous Waste & Substance Site List
HWP..... EnviroStor Permitted Facilities Listing
HWT..... Registered Hazardous Waste Transporter Database
MINES..... Mines Site Location Listing
MWMP..... Medical Waste Management Program Listing
NPDES..... NPDES Permits Listing
PEST LIC..... Pesticide Regulation Licenses Listing
PROC..... Certified Processors Database
Notify 65..... Proposition 65 Records
UIC..... UIC Listing
WASTEWATER PITS..... Oil Wastewater Pits Listing
WDS..... Waste Discharge System
WIP..... Well Investigation Program Case List

EDR HIGH RISK HISTORICAL RECORDS

EDR Exclusive Records

EDR MGP..... EDR Proprietary Manufactured Gas Plants
EDR Hist Auto..... EDR Exclusive Historical Auto Stations
EDR Hist Cleaner..... EDR Exclusive Historical Cleaners

EDR RECOVERED GOVERNMENT ARCHIVES

Exclusive Recovered Govt. Archives

RGA LF..... Recovered Government Archive Solid Waste Facilities List
RGA LUST..... Recovered Government Archive Leaking Underground Storage Tank

SURROUNDING SITES: SEARCH RESULTS

Surrounding sites were identified in the following databases.

Elevations have been determined from the USGS Digital Elevation Model and should be evaluated on a relative (not an absolute) basis. Relative elevation information between sites of close proximity should be field verified. Sites with an elevation equal to or higher than the target property have been differentiated below from sites with an elevation lower than the target property.
Page numbers and map identification numbers refer to the EDR Radius Map report where detailed data on individual sites can be reviewed.

Sites listed in ***bold italics*** are in multiple databases.

Unmappable (orphan) sites are not considered in the foregoing analysis.

ADDITIONAL ENVIRONMENTAL RECORDS

Other Ascertainable Records

FUDS: The Listing includes locations of Formerly Used Defense Sites Properties where the US Army Corps Of Engineers is actively working or will take necessary cleanup actions.

A review of the FUDS list, as provided by EDR, and dated 01/31/2015 has revealed that there is 1 FUDS

site within approximately 4 miles of the target property.

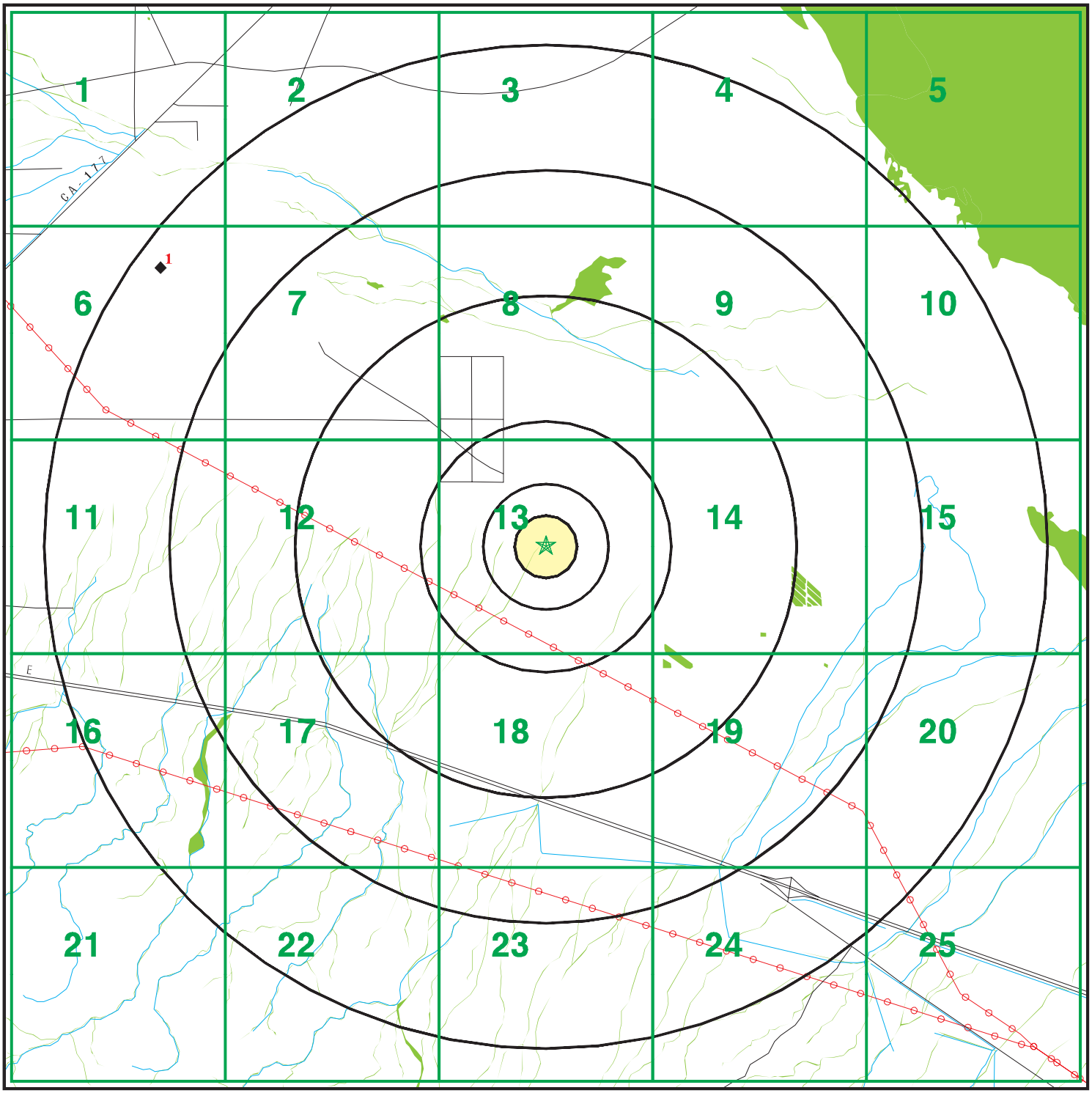
Lower Elevation	Address	Direction / Distance	Map ID	Page
DESERT CNTR ARPT		NW >2 (3.791 mi.)	1	32

EXECUTIVE SUMMARY

Due to poor or inadequate address information, the following sites were not mapped. Count: 25 records.

Site Name	Database(s)
CALTRANS DESERT CENTER	RGA LUST
CALTRANS-DESERT CENTER	RGA LUST
CALTRANS-DESERT CENTER	RGA LUST
CALTRANS DESERT CENTER MAIN.	RGA LUST
CALTRANS-DESERT CENTER	RGA LUST
CRA SAND TRAP REPLACEMENT EAGLE MO	CHMIRS, ENF, NPDES
ST HWY 111 NE PALM SPRINGS	NPDES
	CDL
	CDL
PAR ELECTRIC CONTRACTORS	CHMIRS, HAZNET
RCIT - ROAD 62 #44	AST
SO. CALIF. GAS CO. - DESERT CENTER	AST
SOUTHERN CALIFORNIA GAS CO	HAZNET
CALTRANS D-8/CONSTR/EA08-0K6304	HAZNET
LONG BEACH CONTAINER TTRANSPORT, I	HAZNET
COVENANT TRANSPORTATION	HAZNET
MARQUEZ TRUCKING	HAZNET
HERTZ EQUIPMENT RENTAL CORPORATION	HAZNET
SWIFT TRANSPORTATION CORPORATION	HAZNET
PETERS PROPERTY	HAZNET
PALEN SOLAR POWER PROJECT	FINDS
RICE SOLAR ENERGY PROJECT	FINDS
PACIFIC CLAY PRODS CO	US MINES
METRO WATER DIST OF SO CAL	EMI
KAISER EAGLE MOUNTAIN	DOCKET HWC

OVERVIEW MAP - 5224824.5S



- Target Property
- Sites at elevations higher than or equal to the target property
- Sites at elevations lower than the target property
- Manufactured Gas Plants
- National Priority List Sites
- Dept. Defense Sites

0 1 2 4 Miles

- Indian Reservations BIA
- Power transmission lines
- 100-year flood zone
- 500-year flood zone
- National Wetland Inventory
- State Wetlands
- Upgradient Area
- Areas of Concern

N

SITE NAME: Aragorn-Athos Project	CLIENT: Stantec
ADDRESS: Riverside County Desert Center CA 92239	CONTACT: Dion Monge
	INQUIRY #: 5224824.5s
LAT/LONG: 33.721894 / 115.277246	DATE: March 21, 2018 8:20 am

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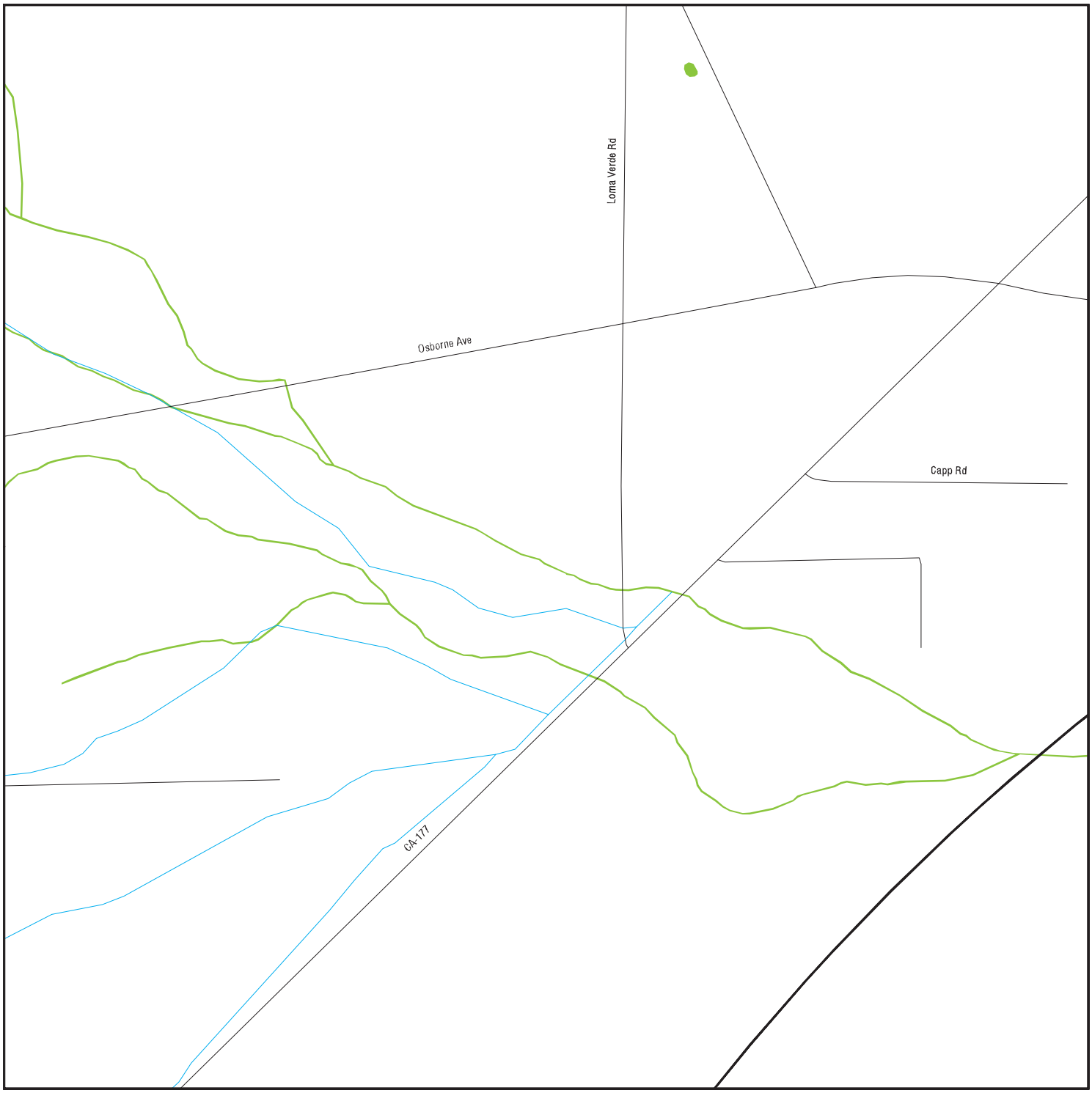
DETAIL MAP 1 OF 25 - 5224824.5S



- Target Property
- Sites at elevations higher than or equal to the target property
- Sites at elevations lower than the target property
- Manufactured Gas Plants
- Sensitive Receptors
- National Priority List Sites
- Dept. Defense Sites

0 1/8 1/4 1/2 Miles

- Indian Reservations BIA
- 100-year flood zone
- 500-year flood zone
- National Wetland Inventory
- State Wetlands
- Areas of Concern

N

SITE NAME: Aragorn-Athos Project ADDRESS: Riverside County Desert Center CA 92239 LAT/LONG: 33.721894 / 115.277246	CLIENT: Stantec CONTACT: Dion Monge INQUIRY #: 5224824.5s DATE: March 21, 2018 8:21 am

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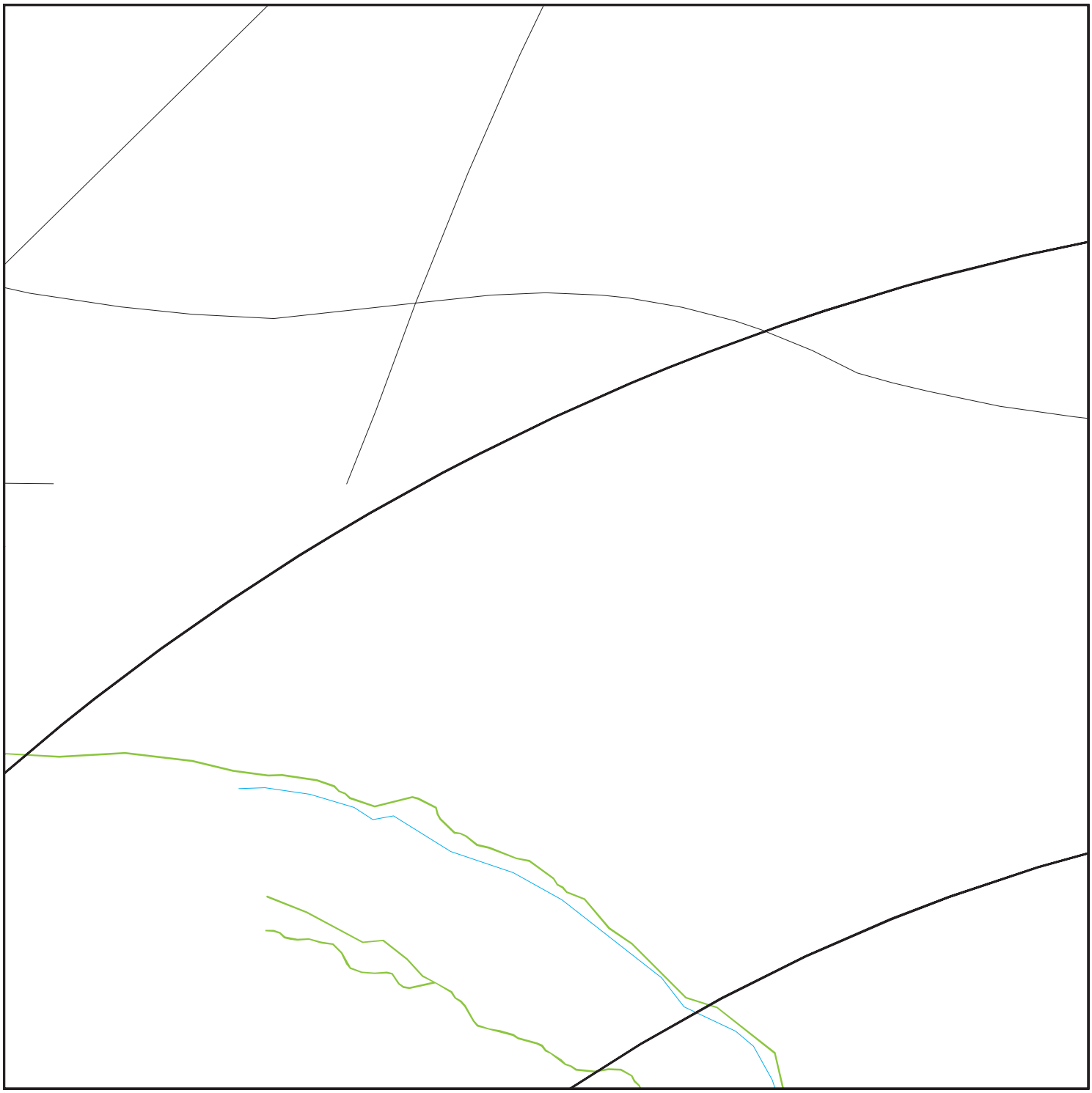
DETAIL MAP 2 OF 25 - 5224824.5S



Target Property

Sites at elevations higher than or equal to the target property

Sites at elevations lower than the target property

Manufactured Gas Plants

Sensitive Receptors

National Priority List Sites

Dept. Defense Sites

0 1/8 1/4 1/2 Miles

Indian Reservations BIA

100-year flood zone

500-year flood zone

National Wetland Inventory

State Wetlands

Areas of Concern

N

SITE NAME: Aragorn-Athos Project ADDRESS: Riverside County Desert Center CA 92239 LAT/LONG: 33.721894 / 115.277246	CLIENT: Stantec CONTACT: Dion Monge INQUIRY #: 5224824.5s DATE: March 21, 2018 8:22 am

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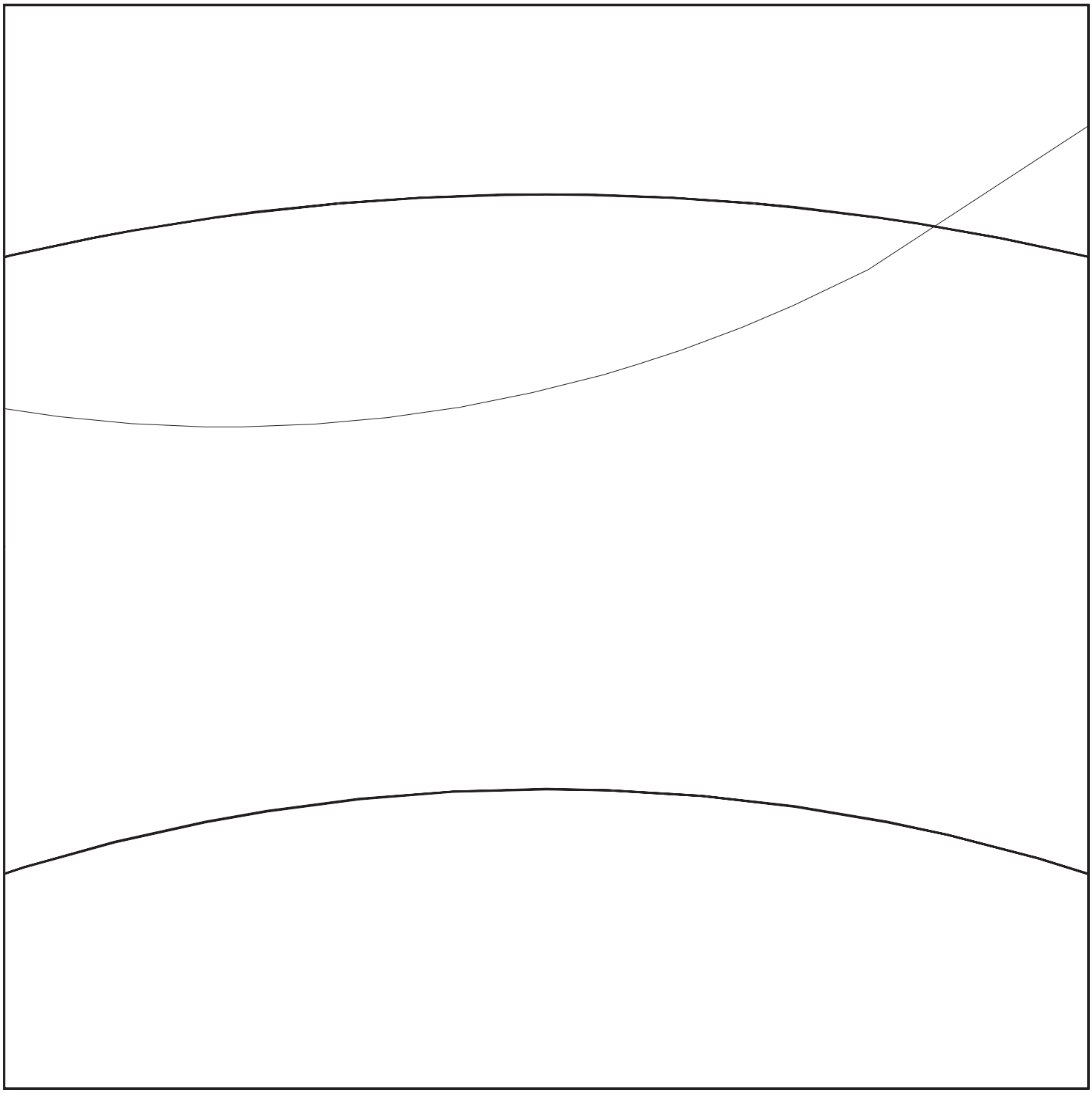
DETAIL MAP 3 OF 25 - 5224824.5S



Target Property

Sites at elevations higher than or equal to the target property

Sites at elevations lower than the target property

Manufactured Gas Plants

Sensitive Receptors

National Priority List Sites

Dept. Defense Sites

0 1/8 1/4 1/2 Miles

Indian Reservations BIA

100-year flood zone

500-year flood zone

Areas of Concern

SITE NAME:	Aragorn-Athos Project	CLIENT:	Stantec
ADDRESS:	Riverside County Desert Center CA 92239	CONTACT:	Dion Monge
		INQUIRY #:	5224824.5s
LAT/LONG:	33.721894 / 115.277246	DATE:	March 21, 2018 8:22 am

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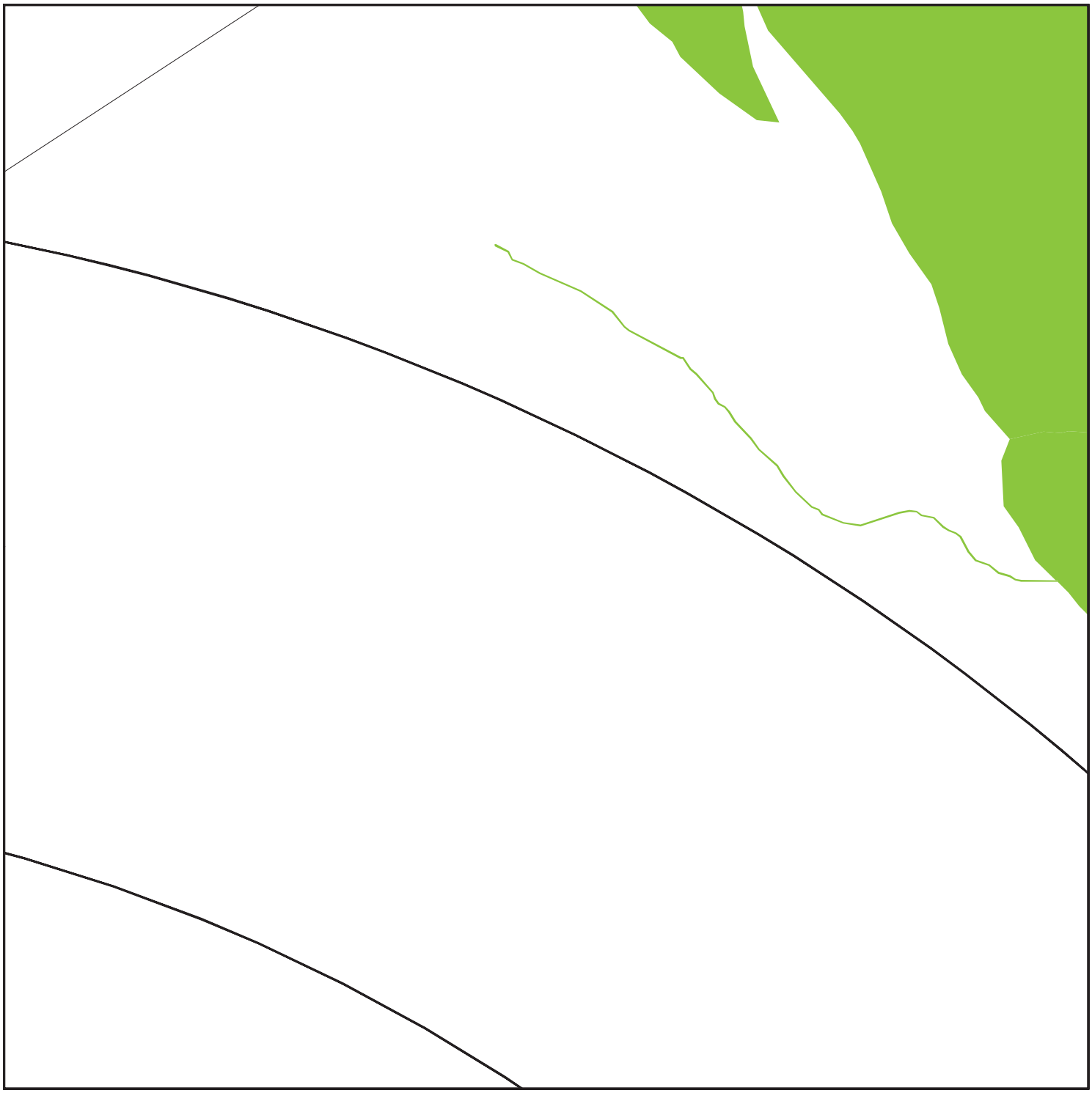
DETAIL MAP 4 OF 25 - 5224824.5S



Target Property

Sites at elevations higher than or equal to the target property

Sites at elevations lower than the target property

Manufactured Gas Plants

Sensitive Receptors

National Priority List Sites

Dept. Defense Sites

0 1/8 1/4 1/2 Miles

Indian Reservations BIA

100-year flood zone

500-year flood zone

National Wetland Inventory

State Wetlands

Areas of Concern

N

SITE NAME: Aragorn-Athos Project ADDRESS: Riverside County Desert Center CA 92239 LAT/LONG: 33.721894 / 115.277246	CLIENT: Stantec CONTACT: Dion Monge INQUIRY #: 5224824.5s DATE: March 21, 2018 8:23 am

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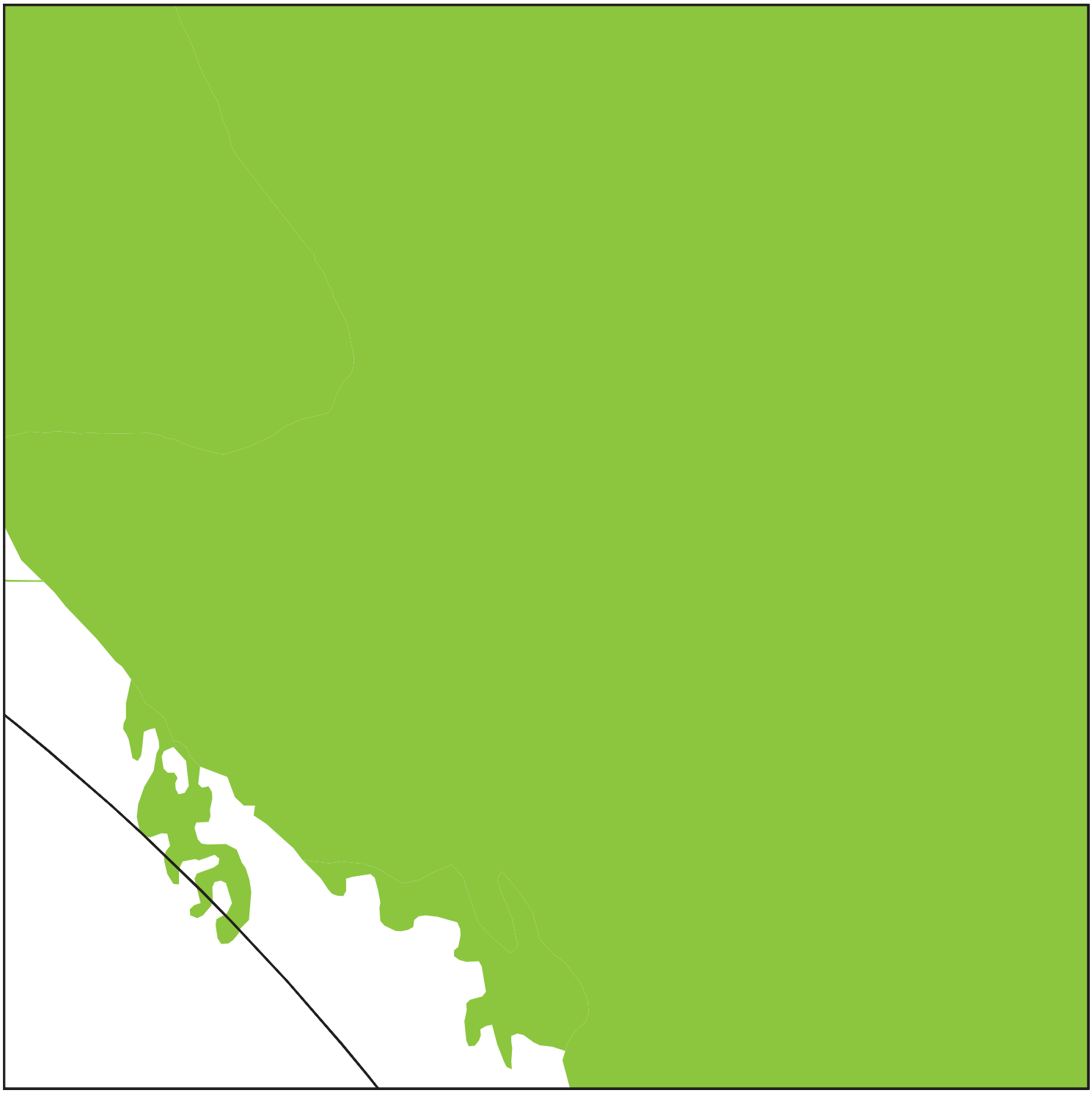
DETAIL MAP 5 OF 25 - 5224824.5S



Target Property

Sites at elevations higher than or equal to the target property

Sites at elevations lower than the target property

Manufactured Gas Plants

Sensitive Receptors

National Priority List Sites

Dept. Defense Sites

0 1/8 1/4 1/2 Miles

Indian Reservations BIA

100-year flood zone

500-year flood zone

National Wetland Inventory

State Wetlands

Areas of Concern

N

SITE NAME:	Aragorn-Athos Project	CLIENT:	Stantec
ADDRESS:	Riverside County Desert Center CA 92239	CONTACT:	Dion Monge
		INQUIRY #:	5224824.5s
LAT/LONG:	33.721894 / 115.277246	DATE:	March 21, 2018 8:23 am

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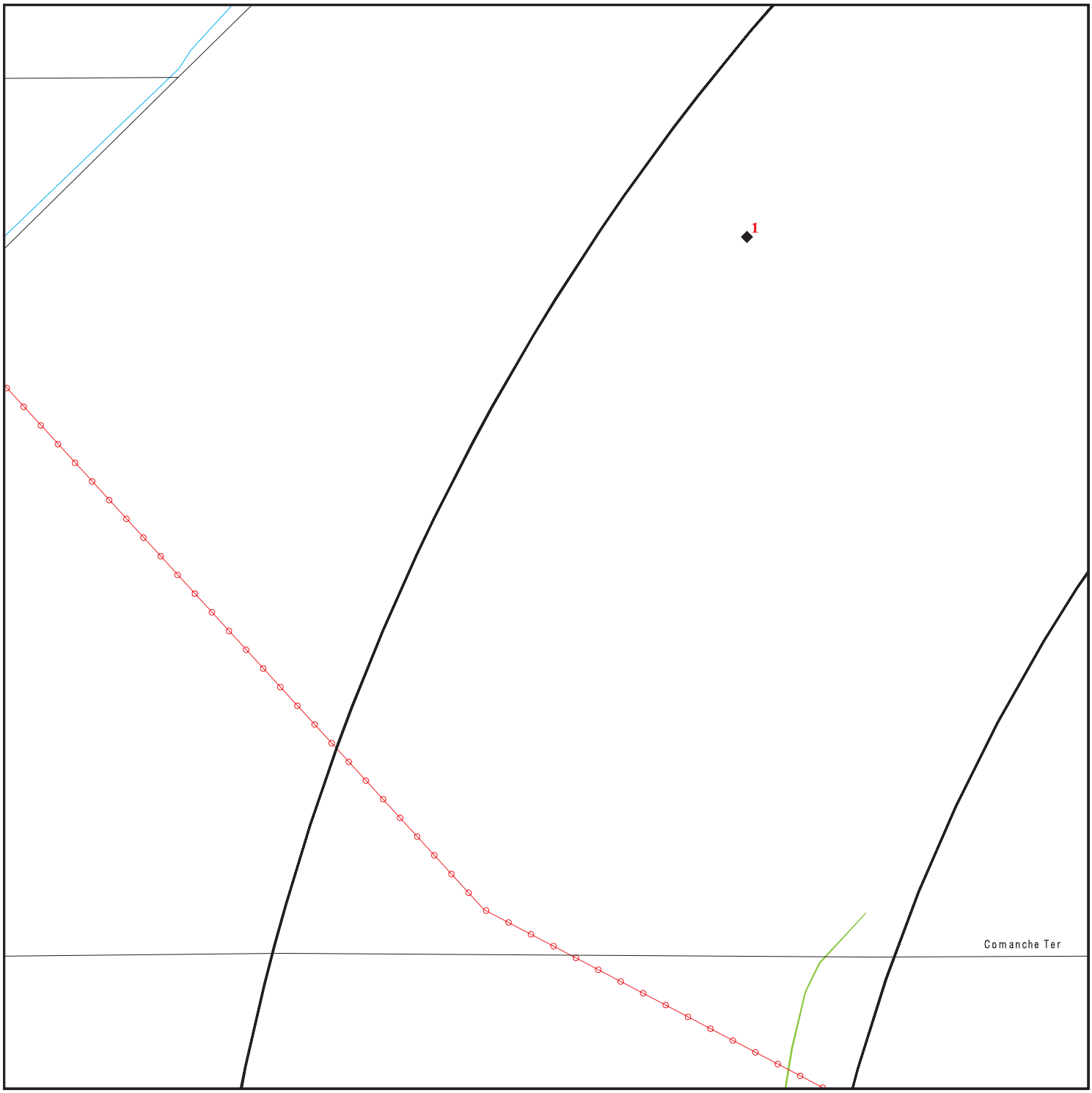
DETAIL MAP 6 OF 25 - 5224824.5S



- Target Property
- Sites at elevations higher than or equal to the target property
- Sites at elevations lower than the target property
- Manufactured Gas Plants
- Sensitive Receptors
- National Priority List Sites
- Dept. Defense Sites

0 1/8 1/4 1/2 Miles

- Indian Reservations BIA
- Power transmission lines
- 100-year flood zone
- 500-year flood zone
- National Wetland Inventory
- State Wetlands
- Areas of Concern

N

SITE NAME:	Aragorn-Athos Project	CLIENT:	Stantec
ADDRESS:	Riverside County Desert Center CA 92239	CONTACT:	Dion Monge
		INQUIRY #:	5224824.5s
LAT/LONG:	33.721894 / 115.277246	DATE:	March 21, 2018 8:24 am

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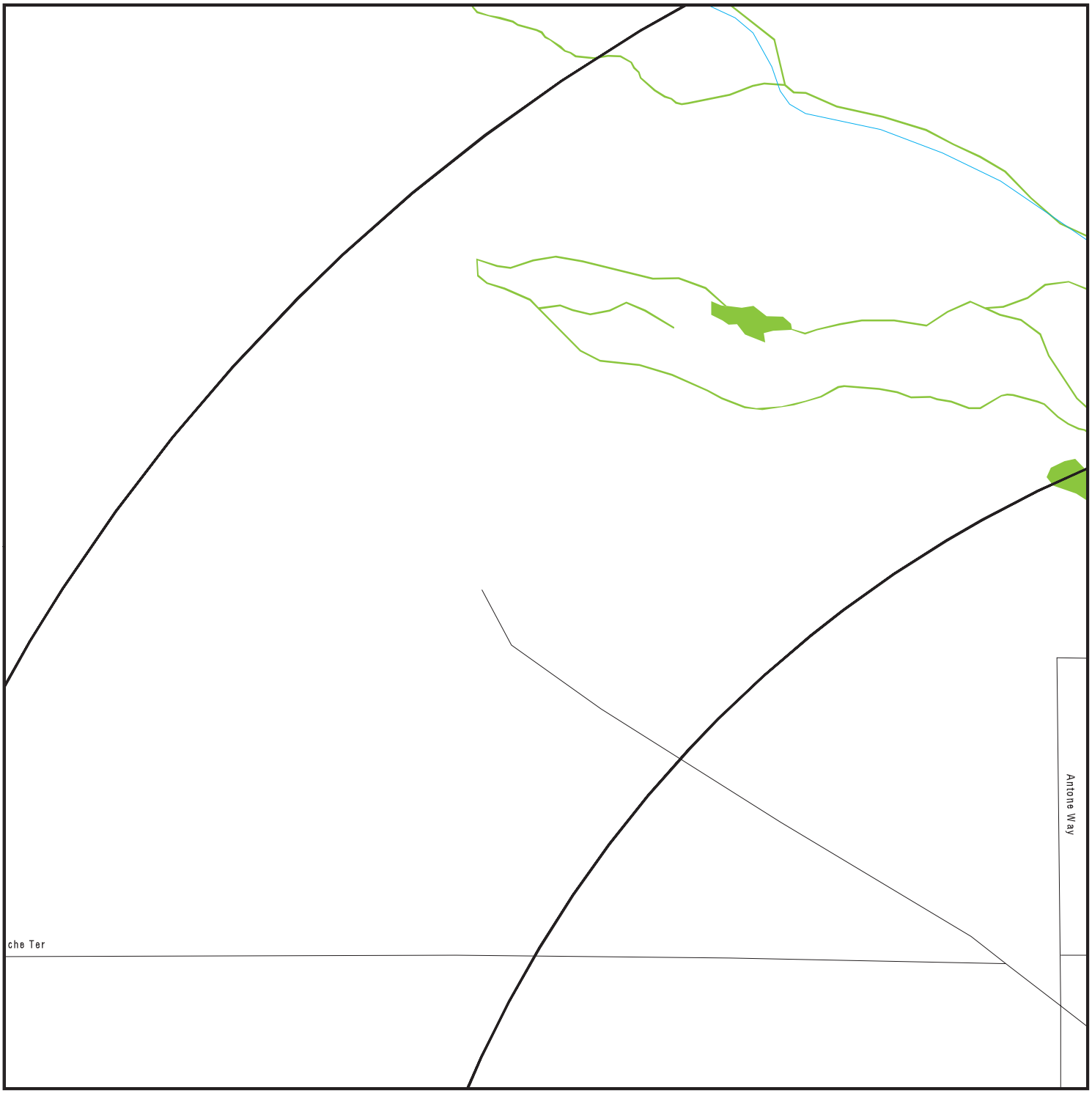
DETAIL MAP 7 OF 25 - 5224824.5S



- Target Property
- Sites at elevations higher than or equal to the target property
- Sites at elevations lower than the target property
- Manufactured Gas Plants
- Sensitive Receptors
- National Priority List Sites
- Dept. Defense Sites

0 1/8 1/4 1/2 Miles

- Indian Reservations BIA
- 100-year flood zone
- 500-year flood zone
- National Wetland Inventory
- State Wetlands
- Areas of Concern

N

SITE NAME: Aragorn-Athos Project ADDRESS: Riverside County Desert Center CA 92239 LAT/LONG: 33.721894 / 115.277246	CLIENT: Stantec CONTACT: Dion Monge INQUIRY #: 5224824.5s DATE: March 21, 2018 8:25 am

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DETAIL MAP 8 OF 25 - 5224824.5S

- Target Property
- Sites at elevations higher than or equal to the target property
- Sites at elevations lower than the target property
- Manufactured Gas Plants
- Sensitive Receptors
- National Priority List Sites
- Dept. Defense Sites

0 1/8 1/4 1/2 Miles

- Indian Reservations BIA
- 100-year flood zone
- 500-year flood zone
- National Wetland Inventory
- State Wetlands
- Areas of Concern

N

SITE NAME: Aragorn-Athos Project	CLIENT: Stantec
ADDRESS: Riverside County Desert Center CA 92239	CONTACT: Dion Monge INQUIRY #: 5224824.5s
LAT/LONG: 33.721894 / 115.277246	DATE: March 21, 2018 8:25 am

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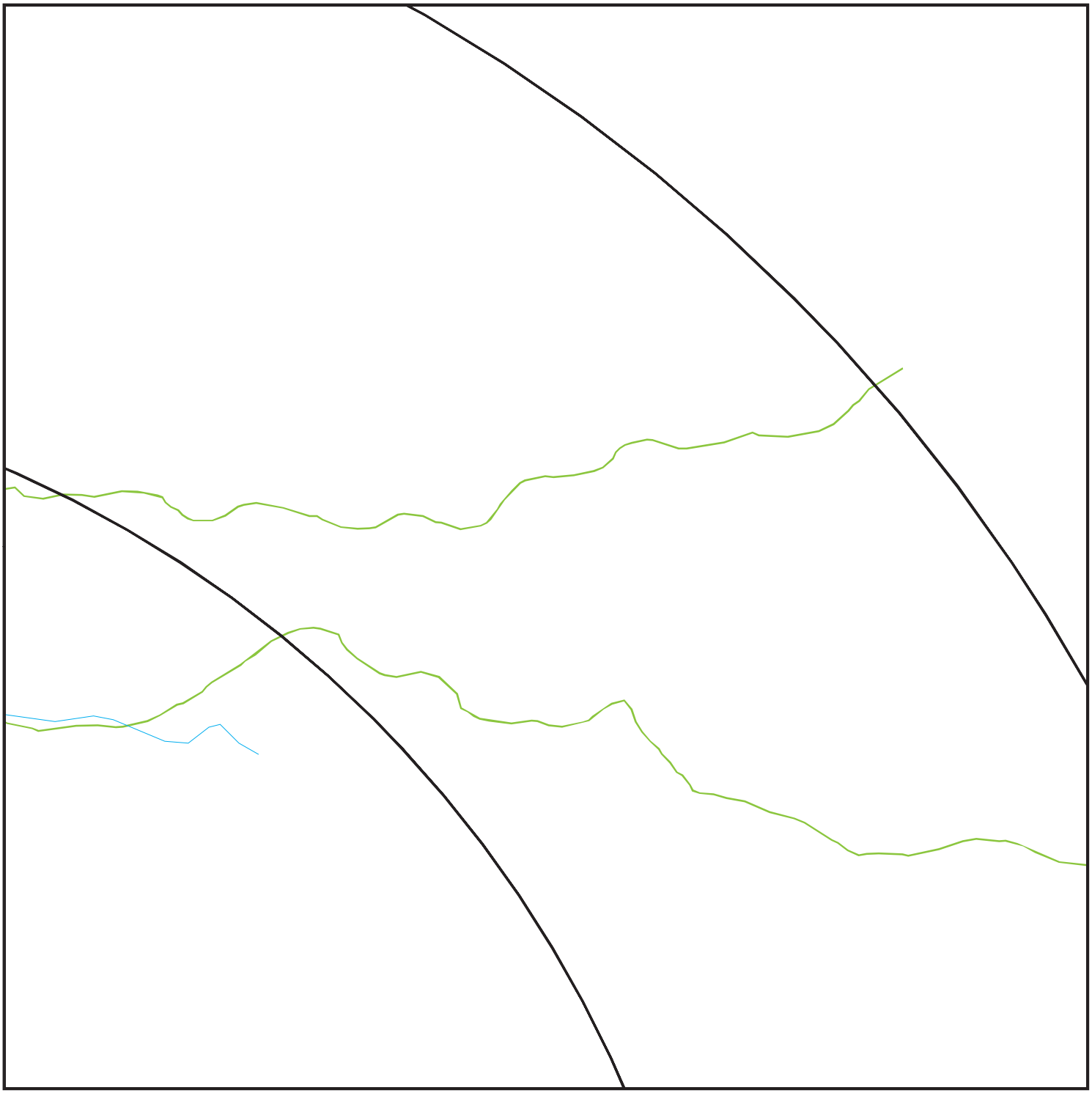
DETAIL MAP 9 OF 25 - 5224824.5S



Target Property

Sites at elevations higher than or equal to the target property

Sites at elevations lower than the target property

Manufactured Gas Plants

Sensitive Receptors

National Priority List Sites

Dept. Defense Sites

0 1/8 1/4 1/2 Miles

Indian Reservations BIA

100-year flood zone

500-year flood zone

National Wetland Inventory

State Wetlands

Areas of Concern

N

SITE NAME:	Aragorn-Athos Project	CLIENT:	Stantec
ADDRESS:	Riverside County Desert Center CA 92239	CONTACT:	Dion Monge
		INQUIRY #:	5224824.5s
LAT/LONG:	33.721894 / 115.277246	DATE:	March 21, 2018 8:26 am

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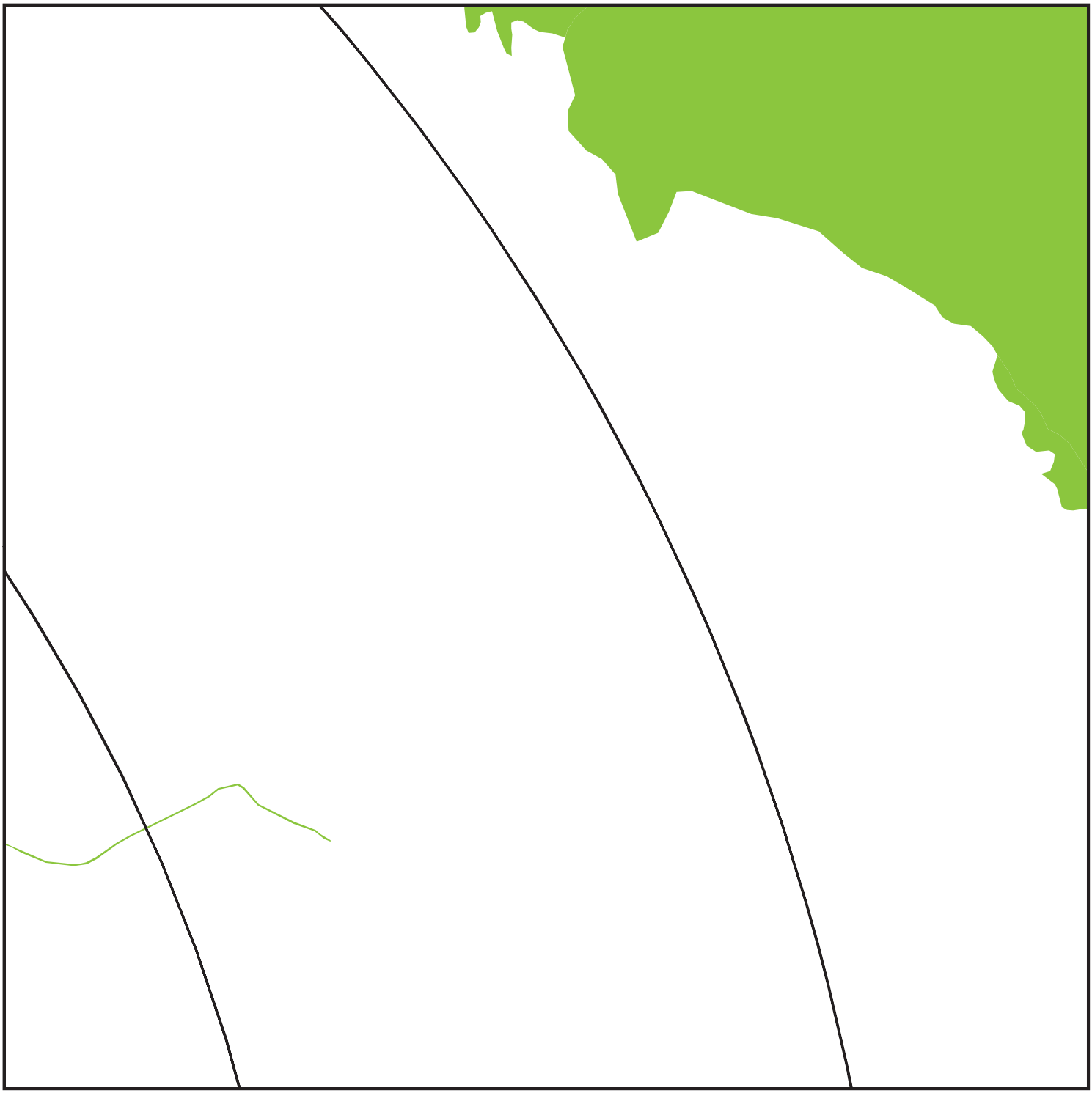
DETAIL MAP 10 OF 25 - 5224824.5S



Target Property

Sites at elevations higher than or equal to the target property

Sites at elevations lower than the target property

Manufactured Gas Plants

Sensitive Receptors

National Priority List Sites

Dept. Defense Sites

0 1/8 1/4 1/2 Miles

Indian Reservations BIA

100-year flood zone

500-year flood zone

National Wetland Inventory

State Wetlands

Areas of Concern

N

SITE NAME:	Aragorn-Athos Project	CLIENT:	Stantec
ADDRESS:	Riverside County Desert Center CA 92239	CONTACT:	Dion Monge
		INQUIRY #:	5224824.5s
LAT/LONG:	33.721894 / 115.277246	DATE:	March 21, 2018 8:27 am

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DETAIL MAP 11 OF 25 - 5224824.5S

Target Property

Sites at elevations higher than or equal to the target property

Sites at elevations lower than the target property

Manufactured Gas Plants

Sensitive Receptors

National Priority List Sites

Dept. Defense Sites

0 1/8 1/4 1/2 Miles

Indian Reservations BIA

Power transmission lines

100-year flood zone

500-year flood zone

National Wetland Inventory

State Wetlands

Areas of Concern

N

SITE NAME: Aragorn-Athos Project ADDRESS: Riverside County Desert Center CA 92239 LAT/LONG: 33.721894 / 115.277246	CLIENT: Stantec CONTACT: Dion Monge INQUIRY #: 5224824.5s DATE: March 21, 2018 8:27 am

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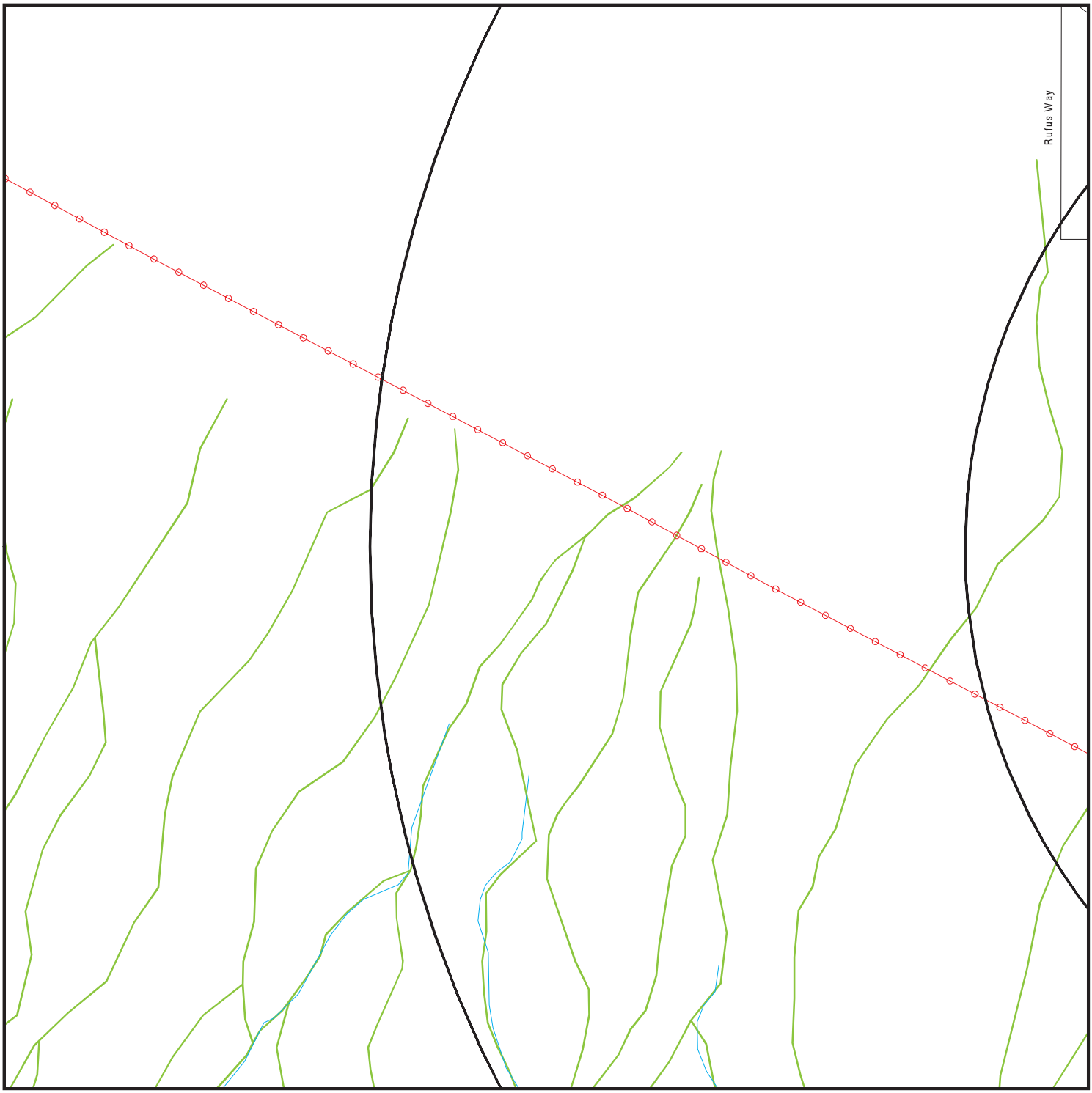
DETAIL MAP 12 OF 25 - 5224824.5S



Target Property

Sites at elevations higher than or equal to the target property

Sites at elevations lower than the target property

Manufactured Gas Plants

Sensitive Receptors

National Priority List Sites

Dept. Defense Sites

0 1/8 1/4 1/2 Miles

Indian Reservations BIA

Power transmission lines

100-year flood zone

500-year flood zone

National Wetland Inventory

State Wetlands

Areas of Concern

N

SITE NAME: Aragorn-Athos Project ADDRESS: Riverside County Desert Center CA 92239 LAT/LONG: 33.721894 / 115.277246	CLIENT: Stantec CONTACT: Dion Monge INQUIRY #: 5224824.5s DATE: March 21, 2018 8:28 am

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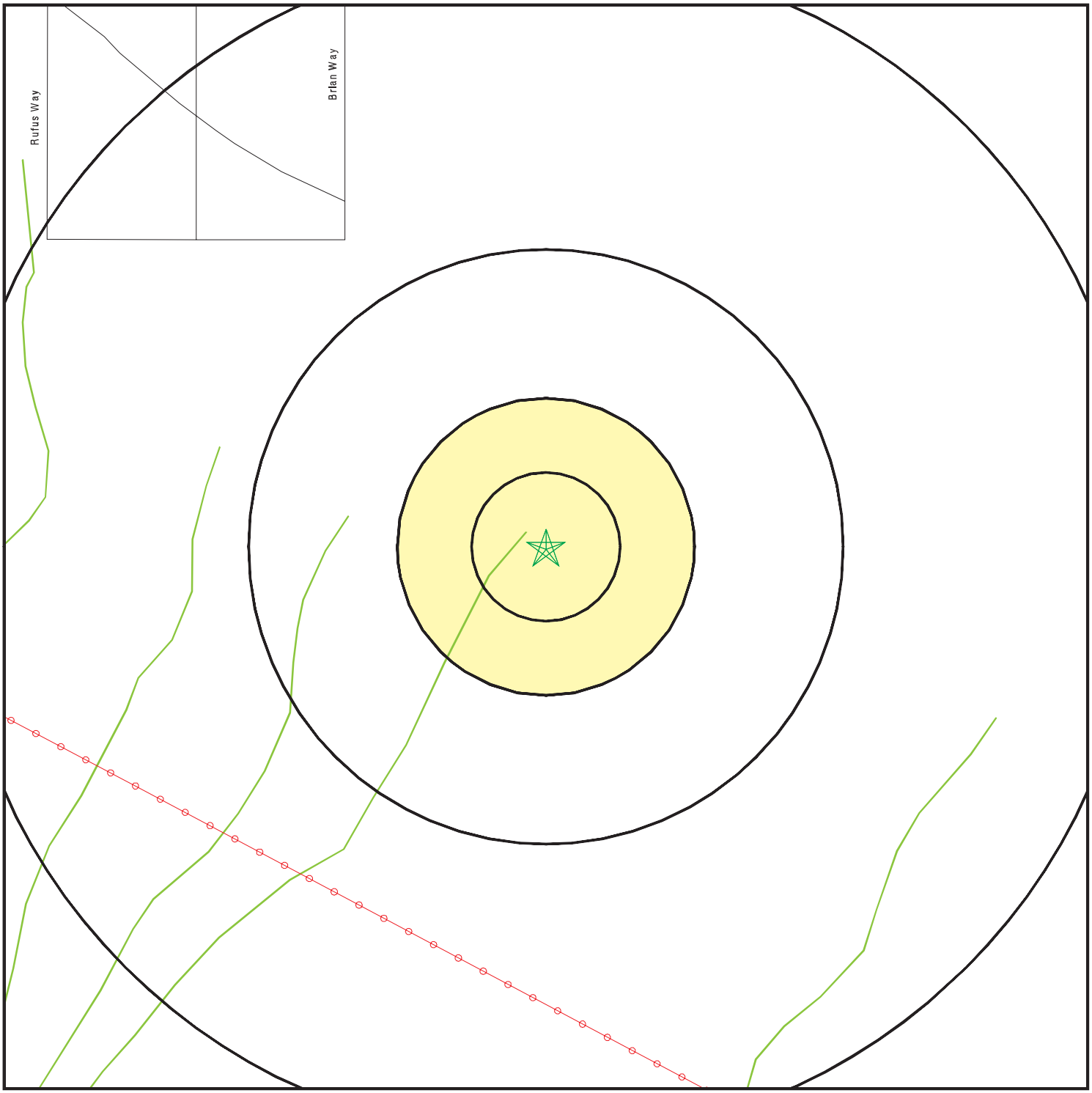
DETAIL MAP 13 OF 25 - 5224824.5S



Target Property

Sites at elevations higher than or equal to the target property

Sites at elevations lower than the target property

Manufactured Gas Plants

Sensitive Receptors

National Priority List Sites

Dept. Defense Sites

0 1/8 1/4 1/2 Miles

Indian Reservations BIA

Power transmission lines

100-year flood zone

500-year flood zone

National Wetland Inventory

State Wetlands

Areas of Concern

N

SITE NAME: Aragorn-Athos Project ADDRESS: Riverside County Desert Center CA 92239 LAT/LONG: 33.721894 / 115.277246	CLIENT: Stantec CONTACT: Dion Monge INQUIRY #: 5224824.5s DATE: March 21, 2018 8:29 am

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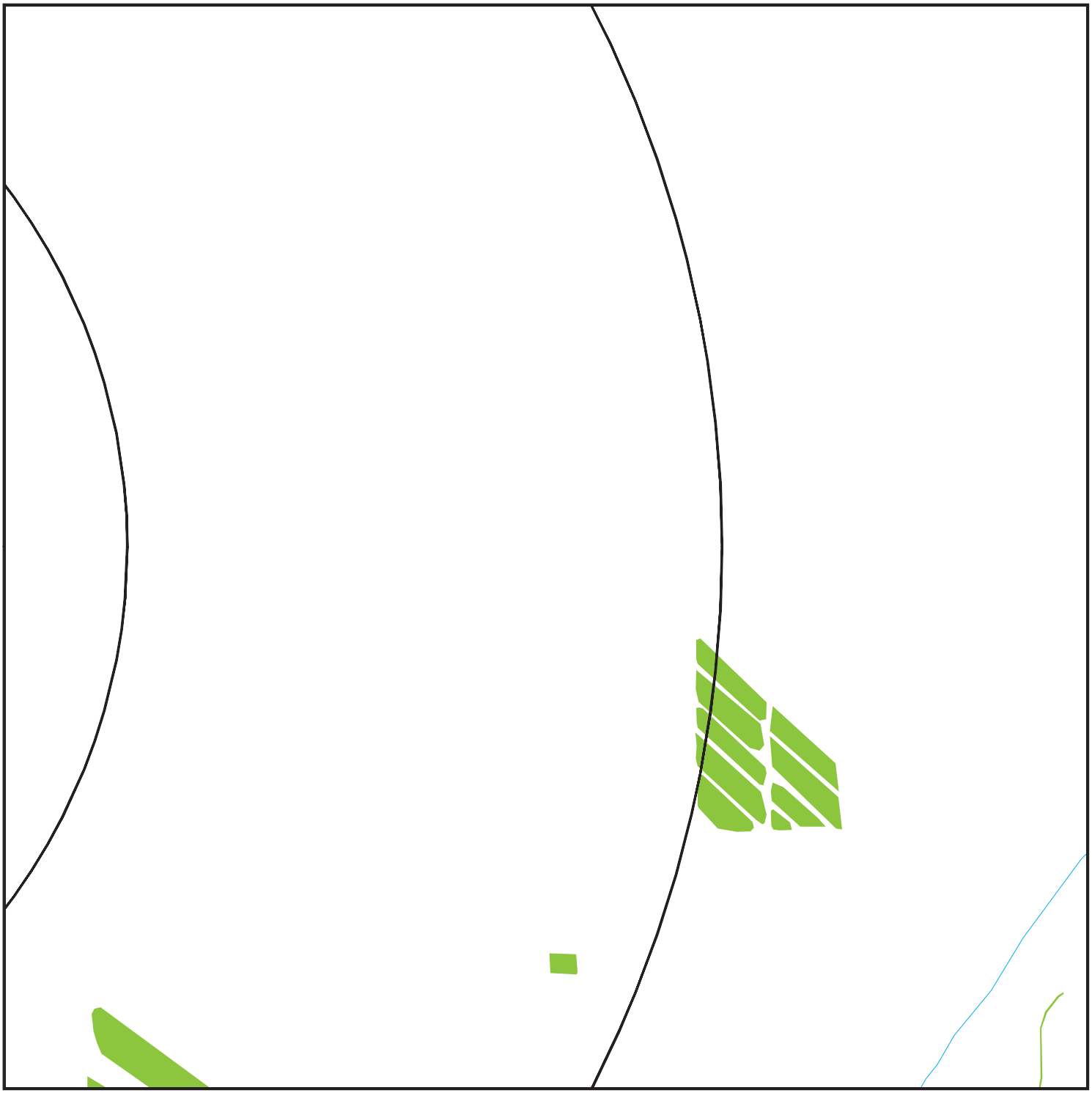
DETAIL MAP 14 OF 25 - 5224824.5S



Target Property

Sites at elevations higher than or equal to the target property

Sites at elevations lower than the target property

Manufactured Gas Plants

Sensitive Receptors

National Priority List Sites

Dept. Defense Sites

0 1/8 1/4 1/2 Miles

Indian Reservations BIA

100-year flood zone

500-year flood zone

National Wetland Inventory

State Wetlands

Areas of Concern

N

SITE NAME:	Aragorn-Athos Project	CLIENT:	Stantec
ADDRESS:	Riverside County Desert Center CA 92239	CONTACT:	Dion Monge
		INQUIRY #:	5224824.5s
LAT/LONG:	33.721894 / 115.277246	DATE:	March 21, 2018 8:30 am

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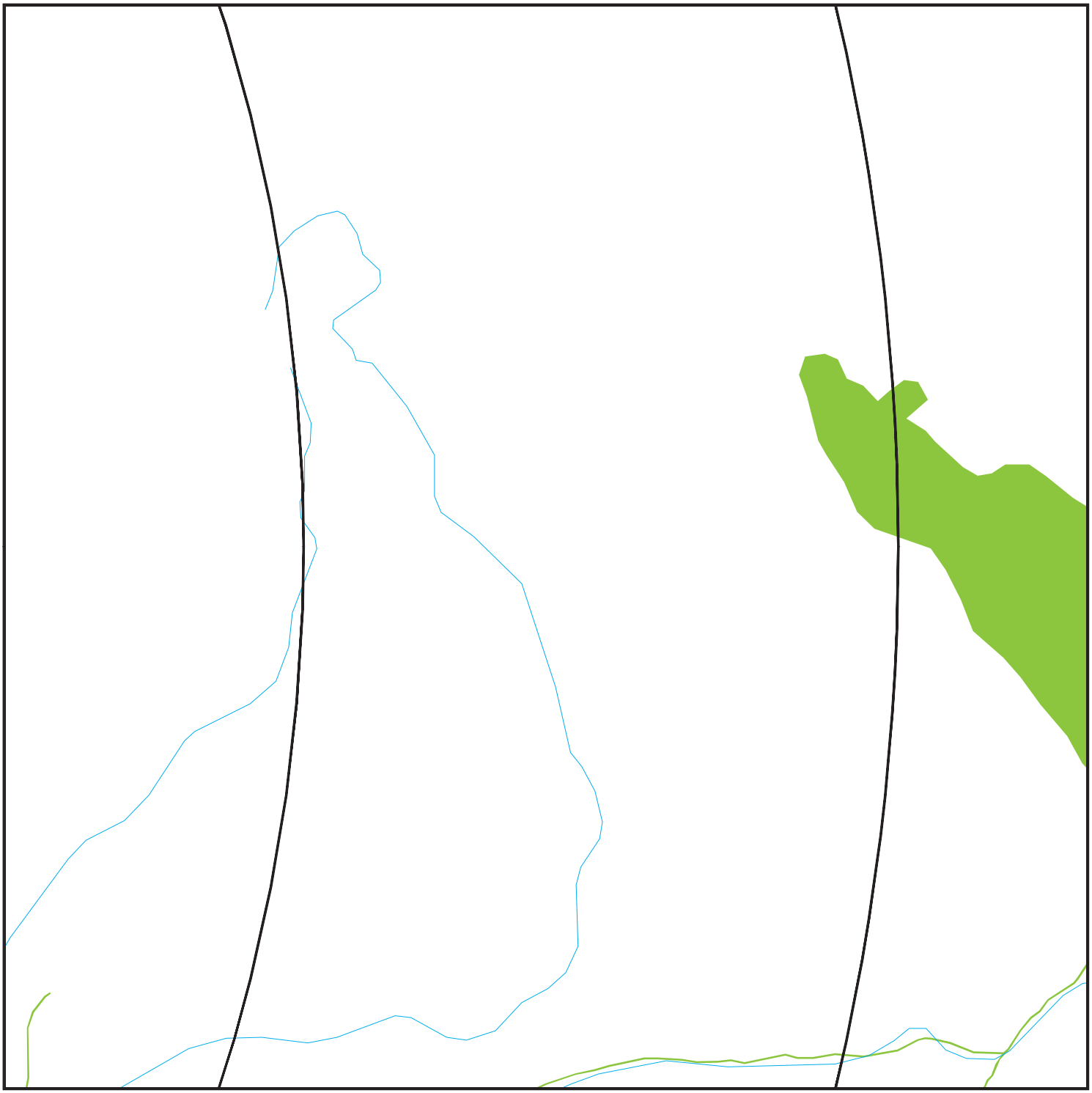
DETAIL MAP 15 OF 25 - 5224824.5S



Target Property

Sites at elevations higher than or equal to the target property

Sites at elevations lower than the target property

Manufactured Gas Plants

Sensitive Receptors

National Priority List Sites

Dept. Defense Sites

0 1/8 1/4 1/2 Miles

Indian Reservations BIA

100-year flood zone

500-year flood zone

National Wetland Inventory

State Wetlands

Areas of Concern

SITE NAME:	Aragorn-Athos Project	CLIENT:	Stantec
ADDRESS:	Riverside County Desert Center CA 92239	CONTACT:	Dion Monge
		INQUIRY #:	5224824.5s
LAT/LONG:	33.721894 / 115.277246	DATE:	March 21, 2018 8:30 am

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DETAIL MAP 16 OF 25 - 5224824.5S

Target Property

Sites at elevations higher than or equal to the target property

Sites at elevations lower than the target property

Manufactured Gas Plants

Sensitive Receptors

National Priority List Sites

Dept. Defense Sites

0 1/8 1/4 1/2 Miles

Indian Reservations BIA

Power transmission lines

100-year flood zone

500-year flood zone

National Wetland Inventory

State Wetlands

Areas of Concern

N

SITE NAME: Aragorn-Athos Project ADDRESS: Riverside County Desert Center CA 92239 LAT/LONG: 33.721894 / 115.277246	CLIENT: Stantec CONTACT: Dion Monge INQUIRY #: 5224824.5s DATE: March 21, 2018 8:31 am

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DETAIL MAP 17 OF 25 - 5224824.5S

Target Property

Sites at elevations higher than or equal to the target property

Sites at elevations lower than the target property

Manufactured Gas Plants

Sensitive Receptors

National Priority List Sites

Dept. Defense Sites

0 1/8 1/4 1/2 Miles

Indian Reservations BIA

Power transmission lines

100-year flood zone

500-year flood zone

National Wetland Inventory

State Wetlands

Areas of Concern

N

SITE NAME: Aragorn-Athos Project ADDRESS: Riverside County Desert Center CA 92239 LAT/LONG: 33.721894 / 115.277246	CLIENT: Stantec CONTACT: Dion Monge INQUIRY #: 5224824.5s DATE: March 21, 2018 8:32 am

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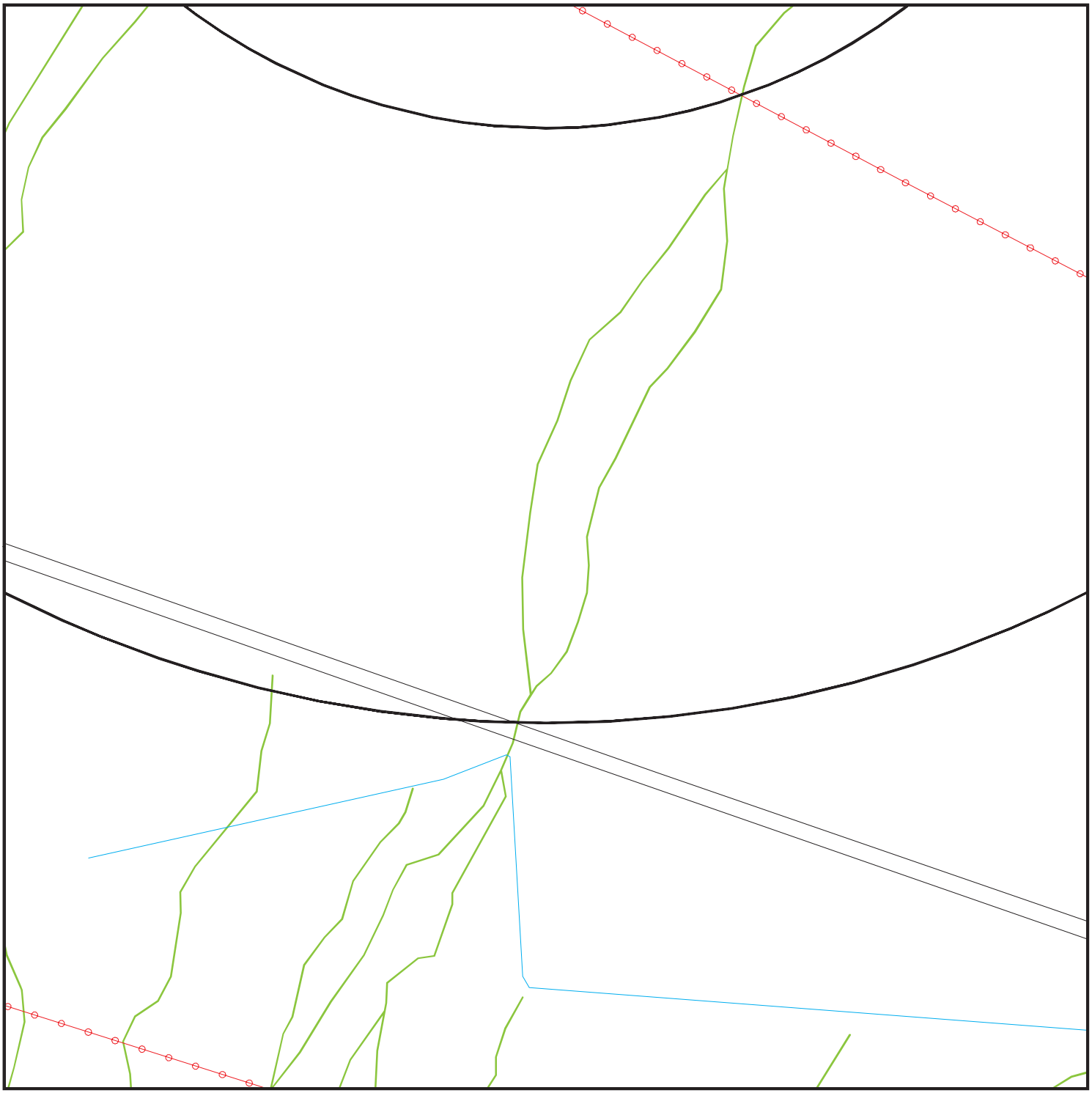
DETAIL MAP 18 OF 25 - 5224824.5S



Target Property

Sites at elevations higher than or equal to the target property

Sites at elevations lower than the target property

Manufactured Gas Plants

Sensitive Receptors

National Priority List Sites

Dept. Defense Sites

0 1/8 1/4 1/2 Miles

Indian Reservations BIA

Power transmission lines

100-year flood zone

500-year flood zone

National Wetland Inventory

State Wetlands

Areas of Concern

N

SITE NAME:	Aragorn-Athos Project	CLIENT:	Stantec
ADDRESS:	Riverside County Desert Center CA 92239	CONTACT:	Dion Monge
		INQUIRY #:	5224824.5s
LAT/LONG:	33.721894 / 115.277246	DATE:	March 21, 2018 8:33 am

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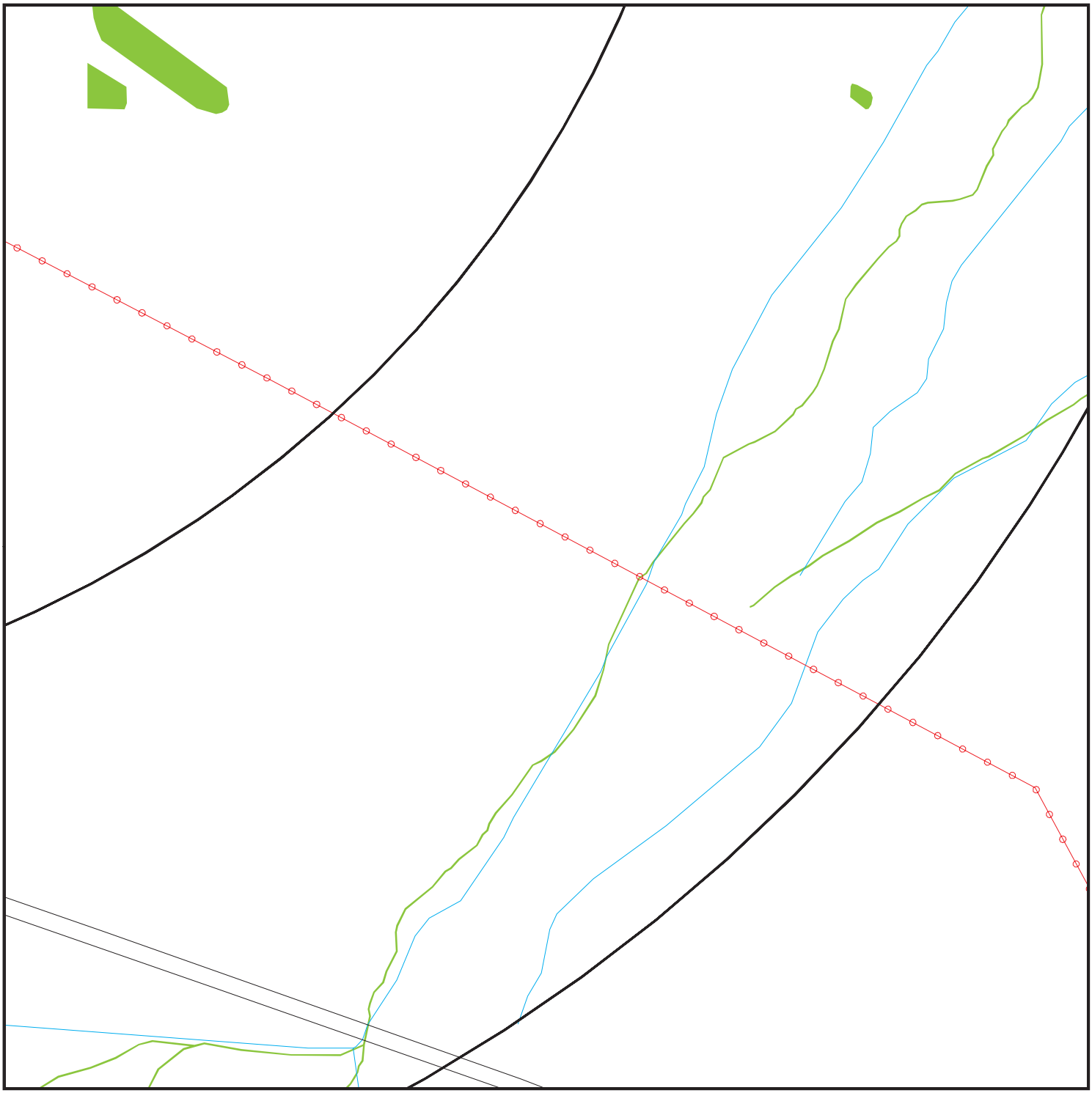
DETAIL MAP 19 OF 25 - 5224824.5S



Target Property

Sites at elevations higher than or equal to the target property

Sites at elevations lower than the target property

Manufactured Gas Plants

Sensitive Receptors

National Priority List Sites

Dept. Defense Sites

0 1/8 1/4 1/2 Miles

Indian Reservations BIA

Power transmission lines

100-year flood zone

500-year flood zone

National Wetland Inventory

State Wetlands

Areas of Concern

N

SITE NAME: Aragorn-Athos Project ADDRESS: Riverside County Desert Center CA 92239 LAT/LONG: 33.721894 / 115.277246	CLIENT: Stantec CONTACT: Dion Monge INQUIRY #: 5224824.5s DATE: March 21, 2018 8:33 am

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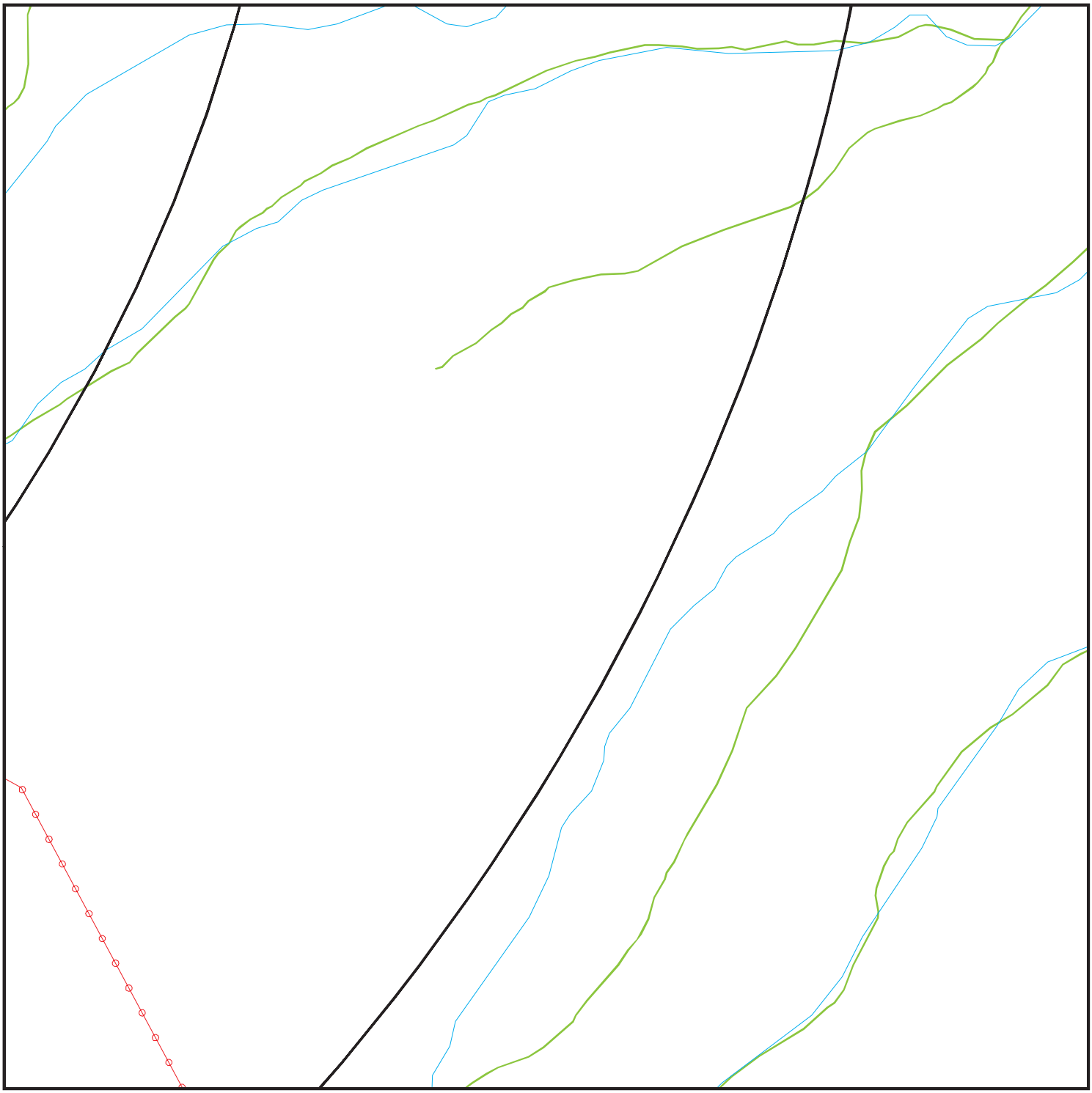
DETAIL MAP 20 OF 25 - 5224824.5S



Target Property

Sites at elevations higher than or equal to the target property

Sites at elevations lower than the target property

Manufactured Gas Plants

Sensitive Receptors

National Priority List Sites

Dept. Defense Sites

0 1/8 1/4 1/2 Miles

Indian Reservations BIA

Power transmission lines

100-year flood zone

500-year flood zone

National Wetland Inventory

State Wetlands

Areas of Concern

N

SITE NAME: Aragorn-Athos Project ADDRESS: Riverside County Desert Center CA 92239 LAT/LONG: 33.721894 / 115.277246	CLIENT: Stantec CONTACT: Dion Monge INQUIRY #: 5224824.5s DATE: March 21, 2018 8:34 am

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DETAIL MAP 21 OF 25 - 5224824.5S

Target Property

Sites at elevations higher than or equal to the target property

Sites at elevations lower than the target property

Manufactured Gas Plants

Sensitive Receptors

National Priority List Sites

Dept. Defense Sites

0 1/8 1/4 1/2 Miles

Indian Reservations BIA

100-year flood zone

500-year flood zone

National Wetland Inventory

State Wetlands

Areas of Concern

N

SITE NAME: Aragorn-Athos Project ADDRESS: Riverside County Desert Center CA 92239 LAT/LONG: 33.721894 / 115.277246	CLIENT: Stantec CONTACT: Dion Monge INQUIRY #: 5224824.5s DATE: March 21, 2018 8:35 am

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DETAIL MAP 22 OF 25 - 5224824.5S

Target Property

Sites at elevations higher than or equal to the target property

Sites at elevations lower than the target property

Manufactured Gas Plants

Sensitive Receptors

National Priority List Sites

Dept. Defense Sites

0 1/8 1/4 1/2 Miles

Indian Reservations BIA

Power transmission lines

100-year flood zone

500-year flood zone

National Wetland Inventory

State Wetlands

Areas of Concern

N

SITE NAME: Aragorn-Athos Project ADDRESS: Riverside County Desert Center CA 92239 LAT/LONG: 33.721894 / 115.277246	CLIENT: Stantec CONTACT: Dion Monge INQUIRY #: 5224824.5s DATE: March 21, 2018 8:36 am

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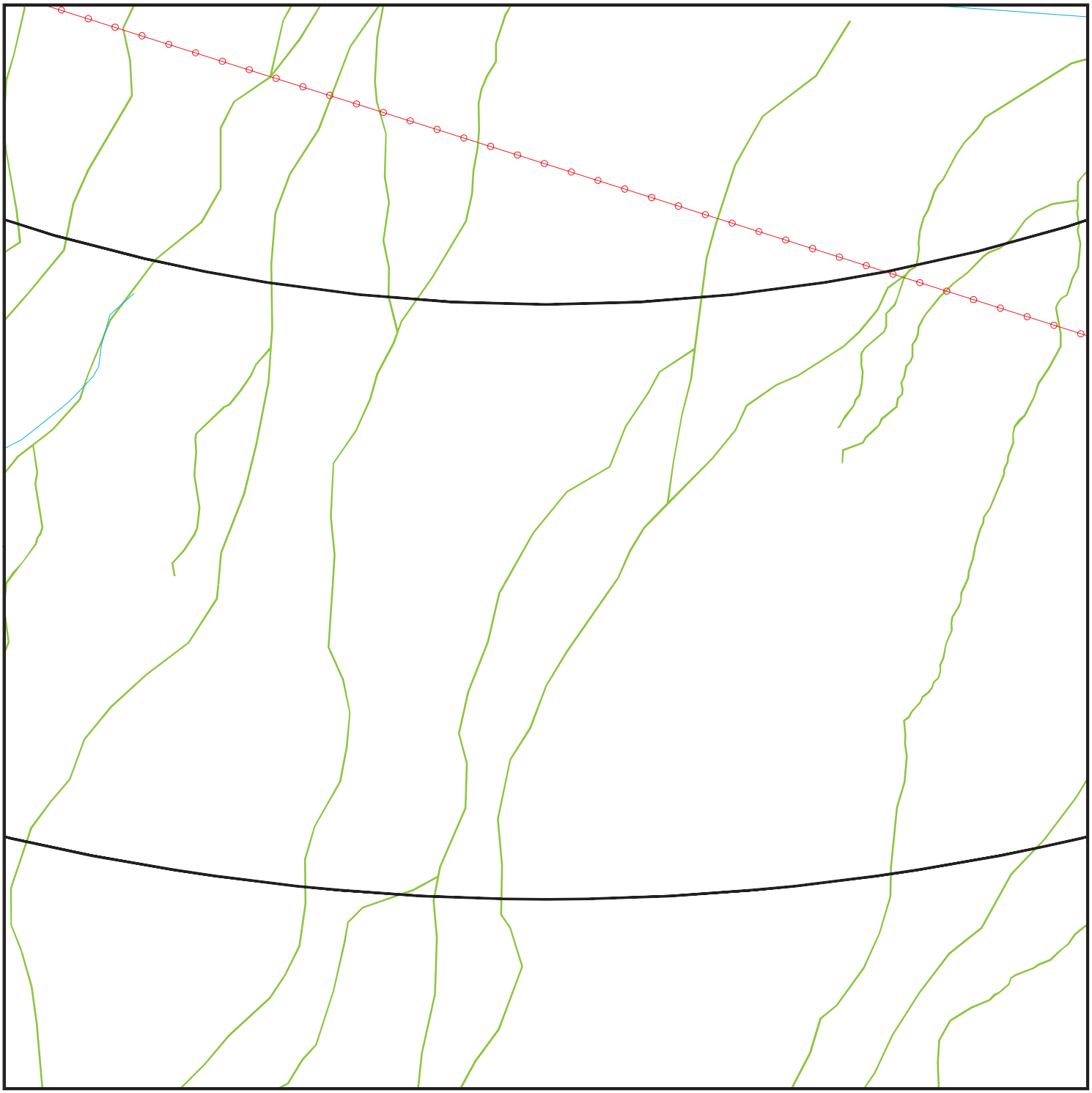
DETAIL MAP 23 OF 25 - 5224824.5S



Target Property

Sites at elevations higher than or equal to the target property

Sites at elevations lower than the target property

Manufactured Gas Plants

Sensitive Receptors

National Priority List Sites

Dept. Defense Sites

0 1/8 1/4 1/2 Miles

Indian Reservations BIA

Power transmission lines

100-year flood zone

500-year flood zone

National Wetland Inventory

State Wetlands

Areas of Concern

N

SITE NAME: Aragorn-Athos Project ADDRESS: Riverside County Desert Center CA 92239 LAT/LONG: 33.721894 / 115.277246	CLIENT: Stantec CONTACT: Dion Monge INQUIRY #: 5224824.5s DATE: March 21, 2018 8:36 am

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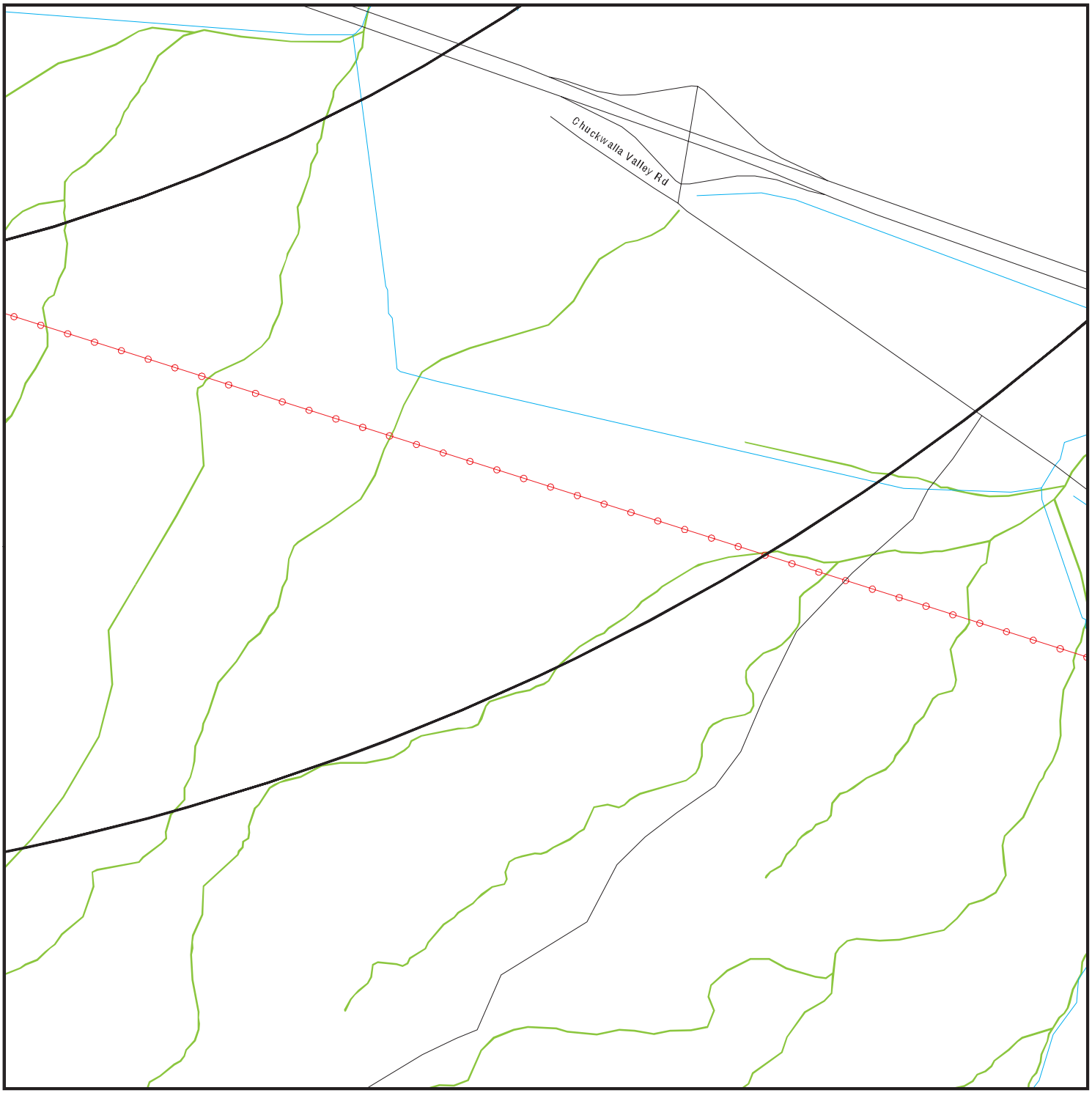
DETAIL MAP 24 OF 25 - 5224824.5S



- Target Property
- Sites at elevations higher than or equal to the target property
- Sites at elevations lower than the target property
- Manufactured Gas Plants
- Sensitive Receptors
- National Priority List Sites
- Dept. Defense Sites

0 1/8 1/4 1/2 Miles

- Indian Reservations BIA
- Power transmission lines
- 100-year flood zone
- 500-year flood zone
- National Wetland Inventory
- State Wetlands
- Areas of Concern

N

SITE NAME: Aragorn-Athos Project ADDRESS: Riverside County Desert Center CA 92239 LAT/LONG: 33.721894 / 115.277246	CLIENT: Stantec CONTACT: Dion Monge INQUIRY #: 5224824.5s DATE: March 21, 2018 8:37 am

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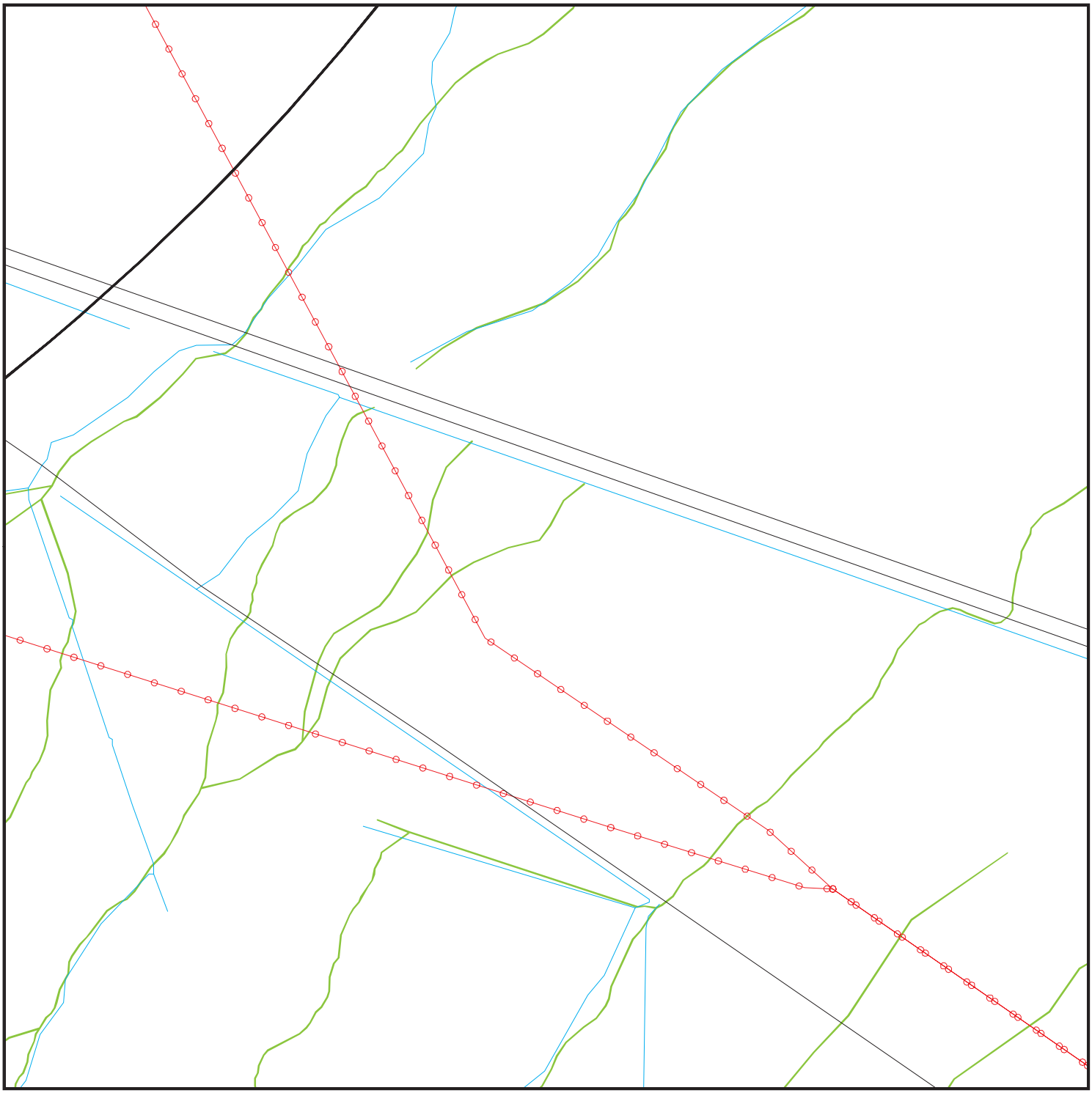
DETAIL MAP 25 OF 25 - 5224824.5S



Target Property

Sites at elevations higher than or equal to the target property

Sites at elevations lower than the target property

Manufactured Gas Plants

Sensitive Receptors

National Priority List Sites

Dept. Defense Sites

0 1/8 1/4 1/2 Miles

Indian Reservations BIA

Power transmission lines

100-year flood zone

500-year flood zone

National Wetland Inventory

State Wetlands

Areas of Concern

N

SITE NAME: Aragorn-Athos Project ADDRESS: Riverside County Desert Center CA 92239 LAT/LONG: 33.721894 / 115.277246	CLIENT: Stantec CONTACT: Dion Monge INQUIRY #: 5224824.5s DATE: March 21, 2018 8:38 am

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MAP FINDINGS SUMMARY

Database	Search Distance (Miles)	Target Property	< 1/8	1/8 - 1/4	1/4 - 1/2	1/2 - 1	> 1	Total Plotted
STANDARD ENVIRONMENTAL RECORDS								
Federal NPL site list								
NPL	4.000		0	0	0	0	0	0
Proposed NPL	4.000		0	0	0	0	0	0
NPL LIENS	3.000		0	0	0	0	0	0
Federal Delisted NPL site list								
Delisted NPL	4.000		0	0	0	0	0	0
Federal CERCLIS list								
FEDERAL FACILITY	3.500		0	0	0	0	0	0
SEMS	3.500		0	0	0	0	0	0
Federal CERCLIS NFRAP site list								
SEMS-ARCHIVE	3.500		0	0	0	0	0	0
Federal RCRA CORRACTS facilities list								
CORRACTS	4.000		0	0	0	0	0	0
Federal RCRA non-CORRACTS TSD facilities list								
RCRA-TSDF	3.500		0	0	0	0	0	0
Federal RCRA generators list								
RCRA-LQG	3.250		0	0	0	0	0	0
RCRA-SQG	3.250		0	0	0	0	0	0
RCRA-CESQG	3.250		0	0	0	0	0	0
Federal institutional controls / engineering controls registries								
LUCIS	3.500		0	0	0	0	0	0
US ENG CONTROLS	3.500		0	0	0	0	0	0
US INST CONTROL	3.500		0	0	0	0	0	0
Federal ERNS list								
ERNS	3.000		0	0	0	0	0	0
State- and tribal - equivalent NPL								
RESPONSE	4.000		0	0	0	0	0	0
State- and tribal - equivalent CERCLIS								
ENVIROSTOR	4.000		0	0	0	0	0	0
State and tribal landfill and/or solid waste disposal site lists								
SWF/LF	3.500		0	0	0	0	0	0
State and tribal leaking storage tank lists								
LUST	3.500		0	0	0	0	0	0

MAP FINDINGS SUMMARY

Database	Search Distance (Miles)	Target Property	< 1/8	1/8 - 1/4	1/4 - 1/2	1/2 - 1	> 1	Total Plotted
INDIAN LUST	3.500		0	0	0	0	0	0
SLIC	3.500		0	0	0	0	0	0
State and tribal registered storage tank lists								
FEMA UST	3.250		0	0	0	0	0	0
UST	3.250		0	0	0	0	0	0
AST	3.250		0	0	0	0	0	0
INDIAN UST	3.250		0	0	0	0	0	0
State and tribal voluntary cleanup sites								
INDIAN VCP	3.500		0	0	0	0	0	0
VCP	3.500		0	0	0	0	0	0
State and tribal Brownfields sites								
BROWNFIELDS	3.500		0	0	0	0	0	0
ADDITIONAL ENVIRONMENTAL RECORDS								
Local Brownfield lists								
US BROWNFIELDS	3.500		0	0	0	0	0	0
Local Lists of Landfill / Solid Waste Disposal Sites								
WMUDS/SWAT	3.500		0	0	0	0	0	0
SWRCY	3.500		0	0	0	0	0	0
HAULERS	3.000		0	0	0	0	0	0
INDIAN ODI	3.500		0	0	0	0	0	0
DEBRIS REGION 9	3.500		0	0	0	0	0	0
ODI	3.500		0	0	0	0	0	0
IHS OPEN DUMPS	3.500		0	0	0	0	0	0
Local Lists of Hazardous waste / Contaminated Sites								
US HIST CDL	3.000		0	0	0	0	0	0
HIST Cal-Sites	4.000		0	0	0	0	0	0
SCH	3.250		0	0	0	0	0	0
CDL	3.000		0	0	0	0	0	0
Toxic Pits	4.000		0	0	0	0	0	0
US CDL	3.000		0	0	0	0	0	0
Local Lists of Registered Storage Tanks								
SWEEPS UST	3.250		0	0	0	0	0	0
HIST UST	3.250		0	0	0	0	0	0
CA FID UST	3.250		0	0	0	0	0	0
Local Land Records								
LIENS	3.000		0	0	0	0	0	0
LIENS 2	3.000		0	0	0	0	0	0
DEED	3.500		0	0	0	0	0	0
Records of Emergency Release Reports								
HMIRS	3.000		0	0	0	0	0	0

MAP FINDINGS SUMMARY

Database	Search Distance (Miles)	Target Property	< 1/8	1/8 - 1/4	1/4 - 1/2	1/2 - 1	> 1	Total Plotted
CHMIRS	3.000		0	0	0	0	0	0
LDS	3.000		0	0	0	0	0	0
MCS	3.000		0	0	0	0	0	0
SPILLS 90	3.000		0	0	0	0	0	0
Other Ascertainable Records								
RCRA NonGen / NLR	3.250		0	0	0	0	0	0
FUDS	4.000		0	0	0	0	1	1
DOD	4.000		0	0	0	0	0	0
SCRD DRYCLEANERS	3.500		0	0	0	0	0	0
US FIN ASSUR	3.000		0	0	0	0	0	0
EPA WATCH LIST	3.000		0	0	0	0	0	0
2020 COR ACTION	3.250		0	0	0	0	0	0
TSCA	3.000		0	0	0	0	0	0
TRIS	3.000		0	0	0	0	0	0
SSTS	3.000		0	0	0	0	0	0
ROD	4.000		0	0	0	0	0	0
RMP	3.000		0	0	0	0	0	0
RAATS	3.000		0	0	0	0	0	0
PRP	3.000		0	0	0	0	0	0
PADS	3.000		0	0	0	0	0	0
ICIS	3.000		0	0	0	0	0	0
FTTS	3.000		0	0	0	0	0	0
MLTS	3.000		0	0	0	0	0	0
COAL ASH DOE	3.000		0	0	0	0	0	0
COAL ASH EPA	3.500		0	0	0	0	0	0
PCB TRANSFORMER	3.000		0	0	0	0	0	0
RADINFO	3.000		0	0	0	0	0	0
HIST FTTS	3.000		0	0	0	0	0	0
DOT OPS	3.000		0	0	0	0	0	0
CONSENT	4.000		0	0	0	0	0	0
INDIAN RESERV	4.000		0	0	0	0	0	0
FUSRAP	4.000		0	0	0	0	0	0
UMTRA	3.500		0	0	0	0	0	0
LEAD SMELTERS	3.000		0	0	0	0	0	0
US AIRS	3.000		0	0	0	0	0	0
US MINES	3.250		0	0	0	0	0	0
ABANDONED MINES	3.250		0	0	0	0	0	0
FINDS	3.000		0	0	0	0	0	0
UXO	4.000		0	0	0	0	0	0
ECHO	3.000		0	0	0	0	0	0
DOCKET HWC	3.000		0	0	0	0	0	0
FUELS PROGRAM	3.250		0	0	0	0	0	0
CA BOND EXP. PLAN	4.000		0	0	0	0	0	0
Cortese	3.500		0	0	0	0	0	0
CUPA Listings	3.250		0	0	0	0	0	0
DRYCLEANERS	3.250		0	0	0	0	0	0
EMI	3.000		0	0	0	0	0	0
ENF	3.000		0	0	0	0	0	0
Financial Assurance	3.000		0	0	0	0	0	0
HAZNET	3.000		0	0	0	0	0	0

MAP FINDINGS SUMMARY

Database	Search Distance (Miles)	Target Property	< 1/8	1/8 - 1/4	1/4 - 1/2	1/2 - 1	> 1	Total Plotted
ICE	3.000		0	0	0	0	0	0
HIST CORTESE	3.500		0	0	0	0	0	0
HWP	4.000		0	0	0	0	0	0
HWT	3.250		0	0	0	0	0	0
MINES	3.250		0	0	0	0	0	0
MWMP	3.250		0	0	0	0	0	0
NPDES	3.000		0	0	0	0	0	0
PEST LIC	3.000		0	0	0	0	0	0
PROC	3.500		0	0	0	0	0	0
Notify 65	4.000		0	0	0	0	0	0
UIC	3.000		0	0	0	0	0	0
WASTEWATER PITS	3.500		0	0	0	0	0	0
WDS	3.000		0	0	0	0	0	0
WIP	3.250		0	0	0	0	0	0
EDR HIGH RISK HISTORICAL RECORDS								
EDR Exclusive Records								
EDR MGP	4.000		0	0	0	0	0	0
EDR Hist Auto	3.125		0	0	0	0	0	0
EDR Hist Cleaner	3.125		0	0	0	0	0	0
EDR RECOVERED GOVERNMENT ARCHIVES								
Exclusive Recovered Govt. Archives								
RGA LF	3.000		0	0	0	0	0	0
RGA LUST	3.000		0	0	0	0	0	0
- Totals --		0	0	0	0	0	1	1

NOTES:

TP = Target Property

NR = Not Requested at this Search Distance

Sites may be listed in more than one database

1 NW > 1 3.791 mi. 20017 ft. | **DESERT CNTR ARPT** | **FUDS** | **1012129642** **N/A**

DESERT CENTER, CA

Relative: Lower

Actual: 537 ft.

FUDS:

EPA Region:	09
Congressional District:	36
FUDS Number:	J09CA0341
State:	CA
Facility Name:	DESERT CNTR ARPT
Fiscal Year:	2013
City:	DESERT CENTER
Federal Facility ID:	CA9799F5427
Telephone:	213-452-3920
INST ID:	61057
County:	RIVERSIDE
RAB:	Not reported
CORPS_DIST:	Los Angeles District (SPL)
NPL Status:	Not Listed
CTC:	134
Current Owner:	Local Government
Future Prog:	Not reported
Description:	SITE CONSISTED OF 1958.02 ACRES. IMPROVEMENTS INCL. STRUCTURES FOR BASE HOUSING, OPERATION, AIRCRAFT SERVICE STORAGE, FUEL SYS. PERSONNEL & MISC. MOST ARE CURRENTLY BEING USED. USTS HAVE NOT BEEN USED , HOWEVER.
Current Program:	Not reported
History:	US ARMY ACQUIRED THE PROPERTY IN 1942 THROUGH PURCHASE, TRANSFER & CONDEMNATION. IT WAS DECLARED AS EXCESS IN 1945 & DISPOSED TO RIVERSIDE COUNTY IN 1965. COUNTY OF RIVERSIDE IS THE PRESENT OWNER.
Latitude Degree:	33
Latitude Minute:	45
Latitude Second:	15
Latitude Direction:	N
Longitude Degree:	-115
Longitude Minute:	20
Longitude Second:	50
Longitude Direction:	E

Count: 25 records.

ORPHAN SUMMARY

City	EDR ID	Site Name	Site Address	Zip	Database(s)
CACTUS	S113005883	SOUTHERN CALIFORNIA GAS CO	I-10 20 MI EAST OF INDIO	92239	HAZNET
DESERT CENTER	S112974323	CALTRANS D-8/CONSTR/EA08-0K6304	RTE 177 PM 0.0-27.0	92239	HAZNET
DESERT CENTER	S108407375		I-10, 3 MILES W OF STATE ROUTE	92239	CDL
DESERT CENTER	S114590543	CALTRANS DESERT CENTER	129476 HIGHWAY 60		RGA LUST
DESERT CENTER	S114591008	CALTRANS-DESERT CENTER	129476 HIGHWAY 60		RGA LUST
DESERT CENTER	A100423762	RCIT - ROAD 62 #44	34505 HIGHWAY 62	92239	AST
DESERT CENTER	1014672120	PALEN SOLAR POWER PROJECT	CORN SPRINGS ROAD	92239	FINDS
DESERT CENTER	S111759643	PAR ELECTRIC CONTRACTORS	30855 CORN SPRINGS RD	92239	CHMIRS, HAZNET
DESERT CENTER	S121011395	LONG BEACH CONTAINER TTRANSPORT, I	I-10 FWY W/B, POST MILE 99	92239	HAZNET
DESERT CENTER	S120991346	COVENANT TRANSPORTATION	I-10 FWY E/B AT POST MILE 101	92239	HAZNET
DESERT CENTER	S118929108	MARQUEZ TRUCKING	I-10 FWY AT PM 118.5 WEST B	92239	HAZNET
DESERT CENTER	S118925098	HERTZ EQUIPMENT RENTAL CORPORATION	I-10 FWY AT POST MILE 103	92239	HAZNET
DESERT CENTER	S114591009	CALTRANS-DESERT CENTER	129476 U.S. HIGHWAY 60		RGA LUST
DESERT CENTER	S114590542	CALTRANS DESERT CENTER MAIN.	129476 U.S. HIGHWAY 60		RGA LUST
DESERT CENTER	S106835533	METRO WATER DIST OF SO CAL	HINDS VILLAGE I-10/HAYFIELD		EMI
DESERT CENTER	S114591010	CALTRANS-DESERT CENTER	129476 U.S. HWY 60		RGA LUST
DESERT CENTER	S118200690	SWIFT TRANSPORTATION CORPORATION	EB I-10 @ PM125.5	92239	HAZNET
DESERT CENTER	S107144793	CRA SAND TRAP REPLACEMENT EAGLE MO	15500 KAISER TRUCK ROAD	92239	CHMIRS, ENF, NPDES
DESERT CENTER	A100424613	SO. CALIF. GAS CO. - DESERT CENTER	1 MILE EAST OF DESERT CTR. ON	92239	AST
DESERT CENTER	1018132372	KAISER EAGLE MOUNTAIN	N OF HWY 10 8M OFF KAISER RD	92239	DOCKET HWC
DESERT CENTER	S113792925	PETERS PROPERTY	RIVERSIDE CTY APN 800-430-00	92239	HAZNET
RICE	1023377596	RICE SOLAR ENERGY PROJECT	STATE RTE. 62	92239	FINDS
RIVERSIDE COUNTY	S107537885		BOX SPRINGS RD & HWY 215 (SEE		CDL
RIVERSIDE COUNTY	S117711495	ST HWY 111 NE PALM SPRINGS	ST HWY 111 NE OF PALM SPRINGS		NPDES
RIVERSIDE COUNTY	M300002452	PACIFIC CLAY PRODS CO	RIVERSIDE COUNTY PITS (5 OPERA		US MINES

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

To maintain currency of the following federal and state databases, EDR contacts the appropriate governmental agency on a monthly or quarterly basis, as required.

Number of Days to Update: Provides confirmation that EDR is reporting records that have been updated within 90 days from the date the government agency made the information available to the public.

STANDARD ENVIRONMENTAL RECORDS

Federal NPL site list

NPL: National Priority List

National Priorities List (Superfund). The NPL is a subset of CERCLIS and identifies over 1,200 sites for priority cleanup under the Superfund Program. NPL sites may encompass relatively large areas. As such, EDR provides polygon coverage for over 1,000 NPL site boundaries produced by EPA's Environmental Photographic Interpretation Center (EPIC) and regional EPA offices.

Date of Government Version: 12/11/2017
Date Data Arrived at EDR: 12/22/2017
Date Made Active in Reports: 01/05/2018
Number of Days to Update: 14

Source: EPA
Telephone: N/A
Last EDR Contact: 02/06/2018
Next Scheduled EDR Contact: 04/16/2018
Data Release Frequency: Quarterly

NPL Site Boundaries

Sources:

EPA's Environmental Photographic Interpretation Center (EPIC)
Telephone: 202-564-7333

EPA Region 1
Telephone 617-918-1143

EPA Region 6
Telephone: 214-655-6659

EPA Region 3
Telephone 215-814-5418

EPA Region 7
Telephone: 913-551-7247

EPA Region 4
Telephone 404-562-8033

EPA Region 8
Telephone: 303-312-6774

EPA Region 5
Telephone 312-886-6686

EPA Region 9
Telephone: 415-947-4246

EPA Region 10
Telephone 206-553-8665

Proposed NPL: Proposed National Priority List Sites

A site that has been proposed for listing on the National Priorities List through the issuance of a proposed rule in the Federal Register. EPA then accepts public comments on the site, responds to the comments, and places on the NPL those sites that continue to meet the requirements for listing.

Date of Government Version: 12/11/2017
Date Data Arrived at EDR: 12/22/2017
Date Made Active in Reports: 01/05/2018
Number of Days to Update: 14

Source: EPA
Telephone: N/A
Last EDR Contact: 02/06/2018
Next Scheduled EDR Contact: 05/21/2018
Data Release Frequency: Quarterly

NPL LIENS: Federal Superfund Liens

Federal Superfund Liens. Under the authority granted the USEPA by CERCLA of 1980, the USEPA has the authority to file liens against real property in order to recover remedial action expenditures or when the property owner received notification of potential liability. USEPA compiles a listing of filed notices of Superfund Liens.

Date of Government Version: 10/15/1991
Date Data Arrived at EDR: 02/02/1994
Date Made Active in Reports: 03/30/1994
Number of Days to Update: 56

Source: EPA
Telephone: 202-564-4267
Last EDR Contact: 08/15/2011
Next Scheduled EDR Contact: 11/28/2011
Data Release Frequency: No Update Planned

Federal Delisted NPL site list

Delisted NPL: National Priority List Deletions

The National Oil and Hazardous Substances Pollution Contingency Plan (NCP) establishes the criteria that the EPA uses to delete sites from the NPL. In accordance with 40 CFR 300.425.(e), sites may be deleted from the NPL where no further response is appropriate.

Date of Government Version: 12/11/2017	Source: EPA
Date Data Arrived at EDR: 12/22/2017	Telephone: N/A
Date Made Active in Reports: 01/05/2018	Last EDR Contact: 02/06/2018
Number of Days to Update: 14	Next Scheduled EDR Contact: 04/16/2018
	Data Release Frequency: Quarterly

Federal CERCLIS list

FEDERAL FACILITY: Federal Facility Site Information listing

A listing of National Priority List (NPL) and Base Realignment and Closure (BRAC) sites found in the Comprehensive Environmental Response, Compensation and Liability Information System (CERCLIS) Database where EPA Federal Facilities Restoration and Reuse Office is involved in cleanup activities.

Date of Government Version: 11/07/2016	Source: Environmental Protection Agency
Date Data Arrived at EDR: 01/05/2017	Telephone: 703-603-8704
Date Made Active in Reports: 04/07/2017	Last EDR Contact: 01/05/2018
Number of Days to Update: 92	Next Scheduled EDR Contact: 04/16/2018
	Data Release Frequency: Varies

SEMS: Superfund Enterprise Management System

SEMS (Superfund Enterprise Management System) tracks hazardous waste sites, potentially hazardous waste sites, and remedial activities performed in support of EPA's Superfund Program across the United States. The list was formerly know as CERCLIS, renamed to SEMS by the EPA in 2015. The list contains data on potentially hazardous waste sites that have been reported to the USEPA by states, municipalities, private companies and private persons, pursuant to Section 103 of the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA). This dataset also contains sites which are either proposed to or on the National Priorities List (NPL) and the sites which are in the screening and assessment phase for possible inclusion on the NPL.

Date of Government Version: 12/11/2017	Source: EPA
Date Data Arrived at EDR: 12/22/2017	Telephone: 800-424-9346
Date Made Active in Reports: 01/12/2018	Last EDR Contact: 02/06/2018
Number of Days to Update: 21	Next Scheduled EDR Contact: 04/30/2018
	Data Release Frequency: Quarterly

Federal CERCLIS NFRAP site list

SEMS-ARCHIVE: Superfund Enterprise Management System Archive

SEMS-ARCHIVE (Superfund Enterprise Management System Archive) tracks sites that have no further interest under the Federal Superfund Program based on available information. The list was formerly known as the CERCLIS-NFRAP, renamed to SEMS ARCHIVE by the EPA in 2015. EPA may perform a minimal level of assessment work at a site while it is archived if site conditions change and/or new information becomes available. Archived sites have been removed and archived from the inventory of SEMS sites. Archived status indicates that, to the best of EPA's knowledge, assessment at a site has been completed and that EPA has determined no further steps will be taken to list the site on the National Priorities List (NPL), unless information indicates this decision was not appropriate or other considerations require a recommendation for listing at a later time. The decision does not necessarily mean that there is no hazard associated with a given site; it only means that. based upon available information, the location is not judged to be potential NPL site.

Date of Government Version: 12/11/2017
Date Data Arrived at EDR: 12/22/2017
Date Made Active in Reports: 01/12/2018
Number of Days to Update: 21

Source: EPA
Telephone: 800-424-9346
Last EDR Contact: 02/06/2018
Next Scheduled EDR Contact: 04/30/2018
Data Release Frequency: Quarterly

Federal RCRA CORRACTS facilities list

CORRACTS: Corrective Action Report
CORRACTS identifies hazardous waste handlers with RCRA corrective action activity.

Date of Government Version: 12/11/2017
Date Data Arrived at EDR: 12/26/2017
Date Made Active in Reports: 02/09/2018
Number of Days to Update: 45

Source: EPA
Telephone: 800-424-9346
Last EDR Contact: 01/19/2018
Next Scheduled EDR Contact: 04/09/2018
Data Release Frequency: Quarterly

Federal RCRA non-CORRACTS TSD facilities list

RCRA-TSDF: RCRA - Treatment, Storage and Disposal
RCRAInfo is EPA's comprehensive information system, providing access to data supporting the Resource Conservation and Recovery Act (RCRA) of 1976 and the Hazardous and Solid Waste Amendments (HSWA) of 1984. The database includes selective information on sites which generate, transport, store, treat and/or dispose of hazardous waste as defined by the Resource Conservation and Recovery Act (RCRA). Transporters are individuals or entities that move hazardous waste from the generator offsite to a facility that can recycle, treat, store, or dispose of the waste. TSDFs treat, store, or dispose of the waste.

Date of Government Version: 12/11/2017
Date Data Arrived at EDR: 12/26/2017
Date Made Active in Reports: 02/09/2018
Number of Days to Update: 45

Source: Environmental Protection Agency
Telephone: (415) 495-8895
Last EDR Contact: 01/19/2018
Next Scheduled EDR Contact: 04/09/2018
Data Release Frequency: Quarterly

Federal RCRA generators list

RCRA-LQG: RCRA - Large Quantity Generators
RCRAInfo is EPA's comprehensive information system, providing access to data supporting the Resource Conservation and Recovery Act (RCRA) of 1976 and the Hazardous and Solid Waste Amendments (HSWA) of 1984. The database includes selective information on sites which generate, transport, store, treat and/or dispose of hazardous waste as defined by the Resource Conservation and Recovery Act (RCRA). Large quantity generators (LQGs) generate over 1,000 kilograms (kg) of hazardous waste, or over 1 kg of acutely hazardous waste per month.

Date of Government Version: 12/11/2017
Date Data Arrived at EDR: 12/26/2017
Date Made Active in Reports: 02/09/2018
Number of Days to Update: 45

Source: Environmental Protection Agency
Telephone: (415) 495-8895
Last EDR Contact: 01/19/2018
Next Scheduled EDR Contact: 04/09/2018
Data Release Frequency: Quarterly

RCRA-SQG: RCRA - Small Quantity Generators

RCRAInfo is EPA's comprehensive information system, providing access to data supporting the Resource Conservation and Recovery Act (RCRA) of 1976 and the Hazardous and Solid Waste Amendments (HSWA) of 1984. The database includes selective information on sites which generate, transport, store, treat and/or dispose of hazardous waste as defined by the Resource Conservation and Recovery Act (RCRA). Small quantity generators (SQGs) generate between 100 kg and 1,000 kg of hazardous waste per month.

Date of Government Version: 12/11/2017
Date Data Arrived at EDR: 12/26/2017
Date Made Active in Reports: 02/09/2018
Number of Days to Update: 45

Source: Environmental Protection Agency
Telephone: (415) 495-8895
Last EDR Contact: 01/19/2018
Next Scheduled EDR Contact: 04/09/2018
Data Release Frequency: Quarterly

RCRA-CESQG: RCRA - Conditionally Exempt Small Quantity Generators

RCRAInfo is EPA's comprehensive information system, providing access to data supporting the Resource Conservation and Recovery Act (RCRA) of 1976 and the Hazardous and Solid Waste Amendments (HSWA) of 1984. The database includes selective information on sites which generate, transport, store, treat and/or dispose of hazardous waste as defined by the Resource Conservation and Recovery Act (RCRA). Conditionally exempt small quantity generators (CESQGs) generate less than 100 kg of hazardous waste, or less than 1 kg of acutely hazardous waste per month.

Date of Government Version: 12/11/2017
Date Data Arrived at EDR: 12/26/2017
Date Made Active in Reports: 02/09/2018
Number of Days to Update: 45

Source: Environmental Protection Agency
Telephone: (415) 495-8895
Last EDR Contact: 01/19/2018
Next Scheduled EDR Contact: 04/09/2018
Data Release Frequency: Quarterly

Federal institutional controls / engineering controls registries

LUCIS: Land Use Control Information System

LUCIS contains records of land use control information pertaining to the former Navy Base Realignment and Closure properties.

Date of Government Version: 05/22/2017
Date Data Arrived at EDR: 06/13/2017
Date Made Active in Reports: 09/15/2017
Number of Days to Update: 94

Source: Department of the Navy
Telephone: 843-820-7326
Last EDR Contact: 02/09/2018
Next Scheduled EDR Contact: 05/28/2018
Data Release Frequency: Varies

US ENG CONTROLS: Engineering Controls Sites List

A listing of sites with engineering controls in place. Engineering controls include various forms of caps, building foundations, liners, and treatment methods to create pathway elimination for regulated substances to enter environmental media or effect human health.

Date of Government Version: 11/13/2017
Date Data Arrived at EDR: 11/27/2017
Date Made Active in Reports: 02/09/2018
Number of Days to Update: 74

Source: Environmental Protection Agency
Telephone: 703-603-0695
Last EDR Contact: 02/27/2018
Next Scheduled EDR Contact: 06/11/2018
Data Release Frequency: Varies

US INST CONTROL: Sites with Institutional Controls

A listing of sites with institutional controls in place. Institutional controls include administrative measures, such as groundwater use restrictions, construction restrictions, property use restrictions, and post remediation care requirements intended to prevent exposure to contaminants remaining on site. Deed restrictions are generally required as part of the institutional controls.

Date of Government Version: 11/13/2017
Date Data Arrived at EDR: 11/27/2017
Date Made Active in Reports: 02/09/2018
Number of Days to Update: 74

Source: Environmental Protection Agency
Telephone: 703-603-0695
Last EDR Contact: 02/27/2018
Next Scheduled EDR Contact: 06/11/2018
Data Release Frequency: Varies

Federal ERNS list

ERNS: Emergency Response Notification System

Emergency Response Notification System. ERNS records and stores information on reported releases of oil and hazardous substances.

Date of Government Version: 09/18/2017
Date Data Arrived at EDR: 09/21/2017
Date Made Active in Reports: 10/13/2017
Number of Days to Update: 22

Source: National Response Center, United States Coast Guard
Telephone: 202-267-2180
Last EDR Contact: 01/19/2018
Next Scheduled EDR Contact: 04/09/2018
Data Release Frequency: Quarterly

State- and tribal - equivalent NPL

RESPONSE: State Response Sites

Identifies confirmed release sites where DTSC is involved in remediation, either in a lead or oversight capacity. These confirmed release sites are generally high-priority and high potential risk.

Date of Government Version: 01/30/2018
Date Data Arrived at EDR: 01/31/2018
Date Made Active in Reports: 03/19/2018
Number of Days to Update: 47

Source: Department of Toxic Substances Control
Telephone: 916-323-3400
Last EDR Contact: 01/31/2018
Next Scheduled EDR Contact: 05/14/2018
Data Release Frequency: Quarterly

State- and tribal - equivalent CERCLIS

ENVIROSTOR: EnviroStor Database

The Department of Toxic Substances Control's (DTSC's) Site Mitigation and Brownfields Reuse Program's (SMBRP's) EnviroStor database identifes sites that have known contamination or sites for which there may be reasons to investigate further. The database includes the following site types: Federal Superfund sites (National Priorities List (NPL)); State Response, including Military Facilities and State Superfund; Voluntary Cleanup; and School sites. EnviroStor provides similar information to the information that was available in CalSites, and provides additional site information, including, but not limited to, identification of formerly-contaminated properties that have been released for reuse, properties where environmental deed restrictions have been recorded to prevent inappropriate land uses, and risk characterization information that is used to assess potential impacts to public health and the environment at contaminated sites.

Date of Government Version: 01/30/2018
Date Data Arrived at EDR: 01/31/2018
Date Made Active in Reports: 03/19/2018
Number of Days to Update: 47

Source: Department of Toxic Substances Control
Telephone: 916-323-3400
Last EDR Contact: 01/31/2018
Next Scheduled EDR Contact: 05/14/2018
Data Release Frequency: Quarterly

State and tribal landfill and/or solid waste disposal site lists

SWF/LF (SWIS): Solid Waste Information System

Active, Closed and Inactive Landfills. SWF/LF records typically contain an inve ntory of solid waste disposal facilities or landfills. These may be active or i nactive facilities or open dumps that failed to meet RCRA Section 4004 criteria for solid waste landfills or disposal sites.

Date of Government Version: 11/13/2017
Date Data Arrived at EDR: 11/14/2017
Date Made Active in Reports: 12/07/2017
Number of Days to Update: 23

Source: Department of Resources Recycling and Recovery
Telephone: 916-341-6320
Last EDR Contact: 02/14/2018
Next Scheduled EDR Contact: 05/28/2018
Data Release Frequency: Quarterly

State and tribal leaking storage tank lists

LUST REG 9: Leaking Underground Storage Tank Report
Orange, Riverside, San Diego counties. For more current information, please refer to the State Water Resources Control Board's LUST database.

Date of Government Version: 03/01/2001
Date Data Arrived at EDR: 04/23/2001
Date Made Active in Reports: 05/21/2001
Number of Days to Update: 28

Source: California Regional Water Quality Control Board San Diego Region (9)
Telephone: 858-637-5595
Last EDR Contact: 09/26/2011
Next Scheduled EDR Contact: 01/09/2012
Data Release Frequency: No Update Planned

LUST: Leaking Underground Fuel Tank Report (GEOTRACKER)
Leaking Underground Storage Tank (LUST) Sites included in GeoTracker. GeoTracker is the Water Boards data management system for sites that impact, or have the potential to impact, water quality in California, with emphasis on groundwater.

Date of Government Version: 12/11/2017
Date Data Arrived at EDR: 12/12/2017
Date Made Active in Reports: 01/11/2018
Number of Days to Update: 30

Source: State Water Resources Control Board
Telephone: see region list
Last EDR Contact: 03/14/2018
Next Scheduled EDR Contact: 06/25/2018
Data Release Frequency: Quarterly

LUST REG 7: Leaking Underground Storage Tank Case Listing
Leaking Underground Storage Tank locations. Imperial, Riverside, San Diego, Santa Barbara counties.

Date of Government Version: 02/26/2004
Date Data Arrived at EDR: 02/26/2004
Date Made Active in Reports: 03/24/2004
Number of Days to Update: 27

Source: California Regional Water Quality Control Board Colorado River Basin Region (7)
Telephone: 760-776-8943
Last EDR Contact: 08/01/2011
Next Scheduled EDR Contact: 11/14/2011
Data Release Frequency: No Update Planned

LUST REG 6V: Leaking Underground Storage Tank Case Listing
Leaking Underground Storage Tank locations. Inyo, Kern, Los Angeles, Mono, San Bernardino counties.

Date of Government Version: 06/07/2005
Date Data Arrived at EDR: 06/07/2005
Date Made Active in Reports: 06/29/2005
Number of Days to Update: 22

Source: California Regional Water Quality Control Board Victorville Branch Office (6)
Telephone: 760-241-7365
Last EDR Contact: 09/12/2011
Next Scheduled EDR Contact: 12/26/2011
Data Release Frequency: No Update Planned

LUST REG 5: Leaking Underground Storage Tank Database
Leaking Underground Storage Tank locations. Alameda, Alpine, Amador, Butte, Colusa, Contra Costa, Calveras, El Dorado, Fresno, Glenn, Kern, Kings, Lake, Lassen, Madera, Mariposa, Merced, Modoc, Napa, Nevada, Placer, Plumas, Sacramento, San Joaquin, Shasta, Solano, Stanislaus, Sutter, Tehama, Tulare, Tuolumne, Yolo, Yuba counties.

Date of Government Version: 07/01/2008
Date Data Arrived at EDR: 07/22/2008
Date Made Active in Reports: 07/31/2008
Number of Days to Update: 9

Source: California Regional Water Quality Control Board Central Valley Region (5)
Telephone: 916-464-4834
Last EDR Contact: 07/01/2011
Next Scheduled EDR Contact: 10/17/2011
Data Release Frequency: No Update Planned

LUST REG 1: Active Toxic Site Investigation
Del Norte, Humboldt, Lake, Mendocino, Modoc, Siskiyou, Sonoma, Trinity counties. For more current information, please refer to the State Water Resources Control Board's LUST database.

Date of Government Version: 02/01/2001
Date Data Arrived at EDR: 02/28/2001
Date Made Active in Reports: 03/29/2001
Number of Days to Update: 29

Source: California Regional Water Quality Control Board North Coast (1)
Telephone: 707-570-3769
Last EDR Contact: 08/01/2011
Next Scheduled EDR Contact: 11/14/2011
Data Release Frequency: No Update Planned

LUST REG 2: Fuel Leak List
Leaking Underground Storage Tank locations. Alameda, Contra Costa, Marin, Napa, San Francisco, San Mateo, Santa Clara, Solano, Sonoma counties.

Date of Government Version: 09/30/2004
Date Data Arrived at EDR: 10/20/2004
Date Made Active in Reports: 11/19/2004
Number of Days to Update: 30

Source: California Regional Water Quality Control Board San Francisco Bay Region (2)
Telephone: 510-622-2433
Last EDR Contact: 09/19/2011
Next Scheduled EDR Contact: 01/02/2012
Data Release Frequency: Quarterly

LUST REG 3: Leaking Underground Storage Tank Database
Leaking Underground Storage Tank locations. Monterey, San Benito, San Luis Obispo, Santa Barbara, Santa Cruz counties.

Date of Government Version: 05/19/2003
Date Data Arrived at EDR: 05/19/2003
Date Made Active in Reports: 06/02/2003
Number of Days to Update: 14

Source: California Regional Water Quality Control Board Central Coast Region (3)
Telephone: 805-542-4786
Last EDR Contact: 07/18/2011
Next Scheduled EDR Contact: 10/31/2011
Data Release Frequency: No Update Planned

LUST REG 4: Underground Storage Tank Leak List
Los Angeles, Ventura counties. For more current information, please refer to the State Water Resources Control Board's LUST database.

Date of Government Version: 09/07/2004
Date Data Arrived at EDR: 09/07/2004
Date Made Active in Reports: 10/12/2004
Number of Days to Update: 35

Source: California Regional Water Quality Control Board Los Angeles Region (4)
Telephone: 213-576-6710
Last EDR Contact: 09/06/2011
Next Scheduled EDR Contact: 12/19/2011
Data Release Frequency: No Update Planned

LUST REG 8: Leaking Underground Storage Tanks
California Regional Water Quality Control Board Santa Ana Region (8). For more current information, please refer to the State Water Resources Control Board's LUST database.

Date of Government Version: 02/14/2005
Date Data Arrived at EDR: 02/15/2005
Date Made Active in Reports: 03/28/2005
Number of Days to Update: 41

Source: California Regional Water Quality Control Board Santa Ana Region (8)
Telephone: 909-782-4496
Last EDR Contact: 08/15/2011
Next Scheduled EDR Contact: 11/28/2011
Data Release Frequency: Varies

LUST REG 6L: Leaking Underground Storage Tank Case Listing
For more current information, please refer to the State Water Resources Control Board's LUST database.

Date of Government Version: 09/09/2003
Date Data Arrived at EDR: 09/10/2003
Date Made Active in Reports: 10/07/2003
Number of Days to Update: 27

Source: California Regional Water Quality Control Board Lahontan Region (6)
Telephone: 530-542-5572
Last EDR Contact: 09/12/2011
Next Scheduled EDR Contact: 12/26/2011
Data Release Frequency: No Update Planned

INDIAN LUST R10: Leaking Underground Storage Tanks on Indian Land
LUSTs on Indian land in Alaska, Idaho, Oregon and Washington.

Date of Government Version: 04/25/2017
Date Data Arrived at EDR: 11/07/2017
Date Made Active in Reports: 12/08/2017
Number of Days to Update: 31

Source: EPA Region 10
Telephone: 206-553-2857
Last EDR Contact: 01/23/2018
Next Scheduled EDR Contact: 05/07/2018
Data Release Frequency: Varies

INDIAN LUST R9: Leaking Underground Storage Tanks on Indian Land
LUSTs on Indian land in Arizona, California, New Mexico and Nevada

Date of Government Version: 04/13/2017
Date Data Arrived at EDR: 07/27/2017
Date Made Active in Reports: 10/13/2017
Number of Days to Update: 78

Source: Environmental Protection Agency
Telephone: 415-972-3372
Last EDR Contact: 01/23/2018
Next Scheduled EDR Contact: 05/07/2018
Data Release Frequency: Varies

INDIAN LUST R8: Leaking Underground Storage Tanks on Indian Land
LUSTs on Indian land in Colorado, Montana, North Dakota, South Dakota, Utah and Wyoming.

Date of Government Version: 05/01/2017
Date Data Arrived at EDR: 07/27/2017
Date Made Active in Reports: 10/13/2017
Number of Days to Update: 78

Source: EPA Region 8
Telephone: 303-312-6271
Last EDR Contact: 01/23/2018
Next Scheduled EDR Contact: 05/07/2018
Data Release Frequency: Varies

INDIAN LUST R7: Leaking Underground Storage Tanks on Indian Land
LUSTs on Indian land in Iowa, Kansas, and Nebraska

Date of Government Version: 04/14/2017
Date Data Arrived at EDR: 07/27/2017
Date Made Active in Reports: 10/06/2017
Number of Days to Update: 71

Source: EPA Region 7
Telephone: 913-551-7003
Last EDR Contact: 01/23/2018
Next Scheduled EDR Contact: 05/07/2018
Data Release Frequency: Varies

INDIAN LUST R1: Leaking Underground Storage Tanks on Indian Land
A listing of leaking underground storage tank locations on Indian Land.

Date of Government Version: 04/14/2017
Date Data Arrived at EDR: 07/27/2017
Date Made Active in Reports: 10/06/2017
Number of Days to Update: 71

Source: EPA Region 1
Telephone: 617-918-1313
Last EDR Contact: 01/23/2018
Next Scheduled EDR Contact: 05/07/2018
Data Release Frequency: Varies

INDIAN LUST R4: Leaking Underground Storage Tanks on Indian Land
LUSTs on Indian land in Florida, Mississippi and North Carolina.

Date of Government Version: 10/14/2016
Date Data Arrived at EDR: 01/27/2017
Date Made Active in Reports: 05/05/2017
Number of Days to Update: 98

Source: EPA Region 4
Telephone: 404-562-8677
Last EDR Contact: 01/19/2018
Next Scheduled EDR Contact: 05/07/2018
Data Release Frequency: Semi-Annually

INDIAN LUST R6: Leaking Underground Storage Tanks on Indian Land
LUSTs on Indian land in New Mexico and Oklahoma.

Date of Government Version: 04/24/2017
Date Data Arrived at EDR: 07/27/2017
Date Made Active in Reports: 10/06/2017
Number of Days to Update: 71

Source: EPA Region 6
Telephone: 214-665-6597
Last EDR Contact: 01/23/2018
Next Scheduled EDR Contact: 05/07/2018
Data Release Frequency: Varies

INDIAN LUST R5: Leaking Underground Storage Tanks on Indian Land
Leaking underground storage tanks located on Indian Land in Michigan, Minnesota and Wisconsin.

Date of Government Version: 04/26/2017
Date Data Arrived at EDR: 07/27/2017
Date Made Active in Reports: 10/13/2017
Number of Days to Update: 78

Source: EPA, Region 5
Telephone: 312-886-7439
Last EDR Contact: 01/23/2018
Next Scheduled EDR Contact: 05/07/2018
Data Release Frequency: Varies

SLIC: Statewide SLIC Cases (GEOTRACKER)
Cleanup Program Sites (CPS; also known as Site Cleanups [SC] and formerly known as Spills, Leaks, Investigations, and Cleanups [SLIC] sites) included in GeoTracker. GeoTracker is the Water Boards data management system for sites that impact, or have the potential to impact, water quality in California, with emphasis on groundwater.

Date of Government Version: 12/11/2017
Date Data Arrived at EDR: 12/12/2017
Date Made Active in Reports: 01/12/2018
Number of Days to Update: 31

Source: State Water Resources Control Board
Telephone: 866-480-1028
Last EDR Contact: 12/12/2018
Next Scheduled EDR Contact: 06/25/2018
Data Release Frequency: Varies

SLIC REG 1: Active Toxic Site Investigations
The SLIC (Spills, Leaks, Investigations and Cleanup) program is designed to protect and restore water quality from spills, leaks, and similar discharges.

Date of Government Version: 04/03/2003
Date Data Arrived at EDR: 04/07/2003
Date Made Active in Reports: 04/25/2003
Number of Days to Update: 18

Source: California Regional Water Quality Control Board, North Coast Region (1)
Telephone: 707-576-2220
Last EDR Contact: 08/01/2011
Next Scheduled EDR Contact: 11/14/2011
Data Release Frequency: No Update Planned

SLIC REG 2: Spills, Leaks, Investigation & Cleanup Cost Recovery Listing
The SLIC (Spills, Leaks, Investigations and Cleanup) program is designed to protect and restore water quality from spills, leaks, and similar discharges.

Date of Government Version: 09/30/2004
Date Data Arrived at EDR: 10/20/2004
Date Made Active in Reports: 11/19/2004
Number of Days to Update: 30

Source: Regional Water Quality Control Board San Francisco Bay Region (2)
Telephone: 510-286-0457
Last EDR Contact: 09/19/2011
Next Scheduled EDR Contact: 01/02/2012
Data Release Frequency: Quarterly

SLIC REG 3: Spills, Leaks, Investigation & Cleanup Cost Recovery Listing
The SLIC (Spills, Leaks, Investigations and Cleanup) program is designed to protect and restore water quality from spills, leaks, and similar discharges.

Date of Government Version: 05/18/2006
Date Data Arrived at EDR: 05/18/2006
Date Made Active in Reports: 06/15/2006
Number of Days to Update: 28

Source: California Regional Water Quality Control Board Central Coast Region (3)
Telephone: 805-549-3147
Last EDR Contact: 07/18/2011
Next Scheduled EDR Contact: 10/31/2011
Data Release Frequency: Semi-Annually

SLIC REG 4: Spills, Leaks, Investigation & Cleanup Cost Recovery Listing
The SLIC (Spills, Leaks, Investigations and Cleanup) program is designed to protect and restore water quality from spills, leaks, and similar discharges.

Date of Government Version: 11/17/2004
Date Data Arrived at EDR: 11/18/2004
Date Made Active in Reports: 01/04/2005
Number of Days to Update: 47

Source: Region Water Quality Control Board Los Angeles Region (4)
Telephone: 213-576-6600
Last EDR Contact: 07/01/2011
Next Scheduled EDR Contact: 10/17/2011
Data Release Frequency: Varies

SLIC REG 5: Spills, Leaks, Investigation & Cleanup Cost Recovery Listing
The SLIC (Spills, Leaks, Investigations and Cleanup) program is designed to protect and restore water quality from spills, leaks, and similar discharges.

Date of Government Version: 04/01/2005
Date Data Arrived at EDR: 04/05/2005
Date Made Active in Reports: 04/21/2005
Number of Days to Update: 16

Source: Regional Water Quality Control Board Central Valley Region (5)
Telephone: 916-464-3291
Last EDR Contact: 09/12/2011
Next Scheduled EDR Contact: 12/26/2011
Data Release Frequency: Semi-Annually

SLIC REG 6V: Spills, Leaks, Investigation & Cleanup Cost Recovery Listing
The SLIC (Spills, Leaks, Investigations and Cleanup) program is designed to protect and restore water quality from spills, leaks, and similar discharges.

Date of Government Version: 05/24/2005
Date Data Arrived at EDR: 05/25/2005
Date Made Active in Reports: 06/16/2005
Number of Days to Update: 22

Source: Regional Water Quality Control Board, Victorville Branch
Telephone: 619-241-6583
Last EDR Contact: 08/15/2011
Next Scheduled EDR Contact: 11/28/2011
Data Release Frequency: Semi-Annually

SLIC REG 6L: SLIC Sites
The SLIC (Spills, Leaks, Investigations and Cleanup) program is designed to protect and restore water quality from spills, leaks, and similar discharges.

Date of Government Version: 09/07/2004
Date Data Arrived at EDR: 09/07/2004
Date Made Active in Reports: 10/12/2004
Number of Days to Update: 35

Source: California Regional Water Quality Control Board, Lahontan Region
Telephone: 530-542-5574
Last EDR Contact: 08/15/2011
Next Scheduled EDR Contact: 11/28/2011
Data Release Frequency: No Update Planned

SLIC REG 7: SLIC List
The SLIC (Spills, Leaks, Investigations and Cleanup) program is designed to protect and restore water quality from spills, leaks, and similar discharges.

Date of Government Version: 11/24/2004
Date Data Arrived at EDR: 11/29/2004
Date Made Active in Reports: 01/04/2005
Number of Days to Update: 36

Source: California Regional Quality Control Board, Colorado River Basin Region
Telephone: 760-346-7491
Last EDR Contact: 08/01/2011
Next Scheduled EDR Contact: 11/14/2011
Data Release Frequency: No Update Planned

SLIC REG 8: Spills, Leaks, Investigation & Cleanup Cost Recovery Listing
The SLIC (Spills, Leaks, Investigations and Cleanup) program is designed to protect and restore water quality from spills, leaks, and similar discharges.

Date of Government Version: 04/03/2008
Date Data Arrived at EDR: 04/03/2008
Date Made Active in Reports: 04/14/2008
Number of Days to Update: 11

Source: California Region Water Quality Control Board Santa Ana Region (8)
Telephone: 951-782-3298
Last EDR Contact: 09/12/2011
Next Scheduled EDR Contact: 12/26/2011
Data Release Frequency: Semi-Annually

SLIC REG 9: Spills, Leaks, Investigation & Cleanup Cost Recovery Listing
The SLIC (Spills, Leaks, Investigations and Cleanup) program is designed to protect and restore water quality from spills, leaks, and similar discharges.

Date of Government Version: 09/10/2007
Date Data Arrived at EDR: 09/11/2007
Date Made Active in Reports: 09/28/2007
Number of Days to Update: 17

Source: California Regional Water Quality Control Board San Diego Region (9)
Telephone: 858-467-2980
Last EDR Contact: 08/08/2011
Next Scheduled EDR Contact: 11/21/2011
Data Release Frequency: Annually

State and tribal registered storage tank lists

FEMA UST: Underground Storage Tank Listing
A listing of all FEMA owned underground storage tanks.

Date of Government Version: 05/15/2017
Date Data Arrived at EDR: 05/30/2017
Date Made Active in Reports: 10/13/2017
Number of Days to Update: 136

Source: FEMA
Telephone: 202-646-5797
Last EDR Contact: 01/09/2018
Next Scheduled EDR Contact: 04/23/2018
Data Release Frequency: Varies

UST: Active UST Facilities
Active UST facilities gathered from the local regulatory agencies

Date of Government Version: 12/11/2017
Date Data Arrived at EDR: 12/12/2017
Date Made Active in Reports: 01/17/2018
Number of Days to Update: 36

Source: SWRCB
Telephone: 916-341-5851
Last EDR Contact: 03/14/2018
Next Scheduled EDR Contact: 06/25/2018
Data Release Frequency: Semi-Annually

AST: Aboveground Petroleum Storage Tank Facilities
A listing of aboveground storage tank petroleum storage tank locations.

Date of Government Version: 07/06/2016
Date Data Arrived at EDR: 07/12/2016
Date Made Active in Reports: 09/19/2016
Number of Days to Update: 69

Source: California Environmental Protection Agency
Telephone: 916-327-5092
Last EDR Contact: 12/26/2017
Next Scheduled EDR Contact: 04/09/2018
Data Release Frequency: Quarterly

INDIAN UST R5: Underground Storage Tanks on Indian Land
The Indian Underground Storage Tank (UST) database provides information about underground storage tanks on Indian land in EPA Region 5 (Michigan, Minnesota and Wisconsin and Tribal Nations).

Date of Government Version: 04/26/2017
Date Data Arrived at EDR: 07/27/2017
Date Made Active in Reports: 10/06/2017
Number of Days to Update: 71

Source: EPA Region 5
Telephone: 312-886-6136
Last EDR Contact: 01/23/2018
Next Scheduled EDR Contact: 05/07/2018
Data Release Frequency: Varies

INDIAN UST R1: Underground Storage Tanks on Indian Land
The Indian Underground Storage Tank (UST) database provides information about underground storage tanks on Indian land in EPA Region 1 (Connecticut, Maine, Massachusetts, New Hampshire, Rhode Island, Vermont and ten Tribal Nations).

Date of Government Version: 04/14/2017
Date Data Arrived at EDR: 07/27/2017
Date Made Active in Reports: 10/06/2017
Number of Days to Update: 71

Source: EPA, Region 1
Telephone: 617-918-1313
Last EDR Contact: 01/23/2018
Next Scheduled EDR Contact: 05/07/2018
Data Release Frequency: Varies

INDIAN UST R9: Underground Storage Tanks on Indian Land
The Indian Underground Storage Tank (UST) database provides information about underground storage tanks on Indian land in EPA Region 9 (Arizona, California, Hawaii, Nevada, the Pacific Islands, and Tribal Nations).

Date of Government Version: 04/13/2017
Date Data Arrived at EDR: 07/27/2017
Date Made Active in Reports: 10/13/2017
Number of Days to Update: 78

Source: EPA Region 9
Telephone: 415-972-3368
Last EDR Contact: 01/23/2018
Next Scheduled EDR Contact: 05/07/2018
Data Release Frequency: Varies

INDIAN UST R4: Underground Storage Tanks on Indian Land
The Indian Underground Storage Tank (UST) database provides information about underground storage tanks on Indian land in EPA Region 4 (Alabama, Florida, Georgia, Kentucky, Mississippi, North Carolina, South Carolina, Tennessee and Tribal Nations)

Date of Government Version: 10/14/2016
Date Data Arrived at EDR: 01/27/2017
Date Made Active in Reports: 05/05/2017
Number of Days to Update: 98

Source: EPA Region 4
Telephone: 404-562-9424
Last EDR Contact: 01/19/2018
Next Scheduled EDR Contact: 05/07/2018
Data Release Frequency: Semi-Annually

INDIAN UST R8: Underground Storage Tanks on Indian Land
The Indian Underground Storage Tank (UST) database provides information about underground storage tanks on Indian land in EPA Region 8 (Colorado, Montana, North Dakota, South Dakota, Utah, Wyoming and 27 Tribal Nations).

Date of Government Version: 05/01/2017
Date Data Arrived at EDR: 07/27/2017
Date Made Active in Reports: 10/13/2017
Number of Days to Update: 78

Source: EPA Region 8
Telephone: 303-312-6137
Last EDR Contact: 01/23/2018
Next Scheduled EDR Contact: 05/07/2018
Data Release Frequency: Varies

INDIAN UST R7: Underground Storage Tanks on Indian Land
The Indian Underground Storage Tank (UST) database provides information about underground storage tanks on Indian land in EPA Region 7 (Iowa, Kansas, Missouri, Nebraska, and 9 Tribal Nations).

Date of Government Version: 05/02/2017
Date Data Arrived at EDR: 07/27/2017
Date Made Active in Reports: 10/06/2017
Number of Days to Update: 71

Source: EPA Region 7
Telephone: 913-551-7003
Last EDR Contact: 01/23/2018
Next Scheduled EDR Contact: 05/07/2018
Data Release Frequency: Varies

INDIAN UST R6: Underground Storage Tanks on Indian Land
The Indian Underground Storage Tank (UST) database provides information about underground storage tanks on Indian land in EPA Region 6 (Louisiana, Arkansas, Oklahoma, New Mexico, Texas and 65 Tribes).

Date of Government Version: 04/24/2017
Date Data Arrived at EDR: 07/27/2017
Date Made Active in Reports: 12/08/2017
Number of Days to Update: 134

Source: EPA Region 6
Telephone: 214-665-7591
Last EDR Contact: 01/23/2018
Next Scheduled EDR Contact: 05/07/2018
Data Release Frequency: Varies

INDIAN UST R10: Underground Storage Tanks on Indian Land
The Indian Underground Storage Tank (UST) database provides information about underground storage tanks on Indian land in EPA Region 10 (Alaska, Idaho, Oregon, Washington, and Tribal Nations).

Date of Government Version: 04/25/2017
Date Data Arrived at EDR: 07/27/2017
Date Made Active in Reports: 10/13/2017
Number of Days to Update: 78

Source: EPA Region 10
Telephone: 206-553-2857
Last EDR Contact: 01/23/2018
Next Scheduled EDR Contact: 05/07/2018
Data Release Frequency: Varies

State and tribal voluntary cleanup sites

INDIAN VCP R1: Voluntary Cleanup Priority Listing
A listing of voluntary cleanup priority sites located on Indian Land located in Region 1.

Date of Government Version: 07/27/2015
Date Data Arrived at EDR: 09/29/2015
Date Made Active in Reports: 02/18/2016
Number of Days to Update: 142

Source: EPA, Region 1
Telephone: 617-918-1102
Last EDR Contact: 12/20/2017
Next Scheduled EDR Contact: 04/09/2018
Data Release Frequency: Varies

INDIAN VCP R7: Voluntary Cleanup Priority Lisitng
A listing of voluntary cleanup priority sites located on Indian Land located in Region 7.

Date of Government Version: 03/20/2008
Date Data Arrived at EDR: 04/22/2008
Date Made Active in Reports: 05/19/2008
Number of Days to Update: 27

Source: EPA, Region 7
Telephone: 913-551-7365
Last EDR Contact: 04/20/2009
Next Scheduled EDR Contact: 07/20/2009
Data Release Frequency: Varies

VCP: Voluntary Cleanup Program Properties
Contains low threat level properties with either confirmed or unconfirmed releases and the project proponents have request that DTSC oversee investigation and/or cleanup activities and have agreed to provide coverage for DTSC's costs.

Date of Government Version: 01/30/2018
Date Data Arrived at EDR: 01/31/2018
Date Made Active in Reports: 03/19/2018
Number of Days to Update: 47

Source: Department of Toxic Substances Control
Telephone: 916-323-3400
Last EDR Contact: 01/31/2018
Next Scheduled EDR Contact: 05/14/2018
Data Release Frequency: Quarterly

State and tribal Brownfields sites

BROWNFIELDS: Considered Brownfieds Sites Listing
A listing of sites the SWRCB considers to be Brownfields since these are sites have come to them through the MOA Process.

Date of Government Version: 12/22/2017
Date Data Arrived at EDR: 12/26/2017
Date Made Active in Reports: 01/31/2018
Number of Days to Update: 36

Source: State Water Resources Control Board
Telephone: 916-323-7905
Last EDR Contact: 12/26/2017
Next Scheduled EDR Contact: 04/09/2018
Data Release Frequency: Quarterly

ADDITIONAL ENVIRONMENTAL RECORDS

Local Brownfield lists

US BROWNFIELDS: A Listing of Brownfields Sites
Brownfields are real property, the expansion, redevelopment, or reuse of which may be complicated by the presence or potential presence of a hazardous substance, pollutant, or contaminant. Cleaning up and reinvesting in these properties takes development pressures off of undeveloped, open land, and both improves and protects the environment. Assessment, Cleanup and Redevelopment Exchange System (ACRES) stores information reported by EPA Brownfields grant recipients on brownfields properties assessed or cleaned up with grant funding as well as information on Targeted Brownfields Assessments performed by EPA Regions. A listing of ACRES Brownfield sites is obtained from Cleanups in My Community. Cleanups in My Community provides information on Brownfields properties for which information is reported back to EPA, as well as areas served by Brownfields grant programs.

Date of Government Version: 01/19/2018
Date Data Arrived at EDR: 01/19/2018
Date Made Active in Reports: 02/09/2018
Number of Days to Update: 21

Source: Environmental Protection Agency
Telephone: 202-566-2777
Last EDR Contact: 01/19/2018
Next Scheduled EDR Contact: 04/02/2018
Data Release Frequency: Semi-Annually

Local Lists of Landfill / Solid Waste Disposal Sites

WMUDS/SWAT: Waste Management Unit Database
Waste Management Unit Database System. WMUDS is used by the State Water Resources Control Board staff and the Regional Water Quality Control Boards for program tracking and inventory of waste management units. WMUDS is composed of the following databases: Facility Information, Scheduled Inspections Information, Waste Management Unit Information, SWAT Program Information, SWAT Report Summary Information, SWAT Report Summary Data, Chapter 15 (formerly Subchapter 15) Information, Chapter 15 Monitoring Parameters, TPCA Program Information, RCRA Program Information, Closure Information, and Interested Parties Information.

Date of Government Version: 04/01/2000
Date Data Arrived at EDR: 04/10/2000
Date Made Active in Reports: 05/10/2000
Number of Days to Update: 30

Source: State Water Resources Control Board
Telephone: 916-227-4448
Last EDR Contact: 01/31/2018
Next Scheduled EDR Contact: 05/21/2018
Data Release Frequency: No Update Planned

SWRCY: Recycler Database
A listing of recycling facilities in California.

Date of Government Version: 12/11/2017
Date Data Arrived at EDR: 12/12/2017
Date Made Active in Reports: 01/17/2018
Number of Days to Update: 36

Source: Department of Conservation
Telephone: 916-323-3836
Last EDR Contact: 03/14/2018
Next Scheduled EDR Contact: 06/25/2018
Data Release Frequency: Quarterly

HAULERS: Registered Waste Tire Haulers Listing
A listing of registered waste tire haulers.

Date of Government Version: 02/08/2018
Date Data Arrived at EDR: 02/09/2018
Date Made Active in Reports: 03/20/2018
Number of Days to Update: 39

Source: Integrated Waste Management Board
Telephone: 916-341-6422
Last EDR Contact: 02/09/2018
Next Scheduled EDR Contact: 02/26/2018
Data Release Frequency: Varies

INDIAN ODI: Report on the Status of Open Dumps on Indian Lands
Location of open dumps on Indian land.

Date of Government Version: 12/31/1998
Date Data Arrived at EDR: 12/03/2007
Date Made Active in Reports: 01/24/2008
Number of Days to Update: 52

Source: Environmental Protection Agency
Telephone: 703-308-8245
Last EDR Contact: 01/30/2018
Next Scheduled EDR Contact: 05/14/2018
Data Release Frequency: Varies

DEBRIS REGION 9: Torres Martinez Reservation Illegal Dump Site Locations
A listing of illegal dump sites location on the Torres Martinez Indian Reservation located in eastern Riverside County and northern Imperial County, California.

Date of Government Version: 01/12/2009
Date Data Arrived at EDR: 05/07/2009
Date Made Active in Reports: 09/21/2009
Number of Days to Update: 137

Source: EPA, Region 9
Telephone: 415-947-4219
Last EDR Contact: 01/22/2018
Next Scheduled EDR Contact: 05/07/2018
Data Release Frequency: No Update Planned

ODI: Open Dump Inventory
An open dump is defined as a disposal facility that does not comply with one or more of the Part 257 or Part 258 Subtitle D Criteria.

Date of Government Version: 06/30/1985
Date Data Arrived at EDR: 08/09/2004
Date Made Active in Reports: 09/17/2004
Number of Days to Update: 39

Source: Environmental Protection Agency
Telephone: 800-424-9346
Last EDR Contact: 06/09/2004
Next Scheduled EDR Contact: N/A
Data Release Frequency: No Update Planned

IHS OPEN DUMPS: Open Dumps on Indian Land
A listing of all open dumps located on Indian Land in the United States.

Date of Government Version: 04/01/2014
Date Data Arrived at EDR: 08/06/2014
Date Made Active in Reports: 01/29/2015
Number of Days to Update: 176

Source: Department of Health & Human Serivces, Indian Health Service
Telephone: 301-443-1452
Last EDR Contact: 02/02/2018
Next Scheduled EDR Contact: 05/14/2018
Data Release Frequency: Varies

Local Lists of Hazardous waste / Contaminated Sites

US HIST CDL: National Clandestine Laboratory Register
A listing of clandestine drug lab locations that have been removed from the DEAs National Clandestine Laboratory Register.

Date of Government Version: 01/19/2018
Date Data Arrived at EDR: 01/24/2018
Date Made Active in Reports: 02/09/2018
Number of Days to Update: 16

Source: Drug Enforcement Administration
Telephone: 202-307-1000
Last EDR Contact: 02/27/2018
Next Scheduled EDR Contact: 06/11/2018
Data Release Frequency: No Update Planned

HIST CAL-SITES: Calsites Database

The Calsites database contains potential or confirmed hazardous substance release properties. In 1996, California EPA reevaluated and significantly reduced the number of sites in the Calsites database. No longer updated by the state agency. It has been replaced by ENVIROSTOR.

Date of Government Version: 08/08/2005
Date Data Arrived at EDR: 08/03/2006
Date Made Active in Reports: 08/24/2006
Number of Days to Update: 21

Source: Department of Toxic Substance Control
Telephone: 916-323-3400
Last EDR Contact: 02/23/2009
Next Scheduled EDR Contact: 05/25/2009
Data Release Frequency: No Update Planned

SCH: School Property Evaluation Program

This category contains proposed and existing school sites that are being evaluated by DTSC for possible hazardous materials contamination. In some cases, these properties may be listed in the CalSites category depending on the level of threat to public health and safety or the environment they pose.

Date of Government Version: 01/30/2018
Date Data Arrived at EDR: 01/31/2018
Date Made Active in Reports: 03/19/2018
Number of Days to Update: 47

Source: Department of Toxic Substances Control
Telephone: 916-323-3400
Last EDR Contact: 01/31/2018
Next Scheduled EDR Contact: 05/14/2018
Data Release Frequency: Quarterly

CDL: Clandestine Drug Labs

A listing of drug lab locations. Listing of a location in this database does not indicate that any illegal drug lab materials were or were not present there, and does not constitute a determination that the location either requires or does not require additional cleanup work.

Date of Government Version: 06/30/2017
Date Data Arrived at EDR: 08/18/2017
Date Made Active in Reports: 09/21/2017
Number of Days to Update: 34

Source: Department of Toxic Substances Control
Telephone: 916-255-6504
Last EDR Contact: 02/22/2018
Next Scheduled EDR Contact: 04/23/2018
Data Release Frequency: Varies

TOXIC PITS: Toxic Pits Cleanup Act Sites

Toxic PITS Cleanup Act Sites. TOXIC PITS identifies sites suspected of containing hazardous substances where cleanup has not yet been completed.

Date of Government Version: 07/01/1995
Date Data Arrived at EDR: 08/30/1995
Date Made Active in Reports: 09/26/1995
Number of Days to Update: 27

Source: State Water Resources Control Board
Telephone: 916-227-4364
Last EDR Contact: 01/26/2009
Next Scheduled EDR Contact: 04/27/2009
Data Release Frequency: No Update Planned

US CDL: Clandestine Drug Labs

A listing of clandestine drug lab locations. The U.S. Department of Justice ("the Department") provides this web site as a public service. It contains addresses of some locations where law enforcement agencies reported they found chemicals or other items that indicated the presence of either clandestine drug laboratories or dumpsites. In most cases, the source of the entries is not the Department, and the Department has not verified the entry and does not guarantee its accuracy. Members of the public must verify the accuracy of all entries by, for example, contacting local law enforcement and local health departments.

Date of Government Version: 01/09/2018
Date Data Arrived at EDR: 01/24/2018
Date Made Active in Reports: 02/09/2018
Number of Days to Update: 16

Source: Drug Enforcement Administration
Telephone: 202-307-1000
Last EDR Contact: 02/27/2018
Next Scheduled EDR Contact: 06/11/2018
Data Release Frequency: Quarterly

Local Lists of Registered Storage Tanks

SWEEPS UST: SWEEPS UST Listing

Statewide Environmental Evaluation and Planning System. This underground storage tank listing was updated and maintained by a company contacted by the SWRCB in the early 1990's. The listing is no longer updated or maintained. The local agency is the contact for more information on a site on the SWEEPS list.

Date of Government Version: 06/01/1994
Date Data Arrived at EDR: 07/07/2005
Date Made Active in Reports: 08/11/2005
Number of Days to Update: 35

Source: State Water Resources Control Board
Telephone: N/A
Last EDR Contact: 06/03/2005
Next Scheduled EDR Contact: N/A
Data Release Frequency: No Update Planned

UST MENDOCINO: Mendocino County UST Database

A listing of underground storage tank locations in Mendocino County.

Date of Government Version: 11/27/2017
Date Data Arrived at EDR: 11/29/2017
Date Made Active in Reports: 12/18/2017
Number of Days to Update: 19

Source: Department of Public Health
Telephone: 707-463-4466
Last EDR Contact: 02/22/2018
Next Scheduled EDR Contact: 06/11/2018
Data Release Frequency: Annually

HIST UST: Hazardous Substance Storage Container Database

The Hazardous Substance Storage Container Database is a historical listing of UST sites. Refer to local/county source for current data.

Date of Government Version: 10/15/1990
Date Data Arrived at EDR: 01/25/1991
Date Made Active in Reports: 02/12/1991
Number of Days to Update: 18

Source: State Water Resources Control Board
Telephone: 916-341-5851
Last EDR Contact: 07/26/2001
Next Scheduled EDR Contact: N/A
Data Release Frequency: No Update Planned

CA FID UST: Facility Inventory Database

The Facility Inventory Database (FID) contains a historical listing of active and inactive underground storage tank locations from the State Water Resource Control Board. Refer to local/county source for current data.

Date of Government Version: 10/31/1994
Date Data Arrived at EDR: 09/05/1995
Date Made Active in Reports: 09/29/1995
Number of Days to Update: 24

Source: California Environmental Protection Agency
Telephone: 916-341-5851
Last EDR Contact: 12/28/1998
Next Scheduled EDR Contact: N/A
Data Release Frequency: No Update Planned

Local Land Records

LIENS: Environmental Liens Listing

A listing of property locations with environmental liens for California where DTSC is a lien holder.

Date of Government Version: 11/30/2017
Date Data Arrived at EDR: 12/01/2017
Date Made Active in Reports: 01/11/2018
Number of Days to Update: 41

Source: Department of Toxic Substances Control
Telephone: 916-323-3400
Last EDR Contact: 02/28/2018
Next Scheduled EDR Contact: 06/18/2018
Data Release Frequency: Varies

LIENS 2: CERCLA Lien Information

A Federal CERCLA ('Superfund') lien can exist by operation of law at any site or property at which EPA has spent Superfund monies. These monies are spent to investigate and address releases and threatened releases of contamination. CERCLIS provides information as to the identity of these sites and properties.

Date of Government Version: 12/11/2017
Date Data Arrived at EDR: 12/22/2017
Date Made Active in Reports: 01/12/2018
Number of Days to Update: 21

Source: Environmental Protection Agency
Telephone: 202-564-6023
Last EDR Contact: 02/06/2018
Next Scheduled EDR Contact: 05/21/2018
Data Release Frequency: Semi-Annually

DEED: Deed Restriction Listing

Site Mitigation and Brownfields Reuse Program Facility Sites with Deed Restrictions & Hazardous Waste Management Program Facility Sites with Deed / Land Use Restriction. The DTSC Site Mitigation and Brownfields Reuse Program (SMBRP) list includes sites cleaned up under the program's oversight and generally does not include current or former hazardous waste facilities that required a hazardous waste facility permit. The list represents deed restrictions that are active. Some sites have multiple deed restrictions. The DTSC Hazardous Waste Management Program (HWMP) has developed a list of current or former hazardous waste facilities that have a recorded land use restriction at the local county recorder's office. The land use restrictions on this list were required by the DTSC HWMP as a result of the presence of hazardous substances that remain on site after the facility (or part of the facility) has been closed or cleaned up. The types of land use restriction include deed notice, deed restriction, or a land use restriction that binds current and future owners.

Date of Government Version: 02/08/2018
Date Data Arrived at EDR: 02/08/2018
Date Made Active in Reports: 02/08/2018
Number of Days to Update: 0

Source: DTSC and SWRCB
Telephone: 916-323-3400
Last EDR Contact: 03/06/2018
Next Scheduled EDR Contact: 06/18/2018
Data Release Frequency: Semi-Annually

Records of Emergency Release Reports

HMIRS: Hazardous Materials Information Reporting System

Hazardous Materials Incident Report System. HMIRS contains hazardous material spill incidents reported to DOT.

Date of Government Version: 09/21/2017
Date Data Arrived at EDR: 09/21/2017
Date Made Active in Reports: 10/13/2017
Number of Days to Update: 22

Source: U.S. Department of Transportation
Telephone: 202-366-4555
Last EDR Contact: 01/19/2018
Next Scheduled EDR Contact: 04/09/2018
Data Release Frequency: Quarterly

CHMIRS: California Hazardous Material Incident Report System

California Hazardous Material Incident Reporting System. CHMIRS contains information on reported hazardous material incidents (accidental releases or spills).

Date of Government Version: 05/09/2017
Date Data Arrived at EDR: 07/26/2017
Date Made Active in Reports: 09/21/2017
Number of Days to Update: 57

Source: Office of Emergency Services
Telephone: 916-845-8400
Last EDR Contact: 02/20/2018
Next Scheduled EDR Contact: 05/07/2018
Data Release Frequency: Varies

LDS: Land Disposal Sites Listing (GEOTRACKER)

Land Disposal sites (Landfills) included in GeoTracker. GeoTracker is the Water Boards data management system for sites that impact, or have the potential to impact, water quality in California, with emphasis on groundwater.

Date of Government Version: 12/11/2017
Date Data Arrived at EDR: 12/12/2017
Date Made Active in Reports: 01/11/2018
Number of Days to Update: 30

Source: State Water Qualilty Control Board
Telephone: 866-480-1028
Last EDR Contact: 12/12/2018
Next Scheduled EDR Contact: 06/25/2018
Data Release Frequency: Quarterly

MCS: Military Cleanup Sites Listing (GEOTRACKER)

Military sites (consisting of: Military UST sites; Military Privatized sites; and Military Cleanup sites [formerly known as DoD non UST]) included in GeoTracker. GeoTracker is the Water Boards data management system for sites that impact, or have the potential to impact, water quality in California, with emphasis on groundwater.

Date of Government Version: 12/11/2017
Date Data Arrived at EDR: 12/12/2017
Date Made Active in Reports: 01/12/2018
Number of Days to Update: 31

Source: State Water Resources Control Board
Telephone: 866-480-1028
Last EDR Contact: 12/12/2018
Next Scheduled EDR Contact: 06/25/2018
Data Release Frequency: Quarterly

SPILLS 90: SPILLS90 data from FirstSearch

Spills 90 includes those spill and release records available exclusively from FirstSearch databases. Typically, they may include chemical, oil and/or hazardous substance spills recorded after 1990. Duplicate records that are already included in EDR incident and release records are not included in Spills 90.

Date of Government Version: 06/06/2012
Date Data Arrived at EDR: 01/03/2013
Date Made Active in Reports: 02/22/2013
Number of Days to Update: 50

Source: FirstSearch
Telephone: N/A
Last EDR Contact: 01/03/2013
Next Scheduled EDR Contact: N/A
Data Release Frequency: No Update Planned

Other Ascertainable Records

RCRA NonGen / NLR: RCRA - Non Generators / No Longer Regulated

RCRAInfo is EPA's comprehensive information system, providing access to data supporting the Resource Conservation and Recovery Act (RCRA) of 1976 and the Hazardous and Solid Waste Amendments (HSWA) of 1984. The database includes selective information on sites which generate, transport, store, treat and/or dispose of hazardous waste as defined by the Resource Conservation and Recovery Act (RCRA). Non-Generators do not presently generate hazardous waste.

Date of Government Version: 12/11/2017
Date Data Arrived at EDR: 12/26/2017
Date Made Active in Reports: 02/09/2018
Number of Days to Update: 45

Source: Environmental Protection Agency
Telephone: (415) 495-8895
Last EDR Contact: 01/19/2018
Next Scheduled EDR Contact: 04/09/2018
Data Release Frequency: Quarterly

FUDS: Formerly Used Defense Sites

The listing includes locations of Formerly Used Defense Sites properties where the US Army Corps of Engineers is actively working or will take necessary cleanup actions.

Date of Government Version: 01/31/2015
Date Data Arrived at EDR: 07/08/2015
Date Made Active in Reports: 10/13/2015
Number of Days to Update: 97

Source: U.S. Army Corps of Engineers
Telephone: 202-528-4285
Last EDR Contact: 02/21/2018
Next Scheduled EDR Contact: 06/04/2018
Data Release Frequency: Varies

DOD: Department of Defense Sites

This data set consists of federally owned or administered lands, administered by the Department of Defense, that have any area equal to or greater than 640 acres of the United States, Puerto Rico, and the U.S. Virgin Islands.

Date of Government Version: 12/31/2005
Date Data Arrived at EDR: 11/10/2006
Date Made Active in Reports: 01/11/2007
Number of Days to Update: 62

Source: USGS
Telephone: 888-275-8747
Last EDR Contact: 10/13/2017
Next Scheduled EDR Contact: 01/22/2018
Data Release Frequency: Semi-Annually

FEDLAND: Federal and Indian Lands

Federally and Indian administrated lands of the United States. Lands included are administrated by: Army Corps of Engineers, Bureau of Reclamation, National Wild and Scenic River, National Wildlife Refuge, Public Domain Land, Wilderness, Wilderness Study Area, Wildlife Management Area, Bureau of Indian Affairs, Bureau of Land Management, Department of Justice, Forest Service, Fish and Wildlife Service, National Park Service.

Date of Government Version: 12/31/2005
Date Data Arrived at EDR: 02/06/2006
Date Made Active in Reports: 01/11/2007
Number of Days to Update: 339

Source: U.S. Geological Survey
Telephone: 888-275-8747
Last EDR Contact: 10/11/2017
Next Scheduled EDR Contact: 01/22/2018
Data Release Frequency: N/A

SCRD DRYCLEANERS: State Coalition for Remediation of Drycleaners Listing

The State Coalition for Remediation of Drycleaners was established in 1998, with support from the U.S. EPA Office of Superfund Remediation and Technology Innovation. It is comprised of representatives of states with established drycleaner remediation programs. Currently the member states are Alabama, Connecticut, Florida, Illinois, Kansas, Minnesota, Missouri, North Carolina, Oregon, South Carolina, Tennessee, Texas, and Wisconsin.

Date of Government Version: 01/01/2017
Date Data Arrived at EDR: 02/03/2017
Date Made Active in Reports: 04/07/2017
Number of Days to Update: 63

Source: Environmental Protection Agency
Telephone: 615-532-8599
Last EDR Contact: 02/16/2018
Next Scheduled EDR Contact: 05/28/2018
Data Release Frequency: Varies

US FIN ASSUR: Financial Assurance Information

All owners and operators of facilities that treat, store, or dispose of hazardous waste are required to provide proof that they will have sufficient funds to pay for the clean up, closure, and post-closure care of their facilities.

Date of Government Version: 01/11/2018
Date Data Arrived at EDR: 01/19/2018
Date Made Active in Reports: 03/02/2018
Number of Days to Update: 42

Source: Environmental Protection Agency
Telephone: 202-566-1917
Last EDR Contact: 01/19/2018
Next Scheduled EDR Contact: 04/09/2018
Data Release Frequency: Quarterly

EPA WATCH LIST: EPA WATCH LIST

EPA maintains a "Watch List" to facilitate dialogue between EPA, state and local environmental agencies on enforcement matters relating to facilities with alleged violations identified as either significant or high priority. Being on the Watch List does not mean that the facility has actually violated the law only that an investigation by EPA or a state or local environmental agency has led those organizations to allege that an unproven violation has in fact occurred. Being on the Watch List does not represent a higher level of concern regarding the alleged violations that were detected, but instead indicates cases requiring additional dialogue between EPA, state and local agencies - primarily because of the length of time the alleged violation has gone unaddressed or unresolved.

Date of Government Version: 08/30/2013
Date Data Arrived at EDR: 03/21/2014
Date Made Active in Reports: 06/17/2014
Number of Days to Update: 88

Source: Environmental Protection Agency
Telephone: 617-520-3000
Last EDR Contact: 01/31/2018
Next Scheduled EDR Contact: 05/21/2018
Data Release Frequency: Quarterly

2020 COR ACTION: 2020 Corrective Action Program List

The EPA has set ambitious goals for the RCRA Corrective Action program by creating the 2020 Corrective Action Universe. This RCRA cleanup baseline includes facilities expected to need corrective action. The 2020 universe contains a wide variety of sites. Some properties are heavily contaminated while others were contaminated but have since been cleaned up. Still others have not been fully investigated yet, and may require little or no remediation. Inclusion in the 2020 Universe does not necessarily imply failure on the part of a facility to meet its RCRA obligations.

Date of Government Version: 04/22/2013
Date Data Arrived at EDR: 03/03/2015
Date Made Active in Reports: 03/09/2015
Number of Days to Update: 6

Source: Environmental Protection Agency
Telephone: 703-308-4044
Last EDR Contact: 02/08/2018
Next Scheduled EDR Contact: 05/21/2018
Data Release Frequency: Varies

TSCA: Toxic Substances Control Act

Toxic Substances Control Act. TSCA identifies manufacturers and importers of chemical substances included on the TSCA Chemical Substance Inventory list. It includes data on the production volume of these substances by plant site.

Date of Government Version: 12/31/2016
Date Data Arrived at EDR: 06/21/2017
Date Made Active in Reports: 01/05/2018
Number of Days to Update: 198

Source: EPA
Telephone: 202-260-5521
Last EDR Contact: 12/22/2017
Next Scheduled EDR Contact: 04/02/2018
Data Release Frequency: Every 4 Years

TRIS: Toxic Chemical Release Inventory System

Toxic Release Inventory System. TRIS identifies facilities which release toxic chemicals to the air, water and land in reportable quantities under SARA Title III Section 313.

Date of Government Version: 12/31/2016
Date Data Arrived at EDR: 01/10/2018
Date Made Active in Reports: 01/12/2018
Number of Days to Update: 2

Source: EPA
Telephone: 202-566-0250
Last EDR Contact: 02/23/2018
Next Scheduled EDR Contact: 06/04/2018
Data Release Frequency: Annually

SSTS: Section 7 Tracking Systems

Section 7 of the Federal Insecticide, Fungicide and Rodenticide Act, as amended (92 Stat. 829) requires all registered pesticide-producing establishments to submit a report to the Environmental Protection Agency by March 1st each year. Each establishment must report the types and amounts of pesticides, active ingredients and devices being produced, and those having been produced and sold or distributed in the past year.

Date of Government Version: 12/31/2009
Date Data Arrived at EDR: 12/10/2010
Date Made Active in Reports: 02/25/2011
Number of Days to Update: 77

Source: EPA
Telephone: 202-564-4203
Last EDR Contact: 01/25/2018
Next Scheduled EDR Contact: 05/07/2018
Data Release Frequency: Annually

ROD: Records Of Decision

Record of Decision. ROD documents mandate a permanent remedy at an NPL (Superfund) site containing technical and health information to aid in the cleanup.

Date of Government Version: 12/11/2017
Date Data Arrived at EDR: 12/22/2017
Date Made Active in Reports: 01/12/2018
Number of Days to Update: 21

Source: EPA
Telephone: 703-416-0223
Last EDR Contact: 03/09/2018
Next Scheduled EDR Contact: 06/18/2018
Data Release Frequency: Annually

RMP: Risk Management Plans

When Congress passed the Clean Air Act Amendments of 1990, it required EPA to publish regulations and guidance for chemical accident prevention at facilities using extremely hazardous substances. The Risk Management Program Rule (RMP Rule) was written to implement Section 112(r) of these amendments. The rule, which built upon existing industry codes and standards, requires companies of all sizes that use certain flammable and toxic substances to develop a Risk Management Program, which includes a(n): Hazard assessment that details the potential effects of an accidental release, an accident history of the last five years, and an evaluation of worst-case and alternative accidental releases; Prevention program that includes safety precautions and maintenance, monitoring, and employee training measures; and Emergency response program that spells out emergency health care, employee training measures and procedures for informing the public and response agencies (e.g the fire department) should an accident occur.

Date of Government Version: 11/02/2017
Date Data Arrived at EDR: 11/17/2017
Date Made Active in Reports: 12/08/2017
Number of Days to Update: 21

Source: Environmental Protection Agency
Telephone: 202-564-8600
Last EDR Contact: 01/19/2018
Next Scheduled EDR Contact: 05/07/2018
Data Release Frequency: Varies

RAATS: RCRA Administrative Action Tracking System

RCRA Administration Action Tracking System. RAATS contains records based on enforcement actions issued under RCRA pertaining to major violators and includes administrative and civil actions brought by the EPA. For administration actions after September 30, 1995, data entry in the RAATS database was discontinued. EPA will retain a copy of the database for historical records. It was necessary to terminate RAATS because a decrease in agency resources made it impossible to continue to update the information contained in the database.

Date of Government Version: 04/17/1995
Date Data Arrived at EDR: 07/03/1995
Date Made Active in Reports: 08/07/1995
Number of Days to Update: 35

Source: EPA
Telephone: 202-564-4104
Last EDR Contact: 06/02/2008
Next Scheduled EDR Contact: 09/01/2008
Data Release Frequency: No Update Planned

PRP: Potentially Responsible Parties
A listing of verified Potentially Responsible Parties

Date of Government Version: 10/25/2013
Date Data Arrived at EDR: 10/17/2014
Date Made Active in Reports: 10/20/2014
Number of Days to Update: 3

Source: EPA
Telephone: 202-564-6023
Last EDR Contact: 02/06/2018
Next Scheduled EDR Contact: 05/21/2018
Data Release Frequency: Quarterly

PADS: PCB Activity Database System
PCB Activity Database. PADS Identifies generators, transporters, commercial storers and/or brokers and disposers of PCB's who are required to notify the EPA of such activities.

Date of Government Version: 06/01/2017
Date Data Arrived at EDR: 06/09/2017
Date Made Active in Reports: 10/13/2017
Number of Days to Update: 126

Source: EPA
Telephone: 202-566-0500
Last EDR Contact: 01/12/2018
Next Scheduled EDR Contact: 04/23/2018
Data Release Frequency: Annually

ICIS: Integrated Compliance Information System
The Integrated Compliance Information System (ICIS) supports the information needs of the national enforcement and compliance program as well as the unique needs of the National Pollutant Discharge Elimination System (NPDES) program.

Date of Government Version: 11/18/2016
Date Data Arrived at EDR: 11/23/2016
Date Made Active in Reports: 02/10/2017
Number of Days to Update: 79

Source: Environmental Protection Agency
Telephone: 202-564-2501
Last EDR Contact: 01/09/2018
Next Scheduled EDR Contact: 04/23/2018
Data Release Frequency: Quarterly

FTTS: FIFRA/ TSCA Tracking System - FIFRA (Federal Insecticide, Fungicide, & Rodenticide Act)/TSCA (Toxic Substances Control Act)
FTTS tracks administrative cases and pesticide enforcement actions and compliance activities related to FIFRA, TSCA and EPCRA (Emergency Planning and Community Right-to-Know Act). To maintain currency, EDR contacts the Agency on a quarterly basis.

Date of Government Version: 04/09/2009
Date Data Arrived at EDR: 04/16/2009
Date Made Active in Reports: 05/11/2009
Number of Days to Update: 25

Source: EPA/Office of Prevention, Pesticides and Toxic Substances
Telephone: 202-566-1667
Last EDR Contact: 08/18/2017
Next Scheduled EDR Contact: 12/04/2017
Data Release Frequency: Quarterly

FTTS INSP: FIFRA/ TSCA Tracking System - FIFRA (Federal Insecticide, Fungicide, & Rodenticide Act)/TSCA (Toxic Substances Control Act)
A listing of FIFRA/TSCA Tracking System (FTTS) inspections and enforcements.

Date of Government Version: 04/09/2009
Date Data Arrived at EDR: 04/16/2009
Date Made Active in Reports: 05/11/2009
Number of Days to Update: 25

Source: EPA
Telephone: 202-566-1667
Last EDR Contact: 08/18/2017
Next Scheduled EDR Contact: 12/04/2017
Data Release Frequency: Quarterly

MLTS: Material Licensing Tracking System
MLTS is maintained by the Nuclear Regulatory Commission and contains a list of approximately 8,100 sites which possess or use radioactive materials and which are subject to NRC licensing requirements. To maintain currency, EDR contacts the Agency on a quarterly basis.

Date of Government Version: 08/30/2016
Date Data Arrived at EDR: 09/08/2016
Date Made Active in Reports: 10/21/2016
Number of Days to Update: 43

Source: Nuclear Regulatory Commission
Telephone: 301-415-7169
Last EDR Contact: 01/19/2018
Next Scheduled EDR Contact: 05/21/2018
Data Release Frequency: Quarterly

COAL ASH DOE: Steam-Electric Plant Operation Data
A listing of power plants that store ash in surface ponds.

Date of Government Version: 12/31/2005
Date Data Arrived at EDR: 08/07/2009
Date Made Active in Reports: 10/22/2009
Number of Days to Update: 76

Source: Department of Energy
Telephone: 202-586-8719
Last EDR Contact: 03/09/2018
Next Scheduled EDR Contact: 06/18/2018
Data Release Frequency: Varies

COAL ASH EPA: Coal Combustion Residues Surface Impoundments List
A listing of coal combustion residues surface impoundments with high hazard potential ratings.

Date of Government Version: 07/01/2014
Date Data Arrived at EDR: 09/10/2014
Date Made Active in Reports: 10/20/2014
Number of Days to Update: 40

Source: Environmental Protection Agency
Telephone: N/A
Last EDR Contact: 03/06/2018
Next Scheduled EDR Contact: 06/18/2018
Data Release Frequency: Varies

PCB TRANSFORMER: PCB Transformer Registration Database
The database of PCB transformer registrations that includes all PCB registration submittals.

Date of Government Version: 05/24/2017
Date Data Arrived at EDR: 11/30/2017
Date Made Active in Reports: 12/15/2017
Number of Days to Update: 15

Source: Environmental Protection Agency
Telephone: 202-566-0517
Last EDR Contact: 01/26/2018
Next Scheduled EDR Contact: 05/07/2018
Data Release Frequency: Varies

RADINFO: Radiation Information Database
The Radiation Information Database (RADINFO) contains information about facilities that are regulated by U.S. Environmental Protection Agency (EPA) regulations for radiation and radioactivity.

Date of Government Version: 10/02/2017
Date Data Arrived at EDR: 10/05/2017
Date Made Active in Reports: 10/13/2017
Number of Days to Update: 8

Source: Environmental Protection Agency
Telephone: 202-343-9775
Last EDR Contact: 01/04/2018
Next Scheduled EDR Contact: 04/16/2018
Data Release Frequency: Quarterly

HIST FTTS: FIFRA/TSCA Tracking System Administrative Case Listing
A complete administrative case listing from the FIFRA/TSCA Tracking System (FTTS) for all ten EPA regions. The information was obtained from the National Compliance Database (NCDB). NCDB supports the implementation of FIFRA (Federal Insecticide, Fungicide, and Rodenticide Act) and TSCA (Toxic Substances Control Act). Some EPA regions are now closing out records. Because of that, and the fact that some EPA regions are not providing EPA Headquarters with updated records, it was decided to create a HIST FTTS database. It included records that may not be included in the newer FTTS database updates. This database is no longer updated.

Date of Government Version: 10/19/2006
Date Data Arrived at EDR: 03/01/2007
Date Made Active in Reports: 04/10/2007
Number of Days to Update: 40

Source: Environmental Protection Agency
Telephone: 202-564-2501
Last EDR Contact: 12/17/2007
Next Scheduled EDR Contact: 03/17/2008
Data Release Frequency: No Update Planned

HIST FTTS INSP: FIFRA/TSCA Tracking System Inspection & Enforcement Case Listing
A complete inspection and enforcement case listing from the FIFRA/TSCA Tracking System (FTTS) for all ten EPA regions. The information was obtained from the National Compliance Database (NCDB). NCDB supports the implementation of FIFRA (Federal Insecticide, Fungicide, and Rodenticide Act) and TSCA (Toxic Substances Control Act). Some EPA regions are now closing out records. Because of that, and the fact that some EPA regions are not providing EPA Headquarters with updated records, it was decided to create a HIST FTTS database. It included records that may not be included in the newer FTTS database updates. This database is no longer updated.

Date of Government Version: 10/19/2006
Date Data Arrived at EDR: 03/01/2007
Date Made Active in Reports: 04/10/2007
Number of Days to Update: 40

Source: Environmental Protection Agency
Telephone: 202-564-2501
Last EDR Contact: 12/17/2008
Next Scheduled EDR Contact: 03/17/2008
Data Release Frequency: No Update Planned

DOT OPS: Incident and Accident Data

Department of Transporation, Office of Pipeline Safety Incident and Accident data.

Date of Government Version: 07/31/2012
Date Data Arrived at EDR: 08/07/2012
Date Made Active in Reports: 09/18/2012
Number of Days to Update: 42

Source: Department of Transporation, Office of Pipeline Safety
Telephone: 202-366-4595
Last EDR Contact: 01/19/2018
Next Scheduled EDR Contact: 05/14/2018
Data Release Frequency: Varies

CONSENT: Superfund (CERCLA) Consent Decrees

Major legal settlements that establish responsibility and standards for cleanup at NPL (Superfund) sites. Released periodically by United States District Courts after settlement by parties to litigation matters.

Date of Government Version: 09/30/2017
Date Data Arrived at EDR: 11/10/2017
Date Made Active in Reports: 01/12/2018
Number of Days to Update: 63

Source: Department of Justice, Consent Decree Library
Telephone: Varies
Last EDR Contact: 03/19/2018
Next Scheduled EDR Contact: 07/02/2018
Data Release Frequency: Varies

BRS: Biennial Reporting System

The Biennial Reporting System is a national system administered by the EPA that collects data on the generation and management of hazardous waste. BRS captures detailed data from two groups: Large Quantity Generators (LQG) and Treatment, Storage, and Disposal Facilities.

Date of Government Version: 12/31/2015
Date Data Arrived at EDR: 02/22/2017
Date Made Active in Reports: 09/28/2017
Number of Days to Update: 218

Source: EPA/NTIS
Telephone: 800-424-9346
Last EDR Contact: 02/23/2018
Next Scheduled EDR Contact: 06/04/2018
Data Release Frequency: Biennially

INDIAN RESERV: Indian Reservations

This map layer portrays Indian administered lands of the United States that have any area equal to or greater than 640 acres.

Date of Government Version: 12/31/2014
Date Data Arrived at EDR: 07/14/2015
Date Made Active in Reports: 01/10/2017
Number of Days to Update: 546

Source: USGS
Telephone: 202-208-3710
Last EDR Contact: 01/09/2018
Next Scheduled EDR Contact: 04/23/2018
Data Release Frequency: Semi-Annually

FUSRAP: Formerly Utilized Sites Remedial Action Program

DOE established the Formerly Utilized Sites Remedial Action Program (FUSRAP) in 1974 to remediate sites where radioactive contamination remained from Manhattan Project and early U.S. Atomic Energy Commission (AEC) operations.

Date of Government Version: 12/23/2016
Date Data Arrived at EDR: 12/27/2016
Date Made Active in Reports: 02/17/2017
Number of Days to Update: 52

Source: Department of Energy
Telephone: 202-586-3559
Last EDR Contact: 01/19/2018
Next Scheduled EDR Contact: 05/21/2018
Data Release Frequency: Varies

UMTRA: Uranium Mill Tailings Sites

Uranium ore was mined by private companies for federal government use in national defense programs. When the mills shut down, large piles of the sand-like material (mill tailings) remain after uranium has been extracted from the ore. Levels of human exposure to radioactive materials from the piles are low; however, in some cases tailings were used as construction materials before the potential health hazards of the tailings were recognized.

Date of Government Version: 06/23/2017
Date Data Arrived at EDR: 10/11/2017
Date Made Active in Reports: 11/03/2017
Number of Days to Update: 23

Source: Department of Energy
Telephone: 505-845-0011
Last EDR Contact: 02/23/2018
Next Scheduled EDR Contact: 06/04/2018
Data Release Frequency: Varies

LEAD SMELTER 1: Lead Smelter Sites

A listing of former lead smelter site locations.

Date of Government Version: 01/09/2018
Date Data Arrived at EDR: 02/06/2018
Date Made Active in Reports: 03/02/2018
Number of Days to Update: 24

Source: Environmental Protection Agency
Telephone: 703-603-8787
Last EDR Contact: 02/06/2018
Next Scheduled EDR Contact: 05/21/2018
Data Release Frequency: Varies

LEAD SMELTER 2: Lead Smelter Sites

A list of several hundred sites in the U.S. where secondary lead smelting was done from 1931and 1964. These sites may pose a threat to public health through ingestion or inhalation of contaminated soil or dust

Date of Government Version: 04/05/2001
Date Data Arrived at EDR: 10/27/2010
Date Made Active in Reports: 12/02/2010
Number of Days to Update: 36

Source: American Journal of Public Health
Telephone: 703-305-6451
Last EDR Contact: 12/02/2009
Next Scheduled EDR Contact: N/A
Data Release Frequency: No Update Planned

US AIRS (AFS): Aerometric Information Retrieval System Facility Subsystem (AFS)

The database is a sub-system of Aerometric Information Retrieval System (AIRS). AFS contains compliance data on air pollution point sources regulated by the U.S. EPA and/or state and local air regulatory agencies. This information comes from source reports by various stationary sources of air pollution, such as electric power plants, steel mills, factories, and universities, and provides information about the air pollutants they produce. Action, air program, air program pollutant, and general level plant data. It is used to track emissions and compliance data from industrial plants.

Date of Government Version: 10/12/2016
Date Data Arrived at EDR: 10/26/2016
Date Made Active in Reports: 02/03/2017
Number of Days to Update: 100

Source: EPA
Telephone: 202-564-2496
Last EDR Contact: 09/26/2017
Next Scheduled EDR Contact: 01/08/2018
Data Release Frequency: Annually

US AIRS MINOR: Air Facility System Data

A listing of minor source facilities.

Date of Government Version: 10/12/2016
Date Data Arrived at EDR: 10/26/2016
Date Made Active in Reports: 02/03/2017
Number of Days to Update: 100

Source: EPA
Telephone: 202-564-2496
Last EDR Contact: 09/26/2017
Next Scheduled EDR Contact: 01/08/2018
Data Release Frequency: Annually

US MINES: Mines Master Index File

Contains all mine identification numbers issued for mines active or opened since 1971. The data also includes violation information.

Date of Government Version: 10/29/2017
Date Data Arrived at EDR: 11/28/2017
Date Made Active in Reports: 01/12/2018
Number of Days to Update: 45

Source: Department of Labor, Mine Safety and Health Administration
Telephone: 303-231-5959
Last EDR Contact: 02/28/2018
Next Scheduled EDR Contact: 06/11/2018
Data Release Frequency: Semi-Annually

US MINES 2: Ferrous and Nonferrous Metal Mines Database Listing

This map layer includes ferrous (ferrous metal mines are facilities that extract ferrous metals, such as iron ore or molybdenum) and nonferrous (Nonferrous metal mines are facilities that extract nonferrous metals, such as gold, silver, copper, zinc, and lead) metal mines in the United States.

Date of Government Version: 12/05/2005
Date Data Arrived at EDR: 02/29/2008
Date Made Active in Reports: 04/18/2008
Number of Days to Update: 49

Source: USGS
Telephone: 703-648-7709
Last EDR Contact: 03/02/2018
Next Scheduled EDR Contact: 06/11/2018
Data Release Frequency: Varies

US MINES 3: Active Mines & Mineral Plants Database Listing

Active Mines and Mineral Processing Plant operations for commodities monitored by the Minerals Information Team of the USGS.

Date of Government Version: 04/14/2011
Date Data Arrived at EDR: 06/08/2011
Date Made Active in Reports: 09/13/2011
Number of Days to Update: 97

Source: USGS
Telephone: 703-648-7709
Last EDR Contact: 03/02/2018
Next Scheduled EDR Contact: 06/11/2018
Data Release Frequency: Varies

ABANDONED MINES: Abandoned Mines

An inventory of land and water impacted by past mining (primarily coal mining) is maintained by OSMRE to provide information needed to implement the Surface Mining Control and Reclamation Act of 1977 (SMCRA). The inventory contains information on the location, type, and extent of AML impacts, as well as, information on the cost associated with the reclamation of those problems. The inventory is based upon field surveys by State, Tribal, and OSMRE program officials. It is dynamic to the extent that it is modified as new problems are identified and existing problems are reclaimed.

Date of Government Version: 09/25/2017
Date Data Arrived at EDR: 09/26/2017
Date Made Active in Reports: 10/20/2017
Number of Days to Update: 24

Source: Department of Interior
Telephone: 202-208-2609
Last EDR Contact: 03/07/2018
Next Scheduled EDR Contact: 06/25/2018
Data Release Frequency: Quarterly

FINDS: Facility Index System/Facility Registry System

Facility Index System. FINDS contains both facility information and 'pointers' to other sources that contain more detail. EDR includes the following FINDS databases in this report: PCS (Permit Compliance System), AIRS (Aerometric Information Retrieval System), DOCKET (Enforcement Docket used to manage and track information on civil judicial enforcement cases for all environmental statutes), FURS (Federal Underground Injection Control), C-DOCKET (Criminal Docket System used to track criminal enforcement actions for all environmental statutes), FFIS (Federal Facilities Information System), STATE (State Environmental Laws and Statutes), and PADS (PCB Activity Data System).

Date of Government Version: 07/23/2017
Date Data Arrived at EDR: 09/06/2017
Date Made Active in Reports: 09/15/2017
Number of Days to Update: 9

Source: EPA
Telephone: (415) 947-8000
Last EDR Contact: 02/23/2018
Next Scheduled EDR Contact: 06/18/2018
Data Release Frequency: Quarterly

UXO: Unexploded Ordnance Sites

A listing of unexploded ordnance site locations

Date of Government Version: 09/30/2016
Date Data Arrived at EDR: 10/31/2017
Date Made Active in Reports: 01/12/2018
Number of Days to Update: 73

Source: Department of Defense
Telephone: 703-704-1564
Last EDR Contact: 01/02/2018
Next Scheduled EDR Contact: 04/30/2018
Data Release Frequency: Varies

ECHO: Enforcement & Compliance History Information

ECHO provides integrated compliance and enforcement information for about 800,000 regulated facilities nationwide.

Date of Government Version: 01/13/2018
Date Data Arrived at EDR: 01/19/2018
Date Made Active in Reports: 03/02/2018
Number of Days to Update: 42

Source: Environmental Protection Agency
Telephone: 202-564-2280
Last EDR Contact: 03/07/2018
Next Scheduled EDR Contact: 06/18/2018
Data Release Frequency: Quarterly

DOCKET HWC: Hazardous Waste Compliance Docket Listing
A complete list of the Federal Agency Hazardous Waste Compliance Docket Facilities.

Date of Government Version: 06/27/2017
Date Data Arrived at EDR: 11/21/2017
Date Made Active in Reports: 01/12/2018
Number of Days to Update: 52

Source: Environmental Protection Agency
Telephone: 202-564-0527
Last EDR Contact: 03/02/2018
Next Scheduled EDR Contact: 06/11/2018
Data Release Frequency: Varies

FUELS PROGRAM: EPA Fuels Program Registered Listing
This listing includes facilities that are registered under the Part 80 (Code of Federal Regulations) EPA Fuels Programs. All companies now are required to submit new and updated registrations.

Date of Government Version: 11/20/2017
Date Data Arrived at EDR: 11/20/2017
Date Made Active in Reports: 01/12/2018
Number of Days to Update: 53

Source: EPA
Telephone: 800-385-6164
Last EDR Contact: 02/21/2018
Next Scheduled EDR Contact: 06/04/2018
Data Release Frequency: Quarterly

CA BOND EXP. PLAN: Bond Expenditure Plan
Department of Health Services developed a site-specific expenditure plan as the basis for an appropriation of Hazardous Substance Cleanup Bond Act funds. It is not updated.

Date of Government Version: 01/01/1989
Date Data Arrived at EDR: 07/27/1994
Date Made Active in Reports: 08/02/1994
Number of Days to Update: 6

Source: Department of Health Services
Telephone: 916-255-2118
Last EDR Contact: 05/31/1994
Next Scheduled EDR Contact: N/A
Data Release Frequency: No Update Planned

CORTESE: "Cortese" Hazardous Waste & Substances Sites List
The sites for the list are designated by the State Water Resource Control Board (LUST), the Integrated Waste Board (SWF/LS), and the Department of Toxic Substances Control (Cal-Sites).

Date of Government Version: 02/08/2018
Date Data Arrived at EDR: 02/08/2018
Date Made Active in Reports: 02/08/2018
Number of Days to Update: 0

Source: CAL EPA/Office of Emergency Information
Telephone: 916-323-3400
Last EDR Contact: 02/08/2018
Next Scheduled EDR Contact: 04/09/2018
Data Release Frequency: Quarterly

DRYCLEANERS: Cleaner Facilities
A list of drycleaner related facilities that have EPA ID numbers. These are facilities with certain SIC codes: power laundries, family and commercial; garment pressing and cleaner's agents; linen supply; coin-operated laundries and cleaning; drycleaning plants, except rugs; carpet and upholster cleaning; industrial launderers; laundry and garment services.

Date of Government Version: 12/01/2017
Date Data Arrived at EDR: 02/02/2018
Date Made Active in Reports: 03/16/2018
Number of Days to Update: 42

Source: Department of Toxic Substance Control
Telephone: 916-327-4498
Last EDR Contact: 02/28/2018
Next Scheduled EDR Contact: 06/18/2018
Data Release Frequency: Annually

EMI: Emissions Inventory Data
Toxics and criteria pollutant emissions data collected by the ARB and local air pollution agencies.

Date of Government Version: 12/31/2015
Date Data Arrived at EDR: 03/21/2017
Date Made Active in Reports: 08/15/2017
Number of Days to Update: 147

Source: California Air Resources Board
Telephone: 916-322-2990
Last EDR Contact: 12/22/2017
Next Scheduled EDR Contact: 04/02/2018
Data Release Frequency: Varies

ENF: Enforcement Action Listing

A listing of Water Board Enforcement Actions. Formal is everything except Oral/Verbal Communication, Notice of Violation, Expedited Payment Letter, and Staff Enforcement Letter.

Date of Government Version: 01/22/2018
Date Data Arrived at EDR: 01/24/2018
Date Made Active in Reports: 03/19/2018
Number of Days to Update: 54

Source: State Water Resoruces Control Board
Telephone: 916-445-9379
Last EDR Contact: 01/22/2018
Next Scheduled EDR Contact: 05/07/2018
Data Release Frequency: Varies

Financial Assurance 1: Financial Assurance Information Listing

Financial Assurance information

Date of Government Version: 01/22/2018
Date Data Arrived at EDR: 01/24/2018
Date Made Active in Reports: 03/20/2018
Number of Days to Update: 55

Source: Department of Toxic Substances Control
Telephone: 916-255-3628
Last EDR Contact: 01/22/2018
Next Scheduled EDR Contact: 05/07/2018
Data Release Frequency: Varies

Financial Assurance 2: Financial Assurance Information Listing

A listing of financial assurance information for solid waste facilities. Financial assurance is intended to ensure that resources are available to pay for the cost of closure, post-closure care, and corrective measures if the owner or operator of a regulated facility is unable or unwilling to pay.

Date of Government Version: 11/14/2017
Date Data Arrived at EDR: 11/17/2017
Date Made Active in Reports: 12/18/2017
Number of Days to Update: 31

Source: California Integrated Waste Management Board
Telephone: 916-341-6066
Last EDR Contact: 02/08/2018
Next Scheduled EDR Contact: 05/28/2018
Data Release Frequency: Varies

HAZNET: Facility and Manifest Data

Facility and Manifest Data. The data is extracted from the copies of hazardous waste manifests received each year by the DTSC. The annual volume of manifests is typically 700,000 - 1,000,000 annually, representing approximately 350,000 - 500,000 shipments. Data are from the manifests submitted without correction, and therefore many contain some invalid values for data elements such as generator ID, TSD ID, waste category, and disposal method. This database begins with calendar year 1993.

Date of Government Version: 12/31/2016
Date Data Arrived at EDR: 07/12/2017
Date Made Active in Reports: 10/17/2017
Number of Days to Update: 97

Source: California Environmental Protection Agency
Telephone: 916-255-1136
Last EDR Contact: 01/08/2018
Next Scheduled EDR Contact: 04/23/2018
Data Release Frequency: Annually

ICE: ICE

Contains data pertaining to the Permitted Facilities with Inspections / Enforcements sites tracked in Envirostor.

Date of Government Version: 11/20/2017
Date Data Arrived at EDR: 11/20/2017
Date Made Active in Reports: 12/27/2017
Number of Days to Update: 37

Source: Department of Toxic Subsances Control
Telephone: 877-786-9427
Last EDR Contact: 02/21/2018
Next Scheduled EDR Contact: 06/04/2018
Data Release Frequency: Quarterly

HIST CORTESE: Hazardous Waste & Substance Site List

The sites for the list are designated by the State Water Resource Control Board [LUST], the Integrated Waste Board [SWF/LS], and the Department of Toxic Substances Control [CALSITES]. This listing is no longer updated by the state agency.

Date of Government Version: 04/01/2001
Date Data Arrived at EDR: 01/22/2009
Date Made Active in Reports: 04/08/2009
Number of Days to Update: 76

Source: Department of Toxic Substances Control
Telephone: 916-323-3400
Last EDR Contact: 01/22/2009
Next Scheduled EDR Contact: N/A
Data Release Frequency: No Update Planned

HWP: EnviroStor Permitted Facilities Listing
Detailed information on permitted hazardous waste facilities and corrective action ("cleanups") tracked in EnviroStor.

Date of Government Version: 11/20/2017
Date Data Arrived at EDR: 11/20/2017
Date Made Active in Reports: 12/27/2017
Number of Days to Update: 37

Source: Department of Toxic Substances Control
Telephone: 916-323-3400
Last EDR Contact: 02/21/2018
Next Scheduled EDR Contact: 06/04/2018
Data Release Frequency: Quarterly

HWT: Registered Hazardous Waste Transporter Database
A listing of hazardous waste transporters. In California, unless specifically exempted, it is unlawful for any person to transport hazardous wastes unless the person holds a valid registration issued by DTSC. A hazardous waste transporter registration is valid for one year and is assigned a unique registration number.

Date of Government Version: 01/08/2018
Date Data Arrived at EDR: 01/09/2018
Date Made Active in Reports: 02/06/2018
Number of Days to Update: 28

Source: Department of Toxic Substances Control
Telephone: 916-440-7145
Last EDR Contact: 01/09/2018
Next Scheduled EDR Contact: 04/23/2018
Data Release Frequency: Quarterly

MINES: Mines Site Location Listing
A listing of mine site locations from the Office of Mine Reclamation.

Date of Government Version: 12/11/2017
Date Data Arrived at EDR: 12/12/2017
Date Made Active in Reports: 01/12/2018
Number of Days to Update: 31

Source: Department of Conservation
Telephone: 916-322-1080
Last EDR Contact: 03/14/2018
Next Scheduled EDR Contact: 06/25/2018
Data Release Frequency: Quarterly

MWMP: Medical Waste Management Program Listing
The Medical Waste Management Program (MWMP) ensures the proper handling and disposal of medical waste by permitting and inspecting medical waste Offsite Treatment Facilities (PDF) and Transfer Stations (PDF) throughout the state. MWMP also oversees all Medical Waste Transporters.

Date of Government Version: 11/29/2017
Date Data Arrived at EDR: 12/05/2017
Date Made Active in Reports: 01/16/2018
Number of Days to Update: 42

Source: Department of Public Health
Telephone: 916-558-1784
Last EDR Contact: 03/06/2018
Next Scheduled EDR Contact: 06/18/2018
Data Release Frequency: Varies

NPDES: NPDES Permits Listing
A listing of NPDES permits, including stormwater.

Date of Government Version: 02/14/2018
Date Data Arrived at EDR: 02/14/2018
Date Made Active in Reports: 03/15/2018
Number of Days to Update: 29

Source: State Water Resources Control Board
Telephone: 916-445-9379
Last EDR Contact: 03/14/2018
Next Scheduled EDR Contact: 05/28/2018
Data Release Frequency: Quarterly

PEST LIC: Pesticide Regulation Licenses Listing
A listing of licenses and certificates issued by the Department of Pesticide Regulation. The DPR issues licenses and/or certificates to: Persons and businesses that apply or sell pesticides; Pest control dealers and brokers; Persons who advise on agricultural pesticide applications.

Date of Government Version: 12/04/2017
Date Data Arrived at EDR: 12/05/2017
Date Made Active in Reports: 01/16/2018
Number of Days to Update: 42

Source: Department of Pesticide Regulation
Telephone: 916-445-4038
Last EDR Contact: 03/05/2018
Next Scheduled EDR Contact: 06/18/2018
Data Release Frequency: Quarterly

PROC: Certified Processors Database
A listing of certified processors.

Date of Government Version: 12/11/2017
Date Data Arrived at EDR: 12/12/2017
Date Made Active in Reports: 01/16/2018
Number of Days to Update: 35

Source: Department of Conservation
Telephone: 916-323-3836
Last EDR Contact: 03/14/2018
Next Scheduled EDR Contact: 06/25/2018
Data Release Frequency: Quarterly

NOTIFY 65: Proposition 65 Records
Listings of all Proposition 65 incidents reported to counties by the State Water Resources Control Board and the Regional Water Quality Control Board. This database is no longer updated by the reporting agency.

Date of Government Version: 12/14/2017
Date Data Arrived at EDR: 12/15/2017
Date Made Active in Reports: 01/16/2018
Number of Days to Update: 32

Source: State Water Resources Control Board
Telephone: 916-445-3846
Last EDR Contact: 03/14/2018
Next Scheduled EDR Contact: 07/02/2018
Data Release Frequency: No Update Planned

UIC: UIC Listing
A listing of wells identified as underground injection wells, in the California Oil and Gas Wells database.

Date of Government Version: 12/11/2017
Date Data Arrived at EDR: 12/12/2017
Date Made Active in Reports: 01/17/2018
Number of Days to Update: 36

Source: Deaprtment of Conservation
Telephone: 916-445-2408
Last EDR Contact: 03/14/2018
Next Scheduled EDR Contact: 06/25/2018
Data Release Frequency: Varies

WASTEWATER PITS: Oil Wastewater Pits Listing
Water officials discovered that oil producers have been dumping chemical-laden wastewater into hundreds of unlined pits that are operating without proper permits. Inspections completed by the Central Valley Regional Water Quality Control Board revealed the existence of previously unidentified waste sites. The water board?s review found that more than one-third of the region?s active disposal pits are operating without permission.

Date of Government Version: 04/15/2015
Date Data Arrived at EDR: 04/17/2015
Date Made Active in Reports: 06/23/2015
Number of Days to Update: 67

Source: RWQCB, Central Valley Region
Telephone: 559-445-5577
Last EDR Contact: 01/12/2018
Next Scheduled EDR Contact: 04/23/2018
Data Release Frequency: Varies

WDS: Waste Discharge System
Sites which have been issued waste discharge requirements.

Date of Government Version: 06/19/2007
Date Data Arrived at EDR: 06/20/2007
Date Made Active in Reports: 06/29/2007
Number of Days to Update: 9

Source: State Water Resources Control Board
Telephone: 916-341-5227
Last EDR Contact: 02/15/2018
Next Scheduled EDR Contact: 06/04/2018
Data Release Frequency: Quarterly

WIP: Well Investigation Program Case List
Well Investigation Program case in the San Gabriel and San Fernando Valley area.

Date of Government Version: 07/03/2009
Date Data Arrived at EDR: 07/21/2009
Date Made Active in Reports: 08/03/2009
Number of Days to Update: 13

Source: Los Angeles Water Quality Control Board
Telephone: 213-576-6726
Last EDR Contact: 12/19/2017
Next Scheduled EDR Contact: 04/09/2018
Data Release Frequency: Varies

EDR HIGH RISK HISTORICAL RECORDS

EDR Exclusive Records

EDR MGP: EDR Proprietary Manufactured Gas Plants

The EDR Proprietary Manufactured Gas Plant Database includes records of coal gas plants (manufactured gas plants) compiled by EDR's researchers. Manufactured gas sites were used in the United States from the 1800's to 1950's to produce a gas that could be distributed and used as fuel. These plants used whale oil, rosin, coal, or a mixture of coal, oil, and water that also produced a significant amount of waste. Many of the byproducts of the gas production, such as coal tar (oily waste containing volatile and non-volatile chemicals), sludges, oils and other compounds are potentially hazardous to human health and the environment. The byproduct from this process was frequently disposed of directly at the plant site and can remain or spread slowly, serving as a continuous source of soil and groundwater contamination.

Date of Government Version: N/A
Date Data Arrived at EDR: N/A
Date Made Active in Reports: N/A
Number of Days to Update: N/A

Source: EDR, Inc.
Telephone: N/A
Last EDR Contact: N/A
Next Scheduled EDR Contact: N/A
Data Release Frequency: No Update Planned

EDR Hist Auto: EDR Exclusive Historical Auto Stations

EDR has searched selected national collections of business directories and has collected listings of potential gas station/filling station/service station sites that were available to EDR researchers. EDR's review was limited to those categories of sources that might, in EDR's opinion, include gas station/filling station/service station establishments. The categories reviewed included, but were not limited to gas, gas station, gasoline station, filling station, auto, automobile repair, auto service station, service station, etc. This database falls within a category of information EDR classifies as "High Risk Historical Records", or HRHR. EDR's HRHR effort presents unique and sometimes proprietary data about past sites and operations that typically create environmental concerns, but may not show up in current government records searches.

Date of Government Version: N/A
Date Data Arrived at EDR: N/A
Date Made Active in Reports: N/A
Number of Days to Update: N/A

Source: EDR, Inc.
Telephone: N/A
Last EDR Contact: N/A
Next Scheduled EDR Contact: N/A
Data Release Frequency: Varies

EDR Hist Cleaner: EDR Exclusive Historical Cleaners

EDR has searched selected national collections of business directories and has collected listings of potential dry cleaner sites that were available to EDR researchers. EDR's review was limited to those categories of sources that might, in EDR's opinion, include dry cleaning establishments. The categories reviewed included, but were not limited to dry cleaners, cleaners, laundry, laundromat, cleaning/laundry, wash & dry etc. This database falls within a category of information EDR classifies as "High Risk Historical Records", or HRHR. EDR's HRHR effort presents unique and sometimes proprietary data about past sites and operations that typically create environmental concerns, but may not show up in current government records searches.

Date of Government Version: N/A
Date Data Arrived at EDR: N/A
Date Made Active in Reports: N/A
Number of Days to Update: N/A

Source: EDR, Inc.
Telephone: N/A
Last EDR Contact: N/A
Next Scheduled EDR Contact: N/A
Data Release Frequency: Varies

EDR RECOVERED GOVERNMENT ARCHIVES

Exclusive Recovered Govt. Archives

RGA LF: Recovered Government Archive Solid Waste Facilities List

The EDR Recovered Government Archive Landfill database provides a list of landfills derived from historical databases and includes many records that no longer appear in current government lists. Compiled from Records formerly available from the Department of Resources Recycling and Recovery in California.

Date of Government Version: N/A
Date Data Arrived at EDR: 07/01/2013
Date Made Active in Reports: 01/13/2014
Number of Days to Update: 196

Source: Department of Resources Recycling and Recovery
Telephone: N/A
Last EDR Contact: 06/01/2012
Next Scheduled EDR Contact: N/A
Data Release Frequency: Varies

RGA LUST: Recovered Government Archive Leaking Underground Storage Tank

The EDR Recovered Government Archive Leaking Underground Storage Tank database provides a list of LUST incidents derived from historical databases and includes many records that no longer appear in current government lists. Compiled from Records formerly available from the State Water Resources Control Board in California.

Date of Government Version: N/A
Date Data Arrived at EDR: 07/01/2013
Date Made Active in Reports: 12/30/2013
Number of Days to Update: 182

Source: State Water Resources Control Board
Telephone: N/A
Last EDR Contact: 06/01/2012
Next Scheduled EDR Contact: N/A
Data Release Frequency: Varies

COUNTY RECORDS

ALAMEDA COUNTY:

Contaminated Sites

A listing of contaminated sites overseen by the Toxic Release Program (oil and groundwater contamination from chemical releases and spills) and the Leaking Underground Storage Tank Program (soil and ground water contamination from leaking petroleum USTs).

Date of Government Version: 01/09/2018
Date Data Arrived at EDR: 01/11/2018
Date Made Active in Reports: 02/22/2018
Number of Days to Update: 42

Source: Alameda County Environmental Health Services
Telephone: 510-567-6700
Last EDR Contact: 01/04/2018
Next Scheduled EDR Contact: 04/23/2018
Data Release Frequency: Semi-Annually

Underground Tanks

Underground storage tank sites located in Alameda county.

Date of Government Version: 10/11/2017
Date Data Arrived at EDR: 10/12/2017
Date Made Active in Reports: 11/08/2017
Number of Days to Update: 27

Source: Alameda County Environmental Health Services
Telephone: 510-567-6700
Last EDR Contact: 01/22/2018
Next Scheduled EDR Contact: 04/24/2047
Data Release Frequency: Semi-Annually

AMADOR COUNTY:

CUPA Facility List

Cupa Facility List

Date of Government Version: 03/01/2018
Date Data Arrived at EDR: 03/05/2018
Date Made Active in Reports: 03/15/2018
Number of Days to Update: 10

Source: Amador County Environmental Health
Telephone: 209-223-6439
Last EDR Contact: 02/28/2018
Next Scheduled EDR Contact: 06/18/2018
Data Release Frequency: Varies

BUTTE COUNTY:

CUPA Facility Listing

Cupa facility list.

Date of Government Version: 04/21/2017
Date Data Arrived at EDR: 04/25/2017
Date Made Active in Reports: 08/09/2017
Number of Days to Update: 106

Source: Public Health Department
Telephone: 530-538-7149
Last EDR Contact: 01/04/2018
Next Scheduled EDR Contact: 04/23/2018
Data Release Frequency: No Update Planned

CALVERAS COUNTY:

CUPA Facility Listing
Cupa Facility Listing

Date of Government Version: 01/25/2018
Date Data Arrived at EDR: 01/26/2018
Date Made Active in Reports: 03/14/2018
Number of Days to Update: 47

Source: Calveras County Environmental Health
Telephone: 209-754-6399
Last EDR Contact: 12/20/2017
Next Scheduled EDR Contact: 10/09/2017
Data Release Frequency: Quarterly

COLUSA COUNTY:

CUPA Facility List
Cupa facility list.

Date of Government Version: 02/26/2018
Date Data Arrived at EDR: 03/01/2018
Date Made Active in Reports: 03/15/2018
Number of Days to Update: 14

Source: Health & Human Services
Telephone: 530-458-0396
Last EDR Contact: 02/14/2018
Next Scheduled EDR Contact: 05/21/2018
Data Release Frequency: Semi-Annually

CONTRA COSTA COUNTY:

Site List
List includes sites from the underground tank, hazardous waste generator and business plan/2185 programs.

Date of Government Version: 11/20/2017
Date Data Arrived at EDR: 11/29/2017
Date Made Active in Reports: 01/19/2018
Number of Days to Update: 51

Source: Contra Costa Health Services Department
Telephone: 925-646-2286
Last EDR Contact: 01/29/2018
Next Scheduled EDR Contact: 05/14/2018
Data Release Frequency: Semi-Annually

DEL NORTE COUNTY:

CUPA Facility List
Cupa Facility list

Date of Government Version: 01/05/2018
Date Data Arrived at EDR: 02/02/2018
Date Made Active in Reports: 03/14/2018
Number of Days to Update: 40

Source: Del Norte County Environmental Health Division
Telephone: 707-465-0426
Last EDR Contact: 01/29/2018
Next Scheduled EDR Contact: 05/14/2018
Data Release Frequency: Varies

EL DORADO COUNTY:

CUPA Facility List
CUPA facility list.

Date of Government Version: 12/04/2017
Date Data Arrived at EDR: 12/06/2017
Date Made Active in Reports: 12/27/2017
Number of Days to Update: 21

Source: El Dorado County Environmental Management Department
Telephone: 530-621-6623
Last EDR Contact: 01/29/2018
Next Scheduled EDR Contact: 05/14/2018
Data Release Frequency: Varies

FRESNO COUNTY:

CUPA Resources List

Certified Unified Program Agency. CUPA's are responsible for implementing a unified hazardous materials and hazardous waste management regulatory program. The agency provides oversight of businesses that deal with hazardous materials, operate underground storage tanks or aboveground storage tanks.

Date of Government Version: 03/01/2018
Date Data Arrived at EDR: 03/05/2018
Date Made Active in Reports: 03/14/2018
Number of Days to Update: 9

Source: Dept. of Community Health
Telephone: 559-445-3271
Last EDR Contact: 02/22/2018
Next Scheduled EDR Contact: 04/16/2018
Data Release Frequency: Semi-Annually

GLENN COUNTY:

CUPA Facility List

Cupa facility list

Date of Government Version: 01/22/2018
Date Data Arrived at EDR: 01/24/2018
Date Made Active in Reports: 03/14/2018
Number of Days to Update: 49

Source: Glenn County Air Pollution Control District
Telephone: 830-934-6500
Last EDR Contact: 01/22/2018
Next Scheduled EDR Contact: 05/07/2018
Data Release Frequency: Varies

HUMBOLDT COUNTY:

CUPA Facility List

CUPA facility list.

Date of Government Version: 08/03/2017
Date Data Arrived at EDR: 08/08/2017
Date Made Active in Reports: 10/16/2017
Number of Days to Update: 69

Source: Humboldt County Environmental Health
Telephone: N/A
Last EDR Contact: 02/05/2018
Next Scheduled EDR Contact: 06/04/2018
Data Release Frequency: Semi-Annually

IMPERIAL COUNTY:

CUPA Facility List

Cupa facility list.

Date of Government Version: 01/22/2018
Date Data Arrived at EDR: 01/26/2018
Date Made Active in Reports: 03/14/2018
Number of Days to Update: 47

Source: San Diego Border Field Office
Telephone: 760-339-2777
Last EDR Contact: 01/22/2018
Next Scheduled EDR Contact: 05/07/2018
Data Release Frequency: Varies

INYO COUNTY:

CUPA Facility List
Cupa facility list.

Date of Government Version: 06/08/2017
Date Data Arrived at EDR: 06/09/2017
Date Made Active in Reports: 08/04/2017
Number of Days to Update: 56

Source: Inyo County Environmental Health Services
Telephone: 760-878-0238
Last EDR Contact: 02/14/2018
Next Scheduled EDR Contact: 06/04/2018
Data Release Frequency: Varies

KERN COUNTY:

Underground Storage Tank Sites & Tank Listing
Kern County Sites and Tanks Listing.

Date of Government Version: 11/02/2017
Date Data Arrived at EDR: 11/07/2017
Date Made Active in Reports: 12/20/2017
Number of Days to Update: 43

Source: Kern County Environment Health Services Department
Telephone: 661-862-8700
Last EDR Contact: 02/01/2018
Next Scheduled EDR Contact: 05/21/2018
Data Release Frequency: Quarterly

KINGS COUNTY:

CUPA Facility List
A listing of sites included in the county's Certified Unified Program Agency database. California's Secretary for Environmental Protection established the unified hazardous materials and hazardous waste regulatory program as required by chapter 6.11 of the California Health and Safety Code. The Unified Program consolidates the administration, permits, inspections, and enforcement activities.

Date of Government Version: 11/14/2017
Date Data Arrived at EDR: 11/17/2017
Date Made Active in Reports: 12/15/2017
Number of Days to Update: 28

Source: Kings County Department of Public Health
Telephone: 559-584-1411
Last EDR Contact: 03/14/2018
Next Scheduled EDR Contact: 06/04/2018
Data Release Frequency: Varies

LAKE COUNTY:

CUPA Facility List
Cupa facility list

Date of Government Version: 02/06/2018
Date Data Arrived at EDR: 02/09/2018
Date Made Active in Reports: 03/14/2018
Number of Days to Update: 33

Source: Lake County Environmental Health
Telephone: 707-263-1164
Last EDR Contact: 01/16/2018
Next Scheduled EDR Contact: 04/30/2018
Data Release Frequency: Varies

LASSEN COUNTY:

CUPA Facility List
Cupa facility list

Date of Government Version: 01/22/2018
Date Data Arrived at EDR: 01/24/2018
Date Made Active in Reports: 03/14/2018
Number of Days to Update: 49

Source: Lassen County Environmental Health
Telephone: 530-251-8528
Last EDR Contact: 01/22/2018
Next Scheduled EDR Contact: 05/07/2018
Data Release Frequency: Varies

LOS ANGELES COUNTY:

San Gabriel Valley Areas of Concern
San Gabriel Valley areas where VOC contamination is at or above the MCL as designated by region 9 EPA office.

Date of Government Version: 03/30/2009
Date Data Arrived at EDR: 03/31/2009
Date Made Active in Reports: 10/23/2009
Number of Days to Update: 206

Source: EPA Region 9
Telephone: 415-972-3178
Last EDR Contact: 03/14/2018
Next Scheduled EDR Contact: 07/02/2018
Data Release Frequency: No Update Planned

HMS: Street Number List
Industrial Waste and Underground Storage Tank Sites.

Date of Government Version: 01/16/2018
Date Data Arrived at EDR: 01/23/2018
Date Made Active in Reports: 03/20/2018
Number of Days to Update: 56

Source: Department of Public Works
Telephone: 626-458-3517
Last EDR Contact: 01/04/2018
Next Scheduled EDR Contact: 04/23/2018
Data Release Frequency: Semi-Annually

List of Solid Waste Facilities
Solid Waste Facilities in Los Angeles County.

Date of Government Version: 01/16/2018
Date Data Arrived at EDR: 01/16/2018
Date Made Active in Reports: 02/14/2018
Number of Days to Update: 29

Source: La County Department of Public Works
Telephone: 818-458-5185
Last EDR Contact: 01/16/2018
Next Scheduled EDR Contact: 04/30/2018
Data Release Frequency: Varies

City of Los Angeles Landfills
Landfills owned and maintained by the City of Los Angeles.

Date of Government Version: 01/01/2017
Date Data Arrived at EDR: 04/21/2017
Date Made Active in Reports: 10/09/2017
Number of Days to Update: 171

Source: Engineering & Construction Division
Telephone: 213-473-7869
Last EDR Contact: 01/10/2018
Next Scheduled EDR Contact: 04/30/2018
Data Release Frequency: Varies

Site Mitigation List
Industrial sites that have had some sort of spill or complaint.

Date of Government Version: 01/01/2018
Date Data Arrived at EDR: 01/17/2018
Date Made Active in Reports: 02/14/2018
Number of Days to Update: 28

Source: Community Health Services
Telephone: 323-890-7806
Last EDR Contact: 01/17/2018
Next Scheduled EDR Contact: 04/30/2018
Data Release Frequency: Annually

City of El Segundo Underground Storage Tank
Underground storage tank sites located in El Segundo city.

Date of Government Version: 01/21/2017
Date Data Arrived at EDR: 04/19/2017
Date Made Active in Reports: 05/10/2017
Number of Days to Update: 21

Source: City of El Segundo Fire Department
Telephone: 310-524-2236
Last EDR Contact: 01/10/2018
Next Scheduled EDR Contact: 04/30/2018
Data Release Frequency: Semi-Annually

City of Long Beach Underground Storage Tank
Underground storage tank sites located in the city of Long Beach.

Date of Government Version: 03/09/2017
Date Data Arrived at EDR: 03/10/2017
Date Made Active in Reports: 05/03/2017
Number of Days to Update: 54

Source: City of Long Beach Fire Department
Telephone: 562-570-2563
Last EDR Contact: 01/22/2018
Next Scheduled EDR Contact: 05/07/2018
Data Release Frequency: Annually

City of Torrance Underground Storage Tank
Underground storage tank sites located in the city of Torrance.

Date of Government Version: 01/04/2018
Date Data Arrived at EDR: 01/05/2018
Date Made Active in Reports: 01/18/2018
Number of Days to Update: 13

Source: City of Torrance Fire Department
Telephone: 310-618-2973
Last EDR Contact: 01/04/2018
Next Scheduled EDR Contact: 04/23/2018
Data Release Frequency: Semi-Annually

MADERA COUNTY:

CUPA Facility List
A listing of sites included in the county's Certified Unified Program Agency database. California's Secretary for Environmental Protection established the unified hazardous materials and hazardous waste regulatory program as required by chapter 6.11 of the California Health and Safety Code. The Unified Program consolidates the administration, permits, inspections, and enforcement activities.

Date of Government Version: 10/26/2017
Date Data Arrived at EDR: 10/27/2017
Date Made Active in Reports: 11/06/2017
Number of Days to Update: 10

Source: Madera County Environmental Health
Telephone: 559-675-7823
Last EDR Contact: 02/14/2018
Next Scheduled EDR Contact: 06/04/2018
Data Release Frequency: Varies

MARIN COUNTY:

Underground Storage Tank Sites
Currently permitted USTs in Marin County.

Date of Government Version: 01/02/2018
Date Data Arrived at EDR: 01/05/2018
Date Made Active in Reports: 01/17/2018
Number of Days to Update: 12

Source: Public Works Department Waste Management
Telephone: 415-473-6647
Last EDR Contact: 01/02/2018
Next Scheduled EDR Contact: 04/16/2018
Data Release Frequency: Semi-Annually

MERCED COUNTY:

CUPA Facility List
CUPA facility list.

Date of Government Version: 01/11/2018
Date Data Arrived at EDR: 01/12/2018
Date Made Active in Reports: 02/08/2018
Number of Days to Update: 27

Source: Merced County Environmental Health
Telephone: 209-381-1094
Last EDR Contact: 02/14/2018
Next Scheduled EDR Contact: 06/04/2018
Data Release Frequency: Varies

MONO COUNTY:

CUPA Facility List
CUPA Facility List

Date of Government Version: 02/22/2018
Date Data Arrived at EDR: 02/27/2018
Date Made Active in Reports: 03/14/2018
Number of Days to Update: 15

Source: Mono County Health Department
Telephone: 760-932-5580
Last EDR Contact: 02/22/2018
Next Scheduled EDR Contact: 06/11/2018
Data Release Frequency: Varies

MONTEREY COUNTY:

CUPA Facility Listing
CUPA Program listing from the Environmental Health Division.

Date of Government Version: 01/09/2018
Date Data Arrived at EDR: 01/11/2018
Date Made Active in Reports: 01/31/2018
Number of Days to Update: 20

Source: Monterey County Health Department
Telephone: 831-796-1297
Last EDR Contact: 02/20/2018
Next Scheduled EDR Contact: 06/04/2018
Data Release Frequency: Varies

NAPA COUNTY:

Sites With Reported Contamination
A listing of leaking underground storage tank sites located in Napa county.

Date of Government Version: 01/09/2017
Date Data Arrived at EDR: 01/11/2017
Date Made Active in Reports: 03/02/2017
Number of Days to Update: 50

Source: Napa County Department of Environmental Management
Telephone: 707-253-4269
Last EDR Contact: 02/22/2018
Next Scheduled EDR Contact: 06/11/2018
Data Release Frequency: No Update Planned

Closed and Operating Underground Storage Tank Sites
Underground storage tank sites located in Napa county.

Date of Government Version: 11/22/2017
Date Data Arrived at EDR: 11/27/2017
Date Made Active in Reports: 12/19/2017
Number of Days to Update: 22

Source: Napa County Department of Environmental Management
Telephone: 707-253-4269
Last EDR Contact: 02/22/2018
Next Scheduled EDR Contact: 06/11/2018
Data Release Frequency: No Update Planned

NEVADA COUNTY:

CUPA Facility List
CUPA facility list.

Date of Government Version: 01/31/2018
Date Data Arrived at EDR: 02/01/2018
Date Made Active in Reports: 03/14/2018
Number of Days to Update: 41

Source: Community Development Agency
Telephone: 530-265-1467
Last EDR Contact: 01/29/2018
Next Scheduled EDR Contact: 05/14/2018
Data Release Frequency: Varies

ORANGE COUNTY:

List of Industrial Site Cleanups
Petroleum and non-petroleum spills.

Date of Government Version: 11/02/2017
Date Data Arrived at EDR: 11/09/2017
Date Made Active in Reports: 12/07/2017
Number of Days to Update: 28

Source: Health Care Agency
Telephone: 714-834-3446
Last EDR Contact: 02/05/2018
Next Scheduled EDR Contact: 05/21/2018
Data Release Frequency: Annually

List of Underground Storage Tank Cleanups
Orange County Underground Storage Tank Cleanups (LUST).

Date of Government Version: 02/05/2018
Date Data Arrived at EDR: 02/13/2018
Date Made Active in Reports: 03/20/2018
Number of Days to Update: 35

Source: Health Care Agency
Telephone: 714-834-3446
Last EDR Contact: 02/05/2018
Next Scheduled EDR Contact: 05/21/2018
Data Release Frequency: Quarterly

List of Underground Storage Tank Facilities
Orange County Underground Storage Tank Facilities (UST).

Date of Government Version: 11/02/2017
Date Data Arrived at EDR: 11/07/2017
Date Made Active in Reports: 12/19/2017
Number of Days to Update: 42

Source: Health Care Agency
Telephone: 714-834-3446
Last EDR Contact: 02/07/2018
Next Scheduled EDR Contact: 05/21/2018
Data Release Frequency: Quarterly

PLACER COUNTY:

Master List of Facilities
List includes aboveground tanks, underground tanks and cleanup sites.

Date of Government Version: 12/08/2017
Date Data Arrived at EDR: 12/12/2017
Date Made Active in Reports: 01/31/2018
Number of Days to Update: 50

Source: Placer County Health and Human Services
Telephone: 530-745-2363
Last EDR Contact: 03/15/2018
Next Scheduled EDR Contact: 06/18/2018
Data Release Frequency: Semi-Annually

PLUMAS COUNTY:

CUPA Facility List
Plumas County CUPA Program facilities.

Date of Government Version: 01/22/2018
Date Data Arrived at EDR: 01/24/2018
Date Made Active in Reports: 03/15/2018
Number of Days to Update: 50

Source: Plumas County Environmental Health
Telephone: 530-283-6355
Last EDR Contact: 01/22/2018
Next Scheduled EDR Contact: 05/07/2018
Data Release Frequency: Varies

RIVERSIDE COUNTY:

Listing of Underground Tank Cleanup Sites
Riverside County Underground Storage Tank Cleanup Sites (LUST).

Date of Government Version: 01/18/2018
Date Data Arrived at EDR: 01/23/2018
Date Made Active in Reports: 03/20/2018
Number of Days to Update: 56

Source: Department of Environmental Health
Telephone: 951-358-5055
Last EDR Contact: 03/19/2018
Next Scheduled EDR Contact: 07/02/2018
Data Release Frequency: Quarterly

Underground Storage Tank Tank List
Underground storage tank sites located in Riverside county.

Date of Government Version: 10/12/2017
Date Data Arrived at EDR: 10/12/2017
Date Made Active in Reports: 11/08/2017
Number of Days to Update: 27

Source: Department of Environmental Health
Telephone: 951-358-5055
Last EDR Contact: 03/19/2018
Next Scheduled EDR Contact: 07/02/2018
Data Release Frequency: Quarterly

SACRAMENTO COUNTY:

Toxic Site Clean-Up List
List of sites where unauthorized releases of potentially hazardous materials have occurred.

Date of Government Version: 11/02/2017
Date Data Arrived at EDR: 01/03/2018
Date Made Active in Reports: 02/05/2018
Number of Days to Update: 33

Source: Sacramento County Environmental Management
Telephone: 916-875-8406
Last EDR Contact: 01/03/2018
Next Scheduled EDR Contact: 04/16/2018
Data Release Frequency: Quarterly

Master Hazardous Materials Facility List

Any business that has hazardous materials on site - hazardous material storage sites, underground storage tanks, waste generators.

Date of Government Version: 11/02/2017
Date Data Arrived at EDR: 01/03/2018
Date Made Active in Reports: 02/14/2018
Number of Days to Update: 42

Source: Sacramento County Environmental Management
Telephone: 916-875-8406
Last EDR Contact: 01/03/2018
Next Scheduled EDR Contact: 04/16/2018
Data Release Frequency: Quarterly

SAN BENITO COUNTY:

CUPA Facility List

Cupa facility list

Date of Government Version: 11/01/2017
Date Data Arrived at EDR: 11/03/2017
Date Made Active in Reports: 11/17/2017
Number of Days to Update: 14

Source: San Benito County Environmental Health
Telephone: N/A
Last EDR Contact: 02/15/2018
Next Scheduled EDR Contact: 05/21/2018
Data Release Frequency: Varies

SAN BERNARDINO COUNTY:

Hazardous Material Permits

This listing includes underground storage tanks, medical waste handlers/generators, hazardous materials handlers, hazardous waste generators, and waste oil generators/handlers.

Date of Government Version: 11/30/2017
Date Data Arrived at EDR: 12/01/2017
Date Made Active in Reports: 01/16/2018
Number of Days to Update: 46

Source: San Bernardino County Fire Department Hazardous Materials Division
Telephone: 909-387-3041
Last EDR Contact: 02/05/2018
Next Scheduled EDR Contact: 05/21/2018
Data Release Frequency: Quarterly

SAN DIEGO COUNTY:

Hazardous Materials Management Division Database

The database includes: HE58 - This report contains the business name, site address, business phone number, establishment 'H' permit number, type of permit, and the business status. HE17 - In addition to providing the same information provided in the HE58 listing, HE17 provides inspection dates, violations received by the establishment, hazardous waste generated, the quantity, method of storage, treatment/disposal of waste and the hauler, and information on underground storage tanks. Unauthorized Release List - Includes a summary of environmental contamination cases in San Diego County (underground tank cases, non-tank cases, groundwater contamination, and soil contamination are included.)

Date of Government Version: 12/04/2017
Date Data Arrived at EDR: 12/05/2017
Date Made Active in Reports: 01/11/2018
Number of Days to Update: 37

Source: Hazardous Materials Management Division
Telephone: 619-338-2268
Last EDR Contact: 03/07/2018
Next Scheduled EDR Contact: 06/18/2018
Data Release Frequency: Quarterly

Solid Waste Facilities
San Diego County Solid Waste Facilities.

Date of Government Version: 10/31/2015
Date Data Arrived at EDR: 11/07/2015
Date Made Active in Reports: 01/04/2016
Number of Days to Update: 58

Source: Department of Health Services
Telephone: 619-338-2209
Last EDR Contact: 02/01/2018
Next Scheduled EDR Contact: 05/07/2018
Data Release Frequency: Varies

Environmental Case Listing
The listing contains all underground tank release cases and projects pertaining to properties contaminated with hazardous substances that are actively under review by the Site Assessment and Mitigation Program.

Date of Government Version: 03/23/2010
Date Data Arrived at EDR: 06/15/2010
Date Made Active in Reports: 07/09/2010
Number of Days to Update: 24

Source: San Diego County Department of Environmental Health
Telephone: 619-338-2371
Last EDR Contact: 02/28/2018
Next Scheduled EDR Contact: 06/18/2018
Data Release Frequency: No Update Planned

SAN FRANCISCO COUNTY:

Local Oversite Facilities
A listing of leaking underground storage tank sites located in San Francisco county.

Date of Government Version: 09/19/2008
Date Data Arrived at EDR: 09/19/2008
Date Made Active in Reports: 09/29/2008
Number of Days to Update: 10

Source: Department Of Public Health San Francisco County
Telephone: 415-252-3920
Last EDR Contact: 02/01/2018
Next Scheduled EDR Contact: 05/21/2018
Data Release Frequency: Quarterly

Underground Storage Tank Information
Underground storage tank sites located in San Francisco county.

Date of Government Version: 11/02/2017
Date Data Arrived at EDR: 11/07/2017
Date Made Active in Reports: 12/19/2017
Number of Days to Update: 42

Source: Department of Public Health
Telephone: 415-252-3920
Last EDR Contact: 03/14/2018
Next Scheduled EDR Contact: 05/21/2018
Data Release Frequency: Quarterly

SAN JOAQUIN COUNTY:

San Joaquin Co. UST
A listing of underground storage tank locations in San Joaquin county.

Date of Government Version: 12/20/2017
Date Data Arrived at EDR: 12/21/2017
Date Made Active in Reports: 02/01/2018
Number of Days to Update: 42

Source: Environmental Health Department
Telephone: N/A
Last EDR Contact: 03/14/2018
Next Scheduled EDR Contact: 07/02/2018
Data Release Frequency: Semi-Annually

SAN LUIS OBISPO COUNTY:

CUPA Facility List
Cupa Facility List.

Date of Government Version: 11/16/2017
Date Data Arrived at EDR: 11/17/2017
Date Made Active in Reports: 12/18/2017
Number of Days to Update: 31

Source: San Luis Obispo County Public Health Department
Telephone: 805-781-5596
Last EDR Contact: 02/15/2018
Next Scheduled EDR Contact: 06/04/2018
Data Release Frequency: Varies

SAN MATEO COUNTY:

Business Inventory
List includes Hazardous Materials Business Plan, hazardous waste generators, and underground storage tanks.

Date of Government Version: 12/12/2017
Date Data Arrived at EDR: 12/14/2017
Date Made Active in Reports: 01/11/2018
Number of Days to Update: 28

Source: San Mateo County Environmental Health Services Division
Telephone: 650-363-1921
Last EDR Contact: 03/07/2018
Next Scheduled EDR Contact: 06/25/2018
Data Release Frequency: Annually

Fuel Leak List
A listing of leaking underground storage tank sites located in San Mateo county.

Date of Government Version: 12/12/2017
Date Data Arrived at EDR: 12/14/2017
Date Made Active in Reports: 01/12/2018
Number of Days to Update: 29

Source: San Mateo County Environmental Health Services Division
Telephone: 650-363-1921
Last EDR Contact: 03/07/2018
Next Scheduled EDR Contact: 06/25/2018
Data Release Frequency: Semi-Annually

SANTA BARBARA COUNTY:

CUPA Facility Listing
CUPA Program Listing from the Environmental Health Services division.

Date of Government Version: 09/08/2011
Date Data Arrived at EDR: 09/09/2011
Date Made Active in Reports: 10/07/2011
Number of Days to Update: 28

Source: Santa Barbara County Public Health Department
Telephone: 805-686-8167
Last EDR Contact: 02/15/2018
Next Scheduled EDR Contact: 06/04/2018
Data Release Frequency: Varies

SANTA CLARA COUNTY:

Cupa Facility List
Cupa facility list

Date of Government Version: 02/20/2018
Date Data Arrived at EDR: 02/20/2018
Date Made Active in Reports: 03/19/2018
Number of Days to Update: 27

Source: Department of Environmental Health
Telephone: 408-918-1973
Last EDR Contact: 02/15/2018
Next Scheduled EDR Contact: 06/04/2018
Data Release Frequency: Varies

HIST LUST - Fuel Leak Site Activity Report
A listing of open and closed leaking underground storage tanks. This listing is no longer updated by the county. Leaking underground storage tanks are now handled by the Department of Environmental Health.

Date of Government Version: 03/29/2005
Date Data Arrived at EDR: 03/30/2005
Date Made Active in Reports: 04/21/2005
Number of Days to Update: 22

Source: Santa Clara Valley Water District
Telephone: 408-265-2600
Last EDR Contact: 03/23/2009
Next Scheduled EDR Contact: 06/22/2009
Data Release Frequency: No Update Planned

LOP Listing
A listing of leaking underground storage tanks located in Santa Clara county.

Date of Government Version: 03/03/2014
Date Data Arrived at EDR: 03/05/2014
Date Made Active in Reports: 03/18/2014
Number of Days to Update: 13

Source: Department of Environmental Health
Telephone: 408-918-3417
Last EDR Contact: 02/22/2018
Next Scheduled EDR Contact: 06/11/2018
Data Release Frequency: Annually

Hazardous Material Facilities
Hazardous material facilities, including underground storage tank sites.

Date of Government Version: 02/04/2018
Date Data Arrived at EDR: 02/06/2018
Date Made Active in Reports: 03/20/2018
Number of Days to Update: 42

Source: City of San Jose Fire Department
Telephone: 408-535-7694
Last EDR Contact: 02/01/2018
Next Scheduled EDR Contact: 05/21/2018
Data Release Frequency: Annually

SANTA CRUZ COUNTY:

CUPA Facility List
CUPA facility listing.

Date of Government Version: 01/21/2017
Date Data Arrived at EDR: 02/22/2017
Date Made Active in Reports: 05/23/2017
Number of Days to Update: 90

Source: Santa Cruz County Environmental Health
Telephone: 831-464-2761
Last EDR Contact: 02/15/2018
Next Scheduled EDR Contact: 06/04/2018
Data Release Frequency: Varies

SHASTA COUNTY:

CUPA Facility List
Cupa Facility List.

Date of Government Version: 06/15/2017
Date Data Arrived at EDR: 06/19/2017
Date Made Active in Reports: 08/09/2017
Number of Days to Update: 51

Source: Shasta County Department of Resource Management
Telephone: 530-225-5789
Last EDR Contact: 02/15/2018
Next Scheduled EDR Contact: 06/04/2018
Data Release Frequency: Varies

SOLANO COUNTY:

Leaking Underground Storage Tanks
A listing of leaking underground storage tank sites located in Solano county.

Date of Government Version: 12/14/2017
Date Data Arrived at EDR: 12/15/2017
Date Made Active in Reports: 01/12/2018
Number of Days to Update: 28

Source: Solano County Department of Environmental Management
Telephone: 707-784-6770
Last EDR Contact: 02/28/2018
Next Scheduled EDR Contact: 06/18/2018
Data Release Frequency: Quarterly

Underground Storage Tanks
Underground storage tank sites located in Solano county.

Date of Government Version: 12/14/2017
Date Data Arrived at EDR: 12/15/2017
Date Made Active in Reports: 01/18/2018
Number of Days to Update: 34

Source: Solano County Department of Environmental Management
Telephone: 707-784-6770
Last EDR Contact: 02/28/2018
Next Scheduled EDR Contact: 06/18/2018
Data Release Frequency: Quarterly

SONOMA COUNTY:

Cupa Facility List
Cupa Facility list

Date of Government Version: 12/20/2017
Date Data Arrived at EDR: 12/21/2017
Date Made Active in Reports: 01/31/2018
Number of Days to Update: 41

Source: County of Sonoma Fire & Emergency Services Department
Telephone: 707-565-1174
Last EDR Contact: 12/19/2017
Next Scheduled EDR Contact: 04/09/2018
Data Release Frequency: Varies

Leaking Underground Storage Tank Sites
A listing of leaking underground storage tank sites located in Sonoma county.

Date of Government Version: 01/04/2018
Date Data Arrived at EDR: 01/09/2018
Date Made Active in Reports: 02/06/2018
Number of Days to Update: 28

Source: Department of Health Services
Telephone: 707-565-6565
Last EDR Contact: 01/04/2018
Next Scheduled EDR Contact: 04/09/2018
Data Release Frequency: Quarterly

STANISLAUS COUNTY:

CUPA Facility List
Cupa facility list

Date of Government Version: 02/06/2018
Date Data Arrived at EDR: 02/07/2018
Date Made Active in Reports: 03/16/2018
Number of Days to Update: 37

Source: Stanislaus County Department of Ennvironmental Protection
Telephone: 209-525-6751
Last EDR Contact: 01/16/2018
Next Scheduled EDR Contact: 04/30/2018
Data Release Frequency: Varies

SUTTER COUNTY:

Underground Storage Tanks
Underground storage tank sites located in Sutter county.

Date of Government Version: 12/01/2017
Date Data Arrived at EDR: 12/04/2017
Date Made Active in Reports: 12/19/2017
Number of Days to Update: 15

Source: Sutter County Department of Agriculture
Telephone: 530-822-7500
Last EDR Contact: 02/28/2018
Next Scheduled EDR Contact: 06/18/2018
Data Release Frequency: Semi-Annually

TEHAMA COUNTY:

CUPA Facility List
Cupa facilities

Date of Government Version: 11/16/2017
Date Data Arrived at EDR: 11/17/2017
Date Made Active in Reports: 12/18/2017
Number of Days to Update: 31

Source: Tehama County Department of Environmental Health
Telephone: 530-527-8020
Last EDR Contact: 02/01/2018
Next Scheduled EDR Contact: 05/21/2018
Data Release Frequency: Varies

TRINITY COUNTY:

CUPA Facility List
Cupa facility list

Date of Government Version: 01/22/2018
Date Data Arrived at EDR: 01/25/2018
Date Made Active in Reports: 03/19/2018
Number of Days to Update: 53

Source: Department of Toxic Substances Control
Telephone: 760-352-0381
Last EDR Contact: 01/22/2018
Next Scheduled EDR Contact: 05/07/2018
Data Release Frequency: Varies

TULARE COUNTY:

CUPA Facility List
Cupa program facilities

Date of Government Version: 09/27/2017
Date Data Arrived at EDR: 09/28/2017
Date Made Active in Reports: 10/16/2017
Number of Days to Update: 18

Source: Tulare County Environmental Health Services Division
Telephone: 559-624-7400
Last EDR Contact: 03/06/2018
Next Scheduled EDR Contact: 05/21/2018
Data Release Frequency: Varies

TUOLUMNE COUNTY:

CUPA Facility List
Cupa facility list

Date of Government Version: 01/22/2018
Date Data Arrived at EDR: 01/25/2018
Date Made Active in Reports: 03/16/2018
Number of Days to Update: 50

Source: Divison of Environmental Health
Telephone: 209-533-5633
Last EDR Contact: 01/22/2018
Next Scheduled EDR Contact: 05/07/2018
Data Release Frequency: Varies

VENTURA COUNTY:

Business Plan, Hazardous Waste Producers, and Operating Underground Tanks
The BWT list indicates by site address whether the Environmental Health Division has Business Plan (B), Waste Producer (W), and/or Underground Tank (T) information.

Date of Government Version: 12/26/2017
Date Data Arrived at EDR: 01/25/2018
Date Made Active in Reports: 03/14/2018
Number of Days to Update: 48

Source: Ventura County Environmental Health Division
Telephone: 805-654-2813
Last EDR Contact: 01/22/2018
Next Scheduled EDR Contact: 05/07/2018
Data Release Frequency: Quarterly

Inventory of Illegal Abandoned and Inactive Sites
Ventura County Inventory of Closed, Illegal Abandoned, and Inactive Sites.

Date of Government Version: 12/01/2011
Date Data Arrived at EDR: 12/01/2011
Date Made Active in Reports: 01/19/2012
Number of Days to Update: 49

Source: Environmental Health Division
Telephone: 805-654-2813
Last EDR Contact: 12/26/2017
Next Scheduled EDR Contact: 04/16/2018
Data Release Frequency: Annually

Listing of Underground Tank Cleanup Sites
Ventura County Underground Storage Tank Cleanup Sites (LUST).

Date of Government Version: 05/29/2008
Date Data Arrived at EDR: 06/24/2008
Date Made Active in Reports: 07/31/2008
Number of Days to Update: 37

Source: Environmental Health Division
Telephone: 805-654-2813
Last EDR Contact: 02/08/2018
Next Scheduled EDR Contact: 05/28/2018
Data Release Frequency: Quarterly

Medical Waste Program List
To protect public health and safety and the environment from potential exposure to disease causing agents, the Environmental Health Division Medical Waste Program regulates the generation, handling, storage, treatment and disposal of medical waste throughout the County.

Date of Government Version: 12/26/2017
Date Data Arrived at EDR: 01/25/2018
Date Made Active in Reports: 03/20/2018
Number of Days to Update: 54

Source: Ventura County Resource Management Agency
Telephone: 805-654-2813
Last EDR Contact: 01/22/2018
Next Scheduled EDR Contact: 05/07/2018
Data Release Frequency: Quarterly

Underground Tank Closed Sites List
Ventura County Operating Underground Storage Tank Sites (UST)/Underground Tank Closed Sites List.

Date of Government Version: 11/27/2017
Date Data Arrived at EDR: 12/13/2017
Date Made Active in Reports: 01/19/2018
Number of Days to Update: 37

Source: Environmental Health Division
Telephone: 805-654-2813
Last EDR Contact: 03/14/2018
Next Scheduled EDR Contact: 06/25/2018
Data Release Frequency: Quarterly

YOLO COUNTY:

Underground Storage Tank Comprehensive Facility Report
Underground storage tank sites located in Yolo county.

Date of Government Version: 01/02/2018
Date Data Arrived at EDR: 01/09/2018
Date Made Active in Reports: 01/19/2018
Number of Days to Update: 10

Source: Yolo County Department of Health
Telephone: 530-666-8646
Last EDR Contact: 01/02/2018
Next Scheduled EDR Contact: 04/16/2018
Data Release Frequency: Annually

YUBA COUNTY:

CUPA Facility List
CUPA facility listing for Yuba County.

Date of Government Version: 11/08/2017
Date Data Arrived at EDR: 11/10/2017
Date Made Active in Reports: 11/16/2017
Number of Days to Update: 6

Source: Yuba County Environmental Health Department
Telephone: 530-749-7523
Last EDR Contact: 01/29/2018
Next Scheduled EDR Contact: 05/14/2018
Data Release Frequency: Varies

OTHER DATABASE(S)

Depending on the geographic area covered by this report, the data provided in these specialty databases may or may not be complete. For example, the existence of wetlands information data in a specific report does not mean that all wetlands in the area covered by the report are included. Moreover, the absence of any reported wetlands information does not necessarily mean that wetlands do not exist in the area covered by the report.

CT MANIFEST: Hazardous Waste Manifest Data
Facility and manifest data. Manifest is a document that lists and tracks hazardous waste from the generator through transporters to a tsd facility.

Date of Government Version: 11/11/2017
Date Data Arrived at EDR: 11/14/2017
Date Made Active in Reports: 12/18/2017
Number of Days to Update: 34

Source: Department of Energy & Environmental Protection
Telephone: 860-424-3375
Last EDR Contact: 02/14/2018
Next Scheduled EDR Contact: 05/28/2018
Data Release Frequency: No Update Planned

NJ MANIFEST: Manifest Information
Hazardous waste manifest information.

Date of Government Version: 12/31/2016
Date Data Arrived at EDR: 04/11/2017
Date Made Active in Reports: 07/27/2017
Number of Days to Update: 107

Source: Department of Environmental Protection
Telephone: N/A
Last EDR Contact: 01/05/2018
Next Scheduled EDR Contact: 04/23/2018
Data Release Frequency: Annually

NY MANIFEST: Facility and Manifest Data
Manifest is a document that lists and tracks hazardous waste from the generator through transporters to a TSD facility.

Date of Government Version: 12/31/2017
Date Data Arrived at EDR: 01/31/2018
Date Made Active in Reports: 03/09/2018
Number of Days to Update: 37

Source: Department of Environmental Conservation
Telephone: 518-402-8651
Last EDR Contact: 01/31/2018
Next Scheduled EDR Contact: 05/14/2018
Data Release Frequency: Quarterly

PA MANIFEST: Manifest Information
Hazardous waste manifest information.

Date of Government Version: 12/31/2016
Date Data Arrived at EDR: 07/25/2017
Date Made Active in Reports: 09/25/2017
Number of Days to Update: 62

Source: Department of Environmental Protection
Telephone: 717-783-8990
Last EDR Contact: 01/16/2018
Next Scheduled EDR Contact: 04/30/2018
Data Release Frequency: Annually

RI MANIFEST: Manifest information
Hazardous waste manifest information

Date of Government Version: 12/31/2013
Date Data Arrived at EDR: 06/19/2015
Date Made Active in Reports: 07/15/2015
Number of Days to Update: 26

Source: Department of Environmental Management
Telephone: 401-222-2797
Last EDR Contact: 02/21/2018
Next Scheduled EDR Contact: 06/04/2018
Data Release Frequency: Annually

WI MANIFEST: Manifest Information
Hazardous waste manifest information.

Date of Government Version: 12/31/2016
Date Data Arrived at EDR: 04/13/2017
Date Made Active in Reports: 07/14/2017
Number of Days to Update: 92

Source: Department of Natural Resources
Telephone: N/A
Last EDR Contact: 03/08/2018
Next Scheduled EDR Contact: 06/25/2018
Data Release Frequency: Annually

Oil/Gas Pipelines
Source: PennWell Corporation
Petroleum Bundle (Crude Oil, Refined Products, Petrochemicals, Gas Liquids (LPG/NGL), and Specialty Gases (Miscellaneous)) N = Natural Gas Bundle (Natural Gas, Gas Liquids (LPG/NGL), and Specialty Gases (Miscellaneous)). This map includes information copyrighted by PennWell Corporation. This information is provided on a best effort basis and PennWell Corporation does not guarantee its accuracy nor warrant its fitness for any particular purpose. Such information has been reprinted with the permission of PennWell.

Electric Power Transmission Line Data
Source: PennWell Corporation
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Sensitive Receptors: There are individuals deemed sensitive receptors due to their fragile immune systems and special sensitivity to environmental discharges. These sensitive receptors typically include the elderly, the sick, and children. While the location of all sensitive receptors cannot be determined, EDR indicates those buildings and facilities - schools, daycares, hospitals, medical centers, and nursing homes - where individuals who are sensitive receptors are likely to be located.

AHA Hospitals:
Source: American Hospital Association, Inc.
Telephone: 312-280-5991
The database includes a listing of hospitals based on the American Hospital Association's annual survey of hospitals.

Medical Centers: Provider of Services Listing
Source: Centers for Medicare & Medicaid Services
Telephone: 410-786-3000
A listing of hospitals with Medicare provider number, produced by Centers of Medicare & Medicaid Services, a federal agency within the U.S. Department of Health and Human Services.

Nursing Homes
Source: National Institutes of Health
Telephone: 301-594-6248
Information on Medicare and Medicaid certified nursing homes in the United States.

Public Schools
Source: National Center for Education Statistics
Telephone: 202-502-7300
The National Center for Education Statistics' primary database on elementary and secondary public education in the United States. It is a comprehensive, annual, national statistical database of all public elementary and secondary schools and school districts, which contains data that are comparable across all states.

Private Schools
Source: National Center for Education Statistics
Telephone: 202-502-7300
The National Center for Education Statistics' primary database on private school locations in the United States.

Daycare Centers: Licensed Facilities
Source: Department of Social Services
Telephone: 916-657-4041

Flood Zone Data: This data was obtained from the Federal Emergency Management Agency (FEMA). It depicts 100-year and 500-year flood zones as defined by FEMA. It includes the National Flood Hazard Layer (NFHL) which incorporates Flood Insurance Rate Map (FIRM) data and Q3 data from FEMA in areas not covered by NFHL.
Source: FEMA
Telephone: 877-336-2627
Date of Government Version: 2003, 2015

NWI: National Wetlands Inventory. This data, available in select counties across the country, was obtained by EDR in 2002, 2005 and 2010 from the U.S. Fish and Wildlife Service.

State Wetlands Data: Wetland Inventory
Source: Department of Fish & Game
Telephone: 916-445-0411

STREET AND ADDRESS INFORMATION

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GEOCHECK ®- PHYSICAL SETTING SOURCE ADDENDUM

TARGET PROPERTY ADDRESS

ARAGORN-ATHOS PROJECT
RIVERSIDE COUNTY
DESERT CENTER, CA 92239

TARGET PROPERTY COORDINATES

Latitude (North):	33.721894 - 33˚ 43' 18.82''
Longitude (West):	115.277246 - 115˚ 16' 38.09''
Universal Tranverse Mercator:	Zone 11
UTM X (Meters):	659622.1
UTM Y (Meters):	3732459.8
Elevation:	581 ft. above sea level

USGS TOPOGRAPHIC MAP

Target Property Map:	5640274 CORN SPRING, CA
Version Date:	2012
North Map:	5640284 EAST OF VICTORY PASS, CA
Version Date:	2012
Northeast Map:	5639776 PALEN LAKE, CA
Version Date:	2012
Southeast Map:	5641100 SIDEWINDER WELL, CA
Version Date:	2012

EDR's GeoCheck Physical Setting Source Addendum is provided to assist the environmental professional in forming an opinion about the impact of potential contaminant migration.

Assessment of the impact of contaminant migration generally has two principal investigative components:

1. Groundwater flow direction, and
2. Groundwater flow velocity.

Groundwater flow direction may be impacted by surface topography, hydrology, hydrogeology, characteristics of the soil, and nearby wells. Groundwater flow velocity is generally impacted by the nature of the geologic strata.

GEOCHECK® - PHYSICAL SETTING SOURCE SUMMARY

GROUNDWATER FLOW DIRECTION INFORMATION

Groundwater flow direction for a particular site is best determined by a qualified environmental professional using site-specific well data. If such data is not reasonably ascertainable, it may be necessary to rely on other sources of information, such as surface topographic information, hydrologic information, hydrogeologic data collected on nearby properties, and regional groundwater flow information (from deep aquifers).

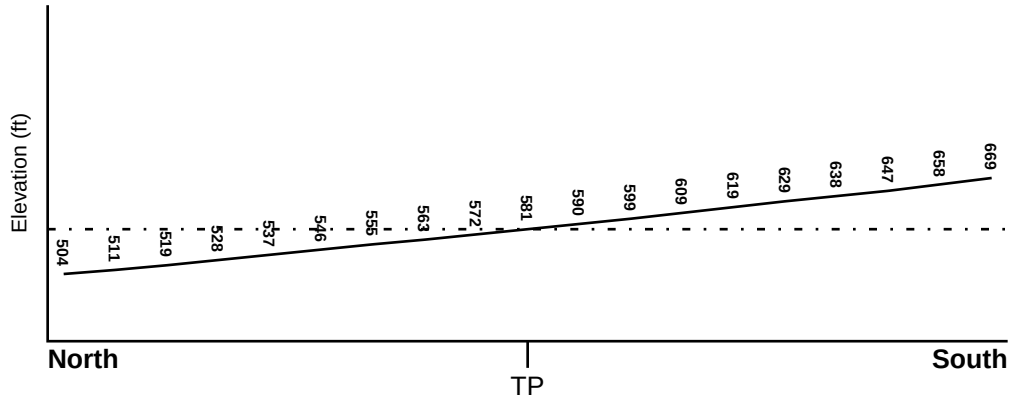
TOPOGRAPHIC INFORMATION

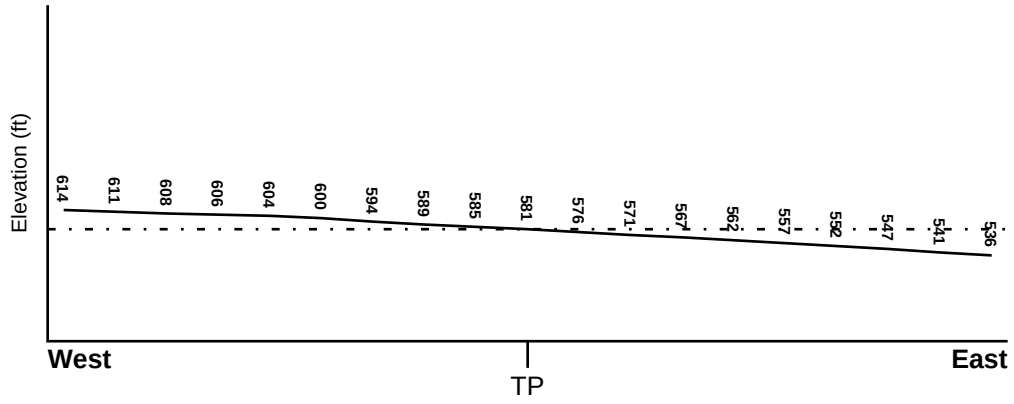
Surface topography may be indicative of the direction of surficial groundwater flow. This information can be used to assist the environmental professional in forming an opinion about the impact of nearby contaminated properties or, should contamination exist on the target property, what downgradient sites might be impacted.

TARGET PROPERTY TOPOGRAPHY

General Topographic Gradient: General NNE

SURROUNDING TOPOGRAPHY: ELEVATION PROFILES





Target Property Elevation: 581 ft.

0 1/2 1 Miles

Source: Topography has been determined from the USGS 7.5' Digital Elevation Model and should be evaluated on a relative (not an absolute) basis. Relative elevation information between sites of close proximity should be field verified.

GEOCHECK® - PHYSICAL SETTING SOURCE SUMMARY

HYDROLOGIC INFORMATION

Surface water can act as a hydrologic barrier to groundwater flow. Such hydrologic information can be used to assist the environmental professional in forming an opinion about the impact of nearby contaminated properties or, should contamination exist on the target property, what downgradient sites might be impacted.

Refer to the Physical Setting Source Map following this summary for hydrologic information (major waterways and bodies of water).

FEMA FLOOD ZONE

Flood Plain Panel at Target Property	FEMA Source Type
0602452475A	FEMA Q3 Flood data

Additional Panels in search area:	FEMA Source Type
0602451850A	FEMA Q3 Flood data
0602451825A	FEMA Q3 Flood data
0602452500A	FEMA Q3 Flood data

NATIONAL WETLAND INVENTORY

NWI Quad at Target Property	NWI Electronic Data Coverage
CORN SPRING	YES - refer to the Overview Map and Detail Map

HYDROGEOLOGIC INFORMATION

Hydrogeologic information obtained by installation of wells on a specific site can often be an indicator of groundwater flow direction in the immediate area. Such hydrogeologic information can be used to assist the environmental professional in forming an opinion about the impact of nearby contaminated properties or, should contamination exist on the target property, what downgradient sites might be impacted.

Site-Specific Hydrogeological Data*:

Search Radius:	1.25 miles
Status:	Not found

AQUIFLOW®

Search Radius: 1.000 Mile.

EDR has developed the AQUIFLOW Information System to provide data on the general direction of groundwater flow at specific points. EDR has reviewed reports submitted by environmental professionals to regulatory authorities at select sites and has extracted the date of the report, groundwater flow direction as determined hydrogeologically, and the depth to water table.

MAP ID	LOCATION FROM TP	GENERAL DIRECTION GROUNDWATER FLOW
Not Reported		

* ©1996 Site−specific hydrogeological data gathered by CERCLIS Alerts, Inc., Bainbridge Island, WA. All rights reserved. All of the information and opinions presented are those of the cited EPA report(s), which were completed under a Comprehensive Environmental Response Compensation and Liability Information System (CERCLIS) investigation.

GEOCHECK® - PHYSICAL SETTING SOURCE SUMMARY

GROUNDWATER FLOW VELOCITY INFORMATION

Groundwater flow velocity information for a particular site is best determined by a qualified environmental professional using site specific geologic and soil strata data. If such data are not reasonably ascertainable, it may be necessary to rely on other sources of information, including geologic age identification, rock stratigraphic unit and soil characteristics data collected on nearby properties and regional soil information. In general, contaminant plumes move more quickly through sandy-gravelly types of soils than silty-clayey types of soils.

GEOLOGIC INFORMATION IN GENERAL AREA OF TARGET PROPERTY

Geologic information can be used by the environmental professional in forming an opinion about the relative speed at which contaminant migration may be occurring.

ROCK STRATIGRAPHIC UNIT

Era:	Cenozoic
System:	Quaternary
Series:	Quaternary
Code:	Q *(decoded above as Era, System & Series)*

GEOLOGIC AGE IDENTIFICATION

Category: Stratifed Sequence

Geologic Age and Rock Stratigraphic Unit Source: P.G. Schruben, R.E. Arndt and W.J. Bawiec, Geology of the Conterminous U.S. at 1:2,500,000 Scale - a digital representation of the 1974 P.B. King and H.M. Beikman Map, USGS Digital Data Series DDS - 11 (1994).

DOMINANT SOIL COMPOSITION IN GENERAL AREA OF TARGET PROPERTY

The U.S. Department of Agriculture's (USDA) Soil Conservation Service (SCS) leads the National Cooperative Soil Survey (NCSS) and is responsible for collecting, storing, maintaining and distributing soil survey information for privately owned lands in the United States. A soil map in a soil survey is a representation of soil patterns in a landscape. Soil maps for STATSGO are compiled by generalizing more detailed (SSURGO) soil survey maps. The following information is based on Soil Conservation Service STATSGO data.

Soil Component Name:	CHERIONI
Soil Surface Texture:	very gravelly - sandy loam
Hydrologic Group:	Class D - Very slow infiltration rates. Soils are clayey, have a high water table, or are shallow to an impervious layer.
Soil Drainage Class:	Well drained. Soils have intermediate water holding capacity. Depth to water table is more than 6 feet.

Hydric Status: Soil does not meet the requirements for a hydric soil.

Corrosion Potential - Uncoated Steel:	HIGH
Depth to Bedrock Min:	> 6 inches
Depth to Bedrock Max:	> 20 inches

GEOCHECK® - PHYSICAL SETTING SOURCE SUMMARY

Soil Layer Information							
	Boundary			Classification			
Layer	Upper	Lower	Soil Texture Class	AASHTO Group	Unified Soil	Permeability Rate (in/hr)	Soil Reaction (pH)
1	0 inches	2 inches	very gravelly - sandy loam	Granular materials (35 pct. or less passing No. 200), Stone Fragments, Gravel and Sand.	COARSE-GRAINED SOILS, Sands, Sands with fines, Silty Sand.	Max: 2.00 Min: 0.60	Max: 8.40 Min: 7.90
2	2 inches	9 inches	very gravelly - very fine sandy loam	Granular materials (35 pct. or less passing No. 200), Stone Fragments, Gravel and Sand.	COARSE-GRAINED SOILS, Gravels, Gravels with fines, Silty Gravel	Max: 2.00 Min: 0.60	Max: 8.40 Min: 7.90
3	9 inches	11 inches	indurated	Not reported	Not reported	Max: 0.00 Min: 0.00	Max: 0.00 Min: 0.00
4	11 inches	20 inches	unweathered bedrock	Not reported	Not reported	Max: 0.00 Min: 0.00	Max: 0.00 Min: 0.00

OTHER SOIL TYPES IN AREA

Based on Soil Conservation Service STATSGO data, the following additional subordinant soil types may appear within the general area of target property.

Soil Surface Textures: extremely gravelly - sandy loam

Surficial Soil Types: extremely gravelly - sandy loam

Shallow Soil Types: cemented
extremely gravelly - sandy loam
very gravelly - sandy clay loam

Deeper Soil Types: stratified

LOCAL / REGIONAL WATER AGENCY RECORDS

EDR Local/Regional Water Agency records provide water well information to assist the environmental professional in assessing sources that may impact ground water flow direction, and in forming an opinion about the impact of contaminant migration on nearby drinking water wells.

GEOCHECK® - PHYSICAL SETTING SOURCE SUMMARY

WELL SEARCH DISTANCE INFORMATION

DATABASE	SEARCH DISTANCE (miles)
Federal USGS	4.000
Federal FRDS PWS	Nearest PWS within 3.000 miles
State Database	4.000

FEDERAL USGS WELL INFORMATION

MAP ID	WELL ID	LOCATION FROM TP
1	USGS40000128494	1 - 2 Miles ESE
2	USGS40000128492	1 - 2 Miles ESE
3	USGS40000128483	2 - 3 Miles SE
4	USGS40000128491	2 - 3 Miles ESE

FEDERAL FRDS PUBLIC WATER SUPPLY SYSTEM INFORMATION

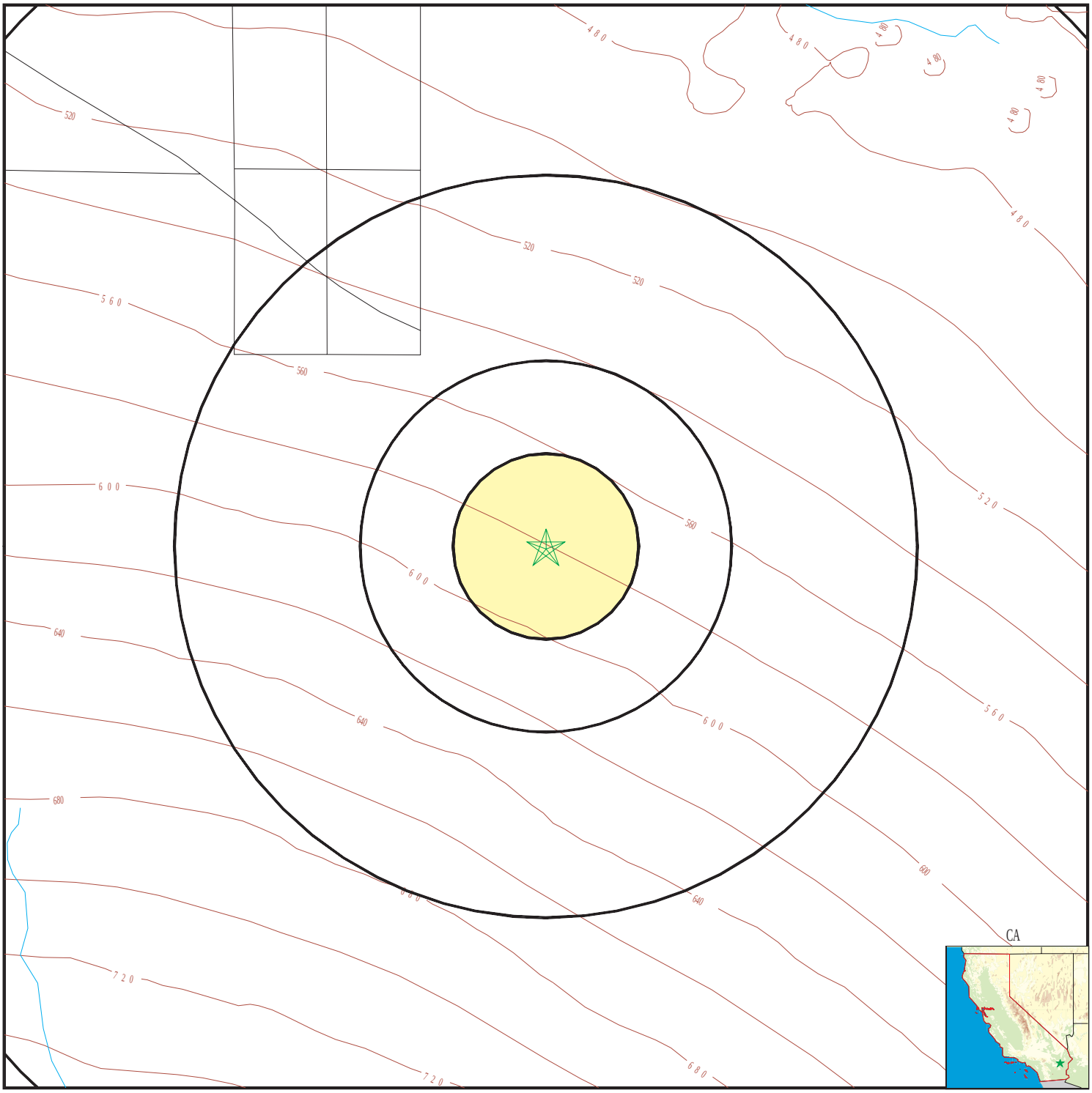
MAP ID	WELL ID	LOCATION FROM TP
No PWS System Found		

Note: PWS System location is not always the same as well location.

STATE DATABASE WELL INFORMATION

MAP ID	WELL ID	LOCATION FROM TP
No Wells Found		

PHYSICAL SETTING SOURCE MAP - 5224824.5s



County Boundary
Major Roads
Contour Lines
Earthquake Fault Lines
Earthquake epicenter, Richter 5 or greater
Water Wells
Public Water Supply Wells
Cluster of Multiple Icons

0 1/4 1/2 1 Miles

Groundwater Flow Direction
GI Indeterminate Groundwater Flow at Location
GV Groundwater Flow Varies at Location
HD Closest Hydrogeological Data
Oil, gas or related wells

N

SITE NAME: Aragorn-Athos Project ADDRESS: Riverside County Desert Center CA 92239 LAT/LONG: 33.721894 / 115.277246	CLIENT: Stantec CONTACT: Dion Monge INQUIRY #: 5224824.5s DATE: March 21, 2018 8:39 am

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Map ID Direction Distance Elevation	Database	EDR ID Number
1 **ESE** **1 - 2 Miles** **Lower**	**FED USGS**	**USGS40000128494**

Org. Identifier:	USGS-AZ		
Formal name:	USGS Arizona Water Science Center		
Monloc Identifier:	USGS-334252115144701		
Monloc name:	005S017E19Q001S		
Monloc type:	Well		
Monloc desc:	Not Reported		
Huc code:	18100100	Drainagearea value:	Not Reported
Drainagearea Units:	Not Reported	Contrib drainagearea:	Not Reported
Contrib drainagearea units:	Not Reported	Latitude:	33.7144646
Longitude:	-115.2472004	Sourcemap scale:	24000
Horiz Acc measure:	1	Horiz Acc measure units:	seconds
Horiz Collection method:	Interpolated from map		
Horiz coord refsys:	NAD83	Vert measure val:	538.
Vert measure units:	feet	Vertacc measure val:	17
Vert accmeasure units:	feet		
Vertcollection method:	Interpolated from topographic map		
Vert coord refsys:	NGVD29	Countrycode:	US
Aquifername:	Not Reported		
Formation type:	Not Reported		
Aquifer type:	Not Reported		
Construction date:	19580829	Welldepth:	760
Welldepth units:	ft	Wellholedepth:	760
Wellholedepth units:	ft		

Ground-water levels, Number of Measurements: 4

Date	Feet below Surface	Feet to Sealevel	Date	Feet below Surface	Feet to Sealevel
1992-02-12	82.30		1970-05-01	75.30	
1961-04-20	76.17		1961-04-06	76.18	

2 **ESE** **1 - 2 Miles** **Higher**	**FED USGS**	**USGS40000128492**

Org. Identifier:	USGS-AZ		
Formal name:	USGS Arizona Water Science Center		
Monloc Identifier:	USGS-334229115145301		
Monloc name:	005S017E30F001S		
Monloc type:	Well		
Monloc desc:	Not Reported		
Huc code:	18100100	Drainagearea value:	Not Reported
Drainagearea Units:	Not Reported	Contrib drainagearea:	Not Reported
Contrib drainagearea units:	Not Reported	Latitude:	33.7080759
Longitude:	-115.2488671	Sourcemap scale:	24000
Horiz Acc measure:	1	Horiz Acc measure units:	seconds
Horiz Collection method:	Interpolated from map		
Horiz coord refsys:	NAD83	Vert measure val:	574.
Vert measure units:	feet	Vertacc measure val:	17
Vert accmeasure units:	feet		
Vertcollection method:	Interpolated from topographic map		
Vert coord refsys:	NGVD29	Countrycode:	US
Aquifername:	Not Reported		
Formation type:	Not Reported		

Aquifer type:	Not Reported		
Construction date:	19580829	Welldepth:	698
Welldepth units:	ft	Wellholedepth:	720
Wellholedepth units:	ft		

Ground-water levels, Number of Measurements: 3

Date	Feet below Surface	Feet to Sealevel	Date	Feet below Surface	Feet to Sealevel
1992-03-26	113.12		1970-05-01	110.77	
1961-04-06	108.37				

3
SE **FED USGS** **USGS40000128483**
2 - 3 Miles
Higher

Org. Identifier:	USGS-AZ		
Formal name:	USGS Arizona Water Science Center		
Monloc Identifier:	USGS-334202115145501		
Monloc name:	005S017E30P001S		
Monloc type:	Well		
Monloc desc:	Not Reported		
Huc code:	18100100	Drainagearea value:	Not Reported
Drainagearea Units:	Not Reported	Contrib drainagearea:	Not Reported
Contrib drainagearea units:	Not Reported	Latitude:	33.7005761
Longitude:	-115.2494227	Sourcemap scale:	24000
Horiz Acc measure:	1	Horiz Acc measure units:	seconds
Horiz Collection method:	Interpolated from map		
Horiz coord refsys:	NAD83	Vert measure val:	607.
Vert measure units:	feet	Vertacc measure val:	17
Vert accmeasure units:	feet		
Vertcollection method:	Interpolated from topographic map		
Vert coord refsys:	NGVD29	Countrycode:	US
Aquifername:	Not Reported		
Formation type:	Not Reported		
Aquifer type:	Not Reported		
Construction date:	1937	Welldepth:	152
Welldepth units:	ft	Wellholedepth:	152
Wellholedepth units:	ft		

Ground-water levels, Number of Measurements: 6

Date	Feet below Surface	Feet to Sealevel	Date	Feet below Surface	Feet to Sealevel
1992-02-12					
Note: The site was dry (no water level recorded).					
1961-05-16					
Note: The site was dry (no water level recorded).					
1961-04-06					
Note: The site was dry (no water level recorded).					
1959-05-18					
Note: The site was dry (no water level recorded).					
1958-05-10					
Note: The site was dry (no water level recorded).					
1957-05-16	150.0				

Map ID Direction Distance Elevation	Database	EDR ID Number
4 **ESE** **2 - 3 Miles** **Lower**	**FED USGS**	**USGS40000128491**

Org. Identifier:	USGS-AZ		
Formal name:	USGS Arizona Water Science Center		
Monloc Identifier:	USGS-334229115141701		
Monloc name:	005S017E30G001S		
Monloc type:	Well		
Monloc desc:	Not Reported		
Huc code:	18100100	Drainagearea value:	Not Reported
Drainagearea Units:	Not Reported	Contrib drainagearea:	Not Reported
Contrib drainagearea units:	Not Reported	Latitude:	33.7079481
Longitude:	-115.2388196	Sourcemap scale:	24000
Horiz Acc measure:	.01	Horiz Acc measure units:	seconds
Horiz Collection method:	Differentially corrected Global Positioning System (DGPS)		
Horiz coord refsys:	NAD83	Vert measure val:	543.3
Vert measure units:	feet	Vertacc measure val:	0.1
Vert accmeasure units:	feet		
Vertcollection method:	Differential Global Positioning System (GPS)r		
Vert coord refsys:	NGVD29	Countrycode:	US
Aquifername:	Not Reported		
Formation type:	Not Reported		
Aquifer type:	Not Reported		
Construction date:	Not Reported	Welldepth:	Not Reported
Welldepth units:	Not Reported	Wellholedepth:	Not Reported
Wellholedepth units:	Not Reported		

Ground-water levels, Number of Measurements: 1

Date	Feet below Surface	Feet to Sealevel
2000-03-31	115.60	

GEOCHECK® - PHYSICAL SETTING SOURCE MAP FINDINGS
RADON

AREA RADON INFORMATION

State Database: CA Radon

Radon Test Results

Zipcode	Num Tests	> 4 pCi/L
92239	1	0

Federal EPA Radon Zone for RIVERSIDE County: 2

Note: Zone 1 indoor average level > 4 pCi/L.
: Zone 2 indoor average level >= 2 pCi/L and <= 4 pCi/L.
: Zone 3 indoor average level < 2 pCi/L.

Federal Area Radon Information for RIVERSIDE COUNTY, CA

Number of sites tested: 12

Area	Average Activity	% <4 pCi/L	% 4-20 pCi/L	% >20 pCi/L
Living Area - 1st Floor	0.117 pCi/L	100%	0%	0%
Living Area - 2nd Floor	0.450 pCi/L	100%	0%	0%
Basement	1.700 pCi/L	100%	0%	0%

PHYSICAL SETTING SOURCE RECORDS SEARCHED

TOPOGRAPHIC INFORMATION

USGS 7.5' Digital Elevation Model (DEM)
Source: United States Geologic Survey
EDR acquired the USGS 7.5' Digital Elevation Model in 2002 and updated it in 2006. The 7.5 minute DEM corresponds to the USGS 1:24,000- and 1:25,000-scale topographic quadrangle maps. The DEM provides elevation data with consistent elevation units and projection.

HYDROLOGIC INFORMATION

Flood Zone Data: This data was obtained from the Federal Emergency Management Agency (FEMA). It depicts 100-year and 500-year flood zones as defined by FEMA. It includes the National Flood Hazard Layer (NFHL) which incorporates Flood Insurance Rate Map (FIRM) data and Q3 data from FEMA in areas not covered by NFHL.
Source: FEMA
Telephone: 877-336-2627
Date of Government Version: 2003, 2015

NWI: National Wetlands Inventory. This data, available in select counties across the country, was obtained by EDR in 2002, 2005 and 2010 from the U.S. Fish and Wildlife Service.

State Wetlands Data: Wetland Inventory
Source: Department of Fish & Game
Telephone: 916-445-0411

HYDROGEOLOGIC INFORMATION

AQUIFLOW[R] Information System
Source: EDR proprietary database of groundwater flow information
EDR has developed the AQUIFLOW Information System (AIS) to provide data on the general direction of groundwater flow at specific points. EDR has reviewed reports submitted to regulatory authorities at select sites and has extracted the date of the report, hydrogeologically determined groundwater flow direction and depth to water table information.

GEOLOGIC INFORMATION

Geologic Age and Rock Stratigraphic Unit
Source: P.G. Schruben, R.E. Arndt and W.J. Bawiec, Geology of the Conterminous U.S. at 1:2,500,000 Scale - A digital representation of the 1974 P.B. King and H.M. Beikman Map, USGS Digital Data Series DDS - 11 (1994).

STATSGO: State Soil Geographic Database
Source: Department of Agriculture, Natural Resources Conservation Service (NRCS)
The U.S. Department of Agriculture's (USDA) Natural Resources Conservation Service (NRCS) leads the national Conservation Soil Survey (NCSS) and is responsible for collecting, storing, maintaining and distributing soil survey information for privately owned lands in the United States. A soil map in a soil survey is a representation of soil patterns in a landscape. Soil maps for STATSGO are compiled by generalizing more detailed (SSURGO) soil survey maps.

SSURGO: Soil Survey Geographic Database
Source: Department of Agriculture, Natural Resources Conservation Service (NRCS)
Telephone: 800-672-5559
SSURGO is the most detailed level of mapping done by the Natural Resources Conservation Service, mapping scales generally range from 1:12,000 to 1:63,360. Field mapping methods using national standards are used to construct the soil maps in the Soil Survey Geographic (SSURGO) database. SSURGO digitizing duplicates the original soil survey maps. This level of mapping is designed for use by landowners, townships and county natural resource planning and management.

PHYSICAL SETTING SOURCE RECORDS SEARCHED

LOCAL / REGIONAL WATER AGENCY RECORDS

FEDERAL WATER WELLS

PWS: Public Water Systems
Source: EPA/Office of Drinking Water
Telephone: 202-564-3750
Public Water System data from the Federal Reporting Data System. A PWS is any water system which provides water to at least 25 people for at least 60 days annually. PWSs provide water from wells, rivers and other sources.

PWS ENF: Public Water Systems Violation and Enforcement Data
Source: EPA/Office of Drinking Water
Telephone: 202-564-3750
Violation and Enforcement data for Public Water Systems from the Safe Drinking Water Information System (SDWIS) after August 1995. Prior to August 1995, the data came from the Federal Reporting Data System (FRDS).

USGS Water Wells: USGS National Water Inventory System (NWIS)
This database contains descriptive information on sites where the USGS collects or has collected data on surface water and/or groundwater. The groundwater data includes information on wells, springs, and other sources of groundwater.

STATE RECORDS

Water Well Database
Source: Department of Water Resources
Telephone: 916-651-9648

California Drinking Water Quality Database
Source: Department of Public Health
Telephone: 916-324-2319
The database includes all drinking water compliance and special studies monitoring for the state of California since 1984. It consists of over 3,200,000 individual analyses along with well and water system information.

OTHER STATE DATABASE INFORMATION

California Oil and Gas Well Locations
Source: Department of Conservation
Telephone: 916-323-1779
Oil and Gas well locations in the state.

RADON

State Database: CA Radon
Source: Department of Health Services
Telephone: 916-324-2208
Radon Database for California

Area Radon Information
Source: USGS
Telephone: 703-356-4020
The National Radon Database has been developed by the U.S. Environmental Protection Agency (USEPA) and is a compilation of the EPA/State Residential Radon Survey and the National Residential Radon Survey. The study covers the years 1986 - 1992. Where necessary data has been supplemented by information collected at private sources such as universities and research institutions.

EPA Radon Zones
Source: EPA
Telephone: 703-356-4020
Sections 307 & 309 of IRAA directed EPA to list and identify areas of U.S. with the potential for elevated indoor radon levels.

PHYSICAL SETTING SOURCE RECORDS SEARCHED

OTHER

Airport Landing Facilities: Private and public use landing facilities
Source: Federal Aviation Administration, 800-457-6656

Epicenters: World earthquake epicenters, Richter 5 or greater
Source: Department of Commerce, National Oceanic and Atmospheric Administration

California Earthquake Fault Lines: The fault lines displayed on EDR's Topographic map are digitized quaternary fault lines, prepared in 1975 by the United State Geological Survey. Additional information (also from 1975) regarding activity at specific fault lines comes from California's Preliminary Fault Activity Map prepared by the California Division of Mines and Geology.

STREET AND ADDRESS INFORMATION

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Appendix D
USER PROVIDED RECORDS

Stantec Consulting Services Inc.
25864-F Business Center Drive, Redlands, CA 92374-4515
Phone: 909-335-6116
Fax: 909-335-6120

PHASE I ESA USER'S QUESTIONNAIRE

In order to qualify for protection from land owner liability under CERCLA as an *innocent landowner, bona fide prospective purchaser,* or *contiguous property owner*, ASTM standard practice E1527-13 and the federal AAI rule (40 CFR 312) require that the User of the Phase I ESA report provide certain information (if available) to the Environmental Professional completing the assessment. Failure to provide this information could result in a determination that "all appropriate inquiry" is not complete. Information that is not or cannot be provided to the Environmental Professional may be identified as a "data gap" in the Phase I ESA report.

Please answer the following questions as completely as possible. Attach additional pages as needed. Return the completed questionnaire to Stantec Consulting Services Inc.

1. Property Information

Property Name: APNs 807-680-001, 807-680-002, 807-680-003, 807-680-004, 807-680-005, 807-680-006, 807-680-007, 807-680-008, 807-680-009, 807-680-010, 807-680-011, 807-680-012, 07-680-013, 807-690-001, 807-690-002, 807-690-003, 807-690-004, 807-690-026, 807-690-027, 807-690-028, 807-690-011, 807-690-012, 807-690-013, 807-690-014, 807-690-015, 807-690-016, 807-690-017, 807-690-018, 807-690-019, 807-690-020, 807-690-021, 807-690-022, 807-690-023, 807-690-024, 807-690-025

Property Address: c/o River West Investments, 2 410 Fair Oaks Boulevard, Suite 110

City: Sacramento State CA Zip 95825

Property Owner Name: VG Devco, LLC

Property Owner Phone #: _____

2. Contact For Site Access

Name: Brian Vail

Company/Organization/Title: River West Investments

Phone # (916) 379-0955 E-Mail Address: bvail@river-west.com

3. Environmental Cleanup Liens. Are you aware of any environmental cleanup liens against the property that are filed or recorded under federal, tribal, state or local law?

_____ Yes _____X_____ No

If yes, describe or attach details of the lien _____

_____

4. Activity and Land Use Limitations. Are you aware of any activity and use limitations, such as engineering controls, land use restrictions, or institutional controls that are in place at the property and/or have been filed or recorded as applicable to the property as a result of environmental contamination, investigation, cleanup, or related matters?

_____ Yes _____X_____ No

If yes, describe or attach details of the limitations _____
_____

5. Specialized Knowledge or Experience. As the User of this ESA, do you have any specialized knowledge or experience related to the property or nearby properties? For example, are you involved in the same line of business as the current or former occupants of the property or an adjoining property, such that you would have specialized knowledge about chemicals and processes used by this type of business?

_____ Yes ____x_____ No

If yes, describe or attach details of your specialized knowledge or experience _____
_____

6. Relationship of Purchase Price to Fair Market Value of Property. Does the purchase price being paid for this property reasonably reflect the fair market value of the property? If you conclude that there is a difference, do you have any reason to believe that the reduced purchase price may be related to contamination known or believed to be present at the property?

_____Yes, I have reason to believe that the purchase price for the property has been reduced in comparison with the fair market value due to contamination known or believed to be present at the property?

_____x___No, I have no reason to believe that the purchase price for the property has been reduced in comparison with the fair market value due to contamination known or believed to be present at the property?

_____Not applicable. User is not involved in a purchase of the property.

7. Commonly Known or Reasonably Ascertainable Information. Are you aware of commonly known or reasonably ascertainable information about the property that would help the Environmental Professional to identify conditions indicative of releases or threatened releases of hazardous substances or petroleum products? For example:

Do you know the past uses of the property?

_____Yes (describe) _____

_____

___X__No

Do you know of chemicals, hazardous substances or petroleum products that are present or once were present at the property?

____Yes (describe) _____

_____

__X__No

Do you know of spills or other releases of chemicals, hazardous substances or petroleum products that have taken place at the property?

____Yes (describe) _____

_____

__X__No

Do you know of any environmental cleanups that have taken place at the property?
____Yes (describe) _____

_____

__X__No

8. The Degree of Obviousness of Contamination. E1527-13 and the federal AAI rule (40 CFR 312.31) require that the Phase I ESA consider the degree of obviousness of the presence or likely presence of contamination at the property, and the ability to detect the contamination by appropriate investigation. Based on your knowledge and experience related to the property, are there any *obvious* indictors that point to the presence or likely presence of contamination at the property?

____Yes (describe) _____

_____

__x__No

9. Availability of Previous Environmental Reports. Are you aware of previous environmental site assessment reports, other environmental reports, documents, correspondence, etc. concerning the property and its environmental condition?

__X__Yes (describe) _____Soil-Crop Feasibility Report

_____

____No

Signature: _____

Name (printed): Marisa Mitchell_____

Title: Principal_____

Date: 3/14/2018_____

Stantec Consulting Services Inc.
25864-F Business Center Drive, Redlands, CA 92374-4515
Phone: 909-335-6116
Fax: 909-335-6120

PHASE I ESA USER'S QUESTIONNAIRE

In order to qualify for protection from land owner liability under CERCLA as an *innocent landowner, bona fide prospective purchaser,* or *contiguous property owner*, ASTM standard practice E1527-13 and the federal AAI rule (40 CFR 312) require that the User of the Phase I ESA report provide certain information (if available) to the Environmental Professional completing the assessment. Failure to provide this information could result in a determination that "all appropriate inquiry" is not complete. Information that is not or cannot be provided to the Environmental Professional may be identified as a "data gap" in the Phase I ESA report.

Please answer the following questions as completely as possible. Attach additional pages as needed. Return the completed questionnaire to Stantec Consulting Services Inc.

1. Property Information

   Property Name: APN 807-191-004

   Property Address: 23405 Rice Road

   City: Desert Center State CA Zip 92239

   Property Owner Name: Apollo Venture Partnership, LLC

   Property Owner Phone #: _____

2. Contact For Site Access

   Name: Tak Kuen Mau

   Company/Organization/Title: Apollo Venture Partnership, LLC

   Phone # 626-215-9692 E-Mail Address: takmau888@gmail.com

3. Environmental Cleanup Liens. Are you aware of any environmental cleanup liens against the property that are filed or recorded under federal, tribal, state or local law?

   _____ Yes _____X_____ No

   If yes, describe or attach details of the lien _____

4. Activity and Land Use Limitations. Are you aware of any activity and use limitations, such as engineering controls, land use restrictions, or institutional controls that are in place at the property and/or have been filed or recorded as applicable to the property as a result of environmental contamination, investigation, cleanup, or related matters?

_____ Yes _____ No

If yes, describe or attach details of the limitations _____
_____

5. Specialized Knowledge or Experience. As the User of this ESA, do you have any specialized knowledge or experience related to the property or nearby properties? For example, are you involved in the same line of business as the current or former occupants of the property or an adjoining property, such that you would have specialized knowledge about chemicals and processes used by this type of business?

_____ Yes ____x_____ No

If yes, describe or attach details of your specialized knowledge or experience _____
_____

6. Relationship of Purchase Price to Fair Market Value of Property. Does the purchase price being paid for this property reasonably reflect the fair market value of the property? If you conclude that there is a difference, do you have any reason to believe that the reduced purchase price may be related to contamination known or believed to be present at the property?

_____Yes, I have reason to believe that the purchase price for the property has been reduced in comparison with the fair market value due to contamination known or believed to be present at the property?

_____x___No, I have no reason to believe that the purchase price for the property has been reduced in comparison with the fair market value due to contamination known or believed to be present at the property?

_____Not applicable. User is not involved in a purchase of the property.

7. Commonly Known or Reasonably Ascertainable Information. Are you aware of commonly known or reasonably ascertainable information about the property that would help the Environmental Professional to identify conditions indicative of releases or threatened releases of hazardous substances or petroleum products? For example:

Do you know the past uses of the property?

_____Yes (describe) _____

_____

__X___No

Do you know of chemicals, hazardous substances or petroleum products that are present or once were present at the property?

____Yes (describe) _____

_____

__X__No

Do you know of spills or other releases of chemicals, hazardous substances or petroleum products that have taken place at the property?

____Yes (describe) _____

_____

__X__No

Do you know of any environmental cleanups that have taken place at the property?
____Yes (describe) _____

_____

__X__No

8. The Degree of Obviousness of Contamination. E1527-13 and the federal AAI rule (40 CFR 312.31) require that the Phase I ESA consider the degree of obviousness of the presence or likely presence of contamination at the property, and the ability to detect the contamination by appropriate investigation. Based on your knowledge and experience related to the property, are there any *obvious* indictors that point to the presence or likely presence of contamination at the property?

____Yes (describe) _____

_____

__X__No

9. Availability of Previous Environmental Reports. Are you aware of previous environmental site assessment reports, other environmental reports, documents, correspondence, etc. concerning the property and its environmental condition?

____Yes (describe) _____

_____

__X__No

Signature: _____

Name (printed): Marisa Mitchell_____

Title: Principal_____

Date: 3/14/2018_____

Stantec Consulting Services Inc.
25864-F Business Center Drive, Redlands, CA 92374-4515
Phone: 909-335-6116
Fax: 909-335-6120

PHASE I ESA USER'S QUESTIONNAIRE

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Please answer the following questions as completely as possible. Attach additional pages as needed. Return the completed questionnaire to Stantec Consulting Services Inc.

1. Property Information

   Property Name: APN 811-180-024

   Property Address: _____

   City: _____ State _____ Zip _____

   Property Owner Name: Caspers Family Trust

   Property Owner Phone #: _____

2. Contact For Site Access

   Name: David Caspers

   Company/Organization/Title: Caspers Family Trust

   Phone # (760) 774-8655 E-Mail Address: CaliforniaRealEstate@earthlink.com

3. Environmental Cleanup Liens. Are you aware of any environmental cleanup liens against the property that are filed or recorded under federal, tribal, state or local law?

   _____ Yes ___x_____ No

   If yes, describe or attach details of the lien _____

4. Activity and Land Use Limitations. Are you aware of any activity and use limitations, such as engineering controls, land use restrictions, or institutional controls that are in place at the property and/or have been filed or recorded as applicable to the property as a result of environmental contamination, investigation, cleanup, or related matters?

_____ Yes _____x____ No

If yes, describe or attach details of the limitations _____
_____

5. Specialized Knowledge or Experience. As the User of this ESA, do you have any specialized knowledge or experience related to the property or nearby properties? For example, are you involved in the same line of business as the current or former occupants of the property or an adjoining property, such that you would have specialized knowledge about chemicals and processes used by this type of business?

_____ Yes ____x_____ No

If yes, describe or attach details of your specialized knowledge or experience _____
_____

6. Relationship of Purchase Price to Fair Market Value of Property. Does the purchase price being paid for this property reasonably reflect the fair market value of the property? If you conclude that there is a difference, do you have any reason to believe that the reduced purchase price may be related to contamination known or believed to be present at the property?

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_____Not applicable. User is not involved in a purchase of the property.

7. Commonly Known or Reasonably Ascertainable Information. Are you aware of commonly known or reasonably ascertainable information about the property that would help the Environmental Professional to identify conditions indicative of releases or threatened releases of hazardous substances or petroleum products? For example:

Do you know the past uses of the property?

_____Yes (describe) _____

_____

x_____No

Do you know of chemicals, hazardous substances or petroleum products that are present or once were present at the property?

____Yes (describe) _____

_____

x____No

Do you know of spills or other releases of chemicals, hazardous substances or petroleum products that have taken place at the property?

____Yes (describe) _____

_____

x____No

Do you know of any environmental cleanups that have taken place at the property?
____Yes (describe) _____

_____

_x___No

8. The Degree of Obviousness of Contamination. E1527-13 and the federal AAI rule (40 CFR 312.31) require that the Phase I ESA consider the degree of obviousness of the presence or likely presence of contamination at the property, and the ability to detect the contamination by appropriate investigation. Based on your knowledge and experience related to the property, are there any *obvious* indictors that point to the presence or likely presence of contamination at the property?

____Yes (describe) _____

_____

____No

9. Availability of Previous Environmental Reports. Are you aware of previous environmental site assessment reports, other environmental reports, documents, correspondence, etc. concerning the property and its environmental condition?

__X__Yes (describe) _____

_____

____No

Signature: _____

Name (printed): Marisa Mitchell_____

Title: Principal_____

Date: 3/14/2018_____

Stantec Consulting Services Inc.
25864-F Business Center Drive, Redlands, CA 92374-4515
Phone: 909-335-6116
Fax: 909-335-6120

PHASE I ESA USER'S QUESTIONNAIRE

In order to qualify for protection from land owner liability under CERCLA as an *innocent landowner, bona fide prospective purchaser,* or *contiguous property owner*, ASTM standard practice E1527-13 and the federal AAI rule (40 CFR 312) require that the User of the Phase I ESA report provide certain information (if available) to the Environmental Professional completing the assessment. Failure to provide this information could result in a determination that "all appropriate inquiry" is not complete. Information that is not or cannot be provided to the Environmental Professional may be identified as a "data gap" in the Phase I ESA report.

Please answer the following questions as completely as possible. Attach additional pages as needed. Return the completed questionnaire to Stantec Consulting Services Inc.

1. Property Information

Property Name: APNs 811-122-002 & 811-142-007

Property Address: _____

City: _____ State _____ Zip _____

Property Owner Name: Transito and Martha Castellanos

Property Owner Phone #: 909-821-0712

2. Contact For Site Access

Name: Transito Castellanos

Company/Organization/Title: _____

Phone # 909-821-0712 E-Mail Address: william081957@hotmail.com

3. Environmental Cleanup Liens. Are you aware of any environmental cleanup liens against the property that are filed or recorded under federal, tribal, state or local law?

_____ Yes _____X_____ No

If yes, describe or attach details of the lien _____

_____

4. Activity and Land Use Limitations. Are you aware of any activity and use limitations, such as engineering controls, land use restrictions, or institutional controls that are in place at the property and/or have been filed or recorded as applicable to the property as a result of environmental contamination, investigation, cleanup, or related matters?

_____ Yes _____X_____ No

If yes, describe or attach details of the limitations _____
_____

5. Specialized Knowledge or Experience. As the User of this ESA, do you have any specialized knowledge or experience related to the property or nearby properties? For example, are you involved in the same line of business as the current or former occupants of the property or an adjoining property, such that you would have specialized knowledge about chemicals and processes used by this type of business?

_____ Yes ___x_____ No

If yes, describe or attach details of your specialized knowledge or experience _____
_____

6. Relationship of Purchase Price to Fair Market Value of Property. Does the purchase price being paid for this property reasonably reflect the fair market value of the property? If you conclude that there is a difference, do you have any reason to believe that the reduced purchase price may be related to contamination known or believed to be present at the property?

_____Yes, I have reason to believe that the purchase price for the property has been reduced in comparison with the fair market value due to contamination known or believed to be present at the property?

x_____No, I have no reason to believe that the purchase price for the property has been reduced in comparison with the fair market value due to contamination known or believed to be present at the property?

_____Not applicable. User is not involved in a purchase of the property.

7. Commonly Known or Reasonably Ascertainable Information. Are you aware of commonly known or reasonably ascertainable information about the property that would help the Environmental Professional to identify conditions indicative of releases or threatened releases of hazardous substances or petroleum products? For example:

Do you know the past uses of the property?

_____Yes (describe) _____

_____

___X__No

Do you know of chemicals, hazardous substances or petroleum products that are present or once were present at the property?

____Yes (describe) _____

_____

__X__No

Do you know of spills or other releases of chemicals, hazardous substances or petroleum products that have taken place at the property?

____Yes (describe) _____

_____

__X__No

Do you know of any environmental cleanups that have taken place at the property?
____Yes (describe) _____

_____

__X__No

8. The Degree of Obviousness of Contamination. E1527-13 and the federal AAI rule (40 CFR 312.31) require that the Phase I ESA consider the degree of obviousness of the presence or likely presence of contamination at the property, and the ability to detect the contamination by appropriate investigation. Based on your knowledge and experience related to the property, are there any *obvious* indictors that point to the presence or likely presence of contamination at the property?

____Yes (describe) _____

_____

__X__No

9. Availability of Previous Environmental Reports. Are you aware of previous environmental site assessment reports, other environmental reports, documents, correspondence, etc. concerning the property and its environmental condition?

____Yes (describe) _____

_____

__X__No

Signature: _____

Name (printed): Marisa Mitchell_____

Title: Principal_____

Date: 3/14/2018_____

Stantec Consulting Services Inc.
25864-F Business Center Drive, Redlands, CA 92374-4515
Phone: 909-335-6116
Fax: 909-335-6120

PHASE I ESA USER'S QUESTIONNAIRE

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Please answer the following questions as completely as possible. Attach additional pages as needed. Return the completed questionnaire to Stantec Consulting Services Inc.

1. Property Information

   Property Name: APN 811-150-001

   Property Address: _____

   City: _____ State _____ Zip _____

   Property Owner Name: Ritheary Chea

   Property Owner Phone #: (562) 552-1506

2. Contact For Site Access

   Name: Ritheary Chea

   Company/Organization/Title: _____

   Phone # (562) 552-1506 E-Mail Address: rchea77@yahoo.com

3. Environmental Cleanup Liens. Are you aware of any environmental cleanup liens against the property that are filed or recorded under federal, tribal, state or local law?

   _____ Yes _____X_____ No

   If yes, describe or attach details of the lien _____

4. Activity and Land Use Limitations. Are you aware of any activity and use limitations, such as engineering controls, land use restrictions, or institutional controls that are in place at the property and/or have been filed or recorded as applicable to the property as a result of environmental contamination, investigation, cleanup, or related matters?

_____ Yes _____X_____ No

If yes, describe or attach details of the limitations _____
_____

5. Specialized Knowledge or Experience. As the User of this ESA, do you have any specialized knowledge or experience related to the property or nearby properties? For example, are you involved in the same line of business as the current or former occupants of the property or an adjoining property, such that you would have specialized knowledge about chemicals and processes used by this type of business?

_____ Yes _____x_____ No

If yes, describe or attach details of your specialized knowledge or experience _____
_____

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_____Yes, I have reason to believe that the purchase price for the property has been reduced in comparison with the fair market value due to contamination known or believed to be present at the property?

_____x___No, I have no reason to believe that the purchase price for the property has been reduced in comparison with the fair market value due to contamination known or believed to be present at the property?

_____Not applicable. User is not involved in a purchase of the property.

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Do you know the past uses of the property?

_____Yes (describe) _____

_____

___X__No

Do you know of chemicals, hazardous substances or petroleum products that are present or once were present at the property?

____Yes (describe) _____

_____

__X__No

Do you know of spills or other releases of chemicals, hazardous substances or petroleum products that have taken place at the property?

____Yes (describe) _____

_____

__X__No

Do you know of any environmental cleanups that have taken place at the property?
____Yes (describe) _____

_____

__X__No

8. The Degree of Obviousness of Contamination. E1527-13 and the federal AAI rule (40 CFR 312.31) require that the Phase I ESA consider the degree of obviousness of the presence or likely presence of contamination at the property, and the ability to detect the contamination by appropriate investigation. Based on your knowledge and experience related to the property, are there any *obvious* indictors that point to the presence or likely presence of contamination at the property?

____Yes (describe) _____

_____

__X__No

9. Availability of Previous Environmental Reports. Are you aware of previous environmental site assessment reports, other environmental reports, documents, correspondence, etc. concerning the property and its environmental condition?

____Yes (describe) _____

_____

__X__No

Signature: _____

Name (printed): Marisa Mitchell_____

Title: Principal_____

Date: 3/14/2018_____

Stantec Consulting Services Inc.
25864-F Business Center Drive, Redlands, CA 92374-4515
Phone: 909-335-6116
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Please answer the following questions as completely as possible. Attach additional pages as needed. Return the completed questionnaire to Stantec Consulting Services Inc.

1. Property Information

   Property Name: APNs 811-122-009, 811-142-015, 811-130-010 & 811-150-002 (west half)

   Property Address: _____

   City: _____ State _____ Zip _____

   Property Owner Name: Chuckwalla Valley Associates, LLC

   Property Owner Phone #: _____

2. Contact For Site Access

   Name: Micky Grana

   Company/Organization/Title: Chuckwalla Valley Associates, LLC

   Phone # 760-275-3883 E-Mail Address: micky@cvraceway.com

3. Environmental Cleanup Liens. Are you aware of any environmental cleanup liens against the property that are filed or recorded under federal, tribal, state or local law?

   _____ Yes __x_____ No

   If yes, describe or attach details of the lien _____

4. Activity and Land Use Limitations. Are you aware of any activity and use limitations, such as engineering controls, land use restrictions, or institutional controls that are in place at the property and/or have been filed or recorded as applicable to the property as a result of environmental contamination, investigation, cleanup, or related matters?

_____ Yes __x_____ No

If yes, describe or attach details of the limitations _____
_____

5. Specialized Knowledge or Experience. As the User of this ESA, do you have any specialized knowledge or experience related to the property or nearby properties? For example, are you involved in the same line of business as the current or former occupants of the property or an adjoining property, such that you would have specialized knowledge about chemicals and processes used by this type of business?

_____ Yes __x_____ No

If yes, describe or attach details of your specialized knowledge or experience _____
_____

6. Relationship of Purchase Price to Fair Market Value of Property. Does the purchase price being paid for this property reasonably reflect the fair market value of the property? If you conclude that there is a difference, do you have any reason to believe that the reduced purchase price may be related to contamination known or believed to be present at the property?

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_____x___No, I have no reason to believe that the purchase price for the property has been reduced in comparison with the fair market value due to contamination known or believed to be present at the property?

_____Not applicable. User is not involved in a purchase of the property.

7. Commonly Known or Reasonably Ascertainable Information. Are you aware of commonly known or reasonably ascertainable information about the property that would help the Environmental Professional to identify conditions indicative of releases or threatened releases of hazardous substances or petroleum products? For example:

Do you know the past uses of the property?

_____Yes (describe) _____

_____

___x__No

Do you know of chemicals, hazardous substances or petroleum products that are present or once were present at the property?

____Yes (describe) _____

_____

__x__No

Do you know of spills or other releases of chemicals, hazardous substances or petroleum products that have taken place at the property?

____Yes (describe) _____

_____

__x__No

Do you know of any environmental cleanups that have taken place at the property?
____Yes (describe) _____

_____

__x__No

8. The Degree of Obviousness of Contamination. E1527-13 and the federal AAI rule (40 CFR 312.31) require that the Phase I ESA consider the degree of obviousness of the presence or likely presence of contamination at the property, and the ability to detect the contamination by appropriate investigation. Based on your knowledge and experience related to the property, are there any *obvious* indictors that point to the presence or likely presence of contamination at the property?

____Yes (describe) _____

_____

__x__No

9. Availability of Previous Environmental Reports. Are you aware of previous environmental site assessment reports, other environmental reports, documents, correspondence, etc. concerning the property and its environmental condition?

____Yes (describe) _____

_____

_x___No

Signature: _____

Name (printed): Marisa Mitchell_____

Title: Principal_____

Date: 3/14/2018_____

Stantec Consulting Services Inc.
25864-F Business Center Drive, Redlands, CA 92374-4515
Phone: 909-335-6116
Fax: 909-335-6120

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Please answer the following questions as completely as possible. Attach additional pages as needed. Return the completed questionnaire to Stantec Consulting Services Inc.

1. Property Information

   Property Name: APNs 810-110-001 & 810-110-006

   Property Address: _____

   City: _____ State _____ Zip _____

   Property Owner Name: Cocopah Nurseries Inc.

   Property Owner Phone #: _____

2. Contact For Site Access

   Name: Duane Young

   Company/Organization/Title: Cocopah Nurseries Inc.

   Phone # (760) 347-7906 E-Mail Address: duane@WDYoung.com

3. Environmental Cleanup Liens. Are you aware of any environmental cleanup liens against the property that are filed or recorded under federal, tribal, state or local law?

   _____ Yes _____X_____ No

   If yes, describe or attach details of the lien _____

   _____

4. Activity and Land Use Limitations. Are you aware of any activity and use limitations, such as engineering controls, land use restrictions, or institutional controls that are in place at the property and/or have been filed or recorded as applicable to the property as a result of environmental contamination, investigation, cleanup, or related matters?

_____ Yes _____X____ No

If yes, describe or attach details of the limitations _____
_____

5. Specialized Knowledge or Experience. As the User of this ESA, do you have any specialized knowledge or experience related to the property or nearby properties? For example, are you involved in the same line of business as the current or former occupants of the property or an adjoining property, such that you would have specialized knowledge about chemicals and processes used by this type of business?

_____ Yes ___x_____ No

If yes, describe or attach details of your specialized knowledge or experience _____
_____

6. Relationship of Purchase Price to Fair Market Value of Property. Does the purchase price being paid for this property reasonably reflect the fair market value of the property? If you conclude that there is a difference, do you have any reason to believe that the reduced purchase price may be related to contamination known or believed to be present at the property?

_____Yes, I have reason to believe that the purchase price for the property has been reduced in comparison with the fair market value due to contamination known or believed to be present at the property?

_____x___No, I have no reason to believe that the purchase price for the property has been reduced in comparison with the fair market value due to contamination known or believed to be present at the property?

_____Not applicable. User is not involved in a purchase of the property.

7. Commonly Known or Reasonably Ascertainable Information. Are you aware of commonly known or reasonably ascertainable information about the property that would help the Environmental Professional to identify conditions indicative of releases or threatened releases of hazardous substances or petroleum products? For example:

Do you know the past uses of the property?

_____Yes (describe) _____

_____

__x___No

Do you know of chemicals, hazardous substances or petroleum products that are present or once were present at the property?

____Yes (describe) _____

_____

__X__No

Do you know of spills or other releases of chemicals, hazardous substances or petroleum products that have taken place at the property?

____Yes (describe) _____

_____

__X__No

Do you know of any environmental cleanups that have taken place at the property?
____Yes (describe) _____

_____

__X__No

8. The Degree of Obviousness of Contamination. E1527-13 and the federal AAI rule (40 CFR 312.31) require that the Phase I ESA consider the degree of obviousness of the presence or likely presence of contamination at the property, and the ability to detect the contamination by appropriate investigation. Based on your knowledge and experience related to the property, are there any *obvious* indictors that point to the presence or likely presence of contamination at the property?

____Yes (describe) _____

_____

__X__No

9. Availability of Previous Environmental Reports. Are you aware of previous environmental site assessment reports, other environmental reports, documents, correspondence, etc. concerning the property and its environmental condition?

__X__Yes (describe) _____Mineral Report, Bio Survey

_____

____No

Signature: _____

Name (printed): Marisa Mitchell_____

Title: Principal_____

Date: 3/14/2018_____

Stantec Consulting Services Inc.
25864-F Business Center Drive, Redlands, CA 92374-4515
Phone: 909-335-6116
Fax: 909-335-6120

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Please answer the following questions as completely as possible. Attach additional pages as needed. Return the completed questionnaire to Stantec Consulting Services Inc.

1. Property Information

   Property Name: APNs 811-142-006 & 811-180-013

   Property Address: _____

   City: _____ State _____ Zip _____

   Property Owner Name: CP Land Holdings LLC

   Property Owner Phone #: _____

2. Contact For Site Access

   Name: John Copyak

   Company/Organization/Title: CP Land Holdings LLC

   Phone # (541) 668-0423 E-Mail Address: jgcopyak@gmail.com

3. Environmental Cleanup Liens. Are you aware of any environmental cleanup liens against the property that are filed or recorded under federal, tribal, state or local law?

   _____ Yes _____x_____ No

   If yes, describe or attach details of the lien _____

4. Activity and Land Use Limitations. Are you aware of any activity and use limitations, such as engineering controls, land use restrictions, or institutional controls that are in place at the property and/or have been filed or recorded as applicable to the property as a result of environmental contamination, investigation, cleanup, or related matters?

_____ Yes _____x____ No

If yes, describe or attach details of the limitations _____
_____

5. Specialized Knowledge or Experience. As the User of this ESA, do you have any specialized knowledge or experience related to the property or nearby properties? For example, are you involved in the same line of business as the current or former occupants of the property or an adjoining property, such that you would have specialized knowledge about chemicals and processes used by this type of business?

_____ Yes _____x_____ No

If yes, describe or attach details of your specialized knowledge or experience _____
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6. Relationship of Purchase Price to Fair Market Value of Property. Does the purchase price being paid for this property reasonably reflect the fair market value of the property? If you conclude that there is a difference, do you have any reason to believe that the reduced purchase price may be related to contamination known or believed to be present at the property?

_____Yes, I have reason to believe that the purchase price for the property has been reduced in comparison with the fair market value due to contamination known or believed to be present at the property?

_____x___No, I have no reason to believe that the purchase price for the property has been reduced in comparison with the fair market value due to contamination known or believed to be present at the property?

_____Not applicable. User is not involved in a purchase of the property.

7. Commonly Known or Reasonably Ascertainable Information. Are you aware of commonly known or reasonably ascertainable information about the property that would help the Environmental Professional to identify conditions indicative of releases or threatened releases of hazardous substances or petroleum products? For example:

Do you know the past uses of the property?

_____Yes (describe) _____

_____

__x___No

Do you know of chemicals, hazardous substances or petroleum products that are present or once were present at the property?

____Yes (describe) _____

_____

_x___No

Do you know of spills or other releases of chemicals, hazardous substances or petroleum products that have taken place at the property?

____Yes (describe) _____

_____

__x__No

Do you know of any environmental cleanups that have taken place at the property?
____Yes (describe) _____

_____

__x__No

8. The Degree of Obviousness of Contamination. E1527-13 and the federal AAI rule (40 CFR 312.31) require that the Phase I ESA consider the degree of obviousness of the presence or likely presence of contamination at the property, and the ability to detect the contamination by appropriate investigation. Based on your knowledge and experience related to the property, are there any *obvious* indictors that point to the presence or likely presence of contamination at the property?

____Yes (describe) _____

_____

__x__No

9. Availability of Previous Environmental Reports. Are you aware of previous environmental site assessment reports, other environmental reports, documents, correspondence, etc. concerning the property and its environmental condition?

____Yes (describe) _____

_____

__x__No

Signature: _____

Name (printed): Marisa Mitchell_____

Title: Principal_____

Date: 3/14/2018_____

Stantec Consulting Services Inc.
25864-F Business Center Drive, Redlands, CA 92374-4515
Phone: 909-335-6116
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Please answer the following questions as completely as possible. Attach additional pages as needed. Return the completed questionnaire to Stantec Consulting Services Inc.

1. Property Information

Property Name: APNs 811-170-007, 811-170-008 & 811-170-009

Property Address: _____

City: _____ State _____ Zip _____

Property Owner Name: Robert R. Freedlander

Property Owner Phone #: 949-349-7833

2. Contact For Site Access

Name: Robert R. Freedlander

Company/Organization/Title: _____

Phone # 949-349-7833 E-Mail Address: rob.freedlander@fluor.com

3. Environmental Cleanup Liens. Are you aware of any environmental cleanup liens against the property that are filed or recorded under federal, tribal, state or local law?

_____ Yes _____X_____ No

If yes, describe or attach details of the lien _____

_____

4. Activity and Land Use Limitations. Are you aware of any activity and use limitations, such as engineering controls, land use restrictions, or institutional controls that are in place at the property and/or have been filed or recorded as applicable to the property as a result of environmental contamination, investigation, cleanup, or related matters?

_____ Yes _____X_____ No

If yes, describe or attach details of the limitations _____
_____

5. Specialized Knowledge or Experience. As the User of this ESA, do you have any specialized knowledge or experience related to the property or nearby properties? For example, are you involved in the same line of business as the current or former occupants of the property or an adjoining property, such that you would have specialized knowledge about chemicals and processes used by this type of business?

_____ Yes _____x_____ No

If yes, describe or attach details of your specialized knowledge or experience _____
_____

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Do you know the past uses of the property?

_____Yes (describe) _____

_____

__x___No

Do you know of chemicals, hazardous substances or petroleum products that are present or once were present at the property?

____Yes (describe) _____

_____

__X__No

Do you know of spills or other releases of chemicals, hazardous substances or petroleum products that have taken place at the property?

____Yes (describe) _____

_____

__X__No

Do you know of any environmental cleanups that have taken place at the property?
__X__Yes (describe) _____Phase 1 Environmental Site Assessment

_____

____No

8. The Degree of Obviousness of Contamination. E1527-13 and the federal AAI rule (40 CFR 312.31) require that the Phase I ESA consider the degree of obviousness of the presence or likely presence of contamination at the property, and the ability to detect the contamination by appropriate investigation. Based on your knowledge and experience related to the property, are there any *obvious* indictors that point to the presence or likely presence of contamination at the property?

____Yes (describe) _____

_____

_x___No

9. Availability of Previous Environmental Reports. Are you aware of previous environmental site assessment reports, other environmental reports, documents, correspondence, etc. concerning the property and its environmental condition?

____Yes (describe) _____

_____

__x__No

Signature: _____

Name (printed): Marisa Mitchell_____

Title: Principal_____

Date: 3/14/2018_____

Stantec Consulting Services Inc.
25864-F Business Center Drive, Redlands, CA 92374-4515
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Please answer the following questions as completely as possible. Attach additional pages as needed. Return the completed questionnaire to Stantec Consulting Services Inc.

1. Property Information

   Property Name: APN 811-260-013

   Property Address: 25850 Rice Rd

   City: Blythe State CA Zip 92225

   Property Owner Name: Om P. Garg

   Property Owner Phone #: (714) 273-0402

2. Contact For Site Access

   Name: Om P. Garg

   Company/Organization/Title: _____

   Phone # (714) 273-0402 E-Mail Address: resplan1@gmail.com

3. Environmental Cleanup Liens. Are you aware of any environmental cleanup liens against the property that are filed or recorded under federal, tribal, state or local law?

   _____ Yes _____X_____ No

   If yes, describe or attach details of the lien _____

4. Activity and Land Use Limitations. Are you aware of any activity and use limitations, such as engineering controls, land use restrictions, or institutional controls that are in place at the property and/or have been filed or recorded as applicable to the property as a result of environmental contamination, investigation, cleanup, or related matters?

_____ Yes _____X_____ No

If yes, describe or attach details of the limitations _____
_____

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_____ Yes _____x_____ No

If yes, describe or attach details of your specialized knowledge or experience _____
_____

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Do you know the past uses of the property?

_____Yes (describe) _____

_____

___X__No

Do you know of chemicals, hazardous substances or petroleum products that are present or once were present at the property?

____Yes (describe) _____

_____

__X__No

Do you know of spills or other releases of chemicals, hazardous substances or petroleum products that have taken place at the property?

____Yes (describe) _____

_____

__X__No

Do you know of any environmental cleanups that have taken place at the property?
____Yes (describe) _____

_____

__X__No

8. The Degree of Obviousness of Contamination. E1527-13 and the federal AAI rule (40 CFR 312.31) require that the Phase I ESA consider the degree of obviousness of the presence or likely presence of contamination at the property, and the ability to detect the contamination by appropriate investigation. Based on your knowledge and experience related to the property, are there any *obvious* indictors that point to the presence or likely presence of contamination at the property?

____Yes (describe) _____

_____

__X__No

9. Availability of Previous Environmental Reports. Are you aware of previous environmental site assessment reports, other environmental reports, documents, correspondence, etc. concerning the property and its environmental condition?

____Yes (describe) _____

_____

__X__No

Signature: _____

Name (printed): Marisa Mitchell_____

Title: Principal_____

Date: 3/14/2018_____

Stantec Consulting Services Inc.
25864-F Business Center Drive, Redlands, CA 92374-4515
Phone: 909-335-6116
Fax: 909-335-6120

PHASE I ESA USER'S QUESTIONNAIRE

In order to qualify for protection from land owner liability under CERCLA as an *innocent landowner, bona fide prospective purchaser,* or *contiguous property owner*, ASTM standard practice E1527-13 and the federal AAI rule (40 CFR 312) require that the User of the Phase I ESA report provide certain information (if available) to the Environmental Professional completing the assessment. Failure to provide this information could result in a determination that "all appropriate inquiry" is not complete. Information that is not or cannot be provided to the Environmental Professional may be identified as a "data gap" in the Phase I ESA report.

Please answer the following questions as completely as possible. Attach additional pages as needed. Return the completed questionnaire to Stantec Consulting Services Inc.

1. Property Information

   Property Name: APNs 811-180-002, 811-180-003, 811-180-004 & 811-180-005

   Property Address: _____

   City: _____ State _____ Zip _____

   Property Owner Name: Philip Hu, Catherine Hu Zangrilli, and Vivian Hu Shen

   Property Owner Phone #: 858-945-5329

2. Contact For Site Access

   Name: Philip Hu, Catherine Hu Zangrilli, and Vivian Hu Shen

   Company/Organization/Title: _____

   Phone # 858-945-5329 E-Mail Address: Philrhu@gmail.com

3. Environmental Cleanup Liens. Are you aware of any environmental cleanup liens against the property that are filed or recorded under federal, tribal, state or local law?

   _____ Yes _____X_____ No

   If yes, describe or attach details of the lien _____

4. Activity and Land Use Limitations. Are you aware of any activity and use limitations, such as engineering controls, land use restrictions, or institutional controls that are in place at the property and/or have been filed or recorded as applicable to the property as a result of environmental contamination, investigation, cleanup, or related matters?

_____ Yes _____X_____ No

If yes, describe or attach details of the limitations _____
_____

5. Specialized Knowledge or Experience. As the User of this ESA, do you have any specialized knowledge or experience related to the property or nearby properties? For example, are you involved in the same line of business as the current or former occupants of the property or an adjoining property, such that you would have specialized knowledge about chemicals and processes used by this type of business?

_____ Yes ___x_____ No

If yes, describe or attach details of your specialized knowledge or experience _____
_____

6. Relationship of Purchase Price to Fair Market Value of Property. Does the purchase price being paid for this property reasonably reflect the fair market value of the property? If you conclude that there is a difference, do you have any reason to believe that the reduced purchase price may be related to contamination known or believed to be present at the property?

_____Yes, I have reason to believe that the purchase price for the property has been reduced in comparison with the fair market value due to contamination known or believed to be present at the property?

_____x___No, I have no reason to believe that the purchase price for the property has been reduced in comparison with the fair market value due to contamination known or believed to be present at the property?

_____Not applicable. User is not involved in a purchase of the property.

7. Commonly Known or Reasonably Ascertainable Information. Are you aware of commonly known or reasonably ascertainable information about the property that would help the Environmental Professional to identify conditions indicative of releases or threatened releases of hazardous substances or petroleum products? For example:

Do you know the past uses of the property?

_____Yes (describe) _____

_____

___X__No

Do you know of chemicals, hazardous substances or petroleum products that are present or once were present at the property?

____Yes (describe) _____

_____

__X__No

Do you know of spills or other releases of chemicals, hazardous substances or petroleum products that have taken place at the property?

____Yes (describe) _____

_____

__X__No

Do you know of any environmental cleanups that have taken place at the property?
____Yes (describe) _____

_____

__X__No

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____Yes (describe) _____

_____

__X__No

9. Availability of Previous Environmental Reports. Are you aware of previous environmental site assessment reports, other environmental reports, documents, correspondence, etc. concerning the property and its environmental condition?

__X__Yes (describe) _____Environmental Hazard Reports_____

_____

____No

Signature: _____

Name (printed): Marisa Mitchell_____

Title: Principal_____

Date: 3/14/2018_____

Stantec Consulting Services Inc.
25864-F Business Center Drive, Redlands, CA 92374-4515
Phone: 909-335-6116
Fax: 909-335-6120

PHASE I ESA USER'S QUESTIONNAIRE

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Please answer the following questions as completely as possible. Attach additional pages as needed. Return the completed questionnaire to Stantec Consulting Services Inc.

1. Property Information

   Property Name: APN 811-170-013

   Property Address: 26440 Rice Rd

   City: Desert Center State CA Zip 92239

   Property Owner Name: Raul Lopez

   Property Owner Phone #: _____

2. Contact For Site Access

   Name: Loraine Lazerson

   Company/Organization/Title: _____

   Phone # 562-760-1687 E-Mail Address: fboalorainel@aol.com

3. Environmental Cleanup Liens. Are you aware of any environmental cleanup liens against the property that are filed or recorded under federal, tribal, state or local law?

   _____ Yes _____X_____ No

   If yes, describe or attach details of the lien _____

4. Activity and Land Use Limitations. Are you aware of any activity and use limitations, such as engineering controls, land use restrictions, or institutional controls that are in place at the property and/or have been filed or recorded as applicable to the property as a result of environmental contamination, investigation, cleanup, or related matters?

_____ Yes _____X_____ No

If yes, describe or attach details of the limitations _____
_____

5. Specialized Knowledge or Experience. As the User of this ESA, do you have any specialized knowledge or experience related to the property or nearby properties? For example, are you involved in the same line of business as the current or former occupants of the property or an adjoining property, such that you would have specialized knowledge about chemicals and processes used by this type of business?

_____ Yes _____x_____ No

If yes, describe or attach details of your specialized knowledge or experience _____
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Do you know the past uses of the property?

_____Yes (describe) _____

_____

___X__No

Do you know of chemicals, hazardous substances or petroleum products that are present or once were present at the property?

____Yes (describe) _____

_____

__X__No

Do you know of spills or other releases of chemicals, hazardous substances or petroleum products that have taken place at the property?

____Yes (describe) _____

_____

__X__No

Do you know of any environmental cleanups that have taken place at the property?
____Yes (describe) _____

_____

__X__No

8. The Degree of Obviousness of Contamination. E1527-13 and the federal AAI rule (40 CFR 312.31) require that the Phase I ESA consider the degree of obviousness of the presence or likely presence of contamination at the property, and the ability to detect the contamination by appropriate investigation. Based on your knowledge and experience related to the property, are there any *obvious* indictors that point to the presence or likely presence of contamination at the property?

____Yes (describe) _____

_____

__X__No

9. Availability of Previous Environmental Reports. Are you aware of previous environmental site assessment reports, other environmental reports, documents, correspondence, etc. concerning the property and its environmental condition?

____Yes (describe) _____

_____

__X__No

Signature: _____

Name (printed): Marisa Mitchell_____

Title: Principal_____

Date: 3/14/2018_____

Stantec Consulting Services Inc.
25864-F Business Center Drive, Redlands, CA 92374-4515
Phone: 909-335-6116
Fax: 909-335-6120

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Please answer the following questions as completely as possible. Attach additional pages as needed. Return the completed questionnaire to Stantec Consulting Services Inc.

1. Property Information

   Property Name: APN 811-142-005

   Property Address: 25250 Rice Rd

   City: Desert Center State CA Zip 92239

   Property Owner Name: North Star Capital Development, LLC

   Property Owner Phone #: _____

2. Contact For Site Access

   Name: Joseph Vu

   Company/Organization/Title: North Star Capital Development, LLC

   Phone # (714) 530-7120 E-Mail Address: josephvu@josephvucompany.com

3. Environmental Cleanup Liens. Are you aware of any environmental cleanup liens against the property that are filed or recorded under federal, tribal, state or local law?

   _____ Yes _____X_____ No

   If yes, describe or attach details of the lien _____

4. Activity and Land Use Limitations. Are you aware of any activity and use limitations, such as engineering controls, land use restrictions, or institutional controls that are in place at the property and/or have been filed or recorded as applicable to the property as a result of environmental contamination, investigation, cleanup, or related matters?

_____ Yes _____X_____ No

If yes, describe or attach details of the limitations _____
_____

5. Specialized Knowledge or Experience. As the User of this ESA, do you have any specialized knowledge or experience related to the property or nearby properties? For example, are you involved in the same line of business as the current or former occupants of the property or an adjoining property, such that you would have specialized knowledge about chemicals and processes used by this type of business?

_____ Yes ____x_____ No

If yes, describe or attach details of your specialized knowledge or experience _____
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6. Relationship of Purchase Price to Fair Market Value of Property. Does the purchase price being paid for this property reasonably reflect the fair market value of the property? If you conclude that there is a difference, do you have any reason to believe that the reduced purchase price may be related to contamination known or believed to be present at the property?

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7. Commonly Known or Reasonably Ascertainable Information. Are you aware of commonly known or reasonably ascertainable information about the property that would help the Environmental Professional to identify conditions indicative of releases or threatened releases of hazardous substances or petroleum products? For example:

Do you know the past uses of the property?

_____Yes (describe) _____

_____

__X___No

Do you know of chemicals, hazardous substances or petroleum products that are present or once were present at the property?

____Yes (describe) _____

_____

__X__No

Do you know of spills or other releases of chemicals, hazardous substances or petroleum products that have taken place at the property?

____Yes (describe) _____

_____

__X__No

Do you know of any environmental cleanups that have taken place at the property?
____Yes (describe) _____

_____

__X__No

8. The Degree of Obviousness of Contamination. E1527-13 and the federal AAI rule (40 CFR 312.31) require that the Phase I ESA consider the degree of obviousness of the presence or likely presence of contamination at the property, and the ability to detect the contamination by appropriate investigation. Based on your knowledge and experience related to the property, are there any *obvious* indictors that point to the presence or likely presence of contamination at the property?

____Yes (describe) _____

_____

__X__No

9. Availability of Previous Environmental Reports. Are you aware of previous environmental site assessment reports, other environmental reports, documents, correspondence, etc. concerning the property and its environmental condition?

____Yes (describe) _____

_____

__X__No

Signature: _____

Name (printed): Marisa Mitchell_____

Title: Principal_____

Date: 3/14/2018_____

Stantec Consulting Services Inc.
25864-F Business Center Drive, Redlands, CA 92374-4515
Phone: 909-335-6116
Fax: 909-335-6120

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Please answer the following questions as completely as possible. Attach additional pages as needed. Return the completed questionnaire to Stantec Consulting Services Inc.

1. Property Information

   Property Name: APNs 811-170-002 & 811-180-001

   Property Address: _____

   City: _____ State _____ Zip _____

   Property Owner Name: Ann R. Angelo, Claire Naples Eisinger, Raymond Dean Paglia, Michael Paglia, and Vincent M. Paglia

   Property Owner Phone #: _____

2. Contact For Site Access

   Name: Raymond Paglia

   Company/Organization/Title: _____

   Phone # (702) 592-7400 E-Mail Address: ray@julietlasvegas.com

3. Environmental Cleanup Liens. Are you aware of any environmental cleanup liens against the property that are filed or recorded under federal, tribal, state or local law?

   _____ Yes _____x_____ No

   If yes, describe or attach details of the lien _____

4. Activity and Land Use Limitations. Are you aware of any activity and use limitations, such as engineering controls, land use restrictions, or institutional controls that are in place at the property and/or have been filed or recorded as applicable to the property as a result of environmental contamination, investigation, cleanup, or related matters?

_____ Yes _____x____ No

If yes, describe or attach details of the limitations _____
_____

5. Specialized Knowledge or Experience. As the User of this ESA, do you have any specialized knowledge or experience related to the property or nearby properties? For example, are you involved in the same line of business as the current or former occupants of the property or an adjoining property, such that you would have specialized knowledge about chemicals and processes used by this type of business?

_____ Yes _____x_____ No

If yes, describe or attach details of your specialized knowledge or experience _____
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6. Relationship of Purchase Price to Fair Market Value of Property. Does the purchase price being paid for this property reasonably reflect the fair market value of the property? If you conclude that there is a difference, do you have any reason to believe that the reduced purchase price may be related to contamination known or believed to be present at the property?

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Do you know the past uses of the property?

_____Yes (describe) _____

_____

__x___No

Do you know of chemicals, hazardous substances or petroleum products that are present or once were present at the property?

____Yes (describe) _____

_____

__x__No

Do you know of spills or other releases of chemicals, hazardous substances or petroleum products that have taken place at the property?

____Yes (describe) _____

_____

__x__No

Do you know of any environmental cleanups that have taken place at the property?
____Yes (describe) _____

_____

_x___No

8. The Degree of Obviousness of Contamination. E1527-13 and the federal AAI rule (40 CFR 312.31) require that the Phase I ESA consider the degree of obviousness of the presence or likely presence of contamination at the property, and the ability to detect the contamination by appropriate investigation. Based on your knowledge and experience related to the property, are there any *obvious* indictors that point to the presence or likely presence of contamination at the property?

____Yes (describe) _____

_____

__x__No

9. Availability of Previous Environmental Reports. Are you aware of previous environmental site assessment reports, other environmental reports, documents, correspondence, etc. concerning the property and its environmental condition?

____Yes (describe) _____

_____

__x__No

Signature: _____

Name (printed): Marisa Mitchell_____

Title: Principal_____

Date: 3/14/2018_____

Stantec Consulting Services Inc.
25864-F Business Center Drive, Redlands, CA 92374-4515
Phone: 909-335-6116
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Please answer the following questions as completely as possible. Attach additional pages as needed. Return the completed questionnaire to Stantec Consulting Services Inc.

1. Property Information

   Property Name: APN 811-190-001

   Property Address: _____

   City: _____ State _____ Zip _____

   Property Owner Name: Lawrence Clark Powell and Eleanor B. Mortensen

   Property Owner Phone #: _____

2. Contact For Site Access

   Name: Jeffrey A. Scott

   Company/Organization/Title: _____

   Phone # 719-251-2289 E-Mail Address: jeffscott@ymail.com

3. Environmental Cleanup Liens. Are you aware of any environmental cleanup liens against the property that are filed or recorded under federal, tribal, state or local law?

   _____ Yes _____X_____ No

   If yes, describe or attach details of the lien _____

4. Activity and Land Use Limitations. Are you aware of any activity and use limitations, such as engineering controls, land use restrictions, or institutional controls that are in place at the property and/or have been filed or recorded as applicable to the property as a result of environmental contamination, investigation, cleanup, or related matters?

_____ Yes _____X_____ No

If yes, describe or attach details of the limitations _____
_____

5. Specialized Knowledge or Experience. As the User of this ESA, do you have any specialized knowledge or experience related to the property or nearby properties? For example, are you involved in the same line of business as the current or former occupants of the property or an adjoining property, such that you would have specialized knowledge about chemicals and processes used by this type of business?

_____ Yes _____x_____ No

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Do you know the past uses of the property?

_____Yes (describe) _____

_____

___X__No

Do you know of chemicals, hazardous substances or petroleum products that are present or once were present at the property?

____Yes (describe) _____

_____

__X__No

Do you know of spills or other releases of chemicals, hazardous substances or petroleum products that have taken place at the property?

____Yes (describe) _____

_____

__X__No

Do you know of any environmental cleanups that have taken place at the property?
____Yes (describe) _____

_____

__X__No

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____Yes (describe) _____

_____

__X__No

9. Availability of Previous Environmental Reports. Are you aware of previous environmental site assessment reports, other environmental reports, documents, correspondence, etc. concerning the property and its environmental condition?

__X__Yes (describe) _____EIS for Eagle Mountain Hydroelectric Project

_____

____No

Signature: _____

Name (printed): Marisa Mitchell_____

Title: Principal_____

Date: 3/14/2018_____

Stantec Consulting Services Inc.
25864-F Business Center Drive, Redlands, CA 92374-4515
Phone: 909-335-6116
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Please answer the following questions as completely as possible. Attach additional pages as needed. Return the completed questionnaire to Stantec Consulting Services Inc.

1. Property Information

   Property Name: APN 811-122-001

   Property Address: _____

   City: _____ State _____ Zip _____

   Property Owner Name: Southwest Conservancy III, LLC

   Property Owner Phone #: _____

2. Contact For Site Access

   Name: John Copyak

   Company/Organization/Title: Southwest Conservancy III, LLC

   Phone # 541-668-0423 E-Mail Address: jgcopyak@gmail.com

3. Environmental Cleanup Liens. Are you aware of any environmental cleanup liens against the property that are filed or recorded under federal, tribal, state or local law?

   _____ Yes ____x_____ No

   If yes, describe or attach details of the lien _____

   _____

4. Activity and Land Use Limitations. Are you aware of any activity and use limitations, such as engineering controls, land use restrictions, or institutional controls that are in place at the property and/or have been filed or recorded as applicable to the property as a result of environmental contamination, investigation, cleanup, or related matters?

_____ Yes ____x_____ No

If yes, describe or attach details of the limitations _____
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Do you know the past uses of the property?

_____Yes (describe) _____

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__x___No

Do you know of chemicals, hazardous substances or petroleum products that are present or once were present at the property?

____Yes (describe) _____

_____

__x__No

Do you know of spills or other releases of chemicals, hazardous substances or petroleum products that have taken place at the property?

____Yes (describe) _____

_____

_x___No

Do you know of any environmental cleanups that have taken place at the property?
____Yes (describe) _____

_____

_x___No

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____Yes (describe) _____

_____

__x__No

9. Availability of Previous Environmental Reports. Are you aware of previous environmental site assessment reports, other environmental reports, documents, correspondence, etc. concerning the property and its environmental condition?

____Yes (describe) _____

_____

__x__No

Signature: _____

Name (printed): Marisa Mitchell_____

Title: Principal_____

Date: 3/14/2018_____

First American Title Insurance Company

National Commercial Services

666 Third Avenue, 5th Floor
New York, NY 10017

April 28, 2017

Seth Israel
Intersect Power
Embarcadero Center , 7th Floor
San Francisco, CA 94111

Customer Reference: 25850 Rice Road

Order Number: 3020-847921

Owner: OM P. Garg

Property: Vacant, Blythe, CA

Attached please find the following item(s):

Commitment

Thank You for your confidence and support. We at First American Title Insurance Company maintain the fundamental principle:

Customer First!

First American Title Insurance Company

INFORMATION

The Title Insurance Commitment is a legal contract between you and the company. It is issued to show the basis on which we will issue a Title Insurance Policy to you. The Policy will insure you against certain risks to the land title, subject to the limitations shown in the policy.

The Company will give you a sample of the Policy form, if you ask.

The Commitment is based on the land title as of the Commitment Date. Any changes in the land title or the transaction may affect the Commitment and the Policy.

The Commitment is subject to its Requirements, Exceptions and Conditions.

This information is not part of the title insurance commitment.

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4.	Description of the Land	4
Schedule B-1 - Requirements		
Schedule B-2 - Exceptions		
Conditions		

YOU SHOULD READ THE COMMITMENT VERY CAREFULLY.
If you have any questions about the Commitment,
please contact the issuing office.

COMMITMENT FOR TITLE INSURANCE

Issued by

First American Title Insurance Company

Agreement to Issue Policy

We agree to issue a policy to you according to the terms of this Commitment.

When we show the policy amount and your name as the proposed insured in Schedule A, this Commitment becomes effective as of the Commitment Date shown in Schedule A.

If the Requirements shown in this Commitment have not been met within six months after the Commitment Date, our obligation under this Commitment will end. Also, our obligation under this Commitment will end when the Policy is issued and then our obligation to you will be under the Policy.

Our obligation under this Commitment is limited by the following:

The Provisions in Schedule A.

The Requirements in Schedule B-1.

The Exceptions in Schedule B-2.

The Conditions.

This Commitment is not valid without Schedule A and Sections 1 and 2 of Schedule B.

SCHEDULE A

1. Commitment Date: April 24, 2017 at 7:30 A.M.

2. Policy or Policies to be issued: Amount

(A) ALTA Owner's Policy $To Be Determined
ALTA Standard Owner Policy

Proposed Insured:

To Be Determined

(B) ALTA Loan Policy $To Be Determined
To Be Determined

Proposed Insured:

To Be Determined

3. (A) The estate or interest in the land described in this Commitment is:

FEE

(B) Title to said estate or interest at the date hereof is vested in:

OM P. GARG, A MARRIED MAN

4. The land referred to in this Commitment is situated in the unincorporated area of the County of Riverside, State of California, and is described as follows:

LOTS 1 AND 2 OF THE SOUTHWEST QUARTER AND THE SOUTHEAST QUARTER OF SECTION 7, TOWNSHIP 5 SOUTH, RANGE 16 EAST, SAN BERNARDINO BASE AND MERIDIAN, EXCEPTING THEREFROM THAT PORTION LYING IN THE COUNTY HIGHWAY, 100 FEET WIDE, AS DESIGNATED BY RESOLUTION OF THE COUNTY OF RIVERSIDE, A CERTIFIED COPY OF WHICH WAS FILED FOR RECORD MARCH 27, 1945 AS INSTRUMENT NO. 2957. ALSO EXCEPTING THEREFROM THAT PORTION LYING NORTHWESTERLY OF THE SOUTHEASTERLY RIGHT OF WAY LINE OF SAID COUNTY HIGHWAY. ALSO EXCEPTING THEREFROM THAT PORTION DESCRIBED AS FOLLOWS: COMMENCING AT THE SOUTHEAST CORNER OF THE SOUTHWEST QUARTER OF SAID SECTION 7, THENCE SOUTH 88 DEGREES 53'30" WEST, ON THE SOUTH LINE OF SAID SECTION 7, 200 FEET, THENCE NORTH 01 DEGREES 06'30" WEST, 598.43 FEET; THENCE NORTH 44 DEGREES 35'35" WEST, 1880.40 FEET TO THE SOUTHEASTERLY LINE OF SAID COUNTY ROAD, AS SHOWN ON RECORD OF SURVEY ON FILE IN BOOK 12, PAGE 81 OF RECORDS OF SURVEY, RIVERSIDE COUNTY RECORDS, THENCE SOUTH 45 DEGREES 30'00" WEST ON THE SOUTHEASTERLY LINE OF SAID COUNTY ROAD, 350 FEET TO THE TRUE POINT OF BEGINNING; THENCE CONTINUING, SOUTH 45 DEGREES 30'00" WEST, 600 FEET; THENCE SOUTH 44 DEGREES 06'00" EAST 300 FEET; THENCE NORTH 45 DEGREES 30'00' EAST, 600 FEET; THENCE NORTH 44 DEGREES 06'00" WEST 300 FEET TO THE TRUE POINT OF BEGINNING.

APN: 811-260-013-4

SCHEDULE B

SECTION ONE

REQUIREMENTS

The following requirements must be met:

(A) Pay the agreed amounts for the interest in the land and/or the mortgage to be insured.

(B) Pay us the premiums, fees and charges for the policy.

(C) Documents satisfactory to us creating the interest in the land and/or the mortgage to be insured must be signed, delivered and recorded.

(D) You must tell us in writing the name of anyone not referred to in this Commitment who will get an interest in the land or who will make a loan on the land. We may then make additional requirements or exceptions.

(E) Releases(s) or Reconveyance(s) of Item(s): None

(F) Other: None

(G) You must give us the following information:

1. Any off record leases, surveys, etc.
2. Statement(s) of Identity, all parties.
3. Other:

A deed from the spouse of any married vestee herein be recorded in the public records, or the joinder of the spouse of any married vestee named herein on any conveyance, encumbrance or lease to be executed by the vestee.

The deed should contain the following statement:

"It is the express intent of the grantor, being the spouse of the grantee, to convey all right, title and interest of the grantor, community or otherwise, in and to the herein described property to the grantee as his/her sole and separate property."

The following additional requirements, as indicated by "X", must be met:

[X] (H) Provide information regarding any off-record matters, which may include, but are not limited to: leases, recent works of improvement, or commitment statements in effect under the Environmental Responsibility Acceptance Act, Civil Code Section 850, et seq.

The Company's Owner's Affidavit form (as provided by company) must be completed and submitted prior to close in order to satisfy this requirement. This Commitment will then be subject to such further exceptions and/or requirements as may be deemed necessary.

[] (I) An ALTA/NSPS survey of recent date, which complies with the current minimum standard detail requirements for ALTA/NSPS land title surveys, must be submitted to the Company for review. This Commitment will then be subject to such further exceptions and/or requirements as may be deemed necessary.

[] (J) The following LLC documentation is required:
(i) a copy of the Articles of Organization
(ii) a copy of the Operating Agreement, if applicable
(iii) a Certificate of Good Standing and/or other evidence of current Authority to Conduct Business within the State
(iv) express Company Consent to the current transaction

[] (K) The following partnership documentation is required **:**
(i) a copy of the partnership agreement, including all applicable amendments thereto
(ii) a Certificate of Good Standing and/or other evidence of current Authority to Conduct Business within the State
(iii) express Partnership Consent to the current transaction

[] (L) The following corporation documentation is required:
(i) a copy of the Articles of Incorporation
(ii) a copy of the Bylaws, including all applicable Amendments thereto
(iii) a Certificate of Good Standing and/or other evidence of current Authority to Conduct Business within the State
(iv) express Corporate Resolution consenting to the current transaction

[] (M) Based upon the Company's review of that certain partnership/operating agreement dated **Not disclosed** for the proposed insured herein, the following requirements must be met:

Any further amendments to said agreement must be submitted to the Company, together with an affidavit from one of the general partners or members stating that it is a true copy, that said partnership or limited liability company is in full force and effect, and that there have been no further amendments to the agreement. This Commitment will then be subject to such further requirements as may be deemed necessary.

[] (N) A copy of the complete lease, as referenced in Schedule A, #3 herein, together with any amendments and/or assignments thereto, must be submitted to the Company for review, along with an affidavit executed by the present lessee stating that it is a true copy, that the lease is in full force and effect, and that there have been no further amendments to the lease. This Commitment will then be subject to such further requirements as may be deemed necessary.

[X] (O) Approval from the Company's Underwriting Department must be obtained for issuance of the policy contemplated herein and any endorsements requested thereunder. This Commitment will then be subject to such further requirements as may be required to obtain such approval.

[] (P) Potential additional requirements, if ALTA Extended coverage is contemplated hereunder, and work on the land has commenced prior to close, some or all of the following requirements, and any other requirements which may be deemed necessary, may need to be met:

[] (Q) The Company's "Indemnity Agreement I" must be executed by the appropriate parties.

[] (R) Financial statements from the appropriate parties must be submitted to the Company for review.

[] (S) A copy of the construction contract must be submitted to the Company for review.

[] (T) An inspection of the land must be performed by the Company for verification of the phase of construction.

[] (U) The Company's "Mechanic's Lien Risk Addendum" form must be completed by a Company employee, based upon information furnished by the appropriate parties involved.

SCHEDULE B

SECTION TWO

EXCEPTIONS

Any policy we issue will have the following exceptions unless they are taken care of to our satisfaction. The printed exceptions and exclusions from the coverage of the policy or policies are set forth in Exhibit A attached. Copies of the policy forms should be read. They are available from the office which issued this Commitment.

1. General and special taxes and assessments for the fiscal year 2017-2018, a lien not yet due or payable.

2. The lien of supplemental taxes, if any, assessed pursuant to Chapter 3.5 commencing with Section 75 of the California Revenue and Taxation Code.

3. A right of water line and patrol road over said property, granted to Southern Counties Gas Company and Southern California Gas Company, by Bureau of Land Management on November 21, 1952, under Serial No. 098376, as disclosed by Records of Bureau of Land Management, Riverside, California.

4. An easement for public utilities and incidental purposes in the document recorded August 28, 1957 as Instrument No. 62579 of Official Records.

5. An easement for public utilities and incidental purposes in the document recorded August 28, 1957 as Instrument No. 62581 of Official Records.

6. An easement for public utilities and incidental purposes in the document recorded September 19, 1957 as Instrument No. 67559 of Official Records.

7. An easement for public utilities and incidental purposes in the document recorded September 19, 1957 as Instrument No. 67561 of Official Records.

8. An easement for public utilities and incidental purposes in the document recorded June 20, 1958 as Instrument No. 44258 of Official Records.

9. Provisions as recited in the Patent from the United States of America to Edith E. Brown, filed for record December 13, 1960 as Instrument No. 105231, as follows: Subject to any vested and accrued water rights for mining, agricultural, manufacturing or other purposes, and rights to ditches and reservoirs used in connection with such water rights as may be recognized and acknowledged by the local customs, laws and decisions of courts; and also, a right of way for ditches or canals constructed by authority of the United States as reserved in said Patent.

10. An easement for public utilities and incidental purposes in the document recorded April 15, 1966 as Instrument No. 39775 of Official Records.

11. The sufficiency and validity of the proceeding leading up to and including the tax collector's deed or sheriff's deed to OM P. GARG, A MARRIED MAN.

    In order for the company to be in a position to omit this exception from further title evidence, it will be necessary to obtain a final decree quieting title to the land in the vestee herein, and

against: the last record owner of this land, any one claiming through him, any liens or encumbrances, whose interests were divested by virtue of such tax sale.

12. The effect of a deed given by the county tax collector upon sale of tax-defaulted property pursuant to Chapter 7 of Part 6 of Division 1 of the California Revenue and Taxation Code, recorded May 03, 2006 as Instrument No. 2006-0321690 of Official Records.

    We will require the recording of a deed from WHITEHOUSE, JAMES S TR & TOZZER, PATRICIA A TR & PLANTZ, THERESA A & CURTY, JAMES TR & MYRTLE W TR & WOLNISTY, CARL TR & MCCOY, HAROLD W TR & PEGGY C TR & LASAGNA, ROBERT J TR & CATHERINE M TR & MATHEW, ELAVUMKEL JOSEPH & MOONJALY ROSY & MCCOY, CARL L TR & HINDMAN, KENNETH W TR & MARIE E TR or the recording of a certified copy of a satisfactory final, unappealable judgment quieting title.

13. An easement for the transportation of water and electricity over, under, through, along and together with the reasonable right of ingress and egress, and the right to construct and maintain a 30-foot wide access road and incidental purposes, recorded August 26, 2008 as Instrument No. 2008-0468971 of Official Records.

In Favor of:	Southern California Gas Company, a California corporation
Affects:	As described therein

14. Any claim that the Title is subject to a trust or lien created under The Perishable Agricultural Commodities Act, 1930 (7 U.S.C. §§499a, et seq.) or the Packers and Stockyards Act (7 U.S.C. §§181 et seq.) or under similar state laws.

15. Water rights, claims or title to water, whether or not shown by the public records.

16. Rights of the public in and to that portion of the land lying within any road, street and/or highway.

17. Any right, title or interest of the spouse or domestic partner (if any) of any vestee herein.

18. Rights of parties in possession.

INFORMATIONAL NOTES

1. Taxes for proration purposes only for the fiscal year 2016-2017.

First Installment:	$1,001.19, PAID
Second Installment:	$1,001.19, PAID
Tax Rate Area:	062-000
APN:	811-260-013-4

2. The property covered by this report is vacant land.

3. According to the public records, there has been no conveyance of the land within a period of twenty-four months prior to the date of this report, except as follows:

   None

4. This preliminary report/commitment was prepared based upon an application for a policy of title insurance that identified land by street address or assessor's parcel number only. It is the responsibility of the applicant to determine whether the land referred to herein is in fact the land that is to be described in the policy or policies to be issued.

The map attached, if any, may or may not be a survey of the land depicted hereon. First American Title Insurance Company expressly disclaims any liability for loss or damage which may result from reliance on this map except to the extent coverage for such loss or damage is expressly provided by the terms and provisions of the title insurance policy, if any, to which this map is attached.

******To obtain wire instructions for deposit of funds to your escrow file please contact your Escrow Officer.******

CONDITIONS

1. **DEFINITIONS**
(a)"Mortgage" means mortgage, deed of trust or other security instrument.
(b)"Public Records" means title records that give constructive notice of matters affecting the title according to the state law where the land is located.

2. **LATER DEFECTS**
The Exceptions in Schedule B - Section Two may be amended to show any defects, liens or encumbrances that appear for the first time in the public records or are created or attached between the Commitment Date and the date on which all of the Requirements (a) and (c) of Schedule B - Section One are met. We shall have no liability to you because of this amendment.

3. **EXISTING DEFECTS**
If any defects, liens or encumbrances existing at Commitment Date are not shown in Schedule B, we may amend Schedule B to show them. If we do amend Schedule B to show these defects, liens or encumbrances, we shall be liable to you according to Paragraph 4 below unless you knew of this information and did not tell us about it in writing.

4. **LIMITATION OF OUR LIABILITY**
Our only obligation is to issue to you the Policy referred to in this Commitment, when you have met its Requirements. If we have any liability to you for any loss you incur because of an error in this Commitment, our liability will be limited to your actual loss caused by your relying on this Commitment when you acted in good faith to:

comply with the Requirements shown in Schedule B - Section One
or
eliminate with our written consent any Exceptions shown in Schedule B - Section Two.

We shall not be liable for more than the Policy Amount shown in Schedule A of this Commitment and our liability is subject to the terms of the Policy form to be issued to you.

5. **CLAIMS MUST BE BASED ON THIS COMMITMENT**
Any claim, whether or not based on negligence, which you may have against us concerning the title to the land must be based on this commitment and is subject to its terms.

First American Title

Privacy Information

We Are Committed to Safeguarding Customer Information

In order to better serve your needs now and in the future, we may ask you to provide us with certain information. We understand that you may be concerned about what we will do with such information - particularly any personal or financial information. We agree that you have a right to know how we will utilize the personal information you provide to us. Therefore, together with our subsidiaries we have adopted this Privacy Policy to govern the use and handling of your personal information.

Applicability

This Privacy Policy governs our use of the information that you provide to us. It does not govern the manner in which we may use information we have obtained from any other source, such as information obtained from a public record or from another person or entity. First American has also adopted broader guidelines that govern our use of personal information regardless of its source. First American calls these guidelines its Fair Information Values.

Types of Information

Depending upon which of our services you are utilizing, the types of nonpublic personal information that we may collect include:

- Information we receive from you on applications, forms and in other communications to us, whether in writing, in person, by telephone or any other means;
- Information about your transactions with us, our affiliated companies, or others; and
- Information we receive from a consumer reporting agency.

Use of Information

We request information from you for our own legitimate business purposes and not for the benefit of any nonaffiliated party. Therefore, we will not release your information to nonaffiliated parties except: (1) as necessary for us to provide the product or service you have requested of us; or (2) as permitted by law. We may, however, store such information indefinitely, including the period after which any customer relationship has ceased. Such information may be used for any internal purpose, such as quality control efforts or customer analysis. We may also provide all of the types of nonpublic personal information listed above to one or more of our affiliated companies. Such affiliated companies include financial service providers, such as title insurers, property and casualty insurers, and trust and investment advisory companies, or companies involved in real estate services, such as appraisal companies, home warranty companies and escrow companies. Furthermore, we may also provide all the information we collect, as described above, to companies that perform marketing services on our behalf, on behalf of our affiliated companies or to other financial institutions with whom we or our affiliated companies have joint marketing agreements.

Former Customers

Even if you are no longer our customer, our Privacy Policy will continue to apply to you.

Confidentiality and Security

We will use our best efforts to ensure that no unauthorized parties have access to any of your information. We restrict access to nonpublic personal information about you to those individuals and entities who need to know that information to provide products or services to you. We will use our best efforts to train and oversee our employees and agents to ensure that your information will be handled responsibly and in accordance with this Privacy Policy and First American's Fair Information Values. We currently maintain physical, electronic, and procedural safeguards that comply with federal regulations to guard your nonpublic personal information.

Information Obtained Through Our Web Site

First American Financial Corporation is sensitive to privacy issues on the Internet. We believe it is important you know how we treat the information about you we receive on the Internet.

In general, you can visit First American or its affiliates' Web sites on the World Wide Web without telling us who you are or revealing any information about yourself. Our Web servers collect the domain names, not the e-mail addresses, of visitors. This information is aggregated to measure the number of visits, average time spent on the site, pages viewed and similar information. First American uses this information to measure the use of our site and to develop ideas to improve the content of our site.

There are times, however, when we may need information from you, such as your name and email address. When information is needed, we will use our best efforts to let you know at the time of collection how we will use the personal information. Usually, the personal information we collect is used only by us to respond to your inquiry, process an order or allow you to access specific account/profile information. If you choose to share any personal information with us, we will only use it in accordance with the policies outlined above.

Business Relationships

First American Financial Corporation's site and its affiliates' sites may contain links to other Web sites. While we try to link only to sites that share our high standards and respect for privacy, we are not responsible for the content or the privacy practices employed by other sites.

Cookies

Some of First American's Web sites may make use of "cookie" technology to measure site activity and to customize information to your personal tastes. A cookie is an element of data that a Web site can send to your browser, which may then store the cookie on your hard drive.

FirstAm.com uses stored cookies. The goal of this technology is to better serve you when visiting our site, save you time when you are here and to provide you with a more meaningful and productive Web site experience.

Fair Information Values

Fairness We consider consumer expectations about their privacy in all our businesses. We only offer products and services that assure a favorable balance between consumer benefits and consumer privacy.

Public Record We believe that an open public record creates significant value for society, enhances consumer choice and creates consumer opportunity. We actively support an open public record and emphasize its importance and contribution to our economy.

Use We believe we should behave responsibly when we use information about a consumer in our business. We will obey the laws governing the collection, use and dissemination of data.

Accuracy We will take reasonable steps to help assure the accuracy of the data we collect, use and disseminate. Where possible, we will take reasonable steps to correct inaccurate information. When, as with the public record, we cannot correct inaccurate information, we will take all reasonable steps to assist consumers in identifying the source of the erroneous data so that the consumer can secure the required corrections.

Education We endeavor to educate the users of our products and services, our employees and others in our industry about the importance of consumer privacy. We will instruct our employees on our fair information values and on the responsible collection and use of data. We will encourage others in our industry to collect and use information in a responsible manner.

Security We will maintain appropriate facilities and systems to protect against unauthorized access to and corruption of the data we maintain.

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EXHIBIT A
LIST OF PRINTED EXCEPTIONS AND EXCLUSIONS (BY POLICY TYPE)

1. CALIFORNIA LAND TITLE ASSOCIATION STANDARD COVERAGE POLICY - 1990
SCHEDULE B

EXCEPTIONS FROM COVERAGE

This policy does not insure against loss or damage (and the Company will not pay costs, attorneys' fees or expenses) which arise by reason of:

1. Taxes or assessments which are not shown as existing liens by the records of any taxing authority that levies taxes or assessments on real property or by the public records. Proceedings by a public agency which may result in taxes or assessments, or notice of such proceedings, whether or not shown by the records of such agency or by the public records.
2. Any facts, rights, interests, or claims which are not shown by the public records but which could be ascertained by an inspection of the land or which may be asserted by persons in possession thereof.
3. Easements, liens or encumbrances, or claims thereof, which are not shown by the public records.
4. Discrepancies, conflicts in boundary lines, shortage in area, encroachments, or any other facts which a correct survey would disclose, and which are not shown by the public records.
5. (a) Unpatented mining claims; (b) reservations or exceptions in patents or in Acts authorizing the issuance thereof; (c) water rights, claims or title to water, whether or not the matters excepted under (a), (b), or (c) are shown by the public records.

EXCLUSIONS FROM COVERAGE

The following matters are expressly excluded from the coverage of this policy and the Company will not pay loss or damage, costs, attorneys' fees or expenses which arise by reason of:

1. (a) Any law, ordinance or governmental regulation (including but not limited to building and zoning laws, ordinances, or regulations) restricting, regulating, prohibiting or relating to (i) the occupancy, use, or enjoyment of the land; (ii) the character, dimensions or location of any improvement now or hereafter erected on the land; (iii) a separation in ownership or a change in the dimensions or area of the land or any parcel of which the land is or was a part; or (iv) environmental protection, or the effect of any violation of these laws, ordinances or governmental regulations, except to the extent that a notice of the enforcement thereof or a notice of a defect, lien or encumbrance resulting from a violation or alleged violation affecting the land has been recorded in the public records at Date of Policy.
   (b) Any governmental police power not excluded by (a) above, except to the extent that a notice of the exercise thereof or a notice of a defect, lien or encumbrance resulting from a violation or alleged violation affecting the land has been recorded in the public records at Date of Policy.
2. Rights of eminent domain unless notice of the exercise thereof has been recorded in the public records at Date of Policy, but not excluding from coverage any taking which has occurred prior to Date of Policy which would be binding on the rights of a purchaser for value without knowledge.
3. Defects, liens, encumbrances, adverse claims or other matters:
   (a) whether or not recorded in the public records at Date of Policy, but created, suffered, assumed or agreed to by the insured claimant;
   (b) not known to the Company, not recorded in the public records at Date of Policy, but known to the insured claimant and not disclosed in writing to the Company by the insured claimant prior to the date the insured claimant became an insured under this policy;
   (c) resulting in no loss or damage to the insured claimant;
   (d) attaching or created subsequent to Date of Policy; or
   (e) resulting in loss or damage which would not have been sustained if the insured claimant had paid value for the insured mortgage or for the estate or interest insured by this policy.
4. Unenforceability of the lien of the insured mortgage because of the inability or failure of the insured at Date of Policy, or the inability or failure of any subsequent owner of the indebtedness, to comply with applicable "doing business" laws of the state in which the land is situated.
5. Invalidity or unenforceability of the lien of the insured mortgage, or claim thereof, which arises out of the transaction evidenced by the insured mortgage and is based upon usury or any consumer credit protection or truth in lending law.
6. Any claim, which arises out of the transaction vesting in the insured the estate or interest insured by their policy or the transaction creating the interest of the insured lender, by reason of the operation of federal bankruptcy, state insolvency or similar creditors' rights laws.

2. AMERICAN LAND TITLE ASSOCIATION OWNER'S POLICY FORM B - 1970
SCHEDULE OF EXCLUSIONS FROM COVERAGE

1. Any law, ordinance or governmental regulation (including but not limited to building and zoning ordinances) restricting or regulating or prohibiting the occupancy, use or enjoyment of the land, or regulating the character, dimensions or location of any improvement now or hereafter erected on the land, or prohibiting a separation in ownership or a reduction in the dimensions of area of the land, or the effect of any violation of any such law, ordinance or governmental regulation.
2. Rights of eminent domain or governmental rights of police power unless notice of the exercise of such rights appears in the public records at Date of Policy.
3. Defects, liens, encumbrances, adverse claims, or other matters (a) created, suffered, assumed or agreed to by the insured claimant; (b) not known to the Company and not shown by the public records but known to the insured claimant either at Date of Policy or at the date such claimant acquired an estate or interest insured by this policy and not disclosed in writing by the insured claimant to the Company prior to the date such insured claimant became an insured hereunder; (c) resulting in no loss or damage to the insured claimant; (d) attaching or created subsequent to Date of Policy; or (e) resulting in loss or damage which would not have been sustained if the insured claimant had paid value for the estate or interest insured by this policy.

3. AMERICAN LAND TITLE ASSOCIATION OWNER'S POLICY FORM B - 1970
WITH REGIONAL EXCEPTIONS

When the American Land Title Association policy is used as a Standard Coverage Policy and not as an Extended Coverage Policy the exclusions set forth in paragraph 2 above are used and the following exceptions to coverage appear in the policy.

SCHEDULE B

This policy does not insure against loss or damage by reason of the matters shown in parts one and two following:
Part One

1. Taxes or assessments which are not shown as existing liens by the records of any taxing authority that levies taxes or assessments on real property or by the public records.
2. Any facts, rights, interests, or claims which are not shown by the public records but which could be ascertained by an inspection of said land or by making inquiry of persons in possession thereof.
3. Easements, claims of easement or encumbrances which are not shown by the public records.
4. Discrepancies, conflicts in boundary lines, shortage in area, encroachments, or any other facts which a correct survey would disclose, and which are not shown by public records.
5. Unpatented mining claims; reservations or exceptions in patents or in Acts authorizing the issuance thereof; water rights, claims or title to water.
6. Any lien, or right to a lien, for services, labor or material heretofore or hereafter furnished, imposed by law and not shown by the public records.

4. AMERICAN LAND TITLE ASSOCIATION LOAN POLICY - 1970 WITH A.L.T.A. ENDORSEMENT FORM 1 COVERAGE SCHEDULE OF EXCLUSIONS FROM COVERAGE

1. Any law, ordinance or governmental regulation (including but not limited to building and zoning ordinances) restricting or regulating or prohibiting the occupancy, use or enjoyment of the land, or regulating the character, dimensions or location of any improvement now or hereafter erected on the land, or prohibiting a separation in ownership or a reduction in the dimensions or area of the land, or the effect of any violation of any such law ordinance or governmental regulation.
2. Rights of eminent domain or governmental rights of police power unless notice of the exercise of such rights appears in the public records at Date of Policy.
3. Defects, liens, encumbrances, adverse claims, or other matters (a) created, suffered, assumed or agreed to by the insured claimant, (b) not known to the Company and not shown by the public records but known to the insured claimant either at Date of Policy or at the date such claimant acquired an estate or interest insured by this policy or acquired the insured mortgage and not disclosed in writing by the insured claimant to the Company prior to the date such insured claimant became an insured hereunder, (c) resulting in no loss or damage to the insured claimant; (d) attaching or created subsequent to Date of Policy (except to the extent insurance is afforded herein as to any statutory lien for labor or material or to the extent insurance is afforded herein as to assessments for street improvements under construction or completed at Date of Policy).
4. Unenforceability of the lien of the insured mortgage because of failure of the insured at Date of Policy or of any subsequent owner of the indebtedness to comply with applicable "doing business" laws of the state in which the land is situated.

5. AMERICAN LAND TITLE ASSOCIATION LOAN POLICY - 1970 WITH REGIONAL EXCEPTIONS

When the American Land Title Association Lenders Policy is used as a Standard Coverage Policy and not as an Extended Coverage Policy, the exclusions set forth in paragraph 4 above are used and the following exceptions to coverage appear in the policy.

SCHEDULE B

This policy does not insure against loss or damage by reason of the matters shown in parts one and two following:
Part One

1. Taxes or assessments which are not shown as existing liens by the records of any taxing authority that levies taxes or assessments on real property or by the public records.
2. Any facts, rights, interests, or claims which are not shown by the public records but which could be ascertained by an inspection of said land or by making inquiry of persons in possession thereof.
3. Easements, claims of easement or encumbrances which are not shown by the public records.
4. Discrepancies, conflicts in boundary lines, shortage in area, encroachments, or any other facts which a correct survey would disclose, and which are not shown by public records.
5. Unpatented mining claims; reservations or exceptions in patents or in Acts authorizing the issuance thereof; water rights, claims or title to water.
6. Any lien, or right to a lien, for services, labor or material theretofore or hereafter furnished, imposed by law and not shown by the public records.

6. AMERICAN LAND TITLE ASSOCIATION LOAN POLICY - 1992 WITH A.L.T.A. ENDORSEMENT FORM 1 COVERAGE EXCLUSIONS FROM COVERAGE

The following matters are expressly excluded from the coverage of this policy and the Company will not pay loss or damage, costs, attorneys' fees or expenses which arise by reason of:

1. (a) Any law, ordinance or governmental regulation (including but not limited to building and zoning laws, ordinances, or regulations) restricting, regulating, prohibiting or relating to (i) the occupancy, use, or enjoyment of the land; (ii) the character, dimensions or location of any improvement now or hereafter erected on the land; (iii) a separation in ownership or a change in the dimensions or area of the land or any parcel of which the land is or was a part; or (iv) environmental protection, or the effect of any violation of these laws, ordinances or governmental regulations, except to the extent that a notice of the enforcement thereof or a notice of a defect, lien or encumbrance resulting from a violation or alleged violation affecting the land has been recorded in the public records at Date of Policy;
   (b) Any governmental police power not excluded by (a) above, except to the extent that a notice of the exercise thereof or a notice of a defect, lien or encumbrance resulting from a violation or alleged violation affecting the land has been recorded in the public records at Date of Policy.

2. Rights of eminent domain unless notice of the exercise thereof has been recorded in the public records at Date of Policy, but not excluding from coverage any taking which has occurred prior to Date of Policy which would be binding on the rights of a purchaser for value without knowledge.
3. Defects, liens, encumbrances, adverse claims, or other matters:
(a) whether or not recorded in the public records at Date of Policy, but created, suffered, assumed or agreed to by the insured claimant;
(b) not known to the Company, not recorded in the public records at Date of Policy, but known to the insured claimant and not disclosed in writing to the Company by the insured claimant prior to the date the insured claimant became an insured under this policy;
(c) resulting in no loss or damage to the insured claimant;
(d) attaching or created subsequent to Date of Policy (except to the extent that this policy insures the priority of the lien of the insured mortgage over any statutory lien for services, labor or material or the extent insurance is afforded herein as to assessments for street improvements under construction or completed at date of policy); or
(e) resulting in loss or damage which would not have been sustained if the insured claimant had paid value for the insured mortgage.
4. Unenforceability of the lien of the insured mortgage because of the inability or failure of the insured at Date of Policy, or the inability or failure of any subsequent owner of the indebtedness, to comply with the applicable "doing business" laws of the state in which the land is situated.
5. Invalidity or unenforceability of the lien of the insured mortgage, or claim thereof, which arises out of the transaction evidenced by the insured mortgage and is based upon usury or any consumer credit protection or truth in lending law.
6. Any statutory lien for services, labor or materials (or the claim of priority of any statutory lien for services, labor or materials over the lien of the insured mortgage) arising from an improvement or work related to the land which is contracted for and commenced subsequent to Date of Policy and is not financed in whole or in part by proceeds of the indebtedness secured by the insured mortgage which at Date of Policy the insured has advanced or is obligated to advance.
7. Any claim, which arises out of the transaction creating the interest of the mortgagee insured by this policy, by reason of the operation of federal bankruptcy, state insolvency, or similar creditors' rights laws, that is based on:
(i) the transaction creating the interest of the insured mortgagee being deemed a fraudulent conveyance or fraudulent transfer; or
(ii) the subordination of the interest of the insured mortgagee as a result of the application of the doctrine of equitable subordination; or
(iii) the transaction creating the interest of the insured mortgagee being deemed a preferential transfer except where the preferential transfer results from the failure:
(a) to timely record the instrument of transfer; or
(b) of such recordation to impart notice to a purchaser for value or a judgment or lien creditor.

7. AMERICAN LAND TITLE ASSOCIATION LOAN POLICY - 1992
WITH REGIONAL EXCEPTIONS

When the American Land Title Association policy is used as a Standard Coverage Policy and not as an Extended Coverage Policy the exclusions set forth in paragraph 6 above are used and the following exceptions to coverage appear in the policy.

SCHEDULE B

This policy does not insure against loss or damage (and the Company will not pay costs, attorneys' fees or expenses) which arise by reason of:
1. Taxes or assessments which are not shown as existing liens by the records of any taxing authority that levies taxes or assessments on real property or by the public records.
2. Any facts, rights, interests, or claims which are not shown by the public records but which could be ascertained by an inspection of said land or by making inquiry of persons in possession thereof.
3. Easements, claims of easement or encumbrances which are not shown by the public records.
4. Discrepancies, conflicts in boundary lines, shortage in area, encroachments, or any other facts which a correct survey would disclose, and which are not shown by public records.
5. Unpatented mining claims; reservations or exceptions in patents or in Acts authorizing the issuance thereof; water rights, claims or title to water.
6. Any lien, or right to a lien, for services, labor or material theretofore or hereafter furnished, imposed by law and not shown by the public records.

8. AMERICAN LAND TITLE ASSOCIATION OWNER'S POLICY - 1992
EXCLUSIONS FROM COVERAGE

The following matters are expressly excluded from the coverage of this policy and the Company will not pay loss or damage, costs, attorneys' fees or expenses which arise by reason of:
1. (a) Any law, ordinance or governmental regulation (including but not limited to building and zoning laws, ordinances, or regulations) restricting, regulating, prohibiting or relating to (i) the occupancy, use, or enjoyment of the land; (ii) the character, dimensions or location of any improvement now or hereafter erected on the land; (iii) a separation in ownership or a change in the dimensions or area of the land or any parcel of which the land is or was a part; or (iv) environmental protection, or the effect of any violation of these laws, ordinances or governmental regulations, except to the extent that a notice of the enforcement thereof or a notice of a defect, lien or encumbrance resulting from a violation or alleged violation affecting the land has been recorded in the public records at Date of Policy.
(b) Any governmental police power not excluded by (a) above, except to the extent that a notice of the exercise thereof or a notice of a defect, lien or encumbrance resulting from a violation or alleged violation affecting the land has been recorded in the public records at Date of Policy.
2. Rights of eminent domain unless notice of the exercise thereof has been recorded in the public records at Date of Policy, but not excluding from coverage any taking which has occurred prior to Date of Policy which would be binding on the rights of a purchaser for value without knowledge.
3. Defects, liens, encumbrances, adverse claims, or other matters:
(a) created, suffered, assumed or agreed to by the insured claimant;
(b) not known to the Company, not recorded in the public records at Date of Policy, but known to the insured claimant and not disclosed in writing to the Company by the insured claimant prior to the date the insured claimant became an insured under this policy;
(c) resulting in no loss or damage to the insured claimant;
(d) attaching or created subsequent to Date of Policy; or

(e) resulting in loss or damage which would not have been sustained if the insured claimant had paid value for the estate or interest insured by this policy.

4. Any claim, which arises out of the transaction vesting in the insured the estate or interest insured by this policy, by reason of the operation of federal bankruptcy, state insolvency, or similar creditors' rights laws, that is based on:
(i) the transaction creating the estate or interest insured by this policy being deemed a fraudulent conveyance or fraudulent transfer; or
(ii) the transaction creating the estate or interest insured by this policy being deemed a preferential transfer except where the preferential transfer results from the failure:
(a) to timely record the instrument of transfer; or
(b) of such recordation to impart notice to a purchaser for value or a judgment or lien creditor.

9. AMERICAN LAND TITLE ASSOCIATION OWNER'S POLICY - 1992 WITH REGIONAL EXCEPTIONS

When the American Land Title Association policy is used as a Standard Coverage Policy and not as an Extended Coverage Policy the exclusions set forth in paragraph 8 above are used and the following exceptions to coverage appear in the policy.

SCHEDULE B

This policy does not insure against loss or damage (and the Company will not pay costs, attorneys' fees or expenses) which arise by reason of:
Part One:

1. Taxes or assessments which are not shown as existing liens by the records of any taxing authority that levies taxes or assessments on real property or by the public records.
2. Any facts, rights, interests, or claims which are not shown by the public records but which could be ascertained by an inspection of said land or by making inquiry of persons in possession thereof.
3. Easements, claims of easement or encumbrances which are not shown by the public records.
4. Discrepancies, conflicts in boundary lines, shortage in area, encroachments, or any other facts which a correct survey would disclose, and which are not shown by public records.
5. Unpatented mining claims; reservations or exceptions in patents or in Acts authorizing the issuance thereof; water rights, claims or title to water.
6. Any lien, or right to a lien, for services, labor or material theretofore or hereafter furnished, imposed by law and not shown by the public records.

ALTA RESIDENTIAL TITLE INSURANCE POLICY (6-1-87)

EXCLUSIONS

In addition to the Exceptions in Schedule B, you are not insured against loss, costs, attorneys' fees, and expenses resulting from:

1. Governmental police power, and the existence or violation of any law or government regulation. This includes building and zoning ordinances and also laws and regulations concerning:
   (a) and use
   (b) improvements on the land
   (c) and division
   (d) environmental protection

   This exclusion does not apply to violations or the enforcement of these matters which appear in the public records at Policy Date.
   This exclusion does not limit the zoning coverage described in Items 12 and 13 of Covered Title Risks.
2. The right to take the land by condemning it, unless:
   (a) a notice of exercising the right appears in the public records on the Policy Date
   (b) the taking happened prior to the Policy Date and is binding on you if you bought the land without knowing of the taking
3. Title Risks:
   (a) that are created, allowed, or agreed to by you
   (b) that are known to you, but not to us, on the Policy Date -- unless they appeared in the public records
   (c) that result in no loss to you
   (d) that first affect your title after the Policy Date -- this does not limit the labor and material lien coverage in Item 8 of Covered Title Risks
4. Failure to pay value for your title.
5. Lack of a right:
   (a) to any land outside the area specifically described and referred to in Item 3 of Schedule A OR
   (b) in streets, alleys, or waterways that touch your land
   This exclusion does not limit the access coverage in Item 5 of Covered Title Risks.

11. EAGLE PROTECTION OWNER'S POLICY

CLTA HOMEOWNER'S POLICY OF TITLE INSURANCE - 1998
ALTA HOMEOWNER'S POLICY OF TITLE INSURANCE - 1998

Covered Risks 14 (Subdivision Law Violation). 15 (Building Permit). 16 (Zoning) and 18 (Encroachment of boundary walls or fences) are subject to Deductible Amounts and Maximum Dollar Limits of Liability

EXCLUSIONS

In addition to the Exceptions in Schedule B, you are not insured against loss, costs, attorneys' fees, and expenses resulting from:

1. Governmental police power, and the existence or violation of any law or government regulation. This includes ordinances, laws and regulations concerning:
   a. building
   b. zoning
   c. land use
   d. improvements on the land
   e. land division
   f. environmental protection

   This exclusion does not apply to violations or the enforcement of these matters if notice of the violation or enforcement appears in the Public Records at the Policy Date.
   This exclusion does not limit the coverage described in Covered Risk 14, 15, 16, 17 or 24.
2. The failure of Your existing structures, or any part of them, to be constructed in accordance with applicable building codes. This Exclusion does not apply to violations of building codes if notice of the violation appears in the Public Records at the Policy Date.
3. The right to take the Land by condemning it, unless:
   a. a notice of exercising the right appears in the Public Records at the Policy Date; or
   b. the taking happened before the Policy Date and is binding on You if You bought the Land without Knowing of the taking.
4. Risks:
   a. that are created, allowed, or agreed to by You, whether or not they appear in the Public Records;
   b. that are Known to You at the Policy Date, but not to Us, unless they appear in the Public Records at the Policy Date;
   c. that result in no loss to You; or
   d. that first occur after the Policy Date - this does not limit the coverage described in Covered Risk 7, 8.d, 22, 23, 24 or 25.
5. Failure to pay value for Your Title.
6. Lack of a right:
   a. to any Land outside the area specifically described and referred to in paragraph 3 of Schedule A; and
   b. in streets, alleys, or waterways that touch the Land.
   This exclusion does not limit the coverage described in Covered Risk 11 or 18.

12. THIRD GENERATION EAGLE LOAN POLICY AMERICAN LAND TITLE ASSOCIATION EXPANDED COVERAGE RESIDENTIAL LOAN POLICY (1/01/08)

EXCLUSIONS FROM COVERAGE

The following matters are expressly excluded from the coverage of this policy and the Company will not pay loss or damage, costs, attorneys' fees or expenses which arise by reason of:

1. (a) Any law, ordinance, permit, or governmental regulation (including those relating to building and zoning) restricting, regulating, prohibiting, or relating to (i) the occupancy, use, or enjoyment of the Land; (ii) the character, dimensions, or location of any improvement erected on the Land; (iii) the subdivision of land; or(iv) environmental protection; or the effect of any violation of these laws, ordinances, or governmental regulations. This Exclusion 1(a) does not modify or limit the coverage provided under Covered Risk 5, 6, 13(c), 13(d), 14 or 16.
   (b)Any governmental police power. This Exclusion 1(b) does not modify or limit the coverage provided under Covered Risk 5, 6, 13(c), 13(d), 14 or 16.
2. Rights of eminent domain. This Exclusion does not modify or limit the coverage provided under Covered Risk 7 or 8.
3. Defects, liens, encumbrances, adverse claims, or other matters
   (a) created, suffered, assumed or agreed to by the Insured Claimant;
   (b) not Known to the Company, not recorded in the Public Records at Date of Policy, but Known to the Insured Claimant and not disclosed in writing to the Company by the Insured Claimant prior to the date the Insured Claimant became an Insured under this policy;
   (c) resulting in no loss or damage to the Insured Claimant;
   (d) attaching or created subsequent to Date of Policy (however, this does not modify or limit the coverage provided under Covered Risk 11, 16, 17, 18, 19, 20, 21, 22, 23, 24, 27 or 28); or
   (e) resulting in loss or damage which would not have been sustained if the Insured Claimant had paid value for the Insured Mortgage.
4. Unenforceability of the lien of the Insured Mortgage because of the inability or failure of an Insured to comply with applicable doing business laws of the state where the Land is situated.
5. Invalidity or unenforceability in whole or in part of the lien of the Insured Mortgage that arises out of the transaction evidenced by the Insured Mortgage and is based upon usury, or any consumer credit protection or truth-in-lending law. This Exclusion does not modify or limit the coverage provided in Covered Risk 26.
6. Any claim of invalidity, unenforceability or lack of priority of the lien of the Insured Mortgage as to Advances or modifications made after the Insured has Knowledge that the vestee shown in Schedule A is no longer the owner of the estate or interest covered by this policy. This Exclusion does not modify or limit the coverage provided in Covered Risk 11.
7. Any lien on the Title for real estate taxes or assessments imposed by governmental authority and created or attaching subsequent to Date of Policy. This Exclusion does not modify or limit the coverage provided in Covered Risk 11(b) or 25.
8. The failure of the residential structure, or any portion of it, to have been constructed before, on or after Date of Policy in accordance with applicable building codes. This Exclusion does not modify or limit the coverage provided in Covered Risk 5 or 6.

13. AMERICAN LAND TITLE ASSOCIATION LOAN POLICY - 2006
EXCLUSIONS FROM COVERAGE

The following matters are expressly excluded from the coverage of this policy, and the Company will not pay loss or damage, costs, attorneys' fees, or

expenses that arise by reason of:

1. (a) Any law, ordinance, permit, or governmental regulation (including those relating to building and zoning) restricting, regulating, prohibiting, or relating to

   (i) the occupancy, use, or enjoyment of the Land;

   (ii) the character, dimensions, or location of any improvement erected on the Land;

   (iii) the subdivision of land; or

   (iv) environmental protection;

   or the effect of any violation of these laws, ordinances, or governmental regulations. This Exclusion 1(a) does not modify or limit the coverage provided under Covered Risk 5.

   (b) Any governmental police power. This Exclusion 1(b) does not modify or limit the coverage provided under Covered Risk 6.

2. Rights of eminent domain. This Exclusion does not modify or limit the coverage provided under Covered Risk 7 or 8.

3. Defects, liens, encumbrances, adverse claims, or other matters

   (a) created, suffered, assumed, or agreed to by the Insured Claimant;

   (b) not Known to the Company, not recorded in the Public Records at Date of Policy, but Known to the Insured Claimant and not disclosed in writing to the Company by the Insured Claimant prior to the date the Insured Claimant became an Insured under this policy;

   (c) resulting in no loss or damage to the Insured Claimant;

   (d) attaching or created subsequent to Date of Policy (however, this does not modify or limit the coverage provided under Covered Risk 11, 13, or 14); or

   (e) resulting in loss or damage that would not have been sustained if the Insured Claimant had paid value for the Insured Mortgage.

4. Unenforceability of the lien of the Insured Mortgage because of the inability or failure of an Insured to comply with applicable doing-business laws of the state where the Land is situated.

5. Invalidity or unenforceability in whole or in part of the lien of the Insured Mortgage that arises out of the transaction evidenced by the Insured Mortgage and is based upon usury or any consumer credit protection or truth-in-lending law.

6. Any claim, by reason of the operation of federal bankruptcy, state insolvency, or similar creditors' rights laws, that the transaction creating the lien of the Insured Mortgage, is

   (a) a fraudulent conveyance or fraudulent transfer, or

   (b) a preferential transfer for any reason not stated in Covered Risk 13(b) of this policy.

7. Any lien on the Title for real estate taxes or assessments imposed by governmental authority and created or attaching between Date of Policy and the date of recording of the Insured Mortgage in the Public Records. This Exclusion does not modify or limit the coverage provided under Covered Risk 11(b).

14. AMERICAN LAND TITLE ASSOCIATION LOAN POLICY - 2006 WITH REGIONAL EXCEPTIONS

When the American Land Title Association policy is used as a Standard Coverage Policy and not as an Extended Coverage Policy the exclusions set forth in paragraph 13 above are used and the following exceptions to coverage appear in the policy.

SCHEDULE B

This policy does not insure against loss or damage (and the Company will not pay costs, attorneys' fees or expenses) which arise by reason of:

1. (a) Taxes or assessments that are not shown as existing liens by the records of any taxing authority that levies taxes or assessments on real property or by the Public Records; (b) proceedings by a public agency that may result in taxes or assessments, or notices of such proceedings, whether or not shown by the records of such agency or by the Public Records.

2. Any facts, rights, interests, or claims that are not shown by the Public Records but that could be ascertained by an inspection of the Land or that may be asserted by persons in possession of the Land.

3. Easements, liens or encumbrances, or claims thereof, not shown by the Public Records.

4. Any encroachment, encumbrance, violation, variation, or adverse circumstance affecting the Title that would be disclosed by an accurate and complete land survey of the Land and not shown by the Public Records.

5. (a) Unpatented mining claims; (b) reservations or exceptions in patents or in Acts authorizing the issuance thereof; (c) water rights, claims or title to water, whether or not the matters excepted under (a), (b), or (c) are shown by the Public Records.

15. AMERICAN LAND TITLE ASSOCIATION OWNER'S POLICY - 2006 EXCLUSIONS FROM COVERAGE

The following matters are expressly excluded from the coverage of this policy and the Company will not pay loss or damage, costs, attorneys' fees or expenses which arise by reason of:

1. (a) Any law, ordinance, permit, or governmental regulation (including those relating to building and zoning) restricting, regulating, prohibiting, or relating to

   (i) the occupancy, use, or enjoyment of the Land;

   (ii) the character, dimensions, or location of any improvement erected on the Land;

   (iii) the subdivision of land; or

   (iv) environmental protection;or the effect of any violation of these laws, ordinances, or governmental regulations. This Exclusion 1(a) does not modify or limit the coverage provided under Covered Risk 5.

(b) Any governmental police power. This Exclusion 1(b) does not modify or limit the coverage provided under Covered Risk 6.

2. Rights of eminent domain. This Exclusion does not modify or limit the coverage provided under Covered Risk 7 or 8.

3. Defects, liens, encumbrances, adverse claims, or other matters

(a) created, suffered, assumed, or agreed to by the Insured Claimant;

(b) not Known to the Company, not recorded in the Public Records at Date of Policy, but Known to the Insured Claimant and not disclosed in writing to the Company by the Insured Claimant prior to the date the Insured Claimant became an Insured under this policy;

(c) resulting in no loss or damage to the Insured Claimant;

(d) attaching or created subsequent to Date of Policy (however, this does not modify or limit the coverage provided under Covered Risks 9 and 10); or

(e) resulting in loss or damage that would not have been sustained if the Insured Claimant had paid value for the Title.

4. Any claim, by reason of the operation of federal bankruptcy, state insolvency, or similar creditors rights laws, that the transaction vesting the Title as shown in Schedule A, is

(a) a fraudulent conveyance or fraudulent transfer; or

(b) a preferential transfer for any reason not stated in Covered Risk 9 of this policy.

5. Any lien on the Title for real estate taxes or assessments imposed by governmental authority and created or attaching between Date of Policy and the date of recording of the deed or other instrument of transfer in the Public Records that vests Title as shown in Schedule A.

16. AMERICAN LAND TITLE ASSOCIATION OWNER'S POLICY - 2006 WITH REGIONAL EXCEPTIONS

When the American Land Title Association policy is used as a Standard Coverage Policy and not as an Extended Coverage Policy the exclusions set forth in paragraph 15 above are used and the following exceptions to coverage appear in the policy.

SCHEDULE B

This policy does not insure against loss or damage (and the Company will not pay costs, attorneys' fees or expenses) which arise by reason of:

1. (a) Taxes or assessments that are not shown as existing liens by the records of any taxing authority that levies taxes or assessments on real property or by the Public Records; (b) proceedings by a public agency that may result in taxes or assessments, or notices of such proceedings, whether or not shown by the records of such agency or by the Public Records.
2. Any facts, rights, interests, or claims that are not shown by the Public Records but that could be ascertained by an inspection of the Land or that may be asserted by persons in possession of the Land.
3. Easements, liens or encumbrances, or claims thereof, not shown by the Public Records.
4. Any encroachment, encumbrance, violation, variation, or adverse circumstance affecting the Title that would be disclosed by an accurate and complete land survey of the Land and not shown by the Public Records.
5. (a) Unpatented mining claims; (b) reservations or exceptions in patents or in Acts authorizing the issuance thereof; (c) water rights, claims or title to water, whether or not the matters excepted under (a), (b), or (c) are shown by the Public Records.

First American Title Insurance Company

National Commercial Services

666 Third Avenue, 5th Floor
New York, NY 10017

February 12, 2018

John Warren
Intersect Power
Embarcadero Center , 7th Floor
San Francisco, CA 94111
Phone: (415)297-4169

Customer Reference: Chea

Order Number: 3020-890953

Owner: Ritheary Chea

Property: Vacant Land/APN# 811-150-001, , CA

Attached please find the following item(s):

Commitment

Thank You for your confidence and support. We at First American Title Insurance Company maintain the fundamental principle:

Customer First!

First American Title Insurance Company

INFORMATION

The Title Insurance Commitment is a legal contract between you and the company. It is issued to show the basis on which we will issue a Title Insurance Policy to you. The Policy will insure you against certain risks to the land title, subject to the limitations shown in the policy.

The Company will give you a sample of the Policy form, if you ask.

The Commitment is based on the land title as of the Commitment Date. Any changes in the land title or the transaction may affect the Commitment and the Policy.

The Commitment is subject to its Requirements, Exceptions and Conditions.

This information is not part of the title insurance commitment.

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YOU SHOULD READ THE COMMITMENT VERY CAREFULLY.
If you have any questions about the Commitment,
please contact the issuing office.

COMMITMENT FOR TITLE INSURANCE

Issued by

First American Title Insurance Company

Agreement to Issue Policy

We agree to issue a policy to you according to the terms of this Commitment.

When we show the policy amount and your name as the proposed insured in Schedule A, this Commitment becomes effective as of the Commitment Date shown in Schedule A.

If the Requirements shown in this Commitment have not been met within six months after the Commitment Date, our obligation under this Commitment will end. Also, our obligation under this Commitment will end when the Policy is issued and then our obligation to you will be under the Policy.

Our obligation under this Commitment is limited by the following:

The Provisions in Schedule A.

The Requirements in Schedule B-1.

The Exceptions in Schedule B-2.

The Conditions.

This Commitment is not valid without Schedule A and Sections 1 and 2 of Schedule B.

SCHEDULE A

1. Commitment Date: January 30, 2018 at 7:30 A.M.

2. Policy or Policies to be issued: Amount

(A) ALTA Owner's Policy $To Be Determined
ALTA Standard Owner Policy

Proposed Insured:

To Be Determined

(B) ALTA Loan Policy $To Be Determined
To Be Determined

Proposed Insured:

To Be Determined

3. (A) The estate or interest in the land described in this Commitment is:

FEE

(B) Title to said estate or interest at the date hereof is vested in:

168 Group Ltd, A California Limited Partnership

4. The land referred to in this Commitment is situated in the Unincorporated Area of the County of Riverside, State of California, and is described as follows:

THAT PORTION OF THE SOUTH HALF OF SECTION 9, TOWNSHIP 5 SOUTH, RANGE 16 EAST, SAN BERNARDINO BASE AND MERIDIAN, DESCRIBED AS FOLLOWS: BEGINNING AT THE SOUTHEAST CORNER OF SAID SECTION, THENCE NORTHERLY ALONG THE EAST LINE OF SECTION 9, 1912.21 FEET; THENCE SOUTHWESTERLY IN A DIRECT LINE, 4407.37 FEET TO THE SOUTH LINE OF SECTION 9; THENCE EASTERLY ALONG SAID SOUTH LINE, 3960 FEET TO THE POINT OF BEGINNING.

APN: 811-150-001-3

SCHEDULE B

SECTION ONE

REQUIREMENTS

The following requirements must be met:

(A) Pay the agreed amounts for the interest in the land and/or the mortgage to be insured.

(B) Pay us the premiums, fees and charges for the policy.

(C) Documents satisfactory to us creating the interest in the land and/or the mortgage to be insured must be signed, delivered and recorded.

(D) You must tell us in writing the name of anyone not referred to in this Commitment who will get an interest in the land or who will make a loan on the land. We may then make additional requirements or exceptions.

(E) Releases(s) or Reconveyance(s) of Item(s): None

(F) Other: None

(G) You must give us the following information:

1. Any off record leases, surveys, etc.
2. Statement(s) of Identity, all parties.
3. Other:

A deed from the spouse of any married vestee herein be recorded in the public records, or the joinder of the spouse of any married vestee named herein on any conveyance, encumbrance or lease to be executed by the vestee.

The deed should contain the following statement:

"It is the express intent of the grantor, being the spouse of the grantee, to convey all right, title and interest of the grantor, community or otherwise, in and to the herein described property to the grantee as his/her sole and separate property."

The following additional requirements, as indicated by "X", must be met:

[X] (H) Provide information regarding any off-record matters, which may include, but are not limited to: leases, recent works of improvement, or commitment statements in effect under the Environmental Responsibility Acceptance Act, Civil Code Section 850, et seq.

The Company's Owner's Affidavit form (as provided by company) must be completed and submitted prior to close in order to satisfy this requirement. This Commitment will then be subject to such further exceptions and/or requirements as may be deemed necessary.

[] (I) An ALTA/NSPS survey of recent date, which complies with the current minimum standard detail requirements for ALTA/NSPS land title surveys, must be submitted to the Company for review. This Commitment will then be subject to such further exceptions and/or requirements as may be deemed necessary.

[] (J) The following LLC documentation is required:
(i) a copy of the Articles of Organization
(ii) a copy of the Operating Agreement, if applicable
(iii) a Certificate of Good Standing and/or other evidence of current Authority to Conduct Business within the State
(iv) express Company Consent to the current transaction

[X] (K) The following partnership documentation is required **:**
(i) a copy of the partnership agreement, including all applicable amendments thereto
(ii) a Certificate of Good Standing and/or other evidence of current Authority to Conduct Business within the State
(iii) express Partnership Consent to the current transaction

[] (L) The following corporation documentation is required:
(i) a copy of the Articles of Incorporation
(ii) a copy of the Bylaws, including all applicable Amendments thereto
(iii) a Certificate of Good Standing and/or other evidence of current Authority to Conduct Business within the State
(iv) express Corporate Resolution consenting to the current transaction

[**X**] (M) Based upon the Company's review of that certain partnership/operating agreement dated **Not disclosed** for the proposed insured herein, the following requirements must be met:

Any further amendments to said agreement must be submitted to the Company, together with an affidavit from one of the general partners or members stating that it is a true copy, that said partnership or limited liability company is in full force and effect, and that there have been no further amendments to the agreement. This Commitment will then be subject to such further requirements as may be deemed necessary.

[] (N) A copy of the complete lease, as referenced in Schedule A, #3 herein, together with any amendments and/or assignments thereto, must be submitted to the Company for review, along with an affidavit executed by the present lessee stating that it is a true copy, that the lease is in full force and effect, and that there have been no further amendments to the lease. This Commitment will then be subject to such further requirements as may be deemed necessary.

[X] (O) Approval from the Company's Underwriting Department must be obtained for issuance of the policy contemplated herein and any endorsements requested thereunder. This Commitment will then be subject to such further requirements as may be required to obtain such approval.

[] (P) Potential additional requirements, if ALTA Extended coverage is contemplated hereunder, and work on the land has commenced prior to close, some or all of the following requirements, and any other requirements which may be deemed necessary, may need to be met:

[] (Q) The Company's "Indemnity Agreement I" must be executed by the appropriate parties.

[] (R) Financial statements from the appropriate parties must be submitted to the Company for review.

[] (S) A copy of the construction contract must be submitted to the Company for review.

[] (T) An inspection of the land must be performed by the Company for verification of the phase of construction.

[] (U) The Company's "Mechanic's Lien Risk Addendum" form must be completed by a Company employee, based upon information furnished by the appropriate parties involved.

SCHEDULE B

SECTION TWO

EXCEPTIONS

Any policy we issue will have the following exceptions unless they are taken care of to our satisfaction. The printed exceptions and exclusions from the coverage of the policy or policies are set forth in Exhibit A attached. Copies of the policy forms should be read. They are available from the office which issued this Commitment.

1. General and special taxes and assessments for the fiscal year 2018-2019, a lien not yet due or payable.

2. The lien of supplemental taxes, if any, assessed pursuant to Chapter 3.5 commencing with Section 75 of the California Revenue and Taxation Code.

3. An easement for public road, public utility and public service uses and incidental purposes, recorded October 20, 1965 as Instrument No. 119997 of Official Records.
   In Favor of: Kelly F. Naples and Madelyn R. Naples, husband and wife, et al
   Affects: as described therein

4. The Effect of A Declaration Of Dedication dated January 23, 1980, Executed By Vernon C. Brown and Harriett Brown, Husband and Wife, Purporting To Irrevocably Dedicate In Perpetuity for Public Road Purposes, Public Utility And Public Services, The Property Described Therein, Recorded February 1, 1980 As Instrument No. 21790 Of Official Records Of Riverside County, California.

5. A lease dated December 1, 1981, executed by William Kellen, Trustee under Sterling Trust as lessor and U. S. Agri Research and Development Corporation as lessee, recorded June 24, 1986 as Instrument No. 146302 of Official Records.

   Said Lease, among other things, provides for an option to purchase.

   Defects, liens, encumbrances or other matters affecting the leasehold estate, whether or not shown by the public records are not shown herein.

   Affects: The land and other property.

6. A claim of lien recorded December 15, 1988 as Instrument No. 366797 of Official Records.
   Lien claimant: Pacific Agricultural Holdings, Inc., a California Corporation
   Amount: $1,619.69

Notice of pendency of action recorded February 15, 1989 as Instrument No. 46725 of Official Records.

Court:	Superior Court of the State of California
Case No.:	196675
Plaintiff:	Pacific Agricultural Holdings, Inc., a California Corporation, as Successor-in- Interest to Pacific Agricultural Services, Inc., a Delaware Corporation
Defendant:	U. S. Agri Development Corp., a Nevada corporation, U. S. Agri Research & Development Corporation, a Nevada corporation, American Land & Development Corporation, an unknown entity, First Pacific Agri Partners Ltd., a California limited partnership, Dewayne C. Soares, an individual, Calagri Partners II, a California limited partnership, Robert Cole, an individual, Financial Dynamics III, an unknown entity, California Jojoba Investors, an unknown entity, Desert Center II, an unknown entity, Desert Center, an unknown entity, Applied Jojoba, an unknown entity, 168 Group Ltd., a California limited partnership, C. W. HOGBERG, an individual, Jojoba Research Ltd., a California limited partnership, Robert Osborne, an individual, Herbert Aderholt, an individual, More Jojoba, Ltd., a California limited partnership, Arthur J. More, an individual, Desert Center Ltd., an unknown entity, Financial Dynamics I, an unknown entity, Financial Dynamics II, an unknown entity, Southern Calif. Jojoba, an unknown entity, Western Jojoba Partners (85-1) Ltd., an unknown entity, 82 Agri Research Partners, an unknown entity, JRP Hawaii, an unknown entity, Blythe II, an unknown entity, Western Jojoba Partners III, an unknown entity, Calneva Research, an unknown entity, Agri Research Partners II, an unknown entity, Contra Costa Jojoba Research, an unknown entity, Cis R & D Partners, an unknown entity, Arid Land Research Partners, an unknown entity, Energy Research Ltd. I, an unknown entity, San Nicholas Research Ltd. I, an unknown entity, Cis R & D Partners II, an unknown entity, CIS R & D I, an unknown entity, Western Jojoba Partners II, an unknown entity, Western Jojoba Partners I, an unknown entity, Jojoba Investors I, 1 an unknown entity, C.A.E. LTD., an unknown entity, JR 40, an unknown entity, Investors Jojoba, an unknown entity, Blythe I, an unknown entity, California Jojoba, an unknown entity, CH I, an unknown entity, Jojoba Venture. Assoc., an unknown entity, State School Lands, an unknown entity, Jojoba Beans Ltd., an unknown entity, Jojoba Research Partners-Cole, an unknown entity, Utah Jojoba I, an unknown entity, C.I. Investment Corp., an unknown entity, Sonoma, an unknown entity, Riverside Jojoba, an unknown entity, and does 1 through 500, inclusive
Purpose:	Foreclosure of a mechanics' lien.

7. The terms, provisions and easement(s) contained in the document entitled "Irrevocable Grant of Water Easement, Water Use Agreement, and Deed of Water Rights" recorded November 6, 1991 as Instrument No. 385526 of Official Records.

8. The effect of a deed given by the county tax collector upon sale of tax-defaulted property pursuant to Chapter 7 of Part 6 of Division 1 of the California Revenue and Taxation Code, recorded May 14, 2003 as Instrument No. 2003-347639 of Official Records.

We will require the recording of a deed from 168 Group Ltd or the recording of a certified copy of a satisfactory final, unappealable judgment quieting title.

9. The sufficiency and validity of the proceeding leading up to and including the tax collector's deed or sheriff's deed to N. R. L. L., Inc, a Califorina Corporation.

   In order for the company to be in a position to omit this exception from further title evidence, it will be necessary to obtain a final decree quieting title to the land in the vestee herein, and against: the last record owner of this land, any one claiming through him, any liens or encumbrances, whose interests were divested by virtue of such tax sale.

10. The effect of a document entitled "N. R. L. L., Inc, a Califorina Corporation", recorded Keat Yin and Ritheary Chea, as Joint Tenants as March 17, 2004 of Official Records.

    Instrument No. 2004-0187705

11. The effect of a deed executed by Keat Yin and Ritheary Chea, who acquired title as Joint Tenants to Ritheary Chea, an unmarried woman, recorded October 22, 2013 as Instrument No. 2013-0503925 of Official Records.

    The Company will require satisfactory evidence that the deed was an absolute conveyance for value and that there are no other agreements, oral or written, regarding the ownership or occupancy of the land described in the deed.

    Document re-recorded November 26, 2013 as Instrument No. 2013-0556514 of Official Records.

12. Rights of the public in and to that portion of the land lying within any road, street and/or highway.

13. Any claim that the Title is subject to a trust or lien created under The Perishable Agricultural Commodities Act, 1930 (7 U.S.C. §§499a, et seq.) or the Packers and Stockyards Act (7 U.S.C. §§181 et seq.) or under similar state laws.

14. Water rights, claims or title to water, whether or not shown by the public records.

15. The lack of a right of access to and from the land.

    Notice: Paragraph 4 of the insuring provisions on the face page of the policy will be deleted from the policy to be issued.

16. Any right, title or interest of the spouse, if any, of any married vestee herein.

17. Rights of parties in possession.

INFORMATIONAL NOTES

ALERT - CA Senate Bill 2 imposes an additional fee of $75 up to $225 at the time of recording on certain transactions effective January 1, 2018. Please contact your First American Title representative for more information on how this may affect your closing.

1. Taxes for proration purposes only for the fiscal year 2017-2018.

First Installment:	$169.50, PAID
Second Installment:	$169.50, PAID
Tax Rate Area:	062-000
APN:	811-150-001-3

2. The property covered by this report is vacant land.

3. According to the public records, there has been no conveyance of the land within a period of twenty-four months prior to the date of this report, except as follows:

   None

4. This preliminary report/commitment was prepared based upon an application for a policy of title insurance that identified land by street address or assessor's parcel number only. It is the responsibility of the applicant to determine whether the land referred to herein is in fact the land that is to be described in the policy or policies to be issued.

The map attached, if any, may or may not be a survey of the land depicted hereon. First American Title Insurance Company expressly disclaims any liability for loss or damage which may result from reliance on this map except to the extent coverage for such loss or damage is expressly provided by the terms and provisions of the title insurance policy, if any, to which this map is attached.

******To obtain wire instructions for deposit of funds to your escrow file please contact your Escrow Officer.******

CONDITIONS

1. **DEFINITIONS**
(a)"Mortgage" means mortgage, deed of trust or other security instrument.
(b)"Public Records" means title records that give constructive notice of matters affecting the title according to the state law where the land is located.

2. **LATER DEFECTS**
The Exceptions in Schedule B - Section Two may be amended to show any defects, liens or encumbrances that appear for the first time in the public records or are created or attached between the Commitment Date and the date on which all of the Requirements (a) and (c) of Schedule B - Section One are met. We shall have no liability to you because of this amendment.

3. **EXISTING DEFECTS**
If any defects, liens or encumbrances existing at Commitment Date are not shown in Schedule B, we may amend Schedule B to show them. If we do amend Schedule B to show these defects, liens or encumbrances, we shall be liable to you according to Paragraph 4 below unless you knew of this information and did not tell us about it in writing.

4. **LIMITATION OF OUR LIABILITY**
Our only obligation is to issue to you the Policy referred to in this Commitment, when you have met its Requirements. If we have any liability to you for any loss you incur because of an error in this Commitment, our liability will be limited to your actual loss caused by your relying on this Commitment when you acted in good faith to:

comply with the Requirements shown in Schedule B - Section One
or
eliminate with our written consent any Exceptions shown in Schedule B - Section Two.

We shall not be liable for more than the Policy Amount shown in Schedule A of this Commitment and our liability is subject to the terms of the Policy form to be issued to you.

5. **CLAIMS MUST BE BASED ON THIS COMMITMENT**
Any claim, whether or not based on negligence, which you may have against us concerning the title to the land must be based on this commitment and is subject to its terms.

First American Title

Privacy Information

We Are Committed to Safeguarding Customer Information

In order to better serve your needs now and in the future, we may ask you to provide us with certain information. We understand that you may be concerned about what we will do with such information - particularly any personal or financial information. We agree that you have a right to know how we will utilize the personal information you provide to us. Therefore, together with our subsidiaries we have adopted this Privacy Policy to govern the use and handling of your personal information.

Applicability

This Privacy Policy governs our use of the information that you provide to us. It does not govern the manner in which we may use information we have obtained from any other source, such as information obtained from a public record or from another person or entity. First American has also adopted broader guidelines that govern our use of personal information regardless of its source. First American calls these guidelines its Fair Information Values.

Types of Information

Depending upon which of our services you are utilizing, the types of nonpublic personal information that we may collect include:

- Information we receive from you on applications, forms and in other communications to us, whether in writing, in person, by telephone or any other means;
- Information about your transactions with us, our affiliated companies, or others; and
- Information we receive from a consumer reporting agency.

Use of Information

We request information from you for our own legitimate business purposes and not for the benefit of any nonaffiliated party. Therefore, we will not release your information to nonaffiliated parties except: (1) as necessary for us to provide the product or service you have requested of us; or (2) as permitted by law. We may, however, store such information indefinitely, including the period after which any customer relationship has ceased. Such information may be used for any internal purpose, such as quality control efforts or customer analysis. We may also provide all of the types of nonpublic personal information listed above to one or more of our affiliated companies. Such affiliated companies include financial service providers, such as title insurers, property and casualty insurers, and trust and investment advisory companies, or companies involved in real estate services, such as appraisal companies, home warranty companies and escrow companies. Furthermore, we may also provide all the information we collect, as described above, to companies that perform marketing services on our behalf, on behalf of our affiliated companies or to other financial institutions with whom we or our affiliated companies have joint marketing agreements.

Former Customers

Even if you are no longer our customer, our Privacy Policy will continue to apply to you.

Confidentiality and Security

We will use our best efforts to ensure that no unauthorized parties have access to any of your information. We restrict access to nonpublic personal information about you to those individuals and entities who need to know that information to provide products or services to you. We will use our best efforts to train and oversee our employees and agents to ensure that your information will be handled responsibly and in accordance with this Privacy Policy and First American's Fair Information Values. We currently maintain physical, electronic, and procedural safeguards that comply with federal regulations to guard your nonpublic personal information.

Information Obtained Through Our Web Site

First American Financial Corporation is sensitive to privacy issues on the Internet. We believe it is important you know how we treat the information about you we receive on the Internet.

In general, you can visit First American or its affiliates' Web sites on the World Wide Web without telling us who you are or revealing any information about yourself. Our Web servers collect the domain names, not the e-mail addresses, of visitors. This information is aggregated to measure the number of visits, average time spent on the site, pages viewed and similar information. First American uses this information to measure the use of our site and to develop ideas to improve the content of our site.

There are times, however, when we may need information from you, such as your name and email address. When information is needed, we will use our best efforts to let you know at the time of collection how we will use the personal information. Usually, the personal information we collect is used only by us to respond to your inquiry, process an order or allow you to access specific account/profile information. If you choose to share any personal information with us, we will only use it in accordance with the policies outlined above.

Business Relationships

First American Financial Corporation's site and its affiliates' sites may contain links to other Web sites. While we try to link only to sites that share our high standards and respect for privacy, we are not responsible for the content or the privacy practices employed by other sites.

Cookies

Some of First American's Web sites may make use of "cookie" technology to measure site activity and to customize information to your personal tastes. A cookie is an element of data that a Web site can send to your browser, which may then store the cookie on your hard drive.

FirstAm.com uses stored cookies. The goal of this technology is to better serve you when visiting our site, save you time when you are here and to provide you with a more meaningful and productive Web site experience.

Fair Information Values

Fairness We consider consumer expectations about their privacy in all our businesses. We only offer products and services that assure a favorable balance between consumer benefits and consumer privacy.

Public Record We believe that an open public record creates significant value for society, enhances consumer choice and creates consumer opportunity. We actively support an open public record and emphasize its importance and contribution to our economy.

Use We believe we should behave responsibly when we use information about a consumer in our business. We will obey the laws governing the collection, use and dissemination of data.

Accuracy We will take reasonable steps to help assure the accuracy of the data we collect, use and disseminate. Where possible, we will take reasonable steps to correct inaccurate information. When, as with the public record, we cannot correct inaccurate information, we will take all reasonable steps to assist consumers in identifying the source of the erroneous data so that the consumer can secure the required corrections.

Education We endeavor to educate the users of our products and services, our employees and others in our industry about the importance of consumer privacy. We will instruct our employees on our fair information values and on the responsible collection and use of data. We will encourage others in our industry to collect and use information in a responsible manner.

Security We will maintain appropriate facilities and systems to protect against unauthorized access to and corruption of the data we maintain.

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EXHIBIT A
LIST OF PRINTED EXCEPTIONS AND EXCLUSIONS (BY POLICY TYPE)

1. CALIFORNIA LAND TITLE ASSOCIATION STANDARD COVERAGE POLICY - 1990
SCHEDULE B

EXCEPTIONS FROM COVERAGE

This policy does not insure against loss or damage (and the Company will not pay costs, attorneys' fees or expenses) which arise by reason of:

1. Taxes or assessments which are not shown as existing liens by the records of any taxing authority that levies taxes or assessments on real property or by the public records. Proceedings by a public agency which may result in taxes or assessments, or notice of such proceedings, whether or not shown by the records of such agency or by the public records.
2. Any facts, rights, interests, or claims which are not shown by the public records but which could be ascertained by an inspection of the land or which may be asserted by persons in possession thereof.
3. Easements, liens or encumbrances, or claims thereof, which are not shown by the public records.
4. Discrepancies, conflicts in boundary lines, shortage in area, encroachments, or any other facts which a correct survey would disclose, and which are not shown by the public records.
5. (a) Unpatented mining claims; (b) reservations or exceptions in patents or in Acts authorizing the issuance thereof; (c) water rights, claims or title to water, whether or not the matters excepted under (a), (b), or (c) are shown by the public records.

EXCLUSIONS FROM COVERAGE

The following matters are expressly excluded from the coverage of this policy and the Company will not pay loss or damage, costs, attorneys' fees or expenses which arise by reason of:

1. (a) Any law, ordinance or governmental regulation (including but not limited to building and zoning laws, ordinances, or regulations) restricting, regulating, prohibiting or relating to (i) the occupancy, use, or enjoyment of the land; (ii) the character, dimensions or location of any improvement now or hereafter erected on the land; (iii) a separation in ownership or a change in the dimensions or area of the land or any parcel of which the land is or was a part; or (iv) environmental protection, or the effect of any violation of these laws, ordinances or governmental regulations, except to the extent that a notice of the enforcement thereof or a notice of a defect, lien or encumbrance resulting from a violation or alleged violation affecting the land has been recorded in the public records at Date of Policy.
   (b) Any governmental police power not excluded by (a) above, except to the extent that a notice of the exercise thereof or a notice of a defect, lien or encumbrance resulting from a violation or alleged violation affecting the land has been recorded in the public records at Date of Policy.
2. Rights of eminent domain unless notice of the exercise thereof has been recorded in the public records at Date of Policy, but not excluding from coverage any taking which has occurred prior to Date of Policy which would be binding on the rights of a purchaser for value without knowledge.
3. Defects, liens, encumbrances, adverse claims or other matters:
   (a) whether or not recorded in the public records at Date of Policy, but created, suffered, assumed or agreed to by the insured claimant;
   (b) not known to the Company, not recorded in the public records at Date of Policy, but known to the insured claimant and not disclosed in writing to the Company by the insured claimant prior to the date the insured claimant became an insured under this policy;
   (c) resulting in no loss or damage to the insured claimant;
   (d) attaching or created subsequent to Date of Policy; or
   (e) resulting in loss or damage which would not have been sustained if the insured claimant had paid value for the insured mortgage or for the estate or interest insured by this policy.
4. Unenforceability of the lien of the insured mortgage because of the inability or failure of the insured at Date of Policy, or the inability or failure of any subsequent owner of the indebtedness, to comply with applicable "doing business" laws of the state in which the land is situated.
5. Invalidity or unenforceability of the lien of the insured mortgage, or claim thereof, which arises out of the transaction evidenced by the insured mortgage and is based upon usury or any consumer credit protection or truth in lending law.
6. Any claim, which arises out of the transaction vesting in the insured the estate or interest insured by their policy or the transaction creating the interest of the insured lender, by reason of the operation of federal bankruptcy, state insolvency or similar creditors' rights laws.

2. AMERICAN LAND TITLE ASSOCIATION OWNER'S POLICY FORM B - 1970
SCHEDULE OF EXCLUSIONS FROM COVERAGE

1. Any law, ordinance or governmental regulation (including but not limited to building and zoning ordinances) restricting or regulating or prohibiting the occupancy, use or enjoyment of the land, or regulating the character, dimensions or location of any improvement now or hereafter erected on the land, or prohibiting a separation in ownership or a reduction in the dimensions of area of the land, or the effect of any violation of any such law, ordinance or governmental regulation.
2. Rights of eminent domain or governmental rights of police power unless notice of the exercise of such rights appears in the public records at Date of Policy.
3. Defects, liens, encumbrances, adverse claims, or other matters (a) created, suffered, assumed or agreed to by the insured claimant; (b) not known to the Company and not shown by the public records but known to the insured claimant either at Date of Policy or at the date such claimant acquired an estate or interest insured by this policy and not disclosed in writing by the insured claimant to the Company prior to the date such insured claimant became an insured hereunder; (c) resulting in no loss or damage to the insured claimant; (d) attaching or created subsequent to Date of Policy; or (e) resulting in loss or damage which would not have been sustained if the insured claimant had paid value for the estate or interest insured by this policy.

3. AMERICAN LAND TITLE ASSOCIATION OWNER'S POLICY FORM B - 1970
WITH REGIONAL EXCEPTIONS

When the American Land Title Association policy is used as a Standard Coverage Policy and not as an Extended Coverage Policy the exclusions set forth in paragraph 2 above are used and the following exceptions to coverage appear in the policy.

SCHEDULE B

This policy does not insure against loss or damage by reason of the matters shown in parts one and two following:
Part One

1. Taxes or assessments which are not shown as existing liens by the records of any taxing authority that levies taxes or assessments on real property or by the public records.
2. Any facts, rights, interests, or claims which are not shown by the public records but which could be ascertained by an inspection of said land or by making inquiry of persons in possession thereof.
3. Easements, claims of easement or encumbrances which are not shown by the public records.
4. Discrepancies, conflicts in boundary lines, shortage in area, encroachments, or any other facts which a correct survey would disclose, and which are not shown by public records.
5. Unpatented mining claims; reservations or exceptions in patents or in Acts authorizing the issuance thereof; water rights, claims or title to water.
6. Any lien, or right to a lien, for services, labor or material heretofore or hereafter furnished, imposed by law and not shown by the public records.

4. AMERICAN LAND TITLE ASSOCIATION LOAN POLICY - 1970
WITH A.L.T.A. ENDORSEMENT FORM 1 COVERAGE
SCHEDULE OF EXCLUSIONS FROM COVERAGE

1. Any law, ordinance or governmental regulation (including but not limited to building and zoning ordinances) restricting or regulating or prohibiting the occupancy, use or enjoyment of the land, or regulating the character, dimensions or location of any improvement now or hereafter erected on the land, or prohibiting a separation in ownership or a reduction in the dimensions or area of the land, or the effect of any violation of any such law ordinance or governmental regulation.
2. Rights of eminent domain or governmental rights of police power unless notice of the exercise of such rights appears in the public records at Date of Policy.
3. Defects, liens, encumbrances, adverse claims, or other matters (a) created, suffered, assumed or agreed to by the insured claimant, (b) not known to the Company and not shown by the public records but known to the insured claimant either at Date of Policy or at the date such claimant acquired an estate or interest insured by this policy or acquired the insured mortgage and not disclosed in writing by the insured claimant to the Company prior to the date such insured claimant became an insured hereunder, (c) resulting in no loss or damage to the insured claimant; (d) attaching or created subsequent to Date of Policy (except to the extent insurance is afforded herein as to any statutory lien for labor or material or to the extent insurance is afforded herein as to assessments for street improvements under construction or completed at Date of Policy).
4. Unenforceability of the lien of the insured mortgage because of failure of the insured at Date of Policy or of any subsequent owner of the indebtedness to comply with applicable "doing business" laws of the state in which the land is situated.

5. AMERICAN LAND TITLE ASSOCIATION LOAN POLICY - 1970
WITH REGIONAL EXCEPTIONS

When the American Land Title Association Lenders Policy is used as a Standard Coverage Policy and not as an Extended Coverage Policy, the exclusions set forth in paragraph 4 above are used and the following exceptions to coverage appear in the policy.

SCHEDULE B

This policy does not insure against loss or damage by reason of the matters shown in parts one and two following:
Part One

1. Taxes or assessments which are not shown as existing liens by the records of any taxing authority that levies taxes or assessments on real property or by the public records.
2. Any facts, rights, interests, or claims which are not shown by the public records but which could be ascertained by an inspection of said land or by making inquiry of persons in possession thereof.
3. Easements, claims of easement or encumbrances which are not shown by the public records.
4. Discrepancies, conflicts in boundary lines, shortage in area, encroachments, or any other facts which a correct survey would disclose, and which are not shown by public records.
5. Unpatented mining claims; reservations or exceptions in patents or in Acts authorizing the issuance thereof; water rights, claims or title to water.
6. Any lien, or right to a lien, for services, labor or material theretofore or hereafter furnished, imposed by law and not shown by the public records.

6. AMERICAN LAND TITLE ASSOCIATION LOAN POLICY - 1992
WITH A.L.T.A. ENDORSEMENT FORM 1 COVERAGE
EXCLUSIONS FROM COVERAGE

The following matters are expressly excluded from the coverage of this policy and the Company will not pay loss or damage, costs, attorneys' fees or expenses which arise by reason of:

1. (a) Any law, ordinance or governmental regulation (including but not limited to building and zoning laws, ordinances, or regulations) restricting, regulating, prohibiting or relating to (i) the occupancy, use, or enjoyment of the land; (ii) the character, dimensions or location of any improvement now or hereafter erected on the land; (iii) a separation in ownership or a change in the dimensions or area of the land or any parcel of which the land is or was a part; or (iv) environmental protection, or the effect of any violation of these laws, ordinances or governmental regulations, except to the extent that a notice of the enforcement thereof or a notice of a defect, lien or encumbrance resulting from a violation or alleged violation affecting the land has been recorded in the public records at Date of Policy;
(b) Any governmental police power not excluded by (a) above, except to the extent that a notice of the exercise thereof or a notice of a defect, lien or encumbrance resulting from a violation or alleged violation affecting the land has been recorded in the public records at Date of Policy.

2. Rights of eminent domain unless notice of the exercise thereof has been recorded in the public records at Date of Policy, but not excluding from coverage any taking which has occurred prior to Date of Policy which would be binding on the rights of a purchaser for value without knowledge.
3. Defects, liens, encumbrances, adverse claims, or other matters:
(a) whether or not recorded in the public records at Date of Policy, but created, suffered, assumed or agreed to by the insured claimant;
(b) not known to the Company, not recorded in the public records at Date of Policy, but known to the insured claimant and not disclosed in writing to the Company by the insured claimant prior to the date the insured claimant became an insured under this policy;
(c) resulting in no loss or damage to the insured claimant;
(d) attaching or created subsequent to Date of Policy (except to the extent that this policy insures the priority of the lien of the insured mortgage over any statutory lien for services, labor or material or the extent insurance is afforded herein as to assessments for street improvements under construction or completed at date of policy); or
(e) resulting in loss or damage which would not have been sustained if the insured claimant had paid value for the insured mortgage.
4. Unenforceability of the lien of the insured mortgage because of the inability or failure of the insured at Date of Policy, or the inability or failure of any subsequent owner of the indebtedness, to comply with the applicable "doing business" laws of the state in which the land is situated.
5. Invalidity or unenforceability of the lien of the insured mortgage, or claim thereof, which arises out of the transaction evidenced by the insured mortgage and is based upon usury or any consumer credit protection or truth in lending law.
6. Any statutory lien for services, labor or materials (or the claim of priority of any statutory lien for services, labor or materials over the lien of the insured mortgage) arising from an improvement or work related to the land which is contracted for and commenced subsequent to Date of Policy and is not financed in whole or in part by proceeds of the indebtedness secured by the insured mortgage which at Date of Policy the insured has advanced or is obligated to advance.
7. Any claim, which arises out of the transaction creating the interest of the mortgagee insured by this policy, by reason of the operation of federal bankruptcy, state insolvency, or similar creditors' rights laws, that is based on:
(i) the transaction creating the interest of the insured mortgagee being deemed a fraudulent conveyance or fraudulent transfer; or
(ii) the subordination of the interest of the insured mortgagee as a result of the application of the doctrine of equitable subordination; or
(iii) the transaction creating the interest of the insured mortgagee being deemed a preferential transfer except where the preferential transfer results from the failure:
(a) to timely record the instrument of transfer; or
(b) of such recordation to impart notice to a purchaser for value or a judgment or lien creditor.

7. AMERICAN LAND TITLE ASSOCIATION LOAN POLICY - 1992
WITH REGIONAL EXCEPTIONS

When the American Land Title Association policy is used as a Standard Coverage Policy and not as an Extended Coverage Policy the exclusions set forth in paragraph 6 above are used and the following exceptions to coverage appear in the policy.

SCHEDULE B

This policy does not insure against loss or damage (and the Company will not pay costs, attorneys' fees or expenses) which arise by reason of:
1. Taxes or assessments which are not shown as existing liens by the records of any taxing authority that levies taxes or assessments on real property or by the public records.
2. Any facts, rights, interests, or claims which are not shown by the public records but which could be ascertained by an inspection of said land or by making inquiry of persons in possession thereof.
3. Easements, claims of easement or encumbrances which are not shown by the public records.
4. Discrepancies, conflicts in boundary lines, shortage in area, encroachments, or any other facts which a correct survey would disclose, and which are not shown by public records.
5. Unpatented mining claims; reservations or exceptions in patents or in Acts authorizing the issuance thereof; water rights, claims or title to water.
6. Any lien, or right to a lien, for services, labor or material theretofore or hereafter furnished, imposed by law and not shown by the public records.

8. AMERICAN LAND TITLE ASSOCIATION OWNER'S POLICY - 1992
EXCLUSIONS FROM COVERAGE

The following matters are expressly excluded from the coverage of this policy and the Company will not pay loss or damage, costs, attorneys' fees or expenses which arise by reason of:
1. (a) Any law, ordinance or governmental regulation (including but not limited to building and zoning laws, ordinances, or regulations) restricting, regulating, prohibiting or relating to (i) the occupancy, use, or enjoyment of the land; (ii) the character, dimensions or location of any improvement now or hereafter erected on the land; (iii) a separation in ownership or a change in the dimensions or area of the land or any parcel of which the land is or was a part; or (iv) environmental protection, or the effect of any violation of these laws, ordinances or governmental regulations, except to the extent that a notice of the enforcement thereof or a notice of a defect, lien or encumbrance resulting from a violation or alleged violation affecting the land has been recorded in the public records at Date of Policy.
(b) Any governmental police power not excluded by (a) above, except to the extent that a notice of the exercise thereof or a notice of a defect, lien or encumbrance resulting from a violation or alleged violation affecting the land has been recorded in the public records at Date of Policy.
2. Rights of eminent domain unless notice of the exercise thereof has been recorded in the public records at Date of Policy, but not excluding from coverage any taking which has occurred prior to Date of Policy which would be binding on the rights of a purchaser for value without knowledge.
3. Defects, liens, encumbrances, adverse claims, or other matters:
(a) created, suffered, assumed or agreed to by the insured claimant;
(b) not known to the Company, not recorded in the public records at Date of Policy, but known to the insured claimant and not disclosed in writing to the Company by the insured claimant prior to the date the insured claimant became an insured under this policy;
(c) resulting in no loss or damage to the insured claimant;
(d) attaching or created subsequent to Date of Policy; or

(e) resulting in loss or damage which would not have been sustained if the insured claimant had paid value for the estate or interest insured by this policy.

4. Any claim, which arises out of the transaction vesting in the insured the estate or interest insured by this policy, by reason of the operation of federal bankruptcy, state insolvency, or similar creditors' rights laws, that is based on:
(i) the transaction creating the estate or interest insured by this policy being deemed a fraudulent conveyance or fraudulent transfer; or
(ii) the transaction creating the estate or interest insured by this policy being deemed a preferential transfer except where the preferential transfer results from the failure:
(a) to timely record the instrument of transfer; or
(b) of such recordation to impart notice to a purchaser for value or a judgment or lien creditor.

9. AMERICAN LAND TITLE ASSOCIATION OWNER'S POLICY - 1992 WITH REGIONAL EXCEPTIONS

When the American Land Title Association policy is used as a Standard Coverage Policy and not as an Extended Coverage Policy the exclusions set forth in paragraph 8 above are used and the following exceptions to coverage appear in the policy.

SCHEDULE B

This policy does not insure against loss or damage (and the Company will not pay costs, attorneys' fees or expenses) which arise by reason of:
Part One:

1. Taxes or assessments which are not shown as existing liens by the records of any taxing authority that levies taxes or assessments on real property or by the public records.
2. Any facts, rights, interests, or claims which are not shown by the public records but which could be ascertained by an inspection of said land or by making inquiry of persons in possession thereof.
3. Easements, claims of easement or encumbrances which are not shown by the public records.
4. Discrepancies, conflicts in boundary lines, shortage in area, encroachments, or any other facts which a correct survey would disclose, and which are not shown by public records.
5. Unpatented mining claims; reservations or exceptions in patents or in Acts authorizing the issuance thereof; water rights, claims or title to water.
6. Any lien, or right to a lien, for services, labor or material theretofore or hereafter furnished, imposed by law and not shown by the public records.

ALTA RESIDENTIAL TITLE INSURANCE POLICY (6-1-87)

EXCLUSIONS

In addition to the Exceptions in Schedule B, you are not insured against loss, costs, attorneys' fees, and expenses resulting from:

1. Governmental police power, and the existence or violation of any law or government regulation. This includes building and zoning ordinances and also laws and regulations concerning:
   (a) and use
   (b) improvements on the land
   (c) and division
   (d) environmental protection

   This exclusion does not apply to violations or the enforcement of these matters which appear in the public records at Policy Date.
   This exclusion does not limit the zoning coverage described in Items 12 and 13 of Covered Title Risks.
2. The right to take the land by condemning it, unless:
   (a) a notice of exercising the right appears in the public records on the Policy Date
   (b) the taking happened prior to the Policy Date and is binding on you if you bought the land without knowing of the taking
3. Title Risks:
   (a) that are created, allowed, or agreed to by you
   (b) that are known to you, but not to us, on the Policy Date -- unless they appeared in the public records
   (c) that result in no loss to you
   (d) that first affect your title after the Policy Date -- this does not limit the labor and material lien coverage in Item 8 of Covered Title Risks
4. Failure to pay value for your title.
5. Lack of a right:
   (a) to any land outside the area specifically described and referred to in Item 3 of Schedule A OR
   (b) in streets, alleys, or waterways that touch your land
   This exclusion does not limit the access coverage in Item 5 of Covered Title Risks.

11. EAGLE PROTECTION OWNER'S POLICY

CLTA HOMEOWNER'S POLICY OF TITLE INSURANCE - 1998
ALTA HOMEOWNER'S POLICY OF TITLE INSURANCE - 1998

Covered Risks 14 (Subdivision Law Violation). 15 (Building Permit). 16 (Zoning) and 18 (Encroachment of boundary walls or fences) are subject to Deductible Amounts and Maximum Dollar Limits of Liability

EXCLUSIONS

In addition to the Exceptions in Schedule B, you are not insured against loss, costs, attorneys' fees, and expenses resulting from:

1. Governmental police power, and the existence or violation of any law or government regulation. This includes ordinances, laws and regulations concerning:
   a. building
   b. zoning
   c. land use
   d. improvements on the land
   e. land division
   f. environmental protection

   This exclusion does not apply to violations or the enforcement of these matters if notice of the violation or enforcement appears in the Public Records at the Policy Date.
   This exclusion does not limit the coverage described in Covered Risk 14, 15, 16, 17 or 24.
2. The failure of Your existing structures, or any part of them, to be constructed in accordance with applicable building codes. This Exclusion does not apply to violations of building codes if notice of the violation appears in the Public Records at the Policy Date.
3. The right to take the Land by condemning it, unless:
   a. a notice of exercising the right appears in the Public Records at the Policy Date; or
   b. the taking happened before the Policy Date and is binding on You if You bought the Land without Knowing of the taking.
4. Risks:
   a. that are created, allowed, or agreed to by You, whether or not they appear in the Public Records;
   b. that are Known to You at the Policy Date, but not to Us, unless they appear in the Public Records at the Policy Date;
   c. that result in no loss to You; or
   d. that first occur after the Policy Date - this does not limit the coverage described in Covered Risk 7, 8.d, 22, 23, 24 or 25.
5. Failure to pay value for Your Title.
6. Lack of a right:
   a. to any Land outside the area specifically described and referred to in paragraph 3 of Schedule A; and
   b. in streets, alleys, or waterways that touch the Land.
   This exclusion does not limit the coverage described in Covered Risk 11 or 18.

12. THIRD GENERATION EAGLE LOAN POLICY AMERICAN LAND TITLE ASSOCIATION EXPANDED COVERAGE RESIDENTIAL LOAN POLICY (1/01/08)

EXCLUSIONS FROM COVERAGE

The following matters are expressly excluded from the coverage of this policy and the Company will not pay loss or damage, costs, attorneys' fees or expenses which arise by reason of:

1. (a) Any law, ordinance, permit, or governmental regulation (including those relating to building and zoning) restricting, regulating, prohibiting, or relating to (i) the occupancy, use, or enjoyment of the Land; (ii) the character, dimensions, or location of any improvement erected on the Land; (iii) the subdivision of land; or(iv) environmental protection; or the effect of any violation of these laws, ordinances, or governmental regulations. This Exclusion 1(a) does not modify or limit the coverage provided under Covered Risk 5, 6, 13(c), 13(d), 14 or 16.
   (b)Any governmental police power. This Exclusion 1(b) does not modify or limit the coverage provided under Covered Risk 5, 6, 13(c), 13(d), 14 or 16.
2. Rights of eminent domain. This Exclusion does not modify or limit the coverage provided under Covered Risk 7 or 8.
3. Defects, liens, encumbrances, adverse claims, or other matters
   (a) created, suffered, assumed or agreed to by the Insured Claimant;
   (b) not Known to the Company, not recorded in the Public Records at Date of Policy, but Known to the Insured Claimant and not disclosed in writing to the Company by the Insured Claimant prior to the date the Insured Claimant became an Insured under this policy;
   (c) resulting in no loss or damage to the Insured Claimant;
   (d) attaching or created subsequent to Date of Policy (however, this does not modify or limit the coverage provided under Covered Risk 11, 16, 17, 18, 19, 20, 21, 22, 23, 24, 27 or 28); or
   (e) resulting in loss or damage which would not have been sustained if the Insured Claimant had paid value for the Insured Mortgage.
4. Unenforceability of the lien of the Insured Mortgage because of the inability or failure of an Insured to comply with applicable doing business laws of the state where the Land is situated.
5. Invalidity or unenforceability in whole or in part of the lien of the Insured Mortgage that arises out of the transaction evidenced by the Insured Mortgage and is based upon usury, or any consumer credit protection or truth-in-lending law. This Exclusion does not modify or limit the coverage provided in Covered Risk 26.
6. Any claim of invalidity, unenforceability or lack of priority of the lien of the Insured Mortgage as to Advances or modifications made after the Insured has Knowledge that the vestee shown in Schedule A is no longer the owner of the estate or interest covered by this policy. This Exclusion does not modify or limit the coverage provided in Covered Risk 11.
7. Any lien on the Title for real estate taxes or assessments imposed by governmental authority and created or attaching subsequent to Date of Policy. This Exclusion does not modify or limit the coverage provided in Covered Risk 11(b) or 25.
8. The failure of the residential structure, or any portion of it, to have been constructed before, on or after Date of Policy in accordance with applicable building codes. This Exclusion does not modify or limit the coverage provided in Covered Risk 5 or 6.

13. AMERICAN LAND TITLE ASSOCIATION LOAN POLICY - 2006
EXCLUSIONS FROM COVERAGE

The following matters are expressly excluded from the coverage of this policy, and the Company will not pay loss or damage, costs, attorneys' fees, or

expenses that arise by reason of:

1. (a) Any law, ordinance, permit, or governmental regulation (including those relating to building and zoning) restricting, regulating, prohibiting, or relating to

   (i) the occupancy, use, or enjoyment of the Land;

   (ii) the character, dimensions, or location of any improvement erected on the Land;

   (iii) the subdivision of land; or

   (iv) environmental protection;

   or the effect of any violation of these laws, ordinances, or governmental regulations. This Exclusion 1(a) does not modify or limit the coverage provided under Covered Risk 5.

   (b) Any governmental police power. This Exclusion 1(b) does not modify or limit the coverage provided under Covered Risk 6.

2. Rights of eminent domain. This Exclusion does not modify or limit the coverage provided under Covered Risk 7 or 8.

3. Defects, liens, encumbrances, adverse claims, or other matters

   (a) created, suffered, assumed, or agreed to by the Insured Claimant;

   (b) not Known to the Company, not recorded in the Public Records at Date of Policy, but Known to the Insured Claimant and not disclosed in writing to the Company by the Insured Claimant prior to the date the Insured Claimant became an Insured under this policy;

   (c) resulting in no loss or damage to the Insured Claimant;

   (d) attaching or created subsequent to Date of Policy (however, this does not modify or limit the coverage provided under Covered Risk 11, 13, or 14); or

   (e) resulting in loss or damage that would not have been sustained if the Insured Claimant had paid value for the Insured Mortgage.

4. Unenforceability of the lien of the Insured Mortgage because of the inability or failure of an Insured to comply with applicable doing-business laws of the state where the Land is situated.

5. Invalidity or unenforceability in whole or in part of the lien of the Insured Mortgage that arises out of the transaction evidenced by the Insured Mortgage and is based upon usury or any consumer credit protection or truth-in-lending law.

6. Any claim, by reason of the operation of federal bankruptcy, state insolvency, or similar creditors' rights laws, that the transaction creating the lien of the Insured Mortgage, is

   (a) a fraudulent conveyance or fraudulent transfer, or

   (b) a preferential transfer for any reason not stated in Covered Risk 13(b) of this policy.

7. Any lien on the Title for real estate taxes or assessments imposed by governmental authority and created or attaching between Date of Policy and the date of recording of the Insured Mortgage in the Public Records. This Exclusion does not modify or limit the coverage provided under Covered Risk 11(b).

14. AMERICAN LAND TITLE ASSOCIATION LOAN POLICY - 2006 WITH REGIONAL EXCEPTIONS

When the American Land Title Association policy is used as a Standard Coverage Policy and not as an Extended Coverage Policy the exclusions set forth in paragraph 13 above are used and the following exceptions to coverage appear in the policy.

SCHEDULE B

This policy does not insure against loss or damage (and the Company will not pay costs, attorneys' fees or expenses) which arise by reason of:

1. (a) Taxes or assessments that are not shown as existing liens by the records of any taxing authority that levies taxes or assessments on real property or by the Public Records; (b) proceedings by a public agency that may result in taxes or assessments, or notices of such proceedings, whether or not shown by the records of such agency or by the Public Records.

2. Any facts, rights, interests, or claims that are not shown by the Public Records but that could be ascertained by an inspection of the Land or that may be asserted by persons in possession of the Land.

3. Easements, liens or encumbrances, or claims thereof, not shown by the Public Records.

4. Any encroachment, encumbrance, violation, variation, or adverse circumstance affecting the Title that would be disclosed by an accurate and complete land survey of the Land and not shown by the Public Records.

5. (a) Unpatented mining claims; (b) reservations or exceptions in patents or in Acts authorizing the issuance thereof; (c) water rights, claims or title to water, whether or not the matters excepted under (a), (b), or (c) are shown by the Public Records.

15. AMERICAN LAND TITLE ASSOCIATION OWNER'S POLICY - 2006 EXCLUSIONS FROM COVERAGE

The following matters are expressly excluded from the coverage of this policy and the Company will not pay loss or damage, costs, attorneys' fees or expenses which arise by reason of:

1. (a) Any law, ordinance, permit, or governmental regulation (including those relating to building and zoning) restricting, regulating, prohibiting, or relating to

   (i) the occupancy, use, or enjoyment of the Land;

   (ii) the character, dimensions, or location of any improvement erected on the Land;

   (iii) the subdivision of land; or

   (iv) environmental protection;or the effect of any violation of these laws, ordinances, or governmental regulations. This Exclusion 1(a) does not modify or limit the coverage provided under Covered Risk 5.

(b) Any governmental police power. This Exclusion 1(b) does not modify or limit the coverage provided under Covered Risk 6.

2. Rights of eminent domain. This Exclusion does not modify or limit the coverage provided under Covered Risk 7 or 8.

3. Defects, liens, encumbrances, adverse claims, or other matters

(a) created, suffered, assumed, or agreed to by the Insured Claimant;

(b) not Known to the Company, not recorded in the Public Records at Date of Policy, but Known to the Insured Claimant and not disclosed in writing to the Company by the Insured Claimant prior to the date the Insured Claimant became an Insured under this policy;

(c) resulting in no loss or damage to the Insured Claimant;

(d) attaching or created subsequent to Date of Policy (however, this does not modify or limit the coverage provided under Covered Risks 9 and 10); or

(e) resulting in loss or damage that would not have been sustained if the Insured Claimant had paid value for the Title.

4. Any claim, by reason of the operation of federal bankruptcy, state insolvency, or similar creditors rights laws, that the transaction vesting the Title as shown in Schedule A, is

(a) a fraudulent conveyance or fraudulent transfer; or

(b) a preferential transfer for any reason not stated in Covered Risk 9 of this policy.

5. Any lien on the Title for real estate taxes or assessments imposed by governmental authority and created or attaching between Date of Policy and the date of recording of the deed or other instrument of transfer in the Public Records that vests Title as shown in Schedule A.

16. AMERICAN LAND TITLE ASSOCIATION OWNER'S POLICY - 2006 WITH REGIONAL EXCEPTIONS

When the American Land Title Association policy is used as a Standard Coverage Policy and not as an Extended Coverage Policy the exclusions set forth in paragraph 15 above are used and the following exceptions to coverage appear in the policy.

SCHEDULE B

This policy does not insure against loss or damage (and the Company will not pay costs, attorneys' fees or expenses) which arise by reason of:

1. (a) Taxes or assessments that are not shown as existing liens by the records of any taxing authority that levies taxes or assessments on real property or by the Public Records; (b) proceedings by a public agency that may result in taxes or assessments, or notices of such proceedings, whether or not shown by the records of such agency or by the Public Records.
2. Any facts, rights, interests, or claims that are not shown by the Public Records but that could be ascertained by an inspection of the Land or that may be asserted by persons in possession of the Land.
3. Easements, liens or encumbrances, or claims thereof, not shown by the Public Records.
4. Any encroachment, encumbrance, violation, variation, or adverse circumstance affecting the Title that would be disclosed by an accurate and complete land survey of the Land and not shown by the Public Records.
5. (a) Unpatented mining claims; (b) reservations or exceptions in patents or in Acts authorizing the issuance thereof; (c) water rights, claims or title to water, whether or not the matters excepted under (a), (b), or (c) are shown by the Public Records.

First American Title Insurance Company

National Commercial Services

666 Third Avenue, 5th Floor
New York, NY 10017

January 19, 2018

John Warren
Intersect Power
Embarcadero Center , 7th Floor
San Francisco, CA 94111
Phone: (415)297-4169

Customer Reference: Naples, Angelo, Paglia

Order Number: 3020-886883

Owner: Kelly F. Naples

Property: Vacant/APN 811-170-002-6 and 811-180-001-6, CA

Attached please find the following item(s):

Commitment

Thank You for your confidence and support. We at First American Title Insurance Company maintain the fundamental principle:

Customer First!

First American Title Insurance Company

INFORMATION

The Title Insurance Commitment is a legal contract between you and the company. It is issued to show the basis on which we will issue a Title Insurance Policy to you. The Policy will insure you against certain risks to the land title, subject to the limitations shown in the policy.

The Company will give you a sample of the Policy form, if you ask.

The Commitment is based on the land title as of the Commitment Date. Any changes in the land title or the transaction may affect the Commitment and the Policy.

The Commitment is subject to its Requirements, Exceptions and Conditions.

This information is not part of the title insurance commitment.

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YOU SHOULD READ THE COMMITMENT VERY CAREFULLY.
If you have any questions about the Commitment,
please contact the issuing office.

COMMITMENT FOR TITLE INSURANCE

Issued by

First American Title Insurance Company

Agreement to Issue Policy

We agree to issue a policy to you according to the terms of this Commitment.

When we show the policy amount and your name as the proposed insured in Schedule A, this Commitment becomes effective as of the Commitment Date shown in Schedule A.

If the Requirements shown in this Commitment have not been met within six months after the Commitment Date, our obligation under this Commitment will end. Also, our obligation under this Commitment will end when the Policy is issued and then our obligation to you will be under the Policy.

Our obligation under this Commitment is limited by the following:

The Provisions in Schedule A.

The Requirements in Schedule B-1.

The Exceptions in Schedule B-2.

The Conditions.

This Commitment is not valid without Schedule A and Sections 1 and 2 of Schedule B.

SCHEDULE A

1. Commitment Date: January 10, 2018 at 7:30 A.M.

2. Policy or Policies to be issued: Amount

(A) ALTA Owner's Policy $To Be Determined
ALTA Standard Owner Policy

Proposed Insured:

To Be Determined

(B) ALTA Loan Policy $To Be Determined
To Be Determined

Proposed Insured:

To Be Determined

3. (A) The estate or interest in the land described in this Commitment is:

Fee Simple

(B) Title to said estate or interest at the date hereof is vested in:

Ann R. Angelo, a single woman, as to an undivided one-fourth interest;

Kelly F. Naples and Madelyn R. Naples, as Co-Trustees of the “Kelly F. Naples and Madelyn R. Naples 1971 Trust," dated May 14, 1971, as to an undivided one-half interest and

Raymond Dean Paglia, a single man; Michael Paglia, a single man and Vincent M. Paglia, a single man, all as to an undivided one-fourth interest

4. The land referred to in this Commitment is situated in the unincorporated area of the County of Riverside, State of California, and is described as follows:

PARCEL 1:

THOSE PORTIONS OF SECTIONS 16 AND 17, TOWNSHIP 5 SOUTH, RANGE 16 EAST, SAN BERNARDINO BASE AND MERIDIAN, IN THE COUNTY OF RIVERSIDE, STATE OF CALIFORNIA, DESCRIBED AS FOLLOWS:

BEGINNING AT THE NORTHEAST CORNER OF THE NORTHWEST QUARTER OF THE NORTHWEST QUARTER OF SAID SECTION 16; THENCE SOUTH 0° 42' 52" EAST ALONG THE EAST LINE OF SAID NORTHWEST QUARTER OF THE NORTHWEST QUARTER, A DISTANCE OF 1334.17 FEET TO THE SOUTHEAST CORNER THEREOF; THENCE SOUTH 89° 29' 42" WEST A DISTANCE OF 1325.59 FEET TO THE SOUTHWEST CORNER THEREOF; THENCE SOUTH 89° 47' 10" WEST ALONG THE SOUTH LINE OF THE NORTH HALF OF THE NORTHEAST QUARTER OF SAID SECTION 17, A DISTANCE OF 1447.37 FEET; THENCE NORTH 63° 53' 19” EAST A DISTANCE OF 3069.49 FEET TO THE POINT OF BEGINNING.

PARCEL 2:

AN EASEMENT 60 FEET WIDE FOR PUBLIC ROAD PURPOSES, PUBLIC UTILITY AND PUBLIC SERVICE USES, ADJOINING THE WESTERLY, SOUTHERLY AND SOUTHEASTERLY BOUNDARIES OF THE FOLLOWING DESCRIBED PARCEL LYING SOUTHERLY OF SAID SOUTH LINE OF THE NORTH HALF OF THE NORTHEAST QUARTER OF THE NORTHWEST QUARTER OF SECTION 8, AS SHOWN ON DEED RECORDED OCTOBER 20, 1965, AS INSTRUMENT NO. 119997, RIVERSIDE COUNTY RECORDS, DESCRIBED AS FOLLOWS:

THOSE PORTIONS OF SECTIONS 5, 8, 9, 16 AND 17, TOWNSHIP 5 SOUTH, RANGE 16 EAST, SAN BERNARDINO BASE AND MERIDIAN, IN THE COUNTY OF RIVERSIDE, STATE OF CALIFORNIA, MORE PARTICULARLY DESCRIBED AS FOLLOW:

BEGINNING AT A POINT ON THE EAST LINE OF SAID SECTION 9 FROM WHENCE THE SOUTHEAST CORNER THEREOF BEARS SOUTH 0° 48' 32" EAST A DISTANCE OF 1912.21 FEET; THENCE SOUTH 63° 53' 19" WEST AND PASSING THROUGH A POINT, SAID POINT BEING THE NORTHWEST CORNER OF THE NORTHEAST QUARTER OF THE NORTHWEST QUARTER OF SAID SECTION 16, A DISTANCE OF 7476.86 FEET TO A POINT ON THE SOUTH LINE OF THE NORTH HALF OF THE NORTHEAST QUARTER OF SAID SECTION 17 FROM WHENCE THE SOUTHEAST CORNER OF SAID NORTH HALF BEARS NORTH 89° 47' 10" EAST A DISTANCE OF 1447.37 FEET; THENCE WESTERLY ALONG SAID SOUTH LINE OF THE NORTH HALF AND ALONG THE SOUTH LINE OF THE NORTHEAST QUARTER OF THE NORTHWEST QUARTER OF SAID SECTION 17 TO THE SOUTHWEST CORNER OF SAID NORTHEAST QUARTER; THENCE NORTHERLY ALONG THE WEST LINE OF SAID NORTHEAST QUARTER, AND THE WEST LINE OF THE EAST HALF OF THE WEST HALF OF SAID SECTION 8, AND THE WEST LINE OF THE EAST HALF OF THE SOUTHWEST QUARTER OF SAID SECTION 5, TO THE SOUTHEASTERLY LINE OF THE DESERT CENTER - RICE ROAD AS SHOWN ON MAP ON FILE IN RECORD OF SURVEY BOOK 12, PAGE 81, RECORDS OF RIVERSIDE COUNTY, CALIFORNIA; THENCE NORTHEASTERLY ALONG SAID SOUTHEASTERLY LINE TO A LINE PARALLEL WITH AND 100 FEET EASTERLY, MEASURED AT A RIGHT ANGLE, FROM SAID WEST LINE OF THE EAST HALF OF THE SOUTHWEST QUARTER OF SECTION 5; THENCE SOUTHERLY ALONG SAID PARALLEL LINE AND ALONG A LINE PARALLEL WITH AND 100 FEET EASTERLY OF THE WEST LINE OF THE NORTH HALF OF THE NORTHEAST QUARTER OF THE NORTHWEST QUARTER OF SAID SECTION 8, TO THE SOUTH LINE OF SAID NORTH HALF; THENCE EASTERLY ALONG SAID SOUTH LINE AND ALONG THE SOUTH LINE OF THE NORTH HALF OF THE NORTH HALF OF THE NORTHEAST QUARTER OF SAID SECTION 8, AND ALONG THE SOUTH LINE OF THE NORTH HALF OF THE NORTH HALF OF THE NORTH HALF OF SAID SECTION 9 TO THE EAST LINE THEREOF; THENCE SOUTHERLY ALONG SAID EAST LINE TO THE POINT OF BEGINNING.

PARCEL 3:

A JOINT USE ACCESS EASEMENT OVER THE WESTERLY 100 FEET OF THE NORTH HALF OF THE NORTHEAST QUARTER OF THE NORTHWEST QUARTER OF SECTION 8, TOWNSHIP 5 SOUTH, RANGE 16 EAST, SAN BERNARDINO BASE AND MERIDIAN IN THE COUNTY OF RIVERSIDE, STATE OF CALIFORNIA AND THE WESTERLY 100 FEET OF THE EAST HALF OF THE SOUTHWEST QUARTER OF SECTION 5 SAID TOWNSHIP AND RANGE LYING SOUTHERLY OF THE DESERT CENTER - RICE ROAD, AS SHOWN ON DEED RECORDED OCTOBER 20, 1965, AS INSTRUMENT NO. 119997, RIVERSIDE COUNTY RECORDS.

APN:
811-180-001-6 (Portion)
811-170-002-6 (Portion)

SCHEDULE B

SECTION ONE

REQUIREMENTS

The following requirements must be met:

(A) Pay the agreed amounts for the interest in the land and/or the mortgage to be insured.

(B) Pay us the premiums, fees and charges for the policy.

(C) Documents satisfactory to us creating the interest in the land and/or the mortgage to be insured must be signed, delivered and recorded.

(D) You must tell us in writing the name of anyone not referred to in this Commitment who will get an interest in the land or who will make a loan on the land. We may then make additional requirements or exceptions.

(E) Releases(s) or Reconveyance(s) of Item(s): None

(F) Other: None

(G) You must give us the following information:
1. Any off record leases, surveys, etc.
2. Statement(s) of Identity, all parties.
3. Other:

With respect to the trust referred to in the vesting:

a. A certification pursuant to Section 18100.5 of the California Probate Code in a form satisfactory to the Company.
b. Copies of those excerpts from the original trust documents and amendments thereto which designate the trustee and confer upon the trustee the power to act in the pending transaction.
c. Other requirements which the Company may impose following its review of the material required herein and other information which the Company may require.

8. A deed from the spouse of any married vestee herein be recorded in the public records, or the joinder of the spouse of any married vestee named herein on any conveyance, encumbrance or lease to be executed by the vestee.

The deed should contain the following statement:

"It is the express intent of the grantor, being the spouse of the grantee, to convey all right, title and interest of the grantor, community or otherwise, in and to the herein described property to the grantee as his/her sole and separate property."

The following additional requirements, as indicated by "X", must be met:

[X] (H) Provide information regarding any off-record matters, which may include, but are not limited to: leases, recent works of improvement, or commitment statements in effect under the Environmental Responsibility Acceptance Act, Civil Code Section 850, et seq.

The Company's Owner's Affidavit form (as provided by company) must be completed and submitted prior to close in order to satisfy this requirement. This Commitment will then be subject to such further exceptions and/or requirements as may be deemed necessary.

[] (I) An ALTA/NSPS survey of recent date, which complies with the current minimum standard detail requirements for ALTA/NSPS land title surveys, must be submitted to the Company for review. This Commitment will then be subject to such further exceptions and/or requirements as may be deemed necessary.

[] (J) The following LLC documentation is required:
(i) a copy of the Articles of Organization
(ii) a copy of the Operating Agreement, if applicable
(iii) a Certificate of Good Standing and/or other evidence of current Authority to Conduct Business within the State
(iv) express Company Consent to the current transaction

[] (K) The following partnership documentation is required **:**
(i) a copy of the partnership agreement, including all applicable amendments thereto
(ii) a Certificate of Good Standing and/or other evidence of current Authority to Conduct Business within the State
(iii) express Partnership Consent to the current transaction

[] (L) The following corporation documentation is required:
(i) a copy of the Articles of Incorporation
(ii) a copy of the Bylaws, including all applicable Amendments thereto
(iii) a Certificate of Good Standing and/or other evidence of current Authority to Conduct Business within the State
(iv) express Corporate Resolution consenting to the current transaction

[] (M) Based upon the Company's review of that certain partnership/operating agreement dated **Not disclosed** for the proposed insured herein, the following requirements must be met:

Any further amendments to said agreement must be submitted to the Company, together with an affidavit from one of the general partners or members stating that it is a true copy, that said partnership or limited liability company is in full force and effect, and that there have been no further amendments to the agreement. This Commitment will then be subject to such further requirements as may be deemed necessary.

[] (N) A copy of the complete lease, as referenced in Schedule A, #3 herein, together with any amendments and/or assignments thereto, must be submitted to the Company for review, along with an affidavit executed by the present lessee stating that it is a true copy, that the lease is in full force and effect, and that there have been no further amendments to the lease. This Commitment will then be subject to such further requirements as may be deemed necessary.

[X] (O) Approval from the Company's Underwriting Department must be obtained for issuance of the policy contemplated herein and any endorsements requested thereunder. This Commitment will then be subject to such further requirements as may be required to obtain such approval.

[] (P) Potential additional requirements, if ALTA Extended coverage is contemplated hereunder, and work on the land has commenced prior to close, some or all of the following requirements, and any other requirements which may be deemed necessary, may need to be met:

[] (Q) The Company's "Indemnity Agreement I" must be executed by the appropriate parties.

[] (R) Financial statements from the appropriate parties must be submitted to the Company for review.

[] (S) A copy of the construction contract must be submitted to the Company for review.

[] (T) An inspection of the land must be performed by the Company for verification of the phase of construction.

[] (U) The Company's "Mechanic's Lien Risk Addendum" form must be completed by a Company employee, based upon information furnished by the appropriate parties involved.

SCHEDULE B

SECTION TWO

EXCEPTIONS

Any policy we issue will have the following exceptions unless they are taken care of to our satisfaction. The printed exceptions and exclusions from the coverage of the policy or policies are set forth in Exhibit A attached. Copies of the policy forms should be read. They are available from the office which issued this Commitment.

1. General and special taxes and assessments for the fiscal year 2018-2019, a lien not yet due or payable.

2. The lien of supplemental taxes, if any, assessed pursuant to Chapter 3.5 commencing with Section 75 of the California Revenue and Taxation Code.

3. The effect of a map purporting to show the land and other property, filed May 23, 1989 in Book 83, Page 76 of Record of Surveys.

4. Water rights, claims or title to water, whether or not shown by the public records.

5. Rights of the public in and to that portion of the land lying within any public road, street or highway.

6. Any right, title or interest of the spouse, if any, of any married vestee herein.

7. Rights of parties in possession.

INFORMATIONAL NOTES

ALERT - CA Senate Bill 2 imposes an additional fee of $75 up to $225 at the time of recording on certain transactions effective January 1, 2018. Please contact your First American Title representative for more information on how this may affect your closing.

1. Taxes for proration purposes only for the fiscal year 2017-2018.

First Installment:	$30.29, Paid
Second Installment:	$30.29, Paid
Tax Rate Area:	062-000
APN:	811-170-002-6

Affects a portion of said land.

2. Taxes for proration purposes only for the fiscal year 2017-2018.

First Installment:	$68.27, Paid
Second Installment:	$68.27, Paid
Tax Rate Area:	062-000
APN:	811-180-001-6

Affects a portion of said land.

3. The property covered by this report is vacant land.

4. According to the public records, there has been no conveyance of the land within a period of twenty-four months prior to the date of this report, except as follows:

None

5. This preliminary report/commitment was prepared based upon an application for a policy of title insurance that identified land by street address or assessor's parcel number only. It is the responsibility of the applicant to determine whether the land referred to herein is in fact the land that is to be described in the policy or policies to be issued.

The map attached, if any, may or may not be a survey of the land depicted hereon. First American Title Insurance Company expressly disclaims any liability for loss or damage which may result from reliance on this map except to the extent coverage for such loss or damage is expressly provided by the terms and provisions of the title insurance policy, if any, to which this map is attached.

******To obtain wire instructions for deposit of funds to your escrow file please contact your Escrow Officer.******

CONDITIONS

1. **DEFINITIONS**
(a)"Mortgage" means mortgage, deed of trust or other security instrument.
(b)"Public Records" means title records that give constructive notice of matters affecting the title according to the state law where the land is located.

2. **LATER DEFECTS**
The Exceptions in Schedule B - Section Two may be amended to show any defects, liens or encumbrances that appear for the first time in the public records or are created or attached between the Commitment Date and the date on which all of the Requirements (a) and (c) of Schedule B - Section One are met. We shall have no liability to you because of this amendment.

3. **EXISTING DEFECTS**
If any defects, liens or encumbrances existing at Commitment Date are not shown in Schedule B, we may amend Schedule B to show them. If we do amend Schedule B to show these defects, liens or encumbrances, we shall be liable to you according to Paragraph 4 below unless you knew of this information and did not tell us about it in writing.

4. **LIMITATION OF OUR LIABILITY**
Our only obligation is to issue to you the Policy referred to in this Commitment, when you have met its Requirements. If we have any liability to you for any loss you incur because of an error in this Commitment, our liability will be limited to your actual loss caused by your relying on this Commitment when you acted in good faith to:

comply with the Requirements shown in Schedule B - Section One
or
eliminate with our written consent any Exceptions shown in Schedule B - Section Two.

We shall not be liable for more than the Policy Amount shown in Schedule A of this Commitment and our liability is subject to the terms of the Policy form to be issued to you.

5. **CLAIMS MUST BE BASED ON THIS COMMITMENT**
Any claim, whether or not based on negligence, which you may have against us concerning the title to the land must be based on this commitment and is subject to its terms.

First American Title

Privacy Information

We Are Committed to Safeguarding Customer Information

In order to better serve your needs now and in the future, we may ask you to provide us with certain information. We understand that you may be concerned about what we will do with such information - particularly any personal or financial information. We agree that you have a right to know how we will utilize the personal information you provide to us. Therefore, together with our subsidiaries we have adopted this Privacy Policy to govern the use and handling of your personal information.

Applicability

This Privacy Policy governs our use of the information that you provide to us. It does not govern the manner in which we may use information we have obtained from any other source, such as information obtained from a public record or from another person or entity. First American has also adopted broader guidelines that govern our use of personal information regardless of its source. First American calls these guidelines its Fair Information Values.

Types of Information

Depending upon which of our services you are utilizing, the types of nonpublic personal information that we may collect include:

- Information we receive from you on applications, forms and in other communications to us, whether in writing, in person, by telephone or any other means;
- Information about your transactions with us, our affiliated companies, or others; and
- Information we receive from a consumer reporting agency.

Use of Information

We request information from you for our own legitimate business purposes and not for the benefit of any nonaffiliated party. Therefore, we will not release your information to nonaffiliated parties except: (1) as necessary for us to provide the product or service you have requested of us; or (2) as permitted by law. We may, however, store such information indefinitely, including the period after which any customer relationship has ceased. Such information may be used for any internal purpose, such as quality control efforts or customer analysis. We may also provide all of the types of nonpublic personal information listed above to one or more of our affiliated companies. Such affiliated companies include financial service providers, such as title insurers, property and casualty insurers, and trust and investment advisory companies, or companies involved in real estate services, such as appraisal companies, home warranty companies and escrow companies. Furthermore, we may also provide all the information we collect, as described above, to companies that perform marketing services on our behalf, on behalf of our affiliated companies or to other financial institutions with whom we or our affiliated companies have joint marketing agreements.

Former Customers

Even if you are no longer our customer, our Privacy Policy will continue to apply to you.

Confidentiality and Security

We will use our best efforts to ensure that no unauthorized parties have access to any of your information. We restrict access to nonpublic personal information about you to those individuals and entities who need to know that information to provide products or services to you. We will use our best efforts to train and oversee our employees and agents to ensure that your information will be handled responsibly and in accordance with this Privacy Policy and First American's Fair Information Values. We currently maintain physical, electronic, and procedural safeguards that comply with federal regulations to guard your nonpublic personal information.

Information Obtained Through Our Web Site

First American Financial Corporation is sensitive to privacy issues on the Internet. We believe it is important you know how we treat the information about you we receive on the Internet.

In general, you can visit First American or its affiliates' Web sites on the World Wide Web without telling us who you are or revealing any information about yourself. Our Web servers collect the domain names, not the e-mail addresses, of visitors. This information is aggregated to measure the number of visits, average time spent on the site, pages viewed and similar information. First American uses this information to measure the use of our site and to develop ideas to improve the content of our site.

There are times, however, when we may need information from you, such as your name and email address. When information is needed, we will use our best efforts to let you know at the time of collection how we will use the personal information. Usually, the personal information we collect is used only by us to respond to your inquiry, process an order or allow you to access specific account/profile information. If you choose to share any personal information with us, we will only use it in accordance with the policies outlined above.

Business Relationships

First American Financial Corporation's site and its affiliates' sites may contain links to other Web sites. While we try to link only to sites that share our high standards and respect for privacy, we are not responsible for the content or the privacy practices employed by other sites.

Cookies

Some of First American's Web sites may make use of "cookie" technology to measure site activity and to customize information to your personal tastes. A cookie is an element of data that a Web site can send to your browser, which may then store the cookie on your hard drive.

FirstAm.com uses stored cookies. The goal of this technology is to better serve you when visiting our site, save you time when you are here and to provide you with a more meaningful and productive Web site experience.

Fair Information Values

Fairness We consider consumer expectations about their privacy in all our businesses. We only offer products and services that assure a favorable balance between consumer benefits and consumer privacy.

Public Record We believe that an open public record creates significant value for society, enhances consumer choice and creates consumer opportunity. We actively support an open public record and emphasize its importance and contribution to our economy.

Use We believe we should behave responsibly when we use information about a consumer in our business. We will obey the laws governing the collection, use and dissemination of data.

Accuracy We will take reasonable steps to help assure the accuracy of the data we collect, use and disseminate. Where possible, we will take reasonable steps to correct inaccurate information. When, as with the public record, we cannot correct inaccurate information, we will take all reasonable steps to assist consumers in identifying the source of the erroneous data so that the consumer can secure the required corrections.

Education We endeavor to educate the users of our products and services, our employees and others in our industry about the importance of consumer privacy. We will instruct our employees on our fair information values and on the responsible collection and use of data. We will encourage others in our industry to collect and use information in a responsible manner.

Security We will maintain appropriate facilities and systems to protect against unauthorized access to and corruption of the data we maintain.

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EXHIBIT A
LIST OF PRINTED EXCEPTIONS AND EXCLUSIONS (BY POLICY TYPE)

1. CALIFORNIA LAND TITLE ASSOCIATION STANDARD COVERAGE POLICY - 1990
SCHEDULE B

EXCEPTIONS FROM COVERAGE

This policy does not insure against loss or damage (and the Company will not pay costs, attorneys' fees or expenses) which arise by reason of:

1. Taxes or assessments which are not shown as existing liens by the records of any taxing authority that levies taxes or assessments on real property or by the public records. Proceedings by a public agency which may result in taxes or assessments, or notice of such proceedings, whether or not shown by the records of such agency or by the public records.
2. Any facts, rights, interests, or claims which are not shown by the public records but which could be ascertained by an inspection of the land or which may be asserted by persons in possession thereof.
3. Easements, liens or encumbrances, or claims thereof, which are not shown by the public records.
4. Discrepancies, conflicts in boundary lines, shortage in area, encroachments, or any other facts which a correct survey would disclose, and which are not shown by the public records.
5. (a) Unpatented mining claims; (b) reservations or exceptions in patents or in Acts authorizing the issuance thereof; (c) water rights, claims or title to water, whether or not the matters excepted under (a), (b), or (c) are shown by the public records.

EXCLUSIONS FROM COVERAGE

The following matters are expressly excluded from the coverage of this policy and the Company will not pay loss or damage, costs, attorneys' fees or expenses which arise by reason of:

1. (a) Any law, ordinance or governmental regulation (including but not limited to building and zoning laws, ordinances, or regulations) restricting, regulating, prohibiting or relating to (i) the occupancy, use, or enjoyment of the land; (ii) the character, dimensions or location of any improvement now or hereafter erected on the land; (iii) a separation in ownership or a change in the dimensions or area of the land or any parcel of which the land is or was a part; or (iv) environmental protection, or the effect of any violation of these laws, ordinances or governmental regulations, except to the extent that a notice of the enforcement thereof or a notice of a defect, lien or encumbrance resulting from a violation or alleged violation affecting the land has been recorded in the public records at Date of Policy.
   (b) Any governmental police power not excluded by (a) above, except to the extent that a notice of the exercise thereof or a notice of a defect, lien or encumbrance resulting from a violation or alleged violation affecting the land has been recorded in the public records at Date of Policy.
2. Rights of eminent domain unless notice of the exercise thereof has been recorded in the public records at Date of Policy, but not excluding from coverage any taking which has occurred prior to Date of Policy which would be binding on the rights of a purchaser for value without knowledge.
3. Defects, liens, encumbrances, adverse claims or other matters:
   (a) whether or not recorded in the public records at Date of Policy, but created, suffered, assumed or agreed to by the insured claimant;
   (b) not known to the Company, not recorded in the public records at Date of Policy, but known to the insured claimant and not disclosed in writing to the Company by the insured claimant prior to the date the insured claimant became an insured under this policy;
   (c) resulting in no loss or damage to the insured claimant;
   (d) attaching or created subsequent to Date of Policy; or
   (e) resulting in loss or damage which would not have been sustained if the insured claimant had paid value for the insured mortgage or for the estate or interest insured by this policy.
4. Unenforceability of the lien of the insured mortgage because of the inability or failure of the insured at Date of Policy, or the inability or failure of any subsequent owner of the indebtedness, to comply with applicable "doing business" laws of the state in which the land is situated.
5. Invalidity or unenforceability of the lien of the insured mortgage, or claim thereof, which arises out of the transaction evidenced by the insured mortgage and is based upon usury or any consumer credit protection or truth in lending law.
6. Any claim, which arises out of the transaction vesting in the insured the estate or interest insured by their policy or the transaction creating the interest of the insured lender, by reason of the operation of federal bankruptcy, state insolvency or similar creditors' rights laws.

2. AMERICAN LAND TITLE ASSOCIATION OWNER'S POLICY FORM B - 1970
SCHEDULE OF EXCLUSIONS FROM COVERAGE

1. Any law, ordinance or governmental regulation (including but not limited to building and zoning ordinances) restricting or regulating or prohibiting the occupancy, use or enjoyment of the land, or regulating the character, dimensions or location of any improvement now or hereafter erected on the land, or prohibiting a separation in ownership or a reduction in the dimensions of area of the land, or the effect of any violation of any such law, ordinance or governmental regulation.
2. Rights of eminent domain or governmental rights of police power unless notice of the exercise of such rights appears in the public records at Date of Policy.
3. Defects, liens, encumbrances, adverse claims, or other matters (a) created, suffered, assumed or agreed to by the insured claimant; (b) not known to the Company and not shown by the public records but known to the insured claimant either at Date of Policy or at the date such claimant acquired an estate or interest insured by this policy and not disclosed in writing by the insured claimant to the Company prior to the date such insured claimant became an insured hereunder; (c) resulting in no loss or damage to the insured claimant; (d) attaching or created subsequent to Date of Policy; or (e) resulting in loss or damage which would not have been sustained if the insured claimant had paid value for the estate or interest insured by this policy.

3. AMERICAN LAND TITLE ASSOCIATION OWNER'S POLICY FORM B - 1970
WITH REGIONAL EXCEPTIONS

When the American Land Title Association policy is used as a Standard Coverage Policy and not as an Extended Coverage Policy the exclusions set forth in paragraph 2 above are used and the following exceptions to coverage appear in the policy.

SCHEDULE B

This policy does not insure against loss or damage by reason of the matters shown in parts one and two following:
Part One

1. Taxes or assessments which are not shown as existing liens by the records of any taxing authority that levies taxes or assessments on real property or by the public records.
2. Any facts, rights, interests, or claims which are not shown by the public records but which could be ascertained by an inspection of said land or by making inquiry of persons in possession thereof.
3. Easements, claims of easement or encumbrances which are not shown by the public records.
4. Discrepancies, conflicts in boundary lines, shortage in area, encroachments, or any other facts which a correct survey would disclose, and which are not shown by public records.
5. Unpatented mining claims; reservations or exceptions in patents or in Acts authorizing the issuance thereof; water rights, claims or title to water.
6. Any lien, or right to a lien, for services, labor or material heretofore or hereafter furnished, imposed by law and not shown by the public records.

4. AMERICAN LAND TITLE ASSOCIATION LOAN POLICY - 1970
WITH A.L.T.A. ENDORSEMENT FORM 1 COVERAGE
SCHEDULE OF EXCLUSIONS FROM COVERAGE

1. Any law, ordinance or governmental regulation (including but not limited to building and zoning ordinances) restricting or regulating or prohibiting the occupancy, use or enjoyment of the land, or regulating the character, dimensions or location of any improvement now or hereafter erected on the land, or prohibiting a separation in ownership or a reduction in the dimensions or area of the land, or the effect of any violation of any such law ordinance or governmental regulation.
2. Rights of eminent domain or governmental rights of police power unless notice of the exercise of such rights appears in the public records at Date of Policy.
3. Defects, liens, encumbrances, adverse claims, or other matters (a) created, suffered, assumed or agreed to by the insured claimant, (b) not known to the Company and not shown by the public records but known to the insured claimant either at Date of Policy or at the date such claimant acquired an estate or interest insured by this policy or acquired the insured mortgage and not disclosed in writing by the insured claimant to the Company prior to the date such insured claimant became an insured hereunder, (c) resulting in no loss or damage to the insured claimant; (d) attaching or created subsequent to Date of Policy (except to the extent insurance is afforded herein as to any statutory lien for labor or material or to the extent insurance is afforded herein as to assessments for street improvements under construction or completed at Date of Policy).
4. Unenforceability of the lien of the insured mortgage because of failure of the insured at Date of Policy or of any subsequent owner of the indebtedness to comply with applicable "doing business" laws of the state in which the land is situated.

5. AMERICAN LAND TITLE ASSOCIATION LOAN POLICY - 1970
WITH REGIONAL EXCEPTIONS

When the American Land Title Association Lenders Policy is used as a Standard Coverage Policy and not as an Extended Coverage Policy, the exclusions set forth in paragraph 4 above are used and the following exceptions to coverage appear in the policy.

SCHEDULE B

This policy does not insure against loss or damage by reason of the matters shown in parts one and two following:
Part One

1. Taxes or assessments which are not shown as existing liens by the records of any taxing authority that levies taxes or assessments on real property or by the public records.
2. Any facts, rights, interests, or claims which are not shown by the public records but which could be ascertained by an inspection of said land or by making inquiry of persons in possession thereof.
3. Easements, claims of easement or encumbrances which are not shown by the public records.
4. Discrepancies, conflicts in boundary lines, shortage in area, encroachments, or any other facts which a correct survey would disclose, and which are not shown by public records.
5. Unpatented mining claims; reservations or exceptions in patents or in Acts authorizing the issuance thereof; water rights, claims or title to water.
6. Any lien, or right to a lien, for services, labor or material theretofore or hereafter furnished, imposed by law and not shown by the public records.

6. AMERICAN LAND TITLE ASSOCIATION LOAN POLICY - 1992
WITH A.L.T.A. ENDORSEMENT FORM 1 COVERAGE
EXCLUSIONS FROM COVERAGE

The following matters are expressly excluded from the coverage of this policy and the Company will not pay loss or damage, costs, attorneys' fees or expenses which arise by reason of:

1. (a) Any law, ordinance or governmental regulation (including but not limited to building and zoning laws, ordinances, or regulations) restricting, regulating, prohibiting or relating to (i) the occupancy, use, or enjoyment of the land; (ii) the character, dimensions or location of any improvement now or hereafter erected on the land; (iii) a separation in ownership or a change in the dimensions or area of the land or any parcel of which the land is or was a part; or (iv) environmental protection, or the effect of any violation of these laws, ordinances or governmental regulations, except to the extent that a notice of the enforcement thereof or a notice of a defect, lien or encumbrance resulting from a violation or alleged violation affecting the land has been recorded in the public records at Date of Policy;
(b) Any governmental police power not excluded by (a) above, except to the extent that a notice of the exercise thereof or a notice of a defect, lien or encumbrance resulting from a violation or alleged violation affecting the land has been recorded in the public records at Date of Policy.

2. Rights of eminent domain unless notice of the exercise thereof has been recorded in the public records at Date of Policy, but not excluding from coverage any taking which has occurred prior to Date of Policy which would be binding on the rights of a purchaser for value without knowledge.
3. Defects, liens, encumbrances, adverse claims, or other matters:
(a) whether or not recorded in the public records at Date of Policy, but created, suffered, assumed or agreed to by the insured claimant;
(b) not known to the Company, not recorded in the public records at Date of Policy, but known to the insured claimant and not disclosed in writing to the Company by the insured claimant prior to the date the insured claimant became an insured under this policy;
(c) resulting in no loss or damage to the insured claimant;
(d) attaching or created subsequent to Date of Policy (except to the extent that this policy insures the priority of the lien of the insured mortgage over any statutory lien for services, labor or material or the extent insurance is afforded herein as to assessments for street improvements under construction or completed at date of policy); or
(e) resulting in loss or damage which would not have been sustained if the insured claimant had paid value for the insured mortgage.
4. Unenforceability of the lien of the insured mortgage because of the inability or failure of the insured at Date of Policy, or the inability or failure of any subsequent owner of the indebtedness, to comply with the applicable "doing business" laws of the state in which the land is situated.
5. Invalidity or unenforceability of the lien of the insured mortgage, or claim thereof, which arises out of the transaction evidenced by the insured mortgage and is based upon usury or any consumer credit protection or truth in lending law.
6. Any statutory lien for services, labor or materials (or the claim of priority of any statutory lien for services, labor or materials over the lien of the insured mortgage) arising from an improvement or work related to the land which is contracted for and commenced subsequent to Date of Policy and is not financed in whole or in part by proceeds of the indebtedness secured by the insured mortgage which at Date of Policy the insured has advanced or is obligated to advance.
7. Any claim, which arises out of the transaction creating the interest of the mortgagee insured by this policy, by reason of the operation of federal bankruptcy, state insolvency, or similar creditors' rights laws, that is based on:
(i) the transaction creating the interest of the insured mortgagee being deemed a fraudulent conveyance or fraudulent transfer; or
(ii) the subordination of the interest of the insured mortgagee as a result of the application of the doctrine of equitable subordination; or
(iii) the transaction creating the interest of the insured mortgagee being deemed a preferential transfer except where the preferential transfer results from the failure:
(a) to timely record the instrument of transfer; or
(b) of such recordation to impart notice to a purchaser for value or a judgment or lien creditor.

7. AMERICAN LAND TITLE ASSOCIATION LOAN POLICY - 1992
WITH REGIONAL EXCEPTIONS

When the American Land Title Association policy is used as a Standard Coverage Policy and not as an Extended Coverage Policy the exclusions set forth in paragraph 6 above are used and the following exceptions to coverage appear in the policy.

SCHEDULE B

This policy does not insure against loss or damage (and the Company will not pay costs, attorneys' fees or expenses) which arise by reason of:
1. Taxes or assessments which are not shown as existing liens by the records of any taxing authority that levies taxes or assessments on real property or by the public records.
2. Any facts, rights, interests, or claims which are not shown by the public records but which could be ascertained by an inspection of said land or by making inquiry of persons in possession thereof.
3. Easements, claims of easement or encumbrances which are not shown by the public records.
4. Discrepancies, conflicts in boundary lines, shortage in area, encroachments, or any other facts which a correct survey would disclose, and which are not shown by public records.
5. Unpatented mining claims; reservations or exceptions in patents or in Acts authorizing the issuance thereof; water rights, claims or title to water.
6. Any lien, or right to a lien, for services, labor or material theretofore or hereafter furnished, imposed by law and not shown by the public records.

8. AMERICAN LAND TITLE ASSOCIATION OWNER'S POLICY - 1992
EXCLUSIONS FROM COVERAGE

The following matters are expressly excluded from the coverage of this policy and the Company will not pay loss or damage, costs, attorneys' fees or expenses which arise by reason of:
1. (a) Any law, ordinance or governmental regulation (including but not limited to building and zoning laws, ordinances, or regulations) restricting, regulating, prohibiting or relating to (i) the occupancy, use, or enjoyment of the land; (ii) the character, dimensions or location of any improvement now or hereafter erected on the land; (iii) a separation in ownership or a change in the dimensions or area of the land or any parcel of which the land is or was a part; or (iv) environmental protection, or the effect of any violation of these laws, ordinances or governmental regulations, except to the extent that a notice of the enforcement thereof or a notice of a defect, lien or encumbrance resulting from a violation or alleged violation affecting the land has been recorded in the public records at Date of Policy.
(b) Any governmental police power not excluded by (a) above, except to the extent that a notice of the exercise thereof or a notice of a defect, lien or encumbrance resulting from a violation or alleged violation affecting the land has been recorded in the public records at Date of Policy.
2. Rights of eminent domain unless notice of the exercise thereof has been recorded in the public records at Date of Policy, but not excluding from coverage any taking which has occurred prior to Date of Policy which would be binding on the rights of a purchaser for value without knowledge.
3. Defects, liens, encumbrances, adverse claims, or other matters:
(a) created, suffered, assumed or agreed to by the insured claimant;
(b) not known to the Company, not recorded in the public records at Date of Policy, but known to the insured claimant and not disclosed in writing to the Company by the insured claimant prior to the date the insured claimant became an insured under this policy;
(c) resulting in no loss or damage to the insured claimant;
(d) attaching or created subsequent to Date of Policy; or

(e) resulting in loss or damage which would not have been sustained if the insured claimant had paid value for the estate or interest insured by this policy.

4. Any claim, which arises out of the transaction vesting in the insured the estate or interest insured by this policy, by reason of the operation of federal bankruptcy, state insolvency, or similar creditors' rights laws, that is based on:
(i) the transaction creating the estate or interest insured by this policy being deemed a fraudulent conveyance or fraudulent transfer; or
(ii) the transaction creating the estate or interest insured by this policy being deemed a preferential transfer except where the preferential transfer results from the failure:
(a) to timely record the instrument of transfer; or
(b) of such recordation to impart notice to a purchaser for value or a judgment or lien creditor.

9. AMERICAN LAND TITLE ASSOCIATION OWNER'S POLICY - 1992 WITH REGIONAL EXCEPTIONS

When the American Land Title Association policy is used as a Standard Coverage Policy and not as an Extended Coverage Policy the exclusions set forth in paragraph 8 above are used and the following exceptions to coverage appear in the policy.

SCHEDULE B

This policy does not insure against loss or damage (and the Company will not pay costs, attorneys' fees or expenses) which arise by reason of:
Part One:

1. Taxes or assessments which are not shown as existing liens by the records of any taxing authority that levies taxes or assessments on real property or by the public records.
2. Any facts, rights, interests, or claims which are not shown by the public records but which could be ascertained by an inspection of said land or by making inquiry of persons in possession thereof.
3. Easements, claims of easement or encumbrances which are not shown by the public records.
4. Discrepancies, conflicts in boundary lines, shortage in area, encroachments, or any other facts which a correct survey would disclose, and which are not shown by public records.
5. Unpatented mining claims; reservations or exceptions in patents or in Acts authorizing the issuance thereof; water rights, claims or title to water.
6. Any lien, or right to a lien, for services, labor or material theretofore or hereafter furnished, imposed by law and not shown by the public records.

ALTA RESIDENTIAL TITLE INSURANCE POLICY (6-1-87)

EXCLUSIONS

In addition to the Exceptions in Schedule B, you are not insured against loss, costs, attorneys' fees, and expenses resulting from:

1. Governmental police power, and the existence or violation of any law or government regulation. This includes building and zoning ordinances and also laws and regulations concerning:
   (a) and use
   (b) improvements on the land
   (c) and division
   (d) environmental protection

   This exclusion does not apply to violations or the enforcement of these matters which appear in the public records at Policy Date.
   This exclusion does not limit the zoning coverage described in Items 12 and 13 of Covered Title Risks.
2. The right to take the land by condemning it, unless:
   (a) a notice of exercising the right appears in the public records on the Policy Date
   (b) the taking happened prior to the Policy Date and is binding on you if you bought the land without knowing of the taking
3. Title Risks:
   (a) that are created, allowed, or agreed to by you
   (b) that are known to you, but not to us, on the Policy Date -- unless they appeared in the public records
   (c) that result in no loss to you
   (d) that first affect your title after the Policy Date -- this does not limit the labor and material lien coverage in Item 8 of Covered Title Risks
4. Failure to pay value for your title.
5. Lack of a right:
   (a) to any land outside the area specifically described and referred to in Item 3 of Schedule A OR
   (b) in streets, alleys, or waterways that touch your land
   This exclusion does not limit the access coverage in Item 5 of Covered Title Risks.

11. EAGLE PROTECTION OWNER'S POLICY

CLTA HOMEOWNER'S POLICY OF TITLE INSURANCE - 1998
ALTA HOMEOWNER'S POLICY OF TITLE INSURANCE - 1998

Covered Risks 14 (Subdivision Law Violation). 15 (Building Permit). 16 (Zoning) and 18 (Encroachment of boundary walls or fences) are subject to Deductible Amounts and Maximum Dollar Limits of Liability

EXCLUSIONS

In addition to the Exceptions in Schedule B, you are not insured against loss, costs, attorneys' fees, and expenses resulting from:

1. Governmental police power, and the existence or violation of any law or government regulation. This includes ordinances, laws and regulations concerning:
   a. building
   b. zoning
   c. land use
   d. improvements on the land
   e. land division
   f. environmental protection

   This exclusion does not apply to violations or the enforcement of these matters if notice of the violation or enforcement appears in the Public Records at the Policy Date.
   This exclusion does not limit the coverage described in Covered Risk 14, 15, 16, 17 or 24.
2. The failure of Your existing structures, or any part of them, to be constructed in accordance with applicable building codes. This Exclusion does not apply to violations of building codes if notice of the violation appears in the Public Records at the Policy Date.
3. The right to take the Land by condemning it, unless:
   a. a notice of exercising the right appears in the Public Records at the Policy Date; or
   b. the taking happened before the Policy Date and is binding on You if You bought the Land without Knowing of the taking.
4. Risks:
   a. that are created, allowed, or agreed to by You, whether or not they appear in the Public Records;
   b. that are Known to You at the Policy Date, but not to Us, unless they appear in the Public Records at the Policy Date;
   c. that result in no loss to You; or
   d. that first occur after the Policy Date - this does not limit the coverage described in Covered Risk 7, 8.d, 22, 23, 24 or 25.
5. Failure to pay value for Your Title.
6. Lack of a right:
   a. to any Land outside the area specifically described and referred to in paragraph 3 of Schedule A; and
   b. in streets, alleys, or waterways that touch the Land.
   This exclusion does not limit the coverage described in Covered Risk 11 or 18.

12. THIRD GENERATION EAGLE LOAN POLICY AMERICAN LAND TITLE ASSOCIATION EXPANDED COVERAGE RESIDENTIAL LOAN POLICY (1/01/08)

EXCLUSIONS FROM COVERAGE

The following matters are expressly excluded from the coverage of this policy and the Company will not pay loss or damage, costs, attorneys' fees or expenses which arise by reason of:

1. (a) Any law, ordinance, permit, or governmental regulation (including those relating to building and zoning) restricting, regulating, prohibiting, or relating to (i) the occupancy, use, or enjoyment of the Land; (ii) the character, dimensions, or location of any improvement erected on the Land; (iii) the subdivision of land; or(iv) environmental protection; or the effect of any violation of these laws, ordinances, or governmental regulations. This Exclusion 1(a) does not modify or limit the coverage provided under Covered Risk 5, 6, 13(c), 13(d), 14 or 16.
   (b)Any governmental police power. This Exclusion 1(b) does not modify or limit the coverage provided under Covered Risk 5, 6, 13(c), 13(d), 14 or 16.
2. Rights of eminent domain. This Exclusion does not modify or limit the coverage provided under Covered Risk 7 or 8.
3. Defects, liens, encumbrances, adverse claims, or other matters
   (a) created, suffered, assumed or agreed to by the Insured Claimant;
   (b) not Known to the Company, not recorded in the Public Records at Date of Policy, but Known to the Insured Claimant and not disclosed in writing to the Company by the Insured Claimant prior to the date the Insured Claimant became an Insured under this policy;
   (c) resulting in no loss or damage to the Insured Claimant;
   (d) attaching or created subsequent to Date of Policy (however, this does not modify or limit the coverage provided under Covered Risk 11, 16, 17, 18, 19, 20, 21, 22, 23, 24, 27 or 28); or
   (e) resulting in loss or damage which would not have been sustained if the Insured Claimant had paid value for the Insured Mortgage.
4. Unenforceability of the lien of the Insured Mortgage because of the inability or failure of an Insured to comply with applicable doing business laws of the state where the Land is situated.
5. Invalidity or unenforceability in whole or in part of the lien of the Insured Mortgage that arises out of the transaction evidenced by the Insured Mortgage and is based upon usury, or any consumer credit protection or truth-in-lending law. This Exclusion does not modify or limit the coverage provided in Covered Risk 26.
6. Any claim of invalidity, unenforceability or lack of priority of the lien of the Insured Mortgage as to Advances or modifications made after the Insured has Knowledge that the vestee shown in Schedule A is no longer the owner of the estate or interest covered by this policy. This Exclusion does not modify or limit the coverage provided in Covered Risk 11.
7. Any lien on the Title for real estate taxes or assessments imposed by governmental authority and created or attaching subsequent to Date of Policy. This Exclusion does not modify or limit the coverage provided in Covered Risk 11(b) or 25.
8. The failure of the residential structure, or any portion of it, to have been constructed before, on or after Date of Policy in accordance with applicable building codes. This Exclusion does not modify or limit the coverage provided in Covered Risk 5 or 6.

13. AMERICAN LAND TITLE ASSOCIATION LOAN POLICY - 2006
EXCLUSIONS FROM COVERAGE

The following matters are expressly excluded from the coverage of this policy, and the Company will not pay loss or damage, costs, attorneys' fees, or

expenses that arise by reason of:

1. (a) Any law, ordinance, permit, or governmental regulation (including those relating to building and zoning) restricting, regulating, prohibiting, or relating to

   (i) the occupancy, use, or enjoyment of the Land;

   (ii) the character, dimensions, or location of any improvement erected on the Land;

   (iii) the subdivision of land; or

   (iv) environmental protection;

   or the effect of any violation of these laws, ordinances, or governmental regulations. This Exclusion 1(a) does not modify or limit the coverage provided under Covered Risk 5.

   (b) Any governmental police power. This Exclusion 1(b) does not modify or limit the coverage provided under Covered Risk 6.

2. Rights of eminent domain. This Exclusion does not modify or limit the coverage provided under Covered Risk 7 or 8.

3. Defects, liens, encumbrances, adverse claims, or other matters

   (a) created, suffered, assumed, or agreed to by the Insured Claimant;

   (b) not Known to the Company, not recorded in the Public Records at Date of Policy, but Known to the Insured Claimant and not disclosed in writing to the Company by the Insured Claimant prior to the date the Insured Claimant became an Insured under this policy;

   (c) resulting in no loss or damage to the Insured Claimant;

   (d) attaching or created subsequent to Date of Policy (however, this does not modify or limit the coverage provided under Covered Risk 11, 13, or 14); or

   (e) resulting in loss or damage that would not have been sustained if the Insured Claimant had paid value for the Insured Mortgage.

4. Unenforceability of the lien of the Insured Mortgage because of the inability or failure of an Insured to comply with applicable doing-business laws of the state where the Land is situated.

5. Invalidity or unenforceability in whole or in part of the lien of the Insured Mortgage that arises out of the transaction evidenced by the Insured Mortgage and is based upon usury or any consumer credit protection or truth-in-lending law.

6. Any claim, by reason of the operation of federal bankruptcy, state insolvency, or similar creditors' rights laws, that the transaction creating the lien of the Insured Mortgage, is

   (a) a fraudulent conveyance or fraudulent transfer, or

   (b) a preferential transfer for any reason not stated in Covered Risk 13(b) of this policy.

7. Any lien on the Title for real estate taxes or assessments imposed by governmental authority and created or attaching between Date of Policy and the date of recording of the Insured Mortgage in the Public Records. This Exclusion does not modify or limit the coverage provided under Covered Risk 11(b).

14. AMERICAN LAND TITLE ASSOCIATION LOAN POLICY - 2006 WITH REGIONAL EXCEPTIONS

When the American Land Title Association policy is used as a Standard Coverage Policy and not as an Extended Coverage Policy the exclusions set forth in paragraph 13 above are used and the following exceptions to coverage appear in the policy.

SCHEDULE B

This policy does not insure against loss or damage (and the Company will not pay costs, attorneys' fees or expenses) which arise by reason of:

1. (a) Taxes or assessments that are not shown as existing liens by the records of any taxing authority that levies taxes or assessments on real property or by the Public Records; (b) proceedings by a public agency that may result in taxes or assessments, or notices of such proceedings, whether or not shown by the records of such agency or by the Public Records.

2. Any facts, rights, interests, or claims that are not shown by the Public Records but that could be ascertained by an inspection of the Land or that may be asserted by persons in possession of the Land.

3. Easements, liens or encumbrances, or claims thereof, not shown by the Public Records.

4. Any encroachment, encumbrance, violation, variation, or adverse circumstance affecting the Title that would be disclosed by an accurate and complete land survey of the Land and not shown by the Public Records.

5. (a) Unpatented mining claims; (b) reservations or exceptions in patents or in Acts authorizing the issuance thereof; (c) water rights, claims or title to water, whether or not the matters excepted under (a), (b), or (c) are shown by the Public Records.

15. AMERICAN LAND TITLE ASSOCIATION OWNER'S POLICY - 2006 EXCLUSIONS FROM COVERAGE

The following matters are expressly excluded from the coverage of this policy and the Company will not pay loss or damage, costs, attorneys' fees or expenses which arise by reason of:

1. (a) Any law, ordinance, permit, or governmental regulation (including those relating to building and zoning) restricting, regulating, prohibiting, or relating to

   (i) the occupancy, use, or enjoyment of the Land;

   (ii) the character, dimensions, or location of any improvement erected on the Land;

   (iii) the subdivision of land; or

   (iv) environmental protection;or the effect of any violation of these laws, ordinances, or governmental regulations. This Exclusion 1(a) does not modify or limit the coverage provided under Covered Risk 5.

(b) Any governmental police power. This Exclusion 1(b) does not modify or limit the coverage provided under Covered Risk 6.

2. Rights of eminent domain. This Exclusion does not modify or limit the coverage provided under Covered Risk 7 or 8.

3. Defects, liens, encumbrances, adverse claims, or other matters

(a) created, suffered, assumed, or agreed to by the Insured Claimant;

(b) not Known to the Company, not recorded in the Public Records at Date of Policy, but Known to the Insured Claimant and not disclosed in writing to the Company by the Insured Claimant prior to the date the Insured Claimant became an Insured under this policy;

(c) resulting in no loss or damage to the Insured Claimant;

(d) attaching or created subsequent to Date of Policy (however, this does not modify or limit the coverage provided under Covered Risks 9 and 10); or

(e) resulting in loss or damage that would not have been sustained if the Insured Claimant had paid value for the Title.

4. Any claim, by reason of the operation of federal bankruptcy, state insolvency, or similar creditors rights laws, that the transaction vesting the Title as shown in Schedule A, is

(a) a fraudulent conveyance or fraudulent transfer; or

(b) a preferential transfer for any reason not stated in Covered Risk 9 of this policy.

5. Any lien on the Title for real estate taxes or assessments imposed by governmental authority and created or attaching between Date of Policy and the date of recording of the deed or other instrument of transfer in the Public Records that vests Title as shown in Schedule A.

16. AMERICAN LAND TITLE ASSOCIATION OWNER'S POLICY - 2006 WITH REGIONAL EXCEPTIONS

When the American Land Title Association policy is used as a Standard Coverage Policy and not as an Extended Coverage Policy the exclusions set forth in paragraph 15 above are used and the following exceptions to coverage appear in the policy.

SCHEDULE B

This policy does not insure against loss or damage (and the Company will not pay costs, attorneys' fees or expenses) which arise by reason of:

1. (a) Taxes or assessments that are not shown as existing liens by the records of any taxing authority that levies taxes or assessments on real property or by the Public Records; (b) proceedings by a public agency that may result in taxes or assessments, or notices of such proceedings, whether or not shown by the records of such agency or by the Public Records.
2. Any facts, rights, interests, or claims that are not shown by the Public Records but that could be ascertained by an inspection of the Land or that may be asserted by persons in possession of the Land.
3. Easements, liens or encumbrances, or claims thereof, not shown by the Public Records.
4. Any encroachment, encumbrance, violation, variation, or adverse circumstance affecting the Title that would be disclosed by an accurate and complete land survey of the Land and not shown by the Public Records.
5. (a) Unpatented mining claims; (b) reservations or exceptions in patents or in Acts authorizing the issuance thereof; (c) water rights, claims or title to water, whether or not the matters excepted under (a), (b), or (c) are shown by the Public Records.

First American Title Insurance Company

National Commercial Services

666 Third Avenue, 5th Floor
New York, NY 10017

February 08, 2018

John Warren
Intersect Power
Embarcadero Center , 7th Floor
San Francisco, CA 94111
Phone: (415)297-4169

Customer Reference: Caspers

Order Number: 3020-890939

Owner: David Caspers

Property: APN: 811-180-024/Vacant Land, , CA

Attached please find the following item(s):

Commitment

Thank You for your confidence and support. We at First American Title Insurance Company maintain the fundamental principle:

Customer First!

First American Title Insurance Company

INFORMATION

The Title Insurance Commitment is a legal contract between you and the company. It is issued to show the basis on which we will issue a Title Insurance Policy to you. The Policy will insure you against certain risks to the land title, subject to the limitations shown in the policy.

The Company will give you a sample of the Policy form, if you ask.

The Commitment is based on the land title as of the Commitment Date. Any changes in the land title or the transaction may affect the Commitment and the Policy.

The Commitment is subject to its Requirements, Exceptions and Conditions.

This information is not part of the title insurance commitment.

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YOU SHOULD READ THE COMMITMENT VERY CAREFULLY.
If you have any questions about the Commitment,
please contact the issuing office.

COMMITMENT FOR TITLE INSURANCE

Issued by

First American Title Insurance Company

Agreement to Issue Policy

We agree to issue a policy to you according to the terms of this Commitment.

When we show the policy amount and your name as the proposed insured in Schedule A, this Commitment becomes effective as of the Commitment Date shown in Schedule A.

If the Requirements shown in this Commitment have not been met within six months after the Commitment Date, our obligation under this Commitment will end. Also, our obligation under this Commitment will end when the Policy is issued and then our obligation to you will be under the Policy.

Our obligation under this Commitment is limited by the following:

The Provisions in Schedule A.

The Requirements in Schedule B-1.

The Exceptions in Schedule B-2.

The Conditions.

This Commitment is not valid without Schedule A and Sections 1 and 2 of Schedule B.

SCHEDULE A

1. Commitment Date: January 30, 2018 at 7:30 A.M.

2. Policy or Policies to be issued: Amount

(A) ALTA Owner's Policy $To Be Determined
ALTA Standard Owner Policy

Proposed Insured:

To Be Determined

(B) ALTA Loan Policy $To Be Determined
To Be Determined

Proposed Insured:

To Be Determined

3. (A) The estate or interest in the land described in this Commitment is:

Fee

(B) Title to said estate or interest at the date hereof is vested in:

David Caspers, Trustee of The Caspers Family Trust dated Nov 6, 1997

4. The land referred to in this Commitment is situated in the Unincorporated area of the County of Riverside, State of California, and is described as follows:

THE WEST HALF OF THE NORTH HALF OF THE SOUTHEAST QUARTER OF SECTION 16, TOWNSHIP 5 SOUTH, RANGE 16 EAST, SAN BERNARDINO BASE AND MERIDIAN, ACCORDING TO THE OFFICIAL PLAT OF SAID LAND.

EXCEPTING THEREFROM ALL OIL, GAS, OILSHALE, COAL PHOSPHATE, SODIUM, GOLD, SILVER AND ALL OTHER MINERAL DEPOSITS, AS RESERVED BY THE STATE OF CALIFORNIA BY PATENT RECORDED SEPTEMBER 4, 1958 IN BOOK 2327, PAGE 494 OF OFFICIAL RECORDS, RIVERSIDE COUNTY RECORDS.

APN: 811-180-024-7

SCHEDULE B

SECTION ONE

REQUIREMENTS

The following requirements must be met:

(A) Pay the agreed amounts for the interest in the land and/or the mortgage to be insured.

(B) Pay us the premiums, fees and charges for the policy.

(C) Documents satisfactory to us creating the interest in the land and/or the mortgage to be insured must be signed, delivered and recorded.

(D) You must tell us in writing the name of anyone not referred to in this Commitment who will get an interest in the land or who will make a loan on the land. We may then make additional requirements or exceptions.

(E) Releases(s) or Reconveyance(s) of Item(s): None

(F) Other: None

(G) You must give us the following information:
1. Any off record leases, surveys, etc.
2. Statement(s) of Identity, all parties.
3. Other:

With respect to the trust referred to in the vesting:

a. A certification pursuant to Section 18100.5 of the California Probate Code in a form satisfactory to the Company.
b. Copies of those excerpts from the original trust documents and amendments thereto which designate the trustee and confer upon the trustee the power to act in the pending transaction.
c. Other requirements which the Company may impose following its review of the material required herein and other information which the Company may require.

The following additional requirements, as indicated by "X", must be met:

[X] (H) Provide information regarding any off-record matters, which may include, but are not limited to: leases, recent works of improvement, or commitment statements in effect under the Environmental Responsibility Acceptance Act, Civil Code Section 850, et seq.

The Company's Owner's Affidavit form (as provided by company) must be completed and submitted prior to close in order to satisfy this requirement. This Commitment will then be subject to such further exceptions and/or requirements as may be deemed necessary.

[] (I) An ALTA/NSPS survey of recent date, which complies with the current minimum standard detail requirements for ALTA/NSPS land title surveys, must be submitted to the Company for review. This Commitment will then be subject to such further exceptions and/or requirements as may be deemed necessary.

[] (J) The following LLC documentation is required:
(i) a copy of the Articles of Organization
(ii) a copy of the Operating Agreement, if applicable
(iii) a Certificate of Good Standing and/or other evidence of current Authority to Conduct Business within the State
(iv) express Company Consent to the current transaction

[] (K) The following partnership documentation is required **:**
(i) a copy of the partnership agreement, including all applicable amendments thereto
(ii) a Certificate of Good Standing and/or other evidence of current Authority to Conduct Business within the State
(iii) express Partnership Consent to the current transaction

[] (L) The following corporation documentation is required:
(i) a copy of the Articles of Incorporation
(ii) a copy of the Bylaws, including all applicable Amendments thereto
(iii) a Certificate of Good Standing and/or other evidence of current Authority to Conduct Business within the State
(iv) express Corporate Resolution consenting to the current transaction

[] (M) Based upon the Company's review of that certain partnership/operating agreement dated **Not disclosed** for the proposed insured herein, the following requirements must be met:

Any further amendments to said agreement must be submitted to the Company, together with an affidavit from one of the general partners or members stating that it is a true copy, that said partnership or limited liability company is in full force and effect, and that there have been no further amendments to the agreement. This Commitment will then be subject to such further requirements as may be deemed necessary.

[] (N) A copy of the complete lease, as referenced in Schedule A, #3 herein, together with any amendments and/or assignments thereto, must be submitted to the Company for review, along with an affidavit executed by the present lessee stating that it is a true copy, that the lease is in full force and effect, and that there have been no further amendments to the lease. This Commitment will then be subject to such further requirements as may be deemed necessary.

[X] (O) Approval from the Company's Underwriting Department must be obtained for issuance of the policy contemplated herein and any endorsements requested thereunder. This Commitment will then be subject to such further requirements as may be required to obtain such approval.

[] (P) Potential additional requirements, if ALTA Extended coverage is contemplated hereunder, and work on the land has commenced prior to close, some or all of the following requirements, and any other requirements which may be deemed necessary, may need to be met:

[] (Q) The Company's "Indemnity Agreement I" must be executed by the appropriate parties.

[] (R) Financial statements from the appropriate parties must be submitted to the Company for review.

[] (S) A copy of the construction contract must be submitted to the Company for review.

[] (T) An inspection of the land must be performed by the Company for verification of the phase of construction.

[] (U) The Company's "Mechanic's Lien Risk Addendum" form must be completed by a Company employee, based upon information furnished by the appropriate parties involved.

SCHEDULE B

SECTION TWO

EXCEPTIONS

Any policy we issue will have the following exceptions unless they are taken care of to our satisfaction. The printed exceptions and exclusions from the coverage of the policy or policies are set forth in Exhibit A attached. Copies of the policy forms should be read. They are available from the office which issued this Commitment.

1. General and special taxes and assessments for the fiscal year 2018-2019, a lien not yet due or payable.

2. The lien of supplemental taxes, if any, assessed pursuant to Chapter 3.5 commencing with Section 75 of the California Revenue and Taxation Code.

3. An easement in favor of the United States recorded June 22, 1950 in Book 1183, Page 304 of Official Records, Riverside County, California.

4. Rights, rights of way, reservations and exceptions in the patent recorded September 04, 1958 as Book 2327, Page 494 of Official Records.

5. An offer of dedication for public road, public utility and incidental purposes, recorded October 10, 1979 as Instrument No. 214509 of Official Records.
   To: the North, South and West 30 feet

6. Any rights, interests, or claims which may exist or arise by reason of the following facts shown on a survey plat entitled "Plat of A.L.T.A. Survey," dated (not set out), prepared by James D. Feiro:

   A. The fact that a "dirt road" crosses said land along the Westerly 6', the Northerly 10 feet, the Easterly 18 feet and the Southerly 20 feet of Parcel 1, the Westerly 30 feet, the Northerly 10', the Easterly 19 feet and the Southerly 17 feet of Parcel 2, the Westerly 30 feet, the Northerly 14 feet, the Easterly 11 feet and the Southerly 10 feet of Parcel 3.

   B. The fact that a "dirt dike" four feet (more or less) in height encroaches onto the parcel adjoining Parcel 1 on the South.

   C. The fact that a 3 foot high "chicken wire fence" is located on said land and partially on adjoining land along the Easterly boundary of Parcel 1 and encroaches onto land adjoining on the North. Said chicken wire fence encroaches onto land adjoining Parcel 3 on the Northerly and Easterly boundaries.

   D. The fact that a 5' high 4 strand barb wire fence encroaches onto the land adjoining Parcel 3 along the Northerly boundary.

7. The terms and provisions contained in the document entitled Water Agreement, executed by and between Fiorella Foundation, a Lienchtenstein company and Desert Star Jojobam Inc., a California corporation, recorded December 30, 1987, as Instrument No. 365815 of Official Records.

8. Rights of the public in and to that portion of the land lying within any road, street and/or highway.

9. The lack of a right of access to and from the land.

   Notice: Paragraph 4 of the insuring provisions on the face page of the policy will be deleted from the policy to be issued.

10. Water rights, claims or title to water, whether or not shown by the public records.

11. Any claim that the Title is subject to a trust or lien created under The Perishable Agricultural Commodities Act, 1930 (7 U.S.C. §§499a, et seq.) or the Packers and Stockyards Act (7 U.S.C. §§181 et seq.) or under similar state laws.

12. Rights of parties in possession.

INFORMATIONAL NOTES

ALERT - CA Senate Bill 2 imposes an additional fee of $75 up to $225 at the time of recording on certain transactions effective January 1, 2018. Please contact your First American Title representative for more information on how this may affect your closing.

1. Taxes for proration purposes only for the fiscal year 2017-2018.

First Installment:	$114.82, PAID
Second Installment:	$114.82, PAID
Tax Rate Area:	062-000
APN:	811-180-024-7

2. The property covered by this report is vacant land.

3. According to the public records, there has been no conveyance of the land within a period of twenty-four months prior to the date of this report, except as follows:

   None

4. This preliminary report/commitment was prepared based upon an application for a policy of title insurance that identified land by street address or assessor's parcel number only. It is the responsibility of the applicant to determine whether the land referred to herein is in fact the land that is to be described in the policy or policies to be issued.

The map attached, if any, may or may not be a survey of the land depicted hereon. First American Title Insurance Company expressly disclaims any liability for loss or damage which may result from reliance on this map except to the extent coverage for such loss or damage is expressly provided by the terms and provisions of the title insurance policy, if any, to which this map is attached.

******To obtain wire instructions for deposit of funds to your escrow file please contact your Escrow Officer.******

CONDITIONS

1. **DEFINITIONS**
(a)"Mortgage" means mortgage, deed of trust or other security instrument.
(b)"Public Records" means title records that give constructive notice of matters affecting the title according to the state law where the land is located.

2. **LATER DEFECTS**
The Exceptions in Schedule B - Section Two may be amended to show any defects, liens or encumbrances that appear for the first time in the public records or are created or attached between the Commitment Date and the date on which all of the Requirements (a) and (c) of Schedule B - Section One are met. We shall have no liability to you because of this amendment.

3. **EXISTING DEFECTS**
If any defects, liens or encumbrances existing at Commitment Date are not shown in Schedule B, we may amend Schedule B to show them. If we do amend Schedule B to show these defects, liens or encumbrances, we shall be liable to you according to Paragraph 4 below unless you knew of this information and did not tell us about it in writing.

4. **LIMITATION OF OUR LIABILITY**
Our only obligation is to issue to you the Policy referred to in this Commitment, when you have met its Requirements. If we have any liability to you for any loss you incur because of an error in this Commitment, our liability will be limited to your actual loss caused by your relying on this Commitment when you acted in good faith to:

comply with the Requirements shown in Schedule B - Section One
or
eliminate with our written consent any Exceptions shown in Schedule B - Section Two.

We shall not be liable for more than the Policy Amount shown in Schedule A of this Commitment and our liability is subject to the terms of the Policy form to be issued to you.

5. **CLAIMS MUST BE BASED ON THIS COMMITMENT**
Any claim, whether or not based on negligence, which you may have against us concerning the title to the land must be based on this commitment and is subject to its terms.

First American Title

Privacy Information

We Are Committed to Safeguarding Customer Information

In order to better serve your needs now and in the future, we may ask you to provide us with certain information. We understand that you may be concerned about what we will do with such information - particularly any personal or financial information. We agree that you have a right to know how we will utilize the personal information you provide to us. Therefore, together with our subsidiaries we have adopted this Privacy Policy to govern the use and handling of your personal information.

Applicability

This Privacy Policy governs our use of the information that you provide to us. It does not govern the manner in which we may use information we have obtained from any other source, such as information obtained from a public record or from another person or entity. First American has also adopted broader guidelines that govern our use of personal information regardless of its source. First American calls these guidelines its Fair Information Values.

Types of Information

Depending upon which of our services you are utilizing, the types of nonpublic personal information that we may collect include:

- Information we receive from you on applications, forms and in other communications to us, whether in writing, in person, by telephone or any other means;
- Information about your transactions with us, our affiliated companies, or others; and
- Information we receive from a consumer reporting agency.

Use of Information

We request information from you for our own legitimate business purposes and not for the benefit of any nonaffiliated party. Therefore, we will not release your information to nonaffiliated parties except: (1) as necessary for us to provide the product or service you have requested of us; or (2) as permitted by law. We may, however, store such information indefinitely, including the period after which any customer relationship has ceased. Such information may be used for any internal purpose, such as quality control efforts or customer analysis. We may also provide all of the types of nonpublic personal information listed above to one or more of our affiliated companies. Such affiliated companies include financial service providers, such as title insurers, property and casualty insurers, and trust and investment advisory companies, or companies involved in real estate services, such as appraisal companies, home warranty companies and escrow companies. Furthermore, we may also provide all the information we collect, as described above, to companies that perform marketing services on our behalf, on behalf of our affiliated companies or to other financial institutions with whom we or our affiliated companies have joint marketing agreements.

Former Customers

Even if you are no longer our customer, our Privacy Policy will continue to apply to you.

Confidentiality and Security

We will use our best efforts to ensure that no unauthorized parties have access to any of your information. We restrict access to nonpublic personal information about you to those individuals and entities who need to know that information to provide products or services to you. We will use our best efforts to train and oversee our employees and agents to ensure that your information will be handled responsibly and in accordance with this Privacy Policy and First American's Fair Information Values. We currently maintain physical, electronic, and procedural safeguards that comply with federal regulations to guard your nonpublic personal information.

Information Obtained Through Our Web Site

First American Financial Corporation is sensitive to privacy issues on the Internet. We believe it is important you know how we treat the information about you we receive on the Internet.

In general, you can visit First American or its affiliates' Web sites on the World Wide Web without telling us who you are or revealing any information about yourself. Our Web servers collect the domain names, not the e-mail addresses, of visitors. This information is aggregated to measure the number of visits, average time spent on the site, pages viewed and similar information. First American uses this information to measure the use of our site and to develop ideas to improve the content of our site.

There are times, however, when we may need information from you, such as your name and email address. When information is needed, we will use our best efforts to let you know at the time of collection how we will use the personal information. Usually, the personal information we collect is used only by us to respond to your inquiry, process an order or allow you to access specific account/profile information. If you choose to share any personal information with us, we will only use it in accordance with the policies outlined above.

Business Relationships

First American Financial Corporation's site and its affiliates' sites may contain links to other Web sites. While we try to link only to sites that share our high standards and respect for privacy, we are not responsible for the content or the privacy practices employed by other sites.

Cookies

Some of First American's Web sites may make use of "cookie" technology to measure site activity and to customize information to your personal tastes. A cookie is an element of data that a Web site can send to your browser, which may then store the cookie on your hard drive.

FirstAm.com uses stored cookies. The goal of this technology is to better serve you when visiting our site, save you time when you are here and to provide you with a more meaningful and productive Web site experience.

Fair Information Values

Fairness We consider consumer expectations about their privacy in all our businesses. We only offer products and services that assure a favorable balance between consumer benefits and consumer privacy.

Public Record We believe that an open public record creates significant value for society, enhances consumer choice and creates consumer opportunity. We actively support an open public record and emphasize its importance and contribution to our economy.

Use We believe we should behave responsibly when we use information about a consumer in our business. We will obey the laws governing the collection, use and dissemination of data.

Accuracy We will take reasonable steps to help assure the accuracy of the data we collect, use and disseminate. Where possible, we will take reasonable steps to correct inaccurate information. When, as with the public record, we cannot correct inaccurate information, we will take all reasonable steps to assist consumers in identifying the source of the erroneous data so that the consumer can secure the required corrections.

Education We endeavor to educate the users of our products and services, our employees and others in our industry about the importance of consumer privacy. We will instruct our employees on our fair information values and on the responsible collection and use of data. We will encourage others in our industry to collect and use information in a responsible manner.

Security We will maintain appropriate facilities and systems to protect against unauthorized access to and corruption of the data we maintain.

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EXHIBIT A
LIST OF PRINTED EXCEPTIONS AND EXCLUSIONS (BY POLICY TYPE)

1. CALIFORNIA LAND TITLE ASSOCIATION STANDARD COVERAGE POLICY - 1990
SCHEDULE B

EXCEPTIONS FROM COVERAGE

This policy does not insure against loss or damage (and the Company will not pay costs, attorneys' fees or expenses) which arise by reason of:

1. Taxes or assessments which are not shown as existing liens by the records of any taxing authority that levies taxes or assessments on real property or by the public records. Proceedings by a public agency which may result in taxes or assessments, or notice of such proceedings, whether or not shown by the records of such agency or by the public records.
2. Any facts, rights, interests, or claims which are not shown by the public records but which could be ascertained by an inspection of the land or which may be asserted by persons in possession thereof.
3. Easements, liens or encumbrances, or claims thereof, which are not shown by the public records.
4. Discrepancies, conflicts in boundary lines, shortage in area, encroachments, or any other facts which a correct survey would disclose, and which are not shown by the public records.
5. (a) Unpatented mining claims; (b) reservations or exceptions in patents or in Acts authorizing the issuance thereof; (c) water rights, claims or title to water, whether or not the matters excepted under (a), (b), or (c) are shown by the public records.

EXCLUSIONS FROM COVERAGE

The following matters are expressly excluded from the coverage of this policy and the Company will not pay loss or damage, costs, attorneys' fees or expenses which arise by reason of:

1. (a) Any law, ordinance or governmental regulation (including but not limited to building and zoning laws, ordinances, or regulations) restricting, regulating, prohibiting or relating to (i) the occupancy, use, or enjoyment of the land; (ii) the character, dimensions or location of any improvement now or hereafter erected on the land; (iii) a separation in ownership or a change in the dimensions or area of the land or any parcel of which the land is or was a part; or (iv) environmental protection, or the effect of any violation of these laws, ordinances or governmental regulations, except to the extent that a notice of the enforcement thereof or a notice of a defect, lien or encumbrance resulting from a violation or alleged violation affecting the land has been recorded in the public records at Date of Policy.
   (b) Any governmental police power not excluded by (a) above, except to the extent that a notice of the exercise thereof or a notice of a defect, lien or encumbrance resulting from a violation or alleged violation affecting the land has been recorded in the public records at Date of Policy.
2. Rights of eminent domain unless notice of the exercise thereof has been recorded in the public records at Date of Policy, but not excluding from coverage any taking which has occurred prior to Date of Policy which would be binding on the rights of a purchaser for value without knowledge.
3. Defects, liens, encumbrances, adverse claims or other matters:
   (a) whether or not recorded in the public records at Date of Policy, but created, suffered, assumed or agreed to by the insured claimant;
   (b) not known to the Company, not recorded in the public records at Date of Policy, but known to the insured claimant and not disclosed in writing to the Company by the insured claimant prior to the date the insured claimant became an insured under this policy;
   (c) resulting in no loss or damage to the insured claimant;
   (d) attaching or created subsequent to Date of Policy; or
   (e) resulting in loss or damage which would not have been sustained if the insured claimant had paid value for the insured mortgage or for the estate or interest insured by this policy.
4. Unenforceability of the lien of the insured mortgage because of the inability or failure of the insured at Date of Policy, or the inability or failure of any subsequent owner of the indebtedness, to comply with applicable "doing business" laws of the state in which the land is situated.
5. Invalidity or unenforceability of the lien of the insured mortgage, or claim thereof, which arises out of the transaction evidenced by the insured mortgage and is based upon usury or any consumer credit protection or truth in lending law.
6. Any claim, which arises out of the transaction vesting in the insured the estate or interest insured by their policy or the transaction creating the interest of the insured lender, by reason of the operation of federal bankruptcy, state insolvency or similar creditors' rights laws.

2. AMERICAN LAND TITLE ASSOCIATION OWNER'S POLICY FORM B - 1970
SCHEDULE OF EXCLUSIONS FROM COVERAGE

1. Any law, ordinance or governmental regulation (including but not limited to building and zoning ordinances) restricting or regulating or prohibiting the occupancy, use or enjoyment of the land, or regulating the character, dimensions or location of any improvement now or hereafter erected on the land, or prohibiting a separation in ownership or a reduction in the dimensions of area of the land, or the effect of any violation of any such law, ordinance or governmental regulation.
2. Rights of eminent domain or governmental rights of police power unless notice of the exercise of such rights appears in the public records at Date of Policy.
3. Defects, liens, encumbrances, adverse claims, or other matters (a) created, suffered, assumed or agreed to by the insured claimant; (b) not known to the Company and not shown by the public records but known to the insured claimant either at Date of Policy or at the date such claimant acquired an estate or interest insured by this policy and not disclosed in writing by the insured claimant to the Company prior to the date such insured claimant became an insured hereunder; (c) resulting in no loss or damage to the insured claimant; (d) attaching or created subsequent to Date of Policy; or (e) resulting in loss or damage which would not have been sustained if the insured claimant had paid value for the estate or interest insured by this policy.

3. AMERICAN LAND TITLE ASSOCIATION OWNER'S POLICY FORM B - 1970
WITH REGIONAL EXCEPTIONS

When the American Land Title Association policy is used as a Standard Coverage Policy and not as an Extended Coverage Policy the exclusions set forth in paragraph 2 above are used and the following exceptions to coverage appear in the policy.

SCHEDULE B

This policy does not insure against loss or damage by reason of the matters shown in parts one and two following:
Part One

1. Taxes or assessments which are not shown as existing liens by the records of any taxing authority that levies taxes or assessments on real property or by the public records.
2. Any facts, rights, interests, or claims which are not shown by the public records but which could be ascertained by an inspection of said land or by making inquiry of persons in possession thereof.
3. Easements, claims of easement or encumbrances which are not shown by the public records.
4. Discrepancies, conflicts in boundary lines, shortage in area, encroachments, or any other facts which a correct survey would disclose, and which are not shown by public records.
5. Unpatented mining claims; reservations or exceptions in patents or in Acts authorizing the issuance thereof; water rights, claims or title to water.
6. Any lien, or right to a lien, for services, labor or material heretofore or hereafter furnished, imposed by law and not shown by the public records.

4. AMERICAN LAND TITLE ASSOCIATION LOAN POLICY - 1970 WITH A.L.T.A. ENDORSEMENT FORM 1 COVERAGE SCHEDULE OF EXCLUSIONS FROM COVERAGE

1. Any law, ordinance or governmental regulation (including but not limited to building and zoning ordinances) restricting or regulating or prohibiting the occupancy, use or enjoyment of the land, or regulating the character, dimensions or location of any improvement now or hereafter erected on the land, or prohibiting a separation in ownership or a reduction in the dimensions or area of the land, or the effect of any violation of any such law ordinance or governmental regulation.
2. Rights of eminent domain or governmental rights of police power unless notice of the exercise of such rights appears in the public records at Date of Policy.
3. Defects, liens, encumbrances, adverse claims, or other matters (a) created, suffered, assumed or agreed to by the insured claimant, (b) not known to the Company and not shown by the public records but known to the insured claimant either at Date of Policy or at the date such claimant acquired an estate or interest insured by this policy or acquired the insured mortgage and not disclosed in writing by the insured claimant to the Company prior to the date such insured claimant became an insured hereunder, (c) resulting in no loss or damage to the insured claimant; (d) attaching or created subsequent to Date of Policy (except to the extent insurance is afforded herein as to any statutory lien for labor or material or to the extent insurance is afforded herein as to assessments for street improvements under construction or completed at Date of Policy).
4. Unenforceability of the lien of the insured mortgage because of failure of the insured at Date of Policy or of any subsequent owner of the indebtedness to comply with applicable "doing business" laws of the state in which the land is situated.

5. AMERICAN LAND TITLE ASSOCIATION LOAN POLICY - 1970 WITH REGIONAL EXCEPTIONS

When the American Land Title Association Lenders Policy is used as a Standard Coverage Policy and not as an Extended Coverage Policy, the exclusions set forth in paragraph 4 above are used and the following exceptions to coverage appear in the policy.

SCHEDULE B

This policy does not insure against loss or damage by reason of the matters shown in parts one and two following:
Part One

1. Taxes or assessments which are not shown as existing liens by the records of any taxing authority that levies taxes or assessments on real property or by the public records.
2. Any facts, rights, interests, or claims which are not shown by the public records but which could be ascertained by an inspection of said land or by making inquiry of persons in possession thereof.
3. Easements, claims of easement or encumbrances which are not shown by the public records.
4. Discrepancies, conflicts in boundary lines, shortage in area, encroachments, or any other facts which a correct survey would disclose, and which are not shown by public records.
5. Unpatented mining claims; reservations or exceptions in patents or in Acts authorizing the issuance thereof; water rights, claims or title to water.
6. Any lien, or right to a lien, for services, labor or material theretofore or hereafter furnished, imposed by law and not shown by the public records.

6. AMERICAN LAND TITLE ASSOCIATION LOAN POLICY - 1992 WITH A.L.T.A. ENDORSEMENT FORM 1 COVERAGE EXCLUSIONS FROM COVERAGE

The following matters are expressly excluded from the coverage of this policy and the Company will not pay loss or damage, costs, attorneys' fees or expenses which arise by reason of:

1. (a) Any law, ordinance or governmental regulation (including but not limited to building and zoning laws, ordinances, or regulations) restricting, regulating, prohibiting or relating to (i) the occupancy, use, or enjoyment of the land; (ii) the character, dimensions or location of any improvement now or hereafter erected on the land; (iii) a separation in ownership or a change in the dimensions or area of the land or any parcel of which the land is or was a part; or (iv) environmental protection, or the effect of any violation of these laws, ordinances or governmental regulations, except to the extent that a notice of the enforcement thereof or a notice of a defect, lien or encumbrance resulting from a violation or alleged violation affecting the land has been recorded in the public records at Date of Policy;
   (b) Any governmental police power not excluded by (a) above, except to the extent that a notice of the exercise thereof or a notice of a defect, lien or encumbrance resulting from a violation or alleged violation affecting the land has been recorded in the public records at Date of Policy.

2. Rights of eminent domain unless notice of the exercise thereof has been recorded in the public records at Date of Policy, but not excluding from coverage any taking which has occurred prior to Date of Policy which would be binding on the rights of a purchaser for value without knowledge.
3. Defects, liens, encumbrances, adverse claims, or other matters:
(a) whether or not recorded in the public records at Date of Policy, but created, suffered, assumed or agreed to by the insured claimant;
(b) not known to the Company, not recorded in the public records at Date of Policy, but known to the insured claimant and not disclosed in writing to the Company by the insured claimant prior to the date the insured claimant became an insured under this policy;
(c) resulting in no loss or damage to the insured claimant;
(d) attaching or created subsequent to Date of Policy (except to the extent that this policy insures the priority of the lien of the insured mortgage over any statutory lien for services, labor or material or the extent insurance is afforded herein as to assessments for street improvements under construction or completed at date of policy); or
(e) resulting in loss or damage which would not have been sustained if the insured claimant had paid value for the insured mortgage.
4. Unenforceability of the lien of the insured mortgage because of the inability or failure of the insured at Date of Policy, or the inability or failure of any subsequent owner of the indebtedness, to comply with the applicable "doing business" laws of the state in which the land is situated.
5. Invalidity or unenforceability of the lien of the insured mortgage, or claim thereof, which arises out of the transaction evidenced by the insured mortgage and is based upon usury or any consumer credit protection or truth in lending law.
6. Any statutory lien for services, labor or materials (or the claim of priority of any statutory lien for services, labor or materials over the lien of the insured mortgage) arising from an improvement or work related to the land which is contracted for and commenced subsequent to Date of Policy and is not financed in whole or in part by proceeds of the indebtedness secured by the insured mortgage which at Date of Policy the insured has advanced or is obligated to advance.
7. Any claim, which arises out of the transaction creating the interest of the mortgagee insured by this policy, by reason of the operation of federal bankruptcy, state insolvency, or similar creditors' rights laws, that is based on:
(i) the transaction creating the interest of the insured mortgagee being deemed a fraudulent conveyance or fraudulent transfer; or
(ii) the subordination of the interest of the insured mortgagee as a result of the application of the doctrine of equitable subordination; or
(iii) the transaction creating the interest of the insured mortgagee being deemed a preferential transfer except where the preferential transfer results from the failure:
(a) to timely record the instrument of transfer; or
(b) of such recordation to impart notice to a purchaser for value or a judgment or lien creditor.

7. AMERICAN LAND TITLE ASSOCIATION LOAN POLICY - 1992
WITH REGIONAL EXCEPTIONS

When the American Land Title Association policy is used as a Standard Coverage Policy and not as an Extended Coverage Policy the exclusions set forth in paragraph 6 above are used and the following exceptions to coverage appear in the policy.

SCHEDULE B

This policy does not insure against loss or damage (and the Company will not pay costs, attorneys' fees or expenses) which arise by reason of:
1. Taxes or assessments which are not shown as existing liens by the records of any taxing authority that levies taxes or assessments on real property or by the public records.
2. Any facts, rights, interests, or claims which are not shown by the public records but which could be ascertained by an inspection of said land or by making inquiry of persons in possession thereof.
3. Easements, claims of easement or encumbrances which are not shown by the public records.
4. Discrepancies, conflicts in boundary lines, shortage in area, encroachments, or any other facts which a correct survey would disclose, and which are not shown by public records.
5. Unpatented mining claims; reservations or exceptions in patents or in Acts authorizing the issuance thereof; water rights, claims or title to water.
6. Any lien, or right to a lien, for services, labor or material theretofore or hereafter furnished, imposed by law and not shown by the public records.

8. AMERICAN LAND TITLE ASSOCIATION OWNER'S POLICY - 1992
EXCLUSIONS FROM COVERAGE

The following matters are expressly excluded from the coverage of this policy and the Company will not pay loss or damage, costs, attorneys' fees or expenses which arise by reason of:
1. (a) Any law, ordinance or governmental regulation (including but not limited to building and zoning laws, ordinances, or regulations) restricting, regulating, prohibiting or relating to (i) the occupancy, use, or enjoyment of the land; (ii) the character, dimensions or location of any improvement now or hereafter erected on the land; (iii) a separation in ownership or a change in the dimensions or area of the land or any parcel of which the land is or was a part; or (iv) environmental protection, or the effect of any violation of these laws, ordinances or governmental regulations, except to the extent that a notice of the enforcement thereof or a notice of a defect, lien or encumbrance resulting from a violation or alleged violation affecting the land has been recorded in the public records at Date of Policy.
(b) Any governmental police power not excluded by (a) above, except to the extent that a notice of the exercise thereof or a notice of a defect, lien or encumbrance resulting from a violation or alleged violation affecting the land has been recorded in the public records at Date of Policy.
2. Rights of eminent domain unless notice of the exercise thereof has been recorded in the public records at Date of Policy, but not excluding from coverage any taking which has occurred prior to Date of Policy which would be binding on the rights of a purchaser for value without knowledge.
3. Defects, liens, encumbrances, adverse claims, or other matters:
(a) created, suffered, assumed or agreed to by the insured claimant;
(b) not known to the Company, not recorded in the public records at Date of Policy, but known to the insured claimant and not disclosed in writing to the Company by the insured claimant prior to the date the insured claimant became an insured under this policy;
(c) resulting in no loss or damage to the insured claimant;
(d) attaching or created subsequent to Date of Policy; or

(e) resulting in loss or damage which would not have been sustained if the insured claimant had paid value for the estate or interest insured by this policy.

4. Any claim, which arises out of the transaction vesting in the insured the estate or interest insured by this policy, by reason of the operation of federal bankruptcy, state insolvency, or similar creditors' rights laws, that is based on:
(i) the transaction creating the estate or interest insured by this policy being deemed a fraudulent conveyance or fraudulent transfer; or
(ii) the transaction creating the estate or interest insured by this policy being deemed a preferential transfer except where the preferential transfer results from the failure:
(a) to timely record the instrument of transfer; or
(b) of such recordation to impart notice to a purchaser for value or a judgment or lien creditor.

9. AMERICAN LAND TITLE ASSOCIATION OWNER'S POLICY - 1992 WITH REGIONAL EXCEPTIONS

When the American Land Title Association policy is used as a Standard Coverage Policy and not as an Extended Coverage Policy the exclusions set forth in paragraph 8 above are used and the following exceptions to coverage appear in the policy.

SCHEDULE B

This policy does not insure against loss or damage (and the Company will not pay costs, attorneys' fees or expenses) which arise by reason of:
Part One:

1. Taxes or assessments which are not shown as existing liens by the records of any taxing authority that levies taxes or assessments on real property or by the public records.
2. Any facts, rights, interests, or claims which are not shown by the public records but which could be ascertained by an inspection of said land or by making inquiry of persons in possession thereof.
3. Easements, claims of easement or encumbrances which are not shown by the public records.
4. Discrepancies, conflicts in boundary lines, shortage in area, encroachments, or any other facts which a correct survey would disclose, and which are not shown by public records.
5. Unpatented mining claims; reservations or exceptions in patents or in Acts authorizing the issuance thereof; water rights, claims or title to water.
6. Any lien, or right to a lien, for services, labor or material theretofore or hereafter furnished, imposed by law and not shown by the public records.

ALTA RESIDENTIAL TITLE INSURANCE POLICY (6-1-87)

EXCLUSIONS

In addition to the Exceptions in Schedule B, you are not insured against loss, costs, attorneys' fees, and expenses resulting from:

1. Governmental police power, and the existence or violation of any law or government regulation. This includes building and zoning ordinances and also laws and regulations concerning:
   (a) and use
   (b) improvements on the land
   (c) and division
   (d) environmental protection

   This exclusion does not apply to violations or the enforcement of these matters which appear in the public records at Policy Date.
   This exclusion does not limit the zoning coverage described in Items 12 and 13 of Covered Title Risks.
2. The right to take the land by condemning it, unless:
   (a) a notice of exercising the right appears in the public records on the Policy Date
   (b) the taking happened prior to the Policy Date and is binding on you if you bought the land without knowing of the taking
3. Title Risks:
   (a) that are created, allowed, or agreed to by you
   (b) that are known to you, but not to us, on the Policy Date -- unless they appeared in the public records
   (c) that result in no loss to you
   (d) that first affect your title after the Policy Date -- this does not limit the labor and material lien coverage in Item 8 of Covered Title Risks
4. Failure to pay value for your title.
5. Lack of a right:
   (a) to any land outside the area specifically described and referred to in Item 3 of Schedule A OR
   (b) in streets, alleys, or waterways that touch your land
   This exclusion does not limit the access coverage in Item 5 of Covered Title Risks.

11. EAGLE PROTECTION OWNER'S POLICY

CLTA HOMEOWNER'S POLICY OF TITLE INSURANCE - 1998
ALTA HOMEOWNER'S POLICY OF TITLE INSURANCE - 1998

Covered Risks 14 (Subdivision Law Violation). 15 (Building Permit). 16 (Zoning) and 18 (Encroachment of boundary walls or fences) are subject to Deductible Amounts and Maximum Dollar Limits of Liability

EXCLUSIONS

In addition to the Exceptions in Schedule B, you are not insured against loss, costs, attorneys' fees, and expenses resulting from:

1. Governmental police power, and the existence or violation of any law or government regulation. This includes ordinances, laws and regulations concerning:
   a. building
   b. zoning
   c. land use
   d. improvements on the land
   e. land division
   f. environmental protection

   This exclusion does not apply to violations or the enforcement of these matters if notice of the violation or enforcement appears in the Public Records at the Policy Date.
   This exclusion does not limit the coverage described in Covered Risk 14, 15, 16, 17 or 24.
2. The failure of Your existing structures, or any part of them, to be constructed in accordance with applicable building codes. This Exclusion does not apply to violations of building codes if notice of the violation appears in the Public Records at the Policy Date.
3. The right to take the Land by condemning it, unless:
   a. a notice of exercising the right appears in the Public Records at the Policy Date; or
   b. the taking happened before the Policy Date and is binding on You if You bought the Land without Knowing of the taking.
4. Risks:
   a. that are created, allowed, or agreed to by You, whether or not they appear in the Public Records;
   b. that are Known to You at the Policy Date, but not to Us, unless they appear in the Public Records at the Policy Date;
   c. that result in no loss to You; or
   d. that first occur after the Policy Date - this does not limit the coverage described in Covered Risk 7, 8.d, 22, 23, 24 or 25.
5. Failure to pay value for Your Title.
6. Lack of a right:
   a. to any Land outside the area specifically described and referred to in paragraph 3 of Schedule A; and
   b. in streets, alleys, or waterways that touch the Land.
   This exclusion does not limit the coverage described in Covered Risk 11 or 18.

12. THIRD GENERATION EAGLE LOAN POLICY AMERICAN LAND TITLE ASSOCIATION EXPANDED COVERAGE RESIDENTIAL LOAN POLICY (1/01/08)

EXCLUSIONS FROM COVERAGE

The following matters are expressly excluded from the coverage of this policy and the Company will not pay loss or damage, costs, attorneys' fees or expenses which arise by reason of:

1. (a) Any law, ordinance, permit, or governmental regulation (including those relating to building and zoning) restricting, regulating, prohibiting, or relating to (i) the occupancy, use, or enjoyment of the Land; (ii) the character, dimensions, or location of any improvement erected on the Land; (iii) the subdivision of land; or(iv) environmental protection; or the effect of any violation of these laws, ordinances, or governmental regulations. This Exclusion 1(a) does not modify or limit the coverage provided under Covered Risk 5, 6, 13(c), 13(d), 14 or 16.
   (b)Any governmental police power. This Exclusion 1(b) does not modify or limit the coverage provided under Covered Risk 5, 6, 13(c), 13(d), 14 or 16.
2. Rights of eminent domain. This Exclusion does not modify or limit the coverage provided under Covered Risk 7 or 8.
3. Defects, liens, encumbrances, adverse claims, or other matters
   (a) created, suffered, assumed or agreed to by the Insured Claimant;
   (b) not Known to the Company, not recorded in the Public Records at Date of Policy, but Known to the Insured Claimant and not disclosed in writing to the Company by the Insured Claimant prior to the date the Insured Claimant became an Insured under this policy;
   (c) resulting in no loss or damage to the Insured Claimant;
   (d) attaching or created subsequent to Date of Policy (however, this does not modify or limit the coverage provided under Covered Risk 11, 16, 17, 18, 19, 20, 21, 22, 23, 24, 27 or 28); or
   (e) resulting in loss or damage which would not have been sustained if the Insured Claimant had paid value for the Insured Mortgage.
4. Unenforceability of the lien of the Insured Mortgage because of the inability or failure of an Insured to comply with applicable doing business laws of the state where the Land is situated.
5. Invalidity or unenforceability in whole or in part of the lien of the Insured Mortgage that arises out of the transaction evidenced by the Insured Mortgage and is based upon usury, or any consumer credit protection or truth-in-lending law. This Exclusion does not modify or limit the coverage provided in Covered Risk 26.
6. Any claim of invalidity, unenforceability or lack of priority of the lien of the Insured Mortgage as to Advances or modifications made after the Insured has Knowledge that the vestee shown in Schedule A is no longer the owner of the estate or interest covered by this policy. This Exclusion does not modify or limit the coverage provided in Covered Risk 11.
7. Any lien on the Title for real estate taxes or assessments imposed by governmental authority and created or attaching subsequent to Date of Policy. This Exclusion does not modify or limit the coverage provided in Covered Risk 11(b) or 25.
8. The failure of the residential structure, or any portion of it, to have been constructed before, on or after Date of Policy in accordance with applicable building codes. This Exclusion does not modify or limit the coverage provided in Covered Risk 5 or 6.

13. AMERICAN LAND TITLE ASSOCIATION LOAN POLICY - 2006
EXCLUSIONS FROM COVERAGE

The following matters are expressly excluded from the coverage of this policy, and the Company will not pay loss or damage, costs, attorneys' fees, or

expenses that arise by reason of:

1. (a) Any law, ordinance, permit, or governmental regulation (including those relating to building and zoning) restricting, regulating, prohibiting, or relating to

   (i) the occupancy, use, or enjoyment of the Land;

   (ii) the character, dimensions, or location of any improvement erected on the Land;

   (iii) the subdivision of land; or

   (iv) environmental protection;

   or the effect of any violation of these laws, ordinances, or governmental regulations. This Exclusion 1(a) does not modify or limit the coverage provided under Covered Risk 5.

   (b) Any governmental police power. This Exclusion 1(b) does not modify or limit the coverage provided under Covered Risk 6.

2. Rights of eminent domain. This Exclusion does not modify or limit the coverage provided under Covered Risk 7 or 8.

3. Defects, liens, encumbrances, adverse claims, or other matters

   (a) created, suffered, assumed, or agreed to by the Insured Claimant;

   (b) not Known to the Company, not recorded in the Public Records at Date of Policy, but Known to the Insured Claimant and not disclosed in writing to the Company by the Insured Claimant prior to the date the Insured Claimant became an Insured under this policy;

   (c) resulting in no loss or damage to the Insured Claimant;

   (d) attaching or created subsequent to Date of Policy (however, this does not modify or limit the coverage provided under Covered Risk 11, 13, or 14); or

   (e) resulting in loss or damage that would not have been sustained if the Insured Claimant had paid value for the Insured Mortgage.

4. Unenforceability of the lien of the Insured Mortgage because of the inability or failure of an Insured to comply with applicable doing-business laws of the state where the Land is situated.

5. Invalidity or unenforceability in whole or in part of the lien of the Insured Mortgage that arises out of the transaction evidenced by the Insured Mortgage and is based upon usury or any consumer credit protection or truth-in-lending law.

6. Any claim, by reason of the operation of federal bankruptcy, state insolvency, or similar creditors' rights laws, that the transaction creating the lien of the Insured Mortgage, is

   (a) a fraudulent conveyance or fraudulent transfer, or

   (b) a preferential transfer for any reason not stated in Covered Risk 13(b) of this policy.

7. Any lien on the Title for real estate taxes or assessments imposed by governmental authority and created or attaching between Date of Policy and the date of recording of the Insured Mortgage in the Public Records. This Exclusion does not modify or limit the coverage provided under Covered Risk 11(b).

14. AMERICAN LAND TITLE ASSOCIATION LOAN POLICY - 2006 WITH REGIONAL EXCEPTIONS

When the American Land Title Association policy is used as a Standard Coverage Policy and not as an Extended Coverage Policy the exclusions set forth in paragraph 13 above are used and the following exceptions to coverage appear in the policy.

SCHEDULE B

This policy does not insure against loss or damage (and the Company will not pay costs, attorneys' fees or expenses) which arise by reason of:

1. (a) Taxes or assessments that are not shown as existing liens by the records of any taxing authority that levies taxes or assessments on real property or by the Public Records; (b) proceedings by a public agency that may result in taxes or assessments, or notices of such proceedings, whether or not shown by the records of such agency or by the Public Records.

2. Any facts, rights, interests, or claims that are not shown by the Public Records but that could be ascertained by an inspection of the Land or that may be asserted by persons in possession of the Land.

3. Easements, liens or encumbrances, or claims thereof, not shown by the Public Records.

4. Any encroachment, encumbrance, violation, variation, or adverse circumstance affecting the Title that would be disclosed by an accurate and complete land survey of the Land and not shown by the Public Records.

5. (a) Unpatented mining claims; (b) reservations or exceptions in patents or in Acts authorizing the issuance thereof; (c) water rights, claims or title to water, whether or not the matters excepted under (a), (b), or (c) are shown by the Public Records.

15. AMERICAN LAND TITLE ASSOCIATION OWNER'S POLICY - 2006 EXCLUSIONS FROM COVERAGE

The following matters are expressly excluded from the coverage of this policy and the Company will not pay loss or damage, costs, attorneys' fees or expenses which arise by reason of:

1. (a) Any law, ordinance, permit, or governmental regulation (including those relating to building and zoning) restricting, regulating, prohibiting, or relating to

   (i) the occupancy, use, or enjoyment of the Land;

   (ii) the character, dimensions, or location of any improvement erected on the Land;

   (iii) the subdivision of land; or

   (iv) environmental protection;or the effect of any violation of these laws, ordinances, or governmental regulations. This Exclusion 1(a) does not modify or limit the coverage provided under Covered Risk 5.

(b) Any governmental police power. This Exclusion 1(b) does not modify or limit the coverage provided under Covered Risk 6.

2. Rights of eminent domain. This Exclusion does not modify or limit the coverage provided under Covered Risk 7 or 8.

3. Defects, liens, encumbrances, adverse claims, or other matters

(a) created, suffered, assumed, or agreed to by the Insured Claimant;

(b) not Known to the Company, not recorded in the Public Records at Date of Policy, but Known to the Insured Claimant and not disclosed in writing to the Company by the Insured Claimant prior to the date the Insured Claimant became an Insured under this policy;

(c) resulting in no loss or damage to the Insured Claimant;

(d) attaching or created subsequent to Date of Policy (however, this does not modify or limit the coverage provided under Covered Risks 9 and 10); or

(e) resulting in loss or damage that would not have been sustained if the Insured Claimant had paid value for the Title.

4. Any claim, by reason of the operation of federal bankruptcy, state insolvency, or similar creditors rights laws, that the transaction vesting the Title as shown in Schedule A, is

(a) a fraudulent conveyance or fraudulent transfer; or

(b) a preferential transfer for any reason not stated in Covered Risk 9 of this policy.

5. Any lien on the Title for real estate taxes or assessments imposed by governmental authority and created or attaching between Date of Policy and the date of recording of the deed or other instrument of transfer in the Public Records that vests Title as shown in Schedule A.

16. AMERICAN LAND TITLE ASSOCIATION OWNER'S POLICY - 2006 WITH REGIONAL EXCEPTIONS

When the American Land Title Association policy is used as a Standard Coverage Policy and not as an Extended Coverage Policy the exclusions set forth in paragraph 15 above are used and the following exceptions to coverage appear in the policy.

SCHEDULE B

This policy does not insure against loss or damage (and the Company will not pay costs, attorneys' fees or expenses) which arise by reason of:

1. (a) Taxes or assessments that are not shown as existing liens by the records of any taxing authority that levies taxes or assessments on real property or by the Public Records; (b) proceedings by a public agency that may result in taxes or assessments, or notices of such proceedings, whether or not shown by the records of such agency or by the Public Records.
2. Any facts, rights, interests, or claims that are not shown by the Public Records but that could be ascertained by an inspection of the Land or that may be asserted by persons in possession of the Land.
3. Easements, liens or encumbrances, or claims thereof, not shown by the Public Records.
4. Any encroachment, encumbrance, violation, variation, or adverse circumstance affecting the Title that would be disclosed by an accurate and complete land survey of the Land and not shown by the Public Records.
5. (a) Unpatented mining claims; (b) reservations or exceptions in patents or in Acts authorizing the issuance thereof; (c) water rights, claims or title to water, whether or not the matters excepted under (a), (b), or (c) are shown by the Public Records.

March 20, 2018
Update

First American Title Insurance Company
National Commercial Services
666 Third Avenue, 5th Floor
New York, NY 10017

March 20, 2018

John Warren
Intersect Power
Embarcadero Center , 7th Floor
San Francisco, CA 94111
Phone: (415)297-4169

Customer Reference: Castellanos

Order Number: 3020-877979

Owner: Antonio Castellanos and Martha Castellanos

Property: Vacant Land / APN: 811-122-001, , CA

Attached please find the following item(s):

Commitment

Thank You for your confidence and support. We at First American Title Insurance Company maintain the fundamental principle:

Customer First!

First American Title Insurance Company

INFORMATION

The Title Insurance Commitment is a legal contract between you and the company. It is issued to show the basis on which we will issue a Title Insurance Policy to you. The Policy will insure you against certain risks to the land title, subject to the limitations shown in the policy.

The Company will give you a sample of the Policy form, if you ask.

The Commitment is based on the land title as of the Commitment Date. Any changes in the land title or the transaction may affect the Commitment and the Policy.

The Commitment is subject to its Requirements, Exceptions and Conditions.

This information is not part of the title insurance commitment.

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YOU SHOULD READ THE COMMITMENT VERY CAREFULLY.
If you have any questions about the Commitment,
please contact the issuing office.

COMMITMENT FOR TITLE INSURANCE

Issued by

First American Title Insurance Company

Agreement to Issue Policy

We agree to issue a policy to you according to the terms of this Commitment.

When we show the policy amount and your name as the proposed insured in Schedule A, this Commitment becomes effective as of the Commitment Date shown in Schedule A.

If the Requirements shown in this Commitment have not been met within six months after the Commitment Date, our obligation under this Commitment will end. Also, our obligation under this Commitment will end when the Policy is issued and then our obligation to you will be under the Policy.

Our obligation under this Commitment is limited by the following:

The Provisions in Schedule A.

The Requirements in Schedule B-1.

The Exceptions in Schedule B-2.

The Conditions.

This Commitment is not valid without Schedule A and Sections 1 and 2 of Schedule B.

SCHEDULE A

1. Commitment Date: March 12, 2018 at 7:30 A.M.

2. Policy or Policies to be issued: Amount

(A) ALTA Owner's Policy $To Be Determined
ALTA Standard Owner Policy

Proposed Insured:

To Be Determined

(B) ALTA Loan Policy $To Be Determined
To Be Determined

Proposed Insured:

To Be Determined

3. (A) The estate or interest in the land described in this Commitment is:

Fee Simple

(B) Title to said estate or interest at the date hereof is vested in:

Southwest Conservancy III, LLC, a California limited liability company

4. The land referred to in this Commitment is situated in the unincorporated area of the County of Riverside, State of California, and is described as follows:

THAT PORTION OF THE SOUTHEAST QUARTER OF SECTION 6, TOWNSHIP 5 SOUTH, RANGE 16 EAST, SAN BERNARDINO BASE AND MERIDIAN, LYING SOUTHEASTERLY OF THE SOUTHEASTERLY LINE OF DESERT CENTER-RICE ROAD, 100 FEET IN WIDTH, AS DECLARED A COUNTY HIGHWAY BY RESOLUTION OF THE RIVERSIDE COUNTY BOARD OF SUPERVISORS, A CERTIFIED COPY OF WHICH WAS RECORDED MARCH 27, 1945 AS INSTRUMENT NO. 2957 OF OFFICIAL RECORDS OF RIVERSIDE COUNTY, CALIFORNIA.

APN: 811-122-001-6

SCHEDULE B

SECTION ONE

REQUIREMENTS

The following requirements must be met:

(A) Pay the agreed amounts for the interest in the land and/or the mortgage to be insured.

(B) Pay us the premiums, fees and charges for the policy.

(C) Documents satisfactory to us creating the interest in the land and/or the mortgage to be insured must be signed, delivered and recorded.

(D) You must tell us in writing the name of anyone not referred to in this Commitment who will get an interest in the land or who will make a loan on the land. We may then make additional requirements or exceptions.

(E) Releases(s) or Reconveyance(s) of Item(s): 5

(F) Other: None

(G) You must give us the following information:
1. Any off record leases, surveys, etc.
2. Statement(s) of Identity, all parties.
3. Other: None

The following additional requirements, as indicated by "X", must be met:

[X] (H) Provide information regarding any off-record matters, which may include, but are not limited to: leases, recent works of improvement, or commitment statements in effect under the Environmental Responsibility Acceptance Act, Civil Code Section 850, et seq.

The Company's Owner's Affidavit form (as provided by company) must be completed and submitted prior to close in order to satisfy this requirement. This Commitment will then be subject to such further exceptions and/or requirements as may be deemed necessary.

[] (I) An ALTA/NSPS survey of recent date, which complies with the current minimum standard detail requirements for ALTA/NSPS land title surveys, must be submitted to the Company for review. This Commitment will then be subject to such further exceptions and/or requirements as may be deemed necessary.

[X] (J) The following LLC documentation is required:
(i) a copy of the Articles of Organization
(ii) a copy of the Operating Agreement, if applicable
(iii) a Certificate of Good Standing and/or other evidence of current Authority to Conduct Business within the State
(iv) express Company Consent to the current transaction

[] (K) The following partnership documentation is required **:**
(i) a copy of the partnership agreement, including all applicable amendments thereto
(ii) a Certificate of Good Standing and/or other evidence of current Authority to Conduct Business within the State
(iii) express Partnership Consent to the current transaction

[] (L) The following corporation documentation is required:
(i) a copy of the Articles of Incorporation
(ii) a copy of the Bylaws, including all applicable Amendments thereto
(iii) a Certificate of Good Standing and/or other evidence of current Authority to Conduct Business within the State
(iv) express Corporate Resolution consenting to the current transaction

[**X**] (M) Based upon the Company's review of that certain partnership/operating agreement dated **Not disclosed** for the proposed insured herein, the following requirements must be met:

Any further amendments to said agreement must be submitted to the Company, together with an affidavit from one of the general partners or members stating that it is a true copy, that said partnership or limited liability company is in full force and effect, and that there have been no further amendments to the agreement. This Commitment will then be subject to such further requirements as may be deemed necessary.

[] (N) A copy of the complete lease, as referenced in Schedule A, #3 herein, together with any amendments and/or assignments thereto, must be submitted to the Company for review, along with an affidavit executed by the present lessee stating that it is a true copy, that the lease is in full force and effect, and that there have been no further amendments to the lease. This Commitment will then be subject to such further requirements as may be deemed necessary.

[X] (O) Approval from the Company's Underwriting Department must be obtained for issuance of the policy contemplated herein and any endorsements requested thereunder. This Commitment will then be subject to such further requirements as may be required to obtain such approval.

[] (P) Potential additional requirements, if ALTA Extended coverage is contemplated hereunder, and work on the land has commenced prior to close, some or all of the following requirements, and any other requirements which may be deemed necessary, may need to be met:

[] (Q) The Company's "Indemnity Agreement I" must be executed by the appropriate parties.

[] (R) Financial statements from the appropriate parties must be submitted to the Company for review.

[] (S) A copy of the construction contract must be submitted to the Company for review.

[] (T) An inspection of the land must be performed by the Company for verification of the phase of construction.

[] (U) The Company's "Mechanic's Lien Risk Addendum" form must be completed by a Company employee, based upon information furnished by the appropriate parties involved.

SCHEDULE B

SECTION TWO

EXCEPTIONS

Any policy we issue will have the following exceptions unless they are taken care of to our satisfaction. The printed exceptions and exclusions from the coverage of the policy or policies are set forth in Exhibit A attached. Copies of the policy forms should be read. They are available from the office which issued this Commitment.

1. General and special taxes and assessments for the fiscal year 2018-2019, a lien not yet due or payable.

2. The lien of supplemental taxes, if any, assessed pursuant to Chapter 3.5 commencing with Section 75 of the California Revenue and Taxation Code.

3. A right of way for ditches and canals as reserved by the United States of America in the patent recorded January 22, 1963 as Instrument No. 7427 of Official Records.

4. An easement for war department right-of-way and incidental purposes, recorded January 22, 1963 as Instrument No. 7427 of Official Records.

In Favor of:	The United Stated of America
Affects:	as described therein

5. A Deed of Trust to secure an original indebtedness of $10,000.00 recorded June 12, 1981 as Instrument No. 108807 of Official Records.

Dated:	May 12, 1981
Trustor:	Kenneth E. Statler and Mary E. Statler, Husband and Wife
Trustee:	Bank of America National Trust and Savings Association, a national banking association
Beneficiary:	Arlo H. Campbell, a widow as to undivided one-half interest; and Edward Maginnis and Rose Maginnis, Husband and Wife, as to an undivided one-half interest, as tenants in common

6. Any defects, liens, encumbrances or other matters which name parties with the same or similar names as Antonio Castellanos and Martha Castellanos. The name search necessary to ascertain the existence of such matters has not been completed. In order to complete this preliminary report or commitment, we will require a statement of information.

7. Rights of the public in and to that portion of the land lying within any road, street and/or highway.

8. Water rights, claims or title to water, whether or not shown by the public records.

9. Rights of parties in possession.

10. An option in favor of IP Land Holdings, LLC, a Delaware limited liability company as contained in or disclosed by a document recorded January 02, 2018 as Instrument No. 2018-0000025 of Official Records.

INFORMATIONAL NOTES

ALERT - CA Senate Bill 2 imposes an additional fee of $75 up to $225 at the time of recording on certain transactions effective January 1, 2018. Please contact your First American Title representative for more information on how this may affect your closing.

1. Taxes for proration purposes only for the fiscal year 2017-2018.

First Installment:	$41.25, PAID
Second Installment:	$41.25, PAID
Tax Rate Area:	062-000
APN:	811-122-001-6

2. The property covered by this report is vacant land.

3. According to the public records, there has been no conveyance of the land within a period of twenty four months prior to the date of this report, except as follows:

   A document recorded December 29, 2017 as Instrument No. 2017-0549715 of Official Records.
   From: Martha Castellanos
   To: Southwest Conservancy III, LLC, a California limited liability company

4. This preliminary report/commitment was prepared based upon an application for a policy of title insurance that identified land by street address or assessor's parcel number only. It is the responsibility of the applicant to determine whether the land referred to herein is in fact the land that is to be described in the policy or policies to be issued.

The map attached, if any, may or may not be a survey of the land depicted hereon. First American Title Insurance Company expressly disclaims any liability for loss or damage which may result from reliance on this map except to the extent coverage for such loss or damage is expressly provided by the terms and provisions of the title insurance policy, if any, to which this map is attached.

******To obtain wire instructions for deposit of funds to your escrow file please contact your Escrow Officer.******

CONDITIONS

1. **DEFINITIONS**
(a)"Mortgage" means mortgage, deed of trust or other security instrument.
(b)"Public Records" means title records that give constructive notice of matters affecting the title according to the state law where the land is located.

2. **LATER DEFECTS**
The Exceptions in Schedule B - Section Two may be amended to show any defects, liens or encumbrances that appear for the first time in the public records or are created or attached between the Commitment Date and the date on which all of the Requirements (a) and (c) of Schedule B - Section One are met. We shall have no liability to you because of this amendment.

3. **EXISTING DEFECTS**
If any defects, liens or encumbrances existing at Commitment Date are not shown in Schedule B, we may amend Schedule B to show them. If we do amend Schedule B to show these defects, liens or encumbrances, we shall be liable to you according to Paragraph 4 below unless you knew of this information and did not tell us about it in writing.

4. **LIMITATION OF OUR LIABILITY**
Our only obligation is to issue to you the Policy referred to in this Commitment, when you have met its Requirements. If we have any liability to you for any loss you incur because of an error in this Commitment, our liability will be limited to your actual loss caused by your relying on this Commitment when you acted in good faith to:

comply with the Requirements shown in Schedule B - Section One
or
eliminate with our written consent any Exceptions shown in Schedule B - Section Two.

We shall not be liable for more than the Policy Amount shown in Schedule A of this Commitment and our liability is subject to the terms of the Policy form to be issued to you.

5. **CLAIMS MUST BE BASED ON THIS COMMITMENT**
Any claim, whether or not based on negligence, which you may have against us concerning the title to the land must be based on this commitment and is subject to its terms.

First American Title

Privacy Information

We Are Committed to Safeguarding Customer Information

In order to better serve your needs now and in the future, we may ask you to provide us with certain information. We understand that you may be concerned about what we will do with such information - particularly any personal or financial information. We agree that you have a right to know how we will utilize the personal information you provide to us. Therefore, together with our subsidiaries we have adopted this Privacy Policy to govern the use and handling of your personal information.

Applicability

This Privacy Policy governs our use of the information that you provide to us. It does not govern the manner in which we may use information we have obtained from any other source, such as information obtained from a public record or from another person or entity. First American has also adopted broader guidelines that govern our use of personal information regardless of its source. First American calls these guidelines its Fair Information Values.

Types of Information

Depending upon which of our services you are utilizing, the types of nonpublic personal information that we may collect include:

- Information we receive from you on applications, forms and in other communications to us, whether in writing, in person, by telephone or any other means;
- Information about your transactions with us, our affiliated companies, or others; and
- Information we receive from a consumer reporting agency.

Use of Information

We request information from you for our own legitimate business purposes and not for the benefit of any nonaffiliated party. Therefore, we will not release your information to nonaffiliated parties except: (1) as necessary for us to provide the product or service you have requested of us; or (2) as permitted by law. We may, however, store such information indefinitely, including the period after which any customer relationship has ceased. Such information may be used for any internal purpose, such as quality control efforts or customer analysis. We may also provide all of the types of nonpublic personal information listed above to one or more of our affiliated companies. Such affiliated companies include financial service providers, such as title insurers, property and casualty insurers, and trust and investment advisory companies, or companies involved in real estate services, such as appraisal companies, home warranty companies and escrow companies. Furthermore, we may also provide all the information we collect, as described above, to companies that perform marketing services on our behalf, on behalf of our affiliated companies or to other financial institutions with whom we or our affiliated companies have joint marketing agreements.

Former Customers

Even if you are no longer our customer, our Privacy Policy will continue to apply to you.

Confidentiality and Security

We will use our best efforts to ensure that no unauthorized parties have access to any of your information. We restrict access to nonpublic personal information about you to those individuals and entities who need to know that information to provide products or services to you. We will use our best efforts to train and oversee our employees and agents to ensure that your information will be handled responsibly and in accordance with this Privacy Policy and First American's Fair Information Values. We currently maintain physical, electronic, and procedural safeguards that comply with federal regulations to guard your nonpublic personal information.

Information Obtained Through Our Web Site

First American Financial Corporation is sensitive to privacy issues on the Internet. We believe it is important you know how we treat the information about you we receive on the Internet.

In general, you can visit First American or its affiliates' Web sites on the World Wide Web without telling us who you are or revealing any information about yourself. Our Web servers collect the domain names, not the e-mail addresses, of visitors. This information is aggregated to measure the number of visits, average time spent on the site, pages viewed and similar information. First American uses this information to measure the use of our site and to develop ideas to improve the content of our site.

There are times, however, when we may need information from you, such as your name and email address. When information is needed, we will use our best efforts to let you know at the time of collection how we will use the personal information. Usually, the personal information we collect is used only by us to respond to your inquiry, process an order or allow you to access specific account/profile information. If you choose to share any personal information with us, we will only use it in accordance with the policies outlined above.

Business Relationships

First American Financial Corporation's site and its affiliates' sites may contain links to other Web sites. While we try to link only to sites that share our high standards and respect for privacy, we are not responsible for the content or the privacy practices employed by other sites.

Cookies

Some of First American's Web sites may make use of "cookie" technology to measure site activity and to customize information to your personal tastes. A cookie is an element of data that a Web site can send to your browser, which may then store the cookie on your hard drive.

FirstAm.com uses stored cookies. The goal of this technology is to better serve you when visiting our site, save you time when you are here and to provide you with a more meaningful and productive Web site experience.

Fair Information Values

Fairness We consider consumer expectations about their privacy in all our businesses. We only offer products and services that assure a favorable balance between consumer benefits and consumer privacy.

Public Record We believe that an open public record creates significant value for society, enhances consumer choice and creates consumer opportunity. We actively support an open public record and emphasize its importance and contribution to our economy.

Use We believe we should behave responsibly when we use information about a consumer in our business. We will obey the laws governing the collection, use and dissemination of data.

Accuracy We will take reasonable steps to help assure the accuracy of the data we collect, use and disseminate. Where possible, we will take reasonable steps to correct inaccurate information. When, as with the public record, we cannot correct inaccurate information, we will take all reasonable steps to assist consumers in identifying the source of the erroneous data so that the consumer can secure the required corrections.

Education We endeavor to educate the users of our products and services, our employees and others in our industry about the importance of consumer privacy. We will instruct our employees on our fair information values and on the responsible collection and use of data. We will encourage others in our industry to collect and use information in a responsible manner.

Security We will maintain appropriate facilities and systems to protect against unauthorized access to and corruption of the data we maintain.

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EXHIBIT A
LIST OF PRINTED EXCEPTIONS AND EXCLUSIONS (BY POLICY TYPE)

1. CALIFORNIA LAND TITLE ASSOCIATION STANDARD COVERAGE POLICY - 1990
SCHEDULE B

EXCEPTIONS FROM COVERAGE

This policy does not insure against loss or damage (and the Company will not pay costs, attorneys' fees or expenses) which arise by reason of:

1. Taxes or assessments which are not shown as existing liens by the records of any taxing authority that levies taxes or assessments on real property or by the public records. Proceedings by a public agency which may result in taxes or assessments, or notice of such proceedings, whether or not shown by the records of such agency or by the public records.
2. Any facts, rights, interests, or claims which are not shown by the public records but which could be ascertained by an inspection of the land or which may be asserted by persons in possession thereof.
3. Easements, liens or encumbrances, or claims thereof, which are not shown by the public records.
4. Discrepancies, conflicts in boundary lines, shortage in area, encroachments, or any other facts which a correct survey would disclose, and which are not shown by the public records.
5. (a) Unpatented mining claims; (b) reservations or exceptions in patents or in Acts authorizing the issuance thereof; (c) water rights, claims or title to water, whether or not the matters excepted under (a), (b), or (c) are shown by the public records.

EXCLUSIONS FROM COVERAGE

The following matters are expressly excluded from the coverage of this policy and the Company will not pay loss or damage, costs, attorneys' fees or expenses which arise by reason of:

1. (a) Any law, ordinance or governmental regulation (including but not limited to building and zoning laws, ordinances, or regulations) restricting, regulating, prohibiting or relating to (i) the occupancy, use, or enjoyment of the land; (ii) the character, dimensions or location of any improvement now or hereafter erected on the land; (iii) a separation in ownership or a change in the dimensions or area of the land or any parcel of which the land is or was a part; or (iv) environmental protection, or the effect of any violation of these laws, ordinances or governmental regulations, except to the extent that a notice of the enforcement thereof or a notice of a defect, lien or encumbrance resulting from a violation or alleged violation affecting the land has been recorded in the public records at Date of Policy.
   (b) Any governmental police power not excluded by (a) above, except to the extent that a notice of the exercise thereof or a notice of a defect, lien or encumbrance resulting from a violation or alleged violation affecting the land has been recorded in the public records at Date of Policy.
2. Rights of eminent domain unless notice of the exercise thereof has been recorded in the public records at Date of Policy, but not excluding from coverage any taking which has occurred prior to Date of Policy which would be binding on the rights of a purchaser for value without knowledge.
3. Defects, liens, encumbrances, adverse claims or other matters:
   (a) whether or not recorded in the public records at Date of Policy, but created, suffered, assumed or agreed to by the insured claimant;
   (b) not known to the Company, not recorded in the public records at Date of Policy, but known to the insured claimant and not disclosed in writing to the Company by the insured claimant prior to the date the insured claimant became an insured under this policy;
   (c) resulting in no loss or damage to the insured claimant;
   (d) attaching or created subsequent to Date of Policy; or
   (e) resulting in loss or damage which would not have been sustained if the insured claimant had paid value for the insured mortgage or for the estate or interest insured by this policy.
4. Unenforceability of the lien of the insured mortgage because of the inability or failure of the insured at Date of Policy, or the inability or failure of any subsequent owner of the indebtedness, to comply with applicable "doing business" laws of the state in which the land is situated.
5. Invalidity or unenforceability of the lien of the insured mortgage, or claim thereof, which arises out of the transaction evidenced by the insured mortgage and is based upon usury or any consumer credit protection or truth in lending law.
6. Any claim, which arises out of the transaction vesting in the insured the estate or interest insured by their policy or the transaction creating the interest of the insured lender, by reason of the operation of federal bankruptcy, state insolvency or similar creditors' rights laws.

2. AMERICAN LAND TITLE ASSOCIATION OWNER'S POLICY FORM B - 1970
SCHEDULE OF EXCLUSIONS FROM COVERAGE

1. Any law, ordinance or governmental regulation (including but not limited to building and zoning ordinances) restricting or regulating or prohibiting the occupancy, use or enjoyment of the land, or regulating the character, dimensions or location of any improvement now or hereafter erected on the land, or prohibiting a separation in ownership or a reduction in the dimensions of area of the land, or the effect of any violation of any such law, ordinance or governmental regulation.
2. Rights of eminent domain or governmental rights of police power unless notice of the exercise of such rights appears in the public records at Date of Policy.
3. Defects, liens, encumbrances, adverse claims, or other matters (a) created, suffered, assumed or agreed to by the insured claimant; (b) not known to the Company and not shown by the public records but known to the insured claimant either at Date of Policy or at the date such claimant acquired an estate or interest insured by this policy and not disclosed in writing by the insured claimant to the Company prior to the date such insured claimant became an insured hereunder; (c) resulting in no loss or damage to the insured claimant; (d) attaching or created subsequent to Date of Policy; or (e) resulting in loss or damage which would not have been sustained if the insured claimant had paid value for the estate or interest insured by this policy.

3. AMERICAN LAND TITLE ASSOCIATION OWNER'S POLICY FORM B - 1970
WITH REGIONAL EXCEPTIONS

When the American Land Title Association policy is used as a Standard Coverage Policy and not as an Extended Coverage Policy the exclusions set forth in paragraph 2 above are used and the following exceptions to coverage appear in the policy.

SCHEDULE B

This policy does not insure against loss or damage by reason of the matters shown in parts one and two following:
Part One

1. Taxes or assessments which are not shown as existing liens by the records of any taxing authority that levies taxes or assessments on real property or by the public records.
2. Any facts, rights, interests, or claims which are not shown by the public records but which could be ascertained by an inspection of said land or by making inquiry of persons in possession thereof.
3. Easements, claims of easement or encumbrances which are not shown by the public records.
4. Discrepancies, conflicts in boundary lines, shortage in area, encroachments, or any other facts which a correct survey would disclose, and which are not shown by public records.
5. Unpatented mining claims; reservations or exceptions in patents or in Acts authorizing the issuance thereof; water rights, claims or title to water.
6. Any lien, or right to a lien, for services, labor or material heretofore or hereafter furnished, imposed by law and not shown by the public records.

4. AMERICAN LAND TITLE ASSOCIATION LOAN POLICY - 1970 WITH A.L.T.A. ENDORSEMENT FORM 1 COVERAGE SCHEDULE OF EXCLUSIONS FROM COVERAGE

1. Any law, ordinance or governmental regulation (including but not limited to building and zoning ordinances) restricting or regulating or prohibiting the occupancy, use or enjoyment of the land, or regulating the character, dimensions or location of any improvement now or hereafter erected on the land, or prohibiting a separation in ownership or a reduction in the dimensions or area of the land, or the effect of any violation of any such law ordinance or governmental regulation.
2. Rights of eminent domain or governmental rights of police power unless notice of the exercise of such rights appears in the public records at Date of Policy.
3. Defects, liens, encumbrances, adverse claims, or other matters (a) created, suffered, assumed or agreed to by the insured claimant, (b) not known to the Company and not shown by the public records but known to the insured claimant either at Date of Policy or at the date such claimant acquired an estate or interest insured by this policy or acquired the insured mortgage and not disclosed in writing by the insured claimant to the Company prior to the date such insured claimant became an insured hereunder, (c) resulting in no loss or damage to the insured claimant; (d) attaching or created subsequent to Date of Policy (except to the extent insurance is afforded herein as to any statutory lien for labor or material or to the extent insurance is afforded herein as to assessments for street improvements under construction or completed at Date of Policy).
4. Unenforceability of the lien of the insured mortgage because of failure of the insured at Date of Policy or of any subsequent owner of the indebtedness to comply with applicable "doing business" laws of the state in which the land is situated.

5. AMERICAN LAND TITLE ASSOCIATION LOAN POLICY - 1970 WITH REGIONAL EXCEPTIONS

When the American Land Title Association Lenders Policy is used as a Standard Coverage Policy and not as an Extended Coverage Policy, the exclusions set forth in paragraph 4 above are used and the following exceptions to coverage appear in the policy.

SCHEDULE B

This policy does not insure against loss or damage by reason of the matters shown in parts one and two following:
Part One

1. Taxes or assessments which are not shown as existing liens by the records of any taxing authority that levies taxes or assessments on real property or by the public records.
2. Any facts, rights, interests, or claims which are not shown by the public records but which could be ascertained by an inspection of said land or by making inquiry of persons in possession thereof.
3. Easements, claims of easement or encumbrances which are not shown by the public records.
4. Discrepancies, conflicts in boundary lines, shortage in area, encroachments, or any other facts which a correct survey would disclose, and which are not shown by public records.
5. Unpatented mining claims; reservations or exceptions in patents or in Acts authorizing the issuance thereof; water rights, claims or title to water.
6. Any lien, or right to a lien, for services, labor or material theretofore or hereafter furnished, imposed by law and not shown by the public records.

6. AMERICAN LAND TITLE ASSOCIATION LOAN POLICY - 1992 WITH A.L.T.A. ENDORSEMENT FORM 1 COVERAGE EXCLUSIONS FROM COVERAGE

The following matters are expressly excluded from the coverage of this policy and the Company will not pay loss or damage, costs, attorneys' fees or expenses which arise by reason of:

1. (a) Any law, ordinance or governmental regulation (including but not limited to building and zoning laws, ordinances, or regulations) restricting, regulating, prohibiting or relating to (i) the occupancy, use, or enjoyment of the land; (ii) the character, dimensions or location of any improvement now or hereafter erected on the land; (iii) a separation in ownership or a change in the dimensions or area of the land or any parcel of which the land is or was a part; or (iv) environmental protection, or the effect of any violation of these laws, ordinances or governmental regulations, except to the extent that a notice of the enforcement thereof or a notice of a defect, lien or encumbrance resulting from a violation or alleged violation affecting the land has been recorded in the public records at Date of Policy;
(b) Any governmental police power not excluded by (a) above, except to the extent that a notice of the exercise thereof or a notice of a defect, lien or encumbrance resulting from a violation or alleged violation affecting the land has been recorded in the public records at Date of Policy.

2. Rights of eminent domain unless notice of the exercise thereof has been recorded in the public records at Date of Policy, but not excluding from coverage any taking which has occurred prior to Date of Policy which would be binding on the rights of a purchaser for value without knowledge.
3. Defects, liens, encumbrances, adverse claims, or other matters:
(a) whether or not recorded in the public records at Date of Policy, but created, suffered, assumed or agreed to by the insured claimant;
(b) not known to the Company, not recorded in the public records at Date of Policy, but known to the insured claimant and not disclosed in writing to the Company by the insured claimant prior to the date the insured claimant became an insured under this policy;
(c) resulting in no loss or damage to the insured claimant;
(d) attaching or created subsequent to Date of Policy (except to the extent that this policy insures the priority of the lien of the insured mortgage over any statutory lien for services, labor or material or the extent insurance is afforded herein as to assessments for street improvements under construction or completed at date of policy); or
(e) resulting in loss or damage which would not have been sustained if the insured claimant had paid value for the insured mortgage.
4. Unenforceability of the lien of the insured mortgage because of the inability or failure of the insured at Date of Policy, or the inability or failure of any subsequent owner of the indebtedness, to comply with the applicable "doing business" laws of the state in which the land is situated.
5. Invalidity or unenforceability of the lien of the insured mortgage, or claim thereof, which arises out of the transaction evidenced by the insured mortgage and is based upon usury or any consumer credit protection or truth in lending law.
6. Any statutory lien for services, labor or materials (or the claim of priority of any statutory lien for services, labor or materials over the lien of the insured mortgage) arising from an improvement or work related to the land which is contracted for and commenced subsequent to Date of Policy and is not financed in whole or in part by proceeds of the indebtedness secured by the insured mortgage which at Date of Policy the insured has advanced or is obligated to advance.
7. Any claim, which arises out of the transaction creating the interest of the mortgagee insured by this policy, by reason of the operation of federal bankruptcy, state insolvency, or similar creditors' rights laws, that is based on:
(i) the transaction creating the interest of the insured mortgagee being deemed a fraudulent conveyance or fraudulent transfer; or
(ii) the subordination of the interest of the insured mortgagee as a result of the application of the doctrine of equitable subordination; or
(iii) the transaction creating the interest of the insured mortgagee being deemed a preferential transfer except where the preferential transfer results from the failure:
(a) to timely record the instrument of transfer; or
(b) of such recordation to impart notice to a purchaser for value or a judgment or lien creditor.

7. AMERICAN LAND TITLE ASSOCIATION LOAN POLICY - 1992 WITH REGIONAL EXCEPTIONS

When the American Land Title Association policy is used as a Standard Coverage Policy and not as an Extended Coverage Policy the exclusions set forth in paragraph 6 above are used and the following exceptions to coverage appear in the policy.

SCHEDULE B

This policy does not insure against loss or damage (and the Company will not pay costs, attorneys' fees or expenses) which arise by reason of:
1. Taxes or assessments which are not shown as existing liens by the records of any taxing authority that levies taxes or assessments on real property or by the public records.
2. Any facts, rights, interests, or claims which are not shown by the public records but which could be ascertained by an inspection of said land or by making inquiry of persons in possession thereof.
3. Easements, claims of easement or encumbrances which are not shown by the public records.
4. Discrepancies, conflicts in boundary lines, shortage in area, encroachments, or any other facts which a correct survey would disclose, and which are not shown by public records.
5. Unpatented mining claims; reservations or exceptions in patents or in Acts authorizing the issuance thereof; water rights, claims or title to water.
6. Any lien, or right to a lien, for services, labor or material theretofore or hereafter furnished, imposed by law and not shown by the public records.

8. AMERICAN LAND TITLE ASSOCIATION OWNER'S POLICY - 1992 EXCLUSIONS FROM COVERAGE

The following matters are expressly excluded from the coverage of this policy and the Company will not pay loss or damage, costs, attorneys' fees or expenses which arise by reason of:
1. (a) Any law, ordinance or governmental regulation (including but not limited to building and zoning laws, ordinances, or regulations) restricting, regulating, prohibiting or relating to (i) the occupancy, use, or enjoyment of the land; (ii) the character, dimensions or location of any improvement now or hereafter erected on the land; (iii) a separation in ownership or a change in the dimensions or area of the land or any parcel of which the land is or was a part; or (iv) environmental protection, or the effect of any violation of these laws, ordinances or governmental regulations, except to the extent that a notice of the enforcement thereof or a notice of a defect, lien or encumbrance resulting from a violation or alleged violation affecting the land has been recorded in the public records at Date of Policy.
(b) Any governmental police power not excluded by (a) above, except to the extent that a notice of the exercise thereof or a notice of a defect, lien or encumbrance resulting from a violation or alleged violation affecting the land has been recorded in the public records at Date of Policy.
2. Rights of eminent domain unless notice of the exercise thereof has been recorded in the public records at Date of Policy, but not excluding from coverage any taking which has occurred prior to Date of Policy which would be binding on the rights of a purchaser for value without knowledge.
3. Defects, liens, encumbrances, adverse claims, or other matters:
(a) created, suffered, assumed or agreed to by the insured claimant;
(b) not known to the Company, not recorded in the public records at Date of Policy, but known to the insured claimant and not disclosed in writing to the Company by the insured claimant prior to the date the insured claimant became an insured under this policy;
(c) resulting in no loss or damage to the insured claimant;
(d) attaching or created subsequent to Date of Policy; or

(e) resulting in loss or damage which would not have been sustained if the insured claimant had paid value for the estate or interest insured by this policy.

4. Any claim, which arises out of the transaction vesting in the insured the estate or interest insured by this policy, by reason of the operation of federal bankruptcy, state insolvency, or similar creditors' rights laws, that is based on:
(i) the transaction creating the estate or interest insured by this policy being deemed a fraudulent conveyance or fraudulent transfer; or
(ii) the transaction creating the estate or interest insured by this policy being deemed a preferential transfer except where the preferential transfer results from the failure:
(a) to timely record the instrument of transfer; or
(b) of such recordation to impart notice to a purchaser for value or a judgment or lien creditor.

9. AMERICAN LAND TITLE ASSOCIATION OWNER'S POLICY - 1992 WITH REGIONAL EXCEPTIONS

When the American Land Title Association policy is used as a Standard Coverage Policy and not as an Extended Coverage Policy the exclusions set forth in paragraph 8 above are used and the following exceptions to coverage appear in the policy.

SCHEDULE B

This policy does not insure against loss or damage (and the Company will not pay costs, attorneys' fees or expenses) which arise by reason of:
Part One:

1. Taxes or assessments which are not shown as existing liens by the records of any taxing authority that levies taxes or assessments on real property or by the public records.
2. Any facts, rights, interests, or claims which are not shown by the public records but which could be ascertained by an inspection of said land or by making inquiry of persons in possession thereof.
3. Easements, claims of easement or encumbrances which are not shown by the public records.
4. Discrepancies, conflicts in boundary lines, shortage in area, encroachments, or any other facts which a correct survey would disclose, and which are not shown by public records.
5. Unpatented mining claims; reservations or exceptions in patents or in Acts authorizing the issuance thereof; water rights, claims or title to water.
6. Any lien, or right to a lien, for services, labor or material theretofore or hereafter furnished, imposed by law and not shown by the public records.

ALTA RESIDENTIAL TITLE INSURANCE POLICY (6-1-87)

EXCLUSIONS

In addition to the Exceptions in Schedule B, you are not insured against loss, costs, attorneys' fees, and expenses resulting from:

1. Governmental police power, and the existence or violation of any law or government regulation. This includes building and zoning ordinances and also laws and regulations concerning:
   (a) and use
   (b) improvements on the land
   (c) and division
   (d) environmental protection

   This exclusion does not apply to violations or the enforcement of these matters which appear in the public records at Policy Date.
   This exclusion does not limit the zoning coverage described in Items 12 and 13 of Covered Title Risks.
2. The right to take the land by condemning it, unless:
   (a) a notice of exercising the right appears in the public records on the Policy Date
   (b) the taking happened prior to the Policy Date and is binding on you if you bought the land without knowing of the taking
3. Title Risks:
   (a) that are created, allowed, or agreed to by you
   (b) that are known to you, but not to us, on the Policy Date -- unless they appeared in the public records
   (c) that result in no loss to you
   (d) that first affect your title after the Policy Date -- this does not limit the labor and material lien coverage in Item 8 of Covered Title Risks
4. Failure to pay value for your title.
5. Lack of a right:
   (a) to any land outside the area specifically described and referred to in Item 3 of Schedule A OR
   (b) in streets, alleys, or waterways that touch your land
   This exclusion does not limit the access coverage in Item 5 of Covered Title Risks.

11. EAGLE PROTECTION OWNER'S POLICY

CLTA HOMEOWNER'S POLICY OF TITLE INSURANCE - 1998
ALTA HOMEOWNER'S POLICY OF TITLE INSURANCE - 1998

Covered Risks 14 (Subdivision Law Violation). 15 (Building Permit). 16 (Zoning) and 18 (Encroachment of boundary walls or fences) are subject to Deductible Amounts and Maximum Dollar Limits of Liability

EXCLUSIONS

In addition to the Exceptions in Schedule B, you are not insured against loss, costs, attorneys' fees, and expenses resulting from:

1. Governmental police power, and the existence or violation of any law or government regulation. This includes ordinances, laws and regulations concerning:
   a. building
   b. zoning
   c. land use
   d. improvements on the land
   e. land division
   f. environmental protection

   This exclusion does not apply to violations or the enforcement of these matters if notice of the violation or enforcement appears in the Public Records at the Policy Date.
   This exclusion does not limit the coverage described in Covered Risk 14, 15, 16, 17 or 24.
2. The failure of Your existing structures, or any part of them, to be constructed in accordance with applicable building codes. This Exclusion does not apply to violations of building codes if notice of the violation appears in the Public Records at the Policy Date.
3. The right to take the Land by condemning it, unless:
   a. a notice of exercising the right appears in the Public Records at the Policy Date; or
   b. the taking happened before the Policy Date and is binding on You if You bought the Land without Knowing of the taking.
4. Risks:
   a. that are created, allowed, or agreed to by You, whether or not they appear in the Public Records;
   b. that are Known to You at the Policy Date, but not to Us, unless they appear in the Public Records at the Policy Date;
   c. that result in no loss to You; or
   d. that first occur after the Policy Date - this does not limit the coverage described in Covered Risk 7, 8.d, 22, 23, 24 or 25.
5. Failure to pay value for Your Title.
6. Lack of a right:
   a. to any Land outside the area specifically described and referred to in paragraph 3 of Schedule A; and
   b. in streets, alleys, or waterways that touch the Land.
   This exclusion does not limit the coverage described in Covered Risk 11 or 18.

12. THIRD GENERATION EAGLE LOAN POLICY AMERICAN LAND TITLE ASSOCIATION EXPANDED COVERAGE RESIDENTIAL LOAN POLICY (1/01/08)

EXCLUSIONS FROM COVERAGE

The following matters are expressly excluded from the coverage of this policy and the Company will not pay loss or damage, costs, attorneys' fees or expenses which arise by reason of:

1. (a) Any law, ordinance, permit, or governmental regulation (including those relating to building and zoning) restricting, regulating, prohibiting, or relating to (i) the occupancy, use, or enjoyment of the Land; (ii) the character, dimensions, or location of any improvement erected on the Land; (iii) the subdivision of land; or(iv) environmental protection; or the effect of any violation of these laws, ordinances, or governmental regulations. This Exclusion 1(a) does not modify or limit the coverage provided under Covered Risk 5, 6, 13(c), 13(d), 14 or 16.
   (b)Any governmental police power. This Exclusion 1(b) does not modify or limit the coverage provided under Covered Risk 5, 6, 13(c), 13(d), 14 or 16.
2. Rights of eminent domain. This Exclusion does not modify or limit the coverage provided under Covered Risk 7 or 8.
3. Defects, liens, encumbrances, adverse claims, or other matters
   (a) created, suffered, assumed or agreed to by the Insured Claimant;
   (b) not Known to the Company, not recorded in the Public Records at Date of Policy, but Known to the Insured Claimant and not disclosed in writing to the Company by the Insured Claimant prior to the date the Insured Claimant became an Insured under this policy;
   (c) resulting in no loss or damage to the Insured Claimant;
   (d) attaching or created subsequent to Date of Policy (however, this does not modify or limit the coverage provided under Covered Risk 11, 16, 17, 18, 19, 20, 21, 22, 23, 24, 27 or 28); or
   (e) resulting in loss or damage which would not have been sustained if the Insured Claimant had paid value for the Insured Mortgage.
4. Unenforceability of the lien of the Insured Mortgage because of the inability or failure of an Insured to comply with applicable doing business laws of the state where the Land is situated.
5. Invalidity or unenforceability in whole or in part of the lien of the Insured Mortgage that arises out of the transaction evidenced by the Insured Mortgage and is based upon usury, or any consumer credit protection or truth-in-lending law. This Exclusion does not modify or limit the coverage provided in Covered Risk 26.
6. Any claim of invalidity, unenforceability or lack of priority of the lien of the Insured Mortgage as to Advances or modifications made after the Insured has Knowledge that the vestee shown in Schedule A is no longer the owner of the estate or interest covered by this policy. This Exclusion does not modify or limit the coverage provided in Covered Risk 11.
7. Any lien on the Title for real estate taxes or assessments imposed by governmental authority and created or attaching subsequent to Date of Policy. This Exclusion does not modify or limit the coverage provided in Covered Risk 11(b) or 25.
8. The failure of the residential structure, or any portion of it, to have been constructed before, on or after Date of Policy in accordance with applicable building codes. This Exclusion does not modify or limit the coverage provided in Covered Risk 5 or 6.

13. AMERICAN LAND TITLE ASSOCIATION LOAN POLICY - 2006
EXCLUSIONS FROM COVERAGE

The following matters are expressly excluded from the coverage of this policy, and the Company will not pay loss or damage, costs, attorneys' fees, or

expenses that arise by reason of:

1. (a) Any law, ordinance, permit, or governmental regulation (including those relating to building and zoning) restricting, regulating, prohibiting, or relating to

   (i) the occupancy, use, or enjoyment of the Land;

   (ii) the character, dimensions, or location of any improvement erected on the Land;

   (iii) the subdivision of land; or

   (iv) environmental protection;

   or the effect of any violation of these laws, ordinances, or governmental regulations. This Exclusion 1(a) does not modify or limit the coverage provided under Covered Risk 5.

   (b) Any governmental police power. This Exclusion 1(b) does not modify or limit the coverage provided under Covered Risk 6.

2. Rights of eminent domain. This Exclusion does not modify or limit the coverage provided under Covered Risk 7 or 8.

3. Defects, liens, encumbrances, adverse claims, or other matters

   (a) created, suffered, assumed, or agreed to by the Insured Claimant;

   (b) not Known to the Company, not recorded in the Public Records at Date of Policy, but Known to the Insured Claimant and not disclosed in writing to the Company by the Insured Claimant prior to the date the Insured Claimant became an Insured under this policy;

   (c) resulting in no loss or damage to the Insured Claimant;

   (d) attaching or created subsequent to Date of Policy (however, this does not modify or limit the coverage provided under Covered Risk 11, 13, or 14); or

   (e) resulting in loss or damage that would not have been sustained if the Insured Claimant had paid value for the Insured Mortgage.

4. Unenforceability of the lien of the Insured Mortgage because of the inability or failure of an Insured to comply with applicable doing-business laws of the state where the Land is situated.

5. Invalidity or unenforceability in whole or in part of the lien of the Insured Mortgage that arises out of the transaction evidenced by the Insured Mortgage and is based upon usury or any consumer credit protection or truth-in-lending law.

6. Any claim, by reason of the operation of federal bankruptcy, state insolvency, or similar creditors' rights laws, that the transaction creating the lien of the Insured Mortgage, is

   (a) a fraudulent conveyance or fraudulent transfer, or

   (b) a preferential transfer for any reason not stated in Covered Risk 13(b) of this policy.

7. Any lien on the Title for real estate taxes or assessments imposed by governmental authority and created or attaching between Date of Policy and the date of recording of the Insured Mortgage in the Public Records. This Exclusion does not modify or limit the coverage provided under Covered Risk 11(b).

14. AMERICAN LAND TITLE ASSOCIATION LOAN POLICY - 2006 WITH REGIONAL EXCEPTIONS

When the American Land Title Association policy is used as a Standard Coverage Policy and not as an Extended Coverage Policy the exclusions set forth in paragraph 13 above are used and the following exceptions to coverage appear in the policy.

SCHEDULE B

This policy does not insure against loss or damage (and the Company will not pay costs, attorneys' fees or expenses) which arise by reason of:

1. (a) Taxes or assessments that are not shown as existing liens by the records of any taxing authority that levies taxes or assessments on real property or by the Public Records; (b) proceedings by a public agency that may result in taxes or assessments, or notices of such proceedings, whether or not shown by the records of such agency or by the Public Records.

2. Any facts, rights, interests, or claims that are not shown by the Public Records but that could be ascertained by an inspection of the Land or that may be asserted by persons in possession of the Land.

3. Easements, liens or encumbrances, or claims thereof, not shown by the Public Records.

4. Any encroachment, encumbrance, violation, variation, or adverse circumstance affecting the Title that would be disclosed by an accurate and complete land survey of the Land and not shown by the Public Records.

5. (a) Unpatented mining claims; (b) reservations or exceptions in patents or in Acts authorizing the issuance thereof; (c) water rights, claims or title to water, whether or not the matters excepted under (a), (b), or (c) are shown by the Public Records.

15. AMERICAN LAND TITLE ASSOCIATION OWNER'S POLICY - 2006 EXCLUSIONS FROM COVERAGE

The following matters are expressly excluded from the coverage of this policy and the Company will not pay loss or damage, costs, attorneys' fees or expenses which arise by reason of:

1. (a) Any law, ordinance, permit, or governmental regulation (including those relating to building and zoning) restricting, regulating, prohibiting, or relating to

   (i) the occupancy, use, or enjoyment of the Land;

   (ii) the character, dimensions, or location of any improvement erected on the Land;

   (iii) the subdivision of land; or

   (iv) environmental protection;or the effect of any violation of these laws, ordinances, or governmental regulations. This Exclusion 1(a) does not modify or limit the coverage provided under Covered Risk 5.

(b) Any governmental police power. This Exclusion 1(b) does not modify or limit the coverage provided under Covered Risk 6.

2. Rights of eminent domain. This Exclusion does not modify or limit the coverage provided under Covered Risk 7 or 8.

3. Defects, liens, encumbrances, adverse claims, or other matters

(a) created, suffered, assumed, or agreed to by the Insured Claimant;

(b) not Known to the Company, not recorded in the Public Records at Date of Policy, but Known to the Insured Claimant and not disclosed in writing to the Company by the Insured Claimant prior to the date the Insured Claimant became an Insured under this policy;

(c) resulting in no loss or damage to the Insured Claimant;

(d) attaching or created subsequent to Date of Policy (however, this does not modify or limit the coverage provided under Covered Risks 9 and 10); or

(e) resulting in loss or damage that would not have been sustained if the Insured Claimant had paid value for the Title.

4. Any claim, by reason of the operation of federal bankruptcy, state insolvency, or similar creditors rights laws, that the transaction vesting the Title as shown in Schedule A, is

(a) a fraudulent conveyance or fraudulent transfer; or

(b) a preferential transfer for any reason not stated in Covered Risk 9 of this policy.

5. Any lien on the Title for real estate taxes or assessments imposed by governmental authority and created or attaching between Date of Policy and the date of recording of the deed or other instrument of transfer in the Public Records that vests Title as shown in Schedule A.

16. AMERICAN LAND TITLE ASSOCIATION OWNER'S POLICY - 2006 WITH REGIONAL EXCEPTIONS

When the American Land Title Association policy is used as a Standard Coverage Policy and not as an Extended Coverage Policy the exclusions set forth in paragraph 15 above are used and the following exceptions to coverage appear in the policy.

SCHEDULE B

This policy does not insure against loss or damage (and the Company will not pay costs, attorneys' fees or expenses) which arise by reason of:

1. (a) Taxes or assessments that are not shown as existing liens by the records of any taxing authority that levies taxes or assessments on real property or by the Public Records; (b) proceedings by a public agency that may result in taxes or assessments, or notices of such proceedings, whether or not shown by the records of such agency or by the Public Records.
2. Any facts, rights, interests, or claims that are not shown by the Public Records but that could be ascertained by an inspection of the Land or that may be asserted by persons in possession of the Land.
3. Easements, liens or encumbrances, or claims thereof, not shown by the Public Records.
4. Any encroachment, encumbrance, violation, variation, or adverse circumstance affecting the Title that would be disclosed by an accurate and complete land survey of the Land and not shown by the Public Records.
5. (a) Unpatented mining claims; (b) reservations or exceptions in patents or in Acts authorizing the issuance thereof; (c) water rights, claims or title to water, whether or not the matters excepted under (a), (b), or (c) are shown by the Public Records.

First American Title Insurance Company

National Commercial Services

666 Third Avenue, 5th Floor
New York, NY 10017

February 12, 2018

John Warren
Intersect Power
Embarcadero Center , 7th Floor
San Francisco, CA 94111
Phone: (415)297-4169

Customer Reference: Chuckwalla

Order Number: 890943-1

Property: , , CA

Attached please find the following item(s):

Commitment

Thank You for your confidence and support. We at First American Title Insurance Company maintain the fundamental principle:

Customer First!

First American Title Insurance Company

INFORMATION

The Title Insurance Commitment is a legal contract between you and the company. It is issued to show the basis on which we will issue a Title Insurance Policy to you. The Policy will insure you against certain risks to the land title, subject to the limitations shown in the policy.

The Company will give you a sample of the Policy form, if you ask.

The Commitment is based on the land title as of the Commitment Date. Any changes in the land title or the transaction may affect the Commitment and the Policy.

The Commitment is subject to its Requirements, Exceptions and Conditions.

This information is not part of the title insurance commitment.

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YOU SHOULD READ THE COMMITMENT VERY CAREFULLY.
If you have any questions about the Commitment,
please contact the issuing office.

COMMITMENT FOR TITLE INSURANCE

Issued by

First American Title Insurance Company

Agreement to Issue Policy

We agree to issue a policy to you according to the terms of this Commitment.

When we show the policy amount and your name as the proposed insured in Schedule A, this Commitment becomes effective as of the Commitment Date shown in Schedule A.

If the Requirements shown in this Commitment have not been met within six months after the Commitment Date, our obligation under this Commitment will end. Also, our obligation under this Commitment will end when the Policy is issued and then our obligation to you will be under the Policy.

Our obligation under this Commitment is limited by the following:

The Provisions in Schedule A.

The Requirements in Schedule B-1.

The Exceptions in Schedule B-2.

The Conditions.

This Commitment is not valid without Schedule A and Sections 1 and 2 of Schedule B.

SCHEDULE A

1. Commitment Date: February 01, 2018 at 7:30 A.M.

2. Policy or Policies to be issued: Amount

(A) ALTA Owner's Policy $To Be Determined
ALTA Standard Owner Policy

Proposed Insured:

To Be Determined

(B) ALTA Loan Policy $To Be Determined
To Be Determined

Proposed Insured:

To Be Determined

3. (A) The estate or interest in the land described in this Commitment is:

FEE

(B) Title to said estate or interest at the date hereof is vested in:

Chuckwalla Valley Associates, LLC, a California limited liability company

4. The land referred to in this Commitment is situated in the unincorporated area of the County of Riverside, State of California, and is described as follows:

PARCEL 1:

THE NORTH 1/2 OF THE NORTHWEST 1/4 OF THE NORTHWEST 1/4 OF SECTION 9, TOWNSHIP 5 SOUTH, RANGE 16 EAST, SAN BERNARDINO BASE AND MERIDIAN, ALSO THE SOUTHWEST 1/4 OF THE SOUTHWEST 1/4 OF THE SOUTHWEST 1/4 OF SECTION 4, SAID TOWNSHIP AND RANGE; ALSO THE EASTERLY RECTANGULAR 1100 FEET OF THE NORTH 1/2 OF THE NORTHEAST 1/4 OF THE NORTHEAST 1/4 OF SECTION 8, SAID TOWNSHIP AND RANGE; ALSO THE EASTERLY RECTANGULAR 1100 FEET OF THE SOUTHEAST 1/4 OF SECTION 5, SAID TOWNSHIP AND RANGE, EXCEPTING THEREFROM THAT PORTION THEREOF LYING WITHIN THE NORTH 1/2 OF THE NORTHEAST 1/4 OF SAID SOUTHEAST 1/4, ALSO EXCEPTING THEREFROM THE SOUTHEAST 1/4 OF THE NORTHEAST 1/4 OF SAID SOUTHEAST 1/4 OF SECTION 5.

PARCEL 2:

THE NORTHEAST 1/4 OF THE NORTHEAST 1/4 OF THE NORTHEAST 1/4 OF SECTION 9, TOWNSHIP 5 SOUTH, RANGE 16 EAST, SAN BERNARDINO BASE AND MERIDIAN.

APN: 811-122-009-4 (Affects: Portion of Parcel 1)
811-130-010-9 (Affects: Portion of Parcel 1)
811-142-015-1 (Affects: Portion of Parcel 1)

811-150-002-4 (Affects: Portion of Parcel 1)
811-150-004-6 (Affects: Parcel 2)

SCHEDULE B

SECTION ONE

REQUIREMENTS

The following requirements must be met:

(A) Pay the agreed amounts for the interest in the land and/or the mortgage to be insured.

(B) Pay us the premiums, fees and charges for the policy.

(C) Documents satisfactory to us creating the interest in the land and/or the mortgage to be insured must be signed, delivered and recorded.

(D) You must tell us in writing the name of anyone not referred to in this Commitment who will get an interest in the land or who will make a loan on the land. We may then make additional requirements or exceptions.

(E) Releases(s) or Reconveyance(s) of Item(s): 15 through 17

(F) Other: None

(G) You must give us the following information:
1. Any off record leases, surveys, etc.
2. Statement(s) of Identity, all parties.
3. Other: None

The following additional requirements, as indicated by "X", must be met:

[X] (H) Provide information regarding any off-record matters, which may include, but are not limited to: leases, recent works of improvement, or commitment statements in effect under the Environmental Responsibility Acceptance Act, Civil Code Section 850, et seq.

The Company's Owner's Affidavit form (as provided by company) must be completed and submitted prior to close in order to satisfy this requirement. This Commitment will then be subject to such further exceptions and/or requirements as may be deemed necessary.

[] (I) An ALTA/NSPS survey of recent date, which complies with the current minimum standard detail requirements for ALTA/NSPS land title surveys, must be submitted to the Company for review. This Commitment will then be subject to such further exceptions and/or requirements as may be deemed necessary.

[X] (J) The following LLC documentation is required:
(i) a copy of the Articles of Organization
(ii) a copy of the Operating Agreement, if applicable
(iii) a Certificate of Good Standing and/or other evidence of current Authority to Conduct Business within the State
(iv) express Company Consent to the current transaction

[] (K) The following partnership documentation is required **:**
(i) a copy of the partnership agreement, including all applicable amendments thereto
(ii) a Certificate of Good Standing and/or other evidence of current Authority to Conduct Business within the State
(iii) express Partnership Consent to the current transaction

[] (L) The following corporation documentation is required:
(i) a copy of the Articles of Incorporation
(ii) a copy of the Bylaws, including all applicable Amendments thereto
(iii) a Certificate of Good Standing and/or other evidence of current Authority to Conduct Business within the State
(iv) express Corporate Resolution consenting to the current transaction

[**X**] (M) Based upon the Company's review of that certain partnership/operating agreement dated **Not disclosed** for the proposed insured herein, the following requirements must be met:

Any further amendments to said agreement must be submitted to the Company, together with an affidavit from one of the general partners or members stating that it is a true copy, that said partnership or limited liability company is in full force and effect, and that there have been no further amendments to the agreement. This Commitment will then be subject to such further requirements as may be deemed necessary.

[] (N) A copy of the complete lease, as referenced in Schedule A, #3 herein, together with any amendments and/or assignments thereto, must be submitted to the Company for review, along with an affidavit executed by the present lessee stating that it is a true copy, that the lease is in full force and effect, and that there have been no further amendments to the lease. This Commitment will then be subject to such further requirements as may be deemed necessary.

[X] (O) Approval from the Company's Underwriting Department must be obtained for issuance of the policy contemplated herein and any endorsements requested thereunder. This Commitment will then be subject to such further requirements as may be required to obtain such approval.

[] (P) Potential additional requirements, if ALTA Extended coverage is contemplated hereunder, and work on the land has commenced prior to close, some or all of the following requirements, and any other requirements which may be deemed necessary, may need to be met:

[] (Q) The Company's "Indemnity Agreement I" must be executed by the appropriate parties.

[] (R) Financial statements from the appropriate parties must be submitted to the Company for review.

[] (S) A copy of the construction contract must be submitted to the Company for review.

[] (T) An inspection of the land must be performed by the Company for verification of the phase of construction.

[] (U) The Company's "Mechanic's Lien Risk Addendum" form must be completed by a Company employee, based upon information furnished by the appropriate parties involved.

SCHEDULE B

SECTION TWO

EXCEPTIONS

Any policy we issue will have the following exceptions unless they are taken care of to our satisfaction. The printed exceptions and exclusions from the coverage of the policy or policies are set forth in Exhibit A attached. Copies of the policy forms should be read. They are available from the office which issued this Commitment.

1. General and special taxes and assessments for the fiscal year 2018-2019, a lien not yet due or payable.

2. General and special taxes and assessments for the fiscal year 2017-2018.

First Installment:	$144.07, PAID
Penalty:	$0.00
Second Installment:	$144.07, OPEN
Penalty:	$0.00
Tax Rate Area:	062-000
A. P. No.:	811-122-009-4

(Affects Portion of Parcel 1)

3. General and special taxes and assessments for the fiscal year 2017-2018.

First Installment:	$35.98, PAID
Penalty:	$0.00
Second Installment:	$35.98, OPEN
Penalty:	$0.00
Tax Rate Area:	062-000
A. P. No.:	811-130-010-9

(Affects Portion of Parcel 1)

4. General and special taxes and assessments for the fiscal year 2017-2018.

First Installment:	$60.01, PAID
Penalty:	$0.00
Second Installment:	$60.01, OPEN
Penalty:	$0.00
Tax Rate Area:	062-000
A. P. No.:	811-142-015-1

(Affects Portion of Parcel 1)

5. General and special taxes and assessments for the fiscal year 2017-2018.

First Installment:	$72.01, PAID
Penalty:	$0.00
Second Installment:	$72.01, OPEN
Penalty:	$0.00
Tax Rate Area:	062-000
A. P. No.:	811-150-002-4

(Affects Portion of Parcel 1)

6. General and special taxes and assessments for the fiscal year 2017-2018.

First Installment:	$35.98, PAID
Penalty:	$0.00
Second Installment:	$35.98, OPEN
Penalty:	$0.00
Tax Rate Area:	062-000
A. P. No.:	811-150-004-6

(Affects Parcel 2)

7. The lien of supplemental taxes, if any, assessed pursuant to Chapter 3.5 commencing with Section 75 of the California Revenue and Taxation Code.

8. The effect of a map purporting to show the land and other property, filed Book 12, Page 81 of Record of Surveys.

9. An easement for utilities and incidental purposes, recorded March 05, 1946 as Book 715, Page 556 of Official Records.

In Favor of:	United States of America
Affects:	as described therein

10. Covenants, conditions, restrictions and easements in the document recorded September 22, 1965 as Instrument No. 108806 of Official Records, but deleting any covenant, condition or restriction indicating a preference, limitation or discrimination based on race, color, religion, sex, handicap, familial status, national origin, sexual orientation, marital status, ancestry, source of income or disability, to the extent such covenants, conditions or restrictions violate Title 42, Section 3604(c), of the United States Codes. Lawful restrictions under state and federal law on the age of occupants in senior housing or housing for older persons shall not be construed as restrictions based on familial status.

11. An easement for public road, public utility, public service uses and incidental purposes, recorded October 20, 1965 as Instrument No. 1965-119997, June 8, 1967 as Instrument No. 49575, June 15, 1967 as Instrument No. 67-51766, all of Official Records.

In Favor of:	Kelly F. Naples et al.
Affects:	as described therein

12. An easement for utilities and incidental purposes, recorded October 29, 1985 as Instrument No. 243629 of Official Records.

In Favor of:	Southern California Edison Company, a Corporation
Affects:	as described therein

13. The fact that the land lies within the boundaries of the Redevelopment Project Airports - 1988, as disclosed by the document recorded December 27, 1988 as Instrument No. 380562 of Official Records.

14. Easements, Covenants and Conditions contained in the deed from The Redevelopment Agency for the County of Riverside ("RDA"), a public body, corporate and politic, as Grantor, to Chuckwalla Valley Associates, LLC, a California limited liability company, as Grantee, recorded December 13, 2006 as Instrument No. 2006-0913982 of Official Records. Reference being made to the document for full particulars.

15. A deed of trust to secure an original indebtedness of $4,280,914.00 recorded December 23, 2011 as Instrument No. 2011-0569435 of Official Records.

Dated:	September 01, 2011
Trustor:	Chuckwalla Valley Associates LLC, a California Limited Liability Company
Trustee:	Fidelity National Title Company, a California Corporation
Beneficiary:	Guy H. Evans and Malia Evans, Co-Trustees of The Evans Living Trust U/A Dated April 18, 1995

Affects: The land and other property.

16. A deed of trust to secure an original indebtedness of $2,226,252.00 recorded December 23, 2011 as Instrument No. 2011-0569436 of Official Records.

Dated:	September 01, 2011
Trustor:	Chuckwalla Valley Associates LLC, a California Limited Liability Company
Trustee:	Fidelity National Title Company, a California Corporation
Beneficiary:	Guy H. Evans and Malia Evans, Co -Trustees of The Evans Living Trust U/A Dated April 18, 1995

Affects: The land and other property.

17. A deed of trust to secure an original indebtedness of $1,780,000.00 recorded December 23, 2011 as Instrument No. 2011-0569437 of Official Records.

Dated:	September 01, 2011
Trustor:	Chuckwalla Valley Associates LLC, a California Limited Liability Company
Trustee:	Fidelity National Title Company, a California Corporation
Beneficiary:	Metroplex Ventures, LLC, a California limited liability company

Affects: The land and other property.

18. The lack of a right of access to and from the land.

Notice: Paragraph 4 of the insuring provisions on the face page of the policy will be deleted from the policy to be issued.

19. Rights of the public in and to that portion of the land lying within any road, street and/or highway.

20. Water rights, claims or title to water, whether or not shown by the public records.

21. Rights of parties in possession.

INFORMATIONAL NOTES

ALERT - CA Senate Bill 2 imposes an additional fee of $75 up to $225 at the time of recording on certain transactions effective January 1, 2018. Please contact your First American Title representative for more information on how this may affect your closing.

1. The property covered by this report is vacant land.

2. According to the public records, there has been no conveyance of the land within a period of twenty-four months prior to the date of this report, except as follows:

   None

3. This preliminary report/commitment was prepared based upon an application for a policy of title insurance that identified land by street address or assessor's parcel number only. It is the responsibility of the applicant to determine whether the land referred to herein is in fact the land that is to be described in the policy or policies to be issued.

The map attached, if any, may or may not be a survey of the land depicted hereon. First American Title Insurance Company expressly disclaims any liability for loss or damage which may result from reliance on this map except to the extent coverage for such loss or damage is expressly provided by the terms and provisions of the title insurance policy, if any, to which this map is attached.

******To obtain wire instructions for deposit of funds to your escrow file please contact your Escrow Officer.******

CONDITIONS

1. **DEFINITIONS**
(a)"Mortgage" means mortgage, deed of trust or other security instrument.
(b)"Public Records" means title records that give constructive notice of matters affecting the title according to the state law where the land is located.

2. **LATER DEFECTS**
The Exceptions in Schedule B - Section Two may be amended to show any defects, liens or encumbrances that appear for the first time in the public records or are created or attached between the Commitment Date and the date on which all of the Requirements (a) and (c) of Schedule B - Section One are met. We shall have no liability to you because of this amendment.

3. **EXISTING DEFECTS**
If any defects, liens or encumbrances existing at Commitment Date are not shown in Schedule B, we may amend Schedule B to show them. If we do amend Schedule B to show these defects, liens or encumbrances, we shall be liable to you according to Paragraph 4 below unless you knew of this information and did not tell us about it in writing.

4. **LIMITATION OF OUR LIABILITY**
Our only obligation is to issue to you the Policy referred to in this Commitment, when you have met its Requirements. If we have any liability to you for any loss you incur because of an error in this Commitment, our liability will be limited to your actual loss caused by your relying on this Commitment when you acted in good faith to:

comply with the Requirements shown in Schedule B - Section One
or
eliminate with our written consent any Exceptions shown in Schedule B - Section Two.

We shall not be liable for more than the Policy Amount shown in Schedule A of this Commitment and our liability is subject to the terms of the Policy form to be issued to you.

5. **CLAIMS MUST BE BASED ON THIS COMMITMENT**
Any claim, whether or not based on negligence, which you may have against us concerning the title to the land must be based on this commitment and is subject to its terms.

First American Title

Privacy Information

We Are Committed to Safeguarding Customer Information

In order to better serve your needs now and in the future, we may ask you to provide us with certain information. We understand that you may be concerned about what we will do with such information - particularly any personal or financial information. We agree that you have a right to know how we will utilize the personal information you provide to us. Therefore, together with our subsidiaries we have adopted this Privacy Policy to govern the use and handling of your personal information.

Applicability

This Privacy Policy governs our use of the information that you provide to us. It does not govern the manner in which we may use information we have obtained from any other source, such as information obtained from a public record or from another person or entity. First American has also adopted broader guidelines that govern our use of personal information regardless of its source. First American calls these guidelines its Fair Information Values.

Types of Information

Depending upon which of our services you are utilizing, the types of nonpublic personal information that we may collect include:

- Information we receive from you on applications, forms and in other communications to us, whether in writing, in person, by telephone or any other means;
- Information about your transactions with us, our affiliated companies, or others; and
- Information we receive from a consumer reporting agency.

Use of Information

We request information from you for our own legitimate business purposes and not for the benefit of any nonaffiliated party. Therefore, we will not release your information to nonaffiliated parties except: (1) as necessary for us to provide the product or service you have requested of us; or (2) as permitted by law. We may, however, store such information indefinitely, including the period after which any customer relationship has ceased. Such information may be used for any internal purpose, such as quality control efforts or customer analysis. We may also provide all of the types of nonpublic personal information listed above to one or more of our affiliated companies. Such affiliated companies include financial service providers, such as title insurers, property and casualty insurers, and trust and investment advisory companies, or companies involved in real estate services, such as appraisal companies, home warranty companies and escrow companies. Furthermore, we may also provide all the information we collect, as described above, to companies that perform marketing services on our behalf, on behalf of our affiliated companies or to other financial institutions with whom we or our affiliated companies have joint marketing agreements.

Former Customers

Even if you are no longer our customer, our Privacy Policy will continue to apply to you.

Confidentiality and Security

We will use our best efforts to ensure that no unauthorized parties have access to any of your information. We restrict access to nonpublic personal information about you to those individuals and entities who need to know that information to provide products or services to you. We will use our best efforts to train and oversee our employees and agents to ensure that your information will be handled responsibly and in accordance with this Privacy Policy and First American's Fair Information Values. We currently maintain physical, electronic, and procedural safeguards that comply with federal regulations to guard your nonpublic personal information.

Information Obtained Through Our Web Site

First American Financial Corporation is sensitive to privacy issues on the Internet. We believe it is important you know how we treat the information about you we receive on the Internet.

In general, you can visit First American or its affiliates' Web sites on the World Wide Web without telling us who you are or revealing any information about yourself. Our Web servers collect the domain names, not the e-mail addresses, of visitors. This information is aggregated to measure the number of visits, average time spent on the site, pages viewed and similar information. First American uses this information to measure the use of our site and to develop ideas to improve the content of our site.

There are times, however, when we may need information from you, such as your name and email address. When information is needed, we will use our best efforts to let you know at the time of collection how we will use the personal information. Usually, the personal information we collect is used only by us to respond to your inquiry, process an order or allow you to access specific account/profile information. If you choose to share any personal information with us, we will only use it in accordance with the policies outlined above.

Business Relationships

First American Financial Corporation's site and its affiliates' sites may contain links to other Web sites. While we try to link only to sites that share our high standards and respect for privacy, we are not responsible for the content or the privacy practices employed by other sites.

Cookies

Some of First American's Web sites may make use of "cookie" technology to measure site activity and to customize information to your personal tastes. A cookie is an element of data that a Web site can send to your browser, which may then store the cookie on your hard drive.

FirstAm.com uses stored cookies. The goal of this technology is to better serve you when visiting our site, save you time when you are here and to provide you with a more meaningful and productive Web site experience.

Fair Information Values

Fairness We consider consumer expectations about their privacy in all our businesses. We only offer products and services that assure a favorable balance between consumer benefits and consumer privacy.

Public Record We believe that an open public record creates significant value for society, enhances consumer choice and creates consumer opportunity. We actively support an open public record and emphasize its importance and contribution to our economy.

Use We believe we should behave responsibly when we use information about a consumer in our business. We will obey the laws governing the collection, use and dissemination of data.

Accuracy We will take reasonable steps to help assure the accuracy of the data we collect, use and disseminate. Where possible, we will take reasonable steps to correct inaccurate information. When, as with the public record, we cannot correct inaccurate information, we will take all reasonable steps to assist consumers in identifying the source of the erroneous data so that the consumer can secure the required corrections.

Education We endeavor to educate the users of our products and services, our employees and others in our industry about the importance of consumer privacy. We will instruct our employees on our fair information values and on the responsible collection and use of data. We will encourage others in our industry to collect and use information in a responsible manner.

Security We will maintain appropriate facilities and systems to protect against unauthorized access to and corruption of the data we maintain.

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EXHIBIT A
LIST OF PRINTED EXCEPTIONS AND EXCLUSIONS (BY POLICY TYPE)

1. CALIFORNIA LAND TITLE ASSOCIATION STANDARD COVERAGE POLICY - 1990
SCHEDULE B

EXCEPTIONS FROM COVERAGE

This policy does not insure against loss or damage (and the Company will not pay costs, attorneys' fees or expenses) which arise by reason of:

1. Taxes or assessments which are not shown as existing liens by the records of any taxing authority that levies taxes or assessments on real property or by the public records. Proceedings by a public agency which may result in taxes or assessments, or notice of such proceedings, whether or not shown by the records of such agency or by the public records.
2. Any facts, rights, interests, or claims which are not shown by the public records but which could be ascertained by an inspection of the land or which may be asserted by persons in possession thereof.
3. Easements, liens or encumbrances, or claims thereof, which are not shown by the public records.
4. Discrepancies, conflicts in boundary lines, shortage in area, encroachments, or any other facts which a correct survey would disclose, and which are not shown by the public records.
5. (a) Unpatented mining claims; (b) reservations or exceptions in patents or in Acts authorizing the issuance thereof; (c) water rights, claims or title to water, whether or not the matters excepted under (a), (b), or (c) are shown by the public records.

EXCLUSIONS FROM COVERAGE

The following matters are expressly excluded from the coverage of this policy and the Company will not pay loss or damage, costs, attorneys' fees or expenses which arise by reason of:

1. (a) Any law, ordinance or governmental regulation (including but not limited to building and zoning laws, ordinances, or regulations) restricting, regulating, prohibiting or relating to (i) the occupancy, use, or enjoyment of the land; (ii) the character, dimensions or location of any improvement now or hereafter erected on the land; (iii) a separation in ownership or a change in the dimensions or area of the land or any parcel of which the land is or was a part; or (iv) environmental protection, or the effect of any violation of these laws, ordinances or governmental regulations, except to the extent that a notice of the enforcement thereof or a notice of a defect, lien or encumbrance resulting from a violation or alleged violation affecting the land has been recorded in the public records at Date of Policy.
   (b) Any governmental police power not excluded by (a) above, except to the extent that a notice of the exercise thereof or a notice of a defect, lien or encumbrance resulting from a violation or alleged violation affecting the land has been recorded in the public records at Date of Policy.
2. Rights of eminent domain unless notice of the exercise thereof has been recorded in the public records at Date of Policy, but not excluding from coverage any taking which has occurred prior to Date of Policy which would be binding on the rights of a purchaser for value without knowledge.
3. Defects, liens, encumbrances, adverse claims or other matters:
   (a) whether or not recorded in the public records at Date of Policy, but created, suffered, assumed or agreed to by the insured claimant;
   (b) not known to the Company, not recorded in the public records at Date of Policy, but known to the insured claimant and not disclosed in writing to the Company by the insured claimant prior to the date the insured claimant became an insured under this policy;
   (c) resulting in no loss or damage to the insured claimant;
   (d) attaching or created subsequent to Date of Policy; or
   (e) resulting in loss or damage which would not have been sustained if the insured claimant had paid value for the insured mortgage or for the estate or interest insured by this policy.
4. Unenforceability of the lien of the insured mortgage because of the inability or failure of the insured at Date of Policy, or the inability or failure of any subsequent owner of the indebtedness, to comply with applicable "doing business" laws of the state in which the land is situated.
5. Invalidity or unenforceability of the lien of the insured mortgage, or claim thereof, which arises out of the transaction evidenced by the insured mortgage and is based upon usury or any consumer credit protection or truth in lending law.
6. Any claim, which arises out of the transaction vesting in the insured the estate or interest insured by their policy or the transaction creating the interest of the insured lender, by reason of the operation of federal bankruptcy, state insolvency or similar creditors' rights laws.

2. AMERICAN LAND TITLE ASSOCIATION OWNER'S POLICY FORM B - 1970
SCHEDULE OF EXCLUSIONS FROM COVERAGE

1. Any law, ordinance or governmental regulation (including but not limited to building and zoning ordinances) restricting or regulating or prohibiting the occupancy, use or enjoyment of the land, or regulating the character, dimensions or location of any improvement now or hereafter erected on the land, or prohibiting a separation in ownership or a reduction in the dimensions of area of the land, or the effect of any violation of any such law, ordinance or governmental regulation.
2. Rights of eminent domain or governmental rights of police power unless notice of the exercise of such rights appears in the public records at Date of Policy.
3. Defects, liens, encumbrances, adverse claims, or other matters (a) created, suffered, assumed or agreed to by the insured claimant; (b) not known to the Company and not shown by the public records but known to the insured claimant either at Date of Policy or at the date such claimant acquired an estate or interest insured by this policy and not disclosed in writing by the insured claimant to the Company prior to the date such insured claimant became an insured hereunder; (c) resulting in no loss or damage to the insured claimant; (d) attaching or created subsequent to Date of Policy; or (e) resulting in loss or damage which would not have been sustained if the insured claimant had paid value for the estate or interest insured by this policy.

3. AMERICAN LAND TITLE ASSOCIATION OWNER'S POLICY FORM B - 1970
WITH REGIONAL EXCEPTIONS

When the American Land Title Association policy is used as a Standard Coverage Policy and not as an Extended Coverage Policy the exclusions set forth in paragraph 2 above are used and the following exceptions to coverage appear in the policy.

SCHEDULE B

This policy does not insure against loss or damage by reason of the matters shown in parts one and two following:
Part One

1. Taxes or assessments which are not shown as existing liens by the records of any taxing authority that levies taxes or assessments on real property or by the public records.
2. Any facts, rights, interests, or claims which are not shown by the public records but which could be ascertained by an inspection of said land or by making inquiry of persons in possession thereof.
3. Easements, claims of easement or encumbrances which are not shown by the public records.
4. Discrepancies, conflicts in boundary lines, shortage in area, encroachments, or any other facts which a correct survey would disclose, and which are not shown by public records.
5. Unpatented mining claims; reservations or exceptions in patents or in Acts authorizing the issuance thereof; water rights, claims or title to water.
6. Any lien, or right to a lien, for services, labor or material heretofore or hereafter furnished, imposed by law and not shown by the public records.

4. AMERICAN LAND TITLE ASSOCIATION LOAN POLICY - 1970
WITH A.L.T.A. ENDORSEMENT FORM 1 COVERAGE
SCHEDULE OF EXCLUSIONS FROM COVERAGE

1. Any law, ordinance or governmental regulation (including but not limited to building and zoning ordinances) restricting or regulating or prohibiting the occupancy, use or enjoyment of the land, or regulating the character, dimensions or location of any improvement now or hereafter erected on the land, or prohibiting a separation in ownership or a reduction in the dimensions or area of the land, or the effect of any violation of any such law ordinance or governmental regulation.
2. Rights of eminent domain or governmental rights of police power unless notice of the exercise of such rights appears in the public records at Date of Policy.
3. Defects, liens, encumbrances, adverse claims, or other matters (a) created, suffered, assumed or agreed to by the insured claimant, (b) not known to the Company and not shown by the public records but known to the insured claimant either at Date of Policy or at the date such claimant acquired an estate or interest insured by this policy or acquired the insured mortgage and not disclosed in writing by the insured claimant to the Company prior to the date such insured claimant became an insured hereunder, (c) resulting in no loss or damage to the insured claimant; (d) attaching or created subsequent to Date of Policy (except to the extent insurance is afforded herein as to any statutory lien for labor or material or to the extent insurance is afforded herein as to assessments for street improvements under construction or completed at Date of Policy).
4. Unenforceability of the lien of the insured mortgage because of failure of the insured at Date of Policy or of any subsequent owner of the indebtedness to comply with applicable "doing business" laws of the state in which the land is situated.

5. AMERICAN LAND TITLE ASSOCIATION LOAN POLICY - 1970
WITH REGIONAL EXCEPTIONS

When the American Land Title Association Lenders Policy is used as a Standard Coverage Policy and not as an Extended Coverage Policy, the exclusions set forth in paragraph 4 above are used and the following exceptions to coverage appear in the policy.

SCHEDULE B

This policy does not insure against loss or damage by reason of the matters shown in parts one and two following:
Part One

1. Taxes or assessments which are not shown as existing liens by the records of any taxing authority that levies taxes or assessments on real property or by the public records.
2. Any facts, rights, interests, or claims which are not shown by the public records but which could be ascertained by an inspection of said land or by making inquiry of persons in possession thereof.
3. Easements, claims of easement or encumbrances which are not shown by the public records.
4. Discrepancies, conflicts in boundary lines, shortage in area, encroachments, or any other facts which a correct survey would disclose, and which are not shown by public records.
5. Unpatented mining claims; reservations or exceptions in patents or in Acts authorizing the issuance thereof; water rights, claims or title to water.
6. Any lien, or right to a lien, for services, labor or material theretofore or hereafter furnished, imposed by law and not shown by the public records.

6. AMERICAN LAND TITLE ASSOCIATION LOAN POLICY - 1992
WITH A.L.T.A. ENDORSEMENT FORM 1 COVERAGE
EXCLUSIONS FROM COVERAGE

The following matters are expressly excluded from the coverage of this policy and the Company will not pay loss or damage, costs, attorneys' fees or expenses which arise by reason of:

1. (a) Any law, ordinance or governmental regulation (including but not limited to building and zoning laws, ordinances, or regulations) restricting, regulating, prohibiting or relating to (i) the occupancy, use, or enjoyment of the land; (ii) the character, dimensions or location of any improvement now or hereafter erected on the land; (iii) a separation in ownership or a change in the dimensions or area of the land or any parcel of which the land is or was a part; or (iv) environmental protection, or the effect of any violation of these laws, ordinances or governmental regulations, except to the extent that a notice of the enforcement thereof or a notice of a defect, lien or encumbrance resulting from a violation or alleged violation affecting the land has been recorded in the public records at Date of Policy;
(b) Any governmental police power not excluded by (a) above, except to the extent that a notice of the exercise thereof or a notice of a defect, lien or encumbrance resulting from a violation or alleged violation affecting the land has been recorded in the public records at Date of Policy.

2. Rights of eminent domain unless notice of the exercise thereof has been recorded in the public records at Date of Policy, but not excluding from coverage any taking which has occurred prior to Date of Policy which would be binding on the rights of a purchaser for value without knowledge.
3. Defects, liens, encumbrances, adverse claims, or other matters:
(a) whether or not recorded in the public records at Date of Policy, but created, suffered, assumed or agreed to by the insured claimant;
(b) not known to the Company, not recorded in the public records at Date of Policy, but known to the insured claimant and not disclosed in writing to the Company by the insured claimant prior to the date the insured claimant became an insured under this policy;
(c) resulting in no loss or damage to the insured claimant;
(d) attaching or created subsequent to Date of Policy (except to the extent that this policy insures the priority of the lien of the insured mortgage over any statutory lien for services, labor or material or the extent insurance is afforded herein as to assessments for street improvements under construction or completed at date of policy); or
(e) resulting in loss or damage which would not have been sustained if the insured claimant had paid value for the insured mortgage.
4. Unenforceability of the lien of the insured mortgage because of the inability or failure of the insured at Date of Policy, or the inability or failure of any subsequent owner of the indebtedness, to comply with the applicable "doing business" laws of the state in which the land is situated.
5. Invalidity or unenforceability of the lien of the insured mortgage, or claim thereof, which arises out of the transaction evidenced by the insured mortgage and is based upon usury or any consumer credit protection or truth in lending law.
6. Any statutory lien for services, labor or materials (or the claim of priority of any statutory lien for services, labor or materials over the lien of the insured mortgage) arising from an improvement or work related to the land which is contracted for and commenced subsequent to Date of Policy and is not financed in whole or in part by proceeds of the indebtedness secured by the insured mortgage which at Date of Policy the insured has advanced or is obligated to advance.
7. Any claim, which arises out of the transaction creating the interest of the mortgagee insured by this policy, by reason of the operation of federal bankruptcy, state insolvency, or similar creditors' rights laws, that is based on:
(i) the transaction creating the interest of the insured mortgagee being deemed a fraudulent conveyance or fraudulent transfer; or
(ii) the subordination of the interest of the insured mortgagee as a result of the application of the doctrine of equitable subordination; or
(iii) the transaction creating the interest of the insured mortgagee being deemed a preferential transfer except where the preferential transfer results from the failure:
(a) to timely record the instrument of transfer; or
(b) of such recordation to impart notice to a purchaser for value or a judgment or lien creditor.

7. AMERICAN LAND TITLE ASSOCIATION LOAN POLICY - 1992
WITH REGIONAL EXCEPTIONS

When the American Land Title Association policy is used as a Standard Coverage Policy and not as an Extended Coverage Policy the exclusions set forth in paragraph 6 above are used and the following exceptions to coverage appear in the policy.

SCHEDULE B

This policy does not insure against loss or damage (and the Company will not pay costs, attorneys' fees or expenses) which arise by reason of:
1. Taxes or assessments which are not shown as existing liens by the records of any taxing authority that levies taxes or assessments on real property or by the public records.
2. Any facts, rights, interests, or claims which are not shown by the public records but which could be ascertained by an inspection of said land or by making inquiry of persons in possession thereof.
3. Easements, claims of easement or encumbrances which are not shown by the public records.
4. Discrepancies, conflicts in boundary lines, shortage in area, encroachments, or any other facts which a correct survey would disclose, and which are not shown by public records.
5. Unpatented mining claims; reservations or exceptions in patents or in Acts authorizing the issuance thereof; water rights, claims or title to water.
6. Any lien, or right to a lien, for services, labor or material theretofore or hereafter furnished, imposed by law and not shown by the public records.

8. AMERICAN LAND TITLE ASSOCIATION OWNER'S POLICY - 1992
EXCLUSIONS FROM COVERAGE

The following matters are expressly excluded from the coverage of this policy and the Company will not pay loss or damage, costs, attorneys' fees or expenses which arise by reason of:
1. (a) Any law, ordinance or governmental regulation (including but not limited to building and zoning laws, ordinances, or regulations) restricting, regulating, prohibiting or relating to (i) the occupancy, use, or enjoyment of the land; (ii) the character, dimensions or location of any improvement now or hereafter erected on the land; (iii) a separation in ownership or a change in the dimensions or area of the land or any parcel of which the land is or was a part; or (iv) environmental protection, or the effect of any violation of these laws, ordinances or governmental regulations, except to the extent that a notice of the enforcement thereof or a notice of a defect, lien or encumbrance resulting from a violation or alleged violation affecting the land has been recorded in the public records at Date of Policy.
(b) Any governmental police power not excluded by (a) above, except to the extent that a notice of the exercise thereof or a notice of a defect, lien or encumbrance resulting from a violation or alleged violation affecting the land has been recorded in the public records at Date of Policy.
2. Rights of eminent domain unless notice of the exercise thereof has been recorded in the public records at Date of Policy, but not excluding from coverage any taking which has occurred prior to Date of Policy which would be binding on the rights of a purchaser for value without knowledge.
3. Defects, liens, encumbrances, adverse claims, or other matters:
(a) created, suffered, assumed or agreed to by the insured claimant;
(b) not known to the Company, not recorded in the public records at Date of Policy, but known to the insured claimant and not disclosed in writing to the Company by the insured claimant prior to the date the insured claimant became an insured under this policy;
(c) resulting in no loss or damage to the insured claimant;
(d) attaching or created subsequent to Date of Policy; or

(e) resulting in loss or damage which would not have been sustained if the insured claimant had paid value for the estate or interest insured by this policy.

4. Any claim, which arises out of the transaction vesting in the insured the estate or interest insured by this policy, by reason of the operation of federal bankruptcy, state insolvency, or similar creditors' rights laws, that is based on:
(i) the transaction creating the estate or interest insured by this policy being deemed a fraudulent conveyance or fraudulent transfer; or
(ii) the transaction creating the estate or interest insured by this policy being deemed a preferential transfer except where the preferential transfer results from the failure:
(a) to timely record the instrument of transfer; or
(b) of such recordation to impart notice to a purchaser for value or a judgment or lien creditor.

9. AMERICAN LAND TITLE ASSOCIATION OWNER'S POLICY - 1992 WITH REGIONAL EXCEPTIONS

When the American Land Title Association policy is used as a Standard Coverage Policy and not as an Extended Coverage Policy the exclusions set forth in paragraph 8 above are used and the following exceptions to coverage appear in the policy.

SCHEDULE B

This policy does not insure against loss or damage (and the Company will not pay costs, attorneys' fees or expenses) which arise by reason of:
Part One:

1. Taxes or assessments which are not shown as existing liens by the records of any taxing authority that levies taxes or assessments on real property or by the public records.
2. Any facts, rights, interests, or claims which are not shown by the public records but which could be ascertained by an inspection of said land or by making inquiry of persons in possession thereof.
3. Easements, claims of easement or encumbrances which are not shown by the public records.
4. Discrepancies, conflicts in boundary lines, shortage in area, encroachments, or any other facts which a correct survey would disclose, and which are not shown by public records.
5. Unpatented mining claims; reservations or exceptions in patents or in Acts authorizing the issuance thereof; water rights, claims or title to water.
6. Any lien, or right to a lien, for services, labor or material theretofore or hereafter furnished, imposed by law and not shown by the public records.

ALTA RESIDENTIAL TITLE INSURANCE POLICY (6-1-87)

EXCLUSIONS

In addition to the Exceptions in Schedule B, you are not insured against loss, costs, attorneys' fees, and expenses resulting from:

1. Governmental police power, and the existence or violation of any law or government regulation. This includes building and zoning ordinances and also laws and regulations concerning:
   (a) and use
   (b) improvements on the land
   (c) and division
   (d) environmental protection

   This exclusion does not apply to violations or the enforcement of these matters which appear in the public records at Policy Date.
   This exclusion does not limit the zoning coverage described in Items 12 and 13 of Covered Title Risks.
2. The right to take the land by condemning it, unless:
   (a) a notice of exercising the right appears in the public records on the Policy Date
   (b) the taking happened prior to the Policy Date and is binding on you if you bought the land without knowing of the taking
3. Title Risks:
   (a) that are created, allowed, or agreed to by you
   (b) that are known to you, but not to us, on the Policy Date -- unless they appeared in the public records
   (c) that result in no loss to you
   (d) that first affect your title after the Policy Date -- this does not limit the labor and material lien coverage in Item 8 of Covered Title Risks
4. Failure to pay value for your title.
5. Lack of a right:
   (a) to any land outside the area specifically described and referred to in Item 3 of Schedule A OR
   (b) in streets, alleys, or waterways that touch your land
   This exclusion does not limit the access coverage in Item 5 of Covered Title Risks.

11. EAGLE PROTECTION OWNER'S POLICY

CLTA HOMEOWNER'S POLICY OF TITLE INSURANCE - 1998
ALTA HOMEOWNER'S POLICY OF TITLE INSURANCE - 1998

Covered Risks 14 (Subdivision Law Violation). 15 (Building Permit). 16 (Zoning) and 18 (Encroachment of boundary walls or fences) are subject to Deductible Amounts and Maximum Dollar Limits of Liability

EXCLUSIONS

In addition to the Exceptions in Schedule B, you are not insured against loss, costs, attorneys' fees, and expenses resulting from:

1. Governmental police power, and the existence or violation of any law or government regulation. This includes ordinances, laws and regulations concerning:
   a. building
   b. zoning
   c. land use
   d. improvements on the land
   e. land division
   f. environmental protection

   This exclusion does not apply to violations or the enforcement of these matters if notice of the violation or enforcement appears in the Public Records at the Policy Date.
   This exclusion does not limit the coverage described in Covered Risk 14, 15, 16, 17 or 24.
2. The failure of Your existing structures, or any part of them, to be constructed in accordance with applicable building codes. This Exclusion does not apply to violations of building codes if notice of the violation appears in the Public Records at the Policy Date.
3. The right to take the Land by condemning it, unless:
   a. a notice of exercising the right appears in the Public Records at the Policy Date; or
   b. the taking happened before the Policy Date and is binding on You if You bought the Land without Knowing of the taking.
4. Risks:
   a. that are created, allowed, or agreed to by You, whether or not they appear in the Public Records;
   b. that are Known to You at the Policy Date, but not to Us, unless they appear in the Public Records at the Policy Date;
   c. that result in no loss to You; or
   d. that first occur after the Policy Date - this does not limit the coverage described in Covered Risk 7, 8.d, 22, 23, 24 or 25.
5. Failure to pay value for Your Title.
6. Lack of a right:
   a. to any Land outside the area specifically described and referred to in paragraph 3 of Schedule A; and
   b. in streets, alleys, or waterways that touch the Land.
   This exclusion does not limit the coverage described in Covered Risk 11 or 18.

12. THIRD GENERATION EAGLE LOAN POLICY AMERICAN LAND TITLE ASSOCIATION EXPANDED COVERAGE RESIDENTIAL LOAN POLICY (1/01/08)

EXCLUSIONS FROM COVERAGE

The following matters are expressly excluded from the coverage of this policy and the Company will not pay loss or damage, costs, attorneys' fees or expenses which arise by reason of:

1. (a) Any law, ordinance, permit, or governmental regulation (including those relating to building and zoning) restricting, regulating, prohibiting, or relating to (i) the occupancy, use, or enjoyment of the Land; (ii) the character, dimensions, or location of any improvement erected on the Land; (iii) the subdivision of land; or(iv) environmental protection; or the effect of any violation of these laws, ordinances, or governmental regulations. This Exclusion 1(a) does not modify or limit the coverage provided under Covered Risk 5, 6, 13(c), 13(d), 14 or 16.
   (b)Any governmental police power. This Exclusion 1(b) does not modify or limit the coverage provided under Covered Risk 5, 6, 13(c), 13(d), 14 or 16.
2. Rights of eminent domain. This Exclusion does not modify or limit the coverage provided under Covered Risk 7 or 8.
3. Defects, liens, encumbrances, adverse claims, or other matters
   (a) created, suffered, assumed or agreed to by the Insured Claimant;
   (b) not Known to the Company, not recorded in the Public Records at Date of Policy, but Known to the Insured Claimant and not disclosed in writing to the Company by the Insured Claimant prior to the date the Insured Claimant became an Insured under this policy;
   (c) resulting in no loss or damage to the Insured Claimant;
   (d) attaching or created subsequent to Date of Policy (however, this does not modify or limit the coverage provided under Covered Risk 11, 16, 17, 18, 19, 20, 21, 22, 23, 24, 27 or 28); or
   (e) resulting in loss or damage which would not have been sustained if the Insured Claimant had paid value for the Insured Mortgage.
4. Unenforceability of the lien of the Insured Mortgage because of the inability or failure of an Insured to comply with applicable doing business laws of the state where the Land is situated.
5. Invalidity or unenforceability in whole or in part of the lien of the Insured Mortgage that arises out of the transaction evidenced by the Insured Mortgage and is based upon usury, or any consumer credit protection or truth-in-lending law. This Exclusion does not modify or limit the coverage provided in Covered Risk 26.
6. Any claim of invalidity, unenforceability or lack of priority of the lien of the Insured Mortgage as to Advances or modifications made after the Insured has Knowledge that the vestee shown in Schedule A is no longer the owner of the estate or interest covered by this policy. This Exclusion does not modify or limit the coverage provided in Covered Risk 11.
7. Any lien on the Title for real estate taxes or assessments imposed by governmental authority and created or attaching subsequent to Date of Policy. This Exclusion does not modify or limit the coverage provided in Covered Risk 11(b) or 25.
8. The failure of the residential structure, or any portion of it, to have been constructed before, on or after Date of Policy in accordance with applicable building codes. This Exclusion does not modify or limit the coverage provided in Covered Risk 5 or 6.

13. AMERICAN LAND TITLE ASSOCIATION LOAN POLICY - 2006
EXCLUSIONS FROM COVERAGE

The following matters are expressly excluded from the coverage of this policy, and the Company will not pay loss or damage, costs, attorneys' fees, or

expenses that arise by reason of:

1. (a) Any law, ordinance, permit, or governmental regulation (including those relating to building and zoning) restricting, regulating, prohibiting, or relating to

   (i) the occupancy, use, or enjoyment of the Land;

   (ii) the character, dimensions, or location of any improvement erected on the Land;

   (iii) the subdivision of land; or

   (iv) environmental protection;

   or the effect of any violation of these laws, ordinances, or governmental regulations. This Exclusion 1(a) does not modify or limit the coverage provided under Covered Risk 5.

   (b) Any governmental police power. This Exclusion 1(b) does not modify or limit the coverage provided under Covered Risk 6.

2. Rights of eminent domain. This Exclusion does not modify or limit the coverage provided under Covered Risk 7 or 8.

3. Defects, liens, encumbrances, adverse claims, or other matters

   (a) created, suffered, assumed, or agreed to by the Insured Claimant;

   (b) not Known to the Company, not recorded in the Public Records at Date of Policy, but Known to the Insured Claimant and not disclosed in writing to the Company by the Insured Claimant prior to the date the Insured Claimant became an Insured under this policy;

   (c) resulting in no loss or damage to the Insured Claimant;

   (d) attaching or created subsequent to Date of Policy (however, this does not modify or limit the coverage provided under Covered Risk 11, 13, or 14); or

   (e) resulting in loss or damage that would not have been sustained if the Insured Claimant had paid value for the Insured Mortgage.

4. Unenforceability of the lien of the Insured Mortgage because of the inability or failure of an Insured to comply with applicable doing-business laws of the state where the Land is situated.

5. Invalidity or unenforceability in whole or in part of the lien of the Insured Mortgage that arises out of the transaction evidenced by the Insured Mortgage and is based upon usury or any consumer credit protection or truth-in-lending law.

6. Any claim, by reason of the operation of federal bankruptcy, state insolvency, or similar creditors' rights laws, that the transaction creating the lien of the Insured Mortgage, is

   (a) a fraudulent conveyance or fraudulent transfer, or

   (b) a preferential transfer for any reason not stated in Covered Risk 13(b) of this policy.

7. Any lien on the Title for real estate taxes or assessments imposed by governmental authority and created or attaching between Date of Policy and the date of recording of the Insured Mortgage in the Public Records. This Exclusion does not modify or limit the coverage provided under Covered Risk 11(b).

14. AMERICAN LAND TITLE ASSOCIATION LOAN POLICY - 2006 WITH REGIONAL EXCEPTIONS

When the American Land Title Association policy is used as a Standard Coverage Policy and not as an Extended Coverage Policy the exclusions set forth in paragraph 13 above are used and the following exceptions to coverage appear in the policy.

SCHEDULE B

This policy does not insure against loss or damage (and the Company will not pay costs, attorneys' fees or expenses) which arise by reason of:

1. (a) Taxes or assessments that are not shown as existing liens by the records of any taxing authority that levies taxes or assessments on real property or by the Public Records; (b) proceedings by a public agency that may result in taxes or assessments, or notices of such proceedings, whether or not shown by the records of such agency or by the Public Records.

2. Any facts, rights, interests, or claims that are not shown by the Public Records but that could be ascertained by an inspection of the Land or that may be asserted by persons in possession of the Land.

3. Easements, liens or encumbrances, or claims thereof, not shown by the Public Records.

4. Any encroachment, encumbrance, violation, variation, or adverse circumstance affecting the Title that would be disclosed by an accurate and complete land survey of the Land and not shown by the Public Records.

5. (a) Unpatented mining claims; (b) reservations or exceptions in patents or in Acts authorizing the issuance thereof; (c) water rights, claims or title to water, whether or not the matters excepted under (a), (b), or (c) are shown by the Public Records.

15. AMERICAN LAND TITLE ASSOCIATION OWNER'S POLICY - 2006 EXCLUSIONS FROM COVERAGE

The following matters are expressly excluded from the coverage of this policy and the Company will not pay loss or damage, costs, attorneys' fees or expenses which arise by reason of:

1. (a) Any law, ordinance, permit, or governmental regulation (including those relating to building and zoning) restricting, regulating, prohibiting, or relating to

   (i) the occupancy, use, or enjoyment of the Land;

   (ii) the character, dimensions, or location of any improvement erected on the Land;

   (iii) the subdivision of land; or

   (iv) environmental protection;or the effect of any violation of these laws, ordinances, or governmental regulations. This Exclusion 1(a) does not modify or limit the coverage provided under Covered Risk 5.

(b) Any governmental police power. This Exclusion 1(b) does not modify or limit the coverage provided under Covered Risk 6.

2. Rights of eminent domain. This Exclusion does not modify or limit the coverage provided under Covered Risk 7 or 8.

3. Defects, liens, encumbrances, adverse claims, or other matters

(a) created, suffered, assumed, or agreed to by the Insured Claimant;

(b) not Known to the Company, not recorded in the Public Records at Date of Policy, but Known to the Insured Claimant and not disclosed in writing to the Company by the Insured Claimant prior to the date the Insured Claimant became an Insured under this policy;

(c) resulting in no loss or damage to the Insured Claimant;

(d) attaching or created subsequent to Date of Policy (however, this does not modify or limit the coverage provided under Covered Risks 9 and 10); or

(e) resulting in loss or damage that would not have been sustained if the Insured Claimant had paid value for the Title.

4. Any claim, by reason of the operation of federal bankruptcy, state insolvency, or similar creditors rights laws, that the transaction vesting the Title as shown in Schedule A, is

(a) a fraudulent conveyance or fraudulent transfer; or

(b) a preferential transfer for any reason not stated in Covered Risk 9 of this policy.

5. Any lien on the Title for real estate taxes or assessments imposed by governmental authority and created or attaching between Date of Policy and the date of recording of the deed or other instrument of transfer in the Public Records that vests Title as shown in Schedule A.

16. AMERICAN LAND TITLE ASSOCIATION OWNER'S POLICY - 2006 WITH REGIONAL EXCEPTIONS

When the American Land Title Association policy is used as a Standard Coverage Policy and not as an Extended Coverage Policy the exclusions set forth in paragraph 15 above are used and the following exceptions to coverage appear in the policy.

SCHEDULE B

This policy does not insure against loss or damage (and the Company will not pay costs, attorneys' fees or expenses) which arise by reason of:

1. (a) Taxes or assessments that are not shown as existing liens by the records of any taxing authority that levies taxes or assessments on real property or by the Public Records; (b) proceedings by a public agency that may result in taxes or assessments, or notices of such proceedings, whether or not shown by the records of such agency or by the Public Records.
2. Any facts, rights, interests, or claims that are not shown by the Public Records but that could be ascertained by an inspection of the Land or that may be asserted by persons in possession of the Land.
3. Easements, liens or encumbrances, or claims thereof, not shown by the Public Records.
4. Any encroachment, encumbrance, violation, variation, or adverse circumstance affecting the Title that would be disclosed by an accurate and complete land survey of the Land and not shown by the Public Records.
5. (a) Unpatented mining claims; (b) reservations or exceptions in patents or in Acts authorizing the issuance thereof; (c) water rights, claims or title to water, whether or not the matters excepted under (a), (b), or (c) are shown by the Public Records.

February 21, 2018
Update

First American Title Insurance Company

National Commercial Services

666 Third Avenue, 5th Floor
New York, NY 10017

February 21, 2018

John Warren
Intersect Power
Embarcadero Center , 7th Floor
San Francisco, CA 94111
Phone: (415)297-4169

Customer Reference: Luthi

Order Number: 3020-889581

Property: Vacant Land, , CA

Attached please find the following item(s):

Commitment

Thank You for your confidence and support. We at First American Title Insurance Company maintain the fundamental principle:

Customer First!

First American Title Insurance Company

INFORMATION

The Title Insurance Commitment is a legal contract between you and the company. It is issued to show the basis on which we will issue a Title Insurance Policy to you. The Policy will insure you against certain risks to the land title, subject to the limitations shown in the policy.

The Company will give you a sample of the Policy form, if you ask.

The Commitment is based on the land title as of the Commitment Date. Any changes in the land title or the transaction may affect the Commitment and the Policy.

The Commitment is subject to its Requirements, Exceptions and Conditions.

This information is not part of the title insurance commitment.

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YOU SHOULD READ THE COMMITMENT VERY CAREFULLY.
If you have any questions about the Commitment,
please contact the issuing office.

COMMITMENT FOR TITLE INSURANCE

Issued by

First American Title Insurance Company

Agreement to Issue Policy

We agree to issue a policy to you according to the terms of this Commitment.

When we show the policy amount and your name as the proposed insured in Schedule A, this Commitment becomes effective as of the Commitment Date shown in Schedule A.

If the Requirements shown in this Commitment have not been met within six months after the Commitment Date, our obligation under this Commitment will end. Also, our obligation under this Commitment will end when the Policy is issued and then our obligation to you will be under the Policy.

Our obligation under this Commitment is limited by the following:

The Provisions in Schedule A.

The Requirements in Schedule B-1.

The Exceptions in Schedule B-2.

The Conditions.

This Commitment is not valid without Schedule A and Sections 1 and 2 of Schedule B.

SCHEDULE A

1. Commitment Date: February 13, 2018 at 7:30 A.M.

2. Policy or Policies to be issued: Amount

(A) ALTA Owner's Policy $To Be Determined
ALTA Standard Owner Policy

Proposed Insured:

To Be Determined

(B) ALTA Loan Policy $To Be Determined
To Be Determined

Proposed Insured:

To Be Determined

3. (A) The estate or interest in the land described in this Commitment is:

FEE

(B) Title to said estate or interest at the date hereof is vested in:

CP land Holdings, LLC, a California limited liability company

4. The land referred to in this Commitment is situated in the unincorporated area of the County of Riverside, State of California, and is described as follows:

THE WEST ONE-HALF OF THE NORTHWEST QUARTER OF SECTION 8, TOWNSHIP 5 SOUTH, RANGE 16 EAST, SAN BERNARDINO MERIDIAN, IN THE COUNTY OF RIVERSIDE, STATE OF CALIFORNIA.

APN: 811-142-006-3

SCHEDULE B

SECTION ONE

REQUIREMENTS

The following requirements must be met:

(A) Pay the agreed amounts for the interest in the land and/or the mortgage to be insured.

(B) Pay us the premiums, fees and charges for the policy.

(C) Documents satisfactory to us creating the interest in the land and/or the mortgage to be insured must be signed, delivered and recorded.

(D) You must tell us in writing the name of anyone not referred to in this Commitment who will get an interest in the land or who will make a loan on the land. We may then make additional requirements or exceptions.

(E) Releases(s) or Reconveyance(s) of Item(s): None

(F) Other: None

(G) You must give us the following information:
1. Any off record leases, surveys, etc.
2. Statement(s) of Identity, all parties.
3. Other: None

The following additional requirements, as indicated by "X", must be met:

[X] (H) Provide information regarding any off-record matters, which may include, but are not limited to: leases, recent works of improvement, or commitment statements in effect under the Environmental Responsibility Acceptance Act, Civil Code Section 850, et seq.

The Company's Owner's Affidavit form (as provided by company) must be completed and submitted prior to close in order to satisfy this requirement. This Commitment will then be subject to such further exceptions and/or requirements as may be deemed necessary.

[] (I) An ALTA/NSPS survey of recent date, which complies with the current minimum standard detail requirements for ALTA/NSPS land title surveys, must be submitted to the Company for review. This Commitment will then be subject to such further exceptions and/or requirements as may be deemed necessary.

[X] (J) The following LLC documentation is required:
(i) a copy of the Articles of Organization
(ii) a copy of the Operating Agreement, if applicable
(iii) a Certificate of Good Standing and/or other evidence of current Authority to Conduct Business within the State
(iv) express Company Consent to the current transaction

[] (K) The following partnership documentation is required **:**
(i) a copy of the partnership agreement, including all applicable amendments thereto
(ii) a Certificate of Good Standing and/or other evidence of current Authority to Conduct Business within the State
(iii) express Partnership Consent to the current transaction

[] (L) The following corporation documentation is required:
(i) a copy of the Articles of Incorporation
(ii) a copy of the Bylaws, including all applicable Amendments thereto
(iii) a Certificate of Good Standing and/or other evidence of current Authority to Conduct Business within the State
(iv) express Corporate Resolution consenting to the current transaction

[**X**] (M) Based upon the Company's review of that certain partnership/operating agreement dated **Not disclosed** for the proposed insured herein, the following requirements must be met:

Any further amendments to said agreement must be submitted to the Company, together with an affidavit from one of the general partners or members stating that it is a true copy, that said partnership or limited liability company is in full force and effect, and that there have been no further amendments to the agreement. This Commitment will then be subject to such further requirements as may be deemed necessary.

[] (N) A copy of the complete lease, as referenced in Schedule A, #3 herein, together with any amendments and/or assignments thereto, must be submitted to the Company for review, along with an affidavit executed by the present lessee stating that it is a true copy, that the lease is in full force and effect, and that there have been no further amendments to the lease. This Commitment will then be subject to such further requirements as may be deemed necessary.

[X] (O) Approval from the Company's Underwriting Department must be obtained for issuance of the policy contemplated herein and any endorsements requested thereunder. This Commitment will then be subject to such further requirements as may be required to obtain such approval.

[] (P) Potential additional requirements, if ALTA Extended coverage is contemplated hereunder, and work on the land has commenced prior to close, some or all of the following requirements, and any other requirements which may be deemed necessary, may need to be met:

[] (Q) The Company's "Indemnity Agreement I" must be executed by the appropriate parties.

[] (R) Financial statements from the appropriate parties must be submitted to the Company for review.

[] (S) A copy of the construction contract must be submitted to the Company for review.

[] (T) An inspection of the land must be performed by the Company for verification of the phase of construction.

[] (U) The Company's "Mechanic's Lien Risk Addendum" form must be completed by a Company employee, based upon information furnished by the appropriate parties involved.

SCHEDULE B

SECTION TWO

EXCEPTIONS

Any policy we issue will have the following exceptions unless they are taken care of to our satisfaction. The printed exceptions and exclusions from the coverage of the policy or policies are set forth in Exhibit A attached. Copies of the policy forms should be read. They are available from the office which issued this Commitment.

1. General and special taxes and assessments for the fiscal year 2018-2019, a lien not yet due or payable.

2. General and special taxes and assessments for the fiscal year 2017-2018.

First Installment:	$120.79, PAID
Penalty:	$0.00
Second Installment:	$120.79, OPEN
Penalty:	$0.00
Tax Rate Area:	062-000
A. P. No.:	811-142-006-3

3. The lien of supplemental taxes, if any, assessed pursuant to Chapter 3.5 commencing with Section 75 of the California Revenue and Taxation Code.

4. A right of way for ditches and canals as reserved by the United States of America in the patent recorded December 29, 1958 in Book 2387 of Patents, Page 265.

5. The lack of a right of access to and from the land.

   Notice: Paragraph 4 of the insuring provisions on the face page of the policy will be deleted from the policy to be issued.

6. Water rights, claims or title to water, whether or not shown by the public records.

7. Rights of the public in and to that portion of the land lying within any road, street and/or highway.

8. Rights of parties in possession.

INFORMATIONAL NOTES

ALERT - CA Senate Bill 2 imposes an additional fee of $75 up to $225 at the time of recording on certain transactions effective January 1, 2018. Please contact your First American Title representative for more information on how this may affect your closing.

1. The property covered by this report is vacant land.

2. According to the public records, there has been no conveyance of the land within a period of twenty four months prior to the date of this report, except as follows:

   A document recorded February 16, 2018 as Instrument No. 2018-0060489 of Official Records.
   From: Thomas F. Luthi, Trustee of The Thomas F. Luthi Revocable Trust
   Created by Instrument Dated May 22, 2012
   To: CP land Holdings, LLC, a California limited liability company

3. This preliminary report/commitment was prepared based upon an application for a policy of title insurance that identified land by street address or assessor's parcel number only. It is the responsibility of the applicant to determine whether the land referred to herein is in fact the land that is to be described in the policy or policies to be issued.

The map attached, if any, may or may not be a survey of the land depicted hereon. First American Title Insurance Company expressly disclaims any liability for loss or damage which may result from reliance on this map except to the extent coverage for such loss or damage is expressly provided by the terms and provisions of the title insurance policy, if any, to which this map is attached.

******To obtain wire instructions for deposit of funds to your escrow file please contact your Escrow Officer.******

CONDITIONS

1. **DEFINITIONS**
(a)"Mortgage" means mortgage, deed of trust or other security instrument.
(b)"Public Records" means title records that give constructive notice of matters affecting the title according to the state law where the land is located.

2. **LATER DEFECTS**
The Exceptions in Schedule B - Section Two may be amended to show any defects, liens or encumbrances that appear for the first time in the public records or are created or attached between the Commitment Date and the date on which all of the Requirements (a) and (c) of Schedule B - Section One are met. We shall have no liability to you because of this amendment.

3. **EXISTING DEFECTS**
If any defects, liens or encumbrances existing at Commitment Date are not shown in Schedule B, we may amend Schedule B to show them. If we do amend Schedule B to show these defects, liens or encumbrances, we shall be liable to you according to Paragraph 4 below unless you knew of this information and did not tell us about it in writing.

4. **LIMITATION OF OUR LIABILITY**
Our only obligation is to issue to you the Policy referred to in this Commitment, when you have met its Requirements. If we have any liability to you for any loss you incur because of an error in this Commitment, our liability will be limited to your actual loss caused by your relying on this Commitment when you acted in good faith to:

comply with the Requirements shown in Schedule B - Section One
or
eliminate with our written consent any Exceptions shown in Schedule B - Section Two.

We shall not be liable for more than the Policy Amount shown in Schedule A of this Commitment and our liability is subject to the terms of the Policy form to be issued to you.

5. **CLAIMS MUST BE BASED ON THIS COMMITMENT**
Any claim, whether or not based on negligence, which you may have against us concerning the title to the land must be based on this commitment and is subject to its terms.

First American Title

Privacy Information

We Are Committed to Safeguarding Customer Information

In order to better serve your needs now and in the future, we may ask you to provide us with certain information. We understand that you may be concerned about what we will do with such information - particularly any personal or financial information. We agree that you have a right to know how we will utilize the personal information you provide to us. Therefore, together with our subsidiaries we have adopted this Privacy Policy to govern the use and handling of your personal information.

Applicability

This Privacy Policy governs our use of the information that you provide to us. It does not govern the manner in which we may use information we have obtained from any other source, such as information obtained from a public record or from another person or entity. First American has also adopted broader guidelines that govern our use of personal information regardless of its source. First American calls these guidelines its Fair Information Values.

Types of Information

Depending upon which of our services you are utilizing, the types of nonpublic personal information that we may collect include:

- Information we receive from you on applications, forms and in other communications to us, whether in writing, in person, by telephone or any other means;
- Information about your transactions with us, our affiliated companies, or others; and
- Information we receive from a consumer reporting agency.

Use of Information

We request information from you for our own legitimate business purposes and not for the benefit of any nonaffiliated party. Therefore, we will not release your information to nonaffiliated parties except: (1) as necessary for us to provide the product or service you have requested of us; or (2) as permitted by law. We may, however, store such information indefinitely, including the period after which any customer relationship has ceased. Such information may be used for any internal purpose, such as quality control efforts or customer analysis. We may also provide all of the types of nonpublic personal information listed above to one or more of our affiliated companies. Such affiliated companies include financial service providers, such as title insurers, property and casualty insurers, and trust and investment advisory companies, or companies involved in real estate services, such as appraisal companies, home warranty companies and escrow companies. Furthermore, we may also provide all the information we collect, as described above, to companies that perform marketing services on our behalf, on behalf of our affiliated companies or to other financial institutions with whom we or our affiliated companies have joint marketing agreements.

Former Customers

Even if you are no longer our customer, our Privacy Policy will continue to apply to you.

Confidentiality and Security

We will use our best efforts to ensure that no unauthorized parties have access to any of your information. We restrict access to nonpublic personal information about you to those individuals and entities who need to know that information to provide products or services to you. We will use our best efforts to train and oversee our employees and agents to ensure that your information will be handled responsibly and in accordance with this Privacy Policy and First American's Fair Information Values. We currently maintain physical, electronic, and procedural safeguards that comply with federal regulations to guard your nonpublic personal information.

Information Obtained Through Our Web Site

First American Financial Corporation is sensitive to privacy issues on the Internet. We believe it is important you know how we treat the information about you we receive on the Internet.

In general, you can visit First American or its affiliates' Web sites on the World Wide Web without telling us who you are or revealing any information about yourself. Our Web servers collect the domain names, not the e-mail addresses, of visitors. This information is aggregated to measure the number of visits, average time spent on the site, pages viewed and similar information. First American uses this information to measure the use of our site and to develop ideas to improve the content of our site.

There are times, however, when we may need information from you, such as your name and email address. When information is needed, we will use our best efforts to let you know at the time of collection how we will use the personal information. Usually, the personal information we collect is used only by us to respond to your inquiry, process an order or allow you to access specific account/profile information. If you choose to share any personal information with us, we will only use it in accordance with the policies outlined above.

Business Relationships

First American Financial Corporation's site and its affiliates' sites may contain links to other Web sites. While we try to link only to sites that share our high standards and respect for privacy, we are not responsible for the content or the privacy practices employed by other sites.

Cookies

Some of First American's Web sites may make use of "cookie" technology to measure site activity and to customize information to your personal tastes. A cookie is an element of data that a Web site can send to your browser, which may then store the cookie on your hard drive.

FirstAm.com uses stored cookies. The goal of this technology is to better serve you when visiting our site, save you time when you are here and to provide you with a more meaningful and productive Web site experience.

Fair Information Values

Fairness We consider consumer expectations about their privacy in all our businesses. We only offer products and services that assure a favorable balance between consumer benefits and consumer privacy.

Public Record We believe that an open public record creates significant value for society, enhances consumer choice and creates consumer opportunity. We actively support an open public record and emphasize its importance and contribution to our economy.

Use We believe we should behave responsibly when we use information about a consumer in our business. We will obey the laws governing the collection, use and dissemination of data.

Accuracy We will take reasonable steps to help assure the accuracy of the data we collect, use and disseminate. Where possible, we will take reasonable steps to correct inaccurate information. When, as with the public record, we cannot correct inaccurate information, we will take all reasonable steps to assist consumers in identifying the source of the erroneous data so that the consumer can secure the required corrections.

Education We endeavor to educate the users of our products and services, our employees and others in our industry about the importance of consumer privacy. We will instruct our employees on our fair information values and on the responsible collection and use of data. We will encourage others in our industry to collect and use information in a responsible manner.

Security We will maintain appropriate facilities and systems to protect against unauthorized access to and corruption of the data we maintain.

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EXHIBIT A
LIST OF PRINTED EXCEPTIONS AND EXCLUSIONS (BY POLICY TYPE)

1. CALIFORNIA LAND TITLE ASSOCIATION STANDARD COVERAGE POLICY - 1990
SCHEDULE B

EXCEPTIONS FROM COVERAGE

This policy does not insure against loss or damage (and the Company will not pay costs, attorneys' fees or expenses) which arise by reason of:

1. Taxes or assessments which are not shown as existing liens by the records of any taxing authority that levies taxes or assessments on real property or by the public records. Proceedings by a public agency which may result in taxes or assessments, or notice of such proceedings, whether or not shown by the records of such agency or by the public records.
2. Any facts, rights, interests, or claims which are not shown by the public records but which could be ascertained by an inspection of the land or which may be asserted by persons in possession thereof.
3. Easements, liens or encumbrances, or claims thereof, which are not shown by the public records.
4. Discrepancies, conflicts in boundary lines, shortage in area, encroachments, or any other facts which a correct survey would disclose, and which are not shown by the public records.
5. (a) Unpatented mining claims; (b) reservations or exceptions in patents or in Acts authorizing the issuance thereof; (c) water rights, claims or title to water, whether or not the matters excepted under (a), (b), or (c) are shown by the public records.

EXCLUSIONS FROM COVERAGE

The following matters are expressly excluded from the coverage of this policy and the Company will not pay loss or damage, costs, attorneys' fees or expenses which arise by reason of:

1. (a) Any law, ordinance or governmental regulation (including but not limited to building and zoning laws, ordinances, or regulations) restricting, regulating, prohibiting or relating to (i) the occupancy, use, or enjoyment of the land; (ii) the character, dimensions or location of any improvement now or hereafter erected on the land; (iii) a separation in ownership or a change in the dimensions or area of the land or any parcel of which the land is or was a part; or (iv) environmental protection, or the effect of any violation of these laws, ordinances or governmental regulations, except to the extent that a notice of the enforcement thereof or a notice of a defect, lien or encumbrance resulting from a violation or alleged violation affecting the land has been recorded in the public records at Date of Policy.
   (b) Any governmental police power not excluded by (a) above, except to the extent that a notice of the exercise thereof or a notice of a defect, lien or encumbrance resulting from a violation or alleged violation affecting the land has been recorded in the public records at Date of Policy.
2. Rights of eminent domain unless notice of the exercise thereof has been recorded in the public records at Date of Policy, but not excluding from coverage any taking which has occurred prior to Date of Policy which would be binding on the rights of a purchaser for value without knowledge.
3. Defects, liens, encumbrances, adverse claims or other matters:
   (a) whether or not recorded in the public records at Date of Policy, but created, suffered, assumed or agreed to by the insured claimant;
   (b) not known to the Company, not recorded in the public records at Date of Policy, but known to the insured claimant and not disclosed in writing to the Company by the insured claimant prior to the date the insured claimant became an insured under this policy;
   (c) resulting in no loss or damage to the insured claimant;
   (d) attaching or created subsequent to Date of Policy; or
   (e) resulting in loss or damage which would not have been sustained if the insured claimant had paid value for the insured mortgage or for the estate or interest insured by this policy.
4. Unenforceability of the lien of the insured mortgage because of the inability or failure of the insured at Date of Policy, or the inability or failure of any subsequent owner of the indebtedness, to comply with applicable "doing business" laws of the state in which the land is situated.
5. Invalidity or unenforceability of the lien of the insured mortgage, or claim thereof, which arises out of the transaction evidenced by the insured mortgage and is based upon usury or any consumer credit protection or truth in lending law.
6. Any claim, which arises out of the transaction vesting in the insured the estate or interest insured by their policy or the transaction creating the interest of the insured lender, by reason of the operation of federal bankruptcy, state insolvency or similar creditors' rights laws.

2. AMERICAN LAND TITLE ASSOCIATION OWNER'S POLICY FORM B - 1970
SCHEDULE OF EXCLUSIONS FROM COVERAGE

1. Any law, ordinance or governmental regulation (including but not limited to building and zoning ordinances) restricting or regulating or prohibiting the occupancy, use or enjoyment of the land, or regulating the character, dimensions or location of any improvement now or hereafter erected on the land, or prohibiting a separation in ownership or a reduction in the dimensions of area of the land, or the effect of any violation of any such law, ordinance or governmental regulation.
2. Rights of eminent domain or governmental rights of police power unless notice of the exercise of such rights appears in the public records at Date of Policy.
3. Defects, liens, encumbrances, adverse claims, or other matters (a) created, suffered, assumed or agreed to by the insured claimant; (b) not known to the Company and not shown by the public records but known to the insured claimant either at Date of Policy or at the date such claimant acquired an estate or interest insured by this policy and not disclosed in writing by the insured claimant to the Company prior to the date such insured claimant became an insured hereunder; (c) resulting in no loss or damage to the insured claimant; (d) attaching or created subsequent to Date of Policy; or (e) resulting in loss or damage which would not have been sustained if the insured claimant had paid value for the estate or interest insured by this policy.

3. AMERICAN LAND TITLE ASSOCIATION OWNER'S POLICY FORM B - 1970
WITH REGIONAL EXCEPTIONS

When the American Land Title Association policy is used as a Standard Coverage Policy and not as an Extended Coverage Policy the exclusions set forth in paragraph 2 above are used and the following exceptions to coverage appear in the policy.

SCHEDULE B

This policy does not insure against loss or damage by reason of the matters shown in parts one and two following:
Part One

1. Taxes or assessments which are not shown as existing liens by the records of any taxing authority that levies taxes or assessments on real property or by the public records.
2. Any facts, rights, interests, or claims which are not shown by the public records but which could be ascertained by an inspection of said land or by making inquiry of persons in possession thereof.
3. Easements, claims of easement or encumbrances which are not shown by the public records.
4. Discrepancies, conflicts in boundary lines, shortage in area, encroachments, or any other facts which a correct survey would disclose, and which are not shown by public records.
5. Unpatented mining claims; reservations or exceptions in patents or in Acts authorizing the issuance thereof; water rights, claims or title to water.
6. Any lien, or right to a lien, for services, labor or material heretofore or hereafter furnished, imposed by law and not shown by the public records.

4. AMERICAN LAND TITLE ASSOCIATION LOAN POLICY - 1970 WITH A.L.T.A. ENDORSEMENT FORM 1 COVERAGE SCHEDULE OF EXCLUSIONS FROM COVERAGE

1. Any law, ordinance or governmental regulation (including but not limited to building and zoning ordinances) restricting or regulating or prohibiting the occupancy, use or enjoyment of the land, or regulating the character, dimensions or location of any improvement now or hereafter erected on the land, or prohibiting a separation in ownership or a reduction in the dimensions or area of the land, or the effect of any violation of any such law ordinance or governmental regulation.
2. Rights of eminent domain or governmental rights of police power unless notice of the exercise of such rights appears in the public records at Date of Policy.
3. Defects, liens, encumbrances, adverse claims, or other matters (a) created, suffered, assumed or agreed to by the insured claimant, (b) not known to the Company and not shown by the public records but known to the insured claimant either at Date of Policy or at the date such claimant acquired an estate or interest insured by this policy or acquired the insured mortgage and not disclosed in writing by the insured claimant to the Company prior to the date such insured claimant became an insured hereunder, (c) resulting in no loss or damage to the insured claimant; (d) attaching or created subsequent to Date of Policy (except to the extent insurance is afforded herein as to any statutory lien for labor or material or to the extent insurance is afforded herein as to assessments for street improvements under construction or completed at Date of Policy).
4. Unenforceability of the lien of the insured mortgage because of failure of the insured at Date of Policy or of any subsequent owner of the indebtedness to comply with applicable "doing business" laws of the state in which the land is situated.

5. AMERICAN LAND TITLE ASSOCIATION LOAN POLICY - 1970 WITH REGIONAL EXCEPTIONS

When the American Land Title Association Lenders Policy is used as a Standard Coverage Policy and not as an Extended Coverage Policy, the exclusions set forth in paragraph 4 above are used and the following exceptions to coverage appear in the policy.

SCHEDULE B

This policy does not insure against loss or damage by reason of the matters shown in parts one and two following:
Part One

1. Taxes or assessments which are not shown as existing liens by the records of any taxing authority that levies taxes or assessments on real property or by the public records.
2. Any facts, rights, interests, or claims which are not shown by the public records but which could be ascertained by an inspection of said land or by making inquiry of persons in possession thereof.
3. Easements, claims of easement or encumbrances which are not shown by the public records.
4. Discrepancies, conflicts in boundary lines, shortage in area, encroachments, or any other facts which a correct survey would disclose, and which are not shown by public records.
5. Unpatented mining claims; reservations or exceptions in patents or in Acts authorizing the issuance thereof; water rights, claims or title to water.
6. Any lien, or right to a lien, for services, labor or material theretofore or hereafter furnished, imposed by law and not shown by the public records.

6. AMERICAN LAND TITLE ASSOCIATION LOAN POLICY - 1992 WITH A.L.T.A. ENDORSEMENT FORM 1 COVERAGE EXCLUSIONS FROM COVERAGE

The following matters are expressly excluded from the coverage of this policy and the Company will not pay loss or damage, costs, attorneys' fees or expenses which arise by reason of:

1. (a) Any law, ordinance or governmental regulation (including but not limited to building and zoning laws, ordinances, or regulations) restricting, regulating, prohibiting or relating to (i) the occupancy, use, or enjoyment of the land; (ii) the character, dimensions or location of any improvement now or hereafter erected on the land; (iii) a separation in ownership or a change in the dimensions or area of the land or any parcel of which the land is or was a part; or (iv) environmental protection, or the effect of any violation of these laws, ordinances or governmental regulations, except to the extent that a notice of the enforcement thereof or a notice of a defect, lien or encumbrance resulting from a violation or alleged violation affecting the land has been recorded in the public records at Date of Policy;
   (b) Any governmental police power not excluded by (a) above, except to the extent that a notice of the exercise thereof or a notice of a defect, lien or encumbrance resulting from a violation or alleged violation affecting the land has been recorded in the public records at Date of Policy.

2. Rights of eminent domain unless notice of the exercise thereof has been recorded in the public records at Date of Policy, but not excluding from coverage any taking which has occurred prior to Date of Policy which would be binding on the rights of a purchaser for value without knowledge.
3. Defects, liens, encumbrances, adverse claims, or other matters:
(a) whether or not recorded in the public records at Date of Policy, but created, suffered, assumed or agreed to by the insured claimant;
(b) not known to the Company, not recorded in the public records at Date of Policy, but known to the insured claimant and not disclosed in writing to the Company by the insured claimant prior to the date the insured claimant became an insured under this policy;
(c) resulting in no loss or damage to the insured claimant;
(d) attaching or created subsequent to Date of Policy (except to the extent that this policy insures the priority of the lien of the insured mortgage over any statutory lien for services, labor or material or the extent insurance is afforded herein as to assessments for street improvements under construction or completed at date of policy); or
(e) resulting in loss or damage which would not have been sustained if the insured claimant had paid value for the insured mortgage.
4. Unenforceability of the lien of the insured mortgage because of the inability or failure of the insured at Date of Policy, or the inability or failure of any subsequent owner of the indebtedness, to comply with the applicable "doing business" laws of the state in which the land is situated.
5. Invalidity or unenforceability of the lien of the insured mortgage, or claim thereof, which arises out of the transaction evidenced by the insured mortgage and is based upon usury or any consumer credit protection or truth in lending law.
6. Any statutory lien for services, labor or materials (or the claim of priority of any statutory lien for services, labor or materials over the lien of the insured mortgage) arising from an improvement or work related to the land which is contracted for and commenced subsequent to Date of Policy and is not financed in whole or in part by proceeds of the indebtedness secured by the insured mortgage which at Date of Policy the insured has advanced or is obligated to advance.
7. Any claim, which arises out of the transaction creating the interest of the mortgagee insured by this policy, by reason of the operation of federal bankruptcy, state insolvency, or similar creditors' rights laws, that is based on:
(i) the transaction creating the interest of the insured mortgagee being deemed a fraudulent conveyance or fraudulent transfer; or
(ii) the subordination of the interest of the insured mortgagee as a result of the application of the doctrine of equitable subordination; or
(iii) the transaction creating the interest of the insured mortgagee being deemed a preferential transfer except where the preferential transfer results from the failure:
(a) to timely record the instrument of transfer; or
(b) of such recordation to impart notice to a purchaser for value or a judgment or lien creditor.

7. AMERICAN LAND TITLE ASSOCIATION LOAN POLICY - 1992
WITH REGIONAL EXCEPTIONS

When the American Land Title Association policy is used as a Standard Coverage Policy and not as an Extended Coverage Policy the exclusions set forth in paragraph 6 above are used and the following exceptions to coverage appear in the policy.

SCHEDULE B

This policy does not insure against loss or damage (and the Company will not pay costs, attorneys' fees or expenses) which arise by reason of:
1. Taxes or assessments which are not shown as existing liens by the records of any taxing authority that levies taxes or assessments on real property or by the public records.
2. Any facts, rights, interests, or claims which are not shown by the public records but which could be ascertained by an inspection of said land or by making inquiry of persons in possession thereof.
3. Easements, claims of easement or encumbrances which are not shown by the public records.
4. Discrepancies, conflicts in boundary lines, shortage in area, encroachments, or any other facts which a correct survey would disclose, and which are not shown by public records.
5. Unpatented mining claims; reservations or exceptions in patents or in Acts authorizing the issuance thereof; water rights, claims or title to water.
6. Any lien, or right to a lien, for services, labor or material theretofore or hereafter furnished, imposed by law and not shown by the public records.

8. AMERICAN LAND TITLE ASSOCIATION OWNER'S POLICY - 1992
EXCLUSIONS FROM COVERAGE

The following matters are expressly excluded from the coverage of this policy and the Company will not pay loss or damage, costs, attorneys' fees or expenses which arise by reason of:
1. (a) Any law, ordinance or governmental regulation (including but not limited to building and zoning laws, ordinances, or regulations) restricting, regulating, prohibiting or relating to (i) the occupancy, use, or enjoyment of the land; (ii) the character, dimensions or location of any improvement now or hereafter erected on the land; (iii) a separation in ownership or a change in the dimensions or area of the land or any parcel of which the land is or was a part; or (iv) environmental protection, or the effect of any violation of these laws, ordinances or governmental regulations, except to the extent that a notice of the enforcement thereof or a notice of a defect, lien or encumbrance resulting from a violation or alleged violation affecting the land has been recorded in the public records at Date of Policy.
(b) Any governmental police power not excluded by (a) above, except to the extent that a notice of the exercise thereof or a notice of a defect, lien or encumbrance resulting from a violation or alleged violation affecting the land has been recorded in the public records at Date of Policy.
2. Rights of eminent domain unless notice of the exercise thereof has been recorded in the public records at Date of Policy, but not excluding from coverage any taking which has occurred prior to Date of Policy which would be binding on the rights of a purchaser for value without knowledge.
3. Defects, liens, encumbrances, adverse claims, or other matters:
(a) created, suffered, assumed or agreed to by the insured claimant;
(b) not known to the Company, not recorded in the public records at Date of Policy, but known to the insured claimant and not disclosed in writing to the Company by the insured claimant prior to the date the insured claimant became an insured under this policy;
(c) resulting in no loss or damage to the insured claimant;
(d) attaching or created subsequent to Date of Policy; or

(e) resulting in loss or damage which would not have been sustained if the insured claimant had paid value for the estate or interest insured by this policy.

4. Any claim, which arises out of the transaction vesting in the insured the estate or interest insured by this policy, by reason of the operation of federal bankruptcy, state insolvency, or similar creditors' rights laws, that is based on:
(i) the transaction creating the estate or interest insured by this policy being deemed a fraudulent conveyance or fraudulent transfer; or
(ii) the transaction creating the estate or interest insured by this policy being deemed a preferential transfer except where the preferential transfer results from the failure:
(a) to timely record the instrument of transfer; or
(b) of such recordation to impart notice to a purchaser for value or a judgment or lien creditor.

9. AMERICAN LAND TITLE ASSOCIATION OWNER'S POLICY - 1992 WITH REGIONAL EXCEPTIONS

When the American Land Title Association policy is used as a Standard Coverage Policy and not as an Extended Coverage Policy the exclusions set forth in paragraph 8 above are used and the following exceptions to coverage appear in the policy.

SCHEDULE B

This policy does not insure against loss or damage (and the Company will not pay costs, attorneys' fees or expenses) which arise by reason of:
Part One:

1. Taxes or assessments which are not shown as existing liens by the records of any taxing authority that levies taxes or assessments on real property or by the public records.
2. Any facts, rights, interests, or claims which are not shown by the public records but which could be ascertained by an inspection of said land or by making inquiry of persons in possession thereof.
3. Easements, claims of easement or encumbrances which are not shown by the public records.
4. Discrepancies, conflicts in boundary lines, shortage in area, encroachments, or any other facts which a correct survey would disclose, and which are not shown by public records.
5. Unpatented mining claims; reservations or exceptions in patents or in Acts authorizing the issuance thereof; water rights, claims or title to water.
6. Any lien, or right to a lien, for services, labor or material theretofore or hereafter furnished, imposed by law and not shown by the public records.

ALTA RESIDENTIAL TITLE INSURANCE POLICY (6-1-87)

EXCLUSIONS

In addition to the Exceptions in Schedule B, you are not insured against loss, costs, attorneys' fees, and expenses resulting from:

1. Governmental police power, and the existence or violation of any law or government regulation. This includes building and zoning ordinances and also laws and regulations concerning:
   (a) and use
   (b) improvements on the land
   (c) and division
   (d) environmental protection

   This exclusion does not apply to violations or the enforcement of these matters which appear in the public records at Policy Date.
   This exclusion does not limit the zoning coverage described in Items 12 and 13 of Covered Title Risks.
2. The right to take the land by condemning it, unless:
   (a) a notice of exercising the right appears in the public records on the Policy Date
   (b) the taking happened prior to the Policy Date and is binding on you if you bought the land without knowing of the taking
3. Title Risks:
   (a) that are created, allowed, or agreed to by you
   (b) that are known to you, but not to us, on the Policy Date -- unless they appeared in the public records
   (c) that result in no loss to you
   (d) that first affect your title after the Policy Date -- this does not limit the labor and material lien coverage in Item 8 of Covered Title Risks
4. Failure to pay value for your title.
5. Lack of a right:
   (a) to any land outside the area specifically described and referred to in Item 3 of Schedule A OR
   (b) in streets, alleys, or waterways that touch your land
   This exclusion does not limit the access coverage in Item 5 of Covered Title Risks.

11. EAGLE PROTECTION OWNER'S POLICY

CLTA HOMEOWNER'S POLICY OF TITLE INSURANCE - 1998
ALTA HOMEOWNER'S POLICY OF TITLE INSURANCE - 1998

Covered Risks 14 (Subdivision Law Violation). 15 (Building Permit). 16 (Zoning) and 18 (Encroachment of boundary walls or fences) are subject to Deductible Amounts and Maximum Dollar Limits of Liability

EXCLUSIONS

In addition to the Exceptions in Schedule B, you are not insured against loss, costs, attorneys' fees, and expenses resulting from:

1. Governmental police power, and the existence or violation of any law or government regulation. This includes ordinances, laws and regulations concerning:
   a. building
   b. zoning
   c. land use
   d. improvements on the land
   e. land division
   f. environmental protection

   This exclusion does not apply to violations or the enforcement of these matters if notice of the violation or enforcement appears in the Public Records at the Policy Date.
   This exclusion does not limit the coverage described in Covered Risk 14, 15, 16, 17 or 24.
2. The failure of Your existing structures, or any part of them, to be constructed in accordance with applicable building codes. This Exclusion does not apply to violations of building codes if notice of the violation appears in the Public Records at the Policy Date.
3. The right to take the Land by condemning it, unless:
   a. a notice of exercising the right appears in the Public Records at the Policy Date; or
   b. the taking happened before the Policy Date and is binding on You if You bought the Land without Knowing of the taking.
4. Risks:
   a. that are created, allowed, or agreed to by You, whether or not they appear in the Public Records;
   b. that are Known to You at the Policy Date, but not to Us, unless they appear in the Public Records at the Policy Date;
   c. that result in no loss to You; or
   d. that first occur after the Policy Date - this does not limit the coverage described in Covered Risk 7, 8.d, 22, 23, 24 or 25.
5. Failure to pay value for Your Title.
6. Lack of a right:
   a. to any Land outside the area specifically described and referred to in paragraph 3 of Schedule A; and
   b. in streets, alleys, or waterways that touch the Land.
   This exclusion does not limit the coverage described in Covered Risk 11 or 18.

12. THIRD GENERATION EAGLE LOAN POLICY AMERICAN LAND TITLE ASSOCIATION EXPANDED COVERAGE RESIDENTIAL LOAN POLICY (1/01/08)

EXCLUSIONS FROM COVERAGE

The following matters are expressly excluded from the coverage of this policy and the Company will not pay loss or damage, costs, attorneys' fees or expenses which arise by reason of:

1. (a) Any law, ordinance, permit, or governmental regulation (including those relating to building and zoning) restricting, regulating, prohibiting, or relating to (i) the occupancy, use, or enjoyment of the Land; (ii) the character, dimensions, or location of any improvement erected on the Land; (iii) the subdivision of land; or(iv) environmental protection; or the effect of any violation of these laws, ordinances, or governmental regulations. This Exclusion 1(a) does not modify or limit the coverage provided under Covered Risk 5, 6, 13(c), 13(d), 14 or 16.
   (b)Any governmental police power. This Exclusion 1(b) does not modify or limit the coverage provided under Covered Risk 5, 6, 13(c), 13(d), 14 or 16.
2. Rights of eminent domain. This Exclusion does not modify or limit the coverage provided under Covered Risk 7 or 8.
3. Defects, liens, encumbrances, adverse claims, or other matters
   (a) created, suffered, assumed or agreed to by the Insured Claimant;
   (b) not Known to the Company, not recorded in the Public Records at Date of Policy, but Known to the Insured Claimant and not disclosed in writing to the Company by the Insured Claimant prior to the date the Insured Claimant became an Insured under this policy;
   (c) resulting in no loss or damage to the Insured Claimant;
   (d) attaching or created subsequent to Date of Policy (however, this does not modify or limit the coverage provided under Covered Risk 11, 16, 17, 18, 19, 20, 21, 22, 23, 24, 27 or 28); or
   (e) resulting in loss or damage which would not have been sustained if the Insured Claimant had paid value for the Insured Mortgage.
4. Unenforceability of the lien of the Insured Mortgage because of the inability or failure of an Insured to comply with applicable doing business laws of the state where the Land is situated.
5. Invalidity or unenforceability in whole or in part of the lien of the Insured Mortgage that arises out of the transaction evidenced by the Insured Mortgage and is based upon usury, or any consumer credit protection or truth-in-lending law. This Exclusion does not modify or limit the coverage provided in Covered Risk 26.
6. Any claim of invalidity, unenforceability or lack of priority of the lien of the Insured Mortgage as to Advances or modifications made after the Insured has Knowledge that the vestee shown in Schedule A is no longer the owner of the estate or interest covered by this policy. This Exclusion does not modify or limit the coverage provided in Covered Risk 11.
7. Any lien on the Title for real estate taxes or assessments imposed by governmental authority and created or attaching subsequent to Date of Policy. This Exclusion does not modify or limit the coverage provided in Covered Risk 11(b) or 25.
8. The failure of the residential structure, or any portion of it, to have been constructed before, on or after Date of Policy in accordance with applicable building codes. This Exclusion does not modify or limit the coverage provided in Covered Risk 5 or 6.

13. AMERICAN LAND TITLE ASSOCIATION LOAN POLICY - 2006
EXCLUSIONS FROM COVERAGE

The following matters are expressly excluded from the coverage of this policy, and the Company will not pay loss or damage, costs, attorneys' fees, or

expenses that arise by reason of:

1. (a) Any law, ordinance, permit, or governmental regulation (including those relating to building and zoning) restricting, regulating, prohibiting, or relating to

   (i) the occupancy, use, or enjoyment of the Land;

   (ii) the character, dimensions, or location of any improvement erected on the Land;

   (iii) the subdivision of land; or

   (iv) environmental protection;

   or the effect of any violation of these laws, ordinances, or governmental regulations. This Exclusion 1(a) does not modify or limit the coverage provided under Covered Risk 5.

   (b) Any governmental police power. This Exclusion 1(b) does not modify or limit the coverage provided under Covered Risk 6.

2. Rights of eminent domain. This Exclusion does not modify or limit the coverage provided under Covered Risk 7 or 8.

3. Defects, liens, encumbrances, adverse claims, or other matters

   (a) created, suffered, assumed, or agreed to by the Insured Claimant;

   (b) not Known to the Company, not recorded in the Public Records at Date of Policy, but Known to the Insured Claimant and not disclosed in writing to the Company by the Insured Claimant prior to the date the Insured Claimant became an Insured under this policy;

   (c) resulting in no loss or damage to the Insured Claimant;

   (d) attaching or created subsequent to Date of Policy (however, this does not modify or limit the coverage provided under Covered Risk 11, 13, or 14); or

   (e) resulting in loss or damage that would not have been sustained if the Insured Claimant had paid value for the Insured Mortgage.

4. Unenforceability of the lien of the Insured Mortgage because of the inability or failure of an Insured to comply with applicable doing-business laws of the state where the Land is situated.

5. Invalidity or unenforceability in whole or in part of the lien of the Insured Mortgage that arises out of the transaction evidenced by the Insured Mortgage and is based upon usury or any consumer credit protection or truth-in-lending law.

6. Any claim, by reason of the operation of federal bankruptcy, state insolvency, or similar creditors' rights laws, that the transaction creating the lien of the Insured Mortgage, is

   (a) a fraudulent conveyance or fraudulent transfer, or

   (b) a preferential transfer for any reason not stated in Covered Risk 13(b) of this policy.

7. Any lien on the Title for real estate taxes or assessments imposed by governmental authority and created or attaching between Date of Policy and the date of recording of the Insured Mortgage in the Public Records. This Exclusion does not modify or limit the coverage provided under Covered Risk 11(b).

14. AMERICAN LAND TITLE ASSOCIATION LOAN POLICY - 2006 WITH REGIONAL EXCEPTIONS

When the American Land Title Association policy is used as a Standard Coverage Policy and not as an Extended Coverage Policy the exclusions set forth in paragraph 13 above are used and the following exceptions to coverage appear in the policy.

SCHEDULE B

This policy does not insure against loss or damage (and the Company will not pay costs, attorneys' fees or expenses) which arise by reason of:

1. (a) Taxes or assessments that are not shown as existing liens by the records of any taxing authority that levies taxes or assessments on real property or by the Public Records; (b) proceedings by a public agency that may result in taxes or assessments, or notices of such proceedings, whether or not shown by the records of such agency or by the Public Records.

2. Any facts, rights, interests, or claims that are not shown by the Public Records but that could be ascertained by an inspection of the Land or that may be asserted by persons in possession of the Land.

3. Easements, liens or encumbrances, or claims thereof, not shown by the Public Records.

4. Any encroachment, encumbrance, violation, variation, or adverse circumstance affecting the Title that would be disclosed by an accurate and complete land survey of the Land and not shown by the Public Records.

5. (a) Unpatented mining claims; (b) reservations or exceptions in patents or in Acts authorizing the issuance thereof; (c) water rights, claims or title to water, whether or not the matters excepted under (a), (b), or (c) are shown by the Public Records.

15. AMERICAN LAND TITLE ASSOCIATION OWNER'S POLICY - 2006 EXCLUSIONS FROM COVERAGE

The following matters are expressly excluded from the coverage of this policy and the Company will not pay loss or damage, costs, attorneys' fees or expenses which arise by reason of:

1. (a) Any law, ordinance, permit, or governmental regulation (including those relating to building and zoning) restricting, regulating, prohibiting, or relating to

   (i) the occupancy, use, or enjoyment of the Land;

   (ii) the character, dimensions, or location of any improvement erected on the Land;

   (iii) the subdivision of land; or

   (iv) environmental protection;or the effect of any violation of these laws, ordinances, or governmental regulations. This Exclusion 1(a) does not modify or limit the coverage provided under Covered Risk 5.

(b) Any governmental police power. This Exclusion 1(b) does not modify or limit the coverage provided under Covered Risk 6.

2. Rights of eminent domain. This Exclusion does not modify or limit the coverage provided under Covered Risk 7 or 8.

3. Defects, liens, encumbrances, adverse claims, or other matters

(a) created, suffered, assumed, or agreed to by the Insured Claimant;

(b) not Known to the Company, not recorded in the Public Records at Date of Policy, but Known to the Insured Claimant and not disclosed in writing to the Company by the Insured Claimant prior to the date the Insured Claimant became an Insured under this policy;

(c) resulting in no loss or damage to the Insured Claimant;

(d) attaching or created subsequent to Date of Policy (however, this does not modify or limit the coverage provided under Covered Risks 9 and 10); or

(e) resulting in loss or damage that would not have been sustained if the Insured Claimant had paid value for the Title.

4. Any claim, by reason of the operation of federal bankruptcy, state insolvency, or similar creditors rights laws, that the transaction vesting the Title as shown in Schedule A, is

(a) a fraudulent conveyance or fraudulent transfer; or

(b) a preferential transfer for any reason not stated in Covered Risk 9 of this policy.

5. Any lien on the Title for real estate taxes or assessments imposed by governmental authority and created or attaching between Date of Policy and the date of recording of the deed or other instrument of transfer in the Public Records that vests Title as shown in Schedule A.

16. AMERICAN LAND TITLE ASSOCIATION OWNER'S POLICY - 2006 WITH REGIONAL EXCEPTIONS

When the American Land Title Association policy is used as a Standard Coverage Policy and not as an Extended Coverage Policy the exclusions set forth in paragraph 15 above are used and the following exceptions to coverage appear in the policy.

SCHEDULE B

This policy does not insure against loss or damage (and the Company will not pay costs, attorneys' fees or expenses) which arise by reason of:

1. (a) Taxes or assessments that are not shown as existing liens by the records of any taxing authority that levies taxes or assessments on real property or by the Public Records; (b) proceedings by a public agency that may result in taxes or assessments, or notices of such proceedings, whether or not shown by the records of such agency or by the Public Records.
2. Any facts, rights, interests, or claims that are not shown by the Public Records but that could be ascertained by an inspection of the Land or that may be asserted by persons in possession of the Land.
3. Easements, liens or encumbrances, or claims thereof, not shown by the Public Records.
4. Any encroachment, encumbrance, violation, variation, or adverse circumstance affecting the Title that would be disclosed by an accurate and complete land survey of the Land and not shown by the Public Records.
5. (a) Unpatented mining claims; (b) reservations or exceptions in patents or in Acts authorizing the issuance thereof; (c) water rights, claims or title to water, whether or not the matters excepted under (a), (b), or (c) are shown by the Public Records.

First American Title Insurance Company

National Commercial Services

666 Third Avenue, 5th Floor
New York, NY 10017

September 13, 2017

John Warren
Intersect Power
Embarcadero Center , 7th Floor
San Francisco, CA 94111
Phone: (415)297-4169

Customer Reference: Rice Road (140.14 Acres)

Order Number: 3020-869116CA2

Property: Rice Road (140.14 Acres), Desert Center, CA

Attached please find the following item(s):

Commitment

Thank You for your confidence and support. We at First American Title Insurance Company maintain the fundamental principle:

Customer First!

First American Title Insurance Company

INFORMATION

The Title Insurance Commitment is a legal contract between you and the company. It is issued to show the basis on which we will issue a Title Insurance Policy to you. The Policy will insure you against certain risks to the land title, subject to the limitations shown in the policy.

The Company will give you a sample of the Policy form, if you ask.

The Commitment is based on the land title as of the Commitment Date. Any changes in the land title or the transaction may affect the Commitment and the Policy.

The Commitment is subject to its Requirements, Exceptions and Conditions.

This information is not part of the title insurance commitment.

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YOU SHOULD READ THE COMMITMENT VERY CAREFULLY.
If you have any questions about the Commitment,
please contact the issuing office.

COMMITMENT FOR TITLE INSURANCE

Issued by

First American Title Insurance Company

Agreement to Issue Policy

We agree to issue a policy to you according to the terms of this Commitment.

When we show the policy amount and your name as the proposed insured in Schedule A, this Commitment becomes effective as of the Commitment Date shown in Schedule A.

If the Requirements shown in this Commitment have not been met within six months after the Commitment Date, our obligation under this Commitment will end. Also, our obligation under this Commitment will end when the Policy is issued and then our obligation to you will be under the Policy.

Our obligation under this Commitment is limited by the following:

The Provisions in Schedule A.

The Requirements in Schedule B-1.

The Exceptions in Schedule B-2.

The Conditions.

This Commitment is not valid without Schedule A and Sections 1 and 2 of Schedule B.

SCHEDULE A

1. Commitment Date: September 01, 2017 at 7:30 A.M.

2. Policy or Policies to be issued: Amount

(A) ALTA Owner's Policy $To Be Determined
ALTA Standard Leasehold Owner Policy

Proposed Insured:

LLC to be Formed

(B) ALTA Loan Policy $To Be Determined
To Be Determined

Proposed Insured:

To Be Determined

3. (A) The estate or interest in the land described in this Commitment is:

Fee

(B) Title to said estate or interest at the date hereof is vested in:

Transito A. Castellanos and Martha L. Castellanos, Trustees of the Transito and Martha Castellanos Living Trust dated July 12, 2013, and any amendments thereto

4. The land referred to in this Commitment is situated in the City of Desert Center, County of Riverside, State of California, and is described as follows:

THAT PORTION OF SECTION 5, TOWNSHIP 5, SOUTH RANGE 16 EAST, SAN BERNARDINO BASE AND MERIDIAN, DESCRIBED AS FOLLOWS:

BEGINNING AT THE NORTHEAST CORNER OF THE NORTHWEST QUARTER OF THE NORTHWEST QUARTER OF THE SOUTHEAST QUARTER OF SAID SECTION 5; THENCE WESTERLY ALONG THE MID-SECTION LINE OF SAID SECTION 5 TO THE SOUTHEASTERLY LINE OF THE DESERT CENTER RICE ROAD, AS SHOWN BY RECORD OF SURVEY ON FILE IN BOOK 12, PAGE 81 OF RECORDS OF SURVEY, RECORDS RIVERSIDE COUNTY, CALIFORNIA; THENCE SOUTHWESTERLY ALONG SAID SOUTHEASTERLY LINE TO A LINE PARALLEL WITH AND 300 FEET EASTERLY MEASURED AT RIGHT ANGLE FROM THE WEST LINE OF THE EAST HALF OF THE WEST HALF OF SAID SECTION 5; THENCE SOUTHERLY ALONG SAID PARALLEL LINE TO A POINT ON THE SOUTH LINE OF SAID SECTION 5; THENCE EASTERLY ALONG SAID SOUTH LINE, TO A LINE THAT IS PARALLEL WITH AND 1100 FEET WESTERLY FROM THE SOUTHEAST CORNER OF SAID SECTION 5; THENCE NORTHERLY ALONG SAID PARALLEL LINE TO THE NORTH LINE OF THE SOUTH HALF OF THE NORTH HALF OF THE SOUTHEAST QUARTER OF SAID SECTION 5; THENCE WESTERLY ALONG SAID NORTH LINE TO THE SOUTHEAST CORNER OF SAID NORTHWEST QUARTER OF THE NORTHWEST QUARTER OF THE SOUTHEAST QUARTER OF SECTION 5; THENCE NORTHERLY TO THE POINT OF BEGINNING.

APN: 811-122-002-7

SCHEDULE B

SECTION ONE

REQUIREMENTS

The following requirements must be met:

(A) Pay the agreed amounts for the interest in the land and/or the mortgage to be insured.

(B) Pay us the premiums, fees and charges for the policy.

(C) Documents satisfactory to us creating the interest in the land and/or the mortgage to be insured must be signed, delivered and recorded.

(D) You must tell us in writing the name of anyone not referred to in this Commitment who will get an interest in the land or who will make a loan on the land. We may then make additional requirements or exceptions.

(E) Releases(s) or Reconveyance(s) of Item(s): 4, 5 and 6

(F) Other: None

(G) You must give us the following information:
1. Any off record leases, surveys, etc.
2. Statement(s) of Identity, all parties.
3. Other:

With respect to the trust referred to in the vesting:

a. A certification pursuant to Section 18100.5 of the California Probate Code in a form satisfactory to the Company.
b. Copies of those excerpts from the original trust documents and amendments thereto which designate the trustee and confer upon the trustee the power to act in the pending transaction.
c. Other requirements which the Company may impose following its review of the material required herein and other information which the Company may require.

The following additional requirements, as indicated by "X", must be met:

[X] (H) Provide information regarding any off-record matters, which may include, but are not limited to: leases, recent works of improvement, or commitment statements in effect under the Environmental Responsibility Acceptance Act, Civil Code Section 850, et seq.

The Company's Owner's Affidavit form (as provided by company) must be completed and submitted prior to close in order to satisfy this requirement. This Commitment will then be subject to such further exceptions and/or requirements as may be deemed necessary.

[] (I) An ALTA/NSPS survey of recent date, which complies with the current minimum standard detail requirements for ALTA/NSPS land title surveys, must be submitted to the Company for review. This Commitment will then be subject to such further exceptions and/or requirements as may be deemed necessary.

[] (J) The following LLC documentation is required:
(i) a copy of the Articles of Organization
(ii) a copy of the Operating Agreement, if applicable
(iii) a Certificate of Good Standing and/or other evidence of current Authority to Conduct Business within the State
(iv) express Company Consent to the current transaction

[] (K) The following partnership documentation is required **:**
(i) a copy of the partnership agreement, including all applicable amendments thereto
(ii) a Certificate of Good Standing and/or other evidence of current Authority to Conduct Business within the State
(iii) express Partnership Consent to the current transaction

[] (L) The following corporation documentation is required:
(i) a copy of the Articles of Incorporation
(ii) a copy of the Bylaws, including all applicable Amendments thereto
(iii) a Certificate of Good Standing and/or other evidence of current Authority to Conduct Business within the State
(iv) express Corporate Resolution consenting to the current transaction

[] (M) Based upon the Company's review of that certain partnership/operating agreement dated **Not disclosed** for the proposed insured herein, the following requirements must be met:

Any further amendments to said agreement must be submitted to the Company, together with an affidavit from one of the general partners or members stating that it is a true copy, that said partnership or limited liability company is in full force and effect, and that there have been no further amendments to the agreement. This Commitment will then be subject to such further requirements as may be deemed necessary.

[] (N) A copy of the complete lease, as referenced in Schedule A, #3 herein, together with any amendments and/or assignments thereto, must be submitted to the Company for review, along with an affidavit executed by the present lessee stating that it is a true copy, that the lease is in full force and effect, and that there have been no further amendments to the lease. This Commitment will then be subject to such further requirements as may be deemed necessary.

[X] (O) Approval from the Company's Underwriting Department must be obtained for issuance of the policy contemplated herein and any endorsements requested thereunder. This Commitment will then be subject to such further requirements as may be required to obtain such approval.

[] (P) Potential additional requirements, if ALTA Extended coverage is contemplated hereunder, and work on the land has commenced prior to close, some or all of the following requirements, and any other requirements which may be deemed necessary, may need to be met:

[] (Q) The Company's "Indemnity Agreement I" must be executed by the appropriate parties.

[] (R) Financial statements from the appropriate parties must be submitted to the Company for review.

[] (S) A copy of the construction contract must be submitted to the Company for review.

[] (T) An inspection of the land must be performed by the Company for verification of the phase of construction.

[] (U) The Company's "Mechanic's Lien Risk Addendum" form must be completed by a Company employee, based upon information furnished by the appropriate parties involved.

SCHEDULE B

SECTION TWO

EXCEPTIONS

Any policy we issue will have the following exceptions unless they are taken care of to our satisfaction. The printed exceptions and exclusions from the coverage of the policy or policies are set forth in Exhibit A attached. Copies of the policy forms should be read. They are available from the office which issued this Commitment.

1. General and special taxes and assessments for the fiscal year 2017-2018, a lien not yet due or payable.

2. The lien of supplemental taxes, if any, assessed pursuant to Chapter 3.5 commencing with Section 75 of the California Revenue and Taxation Code.

3. A Resolution Establishing Watershed Benefit Assessment Areas Which Provides For The Issuing Of Bonds And The Levying Of A Special Tax To Pay The Interest And Principal Payments On Such Bonds Upon The Herein Described Property, Recorded June 10, 1991 As Instrument Nos. 193749, 193750 And 193751 all Of Official Records Of Riverside County, California.

4. A deed of trust to secure an original indebtedness of $42,000.00 recorded December 17, 1999 as Instrument No. 1999-0545990 of Official Records.

Dated:	October 13, 1999
Trustor:	Transito Castellanos And Martha L. Castellanos, Husband And Wife
Trustee:	Hacienda Escrow Corporation, A California Corporation
Beneficiary:	Soaring Vista Properties, Inc., A MARYLAND CORPORATION
Affects:	The land and other property.

5. A judgment for child, family or spousal support, a certified copy of which recorded August 15, 2005 as Instrument No. 2005-0664713 of Official Records.

Court:	Superior Court of California,County of San Bernardino
Case No.:	RDA042269
Debtor:	Martha L Castellanos
Creditor:	San Bernardino Department of Child Support Services

6. A judgment for child, family or spousal support, a certified copy of which recorded March 03, 2011 as Instrument No. 2011-0096559 of Official Records.

Court:	Superior Court of California,County of San Bernardino
Case No.:	RDARS042269
Debtor:	Martha L Castellanos
Creditor:	San Bernardino Department of Child Support Services

7. Water rights, claims or title to water, whether or not shown by the public records.

8. Rights of the public in and to that portion of the land lying within any road, street and/or highway.

9. Rights of parties in possession.

INFORMATIONAL NOTES

1. Taxes for proration purposes only for the fiscal year 2016-2017.

First Installment:	$682.21, PAID
Second Installment:	$682.21, PAID
Tax Rate Area:	062-000
APN:	811-122-002-7

2. The property covered by this report is vacant land.

3. According to the public records, there has been no conveyance of the land within a period of twenty-four months prior to the date of this report, except as follows:

   None

4. This preliminary report/commitment was prepared based upon an application for a policy of title insurance that identified land by street address or assessor's parcel number only. It is the responsibility of the applicant to determine whether the land referred to herein is in fact the land that is to be described in the policy or policies to be issued.

The map attached, if any, may or may not be a survey of the land depicted hereon. First American Title Insurance Company expressly disclaims any liability for loss or damage which may result from reliance on this map except to the extent coverage for such loss or damage is expressly provided by the terms and provisions of the title insurance policy, if any, to which this map is attached.

******To obtain wire instructions for deposit of funds to your escrow file please contact your Escrow Officer.******

CONDITIONS

1. **DEFINITIONS**
(a)"Mortgage" means mortgage, deed of trust or other security instrument.
(b)"Public Records" means title records that give constructive notice of matters affecting the title according to the state law where the land is located.

2. **LATER DEFECTS**
The Exceptions in Schedule B - Section Two may be amended to show any defects, liens or encumbrances that appear for the first time in the public records or are created or attached between the Commitment Date and the date on which all of the Requirements (a) and (c) of Schedule B - Section One are met. We shall have no liability to you because of this amendment.

3. **EXISTING DEFECTS**
If any defects, liens or encumbrances existing at Commitment Date are not shown in Schedule B, we may amend Schedule B to show them. If we do amend Schedule B to show these defects, liens or encumbrances, we shall be liable to you according to Paragraph 4 below unless you knew of this information and did not tell us about it in writing.

4. **LIMITATION OF OUR LIABILITY**
Our only obligation is to issue to you the Policy referred to in this Commitment, when you have met its Requirements. If we have any liability to you for any loss you incur because of an error in this Commitment, our liability will be limited to your actual loss caused by your relying on this Commitment when you acted in good faith to:

comply with the Requirements shown in Schedule B - Section One
or
eliminate with our written consent any Exceptions shown in Schedule B - Section Two.

We shall not be liable for more than the Policy Amount shown in Schedule A of this Commitment and our liability is subject to the terms of the Policy form to be issued to you.

5. **CLAIMS MUST BE BASED ON THIS COMMITMENT**
Any claim, whether or not based on negligence, which you may have against us concerning the title to the land must be based on this commitment and is subject to its terms.

First American Title

Privacy Information

We Are Committed to Safeguarding Customer Information

In order to better serve your needs now and in the future, we may ask you to provide us with certain information. We understand that you may be concerned about what we will do with such information - particularly any personal or financial information. We agree that you have a right to know how we will utilize the personal information you provide to us. Therefore, together with our subsidiaries we have adopted this Privacy Policy to govern the use and handling of your personal information.

Applicability

This Privacy Policy governs our use of the information that you provide to us. It does not govern the manner in which we may use information we have obtained from any other source, such as information obtained from a public record or from another person or entity. First American has also adopted broader guidelines that govern our use of personal information regardless of its source. First American calls these guidelines its Fair Information Values.

Types of Information

Depending upon which of our services you are utilizing, the types of nonpublic personal information that we may collect include:

- Information we receive from you on applications, forms and in other communications to us, whether in writing, in person, by telephone or any other means;
- Information about your transactions with us, our affiliated companies, or others; and
- Information we receive from a consumer reporting agency.

Use of Information

We request information from you for our own legitimate business purposes and not for the benefit of any nonaffiliated party. Therefore, we will not release your information to nonaffiliated parties except: (1) as necessary for us to provide the product or service you have requested of us; or (2) as permitted by law. We may, however, store such information indefinitely, including the period after which any customer relationship has ceased. Such information may be used for any internal purpose, such as quality control efforts or customer analysis. We may also provide all of the types of nonpublic personal information listed above to one or more of our affiliated companies. Such affiliated companies include financial service providers, such as title insurers, property and casualty insurers, and trust and investment advisory companies, or companies involved in real estate services, such as appraisal companies, home warranty companies and escrow companies. Furthermore, we may also provide all the information we collect, as described above, to companies that perform marketing services on our behalf, on behalf of our affiliated companies or to other financial institutions with whom we or our affiliated companies have joint marketing agreements.

Former Customers

Even if you are no longer our customer, our Privacy Policy will continue to apply to you.

Confidentiality and Security

We will use our best efforts to ensure that no unauthorized parties have access to any of your information. We restrict access to nonpublic personal information about you to those individuals and entities who need to know that information to provide products or services to you. We will use our best efforts to train and oversee our employees and agents to ensure that your information will be handled responsibly and in accordance with this Privacy Policy and First American's Fair Information Values. We currently maintain physical, electronic, and procedural safeguards that comply with federal regulations to guard your nonpublic personal information.

Information Obtained Through Our Web Site

First American Financial Corporation is sensitive to privacy issues on the Internet. We believe it is important you know how we treat the information about you we receive on the Internet.

In general, you can visit First American or its affiliates' Web sites on the World Wide Web without telling us who you are or revealing any information about yourself. Our Web servers collect the domain names, not the e-mail addresses, of visitors. This information is aggregated to measure the number of visits, average time spent on the site, pages viewed and similar information. First American uses this information to measure the use of our site and to develop ideas to improve the content of our site.

There are times, however, when we may need information from you, such as your name and email address. When information is needed, we will use our best efforts to let you know at the time of collection how we will use the personal information. Usually, the personal information we collect is used only by us to respond to your inquiry, process an order or allow you to access specific account/profile information. If you choose to share any personal information with us, we will only use it in accordance with the policies outlined above.

Business Relationships

First American Financial Corporation's site and its affiliates' sites may contain links to other Web sites. While we try to link only to sites that share our high standards and respect for privacy, we are not responsible for the content or the privacy practices employed by other sites.

Cookies

Some of First American's Web sites may make use of "cookie" technology to measure site activity and to customize information to your personal tastes. A cookie is an element of data that a Web site can send to your browser, which may then store the cookie on your hard drive.

FirstAm.com uses stored cookies. The goal of this technology is to better serve you when visiting our site, save you time when you are here and to provide you with a more meaningful and productive Web site experience.

Fair Information Values

Fairness We consider consumer expectations about their privacy in all our businesses. We only offer products and services that assure a favorable balance between consumer benefits and consumer privacy.

Public Record We believe that an open public record creates significant value for society, enhances consumer choice and creates consumer opportunity. We actively support an open public record and emphasize its importance and contribution to our economy.

Use We believe we should behave responsibly when we use information about a consumer in our business. We will obey the laws governing the collection, use and dissemination of data.

Accuracy We will take reasonable steps to help assure the accuracy of the data we collect, use and disseminate. Where possible, we will take reasonable steps to correct inaccurate information. When, as with the public record, we cannot correct inaccurate information, we will take all reasonable steps to assist consumers in identifying the source of the erroneous data so that the consumer can secure the required corrections.

Education We endeavor to educate the users of our products and services, our employees and others in our industry about the importance of consumer privacy. We will instruct our employees on our fair information values and on the responsible collection and use of data. We will encourage others in our industry to collect and use information in a responsible manner.

Security We will maintain appropriate facilities and systems to protect against unauthorized access to and corruption of the data we maintain.

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EXHIBIT A
LIST OF PRINTED EXCEPTIONS AND EXCLUSIONS (BY POLICY TYPE)

1. CALIFORNIA LAND TITLE ASSOCIATION STANDARD COVERAGE POLICY - 1990
SCHEDULE B

EXCEPTIONS FROM COVERAGE

This policy does not insure against loss or damage (and the Company will not pay costs, attorneys' fees or expenses) which arise by reason of:

1. Taxes or assessments which are not shown as existing liens by the records of any taxing authority that levies taxes or assessments on real property or by the public records. Proceedings by a public agency which may result in taxes or assessments, or notice of such proceedings, whether or not shown by the records of such agency or by the public records.
2. Any facts, rights, interests, or claims which are not shown by the public records but which could be ascertained by an inspection of the land or which may be asserted by persons in possession thereof.
3. Easements, liens or encumbrances, or claims thereof, which are not shown by the public records.
4. Discrepancies, conflicts in boundary lines, shortage in area, encroachments, or any other facts which a correct survey would disclose, and which are not shown by the public records.
5. (a) Unpatented mining claims; (b) reservations or exceptions in patents or in Acts authorizing the issuance thereof; (c) water rights, claims or title to water, whether or not the matters excepted under (a), (b), or (c) are shown by the public records.

EXCLUSIONS FROM COVERAGE

The following matters are expressly excluded from the coverage of this policy and the Company will not pay loss or damage, costs, attorneys' fees or expenses which arise by reason of:

1. (a) Any law, ordinance or governmental regulation (including but not limited to building and zoning laws, ordinances, or regulations) restricting, regulating, prohibiting or relating to (i) the occupancy, use, or enjoyment of the land; (ii) the character, dimensions or location of any improvement now or hereafter erected on the land; (iii) a separation in ownership or a change in the dimensions or area of the land or any parcel of which the land is or was a part; or (iv) environmental protection, or the effect of any violation of these laws, ordinances or governmental regulations, except to the extent that a notice of the enforcement thereof or a notice of a defect, lien or encumbrance resulting from a violation or alleged violation affecting the land has been recorded in the public records at Date of Policy.
   (b) Any governmental police power not excluded by (a) above, except to the extent that a notice of the exercise thereof or a notice of a defect, lien or encumbrance resulting from a violation or alleged violation affecting the land has been recorded in the public records at Date of Policy.
2. Rights of eminent domain unless notice of the exercise thereof has been recorded in the public records at Date of Policy, but not excluding from coverage any taking which has occurred prior to Date of Policy which would be binding on the rights of a purchaser for value without knowledge.
3. Defects, liens, encumbrances, adverse claims or other matters:
   (a) whether or not recorded in the public records at Date of Policy, but created, suffered, assumed or agreed to by the insured claimant;
   (b) not known to the Company, not recorded in the public records at Date of Policy, but known to the insured claimant and not disclosed in writing to the Company by the insured claimant prior to the date the insured claimant became an insured under this policy;
   (c) resulting in no loss or damage to the insured claimant;
   (d) attaching or created subsequent to Date of Policy; or
   (e) resulting in loss or damage which would not have been sustained if the insured claimant had paid value for the insured mortgage or for the estate or interest insured by this policy.
4. Unenforceability of the lien of the insured mortgage because of the inability or failure of the insured at Date of Policy, or the inability or failure of any subsequent owner of the indebtedness, to comply with applicable "doing business" laws of the state in which the land is situated.
5. Invalidity or unenforceability of the lien of the insured mortgage, or claim thereof, which arises out of the transaction evidenced by the insured mortgage and is based upon usury or any consumer credit protection or truth in lending law.
6. Any claim, which arises out of the transaction vesting in the insured the estate or interest insured by their policy or the transaction creating the interest of the insured lender, by reason of the operation of federal bankruptcy, state insolvency or similar creditors' rights laws.

2. AMERICAN LAND TITLE ASSOCIATION OWNER'S POLICY FORM B - 1970
SCHEDULE OF EXCLUSIONS FROM COVERAGE

1. Any law, ordinance or governmental regulation (including but not limited to building and zoning ordinances) restricting or regulating or prohibiting the occupancy, use or enjoyment of the land, or regulating the character, dimensions or location of any improvement now or hereafter erected on the land, or prohibiting a separation in ownership or a reduction in the dimensions of area of the land, or the effect of any violation of any such law, ordinance or governmental regulation.
2. Rights of eminent domain or governmental rights of police power unless notice of the exercise of such rights appears in the public records at Date of Policy.
3. Defects, liens, encumbrances, adverse claims, or other matters (a) created, suffered, assumed or agreed to by the insured claimant; (b) not known to the Company and not shown by the public records but known to the insured claimant either at Date of Policy or at the date such claimant acquired an estate or interest insured by this policy and not disclosed in writing by the insured claimant to the Company prior to the date such insured claimant became an insured hereunder; (c) resulting in no loss or damage to the insured claimant; (d) attaching or created subsequent to Date of Policy; or (e) resulting in loss or damage which would not have been sustained if the insured claimant had paid value for the estate or interest insured by this policy.

3. AMERICAN LAND TITLE ASSOCIATION OWNER'S POLICY FORM B - 1970
WITH REGIONAL EXCEPTIONS

When the American Land Title Association policy is used as a Standard Coverage Policy and not as an Extended Coverage Policy the exclusions set forth in paragraph 2 above are used and the following exceptions to coverage appear in the policy.

SCHEDULE B

This policy does not insure against loss or damage by reason of the matters shown in parts one and two following:
Part One

1. Taxes or assessments which are not shown as existing liens by the records of any taxing authority that levies taxes or assessments on real property or by the public records.
2. Any facts, rights, interests, or claims which are not shown by the public records but which could be ascertained by an inspection of said land or by making inquiry of persons in possession thereof.
3. Easements, claims of easement or encumbrances which are not shown by the public records.
4. Discrepancies, conflicts in boundary lines, shortage in area, encroachments, or any other facts which a correct survey would disclose, and which are not shown by public records.
5. Unpatented mining claims; reservations or exceptions in patents or in Acts authorizing the issuance thereof; water rights, claims or title to water.
6. Any lien, or right to a lien, for services, labor or material heretofore or hereafter furnished, imposed by law and not shown by the public records.

4. AMERICAN LAND TITLE ASSOCIATION LOAN POLICY - 1970
WITH A.L.T.A. ENDORSEMENT FORM 1 COVERAGE
SCHEDULE OF EXCLUSIONS FROM COVERAGE

1. Any law, ordinance or governmental regulation (including but not limited to building and zoning ordinances) restricting or regulating or prohibiting the occupancy, use or enjoyment of the land, or regulating the character, dimensions or location of any improvement now or hereafter erected on the land, or prohibiting a separation in ownership or a reduction in the dimensions or area of the land, or the effect of any violation of any such law ordinance or governmental regulation.
2. Rights of eminent domain or governmental rights of police power unless notice of the exercise of such rights appears in the public records at Date of Policy.
3. Defects, liens, encumbrances, adverse claims, or other matters (a) created, suffered, assumed or agreed to by the insured claimant, (b) not known to the Company and not shown by the public records but known to the insured claimant either at Date of Policy or at the date such claimant acquired an estate or interest insured by this policy or acquired the insured mortgage and not disclosed in writing by the insured claimant to the Company prior to the date such insured claimant became an insured hereunder, (c) resulting in no loss or damage to the insured claimant; (d) attaching or created subsequent to Date of Policy (except to the extent insurance is afforded herein as to any statutory lien for labor or material or to the extent insurance is afforded herein as to assessments for street improvements under construction or completed at Date of Policy).
4. Unenforceability of the lien of the insured mortgage because of failure of the insured at Date of Policy or of any subsequent owner of the indebtedness to comply with applicable "doing business" laws of the state in which the land is situated.

5. AMERICAN LAND TITLE ASSOCIATION LOAN POLICY - 1970
WITH REGIONAL EXCEPTIONS

When the American Land Title Association Lenders Policy is used as a Standard Coverage Policy and not as an Extended Coverage Policy, the exclusions set forth in paragraph 4 above are used and the following exceptions to coverage appear in the policy.

SCHEDULE B

This policy does not insure against loss or damage by reason of the matters shown in parts one and two following:
Part One

1. Taxes or assessments which are not shown as existing liens by the records of any taxing authority that levies taxes or assessments on real property or by the public records.
2. Any facts, rights, interests, or claims which are not shown by the public records but which could be ascertained by an inspection of said land or by making inquiry of persons in possession thereof.
3. Easements, claims of easement or encumbrances which are not shown by the public records.
4. Discrepancies, conflicts in boundary lines, shortage in area, encroachments, or any other facts which a correct survey would disclose, and which are not shown by public records.
5. Unpatented mining claims; reservations or exceptions in patents or in Acts authorizing the issuance thereof; water rights, claims or title to water.
6. Any lien, or right to a lien, for services, labor or material theretofore or hereafter furnished, imposed by law and not shown by the public records.

6. AMERICAN LAND TITLE ASSOCIATION LOAN POLICY - 1992
WITH A.L.T.A. ENDORSEMENT FORM 1 COVERAGE
EXCLUSIONS FROM COVERAGE

The following matters are expressly excluded from the coverage of this policy and the Company will not pay loss or damage, costs, attorneys' fees or expenses which arise by reason of:

1. (a) Any law, ordinance or governmental regulation (including but not limited to building and zoning laws, ordinances, or regulations) restricting, regulating, prohibiting or relating to (i) the occupancy, use, or enjoyment of the land; (ii) the character, dimensions or location of any improvement now or hereafter erected on the land; (iii) a separation in ownership or a change in the dimensions or area of the land or any parcel of which the land is or was a part; or (iv) environmental protection, or the effect of any violation of these laws, ordinances or governmental regulations, except to the extent that a notice of the enforcement thereof or a notice of a defect, lien or encumbrance resulting from a violation or alleged violation affecting the land has been recorded in the public records at Date of Policy;
(b) Any governmental police power not excluded by (a) above, except to the extent that a notice of the exercise thereof or a notice of a defect, lien or encumbrance resulting from a violation or alleged violation affecting the land has been recorded in the public records at Date of Policy.

2. Rights of eminent domain unless notice of the exercise thereof has been recorded in the public records at Date of Policy, but not excluding from coverage any taking which has occurred prior to Date of Policy which would be binding on the rights of a purchaser for value without knowledge.
3. Defects, liens, encumbrances, adverse claims, or other matters:
(a) whether or not recorded in the public records at Date of Policy, but created, suffered, assumed or agreed to by the insured claimant;
(b) not known to the Company, not recorded in the public records at Date of Policy, but known to the insured claimant and not disclosed in writing to the Company by the insured claimant prior to the date the insured claimant became an insured under this policy;
(c) resulting in no loss or damage to the insured claimant;
(d) attaching or created subsequent to Date of Policy (except to the extent that this policy insures the priority of the lien of the insured mortgage over any statutory lien for services, labor or material or the extent insurance is afforded herein as to assessments for street improvements under construction or completed at date of policy); or
(e) resulting in loss or damage which would not have been sustained if the insured claimant had paid value for the insured mortgage.
4. Unenforceability of the lien of the insured mortgage because of the inability or failure of the insured at Date of Policy, or the inability or failure of any subsequent owner of the indebtedness, to comply with the applicable "doing business" laws of the state in which the land is situated.
5. Invalidity or unenforceability of the lien of the insured mortgage, or claim thereof, which arises out of the transaction evidenced by the insured mortgage and is based upon usury or any consumer credit protection or truth in lending law.
6. Any statutory lien for services, labor or materials (or the claim of priority of any statutory lien for services, labor or materials over the lien of the insured mortgage) arising from an improvement or work related to the land which is contracted for and commenced subsequent to Date of Policy and is not financed in whole or in part by proceeds of the indebtedness secured by the insured mortgage which at Date of Policy the insured has advanced or is obligated to advance.
7. Any claim, which arises out of the transaction creating the interest of the mortgagee insured by this policy, by reason of the operation of federal bankruptcy, state insolvency, or similar creditors' rights laws, that is based on:
(i) the transaction creating the interest of the insured mortgagee being deemed a fraudulent conveyance or fraudulent transfer; or
(ii) the subordination of the interest of the insured mortgagee as a result of the application of the doctrine of equitable subordination; or
(iii) the transaction creating the interest of the insured mortgagee being deemed a preferential transfer except where the preferential transfer results from the failure:
(a) to timely record the instrument of transfer; or
(b) of such recordation to impart notice to a purchaser for value or a judgment or lien creditor.

7. AMERICAN LAND TITLE ASSOCIATION LOAN POLICY - 1992 WITH REGIONAL EXCEPTIONS

When the American Land Title Association policy is used as a Standard Coverage Policy and not as an Extended Coverage Policy the exclusions set forth in paragraph 6 above are used and the following exceptions to coverage appear in the policy.

SCHEDULE B

This policy does not insure against loss or damage (and the Company will not pay costs, attorneys' fees or expenses) which arise by reason of:
1. Taxes or assessments which are not shown as existing liens by the records of any taxing authority that levies taxes or assessments on real property or by the public records.
2. Any facts, rights, interests, or claims which are not shown by the public records but which could be ascertained by an inspection of said land or by making inquiry of persons in possession thereof.
3. Easements, claims of easement or encumbrances which are not shown by the public records.
4. Discrepancies, conflicts in boundary lines, shortage in area, encroachments, or any other facts which a correct survey would disclose, and which are not shown by public records.
5. Unpatented mining claims; reservations or exceptions in patents or in Acts authorizing the issuance thereof; water rights, claims or title to water.
6. Any lien, or right to a lien, for services, labor or material theretofore or hereafter furnished, imposed by law and not shown by the public records.

8. AMERICAN LAND TITLE ASSOCIATION OWNER'S POLICY - 1992 EXCLUSIONS FROM COVERAGE

The following matters are expressly excluded from the coverage of this policy and the Company will not pay loss or damage, costs, attorneys' fees or expenses which arise by reason of:
1. (a) Any law, ordinance or governmental regulation (including but not limited to building and zoning laws, ordinances, or regulations) restricting, regulating, prohibiting or relating to (i) the occupancy, use, or enjoyment of the land; (ii) the character, dimensions or location of any improvement now or hereafter erected on the land; (iii) a separation in ownership or a change in the dimensions or area of the land or any parcel of which the land is or was a part; or (iv) environmental protection, or the effect of any violation of these laws, ordinances or governmental regulations, except to the extent that a notice of the enforcement thereof or a notice of a defect, lien or encumbrance resulting from a violation or alleged violation affecting the land has been recorded in the public records at Date of Policy.
(b) Any governmental police power not excluded by (a) above, except to the extent that a notice of the exercise thereof or a notice of a defect, lien or encumbrance resulting from a violation or alleged violation affecting the land has been recorded in the public records at Date of Policy.
2. Rights of eminent domain unless notice of the exercise thereof has been recorded in the public records at Date of Policy, but not excluding from coverage any taking which has occurred prior to Date of Policy which would be binding on the rights of a purchaser for value without knowledge.
3. Defects, liens, encumbrances, adverse claims, or other matters:
(a) created, suffered, assumed or agreed to by the insured claimant;
(b) not known to the Company, not recorded in the public records at Date of Policy, but known to the insured claimant and not disclosed in writing to the Company by the insured claimant prior to the date the insured claimant became an insured under this policy;
(c) resulting in no loss or damage to the insured claimant;
(d) attaching or created subsequent to Date of Policy; or

(e) resulting in loss or damage which would not have been sustained if the insured claimant had paid value for the estate or interest insured by this policy.

4. Any claim, which arises out of the transaction vesting in the insured the estate or interest insured by this policy, by reason of the operation of federal bankruptcy, state insolvency, or similar creditors' rights laws, that is based on:
(i) the transaction creating the estate or interest insured by this policy being deemed a fraudulent conveyance or fraudulent transfer; or
(ii) the transaction creating the estate or interest insured by this policy being deemed a preferential transfer except where the preferential transfer results from the failure:
(a) to timely record the instrument of transfer; or
(b) of such recordation to impart notice to a purchaser for value or a judgment or lien creditor.

9. AMERICAN LAND TITLE ASSOCIATION OWNER'S POLICY - 1992 WITH REGIONAL EXCEPTIONS

When the American Land Title Association policy is used as a Standard Coverage Policy and not as an Extended Coverage Policy the exclusions set forth in paragraph 8 above are used and the following exceptions to coverage appear in the policy.

SCHEDULE B

This policy does not insure against loss or damage (and the Company will not pay costs, attorneys' fees or expenses) which arise by reason of:
Part One:

1. Taxes or assessments which are not shown as existing liens by the records of any taxing authority that levies taxes or assessments on real property or by the public records.
2. Any facts, rights, interests, or claims which are not shown by the public records but which could be ascertained by an inspection of said land or by making inquiry of persons in possession thereof.
3. Easements, claims of easement or encumbrances which are not shown by the public records.
4. Discrepancies, conflicts in boundary lines, shortage in area, encroachments, or any other facts which a correct survey would disclose, and which are not shown by public records.
5. Unpatented mining claims; reservations or exceptions in patents or in Acts authorizing the issuance thereof; water rights, claims or title to water.
6. Any lien, or right to a lien, for services, labor or material theretofore or hereafter furnished, imposed by law and not shown by the public records.

ALTA RESIDENTIAL TITLE INSURANCE POLICY (6-1-87)

EXCLUSIONS

In addition to the Exceptions in Schedule B, you are not insured against loss, costs, attorneys' fees, and expenses resulting from:

1. Governmental police power, and the existence or violation of any law or government regulation. This includes building and zoning ordinances and also laws and regulations concerning:
   (a) and use
   (b) improvements on the land
   (c) and division
   (d) environmental protection

   This exclusion does not apply to violations or the enforcement of these matters which appear in the public records at Policy Date.
   This exclusion does not limit the zoning coverage described in Items 12 and 13 of Covered Title Risks.
2. The right to take the land by condemning it, unless:
   (a) a notice of exercising the right appears in the public records on the Policy Date
   (b) the taking happened prior to the Policy Date and is binding on you if you bought the land without knowing of the taking
3. Title Risks:
   (a) that are created, allowed, or agreed to by you
   (b) that are known to you, but not to us, on the Policy Date -- unless they appeared in the public records
   (c) that result in no loss to you
   (d) that first affect your title after the Policy Date -- this does not limit the labor and material lien coverage in Item 8 of Covered Title Risks
4. Failure to pay value for your title.
5. Lack of a right:
   (a) to any land outside the area specifically described and referred to in Item 3 of Schedule A OR
   (b) in streets, alleys, or waterways that touch your land
   This exclusion does not limit the access coverage in Item 5 of Covered Title Risks.

11. EAGLE PROTECTION OWNER'S POLICY

CLTA HOMEOWNER'S POLICY OF TITLE INSURANCE - 1998
ALTA HOMEOWNER'S POLICY OF TITLE INSURANCE - 1998

Covered Risks 14 (Subdivision Law Violation). 15 (Building Permit). 16 (Zoning) and 18 (Encroachment of boundary walls or fences) are subject to Deductible Amounts and Maximum Dollar Limits of Liability

EXCLUSIONS

In addition to the Exceptions in Schedule B, you are not insured against loss, costs, attorneys' fees, and expenses resulting from:

1. Governmental police power, and the existence or violation of any law or government regulation. This includes ordinances, laws and regulations concerning:
   a. building
   b. zoning
   c. land use
   d. improvements on the land
   e. land division
   f. environmental protection

   This exclusion does not apply to violations or the enforcement of these matters if notice of the violation or enforcement appears in the Public Records at the Policy Date.
   This exclusion does not limit the coverage described in Covered Risk 14, 15, 16, 17 or 24.
2. The failure of Your existing structures, or any part of them, to be constructed in accordance with applicable building codes. This Exclusion does not apply to violations of building codes if notice of the violation appears in the Public Records at the Policy Date.
3. The right to take the Land by condemning it, unless:
   a. a notice of exercising the right appears in the Public Records at the Policy Date; or
   b. the taking happened before the Policy Date and is binding on You if You bought the Land without Knowing of the taking.
4. Risks:
   a. that are created, allowed, or agreed to by You, whether or not they appear in the Public Records;
   b. that are Known to You at the Policy Date, but not to Us, unless they appear in the Public Records at the Policy Date;
   c. that result in no loss to You; or
   d. that first occur after the Policy Date - this does not limit the coverage described in Covered Risk 7, 8.d, 22, 23, 24 or 25.
5. Failure to pay value for Your Title.
6. Lack of a right:
   a. to any Land outside the area specifically described and referred to in paragraph 3 of Schedule A; and
   b. in streets, alleys, or waterways that touch the Land.
   This exclusion does not limit the coverage described in Covered Risk 11 or 18.

12. THIRD GENERATION EAGLE LOAN POLICY AMERICAN LAND TITLE ASSOCIATION EXPANDED COVERAGE RESIDENTIAL LOAN POLICY (1/01/08)

EXCLUSIONS FROM COVERAGE

The following matters are expressly excluded from the coverage of this policy and the Company will not pay loss or damage, costs, attorneys' fees or expenses which arise by reason of:

1. (a) Any law, ordinance, permit, or governmental regulation (including those relating to building and zoning) restricting, regulating, prohibiting, or relating to (i) the occupancy, use, or enjoyment of the Land; (ii) the character, dimensions, or location of any improvement erected on the Land; (iii) the subdivision of land; or(iv) environmental protection; or the effect of any violation of these laws, ordinances, or governmental regulations. This Exclusion 1(a) does not modify or limit the coverage provided under Covered Risk 5, 6, 13(c), 13(d), 14 or 16.
   (b)Any governmental police power. This Exclusion 1(b) does not modify or limit the coverage provided under Covered Risk 5, 6, 13(c), 13(d), 14 or 16.
2. Rights of eminent domain. This Exclusion does not modify or limit the coverage provided under Covered Risk 7 or 8.
3. Defects, liens, encumbrances, adverse claims, or other matters
   (a) created, suffered, assumed or agreed to by the Insured Claimant;
   (b) not Known to the Company, not recorded in the Public Records at Date of Policy, but Known to the Insured Claimant and not disclosed in writing to the Company by the Insured Claimant prior to the date the Insured Claimant became an Insured under this policy;
   (c) resulting in no loss or damage to the Insured Claimant;
   (d) attaching or created subsequent to Date of Policy (however, this does not modify or limit the coverage provided under Covered Risk 11, 16, 17, 18, 19, 20, 21, 22, 23, 24, 27 or 28); or
   (e) resulting in loss or damage which would not have been sustained if the Insured Claimant had paid value for the Insured Mortgage.
4. Unenforceability of the lien of the Insured Mortgage because of the inability or failure of an Insured to comply with applicable doing business laws of the state where the Land is situated.
5. Invalidity or unenforceability in whole or in part of the lien of the Insured Mortgage that arises out of the transaction evidenced by the Insured Mortgage and is based upon usury, or any consumer credit protection or truth-in-lending law. This Exclusion does not modify or limit the coverage provided in Covered Risk 26.
6. Any claim of invalidity, unenforceability or lack of priority of the lien of the Insured Mortgage as to Advances or modifications made after the Insured has Knowledge that the vestee shown in Schedule A is no longer the owner of the estate or interest covered by this policy. This Exclusion does not modify or limit the coverage provided in Covered Risk 11.
7. Any lien on the Title for real estate taxes or assessments imposed by governmental authority and created or attaching subsequent to Date of Policy. This Exclusion does not modify or limit the coverage provided in Covered Risk 11(b) or 25.
8. The failure of the residential structure, or any portion of it, to have been constructed before, on or after Date of Policy in accordance with applicable building codes. This Exclusion does not modify or limit the coverage provided in Covered Risk 5 or 6.

13. AMERICAN LAND TITLE ASSOCIATION LOAN POLICY - 2006
EXCLUSIONS FROM COVERAGE

The following matters are expressly excluded from the coverage of this policy, and the Company will not pay loss or damage, costs, attorneys' fees, or

expenses that arise by reason of:

1. (a) Any law, ordinance, permit, or governmental regulation (including those relating to building and zoning) restricting, regulating, prohibiting, or relating to

   (i) the occupancy, use, or enjoyment of the Land;

   (ii) the character, dimensions, or location of any improvement erected on the Land;

   (iii) the subdivision of land; or

   (iv) environmental protection;

   or the effect of any violation of these laws, ordinances, or governmental regulations. This Exclusion 1(a) does not modify or limit the coverage provided under Covered Risk 5.

   (b) Any governmental police power. This Exclusion 1(b) does not modify or limit the coverage provided under Covered Risk 6.

2. Rights of eminent domain. This Exclusion does not modify or limit the coverage provided under Covered Risk 7 or 8.

3. Defects, liens, encumbrances, adverse claims, or other matters

   (a) created, suffered, assumed, or agreed to by the Insured Claimant;

   (b) not Known to the Company, not recorded in the Public Records at Date of Policy, but Known to the Insured Claimant and not disclosed in writing to the Company by the Insured Claimant prior to the date the Insured Claimant became an Insured under this policy;

   (c) resulting in no loss or damage to the Insured Claimant;

   (d) attaching or created subsequent to Date of Policy (however, this does not modify or limit the coverage provided under Covered Risk 11, 13, or 14); or

   (e) resulting in loss or damage that would not have been sustained if the Insured Claimant had paid value for the Insured Mortgage.

4. Unenforceability of the lien of the Insured Mortgage because of the inability or failure of an Insured to comply with applicable doing-business laws of the state where the Land is situated.

5. Invalidity or unenforceability in whole or in part of the lien of the Insured Mortgage that arises out of the transaction evidenced by the Insured Mortgage and is based upon usury or any consumer credit protection or truth-in-lending law.

6. Any claim, by reason of the operation of federal bankruptcy, state insolvency, or similar creditors' rights laws, that the transaction creating the lien of the Insured Mortgage, is

   (a) a fraudulent conveyance or fraudulent transfer, or

   (b) a preferential transfer for any reason not stated in Covered Risk 13(b) of this policy.

7. Any lien on the Title for real estate taxes or assessments imposed by governmental authority and created or attaching between Date of Policy and the date of recording of the Insured Mortgage in the Public Records. This Exclusion does not modify or limit the coverage provided under Covered Risk 11(b).

14. AMERICAN LAND TITLE ASSOCIATION LOAN POLICY - 2006 WITH REGIONAL EXCEPTIONS

When the American Land Title Association policy is used as a Standard Coverage Policy and not as an Extended Coverage Policy the exclusions set forth in paragraph 13 above are used and the following exceptions to coverage appear in the policy.

SCHEDULE B

This policy does not insure against loss or damage (and the Company will not pay costs, attorneys' fees or expenses) which arise by reason of:

1. (a) Taxes or assessments that are not shown as existing liens by the records of any taxing authority that levies taxes or assessments on real property or by the Public Records; (b) proceedings by a public agency that may result in taxes or assessments, or notices of such proceedings, whether or not shown by the records of such agency or by the Public Records.

2. Any facts, rights, interests, or claims that are not shown by the Public Records but that could be ascertained by an inspection of the Land or that may be asserted by persons in possession of the Land.

3. Easements, liens or encumbrances, or claims thereof, not shown by the Public Records.

4. Any encroachment, encumbrance, violation, variation, or adverse circumstance affecting the Title that would be disclosed by an accurate and complete land survey of the Land and not shown by the Public Records.

5. (a) Unpatented mining claims; (b) reservations or exceptions in patents or in Acts authorizing the issuance thereof; (c) water rights, claims or title to water, whether or not the matters excepted under (a), (b), or (c) are shown by the Public Records.

15. AMERICAN LAND TITLE ASSOCIATION OWNER'S POLICY - 2006 EXCLUSIONS FROM COVERAGE

The following matters are expressly excluded from the coverage of this policy and the Company will not pay loss or damage, costs, attorneys' fees or expenses which arise by reason of:

1. (a) Any law, ordinance, permit, or governmental regulation (including those relating to building and zoning) restricting, regulating, prohibiting, or relating to

   (i) the occupancy, use, or enjoyment of the Land;

   (ii) the character, dimensions, or location of any improvement erected on the Land;

   (iii) the subdivision of land; or

   (iv) environmental protection;or the effect of any violation of these laws, ordinances, or governmental regulations. This Exclusion 1(a) does not modify or limit the coverage provided under Covered Risk 5.

(b) Any governmental police power. This Exclusion 1(b) does not modify or limit the coverage provided under Covered Risk 6.

2. Rights of eminent domain. This Exclusion does not modify or limit the coverage provided under Covered Risk 7 or 8.

3. Defects, liens, encumbrances, adverse claims, or other matters

(a) created, suffered, assumed, or agreed to by the Insured Claimant;

(b) not Known to the Company, not recorded in the Public Records at Date of Policy, but Known to the Insured Claimant and not disclosed in writing to the Company by the Insured Claimant prior to the date the Insured Claimant became an Insured under this policy;

(c) resulting in no loss or damage to the Insured Claimant;

(d) attaching or created subsequent to Date of Policy (however, this does not modify or limit the coverage provided under Covered Risks 9 and 10); or

(e) resulting in loss or damage that would not have been sustained if the Insured Claimant had paid value for the Title.

4. Any claim, by reason of the operation of federal bankruptcy, state insolvency, or similar creditors rights laws, that the transaction vesting the Title as shown in Schedule A, is

(a) a fraudulent conveyance or fraudulent transfer; or

(b) a preferential transfer for any reason not stated in Covered Risk 9 of this policy.

5. Any lien on the Title for real estate taxes or assessments imposed by governmental authority and created or attaching between Date of Policy and the date of recording of the deed or other instrument of transfer in the Public Records that vests Title as shown in Schedule A.

16. AMERICAN LAND TITLE ASSOCIATION OWNER'S POLICY - 2006 WITH REGIONAL EXCEPTIONS

When the American Land Title Association policy is used as a Standard Coverage Policy and not as an Extended Coverage Policy the exclusions set forth in paragraph 15 above are used and the following exceptions to coverage appear in the policy.

SCHEDULE B

This policy does not insure against loss or damage (and the Company will not pay costs, attorneys' fees or expenses) which arise by reason of:

1. (a) Taxes or assessments that are not shown as existing liens by the records of any taxing authority that levies taxes or assessments on real property or by the Public Records; (b) proceedings by a public agency that may result in taxes or assessments, or notices of such proceedings, whether or not shown by the records of such agency or by the Public Records.
2. Any facts, rights, interests, or claims that are not shown by the Public Records but that could be ascertained by an inspection of the Land or that may be asserted by persons in possession of the Land.
3. Easements, liens or encumbrances, or claims thereof, not shown by the Public Records.
4. Any encroachment, encumbrance, violation, variation, or adverse circumstance affecting the Title that would be disclosed by an accurate and complete land survey of the Land and not shown by the Public Records.
5. (a) Unpatented mining claims; (b) reservations or exceptions in patents or in Acts authorizing the issuance thereof; (c) water rights, claims or title to water, whether or not the matters excepted under (a), (b), or (c) are shown by the Public Records.

First American Title Insurance Company

National Commercial Services

666 Third Avenue, 5th Floor
New York, NY 10017

February 21, 2018

John Warren
Intersect Power
Embarcadero Center , 7th Floor
San Francisco, CA 94111
Phone: (415)297-4169

Customer Reference: Vacant Land/APN 811-180-013

Order Number: 3020-892965

Property: APN 811-180-013, Palm Desert, CA

Attached please find the following item(s):

Commitment

Thank You for your confidence and support. We at First American Title Insurance Company maintain the fundamental principle:

Customer First!

First American Title Insurance Company

INFORMATION

The Title Insurance Commitment is a legal contract between you and the company. It is issued to show the basis on which we will issue a Title Insurance Policy to you. The Policy will insure you against certain risks to the land title, subject to the limitations shown in the policy.

The Company will give you a sample of the Policy form, if you ask.

The Commitment is based on the land title as of the Commitment Date. Any changes in the land title or the transaction may affect the Commitment and the Policy.

The Commitment is subject to its Requirements, Exceptions and Conditions.

This information is not part of the title insurance commitment.

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YOU SHOULD READ THE COMMITMENT VERY CAREFULLY.
If you have any questions about the Commitment,
please contact the issuing office.

COMMITMENT FOR TITLE INSURANCE

Issued by

First American Title Insurance Company

Agreement to Issue Policy

We agree to issue a policy to you according to the terms of this Commitment.

When we show the policy amount and your name as the proposed insured in Schedule A, this Commitment becomes effective as of the Commitment Date shown in Schedule A.

If the Requirements shown in this Commitment have not been met within six months after the Commitment Date, our obligation under this Commitment will end. Also, our obligation under this Commitment will end when the Policy is issued and then our obligation to you will be under the Policy.

Our obligation under this Commitment is limited by the following:

The Provisions in Schedule A.

The Requirements in Schedule B-1.

The Exceptions in Schedule B-2.

The Conditions.

This Commitment is not valid without Schedule A and Sections 1 and 2 of Schedule B.

SCHEDULE A

1. Commitment Date: February 13, 2018 at 7:30 A.M.

2. Policy or Policies to be issued: Amount

   (A) ALTA Owner's Policy $To Be Determined
   ALTA Standard Owner Policy

   Proposed Insured:

   To Be Determined

   (B) ALTA Loan Policy $To Be Determined
   To Be Determined

   Proposed Insured:

   To Be Determined

3. (A) The estate or interest in the land described in this Commitment is:

   Fee Simple

   (B) Title to said estate or interest at the date hereof is vested in:

   RNI-NV, Limited Partnership

4. The land referred to in this Commitment is situated in the Unincorporated area of , County of Riverside, State of California, and is described as follows:

   THE NORTH HALF OF THE NORTHEAST QUARTER OF SECTION 16, TOWNSHIP 5 SOUTH, RANGE 16 EAST, SAN BERNARDINO BASE AND MERIDIAN.

   APN: 811-180-013-7

SCHEDULE B

SECTION ONE

REQUIREMENTS

The following requirements must be met:

(A) Pay the agreed amounts for the interest in the land and/or the mortgage to be insured.

(B) Pay us the premiums, fees and charges for the policy.

(C) Documents satisfactory to us creating the interest in the land and/or the mortgage to be insured must be signed, delivered and recorded.

(D) You must tell us in writing the name of anyone not referred to in this Commitment who will get an interest in the land or who will make a loan on the land. We may then make additional requirements or exceptions.

(E) Releases(s) or Reconveyance(s) of Item(s): None

(F) Other: None

(G) You must give us the following information:

1. Any off record leases, surveys, etc.
2. Statement(s) of Identity, all parties.
3. Other:

A deed from the spouse of any married vestee herein be recorded in the public records, or the joinder of the spouse of any married vestee named herein on any conveyance, encumbrance or lease to be executed by the vestee.

The deed should contain the following statement:

"It is the express intent of the grantor, being the spouse of the grantee, to convey all right, title and interest of the grantor, community or otherwise, in and to the herein described property to the grantee as his/her sole and separate property."

The following additional requirements, as indicated by "X", must be met:

[X] (H) Provide information regarding any off-record matters, which may include, but are not limited to: leases, recent works of improvement, or commitment statements in effect under the Environmental Responsibility Acceptance Act, Civil Code Section 850, et seq.

The Company's Owner's Affidavit form (as provided by company) must be completed and submitted prior to close in order to satisfy this requirement. This Commitment will then be subject to such further exceptions and/or requirements as may be deemed necessary.

[] (I) An ALTA/NSPS survey of recent date, which complies with the current minimum standard detail requirements for ALTA/NSPS land title surveys, must be submitted to the Company for review. This Commitment will then be subject to such further exceptions and/or requirements as may be deemed necessary.

[] (J) The following LLC documentation is required:
(i) a copy of the Articles of Organization
(ii) a copy of the Operating Agreement, if applicable
(iii) a Certificate of Good Standing and/or other evidence of current Authority to Conduct Business within the State
(iv) express Company Consent to the current transaction

[X] (K) The following partnership documentation is required **:**
(i) a copy of the partnership agreement, including all applicable amendments thereto
(ii) a Certificate of Good Standing and/or other evidence of current Authority to Conduct Business within the State
(iii) express Partnership Consent to the current transaction

[] (L) The following corporation documentation is required:
(i) a copy of the Articles of Incorporation
(ii) a copy of the Bylaws, including all applicable Amendments thereto
(iii) a Certificate of Good Standing and/or other evidence of current Authority to Conduct Business within the State
(iv) express Corporate Resolution consenting to the current transaction

[] (M) Based upon the Company's review of that certain partnership/operating agreement dated **Not disclosed** for the proposed insured herein, the following requirements must be met:

Any further amendments to said agreement must be submitted to the Company, together with an affidavit from one of the general partners or members stating that it is a true copy, that said partnership or limited liability company is in full force and effect, and that there have been no further amendments to the agreement. This Commitment will then be subject to such further requirements as may be deemed necessary.

[] (N) A copy of the complete lease, as referenced in Schedule A, #3 herein, together with any amendments and/or assignments thereto, must be submitted to the Company for review, along with an affidavit executed by the present lessee stating that it is a true copy, that the lease is in full force and effect, and that there have been no further amendments to the lease. This Commitment will then be subject to such further requirements as may be deemed necessary.

[X] (O) Approval from the Company's Underwriting Department must be obtained for issuance of the policy contemplated herein and any endorsements requested thereunder. This Commitment will then be subject to such further requirements as may be required to obtain such approval.

[] (P) Potential additional requirements, if ALTA Extended coverage is contemplated hereunder, and work on the land has commenced prior to close, some or all of the following requirements, and any other requirements which may be deemed necessary, may need to be met:

[] (Q) The Company's "Indemnity Agreement I" must be executed by the appropriate parties.

[] (R) Financial statements from the appropriate parties must be submitted to the Company for review.

[] (S) A copy of the construction contract must be submitted to the Company for review.

[] (T) An inspection of the land must be performed by the Company for verification of the phase of construction.

[] (U) The Company's "Mechanic's Lien Risk Addendum" form must be completed by a Company employee, based upon information furnished by the appropriate parties involved.

SCHEDULE B

SECTION TWO

EXCEPTIONS

Any policy we issue will have the following exceptions unless they are taken care of to our satisfaction. The printed exceptions and exclusions from the coverage of the policy or policies are set forth in Exhibit A attached. Copies of the policy forms should be read. They are available from the office which issued this Commitment.

1. General and special taxes and assessments for the fiscal year 2018-2019, a lien not yet due or payable.

2. The lien of supplemental taxes, if any, assessed pursuant to Chapter 3.5 commencing with Section 75 of the California Revenue and Taxation Code.

3. The effect of a Declaration of Dedication dated January 23, 1980, executed by Vernon C. Brown and Harriett Brown, husband and wife, purporting to irrevocably dedicate in perpetuity for public road purposes, public utility and public service uses, the property described therein, recorded February 1, 1980 as Instrument No. 21790 of Official Records of Riverside County, California.

4. A lease dated December 01, 1981, executed by William Kellen, Trustee under Sterling Trust, dated 7/15/80 as lessor and U.S. Agri Research and Development Corporation as lessee, recorded June 24, 1986 as Instrument No. 146302 of Official Records.

   Affects: The land and other property.

   Said Lease, among other things, provides for an option to purchase.

   Defects, liens, encumbrances or other matters affecting the leasehold estate, whether or not shown by the public records are not shown herein.

5. The terms, provisions and easement(s) contained in the document entitled "Irrevocable Grant of Water Basement, Water Use Agreement, and Deed of Water Rights" recorded November 06, 1991 as Instrument No. 385526 of Official Records.

6. The effect of a document entitled "Option to Purchase", recorded April 28, 1994 as Instrument No. 176595 of Official Records.

7. Rights of the public in and to that portion of the land lying within any road, street and/or highways.

8. The lack of a right of access to and from the land.

   Notice: Paragraph 4 of the insuring provisions on the face page of the policy will be deleted from the policy to be issued.

9. Any right, title or interest of the spouse or domestic partner (if any) of any vestee herein.

10. Any claim that the Title is subject to a trust or lien created under The Perishable Agricultural Commodities Act, 1930 (7 U.S.C. §§499a, et seq.) or the Packers and Stockyards Act (7 U.S.C. §§181 et seq.) or under similar state laws.

11. Water rights, claims or title to water, whether or not shown by the public records.

12. Rights of parties in possession.

INFORMATIONAL NOTES

ALERT - CA Senate Bill 2 imposes an additional fee of $75 up to $225 at the time of recording on certain transactions effective January 1, 2018. Please contact your First American Title representative for more information on how this may affect your closing.

1. Taxes for proration purposes only for the fiscal year 2017-2018.

First Installment:	$289.22, PAID
Second Installment:	$289.22, PAID
Tax Rate Area:	062-000
APN:	811-180-013-7

2. The property covered by this report is vacant land.

3. According to the public records, there has been no conveyance of the land within a period of twenty-four months prior to the date of this report, except as follows:

   None

4. This preliminary report/commitment was prepared based upon an application for a policy of title insurance that identified land by street address or assessor's parcel number only. It is the responsibility of the applicant to determine whether the land referred to herein is in fact the land that is to be described in the policy or policies to be issued.

The map attached, if any, may or may not be a survey of the land depicted hereon. First American Title Insurance Company expressly disclaims any liability for loss or damage which may result from reliance on this map except to the extent coverage for such loss or damage is expressly provided by the terms and provisions of the title insurance policy, if any, to which this map is attached.

******To obtain wire instructions for deposit of funds to your escrow file please contact your Escrow Officer.******

CONDITIONS

1. **DEFINITIONS**
(a)"Mortgage" means mortgage, deed of trust or other security instrument.
(b)"Public Records" means title records that give constructive notice of matters affecting the title according to the state law where the land is located.

2. **LATER DEFECTS**
The Exceptions in Schedule B - Section Two may be amended to show any defects, liens or encumbrances that appear for the first time in the public records or are created or attached between the Commitment Date and the date on which all of the Requirements (a) and (c) of Schedule B - Section One are met. We shall have no liability to you because of this amendment.

3. **EXISTING DEFECTS**
If any defects, liens or encumbrances existing at Commitment Date are not shown in Schedule B, we may amend Schedule B to show them. If we do amend Schedule B to show these defects, liens or encumbrances, we shall be liable to you according to Paragraph 4 below unless you knew of this information and did not tell us about it in writing.

4. **LIMITATION OF OUR LIABILITY**
Our only obligation is to issue to you the Policy referred to in this Commitment, when you have met its Requirements. If we have any liability to you for any loss you incur because of an error in this Commitment, our liability will be limited to your actual loss caused by your relying on this Commitment when you acted in good faith to:

comply with the Requirements shown in Schedule B - Section One
or
eliminate with our written consent any Exceptions shown in Schedule B - Section Two.

We shall not be liable for more than the Policy Amount shown in Schedule A of this Commitment and our liability is subject to the terms of the Policy form to be issued to you.

5. **CLAIMS MUST BE BASED ON THIS COMMITMENT**
Any claim, whether or not based on negligence, which you may have against us concerning the title to the land must be based on this commitment and is subject to its terms.

First American Title

Privacy Information

We Are Committed to Safeguarding Customer Information

In order to better serve your needs now and in the future, we may ask you to provide us with certain information. We understand that you may be concerned about what we will do with such information - particularly any personal or financial information. We agree that you have a right to know how we will utilize the personal information you provide to us. Therefore, together with our subsidiaries we have adopted this Privacy Policy to govern the use and handling of your personal information.

Applicability

This Privacy Policy governs our use of the information that you provide to us. It does not govern the manner in which we may use information we have obtained from any other source, such as information obtained from a public record or from another person or entity. First American has also adopted broader guidelines that govern our use of personal information regardless of its source. First American calls these guidelines its Fair Information Values.

Types of Information

Depending upon which of our services you are utilizing, the types of nonpublic personal information that we may collect include:

- Information we receive from you on applications, forms and in other communications to us, whether in writing, in person, by telephone or any other means;
- Information about your transactions with us, our affiliated companies, or others; and
- Information we receive from a consumer reporting agency.

Use of Information

We request information from you for our own legitimate business purposes and not for the benefit of any nonaffiliated party. Therefore, we will not release your information to nonaffiliated parties except: (1) as necessary for us to provide the product or service you have requested of us; or (2) as permitted by law. We may, however, store such information indefinitely, including the period after which any customer relationship has ceased. Such information may be used for any internal purpose, such as quality control efforts or customer analysis. We may also provide all of the types of nonpublic personal information listed above to one or more of our affiliated companies. Such affiliated companies include financial service providers, such as title insurers, property and casualty insurers, and trust and investment advisory companies, or companies involved in real estate services, such as appraisal companies, home warranty companies and escrow companies. Furthermore, we may also provide all the information we collect, as described above, to companies that perform marketing services on our behalf, on behalf of our affiliated companies or to other financial institutions with whom we or our affiliated companies have joint marketing agreements.

Former Customers

Even if you are no longer our customer, our Privacy Policy will continue to apply to you.

Confidentiality and Security

We will use our best efforts to ensure that no unauthorized parties have access to any of your information. We restrict access to nonpublic personal information about you to those individuals and entities who need to know that information to provide products or services to you. We will use our best efforts to train and oversee our employees and agents to ensure that your information will be handled responsibly and in accordance with this Privacy Policy and First American's Fair Information Values. We currently maintain physical, electronic, and procedural safeguards that comply with federal regulations to guard your nonpublic personal information.

Information Obtained Through Our Web Site

First American Financial Corporation is sensitive to privacy issues on the Internet. We believe it is important you know how we treat the information about you we receive on the Internet.

In general, you can visit First American or its affiliates' Web sites on the World Wide Web without telling us who you are or revealing any information about yourself. Our Web servers collect the domain names, not the e-mail addresses, of visitors. This information is aggregated to measure the number of visits, average time spent on the site, pages viewed and similar information. First American uses this information to measure the use of our site and to develop ideas to improve the content of our site.

There are times, however, when we may need information from you, such as your name and email address. When information is needed, we will use our best efforts to let you know at the time of collection how we will use the personal information. Usually, the personal information we collect is used only by us to respond to your inquiry, process an order or allow you to access specific account/profile information. If you choose to share any personal information with us, we will only use it in accordance with the policies outlined above.

Business Relationships

First American Financial Corporation's site and its affiliates' sites may contain links to other Web sites. While we try to link only to sites that share our high standards and respect for privacy, we are not responsible for the content or the privacy practices employed by other sites.

Cookies

Some of First American's Web sites may make use of "cookie" technology to measure site activity and to customize information to your personal tastes. A cookie is an element of data that a Web site can send to your browser, which may then store the cookie on your hard drive.

FirstAm.com uses stored cookies. The goal of this technology is to better serve you when visiting our site, save you time when you are here and to provide you with a more meaningful and productive Web site experience.

Fair Information Values

Fairness We consider consumer expectations about their privacy in all our businesses. We only offer products and services that assure a favorable balance between consumer benefits and consumer privacy.

Public Record We believe that an open public record creates significant value for society, enhances consumer choice and creates consumer opportunity. We actively support an open public record and emphasize its importance and contribution to our economy.

Use We believe we should behave responsibly when we use information about a consumer in our business. We will obey the laws governing the collection, use and dissemination of data.

Accuracy We will take reasonable steps to help assure the accuracy of the data we collect, use and disseminate. Where possible, we will take reasonable steps to correct inaccurate information. When, as with the public record, we cannot correct inaccurate information, we will take all reasonable steps to assist consumers in identifying the source of the erroneous data so that the consumer can secure the required corrections.

Education We endeavor to educate the users of our products and services, our employees and others in our industry about the importance of consumer privacy. We will instruct our employees on our fair information values and on the responsible collection and use of data. We will encourage others in our industry to collect and use information in a responsible manner.

Security We will maintain appropriate facilities and systems to protect against unauthorized access to and corruption of the data we maintain.

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EXHIBIT A
LIST OF PRINTED EXCEPTIONS AND EXCLUSIONS (BY POLICY TYPE)

1. CALIFORNIA LAND TITLE ASSOCIATION STANDARD COVERAGE POLICY - 1990
SCHEDULE B

EXCEPTIONS FROM COVERAGE

This policy does not insure against loss or damage (and the Company will not pay costs, attorneys' fees or expenses) which arise by reason of:

1. Taxes or assessments which are not shown as existing liens by the records of any taxing authority that levies taxes or assessments on real property or by the public records. Proceedings by a public agency which may result in taxes or assessments, or notice of such proceedings, whether or not shown by the records of such agency or by the public records.
2. Any facts, rights, interests, or claims which are not shown by the public records but which could be ascertained by an inspection of the land or which may be asserted by persons in possession thereof.
3. Easements, liens or encumbrances, or claims thereof, which are not shown by the public records.
4. Discrepancies, conflicts in boundary lines, shortage in area, encroachments, or any other facts which a correct survey would disclose, and which are not shown by the public records.
5. (a) Unpatented mining claims; (b) reservations or exceptions in patents or in Acts authorizing the issuance thereof; (c) water rights, claims or title to water, whether or not the matters excepted under (a), (b), or (c) are shown by the public records.

EXCLUSIONS FROM COVERAGE

The following matters are expressly excluded from the coverage of this policy and the Company will not pay loss or damage, costs, attorneys' fees or expenses which arise by reason of:

1. (a) Any law, ordinance or governmental regulation (including but not limited to building and zoning laws, ordinances, or regulations) restricting, regulating, prohibiting or relating to (i) the occupancy, use, or enjoyment of the land; (ii) the character, dimensions or location of any improvement now or hereafter erected on the land; (iii) a separation in ownership or a change in the dimensions or area of the land or any parcel of which the land is or was a part; or (iv) environmental protection, or the effect of any violation of these laws, ordinances or governmental regulations, except to the extent that a notice of the enforcement thereof or a notice of a defect, lien or encumbrance resulting from a violation or alleged violation affecting the land has been recorded in the public records at Date of Policy.
   (b) Any governmental police power not excluded by (a) above, except to the extent that a notice of the exercise thereof or a notice of a defect, lien or encumbrance resulting from a violation or alleged violation affecting the land has been recorded in the public records at Date of Policy.
2. Rights of eminent domain unless notice of the exercise thereof has been recorded in the public records at Date of Policy, but not excluding from coverage any taking which has occurred prior to Date of Policy which would be binding on the rights of a purchaser for value without knowledge.
3. Defects, liens, encumbrances, adverse claims or other matters:
   (a) whether or not recorded in the public records at Date of Policy, but created, suffered, assumed or agreed to by the insured claimant;
   (b) not known to the Company, not recorded in the public records at Date of Policy, but known to the insured claimant and not disclosed in writing to the Company by the insured claimant prior to the date the insured claimant became an insured under this policy;
   (c) resulting in no loss or damage to the insured claimant;
   (d) attaching or created subsequent to Date of Policy; or
   (e) resulting in loss or damage which would not have been sustained if the insured claimant had paid value for the insured mortgage or for the estate or interest insured by this policy.
4. Unenforceability of the lien of the insured mortgage because of the inability or failure of the insured at Date of Policy, or the inability or failure of any subsequent owner of the indebtedness, to comply with applicable "doing business" laws of the state in which the land is situated.
5. Invalidity or unenforceability of the lien of the insured mortgage, or claim thereof, which arises out of the transaction evidenced by the insured mortgage and is based upon usury or any consumer credit protection or truth in lending law.
6. Any claim, which arises out of the transaction vesting in the insured the estate or interest insured by their policy or the transaction creating the interest of the insured lender, by reason of the operation of federal bankruptcy, state insolvency or similar creditors' rights laws.

2. AMERICAN LAND TITLE ASSOCIATION OWNER'S POLICY FORM B - 1970
SCHEDULE OF EXCLUSIONS FROM COVERAGE

1. Any law, ordinance or governmental regulation (including but not limited to building and zoning ordinances) restricting or regulating or prohibiting the occupancy, use or enjoyment of the land, or regulating the character, dimensions or location of any improvement now or hereafter erected on the land, or prohibiting a separation in ownership or a reduction in the dimensions of area of the land, or the effect of any violation of any such law, ordinance or governmental regulation.
2. Rights of eminent domain or governmental rights of police power unless notice of the exercise of such rights appears in the public records at Date of Policy.
3. Defects, liens, encumbrances, adverse claims, or other matters (a) created, suffered, assumed or agreed to by the insured claimant; (b) not known to the Company and not shown by the public records but known to the insured claimant either at Date of Policy or at the date such claimant acquired an estate or interest insured by this policy and not disclosed in writing by the insured claimant to the Company prior to the date such insured claimant became an insured hereunder; (c) resulting in no loss or damage to the insured claimant; (d) attaching or created subsequent to Date of Policy; or (e) resulting in loss or damage which would not have been sustained if the insured claimant had paid value for the estate or interest insured by this policy.

3. AMERICAN LAND TITLE ASSOCIATION OWNER'S POLICY FORM B - 1970
WITH REGIONAL EXCEPTIONS

When the American Land Title Association policy is used as a Standard Coverage Policy and not as an Extended Coverage Policy the exclusions set forth in paragraph 2 above are used and the following exceptions to coverage appear in the policy.

SCHEDULE B

This policy does not insure against loss or damage by reason of the matters shown in parts one and two following:
Part One

1. Taxes or assessments which are not shown as existing liens by the records of any taxing authority that levies taxes or assessments on real property or by the public records.
2. Any facts, rights, interests, or claims which are not shown by the public records but which could be ascertained by an inspection of said land or by making inquiry of persons in possession thereof.
3. Easements, claims of easement or encumbrances which are not shown by the public records.
4. Discrepancies, conflicts in boundary lines, shortage in area, encroachments, or any other facts which a correct survey would disclose, and which are not shown by public records.
5. Unpatented mining claims; reservations or exceptions in patents or in Acts authorizing the issuance thereof; water rights, claims or title to water.
6. Any lien, or right to a lien, for services, labor or material heretofore or hereafter furnished, imposed by law and not shown by the public records.

4. AMERICAN LAND TITLE ASSOCIATION LOAN POLICY - 1970
WITH A.L.T.A. ENDORSEMENT FORM 1 COVERAGE
SCHEDULE OF EXCLUSIONS FROM COVERAGE

1. Any law, ordinance or governmental regulation (including but not limited to building and zoning ordinances) restricting or regulating or prohibiting the occupancy, use or enjoyment of the land, or regulating the character, dimensions or location of any improvement now or hereafter erected on the land, or prohibiting a separation in ownership or a reduction in the dimensions or area of the land, or the effect of any violation of any such law ordinance or governmental regulation.
2. Rights of eminent domain or governmental rights of police power unless notice of the exercise of such rights appears in the public records at Date of Policy.
3. Defects, liens, encumbrances, adverse claims, or other matters (a) created, suffered, assumed or agreed to by the insured claimant, (b) not known to the Company and not shown by the public records but known to the insured claimant either at Date of Policy or at the date such claimant acquired an estate or interest insured by this policy or acquired the insured mortgage and not disclosed in writing by the insured claimant to the Company prior to the date such insured claimant became an insured hereunder, (c) resulting in no loss or damage to the insured claimant; (d) attaching or created subsequent to Date of Policy (except to the extent insurance is afforded herein as to any statutory lien for labor or material or to the extent insurance is afforded herein as to assessments for street improvements under construction or completed at Date of Policy).
4. Unenforceability of the lien of the insured mortgage because of failure of the insured at Date of Policy or of any subsequent owner of the indebtedness to comply with applicable "doing business" laws of the state in which the land is situated.

5. AMERICAN LAND TITLE ASSOCIATION LOAN POLICY - 1970
WITH REGIONAL EXCEPTIONS

When the American Land Title Association Lenders Policy is used as a Standard Coverage Policy and not as an Extended Coverage Policy, the exclusions set forth in paragraph 4 above are used and the following exceptions to coverage appear in the policy.

SCHEDULE B

This policy does not insure against loss or damage by reason of the matters shown in parts one and two following:
Part One

1. Taxes or assessments which are not shown as existing liens by the records of any taxing authority that levies taxes or assessments on real property or by the public records.
2. Any facts, rights, interests, or claims which are not shown by the public records but which could be ascertained by an inspection of said land or by making inquiry of persons in possession thereof.
3. Easements, claims of easement or encumbrances which are not shown by the public records.
4. Discrepancies, conflicts in boundary lines, shortage in area, encroachments, or any other facts which a correct survey would disclose, and which are not shown by public records.
5. Unpatented mining claims; reservations or exceptions in patents or in Acts authorizing the issuance thereof; water rights, claims or title to water.
6. Any lien, or right to a lien, for services, labor or material theretofore or hereafter furnished, imposed by law and not shown by the public records.

6. AMERICAN LAND TITLE ASSOCIATION LOAN POLICY - 1992
WITH A.L.T.A. ENDORSEMENT FORM 1 COVERAGE
EXCLUSIONS FROM COVERAGE

The following matters are expressly excluded from the coverage of this policy and the Company will not pay loss or damage, costs, attorneys' fees or expenses which arise by reason of:

1. (a) Any law, ordinance or governmental regulation (including but not limited to building and zoning laws, ordinances, or regulations) restricting, regulating, prohibiting or relating to (i) the occupancy, use, or enjoyment of the land; (ii) the character, dimensions or location of any improvement now or hereafter erected on the land; (iii) a separation in ownership or a change in the dimensions or area of the land or any parcel of which the land is or was a part; or (iv) environmental protection, or the effect of any violation of these laws, ordinances or governmental regulations, except to the extent that a notice of the enforcement thereof or a notice of a defect, lien or encumbrance resulting from a violation or alleged violation affecting the land has been recorded in the public records at Date of Policy;
(b) Any governmental police power not excluded by (a) above, except to the extent that a notice of the exercise thereof or a notice of a defect, lien or encumbrance resulting from a violation or alleged violation affecting the land has been recorded in the public records at Date of Policy.

2. Rights of eminent domain unless notice of the exercise thereof has been recorded in the public records at Date of Policy, but not excluding from coverage any taking which has occurred prior to Date of Policy which would be binding on the rights of a purchaser for value without knowledge.
3. Defects, liens, encumbrances, adverse claims, or other matters:
(a) whether or not recorded in the public records at Date of Policy, but created, suffered, assumed or agreed to by the insured claimant;
(b) not known to the Company, not recorded in the public records at Date of Policy, but known to the insured claimant and not disclosed in writing to the Company by the insured claimant prior to the date the insured claimant became an insured under this policy;
(c) resulting in no loss or damage to the insured claimant;
(d) attaching or created subsequent to Date of Policy (except to the extent that this policy insures the priority of the lien of the insured mortgage over any statutory lien for services, labor or material or the extent insurance is afforded herein as to assessments for street improvements under construction or completed at date of policy); or
(e) resulting in loss or damage which would not have been sustained if the insured claimant had paid value for the insured mortgage.
4. Unenforceability of the lien of the insured mortgage because of the inability or failure of the insured at Date of Policy, or the inability or failure of any subsequent owner of the indebtedness, to comply with the applicable "doing business" laws of the state in which the land is situated.
5. Invalidity or unenforceability of the lien of the insured mortgage, or claim thereof, which arises out of the transaction evidenced by the insured mortgage and is based upon usury or any consumer credit protection or truth in lending law.
6. Any statutory lien for services, labor or materials (or the claim of priority of any statutory lien for services, labor or materials over the lien of the insured mortgage) arising from an improvement or work related to the land which is contracted for and commenced subsequent to Date of Policy and is not financed in whole or in part by proceeds of the indebtedness secured by the insured mortgage which at Date of Policy the insured has advanced or is obligated to advance.
7. Any claim, which arises out of the transaction creating the interest of the mortgagee insured by this policy, by reason of the operation of federal bankruptcy, state insolvency, or similar creditors' rights laws, that is based on:
(i) the transaction creating the interest of the insured mortgagee being deemed a fraudulent conveyance or fraudulent transfer; or
(ii) the subordination of the interest of the insured mortgagee as a result of the application of the doctrine of equitable subordination; or
(iii) the transaction creating the interest of the insured mortgagee being deemed a preferential transfer except where the preferential transfer results from the failure:
(a) to timely record the instrument of transfer; or
(b) of such recordation to impart notice to a purchaser for value or a judgment or lien creditor.

7. AMERICAN LAND TITLE ASSOCIATION LOAN POLICY - 1992 WITH REGIONAL EXCEPTIONS

When the American Land Title Association policy is used as a Standard Coverage Policy and not as an Extended Coverage Policy the exclusions set forth in paragraph 6 above are used and the following exceptions to coverage appear in the policy.

SCHEDULE B

This policy does not insure against loss or damage (and the Company will not pay costs, attorneys' fees or expenses) which arise by reason of:
1. Taxes or assessments which are not shown as existing liens by the records of any taxing authority that levies taxes or assessments on real property or by the public records.
2. Any facts, rights, interests, or claims which are not shown by the public records but which could be ascertained by an inspection of said land or by making inquiry of persons in possession thereof.
3. Easements, claims of easement or encumbrances which are not shown by the public records.
4. Discrepancies, conflicts in boundary lines, shortage in area, encroachments, or any other facts which a correct survey would disclose, and which are not shown by public records.
5. Unpatented mining claims; reservations or exceptions in patents or in Acts authorizing the issuance thereof; water rights, claims or title to water.
6. Any lien, or right to a lien, for services, labor or material theretofore or hereafter furnished, imposed by law and not shown by the public records.

8. AMERICAN LAND TITLE ASSOCIATION OWNER'S POLICY - 1992 EXCLUSIONS FROM COVERAGE

The following matters are expressly excluded from the coverage of this policy and the Company will not pay loss or damage, costs, attorneys' fees or expenses which arise by reason of:
1. (a) Any law, ordinance or governmental regulation (including but not limited to building and zoning laws, ordinances, or regulations) restricting, regulating, prohibiting or relating to (i) the occupancy, use, or enjoyment of the land; (ii) the character, dimensions or location of any improvement now or hereafter erected on the land; (iii) a separation in ownership or a change in the dimensions or area of the land or any parcel of which the land is or was a part; or (iv) environmental protection, or the effect of any violation of these laws, ordinances or governmental regulations, except to the extent that a notice of the enforcement thereof or a notice of a defect, lien or encumbrance resulting from a violation or alleged violation affecting the land has been recorded in the public records at Date of Policy.
(b) Any governmental police power not excluded by (a) above, except to the extent that a notice of the exercise thereof or a notice of a defect, lien or encumbrance resulting from a violation or alleged violation affecting the land has been recorded in the public records at Date of Policy.
2. Rights of eminent domain unless notice of the exercise thereof has been recorded in the public records at Date of Policy, but not excluding from coverage any taking which has occurred prior to Date of Policy which would be binding on the rights of a purchaser for value without knowledge.
3. Defects, liens, encumbrances, adverse claims, or other matters:
(a) created, suffered, assumed or agreed to by the insured claimant;
(b) not known to the Company, not recorded in the public records at Date of Policy, but known to the insured claimant and not disclosed in writing to the Company by the insured claimant prior to the date the insured claimant became an insured under this policy;
(c) resulting in no loss or damage to the insured claimant;
(d) attaching or created subsequent to Date of Policy; or

(e) resulting in loss or damage which would not have been sustained if the insured claimant had paid value for the estate or interest insured by this policy.

4. Any claim, which arises out of the transaction vesting in the insured the estate or interest insured by this policy, by reason of the operation of federal bankruptcy, state insolvency, or similar creditors' rights laws, that is based on:
(i) the transaction creating the estate or interest insured by this policy being deemed a fraudulent conveyance or fraudulent transfer; or
(ii) the transaction creating the estate or interest insured by this policy being deemed a preferential transfer except where the preferential transfer results from the failure:
(a) to timely record the instrument of transfer; or
(b) of such recordation to impart notice to a purchaser for value or a judgment or lien creditor.

9. AMERICAN LAND TITLE ASSOCIATION OWNER'S POLICY - 1992 WITH REGIONAL EXCEPTIONS

When the American Land Title Association policy is used as a Standard Coverage Policy and not as an Extended Coverage Policy the exclusions set forth in paragraph 8 above are used and the following exceptions to coverage appear in the policy.

SCHEDULE B

This policy does not insure against loss or damage (and the Company will not pay costs, attorneys' fees or expenses) which arise by reason of:
Part One:

1. Taxes or assessments which are not shown as existing liens by the records of any taxing authority that levies taxes or assessments on real property or by the public records.
2. Any facts, rights, interests, or claims which are not shown by the public records but which could be ascertained by an inspection of said land or by making inquiry of persons in possession thereof.
3. Easements, claims of easement or encumbrances which are not shown by the public records.
4. Discrepancies, conflicts in boundary lines, shortage in area, encroachments, or any other facts which a correct survey would disclose, and which are not shown by public records.
5. Unpatented mining claims; reservations or exceptions in patents or in Acts authorizing the issuance thereof; water rights, claims or title to water.
6. Any lien, or right to a lien, for services, labor or material theretofore or hereafter furnished, imposed by law and not shown by the public records.

ALTA RESIDENTIAL TITLE INSURANCE POLICY (6-1-87)

EXCLUSIONS

In addition to the Exceptions in Schedule B, you are not insured against loss, costs, attorneys' fees, and expenses resulting from:

1. Governmental police power, and the existence or violation of any law or government regulation. This includes building and zoning ordinances and also laws and regulations concerning:
   (a) and use
   (b) improvements on the land
   (c) and division
   (d) environmental protection

   This exclusion does not apply to violations or the enforcement of these matters which appear in the public records at Policy Date.
   This exclusion does not limit the zoning coverage described in Items 12 and 13 of Covered Title Risks.
2. The right to take the land by condemning it, unless:
   (a) a notice of exercising the right appears in the public records on the Policy Date
   (b) the taking happened prior to the Policy Date and is binding on you if you bought the land without knowing of the taking
3. Title Risks:
   (a) that are created, allowed, or agreed to by you
   (b) that are known to you, but not to us, on the Policy Date -- unless they appeared in the public records
   (c) that result in no loss to you
   (d) that first affect your title after the Policy Date -- this does not limit the labor and material lien coverage in Item 8 of Covered Title Risks
4. Failure to pay value for your title.
5. Lack of a right:
   (a) to any land outside the area specifically described and referred to in Item 3 of Schedule A OR
   (b) in streets, alleys, or waterways that touch your land
   This exclusion does not limit the access coverage in Item 5 of Covered Title Risks.

11. EAGLE PROTECTION OWNER'S POLICY

CLTA HOMEOWNER'S POLICY OF TITLE INSURANCE - 1998
ALTA HOMEOWNER'S POLICY OF TITLE INSURANCE - 1998

Covered Risks 14 (Subdivision Law Violation). 15 (Building Permit). 16 (Zoning) and 18 (Encroachment of boundary walls or fences) are subject to Deductible Amounts and Maximum Dollar Limits of Liability

EXCLUSIONS

In addition to the Exceptions in Schedule B, you are not insured against loss, costs, attorneys' fees, and expenses resulting from:

1. Governmental police power, and the existence or violation of any law or government regulation. This includes ordinances, laws and regulations concerning:
   a. building
   b. zoning
   c. land use
   d. improvements on the land
   e. land division
   f. environmental protection

   This exclusion does not apply to violations or the enforcement of these matters if notice of the violation or enforcement appears in the Public Records at the Policy Date.
   This exclusion does not limit the coverage described in Covered Risk 14, 15, 16, 17 or 24.
2. The failure of Your existing structures, or any part of them, to be constructed in accordance with applicable building codes. This Exclusion does not apply to violations of building codes if notice of the violation appears in the Public Records at the Policy Date.
3. The right to take the Land by condemning it, unless:
   a. a notice of exercising the right appears in the Public Records at the Policy Date; or
   b. the taking happened before the Policy Date and is binding on You if You bought the Land without Knowing of the taking.
4. Risks:
   a. that are created, allowed, or agreed to by You, whether or not they appear in the Public Records;
   b. that are Known to You at the Policy Date, but not to Us, unless they appear in the Public Records at the Policy Date;
   c. that result in no loss to You; or
   d. that first occur after the Policy Date - this does not limit the coverage described in Covered Risk 7, 8.d, 22, 23, 24 or 25.
5. Failure to pay value for Your Title.
6. Lack of a right:
   a. to any Land outside the area specifically described and referred to in paragraph 3 of Schedule A; and
   b. in streets, alleys, or waterways that touch the Land.
   This exclusion does not limit the coverage described in Covered Risk 11 or 18.

12. THIRD GENERATION EAGLE LOAN POLICY AMERICAN LAND TITLE ASSOCIATION EXPANDED COVERAGE RESIDENTIAL LOAN POLICY (1/01/08)

EXCLUSIONS FROM COVERAGE

The following matters are expressly excluded from the coverage of this policy and the Company will not pay loss or damage, costs, attorneys' fees or expenses which arise by reason of:

1. (a) Any law, ordinance, permit, or governmental regulation (including those relating to building and zoning) restricting, regulating, prohibiting, or relating to (i) the occupancy, use, or enjoyment of the Land; (ii) the character, dimensions, or location of any improvement erected on the Land; (iii) the subdivision of land; or(iv) environmental protection; or the effect of any violation of these laws, ordinances, or governmental regulations. This Exclusion 1(a) does not modify or limit the coverage provided under Covered Risk 5, 6, 13(c), 13(d), 14 or 16.
   (b)Any governmental police power. This Exclusion 1(b) does not modify or limit the coverage provided under Covered Risk 5, 6, 13(c), 13(d), 14 or 16.
2. Rights of eminent domain. This Exclusion does not modify or limit the coverage provided under Covered Risk 7 or 8.
3. Defects, liens, encumbrances, adverse claims, or other matters
   (a) created, suffered, assumed or agreed to by the Insured Claimant;
   (b) not Known to the Company, not recorded in the Public Records at Date of Policy, but Known to the Insured Claimant and not disclosed in writing to the Company by the Insured Claimant prior to the date the Insured Claimant became an Insured under this policy;
   (c) resulting in no loss or damage to the Insured Claimant;
   (d) attaching or created subsequent to Date of Policy (however, this does not modify or limit the coverage provided under Covered Risk 11, 16, 17, 18, 19, 20, 21, 22, 23, 24, 27 or 28); or
   (e) resulting in loss or damage which would not have been sustained if the Insured Claimant had paid value for the Insured Mortgage.
4. Unenforceability of the lien of the Insured Mortgage because of the inability or failure of an Insured to comply with applicable doing business laws of the state where the Land is situated.
5. Invalidity or unenforceability in whole or in part of the lien of the Insured Mortgage that arises out of the transaction evidenced by the Insured Mortgage and is based upon usury, or any consumer credit protection or truth-in-lending law. This Exclusion does not modify or limit the coverage provided in Covered Risk 26.
6. Any claim of invalidity, unenforceability or lack of priority of the lien of the Insured Mortgage as to Advances or modifications made after the Insured has Knowledge that the vestee shown in Schedule A is no longer the owner of the estate or interest covered by this policy. This Exclusion does not modify or limit the coverage provided in Covered Risk 11.
7. Any lien on the Title for real estate taxes or assessments imposed by governmental authority and created or attaching subsequent to Date of Policy. This Exclusion does not modify or limit the coverage provided in Covered Risk 11(b) or 25.
8. The failure of the residential structure, or any portion of it, to have been constructed before, on or after Date of Policy in accordance with applicable building codes. This Exclusion does not modify or limit the coverage provided in Covered Risk 5 or 6.

13. AMERICAN LAND TITLE ASSOCIATION LOAN POLICY - 2006
EXCLUSIONS FROM COVERAGE

The following matters are expressly excluded from the coverage of this policy, and the Company will not pay loss or damage, costs, attorneys' fees, or

expenses that arise by reason of:

1. (a) Any law, ordinance, permit, or governmental regulation (including those relating to building and zoning) restricting, regulating, prohibiting, or relating to

   (i) the occupancy, use, or enjoyment of the Land;

   (ii) the character, dimensions, or location of any improvement erected on the Land;

   (iii) the subdivision of land; or

   (iv) environmental protection;

   or the effect of any violation of these laws, ordinances, or governmental regulations. This Exclusion 1(a) does not modify or limit the coverage provided under Covered Risk 5.

   (b) Any governmental police power. This Exclusion 1(b) does not modify or limit the coverage provided under Covered Risk 6.

2. Rights of eminent domain. This Exclusion does not modify or limit the coverage provided under Covered Risk 7 or 8.

3. Defects, liens, encumbrances, adverse claims, or other matters

   (a) created, suffered, assumed, or agreed to by the Insured Claimant;

   (b) not Known to the Company, not recorded in the Public Records at Date of Policy, but Known to the Insured Claimant and not disclosed in writing to the Company by the Insured Claimant prior to the date the Insured Claimant became an Insured under this policy;

   (c) resulting in no loss or damage to the Insured Claimant;

   (d) attaching or created subsequent to Date of Policy (however, this does not modify or limit the coverage provided under Covered Risk 11, 13, or 14); or

   (e) resulting in loss or damage that would not have been sustained if the Insured Claimant had paid value for the Insured Mortgage.

4. Unenforceability of the lien of the Insured Mortgage because of the inability or failure of an Insured to comply with applicable doing-business laws of the state where the Land is situated.

5. Invalidity or unenforceability in whole or in part of the lien of the Insured Mortgage that arises out of the transaction evidenced by the Insured Mortgage and is based upon usury or any consumer credit protection or truth-in-lending law.

6. Any claim, by reason of the operation of federal bankruptcy, state insolvency, or similar creditors' rights laws, that the transaction creating the lien of the Insured Mortgage, is

   (a) a fraudulent conveyance or fraudulent transfer, or

   (b) a preferential transfer for any reason not stated in Covered Risk 13(b) of this policy.

7. Any lien on the Title for real estate taxes or assessments imposed by governmental authority and created or attaching between Date of Policy and the date of recording of the Insured Mortgage in the Public Records. This Exclusion does not modify or limit the coverage provided under Covered Risk 11(b).

14. AMERICAN LAND TITLE ASSOCIATION LOAN POLICY - 2006 WITH REGIONAL EXCEPTIONS

When the American Land Title Association policy is used as a Standard Coverage Policy and not as an Extended Coverage Policy the exclusions set forth in paragraph 13 above are used and the following exceptions to coverage appear in the policy.

SCHEDULE B

This policy does not insure against loss or damage (and the Company will not pay costs, attorneys' fees or expenses) which arise by reason of:

1. (a) Taxes or assessments that are not shown as existing liens by the records of any taxing authority that levies taxes or assessments on real property or by the Public Records; (b) proceedings by a public agency that may result in taxes or assessments, or notices of such proceedings, whether or not shown by the records of such agency or by the Public Records.

2. Any facts, rights, interests, or claims that are not shown by the Public Records but that could be ascertained by an inspection of the Land or that may be asserted by persons in possession of the Land.

3. Easements, liens or encumbrances, or claims thereof, not shown by the Public Records.

4. Any encroachment, encumbrance, violation, variation, or adverse circumstance affecting the Title that would be disclosed by an accurate and complete land survey of the Land and not shown by the Public Records.

5. (a) Unpatented mining claims; (b) reservations or exceptions in patents or in Acts authorizing the issuance thereof; (c) water rights, claims or title to water, whether or not the matters excepted under (a), (b), or (c) are shown by the Public Records.

15. AMERICAN LAND TITLE ASSOCIATION OWNER'S POLICY - 2006 EXCLUSIONS FROM COVERAGE

The following matters are expressly excluded from the coverage of this policy and the Company will not pay loss or damage, costs, attorneys' fees or expenses which arise by reason of:

1. (a) Any law, ordinance, permit, or governmental regulation (including those relating to building and zoning) restricting, regulating, prohibiting, or relating to

   (i) the occupancy, use, or enjoyment of the Land;

   (ii) the character, dimensions, or location of any improvement erected on the Land;

   (iii) the subdivision of land; or

   (iv) environmental protection;or the effect of any violation of these laws, ordinances, or governmental regulations. This Exclusion 1(a) does not modify or limit the coverage provided under Covered Risk 5.

(b) Any governmental police power. This Exclusion 1(b) does not modify or limit the coverage provided under Covered Risk 6.

2. Rights of eminent domain. This Exclusion does not modify or limit the coverage provided under Covered Risk 7 or 8.

3. Defects, liens, encumbrances, adverse claims, or other matters

(a) created, suffered, assumed, or agreed to by the Insured Claimant;

(b) not Known to the Company, not recorded in the Public Records at Date of Policy, but Known to the Insured Claimant and not disclosed in writing to the Company by the Insured Claimant prior to the date the Insured Claimant became an Insured under this policy;

(c) resulting in no loss or damage to the Insured Claimant;

(d) attaching or created subsequent to Date of Policy (however, this does not modify or limit the coverage provided under Covered Risks 9 and 10); or

(e) resulting in loss or damage that would not have been sustained if the Insured Claimant had paid value for the Title.

4. Any claim, by reason of the operation of federal bankruptcy, state insolvency, or similar creditors rights laws, that the transaction vesting the Title as shown in Schedule A, is

(a) a fraudulent conveyance or fraudulent transfer; or

(b) a preferential transfer for any reason not stated in Covered Risk 9 of this policy.

5. Any lien on the Title for real estate taxes or assessments imposed by governmental authority and created or attaching between Date of Policy and the date of recording of the deed or other instrument of transfer in the Public Records that vests Title as shown in Schedule A.

16. AMERICAN LAND TITLE ASSOCIATION OWNER'S POLICY - 2006 WITH REGIONAL EXCEPTIONS

When the American Land Title Association policy is used as a Standard Coverage Policy and not as an Extended Coverage Policy the exclusions set forth in paragraph 15 above are used and the following exceptions to coverage appear in the policy.

SCHEDULE B

This policy does not insure against loss or damage (and the Company will not pay costs, attorneys' fees or expenses) which arise by reason of:

1. (a) Taxes or assessments that are not shown as existing liens by the records of any taxing authority that levies taxes or assessments on real property or by the Public Records; (b) proceedings by a public agency that may result in taxes or assessments, or notices of such proceedings, whether or not shown by the records of such agency or by the Public Records.
2. Any facts, rights, interests, or claims that are not shown by the Public Records but that could be ascertained by an inspection of the Land or that may be asserted by persons in possession of the Land.
3. Easements, liens or encumbrances, or claims thereof, not shown by the Public Records.
4. Any encroachment, encumbrance, violation, variation, or adverse circumstance affecting the Title that would be disclosed by an accurate and complete land survey of the Land and not shown by the Public Records.
5. (a) Unpatented mining claims; (b) reservations or exceptions in patents or in Acts authorizing the issuance thereof; (c) water rights, claims or title to water, whether or not the matters excepted under (a), (b), or (c) are shown by the Public Records.

First American Title Insurance Company

National Commercial Services

666 Third Avenue, 5th Floor
New York, NY 10017

August 10, 2017

John Warren
Intersect Power
Embarcadero Center , 7th Floor
San Francisco, CA 94111
Phone: (415)297-4169

Customer Reference: Apollo Venture Partnership

Order Number: 3020-864103

Property: 23405 Rice Road, Desert Center, CA

Attached please find the following item(s):

Commitment

Thank You for your confidence and support. We at First American Title Insurance Company maintain the fundamental principle:

Customer First!

First American Title Insurance Company

INFORMATION

The Title Insurance Commitment is a legal contract between you and the company. It is issued to show the basis on which we will issue a Title Insurance Policy to you. The Policy will insure you against certain risks to the land title, subject to the limitations shown in the policy.

The Company will give you a sample of the Policy form, if you ask.

The Commitment is based on the land title as of the Commitment Date. Any changes in the land title or the transaction may affect the Commitment and the Policy.

The Commitment is subject to its Requirements, Exceptions and Conditions.

This information is not part of the title insurance commitment.

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YOU SHOULD READ THE COMMITMENT VERY CAREFULLY.
If you have any questions about the Commitment,
please contact the issuing office.

COMMITMENT FOR TITLE INSURANCE

Issued by

First American Title Insurance Company

Agreement to Issue Policy

We agree to issue a policy to you according to the terms of this Commitment.

When we show the policy amount and your name as the proposed insured in Schedule A, this Commitment becomes effective as of the Commitment Date shown in Schedule A.

If the Requirements shown in this Commitment have not been met within six months after the Commitment Date, our obligation under this Commitment will end. Also, our obligation under this Commitment will end when the Policy is issued and then our obligation to you will be under the Policy.

Our obligation under this Commitment is limited by the following:

The Provisions in Schedule A.

The Requirements in Schedule B-1.

The Exceptions in Schedule B-2.

The Conditions.

This Commitment is not valid without Schedule A and Sections 1 and 2 of Schedule B.

SCHEDULE A

1. Commitment Date: August 01, 2017 at 7:30 A.M.

2. Policy or Policies to be issued: Amount

(A) ALTA Owner's Policy $To Be Determined
ALTA Standard Owner Policy

Proposed Insured:

To Be Determined

(B) ALTA Loan Policy $To Be Determined
To Be Determined

Proposed Insured:

To Be Determined

3. (A) The estate or interest in the land described in this Commitment is:

Fee as to Parcel 1, an Easement as to Parcel 2

(B) Title to said estate or interest at the date hereof is vested in:

Apollo Venture Partnership, LLC, A California Limited Liability Company

4. The land referred to in this Commitment is situated in the Unincorporated Area , County of Riverside, State of California, and is described as follows:

PARCEL 1:

LOTS 1 AND 2 OF THE NORTHWEST QUARTER AND THE NORTHEAST QUARTER OF SECTION 31, TOWNSHIP 4 SOUTH, RANGE 16 EAST, SAN BERNARDINO BASE AND MERIDIAN, ACCORDING TO UNITED STATES GOVERNMENT SURVEY THEREOF.

PARCEL 2:

AN EASEMENT FOR WELL SITE OVER, UNDER, ALONG AND ACROSS THAT PORTION OF PARCEL 32 OF PARCEL MAP NO. 15617, AS SHOWN BY PARCEL MAP ON FILE IN BOOK 83 PAGES 47 THROUGH 50, INCLUSIVE, OF PARCEL MAPS, RECORDS OF RIVERSIDE COUNTY, CALIFORNIA, DESCRIBED AS FOLLOWS:

COMMENCING AT THE SOUTHWEST CORNER OF SAID PARCEL 32; THENCE ALONG THE SOUTHERLY LINE THEREOF, NORTH 88 DEGREES 36' 15" EAST, 42.31 FEET TO THE TRUE POINT OF BEGINNING;
THENCE LEAVING SAID SOUTHERLY LINE, NORTH 01 DEGREES 23' 45" WEST, 69.80 FEET;
THENCE NORTH 88 DEGREES 36' 15" EAST, 86.00 FEET;
THENCE SOUTH 01 DEGREES 23' 45" EAST, 69.00 FEET TO THE SOUTHERLY LINE OF SAID PARCEL 32;

THENCE ALONG SAID SOUTHERLY LINE, SOUTH 88 DEGREES 36' 15" WEST, 86.00 FEET TO THE TRUE POINT OF BEGINNING.

APN: 807-191-004-2

SCHEDULE B

SECTION ONE

REQUIREMENTS

The following requirements must be met:

(A) Pay the agreed amounts for the interest in the land and/or the mortgage to be insured.

(B) Pay us the premiums, fees and charges for the policy.

(C) Documents satisfactory to us creating the interest in the land and/or the mortgage to be insured must be signed, delivered and recorded.

(D) You must tell us in writing the name of anyone not referred to in this Commitment who will get an interest in the land or who will make a loan on the land. We may then make additional requirements or exceptions.

(E) Releases(s) or Reconveyance(s) of Item(s): None

(F) Other: None

(G) You must give us the following information:
1. Any off record leases, surveys, etc.
2. Statement(s) of Identity, all parties.
3. Other: None

The following additional requirements, as indicated by "X", must be met:

[X] (H) Provide information regarding any off-record matters, which may include, but are not limited to: leases, recent works of improvement, or commitment statements in effect under the Environmental Responsibility Acceptance Act, Civil Code Section 850, et seq.

The Company's Owner's Affidavit form (as provided by company) must be completed and submitted prior to close in order to satisfy this requirement. This Commitment will then be subject to such further exceptions and/or requirements as may be deemed necessary.

[] (I) An ALTA/NSPS survey of recent date, which complies with the current minimum standard detail requirements for ALTA/NSPS land title surveys, must be submitted to the Company for review. This Commitment will then be subject to such further exceptions and/or requirements as may be deemed necessary.

[X] (J) The following LLC documentation is required:
(i) a copy of the Articles of Organization
(ii) a copy of the Operating Agreement, if applicable
(iii) a Certificate of Good Standing and/or other evidence of current Authority to Conduct Business within the State
(iv) express Company Consent to the current transaction

[] (K) The following partnership documentation is required **:**
(i) a copy of the partnership agreement, including all applicable amendments thereto
(ii) a Certificate of Good Standing and/or other evidence of current Authority to Conduct Business within the State
(iii) express Partnership Consent to the current transaction

[] (L) The following corporation documentation is required:
(i) a copy of the Articles of Incorporation
(ii) a copy of the Bylaws, including all applicable Amendments thereto
(iii) a Certificate of Good Standing and/or other evidence of current Authority to Conduct Business within the State
(iv) express Corporate Resolution consenting to the current transaction

[**X**] (M) Based upon the Company's review of that certain partnership/operating agreement dated **Not disclosed** for the proposed insured herein, the following requirements must be met:

Any further amendments to said agreement must be submitted to the Company, together with an affidavit from one of the general partners or members stating that it is a true copy, that said partnership or limited liability company is in full force and effect, and that there have been no further amendments to the agreement. This Commitment will then be subject to such further requirements as may be deemed necessary.

[] (N) A copy of the complete lease, as referenced in Schedule A, #3 herein, together with any amendments and/or assignments thereto, must be submitted to the Company for review, along with an affidavit executed by the present lessee stating that it is a true copy, that the lease is in full force and effect, and that there have been no further amendments to the lease. This Commitment will then be subject to such further requirements as may be deemed necessary.

[X] (O) Approval from the Company's Underwriting Department must be obtained for issuance of the policy contemplated herein and any endorsements requested thereunder. This Commitment will then be subject to such further requirements as may be required to obtain such approval.

[] (P) Potential additional requirements, if ALTA Extended coverage is contemplated hereunder, and work on the land has commenced prior to close, some or all of the following requirements, and any other requirements which may be deemed necessary, may need to be met:

[] (Q) The Company's "Indemnity Agreement I" must be executed by the appropriate parties.

[] (R) Financial statements from the appropriate parties must be submitted to the Company for review.

[] (S) A copy of the construction contract must be submitted to the Company for review.

[] (T) An inspection of the land must be performed by the Company for verification of the phase of construction.

[] (U) The Company's "Mechanic's Lien Risk Addendum" form must be completed by a Company employee, based upon information furnished by the appropriate parties involved.

SCHEDULE B

SECTION TWO

EXCEPTIONS

Any policy we issue will have the following exceptions unless they are taken care of to our satisfaction. The printed exceptions and exclusions from the coverage of the policy or policies are set forth in Exhibit A attached. Copies of the policy forms should be read. They are available from the office which issued this Commitment.

1. General and special taxes and assessments for the fiscal year 2017-2018, a lien not yet due or payable.

2. The lien of supplemental taxes, if any, assessed pursuant to Chapter 3.5 commencing with Section 75 of the California Revenue and Taxation Code.

3. A right of way for ditches and canals as reserved by the United States of America in the patent recorded February 28, 1963 as Instrument No. 20509 of Official Records .

4. A right of way for ditches and canals as reserved by the United States of America in the patent recorded September 26, 1967 as Instrument Nos. 84779 And 84780 Both of Official Records .

5. An easement for Ingress, Egress, Road And Utilities and incidental purposes, recorded July 05, 1979 as Instrument No. 139967 of Official Records.
   In Favor of: JKCB Corporation, A California Corporation
   Affects: as described therein

6. An easement for Ingress, Egress, Road and Utility Purposes and incidental purposes, recorded July 05, 1979 as Instrument No. 139969 of Official Records.
   In Favor of: J.K.C.B Corporation, A California Corporation
   Affects: as described therein

7. Rights of the public in and to that portion of the land lying within any road, street and/or highway.

8. The lack of a right of access to and from the land.

   Notice: Paragraph 4 of the insuring provisions on the face page of the policy will be deleted from the policy to be issued.

9. Water rights, claims or title to water, whether or not shown by the public records.

10. Any claim that the Title is subject to a trust or lien created under The Perishable Agricultural Commodities Act, 1930 (7 U.S.C. §§499a, et seq.) or the Packers and Stockyards Act (7 U.S.C. §§181 et seq.) or under similar state laws.

11. Rights of parties in possession.

INFORMATIONAL NOTES

1. Taxes for proration purposes only for the fiscal year 2016-2017.

First Installment:	$2,165.25, PAID
Second Installment:	$2,165.25, PAID
Tax Rate Area:	062-000
APN:	807-191-004-2

2. According to the latest available equalized assessment roll in the office of the county tax assessor, there is located on the land a(n) Commercial known as 23405 Rice Road, Desert Center, CA.

3. According to the public records, there has been no conveyance of the land within a period of twenty-four months prior to the date of this report, except as follows:

   None

4. This preliminary report/commitment was prepared based upon an application for a policy of title insurance that identified land by street address or assessor's parcel number only. It is the responsibility of the applicant to determine whether the land referred to herein is in fact the land that is to be described in the policy or policies to be issued.

The map attached, if any, may or may not be a survey of the land depicted hereon. First American Title Insurance Company expressly disclaims any liability for loss or damage which may result from reliance on this map except to the extent coverage for such loss or damage is expressly provided by the terms and provisions of the title insurance policy, if any, to which this map is attached.

******To obtain wire instructions for deposit of funds to your escrow file please contact your Escrow Officer.******

CONDITIONS

1. **DEFINITIONS**
(a)"Mortgage" means mortgage, deed of trust or other security instrument.
(b)"Public Records" means title records that give constructive notice of matters affecting the title according to the state law where the land is located.

2. **LATER DEFECTS**
The Exceptions in Schedule B - Section Two may be amended to show any defects, liens or encumbrances that appear for the first time in the public records or are created or attached between the Commitment Date and the date on which all of the Requirements (a) and (c) of Schedule B - Section One are met. We shall have no liability to you because of this amendment.

3. **EXISTING DEFECTS**
If any defects, liens or encumbrances existing at Commitment Date are not shown in Schedule B, we may amend Schedule B to show them. If we do amend Schedule B to show these defects, liens or encumbrances, we shall be liable to you according to Paragraph 4 below unless you knew of this information and did not tell us about it in writing.

4. **LIMITATION OF OUR LIABILITY**
Our only obligation is to issue to you the Policy referred to in this Commitment, when you have met its Requirements. If we have any liability to you for any loss you incur because of an error in this Commitment, our liability will be limited to your actual loss caused by your relying on this Commitment when you acted in good faith to:

comply with the Requirements shown in Schedule B - Section One
or
eliminate with our written consent any Exceptions shown in Schedule B - Section Two.

We shall not be liable for more than the Policy Amount shown in Schedule A of this Commitment and our liability is subject to the terms of the Policy form to be issued to you.

5. **CLAIMS MUST BE BASED ON THIS COMMITMENT**
Any claim, whether or not based on negligence, which you may have against us concerning the title to the land must be based on this commitment and is subject to its terms.

First American Title

Privacy Information

We Are Committed to Safeguarding Customer Information

In order to better serve your needs now and in the future, we may ask you to provide us with certain information. We understand that you may be concerned about what we will do with such information - particularly any personal or financial information. We agree that you have a right to know how we will utilize the personal information you provide to us. Therefore, together with our subsidiaries we have adopted this Privacy Policy to govern the use and handling of your personal information.

Applicability

This Privacy Policy governs our use of the information that you provide to us. It does not govern the manner in which we may use information we have obtained from any other source, such as information obtained from a public record or from another person or entity. First American has also adopted broader guidelines that govern our use of personal information regardless of its source. First American calls these guidelines its Fair Information Values.

Types of Information

Depending upon which of our services you are utilizing, the types of nonpublic personal information that we may collect include:

- Information we receive from you on applications, forms and in other communications to us, whether in writing, in person, by telephone or any other means;
- Information about your transactions with us, our affiliated companies, or others; and
- Information we receive from a consumer reporting agency.

Use of Information

We request information from you for our own legitimate business purposes and not for the benefit of any nonaffiliated party. Therefore, we will not release your information to nonaffiliated parties except: (1) as necessary for us to provide the product or service you have requested of us; or (2) as permitted by law. We may, however, store such information indefinitely, including the period after which any customer relationship has ceased. Such information may be used for any internal purpose, such as quality control efforts or customer analysis. We may also provide all of the types of nonpublic personal information listed above to one or more of our affiliated companies. Such affiliated companies include financial service providers, such as title insurers, property and casualty insurers, and trust and investment advisory companies, or companies involved in real estate services, such as appraisal companies, home warranty companies and escrow companies. Furthermore, we may also provide all the information we collect, as described above, to companies that perform marketing services on our behalf, on behalf of our affiliated companies or to other financial institutions with whom we or our affiliated companies have joint marketing agreements.

Former Customers

Even if you are no longer our customer, our Privacy Policy will continue to apply to you.

Confidentiality and Security

We will use our best efforts to ensure that no unauthorized parties have access to any of your information. We restrict access to nonpublic personal information about you to those individuals and entities who need to know that information to provide products or services to you. We will use our best efforts to train and oversee our employees and agents to ensure that your information will be handled responsibly and in accordance with this Privacy Policy and First American's Fair Information Values. We currently maintain physical, electronic, and procedural safeguards that comply with federal regulations to guard your nonpublic personal information.

Information Obtained Through Our Web Site

First American Financial Corporation is sensitive to privacy issues on the Internet. We believe it is important you know how we treat the information about you we receive on the Internet.

In general, you can visit First American or its affiliates' Web sites on the World Wide Web without telling us who you are or revealing any information about yourself. Our Web servers collect the domain names, not the e-mail addresses, of visitors. This information is aggregated to measure the number of visits, average time spent on the site, pages viewed and similar information. First American uses this information to measure the use of our site and to develop ideas to improve the content of our site.

There are times, however, when we may need information from you, such as your name and email address. When information is needed, we will use our best efforts to let you know at the time of collection how we will use the personal information. Usually, the personal information we collect is used only by us to respond to your inquiry, process an order or allow you to access specific account/profile information. If you choose to share any personal information with us, we will only use it in accordance with the policies outlined above.

Business Relationships

First American Financial Corporation's site and its affiliates' sites may contain links to other Web sites. While we try to link only to sites that share our high standards and respect for privacy, we are not responsible for the content or the privacy practices employed by other sites.

Cookies

Some of First American's Web sites may make use of "cookie" technology to measure site activity and to customize information to your personal tastes. A cookie is an element of data that a Web site can send to your browser, which may then store the cookie on your hard drive.

FirstAm.com uses stored cookies. The goal of this technology is to better serve you when visiting our site, save you time when you are here and to provide you with a more meaningful and productive Web site experience.

Fair Information Values

Fairness We consider consumer expectations about their privacy in all our businesses. We only offer products and services that assure a favorable balance between consumer benefits and consumer privacy.

Public Record We believe that an open public record creates significant value for society, enhances consumer choice and creates consumer opportunity. We actively support an open public record and emphasize its importance and contribution to our economy.

Use We believe we should behave responsibly when we use information about a consumer in our business. We will obey the laws governing the collection, use and dissemination of data.

Accuracy We will take reasonable steps to help assure the accuracy of the data we collect, use and disseminate. Where possible, we will take reasonable steps to correct inaccurate information. When, as with the public record, we cannot correct inaccurate information, we will take all reasonable steps to assist consumers in identifying the source of the erroneous data so that the consumer can secure the required corrections.

Education We endeavor to educate the users of our products and services, our employees and others in our industry about the importance of consumer privacy. We will instruct our employees on our fair information values and on the responsible collection and use of data. We will encourage others in our industry to collect and use information in a responsible manner.

Security We will maintain appropriate facilities and systems to protect against unauthorized access to and corruption of the data we maintain.

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EXHIBIT A
LIST OF PRINTED EXCEPTIONS AND EXCLUSIONS (BY POLICY TYPE)

1. CALIFORNIA LAND TITLE ASSOCIATION STANDARD COVERAGE POLICY - 1990
SCHEDULE B

EXCEPTIONS FROM COVERAGE

This policy does not insure against loss or damage (and the Company will not pay costs, attorneys' fees or expenses) which arise by reason of:

1. Taxes or assessments which are not shown as existing liens by the records of any taxing authority that levies taxes or assessments on real property or by the public records. Proceedings by a public agency which may result in taxes or assessments, or notice of such proceedings, whether or not shown by the records of such agency or by the public records.
2. Any facts, rights, interests, or claims which are not shown by the public records but which could be ascertained by an inspection of the land or which may be asserted by persons in possession thereof.
3. Easements, liens or encumbrances, or claims thereof, which are not shown by the public records.
4. Discrepancies, conflicts in boundary lines, shortage in area, encroachments, or any other facts which a correct survey would disclose, and which are not shown by the public records.
5. (a) Unpatented mining claims; (b) reservations or exceptions in patents or in Acts authorizing the issuance thereof; (c) water rights, claims or title to water, whether or not the matters excepted under (a), (b), or (c) are shown by the public records.

EXCLUSIONS FROM COVERAGE

The following matters are expressly excluded from the coverage of this policy and the Company will not pay loss or damage, costs, attorneys' fees or expenses which arise by reason of:

1. (a) Any law, ordinance or governmental regulation (including but not limited to building and zoning laws, ordinances, or regulations) restricting, regulating, prohibiting or relating to (i) the occupancy, use, or enjoyment of the land; (ii) the character, dimensions or location of any improvement now or hereafter erected on the land; (iii) a separation in ownership or a change in the dimensions or area of the land or any parcel of which the land is or was a part; or (iv) environmental protection, or the effect of any violation of these laws, ordinances or governmental regulations, except to the extent that a notice of the enforcement thereof or a notice of a defect, lien or encumbrance resulting from a violation or alleged violation affecting the land has been recorded in the public records at Date of Policy.
   (b) Any governmental police power not excluded by (a) above, except to the extent that a notice of the exercise thereof or a notice of a defect, lien or encumbrance resulting from a violation or alleged violation affecting the land has been recorded in the public records at Date of Policy.
2. Rights of eminent domain unless notice of the exercise thereof has been recorded in the public records at Date of Policy, but not excluding from coverage any taking which has occurred prior to Date of Policy which would be binding on the rights of a purchaser for value without knowledge.
3. Defects, liens, encumbrances, adverse claims or other matters:
   (a) whether or not recorded in the public records at Date of Policy, but created, suffered, assumed or agreed to by the insured claimant;
   (b) not known to the Company, not recorded in the public records at Date of Policy, but known to the insured claimant and not disclosed in writing to the Company by the insured claimant prior to the date the insured claimant became an insured under this policy;
   (c) resulting in no loss or damage to the insured claimant;
   (d) attaching or created subsequent to Date of Policy; or
   (e) resulting in loss or damage which would not have been sustained if the insured claimant had paid value for the insured mortgage or for the estate or interest insured by this policy.
4. Unenforceability of the lien of the insured mortgage because of the inability or failure of the insured at Date of Policy, or the inability or failure of any subsequent owner of the indebtedness, to comply with applicable "doing business" laws of the state in which the land is situated.
5. Invalidity or unenforceability of the lien of the insured mortgage, or claim thereof, which arises out of the transaction evidenced by the insured mortgage and is based upon usury or any consumer credit protection or truth in lending law.
6. Any claim, which arises out of the transaction vesting in the insured the estate or interest insured by their policy or the transaction creating the interest of the insured lender, by reason of the operation of federal bankruptcy, state insolvency or similar creditors' rights laws.

2. AMERICAN LAND TITLE ASSOCIATION OWNER'S POLICY FORM B - 1970
SCHEDULE OF EXCLUSIONS FROM COVERAGE

1. Any law, ordinance or governmental regulation (including but not limited to building and zoning ordinances) restricting or regulating or prohibiting the occupancy, use or enjoyment of the land, or regulating the character, dimensions or location of any improvement now or hereafter erected on the land, or prohibiting a separation in ownership or a reduction in the dimensions of area of the land, or the effect of any violation of any such law, ordinance or governmental regulation.
2. Rights of eminent domain or governmental rights of police power unless notice of the exercise of such rights appears in the public records at Date of Policy.
3. Defects, liens, encumbrances, adverse claims, or other matters (a) created, suffered, assumed or agreed to by the insured claimant; (b) not known to the Company and not shown by the public records but known to the insured claimant either at Date of Policy or at the date such claimant acquired an estate or interest insured by this policy and not disclosed in writing by the insured claimant to the Company prior to the date such insured claimant became an insured hereunder; (c) resulting in no loss or damage to the insured claimant; (d) attaching or created subsequent to Date of Policy; or (e) resulting in loss or damage which would not have been sustained if the insured claimant had paid value for the estate or interest insured by this policy.

3. AMERICAN LAND TITLE ASSOCIATION OWNER'S POLICY FORM B - 1970
WITH REGIONAL EXCEPTIONS

When the American Land Title Association policy is used as a Standard Coverage Policy and not as an Extended Coverage Policy the exclusions set forth in paragraph 2 above are used and the following exceptions to coverage appear in the policy.

SCHEDULE B

This policy does not insure against loss or damage by reason of the matters shown in parts one and two following:
Part One

1. Taxes or assessments which are not shown as existing liens by the records of any taxing authority that levies taxes or assessments on real property or by the public records.
2. Any facts, rights, interests, or claims which are not shown by the public records but which could be ascertained by an inspection of said land or by making inquiry of persons in possession thereof.
3. Easements, claims of easement or encumbrances which are not shown by the public records.
4. Discrepancies, conflicts in boundary lines, shortage in area, encroachments, or any other facts which a correct survey would disclose, and which are not shown by public records.
5. Unpatented mining claims; reservations or exceptions in patents or in Acts authorizing the issuance thereof; water rights, claims or title to water.
6. Any lien, or right to a lien, for services, labor or material heretofore or hereafter furnished, imposed by law and not shown by the public records.

4. AMERICAN LAND TITLE ASSOCIATION LOAN POLICY - 1970 WITH A.L.T.A. ENDORSEMENT FORM 1 COVERAGE SCHEDULE OF EXCLUSIONS FROM COVERAGE

1. Any law, ordinance or governmental regulation (including but not limited to building and zoning ordinances) restricting or regulating or prohibiting the occupancy, use or enjoyment of the land, or regulating the character, dimensions or location of any improvement now or hereafter erected on the land, or prohibiting a separation in ownership or a reduction in the dimensions or area of the land, or the effect of any violation of any such law ordinance or governmental regulation.
2. Rights of eminent domain or governmental rights of police power unless notice of the exercise of such rights appears in the public records at Date of Policy.
3. Defects, liens, encumbrances, adverse claims, or other matters (a) created, suffered, assumed or agreed to by the insured claimant, (b) not known to the Company and not shown by the public records but known to the insured claimant either at Date of Policy or at the date such claimant acquired an estate or interest insured by this policy or acquired the insured mortgage and not disclosed in writing by the insured claimant to the Company prior to the date such insured claimant became an insured hereunder, (c) resulting in no loss or damage to the insured claimant; (d) attaching or created subsequent to Date of Policy (except to the extent insurance is afforded herein as to any statutory lien for labor or material or to the extent insurance is afforded herein as to assessments for street improvements under construction or completed at Date of Policy).
4. Unenforceability of the lien of the insured mortgage because of failure of the insured at Date of Policy or of any subsequent owner of the indebtedness to comply with applicable "doing business" laws of the state in which the land is situated.

5. AMERICAN LAND TITLE ASSOCIATION LOAN POLICY - 1970 WITH REGIONAL EXCEPTIONS

When the American Land Title Association Lenders Policy is used as a Standard Coverage Policy and not as an Extended Coverage Policy, the exclusions set forth in paragraph 4 above are used and the following exceptions to coverage appear in the policy.

SCHEDULE B

This policy does not insure against loss or damage by reason of the matters shown in parts one and two following:
Part One

1. Taxes or assessments which are not shown as existing liens by the records of any taxing authority that levies taxes or assessments on real property or by the public records.
2. Any facts, rights, interests, or claims which are not shown by the public records but which could be ascertained by an inspection of said land or by making inquiry of persons in possession thereof.
3. Easements, claims of easement or encumbrances which are not shown by the public records.
4. Discrepancies, conflicts in boundary lines, shortage in area, encroachments, or any other facts which a correct survey would disclose, and which are not shown by public records.
5. Unpatented mining claims; reservations or exceptions in patents or in Acts authorizing the issuance thereof; water rights, claims or title to water.
6. Any lien, or right to a lien, for services, labor or material theretofore or hereafter furnished, imposed by law and not shown by the public records.

6. AMERICAN LAND TITLE ASSOCIATION LOAN POLICY - 1992 WITH A.L.T.A. ENDORSEMENT FORM 1 COVERAGE EXCLUSIONS FROM COVERAGE

The following matters are expressly excluded from the coverage of this policy and the Company will not pay loss or damage, costs, attorneys' fees or expenses which arise by reason of:

1. (a) Any law, ordinance or governmental regulation (including but not limited to building and zoning laws, ordinances, or regulations) restricting, regulating, prohibiting or relating to (i) the occupancy, use, or enjoyment of the land; (ii) the character, dimensions or location of any improvement now or hereafter erected on the land; (iii) a separation in ownership or a change in the dimensions or area of the land or any parcel of which the land is or was a part; or (iv) environmental protection, or the effect of any violation of these laws, ordinances or governmental regulations, except to the extent that a notice of the enforcement thereof or a notice of a defect, lien or encumbrance resulting from a violation or alleged violation affecting the land has been recorded in the public records at Date of Policy;
   (b) Any governmental police power not excluded by (a) above, except to the extent that a notice of the exercise thereof or a notice of a defect, lien or encumbrance resulting from a violation or alleged violation affecting the land has been recorded in the public records at Date of Policy.

2. Rights of eminent domain unless notice of the exercise thereof has been recorded in the public records at Date of Policy, but not excluding from coverage any taking which has occurred prior to Date of Policy which would be binding on the rights of a purchaser for value without knowledge.
3. Defects, liens, encumbrances, adverse claims, or other matters:
(a) whether or not recorded in the public records at Date of Policy, but created, suffered, assumed or agreed to by the insured claimant;
(b) not known to the Company, not recorded in the public records at Date of Policy, but known to the insured claimant and not disclosed in writing to the Company by the insured claimant prior to the date the insured claimant became an insured under this policy;
(c) resulting in no loss or damage to the insured claimant;
(d) attaching or created subsequent to Date of Policy (except to the extent that this policy insures the priority of the lien of the insured mortgage over any statutory lien for services, labor or material or the extent insurance is afforded herein as to assessments for street improvements under construction or completed at date of policy); or
(e) resulting in loss or damage which would not have been sustained if the insured claimant had paid value for the insured mortgage.
4. Unenforceability of the lien of the insured mortgage because of the inability or failure of the insured at Date of Policy, or the inability or failure of any subsequent owner of the indebtedness, to comply with the applicable "doing business" laws of the state in which the land is situated.
5. Invalidity or unenforceability of the lien of the insured mortgage, or claim thereof, which arises out of the transaction evidenced by the insured mortgage and is based upon usury or any consumer credit protection or truth in lending law.
6. Any statutory lien for services, labor or materials (or the claim of priority of any statutory lien for services, labor or materials over the lien of the insured mortgage) arising from an improvement or work related to the land which is contracted for and commenced subsequent to Date of Policy and is not financed in whole or in part by proceeds of the indebtedness secured by the insured mortgage which at Date of Policy the insured has advanced or is obligated to advance.
7. Any claim, which arises out of the transaction creating the interest of the mortgagee insured by this policy, by reason of the operation of federal bankruptcy, state insolvency, or similar creditors' rights laws, that is based on:
(i) the transaction creating the interest of the insured mortgagee being deemed a fraudulent conveyance or fraudulent transfer; or
(ii) the subordination of the interest of the insured mortgagee as a result of the application of the doctrine of equitable subordination; or
(iii) the transaction creating the interest of the insured mortgagee being deemed a preferential transfer except where the preferential transfer results from the failure:
(a) to timely record the instrument of transfer; or
(b) of such recordation to impart notice to a purchaser for value or a judgment or lien creditor.

7. AMERICAN LAND TITLE ASSOCIATION LOAN POLICY - 1992 WITH REGIONAL EXCEPTIONS

When the American Land Title Association policy is used as a Standard Coverage Policy and not as an Extended Coverage Policy the exclusions set forth in paragraph 6 above are used and the following exceptions to coverage appear in the policy.

SCHEDULE B

This policy does not insure against loss or damage (and the Company will not pay costs, attorneys' fees or expenses) which arise by reason of:
1. Taxes or assessments which are not shown as existing liens by the records of any taxing authority that levies taxes or assessments on real property or by the public records.
2. Any facts, rights, interests, or claims which are not shown by the public records but which could be ascertained by an inspection of said land or by making inquiry of persons in possession thereof.
3. Easements, claims of easement or encumbrances which are not shown by the public records.
4. Discrepancies, conflicts in boundary lines, shortage in area, encroachments, or any other facts which a correct survey would disclose, and which are not shown by public records.
5. Unpatented mining claims; reservations or exceptions in patents or in Acts authorizing the issuance thereof; water rights, claims or title to water.
6. Any lien, or right to a lien, for services, labor or material theretofore or hereafter furnished, imposed by law and not shown by the public records.

8. AMERICAN LAND TITLE ASSOCIATION OWNER'S POLICY - 1992 EXCLUSIONS FROM COVERAGE

The following matters are expressly excluded from the coverage of this policy and the Company will not pay loss or damage, costs, attorneys' fees or expenses which arise by reason of:
1. (a) Any law, ordinance or governmental regulation (including but not limited to building and zoning laws, ordinances, or regulations) restricting, regulating, prohibiting or relating to (i) the occupancy, use, or enjoyment of the land; (ii) the character, dimensions or location of any improvement now or hereafter erected on the land; (iii) a separation in ownership or a change in the dimensions or area of the land or any parcel of which the land is or was a part; or (iv) environmental protection, or the effect of any violation of these laws, ordinances or governmental regulations, except to the extent that a notice of the enforcement thereof or a notice of a defect, lien or encumbrance resulting from a violation or alleged violation affecting the land has been recorded in the public records at Date of Policy.
(b) Any governmental police power not excluded by (a) above, except to the extent that a notice of the exercise thereof or a notice of a defect, lien or encumbrance resulting from a violation or alleged violation affecting the land has been recorded in the public records at Date of Policy.
2. Rights of eminent domain unless notice of the exercise thereof has been recorded in the public records at Date of Policy, but not excluding from coverage any taking which has occurred prior to Date of Policy which would be binding on the rights of a purchaser for value without knowledge.
3. Defects, liens, encumbrances, adverse claims, or other matters:
(a) created, suffered, assumed or agreed to by the insured claimant;
(b) not known to the Company, not recorded in the public records at Date of Policy, but known to the insured claimant and not disclosed in writing to the Company by the insured claimant prior to the date the insured claimant became an insured under this policy;
(c) resulting in no loss or damage to the insured claimant;
(d) attaching or created subsequent to Date of Policy; or

(e) resulting in loss or damage which would not have been sustained if the insured claimant had paid value for the estate or interest insured by this policy.

4. Any claim, which arises out of the transaction vesting in the insured the estate or interest insured by this policy, by reason of the operation of federal bankruptcy, state insolvency, or similar creditors' rights laws, that is based on:
(i) the transaction creating the estate or interest insured by this policy being deemed a fraudulent conveyance or fraudulent transfer; or
(ii) the transaction creating the estate or interest insured by this policy being deemed a preferential transfer except where the preferential transfer results from the failure:
(a) to timely record the instrument of transfer; or
(b) of such recordation to impart notice to a purchaser for value or a judgment or lien creditor.

9. AMERICAN LAND TITLE ASSOCIATION OWNER'S POLICY - 1992 WITH REGIONAL EXCEPTIONS

When the American Land Title Association policy is used as a Standard Coverage Policy and not as an Extended Coverage Policy the exclusions set forth in paragraph 8 above are used and the following exceptions to coverage appear in the policy.

SCHEDULE B

This policy does not insure against loss or damage (and the Company will not pay costs, attorneys' fees or expenses) which arise by reason of:
Part One:

1. Taxes or assessments which are not shown as existing liens by the records of any taxing authority that levies taxes or assessments on real property or by the public records.
2. Any facts, rights, interests, or claims which are not shown by the public records but which could be ascertained by an inspection of said land or by making inquiry of persons in possession thereof.
3. Easements, claims of easement or encumbrances which are not shown by the public records.
4. Discrepancies, conflicts in boundary lines, shortage in area, encroachments, or any other facts which a correct survey would disclose, and which are not shown by public records.
5. Unpatented mining claims; reservations or exceptions in patents or in Acts authorizing the issuance thereof; water rights, claims or title to water.
6. Any lien, or right to a lien, for services, labor or material theretofore or hereafter furnished, imposed by law and not shown by the public records.

ALTA RESIDENTIAL TITLE INSURANCE POLICY (6-1-87)

EXCLUSIONS

In addition to the Exceptions in Schedule B, you are not insured against loss, costs, attorneys' fees, and expenses resulting from:

1. Governmental police power, and the existence or violation of any law or government regulation. This includes building and zoning ordinances and also laws and regulations concerning:
   (a) and use
   (b) improvements on the land
   (c) and division
   (d) environmental protection

   This exclusion does not apply to violations or the enforcement of these matters which appear in the public records at Policy Date.
   This exclusion does not limit the zoning coverage described in Items 12 and 13 of Covered Title Risks.
2. The right to take the land by condemning it, unless:
   (a) a notice of exercising the right appears in the public records on the Policy Date
   (b) the taking happened prior to the Policy Date and is binding on you if you bought the land without knowing of the taking
3. Title Risks:
   (a) that are created, allowed, or agreed to by you
   (b) that are known to you, but not to us, on the Policy Date -- unless they appeared in the public records
   (c) that result in no loss to you
   (d) that first affect your title after the Policy Date -- this does not limit the labor and material lien coverage in Item 8 of Covered Title Risks
4. Failure to pay value for your title.
5. Lack of a right:
   (a) to any land outside the area specifically described and referred to in Item 3 of Schedule A OR
   (b) in streets, alleys, or waterways that touch your land
   This exclusion does not limit the access coverage in Item 5 of Covered Title Risks.

11. EAGLE PROTECTION OWNER'S POLICY

CLTA HOMEOWNER'S POLICY OF TITLE INSURANCE - 1998
ALTA HOMEOWNER'S POLICY OF TITLE INSURANCE - 1998

Covered Risks 14 (Subdivision Law Violation). 15 (Building Permit). 16 (Zoning) and 18 (Encroachment of boundary walls or fences) are subject to Deductible Amounts and Maximum Dollar Limits of Liability

EXCLUSIONS

In addition to the Exceptions in Schedule B, you are not insured against loss, costs, attorneys' fees, and expenses resulting from:

1. Governmental police power, and the existence or violation of any law or government regulation. This includes ordinances, laws and regulations concerning:
   a. building
   b. zoning
   c. land use
   d. improvements on the land
   e. land division
   f. environmental protection

   This exclusion does not apply to violations or the enforcement of these matters if notice of the violation or enforcement appears in the Public Records at the Policy Date.
   This exclusion does not limit the coverage described in Covered Risk 14, 15, 16, 17 or 24.
2. The failure of Your existing structures, or any part of them, to be constructed in accordance with applicable building codes. This Exclusion does not apply to violations of building codes if notice of the violation appears in the Public Records at the Policy Date.
3. The right to take the Land by condemning it, unless:
   a. a notice of exercising the right appears in the Public Records at the Policy Date; or
   b. the taking happened before the Policy Date and is binding on You if You bought the Land without Knowing of the taking.
4. Risks:
   a. that are created, allowed, or agreed to by You, whether or not they appear in the Public Records;
   b. that are Known to You at the Policy Date, but not to Us, unless they appear in the Public Records at the Policy Date;
   c. that result in no loss to You; or
   d. that first occur after the Policy Date - this does not limit the coverage described in Covered Risk 7, 8.d, 22, 23, 24 or 25.
5. Failure to pay value for Your Title.
6. Lack of a right:
   a. to any Land outside the area specifically described and referred to in paragraph 3 of Schedule A; and
   b. in streets, alleys, or waterways that touch the Land.
   This exclusion does not limit the coverage described in Covered Risk 11 or 18.

12. THIRD GENERATION EAGLE LOAN POLICY AMERICAN LAND TITLE ASSOCIATION EXPANDED COVERAGE RESIDENTIAL LOAN POLICY (1/01/08)

EXCLUSIONS FROM COVERAGE

The following matters are expressly excluded from the coverage of this policy and the Company will not pay loss or damage, costs, attorneys' fees or expenses which arise by reason of:

1. (a) Any law, ordinance, permit, or governmental regulation (including those relating to building and zoning) restricting, regulating, prohibiting, or relating to (i) the occupancy, use, or enjoyment of the Land; (ii) the character, dimensions, or location of any improvement erected on the Land; (iii) the subdivision of land; or(iv) environmental protection; or the effect of any violation of these laws, ordinances, or governmental regulations. This Exclusion 1(a) does not modify or limit the coverage provided under Covered Risk 5, 6, 13(c), 13(d), 14 or 16.
   (b)Any governmental police power. This Exclusion 1(b) does not modify or limit the coverage provided under Covered Risk 5, 6, 13(c), 13(d), 14 or 16.
2. Rights of eminent domain. This Exclusion does not modify or limit the coverage provided under Covered Risk 7 or 8.
3. Defects, liens, encumbrances, adverse claims, or other matters
   (a) created, suffered, assumed or agreed to by the Insured Claimant;
   (b) not Known to the Company, not recorded in the Public Records at Date of Policy, but Known to the Insured Claimant and not disclosed in writing to the Company by the Insured Claimant prior to the date the Insured Claimant became an Insured under this policy;
   (c) resulting in no loss or damage to the Insured Claimant;
   (d) attaching or created subsequent to Date of Policy (however, this does not modify or limit the coverage provided under Covered Risk 11, 16, 17, 18, 19, 20, 21, 22, 23, 24, 27 or 28); or
   (e) resulting in loss or damage which would not have been sustained if the Insured Claimant had paid value for the Insured Mortgage.
4. Unenforceability of the lien of the Insured Mortgage because of the inability or failure of an Insured to comply with applicable doing business laws of the state where the Land is situated.
5. Invalidity or unenforceability in whole or in part of the lien of the Insured Mortgage that arises out of the transaction evidenced by the Insured Mortgage and is based upon usury, or any consumer credit protection or truth-in-lending law. This Exclusion does not modify or limit the coverage provided in Covered Risk 26.
6. Any claim of invalidity, unenforceability or lack of priority of the lien of the Insured Mortgage as to Advances or modifications made after the Insured has Knowledge that the vestee shown in Schedule A is no longer the owner of the estate or interest covered by this policy. This Exclusion does not modify or limit the coverage provided in Covered Risk 11.
7. Any lien on the Title for real estate taxes or assessments imposed by governmental authority and created or attaching subsequent to Date of Policy. This Exclusion does not modify or limit the coverage provided in Covered Risk 11(b) or 25.
8. The failure of the residential structure, or any portion of it, to have been constructed before, on or after Date of Policy in accordance with applicable building codes. This Exclusion does not modify or limit the coverage provided in Covered Risk 5 or 6.

13. AMERICAN LAND TITLE ASSOCIATION LOAN POLICY - 2006
EXCLUSIONS FROM COVERAGE

The following matters are expressly excluded from the coverage of this policy, and the Company will not pay loss or damage, costs, attorneys' fees, or

expenses that arise by reason of:

1. (a) Any law, ordinance, permit, or governmental regulation (including those relating to building and zoning) restricting, regulating, prohibiting, or relating to

   (i) the occupancy, use, or enjoyment of the Land;

   (ii) the character, dimensions, or location of any improvement erected on the Land;

   (iii) the subdivision of land; or

   (iv) environmental protection;

   or the effect of any violation of these laws, ordinances, or governmental regulations. This Exclusion 1(a) does not modify or limit the coverage provided under Covered Risk 5.

   (b) Any governmental police power. This Exclusion 1(b) does not modify or limit the coverage provided under Covered Risk 6.

2. Rights of eminent domain. This Exclusion does not modify or limit the coverage provided under Covered Risk 7 or 8.

3. Defects, liens, encumbrances, adverse claims, or other matters

   (a) created, suffered, assumed, or agreed to by the Insured Claimant;

   (b) not Known to the Company, not recorded in the Public Records at Date of Policy, but Known to the Insured Claimant and not disclosed in writing to the Company by the Insured Claimant prior to the date the Insured Claimant became an Insured under this policy;

   (c) resulting in no loss or damage to the Insured Claimant;

   (d) attaching or created subsequent to Date of Policy (however, this does not modify or limit the coverage provided under Covered Risk 11, 13, or 14); or

   (e) resulting in loss or damage that would not have been sustained if the Insured Claimant had paid value for the Insured Mortgage.

4. Unenforceability of the lien of the Insured Mortgage because of the inability or failure of an Insured to comply with applicable doing-business laws of the state where the Land is situated.

5. Invalidity or unenforceability in whole or in part of the lien of the Insured Mortgage that arises out of the transaction evidenced by the Insured Mortgage and is based upon usury or any consumer credit protection or truth-in-lending law.

6. Any claim, by reason of the operation of federal bankruptcy, state insolvency, or similar creditors' rights laws, that the transaction creating the lien of the Insured Mortgage, is

   (a) a fraudulent conveyance or fraudulent transfer, or

   (b) a preferential transfer for any reason not stated in Covered Risk 13(b) of this policy.

7. Any lien on the Title for real estate taxes or assessments imposed by governmental authority and created or attaching between Date of Policy and the date of recording of the Insured Mortgage in the Public Records. This Exclusion does not modify or limit the coverage provided under Covered Risk 11(b).

14. AMERICAN LAND TITLE ASSOCIATION LOAN POLICY - 2006 WITH REGIONAL EXCEPTIONS

When the American Land Title Association policy is used as a Standard Coverage Policy and not as an Extended Coverage Policy the exclusions set forth in paragraph 13 above are used and the following exceptions to coverage appear in the policy.

SCHEDULE B

This policy does not insure against loss or damage (and the Company will not pay costs, attorneys' fees or expenses) which arise by reason of:

1. (a) Taxes or assessments that are not shown as existing liens by the records of any taxing authority that levies taxes or assessments on real property or by the Public Records; (b) proceedings by a public agency that may result in taxes or assessments, or notices of such proceedings, whether or not shown by the records of such agency or by the Public Records.

2. Any facts, rights, interests, or claims that are not shown by the Public Records but that could be ascertained by an inspection of the Land or that may be asserted by persons in possession of the Land.

3. Easements, liens or encumbrances, or claims thereof, not shown by the Public Records.

4. Any encroachment, encumbrance, violation, variation, or adverse circumstance affecting the Title that would be disclosed by an accurate and complete land survey of the Land and not shown by the Public Records.

5. (a) Unpatented mining claims; (b) reservations or exceptions in patents or in Acts authorizing the issuance thereof; (c) water rights, claims or title to water, whether or not the matters excepted under (a), (b), or (c) are shown by the Public Records.

15. AMERICAN LAND TITLE ASSOCIATION OWNER'S POLICY - 2006 EXCLUSIONS FROM COVERAGE

The following matters are expressly excluded from the coverage of this policy and the Company will not pay loss or damage, costs, attorneys' fees or expenses which arise by reason of:

1. (a) Any law, ordinance, permit, or governmental regulation (including those relating to building and zoning) restricting, regulating, prohibiting, or relating to

   (i) the occupancy, use, or enjoyment of the Land;

   (ii) the character, dimensions, or location of any improvement erected on the Land;

   (iii) the subdivision of land; or

   (iv) environmental protection;or the effect of any violation of these laws, ordinances, or governmental regulations. This Exclusion 1(a) does not modify or limit the coverage provided under Covered Risk 5.

(b) Any governmental police power. This Exclusion 1(b) does not modify or limit the coverage provided under Covered Risk 6.

2. Rights of eminent domain. This Exclusion does not modify or limit the coverage provided under Covered Risk 7 or 8.

3. Defects, liens, encumbrances, adverse claims, or other matters

(a) created, suffered, assumed, or agreed to by the Insured Claimant;

(b) not Known to the Company, not recorded in the Public Records at Date of Policy, but Known to the Insured Claimant and not disclosed in writing to the Company by the Insured Claimant prior to the date the Insured Claimant became an Insured under this policy;

(c) resulting in no loss or damage to the Insured Claimant;

(d) attaching or created subsequent to Date of Policy (however, this does not modify or limit the coverage provided under Covered Risks 9 and 10); or

(e) resulting in loss or damage that would not have been sustained if the Insured Claimant had paid value for the Title.

4. Any claim, by reason of the operation of federal bankruptcy, state insolvency, or similar creditors rights laws, that the transaction vesting the Title as shown in Schedule A, is

(a) a fraudulent conveyance or fraudulent transfer; or

(b) a preferential transfer for any reason not stated in Covered Risk 9 of this policy.

5. Any lien on the Title for real estate taxes or assessments imposed by governmental authority and created or attaching between Date of Policy and the date of recording of the deed or other instrument of transfer in the Public Records that vests Title as shown in Schedule A.

16. AMERICAN LAND TITLE ASSOCIATION OWNER'S POLICY - 2006 WITH REGIONAL EXCEPTIONS

When the American Land Title Association policy is used as a Standard Coverage Policy and not as an Extended Coverage Policy the exclusions set forth in paragraph 15 above are used and the following exceptions to coverage appear in the policy.

SCHEDULE B

This policy does not insure against loss or damage (and the Company will not pay costs, attorneys' fees or expenses) which arise by reason of:

1. (a) Taxes or assessments that are not shown as existing liens by the records of any taxing authority that levies taxes or assessments on real property or by the Public Records; (b) proceedings by a public agency that may result in taxes or assessments, or notices of such proceedings, whether or not shown by the records of such agency or by the Public Records.
2. Any facts, rights, interests, or claims that are not shown by the Public Records but that could be ascertained by an inspection of the Land or that may be asserted by persons in possession of the Land.
3. Easements, liens or encumbrances, or claims thereof, not shown by the Public Records.
4. Any encroachment, encumbrance, violation, variation, or adverse circumstance affecting the Title that would be disclosed by an accurate and complete land survey of the Land and not shown by the Public Records.
5. (a) Unpatented mining claims; (b) reservations or exceptions in patents or in Acts authorizing the issuance thereof; (c) water rights, claims or title to water, whether or not the matters excepted under (a), (b), or (c) are shown by the Public Records.

First American Title Insurance Company

National Commercial Services

666 Third Avenue, 5th Floor
New York, NY 10017

April 28, 2017

Seth Israel
Intersect Power
Embarcadero Center , 7th Floor
San Francisco, CA 94111

Customer Reference: 25850 Rice Road

Order Number: 3020-847921

Owner: OM P. Garg

Property: Vacant, Blythe, CA

Attached please find the following item(s):

Commitment

Thank You for your confidence and support. We at First American Title Insurance Company maintain the fundamental principle:

Customer First!

First American Title Insurance Company

INFORMATION

The Title Insurance Commitment is a legal contract between you and the company. It is issued to show the basis on which we will issue a Title Insurance Policy to you. The Policy will insure you against certain risks to the land title, subject to the limitations shown in the policy.

The Company will give you a sample of the Policy form, if you ask.

The Commitment is based on the land title as of the Commitment Date. Any changes in the land title or the transaction may affect the Commitment and the Policy.

The Commitment is subject to its Requirements, Exceptions and Conditions.

This information is not part of the title insurance commitment.

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YOU SHOULD READ THE COMMITMENT VERY CAREFULLY.
If you have any questions about the Commitment,
please contact the issuing office.

COMMITMENT FOR TITLE INSURANCE

Issued by

First American Title Insurance Company

Agreement to Issue Policy

We agree to issue a policy to you according to the terms of this Commitment.

When we show the policy amount and your name as the proposed insured in Schedule A, this Commitment becomes effective as of the Commitment Date shown in Schedule A.

If the Requirements shown in this Commitment have not been met within six months after the Commitment Date, our obligation under this Commitment will end. Also, our obligation under this Commitment will end when the Policy is issued and then our obligation to you will be under the Policy.

Our obligation under this Commitment is limited by the following:

The Provisions in Schedule A.

The Requirements in Schedule B-1.

The Exceptions in Schedule B-2.

The Conditions.

This Commitment is not valid without Schedule A and Sections 1 and 2 of Schedule B.

SCHEDULE A

1. Commitment Date: April 24, 2017 at 7:30 A.M.

2. Policy or Policies to be issued: Amount

(A) ALTA Owner's Policy $To Be Determined
ALTA Standard Owner Policy

Proposed Insured:

To Be Determined

(B) ALTA Loan Policy $To Be Determined
To Be Determined

Proposed Insured:

To Be Determined

3. (A) The estate or interest in the land described in this Commitment is:

FEE

(B) Title to said estate or interest at the date hereof is vested in:

OM P. GARG, A MARRIED MAN

4. The land referred to in this Commitment is situated in the unincorporated area of the County of Riverside, State of California, and is described as follows:

LOTS 1 AND 2 OF THE SOUTHWEST QUARTER AND THE SOUTHEAST QUARTER OF SECTION 7, TOWNSHIP 5 SOUTH, RANGE 16 EAST, SAN BERNARDINO BASE AND MERIDIAN, EXCEPTING THEREFROM THAT PORTION LYING IN THE COUNTY HIGHWAY, 100 FEET WIDE, AS DESIGNATED BY RESOLUTION OF THE COUNTY OF RIVERSIDE, A CERTIFIED COPY OF WHICH WAS FILED FOR RECORD MARCH 27, 1945 AS INSTRUMENT NO. 2957. ALSO EXCEPTING THEREFROM THAT PORTION LYING NORTHWESTERLY OF THE SOUTHEASTERLY RIGHT OF WAY LINE OF SAID COUNTY HIGHWAY. ALSO EXCEPTING THEREFROM THAT PORTION DESCRIBED AS FOLLOWS: COMMENCING AT THE SOUTHEAST CORNER OF THE SOUTHWEST QUARTER OF SAID SECTION 7, THENCE SOUTH 88 DEGREES 53'30" WEST, ON THE SOUTH LINE OF SAID SECTION 7, 200 FEET, THENCE NORTH 01 DEGREES 06'30" WEST, 598.43 FEET; THENCE NORTH 44 DEGREES 35'35" WEST, 1880.40 FEET TO THE SOUTHEASTERLY LINE OF SAID COUNTY ROAD, AS SHOWN ON RECORD OF SURVEY ON FILE IN BOOK 12, PAGE 81 OF RECORDS OF SURVEY, RIVERSIDE COUNTY RECORDS, THENCE SOUTH 45 DEGREES 30'00" WEST ON THE SOUTHEASTERLY LINE OF SAID COUNTY ROAD, 350 FEET TO THE TRUE POINT OF BEGINNING; THENCE CONTINUING, SOUTH 45 DEGREES 30'00" WEST, 600 FEET; THENCE SOUTH 44 DEGREES 06'00" EAST 300 FEET; THENCE NORTH 45 DEGREES 30'00' EAST, 600 FEET; THENCE NORTH 44 DEGREES 06'00" WEST 300 FEET TO THE TRUE POINT OF BEGINNING.

APN: 811-260-013-4

SCHEDULE B

SECTION ONE

REQUIREMENTS

The following requirements must be met:

(A) Pay the agreed amounts for the interest in the land and/or the mortgage to be insured.

(B) Pay us the premiums, fees and charges for the policy.

(C) Documents satisfactory to us creating the interest in the land and/or the mortgage to be insured must be signed, delivered and recorded.

(D) You must tell us in writing the name of anyone not referred to in this Commitment who will get an interest in the land or who will make a loan on the land. We may then make additional requirements or exceptions.

(E) Releases(s) or Reconveyance(s) of Item(s): None

(F) Other: None

(G) You must give us the following information:

1. Any off record leases, surveys, etc.
2. Statement(s) of Identity, all parties.
3. Other:

A deed from the spouse of any married vestee herein be recorded in the public records, or the joinder of the spouse of any married vestee named herein on any conveyance, encumbrance or lease to be executed by the vestee.

The deed should contain the following statement:

"It is the express intent of the grantor, being the spouse of the grantee, to convey all right, title and interest of the grantor, community or otherwise, in and to the herein described property to the grantee as his/her sole and separate property."

The following additional requirements, as indicated by "X", must be met:

[X] (H) Provide information regarding any off-record matters, which may include, but are not limited to: leases, recent works of improvement, or commitment statements in effect under the Environmental Responsibility Acceptance Act, Civil Code Section 850, et seq.

The Company's Owner's Affidavit form (as provided by company) must be completed and submitted prior to close in order to satisfy this requirement. This Commitment will then be subject to such further exceptions and/or requirements as may be deemed necessary.

[] (I) An ALTA/NSPS survey of recent date, which complies with the current minimum standard detail requirements for ALTA/NSPS land title surveys, must be submitted to the Company for review. This Commitment will then be subject to such further exceptions and/or requirements as may be deemed necessary.

[] (J) The following LLC documentation is required:
(i) a copy of the Articles of Organization
(ii) a copy of the Operating Agreement, if applicable
(iii) a Certificate of Good Standing and/or other evidence of current Authority to Conduct Business within the State
(iv) express Company Consent to the current transaction

[] (K) The following partnership documentation is required **:**
(i) a copy of the partnership agreement, including all applicable amendments thereto
(ii) a Certificate of Good Standing and/or other evidence of current Authority to Conduct Business within the State
(iii) express Partnership Consent to the current transaction

[] (L) The following corporation documentation is required:
(i) a copy of the Articles of Incorporation
(ii) a copy of the Bylaws, including all applicable Amendments thereto
(iii) a Certificate of Good Standing and/or other evidence of current Authority to Conduct Business within the State
(iv) express Corporate Resolution consenting to the current transaction

[] (M) Based upon the Company's review of that certain partnership/operating agreement dated **Not disclosed** for the proposed insured herein, the following requirements must be met:

Any further amendments to said agreement must be submitted to the Company, together with an affidavit from one of the general partners or members stating that it is a true copy, that said partnership or limited liability company is in full force and effect, and that there have been no further amendments to the agreement. This Commitment will then be subject to such further requirements as may be deemed necessary.

[] (N) A copy of the complete lease, as referenced in Schedule A, #3 herein, together with any amendments and/or assignments thereto, must be submitted to the Company for review, along with an affidavit executed by the present lessee stating that it is a true copy, that the lease is in full force and effect, and that there have been no further amendments to the lease. This Commitment will then be subject to such further requirements as may be deemed necessary.

[X] (O) Approval from the Company's Underwriting Department must be obtained for issuance of the policy contemplated herein and any endorsements requested thereunder. This Commitment will then be subject to such further requirements as may be required to obtain such approval.

[] (P) Potential additional requirements, if ALTA Extended coverage is contemplated hereunder, and work on the land has commenced prior to close, some or all of the following requirements, and any other requirements which may be deemed necessary, may need to be met:

[] (Q) The Company's "Indemnity Agreement I" must be executed by the appropriate parties.

[] (R) Financial statements from the appropriate parties must be submitted to the Company for review.

[] (S) A copy of the construction contract must be submitted to the Company for review.

[] (T) An inspection of the land must be performed by the Company for verification of the phase of construction.

[] (U) The Company's "Mechanic's Lien Risk Addendum" form must be completed by a Company employee, based upon information furnished by the appropriate parties involved.

SCHEDULE B

SECTION TWO

EXCEPTIONS

Any policy we issue will have the following exceptions unless they are taken care of to our satisfaction. The printed exceptions and exclusions from the coverage of the policy or policies are set forth in Exhibit A attached. Copies of the policy forms should be read. They are available from the office which issued this Commitment.

1. General and special taxes and assessments for the fiscal year 2017-2018, a lien not yet due or payable.

2. The lien of supplemental taxes, if any, assessed pursuant to Chapter 3.5 commencing with Section 75 of the California Revenue and Taxation Code.

3. A right of water line and patrol road over said property, granted to Southern Counties Gas Company and Southern California Gas Company, by Bureau of Land Management on November 21, 1952, under Serial No. 098376, as disclosed by Records of Bureau of Land Management, Riverside, California.

4. An easement for public utilities and incidental purposes in the document recorded August 28, 1957 as Instrument No. 62579 of Official Records.

5. An easement for public utilities and incidental purposes in the document recorded August 28, 1957 as Instrument No. 62581 of Official Records.

6. An easement for public utilities and incidental purposes in the document recorded September 19, 1957 as Instrument No. 67559 of Official Records.

7. An easement for public utilities and incidental purposes in the document recorded September 19, 1957 as Instrument No. 67561 of Official Records.

8. An easement for public utilities and incidental purposes in the document recorded June 20, 1958 as Instrument No. 44258 of Official Records.

9. Provisions as recited in the Patent from the United States of America to Edith E. Brown, filed for record December 13, 1960 as Instrument No. 105231, as follows: Subject to any vested and accrued water rights for mining, agricultural, manufacturing or other purposes, and rights to ditches and reservoirs used in connection with such water rights as may be recognized and acknowledged by the local customs, laws and decisions of courts; and also, a right of way for ditches or canals constructed by authority of the United States as reserved in said Patent.

10. An easement for public utilities and incidental purposes in the document recorded April 15, 1966 as Instrument No. 39775 of Official Records.

11. The sufficiency and validity of the proceeding leading up to and including the tax collector's deed or sheriff's deed to OM P. GARG, A MARRIED MAN.

    In order for the company to be in a position to omit this exception from further title evidence, it will be necessary to obtain a final decree quieting title to the land in the vestee herein, and

against: the last record owner of this land, any one claiming through him, any liens or encumbrances, whose interests were divested by virtue of such tax sale.

12. The effect of a deed given by the county tax collector upon sale of tax-defaulted property pursuant to Chapter 7 of Part 6 of Division 1 of the California Revenue and Taxation Code, recorded May 03, 2006 as Instrument No. 2006-0321690 of Official Records.

    We will require the recording of a deed from WHITEHOUSE, JAMES S TR & TOZZER, PATRICIA A TR & PLANTZ, THERESA A & CURTY, JAMES TR & MYRTLE W TR & WOLNISTY, CARL TR & MCCOY, HAROLD W TR & PEGGY C TR & LASAGNA, ROBERT J TR & CATHERINE M TR & MATHEW, ELAVUMKEL JOSEPH & MOONJALY ROSY & MCCOY, CARL L TR & HINDMAN, KENNETH W TR & MARIE E TR or the recording of a certified copy of a satisfactory final, unappealable judgment quieting title.

13. An easement for the transportation of water and electricity over, under, through, along and together with the reasonable right of ingress and egress, and the right to construct and maintain a 30-foot wide access road and incidental purposes, recorded August 26, 2008 as Instrument No. 2008-0468971 of Official Records.

In Favor of:	Southern California Gas Company, a California corporation
Affects:	As described therein

14. Any claim that the Title is subject to a trust or lien created under The Perishable Agricultural Commodities Act, 1930 (7 U.S.C. §§499a, et seq.) or the Packers and Stockyards Act (7 U.S.C. §§181 et seq.) or under similar state laws.

15. Water rights, claims or title to water, whether or not shown by the public records.

16. Rights of the public in and to that portion of the land lying within any road, street and/or highway.

17. Any right, title or interest of the spouse or domestic partner (if any) of any vestee herein.

18. Rights of parties in possession.

INFORMATIONAL NOTES

1. Taxes for proration purposes only for the fiscal year 2016-2017.

First Installment:	$1,001.19, PAID
Second Installment:	$1,001.19, PAID
Tax Rate Area:	062-000
APN:	811-260-013-4

2. The property covered by this report is vacant land.

3. According to the public records, there has been no conveyance of the land within a period of twenty-four months prior to the date of this report, except as follows:

   None

4. This preliminary report/commitment was prepared based upon an application for a policy of title insurance that identified land by street address or assessor's parcel number only. It is the responsibility of the applicant to determine whether the land referred to herein is in fact the land that is to be described in the policy or policies to be issued.

The map attached, if any, may or may not be a survey of the land depicted hereon. First American Title Insurance Company expressly disclaims any liability for loss or damage which may result from reliance on this map except to the extent coverage for such loss or damage is expressly provided by the terms and provisions of the title insurance policy, if any, to which this map is attached.

******To obtain wire instructions for deposit of funds to your escrow file please contact your Escrow Officer.******

CONDITIONS

1. **DEFINITIONS**
(a)"Mortgage" means mortgage, deed of trust or other security instrument.
(b)"Public Records" means title records that give constructive notice of matters affecting the title according to the state law where the land is located.

2. **LATER DEFECTS**
The Exceptions in Schedule B - Section Two may be amended to show any defects, liens or encumbrances that appear for the first time in the public records or are created or attached between the Commitment Date and the date on which all of the Requirements (a) and (c) of Schedule B - Section One are met. We shall have no liability to you because of this amendment.

3. **EXISTING DEFECTS**
If any defects, liens or encumbrances existing at Commitment Date are not shown in Schedule B, we may amend Schedule B to show them. If we do amend Schedule B to show these defects, liens or encumbrances, we shall be liable to you according to Paragraph 4 below unless you knew of this information and did not tell us about it in writing.

4. **LIMITATION OF OUR LIABILITY**
Our only obligation is to issue to you the Policy referred to in this Commitment, when you have met its Requirements. If we have any liability to you for any loss you incur because of an error in this Commitment, our liability will be limited to your actual loss caused by your relying on this Commitment when you acted in good faith to:

comply with the Requirements shown in Schedule B - Section One
or
eliminate with our written consent any Exceptions shown in Schedule B - Section Two.

We shall not be liable for more than the Policy Amount shown in Schedule A of this Commitment and our liability is subject to the terms of the Policy form to be issued to you.

5. **CLAIMS MUST BE BASED ON THIS COMMITMENT**
Any claim, whether or not based on negligence, which you may have against us concerning the title to the land must be based on this commitment and is subject to its terms.

First American Title

Privacy Information

We Are Committed to Safeguarding Customer Information

In order to better serve your needs now and in the future, we may ask you to provide us with certain information. We understand that you may be concerned about what we will do with such information - particularly any personal or financial information. We agree that you have a right to know how we will utilize the personal information you provide to us. Therefore, together with our subsidiaries we have adopted this Privacy Policy to govern the use and handling of your personal information.

Applicability

This Privacy Policy governs our use of the information that you provide to us. It does not govern the manner in which we may use information we have obtained from any other source, such as information obtained from a public record or from another person or entity. First American has also adopted broader guidelines that govern our use of personal information regardless of its source. First American calls these guidelines its Fair Information Values.

Types of Information

Depending upon which of our services you are utilizing, the types of nonpublic personal information that we may collect include:

- Information we receive from you on applications, forms and in other communications to us, whether in writing, in person, by telephone or any other means;
- Information about your transactions with us, our affiliated companies, or others; and
- Information we receive from a consumer reporting agency.

Use of Information

We request information from you for our own legitimate business purposes and not for the benefit of any nonaffiliated party. Therefore, we will not release your information to nonaffiliated parties except: (1) as necessary for us to provide the product or service you have requested of us; or (2) as permitted by law. We may, however, store such information indefinitely, including the period after which any customer relationship has ceased. Such information may be used for any internal purpose, such as quality control efforts or customer analysis. We may also provide all of the types of nonpublic personal information listed above to one or more of our affiliated companies. Such affiliated companies include financial service providers, such as title insurers, property and casualty insurers, and trust and investment advisory companies, or companies involved in real estate services, such as appraisal companies, home warranty companies and escrow companies. Furthermore, we may also provide all the information we collect, as described above, to companies that perform marketing services on our behalf, on behalf of our affiliated companies or to other financial institutions with whom we or our affiliated companies have joint marketing agreements.

Former Customers

Even if you are no longer our customer, our Privacy Policy will continue to apply to you.

Confidentiality and Security

We will use our best efforts to ensure that no unauthorized parties have access to any of your information. We restrict access to nonpublic personal information about you to those individuals and entities who need to know that information to provide products or services to you. We will use our best efforts to train and oversee our employees and agents to ensure that your information will be handled responsibly and in accordance with this Privacy Policy and First American's Fair Information Values. We currently maintain physical, electronic, and procedural safeguards that comply with federal regulations to guard your nonpublic personal information.

Information Obtained Through Our Web Site

First American Financial Corporation is sensitive to privacy issues on the Internet. We believe it is important you know how we treat the information about you we receive on the Internet.

In general, you can visit First American or its affiliates' Web sites on the World Wide Web without telling us who you are or revealing any information about yourself. Our Web servers collect the domain names, not the e-mail addresses, of visitors. This information is aggregated to measure the number of visits, average time spent on the site, pages viewed and similar information. First American uses this information to measure the use of our site and to develop ideas to improve the content of our site.

There are times, however, when we may need information from you, such as your name and email address. When information is needed, we will use our best efforts to let you know at the time of collection how we will use the personal information. Usually, the personal information we collect is used only by us to respond to your inquiry, process an order or allow you to access specific account/profile information. If you choose to share any personal information with us, we will only use it in accordance with the policies outlined above.

Business Relationships

First American Financial Corporation's site and its affiliates' sites may contain links to other Web sites. While we try to link only to sites that share our high standards and respect for privacy, we are not responsible for the content or the privacy practices employed by other sites.

Cookies

Some of First American's Web sites may make use of "cookie" technology to measure site activity and to customize information to your personal tastes. A cookie is an element of data that a Web site can send to your browser, which may then store the cookie on your hard drive.

FirstAm.com uses stored cookies. The goal of this technology is to better serve you when visiting our site, save you time when you are here and to provide you with a more meaningful and productive Web site experience.

Fair Information Values

Fairness We consider consumer expectations about their privacy in all our businesses. We only offer products and services that assure a favorable balance between consumer benefits and consumer privacy.

Public Record We believe that an open public record creates significant value for society, enhances consumer choice and creates consumer opportunity. We actively support an open public record and emphasize its importance and contribution to our economy.

Use We believe we should behave responsibly when we use information about a consumer in our business. We will obey the laws governing the collection, use and dissemination of data.

Accuracy We will take reasonable steps to help assure the accuracy of the data we collect, use and disseminate. Where possible, we will take reasonable steps to correct inaccurate information. When, as with the public record, we cannot correct inaccurate information, we will take all reasonable steps to assist consumers in identifying the source of the erroneous data so that the consumer can secure the required corrections.

Education We endeavor to educate the users of our products and services, our employees and others in our industry about the importance of consumer privacy. We will instruct our employees on our fair information values and on the responsible collection and use of data. We will encourage others in our industry to collect and use information in a responsible manner.

Security We will maintain appropriate facilities and systems to protect against unauthorized access to and corruption of the data we maintain.

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EXHIBIT A
LIST OF PRINTED EXCEPTIONS AND EXCLUSIONS (BY POLICY TYPE)

1. CALIFORNIA LAND TITLE ASSOCIATION STANDARD COVERAGE POLICY - 1990
SCHEDULE B

EXCEPTIONS FROM COVERAGE

This policy does not insure against loss or damage (and the Company will not pay costs, attorneys' fees or expenses) which arise by reason of:

1. Taxes or assessments which are not shown as existing liens by the records of any taxing authority that levies taxes or assessments on real property or by the public records. Proceedings by a public agency which may result in taxes or assessments, or notice of such proceedings, whether or not shown by the records of such agency or by the public records.
2. Any facts, rights, interests, or claims which are not shown by the public records but which could be ascertained by an inspection of the land or which may be asserted by persons in possession thereof.
3. Easements, liens or encumbrances, or claims thereof, which are not shown by the public records.
4. Discrepancies, conflicts in boundary lines, shortage in area, encroachments, or any other facts which a correct survey would disclose, and which are not shown by the public records.
5. (a) Unpatented mining claims; (b) reservations or exceptions in patents or in Acts authorizing the issuance thereof; (c) water rights, claims or title to water, whether or not the matters excepted under (a), (b), or (c) are shown by the public records.

EXCLUSIONS FROM COVERAGE

The following matters are expressly excluded from the coverage of this policy and the Company will not pay loss or damage, costs, attorneys' fees or expenses which arise by reason of:

1. (a) Any law, ordinance or governmental regulation (including but not limited to building and zoning laws, ordinances, or regulations) restricting, regulating, prohibiting or relating to (i) the occupancy, use, or enjoyment of the land; (ii) the character, dimensions or location of any improvement now or hereafter erected on the land; (iii) a separation in ownership or a change in the dimensions or area of the land or any parcel of which the land is or was a part; or (iv) environmental protection, or the effect of any violation of these laws, ordinances or governmental regulations, except to the extent that a notice of the enforcement thereof or a notice of a defect, lien or encumbrance resulting from a violation or alleged violation affecting the land has been recorded in the public records at Date of Policy.
   (b) Any governmental police power not excluded by (a) above, except to the extent that a notice of the exercise thereof or a notice of a defect, lien or encumbrance resulting from a violation or alleged violation affecting the land has been recorded in the public records at Date of Policy.
2. Rights of eminent domain unless notice of the exercise thereof has been recorded in the public records at Date of Policy, but not excluding from coverage any taking which has occurred prior to Date of Policy which would be binding on the rights of a purchaser for value without knowledge.
3. Defects, liens, encumbrances, adverse claims or other matters:
   (a) whether or not recorded in the public records at Date of Policy, but created, suffered, assumed or agreed to by the insured claimant;
   (b) not known to the Company, not recorded in the public records at Date of Policy, but known to the insured claimant and not disclosed in writing to the Company by the insured claimant prior to the date the insured claimant became an insured under this policy;
   (c) resulting in no loss or damage to the insured claimant;
   (d) attaching or created subsequent to Date of Policy; or
   (e) resulting in loss or damage which would not have been sustained if the insured claimant had paid value for the insured mortgage or for the estate or interest insured by this policy.
4. Unenforceability of the lien of the insured mortgage because of the inability or failure of the insured at Date of Policy, or the inability or failure of any subsequent owner of the indebtedness, to comply with applicable "doing business" laws of the state in which the land is situated.
5. Invalidity or unenforceability of the lien of the insured mortgage, or claim thereof, which arises out of the transaction evidenced by the insured mortgage and is based upon usury or any consumer credit protection or truth in lending law.
6. Any claim, which arises out of the transaction vesting in the insured the estate or interest insured by their policy or the transaction creating the interest of the insured lender, by reason of the operation of federal bankruptcy, state insolvency or similar creditors' rights laws.

2. AMERICAN LAND TITLE ASSOCIATION OWNER'S POLICY FORM B - 1970
SCHEDULE OF EXCLUSIONS FROM COVERAGE

1. Any law, ordinance or governmental regulation (including but not limited to building and zoning ordinances) restricting or regulating or prohibiting the occupancy, use or enjoyment of the land, or regulating the character, dimensions or location of any improvement now or hereafter erected on the land, or prohibiting a separation in ownership or a reduction in the dimensions of area of the land, or the effect of any violation of any such law, ordinance or governmental regulation.
2. Rights of eminent domain or governmental rights of police power unless notice of the exercise of such rights appears in the public records at Date of Policy.
3. Defects, liens, encumbrances, adverse claims, or other matters (a) created, suffered, assumed or agreed to by the insured claimant; (b) not known to the Company and not shown by the public records but known to the insured claimant either at Date of Policy or at the date such claimant acquired an estate or interest insured by this policy and not disclosed in writing by the insured claimant to the Company prior to the date such insured claimant became an insured hereunder; (c) resulting in no loss or damage to the insured claimant; (d) attaching or created subsequent to Date of Policy; or (e) resulting in loss or damage which would not have been sustained if the insured claimant had paid value for the estate or interest insured by this policy.

3. AMERICAN LAND TITLE ASSOCIATION OWNER'S POLICY FORM B - 1970
WITH REGIONAL EXCEPTIONS

When the American Land Title Association policy is used as a Standard Coverage Policy and not as an Extended Coverage Policy the exclusions set forth in paragraph 2 above are used and the following exceptions to coverage appear in the policy.

SCHEDULE B

This policy does not insure against loss or damage by reason of the matters shown in parts one and two following:
Part One

1. Taxes or assessments which are not shown as existing liens by the records of any taxing authority that levies taxes or assessments on real property or by the public records.
2. Any facts, rights, interests, or claims which are not shown by the public records but which could be ascertained by an inspection of said land or by making inquiry of persons in possession thereof.
3. Easements, claims of easement or encumbrances which are not shown by the public records.
4. Discrepancies, conflicts in boundary lines, shortage in area, encroachments, or any other facts which a correct survey would disclose, and which are not shown by public records.
5. Unpatented mining claims; reservations or exceptions in patents or in Acts authorizing the issuance thereof; water rights, claims or title to water.
6. Any lien, or right to a lien, for services, labor or material heretofore or hereafter furnished, imposed by law and not shown by the public records.

4. AMERICAN LAND TITLE ASSOCIATION LOAN POLICY - 1970 WITH A.L.T.A. ENDORSEMENT FORM 1 COVERAGE SCHEDULE OF EXCLUSIONS FROM COVERAGE

1. Any law, ordinance or governmental regulation (including but not limited to building and zoning ordinances) restricting or regulating or prohibiting the occupancy, use or enjoyment of the land, or regulating the character, dimensions or location of any improvement now or hereafter erected on the land, or prohibiting a separation in ownership or a reduction in the dimensions or area of the land, or the effect of any violation of any such law ordinance or governmental regulation.
2. Rights of eminent domain or governmental rights of police power unless notice of the exercise of such rights appears in the public records at Date of Policy.
3. Defects, liens, encumbrances, adverse claims, or other matters (a) created, suffered, assumed or agreed to by the insured claimant, (b) not known to the Company and not shown by the public records but known to the insured claimant either at Date of Policy or at the date such claimant acquired an estate or interest insured by this policy or acquired the insured mortgage and not disclosed in writing by the insured claimant to the Company prior to the date such insured claimant became an insured hereunder, (c) resulting in no loss or damage to the insured claimant; (d) attaching or created subsequent to Date of Policy (except to the extent insurance is afforded herein as to any statutory lien for labor or material or to the extent insurance is afforded herein as to assessments for street improvements under construction or completed at Date of Policy).
4. Unenforceability of the lien of the insured mortgage because of failure of the insured at Date of Policy or of any subsequent owner of the indebtedness to comply with applicable "doing business" laws of the state in which the land is situated.

5. AMERICAN LAND TITLE ASSOCIATION LOAN POLICY - 1970 WITH REGIONAL EXCEPTIONS

When the American Land Title Association Lenders Policy is used as a Standard Coverage Policy and not as an Extended Coverage Policy, the exclusions set forth in paragraph 4 above are used and the following exceptions to coverage appear in the policy.

SCHEDULE B

This policy does not insure against loss or damage by reason of the matters shown in parts one and two following:
Part One

1. Taxes or assessments which are not shown as existing liens by the records of any taxing authority that levies taxes or assessments on real property or by the public records.
2. Any facts, rights, interests, or claims which are not shown by the public records but which could be ascertained by an inspection of said land or by making inquiry of persons in possession thereof.
3. Easements, claims of easement or encumbrances which are not shown by the public records.
4. Discrepancies, conflicts in boundary lines, shortage in area, encroachments, or any other facts which a correct survey would disclose, and which are not shown by public records.
5. Unpatented mining claims; reservations or exceptions in patents or in Acts authorizing the issuance thereof; water rights, claims or title to water.
6. Any lien, or right to a lien, for services, labor or material theretofore or hereafter furnished, imposed by law and not shown by the public records.

6. AMERICAN LAND TITLE ASSOCIATION LOAN POLICY - 1992 WITH A.L.T.A. ENDORSEMENT FORM 1 COVERAGE EXCLUSIONS FROM COVERAGE

The following matters are expressly excluded from the coverage of this policy and the Company will not pay loss or damage, costs, attorneys' fees or expenses which arise by reason of:

1. (a) Any law, ordinance or governmental regulation (including but not limited to building and zoning laws, ordinances, or regulations) restricting, regulating, prohibiting or relating to (i) the occupancy, use, or enjoyment of the land; (ii) the character, dimensions or location of any improvement now or hereafter erected on the land; (iii) a separation in ownership or a change in the dimensions or area of the land or any parcel of which the land is or was a part; or (iv) environmental protection, or the effect of any violation of these laws, ordinances or governmental regulations, except to the extent that a notice of the enforcement thereof or a notice of a defect, lien or encumbrance resulting from a violation or alleged violation affecting the land has been recorded in the public records at Date of Policy;
   (b) Any governmental police power not excluded by (a) above, except to the extent that a notice of the exercise thereof or a notice of a defect, lien or encumbrance resulting from a violation or alleged violation affecting the land has been recorded in the public records at Date of Policy.

2. Rights of eminent domain unless notice of the exercise thereof has been recorded in the public records at Date of Policy, but not excluding from coverage any taking which has occurred prior to Date of Policy which would be binding on the rights of a purchaser for value without knowledge.
3. Defects, liens, encumbrances, adverse claims, or other matters:
(a) whether or not recorded in the public records at Date of Policy, but created, suffered, assumed or agreed to by the insured claimant;
(b) not known to the Company, not recorded in the public records at Date of Policy, but known to the insured claimant and not disclosed in writing to the Company by the insured claimant prior to the date the insured claimant became an insured under this policy;
(c) resulting in no loss or damage to the insured claimant;
(d) attaching or created subsequent to Date of Policy (except to the extent that this policy insures the priority of the lien of the insured mortgage over any statutory lien for services, labor or material or the extent insurance is afforded herein as to assessments for street improvements under construction or completed at date of policy); or
(e) resulting in loss or damage which would not have been sustained if the insured claimant had paid value for the insured mortgage.
4. Unenforceability of the lien of the insured mortgage because of the inability or failure of the insured at Date of Policy, or the inability or failure of any subsequent owner of the indebtedness, to comply with the applicable "doing business" laws of the state in which the land is situated.
5. Invalidity or unenforceability of the lien of the insured mortgage, or claim thereof, which arises out of the transaction evidenced by the insured mortgage and is based upon usury or any consumer credit protection or truth in lending law.
6. Any statutory lien for services, labor or materials (or the claim of priority of any statutory lien for services, labor or materials over the lien of the insured mortgage) arising from an improvement or work related to the land which is contracted for and commenced subsequent to Date of Policy and is not financed in whole or in part by proceeds of the indebtedness secured by the insured mortgage which at Date of Policy the insured has advanced or is obligated to advance.
7. Any claim, which arises out of the transaction creating the interest of the mortgagee insured by this policy, by reason of the operation of federal bankruptcy, state insolvency, or similar creditors' rights laws, that is based on:
(i) the transaction creating the interest of the insured mortgagee being deemed a fraudulent conveyance or fraudulent transfer; or
(ii) the subordination of the interest of the insured mortgagee as a result of the application of the doctrine of equitable subordination; or
(iii) the transaction creating the interest of the insured mortgagee being deemed a preferential transfer except where the preferential transfer results from the failure:
(a) to timely record the instrument of transfer; or
(b) of such recordation to impart notice to a purchaser for value or a judgment or lien creditor.

7. AMERICAN LAND TITLE ASSOCIATION LOAN POLICY - 1992
WITH REGIONAL EXCEPTIONS

When the American Land Title Association policy is used as a Standard Coverage Policy and not as an Extended Coverage Policy the exclusions set forth in paragraph 6 above are used and the following exceptions to coverage appear in the policy.

SCHEDULE B

This policy does not insure against loss or damage (and the Company will not pay costs, attorneys' fees or expenses) which arise by reason of:
1. Taxes or assessments which are not shown as existing liens by the records of any taxing authority that levies taxes or assessments on real property or by the public records.
2. Any facts, rights, interests, or claims which are not shown by the public records but which could be ascertained by an inspection of said land or by making inquiry of persons in possession thereof.
3. Easements, claims of easement or encumbrances which are not shown by the public records.
4. Discrepancies, conflicts in boundary lines, shortage in area, encroachments, or any other facts which a correct survey would disclose, and which are not shown by public records.
5. Unpatented mining claims; reservations or exceptions in patents or in Acts authorizing the issuance thereof; water rights, claims or title to water.
6. Any lien, or right to a lien, for services, labor or material theretofore or hereafter furnished, imposed by law and not shown by the public records.

8. AMERICAN LAND TITLE ASSOCIATION OWNER'S POLICY - 1992
EXCLUSIONS FROM COVERAGE

The following matters are expressly excluded from the coverage of this policy and the Company will not pay loss or damage, costs, attorneys' fees or expenses which arise by reason of:
1. (a) Any law, ordinance or governmental regulation (including but not limited to building and zoning laws, ordinances, or regulations) restricting, regulating, prohibiting or relating to (i) the occupancy, use, or enjoyment of the land; (ii) the character, dimensions or location of any improvement now or hereafter erected on the land; (iii) a separation in ownership or a change in the dimensions or area of the land or any parcel of which the land is or was a part; or (iv) environmental protection, or the effect of any violation of these laws, ordinances or governmental regulations, except to the extent that a notice of the enforcement thereof or a notice of a defect, lien or encumbrance resulting from a violation or alleged violation affecting the land has been recorded in the public records at Date of Policy.
(b) Any governmental police power not excluded by (a) above, except to the extent that a notice of the exercise thereof or a notice of a defect, lien or encumbrance resulting from a violation or alleged violation affecting the land has been recorded in the public records at Date of Policy.
2. Rights of eminent domain unless notice of the exercise thereof has been recorded in the public records at Date of Policy, but not excluding from coverage any taking which has occurred prior to Date of Policy which would be binding on the rights of a purchaser for value without knowledge.
3. Defects, liens, encumbrances, adverse claims, or other matters:
(a) created, suffered, assumed or agreed to by the insured claimant;
(b) not known to the Company, not recorded in the public records at Date of Policy, but known to the insured claimant and not disclosed in writing to the Company by the insured claimant prior to the date the insured claimant became an insured under this policy;
(c) resulting in no loss or damage to the insured claimant;
(d) attaching or created subsequent to Date of Policy; or

(e) resulting in loss or damage which would not have been sustained if the insured claimant had paid value for the estate or interest insured by this policy.

4. Any claim, which arises out of the transaction vesting in the insured the estate or interest insured by this policy, by reason of the operation of federal bankruptcy, state insolvency, or similar creditors' rights laws, that is based on:
(i) the transaction creating the estate or interest insured by this policy being deemed a fraudulent conveyance or fraudulent transfer; or
(ii) the transaction creating the estate or interest insured by this policy being deemed a preferential transfer except where the preferential transfer results from the failure:
(a) to timely record the instrument of transfer; or
(b) of such recordation to impart notice to a purchaser for value or a judgment or lien creditor.

9. AMERICAN LAND TITLE ASSOCIATION OWNER'S POLICY - 1992 WITH REGIONAL EXCEPTIONS

When the American Land Title Association policy is used as a Standard Coverage Policy and not as an Extended Coverage Policy the exclusions set forth in paragraph 8 above are used and the following exceptions to coverage appear in the policy.

SCHEDULE B

This policy does not insure against loss or damage (and the Company will not pay costs, attorneys' fees or expenses) which arise by reason of:
Part One:

1. Taxes or assessments which are not shown as existing liens by the records of any taxing authority that levies taxes or assessments on real property or by the public records.
2. Any facts, rights, interests, or claims which are not shown by the public records but which could be ascertained by an inspection of said land or by making inquiry of persons in possession thereof.
3. Easements, claims of easement or encumbrances which are not shown by the public records.
4. Discrepancies, conflicts in boundary lines, shortage in area, encroachments, or any other facts which a correct survey would disclose, and which are not shown by public records.
5. Unpatented mining claims; reservations or exceptions in patents or in Acts authorizing the issuance thereof; water rights, claims or title to water.
6. Any lien, or right to a lien, for services, labor or material theretofore or hereafter furnished, imposed by law and not shown by the public records.

ALTA RESIDENTIAL TITLE INSURANCE POLICY (6-1-87)

EXCLUSIONS

In addition to the Exceptions in Schedule B, you are not insured against loss, costs, attorneys' fees, and expenses resulting from:

1. Governmental police power, and the existence or violation of any law or government regulation. This includes building and zoning ordinances and also laws and regulations concerning:
   (a) and use
   (b) improvements on the land
   (c) and division
   (d) environmental protection

   This exclusion does not apply to violations or the enforcement of these matters which appear in the public records at Policy Date.
   This exclusion does not limit the zoning coverage described in Items 12 and 13 of Covered Title Risks.
2. The right to take the land by condemning it, unless:
   (a) a notice of exercising the right appears in the public records on the Policy Date
   (b) the taking happened prior to the Policy Date and is binding on you if you bought the land without knowing of the taking
3. Title Risks:
   (a) that are created, allowed, or agreed to by you
   (b) that are known to you, but not to us, on the Policy Date -- unless they appeared in the public records
   (c) that result in no loss to you
   (d) that first affect your title after the Policy Date -- this does not limit the labor and material lien coverage in Item 8 of Covered Title Risks
4. Failure to pay value for your title.
5. Lack of a right:
   (a) to any land outside the area specifically described and referred to in Item 3 of Schedule A OR
   (b) in streets, alleys, or waterways that touch your land
   This exclusion does not limit the access coverage in Item 5 of Covered Title Risks.

11. EAGLE PROTECTION OWNER'S POLICY

CLTA HOMEOWNER'S POLICY OF TITLE INSURANCE - 1998
ALTA HOMEOWNER'S POLICY OF TITLE INSURANCE - 1998

Covered Risks 14 (Subdivision Law Violation). 15 (Building Permit). 16 (Zoning) and 18 (Encroachment of boundary walls or fences) are subject to Deductible Amounts and Maximum Dollar Limits of Liability

EXCLUSIONS

In addition to the Exceptions in Schedule B, you are not insured against loss, costs, attorneys' fees, and expenses resulting from:

1. Governmental police power, and the existence or violation of any law or government regulation. This includes ordinances, laws and regulations concerning:
   a. building
   b. zoning
   c. land use
   d. improvements on the land
   e. land division
   f. environmental protection

   This exclusion does not apply to violations or the enforcement of these matters if notice of the violation or enforcement appears in the Public Records at the Policy Date.
   This exclusion does not limit the coverage described in Covered Risk 14, 15, 16, 17 or 24.
2. The failure of Your existing structures, or any part of them, to be constructed in accordance with applicable building codes. This Exclusion does not apply to violations of building codes if notice of the violation appears in the Public Records at the Policy Date.
3. The right to take the Land by condemning it, unless:
   a. a notice of exercising the right appears in the Public Records at the Policy Date; or
   b. the taking happened before the Policy Date and is binding on You if You bought the Land without Knowing of the taking.
4. Risks:
   a. that are created, allowed, or agreed to by You, whether or not they appear in the Public Records;
   b. that are Known to You at the Policy Date, but not to Us, unless they appear in the Public Records at the Policy Date;
   c. that result in no loss to You; or
   d. that first occur after the Policy Date - this does not limit the coverage described in Covered Risk 7, 8.d, 22, 23, 24 or 25.
5. Failure to pay value for Your Title.
6. Lack of a right:
   a. to any Land outside the area specifically described and referred to in paragraph 3 of Schedule A; and
   b. in streets, alleys, or waterways that touch the Land.
   This exclusion does not limit the coverage described in Covered Risk 11 or 18.

12. THIRD GENERATION EAGLE LOAN POLICY AMERICAN LAND TITLE ASSOCIATION EXPANDED COVERAGE RESIDENTIAL LOAN POLICY (1/01/08)

EXCLUSIONS FROM COVERAGE

The following matters are expressly excluded from the coverage of this policy and the Company will not pay loss or damage, costs, attorneys' fees or expenses which arise by reason of:

1. (a) Any law, ordinance, permit, or governmental regulation (including those relating to building and zoning) restricting, regulating, prohibiting, or relating to (i) the occupancy, use, or enjoyment of the Land; (ii) the character, dimensions, or location of any improvement erected on the Land; (iii) the subdivision of land; or(iv) environmental protection; or the effect of any violation of these laws, ordinances, or governmental regulations. This Exclusion 1(a) does not modify or limit the coverage provided under Covered Risk 5, 6, 13(c), 13(d), 14 or 16.
   (b)Any governmental police power. This Exclusion 1(b) does not modify or limit the coverage provided under Covered Risk 5, 6, 13(c), 13(d), 14 or 16.
2. Rights of eminent domain. This Exclusion does not modify or limit the coverage provided under Covered Risk 7 or 8.
3. Defects, liens, encumbrances, adverse claims, or other matters
   (a) created, suffered, assumed or agreed to by the Insured Claimant;
   (b) not Known to the Company, not recorded in the Public Records at Date of Policy, but Known to the Insured Claimant and not disclosed in writing to the Company by the Insured Claimant prior to the date the Insured Claimant became an Insured under this policy;
   (c) resulting in no loss or damage to the Insured Claimant;
   (d) attaching or created subsequent to Date of Policy (however, this does not modify or limit the coverage provided under Covered Risk 11, 16, 17, 18, 19, 20, 21, 22, 23, 24, 27 or 28); or
   (e) resulting in loss or damage which would not have been sustained if the Insured Claimant had paid value for the Insured Mortgage.
4. Unenforceability of the lien of the Insured Mortgage because of the inability or failure of an Insured to comply with applicable doing business laws of the state where the Land is situated.
5. Invalidity or unenforceability in whole or in part of the lien of the Insured Mortgage that arises out of the transaction evidenced by the Insured Mortgage and is based upon usury, or any consumer credit protection or truth-in-lending law. This Exclusion does not modify or limit the coverage provided in Covered Risk 26.
6. Any claim of invalidity, unenforceability or lack of priority of the lien of the Insured Mortgage as to Advances or modifications made after the Insured has Knowledge that the vestee shown in Schedule A is no longer the owner of the estate or interest covered by this policy. This Exclusion does not modify or limit the coverage provided in Covered Risk 11.
7. Any lien on the Title for real estate taxes or assessments imposed by governmental authority and created or attaching subsequent to Date of Policy. This Exclusion does not modify or limit the coverage provided in Covered Risk 11(b) or 25.
8. The failure of the residential structure, or any portion of it, to have been constructed before, on or after Date of Policy in accordance with applicable building codes. This Exclusion does not modify or limit the coverage provided in Covered Risk 5 or 6.

13. AMERICAN LAND TITLE ASSOCIATION LOAN POLICY - 2006
EXCLUSIONS FROM COVERAGE

The following matters are expressly excluded from the coverage of this policy, and the Company will not pay loss or damage, costs, attorneys' fees, or

expenses that arise by reason of:

1. (a) Any law, ordinance, permit, or governmental regulation (including those relating to building and zoning) restricting, regulating, prohibiting, or relating to

   (i) the occupancy, use, or enjoyment of the Land;

   (ii) the character, dimensions, or location of any improvement erected on the Land;

   (iii) the subdivision of land; or

   (iv) environmental protection;

   or the effect of any violation of these laws, ordinances, or governmental regulations. This Exclusion 1(a) does not modify or limit the coverage provided under Covered Risk 5.

   (b) Any governmental police power. This Exclusion 1(b) does not modify or limit the coverage provided under Covered Risk 6.

2. Rights of eminent domain. This Exclusion does not modify or limit the coverage provided under Covered Risk 7 or 8.

3. Defects, liens, encumbrances, adverse claims, or other matters

   (a) created, suffered, assumed, or agreed to by the Insured Claimant;

   (b) not Known to the Company, not recorded in the Public Records at Date of Policy, but Known to the Insured Claimant and not disclosed in writing to the Company by the Insured Claimant prior to the date the Insured Claimant became an Insured under this policy;

   (c) resulting in no loss or damage to the Insured Claimant;

   (d) attaching or created subsequent to Date of Policy (however, this does not modify or limit the coverage provided under Covered Risk 11, 13, or 14); or

   (e) resulting in loss or damage that would not have been sustained if the Insured Claimant had paid value for the Insured Mortgage.

4. Unenforceability of the lien of the Insured Mortgage because of the inability or failure of an Insured to comply with applicable doing-business laws of the state where the Land is situated.

5. Invalidity or unenforceability in whole or in part of the lien of the Insured Mortgage that arises out of the transaction evidenced by the Insured Mortgage and is based upon usury or any consumer credit protection or truth-in-lending law.

6. Any claim, by reason of the operation of federal bankruptcy, state insolvency, or similar creditors' rights laws, that the transaction creating the lien of the Insured Mortgage, is

   (a) a fraudulent conveyance or fraudulent transfer, or

   (b) a preferential transfer for any reason not stated in Covered Risk 13(b) of this policy.

7. Any lien on the Title for real estate taxes or assessments imposed by governmental authority and created or attaching between Date of Policy and the date of recording of the Insured Mortgage in the Public Records. This Exclusion does not modify or limit the coverage provided under Covered Risk 11(b).

14. AMERICAN LAND TITLE ASSOCIATION LOAN POLICY - 2006 WITH REGIONAL EXCEPTIONS

When the American Land Title Association policy is used as a Standard Coverage Policy and not as an Extended Coverage Policy the exclusions set forth in paragraph 13 above are used and the following exceptions to coverage appear in the policy.

SCHEDULE B

This policy does not insure against loss or damage (and the Company will not pay costs, attorneys' fees or expenses) which arise by reason of:

1. (a) Taxes or assessments that are not shown as existing liens by the records of any taxing authority that levies taxes or assessments on real property or by the Public Records; (b) proceedings by a public agency that may result in taxes or assessments, or notices of such proceedings, whether or not shown by the records of such agency or by the Public Records.

2. Any facts, rights, interests, or claims that are not shown by the Public Records but that could be ascertained by an inspection of the Land or that may be asserted by persons in possession of the Land.

3. Easements, liens or encumbrances, or claims thereof, not shown by the Public Records.

4. Any encroachment, encumbrance, violation, variation, or adverse circumstance affecting the Title that would be disclosed by an accurate and complete land survey of the Land and not shown by the Public Records.

5. (a) Unpatented mining claims; (b) reservations or exceptions in patents or in Acts authorizing the issuance thereof; (c) water rights, claims or title to water, whether or not the matters excepted under (a), (b), or (c) are shown by the Public Records.

15. AMERICAN LAND TITLE ASSOCIATION OWNER'S POLICY - 2006 EXCLUSIONS FROM COVERAGE

The following matters are expressly excluded from the coverage of this policy and the Company will not pay loss or damage, costs, attorneys' fees or expenses which arise by reason of:

1. (a) Any law, ordinance, permit, or governmental regulation (including those relating to building and zoning) restricting, regulating, prohibiting, or relating to

   (i) the occupancy, use, or enjoyment of the Land;

   (ii) the character, dimensions, or location of any improvement erected on the Land;

   (iii) the subdivision of land; or

   (iv) environmental protection;or the effect of any violation of these laws, ordinances, or governmental regulations. This Exclusion 1(a) does not modify or limit the coverage provided under Covered Risk 5.

(b) Any governmental police power. This Exclusion 1(b) does not modify or limit the coverage provided under Covered Risk 6.

2. Rights of eminent domain. This Exclusion does not modify or limit the coverage provided under Covered Risk 7 or 8.

3. Defects, liens, encumbrances, adverse claims, or other matters

(a) created, suffered, assumed, or agreed to by the Insured Claimant;

(b) not Known to the Company, not recorded in the Public Records at Date of Policy, but Known to the Insured Claimant and not disclosed in writing to the Company by the Insured Claimant prior to the date the Insured Claimant became an Insured under this policy;

(c) resulting in no loss or damage to the Insured Claimant;

(d) attaching or created subsequent to Date of Policy (however, this does not modify or limit the coverage provided under Covered Risks 9 and 10); or

(e) resulting in loss or damage that would not have been sustained if the Insured Claimant had paid value for the Title.

4. Any claim, by reason of the operation of federal bankruptcy, state insolvency, or similar creditors rights laws, that the transaction vesting the Title as shown in Schedule A, is

(a) a fraudulent conveyance or fraudulent transfer; or

(b) a preferential transfer for any reason not stated in Covered Risk 9 of this policy.

5. Any lien on the Title for real estate taxes or assessments imposed by governmental authority and created or attaching between Date of Policy and the date of recording of the deed or other instrument of transfer in the Public Records that vests Title as shown in Schedule A.

16. AMERICAN LAND TITLE ASSOCIATION OWNER'S POLICY - 2006 WITH REGIONAL EXCEPTIONS

When the American Land Title Association policy is used as a Standard Coverage Policy and not as an Extended Coverage Policy the exclusions set forth in paragraph 15 above are used and the following exceptions to coverage appear in the policy.

SCHEDULE B

This policy does not insure against loss or damage (and the Company will not pay costs, attorneys' fees or expenses) which arise by reason of:

1. (a) Taxes or assessments that are not shown as existing liens by the records of any taxing authority that levies taxes or assessments on real property or by the Public Records; (b) proceedings by a public agency that may result in taxes or assessments, or notices of such proceedings, whether or not shown by the records of such agency or by the Public Records.
2. Any facts, rights, interests, or claims that are not shown by the Public Records but that could be ascertained by an inspection of the Land or that may be asserted by persons in possession of the Land.
3. Easements, liens or encumbrances, or claims thereof, not shown by the Public Records.
4. Any encroachment, encumbrance, violation, variation, or adverse circumstance affecting the Title that would be disclosed by an accurate and complete land survey of the Land and not shown by the Public Records.
5. (a) Unpatented mining claims; (b) reservations or exceptions in patents or in Acts authorizing the issuance thereof; (c) water rights, claims or title to water, whether or not the matters excepted under (a), (b), or (c) are shown by the Public Records.

First American Title Insurance Company

National Commercial Services

666 Third Avenue, 5th Floor
New York, NY 10017

May 11, 2017

John Warren
Intersect Power
Embarcadero Center , 7th Floor
San Francisco, CA 94111
Phone: (415)297-4169

Order Number: 3020-850116

Property: Situs Unavailable, Desert Center, CA

Attached please find the following item(s):

Commitment

Thank You for your confidence and support. We at First American Title Insurance Company maintain the fundamental principle:

Customer First!

First American Title Insurance Company

INFORMATION

The Title Insurance Commitment is a legal contract between you and the company. It is issued to show the basis on which we will issue a Title Insurance Policy to you. The Policy will insure you against certain risks to the land title, subject to the limitations shown in the policy.

The Company will give you a sample of the Policy form, if you ask.

The Commitment is based on the land title as of the Commitment Date. Any changes in the land title or the transaction may affect the Commitment and the Policy.

The Commitment is subject to its Requirements, Exceptions and Conditions.

This information is not part of the title insurance commitment.

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YOU SHOULD READ THE COMMITMENT VERY CAREFULLY.
If you have any questions about the Commitment,
please contact the issuing office.

COMMITMENT FOR TITLE INSURANCE

Issued by

First American Title Insurance Company

Agreement to Issue Policy

We agree to issue a policy to you according to the terms of this Commitment.

When we show the policy amount and your name as the proposed insured in Schedule A, this Commitment becomes effective as of the Commitment Date shown in Schedule A.

If the Requirements shown in this Commitment have not been met within six months after the Commitment Date, our obligation under this Commitment will end. Also, our obligation under this Commitment will end when the Policy is issued and then our obligation to you will be under the Policy.

Our obligation under this Commitment is limited by the following:

The Provisions in Schedule A.

The Requirements in Schedule B-1.

The Exceptions in Schedule B-2.

The Conditions.

This Commitment is not valid without Schedule A and Sections 1 and 2 of Schedule B.

SCHEDULE A

1. Commitment Date: May 04, 2017 at 7:30 A.M.

2. Policy or Policies to be issued: Amount

(A) ALTA Owner's Policy $To Be Determined
ALTA Standard Owner Policy

Proposed Insured:

To Be Determined

(B) ALTA Loan Policy $To Be Determined
To Be Determined

Proposed Insured:

To Be Determined

3. (A) The estate or interest in the land described in this Commitment is:

FEE

(B) Title to said estate or interest at the date hereof is vested in:

COCOPAH NURSERIES, INC., A CALIFORNIA CORPORATION

4. The land referred to in this Commitment is situated in the City of Desert Center, County of Riverside, State of California, and is described as follows:

PARCEL 1:

THE SOUTHEAST QUARTER OF SECTION 19, TOWNSHIP 5 SOUTH, RANGE 17 EAST, SAN BERNARDINO BASE AND MERIDIAN; AND THE NORTH HALF OF THE NORTHEAST QUARTER OF SECTION 30, TOWNSHIP 5 SOUTH, RANGE 17 EAST, SAN BERNARDINO BASE AND MERIDIAN, ACCORDING TO THE OFFICIAL PLAT OF SAID LAND APPROVED BY THE SURVEYOR GENERAL JULY 12, 1856.

PARCEL 2:

THE NORTHWEST QUARTER OF SECTION 29, TOWNSHIP 5 SOUTH, RANGE 17 EAST, SAN BERNARDINO BASE AND MERIDIAN, ACCORDING TO THE OFFICIAL PLAT OF SAID LAND APPROVED BY THE SURVEYOR GENERAL JULY 12, 1856.

APN: 810-110-001-2 (Affects : Parcel 1)
810-110-006-7 (Affects : Parcel 2)

SCHEDULE B

SECTION ONE

REQUIREMENTS

The following requirements must be met:

(A) Pay the agreed amounts for the interest in the land and/or the mortgage to be insured.

(B) Pay us the premiums, fees and charges for the policy.

(C) Documents satisfactory to us creating the interest in the land and/or the mortgage to be insured must be signed, delivered and recorded.

(D) You must tell us in writing the name of anyone not referred to in this Commitment who will get an interest in the land or who will make a loan on the land. We may then make additional requirements or exceptions.

(E) Releases(s) or Reconveyance(s) of Item(s): 5 and 7

(F) Other: None

(G) You must give us the following information:
1. Any off record leases, surveys, etc.
2. Statement(s) of Identity, all parties.
3. Other: None

The following additional requirements, as indicated by "X", must be met:

[X] (H) Provide information regarding any off-record matters, which may include, but are not limited to: leases, recent works of improvement, or commitment statements in effect under the Environmental Responsibility Acceptance Act, Civil Code Section 850, et seq.

The Company's Owner's Affidavit form (as provided by company) must be completed and submitted prior to close in order to satisfy this requirement. This Commitment will then be subject to such further exceptions and/or requirements as may be deemed necessary.

[] (I) An ALTA/NSPS survey of recent date, which complies with the current minimum standard detail requirements for ALTA/NSPS land title surveys, must be submitted to the Company for review. This Commitment will then be subject to such further exceptions and/or requirements as may be deemed necessary.

[] (J) The following LLC documentation is required:
(i) a copy of the Articles of Organization
(ii) a copy of the Operating Agreement, if applicable
(iii) a Certificate of Good Standing and/or other evidence of current Authority to Conduct Business within the State
(iv) express Company Consent to the current transaction

[] (K) The following partnership documentation is required **:**
(i) a copy of the partnership agreement, including all applicable amendments thereto
(ii) a Certificate of Good Standing and/or other evidence of current Authority to Conduct Business within the State
(iii) express Partnership Consent to the current transaction

[X] (L) The following corporation documentation is required:
(i) a copy of the Articles of Incorporation
(ii) a copy of the Bylaws, including all applicable Amendments thereto
(iii) a Certificate of Good Standing and/or other evidence of current Authority to Conduct Business within the State
(iv) express Corporate Resolution consenting to the current transaction

[] (M) Based upon the Company's review of that certain partnership/operating agreement dated **Not disclosed** for the proposed insured herein, the following requirements must be met:

Any further amendments to said agreement must be submitted to the Company, together with an affidavit from one of the general partners or members stating that it is a true copy, that said partnership or limited liability company is in full force and effect, and that there have been no further amendments to the agreement. This Commitment will then be subject to such further requirements as may be deemed necessary.

[] (N) A copy of the complete lease, as referenced in Schedule A, #3 herein, together with any amendments and/or assignments thereto, must be submitted to the Company for review, along with an affidavit executed by the present lessee stating that it is a true copy, that the lease is in full force and effect, and that there have been no further amendments to the lease. This Commitment will then be subject to such further requirements as may be deemed necessary.

[X] (O) Approval from the Company's Underwriting Department must be obtained for issuance of the policy contemplated herein and any endorsements requested thereunder. This Commitment will then be subject to such further requirements as may be required to obtain such approval.

[] (P) Potential additional requirements, if ALTA Extended coverage is contemplated hereunder, and work on the land has commenced prior to close, some or all of the following requirements, and any other requirements which may be deemed necessary, may need to be met:

[] (Q) The Company's "Indemnity Agreement I" must be executed by the appropriate parties.

[] (R) Financial statements from the appropriate parties must be submitted to the Company for review.

[] (S) A copy of the construction contract must be submitted to the Company for review.

[] (T) An inspection of the land must be performed by the Company for verification of the phase of construction.

[] (U) The Company's "Mechanic's Lien Risk Addendum" form must be completed by a Company employee, based upon information furnished by the appropriate parties involved.

SCHEDULE B

SECTION TWO

EXCEPTIONS

Any policy we issue will have the following exceptions unless they are taken care of to our satisfaction. The printed exceptions and exclusions from the coverage of the policy or policies are set forth in Exhibit A attached. Copies of the policy forms should be read. They are available from the office which issued this Commitment.

1. General and special taxes and assessments for the fiscal year 2017-2018, a lien not yet due or payable.

2. The lien of supplemental taxes, if any, assessed pursuant to Chapter 3.5 commencing with Section 75 of the California Revenue and Taxation Code.

3. A right of way for ditches and canals as reserved by the United States of America in the patent recorded August 06, 1964 as Instrument No. 96555 of Official Records.

   (Affects Parcel 1)

4. A right of way for ditches and canals as reserved by the United States of America in the patent recorded August 06, 1964 as Instrument No. 96556 of Official Records.

   (Affects Parcel 2)

5. A deed of trust to secure an original indebtedness of $400,000.00 recorded June 11, 2003 as Instrument No. 2003-427416 of Official Records.

Dated:	May 22, 2003
Trustor:	Cocopah Nurseries, Inc., a California Corporation
Trustee:	Joyceco Financial Services, Inc., a California Corporation
Beneficiary:	Stanley W. Spilman and Callie Spilman, husband and wife as joint tenants

   A document recorded October 23, 2015 as Instrument No. 2015-0466766 of Official Records provides that Callie Spilman was substituted as trustee under the deed of trust.

   The effect of a document entitled "Substitution of Trustee and Deed of Reconveyance", recorded October 23, 2015 as Instrument No. 2015-0466766 of Official Records .

   Note: The Company will require satisfactory proof of full payment of the debt secured by said mortgage or deed of trust prior to removing this exception or insuring the contemplated transaction.

6. The effect of a map purporting to show the land and other property, filed in Book 126, Page 11 of Record of Surveys.

7. A deed of trust to secure an original indebtedness of $3,750,000.00 recorded November 08, 2013 as Instrument No. 2013-0533478 of Official Records.

Dated:	October 31, 2013
Trustor:	Cocopah Nurseries, Inc., a California corporation
Trustee:	Fidelity National Title Company
Beneficiary:	The Alison Company, a California corporation

Affects: The land and other property.

A document recorded September 01, 2015 as Instrument No. 2015-0390540 of Official Records provides that The Alison Company, a California corporation was substituted as trustee under the deed of trust.

The Deed of Trust/Mortgage was Partially reconveyed as to Property described in a Partial Reconveyance by instrument recorded September 01, 2015 under recording no. 2015-0390540.

A document recorded June 13, 2016 as Instrument No. 2016-0240562 of Official Records provides that The Alison Company, a California corporation was substituted as trustee under the deed of trust.

The Deed of Trust/Mortgage was Partially reconveyed as to Lot 4 of Tract 25804-1 by instrument recorded June 13, 2016 under recording no. 2016-0240562.

8. Any claim that the Title is subject to a trust or lien created under The Perishable Agricultural Commodities Act, 1930 (7 U.S.C. §§499a, et seq.) or the Packers and Stockyards Act (7 U.S.C. §§181 et seq.) or under similar state laws.

9. Rights of the public in and to that portion of the land lying within "any road, street and/or highway".

10. The lack of a right of access to and from the land.

Notice: Paragraph 4 of the insuring provisions on the face page of the policy will be deleted from the policy to be issued.

11. Water rights, claims or title to water, whether or not shown by the public records.

12. Rights of parties in possession.

INFORMATIONAL NOTES

1. Taxes for proration purposes only for the fiscal year 2016-2017.

First Installment:	$4,421.03, PAID
Second Installment:	$4,421.03, PAID
Tax Rate Area:	062-000
APN:	810-110-001-2

(Affects Parcel 1)

2. Taxes for proration purposes only for the fiscal year 2016-2017.

First Installment:	$1,214.73, PAID
Second Installment:	$1,214.73, PAID
Tax Rate Area:	062-000
APN:	810-110-006-7

(Affects Parcel 2)

3. According to the latest available equalized assessment roll in the office of the county tax assessor, there is located on the land a(n) Commercial Structure known as Situs Unavailable, Desert Center, CA.

4. According to the public records, there has been no conveyance of the land within a period of twenty-four months prior to the date of this report, except as follows:

   None

5. This preliminary report/commitment was prepared based upon an application for a policy of title insurance that identified land by street address or assessor's parcel number only. It is the responsibility of the applicant to determine whether the land referred to herein is in fact the land that is to be described in the policy or policies to be issued.

The map attached, if any, may or may not be a survey of the land depicted hereon. First American Title Insurance Company expressly disclaims any liability for loss or damage which may result from reliance on this map except to the extent coverage for such loss or damage is expressly provided by the terms and provisions of the title insurance policy, if any, to which this map is attached.

******To obtain wire instructions for deposit of funds to your escrow file please contact your Escrow Officer.******

CONDITIONS

1. **DEFINITIONS**
(a)"Mortgage" means mortgage, deed of trust or other security instrument.
(b)"Public Records" means title records that give constructive notice of matters affecting the title according to the state law where the land is located.

2. **LATER DEFECTS**
The Exceptions in Schedule B - Section Two may be amended to show any defects, liens or encumbrances that appear for the first time in the public records or are created or attached between the Commitment Date and the date on which all of the Requirements (a) and (c) of Schedule B - Section One are met. We shall have no liability to you because of this amendment.

3. **EXISTING DEFECTS**
If any defects, liens or encumbrances existing at Commitment Date are not shown in Schedule B, we may amend Schedule B to show them. If we do amend Schedule B to show these defects, liens or encumbrances, we shall be liable to you according to Paragraph 4 below unless you knew of this information and did not tell us about it in writing.

4. **LIMITATION OF OUR LIABILITY**
Our only obligation is to issue to you the Policy referred to in this Commitment, when you have met its Requirements. If we have any liability to you for any loss you incur because of an error in this Commitment, our liability will be limited to your actual loss caused by your relying on this Commitment when you acted in good faith to:

comply with the Requirements shown in Schedule B - Section One
or
eliminate with our written consent any Exceptions shown in Schedule B - Section Two.

We shall not be liable for more than the Policy Amount shown in Schedule A of this Commitment and our liability is subject to the terms of the Policy form to be issued to you.

5. **CLAIMS MUST BE BASED ON THIS COMMITMENT**
Any claim, whether or not based on negligence, which you may have against us concerning the title to the land must be based on this commitment and is subject to its terms.

First American Title

Privacy Information

We Are Committed to Safeguarding Customer Information

In order to better serve your needs now and in the future, we may ask you to provide us with certain information. We understand that you may be concerned about what we will do with such information - particularly any personal or financial information. We agree that you have a right to know how we will utilize the personal information you provide to us. Therefore, together with our subsidiaries we have adopted this Privacy Policy to govern the use and handling of your personal information.

Applicability

This Privacy Policy governs our use of the information that you provide to us. It does not govern the manner in which we may use information we have obtained from any other source, such as information obtained from a public record or from another person or entity. First American has also adopted broader guidelines that govern our use of personal information regardless of its source. First American calls these guidelines its Fair Information Values.

Types of Information

Depending upon which of our services you are utilizing, the types of nonpublic personal information that we may collect include:

- Information we receive from you on applications, forms and in other communications to us, whether in writing, in person, by telephone or any other means;
- Information about your transactions with us, our affiliated companies, or others; and
- Information we receive from a consumer reporting agency.

Use of Information

We request information from you for our own legitimate business purposes and not for the benefit of any nonaffiliated party. Therefore, we will not release your information to nonaffiliated parties except: (1) as necessary for us to provide the product or service you have requested of us; or (2) as permitted by law. We may, however, store such information indefinitely, including the period after which any customer relationship has ceased. Such information may be used for any internal purpose, such as quality control efforts or customer analysis. We may also provide all of the types of nonpublic personal information listed above to one or more of our affiliated companies. Such affiliated companies include financial service providers, such as title insurers, property and casualty insurers, and trust and investment advisory companies, or companies involved in real estate services, such as appraisal companies, home warranty companies and escrow companies. Furthermore, we may also provide all the information we collect, as described above, to companies that perform marketing services on our behalf, on behalf of our affiliated companies or to other financial institutions with whom we or our affiliated companies have joint marketing agreements.

Former Customers

Even if you are no longer our customer, our Privacy Policy will continue to apply to you.

Confidentiality and Security

We will use our best efforts to ensure that no unauthorized parties have access to any of your information. We restrict access to nonpublic personal information about you to those individuals and entities who need to know that information to provide products or services to you. We will use our best efforts to train and oversee our employees and agents to ensure that your information will be handled responsibly and in accordance with this Privacy Policy and First American's Fair Information Values. We currently maintain physical, electronic, and procedural safeguards that comply with federal regulations to guard your nonpublic personal information.

Information Obtained Through Our Web Site

First American Financial Corporation is sensitive to privacy issues on the Internet. We believe it is important you know how we treat the information about you we receive on the Internet.

In general, you can visit First American or its affiliates' Web sites on the World Wide Web without telling us who you are or revealing any information about yourself. Our Web servers collect the domain names, not the e-mail addresses, of visitors. This information is aggregated to measure the number of visits, average time spent on the site, pages viewed and similar information. First American uses this information to measure the use of our site and to develop ideas to improve the content of our site.

There are times, however, when we may need information from you, such as your name and email address. When information is needed, we will use our best efforts to let you know at the time of collection how we will use the personal information. Usually, the personal information we collect is used only by us to respond to your inquiry, process an order or allow you to access specific account/profile information. If you choose to share any personal information with us, we will only use it in accordance with the policies outlined above.

Business Relationships

First American Financial Corporation's site and its affiliates' sites may contain links to other Web sites. While we try to link only to sites that share our high standards and respect for privacy, we are not responsible for the content or the privacy practices employed by other sites.

Cookies

Some of First American's Web sites may make use of "cookie" technology to measure site activity and to customize information to your personal tastes. A cookie is an element of data that a Web site can send to your browser, which may then store the cookie on your hard drive.

FirstAm.com uses stored cookies. The goal of this technology is to better serve you when visiting our site, save you time when you are here and to provide you with a more meaningful and productive Web site experience.

Fair Information Values

Fairness We consider consumer expectations about their privacy in all our businesses. We only offer products and services that assure a favorable balance between consumer benefits and consumer privacy.

Public Record We believe that an open public record creates significant value for society, enhances consumer choice and creates consumer opportunity. We actively support an open public record and emphasize its importance and contribution to our economy.

Use We believe we should behave responsibly when we use information about a consumer in our business. We will obey the laws governing the collection, use and dissemination of data.

Accuracy We will take reasonable steps to help assure the accuracy of the data we collect, use and disseminate. Where possible, we will take reasonable steps to correct inaccurate information. When, as with the public record, we cannot correct inaccurate information, we will take all reasonable steps to assist consumers in identifying the source of the erroneous data so that the consumer can secure the required corrections.

Education We endeavor to educate the users of our products and services, our employees and others in our industry about the importance of consumer privacy. We will instruct our employees on our fair information values and on the responsible collection and use of data. We will encourage others in our industry to collect and use information in a responsible manner.

Security We will maintain appropriate facilities and systems to protect against unauthorized access to and corruption of the data we maintain.

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EXHIBIT A
LIST OF PRINTED EXCEPTIONS AND EXCLUSIONS (BY POLICY TYPE)

1. CALIFORNIA LAND TITLE ASSOCIATION STANDARD COVERAGE POLICY - 1990
SCHEDULE B

EXCEPTIONS FROM COVERAGE

This policy does not insure against loss or damage (and the Company will not pay costs, attorneys' fees or expenses) which arise by reason of:

1. Taxes or assessments which are not shown as existing liens by the records of any taxing authority that levies taxes or assessments on real property or by the public records. Proceedings by a public agency which may result in taxes or assessments, or notice of such proceedings, whether or not shown by the records of such agency or by the public records.
2. Any facts, rights, interests, or claims which are not shown by the public records but which could be ascertained by an inspection of the land or which may be asserted by persons in possession thereof.
3. Easements, liens or encumbrances, or claims thereof, which are not shown by the public records.
4. Discrepancies, conflicts in boundary lines, shortage in area, encroachments, or any other facts which a correct survey would disclose, and which are not shown by the public records.
5. (a) Unpatented mining claims; (b) reservations or exceptions in patents or in Acts authorizing the issuance thereof; (c) water rights, claims or title to water, whether or not the matters excepted under (a), (b), or (c) are shown by the public records.

EXCLUSIONS FROM COVERAGE

The following matters are expressly excluded from the coverage of this policy and the Company will not pay loss or damage, costs, attorneys' fees or expenses which arise by reason of:

1. (a) Any law, ordinance or governmental regulation (including but not limited to building and zoning laws, ordinances, or regulations) restricting, regulating, prohibiting or relating to (i) the occupancy, use, or enjoyment of the land; (ii) the character, dimensions or location of any improvement now or hereafter erected on the land; (iii) a separation in ownership or a change in the dimensions or area of the land or any parcel of which the land is or was a part; or (iv) environmental protection, or the effect of any violation of these laws, ordinances or governmental regulations, except to the extent that a notice of the enforcement thereof or a notice of a defect, lien or encumbrance resulting from a violation or alleged violation affecting the land has been recorded in the public records at Date of Policy.
   (b) Any governmental police power not excluded by (a) above, except to the extent that a notice of the exercise thereof or a notice of a defect, lien or encumbrance resulting from a violation or alleged violation affecting the land has been recorded in the public records at Date of Policy.
2. Rights of eminent domain unless notice of the exercise thereof has been recorded in the public records at Date of Policy, but not excluding from coverage any taking which has occurred prior to Date of Policy which would be binding on the rights of a purchaser for value without knowledge.
3. Defects, liens, encumbrances, adverse claims or other matters:
   (a) whether or not recorded in the public records at Date of Policy, but created, suffered, assumed or agreed to by the insured claimant;
   (b) not known to the Company, not recorded in the public records at Date of Policy, but known to the insured claimant and not disclosed in writing to the Company by the insured claimant prior to the date the insured claimant became an insured under this policy;
   (c) resulting in no loss or damage to the insured claimant;
   (d) attaching or created subsequent to Date of Policy; or
   (e) resulting in loss or damage which would not have been sustained if the insured claimant had paid value for the insured mortgage or for the estate or interest insured by this policy.
4. Unenforceability of the lien of the insured mortgage because of the inability or failure of the insured at Date of Policy, or the inability or failure of any subsequent owner of the indebtedness, to comply with applicable "doing business" laws of the state in which the land is situated.
5. Invalidity or unenforceability of the lien of the insured mortgage, or claim thereof, which arises out of the transaction evidenced by the insured mortgage and is based upon usury or any consumer credit protection or truth in lending law.
6. Any claim, which arises out of the transaction vesting in the insured the estate or interest insured by their policy or the transaction creating the interest of the insured lender, by reason of the operation of federal bankruptcy, state insolvency or similar creditors' rights laws.

2. AMERICAN LAND TITLE ASSOCIATION OWNER'S POLICY FORM B - 1970
SCHEDULE OF EXCLUSIONS FROM COVERAGE

1. Any law, ordinance or governmental regulation (including but not limited to building and zoning ordinances) restricting or regulating or prohibiting the occupancy, use or enjoyment of the land, or regulating the character, dimensions or location of any improvement now or hereafter erected on the land, or prohibiting a separation in ownership or a reduction in the dimensions of area of the land, or the effect of any violation of any such law, ordinance or governmental regulation.
2. Rights of eminent domain or governmental rights of police power unless notice of the exercise of such rights appears in the public records at Date of Policy.
3. Defects, liens, encumbrances, adverse claims, or other matters (a) created, suffered, assumed or agreed to by the insured claimant; (b) not known to the Company and not shown by the public records but known to the insured claimant either at Date of Policy or at the date such claimant acquired an estate or interest insured by this policy and not disclosed in writing by the insured claimant to the Company prior to the date such insured claimant became an insured hereunder; (c) resulting in no loss or damage to the insured claimant; (d) attaching or created subsequent to Date of Policy; or (e) resulting in loss or damage which would not have been sustained if the insured claimant had paid value for the estate or interest insured by this policy.

3. AMERICAN LAND TITLE ASSOCIATION OWNER'S POLICY FORM B - 1970
WITH REGIONAL EXCEPTIONS

When the American Land Title Association policy is used as a Standard Coverage Policy and not as an Extended Coverage Policy the exclusions set forth in paragraph 2 above are used and the following exceptions to coverage appear in the policy.

SCHEDULE B

This policy does not insure against loss or damage by reason of the matters shown in parts one and two following:
Part One

1. Taxes or assessments which are not shown as existing liens by the records of any taxing authority that levies taxes or assessments on real property or by the public records.
2. Any facts, rights, interests, or claims which are not shown by the public records but which could be ascertained by an inspection of said land or by making inquiry of persons in possession thereof.
3. Easements, claims of easement or encumbrances which are not shown by the public records.
4. Discrepancies, conflicts in boundary lines, shortage in area, encroachments, or any other facts which a correct survey would disclose, and which are not shown by public records.
5. Unpatented mining claims; reservations or exceptions in patents or in Acts authorizing the issuance thereof; water rights, claims or title to water.
6. Any lien, or right to a lien, for services, labor or material heretofore or hereafter furnished, imposed by law and not shown by the public records.

4. AMERICAN LAND TITLE ASSOCIATION LOAN POLICY - 1970 WITH A.L.T.A. ENDORSEMENT FORM 1 COVERAGE SCHEDULE OF EXCLUSIONS FROM COVERAGE

1. Any law, ordinance or governmental regulation (including but not limited to building and zoning ordinances) restricting or regulating or prohibiting the occupancy, use or enjoyment of the land, or regulating the character, dimensions or location of any improvement now or hereafter erected on the land, or prohibiting a separation in ownership or a reduction in the dimensions or area of the land, or the effect of any violation of any such law ordinance or governmental regulation.
2. Rights of eminent domain or governmental rights of police power unless notice of the exercise of such rights appears in the public records at Date of Policy.
3. Defects, liens, encumbrances, adverse claims, or other matters (a) created, suffered, assumed or agreed to by the insured claimant, (b) not known to the Company and not shown by the public records but known to the insured claimant either at Date of Policy or at the date such claimant acquired an estate or interest insured by this policy or acquired the insured mortgage and not disclosed in writing by the insured claimant to the Company prior to the date such insured claimant became an insured hereunder, (c) resulting in no loss or damage to the insured claimant; (d) attaching or created subsequent to Date of Policy (except to the extent insurance is afforded herein as to any statutory lien for labor or material or to the extent insurance is afforded herein as to assessments for street improvements under construction or completed at Date of Policy).
4. Unenforceability of the lien of the insured mortgage because of failure of the insured at Date of Policy or of any subsequent owner of the indebtedness to comply with applicable "doing business" laws of the state in which the land is situated.

5. AMERICAN LAND TITLE ASSOCIATION LOAN POLICY - 1970 WITH REGIONAL EXCEPTIONS

When the American Land Title Association Lenders Policy is used as a Standard Coverage Policy and not as an Extended Coverage Policy, the exclusions set forth in paragraph 4 above are used and the following exceptions to coverage appear in the policy.

SCHEDULE B

This policy does not insure against loss or damage by reason of the matters shown in parts one and two following:
Part One

1. Taxes or assessments which are not shown as existing liens by the records of any taxing authority that levies taxes or assessments on real property or by the public records.
2. Any facts, rights, interests, or claims which are not shown by the public records but which could be ascertained by an inspection of said land or by making inquiry of persons in possession thereof.
3. Easements, claims of easement or encumbrances which are not shown by the public records.
4. Discrepancies, conflicts in boundary lines, shortage in area, encroachments, or any other facts which a correct survey would disclose, and which are not shown by public records.
5. Unpatented mining claims; reservations or exceptions in patents or in Acts authorizing the issuance thereof; water rights, claims or title to water.
6. Any lien, or right to a lien, for services, labor or material theretofore or hereafter furnished, imposed by law and not shown by the public records.

6. AMERICAN LAND TITLE ASSOCIATION LOAN POLICY - 1992 WITH A.L.T.A. ENDORSEMENT FORM 1 COVERAGE EXCLUSIONS FROM COVERAGE

The following matters are expressly excluded from the coverage of this policy and the Company will not pay loss or damage, costs, attorneys' fees or expenses which arise by reason of:

1. (a) Any law, ordinance or governmental regulation (including but not limited to building and zoning laws, ordinances, or regulations) restricting, regulating, prohibiting or relating to (i) the occupancy, use, or enjoyment of the land; (ii) the character, dimensions or location of any improvement now or hereafter erected on the land; (iii) a separation in ownership or a change in the dimensions or area of the land or any parcel of which the land is or was a part; or (iv) environmental protection, or the effect of any violation of these laws, ordinances or governmental regulations, except to the extent that a notice of the enforcement thereof or a notice of a defect, lien or encumbrance resulting from a violation or alleged violation affecting the land has been recorded in the public records at Date of Policy;
   (b) Any governmental police power not excluded by (a) above, except to the extent that a notice of the exercise thereof or a notice of a defect, lien or encumbrance resulting from a violation or alleged violation affecting the land has been recorded in the public records at Date of Policy.

2. Rights of eminent domain unless notice of the exercise thereof has been recorded in the public records at Date of Policy, but not excluding from coverage any taking which has occurred prior to Date of Policy which would be binding on the rights of a purchaser for value without knowledge.
3. Defects, liens, encumbrances, adverse claims, or other matters:
(a) whether or not recorded in the public records at Date of Policy, but created, suffered, assumed or agreed to by the insured claimant;
(b) not known to the Company, not recorded in the public records at Date of Policy, but known to the insured claimant and not disclosed in writing to the Company by the insured claimant prior to the date the insured claimant became an insured under this policy;
(c) resulting in no loss or damage to the insured claimant;
(d) attaching or created subsequent to Date of Policy (except to the extent that this policy insures the priority of the lien of the insured mortgage over any statutory lien for services, labor or material or the extent insurance is afforded herein as to assessments for street improvements under construction or completed at date of policy); or
(e) resulting in loss or damage which would not have been sustained if the insured claimant had paid value for the insured mortgage.
4. Unenforceability of the lien of the insured mortgage because of the inability or failure of the insured at Date of Policy, or the inability or failure of any subsequent owner of the indebtedness, to comply with the applicable "doing business" laws of the state in which the land is situated.
5. Invalidity or unenforceability of the lien of the insured mortgage, or claim thereof, which arises out of the transaction evidenced by the insured mortgage and is based upon usury or any consumer credit protection or truth in lending law.
6. Any statutory lien for services, labor or materials (or the claim of priority of any statutory lien for services, labor or materials over the lien of the insured mortgage) arising from an improvement or work related to the land which is contracted for and commenced subsequent to Date of Policy and is not financed in whole or in part by proceeds of the indebtedness secured by the insured mortgage which at Date of Policy the insured has advanced or is obligated to advance.
7. Any claim, which arises out of the transaction creating the interest of the mortgagee insured by this policy, by reason of the operation of federal bankruptcy, state insolvency, or similar creditors' rights laws, that is based on:
(i) the transaction creating the interest of the insured mortgagee being deemed a fraudulent conveyance or fraudulent transfer; or
(ii) the subordination of the interest of the insured mortgagee as a result of the application of the doctrine of equitable subordination; or
(iii) the transaction creating the interest of the insured mortgagee being deemed a preferential transfer except where the preferential transfer results from the failure:
(a) to timely record the instrument of transfer; or
(b) of such recordation to impart notice to a purchaser for value or a judgment or lien creditor.

7. AMERICAN LAND TITLE ASSOCIATION LOAN POLICY - 1992
WITH REGIONAL EXCEPTIONS

When the American Land Title Association policy is used as a Standard Coverage Policy and not as an Extended Coverage Policy the exclusions set forth in paragraph 6 above are used and the following exceptions to coverage appear in the policy.

SCHEDULE B

This policy does not insure against loss or damage (and the Company will not pay costs, attorneys' fees or expenses) which arise by reason of:
1. Taxes or assessments which are not shown as existing liens by the records of any taxing authority that levies taxes or assessments on real property or by the public records.
2. Any facts, rights, interests, or claims which are not shown by the public records but which could be ascertained by an inspection of said land or by making inquiry of persons in possession thereof.
3. Easements, claims of easement or encumbrances which are not shown by the public records.
4. Discrepancies, conflicts in boundary lines, shortage in area, encroachments, or any other facts which a correct survey would disclose, and which are not shown by public records.
5. Unpatented mining claims; reservations or exceptions in patents or in Acts authorizing the issuance thereof; water rights, claims or title to water.
6. Any lien, or right to a lien, for services, labor or material theretofore or hereafter furnished, imposed by law and not shown by the public records.

8. AMERICAN LAND TITLE ASSOCIATION OWNER'S POLICY - 1992
EXCLUSIONS FROM COVERAGE

The following matters are expressly excluded from the coverage of this policy and the Company will not pay loss or damage, costs, attorneys' fees or expenses which arise by reason of:
1. (a) Any law, ordinance or governmental regulation (including but not limited to building and zoning laws, ordinances, or regulations) restricting, regulating, prohibiting or relating to (i) the occupancy, use, or enjoyment of the land; (ii) the character, dimensions or location of any improvement now or hereafter erected on the land; (iii) a separation in ownership or a change in the dimensions or area of the land or any parcel of which the land is or was a part; or (iv) environmental protection, or the effect of any violation of these laws, ordinances or governmental regulations, except to the extent that a notice of the enforcement thereof or a notice of a defect, lien or encumbrance resulting from a violation or alleged violation affecting the land has been recorded in the public records at Date of Policy.
(b) Any governmental police power not excluded by (a) above, except to the extent that a notice of the exercise thereof or a notice of a defect, lien or encumbrance resulting from a violation or alleged violation affecting the land has been recorded in the public records at Date of Policy.
2. Rights of eminent domain unless notice of the exercise thereof has been recorded in the public records at Date of Policy, but not excluding from coverage any taking which has occurred prior to Date of Policy which would be binding on the rights of a purchaser for value without knowledge.
3. Defects, liens, encumbrances, adverse claims, or other matters:
(a) created, suffered, assumed or agreed to by the insured claimant;
(b) not known to the Company, not recorded in the public records at Date of Policy, but known to the insured claimant and not disclosed in writing to the Company by the insured claimant prior to the date the insured claimant became an insured under this policy;
(c) resulting in no loss or damage to the insured claimant;
(d) attaching or created subsequent to Date of Policy; or

(e) resulting in loss or damage which would not have been sustained if the insured claimant had paid value for the estate or interest insured by this policy.

4. Any claim, which arises out of the transaction vesting in the insured the estate or interest insured by this policy, by reason of the operation of federal bankruptcy, state insolvency, or similar creditors' rights laws, that is based on:
(i) the transaction creating the estate or interest insured by this policy being deemed a fraudulent conveyance or fraudulent transfer; or
(ii) the transaction creating the estate or interest insured by this policy being deemed a preferential transfer except where the preferential transfer results from the failure:
(a) to timely record the instrument of transfer; or
(b) of such recordation to impart notice to a purchaser for value or a judgment or lien creditor.

9. AMERICAN LAND TITLE ASSOCIATION OWNER'S POLICY - 1992 WITH REGIONAL EXCEPTIONS

When the American Land Title Association policy is used as a Standard Coverage Policy and not as an Extended Coverage Policy the exclusions set forth in paragraph 8 above are used and the following exceptions to coverage appear in the policy.

SCHEDULE B

This policy does not insure against loss or damage (and the Company will not pay costs, attorneys' fees or expenses) which arise by reason of:
Part One:

1. Taxes or assessments which are not shown as existing liens by the records of any taxing authority that levies taxes or assessments on real property or by the public records.
2. Any facts, rights, interests, or claims which are not shown by the public records but which could be ascertained by an inspection of said land or by making inquiry of persons in possession thereof.
3. Easements, claims of easement or encumbrances which are not shown by the public records.
4. Discrepancies, conflicts in boundary lines, shortage in area, encroachments, or any other facts which a correct survey would disclose, and which are not shown by public records.
5. Unpatented mining claims; reservations or exceptions in patents or in Acts authorizing the issuance thereof; water rights, claims or title to water.
6. Any lien, or right to a lien, for services, labor or material theretofore or hereafter furnished, imposed by law and not shown by the public records.

ALTA RESIDENTIAL TITLE INSURANCE POLICY (6-1-87)

EXCLUSIONS

In addition to the Exceptions in Schedule B, you are not insured against loss, costs, attorneys' fees, and expenses resulting from:

1. Governmental police power, and the existence or violation of any law or government regulation. This includes building and zoning ordinances and also laws and regulations concerning:
   (a) and use
   (b) improvements on the land
   (c) and division
   (d) environmental protection

   This exclusion does not apply to violations or the enforcement of these matters which appear in the public records at Policy Date.
   This exclusion does not limit the zoning coverage described in Items 12 and 13 of Covered Title Risks.
2. The right to take the land by condemning it, unless:
   (a) a notice of exercising the right appears in the public records on the Policy Date
   (b) the taking happened prior to the Policy Date and is binding on you if you bought the land without knowing of the taking
3. Title Risks:
   (a) that are created, allowed, or agreed to by you
   (b) that are known to you, but not to us, on the Policy Date -- unless they appeared in the public records
   (c) that result in no loss to you
   (d) that first affect your title after the Policy Date -- this does not limit the labor and material lien coverage in Item 8 of Covered Title Risks
4. Failure to pay value for your title.
5. Lack of a right:
   (a) to any land outside the area specifically described and referred to in Item 3 of Schedule A OR
   (b) in streets, alleys, or waterways that touch your land
   This exclusion does not limit the access coverage in Item 5 of Covered Title Risks.

11. EAGLE PROTECTION OWNER'S POLICY

CLTA HOMEOWNER'S POLICY OF TITLE INSURANCE - 1998
ALTA HOMEOWNER'S POLICY OF TITLE INSURANCE - 1998

Covered Risks 14 (Subdivision Law Violation). 15 (Building Permit). 16 (Zoning) and 18 (Encroachment of boundary walls or fences) are subject to Deductible Amounts and Maximum Dollar Limits of Liability

EXCLUSIONS

In addition to the Exceptions in Schedule B, you are not insured against loss, costs, attorneys' fees, and expenses resulting from:

1. Governmental police power, and the existence or violation of any law or government regulation. This includes ordinances, laws and regulations concerning:
   a. building
   b. zoning
   c. land use
   d. improvements on the land
   e. land division
   f. environmental protection

   This exclusion does not apply to violations or the enforcement of these matters if notice of the violation or enforcement appears in the Public Records at the Policy Date.
   This exclusion does not limit the coverage described in Covered Risk 14, 15, 16, 17 or 24.
2. The failure of Your existing structures, or any part of them, to be constructed in accordance with applicable building codes. This Exclusion does not apply to violations of building codes if notice of the violation appears in the Public Records at the Policy Date.
3. The right to take the Land by condemning it, unless:
   a. a notice of exercising the right appears in the Public Records at the Policy Date; or
   b. the taking happened before the Policy Date and is binding on You if You bought the Land without Knowing of the taking.
4. Risks:
   a. that are created, allowed, or agreed to by You, whether or not they appear in the Public Records;
   b. that are Known to You at the Policy Date, but not to Us, unless they appear in the Public Records at the Policy Date;
   c. that result in no loss to You; or
   d. that first occur after the Policy Date - this does not limit the coverage described in Covered Risk 7, 8.d, 22, 23, 24 or 25.
5. Failure to pay value for Your Title.
6. Lack of a right:
   a. to any Land outside the area specifically described and referred to in paragraph 3 of Schedule A; and
   b. in streets, alleys, or waterways that touch the Land.
   This exclusion does not limit the coverage described in Covered Risk 11 or 18.

12. THIRD GENERATION EAGLE LOAN POLICY AMERICAN LAND TITLE ASSOCIATION EXPANDED COVERAGE RESIDENTIAL LOAN POLICY (1/01/08)

EXCLUSIONS FROM COVERAGE

The following matters are expressly excluded from the coverage of this policy and the Company will not pay loss or damage, costs, attorneys' fees or expenses which arise by reason of:

1. (a) Any law, ordinance, permit, or governmental regulation (including those relating to building and zoning) restricting, regulating, prohibiting, or relating to (i) the occupancy, use, or enjoyment of the Land; (ii) the character, dimensions, or location of any improvement erected on the Land; (iii) the subdivision of land; or(iv) environmental protection; or the effect of any violation of these laws, ordinances, or governmental regulations. This Exclusion 1(a) does not modify or limit the coverage provided under Covered Risk 5, 6, 13(c), 13(d), 14 or 16.
   (b)Any governmental police power. This Exclusion 1(b) does not modify or limit the coverage provided under Covered Risk 5, 6, 13(c), 13(d), 14 or 16.
2. Rights of eminent domain. This Exclusion does not modify or limit the coverage provided under Covered Risk 7 or 8.
3. Defects, liens, encumbrances, adverse claims, or other matters
   (a) created, suffered, assumed or agreed to by the Insured Claimant;
   (b) not Known to the Company, not recorded in the Public Records at Date of Policy, but Known to the Insured Claimant and not disclosed in writing to the Company by the Insured Claimant prior to the date the Insured Claimant became an Insured under this policy;
   (c) resulting in no loss or damage to the Insured Claimant;
   (d) attaching or created subsequent to Date of Policy (however, this does not modify or limit the coverage provided under Covered Risk 11, 16, 17, 18, 19, 20, 21, 22, 23, 24, 27 or 28); or
   (e) resulting in loss or damage which would not have been sustained if the Insured Claimant had paid value for the Insured Mortgage.
4. Unenforceability of the lien of the Insured Mortgage because of the inability or failure of an Insured to comply with applicable doing business laws of the state where the Land is situated.
5. Invalidity or unenforceability in whole or in part of the lien of the Insured Mortgage that arises out of the transaction evidenced by the Insured Mortgage and is based upon usury, or any consumer credit protection or truth-in-lending law. This Exclusion does not modify or limit the coverage provided in Covered Risk 26.
6. Any claim of invalidity, unenforceability or lack of priority of the lien of the Insured Mortgage as to Advances or modifications made after the Insured has Knowledge that the vestee shown in Schedule A is no longer the owner of the estate or interest covered by this policy. This Exclusion does not modify or limit the coverage provided in Covered Risk 11.
7. Any lien on the Title for real estate taxes or assessments imposed by governmental authority and created or attaching subsequent to Date of Policy. This Exclusion does not modify or limit the coverage provided in Covered Risk 11(b) or 25.
8. The failure of the residential structure, or any portion of it, to have been constructed before, on or after Date of Policy in accordance with applicable building codes. This Exclusion does not modify or limit the coverage provided in Covered Risk 5 or 6.

13. AMERICAN LAND TITLE ASSOCIATION LOAN POLICY - 2006
EXCLUSIONS FROM COVERAGE

The following matters are expressly excluded from the coverage of this policy, and the Company will not pay loss or damage, costs, attorneys' fees, or

expenses that arise by reason of:

1. (a) Any law, ordinance, permit, or governmental regulation (including those relating to building and zoning) restricting, regulating, prohibiting, or relating to

   (i) the occupancy, use, or enjoyment of the Land;

   (ii) the character, dimensions, or location of any improvement erected on the Land;

   (iii) the subdivision of land; or

   (iv) environmental protection;

   or the effect of any violation of these laws, ordinances, or governmental regulations. This Exclusion 1(a) does not modify or limit the coverage provided under Covered Risk 5.

   (b) Any governmental police power. This Exclusion 1(b) does not modify or limit the coverage provided under Covered Risk 6.

2. Rights of eminent domain. This Exclusion does not modify or limit the coverage provided under Covered Risk 7 or 8.

3. Defects, liens, encumbrances, adverse claims, or other matters

   (a) created, suffered, assumed, or agreed to by the Insured Claimant;

   (b) not Known to the Company, not recorded in the Public Records at Date of Policy, but Known to the Insured Claimant and not disclosed in writing to the Company by the Insured Claimant prior to the date the Insured Claimant became an Insured under this policy;

   (c) resulting in no loss or damage to the Insured Claimant;

   (d) attaching or created subsequent to Date of Policy (however, this does not modify or limit the coverage provided under Covered Risk 11, 13, or 14); or

   (e) resulting in loss or damage that would not have been sustained if the Insured Claimant had paid value for the Insured Mortgage.

4. Unenforceability of the lien of the Insured Mortgage because of the inability or failure of an Insured to comply with applicable doing-business laws of the state where the Land is situated.

5. Invalidity or unenforceability in whole or in part of the lien of the Insured Mortgage that arises out of the transaction evidenced by the Insured Mortgage and is based upon usury or any consumer credit protection or truth-in-lending law.

6. Any claim, by reason of the operation of federal bankruptcy, state insolvency, or similar creditors' rights laws, that the transaction creating the lien of the Insured Mortgage, is

   (a) a fraudulent conveyance or fraudulent transfer, or

   (b) a preferential transfer for any reason not stated in Covered Risk 13(b) of this policy.

7. Any lien on the Title for real estate taxes or assessments imposed by governmental authority and created or attaching between Date of Policy and the date of recording of the Insured Mortgage in the Public Records. This Exclusion does not modify or limit the coverage provided under Covered Risk 11(b).

14. AMERICAN LAND TITLE ASSOCIATION LOAN POLICY - 2006 WITH REGIONAL EXCEPTIONS

When the American Land Title Association policy is used as a Standard Coverage Policy and not as an Extended Coverage Policy the exclusions set forth in paragraph 13 above are used and the following exceptions to coverage appear in the policy.

SCHEDULE B

This policy does not insure against loss or damage (and the Company will not pay costs, attorneys' fees or expenses) which arise by reason of:

1. (a) Taxes or assessments that are not shown as existing liens by the records of any taxing authority that levies taxes or assessments on real property or by the Public Records; (b) proceedings by a public agency that may result in taxes or assessments, or notices of such proceedings, whether or not shown by the records of such agency or by the Public Records.

2. Any facts, rights, interests, or claims that are not shown by the Public Records but that could be ascertained by an inspection of the Land or that may be asserted by persons in possession of the Land.

3. Easements, liens or encumbrances, or claims thereof, not shown by the Public Records.

4. Any encroachment, encumbrance, violation, variation, or adverse circumstance affecting the Title that would be disclosed by an accurate and complete land survey of the Land and not shown by the Public Records.

5. (a) Unpatented mining claims; (b) reservations or exceptions in patents or in Acts authorizing the issuance thereof; (c) water rights, claims or title to water, whether or not the matters excepted under (a), (b), or (c) are shown by the Public Records.

15. AMERICAN LAND TITLE ASSOCIATION OWNER'S POLICY - 2006 EXCLUSIONS FROM COVERAGE

The following matters are expressly excluded from the coverage of this policy and the Company will not pay loss or damage, costs, attorneys' fees or expenses which arise by reason of:

1. (a) Any law, ordinance, permit, or governmental regulation (including those relating to building and zoning) restricting, regulating, prohibiting, or relating to

   (i) the occupancy, use, or enjoyment of the Land;

   (ii) the character, dimensions, or location of any improvement erected on the Land;

   (iii) the subdivision of land; or

   (iv) environmental protection;or the effect of any violation of these laws, ordinances, or governmental regulations. This Exclusion 1(a) does not modify or limit the coverage provided under Covered Risk 5.

(b) Any governmental police power. This Exclusion 1(b) does not modify or limit the coverage provided under Covered Risk 6.

2. Rights of eminent domain. This Exclusion does not modify or limit the coverage provided under Covered Risk 7 or 8.

3. Defects, liens, encumbrances, adverse claims, or other matters

(a) created, suffered, assumed, or agreed to by the Insured Claimant;

(b) not Known to the Company, not recorded in the Public Records at Date of Policy, but Known to the Insured Claimant and not disclosed in writing to the Company by the Insured Claimant prior to the date the Insured Claimant became an Insured under this policy;

(c) resulting in no loss or damage to the Insured Claimant;

(d) attaching or created subsequent to Date of Policy (however, this does not modify or limit the coverage provided under Covered Risks 9 and 10); or

(e) resulting in loss or damage that would not have been sustained if the Insured Claimant had paid value for the Title.

4. Any claim, by reason of the operation of federal bankruptcy, state insolvency, or similar creditors rights laws, that the transaction vesting the Title as shown in Schedule A, is

(a) a fraudulent conveyance or fraudulent transfer; or

(b) a preferential transfer for any reason not stated in Covered Risk 9 of this policy.

5. Any lien on the Title for real estate taxes or assessments imposed by governmental authority and created or attaching between Date of Policy and the date of recording of the deed or other instrument of transfer in the Public Records that vests Title as shown in Schedule A.

16. AMERICAN LAND TITLE ASSOCIATION OWNER'S POLICY - 2006 WITH REGIONAL EXCEPTIONS

When the American Land Title Association policy is used as a Standard Coverage Policy and not as an Extended Coverage Policy the exclusions set forth in paragraph 15 above are used and the following exceptions to coverage appear in the policy.

SCHEDULE B

This policy does not insure against loss or damage (and the Company will not pay costs, attorneys' fees or expenses) which arise by reason of:

1. (a) Taxes or assessments that are not shown as existing liens by the records of any taxing authority that levies taxes or assessments on real property or by the Public Records; (b) proceedings by a public agency that may result in taxes or assessments, or notices of such proceedings, whether or not shown by the records of such agency or by the Public Records.
2. Any facts, rights, interests, or claims that are not shown by the Public Records but that could be ascertained by an inspection of the Land or that may be asserted by persons in possession of the Land.
3. Easements, liens or encumbrances, or claims thereof, not shown by the Public Records.
4. Any encroachment, encumbrance, violation, variation, or adverse circumstance affecting the Title that would be disclosed by an accurate and complete land survey of the Land and not shown by the Public Records.
5. (a) Unpatented mining claims; (b) reservations or exceptions in patents or in Acts authorizing the issuance thereof; (c) water rights, claims or title to water, whether or not the matters excepted under (a), (b), or (c) are shown by the Public Records.

First American Title Insurance Company

National Commercial Services

666 Third Avenue, 5th Floor
New York, NY 10017

April 25, 2017

John Warren
Intersect Power
Embarcadero Center , 7th Floor
San Francisco, CA 94111

Order Number: 3020-847296

Owner: Robert R. Freedlander

Property: Vacant Land/ APN: 811-170-007, 811-170-008, 811-170-009, ,
CA

Attached please find the following item(s):

Commitment

Thank You for your confidence and support. We at First American Title Insurance Company maintain the fundamental principle:

Customer First!

First American Title Insurance Company

INFORMATION

The Title Insurance Commitment is a legal contract between you and the company. It is issued to show the basis on which we will issue a Title Insurance Policy to you. The Policy will insure you against certain risks to the land title, subject to the limitations shown in the policy.

The Company will give you a sample of the Policy form, if you ask.

The Commitment is based on the land title as of the Commitment Date. Any changes in the land title or the transaction may affect the Commitment and the Policy.

The Commitment is subject to its Requirements, Exceptions and Conditions.

This information is not part of the title insurance commitment.

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YOU SHOULD READ THE COMMITMENT VERY CAREFULLY.
If you have any questions about the Commitment,
please contact the issuing office.

COMMITMENT FOR TITLE INSURANCE

Issued by

First American Title Insurance Company

Agreement to Issue Policy

We agree to issue a policy to you according to the terms of this Commitment.

When we show the policy amount and your name as the proposed insured in Schedule A, this Commitment becomes effective as of the Commitment Date shown in Schedule A.

If the Requirements shown in this Commitment have not been met within six months after the Commitment Date, our obligation under this Commitment will end. Also, our obligation under this Commitment will end when the Policy is issued and then our obligation to you will be under the Policy.

Our obligation under this Commitment is limited by the following:

The Provisions in Schedule A.

The Requirements in Schedule B-1.

The Exceptions in Schedule B-2.

The Conditions.

This Commitment is not valid without Schedule A and Sections 1 and 2 of Schedule B.

SCHEDULE A

1. Commitment Date: April 19, 2017 at 7:30 A.M.

2. Policy or Policies to be issued: Amount

(A) ALTA Owner's Policy $To Be Determined
ALTA Standard Owner Policy

Proposed Insured:

To Be Determined

(B) ALTA Loan Policy $To Be Determined
To Be Determined

Proposed Insured:

To Be Determined

3. (A) The estate or interest in the land described in this Commitment is:

FEE

(B) Title to said estate or interest at the date hereof is vested in:

Robert R. Freedlander, a married man as his sole and separate property

4. The land referred to in this Commitment is situated in the unincorporated area of the County of Riverside, State of California, and is described as follows:

PARCEL 1:

THE MOST NORTHERLY RECTANGULAR ONE-THIRD (THE SOUTHERLY LINE OF SAID PARCEL BEING PARALLEL WITH THE NORTHERLY LINE THEREOF) OF THE MOST WESTERLY RECTANGULAR ONE-THIRD OF THE SOUTH HALF OF SECTION 17, TOWNSHIP 5 SOUTH, RANGE 16 EAST, SAN BERNARDINO BASE AND MERIDIAN.

PARCEL 2:

THE MOST NORTHERLY RECTANGULAR TWO-THIRDS (THE SOUTHERLY LINE OF SAID PARCEL BEING PARALLEL WITH THE NORTHERLY LINE THEREOF) OF THE MOST WESTERLY RECTANGULAR ONE-THIRD OF THE SOUTH HALF OF SECTION 17, TOWNSHIP 5 SOUTH, RANGE 16 EAST, SAN BERNARDINO BASE AND MERIDIAN.

EXCEPTING THEREFROM THE MOST NORTHERLY RECTANGULAR ONE-THIRD (THE SOUTHERLY LINE OF SAID PARCEL BEING PARALLEL WITH THE NORTHERLY LINE THEREOF) OF THE SAID MOST WESTERLY RECTANGULAR ONE-THIRD OF THE SOUTH HALF OF SAID SECTION 17, TOWNSHIP 5 SOUTH, RANGE 16 EAST, SAN BERNARDINO BASE AND MERIDIAN.

PARCEL 3:

MOST OF THE SOUTHERLY RECTANGULAR ONE-THIRD AND THE NORTHERLY LINE OF SUCH PARCEL TO BE PARALLEL WITH THE SOUTH LINE THEN OF THE MOST WESTERLY RECTANGULAR ONE-THIRD OF THE SOUTH ONE-HALF OF SECTION 17, TOWNSHIP 5 SOUTH, RANGE 16 EAST, SAN BERNARDINO BASE AND MERIDIAN.

APNs:

811-170-007-1 (Affects Parcel 2)
811-170-008-2 (Affects Parcel 3)
811-170-009-3 (Affects Parcel 1)

SCHEDULE B

SECTION ONE

REQUIREMENTS

The following requirements must be met:

(A) Pay the agreed amounts for the interest in the land and/or the mortgage to be insured.

(B) Pay us the premiums, fees and charges for the policy.

(C) Documents satisfactory to us creating the interest in the land and/or the mortgage to be insured must be signed, delivered and recorded.

(D) You must tell us in writing the name of anyone not referred to in this Commitment who will get an interest in the land or who will make a loan on the land. We may then make additional requirements or exceptions.

(E) Releases(s) or Reconveyance(s) of Item(s): 5, 6 and 7

(F) Other: None

(G) You must give us the following information:
1. Any off record leases, surveys, etc.
2. Statement(s) of Identity, all parties.
3. Other: None

The following additional requirements, as indicated by "X", must be met:

[X] (H) Provide information regarding any off-record matters, which may include, but are not limited to: leases, recent works of improvement, or commitment statements in effect under the Environmental Responsibility Acceptance Act, Civil Code Section 850, et seq.

The Company's Owner's Affidavit form (as provided by company) must be completed and submitted prior to close in order to satisfy this requirement. This Commitment will then be subject to such further exceptions and/or requirements as may be deemed necessary.

[] (I) An ALTA/NSPS survey of recent date, which complies with the current minimum standard detail requirements for ALTA/NSPS land title surveys, must be submitted to the Company for review. This Commitment will then be subject to such further exceptions and/or requirements as may be deemed necessary.

[] (J) The following LLC documentation is required:
(i) a copy of the Articles of Organization
(ii) a copy of the Operating Agreement, if applicable
(iii) a Certificate of Good Standing and/or other evidence of current Authority to Conduct Business within the State
(iv) express Company Consent to the current transaction

[] (K) The following partnership documentation is required **:**
(i) a copy of the partnership agreement, including all applicable amendments thereto
(ii) a Certificate of Good Standing and/or other evidence of current Authority to Conduct Business within the State
(iii) express Partnership Consent to the current transaction

[] (L) The following corporation documentation is required:
(i) a copy of the Articles of Incorporation
(ii) a copy of the Bylaws, including all applicable Amendments thereto
(iii) a Certificate of Good Standing and/or other evidence of current Authority to Conduct Business within the State
(iv) express Corporate Resolution consenting to the current transaction

[] (M) Based upon the Company's review of that certain partnership/operating agreement dated **Not disclosed** for the proposed insured herein, the following requirements must be met:

Any further amendments to said agreement must be submitted to the Company, together with an affidavit from one of the general partners or members stating that it is a true copy, that said partnership or limited liability company is in full force and effect, and that there have been no further amendments to the agreement. This Commitment will then be subject to such further requirements as may be deemed necessary.

[] (N) A copy of the complete lease, as referenced in Schedule A, #3 herein, together with any amendments and/or assignments thereto, must be submitted to the Company for review, along with an affidavit executed by the present lessee stating that it is a true copy, that the lease is in full force and effect, and that there have been no further amendments to the lease. This Commitment will then be subject to such further requirements as may be deemed necessary.

[X] (O) Approval from the Company's Underwriting Department must be obtained for issuance of the policy contemplated herein and any endorsements requested thereunder. This Commitment will then be subject to such further requirements as may be required to obtain such approval.

[] (P) Potential additional requirements, if ALTA Extended coverage is contemplated hereunder, and work on the land has commenced prior to close, some or all of the following requirements, and any other requirements which may be deemed necessary, may need to be met:

[] (Q) The Company's "Indemnity Agreement I" must be executed by the appropriate parties.

[] (R) Financial statements from the appropriate parties must be submitted to the Company for review.

[] (S) A copy of the construction contract must be submitted to the Company for review.

[] (T) An inspection of the land must be performed by the Company for verification of the phase of construction.

[] (U) The Company's "Mechanic's Lien Risk Addendum" form must be completed by a Company employee, based upon information furnished by the appropriate parties involved.

SCHEDULE B

SECTION TWO

EXCEPTIONS

Any policy we issue will have the following exceptions unless they are taken care of to our satisfaction. The printed exceptions and exclusions from the coverage of the policy or policies are set forth in Exhibit A attached. Copies of the policy forms should be read. They are available from the office which issued this Commitment.

1. General and special taxes and assessments for the fiscal year 2017-2018, a lien not yet due or payable.

2. The lien of supplemental taxes, if any, assessed pursuant to Chapter 3.5 commencing with Section 75 of the California Revenue and Taxation Code.

3. A right of way for ditches and canals as reserved by the United States of America in the patent recorded April 24, 1956 in Book 1901 of Patents, Page 251.

4. An easement for ingress to and egress from transmission lines and circuits and incidental purposes in the document recorded July 17, 1957 as Book 2120, Page 159 of Official Records.

   The location of the easement cannot be determined from record information.

5. A deed of trust to secure an original indebtedness of $10,000.00 recorded May 02, 1979 as Instrument No. 88569 of Official Records.

Dated:	March 29, 1979
Trustor:	Randall Glen Ramos and Miriam Bonnie Ramos, husband and wife, as community property
Trustee:	United California Bank, a California corporation
Beneficiary:	Inez D. Helms, a single woman

   (Affects Parcel 2)

   A document recorded February 14, 1983 as Instrument No. 27536 of Official Records provides that Cimarron Service Corporation, a California corporation was substituted as trustee under the deed of trust.

6. A deed of trust to secure an original indebtedness of $10,000.00 recorded July 25, 1979 as Instrument No. 155969 of Official Records.

Dated:	April 06, 1979
Trustor:	Randall Glen Ramos and Miriam Bonnie Ramos, husband and wife, as community property
Trustee:	United California Bank, a California corporation
Beneficiary:	Vernon L. Paine and Christine Paine, husband and wife

(Affects Parcel 1)

A document recorded February 14, 1983 as Instrument No. 27538 of Official Records provides that Cimarron Service Corporation, a California corporation was substituted as trustee under the deed of trust.

7. A deed of trust to secure an original indebtedness of $10,000.00 recorded August 03, 1979 as Instrument No. 163664 of Official Records.

Dated:	March 26, 1979
Trustor:	George Fitzpatrick & Candace S. Fitzpatrick, husband and wife as joint tenants
Trustee:	Western Mutual Corporation, a California corporation
Beneficiary:	Floyd M. Paine, a widower

(Affects Parcel 3)

The beneficial interest in the Deed of Trust was assigned to Maurice P. Brotherton and M. Lucille Brotherton, husband and wife as joint tenants by mesne instruments of record, the last of which recorded November 02, 1982 as Instrument No. 190009 of Official Records

8. Rights of the public in and to that portion of the land lying within any road, street and/or highway.

9. Any claim that the Title is subject to a trust or lien created under The Perishable Agricultural Commodities Act, 1930 (7 U.S.C. §§499a, et seq.) or the Packers and Stockyards Act (7 U.S.C. §§181 et seq.) or under similar state laws.

10. Water rights, claims or title to water, whether or not shown by the public records.

11. Rights of parties in possession.

INFORMATIONAL NOTES

1. Taxes for proration purposes only for the fiscal year 2016-2017.
   First Installment: $150.14, PAID
   Second Installment: $150.14, PAID
   Tax Rate Area: 062-000
   APN: 811-170-007-1

   (Affects Parcel 2)

2. Taxes for proration purposes only for the fiscal year 2016-2017.
   First Installment: $150.14, PAID
   Second Installment: $150.14, PAID
   Tax Rate Area: 062-000
   APN: 811-170-008-2

   (Affects Parcel 3)

3. Taxes for proration purposes only for the fiscal year 2016-2017.
   First Installment: $150.14, PAID
   Second Installment: $150.14, PAID
   Tax Rate Area: 062-000
   APN: 811-170-009-3

   (Affects Parcel 1)

4. The property covered by this report is vacant land.

5. According to the public records, there has been no conveyance of the land within a period of twenty-four months prior to the date of this report, except as follows:

   None

6. This preliminary report/commitment was prepared based upon an application for a policy of title insurance that identified land by street address or assessor's parcel number only. It is the responsibility of the applicant to determine whether the land referred to herein is in fact the land that is to be described in the policy or policies to be issued.

The map attached, if any, may or may not be a survey of the land depicted hereon. First American Title Insurance Company expressly disclaims any liability for loss or damage which may result from reliance on this map except to the extent coverage for such loss or damage is expressly provided by the terms and provisions of the title insurance policy, if any, to which this map is attached.

******To obtain wire instructions for deposit of funds to your escrow file please contact your Escrow Officer.******

CONDITIONS

1. **DEFINITIONS**
(a)"Mortgage" means mortgage, deed of trust or other security instrument.
(b)"Public Records" means title records that give constructive notice of matters affecting the title according to the state law where the land is located.

2. **LATER DEFECTS**
The Exceptions in Schedule B - Section Two may be amended to show any defects, liens or encumbrances that appear for the first time in the public records or are created or attached between the Commitment Date and the date on which all of the Requirements (a) and (c) of Schedule B - Section One are met. We shall have no liability to you because of this amendment.

3. **EXISTING DEFECTS**
If any defects, liens or encumbrances existing at Commitment Date are not shown in Schedule B, we may amend Schedule B to show them. If we do amend Schedule B to show these defects, liens or encumbrances, we shall be liable to you according to Paragraph 4 below unless you knew of this information and did not tell us about it in writing.

4. **LIMITATION OF OUR LIABILITY**
Our only obligation is to issue to you the Policy referred to in this Commitment, when you have met its Requirements. If we have any liability to you for any loss you incur because of an error in this Commitment, our liability will be limited to your actual loss caused by your relying on this Commitment when you acted in good faith to:

comply with the Requirements shown in Schedule B - Section One
or
eliminate with our written consent any Exceptions shown in Schedule B - Section Two.

We shall not be liable for more than the Policy Amount shown in Schedule A of this Commitment and our liability is subject to the terms of the Policy form to be issued to you.

5. **CLAIMS MUST BE BASED ON THIS COMMITMENT**
Any claim, whether or not based on negligence, which you may have against us concerning the title to the land must be based on this commitment and is subject to its terms.

First American Title

Privacy Information

We Are Committed to Safeguarding Customer Information

In order to better serve your needs now and in the future, we may ask you to provide us with certain information. We understand that you may be concerned about what we will do with such information - particularly any personal or financial information. We agree that you have a right to know how we will utilize the personal information you provide to us. Therefore, together with our subsidiaries we have adopted this Privacy Policy to govern the use and handling of your personal information.

Applicability

This Privacy Policy governs our use of the information that you provide to us. It does not govern the manner in which we may use information we have obtained from any other source, such as information obtained from a public record or from another person or entity. First American has also adopted broader guidelines that govern our use of personal information regardless of its source. First American calls these guidelines its Fair Information Values.

Types of Information

Depending upon which of our services you are utilizing, the types of nonpublic personal information that we may collect include:

- Information we receive from you on applications, forms and in other communications to us, whether in writing, in person, by telephone or any other means;
- Information about your transactions with us, our affiliated companies, or others; and
- Information we receive from a consumer reporting agency.

Use of Information

We request information from you for our own legitimate business purposes and not for the benefit of any nonaffiliated party. Therefore, we will not release your information to nonaffiliated parties except: (1) as necessary for us to provide the product or service you have requested of us; or (2) as permitted by law. We may, however, store such information indefinitely, including the period after which any customer relationship has ceased. Such information may be used for any internal purpose, such as quality control efforts or customer analysis. We may also provide all of the types of nonpublic personal information listed above to one or more of our affiliated companies. Such affiliated companies include financial service providers, such as title insurers, property and casualty insurers, and trust and investment advisory companies, or companies involved in real estate services, such as appraisal companies, home warranty companies and escrow companies. Furthermore, we may also provide all the information we collect, as described above, to companies that perform marketing services on our behalf, on behalf of our affiliated companies or to other financial institutions with whom we or our affiliated companies have joint marketing agreements.

Former Customers

Even if you are no longer our customer, our Privacy Policy will continue to apply to you.

Confidentiality and Security

We will use our best efforts to ensure that no unauthorized parties have access to any of your information. We restrict access to nonpublic personal information about you to those individuals and entities who need to know that information to provide products or services to you. We will use our best efforts to train and oversee our employees and agents to ensure that your information will be handled responsibly and in accordance with this Privacy Policy and First American's Fair Information Values. We currently maintain physical, electronic, and procedural safeguards that comply with federal regulations to guard your nonpublic personal information.

Information Obtained Through Our Web Site

First American Financial Corporation is sensitive to privacy issues on the Internet. We believe it is important you know how we treat the information about you we receive on the Internet.

In general, you can visit First American or its affiliates' Web sites on the World Wide Web without telling us who you are or revealing any information about yourself. Our Web servers collect the domain names, not the e-mail addresses, of visitors. This information is aggregated to measure the number of visits, average time spent on the site, pages viewed and similar information. First American uses this information to measure the use of our site and to develop ideas to improve the content of our site.

There are times, however, when we may need information from you, such as your name and email address. When information is needed, we will use our best efforts to let you know at the time of collection how we will use the personal information. Usually, the personal information we collect is used only by us to respond to your inquiry, process an order or allow you to access specific account/profile information. If you choose to share any personal information with us, we will only use it in accordance with the policies outlined above.

Business Relationships

First American Financial Corporation's site and its affiliates' sites may contain links to other Web sites. While we try to link only to sites that share our high standards and respect for privacy, we are not responsible for the content or the privacy practices employed by other sites.

Cookies

Some of First American's Web sites may make use of "cookie" technology to measure site activity and to customize information to your personal tastes. A cookie is an element of data that a Web site can send to your browser, which may then store the cookie on your hard drive.

FirstAm.com uses stored cookies. The goal of this technology is to better serve you when visiting our site, save you time when you are here and to provide you with a more meaningful and productive Web site experience.

Fair Information Values

Fairness We consider consumer expectations about their privacy in all our businesses. We only offer products and services that assure a favorable balance between consumer benefits and consumer privacy.

Public Record We believe that an open public record creates significant value for society, enhances consumer choice and creates consumer opportunity. We actively support an open public record and emphasize its importance and contribution to our economy.

Use We believe we should behave responsibly when we use information about a consumer in our business. We will obey the laws governing the collection, use and dissemination of data.

Accuracy We will take reasonable steps to help assure the accuracy of the data we collect, use and disseminate. Where possible, we will take reasonable steps to correct inaccurate information. When, as with the public record, we cannot correct inaccurate information, we will take all reasonable steps to assist consumers in identifying the source of the erroneous data so that the consumer can secure the required corrections.

Education We endeavor to educate the users of our products and services, our employees and others in our industry about the importance of consumer privacy. We will instruct our employees on our fair information values and on the responsible collection and use of data. We will encourage others in our industry to collect and use information in a responsible manner.

Security We will maintain appropriate facilities and systems to protect against unauthorized access to and corruption of the data we maintain.

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EXHIBIT A
LIST OF PRINTED EXCEPTIONS AND EXCLUSIONS (BY POLICY TYPE)

1. CALIFORNIA LAND TITLE ASSOCIATION STANDARD COVERAGE POLICY - 1990
SCHEDULE B

EXCEPTIONS FROM COVERAGE

This policy does not insure against loss or damage (and the Company will not pay costs, attorneys' fees or expenses) which arise by reason of:

1. Taxes or assessments which are not shown as existing liens by the records of any taxing authority that levies taxes or assessments on real property or by the public records. Proceedings by a public agency which may result in taxes or assessments, or notice of such proceedings, whether or not shown by the records of such agency or by the public records.
2. Any facts, rights, interests, or claims which are not shown by the public records but which could be ascertained by an inspection of the land or which may be asserted by persons in possession thereof.
3. Easements, liens or encumbrances, or claims thereof, which are not shown by the public records.
4. Discrepancies, conflicts in boundary lines, shortage in area, encroachments, or any other facts which a correct survey would disclose, and which are not shown by the public records.
5. (a) Unpatented mining claims; (b) reservations or exceptions in patents or in Acts authorizing the issuance thereof; (c) water rights, claims or title to water, whether or not the matters excepted under (a), (b), or (c) are shown by the public records.

EXCLUSIONS FROM COVERAGE

The following matters are expressly excluded from the coverage of this policy and the Company will not pay loss or damage, costs, attorneys' fees or expenses which arise by reason of:

1. (a) Any law, ordinance or governmental regulation (including but not limited to building and zoning laws, ordinances, or regulations) restricting, regulating, prohibiting or relating to (i) the occupancy, use, or enjoyment of the land; (ii) the character, dimensions or location of any improvement now or hereafter erected on the land; (iii) a separation in ownership or a change in the dimensions or area of the land or any parcel of which the land is or was a part; or (iv) environmental protection, or the effect of any violation of these laws, ordinances or governmental regulations, except to the extent that a notice of the enforcement thereof or a notice of a defect, lien or encumbrance resulting from a violation or alleged violation affecting the land has been recorded in the public records at Date of Policy.
   (b) Any governmental police power not excluded by (a) above, except to the extent that a notice of the exercise thereof or a notice of a defect, lien or encumbrance resulting from a violation or alleged violation affecting the land has been recorded in the public records at Date of Policy.
2. Rights of eminent domain unless notice of the exercise thereof has been recorded in the public records at Date of Policy, but not excluding from coverage any taking which has occurred prior to Date of Policy which would be binding on the rights of a purchaser for value without knowledge.
3. Defects, liens, encumbrances, adverse claims or other matters:
   (a) whether or not recorded in the public records at Date of Policy, but created, suffered, assumed or agreed to by the insured claimant;
   (b) not known to the Company, not recorded in the public records at Date of Policy, but known to the insured claimant and not disclosed in writing to the Company by the insured claimant prior to the date the insured claimant became an insured under this policy;
   (c) resulting in no loss or damage to the insured claimant;
   (d) attaching or created subsequent to Date of Policy; or
   (e) resulting in loss or damage which would not have been sustained if the insured claimant had paid value for the insured mortgage or for the estate or interest insured by this policy.
4. Unenforceability of the lien of the insured mortgage because of the inability or failure of the insured at Date of Policy, or the inability or failure of any subsequent owner of the indebtedness, to comply with applicable "doing business" laws of the state in which the land is situated.
5. Invalidity or unenforceability of the lien of the insured mortgage, or claim thereof, which arises out of the transaction evidenced by the insured mortgage and is based upon usury or any consumer credit protection or truth in lending law.
6. Any claim, which arises out of the transaction vesting in the insured the estate or interest insured by their policy or the transaction creating the interest of the insured lender, by reason of the operation of federal bankruptcy, state insolvency or similar creditors' rights laws.

2. AMERICAN LAND TITLE ASSOCIATION OWNER'S POLICY FORM B - 1970
SCHEDULE OF EXCLUSIONS FROM COVERAGE

1. Any law, ordinance or governmental regulation (including but not limited to building and zoning ordinances) restricting or regulating or prohibiting the occupancy, use or enjoyment of the land, or regulating the character, dimensions or location of any improvement now or hereafter erected on the land, or prohibiting a separation in ownership or a reduction in the dimensions of area of the land, or the effect of any violation of any such law, ordinance or governmental regulation.
2. Rights of eminent domain or governmental rights of police power unless notice of the exercise of such rights appears in the public records at Date of Policy.
3. Defects, liens, encumbrances, adverse claims, or other matters (a) created, suffered, assumed or agreed to by the insured claimant; (b) not known to the Company and not shown by the public records but known to the insured claimant either at Date of Policy or at the date such claimant acquired an estate or interest insured by this policy and not disclosed in writing by the insured claimant to the Company prior to the date such insured claimant became an insured hereunder; (c) resulting in no loss or damage to the insured claimant; (d) attaching or created subsequent to Date of Policy; or (e) resulting in loss or damage which would not have been sustained if the insured claimant had paid value for the estate or interest insured by this policy.

3. AMERICAN LAND TITLE ASSOCIATION OWNER'S POLICY FORM B - 1970
WITH REGIONAL EXCEPTIONS

When the American Land Title Association policy is used as a Standard Coverage Policy and not as an Extended Coverage Policy the exclusions set forth in paragraph 2 above are used and the following exceptions to coverage appear in the policy.

SCHEDULE B

This policy does not insure against loss or damage by reason of the matters shown in parts one and two following:
Part One

1. Taxes or assessments which are not shown as existing liens by the records of any taxing authority that levies taxes or assessments on real property or by the public records.
2. Any facts, rights, interests, or claims which are not shown by the public records but which could be ascertained by an inspection of said land or by making inquiry of persons in possession thereof.
3. Easements, claims of easement or encumbrances which are not shown by the public records.
4. Discrepancies, conflicts in boundary lines, shortage in area, encroachments, or any other facts which a correct survey would disclose, and which are not shown by public records.
5. Unpatented mining claims; reservations or exceptions in patents or in Acts authorizing the issuance thereof; water rights, claims or title to water.
6. Any lien, or right to a lien, for services, labor or material heretofore or hereafter furnished, imposed by law and not shown by the public records.

4. AMERICAN LAND TITLE ASSOCIATION LOAN POLICY - 1970 WITH A.L.T.A. ENDORSEMENT FORM 1 COVERAGE SCHEDULE OF EXCLUSIONS FROM COVERAGE

1. Any law, ordinance or governmental regulation (including but not limited to building and zoning ordinances) restricting or regulating or prohibiting the occupancy, use or enjoyment of the land, or regulating the character, dimensions or location of any improvement now or hereafter erected on the land, or prohibiting a separation in ownership or a reduction in the dimensions or area of the land, or the effect of any violation of any such law ordinance or governmental regulation.
2. Rights of eminent domain or governmental rights of police power unless notice of the exercise of such rights appears in the public records at Date of Policy.
3. Defects, liens, encumbrances, adverse claims, or other matters (a) created, suffered, assumed or agreed to by the insured claimant, (b) not known to the Company and not shown by the public records but known to the insured claimant either at Date of Policy or at the date such claimant acquired an estate or interest insured by this policy or acquired the insured mortgage and not disclosed in writing by the insured claimant to the Company prior to the date such insured claimant became an insured hereunder, (c) resulting in no loss or damage to the insured claimant; (d) attaching or created subsequent to Date of Policy (except to the extent insurance is afforded herein as to any statutory lien for labor or material or to the extent insurance is afforded herein as to assessments for street improvements under construction or completed at Date of Policy).
4. Unenforceability of the lien of the insured mortgage because of failure of the insured at Date of Policy or of any subsequent owner of the indebtedness to comply with applicable "doing business" laws of the state in which the land is situated.

5. AMERICAN LAND TITLE ASSOCIATION LOAN POLICY - 1970 WITH REGIONAL EXCEPTIONS

When the American Land Title Association Lenders Policy is used as a Standard Coverage Policy and not as an Extended Coverage Policy, the exclusions set forth in paragraph 4 above are used and the following exceptions to coverage appear in the policy.

SCHEDULE B

This policy does not insure against loss or damage by reason of the matters shown in parts one and two following:
Part One

1. Taxes or assessments which are not shown as existing liens by the records of any taxing authority that levies taxes or assessments on real property or by the public records.
2. Any facts, rights, interests, or claims which are not shown by the public records but which could be ascertained by an inspection of said land or by making inquiry of persons in possession thereof.
3. Easements, claims of easement or encumbrances which are not shown by the public records.
4. Discrepancies, conflicts in boundary lines, shortage in area, encroachments, or any other facts which a correct survey would disclose, and which are not shown by public records.
5. Unpatented mining claims; reservations or exceptions in patents or in Acts authorizing the issuance thereof; water rights, claims or title to water.
6. Any lien, or right to a lien, for services, labor or material theretofore or hereafter furnished, imposed by law and not shown by the public records.

6. AMERICAN LAND TITLE ASSOCIATION LOAN POLICY - 1992 WITH A.L.T.A. ENDORSEMENT FORM 1 COVERAGE EXCLUSIONS FROM COVERAGE

The following matters are expressly excluded from the coverage of this policy and the Company will not pay loss or damage, costs, attorneys' fees or expenses which arise by reason of:

1. (a) Any law, ordinance or governmental regulation (including but not limited to building and zoning laws, ordinances, or regulations) restricting, regulating, prohibiting or relating to (i) the occupancy, use, or enjoyment of the land; (ii) the character, dimensions or location of any improvement now or hereafter erected on the land; (iii) a separation in ownership or a change in the dimensions or area of the land or any parcel of which the land is or was a part; or (iv) environmental protection, or the effect of any violation of these laws, ordinances or governmental regulations, except to the extent that a notice of the enforcement thereof or a notice of a defect, lien or encumbrance resulting from a violation or alleged violation affecting the land has been recorded in the public records at Date of Policy;
   (b) Any governmental police power not excluded by (a) above, except to the extent that a notice of the exercise thereof or a notice of a defect, lien or encumbrance resulting from a violation or alleged violation affecting the land has been recorded in the public records at Date of Policy.

2. Rights of eminent domain unless notice of the exercise thereof has been recorded in the public records at Date of Policy, but not excluding from coverage any taking which has occurred prior to Date of Policy which would be binding on the rights of a purchaser for value without knowledge.
3. Defects, liens, encumbrances, adverse claims, or other matters:
(a) whether or not recorded in the public records at Date of Policy, but created, suffered, assumed or agreed to by the insured claimant;
(b) not known to the Company, not recorded in the public records at Date of Policy, but known to the insured claimant and not disclosed in writing to the Company by the insured claimant prior to the date the insured claimant became an insured under this policy;
(c) resulting in no loss or damage to the insured claimant;
(d) attaching or created subsequent to Date of Policy (except to the extent that this policy insures the priority of the lien of the insured mortgage over any statutory lien for services, labor or material or the extent insurance is afforded herein as to assessments for street improvements under construction or completed at date of policy); or
(e) resulting in loss or damage which would not have been sustained if the insured claimant had paid value for the insured mortgage.
4. Unenforceability of the lien of the insured mortgage because of the inability or failure of the insured at Date of Policy, or the inability or failure of any subsequent owner of the indebtedness, to comply with the applicable "doing business" laws of the state in which the land is situated.
5. Invalidity or unenforceability of the lien of the insured mortgage, or claim thereof, which arises out of the transaction evidenced by the insured mortgage and is based upon usury or any consumer credit protection or truth in lending law.
6. Any statutory lien for services, labor or materials (or the claim of priority of any statutory lien for services, labor or materials over the lien of the insured mortgage) arising from an improvement or work related to the land which is contracted for and commenced subsequent to Date of Policy and is not financed in whole or in part by proceeds of the indebtedness secured by the insured mortgage which at Date of Policy the insured has advanced or is obligated to advance.
7. Any claim, which arises out of the transaction creating the interest of the mortgagee insured by this policy, by reason of the operation of federal bankruptcy, state insolvency, or similar creditors' rights laws, that is based on:
(i) the transaction creating the interest of the insured mortgagee being deemed a fraudulent conveyance or fraudulent transfer; or
(ii) the subordination of the interest of the insured mortgagee as a result of the application of the doctrine of equitable subordination; or
(iii) the transaction creating the interest of the insured mortgagee being deemed a preferential transfer except where the preferential transfer results from the failure:
(a) to timely record the instrument of transfer; or
(b) of such recordation to impart notice to a purchaser for value or a judgment or lien creditor.

7. AMERICAN LAND TITLE ASSOCIATION LOAN POLICY - 1992 WITH REGIONAL EXCEPTIONS

When the American Land Title Association policy is used as a Standard Coverage Policy and not as an Extended Coverage Policy the exclusions set forth in paragraph 6 above are used and the following exceptions to coverage appear in the policy.

SCHEDULE B

This policy does not insure against loss or damage (and the Company will not pay costs, attorneys' fees or expenses) which arise by reason of:
1. Taxes or assessments which are not shown as existing liens by the records of any taxing authority that levies taxes or assessments on real property or by the public records.
2. Any facts, rights, interests, or claims which are not shown by the public records but which could be ascertained by an inspection of said land or by making inquiry of persons in possession thereof.
3. Easements, claims of easement or encumbrances which are not shown by the public records.
4. Discrepancies, conflicts in boundary lines, shortage in area, encroachments, or any other facts which a correct survey would disclose, and which are not shown by public records.
5. Unpatented mining claims; reservations or exceptions in patents or in Acts authorizing the issuance thereof; water rights, claims or title to water.
6. Any lien, or right to a lien, for services, labor or material theretofore or hereafter furnished, imposed by law and not shown by the public records.

8. AMERICAN LAND TITLE ASSOCIATION OWNER'S POLICY - 1992 EXCLUSIONS FROM COVERAGE

The following matters are expressly excluded from the coverage of this policy and the Company will not pay loss or damage, costs, attorneys' fees or expenses which arise by reason of:
1. (a) Any law, ordinance or governmental regulation (including but not limited to building and zoning laws, ordinances, or regulations) restricting, regulating, prohibiting or relating to (i) the occupancy, use, or enjoyment of the land; (ii) the character, dimensions or location of any improvement now or hereafter erected on the land; (iii) a separation in ownership or a change in the dimensions or area of the land or any parcel of which the land is or was a part; or (iv) environmental protection, or the effect of any violation of these laws, ordinances or governmental regulations, except to the extent that a notice of the enforcement thereof or a notice of a defect, lien or encumbrance resulting from a violation or alleged violation affecting the land has been recorded in the public records at Date of Policy.
(b) Any governmental police power not excluded by (a) above, except to the extent that a notice of the exercise thereof or a notice of a defect, lien or encumbrance resulting from a violation or alleged violation affecting the land has been recorded in the public records at Date of Policy.
2. Rights of eminent domain unless notice of the exercise thereof has been recorded in the public records at Date of Policy, but not excluding from coverage any taking which has occurred prior to Date of Policy which would be binding on the rights of a purchaser for value without knowledge.
3. Defects, liens, encumbrances, adverse claims, or other matters:
(a) created, suffered, assumed or agreed to by the insured claimant;
(b) not known to the Company, not recorded in the public records at Date of Policy, but known to the insured claimant and not disclosed in writing to the Company by the insured claimant prior to the date the insured claimant became an insured under this policy;
(c) resulting in no loss or damage to the insured claimant;
(d) attaching or created subsequent to Date of Policy; or

(e) resulting in loss or damage which would not have been sustained if the insured claimant had paid value for the estate or interest insured by this policy.

4. Any claim, which arises out of the transaction vesting in the insured the estate or interest insured by this policy, by reason of the operation of federal bankruptcy, state insolvency, or similar creditors' rights laws, that is based on:
(i) the transaction creating the estate or interest insured by this policy being deemed a fraudulent conveyance or fraudulent transfer; or
(ii) the transaction creating the estate or interest insured by this policy being deemed a preferential transfer except where the preferential transfer results from the failure:
(a) to timely record the instrument of transfer; or
(b) of such recordation to impart notice to a purchaser for value or a judgment or lien creditor.

9. AMERICAN LAND TITLE ASSOCIATION OWNER'S POLICY - 1992 WITH REGIONAL EXCEPTIONS

When the American Land Title Association policy is used as a Standard Coverage Policy and not as an Extended Coverage Policy the exclusions set forth in paragraph 8 above are used and the following exceptions to coverage appear in the policy.

SCHEDULE B

This policy does not insure against loss or damage (and the Company will not pay costs, attorneys' fees or expenses) which arise by reason of:
Part One:

1. Taxes or assessments which are not shown as existing liens by the records of any taxing authority that levies taxes or assessments on real property or by the public records.
2. Any facts, rights, interests, or claims which are not shown by the public records but which could be ascertained by an inspection of said land or by making inquiry of persons in possession thereof.
3. Easements, claims of easement or encumbrances which are not shown by the public records.
4. Discrepancies, conflicts in boundary lines, shortage in area, encroachments, or any other facts which a correct survey would disclose, and which are not shown by public records.
5. Unpatented mining claims; reservations or exceptions in patents or in Acts authorizing the issuance thereof; water rights, claims or title to water.
6. Any lien, or right to a lien, for services, labor or material theretofore or hereafter furnished, imposed by law and not shown by the public records.

ALTA RESIDENTIAL TITLE INSURANCE POLICY (6-1-87)

EXCLUSIONS

In addition to the Exceptions in Schedule B, you are not insured against loss, costs, attorneys' fees, and expenses resulting from:

1. Governmental police power, and the existence or violation of any law or government regulation. This includes building and zoning ordinances and also laws and regulations concerning:
   (a) and use
   (b) improvements on the land
   (c) and division
   (d) environmental protection

   This exclusion does not apply to violations or the enforcement of these matters which appear in the public records at Policy Date.
   This exclusion does not limit the zoning coverage described in Items 12 and 13 of Covered Title Risks.
2. The right to take the land by condemning it, unless:
   (a) a notice of exercising the right appears in the public records on the Policy Date
   (b) the taking happened prior to the Policy Date and is binding on you if you bought the land without knowing of the taking
3. Title Risks:
   (a) that are created, allowed, or agreed to by you
   (b) that are known to you, but not to us, on the Policy Date -- unless they appeared in the public records
   (c) that result in no loss to you
   (d) that first affect your title after the Policy Date -- this does not limit the labor and material lien coverage in Item 8 of Covered Title Risks
4. Failure to pay value for your title.
5. Lack of a right:
   (a) to any land outside the area specifically described and referred to in Item 3 of Schedule A OR
   (b) in streets, alleys, or waterways that touch your land
   This exclusion does not limit the access coverage in Item 5 of Covered Title Risks.

11. EAGLE PROTECTION OWNER'S POLICY

CLTA HOMEOWNER'S POLICY OF TITLE INSURANCE - 1998
ALTA HOMEOWNER'S POLICY OF TITLE INSURANCE - 1998

Covered Risks 14 (Subdivision Law Violation). 15 (Building Permit). 16 (Zoning) and 18 (Encroachment of boundary walls or fences) are subject to Deductible Amounts and Maximum Dollar Limits of Liability

EXCLUSIONS

In addition to the Exceptions in Schedule B, you are not insured against loss, costs, attorneys' fees, and expenses resulting from:

1. Governmental police power, and the existence or violation of any law or government regulation. This includes ordinances, laws and regulations concerning:
   a. building
   b. zoning
   c. land use
   d. improvements on the land
   e. land division
   f. environmental protection

   This exclusion does not apply to violations or the enforcement of these matters if notice of the violation or enforcement appears in the Public Records at the Policy Date.
   This exclusion does not limit the coverage described in Covered Risk 14, 15, 16, 17 or 24.
2. The failure of Your existing structures, or any part of them, to be constructed in accordance with applicable building codes. This Exclusion does not apply to violations of building codes if notice of the violation appears in the Public Records at the Policy Date.
3. The right to take the Land by condemning it, unless:
   a. a notice of exercising the right appears in the Public Records at the Policy Date; or
   b. the taking happened before the Policy Date and is binding on You if You bought the Land without Knowing of the taking.
4. Risks:
   a. that are created, allowed, or agreed to by You, whether or not they appear in the Public Records;
   b. that are Known to You at the Policy Date, but not to Us, unless they appear in the Public Records at the Policy Date;
   c. that result in no loss to You; or
   d. that first occur after the Policy Date - this does not limit the coverage described in Covered Risk 7, 8.d, 22, 23, 24 or 25.
5. Failure to pay value for Your Title.
6. Lack of a right:
   a. to any Land outside the area specifically described and referred to in paragraph 3 of Schedule A; and
   b. in streets, alleys, or waterways that touch the Land.
   This exclusion does not limit the coverage described in Covered Risk 11 or 18.

12. THIRD GENERATION EAGLE LOAN POLICY AMERICAN LAND TITLE ASSOCIATION EXPANDED COVERAGE RESIDENTIAL LOAN POLICY (1/01/08)

EXCLUSIONS FROM COVERAGE

The following matters are expressly excluded from the coverage of this policy and the Company will not pay loss or damage, costs, attorneys' fees or expenses which arise by reason of:

1. (a) Any law, ordinance, permit, or governmental regulation (including those relating to building and zoning) restricting, regulating, prohibiting, or relating to (i) the occupancy, use, or enjoyment of the Land; (ii) the character, dimensions, or location of any improvement erected on the Land; (iii) the subdivision of land; or(iv) environmental protection; or the effect of any violation of these laws, ordinances, or governmental regulations. This Exclusion 1(a) does not modify or limit the coverage provided under Covered Risk 5, 6, 13(c), 13(d), 14 or 16.
   (b)Any governmental police power. This Exclusion 1(b) does not modify or limit the coverage provided under Covered Risk 5, 6, 13(c), 13(d), 14 or 16.
2. Rights of eminent domain. This Exclusion does not modify or limit the coverage provided under Covered Risk 7 or 8.
3. Defects, liens, encumbrances, adverse claims, or other matters
   (a) created, suffered, assumed or agreed to by the Insured Claimant;
   (b) not Known to the Company, not recorded in the Public Records at Date of Policy, but Known to the Insured Claimant and not disclosed in writing to the Company by the Insured Claimant prior to the date the Insured Claimant became an Insured under this policy;
   (c) resulting in no loss or damage to the Insured Claimant;
   (d) attaching or created subsequent to Date of Policy (however, this does not modify or limit the coverage provided under Covered Risk 11, 16, 17, 18, 19, 20, 21, 22, 23, 24, 27 or 28); or
   (e) resulting in loss or damage which would not have been sustained if the Insured Claimant had paid value for the Insured Mortgage.
4. Unenforceability of the lien of the Insured Mortgage because of the inability or failure of an Insured to comply with applicable doing business laws of the state where the Land is situated.
5. Invalidity or unenforceability in whole or in part of the lien of the Insured Mortgage that arises out of the transaction evidenced by the Insured Mortgage and is based upon usury, or any consumer credit protection or truth-in-lending law. This Exclusion does not modify or limit the coverage provided in Covered Risk 26.
6. Any claim of invalidity, unenforceability or lack of priority of the lien of the Insured Mortgage as to Advances or modifications made after the Insured has Knowledge that the vestee shown in Schedule A is no longer the owner of the estate or interest covered by this policy. This Exclusion does not modify or limit the coverage provided in Covered Risk 11.
7. Any lien on the Title for real estate taxes or assessments imposed by governmental authority and created or attaching subsequent to Date of Policy. This Exclusion does not modify or limit the coverage provided in Covered Risk 11(b) or 25.
8. The failure of the residential structure, or any portion of it, to have been constructed before, on or after Date of Policy in accordance with applicable building codes. This Exclusion does not modify or limit the coverage provided in Covered Risk 5 or 6.

13. AMERICAN LAND TITLE ASSOCIATION LOAN POLICY - 2006
EXCLUSIONS FROM COVERAGE

The following matters are expressly excluded from the coverage of this policy, and the Company will not pay loss or damage, costs, attorneys' fees, or

expenses that arise by reason of:

1. (a) Any law, ordinance, permit, or governmental regulation (including those relating to building and zoning) restricting, regulating, prohibiting, or relating to

   (i) the occupancy, use, or enjoyment of the Land;

   (ii) the character, dimensions, or location of any improvement erected on the Land;

   (iii) the subdivision of land; or

   (iv) environmental protection;

   or the effect of any violation of these laws, ordinances, or governmental regulations. This Exclusion 1(a) does not modify or limit the coverage provided under Covered Risk 5.

   (b) Any governmental police power. This Exclusion 1(b) does not modify or limit the coverage provided under Covered Risk 6.

2. Rights of eminent domain. This Exclusion does not modify or limit the coverage provided under Covered Risk 7 or 8.

3. Defects, liens, encumbrances, adverse claims, or other matters

   (a) created, suffered, assumed, or agreed to by the Insured Claimant;

   (b) not Known to the Company, not recorded in the Public Records at Date of Policy, but Known to the Insured Claimant and not disclosed in writing to the Company by the Insured Claimant prior to the date the Insured Claimant became an Insured under this policy;

   (c) resulting in no loss or damage to the Insured Claimant;

   (d) attaching or created subsequent to Date of Policy (however, this does not modify or limit the coverage provided under Covered Risk 11, 13, or 14); or

   (e) resulting in loss or damage that would not have been sustained if the Insured Claimant had paid value for the Insured Mortgage.

4. Unenforceability of the lien of the Insured Mortgage because of the inability or failure of an Insured to comply with applicable doing-business laws of the state where the Land is situated.

5. Invalidity or unenforceability in whole or in part of the lien of the Insured Mortgage that arises out of the transaction evidenced by the Insured Mortgage and is based upon usury or any consumer credit protection or truth-in-lending law.

6. Any claim, by reason of the operation of federal bankruptcy, state insolvency, or similar creditors' rights laws, that the transaction creating the lien of the Insured Mortgage, is

   (a) a fraudulent conveyance or fraudulent transfer, or

   (b) a preferential transfer for any reason not stated in Covered Risk 13(b) of this policy.

7. Any lien on the Title for real estate taxes or assessments imposed by governmental authority and created or attaching between Date of Policy and the date of recording of the Insured Mortgage in the Public Records. This Exclusion does not modify or limit the coverage provided under Covered Risk 11(b).

14. AMERICAN LAND TITLE ASSOCIATION LOAN POLICY - 2006 WITH REGIONAL EXCEPTIONS

When the American Land Title Association policy is used as a Standard Coverage Policy and not as an Extended Coverage Policy the exclusions set forth in paragraph 13 above are used and the following exceptions to coverage appear in the policy.

SCHEDULE B

This policy does not insure against loss or damage (and the Company will not pay costs, attorneys' fees or expenses) which arise by reason of:

1. (a) Taxes or assessments that are not shown as existing liens by the records of any taxing authority that levies taxes or assessments on real property or by the Public Records; (b) proceedings by a public agency that may result in taxes or assessments, or notices of such proceedings, whether or not shown by the records of such agency or by the Public Records.

2. Any facts, rights, interests, or claims that are not shown by the Public Records but that could be ascertained by an inspection of the Land or that may be asserted by persons in possession of the Land.

3. Easements, liens or encumbrances, or claims thereof, not shown by the Public Records.

4. Any encroachment, encumbrance, violation, variation, or adverse circumstance affecting the Title that would be disclosed by an accurate and complete land survey of the Land and not shown by the Public Records.

5. (a) Unpatented mining claims; (b) reservations or exceptions in patents or in Acts authorizing the issuance thereof; (c) water rights, claims or title to water, whether or not the matters excepted under (a), (b), or (c) are shown by the Public Records.

15. AMERICAN LAND TITLE ASSOCIATION OWNER'S POLICY - 2006 EXCLUSIONS FROM COVERAGE

The following matters are expressly excluded from the coverage of this policy and the Company will not pay loss or damage, costs, attorneys' fees or expenses which arise by reason of:

1. (a) Any law, ordinance, permit, or governmental regulation (including those relating to building and zoning) restricting, regulating, prohibiting, or relating to

   (i) the occupancy, use, or enjoyment of the Land;

   (ii) the character, dimensions, or location of any improvement erected on the Land;

   (iii) the subdivision of land; or

   (iv) environmental protection;or the effect of any violation of these laws, ordinances, or governmental regulations. This Exclusion 1(a) does not modify or limit the coverage provided under Covered Risk 5.

(b) Any governmental police power. This Exclusion 1(b) does not modify or limit the coverage provided under Covered Risk 6.

2. Rights of eminent domain. This Exclusion does not modify or limit the coverage provided under Covered Risk 7 or 8.

3. Defects, liens, encumbrances, adverse claims, or other matters

(a) created, suffered, assumed, or agreed to by the Insured Claimant;

(b) not Known to the Company, not recorded in the Public Records at Date of Policy, but Known to the Insured Claimant and not disclosed in writing to the Company by the Insured Claimant prior to the date the Insured Claimant became an Insured under this policy;

(c) resulting in no loss or damage to the Insured Claimant;

(d) attaching or created subsequent to Date of Policy (however, this does not modify or limit the coverage provided under Covered Risks 9 and 10); or

(e) resulting in loss or damage that would not have been sustained if the Insured Claimant had paid value for the Title.

4. Any claim, by reason of the operation of federal bankruptcy, state insolvency, or similar creditors rights laws, that the transaction vesting the Title as shown in Schedule A, is

(a) a fraudulent conveyance or fraudulent transfer; or

(b) a preferential transfer for any reason not stated in Covered Risk 9 of this policy.

5. Any lien on the Title for real estate taxes or assessments imposed by governmental authority and created or attaching between Date of Policy and the date of recording of the deed or other instrument of transfer in the Public Records that vests Title as shown in Schedule A.

16. AMERICAN LAND TITLE ASSOCIATION OWNER'S POLICY - 2006 WITH REGIONAL EXCEPTIONS

When the American Land Title Association policy is used as a Standard Coverage Policy and not as an Extended Coverage Policy the exclusions set forth in paragraph 15 above are used and the following exceptions to coverage appear in the policy.

SCHEDULE B

This policy does not insure against loss or damage (and the Company will not pay costs, attorneys' fees or expenses) which arise by reason of:

1. (a) Taxes or assessments that are not shown as existing liens by the records of any taxing authority that levies taxes or assessments on real property or by the Public Records; (b) proceedings by a public agency that may result in taxes or assessments, or notices of such proceedings, whether or not shown by the records of such agency or by the Public Records.
2. Any facts, rights, interests, or claims that are not shown by the Public Records but that could be ascertained by an inspection of the Land or that may be asserted by persons in possession of the Land.
3. Easements, liens or encumbrances, or claims thereof, not shown by the Public Records.
4. Any encroachment, encumbrance, violation, variation, or adverse circumstance affecting the Title that would be disclosed by an accurate and complete land survey of the Land and not shown by the Public Records.
5. (a) Unpatented mining claims; (b) reservations or exceptions in patents or in Acts authorizing the issuance thereof; (c) water rights, claims or title to water, whether or not the matters excepted under (a), (b), or (c) are shown by the Public Records.

First American Title Insurance Company

National Commercial Services

666 Third Avenue, 5th Floor
New York, NY 10017

October 27, 2017

Seth Israel
Intersect Power
Embarcadero Center , 7th Floor
San Francisco, CA 94111

Customer Reference: Northstar Capital Development

Order Number: 3020-876235

Property: 25250 Rice Road, Desert Center, CA

Attached please find the following item(s):

Commitment

Thank You for your confidence and support. We at First American Title Insurance Company maintain the fundamental principle:

Customer First!

First American Title Insurance Company

INFORMATION

The Title Insurance Commitment is a legal contract between you and the company. It is issued to show the basis on which we will issue a Title Insurance Policy to you. The Policy will insure you against certain risks to the land title, subject to the limitations shown in the policy.

The Company will give you a sample of the Policy form, if you ask.

The Commitment is based on the land title as of the Commitment Date. Any changes in the land title or the transaction may affect the Commitment and the Policy.

The Commitment is subject to its Requirements, Exceptions and Conditions.

This information is not part of the title insurance commitment.

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YOU SHOULD READ THE COMMITMENT VERY CAREFULLY.
If you have any questions about the Commitment,
please contact the issuing office.

COMMITMENT FOR TITLE INSURANCE

Issued by

First American Title Insurance Company

Agreement to Issue Policy

We agree to issue a policy to you according to the terms of this Commitment.

When we show the policy amount and your name as the proposed insured in Schedule A, this Commitment becomes effective as of the Commitment Date shown in Schedule A.

If the Requirements shown in this Commitment have not been met within six months after the Commitment Date, our obligation under this Commitment will end. Also, our obligation under this Commitment will end when the Policy is issued and then our obligation to you will be under the Policy.

Our obligation under this Commitment is limited by the following:

The Provisions in Schedule A.

The Requirements in Schedule B-1.

The Exceptions in Schedule B-2.

The Conditions.

This Commitment is not valid without Schedule A and Sections 1 and 2 of Schedule B.

SCHEDULE A

1. Commitment Date: October 17, 2017 at 7:30 A.M.

2. Policy or Policies to be issued: Amount

(A) ALTA Owner's Policy $To Be Determined
ALTA Standard Owner Policy

Proposed Insured:

To Be Determined

(B) ALTA Loan Policy $To Be Determined
To Be Determined

Proposed Insured:

To Be Determined

3. (A) The estate or interest in the land described in this Commitment is:

Fee

(B) Title to said estate or interest at the date hereof is vested in:

Northstar Capital Development, LLC, subject to exception No. 5.

4. The land referred to in this Commitment is situated in the Unincorporated Area of County of Riverside, State of California, and is described as follows:

THAT PORTION OF THE NORTH HALF OF SECTION 7, TOWNSHIP 5 SOUTH, RANGE 16 EAST, SAN BERNARDINO BASE AND MERIDIAN, LYING SOUTH AND SOUTHEAST OF THE SOUTHEASTERLY LINE OF THE COUNTY HIGHWAY, 100 FEET WIDE AS DESIGNATED BY RESOLUTION OF THE COUNTY OF RIVERSIDE, A CERTIFIED COPY OF WHICH WAS FILED FOR RECORD MARCH 27, 1945 AS INSTRUMENT NO. 2957.

APN: 811-142-005-2

SCHEDULE B

SECTION ONE

REQUIREMENTS

The following requirements must be met:

(A) Pay the agreed amounts for the interest in the land and/or the mortgage to be insured.

(B) Pay us the premiums, fees and charges for the policy.

(C) Documents satisfactory to us creating the interest in the land and/or the mortgage to be insured must be signed, delivered and recorded.

(D) You must tell us in writing the name of anyone not referred to in this Commitment who will get an interest in the land or who will make a loan on the land. We may then make additional requirements or exceptions.

(E) Releases(s) or Reconveyance(s) of Item(s): None

(F) Other: None

(G) You must give us the following information:
1. Any off record leases, surveys, etc.
2. Statement(s) of Identity, all parties.
3. Other:

The following additional requirements, as indicated by "X", must be met:

[X] (H) Provide information regarding any off-record matters, which may include, but are not limited to: leases, recent works of improvement, or commitment statements in effect under the Environmental Responsibility Acceptance Act, Civil Code Section 850, et seq.

The Company's Owner's Affidavit form (as provided by company) must be completed and submitted prior to close in order to satisfy this requirement. This Commitment will then be subject to such further exceptions and/or requirements as may be deemed necessary.

[] (I) An ALTA/NSPS survey of recent date, which complies with the current minimum standard detail requirements for ALTA/NSPS land title surveys, must be submitted to the Company for review. This Commitment will then be subject to such further exceptions and/or requirements as may be deemed necessary.

[X] (J) The following LLC documentation is required:
(i) a copy of the Articles of Organization
(ii) a copy of the Operating Agreement, if applicable
(iii) a Certificate of Good Standing and/or other evidence of current Authority to Conduct Business within the State
(iv) express Company Consent to the current transaction

[] (K) The following partnership documentation is required **:**
(i) a copy of the partnership agreement, including all applicable amendments thereto
(ii) a Certificate of Good Standing and/or other evidence of current Authority to Conduct Business within the State
(iii) express Partnership Consent to the current transaction

[] (L) The following corporation documentation is required:
(i) a copy of the Articles of Incorporation
(ii) a copy of the Bylaws, including all applicable Amendments thereto
(iii) a Certificate of Good Standing and/or other evidence of current Authority to Conduct Business within the State
(iv) express Corporate Resolution consenting to the current transaction

[**X**] (M) Based upon the Company's review of that certain partnership/operating agreement dated **Not disclosed** for the proposed insured herein, the following requirements must be met:

Any further amendments to said agreement must be submitted to the Company, together with an affidavit from one of the general partners or members stating that it is a true copy, that said partnership or limited liability company is in full force and effect, and that there have been no further amendments to the agreement. This Commitment will then be subject to such further requirements as may be deemed necessary.

[] (N) A copy of the complete lease, as referenced in Schedule A, #3 herein, together with any amendments and/or assignments thereto, must be submitted to the Company for review, along with an affidavit executed by the present lessee stating that it is a true copy, that the lease is in full force and effect, and that there have been no further amendments to the lease. This Commitment will then be subject to such further requirements as may be deemed necessary.

[X] (O) Approval from the Company's Underwriting Department must be obtained for issuance of the policy contemplated herein and any endorsements requested thereunder. This Commitment will then be subject to such further requirements as may be required to obtain such approval.

[] (P) Potential additional requirements, if ALTA Extended coverage is contemplated hereunder, and work on the land has commenced prior to close, some or all of the following requirements, and any other requirements which may be deemed necessary, may need to be met:

[] (Q) The Company's "Indemnity Agreement I" must be executed by the appropriate parties.

[] (R) Financial statements from the appropriate parties must be submitted to the Company for review.

[] (S) A copy of the construction contract must be submitted to the Company for review.

[] (T) An inspection of the land must be performed by the Company for verification of the phase of construction.

[] (U) The Company's "Mechanic's Lien Risk Addendum" form must be completed by a Company employee, based upon information furnished by the appropriate parties involved.

SCHEDULE B

SECTION TWO

EXCEPTIONS

Any policy we issue will have the following exceptions unless they are taken care of to our satisfaction. The printed exceptions and exclusions from the coverage of the policy or policies are set forth in Exhibit A attached. Copies of the policy forms should be read. They are available from the office which issued this Commitment.

1. General and special taxes and assessments for the fiscal year 2017-2018.

First Installment:	$790.05, OPEN
Penalty:	$0.00
Second Installment:	$790.05, OPEN
Penalty:	$0.00
Tax Rate Area:	062-000
A. P. No.:	811-142-005-2

2. The lien of supplemental taxes, if any, assessed pursuant to Chapter 3.5 commencing with Section 75 of the California Revenue and Taxation Code.

3. An easement for either or both pole lines, conduits or underground facilities and incidental purposes, recorded August 28, 1957 as Book 2140, Page 177 of Official Records.

In Favor of:	California Electric Power Company
Affects:	As described therein

The location of the easement cannot be determined from record information.

4. An easement for either or both pole lines, conduits or underground facilities and incidental purposes, recorded September 19, 1957 as Book 2150, Page 371 of Official Records.

In Favor of:	California Electric Power Company
Affects:	As described therein

5. The sufficiency and validity of the proceeding leading up to and including the tax collector's deed or sheriff's deed to Northstar Capital Development, LLC.

   In order for the company to be in a position to omit this exception from further title evidence, it will be necessary to obtain a final decree quieting title to the land in the vestee herein, and against: the last record owner of this land, any one claiming through him, any liens or encumbrances, whose interests were divested by virtue of such tax sale.

6. An option in favor of Chuckwalla Greenworks LLC, a Delaware Limited Liability Company as contained in or disclosed by a document recorded September 08, 2011 as Instrument No. 2011-0400315 of Official Records.

7. Water rights, claims or title to water, whether or not shown by the public records.

8. Rights of parties in possession.

INFORMATIONAL NOTES

1. The property covered by this report is vacant land.

2. According to the public records, there has been no conveyance of the land within a period of twenty-four months prior to the date of this report, except as follows:

   None

3. This preliminary report/commitment was prepared based upon an application for a policy of title insurance that identified land by street address or assessor's parcel number only. It is the responsibility of the applicant to determine whether the land referred to herein is in fact the land that is to be described in the policy or policies to be issued.

The map attached, if any, may or may not be a survey of the land depicted hereon. First American Title Insurance Company expressly disclaims any liability for loss or damage which may result from reliance on this map except to the extent coverage for such loss or damage is expressly provided by the terms and provisions of the title insurance policy, if any, to which this map is attached.

******To obtain wire instructions for deposit of funds to your escrow file please contact your Escrow Officer.******

CONDITIONS

1. **DEFINITIONS**
(a)"Mortgage" means mortgage, deed of trust or other security instrument.
(b)"Public Records" means title records that give constructive notice of matters affecting the title according to the state law where the land is located.

2. **LATER DEFECTS**
The Exceptions in Schedule B - Section Two may be amended to show any defects, liens or encumbrances that appear for the first time in the public records or are created or attached between the Commitment Date and the date on which all of the Requirements (a) and (c) of Schedule B - Section One are met. We shall have no liability to you because of this amendment.

3. **EXISTING DEFECTS**
If any defects, liens or encumbrances existing at Commitment Date are not shown in Schedule B, we may amend Schedule B to show them. If we do amend Schedule B to show these defects, liens or encumbrances, we shall be liable to you according to Paragraph 4 below unless you knew of this information and did not tell us about it in writing.

4. **LIMITATION OF OUR LIABILITY**
Our only obligation is to issue to you the Policy referred to in this Commitment, when you have met its Requirements. If we have any liability to you for any loss you incur because of an error in this Commitment, our liability will be limited to your actual loss caused by your relying on this Commitment when you acted in good faith to:

comply with the Requirements shown in Schedule B - Section One
or
eliminate with our written consent any Exceptions shown in Schedule B - Section Two.

We shall not be liable for more than the Policy Amount shown in Schedule A of this Commitment and our liability is subject to the terms of the Policy form to be issued to you.

5. **CLAIMS MUST BE BASED ON THIS COMMITMENT**
Any claim, whether or not based on negligence, which you may have against us concerning the title to the land must be based on this commitment and is subject to its terms.

First American Title

Privacy Information

We Are Committed to Safeguarding Customer Information

In order to better serve your needs now and in the future, we may ask you to provide us with certain information. We understand that you may be concerned about what we will do with such information - particularly any personal or financial information. We agree that you have a right to know how we will utilize the personal information you provide to us. Therefore, together with our subsidiaries we have adopted this Privacy Policy to govern the use and handling of your personal information.

Applicability

This Privacy Policy governs our use of the information that you provide to us. It does not govern the manner in which we may use information we have obtained from any other source, such as information obtained from a public record or from another person or entity. First American has also adopted broader guidelines that govern our use of personal information regardless of its source. First American calls these guidelines its Fair Information Values.

Types of Information

Depending upon which of our services you are utilizing, the types of nonpublic personal information that we may collect include:

- Information we receive from you on applications, forms and in other communications to us, whether in writing, in person, by telephone or any other means;
- Information about your transactions with us, our affiliated companies, or others; and
- Information we receive from a consumer reporting agency.

Use of Information

We request information from you for our own legitimate business purposes and not for the benefit of any nonaffiliated party. Therefore, we will not release your information to nonaffiliated parties except: (1) as necessary for us to provide the product or service you have requested of us; or (2) as permitted by law. We may, however, store such information indefinitely, including the period after which any customer relationship has ceased. Such information may be used for any internal purpose, such as quality control efforts or customer analysis. We may also provide all of the types of nonpublic personal information listed above to one or more of our affiliated companies. Such affiliated companies include financial service providers, such as title insurers, property and casualty insurers, and trust and investment advisory companies, or companies involved in real estate services, such as appraisal companies, home warranty companies and escrow companies. Furthermore, we may also provide all the information we collect, as described above, to companies that perform marketing services on our behalf, on behalf of our affiliated companies or to other financial institutions with whom we or our affiliated companies have joint marketing agreements.

Former Customers

Even if you are no longer our customer, our Privacy Policy will continue to apply to you.

Confidentiality and Security

We will use our best efforts to ensure that no unauthorized parties have access to any of your information. We restrict access to nonpublic personal information about you to those individuals and entities who need to know that information to provide products or services to you. We will use our best efforts to train and oversee our employees and agents to ensure that your information will be handled responsibly and in accordance with this Privacy Policy and First American's Fair Information Values. We currently maintain physical, electronic, and procedural safeguards that comply with federal regulations to guard your nonpublic personal information.

Information Obtained Through Our Web Site

First American Financial Corporation is sensitive to privacy issues on the Internet. We believe it is important you know how we treat the information about you we receive on the Internet.

In general, you can visit First American or its affiliates' Web sites on the World Wide Web without telling us who you are or revealing any information about yourself. Our Web servers collect the domain names, not the e-mail addresses, of visitors. This information is aggregated to measure the number of visits, average time spent on the site, pages viewed and similar information. First American uses this information to measure the use of our site and to develop ideas to improve the content of our site.

There are times, however, when we may need information from you, such as your name and email address. When information is needed, we will use our best efforts to let you know at the time of collection how we will use the personal information. Usually, the personal information we collect is used only by us to respond to your inquiry, process an order or allow you to access specific account/profile information. If you choose to share any personal information with us, we will only use it in accordance with the policies outlined above.

Business Relationships

First American Financial Corporation's site and its affiliates' sites may contain links to other Web sites. While we try to link only to sites that share our high standards and respect for privacy, we are not responsible for the content or the privacy practices employed by other sites.

Cookies

Some of First American's Web sites may make use of "cookie" technology to measure site activity and to customize information to your personal tastes. A cookie is an element of data that a Web site can send to your browser, which may then store the cookie on your hard drive.

FirstAm.com uses stored cookies. The goal of this technology is to better serve you when visiting our site, save you time when you are here and to provide you with a more meaningful and productive Web site experience.

Fair Information Values

Fairness We consider consumer expectations about their privacy in all our businesses. We only offer products and services that assure a favorable balance between consumer benefits and consumer privacy.

Public Record We believe that an open public record creates significant value for society, enhances consumer choice and creates consumer opportunity. We actively support an open public record and emphasize its importance and contribution to our economy.

Use We believe we should behave responsibly when we use information about a consumer in our business. We will obey the laws governing the collection, use and dissemination of data.

Accuracy We will take reasonable steps to help assure the accuracy of the data we collect, use and disseminate. Where possible, we will take reasonable steps to correct inaccurate information. When, as with the public record, we cannot correct inaccurate information, we will take all reasonable steps to assist consumers in identifying the source of the erroneous data so that the consumer can secure the required corrections.

Education We endeavor to educate the users of our products and services, our employees and others in our industry about the importance of consumer privacy. We will instruct our employees on our fair information values and on the responsible collection and use of data. We will encourage others in our industry to collect and use information in a responsible manner.

Security We will maintain appropriate facilities and systems to protect against unauthorized access to and corruption of the data we maintain.

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EXHIBIT A
LIST OF PRINTED EXCEPTIONS AND EXCLUSIONS (BY POLICY TYPE)

1. CALIFORNIA LAND TITLE ASSOCIATION STANDARD COVERAGE POLICY - 1990
SCHEDULE B

EXCEPTIONS FROM COVERAGE

This policy does not insure against loss or damage (and the Company will not pay costs, attorneys' fees or expenses) which arise by reason of:

1. Taxes or assessments which are not shown as existing liens by the records of any taxing authority that levies taxes or assessments on real property or by the public records. Proceedings by a public agency which may result in taxes or assessments, or notice of such proceedings, whether or not shown by the records of such agency or by the public records.
2. Any facts, rights, interests, or claims which are not shown by the public records but which could be ascertained by an inspection of the land or which may be asserted by persons in possession thereof.
3. Easements, liens or encumbrances, or claims thereof, which are not shown by the public records.
4. Discrepancies, conflicts in boundary lines, shortage in area, encroachments, or any other facts which a correct survey would disclose, and which are not shown by the public records.
5. (a) Unpatented mining claims; (b) reservations or exceptions in patents or in Acts authorizing the issuance thereof; (c) water rights, claims or title to water, whether or not the matters excepted under (a), (b), or (c) are shown by the public records.

EXCLUSIONS FROM COVERAGE

The following matters are expressly excluded from the coverage of this policy and the Company will not pay loss or damage, costs, attorneys' fees or expenses which arise by reason of:

1. (a) Any law, ordinance or governmental regulation (including but not limited to building and zoning laws, ordinances, or regulations) restricting, regulating, prohibiting or relating to (i) the occupancy, use, or enjoyment of the land; (ii) the character, dimensions or location of any improvement now or hereafter erected on the land; (iii) a separation in ownership or a change in the dimensions or area of the land or any parcel of which the land is or was a part; or (iv) environmental protection, or the effect of any violation of these laws, ordinances or governmental regulations, except to the extent that a notice of the enforcement thereof or a notice of a defect, lien or encumbrance resulting from a violation or alleged violation affecting the land has been recorded in the public records at Date of Policy.
   (b) Any governmental police power not excluded by (a) above, except to the extent that a notice of the exercise thereof or a notice of a defect, lien or encumbrance resulting from a violation or alleged violation affecting the land has been recorded in the public records at Date of Policy.
2. Rights of eminent domain unless notice of the exercise thereof has been recorded in the public records at Date of Policy, but not excluding from coverage any taking which has occurred prior to Date of Policy which would be binding on the rights of a purchaser for value without knowledge.
3. Defects, liens, encumbrances, adverse claims or other matters:
   (a) whether or not recorded in the public records at Date of Policy, but created, suffered, assumed or agreed to by the insured claimant;
   (b) not known to the Company, not recorded in the public records at Date of Policy, but known to the insured claimant and not disclosed in writing to the Company by the insured claimant prior to the date the insured claimant became an insured under this policy;
   (c) resulting in no loss or damage to the insured claimant;
   (d) attaching or created subsequent to Date of Policy; or
   (e) resulting in loss or damage which would not have been sustained if the insured claimant had paid value for the insured mortgage or for the estate or interest insured by this policy.
4. Unenforceability of the lien of the insured mortgage because of the inability or failure of the insured at Date of Policy, or the inability or failure of any subsequent owner of the indebtedness, to comply with applicable "doing business" laws of the state in which the land is situated.
5. Invalidity or unenforceability of the lien of the insured mortgage, or claim thereof, which arises out of the transaction evidenced by the insured mortgage and is based upon usury or any consumer credit protection or truth in lending law.
6. Any claim, which arises out of the transaction vesting in the insured the estate or interest insured by their policy or the transaction creating the interest of the insured lender, by reason of the operation of federal bankruptcy, state insolvency or similar creditors' rights laws.

2. AMERICAN LAND TITLE ASSOCIATION OWNER'S POLICY FORM B - 1970
SCHEDULE OF EXCLUSIONS FROM COVERAGE

1. Any law, ordinance or governmental regulation (including but not limited to building and zoning ordinances) restricting or regulating or prohibiting the occupancy, use or enjoyment of the land, or regulating the character, dimensions or location of any improvement now or hereafter erected on the land, or prohibiting a separation in ownership or a reduction in the dimensions of area of the land, or the effect of any violation of any such law, ordinance or governmental regulation.
2. Rights of eminent domain or governmental rights of police power unless notice of the exercise of such rights appears in the public records at Date of Policy.
3. Defects, liens, encumbrances, adverse claims, or other matters (a) created, suffered, assumed or agreed to by the insured claimant; (b) not known to the Company and not shown by the public records but known to the insured claimant either at Date of Policy or at the date such claimant acquired an estate or interest insured by this policy and not disclosed in writing by the insured claimant to the Company prior to the date such insured claimant became an insured hereunder; (c) resulting in no loss or damage to the insured claimant; (d) attaching or created subsequent to Date of Policy; or (e) resulting in loss or damage which would not have been sustained if the insured claimant had paid value for the estate or interest insured by this policy.

3. AMERICAN LAND TITLE ASSOCIATION OWNER'S POLICY FORM B - 1970
WITH REGIONAL EXCEPTIONS

When the American Land Title Association policy is used as a Standard Coverage Policy and not as an Extended Coverage Policy the exclusions set forth in paragraph 2 above are used and the following exceptions to coverage appear in the policy.

SCHEDULE B

This policy does not insure against loss or damage by reason of the matters shown in parts one and two following:
Part One

1. Taxes or assessments which are not shown as existing liens by the records of any taxing authority that levies taxes or assessments on real property or by the public records.
2. Any facts, rights, interests, or claims which are not shown by the public records but which could be ascertained by an inspection of said land or by making inquiry of persons in possession thereof.
3. Easements, claims of easement or encumbrances which are not shown by the public records.
4. Discrepancies, conflicts in boundary lines, shortage in area, encroachments, or any other facts which a correct survey would disclose, and which are not shown by public records.
5. Unpatented mining claims; reservations or exceptions in patents or in Acts authorizing the issuance thereof; water rights, claims or title to water.
6. Any lien, or right to a lien, for services, labor or material heretofore or hereafter furnished, imposed by law and not shown by the public records.

4. AMERICAN LAND TITLE ASSOCIATION LOAN POLICY - 1970 WITH A.L.T.A. ENDORSEMENT FORM 1 COVERAGE SCHEDULE OF EXCLUSIONS FROM COVERAGE

1. Any law, ordinance or governmental regulation (including but not limited to building and zoning ordinances) restricting or regulating or prohibiting the occupancy, use or enjoyment of the land, or regulating the character, dimensions or location of any improvement now or hereafter erected on the land, or prohibiting a separation in ownership or a reduction in the dimensions or area of the land, or the effect of any violation of any such law ordinance or governmental regulation.
2. Rights of eminent domain or governmental rights of police power unless notice of the exercise of such rights appears in the public records at Date of Policy.
3. Defects, liens, encumbrances, adverse claims, or other matters (a) created, suffered, assumed or agreed to by the insured claimant, (b) not known to the Company and not shown by the public records but known to the insured claimant either at Date of Policy or at the date such claimant acquired an estate or interest insured by this policy or acquired the insured mortgage and not disclosed in writing by the insured claimant to the Company prior to the date such insured claimant became an insured hereunder, (c) resulting in no loss or damage to the insured claimant; (d) attaching or created subsequent to Date of Policy (except to the extent insurance is afforded herein as to any statutory lien for labor or material or to the extent insurance is afforded herein as to assessments for street improvements under construction or completed at Date of Policy).
4. Unenforceability of the lien of the insured mortgage because of failure of the insured at Date of Policy or of any subsequent owner of the indebtedness to comply with applicable "doing business" laws of the state in which the land is situated.

5. AMERICAN LAND TITLE ASSOCIATION LOAN POLICY - 1970 WITH REGIONAL EXCEPTIONS

When the American Land Title Association Lenders Policy is used as a Standard Coverage Policy and not as an Extended Coverage Policy, the exclusions set forth in paragraph 4 above are used and the following exceptions to coverage appear in the policy.

SCHEDULE B

This policy does not insure against loss or damage by reason of the matters shown in parts one and two following:
Part One

1. Taxes or assessments which are not shown as existing liens by the records of any taxing authority that levies taxes or assessments on real property or by the public records.
2. Any facts, rights, interests, or claims which are not shown by the public records but which could be ascertained by an inspection of said land or by making inquiry of persons in possession thereof.
3. Easements, claims of easement or encumbrances which are not shown by the public records.
4. Discrepancies, conflicts in boundary lines, shortage in area, encroachments, or any other facts which a correct survey would disclose, and which are not shown by public records.
5. Unpatented mining claims; reservations or exceptions in patents or in Acts authorizing the issuance thereof; water rights, claims or title to water.
6. Any lien, or right to a lien, for services, labor or material theretofore or hereafter furnished, imposed by law and not shown by the public records.

6. AMERICAN LAND TITLE ASSOCIATION LOAN POLICY - 1992 WITH A.L.T.A. ENDORSEMENT FORM 1 COVERAGE EXCLUSIONS FROM COVERAGE

The following matters are expressly excluded from the coverage of this policy and the Company will not pay loss or damage, costs, attorneys' fees or expenses which arise by reason of:

1. (a) Any law, ordinance or governmental regulation (including but not limited to building and zoning laws, ordinances, or regulations) restricting, regulating, prohibiting or relating to (i) the occupancy, use, or enjoyment of the land; (ii) the character, dimensions or location of any improvement now or hereafter erected on the land; (iii) a separation in ownership or a change in the dimensions or area of the land or any parcel of which the land is or was a part; or (iv) environmental protection, or the effect of any violation of these laws, ordinances or governmental regulations, except to the extent that a notice of the enforcement thereof or a notice of a defect, lien or encumbrance resulting from a violation or alleged violation affecting the land has been recorded in the public records at Date of Policy;
   (b) Any governmental police power not excluded by (a) above, except to the extent that a notice of the exercise thereof or a notice of a defect, lien or encumbrance resulting from a violation or alleged violation affecting the land has been recorded in the public records at Date of Policy.

2. Rights of eminent domain unless notice of the exercise thereof has been recorded in the public records at Date of Policy, but not excluding from coverage any taking which has occurred prior to Date of Policy which would be binding on the rights of a purchaser for value without knowledge.
3. Defects, liens, encumbrances, adverse claims, or other matters:
(a) whether or not recorded in the public records at Date of Policy, but created, suffered, assumed or agreed to by the insured claimant;
(b) not known to the Company, not recorded in the public records at Date of Policy, but known to the insured claimant and not disclosed in writing to the Company by the insured claimant prior to the date the insured claimant became an insured under this policy;
(c) resulting in no loss or damage to the insured claimant;
(d) attaching or created subsequent to Date of Policy (except to the extent that this policy insures the priority of the lien of the insured mortgage over any statutory lien for services, labor or material or the extent insurance is afforded herein as to assessments for street improvements under construction or completed at date of policy); or
(e) resulting in loss or damage which would not have been sustained if the insured claimant had paid value for the insured mortgage.
4. Unenforceability of the lien of the insured mortgage because of the inability or failure of the insured at Date of Policy, or the inability or failure of any subsequent owner of the indebtedness, to comply with the applicable "doing business" laws of the state in which the land is situated.
5. Invalidity or unenforceability of the lien of the insured mortgage, or claim thereof, which arises out of the transaction evidenced by the insured mortgage and is based upon usury or any consumer credit protection or truth in lending law.
6. Any statutory lien for services, labor or materials (or the claim of priority of any statutory lien for services, labor or materials over the lien of the insured mortgage) arising from an improvement or work related to the land which is contracted for and commenced subsequent to Date of Policy and is not financed in whole or in part by proceeds of the indebtedness secured by the insured mortgage which at Date of Policy the insured has advanced or is obligated to advance.
7. Any claim, which arises out of the transaction creating the interest of the mortgagee insured by this policy, by reason of the operation of federal bankruptcy, state insolvency, or similar creditors' rights laws, that is based on:
(i) the transaction creating the interest of the insured mortgagee being deemed a fraudulent conveyance or fraudulent transfer; or
(ii) the subordination of the interest of the insured mortgagee as a result of the application of the doctrine of equitable subordination; or
(iii) the transaction creating the interest of the insured mortgagee being deemed a preferential transfer except where the preferential transfer results from the failure:
(a) to timely record the instrument of transfer; or
(b) of such recordation to impart notice to a purchaser for value or a judgment or lien creditor.

7. AMERICAN LAND TITLE ASSOCIATION LOAN POLICY - 1992 WITH REGIONAL EXCEPTIONS

When the American Land Title Association policy is used as a Standard Coverage Policy and not as an Extended Coverage Policy the exclusions set forth in paragraph 6 above are used and the following exceptions to coverage appear in the policy.

SCHEDULE B

This policy does not insure against loss or damage (and the Company will not pay costs, attorneys' fees or expenses) which arise by reason of:
1. Taxes or assessments which are not shown as existing liens by the records of any taxing authority that levies taxes or assessments on real property or by the public records.
2. Any facts, rights, interests, or claims which are not shown by the public records but which could be ascertained by an inspection of said land or by making inquiry of persons in possession thereof.
3. Easements, claims of easement or encumbrances which are not shown by the public records.
4. Discrepancies, conflicts in boundary lines, shortage in area, encroachments, or any other facts which a correct survey would disclose, and which are not shown by public records.
5. Unpatented mining claims; reservations or exceptions in patents or in Acts authorizing the issuance thereof; water rights, claims or title to water.
6. Any lien, or right to a lien, for services, labor or material theretofore or hereafter furnished, imposed by law and not shown by the public records.

8. AMERICAN LAND TITLE ASSOCIATION OWNER'S POLICY - 1992 EXCLUSIONS FROM COVERAGE

The following matters are expressly excluded from the coverage of this policy and the Company will not pay loss or damage, costs, attorneys' fees or expenses which arise by reason of:
1. (a) Any law, ordinance or governmental regulation (including but not limited to building and zoning laws, ordinances, or regulations) restricting, regulating, prohibiting or relating to (i) the occupancy, use, or enjoyment of the land; (ii) the character, dimensions or location of any improvement now or hereafter erected on the land; (iii) a separation in ownership or a change in the dimensions or area of the land or any parcel of which the land is or was a part; or (iv) environmental protection, or the effect of any violation of these laws, ordinances or governmental regulations, except to the extent that a notice of the enforcement thereof or a notice of a defect, lien or encumbrance resulting from a violation or alleged violation affecting the land has been recorded in the public records at Date of Policy.
(b) Any governmental police power not excluded by (a) above, except to the extent that a notice of the exercise thereof or a notice of a defect, lien or encumbrance resulting from a violation or alleged violation affecting the land has been recorded in the public records at Date of Policy.
2. Rights of eminent domain unless notice of the exercise thereof has been recorded in the public records at Date of Policy, but not excluding from coverage any taking which has occurred prior to Date of Policy which would be binding on the rights of a purchaser for value without knowledge.
3. Defects, liens, encumbrances, adverse claims, or other matters:
(a) created, suffered, assumed or agreed to by the insured claimant;
(b) not known to the Company, not recorded in the public records at Date of Policy, but known to the insured claimant and not disclosed in writing to the Company by the insured claimant prior to the date the insured claimant became an insured under this policy;
(c) resulting in no loss or damage to the insured claimant;
(d) attaching or created subsequent to Date of Policy; or

(e) resulting in loss or damage which would not have been sustained if the insured claimant had paid value for the estate or interest insured by this policy.

4. Any claim, which arises out of the transaction vesting in the insured the estate or interest insured by this policy, by reason of the operation of federal bankruptcy, state insolvency, or similar creditors' rights laws, that is based on:
(i) the transaction creating the estate or interest insured by this policy being deemed a fraudulent conveyance or fraudulent transfer; or
(ii) the transaction creating the estate or interest insured by this policy being deemed a preferential transfer except where the preferential transfer results from the failure:
(a) to timely record the instrument of transfer; or
(b) of such recordation to impart notice to a purchaser for value or a judgment or lien creditor.

9. AMERICAN LAND TITLE ASSOCIATION OWNER'S POLICY - 1992 WITH REGIONAL EXCEPTIONS

When the American Land Title Association policy is used as a Standard Coverage Policy and not as an Extended Coverage Policy the exclusions set forth in paragraph 8 above are used and the following exceptions to coverage appear in the policy.

SCHEDULE B

This policy does not insure against loss or damage (and the Company will not pay costs, attorneys' fees or expenses) which arise by reason of:
Part One:

1. Taxes or assessments which are not shown as existing liens by the records of any taxing authority that levies taxes or assessments on real property or by the public records.
2. Any facts, rights, interests, or claims which are not shown by the public records but which could be ascertained by an inspection of said land or by making inquiry of persons in possession thereof.
3. Easements, claims of easement or encumbrances which are not shown by the public records.
4. Discrepancies, conflicts in boundary lines, shortage in area, encroachments, or any other facts which a correct survey would disclose, and which are not shown by public records.
5. Unpatented mining claims; reservations or exceptions in patents or in Acts authorizing the issuance thereof; water rights, claims or title to water.
6. Any lien, or right to a lien, for services, labor or material theretofore or hereafter furnished, imposed by law and not shown by the public records.

ALTA RESIDENTIAL TITLE INSURANCE POLICY (6-1-87)

EXCLUSIONS

In addition to the Exceptions in Schedule B, you are not insured against loss, costs, attorneys' fees, and expenses resulting from:

1. Governmental police power, and the existence or violation of any law or government regulation. This includes building and zoning ordinances and also laws and regulations concerning:
   (a) and use
   (b) improvements on the land
   (c) and division
   (d) environmental protection

   This exclusion does not apply to violations or the enforcement of these matters which appear in the public records at Policy Date.
   This exclusion does not limit the zoning coverage described in Items 12 and 13 of Covered Title Risks.
2. The right to take the land by condemning it, unless:
   (a) a notice of exercising the right appears in the public records on the Policy Date
   (b) the taking happened prior to the Policy Date and is binding on you if you bought the land without knowing of the taking
3. Title Risks:
   (a) that are created, allowed, or agreed to by you
   (b) that are known to you, but not to us, on the Policy Date -- unless they appeared in the public records
   (c) that result in no loss to you
   (d) that first affect your title after the Policy Date -- this does not limit the labor and material lien coverage in Item 8 of Covered Title Risks
4. Failure to pay value for your title.
5. Lack of a right:
   (a) to any land outside the area specifically described and referred to in Item 3 of Schedule A OR
   (b) in streets, alleys, or waterways that touch your land
   This exclusion does not limit the access coverage in Item 5 of Covered Title Risks.

11. EAGLE PROTECTION OWNER'S POLICY

CLTA HOMEOWNER'S POLICY OF TITLE INSURANCE - 1998
ALTA HOMEOWNER'S POLICY OF TITLE INSURANCE - 1998

Covered Risks 14 (Subdivision Law Violation). 15 (Building Permit). 16 (Zoning) and 18 (Encroachment of boundary walls or fences) are subject to Deductible Amounts and Maximum Dollar Limits of Liability

EXCLUSIONS

In addition to the Exceptions in Schedule B, you are not insured against loss, costs, attorneys' fees, and expenses resulting from:

1. Governmental police power, and the existence or violation of any law or government regulation. This includes ordinances, laws and regulations concerning:
   a. building
   b. zoning
   c. land use
   d. improvements on the land
   e. land division
   f. environmental protection

   This exclusion does not apply to violations or the enforcement of these matters if notice of the violation or enforcement appears in the Public Records at the Policy Date.
   This exclusion does not limit the coverage described in Covered Risk 14, 15, 16, 17 or 24.
2. The failure of Your existing structures, or any part of them, to be constructed in accordance with applicable building codes. This Exclusion does not apply to violations of building codes if notice of the violation appears in the Public Records at the Policy Date.
3. The right to take the Land by condemning it, unless:
   a. a notice of exercising the right appears in the Public Records at the Policy Date; or
   b. the taking happened before the Policy Date and is binding on You if You bought the Land without Knowing of the taking.
4. Risks:
   a. that are created, allowed, or agreed to by You, whether or not they appear in the Public Records;
   b. that are Known to You at the Policy Date, but not to Us, unless they appear in the Public Records at the Policy Date;
   c. that result in no loss to You; or
   d. that first occur after the Policy Date - this does not limit the coverage described in Covered Risk 7, 8.d, 22, 23, 24 or 25.
5. Failure to pay value for Your Title.
6. Lack of a right:
   a. to any Land outside the area specifically described and referred to in paragraph 3 of Schedule A; and
   b. in streets, alleys, or waterways that touch the Land.
   This exclusion does not limit the coverage described in Covered Risk 11 or 18.

12. THIRD GENERATION EAGLE LOAN POLICY AMERICAN LAND TITLE ASSOCIATION EXPANDED COVERAGE RESIDENTIAL LOAN POLICY (1/01/08)

EXCLUSIONS FROM COVERAGE

The following matters are expressly excluded from the coverage of this policy and the Company will not pay loss or damage, costs, attorneys' fees or expenses which arise by reason of:

1. (a) Any law, ordinance, permit, or governmental regulation (including those relating to building and zoning) restricting, regulating, prohibiting, or relating to (i) the occupancy, use, or enjoyment of the Land; (ii) the character, dimensions, or location of any improvement erected on the Land; (iii) the subdivision of land; or(iv) environmental protection; or the effect of any violation of these laws, ordinances, or governmental regulations. This Exclusion 1(a) does not modify or limit the coverage provided under Covered Risk 5, 6, 13(c), 13(d), 14 or 16.
   (b)Any governmental police power. This Exclusion 1(b) does not modify or limit the coverage provided under Covered Risk 5, 6, 13(c), 13(d), 14 or 16.
2. Rights of eminent domain. This Exclusion does not modify or limit the coverage provided under Covered Risk 7 or 8.
3. Defects, liens, encumbrances, adverse claims, or other matters
   (a) created, suffered, assumed or agreed to by the Insured Claimant;
   (b) not Known to the Company, not recorded in the Public Records at Date of Policy, but Known to the Insured Claimant and not disclosed in writing to the Company by the Insured Claimant prior to the date the Insured Claimant became an Insured under this policy;
   (c) resulting in no loss or damage to the Insured Claimant;
   (d) attaching or created subsequent to Date of Policy (however, this does not modify or limit the coverage provided under Covered Risk 11, 16, 17, 18, 19, 20, 21, 22, 23, 24, 27 or 28); or
   (e) resulting in loss or damage which would not have been sustained if the Insured Claimant had paid value for the Insured Mortgage.
4. Unenforceability of the lien of the Insured Mortgage because of the inability or failure of an Insured to comply with applicable doing business laws of the state where the Land is situated.
5. Invalidity or unenforceability in whole or in part of the lien of the Insured Mortgage that arises out of the transaction evidenced by the Insured Mortgage and is based upon usury, or any consumer credit protection or truth-in-lending law. This Exclusion does not modify or limit the coverage provided in Covered Risk 26.
6. Any claim of invalidity, unenforceability or lack of priority of the lien of the Insured Mortgage as to Advances or modifications made after the Insured has Knowledge that the vestee shown in Schedule A is no longer the owner of the estate or interest covered by this policy. This Exclusion does not modify or limit the coverage provided in Covered Risk 11.
7. Any lien on the Title for real estate taxes or assessments imposed by governmental authority and created or attaching subsequent to Date of Policy. This Exclusion does not modify or limit the coverage provided in Covered Risk 11(b) or 25.
8. The failure of the residential structure, or any portion of it, to have been constructed before, on or after Date of Policy in accordance with applicable building codes. This Exclusion does not modify or limit the coverage provided in Covered Risk 5 or 6.

13. AMERICAN LAND TITLE ASSOCIATION LOAN POLICY - 2006
EXCLUSIONS FROM COVERAGE

The following matters are expressly excluded from the coverage of this policy, and the Company will not pay loss or damage, costs, attorneys' fees, or

expenses that arise by reason of:

1. (a) Any law, ordinance, permit, or governmental regulation (including those relating to building and zoning) restricting, regulating, prohibiting, or relating to

   (i) the occupancy, use, or enjoyment of the Land;

   (ii) the character, dimensions, or location of any improvement erected on the Land;

   (iii) the subdivision of land; or

   (iv) environmental protection;

   or the effect of any violation of these laws, ordinances, or governmental regulations. This Exclusion 1(a) does not modify or limit the coverage provided under Covered Risk 5.

   (b) Any governmental police power. This Exclusion 1(b) does not modify or limit the coverage provided under Covered Risk 6.

2. Rights of eminent domain. This Exclusion does not modify or limit the coverage provided under Covered Risk 7 or 8.

3. Defects, liens, encumbrances, adverse claims, or other matters

   (a) created, suffered, assumed, or agreed to by the Insured Claimant;

   (b) not Known to the Company, not recorded in the Public Records at Date of Policy, but Known to the Insured Claimant and not disclosed in writing to the Company by the Insured Claimant prior to the date the Insured Claimant became an Insured under this policy;

   (c) resulting in no loss or damage to the Insured Claimant;

   (d) attaching or created subsequent to Date of Policy (however, this does not modify or limit the coverage provided under Covered Risk 11, 13, or 14); or

   (e) resulting in loss or damage that would not have been sustained if the Insured Claimant had paid value for the Insured Mortgage.

4. Unenforceability of the lien of the Insured Mortgage because of the inability or failure of an Insured to comply with applicable doing-business laws of the state where the Land is situated.

5. Invalidity or unenforceability in whole or in part of the lien of the Insured Mortgage that arises out of the transaction evidenced by the Insured Mortgage and is based upon usury or any consumer credit protection or truth-in-lending law.

6. Any claim, by reason of the operation of federal bankruptcy, state insolvency, or similar creditors' rights laws, that the transaction creating the lien of the Insured Mortgage, is

   (a) a fraudulent conveyance or fraudulent transfer, or

   (b) a preferential transfer for any reason not stated in Covered Risk 13(b) of this policy.

7. Any lien on the Title for real estate taxes or assessments imposed by governmental authority and created or attaching between Date of Policy and the date of recording of the Insured Mortgage in the Public Records. This Exclusion does not modify or limit the coverage provided under Covered Risk 11(b).

14. AMERICAN LAND TITLE ASSOCIATION LOAN POLICY - 2006 WITH REGIONAL EXCEPTIONS

When the American Land Title Association policy is used as a Standard Coverage Policy and not as an Extended Coverage Policy the exclusions set forth in paragraph 13 above are used and the following exceptions to coverage appear in the policy.

SCHEDULE B

This policy does not insure against loss or damage (and the Company will not pay costs, attorneys' fees or expenses) which arise by reason of:

1. (a) Taxes or assessments that are not shown as existing liens by the records of any taxing authority that levies taxes or assessments on real property or by the Public Records; (b) proceedings by a public agency that may result in taxes or assessments, or notices of such proceedings, whether or not shown by the records of such agency or by the Public Records.

2. Any facts, rights, interests, or claims that are not shown by the Public Records but that could be ascertained by an inspection of the Land or that may be asserted by persons in possession of the Land.

3. Easements, liens or encumbrances, or claims thereof, not shown by the Public Records.

4. Any encroachment, encumbrance, violation, variation, or adverse circumstance affecting the Title that would be disclosed by an accurate and complete land survey of the Land and not shown by the Public Records.

5. (a) Unpatented mining claims; (b) reservations or exceptions in patents or in Acts authorizing the issuance thereof; (c) water rights, claims or title to water, whether or not the matters excepted under (a), (b), or (c) are shown by the Public Records.

15. AMERICAN LAND TITLE ASSOCIATION OWNER'S POLICY - 2006 EXCLUSIONS FROM COVERAGE

The following matters are expressly excluded from the coverage of this policy and the Company will not pay loss or damage, costs, attorneys' fees or expenses which arise by reason of:

1. (a) Any law, ordinance, permit, or governmental regulation (including those relating to building and zoning) restricting, regulating, prohibiting, or relating to

   (i) the occupancy, use, or enjoyment of the Land;

   (ii) the character, dimensions, or location of any improvement erected on the Land;

   (iii) the subdivision of land; or

   (iv) environmental protection;or the effect of any violation of these laws, ordinances, or governmental regulations. This Exclusion 1(a) does not modify or limit the coverage provided under Covered Risk 5.

(b) Any governmental police power. This Exclusion 1(b) does not modify or limit the coverage provided under Covered Risk 6.

2. Rights of eminent domain. This Exclusion does not modify or limit the coverage provided under Covered Risk 7 or 8.

3. Defects, liens, encumbrances, adverse claims, or other matters

(a) created, suffered, assumed, or agreed to by the Insured Claimant;

(b) not Known to the Company, not recorded in the Public Records at Date of Policy, but Known to the Insured Claimant and not disclosed in writing to the Company by the Insured Claimant prior to the date the Insured Claimant became an Insured under this policy;

(c) resulting in no loss or damage to the Insured Claimant;

(d) attaching or created subsequent to Date of Policy (however, this does not modify or limit the coverage provided under Covered Risks 9 and 10); or

(e) resulting in loss or damage that would not have been sustained if the Insured Claimant had paid value for the Title.

4. Any claim, by reason of the operation of federal bankruptcy, state insolvency, or similar creditors rights laws, that the transaction vesting the Title as shown in Schedule A, is

(a) a fraudulent conveyance or fraudulent transfer; or

(b) a preferential transfer for any reason not stated in Covered Risk 9 of this policy.

5. Any lien on the Title for real estate taxes or assessments imposed by governmental authority and created or attaching between Date of Policy and the date of recording of the deed or other instrument of transfer in the Public Records that vests Title as shown in Schedule A.

16. AMERICAN LAND TITLE ASSOCIATION OWNER'S POLICY - 2006 WITH REGIONAL EXCEPTIONS

When the American Land Title Association policy is used as a Standard Coverage Policy and not as an Extended Coverage Policy the exclusions set forth in paragraph 15 above are used and the following exceptions to coverage appear in the policy.

SCHEDULE B

This policy does not insure against loss or damage (and the Company will not pay costs, attorneys' fees or expenses) which arise by reason of:

1. (a) Taxes or assessments that are not shown as existing liens by the records of any taxing authority that levies taxes or assessments on real property or by the Public Records; (b) proceedings by a public agency that may result in taxes or assessments, or notices of such proceedings, whether or not shown by the records of such agency or by the Public Records.
2. Any facts, rights, interests, or claims that are not shown by the Public Records but that could be ascertained by an inspection of the Land or that may be asserted by persons in possession of the Land.
3. Easements, liens or encumbrances, or claims thereof, not shown by the Public Records.
4. Any encroachment, encumbrance, violation, variation, or adverse circumstance affecting the Title that would be disclosed by an accurate and complete land survey of the Land and not shown by the Public Records.
5. (a) Unpatented mining claims; (b) reservations or exceptions in patents or in Acts authorizing the issuance thereof; (c) water rights, claims or title to water, whether or not the matters excepted under (a), (b), or (c) are shown by the Public Records.

Updated December 14, 2017

First American Title Insurance Company

National Commercial Services

666 Third Avenue, 5th Floor
New York, NY 10017

December 08, 2017

John Warren
Intersect Power
Embarcadero Center , 7th Floor
San Francisco, CA 94111
Phone: (415)297-4169

Customer Reference:	APN - 811-180-002, 811-180-003, 811-180-004 and 81
Order Number:	3020-882511
Owner:	Philip Hu and Kathryn Hu
Property:	Vacant Land/APN: 811-180-002, 811-180-003, 811-180-004, and 811-180-005, , CA

Attached please find the following item(s):

Commitment

Thank You for your confidence and support. We at First American Title Insurance Company maintain the fundamental principle:

Customer First!

First American Title Insurance Company

INFORMATION

The Title Insurance Commitment is a legal contract between you and the company. It is issued to show the basis on which we will issue a Title Insurance Policy to you. The Policy will insure you against certain risks to the land title, subject to the limitations shown in the policy.

The Company will give you a sample of the Policy form, if you ask.

The Commitment is based on the land title as of the Commitment Date. Any changes in the land title or the transaction may affect the Commitment and the Policy.

The Commitment is subject to its Requirements, Exceptions and Conditions.

This information is not part of the title insurance commitment.

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YOU SHOULD READ THE COMMITMENT VERY CAREFULLY.
If you have any questions about the Commitment,
please contact the issuing office.

COMMITMENT FOR TITLE INSURANCE

Issued by

First American Title Insurance Company

Agreement to Issue Policy

We agree to issue a policy to you according to the terms of this Commitment.

When we show the policy amount and your name as the proposed insured in Schedule A, this Commitment becomes effective as of the Commitment Date shown in Schedule A.

If the Requirements shown in this Commitment have not been met within six months after the Commitment Date, our obligation under this Commitment will end. Also, our obligation under this Commitment will end when the Policy is issued and then our obligation to you will be under the Policy.

Our obligation under this Commitment is limited by the following:

The Provisions in Schedule A.

The Requirements in Schedule B-1.

The Exceptions in Schedule B-2.

The Conditions.

This Commitment is not valid without Schedule A and Sections 1 and 2 of Schedule B.

SCHEDULE A

1. Commitment Date: November 28, 2017 at 7:30 A.M.

2. Policy or Policies to be issued: Amount

(A) ALTA Owner's Policy $To Be Determined
ALTA Standard Owner Policy

Proposed Insured:

To Be Determined

(B) ALTA Loan Policy $To Be Determined
To Be Determined

Proposed Insured:

To Be Determined

3. (A) The estate or interest in the land described in this Commitment is:

Fee

(B) Title to said estate or interest at the date hereof is vested in:

Philip Hu, as to an undivided 50% interest, and Philip Hu, Vivian Hu Shen Catherine Hu Zangrilli, as to an undivided 50% interest

4. The land referred to in this Commitment is situated in the unincorporated area of the County of Riverside, State of California, and is described as follows:

PARCEL NO. I:

THE SOUTHEAST QUARTER OF THE NORTHWEST QUARTER AND THE SOUTHWEST QUARTER OF SECTION 16, TOWNSHIP 5 SOUTH, RANGE 16 EAST, SAN BERNARDINO BASE AND MERIDIAN;

EXCEPTING THEREFROM THAT PORTION DESCRIBED AS FOLLOWS:

A STRIP OF LAND 100 FEET IN WIDTH LYING 50 FEET ON EACH SIDE OF THE FOLLOWING DESCRIBED CENTER LINE;

BEGINNING AT A POINT ON THE WEST LINE OF SAID SECTION 16, 1,155.00 FEET NORTH OF THE SOUTHWEST CORNER OF SAID SECTION 16;
THENCE SOUTH 61 DEG. 25' 14" EAST, 2505.00 FEET, MORE OR LESS, TO A POINT ON THE SOUTH LINE OF SAID SECTION 16;

ALSO EXCEPTING THEREFROM ALL OIL, GAS, OILSHALE, COAL, PHOSPHATE, SODIUM, GOLD, SILVER AND ALL OTHER MINERAL DEPOSITS AS RESERVED BY THE STATE OF CALIFORNIA RECORDED SEPTEMBER 4, 1958 AS INSTRUMENT NO. 63596.

PARCEL II:

THE SOUTHWEST QUARTER OF THE NORTHWEST QUARTER OF SECTION 16, TOWNSHIP 5 SOUTH, RANGE 16 EAST, SAN BERNARDINO BASE AND MERIDIAN, ACCORDING TO THE OFFICIAL PLAT THEREOF.

EXCEPTING THEREFROM ONE -SIXTEENTH OF ALL COAL, OIL, GAS, AND OTHER MINERAL DEPOSITS AS RESERVED BY THE STATE OF CALIFORNIA IN THE PATENT RECORDED NOVEMBER 21, 1936 IN BOOK 302, PAGE 504 OF THE OFFICIAL RECORDS.

ALSO EXCEPTING THEREFROM AN UNDIVIDED FIFTEEN THIRTY-SECONDS (15/32NDS) INTEREST IN AND TO ALL OIL, GAS AND MINERALS TOGETHER WITH THE RIGHT OF ENTRY UPON SAID LAND AS RESERVED BY CARMEL CANNON IN THE GRANT DEED RECORDED MARCH 20, 1956 AS INSTRUMENT NO. 19805.

ALSO EXCEPTING THEREFROM FIFTY PERCENT (50%) OF ALL OIL, GAS, MINERAL URANIUM, AND OTHER HYDROCARBON SUBSTANCES AS RESERVED BY PACIFIC CATTLE COMPANY, A CORPORATION, IN THE DEED RECORDED JULY 21, 1958 AS INSTRUMENT NO. 51857.

APN: 811-180-002-7 (Affects: Parcel II), 811-180-003-8 (Affects: Portion of Parcel I), 811-180-004-9 (Affects: Portion of Parcel I) and 811-180-005-0 (Affects: Portion of Parcel I)

SCHEDULE B

SECTION ONE

REQUIREMENTS

The following requirements must be met:

(A) Pay the agreed amounts for the interest in the land and/or the mortgage to be insured.

(B) Pay us the premiums, fees and charges for the policy.

(C) Documents satisfactory to us creating the interest in the land and/or the mortgage to be insured must be signed, delivered and recorded.

(D) You must tell us in writing the name of anyone not referred to in this Commitment who will get an interest in the land or who will make a loan on the land. We may then make additional requirements or exceptions.

(E) Releases(s) or Reconveyance(s) of Item(s): 10 and 11

(F) Other: None

(G) You must give us the following information:

1. Any off record leases, surveys, etc.
2. Statement(s) of Identity, all parties.
3. Other:

A deed from the spouse of any married vestee herein be recorded in the public records, or the joinder of the spouse of any married vestee named herein on any conveyance, encumbrance or lease to be executed by the vestee.

The deed should contain the following statement:

"It is the express intent of the grantor, being the spouse of the grantee, to convey all right, title and interest of the grantor, community or otherwise, in and to the herein described property to the grantee as his/her sole and separate property."

The following additional requirements, as indicated by "X", must be met:

[X] (H) Provide information regarding any off-record matters, which may include, but are not limited to: leases, recent works of improvement, or commitment statements in effect under the Environmental Responsibility Acceptance Act, Civil Code Section 850, et seq.

The Company's Owner's Affidavit form (as provided by company) must be completed and submitted prior to close in order to satisfy this requirement. This Commitment will then be subject to such further exceptions and/or requirements as may be deemed necessary.

[] (I) An ALTA/NSPS survey of recent date, which complies with the current minimum standard detail requirements for ALTA/NSPS land title surveys, must be submitted to the Company for review. This Commitment will then be subject to such further exceptions and/or requirements as may be deemed necessary.

[] (J) The following LLC documentation is required:
(i) a copy of the Articles of Organization
(ii) a copy of the Operating Agreement, if applicable
(iii) a Certificate of Good Standing and/or other evidence of current Authority to Conduct Business within the State
(iv) express Company Consent to the current transaction

[] (K) The following partnership documentation is required **:**
(i) a copy of the partnership agreement, including all applicable amendments thereto
(ii) a Certificate of Good Standing and/or other evidence of current Authority to Conduct Business within the State
(iii) express Partnership Consent to the current transaction

[] (L) The following corporation documentation is required:
(i) a copy of the Articles of Incorporation
(ii) a copy of the Bylaws, including all applicable Amendments thereto
(iii) a Certificate of Good Standing and/or other evidence of current Authority to Conduct Business within the State
(iv) express Corporate Resolution consenting to the current transaction

[] (M) Based upon the Company's review of that certain partnership/operating agreement dated **Not disclosed** for the proposed insured herein, the following requirements must be met:

Any further amendments to said agreement must be submitted to the Company, together with an affidavit from one of the general partners or members stating that it is a true copy, that said partnership or limited liability company is in full force and effect, and that there have been no further amendments to the agreement. This Commitment will then be subject to such further requirements as may be deemed necessary.

[] (N) A copy of the complete lease, as referenced in Schedule A, #3 herein, together with any amendments and/or assignments thereto, must be submitted to the Company for review, along with an affidavit executed by the present lessee stating that it is a true copy, that the lease is in full force and effect, and that there have been no further amendments to the lease. This Commitment will then be subject to such further requirements as may be deemed necessary.

[X] (O) Approval from the Company's Underwriting Department must be obtained for issuance of the policy contemplated herein and any endorsements requested thereunder. This Commitment will then be subject to such further requirements as may be required to obtain such approval.

[] (P) Potential additional requirements, if ALTA Extended coverage is contemplated hereunder, and work on the land has commenced prior to close, some or all of the following requirements, and any other requirements which may be deemed necessary, may need to be met:

[] (Q) The Company's "Indemnity Agreement I" must be executed by the appropriate parties.

[] (R) Financial statements from the appropriate parties must be submitted to the Company for review.

[] (S) A copy of the construction contract must be submitted to the Company for review.

[] (T) An inspection of the land must be performed by the Company for verification of the phase of construction.

[] (U) The Company's "Mechanic's Lien Risk Addendum" form must be completed by a Company employee, based upon information furnished by the appropriate parties involved.

SCHEDULE B

SECTION TWO

EXCEPTIONS

Any policy we issue will have the following exceptions unless they are taken care of to our satisfaction. The printed exceptions and exclusions from the coverage of the policy or policies are set forth in Exhibit A attached. Copies of the policy forms should be read. They are available from the office which issued this Commitment.

1. General and special taxes and assessments for the fiscal year 2017-2018.

First Installment:	$83.43, OPEN
Penalty:	$0.00
Second Installment:	$83.43, OPEN
Penalty:	$0.00
Tax Rate Area:	062-000
A. P. No.:	811-180-002-7

(Affects Parcel II)

2. General and special taxes and assessments for the fiscal year 2017-2018.

First Installment:	$83.43, OPEN
Penalty:	$0.00
Second Installment:	$83.43, OPEN
Penalty:	$0.00
Tax Rate Area:	062-000
A. P. No.:	811-180-003-8

(Affects Portion of Parcel I)

3. General and special taxes and assessments for the fiscal year 2017-2018.

First Installment:	$269.50, OPEN
Penalty:	$0.00
Second Installment:	$269.50, OPEN
Penalty:	$0.00
Tax Rate Area:	062-000
A. P. No.:	811-180-004-9

(Affects Portion of Parcel I)

4. General and special taxes and assessments for the fiscal year 2017-2018.

First Installment:	$50.94, OPEN
Penalty:	$0.00
Second Installment:	$50.94, OPEN
Penalty:	$0.00
Tax Rate Area:	062-000
A. P. No.:	811-180-005-0

(Affects Portion of Parcel I)

5. The lien of supplemental taxes, if any, assessed pursuant to Chapter 3.5 commencing with Section 75 of the California Revenue and Taxation Code.

6. An easement for pipelines and other purposes and incidental purposes in the document recorded March 20, 1956 as Book 1882, Page 404 of Official Records.

   The location of the easement cannot be determined from record information.

7. An easement for right of way and incidental purposes, recorded September 4, 1958 as Book 2327, Page 494 of Official Records.

In Favor of:	State of California
Affects:	as described therein

   The location of the easement cannot be determined from record information.

8. A right of way for ditches and canals as reserved by the United States of America in the patent recorded September 4, 1958 as Book 2327, page 494 of Official Records.

9. The terms and provisions contained in the document entitled "Declaration of Dedication" recorded October 10, 1979 as Instrument No. 214510 of Official Records.

10. A deed of trust to secure an original indebtedness of $169,000.00 recorded June 15, 1984 as Instrument No. 1984-128077 of Official Records.

Dated:	June 06, 1984
Trustor:	William G. Kellen, Trustee for the Sterling Trust dated July 15, 1980, Eugene C. Pace, an individual, and U.S. Agri-Research and Development Corp., a Nevada corporation
Trustee:	Title Insurance and Trust Company, a California corporation
Beneficiary:	Michael R. Kaplan, M.D. Trustee of the Michael R. Kaplan, M.D., Inc. Retirement Plans Trust, as to 28.40%; Harry Pellman, M.D., Trustee of the Edinger Medical Group Employee Benefit Plan Trust, as to 23.67%; Jerry H. Titel, M.D., and Carol Titel, Trustees of the Jerry H. Titel, M.D., Inc. Retirement Plans Trust, as to 15.39%; Charles E. Osborn, M.D., Trustee of the Charles E. Osborn, M.D., Inc., Retirement Plans Trust, as to 14.79%; Anne O. Sharp, a single woman, as to 11.83%; Kenneth G. Hobbs, Jr., M.D., Trustee of the Kenneth G. Hobbs, Jr., M.D., F.A.C.O.G., a Medical corporation defined benefit Pension Plan Trust, as to 5.92%

(Affects Parcel I)

11. A deed of trust to secure an original indebtedness of $426,000.00 recorded December 30, 1986 as Instrument No. 1986-335070 of Official Records.

Dated:	December 29, 1986
Trustor:	U.S. Agri Development Corporation
Trustee:	First American Title Insurance Company, a California corporation
Beneficiary:	William G. Kellen, Trustee for the Sterling Trust dated July 15, 1980

According to the public records, the beneficial interest under the deed of trust was assigned to La Cresta Investment Group #98-3, a limited partnership by assignment recorded September 29, 1988 as Instrument No. 1988-282504 of Official Records.

12. An easement for water easement and incidental purposes, recorded November 6, 1991 as Instrument No 385526 of Official Records.

In Favor of:	La Cresta Investment Group #98-3, a Limited Partnership
Affects:	as described therein

The location of the easement cannot be determined from record information.

13. Rights of the public in and to that portion of the land lying within any road, street and/or highway.

14. Any right, title or interest of the spouse, if any, of any married vestee herein.

15. The lack of a right of access to and from the land.

Notice: Paragraph 4 of the insuring provisions on the face page of the policy will be deleted from the policy to be issued.

16. Water rights, claims or title to water, whether or not shown by the public records.

17. Rights of parties in possession.

INFORMATIONAL NOTES

ALERT: CA Senate Bill 2 imposes an additional fee of $75 up to $225 at the time of recording on certain transactions effective January 1, 2018. Please contact your First American Title representative for more information on how this may affect your closing.

1. The property covered by this report is vacant land.

2. According to the public records, there has been no conveyance of the land within a period of twenty-four months prior to the date of this report, except as follows:

   None

3. This preliminary report/commitment was prepared based upon an application for a policy of title insurance that identified land by street address or assessor's parcel number only. It is the responsibility of the applicant to determine whether the land referred to herein is in fact the land that is to be described in the policy or policies to be issued.

The map attached, if any, may or may not be a survey of the land depicted hereon. First American Title Insurance Company expressly disclaims any liability for loss or damage which may result from reliance on this map except to the extent coverage for such loss or damage is expressly provided by the terms and provisions of the title insurance policy, if any, to which this map is attached.

******To obtain wire instructions for deposit of funds to your escrow file please contact your Escrow Officer.******

CONDITIONS

1. **DEFINITIONS**
(a)"Mortgage" means mortgage, deed of trust or other security instrument.
(b)"Public Records" means title records that give constructive notice of matters affecting the title according to the state law where the land is located.

2. **LATER DEFECTS**
The Exceptions in Schedule B - Section Two may be amended to show any defects, liens or encumbrances that appear for the first time in the public records or are created or attached between the Commitment Date and the date on which all of the Requirements (a) and (c) of Schedule B - Section One are met. We shall have no liability to you because of this amendment.

3. **EXISTING DEFECTS**
If any defects, liens or encumbrances existing at Commitment Date are not shown in Schedule B, we may amend Schedule B to show them. If we do amend Schedule B to show these defects, liens or encumbrances, we shall be liable to you according to Paragraph 4 below unless you knew of this information and did not tell us about it in writing.

4. **LIMITATION OF OUR LIABILITY**
Our only obligation is to issue to you the Policy referred to in this Commitment, when you have met its Requirements. If we have any liability to you for any loss you incur because of an error in this Commitment, our liability will be limited to your actual loss caused by your relying on this Commitment when you acted in good faith to:

comply with the Requirements shown in Schedule B - Section One
or
eliminate with our written consent any Exceptions shown in Schedule B - Section Two.

We shall not be liable for more than the Policy Amount shown in Schedule A of this Commitment and our liability is subject to the terms of the Policy form to be issued to you.

5. **CLAIMS MUST BE BASED ON THIS COMMITMENT**
Any claim, whether or not based on negligence, which you may have against us concerning the title to the land must be based on this commitment and is subject to its terms.

First American Title

Privacy Information

We Are Committed to Safeguarding Customer Information

In order to better serve your needs now and in the future, we may ask you to provide us with certain information. We understand that you may be concerned about what we will do with such information - particularly any personal or financial information. We agree that you have a right to know how we will utilize the personal information you provide to us. Therefore, together with our subsidiaries we have adopted this Privacy Policy to govern the use and handling of your personal information.

Applicability

This Privacy Policy governs our use of the information that you provide to us. It does not govern the manner in which we may use information we have obtained from any other source, such as information obtained from a public record or from another person or entity. First American has also adopted broader guidelines that govern our use of personal information regardless of its source. First American calls these guidelines its Fair Information Values.

Types of Information

Depending upon which of our services you are utilizing, the types of nonpublic personal information that we may collect include:

- Information we receive from you on applications, forms and in other communications to us, whether in writing, in person, by telephone or any other means;
- Information about your transactions with us, our affiliated companies, or others; and
- Information we receive from a consumer reporting agency.

Use of Information

We request information from you for our own legitimate business purposes and not for the benefit of any nonaffiliated party. Therefore, we will not release your information to nonaffiliated parties except: (1) as necessary for us to provide the product or service you have requested of us; or (2) as permitted by law. We may, however, store such information indefinitely, including the period after which any customer relationship has ceased. Such information may be used for any internal purpose, such as quality control efforts or customer analysis. We may also provide all of the types of nonpublic personal information listed above to one or more of our affiliated companies. Such affiliated companies include financial service providers, such as title insurers, property and casualty insurers, and trust and investment advisory companies, or companies involved in real estate services, such as appraisal companies, home warranty companies and escrow companies. Furthermore, we may also provide all the information we collect, as described above, to companies that perform marketing services on our behalf, on behalf of our affiliated companies or to other financial institutions with whom we or our affiliated companies have joint marketing agreements.

Former Customers

Even if you are no longer our customer, our Privacy Policy will continue to apply to you.

Confidentiality and Security

We will use our best efforts to ensure that no unauthorized parties have access to any of your information. We restrict access to nonpublic personal information about you to those individuals and entities who need to know that information to provide products or services to you. We will use our best efforts to train and oversee our employees and agents to ensure that your information will be handled responsibly and in accordance with this Privacy Policy and First American's Fair Information Values. We currently maintain physical, electronic, and procedural safeguards that comply with federal regulations to guard your nonpublic personal information.

Information Obtained Through Our Web Site

First American Financial Corporation is sensitive to privacy issues on the Internet. We believe it is important you know how we treat the information about you we receive on the Internet.

In general, you can visit First American or its affiliates' Web sites on the World Wide Web without telling us who you are or revealing any information about yourself. Our Web servers collect the domain names, not the e-mail addresses, of visitors. This information is aggregated to measure the number of visits, average time spent on the site, pages viewed and similar information. First American uses this information to measure the use of our site and to develop ideas to improve the content of our site.

There are times, however, when we may need information from you, such as your name and email address. When information is needed, we will use our best efforts to let you know at the time of collection how we will use the personal information. Usually, the personal information we collect is used only by us to respond to your inquiry, process an order or allow you to access specific account/profile information. If you choose to share any personal information with us, we will only use it in accordance with the policies outlined above.

Business Relationships

First American Financial Corporation's site and its affiliates' sites may contain links to other Web sites. While we try to link only to sites that share our high standards and respect for privacy, we are not responsible for the content or the privacy practices employed by other sites.

Cookies

Some of First American's Web sites may make use of "cookie" technology to measure site activity and to customize information to your personal tastes. A cookie is an element of data that a Web site can send to your browser, which may then store the cookie on your hard drive.

FirstAm.com uses stored cookies. The goal of this technology is to better serve you when visiting our site, save you time when you are here and to provide you with a more meaningful and productive Web site experience.

Fair Information Values

Fairness We consider consumer expectations about their privacy in all our businesses. We only offer products and services that assure a favorable balance between consumer benefits and consumer privacy.

Public Record We believe that an open public record creates significant value for society, enhances consumer choice and creates consumer opportunity. We actively support an open public record and emphasize its importance and contribution to our economy.

Use We believe we should behave responsibly when we use information about a consumer in our business. We will obey the laws governing the collection, use and dissemination of data.

Accuracy We will take reasonable steps to help assure the accuracy of the data we collect, use and disseminate. Where possible, we will take reasonable steps to correct inaccurate information. When, as with the public record, we cannot correct inaccurate information, we will take all reasonable steps to assist consumers in identifying the source of the erroneous data so that the consumer can secure the required corrections.

Education We endeavor to educate the users of our products and services, our employees and others in our industry about the importance of consumer privacy. We will instruct our employees on our fair information values and on the responsible collection and use of data. We will encourage others in our industry to collect and use information in a responsible manner.

Security We will maintain appropriate facilities and systems to protect against unauthorized access to and corruption of the data we maintain.

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EXHIBIT A
LIST OF PRINTED EXCEPTIONS AND EXCLUSIONS (BY POLICY TYPE)

1. CALIFORNIA LAND TITLE ASSOCIATION STANDARD COVERAGE POLICY - 1990
SCHEDULE B

EXCEPTIONS FROM COVERAGE

This policy does not insure against loss or damage (and the Company will not pay costs, attorneys' fees or expenses) which arise by reason of:

1. Taxes or assessments which are not shown as existing liens by the records of any taxing authority that levies taxes or assessments on real property or by the public records. Proceedings by a public agency which may result in taxes or assessments, or notice of such proceedings, whether or not shown by the records of such agency or by the public records.
2. Any facts, rights, interests, or claims which are not shown by the public records but which could be ascertained by an inspection of the land or which may be asserted by persons in possession thereof.
3. Easements, liens or encumbrances, or claims thereof, which are not shown by the public records.
4. Discrepancies, conflicts in boundary lines, shortage in area, encroachments, or any other facts which a correct survey would disclose, and which are not shown by the public records.
5. (a) Unpatented mining claims; (b) reservations or exceptions in patents or in Acts authorizing the issuance thereof; (c) water rights, claims or title to water, whether or not the matters excepted under (a), (b), or (c) are shown by the public records.

EXCLUSIONS FROM COVERAGE

The following matters are expressly excluded from the coverage of this policy and the Company will not pay loss or damage, costs, attorneys' fees or expenses which arise by reason of:

1. (a) Any law, ordinance or governmental regulation (including but not limited to building and zoning laws, ordinances, or regulations) restricting, regulating, prohibiting or relating to (i) the occupancy, use, or enjoyment of the land; (ii) the character, dimensions or location of any improvement now or hereafter erected on the land; (iii) a separation in ownership or a change in the dimensions or area of the land or any parcel of which the land is or was a part; or (iv) environmental protection, or the effect of any violation of these laws, ordinances or governmental regulations, except to the extent that a notice of the enforcement thereof or a notice of a defect, lien or encumbrance resulting from a violation or alleged violation affecting the land has been recorded in the public records at Date of Policy.
   (b) Any governmental police power not excluded by (a) above, except to the extent that a notice of the exercise thereof or a notice of a defect, lien or encumbrance resulting from a violation or alleged violation affecting the land has been recorded in the public records at Date of Policy.
2. Rights of eminent domain unless notice of the exercise thereof has been recorded in the public records at Date of Policy, but not excluding from coverage any taking which has occurred prior to Date of Policy which would be binding on the rights of a purchaser for value without knowledge.
3. Defects, liens, encumbrances, adverse claims or other matters:
   (a) whether or not recorded in the public records at Date of Policy, but created, suffered, assumed or agreed to by the insured claimant;
   (b) not known to the Company, not recorded in the public records at Date of Policy, but known to the insured claimant and not disclosed in writing to the Company by the insured claimant prior to the date the insured claimant became an insured under this policy;
   (c) resulting in no loss or damage to the insured claimant;
   (d) attaching or created subsequent to Date of Policy; or
   (e) resulting in loss or damage which would not have been sustained if the insured claimant had paid value for the insured mortgage or for the estate or interest insured by this policy.
4. Unenforceability of the lien of the insured mortgage because of the inability or failure of the insured at Date of Policy, or the inability or failure of any subsequent owner of the indebtedness, to comply with applicable "doing business" laws of the state in which the land is situated.
5. Invalidity or unenforceability of the lien of the insured mortgage, or claim thereof, which arises out of the transaction evidenced by the insured mortgage and is based upon usury or any consumer credit protection or truth in lending law.
6. Any claim, which arises out of the transaction vesting in the insured the estate or interest insured by their policy or the transaction creating the interest of the insured lender, by reason of the operation of federal bankruptcy, state insolvency or similar creditors' rights laws.

2. AMERICAN LAND TITLE ASSOCIATION OWNER'S POLICY FORM B - 1970
SCHEDULE OF EXCLUSIONS FROM COVERAGE

1. Any law, ordinance or governmental regulation (including but not limited to building and zoning ordinances) restricting or regulating or prohibiting the occupancy, use or enjoyment of the land, or regulating the character, dimensions or location of any improvement now or hereafter erected on the land, or prohibiting a separation in ownership or a reduction in the dimensions of area of the land, or the effect of any violation of any such law, ordinance or governmental regulation.
2. Rights of eminent domain or governmental rights of police power unless notice of the exercise of such rights appears in the public records at Date of Policy.
3. Defects, liens, encumbrances, adverse claims, or other matters (a) created, suffered, assumed or agreed to by the insured claimant; (b) not known to the Company and not shown by the public records but known to the insured claimant either at Date of Policy or at the date such claimant acquired an estate or interest insured by this policy and not disclosed in writing by the insured claimant to the Company prior to the date such insured claimant became an insured hereunder; (c) resulting in no loss or damage to the insured claimant; (d) attaching or created subsequent to Date of Policy; or (e) resulting in loss or damage which would not have been sustained if the insured claimant had paid value for the estate or interest insured by this policy.

3. AMERICAN LAND TITLE ASSOCIATION OWNER'S POLICY FORM B - 1970
WITH REGIONAL EXCEPTIONS

When the American Land Title Association policy is used as a Standard Coverage Policy and not as an Extended Coverage Policy the exclusions set forth in paragraph 2 above are used and the following exceptions to coverage appear in the policy.

SCHEDULE B

This policy does not insure against loss or damage by reason of the matters shown in parts one and two following:
Part One

1. Taxes or assessments which are not shown as existing liens by the records of any taxing authority that levies taxes or assessments on real property or by the public records.
2. Any facts, rights, interests, or claims which are not shown by the public records but which could be ascertained by an inspection of said land or by making inquiry of persons in possession thereof.
3. Easements, claims of easement or encumbrances which are not shown by the public records.
4. Discrepancies, conflicts in boundary lines, shortage in area, encroachments, or any other facts which a correct survey would disclose, and which are not shown by public records.
5. Unpatented mining claims; reservations or exceptions in patents or in Acts authorizing the issuance thereof; water rights, claims or title to water.
6. Any lien, or right to a lien, for services, labor or material heretofore or hereafter furnished, imposed by law and not shown by the public records.

4. AMERICAN LAND TITLE ASSOCIATION LOAN POLICY - 1970 WITH A.L.T.A. ENDORSEMENT FORM 1 COVERAGE SCHEDULE OF EXCLUSIONS FROM COVERAGE

1. Any law, ordinance or governmental regulation (including but not limited to building and zoning ordinances) restricting or regulating or prohibiting the occupancy, use or enjoyment of the land, or regulating the character, dimensions or location of any improvement now or hereafter erected on the land, or prohibiting a separation in ownership or a reduction in the dimensions or area of the land, or the effect of any violation of any such law ordinance or governmental regulation.
2. Rights of eminent domain or governmental rights of police power unless notice of the exercise of such rights appears in the public records at Date of Policy.
3. Defects, liens, encumbrances, adverse claims, or other matters (a) created, suffered, assumed or agreed to by the insured claimant, (b) not known to the Company and not shown by the public records but known to the insured claimant either at Date of Policy or at the date such claimant acquired an estate or interest insured by this policy or acquired the insured mortgage and not disclosed in writing by the insured claimant to the Company prior to the date such insured claimant became an insured hereunder, (c) resulting in no loss or damage to the insured claimant; (d) attaching or created subsequent to Date of Policy (except to the extent insurance is afforded herein as to any statutory lien for labor or material or to the extent insurance is afforded herein as to assessments for street improvements under construction or completed at Date of Policy).
4. Unenforceability of the lien of the insured mortgage because of failure of the insured at Date of Policy or of any subsequent owner of the indebtedness to comply with applicable "doing business" laws of the state in which the land is situated.

5. AMERICAN LAND TITLE ASSOCIATION LOAN POLICY - 1970 WITH REGIONAL EXCEPTIONS

When the American Land Title Association Lenders Policy is used as a Standard Coverage Policy and not as an Extended Coverage Policy, the exclusions set forth in paragraph 4 above are used and the following exceptions to coverage appear in the policy.

SCHEDULE B

This policy does not insure against loss or damage by reason of the matters shown in parts one and two following:
Part One

1. Taxes or assessments which are not shown as existing liens by the records of any taxing authority that levies taxes or assessments on real property or by the public records.
2. Any facts, rights, interests, or claims which are not shown by the public records but which could be ascertained by an inspection of said land or by making inquiry of persons in possession thereof.
3. Easements, claims of easement or encumbrances which are not shown by the public records.
4. Discrepancies, conflicts in boundary lines, shortage in area, encroachments, or any other facts which a correct survey would disclose, and which are not shown by public records.
5. Unpatented mining claims; reservations or exceptions in patents or in Acts authorizing the issuance thereof; water rights, claims or title to water.
6. Any lien, or right to a lien, for services, labor or material theretofore or hereafter furnished, imposed by law and not shown by the public records.

6. AMERICAN LAND TITLE ASSOCIATION LOAN POLICY - 1992 WITH A.L.T.A. ENDORSEMENT FORM 1 COVERAGE EXCLUSIONS FROM COVERAGE

The following matters are expressly excluded from the coverage of this policy and the Company will not pay loss or damage, costs, attorneys' fees or expenses which arise by reason of:

1. (a) Any law, ordinance or governmental regulation (including but not limited to building and zoning laws, ordinances, or regulations) restricting, regulating, prohibiting or relating to (i) the occupancy, use, or enjoyment of the land; (ii) the character, dimensions or location of any improvement now or hereafter erected on the land; (iii) a separation in ownership or a change in the dimensions or area of the land or any parcel of which the land is or was a part; or (iv) environmental protection, or the effect of any violation of these laws, ordinances or governmental regulations, except to the extent that a notice of the enforcement thereof or a notice of a defect, lien or encumbrance resulting from a violation or alleged violation affecting the land has been recorded in the public records at Date of Policy;
   (b) Any governmental police power not excluded by (a) above, except to the extent that a notice of the exercise thereof or a notice of a defect, lien or encumbrance resulting from a violation or alleged violation affecting the land has been recorded in the public records at Date of Policy.

2. Rights of eminent domain unless notice of the exercise thereof has been recorded in the public records at Date of Policy, but not excluding from coverage any taking which has occurred prior to Date of Policy which would be binding on the rights of a purchaser for value without knowledge.
3. Defects, liens, encumbrances, adverse claims, or other matters:
(a) whether or not recorded in the public records at Date of Policy, but created, suffered, assumed or agreed to by the insured claimant;
(b) not known to the Company, not recorded in the public records at Date of Policy, but known to the insured claimant and not disclosed in writing to the Company by the insured claimant prior to the date the insured claimant became an insured under this policy;
(c) resulting in no loss or damage to the insured claimant;
(d) attaching or created subsequent to Date of Policy (except to the extent that this policy insures the priority of the lien of the insured mortgage over any statutory lien for services, labor or material or the extent insurance is afforded herein as to assessments for street improvements under construction or completed at date of policy); or
(e) resulting in loss or damage which would not have been sustained if the insured claimant had paid value for the insured mortgage.
4. Unenforceability of the lien of the insured mortgage because of the inability or failure of the insured at Date of Policy, or the inability or failure of any subsequent owner of the indebtedness, to comply with the applicable "doing business" laws of the state in which the land is situated.
5. Invalidity or unenforceability of the lien of the insured mortgage, or claim thereof, which arises out of the transaction evidenced by the insured mortgage and is based upon usury or any consumer credit protection or truth in lending law.
6. Any statutory lien for services, labor or materials (or the claim of priority of any statutory lien for services, labor or materials over the lien of the insured mortgage) arising from an improvement or work related to the land which is contracted for and commenced subsequent to Date of Policy and is not financed in whole or in part by proceeds of the indebtedness secured by the insured mortgage which at Date of Policy the insured has advanced or is obligated to advance.
7. Any claim, which arises out of the transaction creating the interest of the mortgagee insured by this policy, by reason of the operation of federal bankruptcy, state insolvency, or similar creditors' rights laws, that is based on:
(i) the transaction creating the interest of the insured mortgagee being deemed a fraudulent conveyance or fraudulent transfer; or
(ii) the subordination of the interest of the insured mortgagee as a result of the application of the doctrine of equitable subordination; or
(iii) the transaction creating the interest of the insured mortgagee being deemed a preferential transfer except where the preferential transfer results from the failure:
(a) to timely record the instrument of transfer; or
(b) of such recordation to impart notice to a purchaser for value or a judgment or lien creditor.

7. AMERICAN LAND TITLE ASSOCIATION LOAN POLICY - 1992
WITH REGIONAL EXCEPTIONS

When the American Land Title Association policy is used as a Standard Coverage Policy and not as an Extended Coverage Policy the exclusions set forth in paragraph 6 above are used and the following exceptions to coverage appear in the policy.

SCHEDULE B

This policy does not insure against loss or damage (and the Company will not pay costs, attorneys' fees or expenses) which arise by reason of:
1. Taxes or assessments which are not shown as existing liens by the records of any taxing authority that levies taxes or assessments on real property or by the public records.
2. Any facts, rights, interests, or claims which are not shown by the public records but which could be ascertained by an inspection of said land or by making inquiry of persons in possession thereof.
3. Easements, claims of easement or encumbrances which are not shown by the public records.
4. Discrepancies, conflicts in boundary lines, shortage in area, encroachments, or any other facts which a correct survey would disclose, and which are not shown by public records.
5. Unpatented mining claims; reservations or exceptions in patents or in Acts authorizing the issuance thereof; water rights, claims or title to water.
6. Any lien, or right to a lien, for services, labor or material theretofore or hereafter furnished, imposed by law and not shown by the public records.

8. AMERICAN LAND TITLE ASSOCIATION OWNER'S POLICY - 1992
EXCLUSIONS FROM COVERAGE

The following matters are expressly excluded from the coverage of this policy and the Company will not pay loss or damage, costs, attorneys' fees or expenses which arise by reason of:
1. (a) Any law, ordinance or governmental regulation (including but not limited to building and zoning laws, ordinances, or regulations) restricting, regulating, prohibiting or relating to (i) the occupancy, use, or enjoyment of the land; (ii) the character, dimensions or location of any improvement now or hereafter erected on the land; (iii) a separation in ownership or a change in the dimensions or area of the land or any parcel of which the land is or was a part; or (iv) environmental protection, or the effect of any violation of these laws, ordinances or governmental regulations, except to the extent that a notice of the enforcement thereof or a notice of a defect, lien or encumbrance resulting from a violation or alleged violation affecting the land has been recorded in the public records at Date of Policy.
(b) Any governmental police power not excluded by (a) above, except to the extent that a notice of the exercise thereof or a notice of a defect, lien or encumbrance resulting from a violation or alleged violation affecting the land has been recorded in the public records at Date of Policy.
2. Rights of eminent domain unless notice of the exercise thereof has been recorded in the public records at Date of Policy, but not excluding from coverage any taking which has occurred prior to Date of Policy which would be binding on the rights of a purchaser for value without knowledge.
3. Defects, liens, encumbrances, adverse claims, or other matters:
(a) created, suffered, assumed or agreed to by the insured claimant;
(b) not known to the Company, not recorded in the public records at Date of Policy, but known to the insured claimant and not disclosed in writing to the Company by the insured claimant prior to the date the insured claimant became an insured under this policy;
(c) resulting in no loss or damage to the insured claimant;
(d) attaching or created subsequent to Date of Policy; or

(e) resulting in loss or damage which would not have been sustained if the insured claimant had paid value for the estate or interest insured by this policy.

4. Any claim, which arises out of the transaction vesting in the insured the estate or interest insured by this policy, by reason of the operation of federal bankruptcy, state insolvency, or similar creditors' rights laws, that is based on:
(i) the transaction creating the estate or interest insured by this policy being deemed a fraudulent conveyance or fraudulent transfer; or
(ii) the transaction creating the estate or interest insured by this policy being deemed a preferential transfer except where the preferential transfer results from the failure:
(a) to timely record the instrument of transfer; or
(b) of such recordation to impart notice to a purchaser for value or a judgment or lien creditor.

9. AMERICAN LAND TITLE ASSOCIATION OWNER'S POLICY - 1992 WITH REGIONAL EXCEPTIONS

When the American Land Title Association policy is used as a Standard Coverage Policy and not as an Extended Coverage Policy the exclusions set forth in paragraph 8 above are used and the following exceptions to coverage appear in the policy.

SCHEDULE B

This policy does not insure against loss or damage (and the Company will not pay costs, attorneys' fees or expenses) which arise by reason of:
Part One:

1. Taxes or assessments which are not shown as existing liens by the records of any taxing authority that levies taxes or assessments on real property or by the public records.
2. Any facts, rights, interests, or claims which are not shown by the public records but which could be ascertained by an inspection of said land or by making inquiry of persons in possession thereof.
3. Easements, claims of easement or encumbrances which are not shown by the public records.
4. Discrepancies, conflicts in boundary lines, shortage in area, encroachments, or any other facts which a correct survey would disclose, and which are not shown by public records.
5. Unpatented mining claims; reservations or exceptions in patents or in Acts authorizing the issuance thereof; water rights, claims or title to water.
6. Any lien, or right to a lien, for services, labor or material theretofore or hereafter furnished, imposed by law and not shown by the public records.

ALTA RESIDENTIAL TITLE INSURANCE POLICY (6-1-87)

EXCLUSIONS

In addition to the Exceptions in Schedule B, you are not insured against loss, costs, attorneys' fees, and expenses resulting from:

1. Governmental police power, and the existence or violation of any law or government regulation. This includes building and zoning ordinances and also laws and regulations concerning:
   (a) and use
   (b) improvements on the land
   (c) and division
   (d) environmental protection

   This exclusion does not apply to violations or the enforcement of these matters which appear in the public records at Policy Date.
   This exclusion does not limit the zoning coverage described in Items 12 and 13 of Covered Title Risks.
2. The right to take the land by condemning it, unless:
   (a) a notice of exercising the right appears in the public records on the Policy Date
   (b) the taking happened prior to the Policy Date and is binding on you if you bought the land without knowing of the taking
3. Title Risks:
   (a) that are created, allowed, or agreed to by you
   (b) that are known to you, but not to us, on the Policy Date -- unless they appeared in the public records
   (c) that result in no loss to you
   (d) that first affect your title after the Policy Date -- this does not limit the labor and material lien coverage in Item 8 of Covered Title Risks
4. Failure to pay value for your title.
5. Lack of a right:
   (a) to any land outside the area specifically described and referred to in Item 3 of Schedule A OR
   (b) in streets, alleys, or waterways that touch your land
   This exclusion does not limit the access coverage in Item 5 of Covered Title Risks.

11. EAGLE PROTECTION OWNER'S POLICY

CLTA HOMEOWNER'S POLICY OF TITLE INSURANCE - 1998
ALTA HOMEOWNER'S POLICY OF TITLE INSURANCE - 1998

Covered Risks 14 (Subdivision Law Violation). 15 (Building Permit). 16 (Zoning) and 18 (Encroachment of boundary walls or fences) are subject to Deductible Amounts and Maximum Dollar Limits of Liability

EXCLUSIONS

In addition to the Exceptions in Schedule B, you are not insured against loss, costs, attorneys' fees, and expenses resulting from:

1. Governmental police power, and the existence or violation of any law or government regulation. This includes ordinances, laws and regulations concerning:
   a. building
   b. zoning
   c. land use
   d. improvements on the land
   e. land division
   f. environmental protection

   This exclusion does not apply to violations or the enforcement of these matters if notice of the violation or enforcement appears in the Public Records at the Policy Date.
   This exclusion does not limit the coverage described in Covered Risk 14, 15, 16, 17 or 24.
2. The failure of Your existing structures, or any part of them, to be constructed in accordance with applicable building codes. This Exclusion does not apply to violations of building codes if notice of the violation appears in the Public Records at the Policy Date.
3. The right to take the Land by condemning it, unless:
   a. a notice of exercising the right appears in the Public Records at the Policy Date; or
   b. the taking happened before the Policy Date and is binding on You if You bought the Land without Knowing of the taking.
4. Risks:
   a. that are created, allowed, or agreed to by You, whether or not they appear in the Public Records;
   b. that are Known to You at the Policy Date, but not to Us, unless they appear in the Public Records at the Policy Date;
   c. that result in no loss to You; or
   d. that first occur after the Policy Date - this does not limit the coverage described in Covered Risk 7, 8.d, 22, 23, 24 or 25.
5. Failure to pay value for Your Title.
6. Lack of a right:
   a. to any Land outside the area specifically described and referred to in paragraph 3 of Schedule A; and
   b. in streets, alleys, or waterways that touch the Land.
   This exclusion does not limit the coverage described in Covered Risk 11 or 18.

12. THIRD GENERATION EAGLE LOAN POLICY AMERICAN LAND TITLE ASSOCIATION EXPANDED COVERAGE RESIDENTIAL LOAN POLICY (1/01/08)

EXCLUSIONS FROM COVERAGE

The following matters are expressly excluded from the coverage of this policy and the Company will not pay loss or damage, costs, attorneys' fees or expenses which arise by reason of:

1. (a) Any law, ordinance, permit, or governmental regulation (including those relating to building and zoning) restricting, regulating, prohibiting, or relating to (i) the occupancy, use, or enjoyment of the Land; (ii) the character, dimensions, or location of any improvement erected on the Land; (iii) the subdivision of land; or(iv) environmental protection; or the effect of any violation of these laws, ordinances, or governmental regulations. This Exclusion 1(a) does not modify or limit the coverage provided under Covered Risk 5, 6, 13(c), 13(d), 14 or 16.
   (b)Any governmental police power. This Exclusion 1(b) does not modify or limit the coverage provided under Covered Risk 5, 6, 13(c), 13(d), 14 or 16.
2. Rights of eminent domain. This Exclusion does not modify or limit the coverage provided under Covered Risk 7 or 8.
3. Defects, liens, encumbrances, adverse claims, or other matters
   (a) created, suffered, assumed or agreed to by the Insured Claimant;
   (b) not Known to the Company, not recorded in the Public Records at Date of Policy, but Known to the Insured Claimant and not disclosed in writing to the Company by the Insured Claimant prior to the date the Insured Claimant became an Insured under this policy;
   (c) resulting in no loss or damage to the Insured Claimant;
   (d) attaching or created subsequent to Date of Policy (however, this does not modify or limit the coverage provided under Covered Risk 11, 16, 17, 18, 19, 20, 21, 22, 23, 24, 27 or 28); or
   (e) resulting in loss or damage which would not have been sustained if the Insured Claimant had paid value for the Insured Mortgage.
4. Unenforceability of the lien of the Insured Mortgage because of the inability or failure of an Insured to comply with applicable doing business laws of the state where the Land is situated.
5. Invalidity or unenforceability in whole or in part of the lien of the Insured Mortgage that arises out of the transaction evidenced by the Insured Mortgage and is based upon usury, or any consumer credit protection or truth-in-lending law. This Exclusion does not modify or limit the coverage provided in Covered Risk 26.
6. Any claim of invalidity, unenforceability or lack of priority of the lien of the Insured Mortgage as to Advances or modifications made after the Insured has Knowledge that the vestee shown in Schedule A is no longer the owner of the estate or interest covered by this policy. This Exclusion does not modify or limit the coverage provided in Covered Risk 11.
7. Any lien on the Title for real estate taxes or assessments imposed by governmental authority and created or attaching subsequent to Date of Policy. This Exclusion does not modify or limit the coverage provided in Covered Risk 11(b) or 25.
8. The failure of the residential structure, or any portion of it, to have been constructed before, on or after Date of Policy in accordance with applicable building codes. This Exclusion does not modify or limit the coverage provided in Covered Risk 5 or 6.

13. AMERICAN LAND TITLE ASSOCIATION LOAN POLICY - 2006
EXCLUSIONS FROM COVERAGE

The following matters are expressly excluded from the coverage of this policy, and the Company will not pay loss or damage, costs, attorneys' fees, or

expenses that arise by reason of:

1. (a) Any law, ordinance, permit, or governmental regulation (including those relating to building and zoning) restricting, regulating, prohibiting, or relating to

   (i) the occupancy, use, or enjoyment of the Land;

   (ii) the character, dimensions, or location of any improvement erected on the Land;

   (iii) the subdivision of land; or

   (iv) environmental protection;

   or the effect of any violation of these laws, ordinances, or governmental regulations. This Exclusion 1(a) does not modify or limit the coverage provided under Covered Risk 5.

   (b) Any governmental police power. This Exclusion 1(b) does not modify or limit the coverage provided under Covered Risk 6.

2. Rights of eminent domain. This Exclusion does not modify or limit the coverage provided under Covered Risk 7 or 8.

3. Defects, liens, encumbrances, adverse claims, or other matters

   (a) created, suffered, assumed, or agreed to by the Insured Claimant;

   (b) not Known to the Company, not recorded in the Public Records at Date of Policy, but Known to the Insured Claimant and not disclosed in writing to the Company by the Insured Claimant prior to the date the Insured Claimant became an Insured under this policy;

   (c) resulting in no loss or damage to the Insured Claimant;

   (d) attaching or created subsequent to Date of Policy (however, this does not modify or limit the coverage provided under Covered Risk 11, 13, or 14); or

   (e) resulting in loss or damage that would not have been sustained if the Insured Claimant had paid value for the Insured Mortgage.

4. Unenforceability of the lien of the Insured Mortgage because of the inability or failure of an Insured to comply with applicable doing-business laws of the state where the Land is situated.

5. Invalidity or unenforceability in whole or in part of the lien of the Insured Mortgage that arises out of the transaction evidenced by the Insured Mortgage and is based upon usury or any consumer credit protection or truth-in-lending law.

6. Any claim, by reason of the operation of federal bankruptcy, state insolvency, or similar creditors' rights laws, that the transaction creating the lien of the Insured Mortgage, is

   (a) a fraudulent conveyance or fraudulent transfer, or

   (b) a preferential transfer for any reason not stated in Covered Risk 13(b) of this policy.

7. Any lien on the Title for real estate taxes or assessments imposed by governmental authority and created or attaching between Date of Policy and the date of recording of the Insured Mortgage in the Public Records. This Exclusion does not modify or limit the coverage provided under Covered Risk 11(b).

14. AMERICAN LAND TITLE ASSOCIATION LOAN POLICY - 2006 WITH REGIONAL EXCEPTIONS

When the American Land Title Association policy is used as a Standard Coverage Policy and not as an Extended Coverage Policy the exclusions set forth in paragraph 13 above are used and the following exceptions to coverage appear in the policy.

SCHEDULE B

This policy does not insure against loss or damage (and the Company will not pay costs, attorneys' fees or expenses) which arise by reason of:

1. (a) Taxes or assessments that are not shown as existing liens by the records of any taxing authority that levies taxes or assessments on real property or by the Public Records; (b) proceedings by a public agency that may result in taxes or assessments, or notices of such proceedings, whether or not shown by the records of such agency or by the Public Records.

2. Any facts, rights, interests, or claims that are not shown by the Public Records but that could be ascertained by an inspection of the Land or that may be asserted by persons in possession of the Land.

3. Easements, liens or encumbrances, or claims thereof, not shown by the Public Records.

4. Any encroachment, encumbrance, violation, variation, or adverse circumstance affecting the Title that would be disclosed by an accurate and complete land survey of the Land and not shown by the Public Records.

5. (a) Unpatented mining claims; (b) reservations or exceptions in patents or in Acts authorizing the issuance thereof; (c) water rights, claims or title to water, whether or not the matters excepted under (a), (b), or (c) are shown by the Public Records.

15. AMERICAN LAND TITLE ASSOCIATION OWNER'S POLICY - 2006 EXCLUSIONS FROM COVERAGE

The following matters are expressly excluded from the coverage of this policy and the Company will not pay loss or damage, costs, attorneys' fees or expenses which arise by reason of:

1. (a) Any law, ordinance, permit, or governmental regulation (including those relating to building and zoning) restricting, regulating, prohibiting, or relating to

   (i) the occupancy, use, or enjoyment of the Land;

   (ii) the character, dimensions, or location of any improvement erected on the Land;

   (iii) the subdivision of land; or

   (iv) environmental protection;or the effect of any violation of these laws, ordinances, or governmental regulations. This Exclusion 1(a) does not modify or limit the coverage provided under Covered Risk 5.

(b) Any governmental police power. This Exclusion 1(b) does not modify or limit the coverage provided under Covered Risk 6.

2. Rights of eminent domain. This Exclusion does not modify or limit the coverage provided under Covered Risk 7 or 8.

3. Defects, liens, encumbrances, adverse claims, or other matters

(a) created, suffered, assumed, or agreed to by the Insured Claimant;

(b) not Known to the Company, not recorded in the Public Records at Date of Policy, but Known to the Insured Claimant and not disclosed in writing to the Company by the Insured Claimant prior to the date the Insured Claimant became an Insured under this policy;

(c) resulting in no loss or damage to the Insured Claimant;

(d) attaching or created subsequent to Date of Policy (however, this does not modify or limit the coverage provided under Covered Risks 9 and 10); or

(e) resulting in loss or damage that would not have been sustained if the Insured Claimant had paid value for the Title.

4. Any claim, by reason of the operation of federal bankruptcy, state insolvency, or similar creditors rights laws, that the transaction vesting the Title as shown in Schedule A, is

(a) a fraudulent conveyance or fraudulent transfer; or

(b) a preferential transfer for any reason not stated in Covered Risk 9 of this policy.

5. Any lien on the Title for real estate taxes or assessments imposed by governmental authority and created or attaching between Date of Policy and the date of recording of the deed or other instrument of transfer in the Public Records that vests Title as shown in Schedule A.

16. AMERICAN LAND TITLE ASSOCIATION OWNER'S POLICY - 2006 WITH REGIONAL EXCEPTIONS

When the American Land Title Association policy is used as a Standard Coverage Policy and not as an Extended Coverage Policy the exclusions set forth in paragraph 15 above are used and the following exceptions to coverage appear in the policy.

SCHEDULE B

This policy does not insure against loss or damage (and the Company will not pay costs, attorneys' fees or expenses) which arise by reason of:

1. (a) Taxes or assessments that are not shown as existing liens by the records of any taxing authority that levies taxes or assessments on real property or by the Public Records; (b) proceedings by a public agency that may result in taxes or assessments, or notices of such proceedings, whether or not shown by the records of such agency or by the Public Records.
2. Any facts, rights, interests, or claims that are not shown by the Public Records but that could be ascertained by an inspection of the Land or that may be asserted by persons in possession of the Land.
3. Easements, liens or encumbrances, or claims thereof, not shown by the Public Records.
4. Any encroachment, encumbrance, violation, variation, or adverse circumstance affecting the Title that would be disclosed by an accurate and complete land survey of the Land and not shown by the Public Records.
5. (a) Unpatented mining claims; (b) reservations or exceptions in patents or in Acts authorizing the issuance thereof; (c) water rights, claims or title to water, whether or not the matters excepted under (a), (b), or (c) are shown by the Public Records.

First American Title Insurance Company

National Commercial Services

666 Third Avenue, 5th Floor
New York, NY 10017

April 26, 2017

Seth Israel
Intersect Power
Embarcadero Center , 7th Floor
San Francisco, CA 94111

Customer Reference: 26440 Rice Road

Order Number: 3020-847487

Owner: Raul Lopez

Property: 26440 Rice Road, Desert Center, CA

Attached please find the following item(s):

Commitment

Thank You for your confidence and support. We at First American Title Insurance Company maintain the fundamental principle:

Customer First!

First American Title Insurance Company

INFORMATION

The Title Insurance Commitment is a legal contract between you and the company. It is issued to show the basis on which we will issue a Title Insurance Policy to you. The Policy will insure you against certain risks to the land title, subject to the limitations shown in the policy.

The Company will give you a sample of the Policy form, if you ask.

The Commitment is based on the land title as of the Commitment Date. Any changes in the land title or the transaction may affect the Commitment and the Policy.

The Commitment is subject to its Requirements, Exceptions and Conditions.

This information is not part of the title insurance commitment.

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YOU SHOULD READ THE COMMITMENT VERY CAREFULLY.
If you have any questions about the Commitment,
please contact the issuing office.

COMMITMENT FOR TITLE INSURANCE

Issued by

First American Title Insurance Company

Agreement to Issue Policy

We agree to issue a policy to you according to the terms of this Commitment.

When we show the policy amount and your name as the proposed insured in Schedule A, this Commitment becomes effective as of the Commitment Date shown in Schedule A.

If the Requirements shown in this Commitment have not been met within six months after the Commitment Date, our obligation under this Commitment will end. Also, our obligation under this Commitment will end when the Policy is issued and then our obligation to you will be under the Policy.

Our obligation under this Commitment is limited by the following:

The Provisions in Schedule A.

The Requirements in Schedule B-1.

The Exceptions in Schedule B-2.

The Conditions.

This Commitment is not valid without Schedule A and Sections 1 and 2 of Schedule B.

SCHEDULE A

1. Commitment Date: April 20, 2017 at 7:30 A.M.

2. Policy or Policies to be issued: Amount

(A) ALTA Owner's Policy $To Be Determined
ALTA Standard Owner Policy

Proposed Insured:

To Be Determined

(B) ALTA Loan Policy $To Be Determined
To Be Determined

Proposed Insured:

To Be Determined

3. (A) The estate or interest in the land described in this Commitment is:

Fee as to Parcel 1, an Easement as to Parcel 2

(B) Title to said estate or interest at the date hereof is vested in:

RAUL LOPEZ, AN UNMARRIED MAN

4. The land referred to in this Commitment is situated in the unincorporated area of the County of Riverside, State of California, and is described as follows:

PARCEL 1:

THE NORTHEAST QUARTER AND GOVERNMENT LOTS 1 AND 2 IN THE NORTHWEST QUARTER OF SECTION 18, TOWNSHIP 5 SOUTH, RANGE 16 EAST, SAN BERNARDINO BASE AND MERIDIAN, AS SHOWN BY OFFICIAL PLAT OF SAID LAND APPROVED BY THE SURVEYOR GENERAL, JULY 12, 1856.

PARCEL 2:

A NON-EXCLUSIVE EASEMENT FOR ROAD PURPOSES OVER THE WEST 30 FEET OF SECTION 7, TOWNSHIP 5 SOUTH, RANGE 18 EAST, SAN BERNARDINO BASE AND MERIDIAN.

EXCEPTING THEREFROM THAT PORTION LYING NORTH OF THE SOUTHERLY LINE OF THE COUNTY HIGHWAY, AS DESIGNATED BY RESOLUTION OF THE COUNTY OF RIVERSIDE, A CERTIFIED COPY OF WHICH WAS FILED FOR RECORD MARCH 27, 1945, AS INSTRUMENT NO. 2957, OF OFFICIAL RECORDS OF RIVERSIDE COUNTY, CALIFORNIA.

APN: 811-170-013-6

SCHEDULE B

SECTION ONE

REQUIREMENTS

The following requirements must be met:

(A) Pay the agreed amounts for the interest in the land and/or the mortgage to be insured.

(B) Pay us the premiums, fees and charges for the policy.

(C) Documents satisfactory to us creating the interest in the land and/or the mortgage to be insured must be signed, delivered and recorded.

(D) You must tell us in writing the name of anyone not referred to in this Commitment who will get an interest in the land or who will make a loan on the land. We may then make additional requirements or exceptions.

(E) Releases(s) or Reconveyance(s) of Item(s): 9 and 10

(F) Other: None

(G) You must give us the following information:
1. Any off record leases, surveys, etc.
2. Statement(s) of Identity, all parties.
3. Other: None

The following additional requirements, as indicated by "X", must be met:

[X] (H) Provide information regarding any off-record matters, which may include, but are not limited to: leases, recent works of improvement, or commitment statements in effect under the Environmental Responsibility Acceptance Act, Civil Code Section 850, et seq.

The Company's Owner's Affidavit form (as provided by company) must be completed and submitted prior to close in order to satisfy this requirement. This Commitment will then be subject to such further exceptions and/or requirements as may be deemed necessary.

[] (I) An ALTA/NSPS survey of recent date, which complies with the current minimum standard detail requirements for ALTA/NSPS land title surveys, must be submitted to the Company for review. This Commitment will then be subject to such further exceptions and/or requirements as may be deemed necessary.

[] (J) The following LLC documentation is required:
(i) a copy of the Articles of Organization
(ii) a copy of the Operating Agreement, if applicable
(iii) a Certificate of Good Standing and/or other evidence of current Authority to Conduct Business within the State
(iv) express Company Consent to the current transaction

[] (K) The following partnership documentation is required **:**
(i) a copy of the partnership agreement, including all applicable amendments thereto
(ii) a Certificate of Good Standing and/or other evidence of current Authority to Conduct Business within the State
(iii) express Partnership Consent to the current transaction

[] (L) The following corporation documentation is required:
(i) a copy of the Articles of Incorporation
(ii) a copy of the Bylaws, including all applicable Amendments thereto
(iii) a Certificate of Good Standing and/or other evidence of current Authority to Conduct Business within the State
(iv) express Corporate Resolution consenting to the current transaction

[] (M) Based upon the Company's review of that certain partnership/operating agreement dated **Not disclosed** for the proposed insured herein, the following requirements must be met:

Any further amendments to said agreement must be submitted to the Company, together with an affidavit from one of the general partners or members stating that it is a true copy, that said partnership or limited liability company is in full force and effect, and that there have been no further amendments to the agreement. This Commitment will then be subject to such further requirements as may be deemed necessary.

[] (N) A copy of the complete lease, as referenced in Schedule A, #3 herein, together with any amendments and/or assignments thereto, must be submitted to the Company for review, along with an affidavit executed by the present lessee stating that it is a true copy, that the lease is in full force and effect, and that there have been no further amendments to the lease. This Commitment will then be subject to such further requirements as may be deemed necessary.

[X] (O) Approval from the Company's Underwriting Department must be obtained for issuance of the policy contemplated herein and any endorsements requested thereunder. This Commitment will then be subject to such further requirements as may be required to obtain such approval.

[] (P) Potential additional requirements, if ALTA Extended coverage is contemplated hereunder, and work on the land has commenced prior to close, some or all of the following requirements, and any other requirements which may be deemed necessary, may need to be met:

[] (Q) The Company's "Indemnity Agreement I" must be executed by the appropriate parties.

[] (R) Financial statements from the appropriate parties must be submitted to the Company for review.

[] (S) A copy of the construction contract must be submitted to the Company for review.

[] (T) An inspection of the land must be performed by the Company for verification of the phase of construction.

[] (U) The Company's "Mechanic's Lien Risk Addendum" form must be completed by a Company employee, based upon information furnished by the appropriate parties involved.

SCHEDULE B

SECTION TWO

EXCEPTIONS

Any policy we issue will have the following exceptions unless they are taken care of to our satisfaction. The printed exceptions and exclusions from the coverage of the policy or policies are set forth in Exhibit A attached. Copies of the policy forms should be read. They are available from the office which issued this Commitment.

1. General and special taxes and assessments for the fiscal year 2017-2018, a lien not yet due or payable.

2. The lien of supplemental taxes, if any, assessed pursuant to Chapter 3.5 commencing with Section 75 of the California Revenue and Taxation Code.

3. A right of way for water line and patrol road over said property, granted to Southern Counties Gas Company and Southern California Gas Company, by Bureau of Land Management on November 21, 1952, under Serial No. 098376, as disclosed by records of Bureau of Land Management, Riverside California.

4. An easement for utilities and incidental purposes, recorded September 19, 1957 as Instrument No. 67560 of Official Records.
   In Favor of: California Electric Power Company, a Corporation
   Affects: as described therein

5. A right of way for ditches and canals as reserved by the United States of America in the patent recorded September 26, 1962 as Instrument No. 89992 of Official Records.

6. An easement for underground electric lines and communication lines and incidental purposes, recorded March 29, 1967 as Instrument No. 26243 of Official Records.
   In Favor of: Southern California Edison Company, a Corporation
   Affects: as described therein

7. An easement for pipelines, ingress and egress and incidental purposes, recorded February 6, 1969 as Instrument No. 12060 of Official Records.
   In Favor of: Southern California Gas Company, a Corporation and Southern Counties Gas Company of California
   Affects: as described therein

8. An easement for public road and drainage purposes, including public utility and public services purposes and incidental purposes, recorded May 30, 1985 as Instrument No. 85-116292 of Official Records.
   In Favor of: County of Riverside
   Affects: as described therein

9. A deed of trust to secure an original indebtedness of $850,000.00 recorded February 21, 2006 as Instrument No. 06-125130 of Official Records.

Dated:	February 13, 2006
Trustor:	Benjamin Lugo and Norma Lugo, husband and wife, and Hector E. Santillana and Martha I. Santillana, husband and wife
Trustee:	Fidelity National Title Company, a California Corporation
Beneficiary:	Allen Reames and Maria Reames, Co-Trustees of the Reames of San Agustin Trust dated July 10, 1999

10. A deed of trust to secure an original indebtedness of $1,100,000.00 recorded February 17, 2017 as Instrument No. 2017-0070925 of Official Records.

Dated:	December 23, 2016
Trustor:	Raul Lopez, an unmarried man
Trustee:	Arden Escrow Services, Inc
Beneficiary:	Benjamin Lugo and Norma Lugo, husband and wife, and Hector E. Santillana and Martha I. Santillana, husband and wife, all as joint tenants

The above deed of trust states that it is all-inclusive.

11. Any claim that the Title is subject to a trust or lien created under The Perishable Agricultural Commodities Act, 1930 (7 U.S.C. §§499a, et seq.) or the Packers and Stockyards Act (7 U.S.C. §§181 et seq.) or under similar state laws.

12. Any defects, liens, encumbrances or other matters which name parties with the same or similar names as RAUL LOPEZ. The name search necessary to ascertain the existence of such matters has not been completed. In order to complete this preliminary report or commitment, we will require a statement of information.

13. Rights of the public in and to that portion of the land lying within Any road, street and/or highway.

14. Water rights, claims or title to water, whether or not shown by the public records.

15. Rights of parties in possession.

INFORMATIONAL NOTES

1. Taxes for proration purposes only for the fiscal year 2016-2017.

First Installment:	$4,806.12, PAID
Second Installment:	$4,806.12, PAID
Tax Rate Area:	062-000
APN:	811-170-013-6

The amount(s) must be verified prior to close of escrow.

2. According to the latest available equalized assessment roll in the office of the county tax assessor, there is located on the land a(n) Commercial Structure known as 26440 Rice Road, Desert Center, CA.

3. According to the public records, there has been no conveyance of the land within a period of twenty four months prior to the date of this report, except as follows:

A document recorded February 17, 2017 as Instrument No. 2017-0070924 of Official Records .

From: Benjamin Lugo and Norma Lugo, husband and wife, and Hector E. Santillana and Martha I. Santillana, husband and wife, all as joint tenants

To: Raul Lopez, an unmarried man

4. This preliminary report/commitment was prepared based upon an application for a policy of title insurance that identified land by street address or assessor's parcel number only. It is the responsibility of the applicant to determine whether the land referred to herein is in fact the land that is to be described in the policy or policies to be issued.

The map attached, if any, may or may not be a survey of the land depicted hereon. First American Title Insurance Company expressly disclaims any liability for loss or damage which may result from reliance on this map except to the extent coverage for such loss or damage is expressly provided by the terms and provisions of the title insurance policy, if any, to which this map is attached.

******To obtain wire instructions for deposit of funds to your escrow file please contact your Escrow Officer.******

CONDITIONS

1. **DEFINITIONS**
(a)"Mortgage" means mortgage, deed of trust or other security instrument.
(b)"Public Records" means title records that give constructive notice of matters affecting the title according to the state law where the land is located.

2. **LATER DEFECTS**
The Exceptions in Schedule B - Section Two may be amended to show any defects, liens or encumbrances that appear for the first time in the public records or are created or attached between the Commitment Date and the date on which all of the Requirements (a) and (c) of Schedule B - Section One are met. We shall have no liability to you because of this amendment.

3. **EXISTING DEFECTS**
If any defects, liens or encumbrances existing at Commitment Date are not shown in Schedule B, we may amend Schedule B to show them. If we do amend Schedule B to show these defects, liens or encumbrances, we shall be liable to you according to Paragraph 4 below unless you knew of this information and did not tell us about it in writing.

4. **LIMITATION OF OUR LIABILITY**
Our only obligation is to issue to you the Policy referred to in this Commitment, when you have met its Requirements. If we have any liability to you for any loss you incur because of an error in this Commitment, our liability will be limited to your actual loss caused by your relying on this Commitment when you acted in good faith to:

comply with the Requirements shown in Schedule B - Section One
or
eliminate with our written consent any Exceptions shown in Schedule B - Section Two.

We shall not be liable for more than the Policy Amount shown in Schedule A of this Commitment and our liability is subject to the terms of the Policy form to be issued to you.

5. **CLAIMS MUST BE BASED ON THIS COMMITMENT**
Any claim, whether or not based on negligence, which you may have against us concerning the title to the land must be based on this commitment and is subject to its terms.

First American Title

Privacy Information

We Are Committed to Safeguarding Customer Information

In order to better serve your needs now and in the future, we may ask you to provide us with certain information. We understand that you may be concerned about what we will do with such information - particularly any personal or financial information. We agree that you have a right to know how we will utilize the personal information you provide to us. Therefore, together with our subsidiaries we have adopted this Privacy Policy to govern the use and handling of your personal information.

Applicability

This Privacy Policy governs our use of the information that you provide to us. It does not govern the manner in which we may use information we have obtained from any other source, such as information obtained from a public record or from another person or entity. First American has also adopted broader guidelines that govern our use of personal information regardless of its source. First American calls these guidelines its Fair Information Values.

Types of Information

Depending upon which of our services you are utilizing, the types of nonpublic personal information that we may collect include:

- Information we receive from you on applications, forms and in other communications to us, whether in writing, in person, by telephone or any other means;
- Information about your transactions with us, our affiliated companies, or others; and
- Information we receive from a consumer reporting agency.

Use of Information

We request information from you for our own legitimate business purposes and not for the benefit of any nonaffiliated party. Therefore, we will not release your information to nonaffiliated parties except: (1) as necessary for us to provide the product or service you have requested of us; or (2) as permitted by law. We may, however, store such information indefinitely, including the period after which any customer relationship has ceased. Such information may be used for any internal purpose, such as quality control efforts or customer analysis. We may also provide all of the types of nonpublic personal information listed above to one or more of our affiliated companies. Such affiliated companies include financial service providers, such as title insurers, property and casualty insurers, and trust and investment advisory companies, or companies involved in real estate services, such as appraisal companies, home warranty companies and escrow companies. Furthermore, we may also provide all the information we collect, as described above, to companies that perform marketing services on our behalf, on behalf of our affiliated companies or to other financial institutions with whom we or our affiliated companies have joint marketing agreements.

Former Customers

Even if you are no longer our customer, our Privacy Policy will continue to apply to you.

Confidentiality and Security

We will use our best efforts to ensure that no unauthorized parties have access to any of your information. We restrict access to nonpublic personal information about you to those individuals and entities who need to know that information to provide products or services to you. We will use our best efforts to train and oversee our employees and agents to ensure that your information will be handled responsibly and in accordance with this Privacy Policy and First American's Fair Information Values. We currently maintain physical, electronic, and procedural safeguards that comply with federal regulations to guard your nonpublic personal information.

Information Obtained Through Our Web Site

First American Financial Corporation is sensitive to privacy issues on the Internet. We believe it is important you know how we treat the information about you we receive on the Internet.

In general, you can visit First American or its affiliates' Web sites on the World Wide Web without telling us who you are or revealing any information about yourself. Our Web servers collect the domain names, not the e-mail addresses, of visitors. This information is aggregated to measure the number of visits, average time spent on the site, pages viewed and similar information. First American uses this information to measure the use of our site and to develop ideas to improve the content of our site.

There are times, however, when we may need information from you, such as your name and email address. When information is needed, we will use our best efforts to let you know at the time of collection how we will use the personal information. Usually, the personal information we collect is used only by us to respond to your inquiry, process an order or allow you to access specific account/profile information. If you choose to share any personal information with us, we will only use it in accordance with the policies outlined above.

Business Relationships

First American Financial Corporation's site and its affiliates' sites may contain links to other Web sites. While we try to link only to sites that share our high standards and respect for privacy, we are not responsible for the content or the privacy practices employed by other sites.

Cookies

Some of First American's Web sites may make use of "cookie" technology to measure site activity and to customize information to your personal tastes. A cookie is an element of data that a Web site can send to your browser, which may then store the cookie on your hard drive.

FirstAm.com uses stored cookies. The goal of this technology is to better serve you when visiting our site, save you time when you are here and to provide you with a more meaningful and productive Web site experience.

Fair Information Values

Fairness We consider consumer expectations about their privacy in all our businesses. We only offer products and services that assure a favorable balance between consumer benefits and consumer privacy.

Public Record We believe that an open public record creates significant value for society, enhances consumer choice and creates consumer opportunity. We actively support an open public record and emphasize its importance and contribution to our economy.

Use We believe we should behave responsibly when we use information about a consumer in our business. We will obey the laws governing the collection, use and dissemination of data.

Accuracy We will take reasonable steps to help assure the accuracy of the data we collect, use and disseminate. Where possible, we will take reasonable steps to correct inaccurate information. When, as with the public record, we cannot correct inaccurate information, we will take all reasonable steps to assist consumers in identifying the source of the erroneous data so that the consumer can secure the required corrections.

Education We endeavor to educate the users of our products and services, our employees and others in our industry about the importance of consumer privacy. We will instruct our employees on our fair information values and on the responsible collection and use of data. We will encourage others in our industry to collect and use information in a responsible manner.

Security We will maintain appropriate facilities and systems to protect against unauthorized access to and corruption of the data we maintain.

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EXHIBIT A
LIST OF PRINTED EXCEPTIONS AND EXCLUSIONS (BY POLICY TYPE)

1. CALIFORNIA LAND TITLE ASSOCIATION STANDARD COVERAGE POLICY - 1990
SCHEDULE B

EXCEPTIONS FROM COVERAGE

This policy does not insure against loss or damage (and the Company will not pay costs, attorneys' fees or expenses) which arise by reason of:

1. Taxes or assessments which are not shown as existing liens by the records of any taxing authority that levies taxes or assessments on real property or by the public records. Proceedings by a public agency which may result in taxes or assessments, or notice of such proceedings, whether or not shown by the records of such agency or by the public records.
2. Any facts, rights, interests, or claims which are not shown by the public records but which could be ascertained by an inspection of the land or which may be asserted by persons in possession thereof.
3. Easements, liens or encumbrances, or claims thereof, which are not shown by the public records.
4. Discrepancies, conflicts in boundary lines, shortage in area, encroachments, or any other facts which a correct survey would disclose, and which are not shown by the public records.
5. (a) Unpatented mining claims; (b) reservations or exceptions in patents or in Acts authorizing the issuance thereof; (c) water rights, claims or title to water, whether or not the matters excepted under (a), (b), or (c) are shown by the public records.

EXCLUSIONS FROM COVERAGE

The following matters are expressly excluded from the coverage of this policy and the Company will not pay loss or damage, costs, attorneys' fees or expenses which arise by reason of:

1. (a) Any law, ordinance or governmental regulation (including but not limited to building and zoning laws, ordinances, or regulations) restricting, regulating, prohibiting or relating to (i) the occupancy, use, or enjoyment of the land; (ii) the character, dimensions or location of any improvement now or hereafter erected on the land; (iii) a separation in ownership or a change in the dimensions or area of the land or any parcel of which the land is or was a part; or (iv) environmental protection, or the effect of any violation of these laws, ordinances or governmental regulations, except to the extent that a notice of the enforcement thereof or a notice of a defect, lien or encumbrance resulting from a violation or alleged violation affecting the land has been recorded in the public records at Date of Policy.
   (b) Any governmental police power not excluded by (a) above, except to the extent that a notice of the exercise thereof or a notice of a defect, lien or encumbrance resulting from a violation or alleged violation affecting the land has been recorded in the public records at Date of Policy.
2. Rights of eminent domain unless notice of the exercise thereof has been recorded in the public records at Date of Policy, but not excluding from coverage any taking which has occurred prior to Date of Policy which would be binding on the rights of a purchaser for value without knowledge.
3. Defects, liens, encumbrances, adverse claims or other matters:
   (a) whether or not recorded in the public records at Date of Policy, but created, suffered, assumed or agreed to by the insured claimant;
   (b) not known to the Company, not recorded in the public records at Date of Policy, but known to the insured claimant and not disclosed in writing to the Company by the insured claimant prior to the date the insured claimant became an insured under this policy;
   (c) resulting in no loss or damage to the insured claimant;
   (d) attaching or created subsequent to Date of Policy; or
   (e) resulting in loss or damage which would not have been sustained if the insured claimant had paid value for the insured mortgage or for the estate or interest insured by this policy.
4. Unenforceability of the lien of the insured mortgage because of the inability or failure of the insured at Date of Policy, or the inability or failure of any subsequent owner of the indebtedness, to comply with applicable "doing business" laws of the state in which the land is situated.
5. Invalidity or unenforceability of the lien of the insured mortgage, or claim thereof, which arises out of the transaction evidenced by the insured mortgage and is based upon usury or any consumer credit protection or truth in lending law.
6. Any claim, which arises out of the transaction vesting in the insured the estate or interest insured by their policy or the transaction creating the interest of the insured lender, by reason of the operation of federal bankruptcy, state insolvency or similar creditors' rights laws.

2. AMERICAN LAND TITLE ASSOCIATION OWNER'S POLICY FORM B - 1970
SCHEDULE OF EXCLUSIONS FROM COVERAGE

1. Any law, ordinance or governmental regulation (including but not limited to building and zoning ordinances) restricting or regulating or prohibiting the occupancy, use or enjoyment of the land, or regulating the character, dimensions or location of any improvement now or hereafter erected on the land, or prohibiting a separation in ownership or a reduction in the dimensions of area of the land, or the effect of any violation of any such law, ordinance or governmental regulation.
2. Rights of eminent domain or governmental rights of police power unless notice of the exercise of such rights appears in the public records at Date of Policy.
3. Defects, liens, encumbrances, adverse claims, or other matters (a) created, suffered, assumed or agreed to by the insured claimant; (b) not known to the Company and not shown by the public records but known to the insured claimant either at Date of Policy or at the date such claimant acquired an estate or interest insured by this policy and not disclosed in writing by the insured claimant to the Company prior to the date such insured claimant became an insured hereunder; (c) resulting in no loss or damage to the insured claimant; (d) attaching or created subsequent to Date of Policy; or (e) resulting in loss or damage which would not have been sustained if the insured claimant had paid value for the estate or interest insured by this policy.

3. AMERICAN LAND TITLE ASSOCIATION OWNER'S POLICY FORM B - 1970
WITH REGIONAL EXCEPTIONS

When the American Land Title Association policy is used as a Standard Coverage Policy and not as an Extended Coverage Policy the exclusions set forth in paragraph 2 above are used and the following exceptions to coverage appear in the policy.

SCHEDULE B

This policy does not insure against loss or damage by reason of the matters shown in parts one and two following:
Part One

1. Taxes or assessments which are not shown as existing liens by the records of any taxing authority that levies taxes or assessments on real property or by the public records.
2. Any facts, rights, interests, or claims which are not shown by the public records but which could be ascertained by an inspection of said land or by making inquiry of persons in possession thereof.
3. Easements, claims of easement or encumbrances which are not shown by the public records.
4. Discrepancies, conflicts in boundary lines, shortage in area, encroachments, or any other facts which a correct survey would disclose, and which are not shown by public records.
5. Unpatented mining claims; reservations or exceptions in patents or in Acts authorizing the issuance thereof; water rights, claims or title to water.
6. Any lien, or right to a lien, for services, labor or material heretofore or hereafter furnished, imposed by law and not shown by the public records.

4. AMERICAN LAND TITLE ASSOCIATION LOAN POLICY - 1970 WITH A.L.T.A. ENDORSEMENT FORM 1 COVERAGE SCHEDULE OF EXCLUSIONS FROM COVERAGE

1. Any law, ordinance or governmental regulation (including but not limited to building and zoning ordinances) restricting or regulating or prohibiting the occupancy, use or enjoyment of the land, or regulating the character, dimensions or location of any improvement now or hereafter erected on the land, or prohibiting a separation in ownership or a reduction in the dimensions or area of the land, or the effect of any violation of any such law ordinance or governmental regulation.
2. Rights of eminent domain or governmental rights of police power unless notice of the exercise of such rights appears in the public records at Date of Policy.
3. Defects, liens, encumbrances, adverse claims, or other matters (a) created, suffered, assumed or agreed to by the insured claimant, (b) not known to the Company and not shown by the public records but known to the insured claimant either at Date of Policy or at the date such claimant acquired an estate or interest insured by this policy or acquired the insured mortgage and not disclosed in writing by the insured claimant to the Company prior to the date such insured claimant became an insured hereunder, (c) resulting in no loss or damage to the insured claimant; (d) attaching or created subsequent to Date of Policy (except to the extent insurance is afforded herein as to any statutory lien for labor or material or to the extent insurance is afforded herein as to assessments for street improvements under construction or completed at Date of Policy).
4. Unenforceability of the lien of the insured mortgage because of failure of the insured at Date of Policy or of any subsequent owner of the indebtedness to comply with applicable "doing business" laws of the state in which the land is situated.

5. AMERICAN LAND TITLE ASSOCIATION LOAN POLICY - 1970 WITH REGIONAL EXCEPTIONS

When the American Land Title Association Lenders Policy is used as a Standard Coverage Policy and not as an Extended Coverage Policy, the exclusions set forth in paragraph 4 above are used and the following exceptions to coverage appear in the policy.

SCHEDULE B

This policy does not insure against loss or damage by reason of the matters shown in parts one and two following:
Part One

1. Taxes or assessments which are not shown as existing liens by the records of any taxing authority that levies taxes or assessments on real property or by the public records.
2. Any facts, rights, interests, or claims which are not shown by the public records but which could be ascertained by an inspection of said land or by making inquiry of persons in possession thereof.
3. Easements, claims of easement or encumbrances which are not shown by the public records.
4. Discrepancies, conflicts in boundary lines, shortage in area, encroachments, or any other facts which a correct survey would disclose, and which are not shown by public records.
5. Unpatented mining claims; reservations or exceptions in patents or in Acts authorizing the issuance thereof; water rights, claims or title to water.
6. Any lien, or right to a lien, for services, labor or material theretofore or hereafter furnished, imposed by law and not shown by the public records.

6. AMERICAN LAND TITLE ASSOCIATION LOAN POLICY - 1992 WITH A.L.T.A. ENDORSEMENT FORM 1 COVERAGE EXCLUSIONS FROM COVERAGE

The following matters are expressly excluded from the coverage of this policy and the Company will not pay loss or damage, costs, attorneys' fees or expenses which arise by reason of:

1. (a) Any law, ordinance or governmental regulation (including but not limited to building and zoning laws, ordinances, or regulations) restricting, regulating, prohibiting or relating to (i) the occupancy, use, or enjoyment of the land; (ii) the character, dimensions or location of any improvement now or hereafter erected on the land; (iii) a separation in ownership or a change in the dimensions or area of the land or any parcel of which the land is or was a part; or (iv) environmental protection, or the effect of any violation of these laws, ordinances or governmental regulations, except to the extent that a notice of the enforcement thereof or a notice of a defect, lien or encumbrance resulting from a violation or alleged violation affecting the land has been recorded in the public records at Date of Policy;
   (b) Any governmental police power not excluded by (a) above, except to the extent that a notice of the exercise thereof or a notice of a defect, lien or encumbrance resulting from a violation or alleged violation affecting the land has been recorded in the public records at Date of Policy.

2. Rights of eminent domain unless notice of the exercise thereof has been recorded in the public records at Date of Policy, but not excluding from coverage any taking which has occurred prior to Date of Policy which would be binding on the rights of a purchaser for value without knowledge.
3. Defects, liens, encumbrances, adverse claims, or other matters:
(a) whether or not recorded in the public records at Date of Policy, but created, suffered, assumed or agreed to by the insured claimant;
(b) not known to the Company, not recorded in the public records at Date of Policy, but known to the insured claimant and not disclosed in writing to the Company by the insured claimant prior to the date the insured claimant became an insured under this policy;
(c) resulting in no loss or damage to the insured claimant;
(d) attaching or created subsequent to Date of Policy (except to the extent that this policy insures the priority of the lien of the insured mortgage over any statutory lien for services, labor or material or the extent insurance is afforded herein as to assessments for street improvements under construction or completed at date of policy); or
(e) resulting in loss or damage which would not have been sustained if the insured claimant had paid value for the insured mortgage.
4. Unenforceability of the lien of the insured mortgage because of the inability or failure of the insured at Date of Policy, or the inability or failure of any subsequent owner of the indebtedness, to comply with the applicable "doing business" laws of the state in which the land is situated.
5. Invalidity or unenforceability of the lien of the insured mortgage, or claim thereof, which arises out of the transaction evidenced by the insured mortgage and is based upon usury or any consumer credit protection or truth in lending law.
6. Any statutory lien for services, labor or materials (or the claim of priority of any statutory lien for services, labor or materials over the lien of the insured mortgage) arising from an improvement or work related to the land which is contracted for and commenced subsequent to Date of Policy and is not financed in whole or in part by proceeds of the indebtedness secured by the insured mortgage which at Date of Policy the insured has advanced or is obligated to advance.
7. Any claim, which arises out of the transaction creating the interest of the mortgagee insured by this policy, by reason of the operation of federal bankruptcy, state insolvency, or similar creditors' rights laws, that is based on:
(i) the transaction creating the interest of the insured mortgagee being deemed a fraudulent conveyance or fraudulent transfer; or
(ii) the subordination of the interest of the insured mortgagee as a result of the application of the doctrine of equitable subordination; or
(iii) the transaction creating the interest of the insured mortgagee being deemed a preferential transfer except where the preferential transfer results from the failure:
(a) to timely record the instrument of transfer; or
(b) of such recordation to impart notice to a purchaser for value or a judgment or lien creditor.

7. AMERICAN LAND TITLE ASSOCIATION LOAN POLICY - 1992
WITH REGIONAL EXCEPTIONS

When the American Land Title Association policy is used as a Standard Coverage Policy and not as an Extended Coverage Policy the exclusions set forth in paragraph 6 above are used and the following exceptions to coverage appear in the policy.

SCHEDULE B

This policy does not insure against loss or damage (and the Company will not pay costs, attorneys' fees or expenses) which arise by reason of:
1. Taxes or assessments which are not shown as existing liens by the records of any taxing authority that levies taxes or assessments on real property or by the public records.
2. Any facts, rights, interests, or claims which are not shown by the public records but which could be ascertained by an inspection of said land or by making inquiry of persons in possession thereof.
3. Easements, claims of easement or encumbrances which are not shown by the public records.
4. Discrepancies, conflicts in boundary lines, shortage in area, encroachments, or any other facts which a correct survey would disclose, and which are not shown by public records.
5. Unpatented mining claims; reservations or exceptions in patents or in Acts authorizing the issuance thereof; water rights, claims or title to water.
6. Any lien, or right to a lien, for services, labor or material theretofore or hereafter furnished, imposed by law and not shown by the public records.

8. AMERICAN LAND TITLE ASSOCIATION OWNER'S POLICY - 1992
EXCLUSIONS FROM COVERAGE

The following matters are expressly excluded from the coverage of this policy and the Company will not pay loss or damage, costs, attorneys' fees or expenses which arise by reason of:
1. (a) Any law, ordinance or governmental regulation (including but not limited to building and zoning laws, ordinances, or regulations) restricting, regulating, prohibiting or relating to (i) the occupancy, use, or enjoyment of the land; (ii) the character, dimensions or location of any improvement now or hereafter erected on the land; (iii) a separation in ownership or a change in the dimensions or area of the land or any parcel of which the land is or was a part; or (iv) environmental protection, or the effect of any violation of these laws, ordinances or governmental regulations, except to the extent that a notice of the enforcement thereof or a notice of a defect, lien or encumbrance resulting from a violation or alleged violation affecting the land has been recorded in the public records at Date of Policy.
(b) Any governmental police power not excluded by (a) above, except to the extent that a notice of the exercise thereof or a notice of a defect, lien or encumbrance resulting from a violation or alleged violation affecting the land has been recorded in the public records at Date of Policy.
2. Rights of eminent domain unless notice of the exercise thereof has been recorded in the public records at Date of Policy, but not excluding from coverage any taking which has occurred prior to Date of Policy which would be binding on the rights of a purchaser for value without knowledge.
3. Defects, liens, encumbrances, adverse claims, or other matters:
(a) created, suffered, assumed or agreed to by the insured claimant;
(b) not known to the Company, not recorded in the public records at Date of Policy, but known to the insured claimant and not disclosed in writing to the Company by the insured claimant prior to the date the insured claimant became an insured under this policy;
(c) resulting in no loss or damage to the insured claimant;
(d) attaching or created subsequent to Date of Policy; or

(e) resulting in loss or damage which would not have been sustained if the insured claimant had paid value for the estate or interest insured by this policy.

4. Any claim, which arises out of the transaction vesting in the insured the estate or interest insured by this policy, by reason of the operation of federal bankruptcy, state insolvency, or similar creditors' rights laws, that is based on:
(i) the transaction creating the estate or interest insured by this policy being deemed a fraudulent conveyance or fraudulent transfer; or
(ii) the transaction creating the estate or interest insured by this policy being deemed a preferential transfer except where the preferential transfer results from the failure:
(a) to timely record the instrument of transfer; or
(b) of such recordation to impart notice to a purchaser for value or a judgment or lien creditor.

9. AMERICAN LAND TITLE ASSOCIATION OWNER'S POLICY - 1992 WITH REGIONAL EXCEPTIONS

When the American Land Title Association policy is used as a Standard Coverage Policy and not as an Extended Coverage Policy the exclusions set forth in paragraph 8 above are used and the following exceptions to coverage appear in the policy.

SCHEDULE B

This policy does not insure against loss or damage (and the Company will not pay costs, attorneys' fees or expenses) which arise by reason of:
Part One:

1. Taxes or assessments which are not shown as existing liens by the records of any taxing authority that levies taxes or assessments on real property or by the public records.
2. Any facts, rights, interests, or claims which are not shown by the public records but which could be ascertained by an inspection of said land or by making inquiry of persons in possession thereof.
3. Easements, claims of easement or encumbrances which are not shown by the public records.
4. Discrepancies, conflicts in boundary lines, shortage in area, encroachments, or any other facts which a correct survey would disclose, and which are not shown by public records.
5. Unpatented mining claims; reservations or exceptions in patents or in Acts authorizing the issuance thereof; water rights, claims or title to water.
6. Any lien, or right to a lien, for services, labor or material theretofore or hereafter furnished, imposed by law and not shown by the public records.

ALTA RESIDENTIAL TITLE INSURANCE POLICY (6-1-87)

EXCLUSIONS

In addition to the Exceptions in Schedule B, you are not insured against loss, costs, attorneys' fees, and expenses resulting from:

1. Governmental police power, and the existence or violation of any law or government regulation. This includes building and zoning ordinances and also laws and regulations concerning:
   (a) and use
   (b) improvements on the land
   (c) and division
   (d) environmental protection

   This exclusion does not apply to violations or the enforcement of these matters which appear in the public records at Policy Date.
   This exclusion does not limit the zoning coverage described in Items 12 and 13 of Covered Title Risks.
2. The right to take the land by condemning it, unless:
   (a) a notice of exercising the right appears in the public records on the Policy Date
   (b) the taking happened prior to the Policy Date and is binding on you if you bought the land without knowing of the taking
3. Title Risks:
   (a) that are created, allowed, or agreed to by you
   (b) that are known to you, but not to us, on the Policy Date -- unless they appeared in the public records
   (c) that result in no loss to you
   (d) that first affect your title after the Policy Date -- this does not limit the labor and material lien coverage in Item 8 of Covered Title Risks
4. Failure to pay value for your title.
5. Lack of a right:
   (a) to any land outside the area specifically described and referred to in Item 3 of Schedule A OR
   (b) in streets, alleys, or waterways that touch your land
   This exclusion does not limit the access coverage in Item 5 of Covered Title Risks.

11. EAGLE PROTECTION OWNER'S POLICY

CLTA HOMEOWNER'S POLICY OF TITLE INSURANCE - 1998
ALTA HOMEOWNER'S POLICY OF TITLE INSURANCE - 1998

Covered Risks 14 (Subdivision Law Violation). 15 (Building Permit). 16 (Zoning) and 18 (Encroachment of boundary walls or fences) are subject to Deductible Amounts and Maximum Dollar Limits of Liability

EXCLUSIONS

In addition to the Exceptions in Schedule B, you are not insured against loss, costs, attorneys' fees, and expenses resulting from:

1. Governmental police power, and the existence or violation of any law or government regulation. This includes ordinances, laws and regulations concerning:
   a. building
   b. zoning
   c. land use
   d. improvements on the land
   e. land division
   f. environmental protection

   This exclusion does not apply to violations or the enforcement of these matters if notice of the violation or enforcement appears in the Public Records at the Policy Date.
   This exclusion does not limit the coverage described in Covered Risk 14, 15, 16, 17 or 24.
2. The failure of Your existing structures, or any part of them, to be constructed in accordance with applicable building codes. This Exclusion does not apply to violations of building codes if notice of the violation appears in the Public Records at the Policy Date.
3. The right to take the Land by condemning it, unless:
   a. a notice of exercising the right appears in the Public Records at the Policy Date; or
   b. the taking happened before the Policy Date and is binding on You if You bought the Land without Knowing of the taking.
4. Risks:
   a. that are created, allowed, or agreed to by You, whether or not they appear in the Public Records;
   b. that are Known to You at the Policy Date, but not to Us, unless they appear in the Public Records at the Policy Date;
   c. that result in no loss to You; or
   d. that first occur after the Policy Date - this does not limit the coverage described in Covered Risk 7, 8.d, 22, 23, 24 or 25.
5. Failure to pay value for Your Title.
6. Lack of a right:
   a. to any Land outside the area specifically described and referred to in paragraph 3 of Schedule A; and
   b. in streets, alleys, or waterways that touch the Land.
   This exclusion does not limit the coverage described in Covered Risk 11 or 18.

12. THIRD GENERATION EAGLE LOAN POLICY AMERICAN LAND TITLE ASSOCIATION EXPANDED COVERAGE RESIDENTIAL LOAN POLICY (1/01/08)

EXCLUSIONS FROM COVERAGE

The following matters are expressly excluded from the coverage of this policy and the Company will not pay loss or damage, costs, attorneys' fees or expenses which arise by reason of:

1. (a) Any law, ordinance, permit, or governmental regulation (including those relating to building and zoning) restricting, regulating, prohibiting, or relating to (i) the occupancy, use, or enjoyment of the Land; (ii) the character, dimensions, or location of any improvement erected on the Land; (iii) the subdivision of land; or(iv) environmental protection; or the effect of any violation of these laws, ordinances, or governmental regulations. This Exclusion 1(a) does not modify or limit the coverage provided under Covered Risk 5, 6, 13(c), 13(d), 14 or 16.
   (b)Any governmental police power. This Exclusion 1(b) does not modify or limit the coverage provided under Covered Risk 5, 6, 13(c), 13(d), 14 or 16.
2. Rights of eminent domain. This Exclusion does not modify or limit the coverage provided under Covered Risk 7 or 8.
3. Defects, liens, encumbrances, adverse claims, or other matters
   (a) created, suffered, assumed or agreed to by the Insured Claimant;
   (b) not Known to the Company, not recorded in the Public Records at Date of Policy, but Known to the Insured Claimant and not disclosed in writing to the Company by the Insured Claimant prior to the date the Insured Claimant became an Insured under this policy;
   (c) resulting in no loss or damage to the Insured Claimant;
   (d) attaching or created subsequent to Date of Policy (however, this does not modify or limit the coverage provided under Covered Risk 11, 16, 17, 18, 19, 20, 21, 22, 23, 24, 27 or 28); or
   (e) resulting in loss or damage which would not have been sustained if the Insured Claimant had paid value for the Insured Mortgage.
4. Unenforceability of the lien of the Insured Mortgage because of the inability or failure of an Insured to comply with applicable doing business laws of the state where the Land is situated.
5. Invalidity or unenforceability in whole or in part of the lien of the Insured Mortgage that arises out of the transaction evidenced by the Insured Mortgage and is based upon usury, or any consumer credit protection or truth-in-lending law. This Exclusion does not modify or limit the coverage provided in Covered Risk 26.
6. Any claim of invalidity, unenforceability or lack of priority of the lien of the Insured Mortgage as to Advances or modifications made after the Insured has Knowledge that the vestee shown in Schedule A is no longer the owner of the estate or interest covered by this policy. This Exclusion does not modify or limit the coverage provided in Covered Risk 11.
7. Any lien on the Title for real estate taxes or assessments imposed by governmental authority and created or attaching subsequent to Date of Policy. This Exclusion does not modify or limit the coverage provided in Covered Risk 11(b) or 25.
8. The failure of the residential structure, or any portion of it, to have been constructed before, on or after Date of Policy in accordance with applicable building codes. This Exclusion does not modify or limit the coverage provided in Covered Risk 5 or 6.

13. AMERICAN LAND TITLE ASSOCIATION LOAN POLICY - 2006
EXCLUSIONS FROM COVERAGE

The following matters are expressly excluded from the coverage of this policy, and the Company will not pay loss or damage, costs, attorneys' fees, or

expenses that arise by reason of:

1. (a) Any law, ordinance, permit, or governmental regulation (including those relating to building and zoning) restricting, regulating, prohibiting, or relating to

   (i) the occupancy, use, or enjoyment of the Land;

   (ii) the character, dimensions, or location of any improvement erected on the Land;

   (iii) the subdivision of land; or

   (iv) environmental protection;

   or the effect of any violation of these laws, ordinances, or governmental regulations. This Exclusion 1(a) does not modify or limit the coverage provided under Covered Risk 5.

   (b) Any governmental police power. This Exclusion 1(b) does not modify or limit the coverage provided under Covered Risk 6.

2. Rights of eminent domain. This Exclusion does not modify or limit the coverage provided under Covered Risk 7 or 8.

3. Defects, liens, encumbrances, adverse claims, or other matters

   (a) created, suffered, assumed, or agreed to by the Insured Claimant;

   (b) not Known to the Company, not recorded in the Public Records at Date of Policy, but Known to the Insured Claimant and not disclosed in writing to the Company by the Insured Claimant prior to the date the Insured Claimant became an Insured under this policy;

   (c) resulting in no loss or damage to the Insured Claimant;

   (d) attaching or created subsequent to Date of Policy (however, this does not modify or limit the coverage provided under Covered Risk 11, 13, or 14); or

   (e) resulting in loss or damage that would not have been sustained if the Insured Claimant had paid value for the Insured Mortgage.

4. Unenforceability of the lien of the Insured Mortgage because of the inability or failure of an Insured to comply with applicable doing-business laws of the state where the Land is situated.

5. Invalidity or unenforceability in whole or in part of the lien of the Insured Mortgage that arises out of the transaction evidenced by the Insured Mortgage and is based upon usury or any consumer credit protection or truth-in-lending law.

6. Any claim, by reason of the operation of federal bankruptcy, state insolvency, or similar creditors' rights laws, that the transaction creating the lien of the Insured Mortgage, is

   (a) a fraudulent conveyance or fraudulent transfer, or

   (b) a preferential transfer for any reason not stated in Covered Risk 13(b) of this policy.

7. Any lien on the Title for real estate taxes or assessments imposed by governmental authority and created or attaching between Date of Policy and the date of recording of the Insured Mortgage in the Public Records. This Exclusion does not modify or limit the coverage provided under Covered Risk 11(b).

14. AMERICAN LAND TITLE ASSOCIATION LOAN POLICY - 2006 WITH REGIONAL EXCEPTIONS

When the American Land Title Association policy is used as a Standard Coverage Policy and not as an Extended Coverage Policy the exclusions set forth in paragraph 13 above are used and the following exceptions to coverage appear in the policy.

SCHEDULE B

This policy does not insure against loss or damage (and the Company will not pay costs, attorneys' fees or expenses) which arise by reason of:

1. (a) Taxes or assessments that are not shown as existing liens by the records of any taxing authority that levies taxes or assessments on real property or by the Public Records; (b) proceedings by a public agency that may result in taxes or assessments, or notices of such proceedings, whether or not shown by the records of such agency or by the Public Records.

2. Any facts, rights, interests, or claims that are not shown by the Public Records but that could be ascertained by an inspection of the Land or that may be asserted by persons in possession of the Land.

3. Easements, liens or encumbrances, or claims thereof, not shown by the Public Records.

4. Any encroachment, encumbrance, violation, variation, or adverse circumstance affecting the Title that would be disclosed by an accurate and complete land survey of the Land and not shown by the Public Records.

5. (a) Unpatented mining claims; (b) reservations or exceptions in patents or in Acts authorizing the issuance thereof; (c) water rights, claims or title to water, whether or not the matters excepted under (a), (b), or (c) are shown by the Public Records.

15. AMERICAN LAND TITLE ASSOCIATION OWNER'S POLICY - 2006 EXCLUSIONS FROM COVERAGE

The following matters are expressly excluded from the coverage of this policy and the Company will not pay loss or damage, costs, attorneys' fees or expenses which arise by reason of:

1. (a) Any law, ordinance, permit, or governmental regulation (including those relating to building and zoning) restricting, regulating, prohibiting, or relating to

   (i) the occupancy, use, or enjoyment of the Land;

   (ii) the character, dimensions, or location of any improvement erected on the Land;

   (iii) the subdivision of land; or

   (iv) environmental protection;or the effect of any violation of these laws, ordinances, or governmental regulations. This Exclusion 1(a) does not modify or limit the coverage provided under Covered Risk 5.

(b) Any governmental police power. This Exclusion 1(b) does not modify or limit the coverage provided under Covered Risk 6.

2. Rights of eminent domain. This Exclusion does not modify or limit the coverage provided under Covered Risk 7 or 8.

3. Defects, liens, encumbrances, adverse claims, or other matters

(a) created, suffered, assumed, or agreed to by the Insured Claimant;

(b) not Known to the Company, not recorded in the Public Records at Date of Policy, but Known to the Insured Claimant and not disclosed in writing to the Company by the Insured Claimant prior to the date the Insured Claimant became an Insured under this policy;

(c) resulting in no loss or damage to the Insured Claimant;

(d) attaching or created subsequent to Date of Policy (however, this does not modify or limit the coverage provided under Covered Risks 9 and 10); or

(e) resulting in loss or damage that would not have been sustained if the Insured Claimant had paid value for the Title.

4. Any claim, by reason of the operation of federal bankruptcy, state insolvency, or similar creditors rights laws, that the transaction vesting the Title as shown in Schedule A, is

(a) a fraudulent conveyance or fraudulent transfer; or

(b) a preferential transfer for any reason not stated in Covered Risk 9 of this policy.

5. Any lien on the Title for real estate taxes or assessments imposed by governmental authority and created or attaching between Date of Policy and the date of recording of the deed or other instrument of transfer in the Public Records that vests Title as shown in Schedule A.

16. AMERICAN LAND TITLE ASSOCIATION OWNER'S POLICY - 2006 WITH REGIONAL EXCEPTIONS

When the American Land Title Association policy is used as a Standard Coverage Policy and not as an Extended Coverage Policy the exclusions set forth in paragraph 15 above are used and the following exceptions to coverage appear in the policy.

SCHEDULE B

This policy does not insure against loss or damage (and the Company will not pay costs, attorneys' fees or expenses) which arise by reason of:

1. (a) Taxes or assessments that are not shown as existing liens by the records of any taxing authority that levies taxes or assessments on real property or by the Public Records; (b) proceedings by a public agency that may result in taxes or assessments, or notices of such proceedings, whether or not shown by the records of such agency or by the Public Records.
2. Any facts, rights, interests, or claims that are not shown by the Public Records but that could be ascertained by an inspection of the Land or that may be asserted by persons in possession of the Land.
3. Easements, liens or encumbrances, or claims thereof, not shown by the Public Records.
4. Any encroachment, encumbrance, violation, variation, or adverse circumstance affecting the Title that would be disclosed by an accurate and complete land survey of the Land and not shown by the Public Records.
5. (a) Unpatented mining claims; (b) reservations or exceptions in patents or in Acts authorizing the issuance thereof; (c) water rights, claims or title to water, whether or not the matters excepted under (a), (b), or (c) are shown by the Public Records.

First American Title Insurance Company

National Commercial Services

666 Third Avenue, 5th Floor
New York, NY 10017

August 03, 2017

John Warren
Intersect Power
Embarcadero Center , 7th Floor
San Francisco, CA 94111
Phone: (415)297-4169

Order Number: 3020-862806

Property: Riverside County, CA, Multiple parcel numbers,, see deed for reference, , CA

Attached please find the following item(s):

Commitment

Thank You for your confidence and support. We at First American Title Insurance Company maintain the fundamental principle:

Customer First!

First American Title Insurance Company

INFORMATION

The Title Insurance Commitment is a legal contract between you and the company. It is issued to show the basis on which we will issue a Title Insurance Policy to you. The Policy will insure you against certain risks to the land title, subject to the limitations shown in the policy.

The Company will give you a sample of the Policy form, if you ask.

The Commitment is based on the land title as of the Commitment Date. Any changes in the land title or the transaction may affect the Commitment and the Policy.

The Commitment is subject to its Requirements, Exceptions and Conditions.

This information is not part of the title insurance commitment.

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Conditions		

YOU SHOULD READ THE COMMITMENT VERY CAREFULLY.
If you have any questions about the Commitment,
please contact the issuing office.

COMMITMENT FOR TITLE INSURANCE

Issued by

First American Title Insurance Company

Agreement to Issue Policy

We agree to issue a policy to you according to the terms of this Commitment.

When we show the policy amount and your name as the proposed insured in Schedule A, this Commitment becomes effective as of the Commitment Date shown in Schedule A.

If the Requirements shown in this Commitment have not been met within six months after the Commitment Date, our obligation under this Commitment will end. Also, our obligation under this Commitment will end when the Policy is issued and then our obligation to you will be under the Policy.

Our obligation under this Commitment is limited by the following:

The Provisions in Schedule A.

The Requirements in Schedule B-1.

The Exceptions in Schedule B-2.

The Conditions.

This Commitment is not valid without Schedule A and Sections 1 and 2 of Schedule B.

SCHEDULE A

1. Commitment Date: July 25, 2017 at 7:30 A.M.

2. Policy or Policies to be issued: Amount

(A) ALTA Owner's Policy $To Be Determined
ALTA Standard Owner Policy

Proposed Insured:

To Be Determined

(B) ALTA Loan Policy $To Be Determined
To Be Determined

Proposed Insured:

To Be Determined

3. (A) The estate or interest in the land described in this Commitment is:

Fee Simple

(B) Title to said estate or interest at the date hereof is vested in:

VG Devco, LLC, a California limited liability company

4. The land referred to in this Commitment is situated in the unincorporated area of the County of Riverside, State of California, and is described as follows:

PARCELS 1 THROUGH 32, INCLUSIVE, OF PARCEL MAP 15617 IN THE COUNTY OF RIVERSIDE COUNTY, STATE OF CALIFORNIA, AS PER MAP RECORDED IN BOOK 83, PAGES 47 THROUGH 50, INCLUSIVE, OF PARCEL MAPS, RECORDS OF THE RIVERSIDE COUNTY.

APN: 807-680-001-0 (Affects: Parcel 1)
807-680-002-1 (Affects: Parcel 2)
807-680-003-2 (Affects: Parcel 3)
807-680-004-3 (Affects: Parcel 4)
807-680-005-4 (Affects: Parcel 5)
807-680-006-5 (Affects: Parcel 6)
807-680-007-6 (Affects: Parcel 7)
807-680-008-7 (Affects: Parcel 8)
807-680-009-8 (Affects: Parcel 9)
807-680-010-8 (Affects: Parcel 10)
807-680-011-9 (Affects: Parcel 11)
807-680-012-0 (Affects: Parcel 12)
807-680-013-1 (Affects: Parcel 13)
807-690-001-1 (Affects: Portion of Parcel 14)
807-690-002-2 (Affects: Portion of Parcel 14)
807-690-003-3 (Affects: Portion of Parcel 15)
807-690-004-4 (Affects: Portion of Parcel 15)
807-690-026-4 (Affects: Parcel 16)

807-690-027-5 (Affects: Parcel 17)
807-690-028-6 (Affects: Parcel 18)
807-690-011-0 (Affects: Portion of Parcel 19)
807-690-012-1 (Affects: Portion of Parcel 19)
807-690-013-2 (Affects: Parcel 20)
807-690-014-3 (Affects: Parcel 21)
807-690-015-4 (Affects: Parcel 22)
807-690-016-5 (Affects: Parcel 23)
807-690-017-6 (Affects: Parcel 24)
807-690-018-7 (Affects: Parcel 25)
807-690-019-8 (Affects: Parcel 26)
807-690-020-8 (Affects: Parcel 27)
807-690-021-9 (Affects: Parcel 28)
807-690-022-0 (Affects: Parcel 29)
807-690-023-1 (Affects: Parcel 30)
807-690-024-2 (Affects: Parcel 31)
807-690-025-3 (Affects: Parcel 32)

SCHEDULE B

SECTION ONE

REQUIREMENTS

The following requirements must be met:

(A) Pay the agreed amounts for the interest in the land and/or the mortgage to be insured.

(B) Pay us the premiums, fees and charges for the policy.

(C) Documents satisfactory to us creating the interest in the land and/or the mortgage to be insured must be signed, delivered and recorded.

(D) You must tell us in writing the name of anyone not referred to in this Commitment who will get an interest in the land or who will make a loan on the land. We may then make additional requirements or exceptions.

(E) Releases(s) or Reconveyance(s) of Item(s): None

(F) Other: None

(G) You must give us the following information:
1. Any off record leases, surveys, etc.
2. Statement(s) of Identity, all parties.
3. Other: None

The following additional requirements, as indicated by "X", must be met:

[X] (H) Provide information regarding any off-record matters, which may include, but are not limited to: leases, recent works of improvement, or commitment statements in effect under the Environmental Responsibility Acceptance Act, Civil Code Section 850, et seq.

The Company's Owner's Affidavit form (as provided by company) must be completed and submitted prior to close in order to satisfy this requirement. This Commitment will then be subject to such further exceptions and/or requirements as may be deemed necessary.

[] (I) An ALTA/NSPS survey of recent date, which complies with the current minimum standard detail requirements for ALTA/NSPS land title surveys, must be submitted to the Company for review. This Commitment will then be subject to such further exceptions and/or requirements as may be deemed necessary.

[X] (J) The following LLC documentation is required:
(i) a copy of the Articles of Organization
(ii) a copy of the Operating Agreement, if applicable
(iii) a Certificate of Good Standing and/or other evidence of current Authority to Conduct Business within the State
(iv) express Company Consent to the current transaction

[] (K) The following partnership documentation is required **:**
(i) a copy of the partnership agreement, including all applicable amendments thereto
(ii) a Certificate of Good Standing and/or other evidence of current Authority to Conduct Business within the State
(iii) express Partnership Consent to the current transaction

[] (L) The following corporation documentation is required:
(i) a copy of the Articles of Incorporation
(ii) a copy of the Bylaws, including all applicable Amendments thereto
(iii) a Certificate of Good Standing and/or other evidence of current Authority to Conduct Business within the State
(iv) express Corporate Resolution consenting to the current transaction

[**X**] (M) Based upon the Company's review of that certain partnership/operating agreement dated **Not disclosed** for the proposed insured herein, the following requirements must be met:

Any further amendments to said agreement must be submitted to the Company, together with an affidavit from one of the general partners or members stating that it is a true copy, that said partnership or limited liability company is in full force and effect, and that there have been no further amendments to the agreement. This Commitment will then be subject to such further requirements as may be deemed necessary.

[] (N) A copy of the complete lease, as referenced in Schedule A, #3 herein, together with any amendments and/or assignments thereto, must be submitted to the Company for review, along with an affidavit executed by the present lessee stating that it is a true copy, that the lease is in full force and effect, and that there have been no further amendments to the lease. This Commitment will then be subject to such further requirements as may be deemed necessary.

[X] (O) Approval from the Company's Underwriting Department must be obtained for issuance of the policy contemplated herein and any endorsements requested thereunder. This Commitment will then be subject to such further requirements as may be required to obtain such approval.

[] (P) Potential additional requirements, if ALTA Extended coverage is contemplated hereunder, and work on the land has commenced prior to close, some or all of the following requirements, and any other requirements which may be deemed necessary, may need to be met:

[] (Q) The Company's "Indemnity Agreement I" must be executed by the appropriate parties.

[] (R) Financial statements from the appropriate parties must be submitted to the Company for review.

[] (S) A copy of the construction contract must be submitted to the Company for review.

[] (T) An inspection of the land must be performed by the Company for verification of the phase of construction.

[] (U) The Company's "Mechanic's Lien Risk Addendum" form must be completed by a Company employee, based upon information furnished by the appropriate parties involved.

SCHEDULE B

SECTION TWO

EXCEPTIONS

Any policy we issue will have the following exceptions unless they are taken care of to our satisfaction. The printed exceptions and exclusions from the coverage of the policy or policies are set forth in Exhibit A attached. Copies of the policy forms should be read. They are available from the office which issued this Commitment.

1. General and special taxes and assessments for the fiscal year 2017-2018, a lien not yet due or payable.

2. Supplemental taxes for the fiscal year 2016-2017 assessed pursuant to Chapter 3.5 commencing with Section 75 of the California Revenue and Taxation Code.

Affects	APN	TRA	1st Half, STATUS	Penalty	2nd half, STATUS	Penalty
Parcel 1	053-519-510-3	062-000	$0.00, PENDING	$0.00	$0.00, PENDING	$0.00
Parcel 2	053-519-511-4	062-000	$0.00, PENDING	$0.00	$0.00, PENDING	$0.00
Parcel 3	053-519-512-5	062-000	$0.00, PENDING	$0.00	$0.00, PENDING	$0.00
Parcel 4	053-519-513-6	062-000	$0.00, PENDING	$0.00	$0.00, PENDING	$0.00
Parcel 5	053-519-514-7	062-000	$0.00, PENDING	$0.00	$0.00, PENDING	$0.00
Parcel 6	053-519-515-8	062-000	$0.00, PENDING	$0.00	$0.00, PENDING	$0.00
Parcel 7	053-519-516-9	062-000	$0.00, PENDING	$0.00	$0.00, PENDING	$0.00
Parcel 8	053-519-517-0	062-000	$0.00, PENDING	$0.00	$0.00, PENDING	$0.00
Parcel 9	053-519-518-1	062-000	$0.00, PENDING	$0.00	$0.00, PENDING	$0.00
Parcel 10	053-519-519-2	062-000	$0.00, PENDING	$0.00	$0.00, PENDING	$0.00
Parcel 11	053-519-520-2	062-000	$0.00, PENDING	$0.00	$0.00, PENDING	$0.00
Parcel 12	053-519-521-3	062-000	$0.00, PENDING	$0.00	$0.00, PENDING	$0.00
Parcel 13	053-519-522-4	062-000	$0.00, PENDING	$0.00	$0.00, PENDING	$0.00
Portion of Parcel 14	053-519-523-5	062-000	$0.00, PENDING	$0.00	$0.00, PENDING	$0.00
Portion of Parcel 14	053-519-524-6	062-000	$0.00, PENDING	$0.00	$0.00, PENDING	$0.00
Portion of Parcel 15	053-519-525-7	062-000	$0.00, PENDING	$0.00	$0.00, PENDING	$0.00
Portion of Parcel 15	053-519-526-8	062-000	$0.00, PENDING	$0.00	$0.00, PENDING	$0.00
Portion of Parcel 19	053-519-530-1	062-000	$0.00, PENDING	$0.00	$0.00, PENDING	$0.00
Portion of Parcel 19	053-519-531-2	062-000	$0.00, PENDING	$0.00	$0.00, PENDING	$0.00

Parcel 20	053-519-532-3	062-000	$0.00, PENDING	$0.00	$0.00, PENDING	$0.00
Parcel 21	053-519-533-4	062-000	$0.00, PENDING	$0.00	$0.00, PENDING	$0.00
Parcel 29	053-519-541-1	062-000	$0.00, PENDING	$0.00	$0.00, PENDING	$0.00
Parcel 30	053-519-542-2	062-000	$0.00, PENDING	$0.00	$0.00, PENDING	$0.00
Parcel 31	053-519-543-3	062-000	$0.00, PENDING	$0.00	$0.00, PENDING	$0.00
Parcel 32	053-519-544-4	062-000	$0.00, PENDING	$0.00	$0.00, PENDING	$0.00
Parcel 16	053-519-527-9	062-000	$0.00, PENDING	$0.00	$0.00, PENDING	$0.00
Parcel 17	053-519-528-0	062-000	$0.00, PENDING	$0.00	$0.00, PENDING	$0.00
Parcel 18	053-519-529-1	062-000	$0.00, PENDING	$0.00	$0.00, PENDING	$0.00
Parcel 1	053-514-034-5	062-000	$0.00, PENDING	$0.00	$0.00, PENDING	$0.00
Parcel 2	053-514-035-6	062-000	$0.00, PENDING	$0.00	$0.00, PENDING	$0.00
Parcel 3	053-514-036-7	062-000	$0.00, PENDING	$0.00	$0.00, PENDING	$0.00
Parcel 4	053-514-037-8	062-000	$0.00, PENDING	$0.00	$0.00, PENDING	$0.00
Parcel 5	053-514-038-9	062-000	$0.00, PENDING	$0.00	$0.00, PENDING	$0.00
Parcel 6	053-514-039-0	062-000	$0.00, PENDING	$0.00	$0.00, PENDING	$0.00
Parcel 7	053-514-040-0	062-000	$0.00, PENDING	$0.00	$0.00, PENDING	$0.00
Parcel 8	053-514-041-1	062-000	$0.00, PENDING	$0.00	$0.00, PENDING	$0.00
Parcel 9	053-514-042-2	062-000	$0.00, PENDING	$0.00	$0.00, PENDING	$0.00
Parcel 10	053-514-043-3	062-000	$0.00, PENDING	$0.00	$0.00, PENDING	$0.00
Parcel 11	053-514-044-4	062-000	$0.00, PENDING	$0.00	$0.00, PENDING	$0.00
Parcel 12	053-514-045-5	062-000	$0.00, PENDING	$0.00	$0.00, PENDING	$0.00
Parcel 13	053-514-046-6	062-000	$0.00, PENDING	$0.00	$0.00, PENDING	$0.00
Portion of Parcel 14	053-514-047-7	062-000	$0.00, PENDING	$0.00	$0.00, PENDING	$0.00
Portion of Parcel 14	053-514-048-8	062-000	$0.00, PENDING	$0.00	$0.00, PENDING	$0.00
Portion of Parcel 15	053-514-049-9	062-000	$0.00, PENDING	$0.00	$0.00, PENDING	$0.00
Portion of Parcel 15	053-514-050-9	062-000	$0.00, PENDING	$0.00	$0.00, PENDING	$0.00
Parcel 16	053-514-051-0	062-000	$0.00, PENDING	$0.00	$0.00, PENDING	$0.00
Parcel 17	053-514-052-1	062-000	$0.00, PENDING	$0.00	$0.00, PENDING	$0.00
Parcel 18	053-514-053-2	062-000	$0.00, PENDING	$0.00	$0.00, PENDING	$0.00
Portion of Parcel 19	053-514-054-3	062-000	$0.00, PENDING	$0.00	$0.00, PENDING	$0.00
Portion of Parcel 19	053-514-055-4	062-000	$0.00, PENDING	$0.00	$0.00, PENDING	$0.00
Parcel 20	053-514-056-5	062-000	$0.00, PENDING	$0.00	$0.00, PENDING	$0.00
Parcel 21	053-514-057-6	062-000	$0.00, PENDING	$0.00	$0.00, PENDING	$0.00
Parcel 29	053-514-065-3	062-000	$0.00, PENDING	$0.00	$0.00, PENDING	$0.00
Parcel 30	053-514-066-4	062-000	$0.00, PENDING	$0.00	$0.00, PENDING	$0.00

Parcel 31	053-514-067-5	062-000	$0.00, PENDING	$0.00	$0.00, PENDING	$0.00
Parcel 32	053-514-068-6	062-000	$0.00, PENDING	$0.00	$0.00, PENDING	$0.00

The amount(s) must be verified prior to close of escrow.

3. The lien of supplemental taxes, if any, assessed pursuant to Chapter 3.5 commencing with Section 75 of the California Revenue and Taxation Code.

4. An easement for either or both pole lines and conduits and incidental purposes, recorded October 30, 1961 as Instrument No. 90607 of Official Records.
   In Favor of: California Electric Power Company
   Affects: as described therein

5. An easement for either or both pole lines and conduits and incidental purposes, recorded December 29, 1961 as Instrument No. 112041 of Official Records.
   In Favor of: California Electric Power Company
   Affects: as described therein

6. An easement for either or both pole lines and conduits and incidental purposes, recorded December 29, 1961 as Instrument No. 112042 of Official Records.
   In Favor of: California Electric Power Company
   Affects: as described therein

7. An easement for ditches or canals and incidental purposes in the document recorded September 26, 1967 as Instrument Nos. 84779 and 84780, both of Official Records.

8. An easement for ingress, egress, road and public utilities and incidental purposes in the document recorded July 05, 1979 as Instrument No. 139967 of Official Records.

9. An easement shown or dedicated on the map of Parcel Map 15617 recorded October 9, 1980 and on file in Book 83, Page 47-50, of Parcel Maps.
   For: Street and utility purposes, road easements and incidental purposes.

10. An easement for public utilities and incidental purposes, recorded January 13, 1981 as Instrument No. 5837 of Official Records.
    In Favor of: Southern California Edison Company
    Affects: as described therein

11. An easement for well pumping equipment and irrigation pipes and incidental purposes in the document recorded March 08, 1989 as Instrument No. 70472 of Official Records.

12. Any claim that the Title is subject to a trust or lien created under The Perishable Agricultural Commodities Act, 1930 (7 U.S.C. §§499a, et seq.) or the Packers and Stockyards Act (7 U.S.C. §§181 et seq.) or under similar state laws.

13. Water rights, claims or title to water, whether or not shown by the public records.

14. Rights of parties in possession.

INFORMATIONAL NOTES

1. General and special taxes and assessments for the fiscal year 2016-2017

Affects	APN	TRA	1st Half, STATUS	Penalty	2nd half, STATUS	Penalty
Parcel 1	807-680-001-0	062-000	$104.07, PAID	$0.00	$104.07, PAID	$0.00
Parcel 2	807-680-002-1	062-000	$104.07, PAID	$0.00	$104.07, PAID	$0.00
Parcel 3	807-680-003-2	062-000	$104.59, PAID	$0.00	$104.59, PAID	$0.00
Parcel 4	807-680-004-3	062-000	$104.07, PAID	$0.00	$104.07, PAID	$0.00
Parcel 5	807-680-005-4	062-000	$119.16, PAID	$0.00	$119.16, PAID	$0.00
Parcel 6	807-680-006-5	062-000	$104.59, PAID	$0.00	$104.59, PAID	$0.00
Parcel 7	807-680-007-6	062-000	$104.07, PAID	$0.00	$104.07, PAID	$0.00
Parcel 8	807-680-008-7	062-000	$104.07, PAID	$0.00	$104.07, PAID	$0.00
Parcel 9	807-680-009-8	062-000	$104.07, PAID	$0.00	$104.07, PAID	$0.00
Parcel 10	807-680-010-8	062-000	$104.07, PAID	$0.00	$104.07, PAID	$0.00
Parcel 11	807-680-011-9	062-000	$104.07, PAID	$0.00	$104.07, PAID	$0.00
Parcel 12	807-680-012-0	062-000	$104.07, PAID	$0.00	$104.07, PAID	$0.00
Parcel 13	807-680-013-1	062-000	$104.07, PAID	$0.00	$104.07, PAID	$0.00
Portion of Parcel 14	807-690-001-1	062-000	$65.56, PAID	$0.00	$65.56, PAID	$0.00
Portion of Parcel 14	807-690-002-2	062-000	$37.98, PAID	$0.00	$37.98, PAID	$0.00
Portion of Parcel 15	807-690-003-3	062-000	$44.75, PAID	$0.00	$44.75, PAID	$0.00
Portion of Parcel 15	807-690-004-4	062-000	$66.08, PAID	$0.00	$66.08, PAID	$0.00
Parcel 16	807-690-026-4	062-000	$104.07, PAID	$0.00	$104.07, PAID	$0.00
Parcel 17	807-690-027-5	062-000	$104.07, PAID	$0.00	$104.07, PAID	$0.00
Parcel 18	807-690-028-6	062-000	$104.07, PAID	$0.00	$104.07, PAID	$0.00
Portion of Parcel 19	807-690-011-0	062-000	$48.91, PAID	$0.00	$48.91, PAID	$0.00
Portion of Parcel 19	807-690-012-1	062-000	$54.64, PAID	$0.00	$54.64, PAID	$0.00
Parcel 20	807-690-013-2	062-000	$104.07, PAID	$0.00	$104.07, PAID	$0.00
Parcel 21	807-690-014-3	062-000	$104.07, PAID	$0.00	$104.07, PAID	$0.00
Parcel 22	807-690-015-4	062-000	$104.07, PAID	$0.00	$104.07, PAID	$0.00
Parcel 23	807-690-016-5	062-000	$104.07, PAID	$0.00	$104.07, PAID	$0.00
Parcel 24	807-690-017-6	062-000	$104.07, PAID	$0.00	$104.07, PAID	$0.00

Parcel 25	807-690-018-7	062-000	$107.71, PAID	$0.00	$107.71, PAID	$0.00
Parcel 26	807-690-019-8	062-000	$104.59, PAID	$0.00	$104.59, PAID	$0.00
Parcel 27	807-690-020-8	062-000	$104.07, PAID	$0.00	$104.07, PAID	$0.00
Parcel 28	807-690-021-9	062-000	$104.07, PAID	$0.00	$104.07, PAID	$0.00
Parcel 29	807-690-022-0	062-000	$104.07, PAID	$0.00	$104.07, PAID	$0.00
Parcel 30	807-690-023-1	062-000	$104.07, PAID	$0.00	$104.07, PAID	$0.00
Parcel 31	807-690-024-2	062-000	$104.07, PAID	$0.00	$104.07, PAID	$0.00
Parcel 32	807-690-025-3	062-000	$104.07, PAID	$0.00	$104.07, PAID	$0.00

2. The property covered by this report is vacant land.

3. According to the public records, there has been no conveyance of the land within a period of twenty four months prior to the date of this report, except as follows:

   A document recorded October 06, 2015 as Instrument No. 2015-0442400 of Official Records.
   From: Reido Farms, LLC, a California limited liability company
   To: CCV Investors, LLC, a California limited liability company

   A document recorded October 07, 2015 as Instrument No. 2015-0443351 of Official Records.
   From: CCV Investors, LLC, a California limited liability company
   To: VG Devco, LLC, a California limited liability company

4. This preliminary report/commitment was prepared based upon an application for a policy of title insurance that identified land by street address or assessor's parcel number only. It is the responsibility of the applicant to determine whether the land referred to herein is in fact the land that is to be described in the policy or policies to be issued.

The map attached, if any, may or may not be a survey of the land depicted hereon. First American Title Insurance Company expressly disclaims any liability for loss or damage which may result from reliance on this map except to the extent coverage for such loss or damage is expressly provided by the terms and provisions of the title insurance policy, if any, to which this map is attached.

******To obtain wire instructions for deposit of funds to your escrow file please contact your Escrow Officer.******

CONDITIONS

1. **DEFINITIONS**
(a)"Mortgage" means mortgage, deed of trust or other security instrument.
(b)"Public Records" means title records that give constructive notice of matters affecting the title according to the state law where the land is located.

2. **LATER DEFECTS**
The Exceptions in Schedule B - Section Two may be amended to show any defects, liens or encumbrances that appear for the first time in the public records or are created or attached between the Commitment Date and the date on which all of the Requirements (a) and (c) of Schedule B - Section One are met. We shall have no liability to you because of this amendment.

3. **EXISTING DEFECTS**
If any defects, liens or encumbrances existing at Commitment Date are not shown in Schedule B, we may amend Schedule B to show them. If we do amend Schedule B to show these defects, liens or encumbrances, we shall be liable to you according to Paragraph 4 below unless you knew of this information and did not tell us about it in writing.

4. **LIMITATION OF OUR LIABILITY**
Our only obligation is to issue to you the Policy referred to in this Commitment, when you have met its Requirements. If we have any liability to you for any loss you incur because of an error in this Commitment, our liability will be limited to your actual loss caused by your relying on this Commitment when you acted in good faith to:

comply with the Requirements shown in Schedule B - Section One
or
eliminate with our written consent any Exceptions shown in Schedule B - Section Two.

We shall not be liable for more than the Policy Amount shown in Schedule A of this Commitment and our liability is subject to the terms of the Policy form to be issued to you.

5. **CLAIMS MUST BE BASED ON THIS COMMITMENT**
Any claim, whether or not based on negligence, which you may have against us concerning the title to the land must be based on this commitment and is subject to its terms.

First American Title

Privacy Information

We Are Committed to Safeguarding Customer Information

In order to better serve your needs now and in the future, we may ask you to provide us with certain information. We understand that you may be concerned about what we will do with such information - particularly any personal or financial information. We agree that you have a right to know how we will utilize the personal information you provide to us. Therefore, together with our subsidiaries we have adopted this Privacy Policy to govern the use and handling of your personal information.

Applicability

This Privacy Policy governs our use of the information that you provide to us. It does not govern the manner in which we may use information we have obtained from any other source, such as information obtained from a public record or from another person or entity. First American has also adopted broader guidelines that govern our use of personal information regardless of its source. First American calls these guidelines its Fair Information Values.

Types of Information

Depending upon which of our services you are utilizing, the types of nonpublic personal information that we may collect include:

- Information we receive from you on applications, forms and in other communications to us, whether in writing, in person, by telephone or any other means;
- Information about your transactions with us, our affiliated companies, or others; and
- Information we receive from a consumer reporting agency.

Use of Information

We request information from you for our own legitimate business purposes and not for the benefit of any nonaffiliated party. Therefore, we will not release your information to nonaffiliated parties except: (1) as necessary for us to provide the product or service you have requested of us; or (2) as permitted by law. We may, however, store such information indefinitely, including the period after which any customer relationship has ceased. Such information may be used for any internal purpose, such as quality control efforts or customer analysis. We may also provide all of the types of nonpublic personal information listed above to one or more of our affiliated companies. Such affiliated companies include financial service providers, such as title insurers, property and casualty insurers, and trust and investment advisory companies, or companies involved in real estate services, such as appraisal companies, home warranty companies and escrow companies. Furthermore, we may also provide all the information we collect, as described above, to companies that perform marketing services on our behalf, on behalf of our affiliated companies or to other financial institutions with whom we or our affiliated companies have joint marketing agreements.

Former Customers

Even if you are no longer our customer, our Privacy Policy will continue to apply to you.

Confidentiality and Security

We will use our best efforts to ensure that no unauthorized parties have access to any of your information. We restrict access to nonpublic personal information about you to those individuals and entities who need to know that information to provide products or services to you. We will use our best efforts to train and oversee our employees and agents to ensure that your information will be handled responsibly and in accordance with this Privacy Policy and First American's Fair Information Values. We currently maintain physical, electronic, and procedural safeguards that comply with federal regulations to guard your nonpublic personal information.

Information Obtained Through Our Web Site

First American Financial Corporation is sensitive to privacy issues on the Internet. We believe it is important you know how we treat the information about you we receive on the Internet.

In general, you can visit First American or its affiliates' Web sites on the World Wide Web without telling us who you are or revealing any information about yourself. Our Web servers collect the domain names, not the e-mail addresses, of visitors. This information is aggregated to measure the number of visits, average time spent on the site, pages viewed and similar information. First American uses this information to measure the use of our site and to develop ideas to improve the content of our site.

There are times, however, when we may need information from you, such as your name and email address. When information is needed, we will use our best efforts to let you know at the time of collection how we will use the personal information. Usually, the personal information we collect is used only by us to respond to your inquiry, process an order or allow you to access specific account/profile information. If you choose to share any personal information with us, we will only use it in accordance with the policies outlined above.

Business Relationships

First American Financial Corporation's site and its affiliates' sites may contain links to other Web sites. While we try to link only to sites that share our high standards and respect for privacy, we are not responsible for the content or the privacy practices employed by other sites.

Cookies

Some of First American's Web sites may make use of "cookie" technology to measure site activity and to customize information to your personal tastes. A cookie is an element of data that a Web site can send to your browser, which may then store the cookie on your hard drive.

FirstAm.com uses stored cookies. The goal of this technology is to better serve you when visiting our site, save you time when you are here and to provide you with a more meaningful and productive Web site experience.

Fair Information Values

Fairness We consider consumer expectations about their privacy in all our businesses. We only offer products and services that assure a favorable balance between consumer benefits and consumer privacy.

Public Record We believe that an open public record creates significant value for society, enhances consumer choice and creates consumer opportunity. We actively support an open public record and emphasize its importance and contribution to our economy.

Use We believe we should behave responsibly when we use information about a consumer in our business. We will obey the laws governing the collection, use and dissemination of data.

Accuracy We will take reasonable steps to help assure the accuracy of the data we collect, use and disseminate. Where possible, we will take reasonable steps to correct inaccurate information. When, as with the public record, we cannot correct inaccurate information, we will take all reasonable steps to assist consumers in identifying the source of the erroneous data so that the consumer can secure the required corrections.

Education We endeavor to educate the users of our products and services, our employees and others in our industry about the importance of consumer privacy. We will instruct our employees on our fair information values and on the responsible collection and use of data. We will encourage others in our industry to collect and use information in a responsible manner.

Security We will maintain appropriate facilities and systems to protect against unauthorized access to and corruption of the data we maintain.

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EXHIBIT A
LIST OF PRINTED EXCEPTIONS AND EXCLUSIONS (BY POLICY TYPE)

1. CALIFORNIA LAND TITLE ASSOCIATION STANDARD COVERAGE POLICY - 1990
SCHEDULE B

EXCEPTIONS FROM COVERAGE

This policy does not insure against loss or damage (and the Company will not pay costs, attorneys' fees or expenses) which arise by reason of:

1. Taxes or assessments which are not shown as existing liens by the records of any taxing authority that levies taxes or assessments on real property or by the public records. Proceedings by a public agency which may result in taxes or assessments, or notice of such proceedings, whether or not shown by the records of such agency or by the public records.
2. Any facts, rights, interests, or claims which are not shown by the public records but which could be ascertained by an inspection of the land or which may be asserted by persons in possession thereof.
3. Easements, liens or encumbrances, or claims thereof, which are not shown by the public records.
4. Discrepancies, conflicts in boundary lines, shortage in area, encroachments, or any other facts which a correct survey would disclose, and which are not shown by the public records.
5. (a) Unpatented mining claims; (b) reservations or exceptions in patents or in Acts authorizing the issuance thereof; (c) water rights, claims or title to water, whether or not the matters excepted under (a), (b), or (c) are shown by the public records.

EXCLUSIONS FROM COVERAGE

The following matters are expressly excluded from the coverage of this policy and the Company will not pay loss or damage, costs, attorneys' fees or expenses which arise by reason of:

1. (a) Any law, ordinance or governmental regulation (including but not limited to building and zoning laws, ordinances, or regulations) restricting, regulating, prohibiting or relating to (i) the occupancy, use, or enjoyment of the land; (ii) the character, dimensions or location of any improvement now or hereafter erected on the land; (iii) a separation in ownership or a change in the dimensions or area of the land or any parcel of which the land is or was a part; or (iv) environmental protection, or the effect of any violation of these laws, ordinances or governmental regulations, except to the extent that a notice of the enforcement thereof or a notice of a defect, lien or encumbrance resulting from a violation or alleged violation affecting the land has been recorded in the public records at Date of Policy.
   (b) Any governmental police power not excluded by (a) above, except to the extent that a notice of the exercise thereof or a notice of a defect, lien or encumbrance resulting from a violation or alleged violation affecting the land has been recorded in the public records at Date of Policy.
2. Rights of eminent domain unless notice of the exercise thereof has been recorded in the public records at Date of Policy, but not excluding from coverage any taking which has occurred prior to Date of Policy which would be binding on the rights of a purchaser for value without knowledge.
3. Defects, liens, encumbrances, adverse claims or other matters:
   (a) whether or not recorded in the public records at Date of Policy, but created, suffered, assumed or agreed to by the insured claimant;
   (b) not known to the Company, not recorded in the public records at Date of Policy, but known to the insured claimant and not disclosed in writing to the Company by the insured claimant prior to the date the insured claimant became an insured under this policy;
   (c) resulting in no loss or damage to the insured claimant;
   (d) attaching or created subsequent to Date of Policy; or
   (e) resulting in loss or damage which would not have been sustained if the insured claimant had paid value for the insured mortgage or for the estate or interest insured by this policy.
4. Unenforceability of the lien of the insured mortgage because of the inability or failure of the insured at Date of Policy, or the inability or failure of any subsequent owner of the indebtedness, to comply with applicable "doing business" laws of the state in which the land is situated.
5. Invalidity or unenforceability of the lien of the insured mortgage, or claim thereof, which arises out of the transaction evidenced by the insured mortgage and is based upon usury or any consumer credit protection or truth in lending law.
6. Any claim, which arises out of the transaction vesting in the insured the estate or interest insured by their policy or the transaction creating the interest of the insured lender, by reason of the operation of federal bankruptcy, state insolvency or similar creditors' rights laws.

2. AMERICAN LAND TITLE ASSOCIATION OWNER'S POLICY FORM B - 1970
SCHEDULE OF EXCLUSIONS FROM COVERAGE

1. Any law, ordinance or governmental regulation (including but not limited to building and zoning ordinances) restricting or regulating or prohibiting the occupancy, use or enjoyment of the land, or regulating the character, dimensions or location of any improvement now or hereafter erected on the land, or prohibiting a separation in ownership or a reduction in the dimensions of area of the land, or the effect of any violation of any such law, ordinance or governmental regulation.
2. Rights of eminent domain or governmental rights of police power unless notice of the exercise of such rights appears in the public records at Date of Policy.
3. Defects, liens, encumbrances, adverse claims, or other matters (a) created, suffered, assumed or agreed to by the insured claimant; (b) not known to the Company and not shown by the public records but known to the insured claimant either at Date of Policy or at the date such claimant acquired an estate or interest insured by this policy and not disclosed in writing by the insured claimant to the Company prior to the date such insured claimant became an insured hereunder; (c) resulting in no loss or damage to the insured claimant; (d) attaching or created subsequent to Date of Policy; or (e) resulting in loss or damage which would not have been sustained if the insured claimant had paid value for the estate or interest insured by this policy.

3. AMERICAN LAND TITLE ASSOCIATION OWNER'S POLICY FORM B - 1970
WITH REGIONAL EXCEPTIONS

When the American Land Title Association policy is used as a Standard Coverage Policy and not as an Extended Coverage Policy the exclusions set forth in paragraph 2 above are used and the following exceptions to coverage appear in the policy.

SCHEDULE B

This policy does not insure against loss or damage by reason of the matters shown in parts one and two following:
Part One

1. Taxes or assessments which are not shown as existing liens by the records of any taxing authority that levies taxes or assessments on real property or by the public records.
2. Any facts, rights, interests, or claims which are not shown by the public records but which could be ascertained by an inspection of said land or by making inquiry of persons in possession thereof.
3. Easements, claims of easement or encumbrances which are not shown by the public records.
4. Discrepancies, conflicts in boundary lines, shortage in area, encroachments, or any other facts which a correct survey would disclose, and which are not shown by public records.
5. Unpatented mining claims; reservations or exceptions in patents or in Acts authorizing the issuance thereof; water rights, claims or title to water.
6. Any lien, or right to a lien, for services, labor or material heretofore or hereafter furnished, imposed by law and not shown by the public records.

4. AMERICAN LAND TITLE ASSOCIATION LOAN POLICY - 1970 WITH A.L.T.A. ENDORSEMENT FORM 1 COVERAGE SCHEDULE OF EXCLUSIONS FROM COVERAGE

1. Any law, ordinance or governmental regulation (including but not limited to building and zoning ordinances) restricting or regulating or prohibiting the occupancy, use or enjoyment of the land, or regulating the character, dimensions or location of any improvement now or hereafter erected on the land, or prohibiting a separation in ownership or a reduction in the dimensions or area of the land, or the effect of any violation of any such law ordinance or governmental regulation.
2. Rights of eminent domain or governmental rights of police power unless notice of the exercise of such rights appears in the public records at Date of Policy.
3. Defects, liens, encumbrances, adverse claims, or other matters (a) created, suffered, assumed or agreed to by the insured claimant, (b) not known to the Company and not shown by the public records but known to the insured claimant either at Date of Policy or at the date such claimant acquired an estate or interest insured by this policy or acquired the insured mortgage and not disclosed in writing by the insured claimant to the Company prior to the date such insured claimant became an insured hereunder, (c) resulting in no loss or damage to the insured claimant; (d) attaching or created subsequent to Date of Policy (except to the extent insurance is afforded herein as to any statutory lien for labor or material or to the extent insurance is afforded herein as to assessments for street improvements under construction or completed at Date of Policy).
4. Unenforceability of the lien of the insured mortgage because of failure of the insured at Date of Policy or of any subsequent owner of the indebtedness to comply with applicable "doing business" laws of the state in which the land is situated.

5. AMERICAN LAND TITLE ASSOCIATION LOAN POLICY - 1970 WITH REGIONAL EXCEPTIONS

When the American Land Title Association Lenders Policy is used as a Standard Coverage Policy and not as an Extended Coverage Policy, the exclusions set forth in paragraph 4 above are used and the following exceptions to coverage appear in the policy.

SCHEDULE B

This policy does not insure against loss or damage by reason of the matters shown in parts one and two following:
Part One

1. Taxes or assessments which are not shown as existing liens by the records of any taxing authority that levies taxes or assessments on real property or by the public records.
2. Any facts, rights, interests, or claims which are not shown by the public records but which could be ascertained by an inspection of said land or by making inquiry of persons in possession thereof.
3. Easements, claims of easement or encumbrances which are not shown by the public records.
4. Discrepancies, conflicts in boundary lines, shortage in area, encroachments, or any other facts which a correct survey would disclose, and which are not shown by public records.
5. Unpatented mining claims; reservations or exceptions in patents or in Acts authorizing the issuance thereof; water rights, claims or title to water.
6. Any lien, or right to a lien, for services, labor or material theretofore or hereafter furnished, imposed by law and not shown by the public records.

6. AMERICAN LAND TITLE ASSOCIATION LOAN POLICY - 1992 WITH A.L.T.A. ENDORSEMENT FORM 1 COVERAGE EXCLUSIONS FROM COVERAGE

The following matters are expressly excluded from the coverage of this policy and the Company will not pay loss or damage, costs, attorneys' fees or expenses which arise by reason of:

1. (a) Any law, ordinance or governmental regulation (including but not limited to building and zoning laws, ordinances, or regulations) restricting, regulating, prohibiting or relating to (i) the occupancy, use, or enjoyment of the land; (ii) the character, dimensions or location of any improvement now or hereafter erected on the land; (iii) a separation in ownership or a change in the dimensions or area of the land or any parcel of which the land is or was a part; or (iv) environmental protection, or the effect of any violation of these laws, ordinances or governmental regulations, except to the extent that a notice of the enforcement thereof or a notice of a defect, lien or encumbrance resulting from a violation or alleged violation affecting the land has been recorded in the public records at Date of Policy;
   (b) Any governmental police power not excluded by (a) above, except to the extent that a notice of the exercise thereof or a notice of a defect, lien or encumbrance resulting from a violation or alleged violation affecting the land has been recorded in the public records at Date of Policy.

2. Rights of eminent domain unless notice of the exercise thereof has been recorded in the public records at Date of Policy, but not excluding from coverage any taking which has occurred prior to Date of Policy which would be binding on the rights of a purchaser for value without knowledge.
3. Defects, liens, encumbrances, adverse claims, or other matters:
(a) whether or not recorded in the public records at Date of Policy, but created, suffered, assumed or agreed to by the insured claimant;
(b) not known to the Company, not recorded in the public records at Date of Policy, but known to the insured claimant and not disclosed in writing to the Company by the insured claimant prior to the date the insured claimant became an insured under this policy;
(c) resulting in no loss or damage to the insured claimant;
(d) attaching or created subsequent to Date of Policy (except to the extent that this policy insures the priority of the lien of the insured mortgage over any statutory lien for services, labor or material or the extent insurance is afforded herein as to assessments for street improvements under construction or completed at date of policy); or
(e) resulting in loss or damage which would not have been sustained if the insured claimant had paid value for the insured mortgage.
4. Unenforceability of the lien of the insured mortgage because of the inability or failure of the insured at Date of Policy, or the inability or failure of any subsequent owner of the indebtedness, to comply with the applicable "doing business" laws of the state in which the land is situated.
5. Invalidity or unenforceability of the lien of the insured mortgage, or claim thereof, which arises out of the transaction evidenced by the insured mortgage and is based upon usury or any consumer credit protection or truth in lending law.
6. Any statutory lien for services, labor or materials (or the claim of priority of any statutory lien for services, labor or materials over the lien of the insured mortgage) arising from an improvement or work related to the land which is contracted for and commenced subsequent to Date of Policy and is not financed in whole or in part by proceeds of the indebtedness secured by the insured mortgage which at Date of Policy the insured has advanced or is obligated to advance.
7. Any claim, which arises out of the transaction creating the interest of the mortgagee insured by this policy, by reason of the operation of federal bankruptcy, state insolvency, or similar creditors' rights laws, that is based on:
(i) the transaction creating the interest of the insured mortgagee being deemed a fraudulent conveyance or fraudulent transfer; or
(ii) the subordination of the interest of the insured mortgagee as a result of the application of the doctrine of equitable subordination; or
(iii) the transaction creating the interest of the insured mortgagee being deemed a preferential transfer except where the preferential transfer results from the failure:
(a) to timely record the instrument of transfer; or
(b) of such recordation to impart notice to a purchaser for value or a judgment or lien creditor.

7. AMERICAN LAND TITLE ASSOCIATION LOAN POLICY - 1992
WITH REGIONAL EXCEPTIONS

When the American Land Title Association policy is used as a Standard Coverage Policy and not as an Extended Coverage Policy the exclusions set forth in paragraph 6 above are used and the following exceptions to coverage appear in the policy.

SCHEDULE B

This policy does not insure against loss or damage (and the Company will not pay costs, attorneys' fees or expenses) which arise by reason of:
1. Taxes or assessments which are not shown as existing liens by the records of any taxing authority that levies taxes or assessments on real property or by the public records.
2. Any facts, rights, interests, or claims which are not shown by the public records but which could be ascertained by an inspection of said land or by making inquiry of persons in possession thereof.
3. Easements, claims of easement or encumbrances which are not shown by the public records.
4. Discrepancies, conflicts in boundary lines, shortage in area, encroachments, or any other facts which a correct survey would disclose, and which are not shown by public records.
5. Unpatented mining claims; reservations or exceptions in patents or in Acts authorizing the issuance thereof; water rights, claims or title to water.
6. Any lien, or right to a lien, for services, labor or material theretofore or hereafter furnished, imposed by law and not shown by the public records.

8. AMERICAN LAND TITLE ASSOCIATION OWNER'S POLICY - 1992
EXCLUSIONS FROM COVERAGE

The following matters are expressly excluded from the coverage of this policy and the Company will not pay loss or damage, costs, attorneys' fees or expenses which arise by reason of:
1. (a) Any law, ordinance or governmental regulation (including but not limited to building and zoning laws, ordinances, or regulations) restricting, regulating, prohibiting or relating to (i) the occupancy, use, or enjoyment of the land; (ii) the character, dimensions or location of any improvement now or hereafter erected on the land; (iii) a separation in ownership or a change in the dimensions or area of the land or any parcel of which the land is or was a part; or (iv) environmental protection, or the effect of any violation of these laws, ordinances or governmental regulations, except to the extent that a notice of the enforcement thereof or a notice of a defect, lien or encumbrance resulting from a violation or alleged violation affecting the land has been recorded in the public records at Date of Policy.
(b) Any governmental police power not excluded by (a) above, except to the extent that a notice of the exercise thereof or a notice of a defect, lien or encumbrance resulting from a violation or alleged violation affecting the land has been recorded in the public records at Date of Policy.
2. Rights of eminent domain unless notice of the exercise thereof has been recorded in the public records at Date of Policy, but not excluding from coverage any taking which has occurred prior to Date of Policy which would be binding on the rights of a purchaser for value without knowledge.
3. Defects, liens, encumbrances, adverse claims, or other matters:
(a) created, suffered, assumed or agreed to by the insured claimant;
(b) not known to the Company, not recorded in the public records at Date of Policy, but known to the insured claimant and not disclosed in writing to the Company by the insured claimant prior to the date the insured claimant became an insured under this policy;
(c) resulting in no loss or damage to the insured claimant;
(d) attaching or created subsequent to Date of Policy; or

(e) resulting in loss or damage which would not have been sustained if the insured claimant had paid value for the estate or interest insured by this policy.

4. Any claim, which arises out of the transaction vesting in the insured the estate or interest insured by this policy, by reason of the operation of federal bankruptcy, state insolvency, or similar creditors' rights laws, that is based on:
(i) the transaction creating the estate or interest insured by this policy being deemed a fraudulent conveyance or fraudulent transfer; or
(ii) the transaction creating the estate or interest insured by this policy being deemed a preferential transfer except where the preferential transfer results from the failure:
(a) to timely record the instrument of transfer; or
(b) of such recordation to impart notice to a purchaser for value or a judgment or lien creditor.

9. AMERICAN LAND TITLE ASSOCIATION OWNER'S POLICY - 1992 WITH REGIONAL EXCEPTIONS

When the American Land Title Association policy is used as a Standard Coverage Policy and not as an Extended Coverage Policy the exclusions set forth in paragraph 8 above are used and the following exceptions to coverage appear in the policy.

SCHEDULE B

This policy does not insure against loss or damage (and the Company will not pay costs, attorneys' fees or expenses) which arise by reason of:
Part One:

1. Taxes or assessments which are not shown as existing liens by the records of any taxing authority that levies taxes or assessments on real property or by the public records.
2. Any facts, rights, interests, or claims which are not shown by the public records but which could be ascertained by an inspection of said land or by making inquiry of persons in possession thereof.
3. Easements, claims of easement or encumbrances which are not shown by the public records.
4. Discrepancies, conflicts in boundary lines, shortage in area, encroachments, or any other facts which a correct survey would disclose, and which are not shown by public records.
5. Unpatented mining claims; reservations or exceptions in patents or in Acts authorizing the issuance thereof; water rights, claims or title to water.
6. Any lien, or right to a lien, for services, labor or material theretofore or hereafter furnished, imposed by law and not shown by the public records.

ALTA RESIDENTIAL TITLE INSURANCE POLICY (6-1-87)

EXCLUSIONS

In addition to the Exceptions in Schedule B, you are not insured against loss, costs, attorneys' fees, and expenses resulting from:

1. Governmental police power, and the existence or violation of any law or government regulation. This includes building and zoning ordinances and also laws and regulations concerning:
   (a) and use
   (b) improvements on the land
   (c) and division
   (d) environmental protection

   This exclusion does not apply to violations or the enforcement of these matters which appear in the public records at Policy Date.
   This exclusion does not limit the zoning coverage described in Items 12 and 13 of Covered Title Risks.
2. The right to take the land by condemning it, unless:
   (a) a notice of exercising the right appears in the public records on the Policy Date
   (b) the taking happened prior to the Policy Date and is binding on you if you bought the land without knowing of the taking
3. Title Risks:
   (a) that are created, allowed, or agreed to by you
   (b) that are known to you, but not to us, on the Policy Date -- unless they appeared in the public records
   (c) that result in no loss to you
   (d) that first affect your title after the Policy Date -- this does not limit the labor and material lien coverage in Item 8 of Covered Title Risks
4. Failure to pay value for your title.
5. Lack of a right:
   (a) to any land outside the area specifically described and referred to in Item 3 of Schedule A OR
   (b) in streets, alleys, or waterways that touch your land
   This exclusion does not limit the access coverage in Item 5 of Covered Title Risks.

11. EAGLE PROTECTION OWNER'S POLICY

CLTA HOMEOWNER'S POLICY OF TITLE INSURANCE - 1998
ALTA HOMEOWNER'S POLICY OF TITLE INSURANCE - 1998

Covered Risks 14 (Subdivision Law Violation). 15 (Building Permit). 16 (Zoning) and 18 (Encroachment of boundary walls or fences) are subject to Deductible Amounts and Maximum Dollar Limits of Liability

EXCLUSIONS

In addition to the Exceptions in Schedule B, you are not insured against loss, costs, attorneys' fees, and expenses resulting from:

1. Governmental police power, and the existence or violation of any law or government regulation. This includes ordinances, laws and regulations concerning:
   a. building
   b. zoning
   c. land use
   d. improvements on the land
   e. land division
   f. environmental protection

   This exclusion does not apply to violations or the enforcement of these matters if notice of the violation or enforcement appears in the Public Records at the Policy Date.
   This exclusion does not limit the coverage described in Covered Risk 14, 15, 16, 17 or 24.
2. The failure of Your existing structures, or any part of them, to be constructed in accordance with applicable building codes. This Exclusion does not apply to violations of building codes if notice of the violation appears in the Public Records at the Policy Date.
3. The right to take the Land by condemning it, unless:
   a. a notice of exercising the right appears in the Public Records at the Policy Date; or
   b. the taking happened before the Policy Date and is binding on You if You bought the Land without Knowing of the taking.
4. Risks:
   a. that are created, allowed, or agreed to by You, whether or not they appear in the Public Records;
   b. that are Known to You at the Policy Date, but not to Us, unless they appear in the Public Records at the Policy Date;
   c. that result in no loss to You; or
   d. that first occur after the Policy Date - this does not limit the coverage described in Covered Risk 7, 8.d, 22, 23, 24 or 25.
5. Failure to pay value for Your Title.
6. Lack of a right:
   a. to any Land outside the area specifically described and referred to in paragraph 3 of Schedule A; and
   b. in streets, alleys, or waterways that touch the Land.
   This exclusion does not limit the coverage described in Covered Risk 11 or 18.

12. THIRD GENERATION EAGLE LOAN POLICY AMERICAN LAND TITLE ASSOCIATION EXPANDED COVERAGE RESIDENTIAL LOAN POLICY (1/01/08)

EXCLUSIONS FROM COVERAGE

The following matters are expressly excluded from the coverage of this policy and the Company will not pay loss or damage, costs, attorneys' fees or expenses which arise by reason of:

1. (a) Any law, ordinance, permit, or governmental regulation (including those relating to building and zoning) restricting, regulating, prohibiting, or relating to (i) the occupancy, use, or enjoyment of the Land; (ii) the character, dimensions, or location of any improvement erected on the Land; (iii) the subdivision of land; or(iv) environmental protection; or the effect of any violation of these laws, ordinances, or governmental regulations. This Exclusion 1(a) does not modify or limit the coverage provided under Covered Risk 5, 6, 13(c), 13(d), 14 or 16.
   (b)Any governmental police power. This Exclusion 1(b) does not modify or limit the coverage provided under Covered Risk 5, 6, 13(c), 13(d), 14 or 16.
2. Rights of eminent domain. This Exclusion does not modify or limit the coverage provided under Covered Risk 7 or 8.
3. Defects, liens, encumbrances, adverse claims, or other matters
   (a) created, suffered, assumed or agreed to by the Insured Claimant;
   (b) not Known to the Company, not recorded in the Public Records at Date of Policy, but Known to the Insured Claimant and not disclosed in writing to the Company by the Insured Claimant prior to the date the Insured Claimant became an Insured under this policy;
   (c) resulting in no loss or damage to the Insured Claimant;
   (d) attaching or created subsequent to Date of Policy (however, this does not modify or limit the coverage provided under Covered Risk 11, 16, 17, 18, 19, 20, 21, 22, 23, 24, 27 or 28); or
   (e) resulting in loss or damage which would not have been sustained if the Insured Claimant had paid value for the Insured Mortgage.
4. Unenforceability of the lien of the Insured Mortgage because of the inability or failure of an Insured to comply with applicable doing business laws of the state where the Land is situated.
5. Invalidity or unenforceability in whole or in part of the lien of the Insured Mortgage that arises out of the transaction evidenced by the Insured Mortgage and is based upon usury, or any consumer credit protection or truth-in-lending law. This Exclusion does not modify or limit the coverage provided in Covered Risk 26.
6. Any claim of invalidity, unenforceability or lack of priority of the lien of the Insured Mortgage as to Advances or modifications made after the Insured has Knowledge that the vestee shown in Schedule A is no longer the owner of the estate or interest covered by this policy. This Exclusion does not modify or limit the coverage provided in Covered Risk 11.
7. Any lien on the Title for real estate taxes or assessments imposed by governmental authority and created or attaching subsequent to Date of Policy. This Exclusion does not modify or limit the coverage provided in Covered Risk 11(b) or 25.
8. The failure of the residential structure, or any portion of it, to have been constructed before, on or after Date of Policy in accordance with applicable building codes. This Exclusion does not modify or limit the coverage provided in Covered Risk 5 or 6.

13. AMERICAN LAND TITLE ASSOCIATION LOAN POLICY - 2006
EXCLUSIONS FROM COVERAGE

The following matters are expressly excluded from the coverage of this policy, and the Company will not pay loss or damage, costs, attorneys' fees, or

expenses that arise by reason of:

1. (a) Any law, ordinance, permit, or governmental regulation (including those relating to building and zoning) restricting, regulating, prohibiting, or relating to

   (i) the occupancy, use, or enjoyment of the Land;

   (ii) the character, dimensions, or location of any improvement erected on the Land;

   (iii) the subdivision of land; or

   (iv) environmental protection;

   or the effect of any violation of these laws, ordinances, or governmental regulations. This Exclusion 1(a) does not modify or limit the coverage provided under Covered Risk 5.

   (b) Any governmental police power. This Exclusion 1(b) does not modify or limit the coverage provided under Covered Risk 6.

2. Rights of eminent domain. This Exclusion does not modify or limit the coverage provided under Covered Risk 7 or 8.

3. Defects, liens, encumbrances, adverse claims, or other matters

   (a) created, suffered, assumed, or agreed to by the Insured Claimant;

   (b) not Known to the Company, not recorded in the Public Records at Date of Policy, but Known to the Insured Claimant and not disclosed in writing to the Company by the Insured Claimant prior to the date the Insured Claimant became an Insured under this policy;

   (c) resulting in no loss or damage to the Insured Claimant;

   (d) attaching or created subsequent to Date of Policy (however, this does not modify or limit the coverage provided under Covered Risk 11, 13, or 14); or

   (e) resulting in loss or damage that would not have been sustained if the Insured Claimant had paid value for the Insured Mortgage.

4. Unenforceability of the lien of the Insured Mortgage because of the inability or failure of an Insured to comply with applicable doing-business laws of the state where the Land is situated.

5. Invalidity or unenforceability in whole or in part of the lien of the Insured Mortgage that arises out of the transaction evidenced by the Insured Mortgage and is based upon usury or any consumer credit protection or truth-in-lending law.

6. Any claim, by reason of the operation of federal bankruptcy, state insolvency, or similar creditors' rights laws, that the transaction creating the lien of the Insured Mortgage, is

   (a) a fraudulent conveyance or fraudulent transfer, or

   (b) a preferential transfer for any reason not stated in Covered Risk 13(b) of this policy.

7. Any lien on the Title for real estate taxes or assessments imposed by governmental authority and created or attaching between Date of Policy and the date of recording of the Insured Mortgage in the Public Records. This Exclusion does not modify or limit the coverage provided under Covered Risk 11(b).

14. AMERICAN LAND TITLE ASSOCIATION LOAN POLICY - 2006 WITH REGIONAL EXCEPTIONS

When the American Land Title Association policy is used as a Standard Coverage Policy and not as an Extended Coverage Policy the exclusions set forth in paragraph 13 above are used and the following exceptions to coverage appear in the policy.

SCHEDULE B

This policy does not insure against loss or damage (and the Company will not pay costs, attorneys' fees or expenses) which arise by reason of:

1. (a) Taxes or assessments that are not shown as existing liens by the records of any taxing authority that levies taxes or assessments on real property or by the Public Records; (b) proceedings by a public agency that may result in taxes or assessments, or notices of such proceedings, whether or not shown by the records of such agency or by the Public Records.

2. Any facts, rights, interests, or claims that are not shown by the Public Records but that could be ascertained by an inspection of the Land or that may be asserted by persons in possession of the Land.

3. Easements, liens or encumbrances, or claims thereof, not shown by the Public Records.

4. Any encroachment, encumbrance, violation, variation, or adverse circumstance affecting the Title that would be disclosed by an accurate and complete land survey of the Land and not shown by the Public Records.

5. (a) Unpatented mining claims; (b) reservations or exceptions in patents or in Acts authorizing the issuance thereof; (c) water rights, claims or title to water, whether or not the matters excepted under (a), (b), or (c) are shown by the Public Records.

15. AMERICAN LAND TITLE ASSOCIATION OWNER'S POLICY - 2006 EXCLUSIONS FROM COVERAGE

The following matters are expressly excluded from the coverage of this policy and the Company will not pay loss or damage, costs, attorneys' fees or expenses which arise by reason of:

1. (a) Any law, ordinance, permit, or governmental regulation (including those relating to building and zoning) restricting, regulating, prohibiting, or relating to

   (i) the occupancy, use, or enjoyment of the Land;

   (ii) the character, dimensions, or location of any improvement erected on the Land;

   (iii) the subdivision of land; or

   (iv) environmental protection;or the effect of any violation of these laws, ordinances, or governmental regulations. This Exclusion 1(a) does not modify or limit the coverage provided under Covered Risk 5.

(b) Any governmental police power. This Exclusion 1(b) does not modify or limit the coverage provided under Covered Risk 6.

2. Rights of eminent domain. This Exclusion does not modify or limit the coverage provided under Covered Risk 7 or 8.

3. Defects, liens, encumbrances, adverse claims, or other matters

(a) created, suffered, assumed, or agreed to by the Insured Claimant;

(b) not Known to the Company, not recorded in the Public Records at Date of Policy, but Known to the Insured Claimant and not disclosed in writing to the Company by the Insured Claimant prior to the date the Insured Claimant became an Insured under this policy;

(c) resulting in no loss or damage to the Insured Claimant;

(d) attaching or created subsequent to Date of Policy (however, this does not modify or limit the coverage provided under Covered Risks 9 and 10); or

(e) resulting in loss or damage that would not have been sustained if the Insured Claimant had paid value for the Title.

4. Any claim, by reason of the operation of federal bankruptcy, state insolvency, or similar creditors rights laws, that the transaction vesting the Title as shown in Schedule A, is

(a) a fraudulent conveyance or fraudulent transfer; or

(b) a preferential transfer for any reason not stated in Covered Risk 9 of this policy.

5. Any lien on the Title for real estate taxes or assessments imposed by governmental authority and created or attaching between Date of Policy and the date of recording of the deed or other instrument of transfer in the Public Records that vests Title as shown in Schedule A.

16. AMERICAN LAND TITLE ASSOCIATION OWNER'S POLICY - 2006 WITH REGIONAL EXCEPTIONS

When the American Land Title Association policy is used as a Standard Coverage Policy and not as an Extended Coverage Policy the exclusions set forth in paragraph 15 above are used and the following exceptions to coverage appear in the policy.

SCHEDULE B

This policy does not insure against loss or damage (and the Company will not pay costs, attorneys' fees or expenses) which arise by reason of:

1. (a) Taxes or assessments that are not shown as existing liens by the records of any taxing authority that levies taxes or assessments on real property or by the Public Records; (b) proceedings by a public agency that may result in taxes or assessments, or notices of such proceedings, whether or not shown by the records of such agency or by the Public Records.
2. Any facts, rights, interests, or claims that are not shown by the Public Records but that could be ascertained by an inspection of the Land or that may be asserted by persons in possession of the Land.
3. Easements, liens or encumbrances, or claims thereof, not shown by the Public Records.
4. Any encroachment, encumbrance, violation, variation, or adverse circumstance affecting the Title that would be disclosed by an accurate and complete land survey of the Land and not shown by the Public Records.
5. (a) Unpatented mining claims; (b) reservations or exceptions in patents or in Acts authorizing the issuance thereof; (c) water rights, claims or title to water, whether or not the matters excepted under (a), (b), or (c) are shown by the Public Records.

January 03, 2018
Update

First American Title Insurance Company

National Commercial Services

666 Third Avenue, 5th Floor
New York, NY 10017

January 03, 2018

John Warren
Intersect Power
Embarcadero Center , 7th Floor
San Francisco, CA 94111
Phone: (415)297-4169

Order Number: 3020-847535

Owner: Hope M. Holcomb

Property: APN#: 811-190-001/Vacant Land, , CA

Attached please find the following item(s):

Commitment

Thank You for your confidence and support. We at First American Title Insurance Company maintain the fundamental principle:

Customer First!

First American Title Insurance Company

INFORMATION

The Title Insurance Commitment is a legal contract between you and the company. It is issued to show the basis on which we will issue a Title Insurance Policy to you. The Policy will insure you against certain risks to the land title, subject to the limitations shown in the policy.

The Company will give you a sample of the Policy form, if you ask.

The Commitment is based on the land title as of the Commitment Date. Any changes in the land title or the transaction may affect the Commitment and the Policy.

The Commitment is subject to its Requirements, Exceptions and Conditions.

This information is not part of the title insurance commitment.

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YOU SHOULD READ THE COMMITMENT VERY CAREFULLY.
If you have any questions about the Commitment,
please contact the issuing office.

COMMITMENT FOR TITLE INSURANCE

Issued by

First American Title Insurance Company

Agreement to Issue Policy

We agree to issue a policy to you according to the terms of this Commitment.

When we show the policy amount and your name as the proposed insured in Schedule A, this Commitment becomes effective as of the Commitment Date shown in Schedule A.

If the Requirements shown in this Commitment have not been met within six months after the Commitment Date, our obligation under this Commitment will end. Also, our obligation under this Commitment will end when the Policy is issued and then our obligation to you will be under the Policy.

Our obligation under this Commitment is limited by the following:

The Provisions in Schedule A.

The Requirements in Schedule B-1.

The Exceptions in Schedule B-2.

The Conditions.

This Commitment is not valid without Schedule A and Sections 1 and 2 of Schedule B.

SCHEDULE A

1. Commitment Date: December 22, 2017 at 7:30 A.M.

2. Policy or Policies to be issued: Amount

(A) ALTA Owner's Policy $To Be Determined
ALTA Standard Owner Policy

Proposed Insured:

To Be Determined

(B) ALTA Loan Policy $To Be Determined
To Be Determined

Proposed Insured:

To Be Determined

3. (A) The estate or interest in the land described in this Commitment is:

FEE

(B) Title to said estate or interest at the date hereof is vested in:

Lawrence Clark Powell, Successor Trustee of The Hope M. Holcomb Trust dated 2/11/2002, as to an undivided 1/2 interest, and Eleanor B. Mortensen, Trustee of The Mortensen Family Trust, as to an undivided 1/2 interest, as tenants in common

4. The land referred to in this Commitment is situated in the unincorporated area of the County of Riverside, State of California, and is described as follows:

THE SOUTHWEST QUARTER, THE NORTH HALF OF THE SOUTHEAST QUARTER AND THE SOUTHWEST QUARTER OF THE SOUTHEAST QUARTER OF SECTION 21, TOWNSHIP 5 SOUTH, RANGE 16 EAST, SAN BERNARDINO BASE AND MERIDIAN.

EXCEPTING THEREFROM ALL OIL, GAS AND MINERAL RIGHTS RESERVED THROUGH VARIOUS DEEDS OF RECORD.

APN: 811-190-001-7

SCHEDULE B

SECTION ONE

REQUIREMENTS

The following requirements must be met:

(A) Pay the agreed amounts for the interest in the land and/or the mortgage to be insured.

(B) Pay us the premiums, fees and charges for the policy.

(C) Documents satisfactory to us creating the interest in the land and/or the mortgage to be insured must be signed, delivered and recorded.

(D) You must tell us in writing the name of anyone not referred to in this Commitment who will get an interest in the land or who will make a loan on the land. We may then make additional requirements or exceptions.

(E) Releases(s) or Reconveyance(s) of Item(s): None

(F) Other: None

(G) You must give us the following information:
1. Any off record leases, surveys, etc.
2. Statement(s) of Identity, all parties.
3. Other:

With respect to the trust referred to in the vesting:

a. A certification pursuant to Section 18100.5 of the California Probate Code in a form satisfactory to the Company.
b. Copies of those excerpts from the original trust documents and amendments thereto which designate the trustee and confer upon the trustee the power to act in the pending transaction.
c. Other requirements which the Company may impose following its review of the material required herein and other information which the Company may require.

The following additional requirements, as indicated by "X", must be met:

[X] (H) Provide information regarding any off-record matters, which may include, but are not limited to: leases, recent works of improvement, or commitment statements in effect under the Environmental Responsibility Acceptance Act, Civil Code Section 850, et seq.

The Company's Owner's Affidavit form (as provided by company) must be completed and submitted prior to close in order to satisfy this requirement. This Commitment will then be subject to such further exceptions and/or requirements as may be deemed necessary.

[] (I) An ALTA/NSPS survey of recent date, which complies with the current minimum standard detail requirements for ALTA/NSPS land title surveys, must be submitted to the Company for review. This Commitment will then be subject to such further exceptions and/or requirements as may be deemed necessary.

[] (J) The following LLC documentation is required:
(i) a copy of the Articles of Organization
(ii) a copy of the Operating Agreement, if applicable
(iii) a Certificate of Good Standing and/or other evidence of current Authority to Conduct Business within the State
(iv) express Company Consent to the current transaction

[] (K) The following partnership documentation is required **:**
(i) a copy of the partnership agreement, including all applicable amendments thereto
(ii) a Certificate of Good Standing and/or other evidence of current Authority to Conduct Business within the State
(iii) express Partnership Consent to the current transaction

[] (L) The following corporation documentation is required:
(i) a copy of the Articles of Incorporation
(ii) a copy of the Bylaws, including all applicable Amendments thereto
(iii) a Certificate of Good Standing and/or other evidence of current Authority to Conduct Business within the State
(iv) express Corporate Resolution consenting to the current transaction

[] (M) Based upon the Company's review of that certain partnership/operating agreement dated **Not disclosed** for the proposed insured herein, the following requirements must be met:

Any further amendments to said agreement must be submitted to the Company, together with an affidavit from one of the general partners or members stating that it is a true copy, that said partnership or limited liability company is in full force and effect, and that there have been no further amendments to the agreement. This Commitment will then be subject to such further requirements as may be deemed necessary.

[] (N) A copy of the complete lease, as referenced in Schedule A, #3 herein, together with any amendments and/or assignments thereto, must be submitted to the Company for review, along with an affidavit executed by the present lessee stating that it is a true copy, that the lease is in full force and effect, and that there have been no further amendments to the lease. This Commitment will then be subject to such further requirements as may be deemed necessary.

[X] (O) Approval from the Company's Underwriting Department must be obtained for issuance of the policy contemplated herein and any endorsements requested thereunder. This Commitment will then be subject to such further requirements as may be required to obtain such approval.

[] (P) Potential additional requirements, if ALTA Extended coverage is contemplated hereunder, and work on the land has commenced prior to close, some or all of the following requirements, and any other requirements which may be deemed necessary, may need to be met:

[] (Q) The Company's "Indemnity Agreement I" must be executed by the appropriate parties.

[] (R) Financial statements from the appropriate parties must be submitted to the Company for review.

[] (S) A copy of the construction contract must be submitted to the Company for review.

[] (T) An inspection of the land must be performed by the Company for verification of the phase of construction.

[] (U) The Company's "Mechanic's Lien Risk Addendum" form must be completed by a Company employee, based upon information furnished by the appropriate parties involved.

SCHEDULE B

SECTION TWO

EXCEPTIONS

Any policy we issue will have the following exceptions unless they are taken care of to our satisfaction. The printed exceptions and exclusions from the coverage of the policy or policies are set forth in Exhibit A attached. Copies of the policy forms should be read. They are available from the office which issued this Commitment.

1. General and special taxes and assessments for the fiscal year 2018-2019, a lien not yet due or payable.

1A. General and special taxes and assessments for the fiscal year 2017-2018.

First Installment:	$287.39, PAID
Penalty:	$0.00
Second Installment:	$287.39, OPEN
Penalty:	$0.00
Tax Rate Area:	062-000
A. P. No.:	811-190-001-7

2. The lien of supplemental taxes, if any, assessed pursuant to Chapter 3.5 commencing with Section 75 of the California Revenue and Taxation Code.

3. A right of way for ditches or canals constructed by the authority of the United States, as reserved in United States patent recorded December 28, 1951 in Book 1330 Page 23 of Official Records of Riverside County, California.

4. This item has been intentionally deleted.

5. Rights of the public in and to that portion of the land lying within ANY ROAD, STREET AND/OR HIGHWAY.

6. The lack of a right of access to and from the land.

   Notice: Paragraph 4 of the insuring provisions on the face page of the policy will be deleted from the policy to be issued.

7. Water rights, claims or title to water, whether or not shown by the public records.

8. Rights of parties in possession.

9. Any facts, rights, interests or claims which would be disclosed by a correct ALTA/NSPS survey.

10. Any lien, or right to a lien, imposed by law, as a result of services, labor, and/or materials used, or to be used, for improvement to the premises.

11. Any claim to (a) ownership of or rights to minerals and similar substances, including but not limited to ores, metals, coal, lignite, oil, gas, uranium, clay, rock, sand, and gravel located in, on,

or under the Land or produced from the Land, whether such ownership or rights arise by lease, grant, exception, conveyance, reservation, or otherwise; and (b) any rights, privileges, immunities, rights of way, and easements associated therewith or appurtenant thereto, whether or not the interests or rights excepted in (a) or (b) appear in the Public Records or are shown in Schedule B.

12. Defects, liens, encumbrances, adverse claims or other matters, if any, created, first appearing in the Public Records, or attaching subsequent to the effective date hereof but prior to the date the proposed Insured acquires for value of record the estate or interest or mortgage thereon covered by this Report/Commitment.

INFORMATIONAL NOTES

ALERT - CA Senate Bill 2 imposes an additional fee of $75 up to $225 at the time of recording on certain transactions effective January 1, 2018. Please contact your First American Title representative for more information on how this may affect your closing.

1. The property covered by this report is vacant land.

2. According to the public records, there has been no conveyance of the land within a period of twenty-four months prior to the date of this report, except as follows:

   None

3. This preliminary report/commitment was prepared based upon an application for a policy of title insurance that identified land by street address or assessor's parcel number only. It is the responsibility of the applicant to determine whether the land referred to herein is in fact the land that is to be described in the policy or policies to be issued.

The map attached, if any, may or may not be a survey of the land depicted hereon. First American Title Insurance Company expressly disclaims any liability for loss or damage which may result from reliance on this map except to the extent coverage for such loss or damage is expressly provided by the terms and provisions of the title insurance policy, if any, to which this map is attached.

******To obtain wire instructions for deposit of funds to your escrow file please contact your Escrow Officer.******

CONDITIONS

1. **DEFINITIONS**
(a)"Mortgage" means mortgage, deed of trust or other security instrument.
(b)"Public Records" means title records that give constructive notice of matters affecting the title according to the state law where the land is located.

2. **LATER DEFECTS**
The Exceptions in Schedule B - Section Two may be amended to show any defects, liens or encumbrances that appear for the first time in the public records or are created or attached between the Commitment Date and the date on which all of the Requirements (a) and (c) of Schedule B - Section One are met. We shall have no liability to you because of this amendment.

3. **EXISTING DEFECTS**
If any defects, liens or encumbrances existing at Commitment Date are not shown in Schedule B, we may amend Schedule B to show them. If we do amend Schedule B to show these defects, liens or encumbrances, we shall be liable to you according to Paragraph 4 below unless you knew of this information and did not tell us about it in writing.

4. **LIMITATION OF OUR LIABILITY**
Our only obligation is to issue to you the Policy referred to in this Commitment, when you have met its Requirements. If we have any liability to you for any loss you incur because of an error in this Commitment, our liability will be limited to your actual loss caused by your relying on this Commitment when you acted in good faith to:

comply with the Requirements shown in Schedule B - Section One
or
eliminate with our written consent any Exceptions shown in Schedule B - Section Two.

We shall not be liable for more than the Policy Amount shown in Schedule A of this Commitment and our liability is subject to the terms of the Policy form to be issued to you.

5. **CLAIMS MUST BE BASED ON THIS COMMITMENT**
Any claim, whether or not based on negligence, which you may have against us concerning the title to the land must be based on this commitment and is subject to its terms.

First American Title

Privacy Information

We Are Committed to Safeguarding Customer Information

In order to better serve your needs now and in the future, we may ask you to provide us with certain information. We understand that you may be concerned about what we will do with such information - particularly any personal or financial information. We agree that you have a right to know how we will utilize the personal information you provide to us. Therefore, together with our subsidiaries we have adopted this Privacy Policy to govern the use and handling of your personal information.

Applicability

This Privacy Policy governs our use of the information that you provide to us. It does not govern the manner in which we may use information we have obtained from any other source, such as information obtained from a public record or from another person or entity. First American has also adopted broader guidelines that govern our use of personal information regardless of its source. First American calls these guidelines its Fair Information Values.

Types of Information

Depending upon which of our services you are utilizing, the types of nonpublic personal information that we may collect include:

- Information we receive from you on applications, forms and in other communications to us, whether in writing, in person, by telephone or any other means;
- Information about your transactions with us, our affiliated companies, or others; and
- Information we receive from a consumer reporting agency.

Use of Information

We request information from you for our own legitimate business purposes and not for the benefit of any nonaffiliated party. Therefore, we will not release your information to nonaffiliated parties except: (1) as necessary for us to provide the product or service you have requested of us; or (2) as permitted by law. We may, however, store such information indefinitely, including the period after which any customer relationship has ceased. Such information may be used for any internal purpose, such as quality control efforts or customer analysis. We may also provide all of the types of nonpublic personal information listed above to one or more of our affiliated companies. Such affiliated companies include financial service providers, such as title insurers, property and casualty insurers, and trust and investment advisory companies, or companies involved in real estate services, such as appraisal companies, home warranty companies and escrow companies. Furthermore, we may also provide all the information we collect, as described above, to companies that perform marketing services on our behalf, on behalf of our affiliated companies or to other financial institutions with whom we or our affiliated companies have joint marketing agreements.

Former Customers

Even if you are no longer our customer, our Privacy Policy will continue to apply to you.

Confidentiality and Security

We will use our best efforts to ensure that no unauthorized parties have access to any of your information. We restrict access to nonpublic personal information about you to those individuals and entities who need to know that information to provide products or services to you. We will use our best efforts to train and oversee our employees and agents to ensure that your information will be handled responsibly and in accordance with this Privacy Policy and First American's Fair Information Values. We currently maintain physical, electronic, and procedural safeguards that comply with federal regulations to guard your nonpublic personal information.

Information Obtained Through Our Web Site

First American Financial Corporation is sensitive to privacy issues on the Internet. We believe it is important you know how we treat the information about you we receive on the Internet.

In general, you can visit First American or its affiliates' Web sites on the World Wide Web without telling us who you are or revealing any information about yourself. Our Web servers collect the domain names, not the e-mail addresses, of visitors. This information is aggregated to measure the number of visits, average time spent on the site, pages viewed and similar information. First American uses this information to measure the use of our site and to develop ideas to improve the content of our site.

There are times, however, when we may need information from you, such as your name and email address. When information is needed, we will use our best efforts to let you know at the time of collection how we will use the personal information. Usually, the personal information we collect is used only by us to respond to your inquiry, process an order or allow you to access specific account/profile information. If you choose to share any personal information with us, we will only use it in accordance with the policies outlined above.

Business Relationships

First American Financial Corporation's site and its affiliates' sites may contain links to other Web sites. While we try to link only to sites that share our high standards and respect for privacy, we are not responsible for the content or the privacy practices employed by other sites.

Cookies

Some of First American's Web sites may make use of "cookie" technology to measure site activity and to customize information to your personal tastes. A cookie is an element of data that a Web site can send to your browser, which may then store the cookie on your hard drive.

FirstAm.com uses stored cookies. The goal of this technology is to better serve you when visiting our site, save you time when you are here and to provide you with a more meaningful and productive Web site experience.

Fair Information Values

Fairness We consider consumer expectations about their privacy in all our businesses. We only offer products and services that assure a favorable balance between consumer benefits and consumer privacy.

Public Record We believe that an open public record creates significant value for society, enhances consumer choice and creates consumer opportunity. We actively support an open public record and emphasize its importance and contribution to our economy.

Use We believe we should behave responsibly when we use information about a consumer in our business. We will obey the laws governing the collection, use and dissemination of data.

Accuracy We will take reasonable steps to help assure the accuracy of the data we collect, use and disseminate. Where possible, we will take reasonable steps to correct inaccurate information. When, as with the public record, we cannot correct inaccurate information, we will take all reasonable steps to assist consumers in identifying the source of the erroneous data so that the consumer can secure the required corrections.

Education We endeavor to educate the users of our products and services, our employees and others in our industry about the importance of consumer privacy. We will instruct our employees on our fair information values and on the responsible collection and use of data. We will encourage others in our industry to collect and use information in a responsible manner.

Security We will maintain appropriate facilities and systems to protect against unauthorized access to and corruption of the data we maintain.

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EXHIBIT A
LIST OF PRINTED EXCEPTIONS AND EXCLUSIONS (BY POLICY TYPE)

1. CALIFORNIA LAND TITLE ASSOCIATION STANDARD COVERAGE POLICY - 1990
SCHEDULE B

EXCEPTIONS FROM COVERAGE

This policy does not insure against loss or damage (and the Company will not pay costs, attorneys' fees or expenses) which arise by reason of:

1. Taxes or assessments which are not shown as existing liens by the records of any taxing authority that levies taxes or assessments on real property or by the public records. Proceedings by a public agency which may result in taxes or assessments, or notice of such proceedings, whether or not shown by the records of such agency or by the public records.
2. Any facts, rights, interests, or claims which are not shown by the public records but which could be ascertained by an inspection of the land or which may be asserted by persons in possession thereof.
3. Easements, liens or encumbrances, or claims thereof, which are not shown by the public records.
4. Discrepancies, conflicts in boundary lines, shortage in area, encroachments, or any other facts which a correct survey would disclose, and which are not shown by the public records.
5. (a) Unpatented mining claims; (b) reservations or exceptions in patents or in Acts authorizing the issuance thereof; (c) water rights, claims or title to water, whether or not the matters excepted under (a), (b), or (c) are shown by the public records.

EXCLUSIONS FROM COVERAGE

The following matters are expressly excluded from the coverage of this policy and the Company will not pay loss or damage, costs, attorneys' fees or expenses which arise by reason of:

1. (a) Any law, ordinance or governmental regulation (including but not limited to building and zoning laws, ordinances, or regulations) restricting, regulating, prohibiting or relating to (i) the occupancy, use, or enjoyment of the land; (ii) the character, dimensions or location of any improvement now or hereafter erected on the land; (iii) a separation in ownership or a change in the dimensions or area of the land or any parcel of which the land is or was a part; or (iv) environmental protection, or the effect of any violation of these laws, ordinances or governmental regulations, except to the extent that a notice of the enforcement thereof or a notice of a defect, lien or encumbrance resulting from a violation or alleged violation affecting the land has been recorded in the public records at Date of Policy.
   (b) Any governmental police power not excluded by (a) above, except to the extent that a notice of the exercise thereof or a notice of a defect, lien or encumbrance resulting from a violation or alleged violation affecting the land has been recorded in the public records at Date of Policy.
2. Rights of eminent domain unless notice of the exercise thereof has been recorded in the public records at Date of Policy, but not excluding from coverage any taking which has occurred prior to Date of Policy which would be binding on the rights of a purchaser for value without knowledge.
3. Defects, liens, encumbrances, adverse claims or other matters:
   (a) whether or not recorded in the public records at Date of Policy, but created, suffered, assumed or agreed to by the insured claimant;
   (b) not known to the Company, not recorded in the public records at Date of Policy, but known to the insured claimant and not disclosed in writing to the Company by the insured claimant prior to the date the insured claimant became an insured under this policy;
   (c) resulting in no loss or damage to the insured claimant;
   (d) attaching or created subsequent to Date of Policy; or
   (e) resulting in loss or damage which would not have been sustained if the insured claimant had paid value for the insured mortgage or for the estate or interest insured by this policy.
4. Unenforceability of the lien of the insured mortgage because of the inability or failure of the insured at Date of Policy, or the inability or failure of any subsequent owner of the indebtedness, to comply with applicable "doing business" laws of the state in which the land is situated.
5. Invalidity or unenforceability of the lien of the insured mortgage, or claim thereof, which arises out of the transaction evidenced by the insured mortgage and is based upon usury or any consumer credit protection or truth in lending law.
6. Any claim, which arises out of the transaction vesting in the insured the estate or interest insured by their policy or the transaction creating the interest of the insured lender, by reason of the operation of federal bankruptcy, state insolvency or similar creditors' rights laws.

2. AMERICAN LAND TITLE ASSOCIATION OWNER'S POLICY FORM B - 1970
SCHEDULE OF EXCLUSIONS FROM COVERAGE

1. Any law, ordinance or governmental regulation (including but not limited to building and zoning ordinances) restricting or regulating or prohibiting the occupancy, use or enjoyment of the land, or regulating the character, dimensions or location of any improvement now or hereafter erected on the land, or prohibiting a separation in ownership or a reduction in the dimensions of area of the land, or the effect of any violation of any such law, ordinance or governmental regulation.
2. Rights of eminent domain or governmental rights of police power unless notice of the exercise of such rights appears in the public records at Date of Policy.
3. Defects, liens, encumbrances, adverse claims, or other matters (a) created, suffered, assumed or agreed to by the insured claimant; (b) not known to the Company and not shown by the public records but known to the insured claimant either at Date of Policy or at the date such claimant acquired an estate or interest insured by this policy and not disclosed in writing by the insured claimant to the Company prior to the date such insured claimant became an insured hereunder; (c) resulting in no loss or damage to the insured claimant; (d) attaching or created subsequent to Date of Policy; or (e) resulting in loss or damage which would not have been sustained if the insured claimant had paid value for the estate or interest insured by this policy.

3. AMERICAN LAND TITLE ASSOCIATION OWNER'S POLICY FORM B - 1970
WITH REGIONAL EXCEPTIONS

When the American Land Title Association policy is used as a Standard Coverage Policy and not as an Extended Coverage Policy the exclusions set forth in paragraph 2 above are used and the following exceptions to coverage appear in the policy.

SCHEDULE B

This policy does not insure against loss or damage by reason of the matters shown in parts one and two following:
Part One

1. Taxes or assessments which are not shown as existing liens by the records of any taxing authority that levies taxes or assessments on real property or by the public records.
2. Any facts, rights, interests, or claims which are not shown by the public records but which could be ascertained by an inspection of said land or by making inquiry of persons in possession thereof.
3. Easements, claims of easement or encumbrances which are not shown by the public records.
4. Discrepancies, conflicts in boundary lines, shortage in area, encroachments, or any other facts which a correct survey would disclose, and which are not shown by public records.
5. Unpatented mining claims; reservations or exceptions in patents or in Acts authorizing the issuance thereof; water rights, claims or title to water.
6. Any lien, or right to a lien, for services, labor or material heretofore or hereafter furnished, imposed by law and not shown by the public records.

4. AMERICAN LAND TITLE ASSOCIATION LOAN POLICY - 1970 WITH A.L.T.A. ENDORSEMENT FORM 1 COVERAGE SCHEDULE OF EXCLUSIONS FROM COVERAGE

1. Any law, ordinance or governmental regulation (including but not limited to building and zoning ordinances) restricting or regulating or prohibiting the occupancy, use or enjoyment of the land, or regulating the character, dimensions or location of any improvement now or hereafter erected on the land, or prohibiting a separation in ownership or a reduction in the dimensions or area of the land, or the effect of any violation of any such law ordinance or governmental regulation.
2. Rights of eminent domain or governmental rights of police power unless notice of the exercise of such rights appears in the public records at Date of Policy.
3. Defects, liens, encumbrances, adverse claims, or other matters (a) created, suffered, assumed or agreed to by the insured claimant, (b) not known to the Company and not shown by the public records but known to the insured claimant either at Date of Policy or at the date such claimant acquired an estate or interest insured by this policy or acquired the insured mortgage and not disclosed in writing by the insured claimant to the Company prior to the date such insured claimant became an insured hereunder, (c) resulting in no loss or damage to the insured claimant; (d) attaching or created subsequent to Date of Policy (except to the extent insurance is afforded herein as to any statutory lien for labor or material or to the extent insurance is afforded herein as to assessments for street improvements under construction or completed at Date of Policy).
4. Unenforceability of the lien of the insured mortgage because of failure of the insured at Date of Policy or of any subsequent owner of the indebtedness to comply with applicable "doing business" laws of the state in which the land is situated.

5. AMERICAN LAND TITLE ASSOCIATION LOAN POLICY - 1970 WITH REGIONAL EXCEPTIONS

When the American Land Title Association Lenders Policy is used as a Standard Coverage Policy and not as an Extended Coverage Policy, the exclusions set forth in paragraph 4 above are used and the following exceptions to coverage appear in the policy.

SCHEDULE B

This policy does not insure against loss or damage by reason of the matters shown in parts one and two following:
Part One

1. Taxes or assessments which are not shown as existing liens by the records of any taxing authority that levies taxes or assessments on real property or by the public records.
2. Any facts, rights, interests, or claims which are not shown by the public records but which could be ascertained by an inspection of said land or by making inquiry of persons in possession thereof.
3. Easements, claims of easement or encumbrances which are not shown by the public records.
4. Discrepancies, conflicts in boundary lines, shortage in area, encroachments, or any other facts which a correct survey would disclose, and which are not shown by public records.
5. Unpatented mining claims; reservations or exceptions in patents or in Acts authorizing the issuance thereof; water rights, claims or title to water.
6. Any lien, or right to a lien, for services, labor or material theretofore or hereafter furnished, imposed by law and not shown by the public records.

6. AMERICAN LAND TITLE ASSOCIATION LOAN POLICY - 1992 WITH A.L.T.A. ENDORSEMENT FORM 1 COVERAGE EXCLUSIONS FROM COVERAGE

The following matters are expressly excluded from the coverage of this policy and the Company will not pay loss or damage, costs, attorneys' fees or expenses which arise by reason of:

1. (a) Any law, ordinance or governmental regulation (including but not limited to building and zoning laws, ordinances, or regulations) restricting, regulating, prohibiting or relating to (i) the occupancy, use, or enjoyment of the land; (ii) the character, dimensions or location of any improvement now or hereafter erected on the land; (iii) a separation in ownership or a change in the dimensions or area of the land or any parcel of which the land is or was a part; or (iv) environmental protection, or the effect of any violation of these laws, ordinances or governmental regulations, except to the extent that a notice of the enforcement thereof or a notice of a defect, lien or encumbrance resulting from a violation or alleged violation affecting the land has been recorded in the public records at Date of Policy;
   (b) Any governmental police power not excluded by (a) above, except to the extent that a notice of the exercise thereof or a notice of a defect, lien or encumbrance resulting from a violation or alleged violation affecting the land has been recorded in the public records at Date of Policy.

2. Rights of eminent domain unless notice of the exercise thereof has been recorded in the public records at Date of Policy, but not excluding from coverage any taking which has occurred prior to Date of Policy which would be binding on the rights of a purchaser for value without knowledge.
3. Defects, liens, encumbrances, adverse claims, or other matters:
(a) whether or not recorded in the public records at Date of Policy, but created, suffered, assumed or agreed to by the insured claimant;
(b) not known to the Company, not recorded in the public records at Date of Policy, but known to the insured claimant and not disclosed in writing to the Company by the insured claimant prior to the date the insured claimant became an insured under this policy;
(c) resulting in no loss or damage to the insured claimant;
(d) attaching or created subsequent to Date of Policy (except to the extent that this policy insures the priority of the lien of the insured mortgage over any statutory lien for services, labor or material or the extent insurance is afforded herein as to assessments for street improvements under construction or completed at date of policy); or
(e) resulting in loss or damage which would not have been sustained if the insured claimant had paid value for the insured mortgage.
4. Unenforceability of the lien of the insured mortgage because of the inability or failure of the insured at Date of Policy, or the inability or failure of any subsequent owner of the indebtedness, to comply with the applicable "doing business" laws of the state in which the land is situated.
5. Invalidity or unenforceability of the lien of the insured mortgage, or claim thereof, which arises out of the transaction evidenced by the insured mortgage and is based upon usury or any consumer credit protection or truth in lending law.
6. Any statutory lien for services, labor or materials (or the claim of priority of any statutory lien for services, labor or materials over the lien of the insured mortgage) arising from an improvement or work related to the land which is contracted for and commenced subsequent to Date of Policy and is not financed in whole or in part by proceeds of the indebtedness secured by the insured mortgage which at Date of Policy the insured has advanced or is obligated to advance.
7. Any claim, which arises out of the transaction creating the interest of the mortgagee insured by this policy, by reason of the operation of federal bankruptcy, state insolvency, or similar creditors' rights laws, that is based on:
(i) the transaction creating the interest of the insured mortgagee being deemed a fraudulent conveyance or fraudulent transfer; or
(ii) the subordination of the interest of the insured mortgagee as a result of the application of the doctrine of equitable subordination; or
(iii) the transaction creating the interest of the insured mortgagee being deemed a preferential transfer except where the preferential transfer results from the failure:
(a) to timely record the instrument of transfer; or
(b) of such recordation to impart notice to a purchaser for value or a judgment or lien creditor.

7. AMERICAN LAND TITLE ASSOCIATION LOAN POLICY - 1992
WITH REGIONAL EXCEPTIONS

When the American Land Title Association policy is used as a Standard Coverage Policy and not as an Extended Coverage Policy the exclusions set forth in paragraph 6 above are used and the following exceptions to coverage appear in the policy.

SCHEDULE B

This policy does not insure against loss or damage (and the Company will not pay costs, attorneys' fees or expenses) which arise by reason of:
1. Taxes or assessments which are not shown as existing liens by the records of any taxing authority that levies taxes or assessments on real property or by the public records.
2. Any facts, rights, interests, or claims which are not shown by the public records but which could be ascertained by an inspection of said land or by making inquiry of persons in possession thereof.
3. Easements, claims of easement or encumbrances which are not shown by the public records.
4. Discrepancies, conflicts in boundary lines, shortage in area, encroachments, or any other facts which a correct survey would disclose, and which are not shown by public records.
5. Unpatented mining claims; reservations or exceptions in patents or in Acts authorizing the issuance thereof; water rights, claims or title to water.
6. Any lien, or right to a lien, for services, labor or material theretofore or hereafter furnished, imposed by law and not shown by the public records.

8. AMERICAN LAND TITLE ASSOCIATION OWNER'S POLICY - 1992
EXCLUSIONS FROM COVERAGE

The following matters are expressly excluded from the coverage of this policy and the Company will not pay loss or damage, costs, attorneys' fees or expenses which arise by reason of:
1. (a) Any law, ordinance or governmental regulation (including but not limited to building and zoning laws, ordinances, or regulations) restricting, regulating, prohibiting or relating to (i) the occupancy, use, or enjoyment of the land; (ii) the character, dimensions or location of any improvement now or hereafter erected on the land; (iii) a separation in ownership or a change in the dimensions or area of the land or any parcel of which the land is or was a part; or (iv) environmental protection, or the effect of any violation of these laws, ordinances or governmental regulations, except to the extent that a notice of the enforcement thereof or a notice of a defect, lien or encumbrance resulting from a violation or alleged violation affecting the land has been recorded in the public records at Date of Policy.
(b) Any governmental police power not excluded by (a) above, except to the extent that a notice of the exercise thereof or a notice of a defect, lien or encumbrance resulting from a violation or alleged violation affecting the land has been recorded in the public records at Date of Policy.
2. Rights of eminent domain unless notice of the exercise thereof has been recorded in the public records at Date of Policy, but not excluding from coverage any taking which has occurred prior to Date of Policy which would be binding on the rights of a purchaser for value without knowledge.
3. Defects, liens, encumbrances, adverse claims, or other matters:
(a) created, suffered, assumed or agreed to by the insured claimant;
(b) not known to the Company, not recorded in the public records at Date of Policy, but known to the insured claimant and not disclosed in writing to the Company by the insured claimant prior to the date the insured claimant became an insured under this policy;
(c) resulting in no loss or damage to the insured claimant;
(d) attaching or created subsequent to Date of Policy; or

(e) resulting in loss or damage which would not have been sustained if the insured claimant had paid value for the estate or interest insured by this policy.

4. Any claim, which arises out of the transaction vesting in the insured the estate or interest insured by this policy, by reason of the operation of federal bankruptcy, state insolvency, or similar creditors' rights laws, that is based on:
(i) the transaction creating the estate or interest insured by this policy being deemed a fraudulent conveyance or fraudulent transfer; or
(ii) the transaction creating the estate or interest insured by this policy being deemed a preferential transfer except where the preferential transfer results from the failure:
(a) to timely record the instrument of transfer; or
(b) of such recordation to impart notice to a purchaser for value or a judgment or lien creditor.

9. AMERICAN LAND TITLE ASSOCIATION OWNER'S POLICY - 1992 WITH REGIONAL EXCEPTIONS

When the American Land Title Association policy is used as a Standard Coverage Policy and not as an Extended Coverage Policy the exclusions set forth in paragraph 8 above are used and the following exceptions to coverage appear in the policy.

SCHEDULE B

This policy does not insure against loss or damage (and the Company will not pay costs, attorneys' fees or expenses) which arise by reason of:
Part One:

1. Taxes or assessments which are not shown as existing liens by the records of any taxing authority that levies taxes or assessments on real property or by the public records.
2. Any facts, rights, interests, or claims which are not shown by the public records but which could be ascertained by an inspection of said land or by making inquiry of persons in possession thereof.
3. Easements, claims of easement or encumbrances which are not shown by the public records.
4. Discrepancies, conflicts in boundary lines, shortage in area, encroachments, or any other facts which a correct survey would disclose, and which are not shown by public records.
5. Unpatented mining claims; reservations or exceptions in patents or in Acts authorizing the issuance thereof; water rights, claims or title to water.
6. Any lien, or right to a lien, for services, labor or material theretofore or hereafter furnished, imposed by law and not shown by the public records.

ALTA RESIDENTIAL TITLE INSURANCE POLICY (6-1-87)

EXCLUSIONS

In addition to the Exceptions in Schedule B, you are not insured against loss, costs, attorneys' fees, and expenses resulting from:

1. Governmental police power, and the existence or violation of any law or government regulation. This includes building and zoning ordinances and also laws and regulations concerning:
   (a) and use
   (b) improvements on the land
   (c) and division
   (d) environmental protection

   This exclusion does not apply to violations or the enforcement of these matters which appear in the public records at Policy Date.
   This exclusion does not limit the zoning coverage described in Items 12 and 13 of Covered Title Risks.
2. The right to take the land by condemning it, unless:
   (a) a notice of exercising the right appears in the public records on the Policy Date
   (b) the taking happened prior to the Policy Date and is binding on you if you bought the land without knowing of the taking
3. Title Risks:
   (a) that are created, allowed, or agreed to by you
   (b) that are known to you, but not to us, on the Policy Date -- unless they appeared in the public records
   (c) that result in no loss to you
   (d) that first affect your title after the Policy Date -- this does not limit the labor and material lien coverage in Item 8 of Covered Title Risks
4. Failure to pay value for your title.
5. Lack of a right:
   (a) to any land outside the area specifically described and referred to in Item 3 of Schedule A OR
   (b) in streets, alleys, or waterways that touch your land
   This exclusion does not limit the access coverage in Item 5 of Covered Title Risks.

11. EAGLE PROTECTION OWNER'S POLICY

CLTA HOMEOWNER'S POLICY OF TITLE INSURANCE - 1998
ALTA HOMEOWNER'S POLICY OF TITLE INSURANCE - 1998

Covered Risks 14 (Subdivision Law Violation). 15 (Building Permit). 16 (Zoning) and 18 (Encroachment of boundary walls or fences) are subject to Deductible Amounts and Maximum Dollar Limits of Liability

EXCLUSIONS

In addition to the Exceptions in Schedule B, you are not insured against loss, costs, attorneys' fees, and expenses resulting from:

1. Governmental police power, and the existence or violation of any law or government regulation. This includes ordinances, laws and regulations concerning:
   a. building
   b. zoning
   c. land use
   d. improvements on the land
   e. land division
   f. environmental protection

   This exclusion does not apply to violations or the enforcement of these matters if notice of the violation or enforcement appears in the Public Records at the Policy Date.
   This exclusion does not limit the coverage described in Covered Risk 14, 15, 16, 17 or 24.
2. The failure of Your existing structures, or any part of them, to be constructed in accordance with applicable building codes. This Exclusion does not apply to violations of building codes if notice of the violation appears in the Public Records at the Policy Date.
3. The right to take the Land by condemning it, unless:
   a. a notice of exercising the right appears in the Public Records at the Policy Date; or
   b. the taking happened before the Policy Date and is binding on You if You bought the Land without Knowing of the taking.
4. Risks:
   a. that are created, allowed, or agreed to by You, whether or not they appear in the Public Records;
   b. that are Known to You at the Policy Date, but not to Us, unless they appear in the Public Records at the Policy Date;
   c. that result in no loss to You; or
   d. that first occur after the Policy Date - this does not limit the coverage described in Covered Risk 7, 8.d, 22, 23, 24 or 25.
5. Failure to pay value for Your Title.
6. Lack of a right:
   a. to any Land outside the area specifically described and referred to in paragraph 3 of Schedule A; and
   b. in streets, alleys, or waterways that touch the Land.
   This exclusion does not limit the coverage described in Covered Risk 11 or 18.

12. THIRD GENERATION EAGLE LOAN POLICY AMERICAN LAND TITLE ASSOCIATION EXPANDED COVERAGE RESIDENTIAL LOAN POLICY (1/01/08)

EXCLUSIONS FROM COVERAGE

The following matters are expressly excluded from the coverage of this policy and the Company will not pay loss or damage, costs, attorneys' fees or expenses which arise by reason of:

1. (a) Any law, ordinance, permit, or governmental regulation (including those relating to building and zoning) restricting, regulating, prohibiting, or relating to (i) the occupancy, use, or enjoyment of the Land; (ii) the character, dimensions, or location of any improvement erected on the Land; (iii) the subdivision of land; or(iv) environmental protection; or the effect of any violation of these laws, ordinances, or governmental regulations. This Exclusion 1(a) does not modify or limit the coverage provided under Covered Risk 5, 6, 13(c), 13(d), 14 or 16.
   (b)Any governmental police power. This Exclusion 1(b) does not modify or limit the coverage provided under Covered Risk 5, 6, 13(c), 13(d), 14 or 16.
2. Rights of eminent domain. This Exclusion does not modify or limit the coverage provided under Covered Risk 7 or 8.
3. Defects, liens, encumbrances, adverse claims, or other matters
   (a) created, suffered, assumed or agreed to by the Insured Claimant;
   (b) not Known to the Company, not recorded in the Public Records at Date of Policy, but Known to the Insured Claimant and not disclosed in writing to the Company by the Insured Claimant prior to the date the Insured Claimant became an Insured under this policy;
   (c) resulting in no loss or damage to the Insured Claimant;
   (d) attaching or created subsequent to Date of Policy (however, this does not modify or limit the coverage provided under Covered Risk 11, 16, 17, 18, 19, 20, 21, 22, 23, 24, 27 or 28); or
   (e) resulting in loss or damage which would not have been sustained if the Insured Claimant had paid value for the Insured Mortgage.
4. Unenforceability of the lien of the Insured Mortgage because of the inability or failure of an Insured to comply with applicable doing business laws of the state where the Land is situated.
5. Invalidity or unenforceability in whole or in part of the lien of the Insured Mortgage that arises out of the transaction evidenced by the Insured Mortgage and is based upon usury, or any consumer credit protection or truth-in-lending law. This Exclusion does not modify or limit the coverage provided in Covered Risk 26.
6. Any claim of invalidity, unenforceability or lack of priority of the lien of the Insured Mortgage as to Advances or modifications made after the Insured has Knowledge that the vestee shown in Schedule A is no longer the owner of the estate or interest covered by this policy. This Exclusion does not modify or limit the coverage provided in Covered Risk 11.
7. Any lien on the Title for real estate taxes or assessments imposed by governmental authority and created or attaching subsequent to Date of Policy. This Exclusion does not modify or limit the coverage provided in Covered Risk 11(b) or 25.
8. The failure of the residential structure, or any portion of it, to have been constructed before, on or after Date of Policy in accordance with applicable building codes. This Exclusion does not modify or limit the coverage provided in Covered Risk 5 or 6.

13. AMERICAN LAND TITLE ASSOCIATION LOAN POLICY - 2006
EXCLUSIONS FROM COVERAGE

The following matters are expressly excluded from the coverage of this policy, and the Company will not pay loss or damage, costs, attorneys' fees, or

expenses that arise by reason of:

1. (a) Any law, ordinance, permit, or governmental regulation (including those relating to building and zoning) restricting, regulating, prohibiting, or relating to

   (i) the occupancy, use, or enjoyment of the Land;

   (ii) the character, dimensions, or location of any improvement erected on the Land;

   (iii) the subdivision of land; or

   (iv) environmental protection;

   or the effect of any violation of these laws, ordinances, or governmental regulations. This Exclusion 1(a) does not modify or limit the coverage provided under Covered Risk 5.

   (b) Any governmental police power. This Exclusion 1(b) does not modify or limit the coverage provided under Covered Risk 6.

2. Rights of eminent domain. This Exclusion does not modify or limit the coverage provided under Covered Risk 7 or 8.

3. Defects, liens, encumbrances, adverse claims, or other matters

   (a) created, suffered, assumed, or agreed to by the Insured Claimant;

   (b) not Known to the Company, not recorded in the Public Records at Date of Policy, but Known to the Insured Claimant and not disclosed in writing to the Company by the Insured Claimant prior to the date the Insured Claimant became an Insured under this policy;

   (c) resulting in no loss or damage to the Insured Claimant;

   (d) attaching or created subsequent to Date of Policy (however, this does not modify or limit the coverage provided under Covered Risk 11, 13, or 14); or

   (e) resulting in loss or damage that would not have been sustained if the Insured Claimant had paid value for the Insured Mortgage.

4. Unenforceability of the lien of the Insured Mortgage because of the inability or failure of an Insured to comply with applicable doing-business laws of the state where the Land is situated.

5. Invalidity or unenforceability in whole or in part of the lien of the Insured Mortgage that arises out of the transaction evidenced by the Insured Mortgage and is based upon usury or any consumer credit protection or truth-in-lending law.

6. Any claim, by reason of the operation of federal bankruptcy, state insolvency, or similar creditors' rights laws, that the transaction creating the lien of the Insured Mortgage, is

   (a) a fraudulent conveyance or fraudulent transfer, or

   (b) a preferential transfer for any reason not stated in Covered Risk 13(b) of this policy.

7. Any lien on the Title for real estate taxes or assessments imposed by governmental authority and created or attaching between Date of Policy and the date of recording of the Insured Mortgage in the Public Records. This Exclusion does not modify or limit the coverage provided under Covered Risk 11(b).

14. AMERICAN LAND TITLE ASSOCIATION LOAN POLICY - 2006 WITH REGIONAL EXCEPTIONS

When the American Land Title Association policy is used as a Standard Coverage Policy and not as an Extended Coverage Policy the exclusions set forth in paragraph 13 above are used and the following exceptions to coverage appear in the policy.

SCHEDULE B

This policy does not insure against loss or damage (and the Company will not pay costs, attorneys' fees or expenses) which arise by reason of:

1. (a) Taxes or assessments that are not shown as existing liens by the records of any taxing authority that levies taxes or assessments on real property or by the Public Records; (b) proceedings by a public agency that may result in taxes or assessments, or notices of such proceedings, whether or not shown by the records of such agency or by the Public Records.

2. Any facts, rights, interests, or claims that are not shown by the Public Records but that could be ascertained by an inspection of the Land or that may be asserted by persons in possession of the Land.

3. Easements, liens or encumbrances, or claims thereof, not shown by the Public Records.

4. Any encroachment, encumbrance, violation, variation, or adverse circumstance affecting the Title that would be disclosed by an accurate and complete land survey of the Land and not shown by the Public Records.

5. (a) Unpatented mining claims; (b) reservations or exceptions in patents or in Acts authorizing the issuance thereof; (c) water rights, claims or title to water, whether or not the matters excepted under (a), (b), or (c) are shown by the Public Records.

15. AMERICAN LAND TITLE ASSOCIATION OWNER'S POLICY - 2006 EXCLUSIONS FROM COVERAGE

The following matters are expressly excluded from the coverage of this policy and the Company will not pay loss or damage, costs, attorneys' fees or expenses which arise by reason of:

1. (a) Any law, ordinance, permit, or governmental regulation (including those relating to building and zoning) restricting, regulating, prohibiting, or relating to

   (i) the occupancy, use, or enjoyment of the Land;

   (ii) the character, dimensions, or location of any improvement erected on the Land;

   (iii) the subdivision of land; or

   (iv) environmental protection;or the effect of any violation of these laws, ordinances, or governmental regulations. This Exclusion 1(a) does not modify or limit the coverage provided under Covered Risk 5.

(b) Any governmental police power. This Exclusion 1(b) does not modify or limit the coverage provided under Covered Risk 6.

2. Rights of eminent domain. This Exclusion does not modify or limit the coverage provided under Covered Risk 7 or 8.

3. Defects, liens, encumbrances, adverse claims, or other matters

(a) created, suffered, assumed, or agreed to by the Insured Claimant;

(b) not Known to the Company, not recorded in the Public Records at Date of Policy, but Known to the Insured Claimant and not disclosed in writing to the Company by the Insured Claimant prior to the date the Insured Claimant became an Insured under this policy;

(c) resulting in no loss or damage to the Insured Claimant;

(d) attaching or created subsequent to Date of Policy (however, this does not modify or limit the coverage provided under Covered Risks 9 and 10); or

(e) resulting in loss or damage that would not have been sustained if the Insured Claimant had paid value for the Title.

4. Any claim, by reason of the operation of federal bankruptcy, state insolvency, or similar creditors rights laws, that the transaction vesting the Title as shown in Schedule A, is

(a) a fraudulent conveyance or fraudulent transfer; or

(b) a preferential transfer for any reason not stated in Covered Risk 9 of this policy.

5. Any lien on the Title for real estate taxes or assessments imposed by governmental authority and created or attaching between Date of Policy and the date of recording of the deed or other instrument of transfer in the Public Records that vests Title as shown in Schedule A.

16. AMERICAN LAND TITLE ASSOCIATION OWNER'S POLICY - 2006 WITH REGIONAL EXCEPTIONS

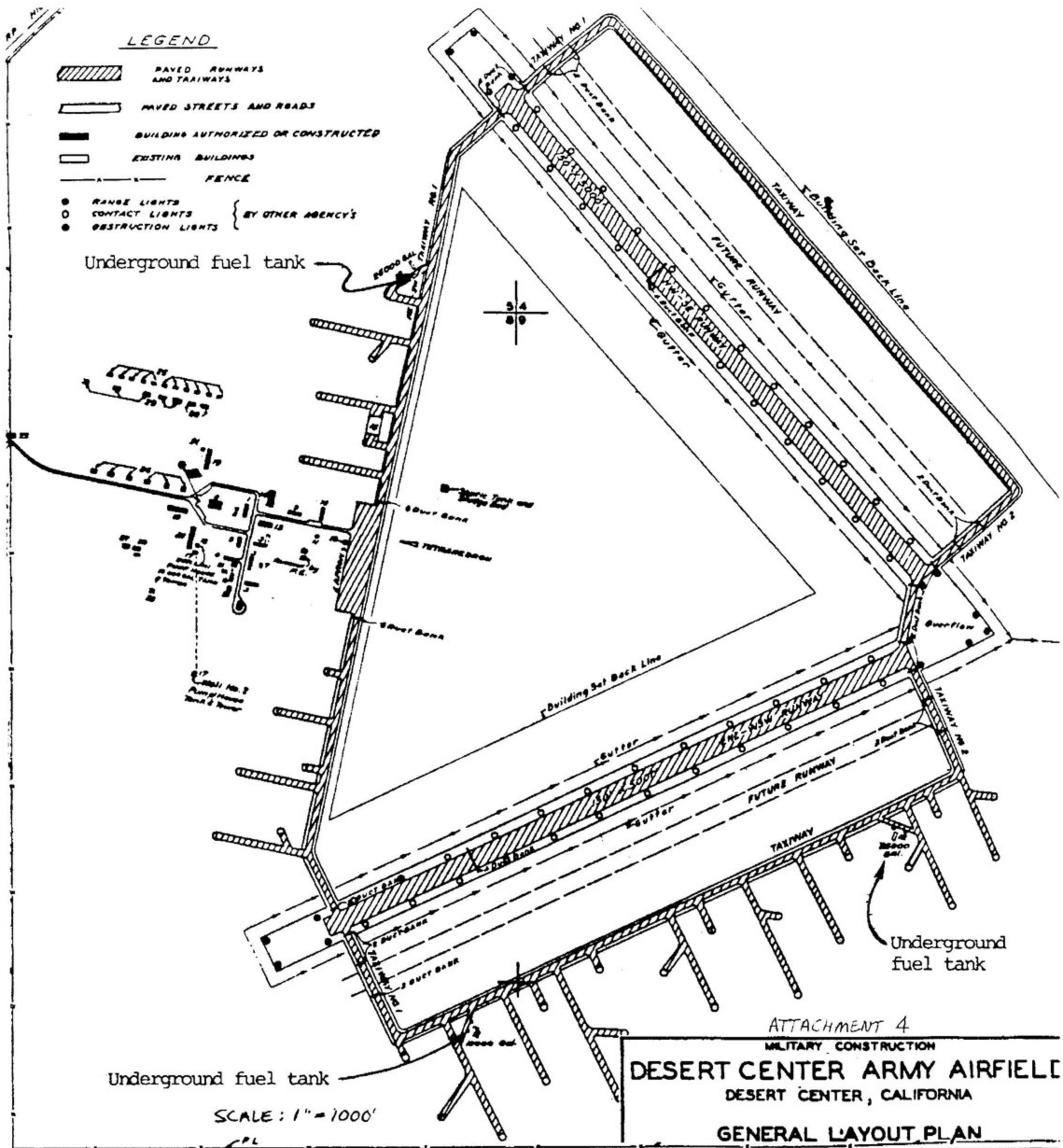
When the American Land Title Association policy is used as a Standard Coverage Policy and not as an Extended Coverage Policy the exclusions set forth in paragraph 15 above are used and the following exceptions to coverage appear in the policy.

SCHEDULE B

This policy does not insure against loss or damage (and the Company will not pay costs, attorneys' fees or expenses) which arise by reason of:

1. (a) Taxes or assessments that are not shown as existing liens by the records of any taxing authority that levies taxes or assessments on real property or by the Public Records; (b) proceedings by a public agency that may result in taxes or assessments, or notices of such proceedings, whether or not shown by the records of such agency or by the Public Records.
2. Any facts, rights, interests, or claims that are not shown by the Public Records but that could be ascertained by an inspection of the Land or that may be asserted by persons in possession of the Land.
3. Easements, liens or encumbrances, or claims thereof, not shown by the Public Records.
4. Any encroachment, encumbrance, violation, variation, or adverse circumstance affecting the Title that would be disclosed by an accurate and complete land survey of the Land and not shown by the Public Records.
5. (a) Unpatented mining claims; (b) reservations or exceptions in patents or in Acts authorizing the issuance thereof; (c) water rights, claims or title to water, whether or not the matters excepted under (a), (b), or (c) are shown by the Public Records.

Appendix E
HISTORICAL DOCUMENTS (MILITARY MAPS, TOPOGRAPHIC MAPS, CITY DIRECTORY REPORT)



ATTACHMENT 4

MILITARY CONSTRUCTION

DESERT CENTER ARMY AIRFIELD

DESERT CENTER, CALIFORNIA

GENERAL LAYOUT PLAN

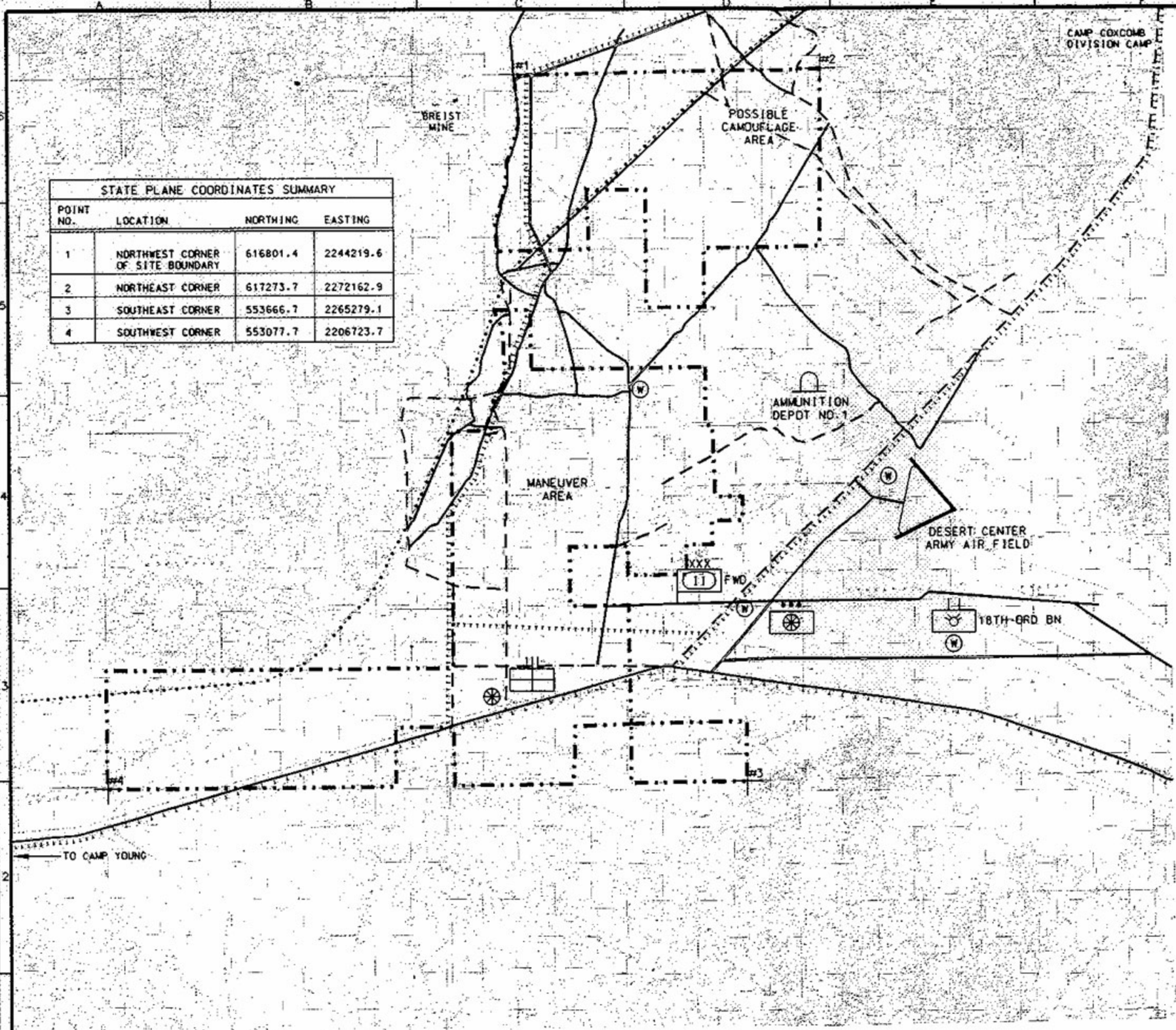
BUILDING SCHEDULE

BLDG NO	TYPE	DESIGNATION	SIZE	PLAN NO	UNITS
1	OQ-A-T	OFFICERS QUARTERS	20X100	597/97	1
2	L-A-T	LAVATORY	20X20	700-6801	1
3	B-A-T	BARRACKS E.M.	20X100	700-5500	3
4	M-C-T	MESS	20X100	700-5000	1
5	RB-B-T	RECREATION	20X78	700-5800	1
6	T-SA-1	SUPPLY BLDG.	20X82	579/60	1
7	L-C-T	LAVATORY	20X32	[illegible]	1
8	T-2-A-6	HEADQUARTERS	60X100	579/96	1
9	T-SH-9	STOREHOUSE (GENERAL)	20X100	579/93	1
10	T-A-6	OPERATIONS BLDG.	20X100	579/99	1
11	T.O.	EXISTING POWER HOUSE	18X28		1
12A	T.O.	WOOD BEACON TOWER PER CAA.	50'		1
12		AF GASOLINE FUELING SYSTEM	[illegible]	ST. TANKS	3
13		DISPENSARY	26X124	700-[illegible]	1
14		LINK TRAINER BLDG.	25X108	1000-760	1
15	CN-97	COMBAT HANGAR	160X130		
16	T.O.	CONTROL TOWER	15X15		
17	T.O.	PUMP HOUSE & WELL	12X20		
18	T.O.	WATER TOWER 10000 Gal	20X20		
19	C.C.C.	BARRACKS	20X130		
20	C.C.C.	BARRACK	20X185		
21	T.O.	GARAGE	25X50		
22	T.O.	CARPENTER SHOP	15X20		
23	T.O.	SENTRY HOUSE	5X10		
24	T.O.	KITCHEN	20X25		
25	T.O.	LATRINE (PIT) E.M.	10X20		
26	T.O.	LATRINE (PIT) OFFICERS	10X20		
27	T.O.	SHOWER ROOMS	20X30		
28	C.C.C.	" "	20X40		
29	C.C.C.	" "	20X30		
30	C.C.C.	" "	20X32		
31	T.O.	HYDROGEN SHELTER	5X10		
32		GASOLINE PUMP (ELEC) 1000 GAL TANK			

1943

1945 AAF dir.

STATE PLANE COORDINATES SUMMARY			
POINT NO.	LOCATION	NORTHING	EASTING
1	NORTHWEST CORNER OF SITE BOUNDARY	616801.4	2244219.6
2	NORTHEAST CORNER	617273.7	2272162.9
3	SOUTHEAST CORNER	553666.7	2265279.1
4	SOUTHWEST CORNER	553077.7	2206723.7



LEGEND:

- FORMER DESERT CENTER DIVISION CAMP BOUNDARY
- HEAVY DUTY ROAD
- SECONDARY HARD SURFACE ROAD
- GRADED UNIMPROVED ROAD
- POOR ROAD OR TRAIL
- TELEPHONE LINES
- OVERHEAD TELEPHONE AND TRANSMISSION LINES
- WATER POINT
- MOTOR POOL
- AMMUNITION DEPOT NO. 1 (POSSIBLE SITE)
- 18TH ORDNANCE BATTALION
- EVACUATION HOSPITAL
- XXX II OBSERVER'S CAMP
- QUARTERMASTER TRUCK COMPANY
- STATE PLANE COORDINATES

NOTES:

1. INFORMATION EXTRACTED FROM DOCUMENTS F-5, F-6, I-1, L-1 AND REFERENCES B-37 AND B-38.
2. LOCATION OF AMMUNITION DEPOT NO. 1 APPROXIMATE. LOCATION BASED UPON DOCUMENT I-1 AND ROADS PRESENT IN 1943.

US Army Corps of Engineers Rock Island District	Designed By: G. C. OFSLAGER	Date:
	Drawn By: J. D. TURNER	Scale: AS SHOWN
	Checked By: M.J. CIVES	Drawing Code:
	Reviewed By: D. J. HOLMES	Project Number: J09CA034201

U.S. ARMY ENGINEER DISTRICT
CORPS OF ENGINEERS
ROCK ISLAND, ILLINOIS

DESERT CENTER DIVISION CAMP
DESERT CENTER, CALIFORNIA

FACILITY LAYOUT
(CIRCA 1943)

Sheet Reference Number:
PLATE 2
Sheet 2 of

Aragorn-Athos Project

Riverside County

Desert Center, CA 92239

Inquiry Number: 5224815.4

March 20, 2018

EDR Historical Topo Map Report

with QuadMatch™

6 Armstrong Road, 4th floor
Shelton, CT 06484
Toll Free: 800.352.0050
www.edrnet.com

EDR Historical Topo Map Report

03/20/18

Site Name:	Client Name:
Aragorn-Athos Project	Stantec
Riverside County	25864-F Business Center Drive
Desert Center, CA 92239	Redlands, CA 92374
EDR Inquiry # 5224815.4	Contact: Dion Monge

EDR Topographic Map Library has been searched by EDR and maps covering the target property location as provided by Stantec were identified for the years listed below. EDR's Historical Topo Map Report is designed to assist professionals in evaluating potential liability on a target property resulting from past activities. EDRs Historical Topo Map Report includes a search of a collection of public and private color historical topographic maps, dating back to the late 1800s.

Search Results:

P.O.# NA

Project: 185804152

Coordinates:

Latitude:	33.763836 33° 45' 50" North
Longitude:	-115.3432 -115° 20' 36" West
UTM Zone:	Zone 11 North
UTM X Meters:	653432.24
UTM Y Meters:	3737204.20
Elevation:	560.00' above sea level

Maps Provided:

2012	1947
2002	1944
1987	1943, 1944
1986	1943
1986, 1987	
1983, 1986	
1963	
1952	

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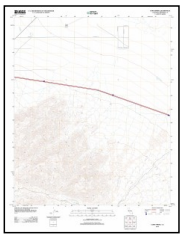
Topo Sheet Key

This EDR Topo Map Report is based upon the following USGS topographic map sheets.

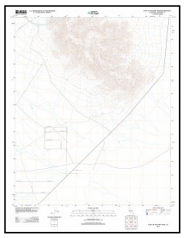
2012 Source Sheets

Desert Center
2012
7.5-minute, 24000

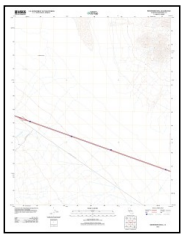


Corn Spring
2012
7.5-minute, 24000

Victory Pass
2012
7.5-minute, 24000

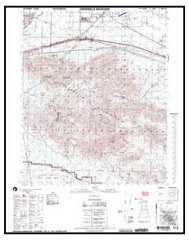


East of Victory Pass
2012
7.5-minute, 24000



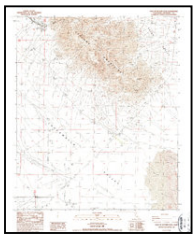
Sidewinder Well
2012
7.5-minute, 24000

2002 Source Sheets



Chuckwalla Mountains
2002
15-minute, 50000

1987 Source Sheets



East of Victory Pass
1987
7.5-minute, 24000
Aerial Photo Revised 1984

1986 Source Sheets

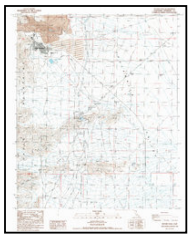
Corn Spring
1986
7.5-minute, 24000
Aerial Photo Revised 1984

Desert Center
1986
7.5-minute, 24000
Aerial Photo Revised 1984

Topo Sheet Key

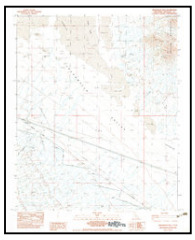
This EDR Topo Map Report is based upon the following USGS topographic map sheets.

1986, 1987 Source Sheets



Victory Pass
1987
7.5-minute, 24000
Aerial Photo Revised 1984

1983, 1986 Source Sheets



Sidewinder Well
1983
7.5-minute, 24000
Aerial Photo Revised 1977

1963 Source Sheets

Chuckwalla Mountains
1963
15-minute, 62500
Aerial Photo Revised 1956

Coxcomb Mountains
1963
15-minute, 62500
Aerial Photo Revised 1956

1952 Source Sheets

Sidewinder Well
1952
15-minute, 62500
Aerial Photo Revised 1948

Topo Sheet Key

This EDR Topo Map Report is based upon the following USGS topographic map sheets.

1947 Source Sheets

CHUCKWALLA MOUNTAINS
1947
15-minute, 50000

COXCOMB MOUNTAINS
1947
15-minute, 50000

1944 Source Sheets

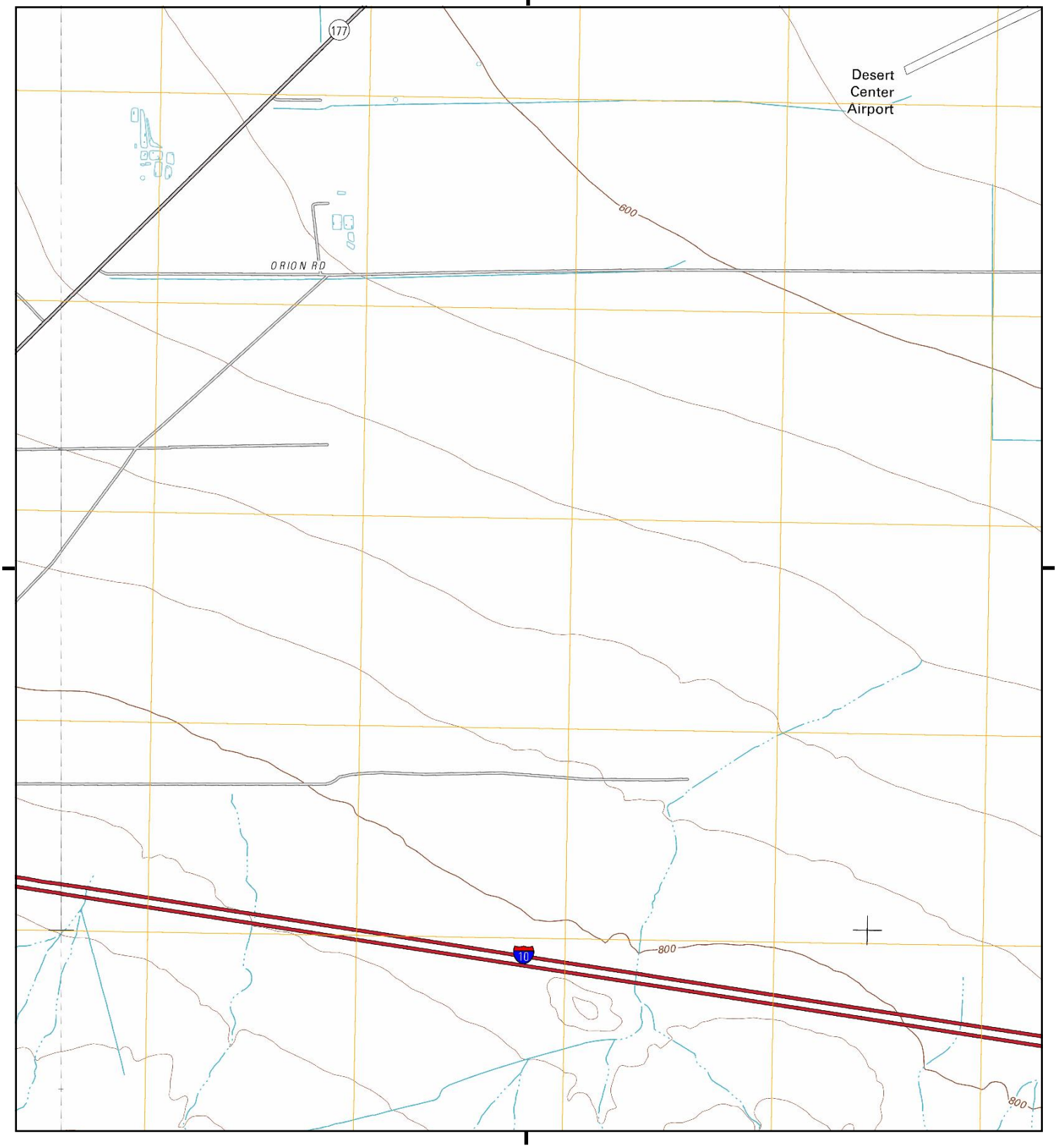
Chuckwalla Mountains
1944
15-minute, 62500
Aerial Photo Revised 1940

1943, 1944 Source Sheets

Coxcomb Mountains
1943
15-minute, 62500
Aerial Photo Revised 1940

Historical Topo Map

2012



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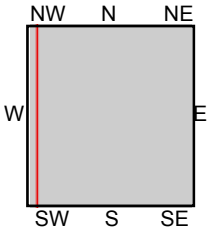


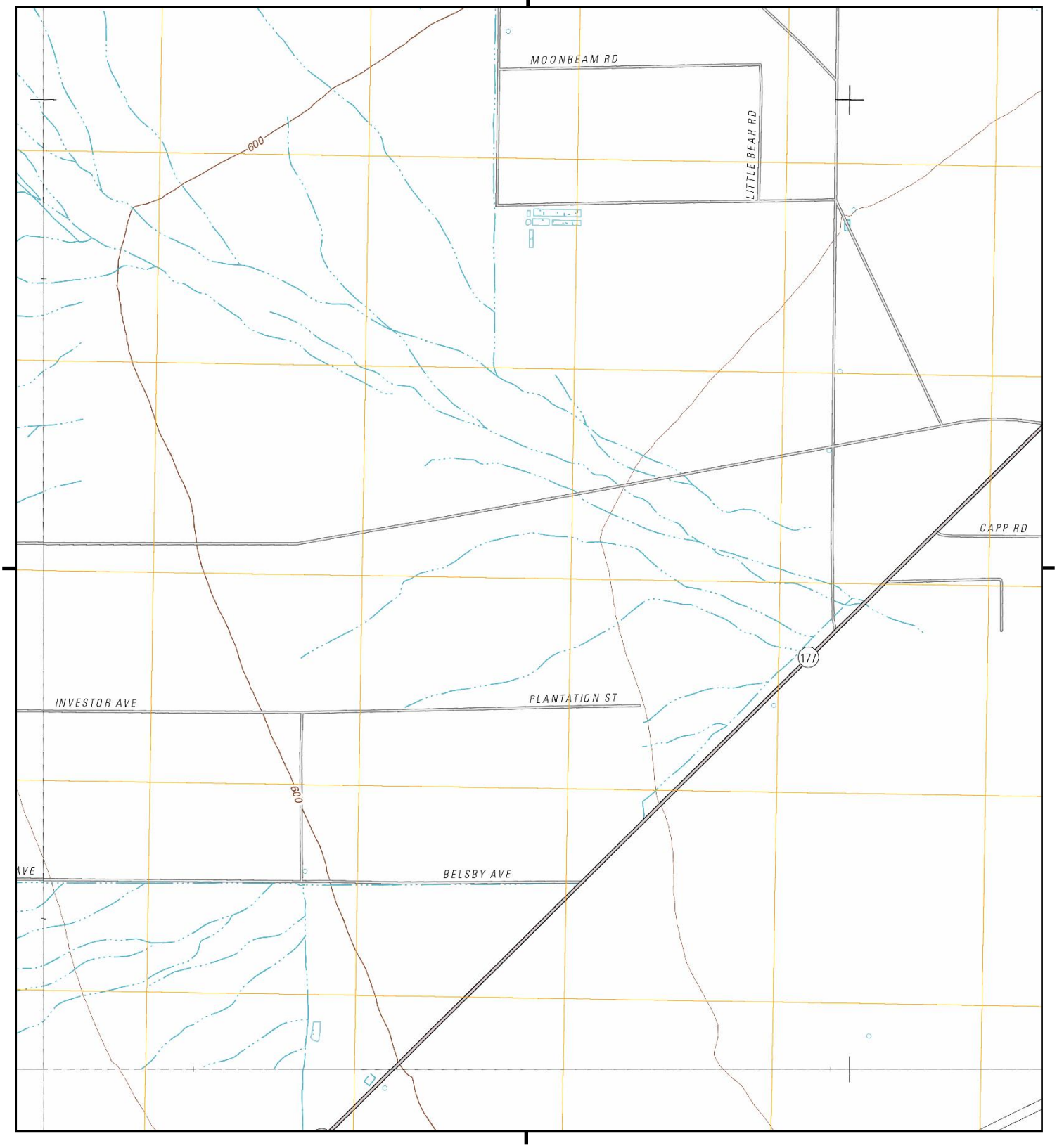
TP, Corn Spring, 2012, 7.5-minute
SW, Desert Center, 2012, 7.5-minute

SITE NAME: Aragorn-Athos Project
ADDRESS: Riverside County
Desert Center, CA 92239
CLIENT: Stantec

N

Historical Topo Map

2012



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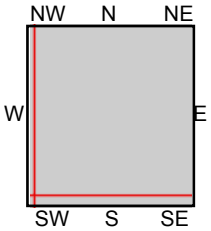


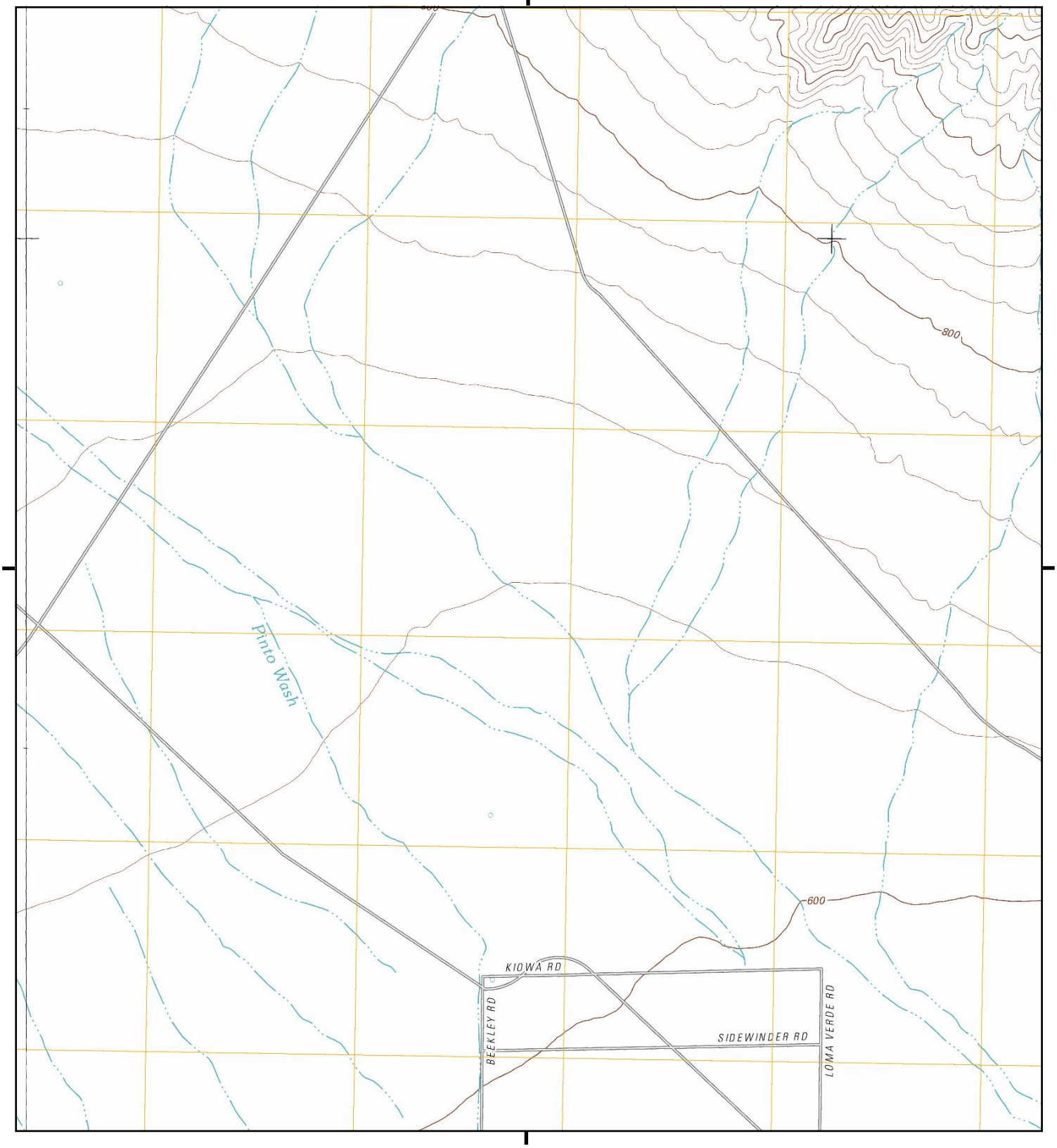
TP, East of Victory Pass, 2012, 7.5-minute
S, Corn Spring, 2012, 7.5-minute
SW, Desert Center, 2012, 7.5-minute
NW, Victory Pass, 2012, 7.5-minute

SITE NAME: Aragorn-Athos Project
ADDRESS: Riverside County
Desert Center, CA 92239
CLIENT: Stantec

N

Historical Topo Map

2012



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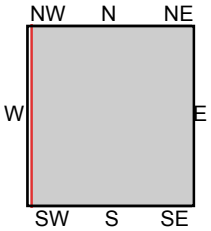


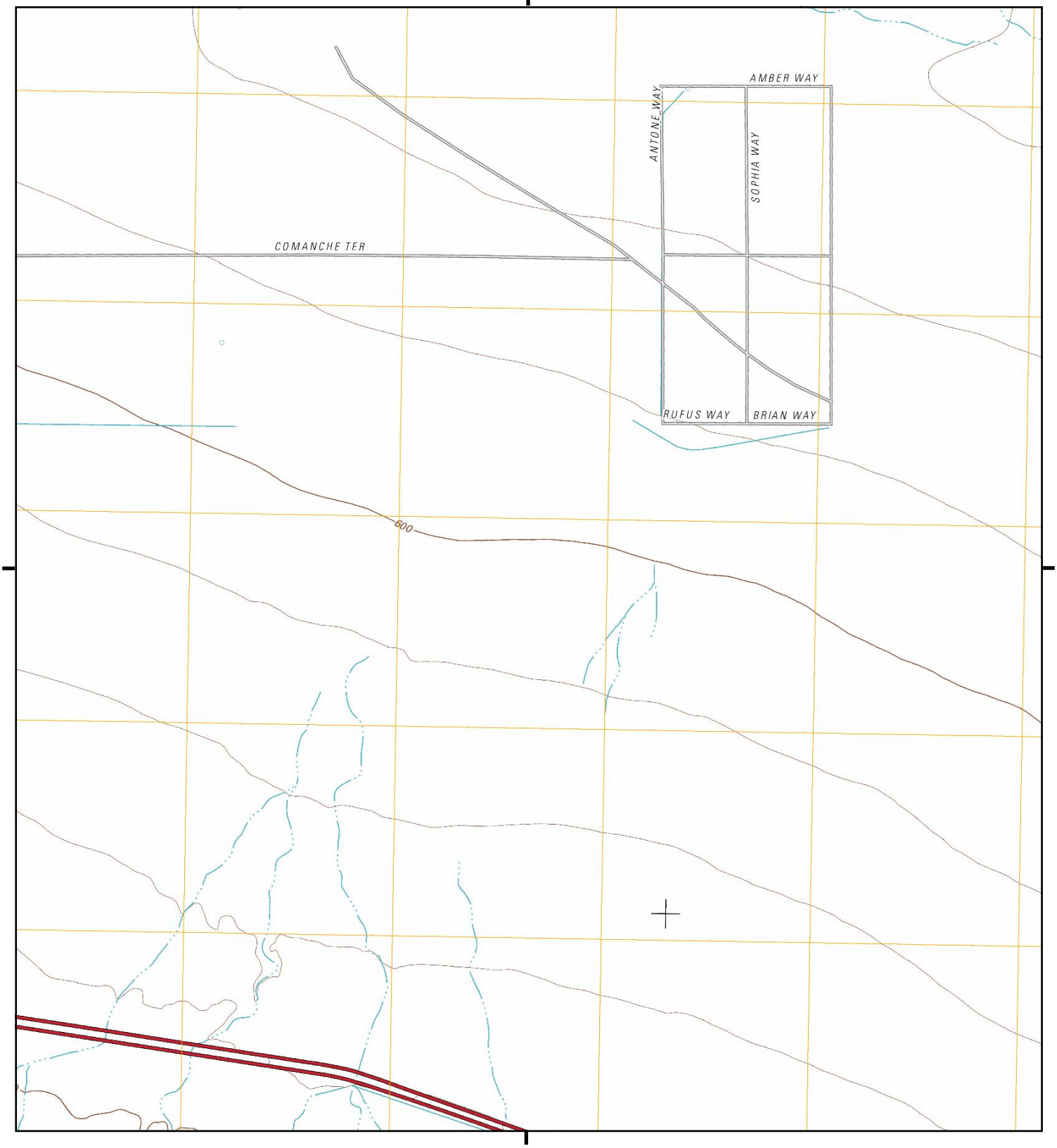
TP, East of Victory Pass, 2012, 7.5-minute
W, Victory Pass, 2012, 7.5-minute

SITE NAME: Aragorn-Athos Project
ADDRESS: Riverside County
Desert Center, CA 92239
CLIENT: Stantec

N

Historical Topo Map

2012



This report includes information from the following map sheet(s).

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NW N NE
W E
SW S SE

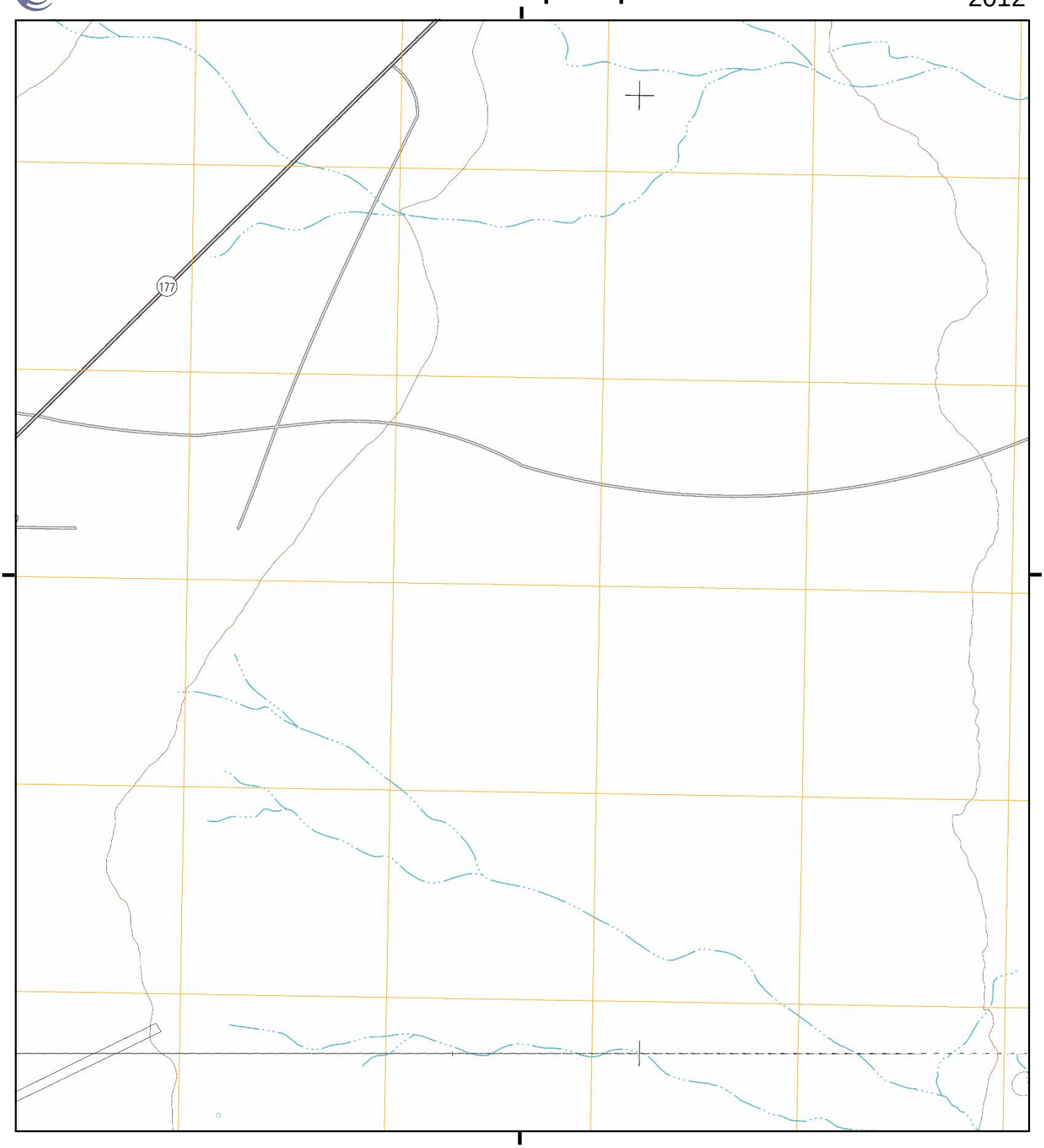
TP, Corn Spring, 2012, 7.5-minute

SITE NAME: Aragorn-Athos Project
ADDRESS: Riverside County
Desert Center, CA 92239
CLIENT: Stantec

N

Historical Topo Map

2012



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NW N NE
W E
SW S SE

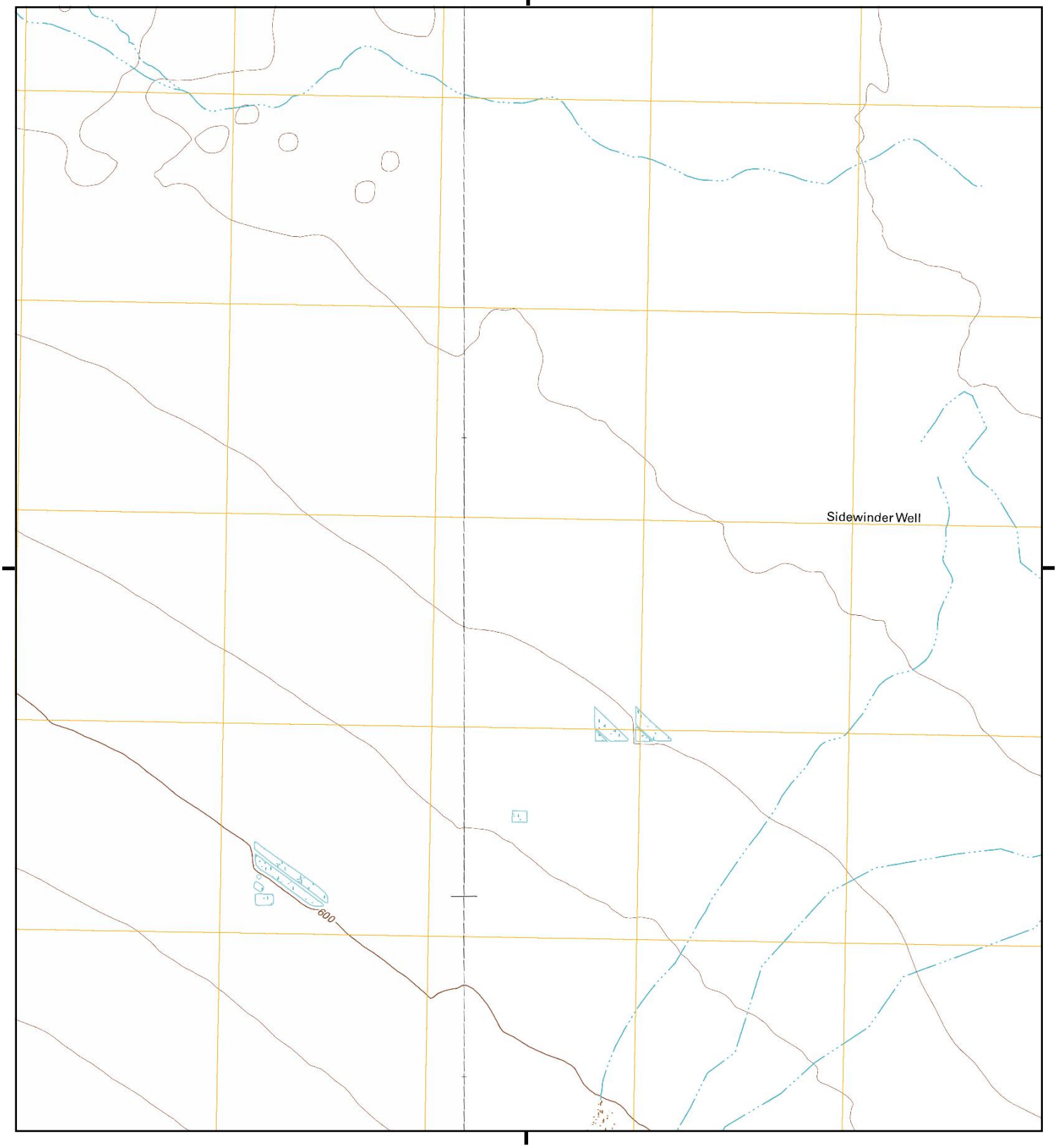
TP, East of Victory Pass, 2012, 7.5-minute
S, Corn Spring, 2012, 7.5-minute

SITE NAME: Aragorn-Athos Project
ADDRESS: Riverside County
Desert Center, CA 92239
CLIENT: Stantec

N

Historical Topo Map

2012



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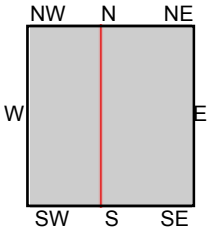


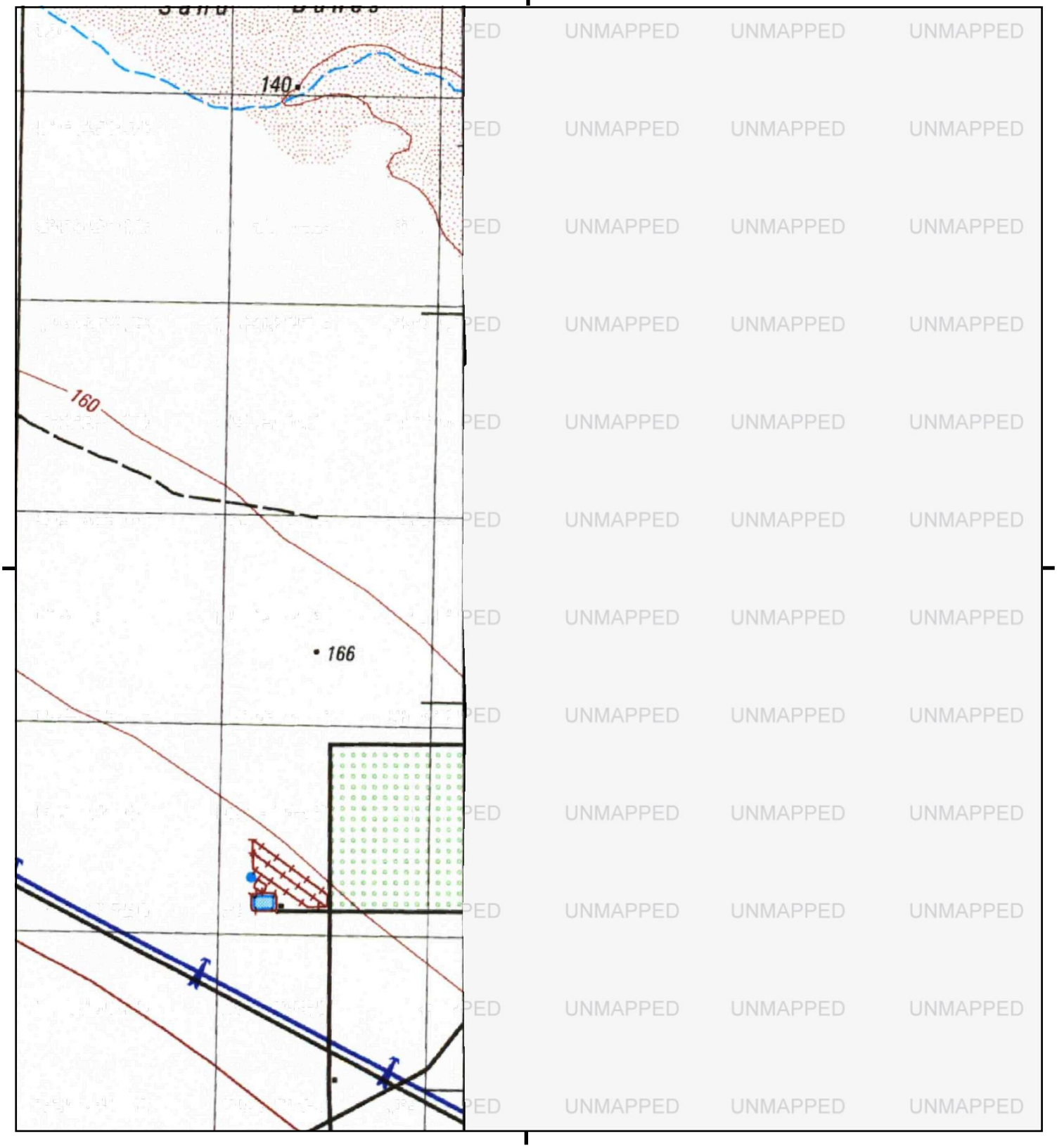
TP, Sidewinder Well, 2012, 7.5-minute
SW, Corn Spring, 2012, 7.5-minute

SITE NAME: Aragorn-Athos Project
ADDRESS: Riverside County
Desert Center, CA 92239
CLIENT: Stantec

N

Historical Topo Map

2002



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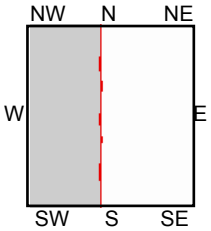
0 Miles 0.25 0.5 1 1.5



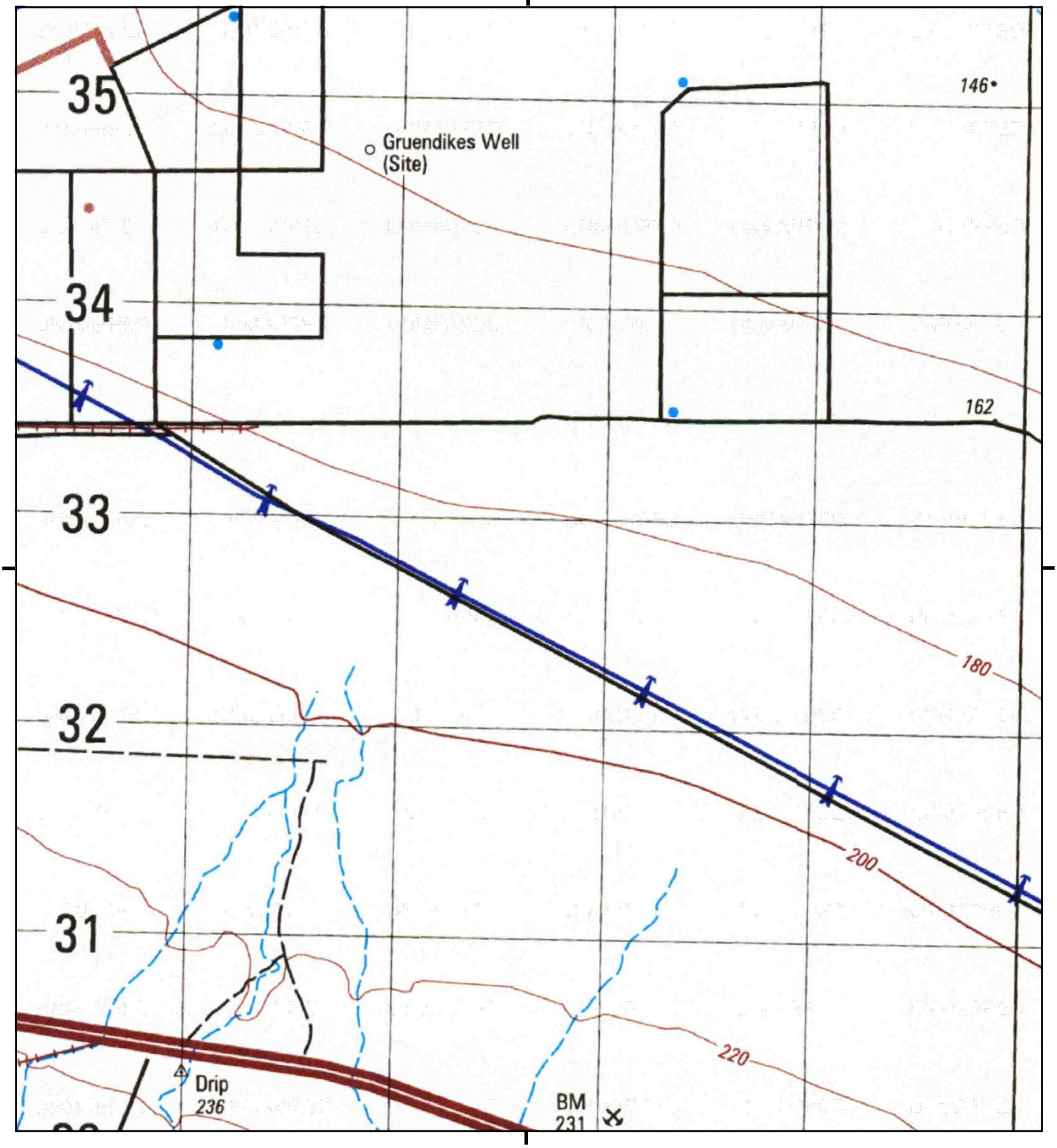
SW, Chuckwalla Mountains, 2002, 15-minute

SITE NAME: Aragorn-Athos Project
ADDRESS: Riverside County
Desert Center, CA 92239
CLIENT: Stantec

N

Historical Topo Map

2002



This report includes information from the following map sheet(s).

0 Miles 0.25 0.5 1 1.5

NW N NE
W E
SW S SE

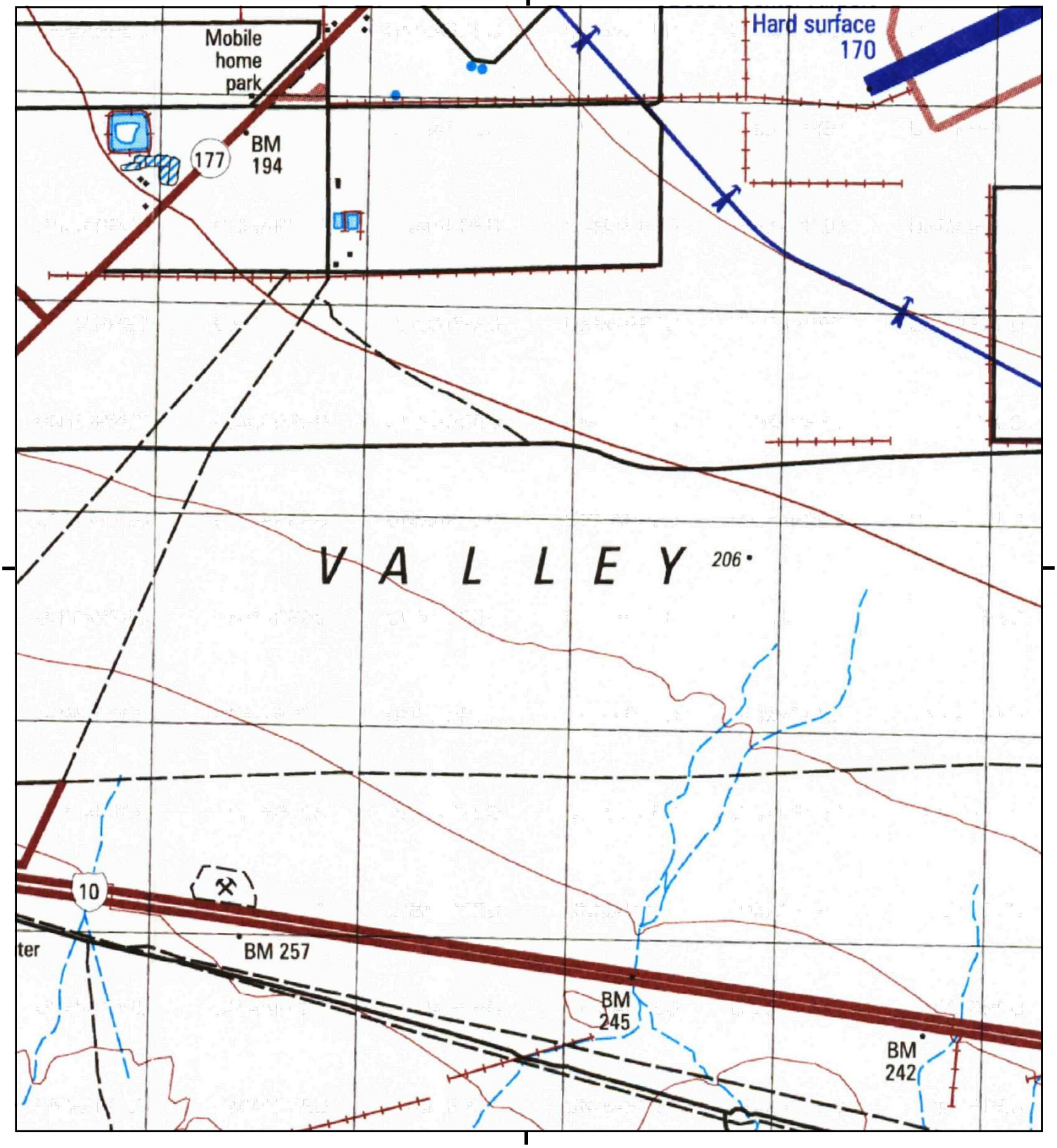
TP, Chuckwalla Mountains, 2002, 15-minute

SITE NAME: Aragorn-Athos Project
ADDRESS: Riverside County
Desert Center, CA 92239
CLIENT: Stantec

N

Historical Topo Map

2002



This report includes information from the following map sheet(s).

0 Miles 0.25 0.5 1 1.5

NW N NE
W E
SW S SE

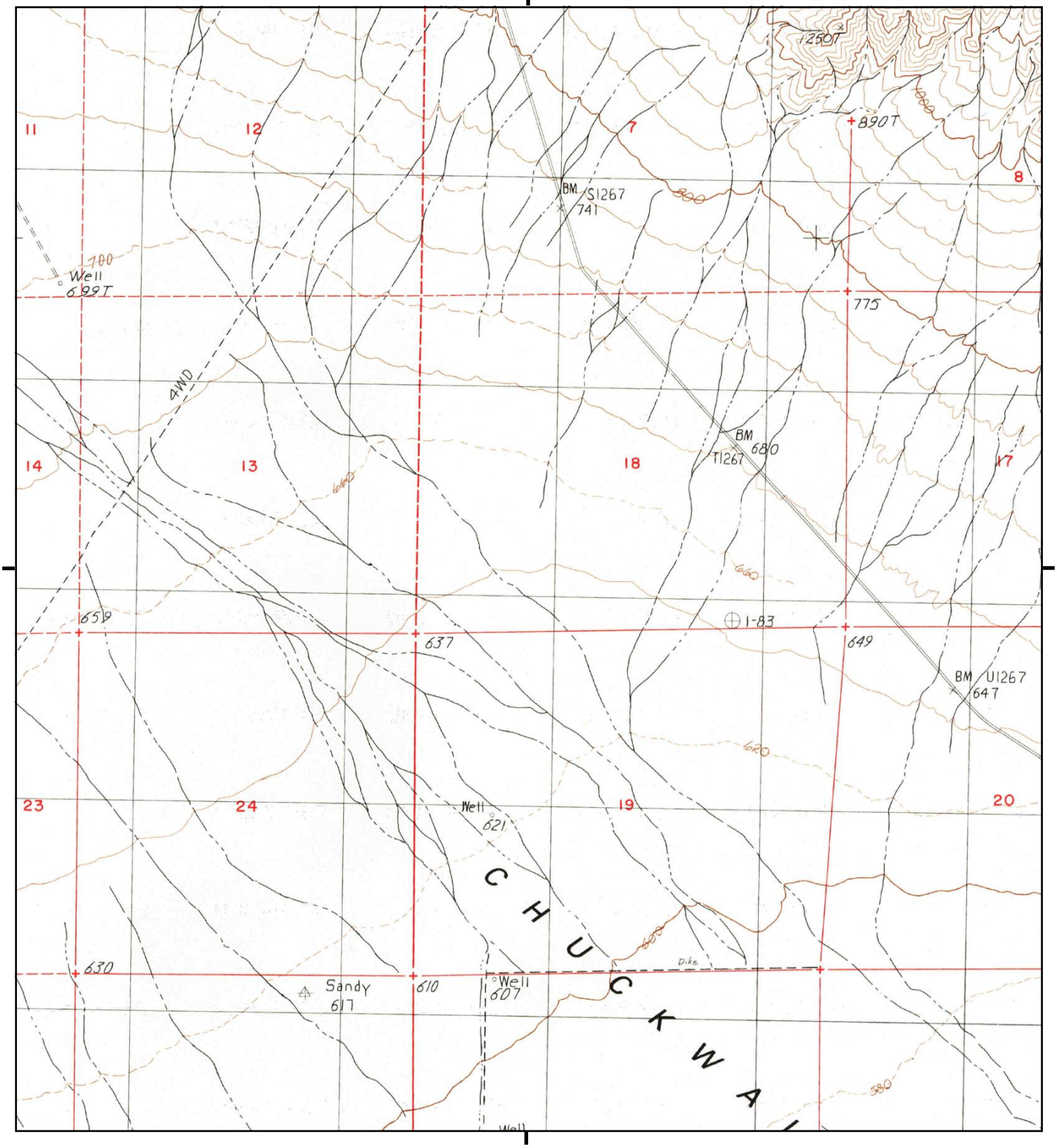
TP, Chuckwalla Mountains, 2002, 15-minute

SITE NAME: Aragorn-Athos Project
ADDRESS: Riverside County
Desert Center, CA 92239
CLIENT: Stantec

N

Historical Topo Map

1987



This report includes information from the following map sheet(s).

0 Miles 0.25 0.5 1 1.5

NW N NE
W E
SW S SE

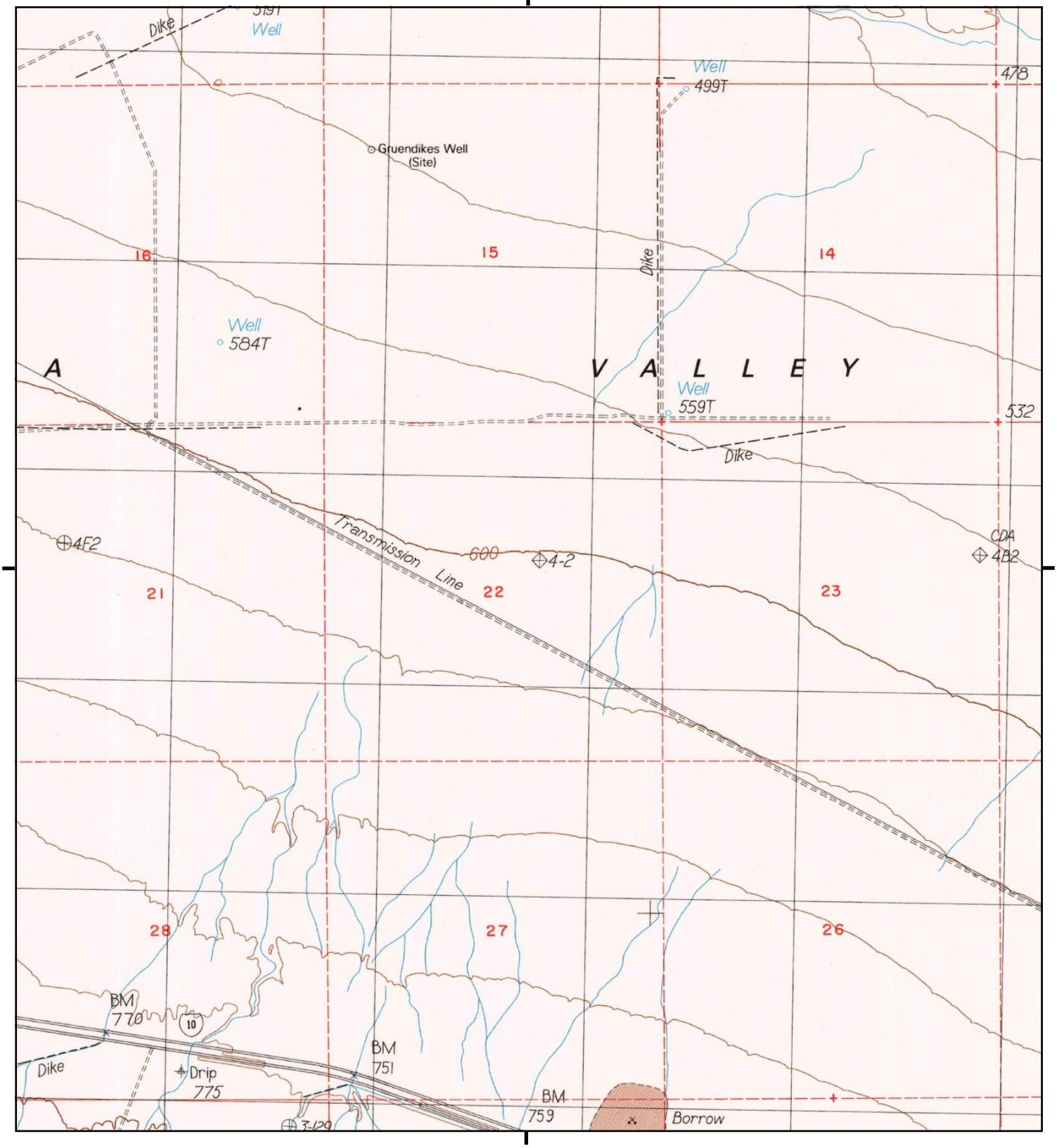
TP, East of Victory Pass, 1987, 7.5-minute

SITE NAME: Aragorn-Athos Project
ADDRESS: Riverside County
Desert Center, CA 92239
CLIENT: Stantec

N

Historical Topo Map

1986



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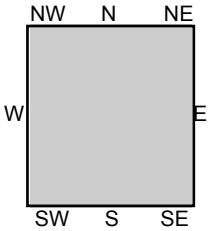


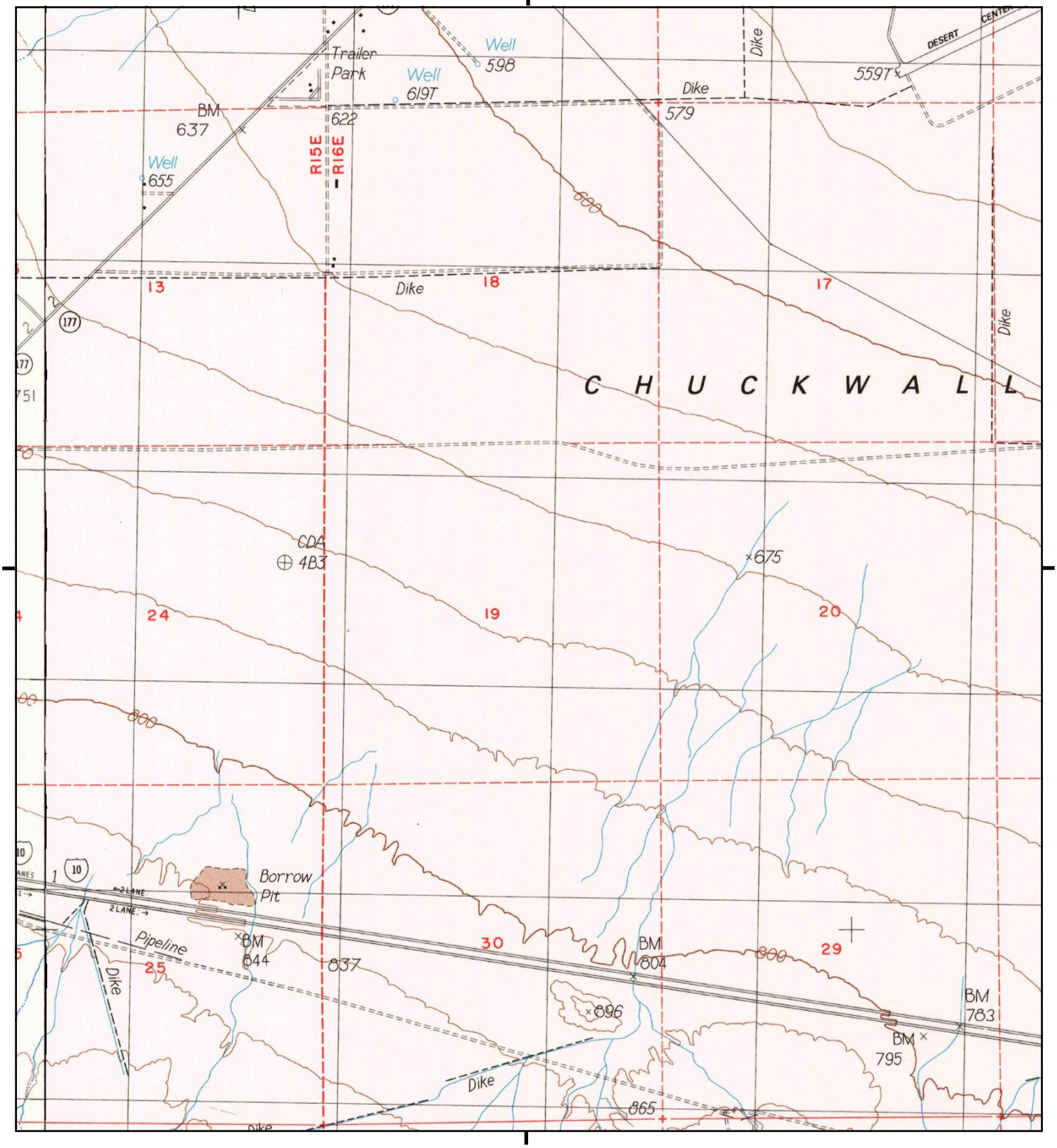
TP, Corn Spring, 1986, 7.5-minute

SITE NAME: Aragorn-Athos Project
ADDRESS: Riverside County
Desert Center, CA 92239
CLIENT: Stantec

N

Historical Topo Map

1986



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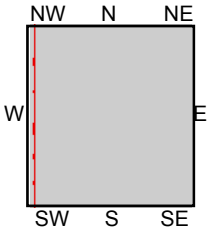


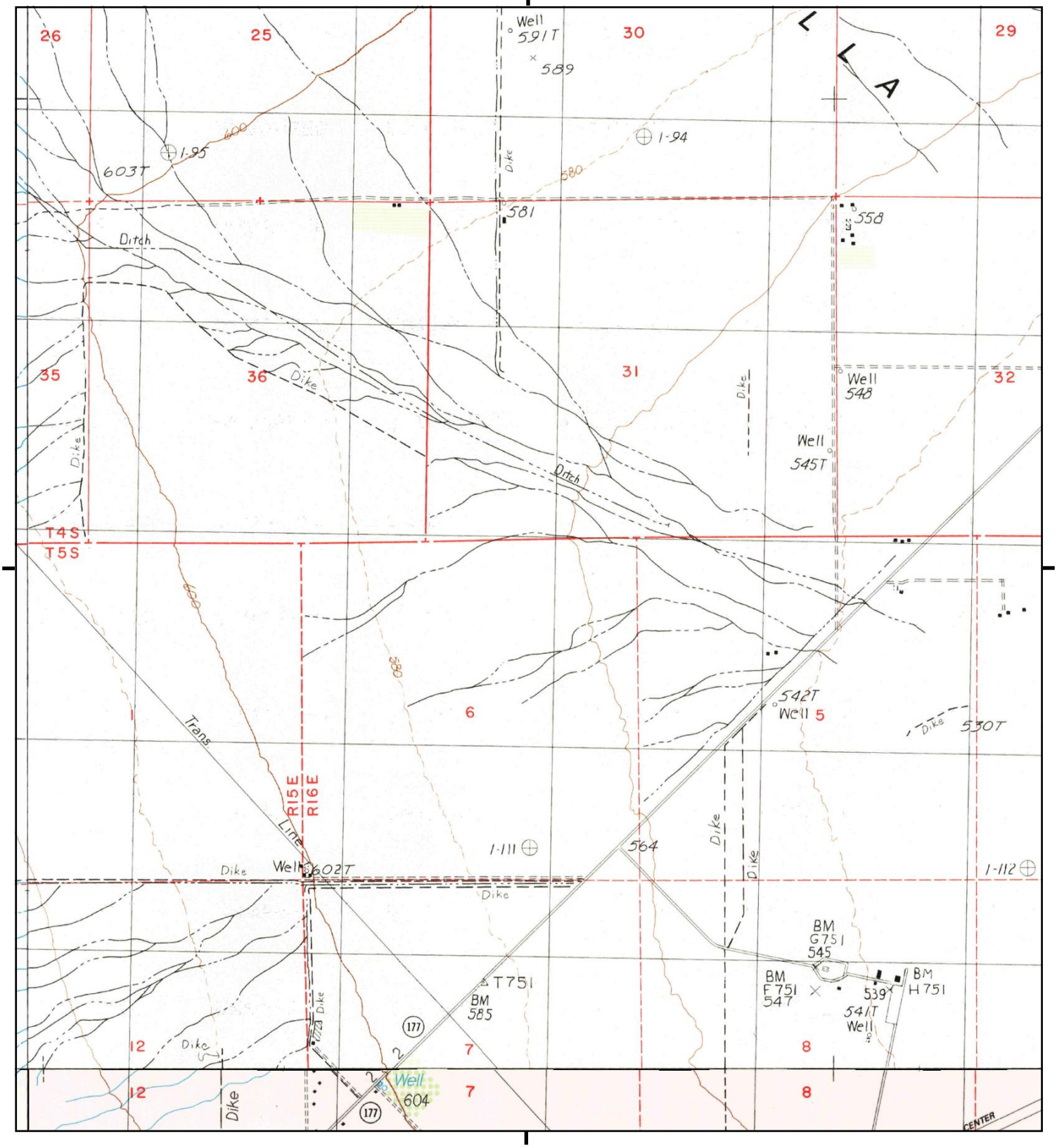
TP, Corn Spring, 1986, 7.5-minute
SW, Desert Center, 1986, 7.5-minute

SITE NAME: Aragorn-Athos Project
ADDRESS: Riverside County
Desert Center, CA 92239
CLIENT: Stantec

N

Historical Topo Map

1986, 1987



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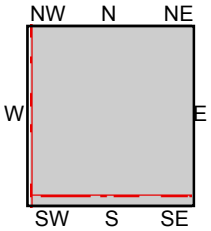
0 Miles 0.25 0.5 1 1.5



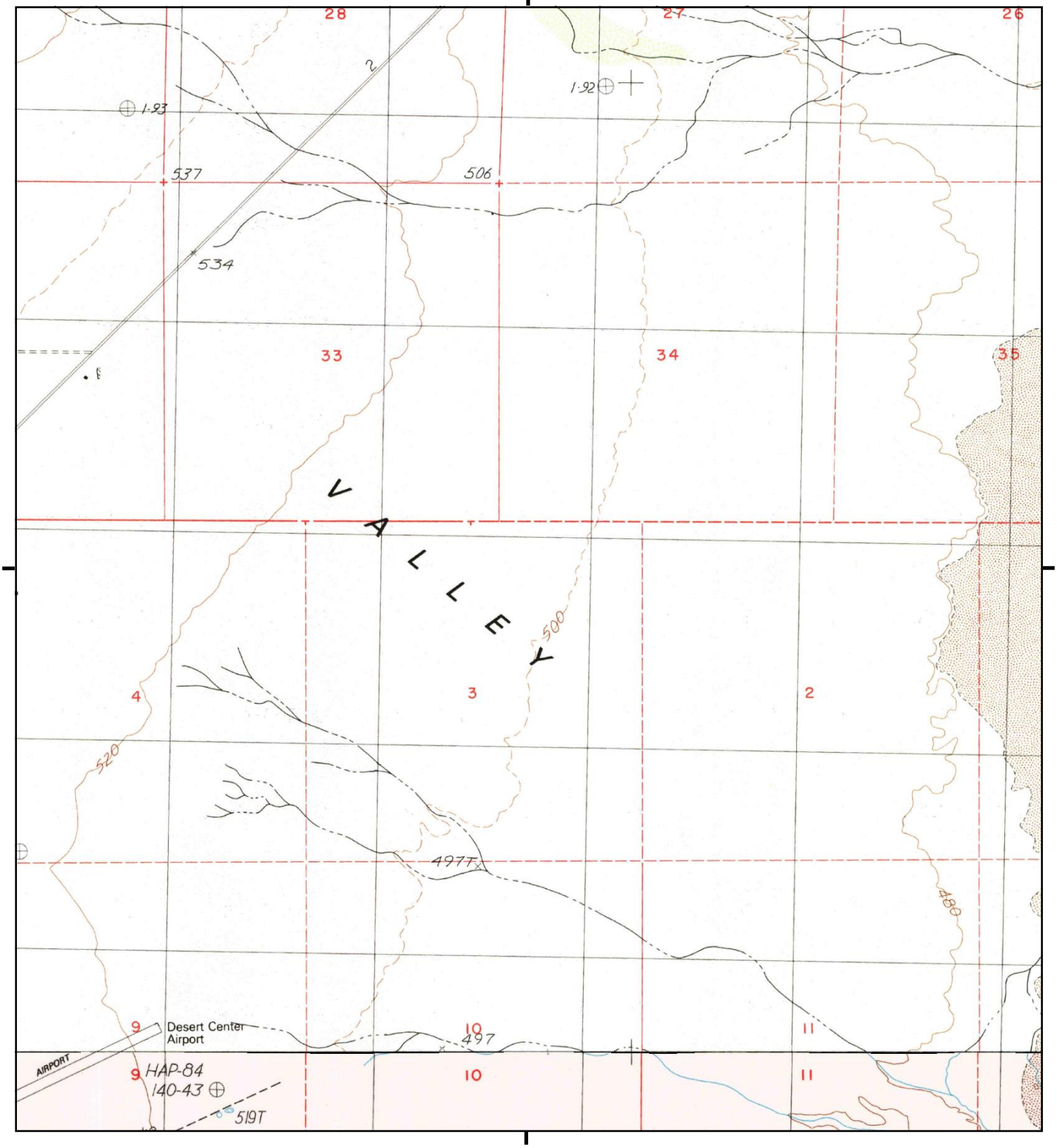
TP, East of Victory Pass, 1987, 7.5-minute
S, Corn Spring, 1986, 7.5-minute
SW, Desert Center, 1986, 7.5-minute
NW, Victory Pass, 1987, 7.5-minute

SITE NAME: Aragorn-Athos Project
ADDRESS: Riverside County
Desert Center, CA 92239
CLIENT: Stantec

N

Historical Topo Map

1986, 1987



This report includes information from the following map sheet(s).

0 Miles 0.25 0.5 1 1.5

NW N NE
W E
SW S SE

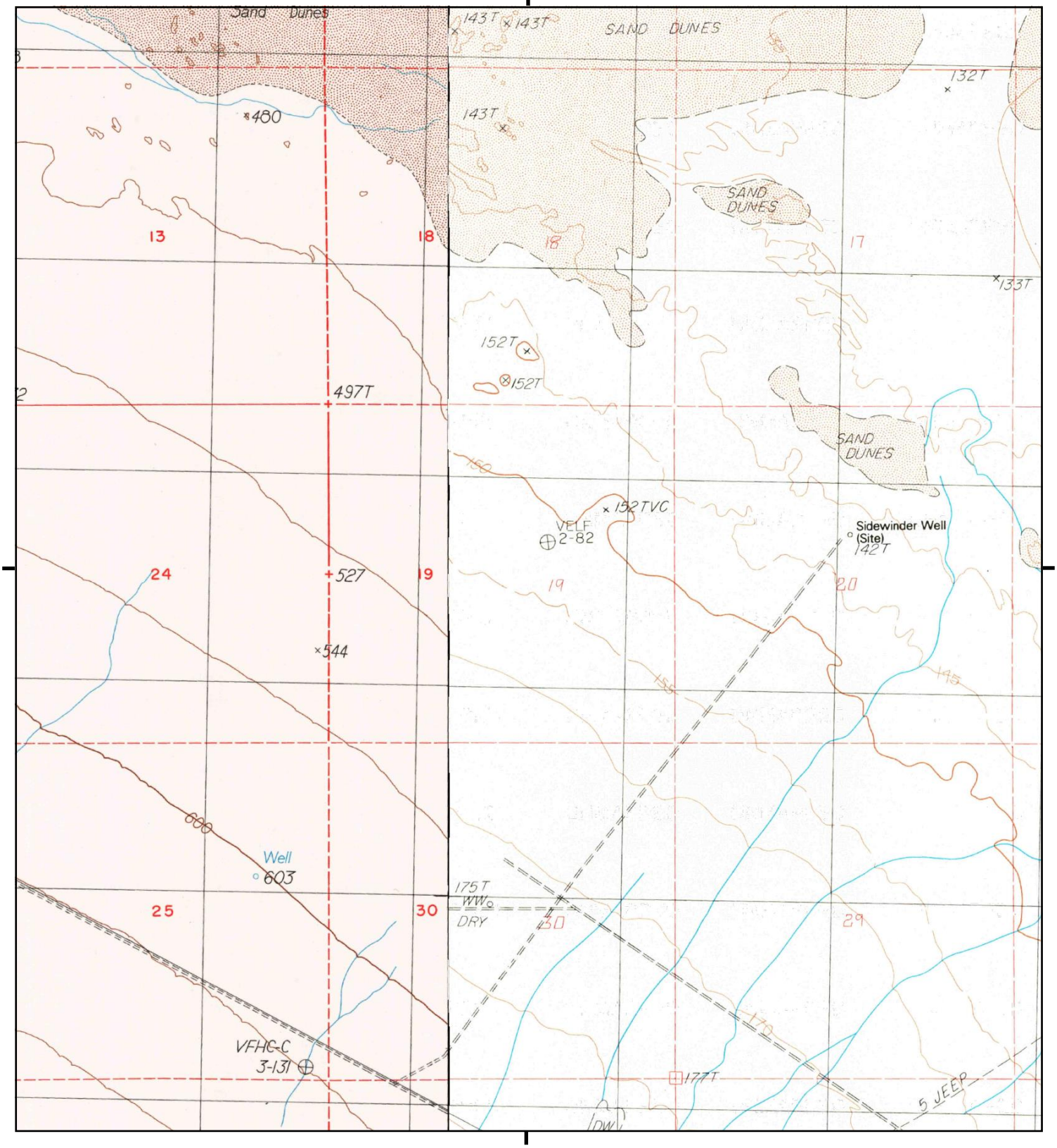
TP, East of Victory Pass, 1987, 7.5-minute
S, Corn Spring, 1986, 7.5-minute

SITE NAME: Aragorn-Athos Project
ADDRESS: Riverside County
Desert Center, CA 92239
CLIENT: Stantec

N

Historical Topo Map

1983, 1986



This report includes information from the following map sheet(s).

0 Miles 0.25 0.5 1 1.5

NW N NE
W E
SW S SE

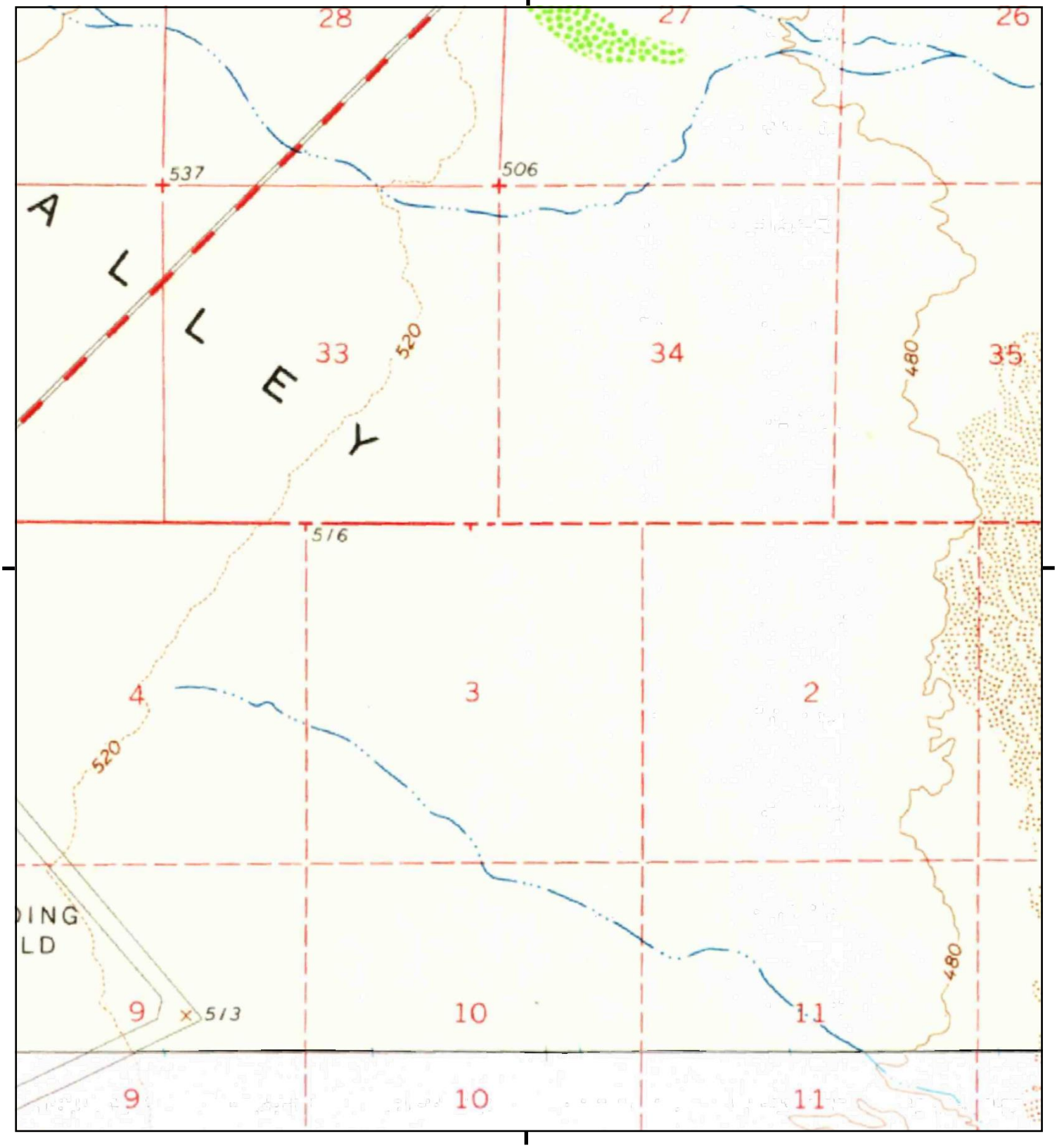
TP, Sidewinder Well, 1983, 7.5-minute
SW, Corn Spring, 1986, 7.5-minute

SITE NAME: Aragorn-Athos Project
ADDRESS: Riverside County
Desert Center, CA 92239
CLIENT: Stantec

N

Historical Topo Map

1963



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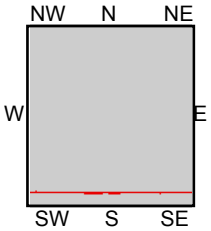
0 Miles 0.25 0.5 1 1.5



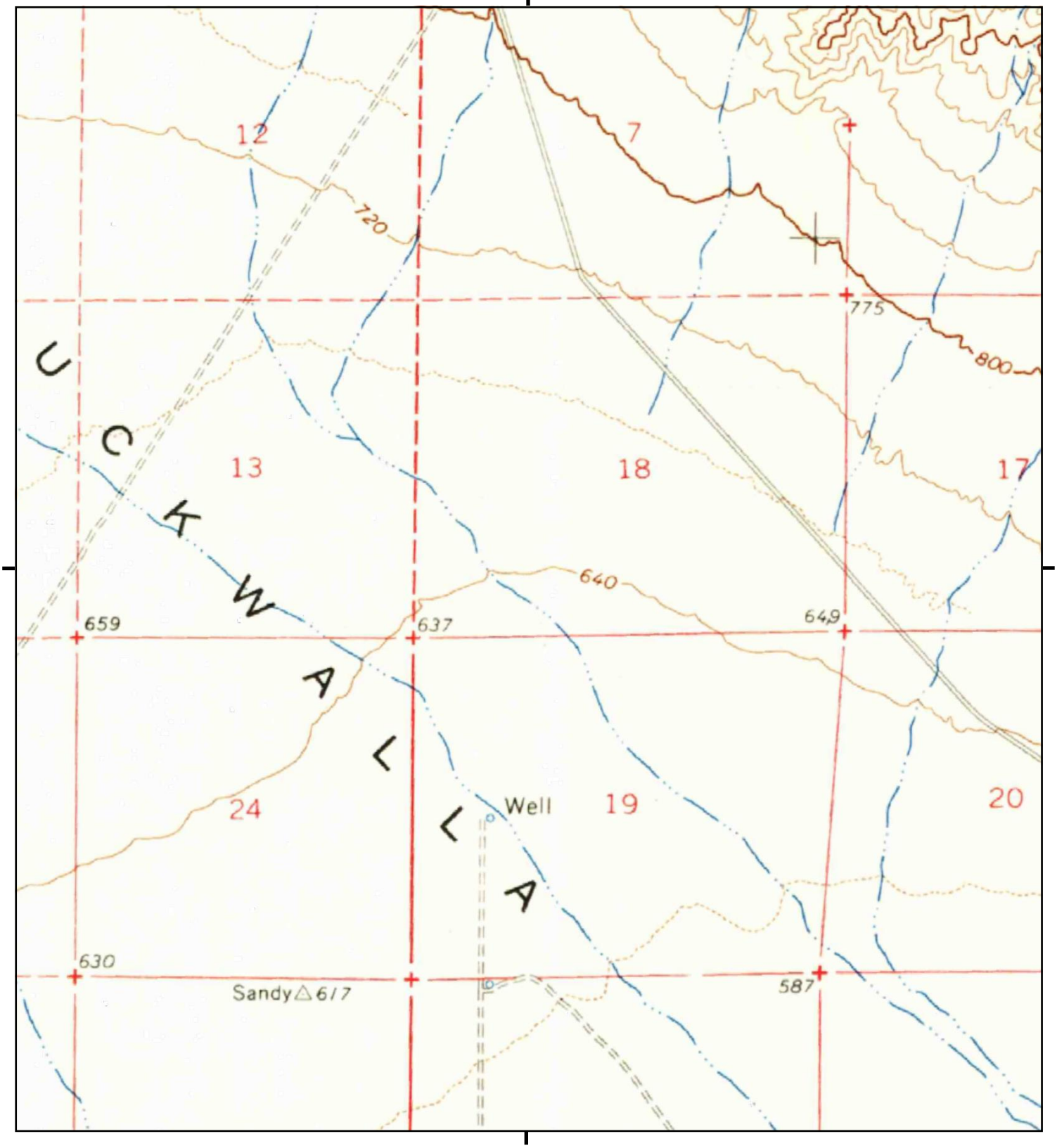
TP, Coxcomb Mountains, 1963, 15-minute
SW, Chuckwalla Mountains, 1963, 15-minute

SITE NAME: Aragorn-Athos Project
ADDRESS: Riverside County
Desert Center, CA 92239
CLIENT: Stantec

N

Historical Topo Map

1963



This report includes information from the following map sheet(s).

0 Miles 0.25 0.5 1 1.5

NW N NE
W E
SW S SE

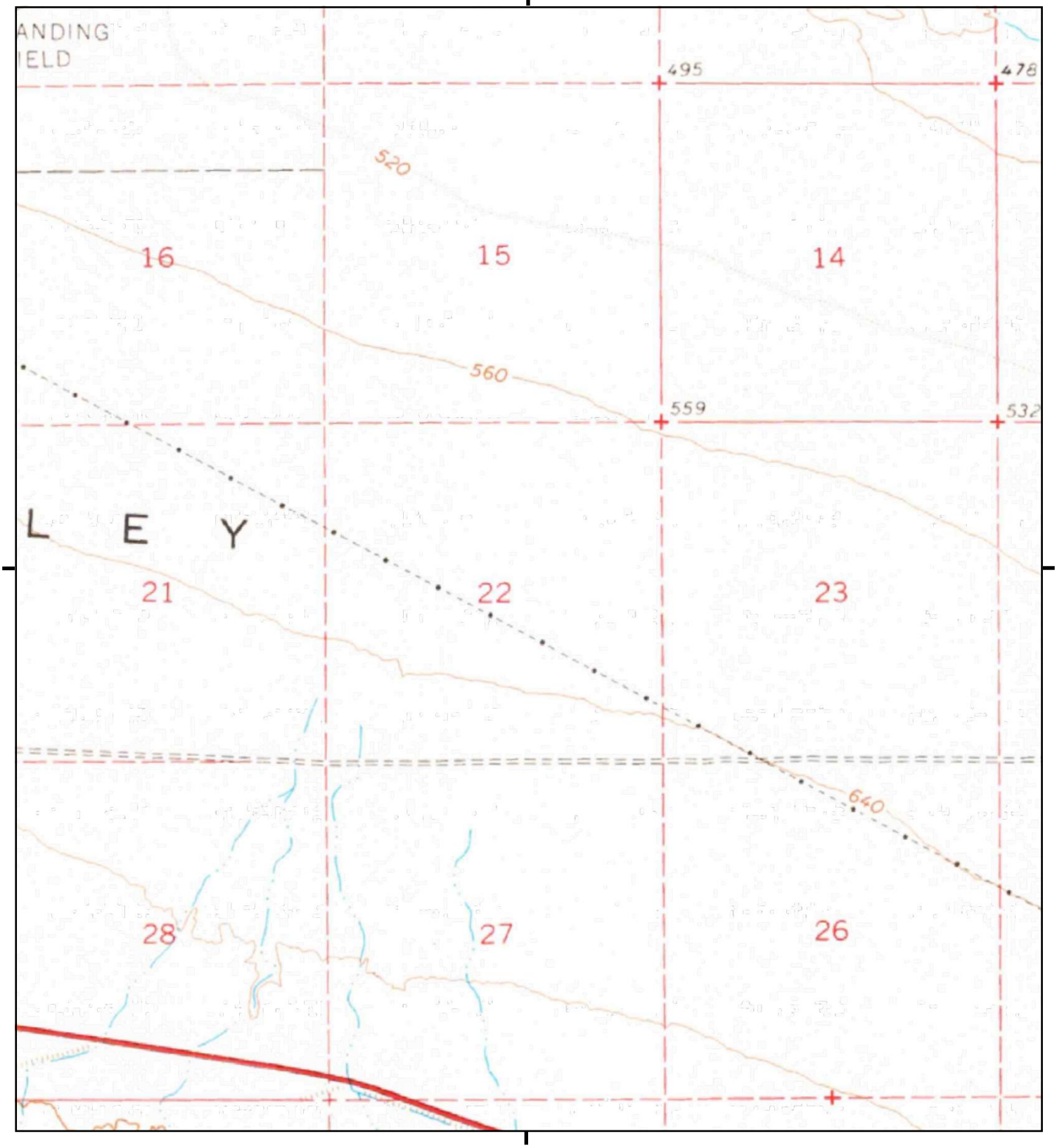
TP, Coxcomb Mountains, 1963, 15-minute

SITE NAME: Aragorn-Athos Project
ADDRESS: Riverside County
Desert Center, CA 92239
CLIENT: Stantec

N

Historical Topo Map

1963



This report includes information from the following map sheet(s).

0 Miles 0.25 0.5 1 1.5

NW N NE
W E
SW S SE

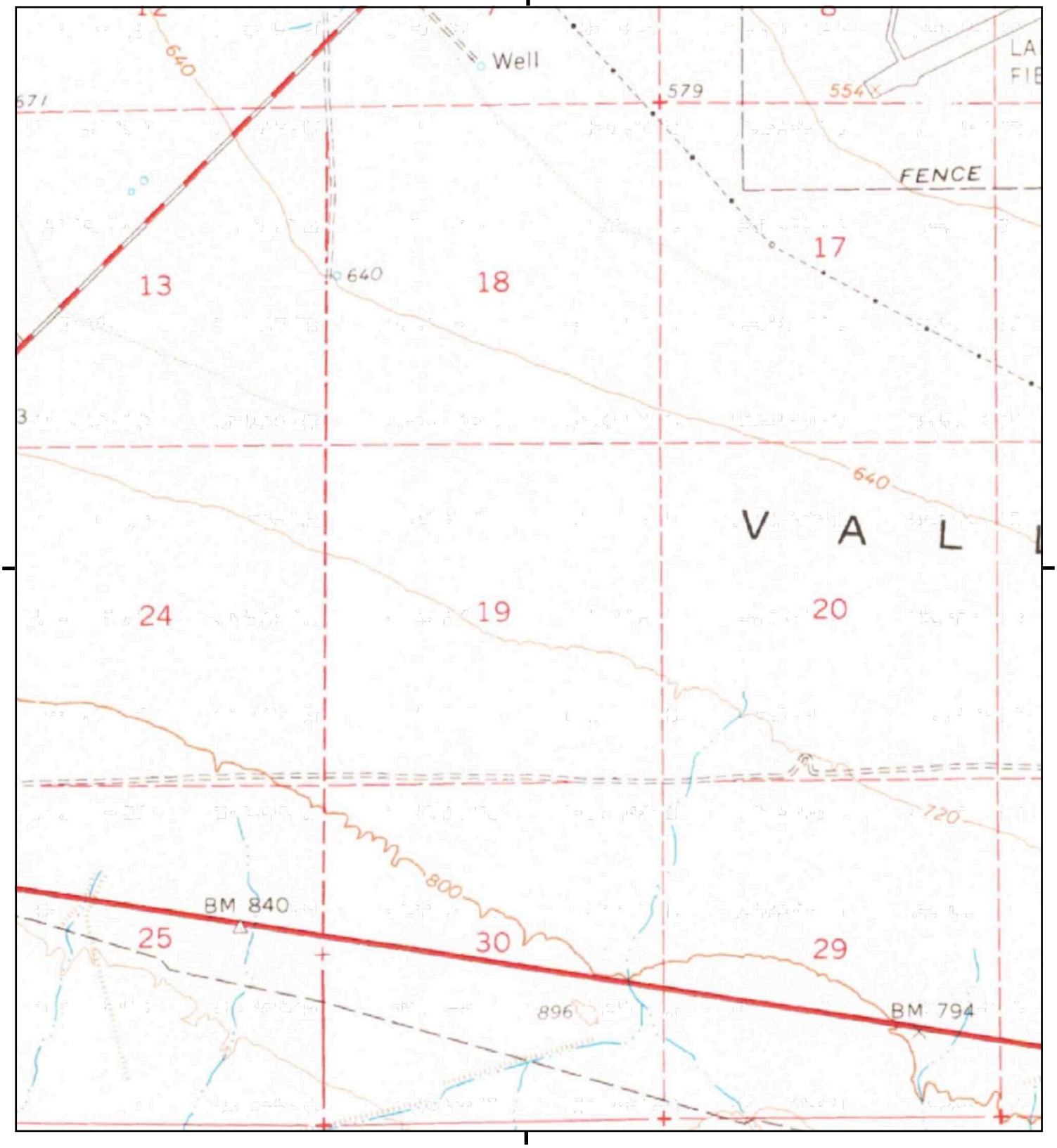
TP, Chuckwalla Mountains, 1963, 15-minute

SITE NAME: Aragorn-Athos Project
ADDRESS: Riverside County
Desert Center, CA 92239
CLIENT: Stantec

N

Historical Topo Map

1963



This report includes information from the following map sheet(s).

0 Miles 0.25 0.5 1 1.5

NW N NE
W E
SW S SE

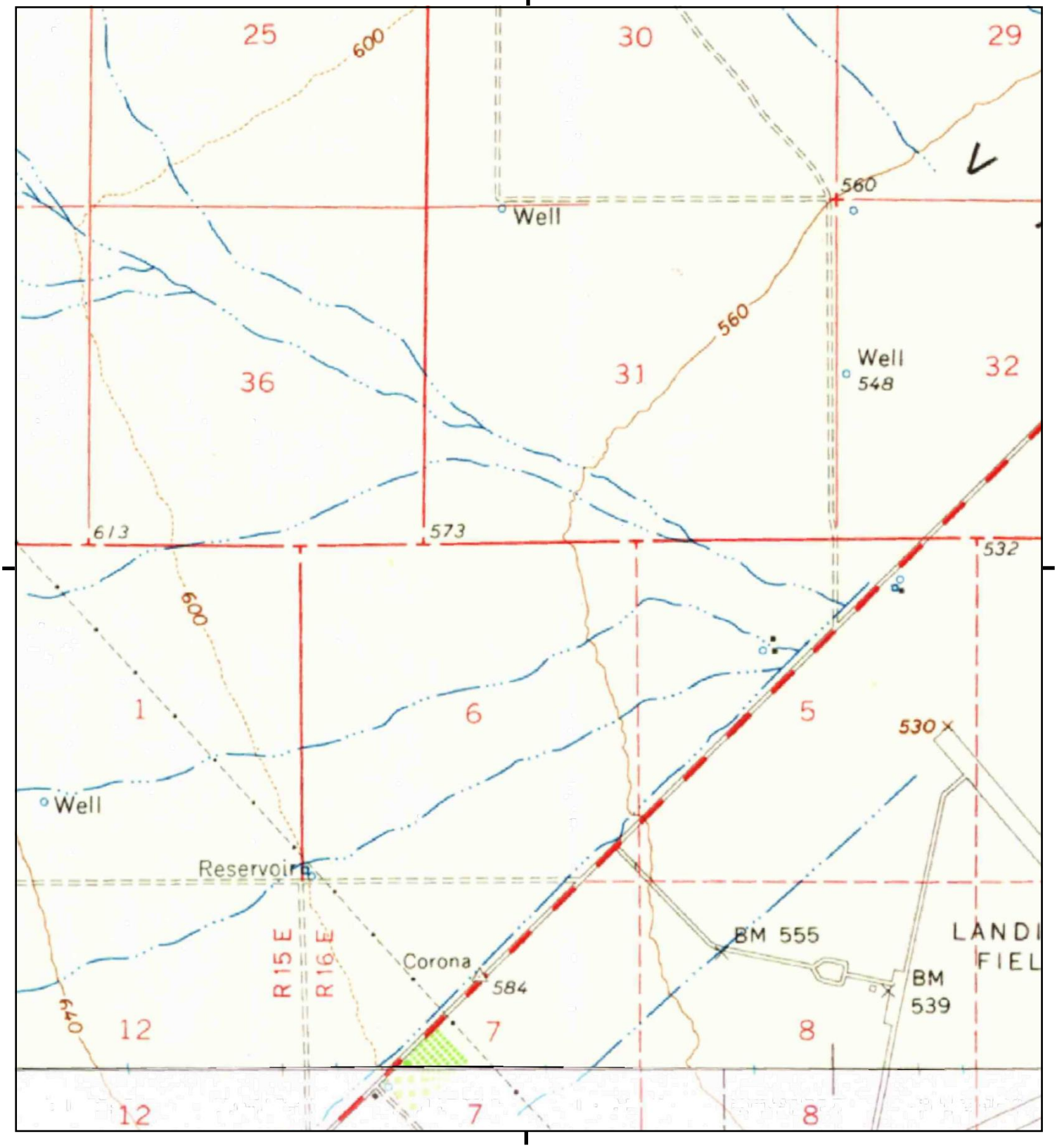
TP, Chuckwalla Mountains, 1963, 15-minute

SITE NAME: Aragorn-Athos Project
ADDRESS: Riverside County
Desert Center, CA 92239
CLIENT: Stantec

N

Historical Topo Map

1963



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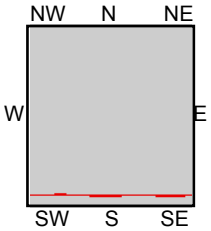
0 Miles 0.25 0.5 1 1.5



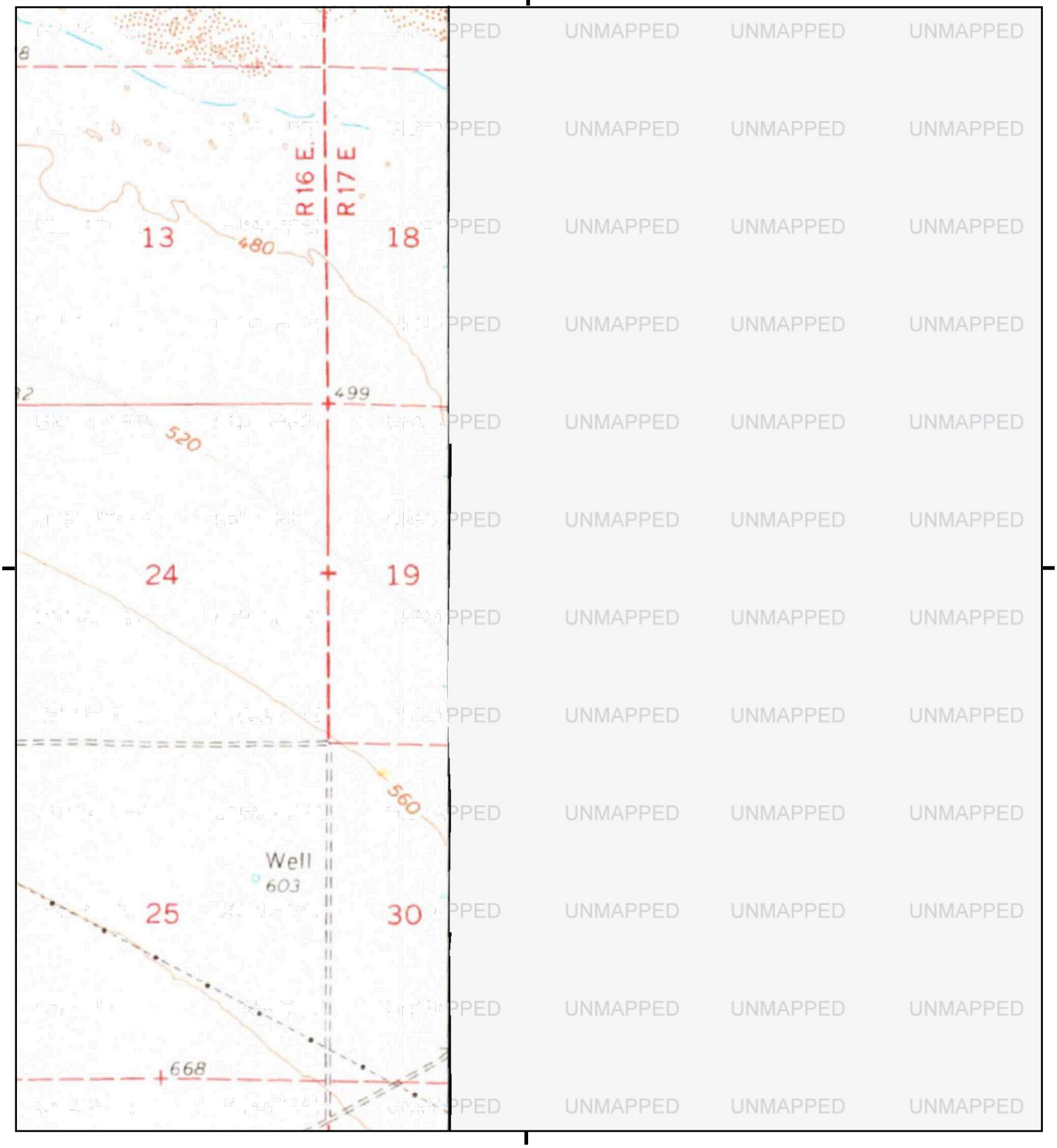
TP, Coxcomb Mountains, 1963, 15-minute
S, Chuckwalla Mountains, 1963, 15-minute

SITE NAME: Aragorn-Athos Project
ADDRESS: Riverside County
Desert Center, CA 92239
CLIENT: Stantec

N

Historical Topo Map

1963



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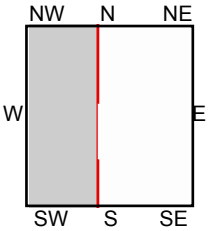
0 Miles 0.25 0.5 1 1.5



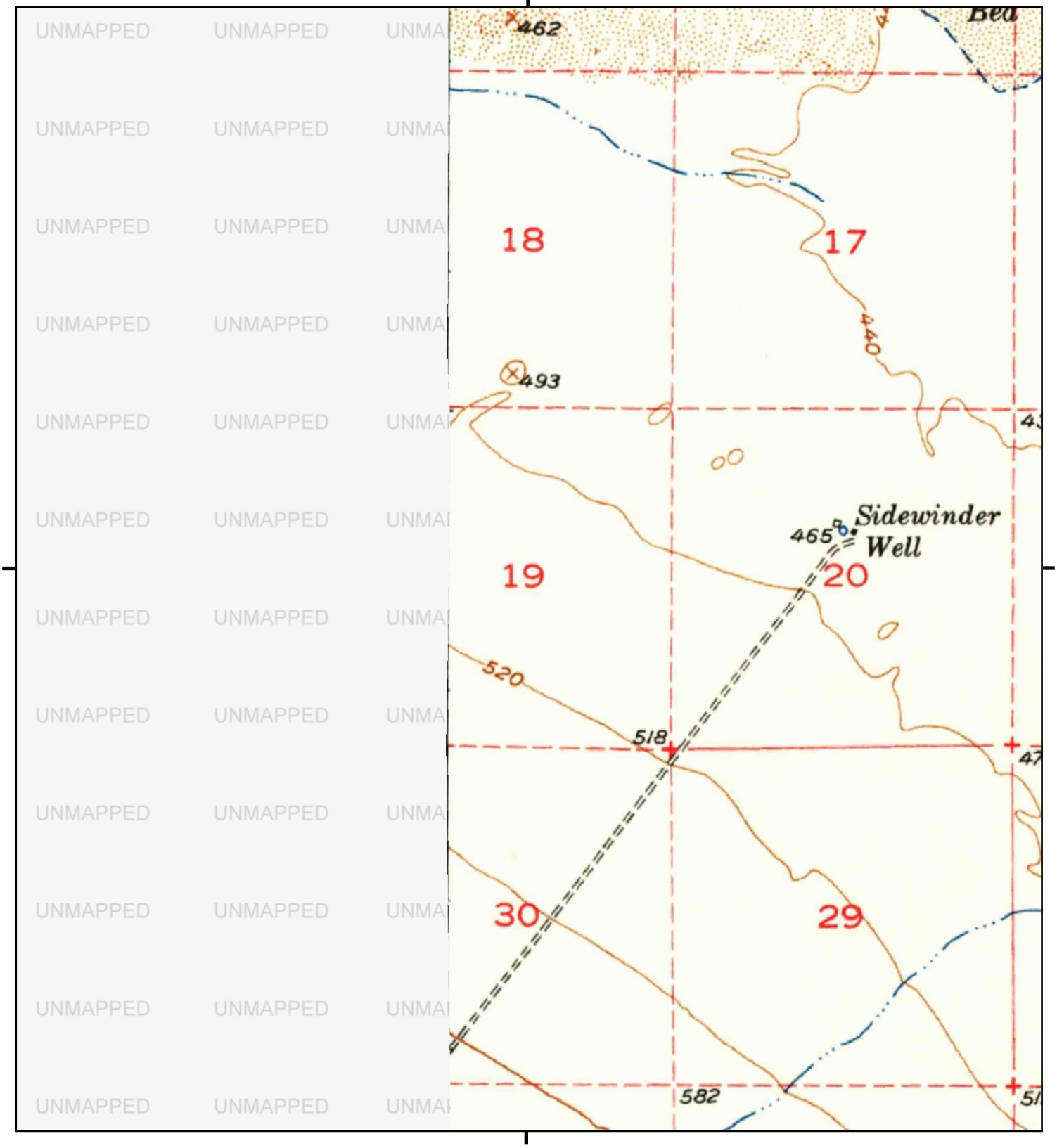
SW, Chuckwalla Mountains, 1963, 15-minute

SITE NAME: Aragorn-Athos Project
ADDRESS: Riverside County
Desert Center, CA 92239
CLIENT: Stantec

N

Historical Topo Map

1952



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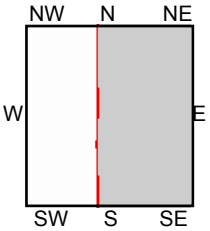
0 Miles 0.25 0.5 1 1.5



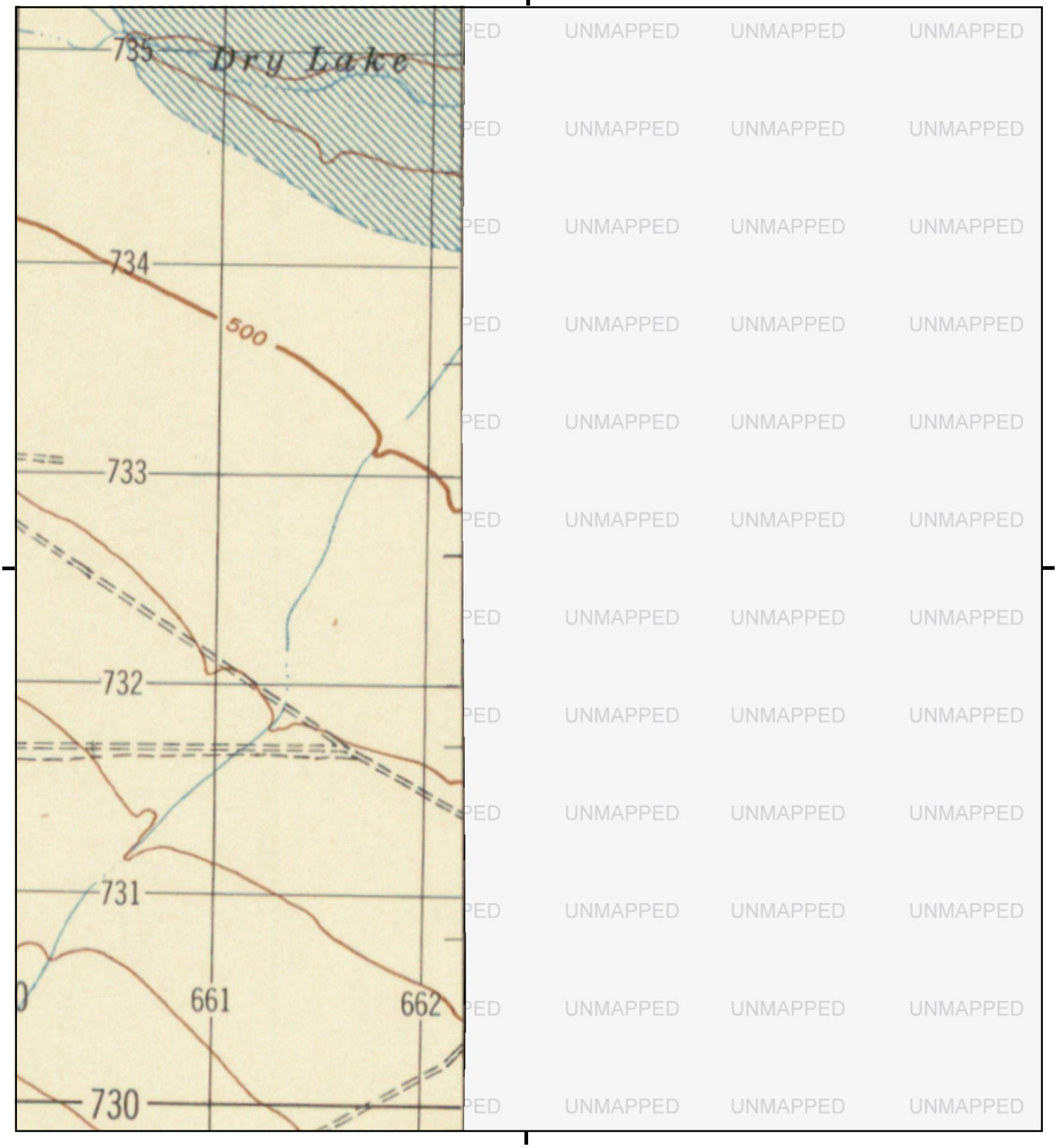
TP, Sidewinder Well, 1952, 15-minute

SITE NAME: Aragorn-Athos Project
ADDRESS: Riverside County
Desert Center, CA 92239
CLIENT: Stantec

N

Historical Topo Map

1947



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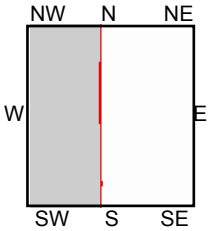
0 Miles 0.25 0.5 1 1.5



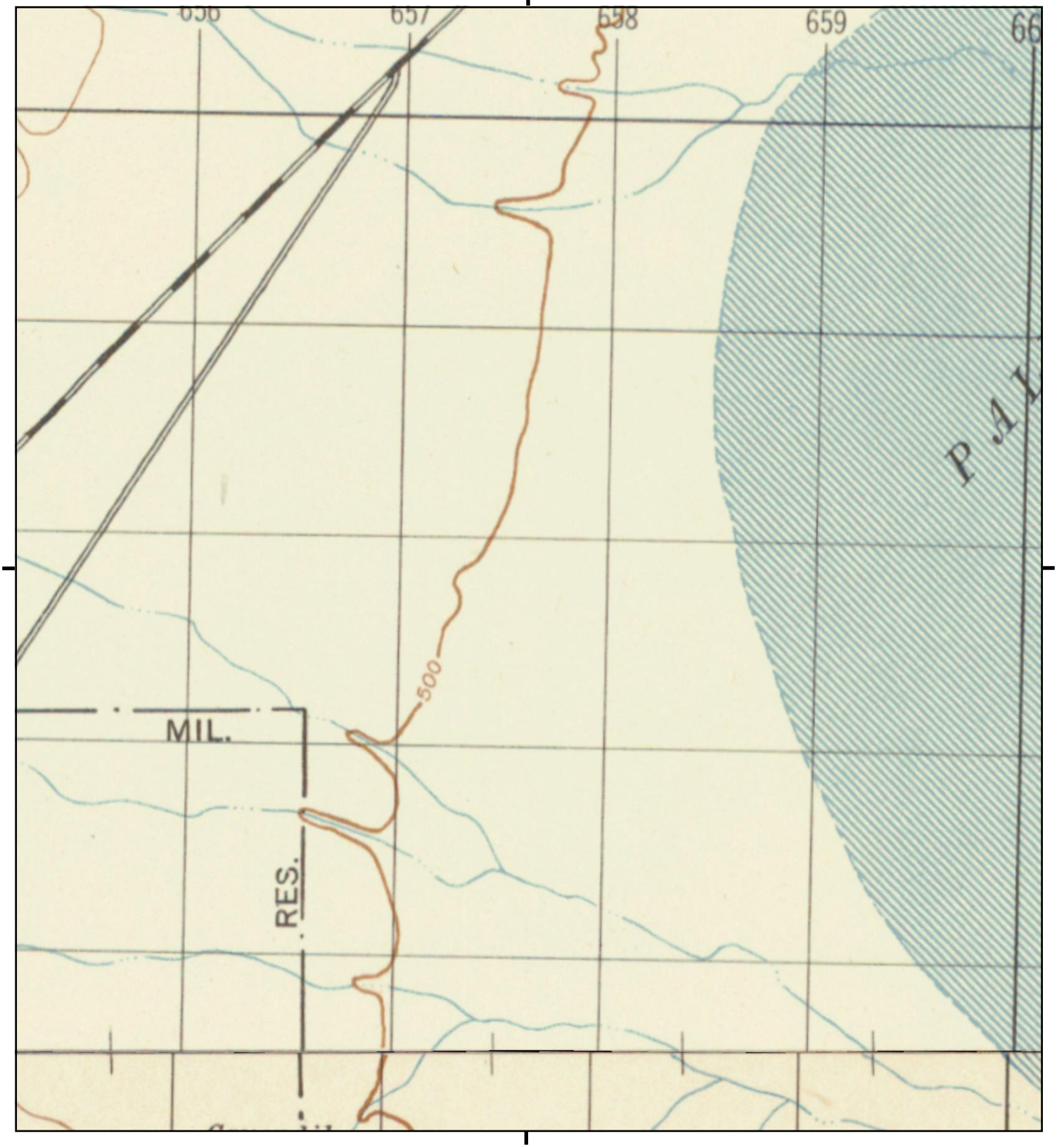
SW, CHUCKWALLA MOUNTAINS, 1947, 15-minute

SITE NAME: Aragorn-Athos Project
ADDRESS: Riverside County
Desert Center, CA 92239
CLIENT: Stantec

N

Historical Topo Map

1947



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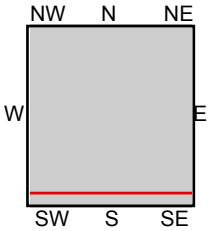
0 Miles 0.25 0.5 1 1.5



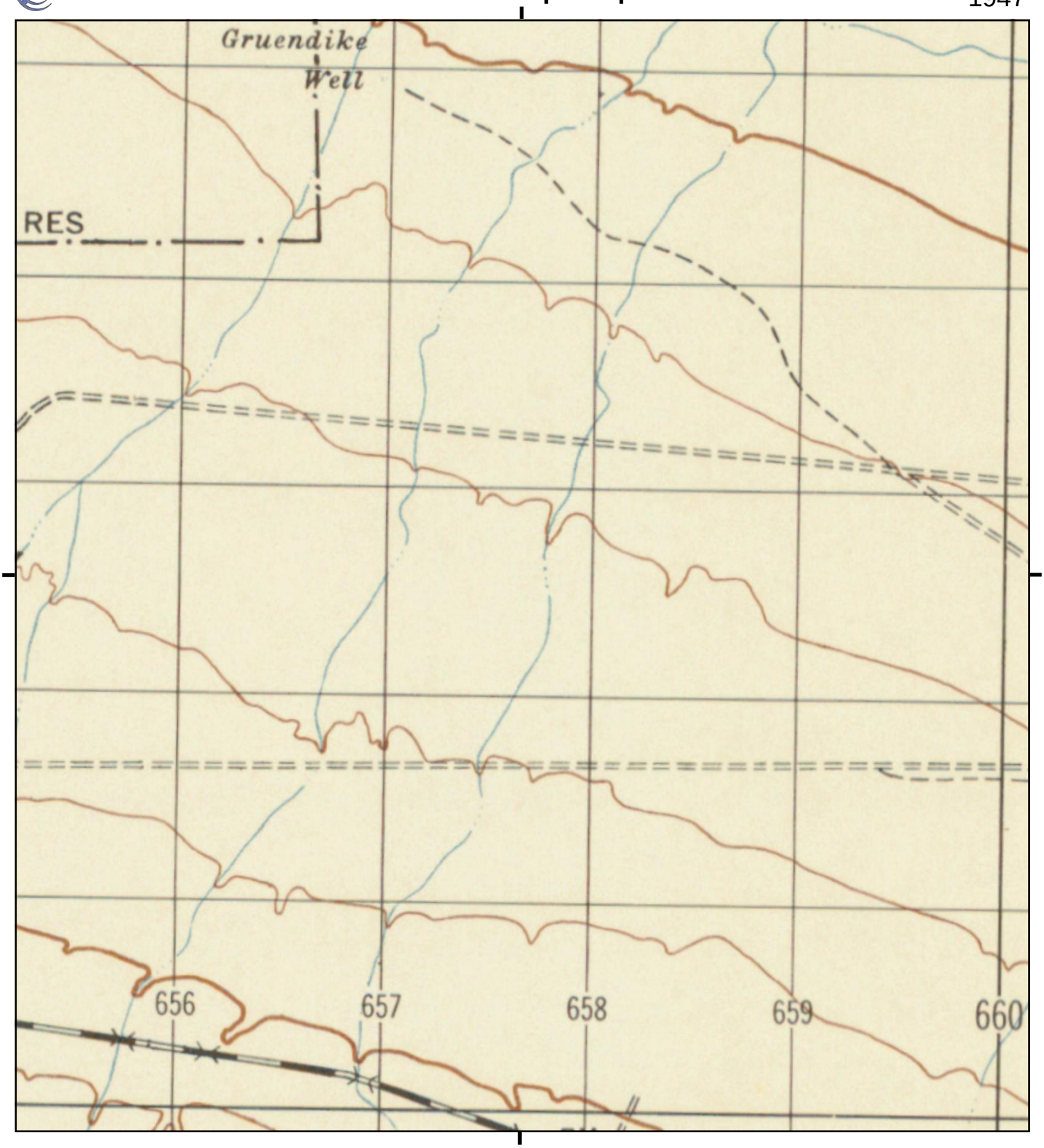
TP, COXCOMB MOUNTAINS, 1947, 15-minute
SW, CHUCKWALLA MOUNTAINS, 1947, 15-minute

SITE NAME: Aragorn-Athos Project
ADDRESS: Riverside County
Desert Center, CA 92239
CLIENT: Stantec

N

Historical Topo Map

1947



This report includes information from the following map sheet(s).

0 Miles 0.25 0.5 1 1.5

NW N NE
W E
SW S SE

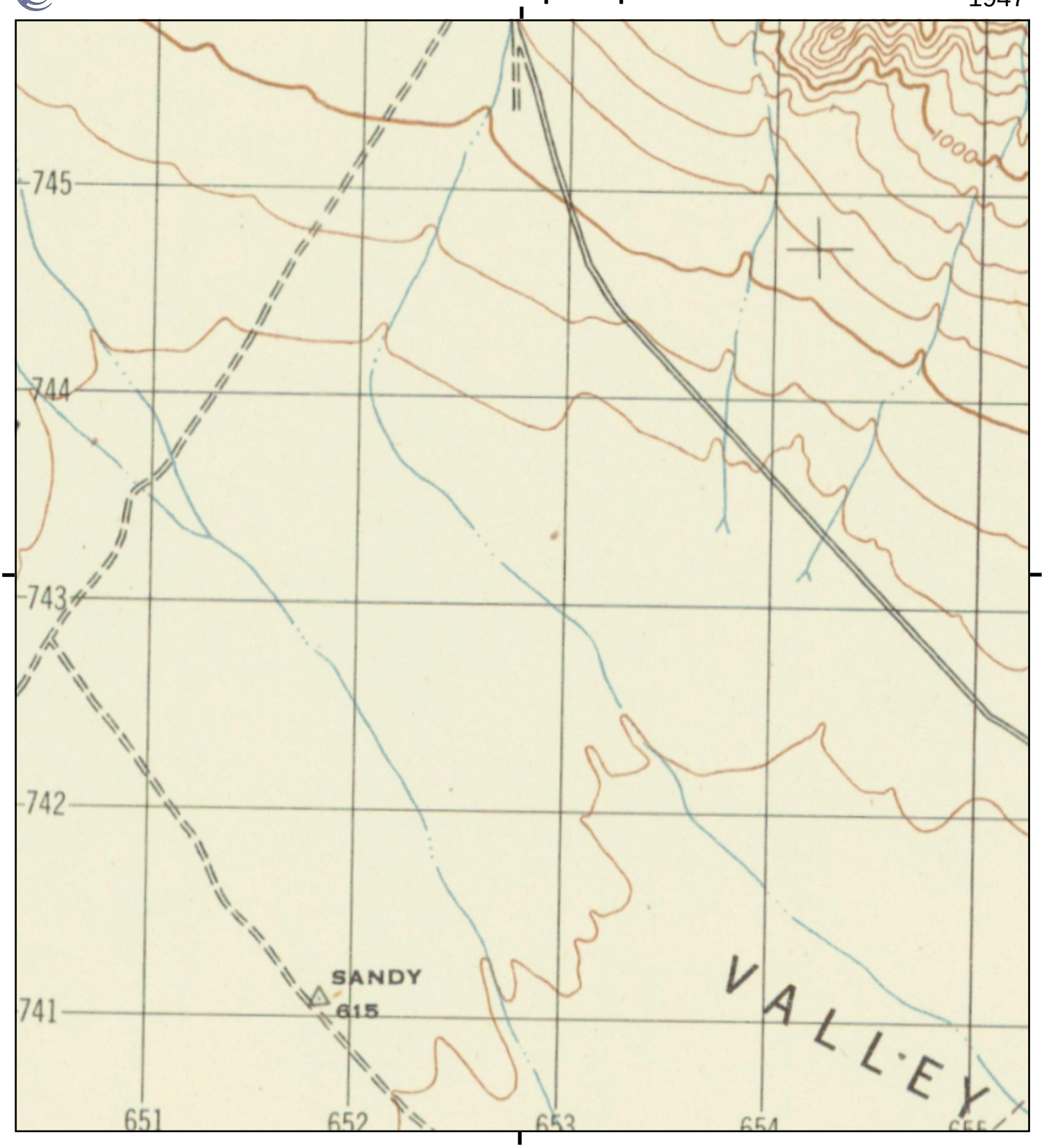
TP, CHUCKWALLA MOUNTAINS, 1947, 15-minute

SITE NAME: Aragorn-Athos Project
ADDRESS: Riverside County
Desert Center, CA 92239
CLIENT: Stantec

N

Historical Topo Map

1947



This report includes information from the following map sheet(s).

0 Miles 0.25 0.5 1 1.5

NW N NE
W E
SW S SE

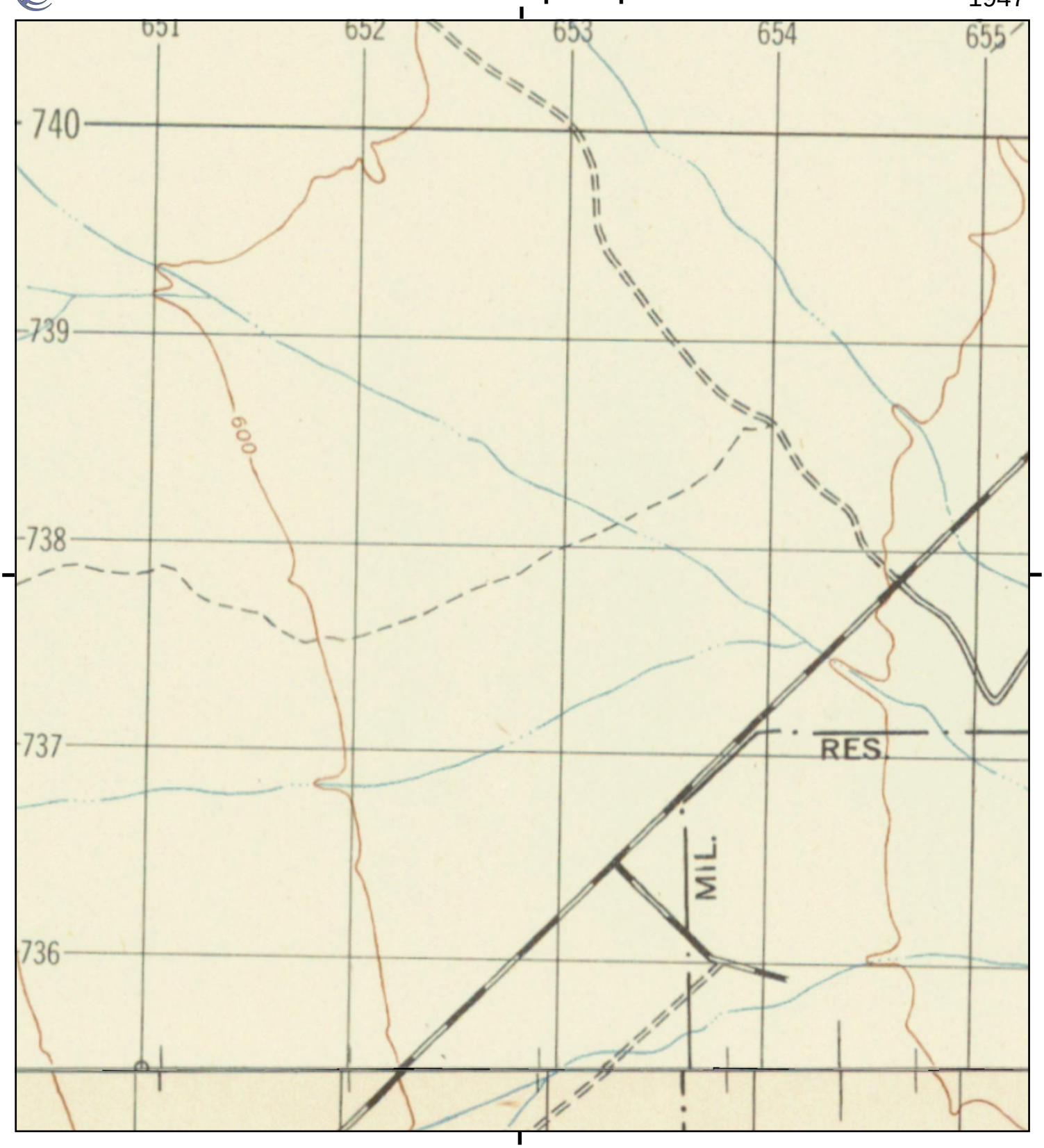
TP, COXCOMB MOUNTAINS, 1947, 15-minute

SITE NAME: Aragorn-Athos Project
ADDRESS: Riverside County
Desert Center, CA 92239
CLIENT: Stantec

N

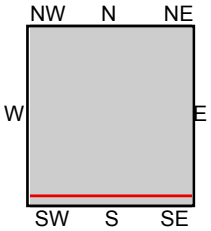
Historical Topo Map

1947



This report includes information from the following map sheet(s).

0 Miles 0.25 0.5 1 1.5



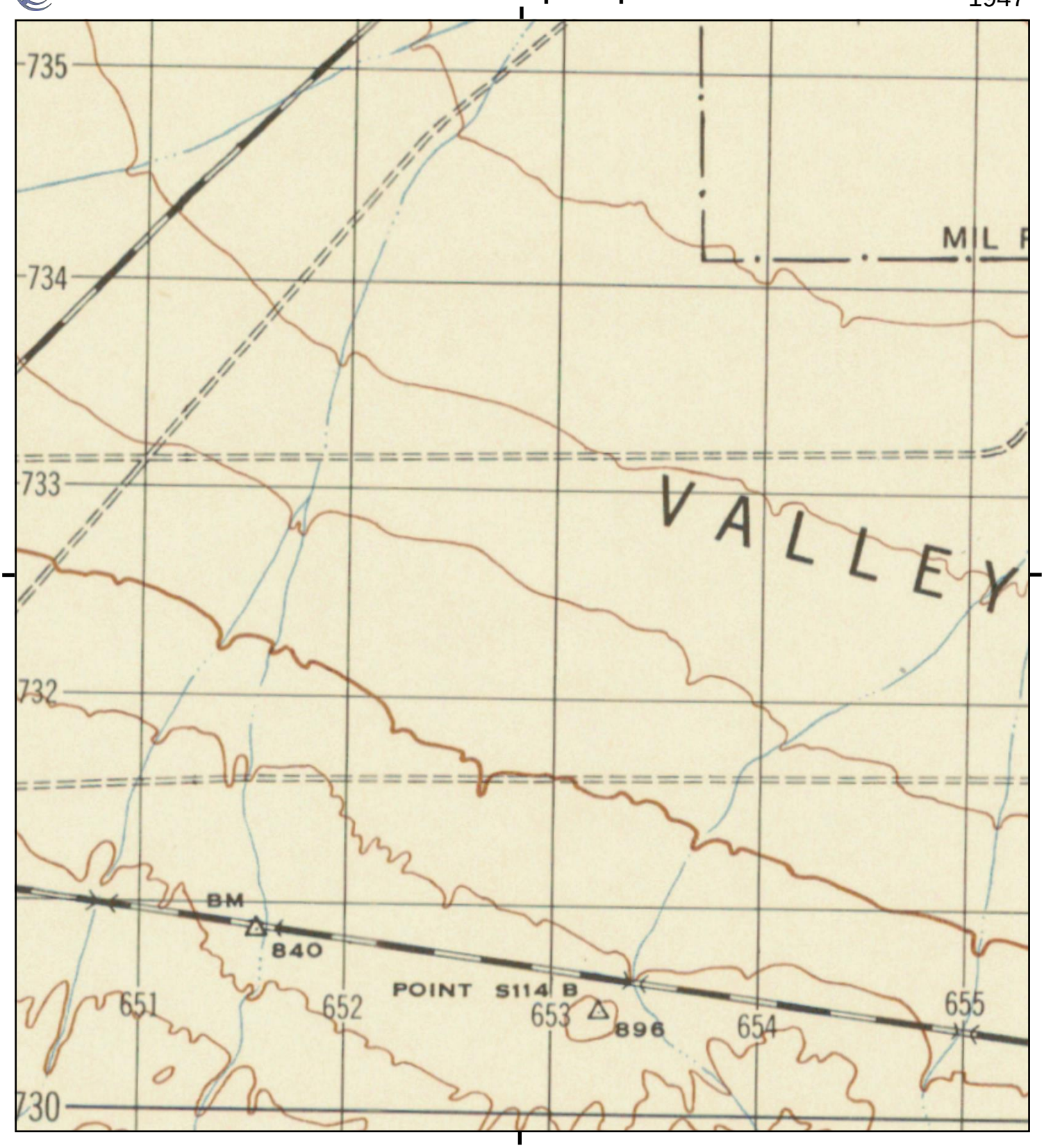
TP, COXCOMB MOUNTAINS, 1947, 15-minute
S, CHUCKWALLA MOUNTAINS, 1947, 15-minute

SITE NAME: Aragorn-Athos Project
ADDRESS: Riverside County
Desert Center, CA 92239
CLIENT: Stantec

N

Historical Topo Map

1947



This report includes information from the following map sheet(s).

0 Miles 0.25 0.5 1 1.5

NW N NE
W E
SW S SE

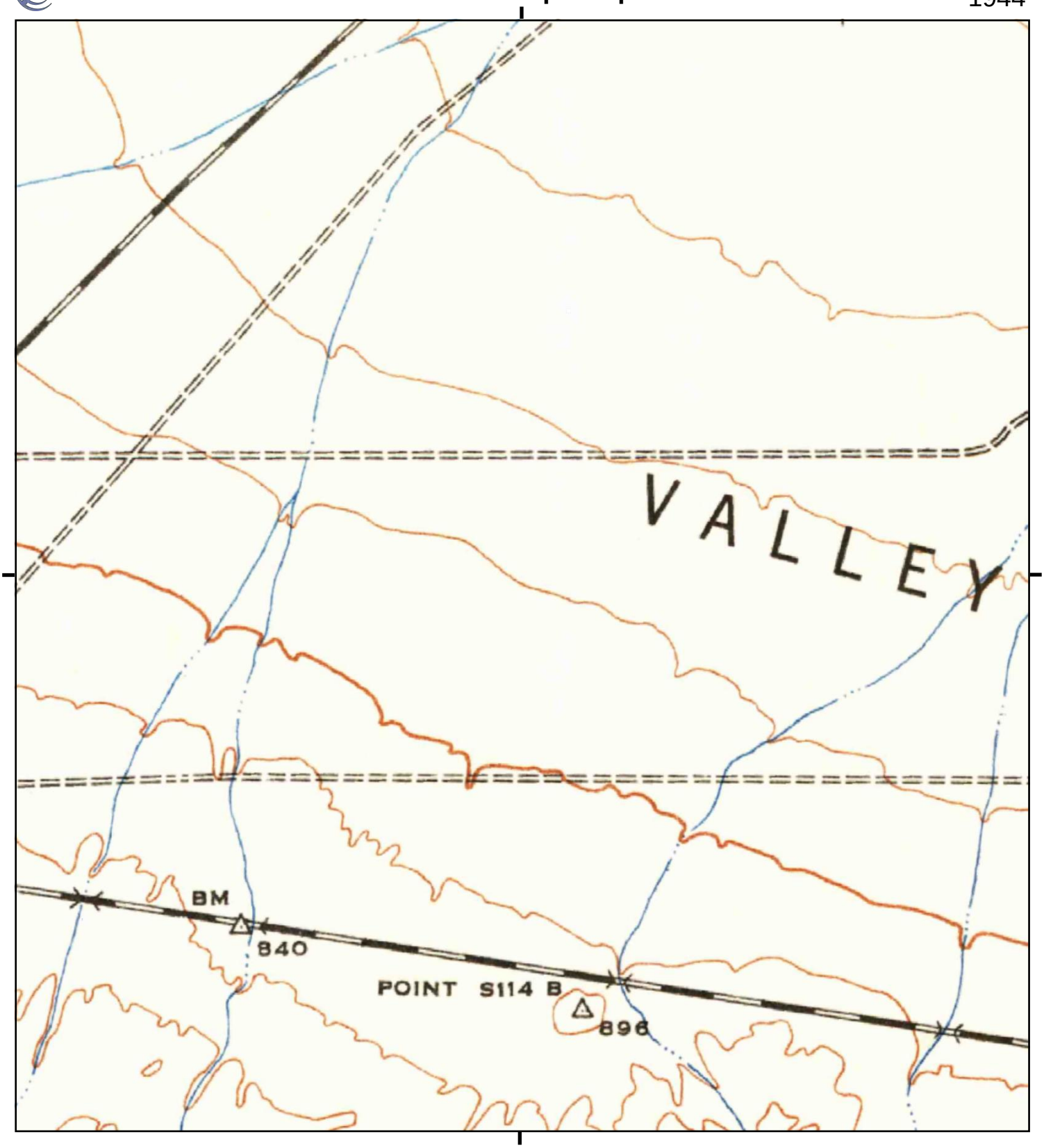
TP, CHUCKWALLA MOUNTAINS, 1947, 15-minute

SITE NAME: Aragorn-Athos Project
ADDRESS: Riverside County
Desert Center, CA 92239
CLIENT: Stantec

N

Historical Topo Map

1944



This report includes information from the following map sheet(s).

0 Miles 0.25 0.5 1 1.5

NW N NE
W E
SW S SE

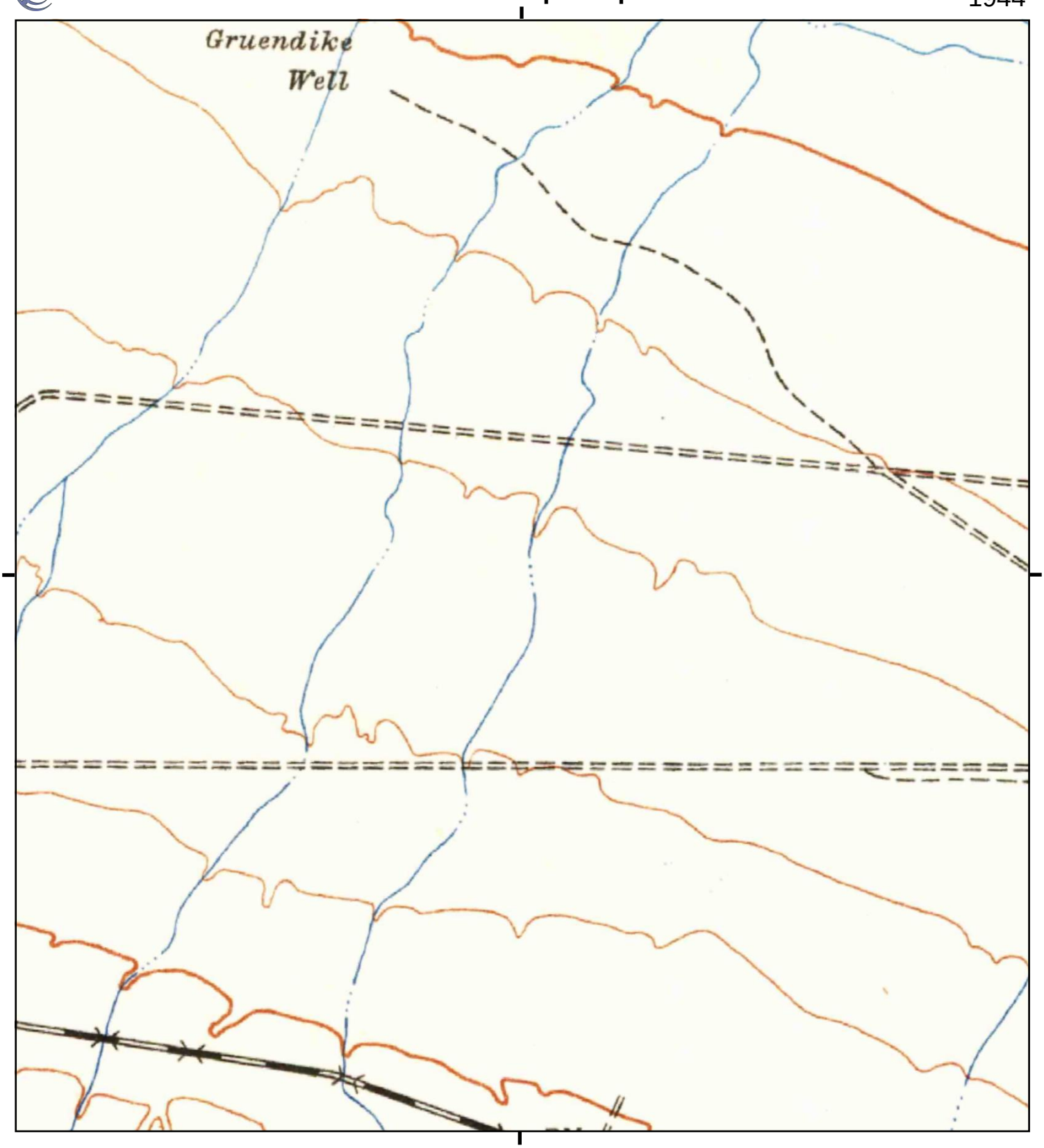
TP, Chuckwalla Mountains, 1944, 15-minute

SITE NAME: Aragorn-Athos Project
ADDRESS: Riverside County
Desert Center, CA 92239
CLIENT: Stantec

N

Historical Topo Map

1944



This report includes information from the following map sheet(s).

0 Miles 0.25 0.5 1 1.5

NW N NE
W E
SW S SE

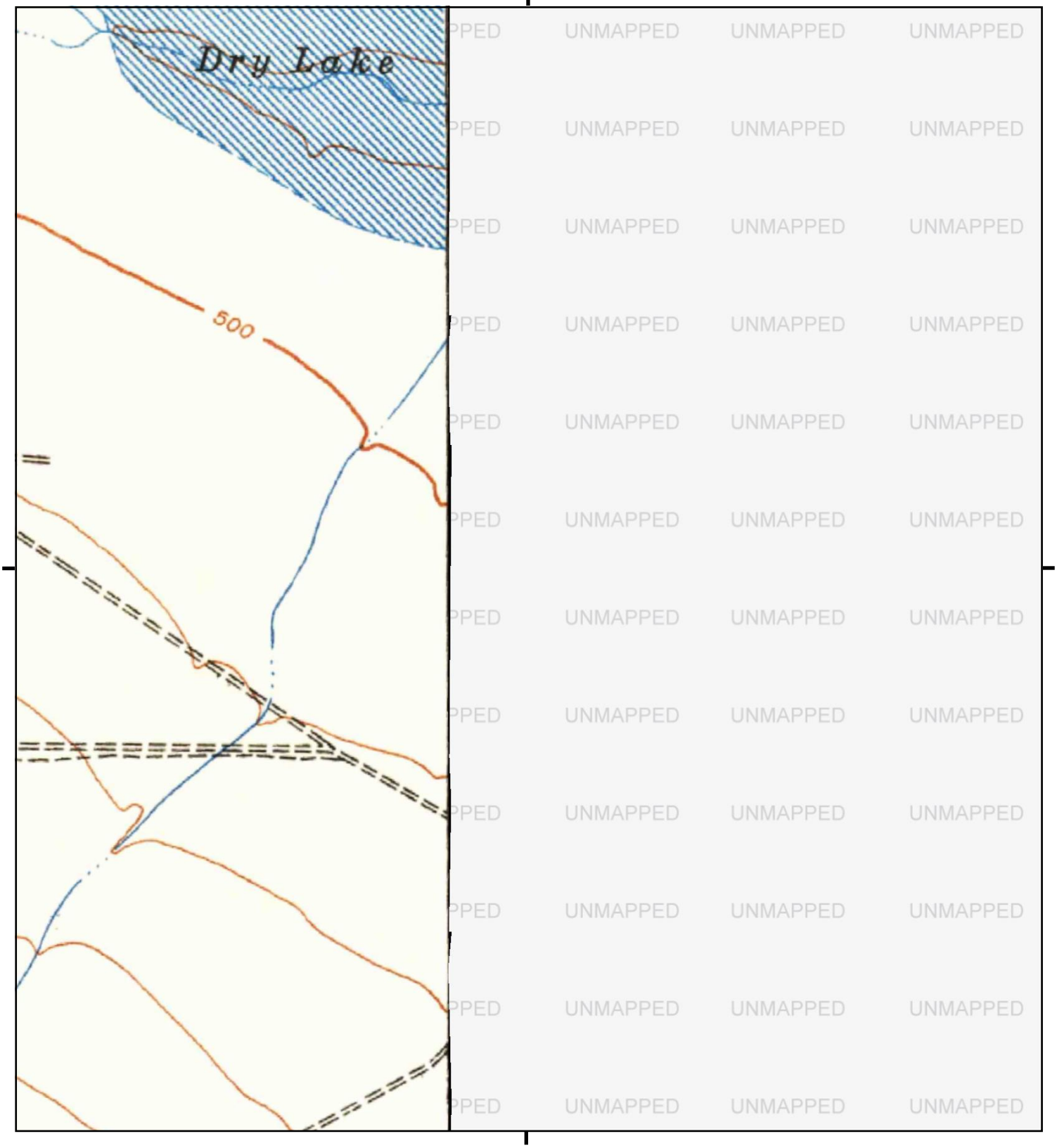
TP, Chuckwalla Mountains, 1944, 15-minute

SITE NAME: Aragorn-Athos Project
ADDRESS: Riverside County
Desert Center, CA 92239
CLIENT: Stantec

N

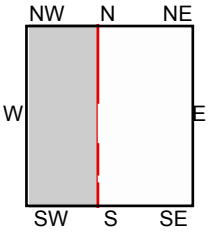
Historical Topo Map

1944



This report includes information from the following map sheet(s).

0 Miles 0.25 0.5 1 1.5



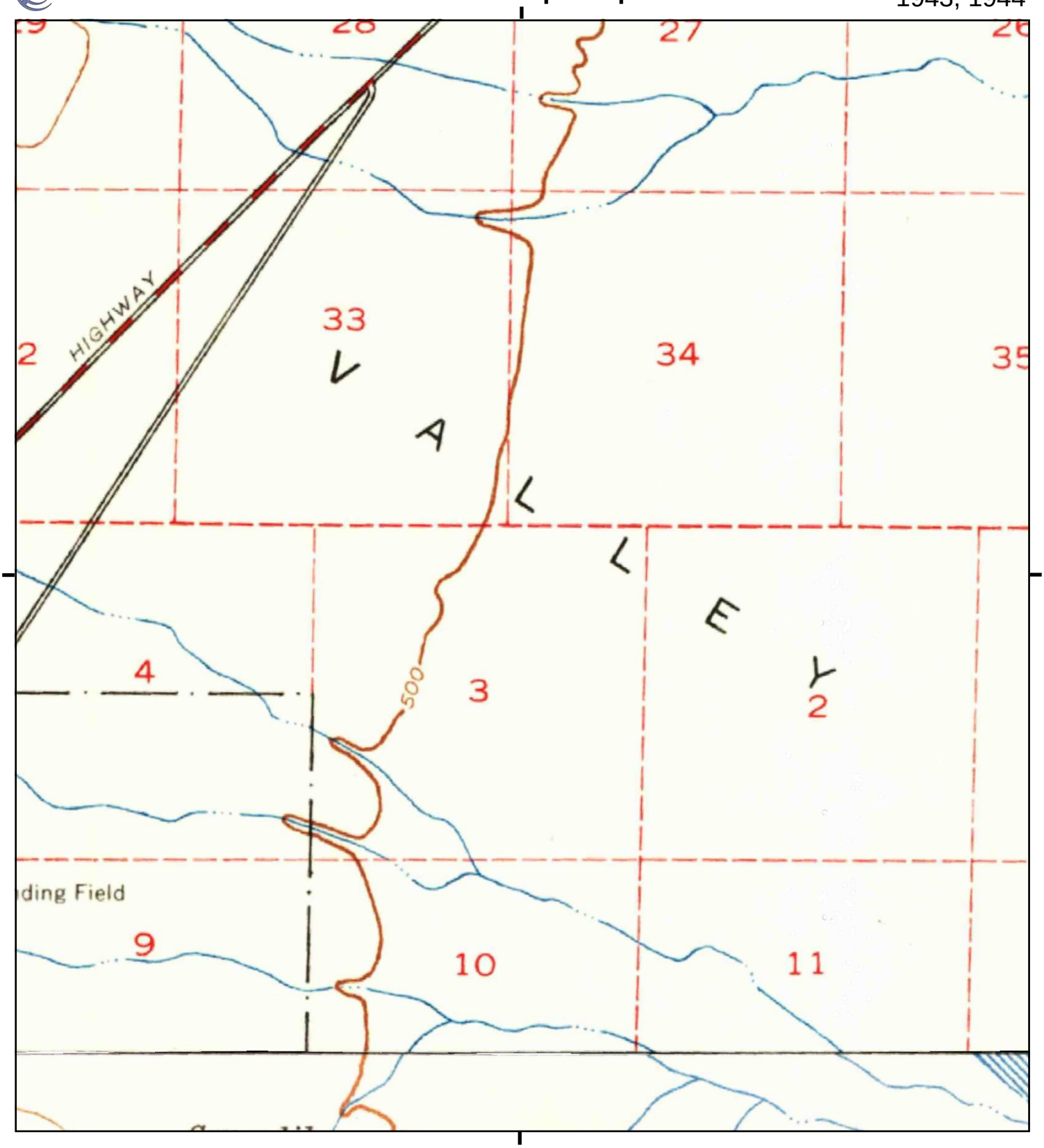
SW, Chuckwalla Mountains, 1944, 15-minute

SITE NAME: Aragorn-Athos Project
ADDRESS: Riverside County
Desert Center, CA 92239
CLIENT: Stantec

N

Historical Topo Map

1943, 1944



This report includes information from the following map sheet(s).

0 Miles 0.25 0.5 1 1.5

NW N NE
W E
SW S SE

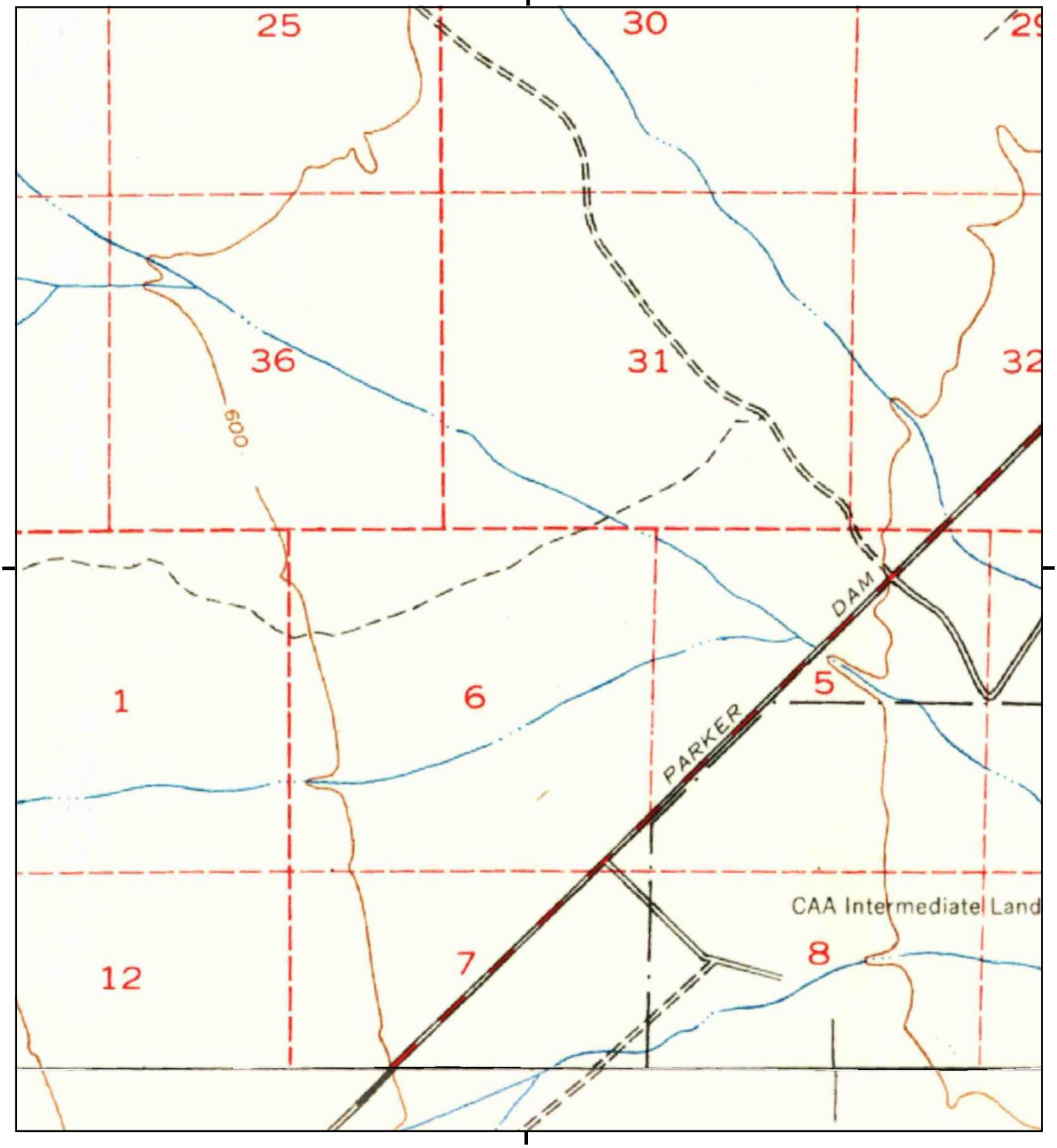
TP, Coxcomb Mountains, 1943, 15-minute
SW, Chuckwalla Mountains, 1944, 15-minute

SITE NAME: Aragorn-Athos Project
ADDRESS: Riverside County
Desert Center, CA 92239
CLIENT: Stantec

N

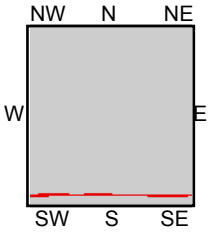
Historical Topo Map

1943, 1944



This report includes information from the following map sheet(s).

0 Miles 0.25 0.5 1 1.5



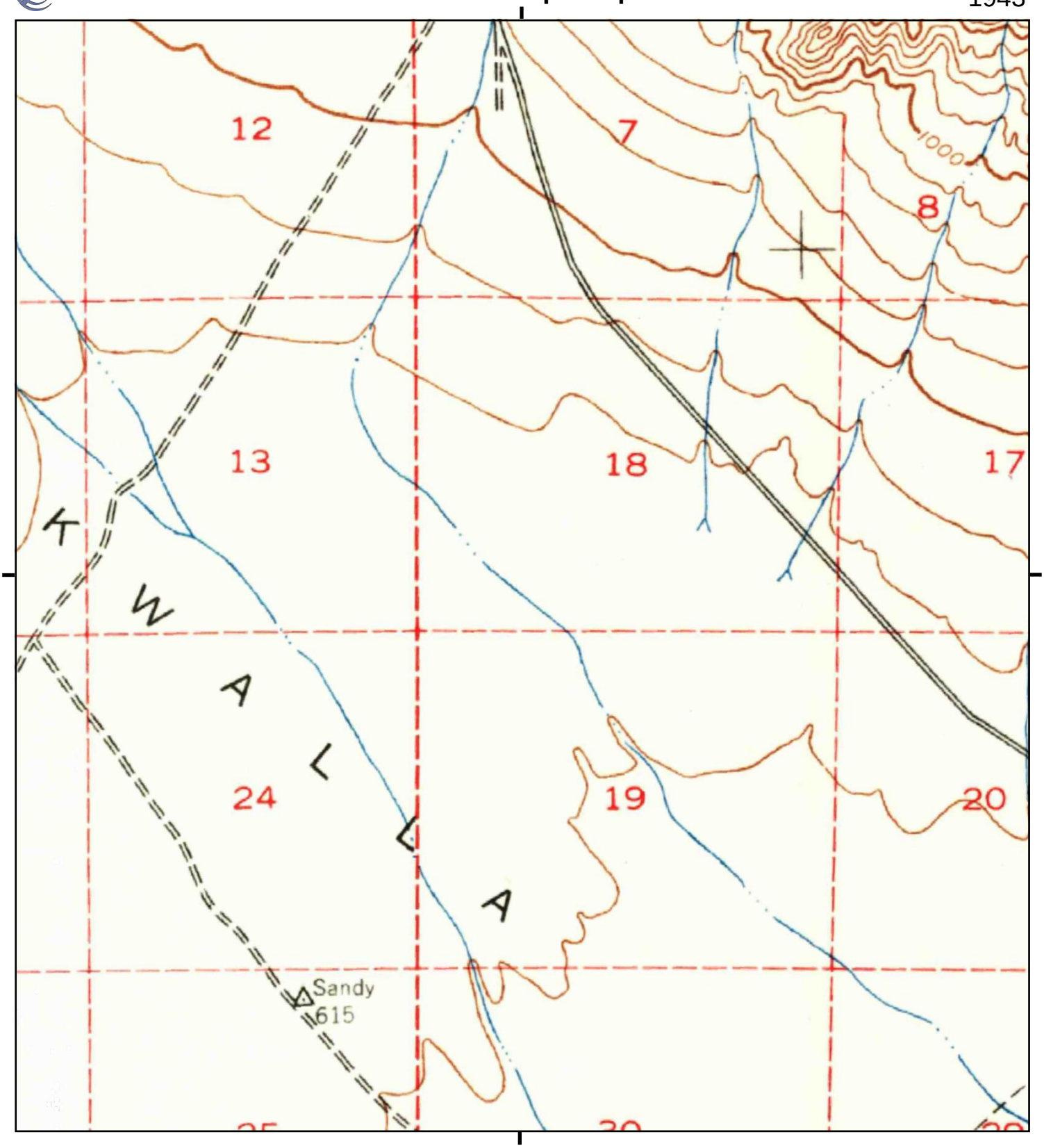
TP, Coxcomb Mountains, 1943, 15-minute
S, Chuckwalla Mountains, 1944, 15-minute

SITE NAME: Aragorn-Athos Project
ADDRESS: Riverside County
Desert Center, CA 92239
CLIENT: Stantec

N

Historical Topo Map

1943



This report includes information from the following map sheet(s).

0 Miles 0.25 0.5 1 1.5

NW N NE
W E
SW S SE

TP, Coxcomb Mountains, 1943, 15-minute

SITE NAME: Aragorn-Athos Project
ADDRESS: Riverside County
Desert Center, CA 92239
CLIENT: Stantec

N

Aragorn-Athos Project
Riverside County
Desert Center, CA 92239

Inquiry Number: 5224815.5
March 22, 2018

The EDR-City Directory Image Report

Environmental Data Resources Inc

6 Armstrong Road
Shelton, CT 06484
800.352.0050
www.edrnet.com

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SECTION

Executive Summary

Findings

City Directory Images

Thank you for your business.
Please contact EDR at 1-800-352-0050
with any questions or comments.

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EXECUTIVE SUMMARY

DESCRIPTION

Environmental Data Resources, Inc.'s (EDR) City Directory Report is a screening tool designed to assist environmental professionals in evaluating potential liability on a target property resulting from past activities. EDR's City Directory Report includes a search of available city directory data at 5 year intervals.

RECORD SOURCES

EDR's Digital Archive combines historical directory listings from sources such as Cole Information and Dun & Bradstreet. These standard sources of property information complement and enhance each other to provide a more comprehensive report.

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Data by infoUSA®

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RESEARCH SUMMARY

The following research sources were consulted in the preparation of this report. A check mark indicates where information was identified in the source and provided in this report.

Year	Target Street	Cross Street	Source
2014	☐	☑	EDR Digital Archive
2010	☐	☑	EDR Digital Archive
2005	☐	☑	EDR Digital Archive
2000	☐	☑	EDR Digital Archive
1995	☐	☑	EDR Digital Archive
1992	☐	☑	EDR Digital Archive
1987	☐	☑	EDR Digital Archive
1982	☐	☑	EDR Digital Archive
1977	☐	☑	EDR Digital Archive

FINDINGS

TARGET PROPERTY STREET

Riverside County
Desert Center, CA 92239

No Addresses Found

FINDINGS

CROSS STREETS

Year	*CD Image*	*Source*	
HWY 10			
2014	-	EDR Digital Archive	Target and Adjoining not listed in Source
2010	-	EDR Digital Archive	Target and Adjoining not listed in Source
2005	-	EDR Digital Archive	Target and Adjoining not listed in Source
2000	-	EDR Digital Archive	Target and Adjoining not listed in Source
1995	-	EDR Digital Archive	Target and Adjoining not listed in Source
1992	-	EDR Digital Archive	Target and Adjoining not listed in Source
1987	-	EDR Digital Archive	Target and Adjoining not listed in Source
1982	-	EDR Digital Archive	Target and Adjoining not listed in Source
1977	-	EDR Digital Archive	Target and Adjoining not listed in Source
RICE RD			
2014	pg. A1	EDR Digital Archive	
2010	pg. A2	EDR Digital Archive	
2005	pg. A3	EDR Digital Archive	
2000	pg. A4	EDR Digital Archive	
1995	pg. A5	EDR Digital Archive	
1992	pg. A6	EDR Digital Archive	
1987	pg. A7	EDR Digital Archive	
1982	pg. A8	EDR Digital Archive	
1977	pg. A9	EDR Digital Archive	

City Directory Images

Target Street	Cross Street	Source
-	✓	EDR Digital Archive

RICE RD 2014

24101	DEAN, JO
24455	CARNEY, D
25300	CHUCKWALLA VALLEY ASSOC LLC
25950	GREEN ACRES MOBILE PARK
	ZELLER, MARY E
25971	OCCUPANT UNKNOWN,

Target Street	Cross Street	Source
-	✓	EDR Digital Archive

RICE RD 2010

24700	FARMING BIODIESEL INC
25300	CHUCKWALLA VALLEY ASSOC LLC
25950	DEITER, ROBERT
	GREEN ACRES MOBILE PARK

Target Street	Cross Street	Source
-	✓	EDR Digital Archive

RICE RD 2005

24101 LINDERMAN, SANDY
25950 GREEN ACRES MOBILE PARK

Target Street	Cross Street	Source
-	✓	EDR Digital Archive

RICE RD 2000

24101	HOPKINS, WALTER V
24455	CARNEY, C
25481	HOLDER, DON
25940	LUTH, STEPHEN
25950	GREEN ACRES MOBILE PARK
	ZEILER, MARY
25991	BROWN, R O
26440	REAMES, MARIA

Target Street	Cross Street	Source
-	✓	EDR Digital Archive

RICE RD 1995

22100	PICKEL, S
24101	HOPKINS, WALTER V
25481	HOLDER, DON
	MORRISON, C
25940	LUTH, EUGENE
25950	BROWN, DEAN
	DANIELS, JAMES A
	GREEN ACRES MOBILE HOME PARK
	WILKINSON, ANNMARI
25951	BREES, VIRGIL O
25971	MOSQUEDA, RAUL
25991	BROWN, ROY O
26440	REAMES, ALLEN

Target Street	Cross Street	Source
-	✓	EDR Digital Archive

RICE RD 1992

22100	PICKEL, S
23375	GESELL, MINERVA
	MEDICKE, RICHARD
24101	HOPKINS, WALTER V
24455	CARNEY, C
25481	HOLDER, DON
	MORRISON FARMS
25940	HEATH, WILLIAM
25950	GREEN ACRES MOBILE HOME PARK
25951	BREES, VIRGIL O
25971	MOSQUEDA, RAUL
25991	BROWN, ROY O
26440	REAMES, ALLEN

Target Street	Cross Street	Source
-	✓	EDR Digital Archive

RICE RD 1987

25481 MORRISON FARMS
25931 RAINDANCE IRRIGATION
25950 GREEN ACRES MOBILE HOME PARK

Target Street	Cross Street	Source
-	✓	EDR Digital Archive

RICE RD 1982

24500 BELSBY DONEL
25931 RAINDANCE IRRIGATION
25940 DESERT ENTERPRISES UNION 76

Target Street	Cross Street	Source
-	✓	EDR Digital Archive

RICE RD 1977

25940 DESERT ENTERPRISES UNION 76

Aragorn-Athos Project

Riverside County

Desert Center, CA 92239

Inquiry Number: 5224815.3

March 20, 2018

Certified Sanborn® Map Report

6 Armstrong Road, 4th floor
Shelton, CT 06484
Toll Free: 800.352.0050
www.edrnet.com

Certified Sanborn® Map Report

03/20/18

Site Name:	Client Name:
Aragorn-Athos Project	Stantec
Riverside County	25864-F Business Center Drive
Desert Center, CA 92239	Redlands, CA 92374
EDR Inquiry # 5224815.3	Contact: Dion Monge

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Certified Sanborn Results:

Certification # E2DE-4455-B34A

PO # NA

Project 185804152

UNMAPPED PROPERTY

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Sanborn® Library search results

Certification #: E2DE-4455-B34A

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- ✔ Library of Congress
- ✔ University Publications of America
- ✔ EDR Private Collection

The Sanborn Library LLC Since 1866™

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Appendix F
HISTORICAL AERIAL PHOTOGRAPHS (COMPACT DISC)

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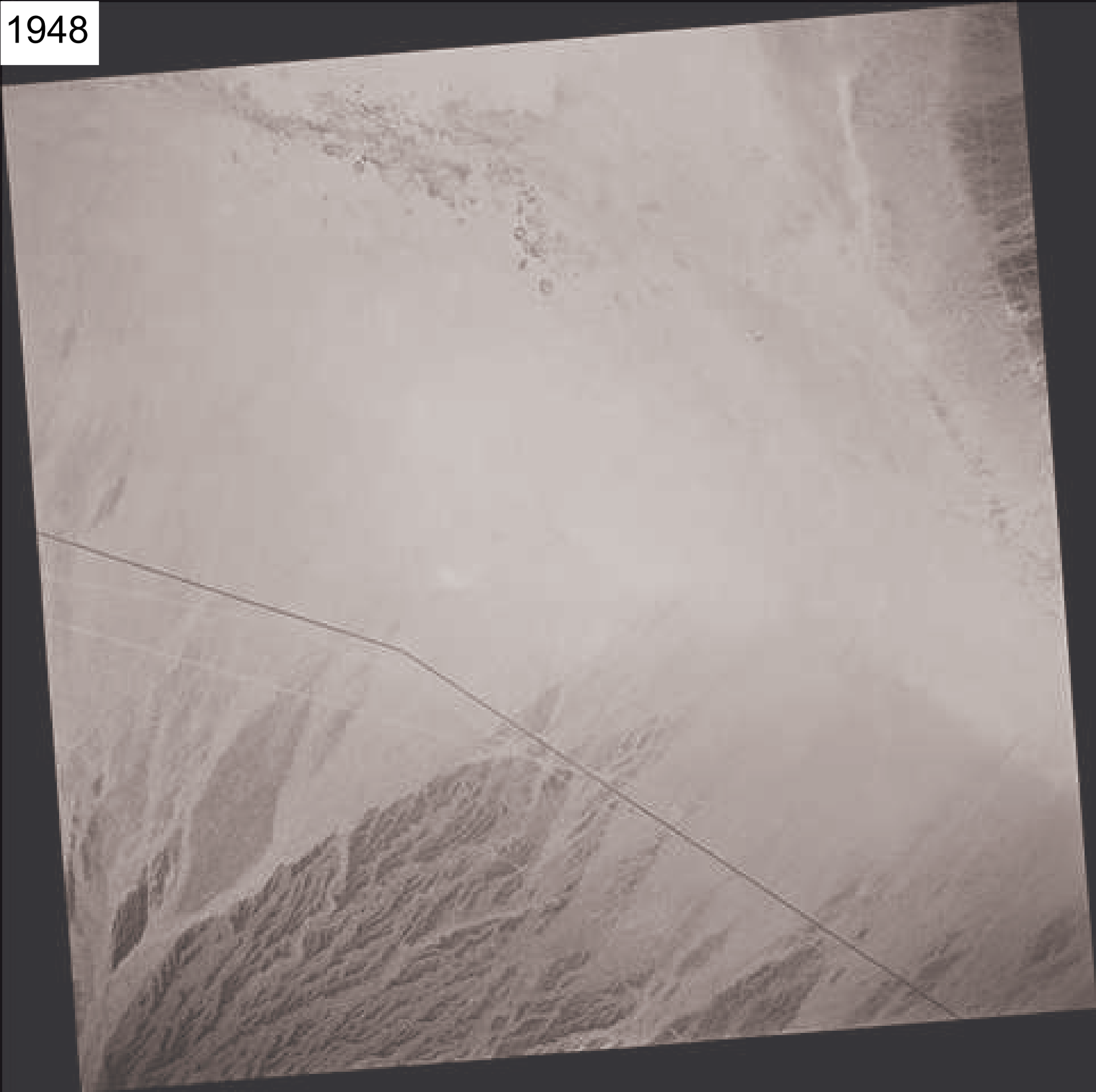
1948



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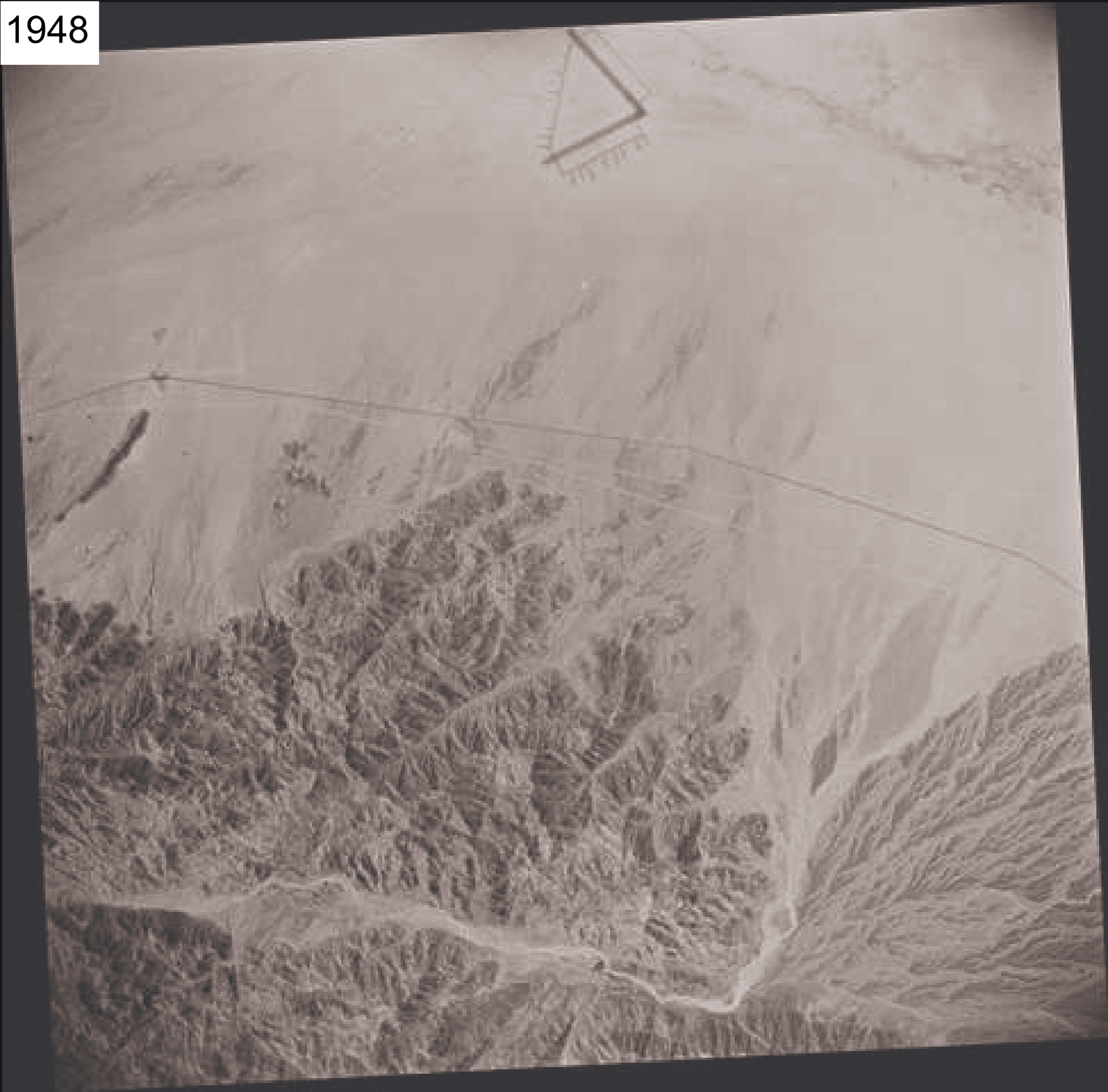

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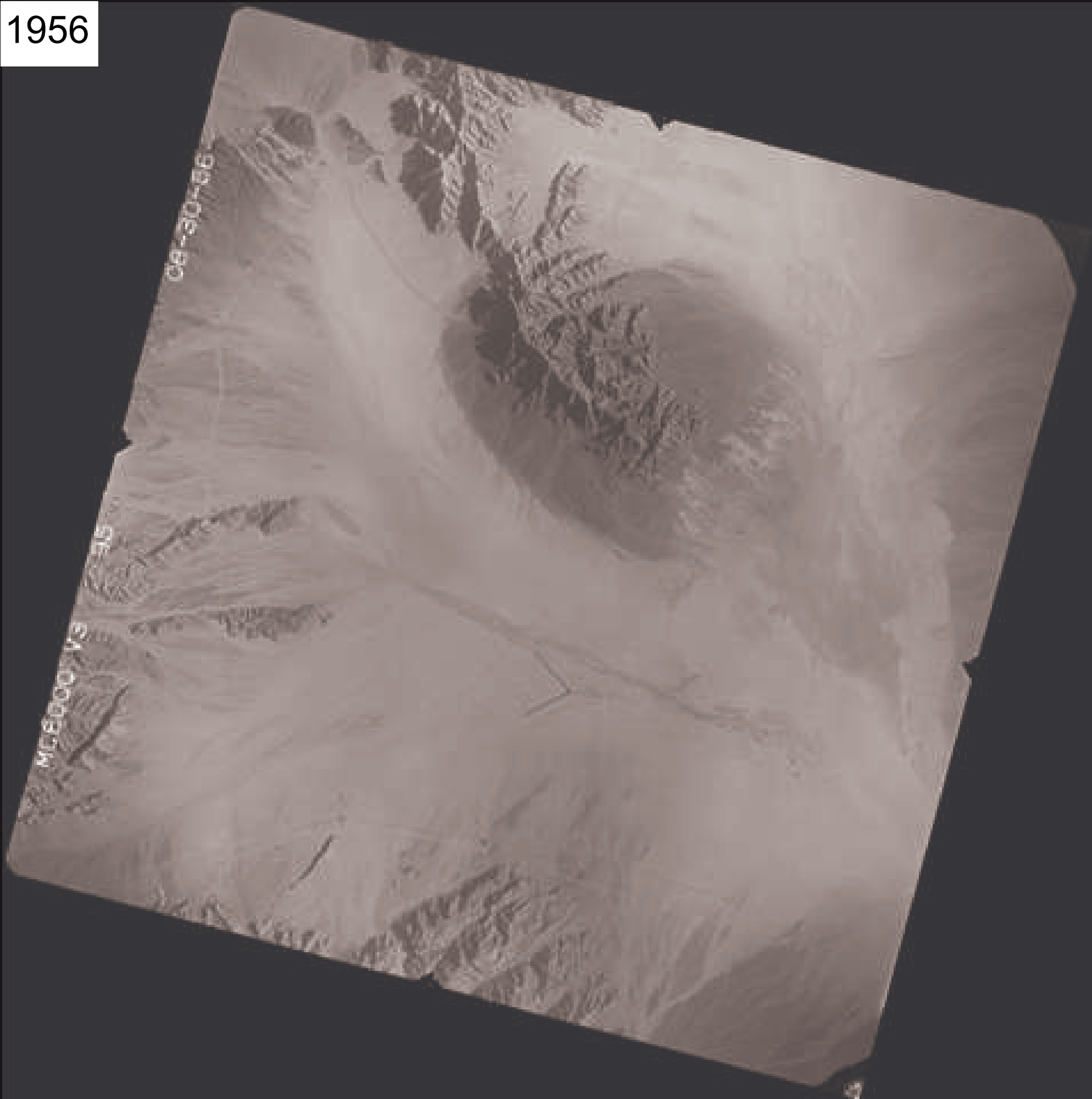

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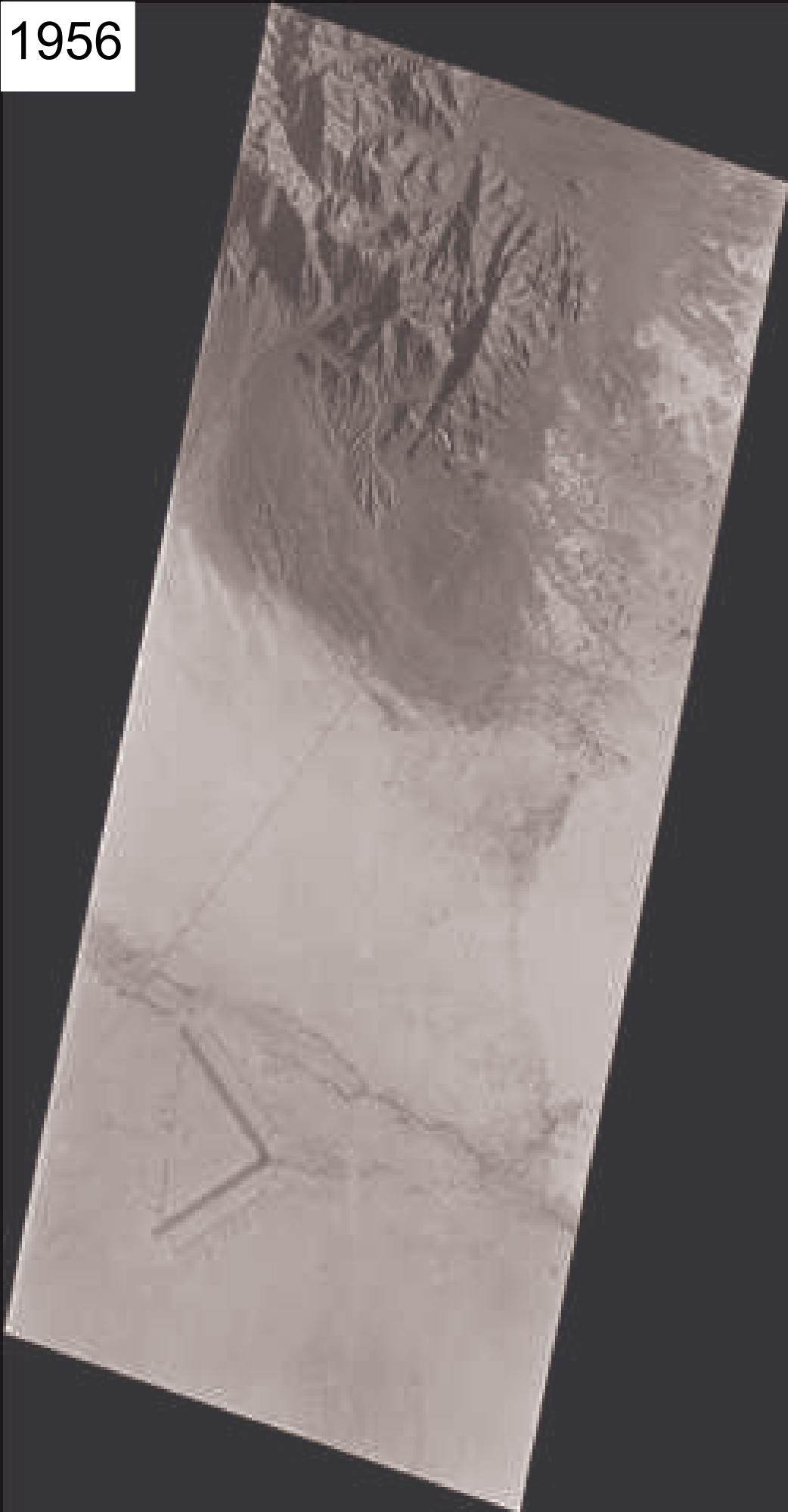

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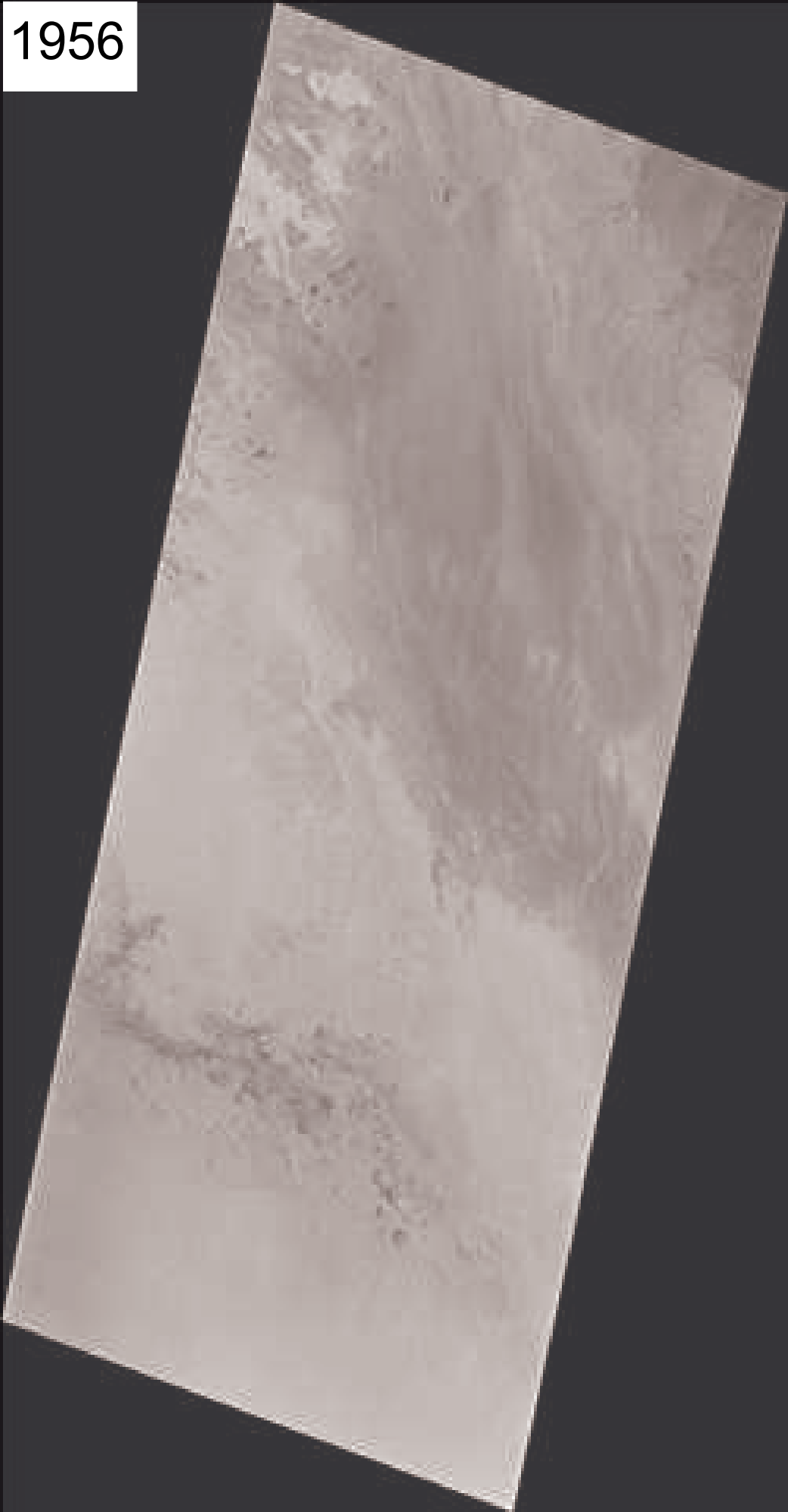

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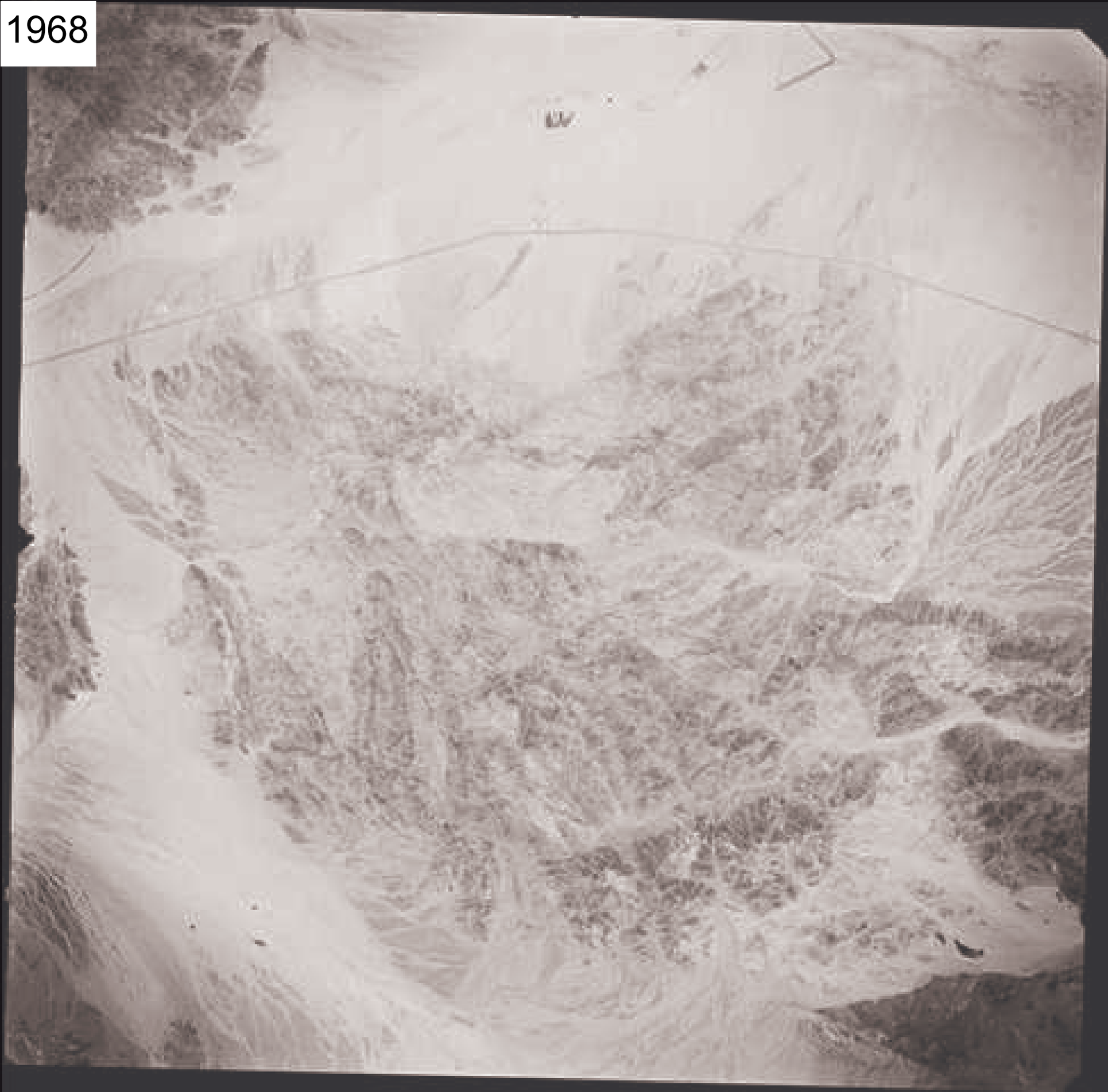
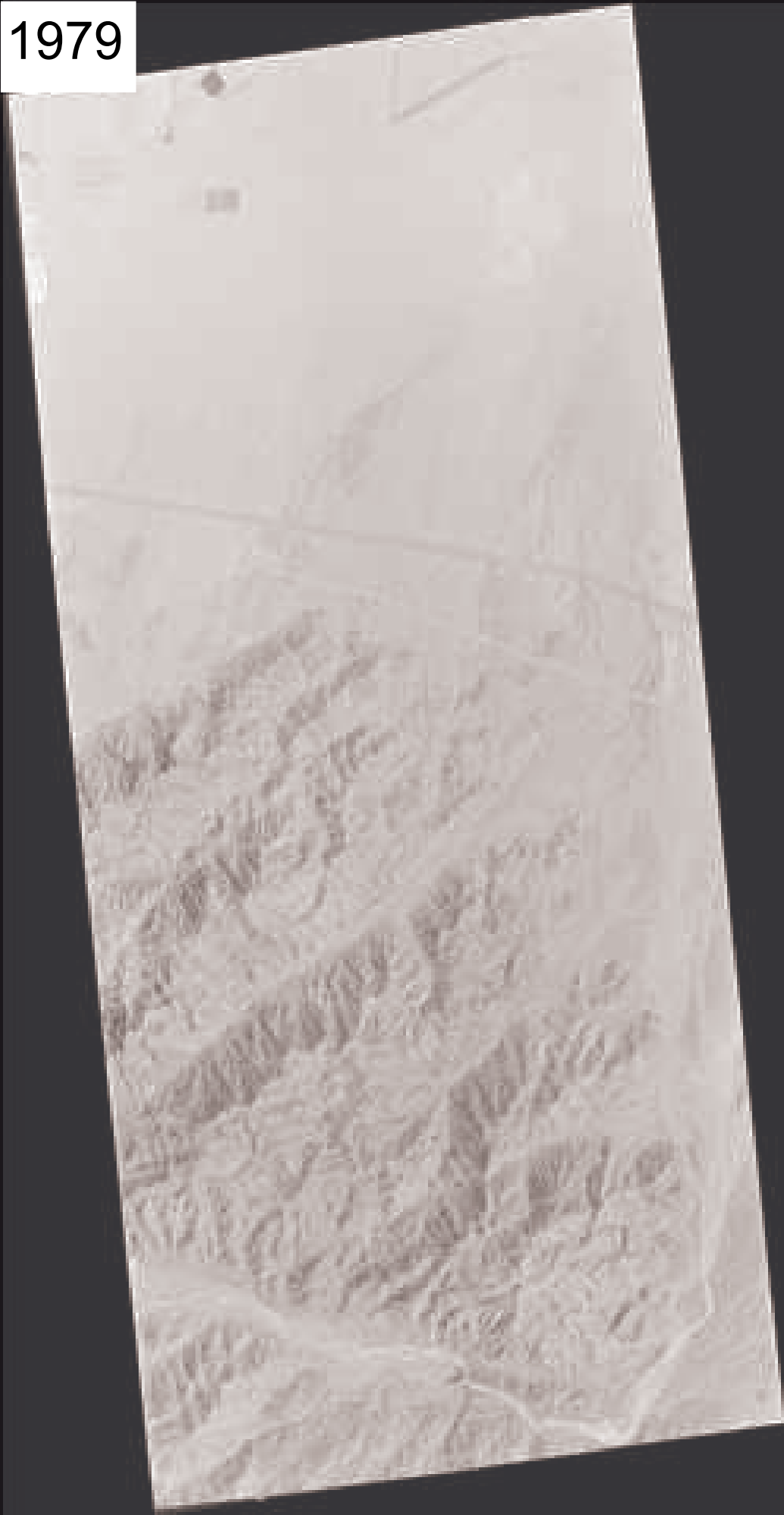


1979

1979



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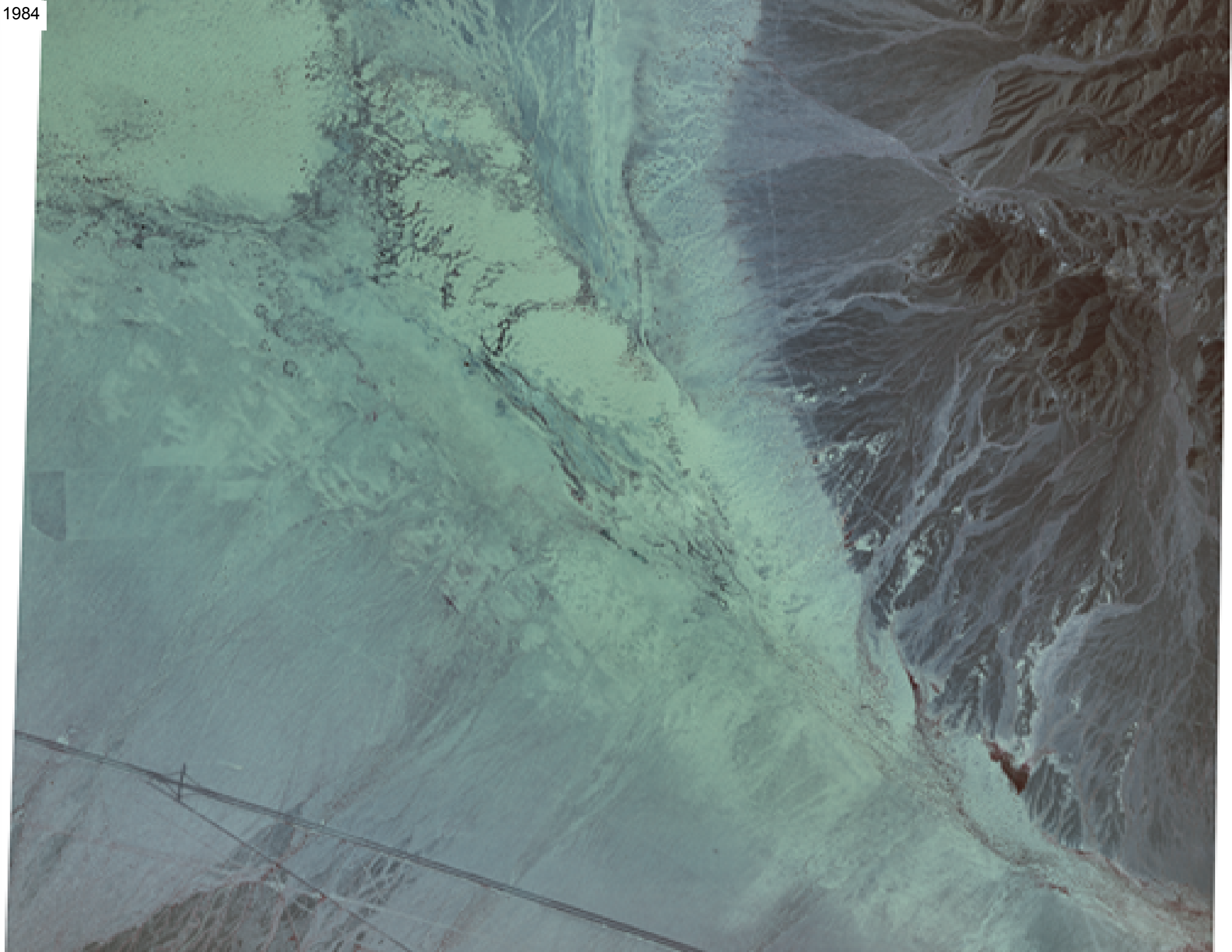

1984

1984

1996

1996

1996

1996

2005

2005

2005

2005

2010

2010

2010

2010

2010

2014

2014

2014

Appendix L

Air Quality and Global Climate Change Technical Report

AIR QUALITY/GHG TECHNICAL REPORT
Athos Renewable Energy Project

Prepared for:

IP Athos, LLC
548 Market Street #68743
San Francisco, CA 94104-5401

Prepared by:

Aspen Environmental Group
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August 2018

AIR QUALITY/GHG TECHNICAL REPORT: Athos Renewable Energy Project

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AIR QUALITY/GHG TECHNICAL REPORT: Athos Renewable Energy Project

1. Executive Summary

This technical report provides the results of an air quality and greenhouse gas (GHG) emissions assessment for the proposed Athos Renewable Energy Project site located near Desert Center, California. The assessment quantifies the emissions due to the project and discusses the extent of potential impacts to air quality and impacts due to GHG emissions. Mitigation measures are recommended to reduce potentially significant air quality impacts; the mitigation would require the project owner to control fugitive dust to control off-road equipment exhaust emissions.

2. Understanding of the Project

Our understanding of the Athos Renewable Energy Project (Proposed Project) is based on the Project Description provided by IP Athos, LLC (Applicant) dated April 13, 2018. The Athos Renewable Energy Project would construct and operate a 500 megawatt (MW) capacity photovoltaic (PV) solar electric power generating facility with up to 500 MW of integrated energy storage capacity. The Proposed Project site is located on approximately 3,400 acres across 7 groups of non-contiguous parcels in the Desert Center area of Riverside County. The Proposed Project would include a 220 kilovolt (kV) generation tie (gen-tie) transmission line outside of the solar facility, located on 7 miles of federal lands managed by the Bureau of Land Management (BLM), Palm Springs-South Coast Field Office. The remainder of the gen-tie lines would traverse approximately 4 miles of privately-owned land, primarily on the solar facility sites.

The site parcels are primarily disturbed, retired agricultural land located both north and south of State Route 177 (SR-177) and north of Interstate 10 (I-10), with the gen-tie crossing I-10 to connect into the existing Southern California Edison (SCE) Red Bluff 500/220 kV Substation. Other existing land uses in the area include several other solar projects and associated gen-ties. Some primarily vacant land surrounding the site includes isolated rural residences described below.

The Proposed Project would be located within the jurisdiction of the South Coast Air Quality Management District (SCAQMD) in the Mojave Desert Air Basin (MDAB). West of the site is the SCAQMD-managed portion of the Coachella Valley (Salton Sea Air Basin). East of the site is the boundary of the jurisdiction of the neighboring the Mojave Desert Air Quality Management District, which oversees the remainder of the Mojave Desert Air Basin, including the easternmost portion of Riverside County

Sensitive Receptor Land Uses. Land uses that are sensitive to air pollution are: residences, schools, daycare centers, playgrounds and medical facilities. There are scattered residences in the project area, namely near Highway 177/Rice Road, with at least one residence less than 100 feet from the project parcel boundary. The Lake Tamarisk community is about 1.5 miles west of the site and the nearest school is the Eagle Mountain School, over 7 miles northwest of the project site.

Construction Equipment Fleet and Schedule

Construction would require approximately 30 months to develop the Proposed Project and associated components over approximately 3,400 acres. The activities may be phased, and the precise timing is not known at this time. The on-site workforce is expected to reach a peak of approximately 530 individuals, generating up to 1,060 one-way on-road vehicle trips per day, with an average construction-related on-site workforce of 320 individuals. Heavy-duty trucks would make up to 40 daily deliveries of materials or up to 80 one-way truck trips per day. Materials deliveries during construction would need to travel through the Mojave Desert Air Basin and the Coachella Valley (Salton Sea Air Basin) up to 150 miles one way from their origins to the site.

The month-by-month timing of construction is difficult to predict and likely to vary as the design is refined, and timing of activities will depend somewhat on the ability of construction contractors to coordinate the work. Because the construction activities may be phased, construction activities are likely to overlap within the overall 30-month timeframe. Overall, construction equipment use would occur during daytime hours (generally five days per week, typically 8 hours per day).

The scope of construction would include the following types of activities, detailed in the Project Description:

- Pre-construction Activities, including surveys and establishing a laydown yard and staging areas.
- Construction Phase 1: Site Preparation, including vegetation management, access roads, and limited site grading.
- Construction Phase 2: Photovoltaic Panel System, including installing support structures and tracking systems.
- Construction Phase 3: Inverters, Transformers, Substations and Electrical Collector System, including underground cables, concrete foundations for transformers and inverters, and the gen-tie.
- Construction Site Stabilization and Restoration, including revegetation.
- Post-Construction Cleanup, including weed control and removal of the laydown and staging areas, as needed.

The Proposed Project would develop and employ a dust control plan to minimize fugitive dust emissions. The content of the dust control plan would be determined during the final design and would need to be approved by the SCAQMD, prior to construction. The Applicant anticipates using up to 500 acre-feet of water, from an onsite groundwater well, for dust suppression (including truck wheel washing) and other purposes during the 30-month construction timeframe.

Off-Road Construction Equipment. The construction fleet would include a wide range of off-road equipment. Equipment used for development of the project facilities would generally be diesel-fueled, and emissions from these sources would occur almost exclusively from on-site locations or within the alignment of project linear facilities. Although the actual composition of the fleet would vary depending on the design, and the fleet would vary over time as activities progress, the fleet could include loaders, graders, scrapers, dozers, backhoes, lifts, cranes, welders, and portable generators, with comparable equipment substituted as needed. Foundation installation would require hammers, pile drivers or augers (truck-mounted drill rigs), and on-site concrete batch plants. The off-road equipment is not subject to local air district permitting requirements for stationary sources, as these are classified and registered as mobile or portable sources. Temporary on-site diesel fuel storage tanks may be required, although diesel

fuel storage tanks smaller than 19,815 gallons would not trigger emissions control requirements under SCAQMD Rule 463 and would not require written air permits.

On-road Vehicles. The category of on-road sources includes all motor vehicles. Heavy-duty trucks would be used for delivery of the modules, module racking, steel supports, inverters and transformers, and for movement of raw materials such as concrete and road base, and trash haul-off. On-highway emissions would occur primarily off-site from the vehicle trips for hauling these materials. Light-duty and medium-duty vehicles would carry vendors, crews, and workers to and from the site.

Operation and Maintenance Activities

Upon commissioning, the Proposed Project would enter the operation phase and generate electricity. The primary operational activities at the site that would cause emissions from use of vehicles or equipment would be solar module washing, vegetation management, and security. Up to 10 permanent staff could be on the site at any one time for ongoing facility maintenance and repairs.

The site staff and on-call personnel would provide security. Other routine O&M activities include: panel repairs; panel washing; maintenance of transformers, inverters, energy storage system, and other electrical equipment as needed; road and fence repairs; and weed management. Heavy-duty off-road equipment would only occasionally be used during normal operation, as routine O&M activities would require use of trucks (pickup and flatbed), forklifts, and loaders, along with water trucks for solar panel washing. One standby or backup generator engine, may be required; this stationary source would be subject to local air district permitting requirements or from SCAQMD's list of pre-certified engines.

3. Regulatory Background

Criteria Air Pollutants. Air quality is determined by measuring ambient concentrations of certain criteria air pollutants. The criteria pollutants are ozone, respirable particulate matter (PM10), fine particulate matter (PM2.5), carbon monoxide (CO), nitrogen dioxide (NO_2), sulfur dioxide (SO_2), and lead. Ozone is an example of a secondary pollutant that is not emitted directly from a source (e.g., an automobile tailpipe), but it is formed in the atmosphere by chemical and photochemical reactions. Reactive organic gases (ROG), including volatile organic compounds (VOC), are regulated as precursors to ozone formation.

The California Air Resources Board (ARB) and the U.S. Environmental Protection Agency (U.S. EPA) have independent authority to develop and establish health-protective ambient air quality standards, although the different legislative and scientific contexts cause some diversity between State and Federal standards currently in effect in California. The monitored levels of the pollutants are compared to the current National and California Ambient Air Quality Standards (NAAQS and CAAQS) to determine degree of existing air quality degradation. The standards currently in effect in California are shown in Table AQ-1.

Table AQ-1. National and California Ambient Air Quality Standards

Pollutant	Averaging Time	California Standards	National Standards
Ozone	1-hour 8-hour	0.09 ppm 0.070 ppm	— 0.070 ppm
Respirable Particulate Matter (PM10)	24-hour Annual Mean	50 µg/m^3 20 µg/m^3	150 µg/m^3 —
Fine Particulate Matter (PM2.5)	24-hour Annual Mean	— 12 µg/m^3	35 µg/m^3 12.0 µg/m^3

Table AQ-1. National and California Ambient Air Quality Standards

Pollutant	Averaging Time	California Standards	National Standards
Carbon Monoxide (CO)	1-hour 8-hour	20 ppm 9.0 ppm	35 ppm 9 ppm
Nitrogen Dioxide (NO_2)	1-hour Annual Mean	0.18 ppm 0.030 ppm	0.100 ppm 0.053 ppm
Sulfur Dioxide (SO_2)	1-hour 24-hour Annual Mean	0.25 ppm 0.04 ppm —	0.075 ppm 0.14 ppm 0.030 ppm

Notes: ppm=parts per million; µg/m3= micrograms per cubic meter; "—" =no standard
Source: ARB (http://www.arb.ca.gov/research/aaqs/aaqs2.pdf), May, 2016.

Ambient Air Quality Attainment Status and Air Quality Plans. The U.S. EPA, ARB, and the local air district classify an area as attainment, unclassified, or nonattainment with regard to certain pollutants, and these designations dictate the air quality management planning activities needed to make future air pollutant reductions. The classification depends on whether the monitored ambient air quality data show compliance, insufficient data available, or non-compliance with the ambient air quality standards, respectively. Table AQ-2 summarizes attainment status for criteria pollutants in comparison with both the state and federal standards, for the Mojave Desert Air Basin portion of Riverside County.

Table AQ-2. Attainment Status for Mojave Desert Air Basin Portion of Riverside County

Pollutant	California Designation	Federal Designation
Ozone	Nonattainment	Attainment
PM10	Nonattainment	Attainment
PM2.5	Attainment	Attainment
NO_2	Attainment	Attainment
CO	Attainment	Attainment
SO_2	Attainment	Attainment

Source: ARB, 2018; U.S.EPA, 2018.

Toxic Air Contaminants. Toxic air contaminants (TACs) are air pollutants that may lead to serious illness or increased mortality, even when present in relatively low concentrations. Potential human health effects of TACs include birth defects, neurological damage, cancer, and death. There are hundreds of different types of TACs with varying degrees of toxicity. Individual TACs vary greatly in the health risk they present; at a given level of exposure, one TAC may pose a hazard that is many times greater than another's. TACs do not have ambient air quality standards, but are regulated by the local air districts using a risk-based approach. The Proposed Project would not be considered a stationary source subject to risk assessment programs. Diesel particulate matter (DPM) is classified as a TAC, and statewide programs focus on managing this pollutant through motor vehicle fuels, engine, and tailpipe standards because many toxic compounds adhere to diesel exhaust particles. The local air districts support these programs by issuing permits and requiring controls for larger stationary sources of DPM, including diesel powered engines rated over 50 horsepower.

Federal Regulatory Setting

Federal Clean Air Act (CAA). The National Ambient Air Quality Standards (NAAQS) for criteria air pollutants were established in 1970 with a mandate for periodic updating. The CAA places responsibility on state and local air agencies to maintain these ambient air quality standards. In the project area, the SCAQMD has the responsibility to establish regulations, enforce air pollution control requirements, and develop the necessary air quality management to achieve the NAAQS. The U.S. EPA implements most aspects of the CAA, and reviews local and state air quality management plans and regulations to ensure attainment with the NAAQS. Because there are no federal nonattainment or maintenance designations in

the MDAB portion of Riverside County, federal agency actions in the MDAB portion of Riverside County are not subject to CAA general conformity review requirements.

Visibility and Federal Class I Areas. The federal CAA requires U.S. EPA to administer programs so that all areas of the country achieve the federal ambient air quality standards within various specified time frames. For attainment areas that already meet the federal ambient air quality standards, the federal Prevention of Significant Deterioration (PSD) permit program includes a three-tier classification defining the extent to which baseline air quality conditions can be degraded. Class I areas have the smallest allowable air quality deterioration limits. Class II areas allow greater deterioration of air quality but must maintain air quality conditions better than the federal air quality standards. Class III areas allow deterioration of air quality to the level of the federal ambient air quality standards.

The boundary of the Joshua Tree National Park (JTNP) Class I area is 0.9 miles (1.4 km) away, northeast of the edge of the northernmost project parcel (owner: VG Devco, 643 acres). Visibility is considered an important air quality value to be protected within JTNP. There are no other Class I areas within 62 miles (100 km) of the Project. Data from the Federal Land Manager Environmental Database (CIRA, 2016) indicate that visibility in the JTNP Class I area has been improving since 2001. For JTNP and other Class I areas in southern California, the Western Regional Air Partnership shows that the visual range has improved more than 20 percent in the most recent years (2010 2014) when compared to the baseline (2000 2004), and that this improvement is largely due to the local authorities having the ability to control anthropogenic emissions (WRAP, 2016).

State Regulatory Setting

California Clean Air Act. Implemented by the ARB, the California Clean Air Act establishes broad authority for California to regulate emissions from mobile sources and requires regions to develop and enforce strategies to attain California Ambient Air Quality Standards (CAAQS). In the project area, the SCAQMD is responsible for demonstrating how these standards are met.

U.S. EPA/ARB Off-Road Mobile Sources Emission Reduction Program. The California Clean Air Act mandates that ARB achieve the maximum degree of emission reductions from all off-road mobile sources to attain the state ambient air quality standards. Off-road mobile sources include construction equipment. The earliest (Tier 1) standards for large compression-ignition engines used in off-road mobile sources became effective in California in 1996. Since then, the Tier 3 standards for large compression-ignition engines used in off-road mobile sources went into effect in California for most engine classes in 2006, and Tier 4 or Tier 4 Interim (4i) standards apply to all off-road diesel engines model year 2012 or newer. These standards and standards applicable to fleets that are already in-use address emissions of NOx and toxic particulate matter from diesel combustion.

ARB In-Use Off-Road Diesel-Fueled Fleets Regulation. The regulations for in-use off-road diesel equipment are designed to reduce NOx and toxic diesel particulate matter (DPM) from existing fleets of equipment. Depending on the size of the fleet, the owner would need to ensure that the average emissions performance of the fleet meets certain state-wide standards. In lieu of improving the emissions performance of the fleet, electric systems can be installed to replace diesel equipment in the fleet average calculations. Presently, all equipment owners are subject to a five-minute idling restriction in the rule (13 California Code of Regulations, Chapter 10, Section 2449).

ARB Portable Equipment Registration Program (PERP). This program allows owners or operators of portable engines and associated equipment commonly used for construction or farming to register their units under a statewide portable program that allows them to operate their equipment throughout California without having to obtain individual permits from local air districts.

SCAQMD Rules and Regulations

The project site is under the jurisdiction of the SCAQMD in the Mojave Desert Air Basin; the MDAB includes portions of Kern, Los Angeles, San Bernardino, and Riverside Counties. The SCAQMD has a number of rules presented in Table AQ-3 relevant to controlling emissions from project-related activities.

Table AQ-3. SCAQMD Rules and Regulations

Applicable Rules	Description
Rules 201, 203, and 212 – Permit to Construct; Permit to Operate; and Standards for Approving Permits and Issuing Public Notice	Establishes the requirements to obtain a Permit to Construct and Permit to Operate for stationary sources of emissions. For exemption categories, see Rule 219: Equipment Not Requiring a Written Permit Pursuant to Regulation II.
Rule 401 – Visible Emissions	Limits visible emissions.
Rule 402 – Nuisance	Prohibits the discharge of air contaminants or other material which cause injury, detriment, nuisance, or annoyance to the public or which endanger the comfort, response, health or safety of the public or which cause injury or damage to business or property.
Rule 403 – Fugitive Dust	Limits fugitive emissions from certain bulk storage, earthmoving, construction and demolition, and manmade conditions that may cause wind erosion.
Rule 404 – Particulate Matter Concentration	The rule limits particulate matter emissions as a function of the exhaust flow rate from the regulated device.
Rule 463 – Organic Liquids Storage	Sets standards for storage of organic liquids with a true vapor pressure of 0.5 pounds per square inch or greater and standards for above-ground tanks used for gasoline storage with a capacity over 250 gallons.
Rule 1110.2 – Emissions from Gaseous and Liquid-Fueled Internal Combustion Engines	The purpose of this rule is to reduce NOx, VOCs, and CO from engines.
Regulation XIII – New Source Review	Establishes the pre-construction review requirements, including Best Available Control Technology and emission offset requirements for new, modified or relocated facilities to ensure that these facilities do not interfere with progress in attainment of the national ambient air quality standards.

Riverside County General Plan

Riverside County adopted the Air Quality Element of the County General Plan in 2015. The air quality element includes policies supporting regional cooperation with other jurisdictions to improve air quality; requiring compliance with federal, state, and regional air quality regulations; encouraging programs to reduce vehicle miles traveled; encouraging energy conservation in urban land uses; and encouraging development patterns that improve the County's jobs/housing balance.

4. Thresholds of Significance

To characterize the potential impact of criteria air pollutant emissions, SCAQMD recommends use of regional significance thresholds for construction and for project-related operation emissions that are subject to CEQA review. The emissions from the activities of construction and operation under the Proposed Project are compared to these SCAQMD regional significance thresholds to determine whether the Proposed Project would result in adverse air quality impacts. The SCAQMD regional significance emissions thresholds are summarized in Table AQ-4.

Table AQ-4. SCAQMD Regional Significance Thresholds (lb/day)

Pollutant	Construction	Operation (Mojave Desert Air Basin)
Nitrogen Oxides (NOx)	100	100
Volatile Organic Compounds (VOC)	75	75
Inhalable Particulate Matter (PM10)	150	150
Fine Particulate Matter (PM2.5)	55	55
Carbon Monoxide (CO)	550	550
Sulfur Oxides (SOx)	150	150

Note: For SCAQMD Coachella Valley (Salton Sea and Mojave Desert Air Basins), the mass daily thresholds for operation are the same as the construction thresholds.
Source: SCAQMD 2015.

For emissions exceeding the regional significance thresholds, the SCAQMD also provides air quality significance thresholds for ambient air quality impact assessments, which may be used to calculate the downwind concentrations caused by the on-site portions of project emissions. The SCAQMD ambient air quality significance thresholds are summarized in Table AQ-5.

Table AQ-5. SCAQMD Ambient Air Quality Significance Thresholds

Pollutant	Construction Only (averaging basis)	Operation Only (averaging basis)	Construction or Operation (averaging basis)
Inhalable Particulate Matter (PM10)	10.4 µg/m^3 (24-hr)	2.5 µg/m^3 (24-hr)	1.0 µg/m^3 (annual)
Fine Particulate Matter (PM2.5)	10.4 µg/m^3 (24-hr)	2.5 µg/m^3 (24-hr)	---
Nitrogen Dioxide (NO_2)	---	---	0.18 ppm (1-hr) 0.03 ppm (annual)
Carbon Monoxide (CO)	---	---	20 ppm (1-hr) 9.0 ppm (8-hr)
Sulfur Dioxide (SO_2)	---	---	0.075 ppm (1-hr) 0.04 ppm (24-hr)

Source: SCAQMD 2015.

For sites located near sensitive receptors, SCAQMD developed the Localized Significance Thresholds (LSTs) as a way to determine if a project could locally exceed the ambient air quality standards or cause a substantial contribution to existing exceedances at a given distance from an emitting site boundary to a nearby receptor. The LSTs vary depending on the meteorological conditions for each Source Receptor Area within the SCAQMD jurisdiction. LSTs for the Desert Center area (East Riverside County) are presented in Table AQ-6.

Table AQ-6. SCAQMD Localized Significance Emissions Thresholds

Pollutant	Site Area	Construction (lb/day)			Operation (lb/day)		
		25 meters	100 meters	500 meters	25 meters	100 meters	500 meters
Nitrogen Oxides (NOx)	5 acres	304	425	875	304	425	875
PM10	5 acres	14	67	248	4	16	60
PM2.5	5 acres	8	19	128	2	5	31

Table AQ-6. SCAQMD Localized Significance Emissions Thresholds

Pollutant	Site Area	Construction (lb/day)			Operation (lb/day)		
		25 meters	100 meters	500 meters	25 meters	100 meters	500 meters
Carbon Monoxide (CO)	5 acres	2,292	5,331	31,115	2,292	5,331	31,115

Note: East Riverside County is SCAQMD "Source Receptor Area" zone 31.
Source: SCAQMD 2009.

Toxic air contaminants (TACs), including carcinogens and non-carcinogens, are subject to the following thresholds (SCAQMD, 2015):

- Maximum Incremental Cancer Risk (MICR) greater than or equal to 10 in 1 million.
- Cancer Burden greater than 0.5 excess cancer cases, for areas where the MICR from a 30-year exposure duration is calculated to be greater than one in one million.
- Chronic & Acute Hazard Index greater than or equal to 1.0 (project increment).

The threshold of significance for GHG emissions from industrial facilities in the SCAQMD is 10,000 MTCO2e per year (SCAQMD, 2015). Project-related GHG emissions would be considered significant if total emissions (direct and indirect effects) would exceed this threshold. Construction-phase GHG emissions arising from short-term activities may be amortized over the longer-term life of the project, defined as 30 years, and added to the operational emissions for comparison with the threshold (SCAQMD, 2008).

Methodology

All construction- and operation-related emissions are quantified based on the best available forecast of activities. This analysis uses the California Emissions Estimator Model (CalEEMod; version 2016.3.2) software developed by the California Air Pollution Control Officers Association (CAPCOA). This is the most recent version of the CalEEMod software, and it relies upon mobile source emission factors from the Air Resources Board (ARB) OFFROAD inventory and EMFAC2014 models. Where project-specific design features are not yet defined, default and typical settings from CalEEMod are used. Default emission factors used in this analysis appear in the CalEEMod User's Guide Appendix D (October 2017).

5. Air Quality Impacts

Impact AQ-1

a. Would the project conflict with or obstruct implementation of the applicable air quality plan?

LESS THAN SIGNIFICANT. The SCAQMD is responsible for managing local air quality and administering the mandatory California and federal programs protecting air quality. Across the entire State of California, the ARB ensures implementation of California's air quality management plans, known collectively as the State Implementation Plan. Activities in the project area are not subject to any federal attainment planning requirements because the Mojave Desert Air Basin of Riverside County attains all federal air quality standards. State-level air quality planning strategies to attain CAAQS are implemented through rules, regulations, and programs adopted by SCAQMD and ARB to control ozone precursors, PM10, and PM2.5. Project-related activities would comply with the applicable rules, regulations, and programs.

A project could be inconsistent with the applicable air quality management plan or attainment plan if it causes population and/or employment growth or growth in vehicle-miles traveled in excess of the growth

forecasts included in the attainment plan. The Proposed Project would create up to 10 permanent full-time positions and positions for contractors for regularly providing ongoing maintenance, including panel washing and security. Although the construction workforce would involve up to 530 individuals, with an average construction-related on-site workforce of 320 individuals over the 30-month period, these positions would be temporary. Upon commencing routine operation, the temporary construction workforce would no longer be employed, and only the small number of permanent employees would remain in the area. Regional air quality plans anticipate a baseline level of construction activity and some permanent population growth, and air quality attainment planning anticipates growth that includes the construction of some new infrastructure, such as the Proposed Project. Therefore, the project would not conflict with or obstruct implementation of the applicable air quality plan. This impact would be less than significant, and no mitigation is required.

Impact AQ-2

b. Would the project violate any air quality standard or contribute substantially to an existing or projected air quality violation?

POTENTIALLY SIGNIFICANT. The Proposed Project would contribute air pollutant emissions to the region during construction activities and project operation. These emissions are discussed separately in more detail below.

Construction Impacts

DURING CONSTRUCTION, POTENTIALLY SIGNIFICANT. Emissions during the construction phase would include criteria air pollutants that could contribute to existing or projected violations of the ambient air quality standards. During construction, emissions would be generated at the site of the proposed solar facility and off-site along the roadways traveled by construction traffic. Construction emissions would be caused by exhaust from vehicles and equipment (this includes ozone precursors [volatile organic compounds (VOC) or reactive organic gases (ROG) and NOx], CO, and particulate matter [PM10 and PM2.5]) and fugitive dust/particulate matter from ground-disturbing activities and travel on unpaved surfaces.

The Proposed Project would require light grading, and much of the 3,400-acres would experience some form of ground disturbance. To minimize the amount of fugitive dust from unpaved surfaces and emissions from other ground-disturbing activities during the site preparation period, all construction activity would be required to comply with local air district rules regarding dust control (including SCAQMD Rule 403). Diesel and gasoline-powered construction equipment would be classified as portable or mobile sources (off-road equipment), and are subject to statewide registration and fleet requirements. On-road motor vehicles used during construction would occur primarily off-site, and these include the heavy-duty trucks to deliver equipment, concrete, water, and other materials, and vehicles carrying crews and medium-duty deliveries. Motor vehicle exhaust emissions would occur outside of the proposed work sites as the traffic would occur primarily over the region-serving transportation network.

Detailed construction fleet and schedule assumptions are shown in the attachments to this technical report. Because the construction activities may be phased, this analysis assumes that the month-by-month timing of construction would cause some overlap. This analysis groups construction into a sequence of four overlapping types of activities within the overall 30-month timeframe and three calendar years, as follows:

- Site Preparation: 5 months in Year 1.
- PV panel system installation: 20 months in Years 2 and 3.

- Electrical system installation (including collectors and gen-ties): 10 months in Year 3.
- Other activities that recur throughout construction and restoration: 30 months over Years 1 to 3.

Table AQ-7 summarizes the maximum daily construction emissions, with and without potential mitigation.

Table AQ-7. Proposed Project Maximum Daily Construction Emissions (lb/day)

Construction Sequence	VOC	NOx	CO	SO_2	PM10	PM2.5
Year 1	55.4	562.0	351.2	0.9	338.3	76.7
Year 2	61.4	498.0	445.7	1.4	474.5	76.7
Year 3	66.9	513.2	499.0	1.6	500.1	81.9
Maximum Daily Emissions, without Mitigation	**66.9**	**562.0**	**499.0**	**1.6**	**500.1**	**81.9**
Construction Sequence	**VOC**	**NOx**	**CO**	**SO_2**	**PM10**	**PM2.5**
Year 1	19.2	99.3	351.0	0.9	79.3	22.1
Year 2	32.4	131.9	527.8	1.4	105.9	23.6
Year 3	36.2	138.6	586.6	1.6	119.5	27.1
Maximum Daily Emissions, with Mitigation	**36.2**	**138.6**	**586.6**	**1.6**	**119.5**	**27.1**
SCAQMD Significance Thresholds (lb/day)	**75**	**100**	**550**	**150**	**150**	**55**

Source: Attachment 1, AQ/GHG Emissions Inventory; Attachment 2, CalEEMod Output.

Construction-phase maximum daily emissions would be above the SCAQMD regional thresholds of significance for NOx, PM10, and PM2.5 if no project-specific mitigation measures are implemented. Because construction emissions would be below the thresholds for CO and SO_2, the Proposed Project would not be likely to violate any air quality standard or contribute substantially to an existing or projected air quality violation for CO or SO_2, and this impact would be less than significant for these pollutants.

Mitigation would be necessary to reduce construction-related NOx, PM10, and PM2.5. After including mitigation, maximum daily construction emissions of PM10 and PM2.5 would not exceed the SCAQMD thresholds, and this impact would be less than significant for these pollutants. Mitigated construction emissions of NOx would be above the thresholds, and accordingly the emissions level for this ozone precursor pollutant could contribute substantially to existing violations of the California ambient air quality standard for ozone. Therefore, the project construction NOx emissions would cause a temporary significant impact.

Mitigation Measures

Mitigation Measure AQ-1 (Fugitive Dust Control Plan) would mitigate the particulate matter impact caused by dust emissions during construction by implementing a suite of effective dust control practices, such as using soil stabilizers or watering exposed areas (2 times/day or as needed) throughout construction. (See Mitigation Measures in Section 7.)

Mitigation Measure AQ-2 (Control On-Site Off-Road Equipment Emissions) would mitigate the NOx, PM10, and PM2.5 in diesel exhaust emissions by requiring use of the newest off-road equipment achieving the most-stringent Tier 4 engine emissions standards. (See Mitigation Measures in Section 7.)

Operation and Maintenance Impacts

DURING OPERATION, LESS THAN SIGNIFICANT. Operation, maintenance, inspections, and panel washing would cause minimal levels of air pollutant emissions; maintenance and operational activities necessary for the solar facility and gen-tie lines would be limited. The project would be required by general air district provisions to implement controls such as the use of water or chemical dust suppressants to minimize particulate matter emissions and to prevent visible particulate emissions to avoid nuisances.

As shown in Table AQ-8, emissions during O&M would not exceed the SCAQMD thresholds. With minimal direct emissions during operation, the impact of air pollutant emissions from project operations would be less than significant, and no mitigation is required.

Table AQ-8. Proposed Project Daily Emissions During O&M (lb/day)

Activity	VOC	NOx	CO	SO_2	PM10	PM2.5
Area Sources	10.8	0.1	15.2	0.0	0.1	0.1
On-road Motor Vehicle Trips	0.5	4.8	9.8	0.0	34.1	4.0
Off-road Equipment	1.2	11.1	10.9	0.0	0.8	0.7
Total Emissions During Operations	**12.6**	**16.1**	**36.0**	**0.1**	**34.9**	**4.7**
SCAQMD Significance Thresholds (lb/day)	**75**	**100**	**550**	**150**	**150**	**55**

Source: Attachment 1, AQ/GHG Emissions Inventory; Attachment 2, CalEEMod Output.

Impact AQ-3

c. Would the project result in a cumulatively considerable net increase of any criteria pollutant for which the project region is nonattainment under an applicable federal or state ambient air quality standard (including releasing emissions which exceed quantitative thresholds for ozone precursors)?

POTENTIALLY SIGNIFICANT. This criterion assesses whether the Proposed Project would result in a cumulatively considerable net increase of any criteria pollutant for which the project region is nonattainment. For the project site, emissions which exceed quantitative thresholds for ozone precursors or PM10 would represent a cumulatively considerable net increase by contributing to existing violations of the California ambient air quality standards for ozone or PM10, respectively.

Concurrent construction of other projects in close proximity to the proposed site could result in increased local air quality impacts for the limited duration of simultaneous construction activities. Construction-phase emissions from each specific project site would vary, but would occur within an air basin that is a state nonattainment area for ozone and PM10. The effects of the cumulative projects would combine with the short-term construction emissions from the Proposed Project and would contribute to violations of the state ambient air quality standards for ozone and PM10, resulting in a cumulative impact.

Construction-related emissions would cease with completion of the 30-month duration for the Proposed Project, and after that time they would not contribute to long-term nonattainment conditions. All cumulative projects, including the Proposed Project, would need to comply with the local air district rules and regulations, which would primarily reduce fugitive dust. Each project would also implement mandatory controls for any new stationary sources and would be subject to the control strategies of the applicable air quality management plans adopted by the SCAQMD and the neighboring Mojave Desert Air

Quality Management District, and additional mitigation may be applied to projects subject to the CEQA process through environmental permitting by lead agencies.

Depending on the timing of construction of other cumulative projects nearby, the air quality adverse effects of the Proposed Project could combine with the air quality adverse effects of the other projects to result in a cumulative adverse effect to air quality. The severity of the Proposed Project potential adverse effects to air quality, as well as the incremental contribution of the Proposed Project to the cumulative adverse effect, would be reduced through implementing Mitigation Measures AQ-1 and AQ-2 identified in the discussion of Impact AQ-2. Although construction-related criteria air pollutant emissions would be mitigated and would entirely cease with completion of the 30-month duration of work, the construction emissions of NOx would cause substantial adverse effects, and the incremental contribution of the Proposed Project to the adverse cumulative effect would remain substantial. Even with implementation of mitigation measures noted above, the contribution of the Proposed Project to the air quality adverse effects would remain cumulatively considerable.

Following construction, smaller quantities of operational emissions would result from limited vehicle use related to periodic maintenance and security activities, and these emissions would be minor and well below the applicable thresholds. Operation of the Proposed Project would not result in a cumulatively considerable net increase of any criteria pollutant. The impact due to the net increase of nonattainment criteria air pollutants, including ozone precursors and particulate matter, would be less than significant, and no additional mitigation is required.

Impact AQ-4

d. Would the project expose sensitive receptors to substantial pollutant concentrations?

LESS THAN SIGNIFICANT. This criterion assesses whether the Proposed Project would expose sensitive receptors to substantial pollutant concentrations. There are scattered residences in the project area, namely near Highway 177/Rice Road, with at least one residence less than 100 feet from the project parcel boundary.

Localized Significance Thresholds. The SCAQMD Localized Significance Thresholds (Table AQ-6) are suitable for determining near-field impacts as a result of emissions from a small site (up to 5 acres). In contrast, project-related emissions would occur from activities on approximately 3,400 acres across 7 groups of non-contiguous parcels. Although the LSTs are not directly applicable, overall project construction emissions of PM10 and PM2.5 (Table AQ-7) would exceed the LSTs within 500 meters (1,641 feet) of the sources, and these pollutants require a detailed review for potential localized impacts. The LSTs for NOx and CO would not be exceeded by the Proposed Project's mitigated levels of construction emissions. Accordingly, construction emissions would not be likely to cause substantial pollutant concentrations of NOx (including NO_2) or CO.

Potential localized impacts would be most influenced by the on-site portions of construction emissions. Sources of construction emissions would be dispersed around the non-contiguous parcels of the site, ensuring that no single location would be exposed to persistent and substantially increased pollutant concentrations. Emissions that occur off-site would be from motor vehicles both near and far from the project boundary, and the majority of off-site emissions would on regional roadways far from sensitive receptors. To determine the extent of the localized impact, this analysis includes a screening-level ambient air quality impact assessment to calculate the downwind concentrations caused by the on-site portions of project construction emissions and compare the results with the SCAQMD ambient air quality significance thresholds for construction-related PM10 and PM2.5.

The screening evaluation for downwind concentrations due to construction-phase PM10 and PM2.5 uses the U.S. EPA-recommended guideline screening model, AERSCREEN, which is a screening version of the AERMOD (American Meteorological Society/EPA Regulatory Model). The model relies upon user-specified source parameters and surface characteristics to determine worst-case ambient impacts by generating a matrix of meteorological conditions, which are input to AERMOD (version: 16216r), obviating the need to gather site-specific meteorological data.

The emissions from the on-site fugitive dust and exhaust emissions of PM10 and PM2.5 from off-road equipment were configured in AERSCREEN as a volume source with a generic "unit" emission rate (1 g/s) that could be scaled for project-specific emissions. Other relevant input options are summarized as follows:

- Volume source representing activity within one typical project parcel: per 160 acres (quarter-section) portion of solar facility and gen-ties (3,400 acres).
- Modeled "unit" emission rate of 1 gram per second.
- Volume source release height: 12 feet (3.7 m); initial lateral dimension: 610 feet (186 m); initial vertical dimension: 6 feet (1.8 m).
- Receptors at default minimum distance per each volume source: 1,315 feet (401 m).
- Receptors at flagpole height, typically breathing height: 6 feet (1.8 m).

The model solves for maximum concentrations at the ambient boundary and other automated distances in terms of micrograms per cubic meter (µg/m^3). As a screening model, the AERSCREEN results were used to evaluate whether project on-site construction emissions would cause impacts at the ambient boundary of any of the non-contiguous project parcels or as a result of the non-contiguous parcels having an overlapping effect. The localized impacts experienced by any location would vary substantially depending on its proximity to one or more of the non-contiguous project parcels.

Localized pollutant concentrations would be considered substantial if they exceed the SCAQMD thresholds of 10.4 µg/m^3 on a 24-hr basis for PM10 or PM2.5 and 1.0 µg/m^3 on an annual basis for PM10 (Table AQ-5). Concentrations of diesel particulate matter (DPM) are evaluated separately, as a toxic air contaminant. The results of the screening-level ambient air quality impact assessment are summarized in Table AQ-9.

Table AQ-9. Proposed Project Ambient Air Quality Impacts, Ground Level Concentrations

	Average Daily Emissions		24-hour Average		Annual Average	
Construction Sources	**Total On-site Emissions (lb/day)**	**Typical 160 acre Parcel (lb/day)**	**Project Impact**	**SCAQMD Significance Threshold**	**Project Impact**	**SCAQMD Significance Threshold**
PM10: Typical Parcel	10.76	0.539	0.71 µg/m^3	**10.4 µg/m^3**	0.12 µg/m^3	**1.0 µg/m^3**
PM10: Total of Non-contiguous Parcels	10.76	---	5.91 µg/m^3	**10.4 µg/m^3**	0.99 µg/m^3	**1.0 µg/m^3**
PM2.5: Typical Parcel	4.26	0.213	0.28 µg/m^3	**10.4 µg/m^3**	0.05 µg/m^3	**None**
PM2.5: Total of Non-contiguous Parcels	4.26	---	2.34 µg/m^3	**10.4 µg/m^3**	0.39 µg/m^3	**None**

Table AQ-9. Proposed Project Ambient Air Quality Impacts, Ground Level Concentrations

	Average Daily Emissions		24-hour Average		Annual Average	
Construction Sources	**Total On-site Emissions (lb/day)**	**Typical 160 acre Parcel (lb/day)**	**Project Impact**	**SCAQMD Significance Threshold**	**Project Impact**	**SCAQMD Significance Threshold**
DPM: Typical Parcel	0.92	0.046	0.10 µg/m^3	**None**	0.01 µg/m^3	**None**
DPM: Total of Non-contiguous Parcels	0.92	---	0.51 µg/m^3	**None**	0.08 µg/m^3	**None**

Source: Attachment 3, AERSCREEN Input-Output.

Construction-phase ambient air quality impacts of PM10 and PM2.5 from on-site activities would not cause localized ground level concentrations at the ambient boundary in excess of the SCAQMD thresholds. As a result, construction-phase emissions of PM10 and PM2.5 would not expose sensitive receptors to substantial pollutant concentrations, and the localized impact to ambient air quality would be less than significant.

Toxic Air Contaminants. Construction activities would result in locally increased concentrations of construction-related emissions, including diesel particulate matter (DPM) and other toxic air contaminants, which would cause increased health risk and hazards near the site. The primary health risks to nearby sensitive receptors would be driven by the DPM emissions from on-site equipment and vehicles during construction. Noncancer effects of DPM are normally less of a concern than cancer risks. To determine the extent of this impact, on-site construction emissions were modeled through a screening evaluation, using the AERSCREEN, to evaluate whether concentrations of DPM would result in a significant health risk to sensitive receptors in the project area.

Sources of DPM would be in use over variable durations depending on specific activities occurring on one or more of the non-contiguous project parcels. Emission calculations show that on-site DPM emissions would occur at an average rate of 0.92 lb/day over the 30-month construction duration. These emissions would be emitted from dozens of individual pieces of equipment across the site and along the gen-tie alignments, and sensitive receptors would be well separated from most activities.

The potential cancer risk over a 30-year residential duration for sensitive receptors near the project boundaries was estimated as follows:

- Modeled results indicate that annual average DPM concentrations of up to 0.08 µg/m^3 could occur as a result of overlapping effects of non-contiguous parcels near the project boundaries.
- Inhalation of DPM at an annual average concentration of 0.08 µg/m^3 over a 30-month construction duration within a 30-year residential exposure duration (2.5 years/30 years), would be equivalent to 0.0067 µg/m^3 for the 30-year average concentration.
- Multiplying the inhalation Cancer Potency factor for DPM of 1.1 (mg/kg-day)$^{-1}$ (Source: OEHHA), the concentration, and the default combined exposure factor for residential receptors over 30 years (677.4; Source: SCAQMD) results in 5.0x 10^{-6} incremental cancer cases.

The DPM concentrations at the nearest sensitive receptors would not result in an excessive incremental cancer risk, because the potential incremental cancer risk associated with DPM at the worst-case residential receptor would be 5.0 in 1 million, which is within the SCAQMD threshold of significance of 10 in 1 million cancer cases for the Maximum Incremental Cancer Risk (MICR). As a result, the proposed

level of DPM emissions would not expose sensitive receptors to substantial pollutant concentrations, and the localized health risk impact would be less than significant.

Valley Fever. Soils in some areas of California host the microscopic fungus that causes Valley Fever, known as *Coccidioides immitis*, which lives in the top two to 12 inches of soil in many parts of the state. When soil is disturbed by activities such as digging, driving, or high winds, fungal spores can become airborne and potentially be inhaled. Workers in Riverside County are less at risk than those in the Central Valley, where the greatest incidence of reported human Valley Fever cases occur. Across the state, employers have a legal responsibility to report illnesses in connection with employment and to provide workers with protection from health risks including any due to Valley Fever (DIR, 2018). The primary ways to reduce the risk of Valley Fever are: avoiding exposure to dusty air or dust storms, preventing dirt or dust from becoming airborne, and if working at a dusty site, consider wearing an N95 mask or respirator (DPH, 2016). Project construction activities would be subject to stringent dust control requirements (including SCAQMD Rule 403), and these mandatory controls would avoid exposing construction workers and the off-site population to substantial concentrations of dust. Project operational and maintenance activities would minimally disturb on-site soils and would not create a risk of causing Valley Fever fungal spores to become airborne. As such, the impact of potential exposure to Valley Fever would be less than significant.

Visibility and Federal Class I Areas. Under the federal CAA, Class I areas are provided the greatest protections. The nearest boundary of the JTNP Class I area is located 0.9 miles (1.4 km) from the nearest project parcel, to the northeast of the project site. Ambient air quality impacts of the Proposed Project including increased concentrations of airborne dust, including PM10 and PM2.5, and NOx emissions could impact visibility. However, the sources of emissions during construction would occur near the ground level, where dust would have a limited ability to notably affect distant vistas, and emissions would be widely dispersed across the project site. The near-ground release and intermittent nature of construction sources ensures that the concentration near the JTNP would be much lower than the localized effects near the project site. Additionally, all cumulative projects are anticipated to avoid visible plumes and control dust as required by SCAQMD Rule 401 and Rule 403. Projects subject to the CEQA process would also implement additional mitigation measures where needed to control dust. Controlling construction emissions as required by local rules and regulations and through mitigation measures identified above ensures that users of the JTNP would not experience substantial concentrations of pollutants, and the impact to visibility would be less than significant.

O&M Emissions. During project operations and maintenance, emissions would occur in limited quantities from the use of equipment and vehicles for routine maintenance, repair, and inspection. No new stationary sources of emissions would be included with the Proposed Project, except one standby or backup generator engine, if required. Mandatory regulatory controls would minimize and avoid impacts from dust emissions and off-road equipment exhaust so that O&M emissions would not result in substantial concentrations of any air pollutants. As a result, O&M would not expose sensitive receptors to substantial concentrations of air pollutants. This impact would be less than significant, and no additional mitigation is required.

Impact AQ-5

e. Would the project create objectionable odors affecting a substantial number of people?

LESS THAN SIGNIFICANT. The project would not include any notable source of odors except for very small quantities of coatings that may include organic compounds. Construction odors would be minimal because of the mandatory use of ultra-low sulfur diesel fuel, and odors would not negatively affect a substantial number of people. This impact would be less than significant, and no mitigation is required.

6. GHG Emissions Impacts

Regulatory Background for GHG Emissions

California Global Warming Solutions Act of 2006 [Assembly Bill 32 (AB 32)]. The California Global Warming Solutions Act of 2006 (AB 32) required that California's GHG emissions be reduced to 1990 levels by 2020. The reduction is being accomplished through an enforceable statewide cap on global warming emissions beginning in 2012. AB 32 directs the ARB to develop regulations and a mandatory reporting system to track and monitor global warming emissions levels (AB 32, Chapter 488, Statutes of 2006). The ARB Climate Change Scoping Plan, initially approved December 2008 and most recently updated by ARB in December 2017, provides the framework for achieving California's goals (ARB, 2017b).

In passing AB 32, the California Legislature found that:

> *Global warming poses a serious threat to the economic well-being, public health, natural resources, and the environment of California. The potential adverse impacts of global warming include the exacerbation of air quality problems, a reduction in the quality and supply of water to the state from the Sierra snowpack, a rise in sea levels resulting in the displacement of thousands of coastal businesses and residences, damage to marine eco-systems and the natural environment, and an increase in the incidences of infectious diseases, asthma, and other human health-related problem."*

Other major Executive Orders, legislation, and regulations adopted for the purpose of reducing GHG emissions support the implementation of AB 32 and California's climate goals, as described below.

California Governor's Executive Order B-30-15 and Senate Bill 32 (SB 32). Executive Order B-30-15 (April 2015) establishes a California GHG reduction target of 40 percent below 1990 levels by 2030. One purpose of this interim target is to ensure California meets its target of reducing greenhouse gas emissions to 80 percent below 1990 levels by 2050. This executive order also specifically addresses the need for climate adaptation and directs state agencies to update the California Climate Adaptation Strategy to identify how climate change will affect California infrastructure and industry and what actions the state can take to reduce the risks posed by climate change. Senate Bill 32 (SB 32) of 2016 codifies this GHG emissions target to 40 percent below the 1990 level by 2030.

Clean Energy and Pollution Reduction Act of 2015 [Senate Bill 350 (SB 350)]. California's state policy objectives on long-term energy planning were updated with SB 350 legislation that was signed into law on October 7, 2015. With SB 350 California expanded the specific set of objectives to be achieved by 2030, with the following:

- To increase the Renewable Portfolio Standard (RPS) from 33 percent to 50 percent for the procurement of California's electricity from renewable sources; and
- To double the energy efficiency savings in electricity and natural gas end uses by retail customers.

Cap-and-Trade Program (17 CCR 95801 to 96022). The California Cap on Greenhouse Gas Emissions and Market-Based Compliance Mechanisms Regulation (Cap-and-Trade Program) was initially approved by ARB in 2011. The Cap-and-Trade Program applies to covered entities that fall within certain source categories, including petroleum refiners and suppliers of transportation fuels, and is triggered when facility emissions exceed 25,000 metric tons of CO_2 equivalent (MTCO2e) in a year. The covered entities must hold compliance instruments sufficient to cover the actual GHG emissions, as evidenced through the MRR requirements. This means that transportation fuel suppliers bear the GHG compliance obligation in the

Cap-and-Trade Program for the GHG emissions from motor vehicle and off-road equipment fuels used by construction workforces and crews.

Impact GHG-1

a. Would the project generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment?

LESS THAN SIGNIFICANT. The Proposed Project would result in GHG emissions due to construction and operation, and operation of the project would produce electricity that would displace the need to produce electricity from traditional (fossil-fueled) resources. Separate discussions appear for the GHG emissions caused by construction activities, operations activities such as maintenance and inspection, the effects of land use conversion, and indirect GHG emissions reductions due to the renewable energy generated by the project.

Emissions From Development Activities: Construction and Operations. Construction, operations, and eventual decommissioning activities would cause GHG emissions as a result of fossil-fuel combustion in the engines of construction equipment and the vehicles carrying construction materials and workers to and from the site. Diesel fuel or gasoline is used in mobilizing the heavy-duty construction equipment, site development and preparation, facility construction, and roadway construction, and eventual decommissioning. Total GHG emissions over the duration of construction would amount to 36,721 MTCO2e, and 1,224 MTCO2e/year, when averaged over a 30-year life of the project, as recommended by SCAQMD guidelines. Direct on-site O&M activities would contribute an additional amount of 741 MTCO2e/year, as shown in Table GHG-1.

Table GHG-1. Proposed Project GHG Emissions

Activity	One-Time During Construction (MTCO2e)	Construction and Operations Combined (MTCO2e per year)	Proposed Project GHG Emissions (MTCO2e per year)
Off-Road Equipment (On-site)	16,656	---	---
Motor Vehicle Trips (Off-site)	20,065	---	---
Total, Duration of Construction	**36,721**	---	---
Construction Total, 30-year Amortized	---	1,224	1,224
Operations	---	741	741
Development Activities: Construction and Operations Combined			1,965
Related to Land Use Conversion			14,654
Avoided by Producing Electricity			- 450,000
Total GHG, Construction and Operations			**- 433,400**

Source: Attachment 2, CalEEMod Output; Attachment 4, Avoided GHG Emissions.

Emissions Related to Land Use Conversion. Installation of the Proposed Project would result in ground disturbance that would disturb soils and remove some vegetation that naturally provide carbon uptake. Converting a portion of the existing land would eliminate the natural sequestration of carbon because the existing soil and vegetation acts as a sink by removing CO_2 from the atmosphere. Ground disturbance and vegetation removal during construction accordingly adds to the GHG impact because a portion of the soils and vegetation onsite would no longer be present to sequester CO_2. The loss of carbon uptake depends on what fraction of natural vegetation on the site would be cleared for permanent installation of foundations, roads, or other onsite facilities, and on efforts to minimize soil erosion or protect existing

ground cover to minimize the loss of carbon uptake. The actual amount of this loss is uncertain because it would depend on the particular characteristics of the site, and the available data on rates of sequestration by vegetation and soils are approximations. The loss of natural carbon uptake would not be expected to exceed 4.31 MTCO2e per year per acre; absent a reliable factor for the project setting, this factor is a proxy based on removing the natural sequestration capability of grassland (CalEEMod User's Guide, 2017). At this rate, the permanent conversion of approximately 3,400 acres, due to vegetation removal, compacted soils for access roads, and impervious areas for equipment at the site, would result in 14,654 MTCO2e per year of sequestration capability being lost. This estimate is conservatively high because a portion of the site would retain natural conditions, and some carbon sequestration capabilities would be restored within the site through revegetation efforts.

Emissions Avoided by Producing Electricity. The production of renewable power would displace power produced by carbon-based fuels that would otherwise be used to meet electricity demand. The power displaced is incremental power provided by generators elsewhere on the grid, typically from natural gas power plants.

The Proposed Project would produce over 1.2 million megawatt-hours (MWh) annually based on a typical, lower-bound capacity factor of 28 percent for a PV system without tracking in eastern Riverside County.[1] With tracking, a higher capacity factor would be achieved, and production would range up to approximately 1.4 million MWh annually. Under the "Proposed Near-Term Method for Estimating Generation Fuel Displacement by Avoided Use of Grid Electricity" (CEC, 2015), the electricity produced by the Proposed Project would displace fuel-burning by California's flexible natural gas-fired resources. This would avoid GHG that would otherwise be emitted at a rate of roughly 450,000 MT of CO_2 in 2030.

The quantity of avoided GHG could vary somewhat from the quantity predicted here depending on whether a storage component would be included. By requiring a charging cycle the storage component before discharging, some round-trip loss of energy would occur, and this would reduce the overall MWh-produced. The output of the storage component would have the beneficial effect of shifting the types of generating units on the grid that could be displaced, but the relative scale of avoided GHG of the Proposed Project with storage would be comparable to the amount without storage. (See Attachment 4, Avoided GHG Emissions.)

The combined direct and indirect effects of the emissions quantified in Table GHG-1 indicates that a net GHG reduction would occur with the Proposed Project avoiding approximately 433,400 MTCO2e annually. This impact would be less than significant, and no mitigation is required.

Impact GHG-2

b. Would the project conflict with any applicable plan, policy or regulation of an agency adopted for the purpose of reducing the emissions of greenhouse gases?

LESS THAN SIGNIFICANT. The Proposed Project would produce electricity in a manner that improves California's ability to supply renewable energy to end-use customers and to achieve statewide renewable energy goals. Electricity from the project would be used to serve the needs of customers and would facilitate compliance with the Renewables Portfolio Standard (RPS), as set forth by SB 350. The GHG emissions avoided by producing electricity would be consistent with and would not conflict with the California's GHG emissions reduction targets, as set forth by the California Global Warming Solutions Act

[1] The capacity factor may be 34 percent or higher if single-axis tracking is used according to data within the CPUC-sponsored RESOLVE spreadsheet model (September 2017 release).

(AB 32), SB 32, and the Climate Change Scoping Plan. Overall, the electricity produced by the project would contribute to the continued reduction of GHG emissions in California's power supply.

Other project activities related to construction and operation would either be exempt from or would be required to comply with California Air Resources Board (CARB) rules and regulations to reduce GHG emissions and would cause no other potential conflict with any applicable plan, policy, or regulation adopted for the purpose of reducing GHG emissions. As the total GHG emissions generated during construction and operation of the Proposed Project would be considerably less than the GHG emissions avoided, the solar power plant would lead to a net reduction in GHG emissions across the State's electricity system, which would contribute to meeting the State's GHG reduction goals under AB 32 and subsequent targets for 2030 and beyond. The Proposed Project would not conflict with any applicable GHG management plan, policy, or regulation.

This impact would be less than significant, and no mitigation is required.

7. Mitigation

Aspen recommends the following measures to mitigate air quality impacts, including several general emissions control measures.

MM AQ-1 **Fugitive Dust Control Plan.** The project owner would prepare and implement a Fugitive Dust Control Plan to address fugitive dust emissions during project construction, operation, maintenance, and decommissioning. The plan would include measures to minimize fugitive dust emissions from development of laydown and staging areas, site grading, vegetation management, and installing all project facilities through post-construction cleanup. The project owner would take every reasonable precaution to prevent all airborne fugitive dust plumes from leaving the project site and to prevent visible particulate matter from being deposited upon public roadways. The plan would be subject to review and approval by the SCAQMD (Rule 403).

The following measures would be included within the plan:

- During construction, all unpaved roads, disturbed areas (e.g., areas of scraping, excavation, backfilling, grading, and compacting), and loose materials generated during construction activities shall be stabilized with a non-toxic soil stabilizer or soil weighting agent or watered two times daily or as frequently as necessary to minimize fugitive dust generation. Non-water-based soil stabilizers shall be as efficient as or more efficient for fugitive dust control than ARB-approved soil stabilizers and shall not increase any other environmental impacts, including loss of vegetation.
- The main access roads through the site shall be either paved or stabilized using soil binders, or equivalent methods, to provide a stabilized surface that is similar for the purposes of dust control to paving, that may or may not include a crushed rock (gravel or similar material with fines removed) top layer, prior to initiating construction. Delivery, laydown, and staging areas for construction or O&M supplies shall be paved or treated prior to taking initial deliveries.
- Grading and earthwork activities, including vegetation removal, cut and fill movement, and soil compacting, shall be phased across the site to minimize the amount of exposed or disturbed area on any single day.

- No vehicle shall exceed 15 miles per hour on unpaved areas within the construction site, with the exception that vehicles may travel up to 25 miles per hour on stabilized unpaved roads as long as such speeds do not create visible dust emissions.
- Visible speed limit signs shall be posted at the construction site entrances.
- All construction equipment vehicle tires shall be inspected and washed as necessary to be cleaned free of dirt prior to entering paved roadways.
- All unpaved exits from the construction site shall be graveled or treated to prevent track-out onto public roadways.
- All paved roads within the construction site shall be swept daily or as needed (less during periods of precipitation) on days when construction activity occurs to prevent the accumulation of dirt and debris.
- At least the first 500 feet of any paved public roadway exiting the construction site or exiting other unpaved roads to access the construction site or staging areas shall be swept as needed when dirt or runoff resulting from the construction activities is visible on the paved public roadway.

MM AQ-2 **Control On-Site Off-Road Equipment Emissions.** The project owner, when entering into construction contracts or when procuring off-road equipment or vehicles for on-site construction or O&M activities, shall ensure that only new model year equipment or vehicles are obtained. The following measures would be included with contract or procurement specifications:

- All construction diesel engines not registered under California Air Resources Board's Statewide Portable Equipment Registration Program, with a rating of 50 hp or higher shall meet the Tier 4 California Emission Standards for Off-Road Compression-Ignition Engines, as specified in California Code of Regulations, Title 13, section 2423(b)(1), unless a good faith effort demonstrates that such engine is not available for a particular item of equipment. In the event that a Tier 4 engine is not available for any off-road equipment larger than 100 hp, a Tier 3 engine shall be used or that equipment shall be equipped with retrofit controls to reduce exhaust emissions of nitrogen oxides (NOx) and diesel particulate matter (DPM) to no more than Tier 3 levels unless certified by the engine manufacturers that the use of such devices is not practical for specific engine types.
- All diesel-fueled engines used in the construction of the facility shall have clearly visible tags showing that the engine meets the standards of this measure.
- All equipment and trucks used in the construction or O&M of the facility shall be properly maintained and the engines tuned to the engine manufacturer's specifications.
- All diesel heavy construction equipment shall not idle for more than five minutes. Vehicles that need to idle as part of their normal operation (such as concrete trucks) are exempted from this requirement.

8. References

CEC (California Energy Commission). 2015. Staff Paper, "Proposed Near-Term Method for Estimating Generation Fuel Displacement by Avoided Use of Grid Electricity" CEC-200-2015-002. June 2015.

CIRA (Cooperative Institute for Research in the Atmosphere). 2016. Federal Land Manager Environmental Database (FED), sponsored by the National Park Service and the U.S. Forest Service. http://views.cira.colostate.edu/fed/SiteBrowser/Default.aspx. Accessed September 2016.

DIR (California Department of Industrial Relations). 2018. Valley Fever prevention and information. http://www.dir.ca.gov/dosh/valley-fever-home.html. Accessed May 2018.

DPH (California Department of Public Health). 2016. Valley Fever Fact Sheet. https://www.cdph.ca.gov/Programs/CID/DCDC/CDPH%20Document%20Library/ValleyFeverFactSheet.pdf. Accessed May 2018.

Riverside County. 2015. County of Riverside General Plan: Air Quality Element.

SCAQMD (South Coast Air Quality Management District). 2015. SCAQMD Air Quality Significance Thresholds.

SCAQMD. 2008. Board Meeting Report. Interim CEQA GHG Significance Threshold for Stationary Sources, Rules and Plans. December.

WRAP (Western Regional Air Partnership). 2016. Public Hearing Testimony, Proposed Amendments to the Regional Haze Rule. June 1, 2016.

Attachments

- **Attachment 1**, AQ/GHG Emissions Inventory
- **Attachment 2**, CalEEMod Output
- **Attachment 3**, AERSCREEN Input-Output
- **Attachment 4,** Avoided GHG Emissions

Attachment 1

AQ/GHG Emissions Inventory

AQ-GHG Construction Emissions Estimation

Activity and Input Notes | (Basis: ~4/13/2018, IP Athos, LL

Air Quality Setting

Jurisdiction: SCAQMD
Air Basin: Mojave Desert
Federal Mandatory Class I Area: JTNP = 1.4 km to NE from edge of Parcel (8) VG Devco (643 acres)

Rough Sequence of Phases	Duration of Phase	Start Seq. (mo)	End Seq. (mo)	Duration (days)
1 Site Prep	5 months	0	5	110
2 PV Panel System	20 months	5	25	440
3 Electrical (collectors onsite plus gen-ties)	10 months	15	25	220
4 Throughout Construction and Restoration	30 months	0	30	660

CalEEMod Input Assumptions

Construction Phase - Overall 30 mo or 660 days of construction
Off-road Equipment - 31 equipment count in Seq 1 Site Prep
Off-road Equipment - 70 equipment count w hydraulic ram or pile driver as Bore / Drill Rigs in Seq 2 PV Panels
Off-road Equipment - 21 equipment count during Seq 3 Electrical
Off-road Equipment - 56 equipment count during Seq 4 Throughout Const
Trips and VMT - 1,260 peak worker commutes and onsite crew, water trucks as vendor class
On-road Fugitive Dust - Water trucks 10% unpaved; HHDT 1% unpaved
Grading - disturbance 3228 ac site plus 104 ac gen-tie ROW
Architectural Coating - minimal or no coatings needed
Vehicle Trips - TR 0.0004 per 1000sqft per day: fewer than 100 daily operational trips
Road Dust - approx 1% unpaved VMT during ops
Consumer Products - consumer products not applicable
Area Coating - no coatings necessary
Energy Use - energy use not applicable
Water And Wastewater - interior water consumption factors not applicable
Solid Waste - light industrial solid waste factors not applicable
Land Use Change - land use conversion calculated separately
Construction Off-road Equipment Mitigation - Tier 4 offroad fleet; water 2x daily is 55% effective PM10 control per Rule 403; suppressant is 84% effective per Table XI-D; 15 mph
Operations off-road equipment - fleet of 6 equipment ct for occasional routine op-maint activity

Trenching: Underground cables, panel strings, collectors
3 ft wide
6 ft depth
2000 ft linear per 2 MW block
250 (2-MW blocks)
9,000,000 ft^3
1,000,000 cy material handling

Foundations: 220 kV OH gen-tie, transmission
35 ft depth
10 ft^2 area
120 (220 kV structs)
42,000 ft^3
4,667 cy material handling

22 days/mo

ONROAD - LD, MDT, HHDT

Item	Truck Deliveries	Vehicle Type	Est. Delivery/Day (# roundtrips)	Duration (months)	Sequence	one way LD_mix Worker Trip (#/day)	one way HDT_Mix Vendor Trip (#/day)	one way HHDT Hauling Total Trips (# oneway)
Modules	8,400	53' Flatbed	12	20	2			16,800
Foundation posts	1,600	48' Flatbed	4	20	2			3,200
Racking	1,850	48' Flatbed	4	20	2			3,700
Cable	260	53' Flatbed	1	10	3			520
Inverters	380	48' Flatbed	1	10	3			760
Transformers	12	53' Flatbed	1	10	3			24
Concrete	600	Concrete Mixer	5	20	2			1,200
Road base	1,650	Dump truck	10	5	1			3,300
Trash (haul off)	200	40-YD roll-off	2	30	4			400
Fencing	90	48' Flatbed	2	5	1			180
Offroad eq transport	480	48' Flatbed	8	5	1			960
Electrical equipment	200	48' Flatbed	2	10	3			400
Water	40,734	4,000 gallon trucks	62	30	4		124	
		Worker commutes, Crew pickups	530	30	4	1,060		
						Worker Trip (#/day)	Vendor Trip (#/day)	Hauling Trip (# overall)
Water requirements, dust control					by Sequence	1,060	124	31,444
500	ac-ft water				1			4,440
21,780,000	ft^3 water				2			24,900
40,734	- equiv per 4,000 gal trucks				3	0	0	1,704
					4	1,060	124	400

Worker Trip (mi/trip)	Vendor Trip (mi/trip)	Hauling Trip (mi/trip)
75	7	150

OFFROAD - Construciton Equipment

Items	Appx Equip Ct. Units	Typ Daily Use (hrs/day)	Purpose	CalEEMod Equip Type	Duration (months)	Sequence
Front end loader	10	8	Material movement	rubber tired loader	30	4
Forklifts	26	8	Material staging	forklift	30	4
Tractor	20	8	Material staging	tractor / loader / backhoe	30	4
Scrapers	12	8	Grading	scraper	5	1
Bulldozers	7	8	Grading	rubber tired dozer	5	1
Graders	12	8	Grading	grader	5	1
Hydraulic rock hammer	30	8	Foundation installation	bore / drill rig	20	2
Concrete batch plant	4	6	Foundation installation	other const equip	20	2
Cranes or lifts	8	6	Module, Inverter placement	crane	20	2
Generators	4	8	Misc modules, structures	generator sets	20	2
Welders	4	8	Misc modules, structures	welders	20	2
Backhoes	20	8	Excavation	tractor / loader / backhoe	20	2
Pile driver			*Post installation*	*(alternate to hydraulic hammer)*		
Cranes or lifts	2	6	Gen-tie, yard work	crane	10	3
Generators	2	8	Misc electrical	generator sets	10	3
Welders	2	8	Misc electrical	welders	10	3
Trencher	4	8	Underground work (AC/DC/Fiber op	trencher	10	3
Compactor	8	6	Compaction	roller	10	3
Cable plow	3	8	Underground cable installation	excavator	10	3

by Sequence	Offroad Equipment (count)
1	31
2	70
3	21
4	56

AQ-GHG Construction Emissions Estimation

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Construction: Maximum lb/day (by Year)

2.1 Overall Construction (Maximum Daily Emission)

Unmitigated Construction

Year	lb/day	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total
2018		55.4	562.0	351.2	0.9	315.4	22.9	338.3	55.6	21.1	76.7
2019		61.4	498.0	445.7	1.4	454.9	19.6	474.5	58.5	18.1	76.7
2020		66.9	513.2	499.0	1.6	479.7	20.4	500.1	63.0	18.9	81.9
Maximum		66.9	562.0	499.0	1.6	479.7	22.9	500.1	63.0	21.1	81.9

Mitigated Construction

Year	lb/day	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total
2018		19.2	99.3	351.0	0.9	78.0	1.3	79.3	20.9	1.3	22.1
2019		32.4	131.9	527.8	1.4	104.2	1.7	105.9	21.9	1.7	23.6
2020		36.2	138.6	586.6	1.6	117.7	1.8	119.5	25.3	1.8	27.1
Maximum		36.2	138.6	586.6	1.6	117.7	1.8	119.5	25.3	1.8	27.1

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total
Percent Reduction	52.2	76.5	-13.1	0.0	76.0	92.3	76.8	61.5	91.8	69.0

Operation: lb/day (by Category)

2.2 Overall Operational

Unmitigated Operational

Category	lb/day	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total
Area		10.8	0.1	15.2	0.0		0.1	0.1		0.1	0.1
Energy		0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0
Mobile		0.5	4.8	9.8	0.0	34.0	0.0	34.1	3.9	0.0	4.0
Offroad		1.2	11.1	10.9	0.0		0.8	0.8		0.7	0.7
Total		12.6	16.1	36.0	0.1	34.0	0.9	34.9	3.9	0.8	4.7

AQ-GHG Construction Emissions Estimation

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Construction: Total over Duration (Mitigated)

		ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total			CO2e
	tons, total													**MT, total**
Fugitive Dust	On-site	0.00	0.00	0.00	0.00	3.26	0.00	3.26	1.10	0.00	1.10			0
Off-Road	On-site	2.29	10.83	102.84	0.19	0.00	0.30	0.30	0.00	0.30	0.30			16,656
Hauling	Off-site	0.41	16.54	2.32	0.08	8.91	0.08	8.98	1.42	0.07	1.50			7,153
Vendor	Off-site	0.16	4.74	1.15	0.01	4.02	0.03	4.05	0.45	0.02	0.47			1,146
Worker	Off-site	5.55	5.52	48.02	0.13	13.66	0.08	13.74	3.63	0.08	3.70			11,765
Total	**Total**	**8.41**	**37.63**	**154.33**	**0.40**	**29.84**	**0.49**	**30.33**	**6.60**	**0.48**	**7.08**			**36,721**
	sumcheck	8.41	37.63	154.33	0.40	29.84	0.49	30.33	6.60	0.48	7.08		CO2e (MT/30-yr)	1,224

Duration (days) 660		**ROG**	**NOx**	**CO**	**SO2**	**Fugitive PM10**	**Exhaust PM10**	**PM10 Total**	**Fugitive PM2.5**	**Exhaust PM2.5**	**PM2.5 Total**
	lb/day, avg										
	On-site	6.95	32.83	311.63	0.56	9.87	0.92	10.78	3.35	0.92	4.26
	Off-site	18.54	81.20	156.04	0.66	80.57	0.57	81.14	16.65	0.53	17.19
	Total	**25.49**	**114.03**	**467.67**	**1.22**	**90.43**	**1.48**	**91.92**	**20.00**	**1.45**	**21.45**

Construction Detail: Annual (Mitigated)

3.2 Site Preparation - 2018

Mitigated Construction On-Site

Category	tons/yr	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
												MT/yr					
Fugitive Dust						1.28	0.00	1.28	0.52	0.00	0.52	0.00	0.00	0.00	0.00	0.00	0.00
Off-Road		0.19	0.82	7.13	0.02		0.03	0.03		0.03	0.03	0.00	1,405.77	1,405.77	0.44	0.00	1,416.71
Total		0.19	0.82	7.13	0.02	1.28	0.03	1.31	0.52	0.03	0.54	0.00	1,405.77	1,405.77	0.44	0.00	1,416.71

Mitigated Construction Off-Site

Category	tons/yr	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
												MT/yr					
Hauling		0.06	2.65	0.35	0.01	0.72	0.01	0.74	0.12	0.01	0.13	0.00	1,025.72	1,025.72	0.01	0.00	1,026.09
Vendor		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Worker		0.29	0.30	2.56	0.01	0.62	0.00	0.62	0.16	0.00	0.17	0.00	553.27	553.27	0.02	0.00	553.79
Total		0.35	2.94	2.90	0.02	1.34	0.02	1.36	0.29	0.02	0.30	0.00	1,578.99	1,578.99	0.04	0.00	1,579.88

3.3 Throughout Constr - 2018

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e

Category	tons/yr										MT/yr					
Fugitive Dust					0.56	0.00	0.56	0.14	0.00	0.14	0.00	0.00	0.00	0.00	0.00	0.00
Off-Road		0.18	0.79	8.83	0.01		0.02	0.02		0.02	0.02	0.00	1,347.51	1,347.51	0.42	0.00	1,358.00
Total		0.18	0.79	8.83	0.01	0.56	0.02	0.58	0.14	0.02	0.17	0.00	1,347.51	1,347.51	0.42	0.00	1,358.00

Mitigated Construction Off-Site

Category	tons/yr	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2 MT/yr	NBio- CO2	Total CO2	CH4	N2O	CO2e
Hauling		0.00	0.05	0.01	0.00	0.06	0.00	0.06	0.01	0.00	0.01	0.00	19.88	19.88	0.00	0.00	19.89
Vendor		0.04	1.11	0.29	0.00	0.87	0.01	0.87	0.10	0.01	0.10	0.00	248.33	248.33	0.02	0.00	248.93
Worker		0.37	0.38	3.30	0.01	0.79	0.01	0.80	0.21	0.00	0.22	0.00	714.22	714.22	0.03	0.00	714.90
Total		0.41	1.54	3.59	0.01	1.72	0.01	1.73	0.32	0.01	0.33	0.00	982.43	982.43	0.05	0.00	983.72

3.3 Throughout Constr - 2019

Mitigated Construction On-Site

Category	tons/yr	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2 MT/yr	NBio- CO2	Total CO2	CH4	N2O	CO2e
Fugitive Dust						0.71	0.00	0.71	0.23	0.00	0.23	0.00	0.00	0.00	0.00	0.00	0.00
Off-Road		0.33	1.45	16.23	0.03		0.04	0.04		0.04	0.04	0.00	2,436.15	2,436.15	0.77	0.00	2,455.42
Total		0.33	1.45	16.23	0.03	0.71	0.04	0.75	0.23	0.04	0.27	0.00	2,436.15	2,436.15	0.77	0.00	2,455.42

Mitigated Construction Off-Site

Category	tons/yr	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2 MT/yr	NBio- CO2	Total CO2	CH4	N2O	CO2e
Hauling		0.00	0.09	0.01	0.00	0.06	0.00	0.06	0.01	0.00	0.01	0.00	36.11	36.11	0.00	0.00	36.13
Vendor		0.07	1.91	0.46	0.00	1.59	0.01	1.60	0.18	0.01	0.19	0.00	453.00	453.00	0.04	0.00	454.09
Worker		0.61	0.62	5.34	0.01	1.46	0.01	1.47	0.39	0.01	0.40	0.00	1,271.89	1,271.89	0.04	0.00	1,272.99
Total		0.68	2.61	5.82	0.02	3.11	0.02	3.13	0.57	0.02	0.59	0.00	1,761.01	1,761.01	0.09	0.00	1,763.21

3.3 Throughout Constr - 2020

Mitigated Construction On-Site

Category	tons/yr	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2 MT/yr	NBio- CO2	Total CO2	CH4	N2O	CO2e
Fugitive Dust						0.70	0.00	0.70	0.22	0.00	0.22	0.00	0.00	0.00	0.00	0.00	0.00
Off-Road		0.33	1.42	15.98	0.03		0.04	0.04		0.04	0.04	0.00	2,346.20	2,346.20	0.76	0.00	2,365.17
Total		0.33	1.42	15.98	0.03	0.70	0.04	0.75	0.22	0.04	0.27	0.00	2,346.20	2,346.20	0.76	0.00	2,365.17

Mitigated Construction Off-Site

Category	tons/yr	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2 MT/yr	NBio- CO2	Total CO2	CH4	N2O	CO2e

Hauling	0.00	0.08	0.01	0.00	0.06	0.00	0.06	0.01	0.00	0.01	0.00	35.12	35.12	0.00	0.00	35.13
Vendor	0.06	1.72	0.40	0.00	1.57	0.01	1.57	0.17	0.01	0.18	0.00	442.44	442.44	0.04	0.00	443.47
Worker	0.55	0.54	4.70	0.01	1.44	0.01	1.45	0.38	0.01	0.39	0.00	1,213.27	1,213.27	0.04	0.00	1,214.22
Total	0.61	2.33	5.11	0.02	3.07	0.02	3.08	0.57	0.02	0.58	0.00	1,690.83	1,690.83	0.08	0.00	1,692.82

3.4 Electrical - 2020

Mitigated Construction On-Site

					Fugitive	Exhaust	PM10	Fugitive	Exhaust	PM2.5						
	ROG	NOx	CO	SO2	PM10	PM10	Total	PM2.5	PM2.5	Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.08	0.53	4.63	0.01		0.01	0.01		0.01	0.01	0.00	578.91	578.91	0.15	0.00	582.58
Total	0.08	0.53	4.63	0.01		0.01	0.01		0.01	0.01	0.00	578.91	578.91	0.15	0.00	582.58

Mitigated Construction Off-Site

					Fugitive	Exhaust	PM10	Fugitive	Exhaust	PM2.5						
	ROG	NOx	CO	SO2	PM10	PM10	Total	PM2.5	PM2.5	Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.02	0.83	0.12	0.00	0.28	0.00	0.28	0.05	0.00	0.05	0.00	384.23	384.23	0.01	0.00	384.37
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Worker	0.47	0.46	4.02	0.01	1.23	0.01	1.24	0.33	0.01	0.33	0.00	1,038.60	1,038.60	0.03	0.00	1,039.41
Total	0.49	1.29	4.14	0.02	1.51	0.01	1.52	0.37	0.01	0.38	0.00	1,422.83	1,422.83	0.04	0.00	1,423.78

3.5 PV Panels - 2019

Mitigated Construction On-Site

					Fugitive	Exhaust	PM10	Fugitive	Exhaust	PM2.5						
	ROG	NOx	CO	SO2	PM10	PM10	Total	PM2.5	PM2.5	Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.58	2.89	24.79	0.05		0.08	0.08		0.08	0.08	0.00	4,207.90	4,207.90	1.26	0.00	4,239.32
Total	0.58	2.89	24.79	0.05		0.08	0.08		0.08	0.08	0.00	4,207.90	4,207.90	1.26	0.00	4,239.32

Mitigated Construction Off-Site

					Fugitive	Exhaust	PM10	Fugitive	Exhaust	PM2.5						
	ROG	NOx	CO	SO2	PM10	PM10	Total	PM2.5	PM2.5	Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.17	6.70	0.93	0.03	3.86	0.03	3.89	0.61	0.03	0.64	0.00	2,816.63	2,816.63	0.04	0.00	2,817.65
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Worker	1.68	1.70	14.72	0.04	4.02	0.03	4.05	1.07	0.02	1.09	0.00	3,505.75	3,505.75	0.12	0.00	3,508.78
Total	1.85	8.40	15.65	0.07	7.88	0.06	7.94	1.68	0.05	1.73	0.00	6,322.38	6,322.38	0.16	0.00	6,326.43

3.5 PV Panels - 2020

Mitigated Construction On-Site

Category	tons/yr	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
												MT/yr					
Off-Road		0.60	2.94	25.24	0.05		0.08	0.08		0.08	0.08	0.00	4,207.21	4,207.21	1.28	0.00	4,239.19
Total		0.60	2.94	25.24	0.05		0.08	0.08		0.08	0.08	0.00	4,207.21	4,207.21	1.28	0.00	4,239.19

Mitigated Construction Off-Site

Category	tons/yr	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
												MT/yr					
Hauling		0.16	6.15	0.90	0.03	3.86	0.03	3.89	0.61	0.03	0.64	0.00	2,832.85	2,832.85	0.04	0.00	2,833.85
Vendor		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Worker		1.57	1.53	13.39	0.04	4.10	0.02	4.12	1.09	0.02	1.11	0.00	3,458.53	3,458.53	0.11	0.00	3,461.23
Total		1.73	7.67	14.28	0.07	7.96	0.05	8.01	1.70	0.05	1.75	0.00	6,291.39	6,291.39	0.15	0.00	6,295.08

Attachment 2

CalEEMod Output

IP Athos

Mojave Desert Air Basin, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
General Light Industry	148,104.00	1000sqft	3,400.00	148,104,000.00	0

1.2 Other Project Characteristics

Urbanization	Rural	**Wind Speed (m/s)**	2.6	**Precipitation Freq (Days)**	31
Climate Zone	10			**Operational Year**	2020
Utility Company					
CO2 Intensity (lb/MWhr)	0	**CH4 Intensity (lb/MWhr)**	0	**N2O Intensity (lb/MWhr)**	0

1.3 User Entered Comments & Non-Default Data

Project Characteristics - 30-mo construction over 660 work days

Land Use - up to 3400 ac site plus gen-ties

Construction Phase - Overall 30 mo or 660 days of construction

Off-road Equipment - mix 21 equip ct in seq 3 - electrical

Off-road Equipment - mix 70 equip ct in seq 2 - pv panels

Off-road Equipment - mix 31 equip ct in seq 1 - site prep

Off-road Equipment - mix 56 equip ct in seq 4 - throughout construction and restoration

Trips and VMT - 1,060 peak worker commutes and crew, water trucks as vendor class

On-road Fugitive Dust - Water trucks 10% unpaved; HHDT 1% unpaved

Grading - trenching is no net material import or export

Architectural Coating - no coatings needed

Vehicle Trips - TR 0.0004 per 1000sqft per day: fewer than 100 daily operational trips

Road Dust - approx 1% unpaved VMT during ops

Consumer Products - no consumer products

Area Coating - minimal or no coatings needed

Energy Use - energy use not applicable

Water And Wastewater - interior water consumption factors not applicable

Solid Waste - light industrial solid waste factors not applicable

Land Use Change - up to 3400 ac loss of natural carbon uptake

Construction Off-road Equipment Mitigation - Tier 4 offroad; water 2x daily is 55% effective PM10 control per Rule 403; suppressant is 84% effective per Table XI-D; 15 mph

Operational Off-Road Equipment - fleet of 6 equipment ct for occasional routine op-maint activity

Table Name	Column Name	Default Value	New Value
tblAreaCoating	ReapplicationRatePercent	10	0.1
tblConstDustMitigation	WaterUnpavedRoadMoistureContent	0	0.5
tblConstDustMitigation	WaterUnpavedRoadVehicleSpeed	0	15
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	30.00

tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	9.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	3.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	25.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	6.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	13.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	4.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	7.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	7.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	10.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	11.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	45.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	2.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	6.00
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final

tblConstructionPhase	NumDays	155,000.00	220.00
tblConstructionPhase	NumDays	15,500.00	660.00
tblConstructionPhase	NumDays	6,000.00	110.00
tblConsumerProducts	ROG_EF	2.14E-05	0
tblEnergyUse	LightingElect	2.93	0.00
tblEnergyUse	NT24E	5.02	0.00
tblEnergyUse	NT24NG	17.13	0.00
tblEnergyUse	T24E	2.20	0.00
tblEnergyUse	T24NG	15.36	0.00
tblGrading	MaterialExported	0.00	1,005,000.00
tblGrading	MaterialImported	0.00	1,005,000.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	6.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	18.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	2.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	2.00
tblOffRoadEquipment	UsageHours	7.00	6.00
tblOnRoadDust	HaulingPercentPave	100.00	99.00
tblOnRoadDust	HaulingPercentPave	100.00	99.00
tblOnRoadDust	HaulingPercentPave	100.00	99.00
tblOnRoadDust	HaulingPercentPave	100.00	99.00
tblOnRoadDust	VendorPercentPave	100.00	90.00
tblOperationalOffRoadEquipment	OperDaysPerYear	260.00	52.00
tblOperationalOffRoadEquipment	OperDaysPerYear	260.00	52.00
tblOperationalOffRoadEquipment	OperDaysPerYear	260.00	52.00
tblOperationalOffRoadEquipment	OperOffRoadEquipmentNumber	0.00	2.00
tblOperationalOffRoadEquipment	OperOffRoadEquipmentNumber	0.00	2.00
tblOperationalOffRoadEquipment	OperOffRoadEquipmentNumber	0.00	2.00

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tblProjectCharacteristics	UrbanizationLevel	Urban	Rural
tblRoadDust	RoadPercentPave	100	99
tblSolidWaste	SolidWasteGenerationRate	183,648.96	0.00
tblTripsAndVMT	HaulingTripLength	20.00	150.00
tblTripsAndVMT	HaulingTripLength	20.00	150.00
tblTripsAndVMT	HaulingTripLength	20.00	150.00
tblTripsAndVMT	HaulingTripLength	20.00	150.00
tblTripsAndVMT	HaulingTripNumber	125,625.00	4,440.00
tblTripsAndVMT	HaulingTripNumber	0.00	400.00
tblTripsAndVMT	HaulingTripNumber	0.00	1,704.00
tblTripsAndVMT	HaulingTripNumber	0.00	24,900.00
tblTripsAndVMT	VendorTripLength	6.60	7.00
tblTripsAndVMT	VendorTripLength	6.60	7.00
tblTripsAndVMT	VendorTripLength	6.60	7.00
tblTripsAndVMT	VendorTripLength	6.60	7.00
tblTripsAndVMT	VendorTripNumber	0.00	124.00
tblTripsAndVMT	VendorTripNumber	24,274.00	0.00
tblTripsAndVMT	WorkerTripLength	16.80	75.00
tblTripsAndVMT	WorkerTripLength	16.80	75.00
tblTripsAndVMT	WorkerTripLength	16.80	75.00
tblTripsAndVMT	WorkerTripLength	16.80	75.00
tblTripsAndVMT	WorkerTripNumber	78.00	200.00
tblTripsAndVMT	WorkerTripNumber	140.00	200.00
tblTripsAndVMT	WorkerTripNumber	62,204.00	200.00
tblTripsAndVMT	WorkerTripNumber	175.00	660.00
tblVehicleTrips	CC_TL	6.60	75.00
tblVehicleTrips	CNW_TL	6.60	75.00

tblVehicleTrips	CW_TL	14.70	75.00
tblVehicleTrips	ST_TR	1.32	4.0000e-004
tblVehicleTrips	SU_TR	0.68	4.0000e-004
tblVehicleTrips	WD_TR	6.97	4.0000e-004
tblWater	IndoorWaterUseRate	34,249,050,000.00	0.00

2.0 Emissions Summary

2.1 Overall Construction

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2018	3.3579	34.3929	22.3356	0.0578	19.2612	1.4247	20.6859	3.3268	1.3115	4.6383	0.0000	5,314.6967	5,314.6967	0.9447	0.0000	5,338.3134
2019	6.8962	58.7020	53.3000	0.1620	49.4658	2.3315	51.7973	6.4540	2.1580	8.6120	0.0000	14,727.4562	14,727.4562	2.2775	0.0000	14,784.3933
2020	7.4572	60.2869	59.4218	0.1836	52.3345	2.3969	54.7314	6.9671	2.2217	9.1888	0.0000	16,537.3835	16,537.3835	2.4500	0.0000	16,598.6345
Maximum	**7.4572**	**60.2869**	**59.4218**	**0.1836**	**52.3345**	**2.3969**	**54.7314**	**6.9671**	**2.2217**	**9.1888**	**0.0000**	**16,537.3835**	**16,537.3835**	**2.4500**	**0.0000**	**16,598.6345**

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2018	1.1269	6.0914	22.4525	0.0578	4.9001	0.0787	4.9788	1.2592	0.0771	1.3363	0.0000	5,314.6934	5,314.6934	0.9447	0.0000	5,338.3101
2019	3.4461	15.3421	62.4913	0.1620	11.7047	0.1988	11.9035	2.4789	0.1943	2.6731	0.0000	14,727.4483	14,727.4483	2.2775	0.0000	14,784.3854
2020	3.8394	16.1969	69.3887	0.1836	13.2387	0.2124	13.4511	2.8618	0.2075	3.0693	0.0000	16,537.3750	16,537.3750	2.4500	0.0000	16,598.6260
Maximum	**3.8394**	**16.1969**	**69.3887**	**0.1836**	**13.2387**	**0.2124**	**13.4511**	**2.8618**	**0.2075**	**3.0693**	**0.0000**	**16,537.3750**	**16,537.3750**	**2.4500**	**0.0000**	**16,598.6260**

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	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**52.50**	**75.47**	**-14.27**	**0.00**	**75.35**	**92.04**	**76.16**	**60.59**	**91.59**	**68.45**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

Quarter	Start Date	End Date	Maximum Unmitigated ROG + NOX (tons/quarter)	Maximum Mitigated ROG + NOX (tons/quarter)
1	**10-1-2018**	**12-31-2018**	13.9942	2.6210
2	**1-1-2019**	**3-31-2019**	10.6753	2.6354
3	**4-1-2019**	**6-30-2019**	18.0683	5.2262
4	**7-1-2019**	**9-30-2019**	18.2669	5.2836
5	**10-1-2019**	**12-31-2019**	18.3809	5.3977
6	**1-1-2020**	**3-31-2020**	18.0780	5.4213
7	**4-1-2020**	**6-30-2020**	18.7331	5.5593
8	**7-1-2020**	**9-30-2020**	18.9390	5.6204
		Highest	18.9390	5.6204

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	1.8450	0.0127	1.3696	1.0000e-004		4.9100e-003	4.9100e-003		4.9100e-003	4.9100e-003	0.0000	2.6464	2.6464	7.1000e-003	0.0000	2.8238
Energy	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Mobile	0.0996	0.9049	1.9058	7.6200e-003	6.1847	6.7400e-003	6.1914	0.7125	6.3600e-003	0.7188	0.0000	703.8646	703.8646	0.0283	0.0000	704.5724
Offroad	0.0306	0.2884	0.2834	3.7000e-004		0.0201	0.0201		0.0185	0.0185	0.0000	32.8714	32.8714	0.0106	0.0000	33.1372
Waste						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Water						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**1.9753**	**1.2059**	**3.5588**	**8.0900e-003**	**6.1847**	**0.0317**	**6.2164**	**0.7125**	**0.0297**	**0.7422**	**0.0000**	**739.3824**	**739.3824**	**0.0460**	**0.0000**	**740.5334**

2.2 Overall Operational

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	1.8450	0.0127	1.3696	1.0000e-004		4.9100e-003	4.9100e-003		4.9100e-003	4.9100e-003	0.0000	2.6464	2.6464	7.1000e-003	0.0000	2.8238
Energy	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Mobile	0.0996	0.9049	1.9058	7.6200e-003	6.1847	6.7400e-003	6.1914	0.7125	6.3600e-003	0.7188	0.0000	703.8646	703.8646	0.0283	0.0000	704.5724
Offroad	0.0306	0.2884	0.2834	3.7000e-004		0.0201	0.0201		0.0185	0.0185	0.0000	32.8714	32.8714	0.0106	0.0000	33.1372
Waste						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Water						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**1.9753**	**1.2059**	**3.5588**	**8.0900e-003**	**6.1847**	**0.0317**	**6.2164**	**0.7125**	**0.0297**	**0.7422**	**0.0000**	**739.3824**	**739.3824**	**0.0460**	**0.0000**	**740.5334**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

2.3 Vegetation

Vegetation

	CO2e
Category	MT
Vegetation Land Change	-14,654.0000
Total	**-14,654.0000**

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Site Preparation	Site Preparation	6/15/2018	11/15/2018	5	110	1 site prep
2	Throughout Constr	Grading	6/15/2018	12/24/2020	5	660	4 throughout cons
3	Electrical	Building Construction	2/3/2020	12/4/2020	5	220	3 electrical
4	PV Panels	Trenching	3/1/2019	11/5/2020	5	440	2 pv panels

Acres of Grading (Site Preparation Phase): 1650

Acres of Grading (Grading Phase): 0

Acres of Paving: 0

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 0; Non-Residential Outdoor: 0; Striped Parking Area: 0 (Architectural Coating – sqft)

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Site Preparation	Graders	12	8.00	187	0.41
Site Preparation	Rubber Tired Dozers	6	8.00	247	0.40
Site Preparation	Scrapers	9	8.00	367	0.48
Site Preparation	Tractors/Loaders/Backhoes	4	8.00	97	0.37
Throughout Constr	Excavators	2	8.00	158	0.38
Throughout Constr	Forklifts	22	8.00	89	0.20
Throughout Constr	Graders	1	8.00	187	0.41
Throughout Constr	Rubber Tired Dozers	1	8.00	247	0.40
Throughout Constr	Rubber Tired Loaders	10	8.00	203	0.36
Throughout Constr	Scrapers	2	8.00	367	0.48
Throughout Constr	Tractors/Loaders/Backhoes	18	8.00	97	0.37
Electrical	Cranes	1	6.00	231	0.29
Electrical	Excavators	1	8.00	158	0.38
Electrical	Forklifts	3	8.00	89	0.20
Electrical	Generator Sets	2	8.00	84	0.74
Electrical	Rollers	7	6.00	80	0.38
Electrical	Tractors/Loaders/Backhoes	3	7.00	97	0.37
Electrical	Trenchers	2	8.00	78	0.50
Electrical	Welders	2	8.00	46	0.45
PV Panels	Bore/Drill Rigs	30	8.00	221	0.50
PV Panels	Cranes	8	6.00	231	0.29
PV Panels	Generator Sets	4	8.00	84	0.74
PV Panels	Other Construction Equipment	4	6.00	172	0.42
PV Panels	Tractors/Loaders/Backhoes	20	8.00	97	0.37
PV Panels	Welders	4	8.00	46	0.45

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Site Preparation	31	200.00	0.00	4,440.00	75.00	7.00	150.00	LD_Mix	HDT_Mix	HHDT
Throughout Constr	56	200.00	124.00	400.00	75.00	7.00	150.00	LD_Mix	HDT_Mix	HHDT
Electrical	21	200.00	0.00	1,704.00	75.00	7.00	150.00	LD_Mix	HDT_Mix	HHDT
PV Panels	70	660.00	0.00	24,900.00	75.00	7.00	150.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Use Cleaner Engines for Construction Equipment

Use Soil Stabilizer

Replace Ground Cover

Water Exposed Area

Reduce Vehicle Speed on Unpaved Roads

3.2 Site Preparation - 2018

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					3.0034	0.0000	3.0034	1.2082	0.0000	1.2082	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	1.3541	16.4523	7.5715	0.0154		0.6723	0.6723		0.6185	0.6185	0.0000	1,405.7741	1,405.7741	0.4376	0.0000	1,416.7150
Total	**1.3541**	**16.4523**	**7.5715**	**0.0154**	**3.0034**	**0.6723**	**3.6757**	**1.2082**	**0.6185**	**1.8267**	**0.0000**	**1,405.7741**	**1,405.7741**	**0.4376**	**0.0000**	**1,416.7150**

3.2 Site Preparation - 2018

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0628	2.6483	0.3478	0.0108	4.7694	0.0129	4.7823	0.5258	0.0124	0.5382	0.0000	1,025.7170	1,025.7170	0.0149	0.0000	1,026.0896
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.2850	0.2965	2.5552	6.1300e-003	0.6153	3.9500e-003	0.6193	0.1634	3.6500e-003	0.1670	0.0000	553.2680	553.2680	0.0210	0.0000	553.7936
Total	**0.3477**	**2.9447**	**2.9030**	**0.0169**	**5.3846**	**0.0169**	**5.4015**	**0.6892**	**0.0160**	**0.7052**	**0.0000**	**1,578.9850**	**1,578.9850**	**0.0359**	**0.0000**	**1,579.8832**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					1.2840	0.0000	1.2840	0.5165	0.0000	0.5165	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.1887	0.8176	7.1272	0.0154		0.0252	0.0252		0.0252	0.0252	0.0000	1,405.7724	1,405.7724	0.4376	0.0000	1,416.7133
Total	**0.1887**	**0.8176**	**7.1272**	**0.0154**	**1.2840**	**0.0252**	**1.3091**	**0.5165**	**0.0252**	**0.5417**	**0.0000**	**1,405.7724**	**1,405.7724**	**0.4376**	**0.0000**	**1,416.7133**

3.2 Site Preparation - 2018

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0628	2.6483	0.3478	0.0108	0.7242	0.0129	0.7371	0.1221	0.0124	0.1345	0.0000	1,025.7170	1,025.7170	0.0149	0.0000	1,026.0896
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.2850	0.2965	2.5552	6.1300e-003	0.6153	3.9500e-003	0.6193	0.1634	3.6500e-003	0.1670	0.0000	553.2680	553.2680	0.0210	0.0000	553.7936
Total	**0.3477**	**2.9447**	**2.9030**	**0.0169**	**1.3395**	**0.0169**	**1.3563**	**0.2855**	**0.0160**	**0.3015**	**0.0000**	**1,578.9850**	**1,578.9850**	**0.0359**	**0.0000**	**1,579.8832**

3.3 Throughout Constr - 2018

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					1.3025	0.0000	1.3025	0.3295	0.0000	0.3295	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	1.2471	13.4535	8.2700	0.0148		0.7231	0.7231		0.6653	0.6653	0.0000	1,347.5109	1,347.5109	0.4195	0.0000	1,357.9983
Total	**1.2471**	**13.4535**	**8.2700**	**0.0148**	**1.3025**	**0.7231**	**2.0256**	**0.3295**	**0.6653**	**0.9948**	**0.0000**	**1,347.5109**	**1,347.5109**	**0.4195**	**0.0000**	**1,357.9983**

3.3 Throughout Constr - 2018

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	1.2200e-003	0.0513	6.7400e-003	2.1000e-004	0.4246	2.5000e-004	0.4249	0.0455	2.4000e-004	0.0458	0.0000	19.8815	19.8815	2.9000e-004	0.0000	19.8887
Vendor	0.0398	1.1084	0.2859	2.6200e-003	8.3518	7.1300e-003	8.3589	0.8435	6.8200e-003	0.8503	0.0000	248.3266	248.3266	0.0242	0.0000	248.9310
Worker	0.3679	0.3827	3.2985	7.9100e-003	0.7943	5.1100e-003	0.7994	0.2109	4.7100e-003	0.2156	0.0000	714.2187	714.2187	0.0271	0.0000	714.8972
Total	**0.4089**	**1.5424**	**3.5911**	**0.0107**	**9.5707**	**0.0125**	**9.5832**	**1.0999**	**0.0118**	**1.1116**	**0.0000**	**982.4268**	**982.4268**	**0.0516**	**0.0000**	**983.7169**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.5568	0.0000	0.5568	0.1409	0.0000	0.1409	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.1815	0.7867	8.8312	0.0148		0.0242	0.0242		0.0242	0.0242	0.0000	1,347.5093	1,347.5093	0.4195	0.0000	1,357.9967
Total	**0.1815**	**0.7867**	**8.8312**	**0.0148**	**0.5568**	**0.0242**	**0.5810**	**0.1409**	**0.0242**	**0.1651**	**0.0000**	**1,347.5093**	**1,347.5093**	**0.4195**	**0.0000**	**1,357.9967**

3.3 Throughout Constr - 2018

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	1.2200e-003	0.0513	6.7400e-003	2.1000e-004	0.0602	2.5000e-004	0.0604	9.1600e-003	2.4000e-004	9.4000e-003	0.0000	19.8815	19.8815	2.9000e-004	0.0000	19.8887
Vendor	0.0398	1.1084	0.2859	2.6200e-003	0.8654	7.1300e-003	0.8725	0.0963	6.8200e-003	0.1031	0.0000	248.3266	248.3266	0.0242	0.0000	248.9310
Worker	0.3679	0.3827	3.2985	7.9100e-003	0.7943	5.1100e-003	0.7994	0.2109	4.7100e-003	0.2156	0.0000	714.2187	714.2187	0.0271	0.0000	714.8972
Total	**0.4089**	**1.5424**	**3.5911**	**0.0107**	**1.7199**	**0.0125**	**1.7324**	**0.3164**	**0.0118**	**0.3281**	**0.0000**	**982.4268**	**982.4268**	**0.0516**	**0.0000**	**983.7169**

3.3 Throughout Constr - 2019

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					1.6608	0.0000	1.6608	0.5265	0.0000	0.5265	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	2.0841	22.3944	14.7830	0.0271		1.1656	1.1656		1.0724	1.0724	0.0000	2,436.1558	2,436.1558	0.7708	0.0000	2,455.4251
Total	**2.0841**	**22.3944**	**14.7830**	**0.0271**	**1.6608**	**1.1656**	**2.8264**	**0.5265**	**1.0724**	**1.5988**	**0.0000**	**2,436.1558**	**2,436.1558**	**0.7708**	**0.0000**	**2,455.4251**

3.3 Throughout Constr - 2019

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	2.1200e-003	0.0859	0.0119	3.8000e-004	0.4258	4.1000e-004	0.4262	0.0460	3.9000e-004	0.0464	0.0000	36.1147	36.1147	5.2000e-004	0.0000	36.1277
Vendor	0.0658	1.9114	0.4641	4.7800e-003	15.3508	0.0111	15.3618	1.5503	0.0106	1.5609	0.0000	452.9980	452.9980	0.0437	0.0000	454.0892
Worker	0.6109	0.6160	5.3422	0.0141	1.4599	9.1100e-003	1.4690	0.3876	8.4000e-003	0.3960	0.0000	1,271.8941	1,271.8941	0.0440	0.0000	1,272.9936
Total	**0.6788**	**2.6133**	**5.8182**	**0.0192**	**17.2365**	**0.0206**	**17.2571**	**1.9839**	**0.0194**	**2.0032**	**0.0000**	**1,761.0068**	**1,761.0068**	**0.0882**	**0.0000**	**1,763.2106**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.7100	0.0000	0.7100	0.2251	0.0000	0.2251	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.3337	1.4460	16.2319	0.0271		0.0445	0.0445		0.0445	0.0445	0.0000	2,436.1529	2,436.1529	0.7708	0.0000	2,455.4222
Total	**0.3337**	**1.4460**	**16.2319**	**0.0271**	**0.7100**	**0.0445**	**0.7545**	**0.2251**	**0.0445**	**0.2696**	**0.0000**	**2,436.1529**	**2,436.1529**	**0.7708**	**0.0000**	**2,455.4222**

3.3 Throughout Constr - 2019

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	2.1200e-003	0.0859	0.0119	3.8000e-004	0.0613	4.1000e-004	0.0618	9.5900e-003	3.9000e-004	9.9800e-003	0.0000	36.1147	36.1147	5.2000e-004	0.0000	36.1277
Vendor	0.0658	1.9114	0.4641	4.7800e-003	1.5907	0.0111	1.6017	0.1770	0.0106	0.1876	0.0000	452.9980	452.9980	0.0437	0.0000	454.0892
Worker	0.6109	0.6160	5.3422	0.0141	1.4599	9.1100e-003	1.4690	0.3876	8.4000e-003	0.3960	0.0000	1,271.8941	1,271.8941	0.0440	0.0000	1,272.9936
Total	**0.6788**	**2.6133**	**5.8182**	**0.0192**	**3.1119**	**0.0206**	**3.1325**	**0.5742**	**0.0194**	**0.5936**	**0.0000**	**1,761.0068**	**1,761.0068**	**0.0882**	**0.0000**	**1,763.2106**

3.3 Throughout Constr - 2020

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					1.6488	0.0000	1.6488	0.5198	0.0000	0.5198	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	1.8904	20.1129	14.2318	0.0267		1.0144	1.0144		0.9333	0.9333	0.0000	2,346.2042	2,346.2042	0.7588	0.0000	2,365.1744
Total	**1.8904**	**20.1129**	**14.2318**	**0.0267**	**1.6488**	**1.0144**	**2.6632**	**0.5198**	**0.9333**	**1.4531**	**0.0000**	**2,346.2042**	**2,346.2042**	**0.7588**	**0.0000**	**2,365.1744**

3.3 Throughout Constr - 2020

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	1.9500e-003	0.0762	0.0111	3.7000e-004	0.4257	3.5000e-004	0.4261	0.0459	3.3000e-004	0.0463	0.0000	35.1216	35.1216	5.0000e-004	0.0000	35.1340
Vendor	0.0557	1.7194	0.4006	4.6700e-003	15.1155	7.3300e-003	15.1229	1.5266	7.0100e-003	1.5336	0.0000	442.4355	442.4355	0.0415	0.0000	443.4735
Worker	0.5519	0.5365	4.6956	0.0134	1.4376	8.6900e-003	1.4462	0.3816	8.0100e-003	0.3897	0.0000	1,213.2711	1,213.2711	0.0378	0.0000	1,214.2171
Total	**0.6096**	**2.3321**	**5.1074**	**0.0185**	**16.9788**	**0.0164**	**16.9952**	**1.9541**	**0.0154**	**1.9695**	**0.0000**	**1,690.8282**	**1,690.8282**	**0.0799**	**0.0000**	**1,692.8246**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.7048	0.0000	0.7048	0.2222	0.0000	0.2222	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.3286	1.4238	15.9832	0.0267		0.0438	0.0438		0.0438	0.0438	0.0000	2,346.2014	2,346.2014	0.7588	0.0000	2,365.1716
Total	**0.3286**	**1.4238**	**15.9832**	**0.0267**	**0.7048**	**0.0438**	**0.7487**	**0.2222**	**0.0438**	**0.2660**	**0.0000**	**2,346.2014**	**2,346.2014**	**0.7588**	**0.0000**	**2,365.1716**

3.3 Throughout Constr - 2020

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	1.9500e-003	0.0762	0.0111	3.7000e-004	0.0613	3.5000e-004	0.0617	9.5700e-003	3.3000e-004	9.9000e-003	0.0000	35.1216	35.1216	5.0000e-004	0.0000	35.1340
Vendor	0.0557	1.7194	0.4006	4.6700e-003	1.5663	7.3300e-003	1.5736	0.1743	7.0100e-003	0.1813	0.0000	442.4355	442.4355	0.0415	0.0000	443.4735
Worker	0.5519	0.5365	4.6956	0.0134	1.4376	8.6900e-003	1.4462	0.3816	8.0100e-003	0.3897	0.0000	1,213.2711	1,213.2711	0.0378	0.0000	1,214.2171
Total	**0.6096**	**2.3321**	**5.1074**	**0.0185**	**3.0651**	**0.0164**	**3.0815**	**0.5655**	**0.0154**	**0.5809**	**0.0000**	**1,690.8282**	**1,690.8282**	**0.0799**	**0.0000**	**1,692.8246**

3.4 Electrical - 2020

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.5480	4.8943	4.4591	6.7100e-003		0.3030	0.3030		0.2837	0.2837	0.0000	578.9154	578.9154	0.1468	0.0000	582.5841
Total	**0.5480**	**4.8943**	**4.4591**	**6.7100e-003**		**0.3030**	**0.3030**		**0.2837**	**0.2837**	**0.0000**	**578.9154**	**578.9154**	**0.1468**	**0.0000**	**582.5841**

3.4 Electrical - 2020

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0214	0.8335	0.1215	4.0400e-003	1.8304	3.7800e-003	1.8342	0.2018	3.6200e-003	0.2054	0.0000	384.2326	384.2326	5.4200e-003	0.0000	384.3681
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.4724	0.4593	4.0196	0.0115	1.2306	7.4400e-003	1.2380	0.3267	6.8600e-003	0.3336	0.0000	1,038.5979	1,038.5979	0.0324	0.0000	1,039.4077
Total	**0.4938**	**1.2928**	**4.1411**	**0.0155**	**3.0610**	**0.0112**	**3.0722**	**0.5285**	**0.0105**	**0.5390**	**0.0000**	**1,422.8305**	**1,422.8305**	**0.0378**	**0.0000**	**1,423.7758**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0818	0.5335	4.6323	6.7100e-003		0.0103	0.0103		0.0103	0.0103	0.0000	578.9147	578.9147	0.1468	0.0000	582.5834
Total	**0.0818**	**0.5335**	**4.6323**	**6.7100e-003**		**0.0103**	**0.0103**		**0.0103**	**0.0103**	**0.0000**	**578.9147**	**578.9147**	**0.1468**	**0.0000**	**582.5834**

3.4 Electrical - 2020

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0214	0.8335	0.1215	4.0400e-003	0.2779	3.7800e-003	0.2817	0.0469	3.6200e-003	0.0505	0.0000	384.2326	384.2326	5.4200e-003	0.0000	384.3681
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.4724	0.4593	4.0196	0.0115	1.2306	7.4400e-003	1.2380	0.3267	6.8600e-003	0.3336	0.0000	1,038.5979	1,038.5979	0.0324	0.0000	1,039.4077
Total	**0.4938**	**1.2928**	**4.1411**	**0.0155**	**1.5085**	**0.0112**	**1.5197**	**0.3736**	**0.0105**	**0.3840**	**0.0000**	**1,422.8305**	**1,422.8305**	**0.0378**	**0.0000**	**1,423.7758**

3.5 PV Panels - 2019

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	2.2840	25.2985	17.0462	0.0472		1.0883	1.0883		1.0126	1.0126	0.0000	4,207.9098	4,207.9098	1.2567	0.0000	4,239.3282
Total	**2.2840**	**25.2985**	**17.0462**	**0.0472**		**1.0883**	**1.0883**		**1.0126**	**1.0126**	**0.0000**	**4,207.9098**	**4,207.9098**	**1.2567**	**0.0000**	**4,239.3282**

3.5 PV Panels - 2019

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.1655	6.6978	0.9277	0.0296	26.5445	0.0320	26.5765	2.8754	0.0306	2.9060	0.0000	2,816.6343	2,816.6343	0.0406	0.0000	2,817.6493
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.6838	1.6980	14.7249	0.0388	4.0240	0.0251	4.0491	1.0683	0.0232	1.0914	0.0000	3,505.7494	3,505.7494	0.1212	0.0000	3,508.7801
Total	**1.8493**	**8.3958**	**15.6526**	**0.0684**	**30.5685**	**0.0571**	**30.6256**	**3.9437**	**0.0538**	**3.9974**	**0.0000**	**6,322.3838**	**6,322.3838**	**0.1618**	**0.0000**	**6,326.4294**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.5843	2.8870	24.7886	0.0472		0.0766	0.0766		0.0766	0.0766	0.0000	4,207.9048	4,207.9048	1.2567	0.0000	4,239.3232
Total	**0.5843**	**2.8870**	**24.7886**	**0.0472**		**0.0766**	**0.0766**		**0.0766**	**0.0766**	**0.0000**	**4,207.9048**	**4,207.9048**	**1.2567**	**0.0000**	**4,239.3232**

3.5 PV Panels - 2019

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.1655	6.6978	0.9277	0.0296	3.8587	0.0320	3.8907	0.6113	0.0306	0.6419	0.0000	2,816.6343	2,816.6343	0.0406	0.0000	2,817.6493
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.6838	1.6980	14.7249	0.0388	4.0240	0.0251	4.0491	1.0683	0.0232	1.0914	0.0000	3,505.7494	3,505.7494	0.1212	0.0000	3,508.7801
Total	**1.8493**	**8.3958**	**15.6526**	**0.0684**	**7.8828**	**0.0571**	**7.9399**	**1.6796**	**0.0538**	**1.7334**	**0.0000**	**6,322.3838**	**6,322.3838**	**0.1618**	**0.0000**	**6,326.4294**

3.5 PV Panels - 2020

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	2.1848	23.9801	17.2011	0.0482		0.9993	0.9993		0.9294	0.9294	0.0000	4,207.2199	4,207.2199	1.2790	0.0000	4,239.1947
Total	**2.1848**	**23.9801**	**17.2011**	**0.0482**		**0.9993**	**0.9993**		**0.9294**	**0.9294**	**0.0000**	**4,207.2199**	**4,207.2199**	**1.2790**	**0.0000**	**4,239.1947**

3.5 PV Panels - 2020

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.1575	6.1453	0.8960	0.0298	26.5481	0.0279	26.5760	2.8767	0.0267	2.9034	0.0000	2,832.8545	2,832.8545	0.0400	0.0000	2,833.8534
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.5732	1.5294	13.3853	0.0383	4.0978	0.0248	4.1226	1.0879	0.0228	1.1107	0.0000	3,458.5309	3,458.5309	0.1079	0.0000	3,461.2275
Total	**1.7307**	**7.6747**	**14.2813**	**0.0681**	**30.6460**	**0.0527**	**30.6986**	**3.9646**	**0.0495**	**4.0141**	**0.0000**	**6,291.3854**	**6,291.3854**	**0.1478**	**0.0000**	**6,295.0810**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.5950	2.9399	25.2435	0.0482		0.0780	0.0780		0.0780	0.0780	0.0000	4,207.2149	4,207.2149	1.2790	0.0000	4,239.1897
Total	**0.5950**	**2.9399**	**25.2435**	**0.0482**		**0.0780**	**0.0780**		**0.0780**	**0.0780**	**0.0000**	**4,207.2149**	**4,207.2149**	**1.2790**	**0.0000**	**4,239.1897**

3.5 PV Panels - 2020

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.1575	6.1453	0.8960	0.0298	3.8624	0.0279	3.8903	0.6126	0.0267	0.6393	0.0000	2,832.8545	2,832.8545	0.0400	0.0000	2,833.8534
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.5732	1.5294	13.3853	0.0383	4.0978	0.0248	4.1226	1.0879	0.0228	1.1107	0.0000	3,458.5309	3,458.5309	0.1079	0.0000	3,461.2275
Total	**1.7307**	**7.6747**	**14.2813**	**0.0681**	**7.9602**	**0.0527**	**8.0129**	**1.7005**	**0.0495**	**1.7500**	**0.0000**	**6,291.3854**	**6,291.3854**	**0.1478**	**0.0000**	**6,295.0810**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	0.0996	0.9049	1.9058	7.6200e-003	6.1847	6.7400e-003	6.1914	0.7125	6.3600e-003	0.7188	0.0000	703.8646	703.8646	0.0283	0.0000	704.5724
Unmitigated	0.0996	0.9049	1.9058	7.6200e-003	6.1847	6.7400e-003	6.1914	0.7125	6.3600e-003	0.7188	0.0000	703.8646	703.8646	0.0283	0.0000	704.5724

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
General Light Industry	59.24	59.24	59.24	1,508,193	1,508,193
Total	59.24	59.24	59.24	1,508,193	1,508,193

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
General Light Industry	75.00	75.00	75.00	59.00	28.00	13.00	92	5	3

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
General Light Industry	0.533720	0.036539	0.171303	0.112547	0.020259	0.005751	0.010148	0.095159	0.001607	0.002105	0.008722	0.000887	0.001253

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Electricity Mitigated						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Electricity Unmitigated						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
NaturalGas Mitigated	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
NaturalGas Unmitigated	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
General Light Industry	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

5.2 Energy by Land Use - NaturalGas

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
General Light Industry	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

5.3 Energy by Land Use - Electricity

Unmitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
General Light Industry	0	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

5.3 Energy by Land Use - Electricity

Mitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
General Light Industry	0	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

6.0 Area Detail

6.1 Mitigation Measures Area

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	1.8450	0.0127	1.3696	1.0000e-004		4.9100e-003	4.9100e-003		4.9100e-003	4.9100e-003	0.0000	2.6464	2.6464	7.1000e-003	0.0000	2.8238
Unmitigated	1.8450	0.0127	1.3696	1.0000e-004		4.9100e-003	4.9100e-003		4.9100e-003	4.9100e-003	0.0000	2.6464	2.6464	7.1000e-003	0.0000	2.8238

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	1.7162					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	0.1289	0.0127	1.3696	1.0000e-004		4.9100e-003	4.9100e-003		4.9100e-003	4.9100e-003	0.0000	2.6464	2.6464	7.1000e-003	0.0000	2.8238
Total	**1.8450**	**0.0127**	**1.3696**	**1.0000e-004**		**4.9100e-003**	**4.9100e-003**		**4.9100e-003**	**4.9100e-003**	**0.0000**	**2.6464**	**2.6464**	**7.1000e-003**	**0.0000**	**2.8238**

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	1.7162					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	0.1289	0.0127	1.3696	1.0000e-004		4.9100e-003	4.9100e-003		4.9100e-003	4.9100e-003	0.0000	2.6464	2.6464	7.1000e-003	0.0000	2.8238
Total	**1.8450**	**0.0127**	**1.3696**	**1.0000e-004**		**4.9100e-003**	**4.9100e-003**		**4.9100e-003**	**4.9100e-003**	**0.0000**	**2.6464**	**2.6464**	**7.1000e-003**	**0.0000**	**2.8238**

7.0 Water Detail

7.1 Mitigation Measures Water

	Total CO2	CH4	N2O	CO2e
Category	MT/yr			
Mitigated	0.0000	0.0000	0.0000	0.0000
Unmitigated	0.0000	0.0000	0.0000	0.0000

7.2 Water by Land Use

Unmitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
General Light Industry	0 / 0	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

7.2 Water by Land Use

Mitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
General Light Industry	0 / 0	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

8.0 Waste Detail

8.1 Mitigation Measures Waste

Category/Year

	Total CO2	CH4	N2O	CO2e
	MT/yr			
Mitigated	0.0000	0.0000	0.0000	0.0000
Unmitigated	0.0000	0.0000	0.0000	0.0000

8.2 Waste by Land Use

Unmitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
General Light Industry	0	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

Mitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
General Light Industry	0	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

9.0 Operational Offroad

Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type
Forklifts	2	8.00	52	89	0.20	Diesel
Other General Industrial Equipment	2	8.00	52	88	0.34	Diesel
Tractors/Loaders/Backhoes	2	8.00	52	97	0.37	Diesel

UnMitigated/Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Equipment Type	tons/yr										MT/yr					
Forklifts	7.4900e-003	0.0675	0.0614	8.0000e-005		5.0300e-003	5.0300e-003		4.6200e-003	4.6200e-003	0.0000	6.9832	6.9832	2.2600e-003	0.0000	7.0396
Other General Industrial Equipment	0.0122	0.1114	0.1035	1.3000e-004		8.1200e-003	8.1200e-003		7.4700e-003	7.4700e-003	0.0000	11.6999	11.6999	3.7800e-003	0.0000	11.7945
Tractors/Loaders/Backhoes	0.0109	0.1095	0.1185	1.6000e-004		6.9200e-003	6.9200e-003		6.3700e-003	6.3700e-003	0.0000	14.1883	14.1883	4.5900e-003	0.0000	14.3031
Total	**0.0306**	**0.2884**	**0.2834**	**3.7000e-004**		**0.0201**	**0.0201**		**0.0185**	**0.0185**	**0.0000**	**32.8714**	**32.8714**	**0.0106**	**0.0000**	**33.1372**

10.0 Stationary Equipment

Fire Pumps and Emergency Generators

Equipment Type	Number	Hours/Day	Hours/Year	Horse Power	Load Factor	Fuel Type

Boilers

Equipment Type	Number	Heat Input/Day	Heat Input/Year	Boiler Rating	Fuel Type

User Defined Equipment

Equipment Type	Number

11.0 Vegetation

	Total CO2	CH4	N2O	CO2e
Category	MT			
Unmitigated	-14,654.0000	0.0000	0.0000	-14,654.0000

11.1 Vegetation Land Change

Vegetation Type

	Initial/Final	Total CO2	CH4	N2O	CO2e
	Acres	MT			
Grassland	3400 / 0	-14,654.0000	0.0000	0.0000	-14,654.0000
Total		**-14,654.0000**	**0.0000**	**0.0000**	**-14,654.0000**

IP Athos

Mojave Desert Air Basin, Winter

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
General Light Industry	148,104.00	1000sqft	3,400.00	148,104,000.00	0

1.2 Other Project Characteristics

Urbanization	Rural	**Wind Speed (m/s)**	2.6	**Precipitation Freq (Days)**	31
Climate Zone	10			**Operational Year**	2020
Utility Company					
CO2 Intensity (lb/MWhr)	0	**CH4 Intensity (lb/MWhr)**	0	**N2O Intensity (lb/MWhr)**	0

1.3 User Entered Comments & Non-Default Data

IP Athos - Mojave Desert Air Basin, Winter

Project Characteristics - 30-mo construction over 660 work days

Land Use - up to 3400 ac site plus gen-ties

Construction Phase - Overall 30 mo or 660 days of construction

Off-road Equipment - mix 21 equip ct in seq 3 - electrical

Off-road Equipment - mix 70 equip ct in seq 2 - pv panels

Off-road Equipment - mix 31 equip ct in seq 1 - site prep

Off-road Equipment - mix 56 equip ct in seq 4 - throughout construction and restoration

Trips and VMT - 1,060 peak worker commutes and crew, water trucks as vendor class

On-road Fugitive Dust - Water trucks 10% unpaved; HHDT 1% unpaved

Grading - trenching is no net material import or export

Architectural Coating - no coatings needed

Vehicle Trips - TR 0.0004 per 1000sqft per day: fewer than 100 daily operational trips

Road Dust - approx 1% unpaved VMT during ops

Consumer Products - no consumer products

Area Coating - minimal or no coatings needed

Energy Use - energy use not applicable

Water And Wastewater - interior water consumption factors not applicable

Solid Waste - light industrial solid waste factors not applicable

Land Use Change - up to 3400 ac loss of natural carbon uptake

Construction Off-road Equipment Mitigation - Tier 4 offroad; water 2x daily is 55% effective PM10 control per Rule 403; suppressant is 84% effective per Table XI-D; 15 mph

Operational Off-Road Equipment - fleet of 6 equipment ct for occasional routine op-maint activity

Table Name	Column Name	Default Value	New Value
tblAreaCoating	ReapplicationRatePercent	10	0.1
tblConstDustMitigation	WaterUnpavedRoadMoistureContent	0	0.5
tblConstDustMitigation	WaterUnpavedRoadVehicleSpeed	0	15
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	30.00

tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	9.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	3.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	25.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	6.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	13.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	4.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	7.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	7.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	10.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	11.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	45.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	2.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	6.00
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final

IP Athos - Mojave Desert Air Basin, Winter

tblConstructionPhase	NumDays	155,000.00	220.00
tblConstructionPhase	NumDays	15,500.00	660.00
tblConstructionPhase	NumDays	6,000.00	110.00
tblConsumerProducts	ROG_EF	2.14E-05	0
tblEnergyUse	LightingElect	2.93	0.00
tblEnergyUse	NT24E	5.02	0.00
tblEnergyUse	NT24NG	17.13	0.00
tblEnergyUse	T24E	2.20	0.00
tblEnergyUse	T24NG	15.36	0.00
tblGrading	MaterialExported	0.00	1,005,000.00
tblGrading	MaterialImported	0.00	1,005,000.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	6.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	18.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	2.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	2.00
tblOffRoadEquipment	UsageHours	7.00	6.00
tblOnRoadDust	HaulingPercentPave	100.00	99.00
tblOnRoadDust	HaulingPercentPave	100.00	99.00
tblOnRoadDust	HaulingPercentPave	100.00	99.00
tblOnRoadDust	HaulingPercentPave	100.00	99.00
tblOnRoadDust	VendorPercentPave	100.00	90.00
tblOperationalOffRoadEquipment	OperDaysPerYear	260.00	52.00
tblOperationalOffRoadEquipment	OperDaysPerYear	260.00	52.00
tblOperationalOffRoadEquipment	OperDaysPerYear	260.00	52.00
tblOperationalOffRoadEquipment	OperOffRoadEquipmentNumber	0.00	2.00
tblOperationalOffRoadEquipment	OperOffRoadEquipmentNumber	0.00	2.00
tblOperationalOffRoadEquipment	OperOffRoadEquipmentNumber	0.00	2.00

IP Athos - Mojave Desert Air Basin, Winter

tblProjectCharacteristics	UrbanizationLevel	Urban	Rural
tblRoadDust	RoadPercentPave	100	99
tblSolidWaste	SolidWasteGenerationRate	183,648.96	0.00
tblTripsAndVMT	HaulingTripLength	20.00	150.00
tblTripsAndVMT	HaulingTripLength	20.00	150.00
tblTripsAndVMT	HaulingTripLength	20.00	150.00
tblTripsAndVMT	HaulingTripLength	20.00	150.00
tblTripsAndVMT	HaulingTripNumber	125,625.00	4,440.00
tblTripsAndVMT	HaulingTripNumber	0.00	400.00
tblTripsAndVMT	HaulingTripNumber	0.00	1,704.00
tblTripsAndVMT	HaulingTripNumber	0.00	24,900.00
tblTripsAndVMT	VendorTripLength	6.60	7.00
tblTripsAndVMT	VendorTripLength	6.60	7.00
tblTripsAndVMT	VendorTripLength	6.60	7.00
tblTripsAndVMT	VendorTripLength	6.60	7.00
tblTripsAndVMT	VendorTripNumber	0.00	124.00
tblTripsAndVMT	VendorTripNumber	24,274.00	0.00
tblTripsAndVMT	WorkerTripLength	16.80	75.00
tblTripsAndVMT	WorkerTripLength	16.80	75.00
tblTripsAndVMT	WorkerTripLength	16.80	75.00
tblTripsAndVMT	WorkerTripLength	16.80	75.00
tblTripsAndVMT	WorkerTripNumber	78.00	200.00
tblTripsAndVMT	WorkerTripNumber	140.00	200.00
tblTripsAndVMT	WorkerTripNumber	62,204.00	200.00
tblTripsAndVMT	WorkerTripNumber	175.00	660.00
tblVehicleTrips	CC_TL	6.60	75.00
tblVehicleTrips	CNW_TL	6.60	75.00

tblVehicleTrips	CW_TL	14.70	75.00
tblVehicleTrips	ST_TR	1.32	4.0000e-004
tblVehicleTrips	SU_TR	0.68	4.0000e-004
tblVehicleTrips	WD_TR	6.97	4.0000e-004
tblWater	IndoorWaterUseRate	34,249,050,000.00	0.00

2.0 Emissions Summary

2.1 Overall Construction (Maximum Daily Emission)

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2018	55.4239	562.0032	351.2001	0.9379	315.4488	22.8907	338.3395	55.6045	21.0723	76.6768	0.0000	95,140.4284	95,140.4284	16.8093	0.0000	95,560.6604
2019	61.3960	498.0230	445.7100	1.3998	454.9076	19.5983	474.5059	58.5114	18.1491	76.6605	0.0000	140,332.4917	140,332.4917	21.5810	0.0000	140,872.0175
2020	66.8738	513.2358	498.9561	1.5815	479.7234	20.3554	500.0789	63.0193	18.8761	81.8955	0.0000	157,050.4047	157,050.4047	23.1929	0.0000	157,630.2279
Maximum	**66.8738**	**562.0032**	**498.9561**	**1.5815**	**479.7234**	**22.8907**	**500.0789**	**63.0193**	**21.0723**	**81.8955**	**0.0000**	**157,050.4047**	**157,050.4047**	**23.1929**	**0.0000**	**157,630.2279**

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2018	19.2268	99.3310	351.0276	0.9379	78.0081	1.2816	79.2897	20.8875	1.2557	22.1433	0.0000	95,140.4284	95,140.4284	16.8093	0.0000	95,560.6604
2019	32.3892	131.8886	527.8448	1.3998	104.2190	1.7265	105.9455	21.9485	1.6865	23.6350	0.0000	140,332.4917	140,332.4917	21.5810	0.0000	140,872.0175
2020	36.1597	138.6009	586.6134	1.5815	117.6621	1.8418	119.5040	25.3215	1.7987	27.1201	0.0000	157,050.4047	157,050.4047	23.1929	0.0000	157,630.2279
Maximum	**36.1597**	**138.6009**	**586.6134**	**1.5815**	**117.6621**	**1.8418**	**119.5040**	**25.3215**	**1.7987**	**27.1201**	**0.0000**	**157,050.4047**	**157,050.4047**	**23.1929**	**0.0000**	**157,630.2279**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**52.22**	**76.49**	**-13.09**	**0.00**	**76.01**	**92.28**	**76.79**	**61.52**	**91.84**	**69.01**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	10.8353	0.1405	15.2182	1.1300e-003		0.0546	0.0546		0.0546	0.0546		32.4129	32.4129	0.0869		34.5859
Energy	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Mobile	0.5409	4.8421	9.8457	0.0411	34.0393	0.0371	34.0764	3.9288	0.0350	3.9638		4,180.2776	4,180.2776	0.1707		4,184.5448
Offroad	1.1777	11.0911	10.8995	0.0144		0.7718	0.7718		0.7101	0.7101		1,393.6350	1,393.6350	0.4507		1,404.9033
Total	**12.5538**	**16.0737**	**35.9635**	**0.0566**	**34.0393**	**0.8635**	**34.9027**	**3.9288**	**0.7996**	**4.7285**		**5,606.3255**	**5,606.3255**	**0.7083**	**0.0000**	**5,624.0340**

2.2 Overall Operational

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	10.8353	0.1405	15.2182	1.1300e-003		0.0546	0.0546		0.0546	0.0546		32.4129	32.4129	0.0869		34.5859
Energy	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Mobile	0.5409	4.8421	9.8457	0.0411	34.0393	0.0371	34.0764	3.9288	0.0350	3.9638		4,180.2776	4,180.2776	0.1707		4,184.5448
Offroad	1.1777	11.0911	10.8995	0.0144		0.7718	0.7718		0.7101	0.7101		1,393.6350	1,393.6350	0.4507		1,404.9033
Total	**12.5538**	**16.0737**	**35.9635**	**0.0566**	**34.0393**	**0.8635**	**34.9027**	**3.9288**	**0.7996**	**4.7285**		**5,606.3255**	**5,606.3255**	**0.7083**	**0.0000**	**5,624.0340**

	ROG	**NOx**	**CO**	**SO2**	**Fugitive PM10**	**Exhaust PM10**	**PM10 Total**	**Fugitive PM2.5**	**Exhaust PM2.5**	**PM2.5 Total**	**Bio- CO2**	**NBio-CO2**	**Total CO2**	**CH4**	**N20**	**CO2e**
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Site Preparation	Site Preparation	6/15/2018	11/15/2018	5	110	1 site prep
2	Throughout Constr	Grading	6/15/2018	12/24/2020	5	660	4 throughout cons
3	Electrical	Building Construction	2/3/2020	12/4/2020	5	220	3 electrical
4	PV Panels	Trenching	3/1/2019	11/5/2020	5	440	2 pv panels

Acres of Grading (Site Preparation Phase): 1650

Acres of Grading (Grading Phase): 0

Acres of Paving: 0

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 0; Non-Residential Outdoor: 0; Striped Parking Area: 0 (Architectural Coating – sqft)

OffRoad Equipment

IP Athos - Mojave Desert Air Basin, Winter

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Site Preparation	Graders	12	8.00	187	0.41
Site Preparation	Rubber Tired Dozers	6	8.00	247	0.40
Site Preparation	Scrapers	9	8.00	367	0.48
Site Preparation	Tractors/Loaders/Backhoes	4	8.00	97	0.37
Throughout Constr	Excavators	2	8.00	158	0.38
Throughout Constr	Forklifts	22	8.00	89	0.20
Throughout Constr	Graders	1	8.00	187	0.41
Throughout Constr	Rubber Tired Dozers	1	8.00	247	0.40
Throughout Constr	Rubber Tired Loaders	10	8.00	203	0.36
Throughout Constr	Scrapers	2	8.00	367	0.48
Throughout Constr	Tractors/Loaders/Backhoes	18	8.00	97	0.37
Electrical	Cranes	1	6.00	231	0.29
Electrical	Excavators	1	8.00	158	0.38
Electrical	Forklifts	3	8.00	89	0.20
Electrical	Generator Sets	2	8.00	84	0.74
Electrical	Rollers	7	6.00	80	0.38
Electrical	Tractors/Loaders/Backhoes	3	7.00	97	0.37
Electrical	Trenchers	2	8.00	78	0.50
Electrical	Welders	2	8.00	46	0.45
PV Panels	Bore/Drill Rigs	30	8.00	221	0.50
PV Panels	Cranes	8	6.00	231	0.29
PV Panels	Generator Sets	4	8.00	84	0.74
PV Panels	Other Construction Equipment	4	6.00	172	0.42
PV Panels	Tractors/Loaders/Backhoes	20	8.00	97	0.37
PV Panels	Welders	4	8.00	46	0.45

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Site Preparation	31	200.00	0.00	4,440.00	75.00	7.00	150.00	LD_Mix	HDT_Mix	HHDT
Throughout Constr	56	200.00	124.00	400.00	75.00	7.00	150.00	LD_Mix	HDT_Mix	HHDT
Electrical	21	200.00	0.00	1,704.00	75.00	7.00	150.00	LD_Mix	HDT_Mix	HHDT
PV Panels	70	660.00	0.00	24,900.00	75.00	7.00	150.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Use Cleaner Engines for Construction Equipment

Use Soil Stabilizer

Replace Ground Cover

Water Exposed Area

Reduce Vehicle Speed on Unpaved Roads

3.2 Site Preparation - 2018

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					54.6077	0.0000	54.6077	21.9678	0.0000	21.9678			0.0000			0.0000
Off-Road	24.6196	299.1328	137.6626	0.2799		12.2226	12.2226		11.2448	11.2448		28,174.5575	28,174.5575	8.7711		28,393.8356
Total	**24.6196**	**299.1328**	**137.6626**	**0.2799**	**54.6077**	**12.2226**	**66.8304**	**21.9678**	**11.2448**	**33.2127**		**28,174.5575**	**28,174.5575**	**8.7711**		**28,393.8356**

3.2 Site Preparation - 2018

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	1.1505	47.3610	6.4819	0.1954	94.3672	0.2350	94.6022	10.3362	0.2248	10.5610		20,487.4060	20,487.4060	0.3137		20,495.2489
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	5.7459	5.0251	43.1092	0.1080	11.3977	0.0719	11.4696	3.0217	0.0663	3.0880		10,751.8127	10,751.8127	0.4042		10,761.9179
Total	**6.8964**	**52.3861**	**49.5911**	**0.3034**	**105.7649**	**0.3069**	**106.0717**	**13.3578**	**0.2911**	**13.6490**		**31,239.2187**	**31,239.2187**	**0.7179**		**31,257.1668**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					23.3448	0.0000	23.3448	9.3912	0.0000	9.3912			0.0000			0.0000
Off-Road	3.4306	14.8658	129.5857	0.2799		0.4574	0.4574		0.4574	0.4574	0.0000	28,174.5575	28,174.5575	8.7711		28,393.8356
Total	**3.4306**	**14.8658**	**129.5857**	**0.2799**	**23.3448**	**0.4574**	**23.8022**	**9.3912**	**0.4574**	**9.8487**	**0.0000**	**28,174.5575**	**28,174.5575**	**8.7711**		**28,393.8356**

3.2 Site Preparation - 2018

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	1.1505	47.3610	6.4819	0.1954	13.9923	0.2350	14.2273	2.3146	0.2248	2.5394		20,487.4060	20,487.4060	0.3137		20,495.2489
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	5.7459	5.0251	43.1092	0.1080	11.3977	0.0719	11.4696	3.0217	0.0663	3.0880		10,751.8127	10,751.8127	0.4042		10,761.9179
Total	**6.8964**	**52.3861**	**49.5911**	**0.3034**	**25.3900**	**0.3069**	**25.6968**	**5.3363**	**0.2911**	**5.6274**		**31,239.2187**	**31,239.2187**	**0.7179**		**31,257.1668**

3.3 Throughout Constr - 2018

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					8.6733	0.0000	8.6733	3.5965	0.0000	3.5965			0.0000			0.0000
Off-Road	17.5651	189.4855	116.4784	0.2078		10.1849	10.1849		9.3701	9.3701		20,920.7953	20,920.7953	6.5129		21,083.6185
Total	**17.5651**	**189.4855**	**116.4784**	**0.2078**	**8.6733**	**10.1849**	**18.8582**	**3.5965**	**9.3701**	**12.9666**		**20,920.7953**	**20,920.7953**	**6.5129**		**21,083.6185**

3.3 Throughout Constr - 2018

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0173	0.7111	0.0973	2.9300e-003	6.5144	3.5300e-003	6.5180	0.6955	3.3800e-003	0.6989		307.6187	307.6187	4.7100e-003		307.7365
Vendor	0.5797	15.2626	4.2614	0.0359	128.4908	0.1010	128.5917	12.9652	0.0966	13.0618		3,746.4256	3,746.4256	0.3984		3,756.3851
Worker	5.7459	5.0251	43.1092	0.1080	11.3977	0.0719	11.4696	3.0217	0.0663	3.0880		10,751.8127	10,751.8127	0.4042		10,761.9179
Total	**6.3429**	**20.9989**	**47.4679**	**0.1468**	**146.4029**	**0.1764**	**146.5793**	**16.6823**	**0.1663**	**16.8486**		**14,805.8570**	**14,805.8570**	**0.8073**		**14,826.0396**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					3.7079	0.0000	3.7079	1.5375	0.0000	1.5375			0.0000			0.0000
Off-Road	2.5570	11.0802	124.3828	0.2078		0.3409	0.3409		0.3409	0.3409	0.0000	20,920.7953	20,920.7953	6.5129		21,083.6185
Total	**2.5570**	**11.0802**	**124.3828**	**0.2078**	**3.7079**	**0.3409**	**4.0488**	**1.5375**	**0.3409**	**1.8784**	**0.0000**	**20,920.7953**	**20,920.7953**	**6.5129**		**21,083.6185**

3.3 Throughout Constr - 2018

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0173	0.7111	0.0973	2.9300e-003	0.9052	3.5300e-003	0.9087	0.1357	3.3800e-003	0.1390		307.6187	307.6187	4.7100e-003		307.7365
Vendor	0.5797	15.2626	4.2614	0.0359	13.2627	0.1010	13.3636	1.4652	0.0966	1.5618		3,746.4256	3,746.4256	0.3984		3,756.3851
Worker	5.7459	5.0251	43.1092	0.1080	11.3977	0.0719	11.4696	3.0217	0.0663	3.0880		10,751.8127	10,751.8127	0.4042		10,761.9179
Total	**6.3429**	**20.9989**	**47.4679**	**0.1468**	**25.5655**	**0.1764**	**25.7419**	**4.6225**	**0.1663**	**4.7888**		**14,805.8570**	**14,805.8570**	**0.8073**		**14,826.0396**

3.3 Throughout Constr - 2019

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					8.6733	0.0000	8.6733	3.5965	0.0000	3.5965			0.0000			0.0000
Off-Road	15.9704	171.6044	113.2796	0.2078		8.9318	8.9318		8.2172	8.2172		20,577.7937	20,577.7937	6.5106		20,740.5586
Total	**15.9704**	**171.6044**	**113.2796**	**0.2078**	**8.6733**	**8.9318**	**17.6051**	**3.5965**	**8.2172**	**11.8137**		**20,577.7937**	**20,577.7937**	**6.5106**		**20,740.5586**

3.3 Throughout Constr - 2019

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0164	0.6473	0.0935	2.9000e-003	3.5532	3.1500e-003	3.5563	0.3816	3.0100e-003	0.3846		304.0049	304.0049	4.6300e-003		304.1205
Vendor	0.5216	14.3218	3.7911	0.0356	128.4908	0.0852	128.5760	12.9652	0.0815	13.0467		3,717.6030	3,717.6030	0.3923		3,727.4099
Worker	5.2100	4.3989	38.0065	0.1046	11.3977	0.0698	11.4675	3.0217	0.0644	3.0860		10,416.8058	10,416.8058	0.3563		10,425.7135
Total	**5.7480**	**19.3680**	**41.8911**	**0.1431**	**143.4416**	**0.1582**	**143.5998**	**16.3685**	**0.1489**	**16.5173**		**14,438.4136**	**14,438.4136**	**0.7532**		**14,457.2440**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					3.7079	0.0000	3.7079	1.5375	0.0000	1.5375			0.0000			0.0000
Off-Road	2.5570	11.0802	124.3828	0.2078		0.3409	0.3409		0.3409	0.3409	0.0000	20,577.7937	20,577.7937	6.5106		20,740.5586
Total	**2.5570**	**11.0802**	**124.3828**	**0.2078**	**3.7079**	**0.3409**	**4.0488**	**1.5375**	**0.3409**	**1.8784**	**0.0000**	**20,577.7937**	**20,577.7937**	**6.5106**		**20,740.5586**

3.3 Throughout Constr - 2019

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0164	0.6473	0.0935	2.9000e-003	0.5014	3.1500e-003	0.5046	0.0770	3.0100e-003	0.0801		304.0049	304.0049	4.6300e-003		304.1205
Vendor	0.5216	14.3218	3.7911	0.0356	13.2627	0.0852	13.3479	1.4652	0.0815	1.5467		3,717.6030	3,717.6030	0.3923		3,727.4099
Worker	5.2100	4.3989	38.0065	0.1046	11.3977	0.0698	11.4675	3.0217	0.0644	3.0860		10,416.8058	10,416.8058	0.3563		10,425.7135
Total	**5.7480**	**19.3680**	**41.8911**	**0.1431**	**25.1617**	**0.1582**	**25.3199**	**4.5639**	**0.1489**	**4.7128**		**14,438.4136**	**14,438.4136**	**0.7532**		**14,457.2440**

3.3 Throughout Constr - 2020

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					8.6733	0.0000	8.6733	3.5965	0.0000	3.5965			0.0000			0.0000
Off-Road	14.7112	156.5206	110.7535	0.2078		7.8943	7.8943		7.2627	7.2627		20,126.4389	20,126.4389	6.5093		20,289.1714
Total	**14.7112**	**156.5206**	**110.7535**	**0.2078**	**8.6733**	**7.8943**	**16.5676**	**3.5965**	**7.2627**	**10.8592**		**20,126.4389**	**20,126.4389**	**6.5093**		**20,289.1714**

3.3 Throughout Constr - 2020

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0153	0.5831	0.0888	2.8600e-003	3.6082	2.6900e-003	3.6109	0.3874	2.5800e-003	0.3900		300.2368	300.2368	4.4800e-003		300.3489
Vendor	0.4499	13.0838	3.3431	0.0353	128.4908	0.0574	128.5482	12.9652	0.0549	13.0201		3,686.9033	3,686.9033	0.3799		3,696.3995
Worker	4.7937	3.8897	33.9333	0.1013	11.3977	0.0677	11.4653	3.0217	0.0623	3.0840		10,091.1493	10,091.1493	0.3117		10,098.9406
Total	**5.2589**	**17.5566**	**37.3651**	**0.1394**	**143.4966**	**0.1277**	**143.6244**	**16.3743**	**0.1198**	**16.4941**		**14,078.2894**	**14,078.2894**	**0.6960**		**14,095.6889**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					3.7079	0.0000	3.7079	1.5375	0.0000	1.5375			0.0000			0.0000
Off-Road	2.5570	11.0802	124.3828	0.2078		0.3409	0.3409		0.3409	0.3409	0.0000	20,126.4389	20,126.4389	6.5093		20,289.1713
Total	**2.5570**	**11.0802**	**124.3828**	**0.2078**	**3.7079**	**0.3409**	**4.0488**	**1.5375**	**0.3409**	**1.8784**	**0.0000**	**20,126.4389**	**20,126.4389**	**6.5093**		**20,289.1713**

3.3 Throughout Constr - 2020

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0153	0.5831	0.0888	2.8600e-003	0.5089	2.6900e-003	0.5116	0.0781	2.5800e-003	0.0807		300.2368	300.2368	4.4800e-003		300.3489
Vendor	0.4499	13.0838	3.3431	0.0353	13.2627	0.0574	13.3201	1.4652	0.0549	1.5201		3,686.9033	3,686.9033	0.3799		3,696.3995
Worker	4.7937	3.8897	33.9333	0.1013	11.3977	0.0677	11.4653	3.0217	0.0623	3.0840		10,091.1493	10,091.1493	0.3117		10,098.9406
Total	**5.2589**	**17.5566**	**37.3651**	**0.1394**	**25.1692**	**0.1277**	**25.2970**	**4.5650**	**0.1198**	**4.6848**		**14,078.2894**	**14,078.2894**	**0.6960**		**14,095.6889**

3.4 Electrical - 2020

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	4.9816	44.4938	40.5373	0.0610		2.7543	2.7543		2.5793	2.5793		5,801.3180	5,801.3180	1.4706		5,838.0819
Total	**4.9816**	**44.4938**	**40.5373**	**0.0610**		**2.7543**	**2.7543**		**2.5793**	**2.5793**		**5,801.3180**	**5,801.3180**	**1.4706**		**5,838.0819**

3.4 Electrical - 2020

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.1958	7.4524	1.1343	0.0366	18.1083	0.0344	18.1427	1.9834	0.0329	2.0164		3,837.0267	3,837.0267	0.0573		3,838.4583
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	4.7937	3.8897	33.9333	0.1013	11.3977	0.0677	11.4653	3.0217	0.0623	3.0840		10,091.1493	10,091.1493	0.3117		10,098.9406
Total	**4.9896**	**11.3421**	**35.0676**	**0.1379**	**29.5060**	**0.1021**	**29.6080**	**5.0051**	**0.0953**	**5.1004**		**13,928.1760**	**13,928.1760**	**0.3689**		**13,937.3989**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.7435	4.8502	42.1116	0.0610		0.0933	0.0933		0.0933	0.0933	0.0000	5,801.3180	5,801.3180	1.4706		5,838.0818
Total	**0.7435**	**4.8502**	**42.1116**	**0.0610**		**0.0933**	**0.0933**		**0.0933**	**0.0933**	**0.0000**	**5,801.3180**	**5,801.3180**	**1.4706**		**5,838.0818**

3.4 Electrical - 2020

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.1958	7.4524	1.1343	0.0366	2.6850	0.0344	2.7194	0.4442	0.0329	0.4771		3,837.0267	3,837.0267	0.0573		3,838.4583
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	4.7937	3.8897	33.9333	0.1013	11.3977	0.0677	11.4653	3.0217	0.0623	3.0840		10,091.1493	10,091.1493	0.3117		10,098.9406
Total	**4.9896**	**11.3421**	**35.0676**	**0.1379**	**14.0827**	**0.1021**	**14.1848**	**3.4658**	**0.0953**	**3.5611**		**13,928.1760**	**13,928.1760**	**0.3689**		**13,937.3989**

3.5 PV Panels - 2019

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	20.9540	232.0961	156.3874	0.4330		9.9840	9.9840		9.2894	9.2894		42,554.3724	42,554.3724	12.7093		42,872.1047
Total	**20.9540**	**232.0961**	**156.3874**	**0.4330**		**9.9840**	**9.9840**		**9.2894**	**9.2894**		**42,554.3724**	**42,554.3724**	**12.7093**		**42,872.1047**

3.5 PV Panels - 2019

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	1.5308	60.4379	8.7307	0.2708	265.1803	0.2940	265.4743	28.5749	0.2813	28.8562		28,386.4530	28,386.4530	0.4321		28,397.2557
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	17.1928	14.5165	125.4213	0.3452	37.6123	0.2304	37.8427	9.9715	0.2123	10.1838		34,375.4590	34,375.4590	1.1758		34,404.8545
Total	**18.7237**	**74.9544**	**134.1519**	**0.6159**	**302.7926**	**0.5244**	**303.3170**	**38.5464**	**0.4936**	**39.0400**		**62,761.9120**	**62,761.9120**	**1.6079**		**62,802.1102**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	5.3606	26.4859	227.4190	0.4330		0.7031	0.7031		0.7031	0.7031	0.0000	42,554.3724	42,554.3724	12.7093		42,872.1047
Total	**5.3606**	**26.4859**	**227.4190**	**0.4330**		**0.7031**	**0.7031**		**0.7031**	**0.7031**	**0.0000**	**42,554.3724**	**42,554.3724**	**12.7093**		**42,872.1047**

3.5 PV Panels - 2019

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	1.5308	60.4379	8.7307	0.2708	37.7371	0.2940	38.0311	5.8757	0.2813	6.1569		28,386.4530	28,386.4530	0.4321		28,397.2557
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	17.1928	14.5165	125.4213	0.3452	37.6123	0.2304	37.8427	9.9715	0.2123	10.1838		34,375.4590	34,375.4590	1.1758		34,404.8545
Total	**18.7237**	**74.9544**	**134.1519**	**0.6159**	**75.3494**	**0.5244**	**75.8738**	**15.8471**	**0.4936**	**16.3407**		**62,761.9120**	**62,761.9120**	**1.6079**		**62,802.1102**

3.5 PV Panels - 2020

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	19.6824	216.0369	154.9652	0.4339		9.0024	9.0024		8.3728	8.3728		41,780.7757	41,780.7757	12.7013		42,098.3089
Total	**19.6824**	**216.0369**	**154.9652**	**0.4339**		**9.0024**	**9.0024**		**8.3728**	**8.3728**		**41,780.7757**	**41,780.7757**	**12.7013**		**42,098.3089**

3.5 PV Panels - 2020

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	1.4309	54.4498	8.2875	0.2674	260.4352	0.2515	260.6867	28.0720	0.2406	28.3126		28,034.6142	28,034.6142	0.4184		28,045.0741
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	15.8193	12.8361	111.9799	0.3342	37.6123	0.2233	37.8356	9.9715	0.2057	10.1772		33,300.7926	33,300.7926	1.0285		33,326.5039
Total	**17.2501**	**67.2859**	**120.2673**	**0.6016**	**298.0475**	**0.4747**	**298.5222**	**38.0435**	**0.4463**	**38.4898**		**61,335.4068**	**61,335.4068**	**1.4469**		**61,371.5780**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	5.3606	26.4859	227.4190	0.4339		0.7031	0.7031		0.7031	0.7031	0.0000	41,780.7757	41,780.7757	12.7013		42,098.3089
Total	**5.3606**	**26.4859**	**227.4190**	**0.4339**		**0.7031**	**0.7031**		**0.7031**	**0.7031**	**0.0000**	**41,780.7757**	**41,780.7757**	**12.7013**		**42,098.3089**

3.5 PV Panels - 2020

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	1.4309	54.4498	8.2875	0.2674	37.0901	0.2515	37.3415	5.7817	0.2406	6.0223		28,034.6142	28,034.6142	0.4184		28,045.0741
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	15.8193	12.8361	111.9799	0.3342	37.6123	0.2233	37.8356	9.9715	0.2057	10.1772		33,300.7926	33,300.7926	1.0285		33,326.5039
Total	**17.2501**	**67.2859**	**120.2673**	**0.6016**	**74.7024**	**0.4747**	**75.1771**	**15.7532**	**0.4463**	**16.1995**		**61,335.4068**	**61,335.4068**	**1.4469**		**61,371.5780**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	0.5409	4.8421	9.8457	0.0411	34.0393	0.0371	34.0764	3.9288	0.0350	3.9638		4,180.2776	4,180.2776	0.1707		4,184.5448
Unmitigated	0.5409	4.8421	9.8457	0.0411	34.0393	0.0371	34.0764	3.9288	0.0350	3.9638		4,180.2776	4,180.2776	0.1707		4,184.5448

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
General Light Industry	59.24	59.24	59.24	1,508,193	1,508,193
Total	59.24	59.24	59.24	1,508,193	1,508,193

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
General Light Industry	75.00	75.00	75.00	59.00	28.00	13.00	92	5	3

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
General Light Industry	0.533720	0.036539	0.171303	0.112547	0.020259	0.005751	0.010148	0.095159	0.001607	0.002105	0.008722	0.000887	0.001253

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
NaturalGas Mitigated	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
NaturalGas Unmitigated	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
General Light Industry	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

5.2 Energy by Land Use - NaturalGas

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
General Light Industry	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

6.0 Area Detail

6.1 Mitigation Measures Area

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	10.8353	0.1405	15.2182	1.1300e-003		0.0546	0.0546		0.0546	0.0546		32.4129	32.4129	0.0869		34.5859
Unmitigated	10.8353	0.1405	15.2182	1.1300e-003		0.0546	0.0546		0.0546	0.0546		32.4129	32.4129	0.0869		34.5859

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	9.4036					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	1.4317	0.1405	15.2182	1.1300e-003		0.0546	0.0546		0.0546	0.0546		32.4129	32.4129	0.0869		34.5859
Total	**10.8353**	**0.1405**	**15.2182**	**1.1300e-003**		**0.0546**	**0.0546**		**0.0546**	**0.0546**		**32.4129**	**32.4129**	**0.0869**		**34.5859**

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	9.4036					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	1.4317	0.1405	15.2182	1.1300e-003		0.0546	0.0546		0.0546	0.0546		32.4129	32.4129	0.0869		34.5859
Total	**10.8353**	**0.1405**	**15.2182**	**1.1300e-003**		**0.0546**	**0.0546**		**0.0546**	**0.0546**		**32.4129**	**32.4129**	**0.0869**		**34.5859**

7.0 Water Detail

7.1 Mitigation Measures Water

8.0 Waste Detail

8.1 Mitigation Measures Waste

9.0 Operational Offroad

Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type
Forklifts	2	8.00	52	89	0.20	Diesel
Other General Industrial Equipment	2	8.00	52	88	0.34	Diesel
Tractors/Loaders/Backhoes	2	8.00	52	97	0.37	Diesel

UnMitigated/Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Equipment Type	lb/day										lb/day					
Forklifts	0.2880	2.5950	2.3605	3.0500e-003		0.1933	0.1933		0.1779	0.1779		296.0617	296.0617	0.0958		298.4555
Other General Industrial Equipment	0.4707	4.2858	3.9796	5.1200e-003		0.3123	0.3123		0.2873	0.2873		496.0363	496.0363	0.1604		500.0470
Tractors/Loaders/Backhoes	0.4190	4.2103	4.5594	6.2100e-003		0.2662	0.2662		0.2449	0.2449		601.5370	601.5370	0.1946		606.4008
Total	**1.1777**	**11.0910**	**10.8995**	**0.0144**		**0.7718**	**0.7718**		**0.7101**	**0.7101**		**1,393.6350**	**1,393.6350**	**0.4507**		**1,404.9033**

10.0 Stationary Equipment

Fire Pumps and Emergency Generators

Equipment Type	Number	Hours/Day	Hours/Year	Horse Power	Load Factor	Fuel Type

Boilers

Equipment Type	Number	Heat Input/Day	Heat Input/Year	Boiler Rating	Fuel Type

User Defined Equipment

Equipment Type	Number

11.0 Vegetation

Attachment 3

AERSCREEN Input-Output

AERSCREEN Settings for Single Source, Ambient Air Quality Impact Calculatior

Project Number / Name:	3397 IP Athos
Scenario:	non-contiguous; groups of typical 1/4-section parcels (160 ac; 0.5 mi sides)
Model Description:	AERSCREEN: 40 CFR 51, Appendix W, Section 4.2.1.1 (Federal Register: Jan 17, 2017)
Model Assumptions:	See U.S. EPA, AERSCREEN User's Guide (EPA-454/B-16-004), December 2016
	Also U.S. EPA, AERMOD User's Guide (EPA-454/B-16-011), December 2016

Input / Settings

Source	**Type = VOL Configuration**	Emiss. Rate (g/s)	Release Height (m)	SyInit (m)	SzInit (m)
	Name : IP_per_160ac	1	3.66	186	1.8
		(unit emis	(12-ft tailpipe (center of the volume	(calc'd below (initial lateral	(6-ft vert mix tailpipes (vertical dim / 2.15

[Initial Vertical Dimention (SyInit)

(SyInit = length of side / 4.3

800	(m) sq. site	158.1	(ac) site
186.05	SyInit		

[Use of volume sources for mobile configurations (SCAQMD, 2003) & roadway segments (BAAQMD, 2012).

[Ref: SCAQMD, Health Risk Assessment Guidance for Analyzing Cancer Risks from Mobile Source Diesel Idling Emissions for CEQA Air Quality Analysis (2003)

Options:

Rural / Urban ? = R

Minimum Receptor Distance ? = default for VOL source

Modeling NO2 chemistry ? = no

Terrain heights ? = no

Flagpole receptors ? = yes, at 1.8 m

Source elevation ? = default for VOL source

Meteorology / Surface Characteristics	Min wind sp (m/s)	MinTemp (K)	MaxTemp (K)	AnemHt (m)	Surf	Clim	Albedo --	Bowen --	Length (m)
	0.5	270	310	10					
					((surface char. per AERMET Seasonal Tables				

Surface Characteristics Tables

User settings for AERMET Seasonal Tables - Dominant Surface Profile:

1) Water
2) Deciduous Forest
3) Coniferous Forest
4) Swamp
5) Cultivated Land
6) Grassland
7) Urban
>>> 8) Desert Shrubland

User settings for AERMET Seasonal Tables - Dominant Climate Profile:

1) Average Moisture
2) Wet Conditions
>>> 3) Dry Conditions

Surface friction velocity setting

Adjust U*? = N

[No ADJ_U* is worst-case, per AERMOD in screening mode w/ general met matrix from MAKEMET.
[Yes ADJ_U* is a regulatory option for AERMOD when using standard met data w/o turbulence and prognostic meteorological inputs (82 FR 5187)

Results : AERSCREEN 16216 / AERMOD 16216r

```
-------------------------------------------------------------------------------
 **********************  AERSCREEN MAXIMUM IMPACT SUMMARY  *********************
 -------------------------------------------------------------------------------

                     MAXIMUM      SCALED      SCALED      SCALED      SCALED
                      1-HOUR      3-HOUR      8-HOUR     24-HOUR      ANNUAL
  CALCULATION          CONC        CONC        CONC        CONC        CONC
   PROCEDURE         (ug/m3)     (ug/m3)     (ug/m3)     (ug/m3)     (ug/m3)
 ---------------    ----------  ----------  ----------  ----------  ----------
 FLAT TERRAIN        420.4       420.4       378.3       252.2       42.04

 DISTANCE FROM SOURCE        400.90 meters
```

```
MAXIMUM CONCENTRATIONS BY DISTANCE
                          MAXIMUM
          DIST      1-HR CONC
           (m)       (ug/m3)
       --------------------
        400.90      420.4
        800.00      344.7
       1600.00      244.4
       2400.00      183.8
       4800.00      96.51
```

Post-Processing

Description	Pollutant	Location (m)	Input (g/s)	VOL Source Daily Emissions (lb/d)	Annual Emissions (tpy)	1-hr (ug/m3)	24-hr (ug/m3)	Annual (ug/m3)
Unit emission rate 1 g/s	None	400.90	1	190.48	34.76	420.4	252.2	42.04
		800.00	1	190.48	34.76	344.7	206.8	34.5
		1600.00	1	190.48	34.76	244.4	146.6	24.4
		2400.00	1	190.48	34.76	183.8	110.3	18.4
		4800.00	1	190.48	34.76	96.51	57.9	9.7

Ground Level Concentrations - Fenceline, per single VOL source						Impact (GLC at Ambient Boundary)		
Description	Pollutant	Total On-site (lb/d)	per VOL source (g/s)	per VOL source (lb/d)	(tpy)	1-hr (ug/m3)	24-hr (ug/m3)	Annual (ug/m3)
On-site; Construction	PM10	10.78	0.003	0.539		1.19	0.714	0.119
On-site; Construction	PM2.5	4.26	0.001	0.213		0.47	0.282	0.047
On-site; Construction	DPM	0.92	0.000	0.046		0.10	0.061	0.010
On-site + Off-site	CO				61.72	746.42	447.78	74.64

0.05 (each VOL source: 160 ac fraction of 3400 ac total on-site ~ 1/20

Overlapping Concentrations, groups of non-contiguous parcels						Impact (GLC Overlapping)		
Description	Pollutant	multiple VOL sources?	Distance (m)	multi VOL sources (g/s)	multi VOL sources (lb/d)		24-hr (ug/m3)	Annual (ug/m3)
On-site; Construction	PM10	1	400.90	0.003	0.54		0.714	0.119
		2	800.00	0.006	1.08		1.170	0.195
		2	1600.00	0.006	1.08		0.830	0.138
		5	2400.00	0.014	2.70		1.560	0.260
		10	4800.00	0.028	5.39		1.638	0.273
		20			10.78	Sum of PM10	5.912	0.986
On-site; Construction	PM2.5	1	400.90	0.001	0.21		0.282	0.047
		2	800.00	0.002	0.43		0.462	0.077
		2	1600.00	0.002	0.43		0.328	0.055
		5	2400.00	0.006	1.07		0.617	0.103
		10	4800.00	0.011	2.13		0.647	0.108
		20			4.26	Sum of PM2.5	2.336	0.389
On-site; Construction	DPM	1	400.90	0.000	0.05		0.061	0.010
		2	800.00	0.000	0.09		0.100	0.017
		2	1600.00	0.000	0.09		0.071	0.012
		5	2400.00	0.001	0.23		0.133	0.022
		10	4800.00	0.002	0.46		0.140	0.023
		20			0.92	Sum of DPM	0.505	0.084

```
AERSCREEN 16216 / AERMOD 16216r                                    05/09/18
                                                                   14:39:38

TITLE: IP_per_160ac


-----------------------------------------------------------------------------
***************************  VOLUME PARAMETERS  ***************************
-----------------------------------------------------------------------------

SOURCE EMISSION RATE:            1.0000 g/s                 7.937 lb/hr
VOLUME HEIGHT:                     3.66 meters              12.01 feet
INITIAL LATERAL DIMENSION:       186.00 meters             610.24 feet
INITIAL VERTICAL DIMENSION:        1.80 meters               5.91 feet
RURAL OR URBAN:                   RURAL

FLAGPOLE RECEPTOR HEIGHT:          1.80 meters               5.91 feet

INITIAL PROBE DISTANCE =          5000. meters             16404. feet



-----------------------------------------------------------------------------
***********************  BUILDING DOWNWASH PARAMETERS  **********************
-----------------------------------------------------------------------------

               BUILDING DOWNWASH NOT USED FOR NON-POINT SOURCES


**************************  PROBE ANALYSIS  **************************
                 25 meter receptor spacing: 401. meters - 5000. meters


     Zo       ROUGHNESS       1-HR CONC   DIST      TEMPORAL
     SECTOR     LENGTH         (ug/m3)     (m)       PERIOD
     ---------------------------------------------------------------------
      1*         0.150         420.4       400.9      WIN
* = worst case flow sector



-----------------------------------------------------------------------------
**********************  MAKEMET METEOROLOGY PARAMETERS  *********************
-----------------------------------------------------------------------------

MIN/MAX TEMPERATURE:    270.0 / 310.0 (K)
```

```
MINIMUM WIND SPEED:       0.5 m/s

ANEMOMETER HEIGHT:     10.000 meters

SURFACE CHARACTERISTICS INPUT: AERMET SEASONAL TABLES

DOMINANT SURFACE PROFILE: Desert Shrubland
DOMINANT CLIMATE TYPE:    Dry Conditions
DOMINANT SEASON:          Winter

ALBEDO:                  0.45
BOWEN RATIO:            10.00
ROUGHNESS LENGTH:       0.150 (meters)

SURFACE FRICTION VELOCITY (U*) NOT ADUSTED


       METEOROLOGY CONDITIONS USED TO PREDICT OVERALL MAXIMUM IMPACT
       -------------------------------------------------------------

 YR MO DY JDY HR
 -- -- -- --- --
 10 01 01   1 01

    H0     U*     W*  DT/DZ ZICNV ZIMCH  M-O LEN    Z0  BOWEN ALBEDO  REF WS
 - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
 -0.49  0.024 -9.000  0.020 -999.    8.      2.3 0.150  10.00   0.45    0.50

    HT  REF TA     HT
- - - - - - - - - - -
  10.0   270.0    2.0


       METEOROLOGY CONDITIONS USED TO PREDICT AMBIENT BOUNDARY IMPACT
       --------------------------------------------------------------

 YR MO DY JDY HR
 -- -- -- --- --
 10 01 01   1 01

    H0     U*     W*  DT/DZ ZICNV ZIMCH  M-O LEN    Z0  BOWEN ALBEDO  REF WS
 - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
 -0.49  0.024 -9.000  0.020 -999.    8.      2.3 0.150  10.00   0.45    0.50

    HT  REF TA     HT
- - - - - - - - - - -
  10.0   270.0    2.0
```

```
-----------------------------------------------------------------------------
************************ AERSCREEN AUTOMATED DISTANCES **********************
                  OVERALL MAXIMUM CONCENTRATIONS BY DISTANCE
-----------------------------------------------------------------------------
```

DIST (m)	MAXIMUM 1-HR CONC (ug/m3)	DIST (m)	MAXIMUM 1-HR CONC (ug/m3)
400.90	420.4	2725.00	165.8
425.00	414.9	2750.00	164.6
450.00	409.5	2775.00	163.3
475.00	404.2	2800.00	162.1
500.00	399.0	2825.00	160.9
525.00	394.0	2850.00	159.7
550.00	389.1	2875.00	158.5
575.00	384.3	2900.00	157.3
600.00	379.6	2925.00	156.1
625.00	374.9	2950.00	155.0
650.00	370.4	2975.00	153.9
675.00	365.9	3000.00	152.7
700.00	361.6	3025.00	151.6
725.00	357.2	3050.00	150.5
750.00	353.0	3075.00	149.4
775.00	348.8	3100.00	148.4
800.00	344.7	3125.00	147.3
825.00	340.7	3150.00	146.3
850.00	336.7	3175.00	145.2
875.00	332.9	3200.00	144.2
900.00	329.0	3225.00	143.2
925.00	325.3	3250.00	142.2
950.00	321.6	3275.00	141.2
975.00	317.9	3300.00	140.2
1000.00	314.4	3325.00	139.3
1025.00	310.8	3350.00	138.3
1050.00	307.4	3375.00	137.3
1075.00	304.0	3400.00	136.4
1100.00	300.6	3425.00	135.5
1125.00	297.4	3450.00	134.6
1150.00	294.1	3475.00	133.7
1175.00	291.0	3500.00	132.8
1200.00	287.8	3525.00	131.9
1225.00	284.8	3550.00	131.0
1250.00	281.8	3575.00	130.1
1275.00	278.8	3600.00	129.3

1300.00	275.9	3625.00	128.4
1325.00	273.0	3650.00	127.6
1350.00	270.2	3675.00	126.7
1375.00	267.4	3700.00	125.9
1400.00	264.7	3725.00	125.1
1425.00	262.0	3750.00	124.3
1450.00	259.4	3775.00	123.5
1475.00	256.8	3800.00	122.7
1500.00	254.2	3825.00	121.9
1525.00	251.7	3850.00	121.1
1550.00	249.2	3875.00	120.4
1575.00	246.8	3900.00	119.6
1600.00	244.4	3925.00	118.8
1625.00	242.0	3950.00	118.1
1650.00	239.7	3975.00	117.4
1675.00	237.4	4000.00	116.6
1700.00	235.2	4025.00	115.9
1725.00	232.9	4050.00	115.2
1750.00	230.8	4075.00	114.5
1775.00	228.6	4100.00	113.8
1800.00	226.5	4125.00	113.1
1825.00	224.4	4150.00	112.4
1850.00	222.3	4175.00	111.7
1875.00	220.3	4200.00	111.0
1900.00	218.3	4225.00	110.4
1925.00	216.3	4250.00	109.7
1950.00	214.4	4275.00	109.0
1975.00	212.5	4300.00	108.4
2000.00	210.6	4325.00	107.7
2025.00	208.8	4350.00	107.1
2050.00	206.9	4375.00	106.5
2075.00	205.1	4400.00	105.8
2100.00	203.3	4425.00	105.2
2125.00	201.6	4450.00	104.6
2150.00	199.9	4475.00	104.0
2175.00	198.1	4500.00	103.4
2200.00	196.5	4525.00	102.8
2225.00	194.8	4550.00	102.2
2250.00	193.2	4575.00	101.6
2275.00	191.6	4600.00	101.0
2300.00	190.0	4625.00	100.4
2325.00	188.4	4650.00	99.85
2350.00	186.8	4675.00	99.28
2375.00	185.3	4700.00	98.72
2400.00	183.8	4725.00	98.16
2425.00	182.3	4750.00	97.60
2450.00	180.8	4775.00	97.06
2475.00	179.4	4800.00	96.51

2500.00	177.9	4825.00	95.97
2525.00	176.5	4850.00	95.44
2550.00	175.1	4875.00	94.91
2575.00	173.8	4900.00	94.38
2600.00	172.4	4925.00	93.86
2625.00	171.0	4950.00	93.34
2650.00	169.7	4975.00	92.83
2675.00	168.4	5000.00	92.32
2700.00	167.1		

********** AERSCREEN MAXIMUM IMPACT SUMMARY **********

CALCULATION PROCEDURE	MAXIMUM 1-HOUR CONC (ug/m3)	SCALED 3-HOUR CONC (ug/m3)	SCALED 8-HOUR CONC (ug/m3)	SCALED 24-HOUR CONC (ug/m3)	SCALED ANNUAL CONC (ug/m3)
FLAT TERRAIN	420.4	420.4	378.3	252.2	42.04

DISTANCE FROM SOURCE 400.90 meters

IMPACT AT THE AMBIENT BOUNDARY	420.4	420.4	378.3	252.2	42.04

DISTANCE FROM SOURCE 400.90 meters

Attachment 4

Avoided GHG Emissions

Cover Sheet

Proposed Near-Term Method for Estimating Generation Fuel Displacement by Avoided Use of Grid Electricity

California Energy Commission, Energy Assessments Division

7-23-15

Summary: The following data sheets contain a functional calculator for estimating generation fuel displacement by avoided use of grid electricity over a five-year period. The avoided electricity is converted to carbon dioxide emissions using the carbon content of the fuel source, natural gas.

The intended audience is the general public, load serving entity resource planning staff, and electric industry stakeholders.

Source of Data: Quarterly Fuel and Energy Report

Key Caveats:

1. These values are produced with data submitted in Spring 2014 pursuant to the Forms and Instructions for Submitting Electricity Resource Plans prepared in support of the *2013 Integrated Energy Policy Report* (CEC-200-2012-007-SF).

2. The heat rates are extrapolated using the historical tend of California's flexible natural gas-fired resources. The method assumes that these resources make up the marginal resource class and would be the resources reduced in use on an annual average basis in response to reductions in electricity demand. Changes to the resource stack, such as increasing renewable energy and the subsequent change to the operation of the grid and its existing resources is not accounted for in the heat rate estimates.

3. A line loss factor of 1.08460, the equivalent of line losses of 7.8 percent, is used to convert the annual average heat rates to onsite adjusted annual average heat rates.

4. Since this method uses annual averages, it is inappropriate for estimating short-term grid variations, including day-to-day operational changes and seasonal variation. Further, this method is inappropriate for estimating large-scale changes to the electric gird, actions that result in the displacement of terawatt-hours. In addition, direct comparison of new and old emissions may be a more appropriate and accurate measure of emission reductions when generation resources are replaced on a one-for-one basis.

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Full Report: http://energy.ca.gov/2015publications/CEC-200-2015-002/CEC-200-2015-002.pdf

Basis: CEC (2015) Proposed Near-Term Method for Estimating Generation Fuel Displacement by Avoided Use of Grid Electricity

Example: Solar PV Project assumptions: Riverside East cap factor (34% tracking, 28% fixed, per CPUC 9/2017 RESOLVE RPS); ~0% cap factor when conventional peaking resources are generating.

Average Annual Emissions Equivalent (metric tonnes CO2)	**451,670**	Typ Ann. Export (MWh)
Total kWh Savings (10-yrs)	**11,920,608,000**	1,192,061
Avoided Emissions Displacement Factor (kg CO2/MWh)	**378.90**	

Inputs:		
	Generator Size (kW)	**500,000**
	Off-Peak Capacity Factor (Percentage)	**28.0%**
	Off-Peak Export (Percentage)	**100%**
	On-Peak Capacity Factor (Percentage)	**0.0%**
	On-Peak Export (Percentage)	**100%**
	Total Capacity Factor	**25.2%**

Year	**Estimated Energy Generation**				**Annual Total (mmBtu)**	**Annual Total (metric tonnes CO2)**
	Export		**Onsite**			
	Load Following (kWh)	**Peaking (kWh)**	**Load Following (kWh)**	**Peaking (kWh)**		
2020	*1,192,060,800*	-	-	-	*8,557,259*	*454,133.97*
2021	*1,192,060,800*	-	-	-	*8,548,815*	*453,685.88*
2022	*1,192,060,800*	-	-	-	*8,540,372*	*453,237.80*
2023	*1,192,060,800*	-	-	-	*8,531,929*	*452,789.72*
2024	*1,192,060,800*	-	-	-	*8,523,486*	*452,341.63*
2025	*1,192,060,800*	-	-	-	*8,515,042*	*451,893.55*
2026	*1,192,060,800*	-	-	-	*8,506,599*	*451,445.47*
2027	*1,192,060,800*	-	-	-	*8,498,156*	*450,997.38*
2028	*1,192,060,800*	-	-	-	*8,489,713*	*450,549.30*
2029	*1,192,060,800*	-	-	-	*8,481,269*	*450,101.22*
2030	*1,192,060,800*	-	-	-	*8,472,826*	*449,653.13*
10-yrs Totals	11,920,608,000	-	-	-	85,108,207	4,516,695

Year	Export		Onsite	
	Btu/kWh	Btu/kWh	Btu/kWh	Btu/kWh
	Load Following	Peaking	Load Following	Peaking
2014	7,221	10,554	7,832	11,446
2015	7,214	10,534	7,824	11,426
2016	7,207	10,515	7,817	11,405
2017	7,200	10,496	7,809	11,384
2018	7,193	10,477	7,801	11,363
2019	7,186	10,458	7,794	11,343
2020	7,179	10,439	7,786	11,322
2021	7,171	10,420	7,778	11,301
2022	7,164	10,401	7,770	11,281
2023	7,157	10,382	7,763	11,260
2024	7,150	10,362	7,755	11,239
2025	7,143	10,343	7,747	11,218
2026	7,136	10,324	7,740	11,198
2027	7,129	10,305	7,732	11,177
2028	7,122	10,286	7,724	11,156
2029	7,115	10,267	7,717	11,136
2030	7,108	10,248	7,709	11,115

Conversion Factors	
1 mmBtu NG	117 lbs. CO2
1 lb	0.45359 kg
1000 kg	1 metric tonne

Percentage of Load Balancing Energy From Peaking Resources
2.8%

AQ-GHG Construction Emissions Estimation - with Mitigation for Onroad Hauling

Copy of CalEEMod: Daily Output. Date: 5/7/2018 11:25 AM

Construction: Maximum lb/day (by Year)

2.1 Overall Construction (Maximum Daily Emission)

Unmitigated Construction

Year	lb/day	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total
2018		55.4	562.0	351.2	0.9	315.4	22.9	338.3	55.6	21.1	76.7
2019		61.4	498.0	445.7	1.4	454.9	19.6	474.5	58.5	18.1	76.7
2020		66.9	513.2	499.0	1.6	479.7	20.4	500.1	63.0	18.9	81.9
Maximum		66.9	562.0	499.0	1.6	479.7	22.9	500.1	63.0	21.1	81.9

Mitigated Construction

Year	lb/day	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total
2018		19.2	99.3	351.0	0.9	78.0	1.3	79.3	20.9	1.3	22.1
2019		32.4	131.9	527.8	1.4	104.2	1.7	105.9	21.9	1.7	23.6
2020		36.2	138.6	586.6	1.6	117.7	1.8	119.5	25.3	1.8	27.1
Maximum		36.2	138.6	586.6	1.6	117.7	1.8	119.5	25.3	1.8	27.1

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total
Percent Reduction	52.2	76.5	-13.1	0.0	76.0	92.3	76.8	61.5	91.8	69.0

Mitigated Construction Detail (inc. MM AQ-1 & AQ-2 --- w/o MM AQ-3 or AQ-4)

3.2 Site Preparation - 2018

Mitigated Construction On-Site

Category	lb/day 2018	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total
Fugitive Du	2018					23.34	0.00	23.34	9.39	0.00	9.39
Off-Road	2018	3.43	14.87	129.59	0.28		0.46	0.46		0.46	0.46
Total	2018	3.43	14.87	129.59	0.28	23.34	0.46	23.80	9.39	0.46	9.85

Mitigated Construction Off-Site

	2018	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total
Category	lb/day										
Hauling	2018	1.15	47.36	6.48	0.20	13.99	0.24	14.23	2.31	0.22	2.54
Vendor	2018	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Worker	2018	5.75	5.03	43.11	0.11	11.40	0.07	11.47	3.02	0.07	3.09
Total	2018	6.90	52.39	49.59	0.30	25.39	0.31	25.70	5.34	0.29	5.63

3.3 Throughout Constr - 2018
Mitigated Construction On-Site

	2018	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total
Category	lb/day										
Fugitive Du	2018					3.71	0.00	3.71	1.54	0.00	1.54
Off-Road	2018	2.56	11.08	124.38	0.21		0.34	0.34		0.34	0.34
Total	2018	2.56	11.08	124.38	0.21	3.71	0.34	4.05	1.54	0.34	1.88

Mitigated Construction Off-Site

	2018	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total
Category	lb/day										
Hauling	2018	0.02	0.71	0.10	0.00	0.91	0.00	0.91	0.14	0.00	0.14
Vendor	2018	0.58	15.26	4.26	0.04	13.26	0.10	13.36	1.47	0.10	1.56
Worker	2018	5.75	5.03	43.11	0.11	11.40	0.07	11.47	3.02	0.07	3.09
Total	2018	6.34	21.00	47.47	0.15	25.57	0.18	25.74	4.62	0.17	4.79

3.3 Throughout Constr - 2019
Mitigated Construction On-Site

	2019	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total
Category	lb/day										
Fugitive Du	2019					3.71	0.00	3.71	1.54	0.00	1.54
Off-Road	2019	2.56	11.08	124.38	0.21		0.34	0.34		0.34	0.34
Total	2019	2.56	11.08	124.38	0.21	3.71	0.34	4.05	1.54	0.34	1.88

Mitigated Construction Off-Site

	2019	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total
Category	lb/day										

Hauling	2019	0.02	0.65	0.09	0.00	0.50	0.00	0.50	0.08	0.00	0.08
Vendor	2019	0.52	14.32	3.79	0.04	13.26	0.09	13.35	1.47	0.08	1.55
Worker	2019	5.21	4.40	38.01	0.10	11.40	0.07	11.47	3.02	0.06	3.09
Total	2019	5.75	19.37	41.89	0.14	25.16	0.16	25.32	4.56	0.15	4.71

3.3 Throughout Constr - 2020
Mitigated Construction On-Site

						Fugitive	Exhaust	PM10	Fugitive	Exhaust	PM2.5
	2020	ROG	NOx	CO	SO2	PM10	PM10	Total	PM2.5	PM2.5	Total
Category	lb/day										
Fugitive Du	2020					3.71	0.00	3.71	1.54	0.00	1.54
Off-Road	2020	2.56	11.08	124.38	0.21		0.34	0.34		0.34	0.34
Total	2020	2.56	11.08	124.38	0.21	3.71	0.34	4.05	1.54	0.34	1.88

Mitigated Construction Off-Site

						Fugitive	Exhaust	PM10	Fugitive	Exhaust	PM2.5
	2020	ROG	NOx	CO	SO2	PM10	PM10	Total	PM2.5	PM2.5	Total
Category	lb/day										
Hauling	2020	0.02	0.58	0.09	0.00	0.51	0.00	0.51	0.08	0.00	0.08
Vendor	2020	0.45	13.08	3.34	0.04	13.26	0.06	13.32	1.47	0.05	1.52
Worker	2020	4.79	3.89	33.93	0.10	11.40	0.07	11.47	3.02	0.06	3.08
Total	2020	5.26	17.56	37.37	0.14	25.17	0.13	25.30	4.57	0.12	4.68

3.4 Electrical - 2020
Mitigated Construction On-Site

						Fugitive	Exhaust	PM10	Fugitive	Exhaust	PM2.5
	2020	ROG	NOx	CO	SO2	PM10	PM10	Total	PM2.5	PM2.5	Total
Category	lb/day										
Off-Road	2020	0.74	4.85	42.11	0.06		0.09	0.09		0.09	0.09
Total	2020	0.74	4.85	42.11	0.06		0.09	0.09		0.09	0.09

Mitigated Construction Off-Site

						Fugitive	Exhaust	PM10	Fugitive	Exhaust	PM2.5
	2020	ROG	NOx	CO	SO2	PM10	PM10	Total	PM2.5	PM2.5	Total
Category	lb/day										
Hauling	2020	0.20	7.45	1.13	0.04	2.69	0.03	2.72	0.44	0.03	0.48
Vendor	2020	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Worker	2020	4.79	3.89	33.93	0.10	11.40	0.07	11.47	3.02	0.06	3.08
Total	2020	4.99	11.34	35.07	0.14	14.08	0.10	14.18	3.47	0.10	3.56

3.5 PV Panels - 2019
Mitigated Construction On-Site

	2019	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total
Category	lb/day										
Off-Road	2019	5.36	26.49	227.42	0.43		0.70	0.70		0.70	0.70
Total	2019	5.36	26.49	227.42	0.43		0.70	0.70		0.70	0.70

Mitigated Construction Off-Site

	2019	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total
Category	lb/day										
Hauling	2019	1.53	60.44	8.73	0.27	37.74	0.29	38.03	5.88	0.28	6.16
Vendor	2019	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Worker	2019	17.19	14.52	125.42	0.35	37.61	0.23	37.84	9.97	0.21	10.18
Total	2019	18.72	74.95	134.15	0.62	75.35	0.52	75.87	15.85	0.49	16.34

3.5 PV Panels - 2020
Mitigated Construction On-Site

	2020	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total
Category	lb/day										
Off-Road	2020	5.36	26.49	227.42	0.43		0.70	0.70		0.70	0.70
Total	2020	5.36	26.49	227.42	0.43		0.70	0.70		0.70	0.70

Mitigated Construction Off-Site

	2020	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total
Category	lb/day										
Hauling	2020	1.43	54.45	8.29	0.27	37.09	0.25	37.34	5.78	0.24	6.02
Vendor	2020	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Worker	2020	15.82	12.84	111.98	0.33	37.61	0.22	37.84	9.97	0.21	10.18
Total	2020	17.25	67.29	120.27	0.60	74.70	0.47	75.18	15.75	0.45	16.20

Mitigated Construction Detail (inc. MM AQ-1 & AQ-2 --- w/o MM AQ-3 or AQ-4)

All Phases (by year) lb/day		ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total
Fugitive Du	2018	0.00	0.00	0.00	0.00	27.05	0.00	27.05	10.93	0.00	10.93
Off-Road	2018	5.99	25.95	253.97	0.49	0.00	0.80	0.80	0.00	0.80	0.80
Hauling	2018	1.17	48.07	6.58	0.20	14.90	0.24	15.14	2.45	0.23	2.68
Vendor	2018	0.58	15.26	4.26	0.04	13.26	0.10	13.36	1.47	0.10	1.56
Worker	2018	11.49	10.05	86.22	0.22	22.80	0.14	22.94	6.04	0.13	6.18
Total	**2018**	**19.23**	**99.33**	**351.03**	**0.94**	**78.01**	**1.28**	**79.29**	**20.89**	**1.26**	**22.14**
Fugitive Du	2019	0.00	0.00	0.00	0.00	3.71	0.00	3.71	1.54	0.00	1.54
Off-Road	2019	7.92	37.57	351.80	0.64	0.00	1.04	1.04	0.00	1.04	1.04
Hauling	2019	1.55	61.09	8.82	0.27	38.24	0.30	38.54	5.95	0.28	6.24
Vendor	2019	0.52	14.32	3.79	0.04	13.26	0.09	13.35	1.47	0.08	1.55
Worker	2019	22.40	18.92	163.43	0.45	49.01	0.30	49.31	12.99	0.28	13.27
Total	**2019**	**32.39**	**131.89**	**527.84**	**1.40**	**104.22**	**1.73**	**105.95**	**21.95**	**1.69**	**23.64**
Fugitive Du	2020	0.00	0.00	0.00	0.00	3.71	0.00	3.71	1.54	0.00	1.54
Off-Road	2020	8.66	42.42	393.91	0.70	0.00	1.14	1.14	0.00	1.14	1.14
Hauling	2020	1.64	62.49	9.51	0.31	40.28	0.29	40.57	6.30	0.28	6.58
Vendor	2020	0.45	13.08	3.34	0.04	13.26	0.06	13.32	1.47	0.05	1.52
Worker	2020	25.41	20.62	179.85	0.54	60.41	0.36	60.77	16.01	0.33	16.35
Total	**2020**	**36.16**	**138.60**	**586.61**	**1.58**	**117.66**	**1.84**	**119.50**	**25.32**	**1.80**	**27.12**

Mitigated Construction Detail (w/ MM AQ-3 to Reduce Onroad Hauling & Vendor)

Off-Site, Onroad % Reduced w/ ONLY Model Yrs 2010-newer (HHDT & MHDT):

MDAB-wide	ROG	NOx	CO	SOx	PM10	PM2.5
% Reduce Hauling	31.5%	42.2%	27.0%	2.3%	8.1%	17.4%
% Reduce Vendor	82.8%	63.0%	80.5%	0.5%	31.2%	50.6%

All Phases (by year) lb/day		ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total
Reduced by (lb/day) w/ ONLY Model Yrs 2010-newer (HHDT & MHDT):											
Hauling	2018	-0.37	-20.27	-1.78	0.00		-0.02			-0.04	
Vendor	2018	-0.48	-9.62	-3.43	0.00		-0.03			-0.05	
Total	**2018**	**18.38**	**69.44**	**345.82**	**0.93**	**78.01**	**1.23**	**79.24**	**20.89**	**1.17**	**22.05**
Hauling	2019	-0.49	-25.76	-2.39	-0.01		-0.02			-0.05	
Vendor	2019	-0.43	-9.03	-3.05	0.00		-0.03			-0.04	
Total	**2019**	**31.47**	**97.10**	**522.41**	**1.39**	**104.22**	**1.68**	**105.89**	**21.95**	**1.60**	**23.54**
Hauling	2020	-0.52	-26.35	-2.57	-0.01		-0.02			-0.05	
Vendor	2020	-0.37	-8.25	-2.69	0.00		-0.02			-0.03	
Total	**2019**	**35.27**	**104.00**	**581.35**	**1.57**	**117.66**	**1.80**	**119.46**	**25.32**	**1.72**	**27.04**

AQ-GHG Construction Emissions Estimation - with Mitigation for Activity Management Plar

Activity and Input Notes | (mitigation could extend original construction sequence of ~4/13/

Air Quality Setting

Jurisdiction: SCAQMD
Air Basin: Mojave Desert
Federal Mandatory Class I Area: JTNP = 1.4 km to NE from edge of Parcel (8) VG Devco (643 acres)

Rough Sequence of Phases	Duration of Phase	Start Seq. (mo)	End Seq. (mo)	Duration (days)
1 Site Prep	6 months	0	6	132
2 PV Panel System	34 months	6	40	748
3 Electrical (collectors onsite plus gen-ties)	10 months	30	40	220
4 Throughout Construction and Restoration	40 months	0	40	880

CalEEMod Input Assumptions

Construction Phase - Originally 30 mo or 660 days, w mitigation to avoid overlap and extend to 880 days
Off-road Equipment - 31 equipment count in Seq 1 Site Prep *(mitigation extends from 5 mo to 6 mo)*
Off-road Equipment - 70 equipment count in Seq 2 PV Panels*(mitigation extends from 20 mo to 34 mo)*
Off-road Equipment - 21 equipment count during Seq 3 Electrical*(Not changed w activity mitigation)*
Off-road Equipment - 56 equipment count during Seq 4 Throughout Const*(mitigation extends from 30 mo to 40 mo)*
Trips and VMT - 1,260 peak worker commutes and onsite crew, water trucks as vendor class
On-road Fugitive Dust - Water trucks 10% unpaved; HHDT 1% unpaved
Grading - disturbance 3228 ac site plus 104 ac gen-tie ROW
Architectural Coating - minimal or no coatings needed
Vehicle Trips - TR 0.0004 per 1000sqft per day: fewer than 100 daily operational trips
Road Dust - approx 1% unpaved VMT during ops
Consumer Products - consumer products not applicable
Area Coating - no coatings necessary
Energy Use - energy use not applicable
Water And Wastewater - interior water consumption factors not applicable
Solid Waste - light industrial solid waste factors not applicable
Land Use Change - land use conversion calculated separately
Construction Off-road Equipment Mitigation - Tier 4 offroad fleet; water 2x daily is 55% effective PM10 control per Rule 403; suppressant is 84% effective per Table XI-D; 15 mph
Operations off-road equipment - fleet of 6 equipment ct for occasional routine op-maint activity

Trenching: Underground cables, panel strings, collectors
3 ft wide
6 ft depth
2000 ft linear per 2 MW block
250 (2-MW blocks)
9,000,000 ft^3
1,000,000 cy material handling

Foundations: 220 kV OH gen-tie, transmission
35 ft depth
10 ft^2 area
120 (220 kV structs)
42,000 ft^3
4,667 cy material handling

22 days/mo

ONROAD - LD, MDT, HHDT

Item	Truck Deliveries	Vehicle Type	Est. Delivery/Day (# roundtrips)	Duration (months)	Sequence	one way LD_mix Worker Trip (#/day)	one way HDT_Mix Vendor Trip (#/day)	one way HHDT Hauling Total Trips (# oneway)
Modules	8,400	53' Flatbed	12	34	2			16,800
Foundation posts	1,600	48' Flatbed	4	34	2			3,200
Racking	1,850	48' Flatbed	4	34	2			3,700
Cable	260	53' Flatbed	1	10	3			520
Inverters	380	48' Flatbed	1	10	3			760
Transformers	12	53' Flatbed	1	10	3			24
Concrete	600	Concrete Mixer	5	34	2			1,200
Road base	1,650	Dump truck	10	6	1			3,300
Trash (haul off)	200	40-YD roll-off	2	40	4			400
Fencing	90	48' Flatbed	2	6	1			180
Offroad eq transport	480	48' Flatbed	8	6	1			960
Electrical equipment	200	48' Flatbed	2	10	3			400
Water	40,734	4,000 gallon trucks	62	40	4		124	
		Worker commutes, Crew pickups	530	40	4	1,060		
						Worker Trip (#/day)	Vendor Trip (#/day)	Hauling Trip (# overall)
Water requirements, dust control					by Sequence	1,060	124	31,444
500	ac-ft water				1			4,440
21,780,000	ft^3 water				2			24,900
40,734	- equiv per 4,000 gal trucks				3	0	0	1,704
					4	1,060	124	400
						Worker Trip (mi/trip)	Vendor Trip (mi/trip)	Hauling Trip (mi/trip)
						75	7	150

OFFROAD - Construciton Equipment

Items	Appx Equip Ct. Units	Typ Daily Use (hrs/day)	Purpose	CalEEMod Equip Type	Duration (months)	Sequence
Front end loader	10	6	Material movement	rubber tired loader	40	4
Forklifts	26	6	Material staging	forklift	40	4
Tractor	20	6	Material staging	tractor / loader / backhoe	40	4
Scrapers	12	6.7	Grading	scraper	6	1
Bulldozers	7	6.7	Grading	rubber tired dozer	6	1
Graders	12	6.7	Grading	grader	6	1
Hydraulic rock hammer	30	6	Foundation installation	bore / drill rig	34	2
Concrete batch plant	4	4	Foundation installation	other const equip	34	2
Cranes or lifts	8	4	Module, Inverter placement	crane	34	2
Generators	4	6	Misc modules, structures	generator sets	34	2
Welders	4	6	Misc modules, structures	welders	34	2
Backhoes	20	6	Excavation	tractor / loader / backhoe	34	2
Pile driver			*Post installation*	*(alternate to hydraulic hammer)*		
Cranes or lifts	2	6	Gen-tie, yard work	crane	10	3
Generators	2	8	Misc electrical	generator sets	10	3
Welders	2	8	Misc electrical	welders	10	3
Trencher	4	8	Underground work (AC/DC/Fiber op	trencher	10	3
Compactor	8	6	Compaction	roller	10	3
Cable plow	3	8	Underground cable installation	excavator	10	3

by Sequence	Offroad Equipment (count)
1	31
2	70
3	21
4	56

AQ-GHG Construction Emissions Estimation - with Mitigation for Activity Management Plan

Copy of CalEEMod: Daily Output. Date: 10/9/2018 10:25 AM
(with mitigation: Construction Activity Management Plan)

Construction: Maximum lb/day (by Year)

2.1 Overall Construction (Maximum Daily Emission)
Mitigated Construction >> Extended Schedule with Activity Management Plan

Year	lb/day	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total
2019		16.7	80.3	286.9	0.8	71.0	1.0	72.0	18.6	1.0	19.6
2020		27.8	90.2	415.6	1.1	96.5	1.3	97.8	20.4	1.2	21.7
2021		26.3	83.0	402.5	1.1	96.6	1.2	97.8	20.4	1.2	21.6
2022		30.1	90.2	462.5	1.3	115.6	1.3	116.9	24.6	1.3	25.9
Maximum		30.1	90.2	462.5	1.3	115.6	1.3	116.9	24.6	1.3	25.9

AQ-GHG Construction Emissions Estimation - with Mitigation for Activity Management Plan

Copy of CalEEMod: Annual Output. Date: 10/9/2018 10:28 AM
(with mitigation: Construction Activity Management Plan)

Construction: Total over Duration (Mitigated)

	tons, total	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total		CO2e MT, total
Fugitive Dust	On-site	0.00	0.00	0.00	0.00	3.63	0.00	3.63	1.15	0.00	1.15		0
Off-Road	On-site	2.60	12.36	115.78	0.21	0.00	0.34	0.34	0.00	0.34	0.34		18,674
Hauling	Off-site	0.38	13.89	2.18	0.07	12.62	0.06	12.69	1.97	0.06	2.03		7,033
Vendor	Off-site	0.18	5.59	1.28	0.02	5.36	0.02	5.38	0.60	0.02	0.61		1,511
Worker	Off-site	7.50	7.06	62.85	0.19	20.70	0.12	20.82	5.50	0.11	5.61		16,944
Total	**Total**	**10.66**	**38.90**	**182.08**	**0.49**	**42.32**	**0.54**	**42.86**	**9.21**	**0.53**	**9.74**		**44,162**
	sumcheck	10.66	38.90	182.08	0.49	42.32	0.54	42.86	9.21	0.53	9.74	CO2e (MT/30-yr)	1,472

Duration (days) 880	lb/day, avg	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total
	On-site	5.91	28.09	263.13	0.48	8.26	0.78	9.04	2.61	0.78	3.39
	Off-site	18.31	60.32	150.69	0.63	87.92	0.46	88.38	18.32	0.43	18.75
	Total	**24.22**	**88.41**	**413.82**	**1.11**	**96.18**	**1.24**	**97.42**	**20.93**	**1.21**	**22.14**

Construction Detail: Annual (Mitigated)

3.2 Site Preparation - 2019

Mitigated Construction On-Site

Category	tons/yr	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
												MT/yr					
Fugitive Dust						1.29	0.00	1.29	0.52	0.00	0.52	0.00	0.00	0.00	0.00	0.00	0.00
Off-Road		0.19	0.82	7.16	0.02		0.03	0.03		0.03	0.03	0.00	1,388.63	1,388.63	0.44	0.00	1,399.62
Total		0.19	0.82	7.16	0.02	1.29	0.03	1.31	0.52	0.03	0.54	0.00	1,388.63	1,388.63	0.44	0.00	1,399.62

Mitigated Construction Off-Site

Category	tons/yr	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
												MT/yr					
Hauling		0.06	2.41	0.33	0.01	0.72	0.01	0.74	0.12	0.01	0.13	0.00	1,013.70	1,013.70	0.01	0.00	1,014.07
Vendor		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Worker		0.31	0.31	2.70	0.01	0.74	0.00	0.74	0.20	0.00	0.20	0.00	643.26	643.26	0.02	0.00	643.81
Total		0.37	2.72	3.04	0.02	1.46	0.02	1.48	0.32	0.02	0.33	0.00	1,656.96	1,656.96	0.04	0.00	1,657.88

3.3 Throughout Constr - 2019

Mitigated Construction On-Site

Category	tons/yr	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
												MT/yr					
Fugitive Dust						0.50	0.00	0.50	0.11	0.00	0.11	0.00	0.00	0.00	0.00	0.00	0.00
Off-Road		0.13	0.55	6.16	0.01		0.02	0.02		0.02	0.02	0.00	924.06	924.06	0.29	0.00	931.37
Total		0.13	0.55	6.16	0.01	0.50	0.02	0.52	0.11	0.02	0.13	0.00	924.06	924.06	0.29	0.00	931.37

Mitigated Construction Off-Site

Category	tons/yr	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
												MT/yr					
Hauling		0.00	0.03	0.00	0.00	0.06	0.00	0.06	0.01	0.00	0.01	0.00	13.70	13.70	0.00	0.00	13.70
Vendor		0.03	0.97	0.23	0.00	0.80	0.01	0.81	0.09	0.01	0.09	0.00	229.10	229.10	0.02	0.00	229.65
Worker		0.31	0.31	2.70	0.01	0.74	0.00	0.74	0.20	0.00	0.20	0.00	643.26	643.26	0.02	0.00	643.81
Total		0.34	1.31	2.94	0.01	1.60	0.01	1.61	0.29	0.01	0.30	0.00	886.06	886.06	0.04	0.00	887.17

3.3 Throughout Constr - 2020

Mitigated Construction On-Site

Category	tons/yr	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
												MT/yr					
Fugitive Dust						0.63	0.00	0.63	0.18	0.00	0.18	0.00	0.00	0.00	0.00	0.00	0.00
Off-Road		0.25	1.09	12.22	0.02		0.03	0.03		0.03	0.03	0.00	1,793.89	1,793.89	0.58	0.00	1,808.39
Total		0.25	1.09	12.22	0.02	0.63	0.03	0.66	0.18	0.03	0.21	0.00	1,793.89	1,793.89	0.58	0.00	1,808.39

Mitigated Construction Off-Site

Category	tons/yr	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
												MT/yr					
Hauling		0.00	0.06	0.01	0.00	0.06	0.00	0.06	0.01	0.00	0.01	0.00	26.85	26.85	0.00	0.00	26.86
Vendor		0.06	1.75	0.41	0.00	1.60	0.01	1.60	0.18	0.01	0.18	0.00	451.04	451.04	0.04	0.00	452.10
Worker		0.56	0.55	4.79	0.01	1.47	0.01	1.47	0.39	0.01	0.40	0.00	1,236.88	1,236.88	0.04	0.00	1,237.84
Total		0.62	2.36	5.20	0.02	3.12	0.02	3.14	0.58	0.02	0.59	0.00	1,714.77	1,714.77	0.08	0.00	1,716.80

3.3 Throughout Constr - 2021

Mitigated Construction On-Site

Category	tons/yr	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
												MT/yr					
Fugitive Dust						0.63	0.00	0.63	0.18	0.00	0.18	0.00	0.00	0.00	0.00	0.00	0.00
Off-Road		0.25	1.08	12.17	0.02		0.03	0.03		0.03	0.03	0.00	1,787.39	1,787.39	0.58	0.00	1,801.84
Total		0.25	1.08	12.17	0.02	0.63	0.03	0.66	0.18	0.03	0.21	0.00	1,787.39	1,787.39	0.58	0.00	1,801.84

Mitigated Construction Off-Site

Category	tons/yr	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
												MT/yr					
Hauling		0.00	0.05	0.01	0.00	0.06	0.00	0.06	0.01	0.00	0.01	0.00	26.45	26.45	0.00	0.00	26.46
Vendor		0.05	1.58	0.36	0.00	1.59	0.00	1.59	0.18	0.00	0.18	0.00	445.97	445.97	0.04	0.00	446.98
Worker		0.52	0.49	4.36	0.01	1.46	0.01	1.47	0.39	0.01	0.40	0.00	1,188.98	1,188.98	0.03	0.00	1,189.85
Total		0.57	2.12	4.73	0.02	3.11	0.01	3.12	0.57	0.01	0.58	0.00	1,661.41	1,661.41	0.08	0.00	1,663.28

3.3 Throughout Constr - 2022

Mitigated Construction On-Site

Category	tons/yr	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
												MT/yr					
Fugitive Dust						0.59	0.00	0.59	0.16	0.00	0.16	0.00	0.00	0.00	0.00	0.00	0.00
Off-Road		0.22	0.93	10.49	0.02		0.03	0.03		0.03	0.03	0.00	1,541.94	1,541.94	0.50	0.00	1,554.40
Total		0.22	0.93	10.49	0.02	0.59	0.03	0.62	0.16	0.03	0.19	0.00	1,541.94	1,541.94	0.50	0.00	1,554.40

Mitigated Construction Off-Site

Category	tons/yr	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
												MT/yr					
Hauling		0.00	0.04	0.01	0.00	0.06	0.00	0.06	0.01	0.00	0.01	0.00	22.52	22.52	0.00	0.00	22.52
Vendor		0.04	1.29	0.28	0.00	1.37	0.00	1.37	0.15	0.00	0.15	0.00	381.54	381.54	0.03	0.00	382.36
Worker		0.42	0.38	3.43	0.01	1.26	0.01	1.27	0.33	0.01	0.34	0.00	987.95	987.95	0.03	0.00	988.61
Total		0.46	1.70	3.72	0.02	2.69	0.01	2.70	0.50	0.01	0.50	0.00	1,392.00	1,392.00	0.06	0.00	1,393.49

3.4 PV Panels - 2020

Mitigated Construction On-Site

Category	tons/yr	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
												MT/yr					
Off-Road		0.52	2.57	22.02	0.04		0.07	0.07		0.07	0.07	0.00	3,672.96	3,672.96	1.12	0.00	3,700.85
Total		0.52	2.57	22.02	0.04		0.07	0.07		0.07	0.07	0.00	3,672.96	3,672.96	1.12	0.00	3,700.85

Mitigated Construction Off-Site

Category	tons/yr	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
												MT/yr					
Hauling		0.11	4.27	0.62	0.02	3.80	0.02	3.82	0.59	0.02	0.61	0.00	1,966.63	1,966.63	0.03	0.00	1,967.33
Vendor		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Worker		1.86	1.81	15.80	0.05	4.84	0.03	4.87	1.28	0.03	1.31	0.00	4,081.69	4,081.69	0.13	0.00	4,084.87
Total		1.97	6.07	16.42	0.07	8.64	0.05	8.69	1.87	0.05	1.92	0.00	6,048.32	6,048.32	0.16	0.00	6,052.20

3.4 PV Panels - 2021

Mitigated Construction On-Site

Category	tons/yr	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
												MT/yr					
Off-Road		0.52	2.56	21.94	0.04		0.07	0.07		0.07	0.07	0.00	3,665.09	3,665.09	1.11	0.00	3,692.86
Total		0.52	2.56	21.94	0.04		0.07	0.07		0.07	0.07	0.00	3,665.09	3,665.09	1.11	0.00	3,692.86

Mitigated Construction Off-Site

Category	tons/yr	ROG	NOx	CO	SO2	itive PM10	aust PM10	PM10 Total	tive PM2.5	aust PM2.5	M2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
												MT/yr					
Hauling		0.10	3.70	0.59	0.02	3.80	0.02	3.82	0.59	0.02	0.61	0.00	1,936.94	1,936.94	0.03	0.00	1,937.60
Vendor		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Worker		1.72	1.61	14.40	0.04	4.82	0.03	4.85	1.28	0.03	1.31	0.00	3,923.65	3,923.65	0.11	0.00	3,926.49
Total		1.82	5.31	14.99	0.06	8.62	0.04	8.66	1.87	0.04	1.91	0.00	5,860.59	5,860.59	0.14	0.00	5,864.09

3.4 PV Panels - 2022

Mitigated Construction On-Site

Category	tons/yr	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
												MT/yr					
Off-Road		0.45	2.21	18.91	0.04		0.06	0.06		0.06	0.06	0.00	3,163.52	3,163.52	0.96	0.00	3,187.46
Total		0.45	2.21	18.91	0.04		0.06	0.06		0.06	0.06	0.00	3,163.52	3,163.52	0.96	0.00	3,187.46

Mitigated Construction Off-Site

Category	tons/yr	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
												MT/yr					
Hauling		0.08	2.72	0.49	0.02	3.78	0.01	3.79	0.58	0.01	0.59	0.00	1,649.00	1,649.00	0.02	0.00	1,649.54
Vendor		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Worker	1.39	1.24	11.32	0.04	4.15	0.02	4.18	1.10	0.02	1.12	0.00	3,260.23	3,260.23	0.09	0.00	3,262.42
Total	1.47	3.96	11.81	0.05	7.93	0.04	7.97	1.69	0.03	1.72	0.00	4,909.23	4,909.23	0.11	0.00	4,911.96

3.5 Electrical - 2022

Mitigated Construction On-Site

Category	tons/yr	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
												MT/yr					
Off-Road		0.08	0.54	4.70	0.01		0.01	0.01		0.01	0.01	0.00	593.02	593.02	0.15	0.00	596.75
Total		0.08	0.54	4.70	0.01		0.01	0.01		0.01	0.01	0.00	593.02	593.02	0.15	0.00	596.75

Mitigated Construction Off-Site

Category	tons/yr	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
												MT/yr					
Hauling		0.02	0.62	0.11	0.00	0.28	0.00	0.28	0.05	0.00	0.05	0.00	375.15	375.15	0.00	0.00	375.28
Vendor		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Worker		0.41	0.37	3.35	0.01	1.23	0.01	1.24	0.33	0.01	0.33	0.00	965.99	965.99	0.03	0.00	966.64
Total		0.43	0.99	3.46	0.01	1.51	0.01	1.52	0.37	0.01	0.38	0.00	1,341.15	1,341.15	0.03	0.00	1,341.92

EMFAC2014 (v1.0.7) Emissions Inventory
Region Type: Air Basin
Region: Mojave Desert
Calendar Year: 2019
Season: Annual
Vehicle Classification: EMFAC2011 Categories
Units: miles/day for VMT, trips/day for Trips, tons/day for Emissions, 1000 gallons/day for Fuel Consumptior

Region	CalYr	VehClass	MdlYr	Speed	Fuel	Population	VMT	Trips	ROG_TOTAL	CO_TOTEX	NOx_TOTEX	CO2_TOTEX	PM10_TOTAL	PM2_5_TOTAL	SOx_TOTEX	Fuel_Consumption
Mojave De	2019	T6 Ag	Aggregate	Aggregate	DSL	78	1,384	0	0.000995108	0.002802227	0.012590697	1.78461337	0.000806528	0.000653672	1.7026E-05	0.160615203
Mojave De	2019	T6 CAIRP h	Aggregate	Aggregate	DSL	150	8,091	0	0.000306037	0.001300855	0.017540138	9.787975254	0.001336844	0.000589392	9.33819E-05	0.880917773
Mojave De	2019	T6 CAIRP s	Aggregate	Aggregate	DSL	382	24,837	0	0.002290509	0.008691122	0.054058427	30.33008131	0.005538773	0.003182203	0.000289363	2.729707318
Mojave De	2019	T6 instate	Aggregate	Aggregate	DSL	298	21,514	0	0.001287925	0.004353944	0.079360264	26.05986874	0.003954186	0.001949416	0.000248623	2.345388187
Mojave De	2019	T6 instate	Aggregate	Aggregate	DSL	998	57,795	0	0.008960387	0.031595339	0.188530765	71.26082639	0.015663999	0.010060309	0.000679862	6.413474375
Mojave De	2019	T6 instate l	Aggregate	Aggregate	DSL	1,162	55,054	0	0.002873772	0.010634278	0.170220255	67.44057829	0.009397663	0.004298724	0.000643415	6.069652046
Mojave De	2019	T6 instate	Aggregate	Aggregate	DSL	2,417	135,009	0	0.026227009	0.091714633	0.517744777	166.2828261	0.041042726	0.027759943	0.001586416	14.96545435
Mojave De	2019	T6 OOS he	Aggregate	Aggregate	DSL	88	4,636	0	0.000177708	0.0007555	0.01051954	5.614740538	0.000769998	0.000341562	5.35672E-05	0.505326648
Mojave De	2019	T6 OOS sm	Aggregate	Aggregate	DSL	219	14,231	0	0.001312376	0.004979686	0.030973447	17.37799674	0.003173509	0.001823283	0.000165794	1.564019706
Mojave De	2019	T6 Public	Aggregate	Aggregate	DSL	383	6,346	0	0.000277888	0.000984285	0.037066067	7.85632254	0.001170213	0.000578688	7.4953E-05	0.707069029
Mojave De	2019	T6 utility	Aggregate	Aggregate	DSL	73	1,413	0	2.89895E-05	0.000155405	0.002955219	1.818098185	0.000224423	9.4319E-05	1.73455E-05	0.163628837
Mojave De	2019	T6TS	Aggregate	Aggregate	GAS	1,211	86,696	24,235	0.056669008	0.694471743	0.1240738	102.7002401	0.013767806	0.005776806	0.001037344	11.06477753
Mojave De	2019	T7 Ag	Aggregate	Aggregate	DSL	61	1,030	0	0.001460461	0.00544317	0.017018094	2.017246646	0.000936337	0.000829951	1.92455E-05	0.181552198
Mojave De	2019	T7 CAIRP	Aggregate	Aggregate	DSL	5,974	1,237,695	0	0.127773189	0.565658905	5.682665749	2196.703649	0.15668382	0.070704175	0.02095758	197.7033284
Mojave De	2019	T7 CAIRP c	Aggregate	Aggregate	DSL	65	15,262	0	0.001666134	0.006929132	0.076497294	27.23303214	0.002073591	0.001007262	0.000259816	2.450972893
Mojave De	2019	T7 NNOOS	Aggregate	Aggregate	DSL	6,121	1,534,744	0	0.100632528	0.498733515	3.424156811	2552.279802	0.17986469	0.073873775	0.024349942	229.7051822
Mojave De	2019	T7 NOOS	Aggregate	Aggregate	DSL	2,419	488,889	0	0.053074656	0.234170994	2.355771785	887.4754462	0.06231571	0.028335362	0.008466931	79.87279015
Mojave De	2019	T7 POLA	Aggregate	Aggregate	DSL	726	107,135	0	0.028145919	0.099291274	0.830844725	211.7215774	0.014871718	0.007372669	0.002019923	19.05494197
Mojave De	2019	T7 Public	Aggregate	Aggregate	DSL	242	5,532	0	0.000922568	0.003483338	0.077489357	11.62645402	0.000957495	0.000562062	0.000110922	1.046380862
Mojave De	2019	T7 Single	Aggregate	Aggregate	DSL	547	52,091	0	0.006932559	0.027755244	0.291227083	92.05601303	0.008216552	0.004527738	0.000878257	8.285041172
Mojave De	2019	T7 single c	Aggregate	Aggregate	DSL	424	39,481	0	0.004088462	0.016268875	0.215677826	68.23840346	0.005704325	0.002931154	0.000651026	6.141456311
Mojave De	2019	T7 SWCV	Aggregate	Aggregate	DSL	146	6,745	0	0.001191147	0.012182354	0.10418472	34.50369717	0.000851282	0.000382835	0.000297996	3.105332745
Mojave De	2019	T7 tractor	Aggregate	Aggregate	DSL	2,442	338,930	0	0.035450381	0.141804283	1.851860809	571.1900183	0.045317341	0.021668418	0.00544942	51.40710165
Mojave De	2019	T7 tractor	Aggregate	Aggregate	DSL	332	29,436	0	0.003938059	0.015651188	0.191675058	51.38370076	0.004618193	0.002534791	0.000490225	4.624533069
Mojave De	2019	T7 utility	Aggregate	Aggregate	DSL	32	726	0	4.18854E-05	0.000200238	0.002675364	1.478700672	8.0314E-05	3.04058E-05	1.41075E-05	0.13308306
Mojave De	2019	T7IS	Aggregate	Aggregate	GAS	66	11,014	1,315	0.012307835	0.466767281	0.053184392	20.35893899	0.001009355	0.000397675	0.000210971	2.250310998

MDAB-wide	Population	VMT (mi/d)	ROG_TOTAL (ton/day)	CO_TOTEX (ton/day)	NOx_TOTEX (ton/day)	CO2_TOTEX (ton/day)	PM10_TOTAL (ton/day)	PM2_5_TOTAL (ton/day)	SOx_TOTEX (ton/day)
All Model Years (MHDT = T6)	7,458	417,006	0.101	0.852	1.246	508.314	0.097	0.057	0.005
All Model Years (HHDT = T7)	19,597	3,868,709	0.378	2.094	15.175	6728.267	0.484	0.215	0.064
All Model Years (T6 + T7)	27,055	4,285,715	0.479	2.947	16.421	7236.581	0.580	0.272	0.069

MDAB-wide	ROG (lb/mi)	CO (lb/mi)	NOx (lb/mi)	CO2 (lb/mi)	PM10 (lb/mi)	PM2.5 (lb/mi)	SOx (lb/mi)
All Model Years (MHDT = T6)	4.86E-04	4.09E-03	5.97E-03	2.44E+00	4.64E-04	2.74E-04	2.35E-05
All Model Years (HHDT = T7)	1.95E-04	1.08E-03	7.84E-03	3.48E+00	2.50E-04	1.11E-04	3.32E-05
All Model Years (T6 + T7)	2.24E-04	1.38E-03	7.66E-03	3.38E+00	2.71E-04	1.27E-04	3.22E-05

EMFAC2014 (v1.0.7) Emissions Inventory
Region Type: Air Basin
Region: Mojave Desert
Calendar Year: 2019
Season: Annual
Vehicle Classification: EMFAC2011 Categories
Units: miles/day for VMT, trips/day for Trips, tons/day for Emissions, 1000 gallons/day for Fuel Consumption

Region	CalYr	VehClass	MdlYr	Speed	Fuel	Population	VMT	Trips	ROG_TOTAL	CO_TOTEX	NOx_TOTEX	CO2_TOTEX	PM10_TOTAL	PM2_5_TOTAL	SOx_TOTEX	nsumption
Mojave De	2019	T6 Ag	2010	Aggregatec	DSL	0	9	0	7.83389E-07	2.15168E-06	4.48757E-05	0.011012069	1.54309E-06	7.35505E-07	1.0506E-07	0.000991
Mojave De	2019	T6 Ag	2011	Aggregatec	DSL	0	5	0	1.9814E-07	8.30649E-07	1.17171E-05	0.005930231	7.42469E-07	3.24571E-07	5.65772E-08	0.000534
Mojave De	2019	T6 Ag	2012	Aggregatec	DSL	11	394	0	1.20455E-05	6.38453E-05	0.000809747	0.520797093	6.31854E-05	2.68668E-05	4.96865E-06	0.046872
Mojave De	2019	T6 Ag	2013	Aggregatec	DSL	2	87	0	2.49549E-06	1.32318E-05	0.000165338	0.114024262	1.38522E-05	5.87916E-06	1.08784E-06	0.010262
Mojave De	2019	T6 Ag	2014	Aggregatec	DSL	2	87	0	2.15358E-06	1.14318E-05	0.000124984	0.107571985	1.38598E-05	5.85818E-06	1.02629E-06	0.009681
Mojave De	2019	T6 CAIRP heavy	2010	Aggregatec	DSL	3	133	0	1.21835E-05	3.27521E-05	0.000686823	0.160473766	2.37627E-05	1.13657E-05	1.53099E-06	0.014443
Mojave De	2019	T6 CAIRP heavy	2011	Aggregatec	DSL	6	282	0	1.24938E-05	5.20527E-05	0.000686929	0.348791501	4.62391E-05	2.024E-05	3.32763E-06	0.031391
Mojave De	2019	T6 CAIRP heavy	2012	Aggregatec	DSL	47	2,501	0	7.72931E-05	0.000408671	0.004654432	3.138637239	0.000401146	0.000170666	2.99441E-05	0.282477
Mojave De	2019	T6 CAIRP heavy	2013	Aggregatec	DSL	11	618	0	1.79216E-05	9.47584E-05	0.001035511	0.772509165	9.89051E-05	4.19943E-05	7.3701E-06	0.069526
Mojave De	2019	T6 CAIRP heavy	2014	Aggregatec	DSL	12	706	0	1.74875E-05	9.25085E-05	0.000817772	0.842668625	0.000112719	4.76524E-05	8.03945E-06	0.07584
Mojave De	2019	T6 CAIRP heavy	2015	Aggregatec	DSL	12	769	0	1.77542E-05	9.393E-05	0.000782548	0.913250293	0.000122625	5.17429E-05	8.71283E-06	0.082193
Mojave De	2019	T6 CAIRP heavy	2016	Aggregatec	DSL	11	690	0	1.52031E-05	8.04378E-05	0.000666837	0.818701958	0.000109857	4.62969E-05	7.8108E-06	0.073683
Mojave De	2019	T6 CAIRP heavy	2017	Aggregatec	DSL	8	502	0	1.05154E-05	5.56451E-05	0.000463771	0.572804997	7.97927E-05	3.35828E-05	5.46483E-06	0.051552
Mojave De	2019	T6 CAIRP heavy	2018	Aggregatec	DSL	8	491	0	9.75698E-06	5.16478E-05	0.000439143	0.560588722	7.80058E-05	3.27868E-05	5.34828E-06	0.050453
Mojave De	2019	T6 CAIRP heavy	2019	Aggregatec	DSL	5	347	0	6.5256E-06	3.4554E-05	0.000299459	0.396553212	5.51224E-05	2.31376E-05	3.7833E-06	0.03569
Mojave De	2019	T6 CAIRP heavy	2020	Aggregatec	DSL	2	61	0	1.10128E-06	5.88319E-06	9.74372E-05	0.07044924	9.65777E-06	4.0485E-06	6.72119E-07	0.00634
Mojave De	2019	T6 CAIRP small	2010	Aggregatec	DSL	6	330	0	3.00951E-05	8.04554E-05	0.001689949	0.413872782	5.8859E-05	2.81522E-05	3.94854E-06	0.037249
Mojave De	2019	T6 CAIRP small	2011	Aggregatec	DSL	12	698	0	3.09039E-05	0.000128509	0.001635034	0.907169141	0.000114624	5.01737E-05	8.65482E-06	0.081645
Mojave De	2019	T6 CAIRP small	2012	Aggregatec	DSL	22	1,409	0	4.34919E-05	0.000229785	0.002471113	1.848944406	0.000226119	9.62008E-05	1.76398E-05	0.166405
Mojave De	2019	T6 CAIRP small	2013	Aggregatec	DSL	29	1,937	0	5.61235E-05	0.000296527	0.003050444	2.533046125	0.000310281	0.000131742	2.41664E-05	0.227974
Mojave De	2019	T6 CAIRP small	2014	Aggregatec	DSL	35	2,483	0	6.13551E-05	0.000324302	0.002627536	3.049154271	0.000396255	0.000167517	2.90904E-05	0.274424
Mojave De	2019	T6 CAIRP small	2015	Aggregatec	DSL	38	2,789	0	6.42376E-05	0.000339571	0.002570226	3.408270884	0.000444573	0.000187592	3.25165E-05	0.306744
Mojave De	2019	T6 CAIRP small	2016	Aggregatec	DSL	39	3,035	0	6.67373E-05	0.000352802	0.002652867	3.70727814	0.000483225	0.000203644	3.53692E-05	0.333655
Mojave De	2019	T6 CAIRP small	2017	Aggregatec	DSL	39	3,078	0	6.43917E-05	0.000340449	0.002566783	3.618630012	0.000489642	0.000206078	3.45234E-05	0.325677
Mojave De	2019	T6 CAIRP small	2018	Aggregatec	DSL	39	3,072	0	6.09252E-05	0.000322206	0.002468466	3.611698772	0.000488175	0.000205185	3.44573E-05	0.325053
Mojave De	2019	T6 CAIRP small	2019	Aggregatec	DSL	26	1,995	0	3.74073E-05	0.000197884	0.001538958	2.345735431	0.000316729	0.000132946	2.23794E-05	0.211116
Mojave De	2019	T6 CAIRP small	2020	Aggregatec	DSL	11	350	0	6.29068E-06	3.35264E-05	0.000483379	0.415720937	5.54925E-05	2.32621E-05	3.96617E-06	0.037415
Mojave De	2019	T6 instate cons	2010	Aggregatec	DSL	14	886	0	6.57794E-05	0.000176154	0.004371703	1.07925091	0.000157123	7.48211E-05	1.02966E-05	0.097133
Mojave De	2019	T6 instate cons	2011	Aggregatec	DSL	17	1,072	0	3.87075E-05	0.000161157	0.002242465	1.362156649	0.000175729	7.6771E-05	1.29956E-05	0.122594
Mojave De	2019	T6 instate cons	2012	Aggregatec	DSL	25	1,856	0	4.66644E-05	0.000246574	0.002725775	2.38218514	0.000297547	0.000126462	2.27272E-05	0.214397
Mojave De	2019	T6 instate cons	2013	Aggregatec	DSL	14	1,693	0	3.98416E-05	0.000210264	0.002009004	2.160788	0.000270962	0.000114939	2.06149E-05	0.194471
Mojave De	2019	T6 instate cons	2014	Aggregatec	DSL	14	1,665	0	3.3423E-05	0.00017647	0.001192333	1.996555987	0.000265549	0.000112172	1.90481E-05	0.17969
Mojave De	2019	T6 instate cons	2015	Aggregatec	DSL	13	1,590	0	2.97475E-05	0.000157098	0.000972656	1.897274697	0.000253205	0.000106765	1.81009E-05	0.170755
Mojave De	2019	T6 instate cons	2016	Aggregatec	DSL	12	1,439	0	2.57197E-05	0.000135848	0.00084549	1.717487546	0.000228992	9.64373E-05	1.63856E-05	0.154574
Mojave De	2019	T6 instate cons	2017	Aggregatec	DSL	11	1,313	0	2.23177E-05	0.0001179	0.000738136	1.507735797	0.000208664	8.77653E-05	1.43845E-05	0.135696
Mojave De	2019	T6 instate cons	2018	Aggregatec	DSL	11	1,325	0	2.13558E-05	0.000112841	0.000711167	1.522112377	0.00021044	8.83979E-05	1.45217E-05	0.13699
Mojave De	2019	T6 instate cons	2019	Aggregatec	DSL	9	1,071	0	1.63146E-05	8.62233E-05	0.000547404	1.230180468	0.000169907	7.12794E-05	1.17365E-05	0.110716
Mojave De	2019	T6 instate cons	2020	Aggregatec	DSL	2	48	0	7.09496E-07	3.80731E-06	6.94153E-05	0.055739436	7.55004E-06	3.1634E-06	5.3178E-07	0.005017
Mojave De	2019	T6 instate cons	2010	Aggregatec	DSL	30	1,658	0	0.000151025	0.000403979	0.008464322	2.076853513	0.000295287	0.000141236	1.98142E-05	0.186917
Mojave De	2019	T6 instate cons	2011	Aggregatec	DSL	39	2,279	0	0.000100907	0.000419689	0.005217638	2.962014256	0.000374186	0.00016379	2.8259E-05	0.266581
Mojave De	2019	T6 instate cons	2012	Aggregatec	DSL	109	6,751	0	0.00020836	0.001100935	0.011422704	8.857905948	0.001083089	0.000460794	8.45086E-05	0.797212
Mojave De	2019	T6 instate cons	2013	Aggregatec	DSL	62	4,058	0	0.000117593	0.000621348	0.006155197	5.307334529	0.00065	0.000275984	5.06345E-05	0.47766
Mojave De	2019	T6 instate cons	2014	Aggregatec	DSL	79	5,503	0	0.000136033	0.000719081	0.00551333	6.760143682	0.000878372	0.000371334	6.44949E-05	0.608413
Mojave De	2019	T6 instate cons	2015	Aggregatec	DSL	61	4,460	0	0.000102743	0.000543166	0.003867715	5.451016633	0.000710913	0.000299977	5.20052E-05	0.490591

Mojave De	2019	T6 instate cons	2016	Aggregatec	DSL	61	4,621	0	0.000101627	0.000537292	0.003796594	5.64511639	0.000735699	0.000310044	5.3857E-05	0.50806
Mojave De	2019	T6 instate cons	2017	Aggregatec	DSL	61	4,682	0	9.79506E-05	0.000517927	0.003662643	5.504194167	0.000744668	0.000313412	5.25126E-05	0.495377
Mojave De	2019	T6 instate cons	2018	Aggregatec	DSL	62	4,714	0	9.35001E-05	0.000494527	0.003543679	5.542341992	0.000749016	0.000314819	5.28765E-05	0.498811
Mojave De	2019	T6 instate cons	2019	Aggregatec	DSL	46	3,502	0	6.56641E-05	0.000347397	0.002519738	4.117290019	0.000555845	0.000233315	3.92809E-05	0.370556
Mojave De	2019	T6 instate cons	2020	Aggregatec	DSL	10	305	0	5.47715E-06	2.91978E-05	0.000382822	0.361870501	4.82868E-05	2.02415E-05	3.45241E-06	0.032568
Mojave De	2019	T6 instate heav	2010	Aggregatec	DSL	15	669	0	5.90718E-05	0.000159225	0.003420341	0.803382726	0.000119179	5.6997E-05	7.66465E-06	0.072304
Mojave De	2019	T6 instate heav	2011	Aggregatec	DSL	23	1,093	0	4.53978E-05	0.000189391	0.002538851	1.345289574	0.000179407	7.84995E-05	1.28347E-05	0.121076
Mojave De	2019	T6 instate heav	2012	Aggregatec	DSL	549	27,721	0	0.000849691	0.004493671	0.049544486	34.8140253	0.004447393	0.001892257	0.000332142	3.133262
Mojave De	2019	T6 instate heav	2013	Aggregatec	DSL	28	1,520	0	4.25428E-05	0.000225021	0.002400608	1.8968413	0.000243455	0.000103365	1.80968E-05	0.170716
Mojave De	2019	T6 instate heav	2014	Aggregatec	DSL	27	1,554	0	3.71177E-05	0.000196431	0.001630016	1.849829386	0.000248064	0.000104867	1.76482E-05	0.166485
Mojave De	2019	T6 instate heav	2015	Aggregatec	DSL	27	1,580	0	3.51733E-05	0.000186164	0.001441049	1.871141152	0.000251881	0.000106281	1.78516E-05	0.168403
Mojave De	2019	T6 instate heav	2016	Aggregatec	DSL	24	1,497	0	3.1823E-05	0.000168442	0.001297719	1.772258608	0.000238416	0.000100473	1.69082E-05	0.159503
Mojave De	2019	T6 instate heav	2017	Aggregatec	DSL	22	1,384	0	2.79822E-05	0.000148138	0.001147801	1.576290206	0.000220142	9.26505E-05	1.50385E-05	0.141866
Mojave De	2019	T6 instate heav	2018	Aggregatec	DSL	22	1,386	0	2.65746E-05	0.000140734	0.001112992	1.57886114	0.000220261	9.25762E-05	1.50631E-05	0.142098
Mojave De	2019	T6 instate heav	2019	Aggregatec	DSL	19	1,181	0	2.13985E-05	0.000113362	0.000914253	1.344576141	0.00018738	7.86512E-05	1.28279E-05	0.121012
Mojave De	2019	T6 instate heav	2020	Aggregatec	DSL	3	73	0	1.2817E-06	6.855E-06	0.000105908	0.084680757	1.16318E-05	4.87592E-06	8.07894E-07	0.007621
Mojave De	2019	T6 instate smal	2010	Aggregatec	DSL	39	2,156	0	0.000190653	0.000510203	0.010945771	2.695542012	0.000384085	0.000183706	2.57167E-05	0.242599
Mojave De	2019	T6 instate smal	2011	Aggregatec	DSL	64	3,775	0	0.000157332	0.000654676	0.008393275	4.877911062	0.000619687	0.000271158	4.65376E-05	0.439012
Mojave De	2019	T6 instate smal	2012	Aggregatec	DSL	299	18,769	0	0.000578322	0.003055612	0.031468397	24.63372349	0.003011281	0.001281256	0.000235017	2.217035
Mojave De	2019	T6 instate smal	2013	Aggregatec	DSL	131	8,747	0	0.000247918	0.001310007	0.012951657	11.42020825	0.001400946	0.000594846	0.000108954	1.027819
Mojave De	2019	T6 instate smal	2014	Aggregatec	DSL	177	12,477	0	0.000298786	0.001579527	0.011805234	15.28671153	0.001991454	0.00084188	0.000145842	1.375804
Mojave De	2019	T6 instate smal	2015	Aggregatec	DSL	119	8,804	0	0.000196562	0.001039224	0.007157215	10.73116563	0.001403101	0.000592047	0.00010238	0.965805
Mojave De	2019	T6 instate smal	2016	Aggregatec	DSL	120	9,185	0	0.00019583	0.001035405	0.007082849	11.19350454	0.001462497	0.000616331	0.000106791	1.007415
Mojave De	2019	T6 instate smal	2017	Aggregatec	DSL	119	9,264	0	0.000187886	0.000993542	0.006812338	10.86430415	0.001473573	0.000620185	0.000103651	0.977787
Mojave De	2019	T6 instate smal	2018	Aggregatec	DSL	120	9,295	0	0.0001787	0.000945229	0.006582492	10.89994524	0.001476805	0.000620713	0.000103991	0.980995
Mojave De	2019	T6 instate smal	2019	Aggregatec	DSL	94	7,300	0	0.000132676	0.000701984	0.004960015	8.560310859	0.001158599	0.000486317	8.16694E-05	0.770428
Mojave De	2019	T6 instate smal	2020	Aggregatec	DSL	14	454	0	7.91035E-06	4.21773E-05	0.000549764	0.5375516	7.19208E-05	3.01485E-05	5.12849E-06	0.04838
Mojave De	2019	T6 OOS heavy	2010	Aggregatec	DSL	2	73	0	6.68729E-06	1.79901E-05	0.000377177	0.088078003	1.30381E-05	6.23616E-06	8.40305E-07	0.007927
Mojave De	2019	T6 OOS heavy	2011	Aggregatec	DSL	3	154	0	6.85707E-06	2.85757E-05	0.000378889	0.191427522	2.53705E-05	1.11053E-05	1.82631E-06	0.017228
Mojave De	2019	T6 OOS heavy	2012	Aggregatec	DSL	29	1,506	0	4.65672E-05	0.000246238	0.002825059	1.890975265	0.000241624	0.000102798	1.80408E-05	0.170188
Mojave De	2019	T6 OOS heavy	2013	Aggregatec	DSL	6	339	0	9.83557E-06	5.20094E-05	0.000572744	0.423959694	5.42673E-05	2.30415E-05	4.04477E-06	0.038156
Mojave De	2019	T6 OOS heavy	2014	Aggregatec	DSL	7	387	0	9.59757E-06	5.07763E-05	0.000453796	0.462458522	6.18469E-05	2.6146E-05	4.41207E-06	0.041621
Mojave De	2019	T6 OOS heavy	2015	Aggregatec	DSL	7	422	0	9.74396E-06	5.1557E-05	0.000434706	0.501189375	6.7282E-05	2.83904E-05	4.78158E-06	0.045107
Mojave De	2019	T6 OOS heavy	2016	Aggregatec	DSL	6	379	0	8.34389E-06	4.41515E-05	0.000370501	0.449298229	6.02765E-05	2.54022E-05	4.28652E-06	0.040437
Mojave De	2019	T6 OOS heavy	2017	Aggregatec	DSL	4	275	0	5.77122E-06	3.05434E-05	0.00025776	0.314350426	4.37808E-05	1.84263E-05	2.99905E-06	0.028292
Mojave De	2019	T6 OOS heavy	2018	Aggregatec	DSL	4	269	0	5.35505E-06	2.83499E-05	0.000244191	0.307646505	4.28003E-05	1.79895E-05	2.93509E-06	0.027688
Mojave De	2019	T6 OOS heavy	2019	Aggregatec	DSL	3	191	0	3.58159E-06	1.89674E-05	0.0001666	0.217625159	3.02446E-05	1.26952E-05	2.07625E-06	0.019586
Mojave De	2019	T6 OOS heavy	2020	Aggregatec	DSL	1	33	0	6.04718E-07	3.2315E-06	5.4427E-05	0.038672666	5.29904E-06	2.22134E-06	3.68955E-07	0.003481
Mojave De	2019	T6 OOS small	2010	Aggregatec	DSL	3	189	0	1.72433E-05	4.60979E-05	0.000968277	0.23713355	3.3724E-05	1.61302E-05	2.26236E-06	0.021342
Mojave De	2019	T6 OOS small	2011	Aggregatec	DSL	7	400	0	1.77068E-05	7.36309E-05	0.000936813	0.519773825	6.56753E-05	2.87476E-05	4.95889E-06	0.04678
Mojave De	2019	T6 OOS small	2012	Aggregatec	DSL	13	808	0	2.49192E-05	0.000131658	0.001415855	1.059375658	0.000129558	5.51194E-05	1.01069E-05	0.095344
Mojave De	2019	T6 OOS small	2013	Aggregatec	DSL	17	1,110	0	3.21567E-05	0.000169899	0.00174779	1.451340234	0.000177779	7.54834E-05	1.38465E-05	0.130621
Mojave De	2019	T6 OOS small	2014	Aggregatec	DSL	20	1,422	0	3.51542E-05	0.000185813	0.001505479	1.747050805	0.000227039	9.59812E-05	1.66677E-05	0.157235
Mojave De	2019	T6 OOS small	2015	Aggregatec	DSL	21	1,598	0	3.68057E-05	0.000194562	0.001472643	1.952811128	0.000254723	0.000107483	1.86307E-05	0.175753
Mojave De	2019	T6 OOS small	2016	Aggregatec	DSL	23	1,739	0	3.8238E-05	0.000202142	0.001519993	2.124131049	0.00027687	0.000116681	2.02652E-05	0.191172
Mojave De	2019	T6 OOS small	2017	Aggregatec	DSL	22	1,764	0	3.6894E-05	0.000195064	0.00147067	2.073339003	0.000280547	0.000118075	1.97806E-05	0.186601
Mojave De	2019	T6 OOS small	2018	Aggregatec	DSL	23	1,760	0	3.49078E-05	0.000184612	0.001414338	2.069367663	0.000279706	0.000117563	1.97427E-05	0.186243
Mojave De	2019	T6 OOS small	2019	Aggregatec	DSL	15	1,143	0	2.1433E-05	0.00011338	0.000881765	1.344018246	0.000181474	7.61732E-05	1.28226E-05	0.120962
Mojave De	2019	T6 OOS small	2020	Aggregatec	DSL	6	201	0	3.60432E-06	1.92094E-05	0.000276958	0.238192474	3.17951E-05	1.33283E-05	2.27247E-06	0.021437
Mojave De	2019	T6 Public	2010	Aggregatec	DSL	7	124	0	6.68976E-06	2.00773E-05	0.000504879	0.156019854	2.09807E-05	9.49987E-06	1.4885E-06	0.014042
Mojave De	2019	T6 Public	2011	Aggregatec	DSL	3	55	0	2.34716E-06	9.98563E-06	0.000154523	0.075466575	8.81184E-06	3.7837E-06	7.19986E-07	0.006792
Mojave De	2019	T6 Public	2012	Aggregatec	DSL	3	56	0	1.02103E-06	5.48996E-06	0.00012582	0.07320001	8.84302E-06	3.72133E-06	6.98362E-07	0.006588
Mojave De	2019	T6 Public	2013	Aggregatec	DSL	24	450	0	6.95409E-06	3.75231E-05	0.000955948	0.583402993	7.15903E-05	3.00964E-05	5.56594E-06	0.052506

Mojave De	2019	T6 Public	2014	Aggregatec	DSL	22	414	0	6.03343E-06	3.25872E-05	0.000767939	0.504025678	6.57618E-05	2.76128E-05	4.80864E-06	0.045362
Mojave De	2019	T6 Public	2015	Aggregatec	DSL	21	420	0	5.97952E-06	3.23005E-05	0.000746852	0.5089708	6.67318E-05	2.80059E-05	4.85582E-06	0.045807
Mojave De	2019	T6 Public	2016	Aggregatec	DSL	21	423	0	5.92051E-06	3.19791E-05	0.00073652	0.511199735	6.70431E-05	2.81274E-05	4.87708E-06	0.046008
Mojave De	2019	T6 Public	2017	Aggregatec	DSL	21	430	0	5.93704E-06	3.20663E-05	0.000735978	0.500702014	6.82474E-05	2.86232E-05	4.77693E-06	0.045063
Mojave De	2019	T6 Public	2018	Aggregatec	DSL	21	435	0	5.90282E-06	3.188E-05	0.000729702	0.505450857	6.89112E-05	2.88919E-05	4.82224E-06	0.045491
Mojave De	2019	T6 Public	2019	Aggregatec	DSL	19	404	0	5.40581E-06	2.9195E-05	0.000666742	0.470226468	6.4123E-05	2.68751E-05	4.48618E-06	0.04232
Mojave De	2019	T6 Public	2020	Aggregatec	DSL	2	15	0	2.13441E-07	1.189E-06	5.54007E-05	0.018014799	2.36316E-06	9.90177E-07	1.7187E-07	0.001621
Mojave De	2019	T6 utility	2012	Aggregatec	DSL	5	89	0	1.95715E-06	1.04871E-05	0.000208808	0.119418721	1.4174E-05	5.9662E-06	1.13931E-06	0.010748
Mojave De	2019	T6 utility	2013	Aggregatec	DSL	37	704	0	1.50711E-05	8.07655E-05	0.001586623	0.940619446	0.00011195	4.70943E-05	8.97395E-06	0.084656
Mojave De	2019	T6 utility	2014	Aggregatec	DSL	6	107	0	2.16843E-06	1.16285E-05	0.000213585	0.134572206	1.70293E-05	7.15507E-06	1.28388E-06	0.012111
Mojave De	2019	T6 utility	2015	Aggregatec	DSL	3	62	0	1.22501E-06	6.56989E-06	0.000118534	0.077430828	9.84608E-06	4.13481E-06	7.38726E-07	0.006969
Mojave De	2019	T6 utility	2016	Aggregatec	DSL	6	120	0	2.33388E-06	1.25162E-05	0.000224818	0.14965099	1.90344E-05	7.99068E-06	1.42774E-06	0.013469
Mojave De	2019	T6 utility	2017	Aggregatec	DSL	7	134	0	2.56735E-06	1.37676E-05	0.000246302	0.160801788	2.1256E-05	8.92019E-06	1.53412E-06	0.014472
Mojave De	2019	T6 utility	2018	Aggregatec	DSL	3	67	0	1.2592E-06	6.75233E-06	0.000120391	0.08008417	1.05883E-05	4.44188E-06	7.6404E-07	0.007208
Mojave De	2019	T6 utility	2019	Aggregatec	DSL	6	126	0	2.34207E-06	1.25589E-05	0.000223259	0.151329755	2.00119E-05	8.3921E-06	1.44376E-06	0.01362
Mojave De	2019	T6 utility	2020	Aggregatec	DSL	0	3	0	6.53736E-08	3.58894E-07	1.29001E-05	0.004190281	5.33658E-07	2.23727E-07	3.99772E-08	0.000377
Mojave De	2019	T6TS	2010	Aggregatec	GAS	21	1,738	429	0.000303449	0.003030973	0.000468459	2.046125308	0.00027311	0.000113124	2.04785E-05	0.218433
Mojave De	2019	T6TS	2011	Aggregatec	GAS	41	3,080	817	0.000531105	0.005732121	0.000868321	3.641054562	0.00048416	0.000200684	3.64472E-05	0.388762
Mojave De	2019	T6TS	2012	Aggregatec	GAS	36	2,634	713	0.000420886	0.005016843	0.000752349	3.136650297	0.000414486	0.00017201	3.13993E-05	0.334919
Mojave De	2019	T6TS	2013	Aggregatec	GAS	55	5,192	1,093	0.000585062	0.00785433	0.001227407	6.329254346	0.000818097	0.000340067	6.33177E-05	0.675375
Mojave De	2019	T6TS	2014	Aggregatec	GAS	59	5,878	1,182	0.000600069	0.008512362	0.001331607	6.859138846	0.000927835	0.000386458	6.86183E-05	0.731914
Mojave De	2019	T6TS	2015	Aggregatec	GAS	65	6,733	1,294	0.000625016	0.009338662	0.001458527	7.849898837	0.001064391	0.000444136	7.85222E-05	0.837553
Mojave De	2019	T6TS	2016	Aggregatec	GAS	69	7,499	1,380	0.000638848	0.009980347	0.001559798	8.735523565	0.001186725	0.000495829	8.73734E-05	0.931964
Mojave De	2019	T6TS	2017	Aggregatec	GAS	72	8,137	1,436	0.000815849	0.012425015	0.002205119	9.115310785	0.001288313	0.000538638	9.12093E-05	0.97288
Mojave De	2019	T6TS	2018	Aggregatec	GAS	72	8,533	1,446	0.000792042	0.012520474	0.002213602	9.552915078	0.0013515	0.000565265	9.55784E-05	1.019483
Mojave De	2019	T6TS	2019	Aggregatec	GAS	64	7,805	1,272	0.000674735	0.011017058	0.001941323	8.732381846	0.00123639	0.000517233	8.73607E-05	0.931829
Mojave De	2019	T7 Ag	2010	Aggregatec	DSL	0	7	0	1.25007E-06	4.04489E-06	6.1268E-05	0.013317744	9.23648E-07	4.6096E-07	1.27058E-07	0.001199
Mojave De	2019	T7 Ag	2011	Aggregatec	DSL	0	3	0	2.15209E-07	9.56108E-07	1.07539E-05	0.00489878	3.02902E-07	1.26698E-07	4.67367E-08	0.000441
Mojave De	2019	T7 Ag	2012	Aggregatec	DSL	6	238	0	1.3559E-05	7.39565E-05	0.000775213	0.451862403	2.68965E-05	1.05158E-05	4.31098E-06	0.040668
Mojave De	2019	T7 Ag	2013	Aggregatec	DSL	1	36	0	1.93605E-06	1.05219E-05	0.000107999	0.067828119	4.02616E-06	1.56637E-06	6.47112E-07	0.006105
Mojave De	2019	T7 Ag	2014	Aggregatec	DSL	1	36	0	1.7186E-06	9.24079E-06	8.02574E-05	0.059764175	4.01212E-06	1.54415E-06	5.70178E-07	0.005379
Mojave De	2019	T7 CAIRP	2010	Aggregatec	DSL	205	35,226	0	0.008385349	0.026653874	0.398202384	68.35795952	0.005409282	0.002921148	0.000652167	6.152216
Mojave De	2019	T7 CAIRP	2011	Aggregatec	DSL	213	40,498	0	0.004548454	0.020340161	0.188923258	74.72652429	0.005030672	0.002221544	0.000712926	6.725387
Mojave De	2019	T7 CAIRP	2012	Aggregatec	DSL	2,678	562,586	0	0.041997105	0.233381209	1.744502455	1021.936887	0.065063448	0.026248298	0.009749756	91.97432
Mojave De	2019	T7 CAIRP	2013	Aggregatec	DSL	239	55,221	0	0.003798102	0.021125874	0.147844733	99.54108682	0.00634913	0.002540804	0.000949669	8.958698
Mojave De	2019	T7 CAIRP	2014	Aggregatec	DSL	258	65,417	0	0.003670792	0.02026668	0.090827158	104.4554161	0.007419441	0.002912376	0.000996554	9.400987
Mojave De	2019	T7 CAIRP	2015	Aggregatec	DSL	268	73,663	0	0.003739506	0.020616816	0.080366951	116.9999792	0.008305782	0.003232717	0.001116234	10.53
Mojave De	2019	T7 CAIRP	2016	Aggregatec	DSL	232	68,163	0	0.003227614	0.017790755	0.068302155	107.8200474	0.007655206	0.002962202	0.001028654	9.703804
Mojave De	2019	T7 CAIRP	2017	Aggregatec	DSL	166	51,117	0	0.002244798	0.012350347	0.046945553	78.33610036	0.005716358	0.002198056	0.000747363	7.050249
Mojave De	2019	T7 CAIRP	2018	Aggregatec	DSL	163	51,672	0	0.002093232	0.011470888	0.043485505	79.06149519	0.005752566	0.002197164	0.000754284	7.115535
Mojave De	2019	T7 CAIRP	2019	Aggregatec	DSL	107	34,079	0	0.001268752	0.00690577	0.026393524	52.14112299	0.00377647	0.001432323	0.000497451	4.692701
Mojave De	2019	T7 CAIRP	2020	Aggregatec	DSL	56	7,460	0	0.000334617	0.00166801	0.009657841	12.30398513	0.000823086	0.000310096	0.000117386	1.107359
Mojave De	2019	T7 CAIRP const	2010	Aggregatec	DSL	3	577	0	0.000129079	0.000403634	0.006353103	1.137052043	8.85292E-05	4.78055E-05	1.0848E-05	0.102335
Mojave De	2019	T7 CAIRP const	2011	Aggregatec	DSL	3	619	0	6.69857E-05	0.000301132	0.002795664	1.180407333	7.69147E-05	3.39632E-05	1.12616E-05	0.106237
Mojave De	2019	T7 CAIRP const	2012	Aggregatec	DSL	9	2,103	0	0.000153597	0.000859846	0.006341722	3.955834382	0.00024319	9.81039E-05	3.77405E-05	0.356025
Mojave De	2019	T7 CAIRP const	2013	Aggregatec	DSL	5	1,258	0	8.54064E-05	0.000477139	0.003308768	2.36062174	0.00014464	5.78805E-05	2.25214E-05	0.212456
Mojave De	2019	T7 CAIRP const	2014	Aggregatec	DSL	5	1,438	0	8.02359E-05	0.000443815	0.001972178	2.364080381	0.000163089	6.4017E-05	2.25544E-05	0.212767
Mojave De	2019	T7 CAIRP const	2015	Aggregatec	DSL	6	1,527	0	7.76699E-05	0.000427915	0.001674542	2.504431354	0.000172148	6.70023E-05	2.38934E-05	0.225399
Mojave De	2019	T7 CAIRP const	2016	Aggregatec	DSL	5	1,359	0	6.48662E-05	0.000356592	0.001389854	2.224333825	0.000152604	5.90514E-05	2.12212E-05	0.20019
Mojave De	2019	T7 CAIRP const	2017	Aggregatec	DSL	3	1,005	0	4.46827E-05	0.000244874	0.000951948	1.596213286	0.000112432	4.32334E-05	1.52286E-05	0.143659
Mojave De	2019	T7 CAIRP const	2018	Aggregatec	DSL	3	1,019	0	4.18104E-05	0.000228155	0.000886489	1.614978603	0.000113416	4.33195E-05	1.54077E-05	0.145348
Mojave De	2019	T7 CAIRP const	2019	Aggregatec	DSL	2	632	0	2.38765E-05	0.000129367	0.000507892	1.002250098	7.00612E-05	2.65731E-05	9.56193E-06	0.090203
Mojave De	2019	T7 CAIRP const	2020	Aggregatec	DSL	1	162	0	7.47142E-06	3.69654E-05	0.000221042	0.277134318	1.7847E-05	6.72419E-06	2.64399E-06	0.024942

Mojave De	2019 T7 NNOOS	2010 Aggregatec	DSL	95	16,408	0	0.00413545	0.01333226	0.18991992	32.66608859	0.002519838	0.001360845	0.00031165	2.939948
Mojave De	2019 T7 NNOOS	2011 Aggregatec	DSL	150	28,500	0	0.003348931	0.014884727	0.136702211	53.76132316	0.003540603	0.001563665	0.000512908	4.838519
Mojave De	2019 T7 NNOOS	2012 Aggregatec	DSL	1,030	216,624	0	0.016781248	0.09211953	0.690265534	401.3240328	0.025054541	0.010108652	0.003828819	36.11916
Mojave De	2019 T7 NNOOS	2013 Aggregatec	DSL	380	88,150	0	0.006288383	0.034556884	0.24285661	161.7900651	0.010135891	0.004056565	0.001543553	14.56111
Mojave De	2019 T7 NNOOS	2014 Aggregatec	DSL	454	115,126	0	0.0067292	0.036661575	0.16801946	186.8596956	0.013058158	0.005126205	0.001782729	16.81737
Mojave De	2019 T7 NNOOS	2015 Aggregatec	DSL	545	149,814	0	0.007928505	0.043124776	0.173267615	241.5922478	0.016893089	0.006575546	0.002304903	21.7433
Mojave De	2019 T7 NNOOS	2016 Aggregatec	DSL	602	176,842	0	0.008730606	0.047475604	0.188046531	283.7473558	0.019861647	0.007686116	0.002707082	25.53726
Mojave De	2019 T7 NNOOS	2017 Aggregatec	DSL	657	202,650	0	0.009288665	0.050401447	0.197940391	314.8203327	0.022663423	0.008715201	0.003003533	28.33383
Mojave De	2019 T7 NNOOS	2018 Aggregatec	DSL	758	240,647	0	0.010198055	0.055083801	0.216176226	373.1245877	0.026792231	0.010233921	0.003559783	33.58121
Mojave De	2019 T7 NNOOS	2019 Aggregatec	DSL	576	182,863	0	0.007149063	0.03831628	0.151989041	283.5123245	0.020264734	0.007686499	0.00270484	25.51611
Mojave De	2019 T7 NNOOS	2020 Aggregatec	DSL	359	47,466	0	0.002341584	0.011398632	0.067906973	80.61119367	0.005237563	0.001973603	0.000769068	7.255007
Mojave De	2019 T7 NOOS	2010 Aggregatec	DSL	79	13,430	0	0.003403418	0.010986555	0.155820127	26.80386504	0.002062504	0.001113866	0.000255721	2.412348
Mojave De	2019 T7 NOOS	2011 Aggregatec	DSL	83	15,440	0	0.001822221	0.00809441	0.074329958	29.18828314	0.00191816	0.000847139	0.00027847	2.626945
Mojave De	2019 T7 NOOS	2012 Aggregatec	DSL	1,102	227,537	0	0.017689892	0.096994021	0.728111008	422.3524495	0.026316853	0.010618055	0.00402944	38.01172
Mojave De	2019 T7 NOOS	2013 Aggregatec	DSL	93	21,054	0	0.001507224	0.008273166	0.05826195	38.70987595	0.002420857	0.000968879	0.00036931	3.483889
Mojave De	2019 T7 NOOS	2014 Aggregatec	DSL	100	24,941	0	0.001463571	0.007963649	0.036682747	40.54616033	0.00282894	0.001110559	0.000386829	3.649154
Mojave De	2019 T7 NOOS	2015 Aggregatec	DSL	104	28,085	0	0.001492297	0.008106488	0.032776493	45.35740104	0.003166876	0.0012327	0.000432731	4.082166
Mojave De	2019 T7 NOOS	2016 Aggregatec	DSL	90	25,988	0	0.001288196	0.006995985	0.027889961	41.75679652	0.00291881	0.001129538	0.000398379	3.758112
Mojave De	2019 T7 NOOS	2017 Aggregatec	DSL	64	19,489	0	0.000896987	0.00486077	0.01921816	30.31671825	0.002179552	0.000838151	0.000289236	2.728505
Mojave De	2019 T7 NOOS	2018 Aggregatec	DSL	63	19,701	0	0.000838496	0.00452286	0.01787636	30.58556957	0.002193354	0.000837809	0.000291801	2.752701
Mojave De	2019 T7 NOOS	2019 Aggregatec	DSL	42	12,993	0	0.000510365	0.002731386	0.010917499	20.17096566	0.001439903	0.000546165	0.00019244	1.815387
Mojave De	2019 T7 NOOS	2020 Aggregatec	DSL	22	2,844	0	0.000141572	0.000687686	0.004131178	4.844205784	0.000313853	0.000118267	4.6216E-05	0.435979
Mojave De	2019 T7 POLA	2010 Aggregatec	DSL	106	15,614	0	0.00614219	0.018255827	0.180201309	32.73067685	0.002443577	0.001338698	0.000312266	2.945761
Mojave De	2019 T7 POLA	2011 Aggregatec	DSL	99	14,581	0	0.002765429	0.012677029	0.083622584	29.29523653	0.00181564	0.000804071	0.00027949	2.636571
Mojave De	2019 T7 POLA	2012 Aggregatec	DSL	82	12,111	0	0.001588431	0.00923907	0.052605683	24.00376644	0.001402603	0.00056691	0.000229007	2.160339
Mojave De	2019 T7 POLA	2013 Aggregatec	DSL	57	8,342	0	0.001020734	0.005930595	0.033022557	16.53326755	0.000960744	0.000385368	0.000157735	1.487994
Mojave De	2019 T7 POLA	2014 Aggregatec	DSL	29	4,269	0	0.000427709	0.002476089	0.01188418	7.430679961	0.000485146	0.000190972	7.08922E-05	0.668761
Mojave De	2019 T7 POLA	2015 Aggregatec	DSL	29	4,269	0	0.00038459	0.002221481	0.010140616	7.430679961	0.000481878	0.000187845	7.08922E-05	0.668761
Mojave De	2019 T7 POLA	2016 Aggregatec	DSL	29	4,269	0	0.000359839	0.002075332	0.009377309	7.430679961	0.000479857	0.000185912	7.08922E-05	0.668761
Mojave De	2019 T7 POLA	2017 Aggregatec	DSL	29	4,269	0	0.000336127	0.001935316	0.008646034	7.220009364	0.000477922	0.00018406	6.88823E-05	0.649801
Mojave De	2019 T7 POLA	2018 Aggregatec	DSL	29	4,269	0	0.000313845	0.001803748	0.00795888	7.220009364	0.000476103	0.00018232	6.88823E-05	0.649801
Mojave De	2019 T7 POLA	2019 Aggregatec	DSL	29	4,269	0	0.000291298	0.001670611	0.007263536	7.220009364	0.000474262	0.000180559	6.88823E-05	0.649801
Mojave De	2019 T7 Public	2010 Aggregatec	DSL	2	46	0	1.03655E-05	3.61234E-05	0.000387353	0.105863478	5.79009E-06	2.5924E-06	1.00999E-06	0.009528
Mojave De	2019 T7 Public	2011 Aggregatec	DSL	1	23	0	1.81222E-06	7.51377E-06	0.000100599	0.048577925	2.61168E-06	1.02806E-06	4.63456E-07	0.004372
Mojave De	2019 T7 Public	2012 Aggregatec	DSL	5	115	0	8.16481E-06	4.07854E-05	0.000469037	0.251261909	1.27589E-05	4.85371E-06	2.39716E-06	0.022614
Mojave De	2019 T7 Public	2013 Aggregatec	DSL	20	458	0	2.30844E-05	0.000106718	0.001681686	0.955954141	5.06638E-05	1.9172E-05	9.12025E-06	0.086036
Mojave De	2019 T7 Public	2014 Aggregatec	DSL	14	314	0	1.5587E-05	7.17463E-05	0.001044928	0.575720955	3.47008E-05	1.31067E-05	5.49265E-06	0.051815
Mojave De	2019 T7 Public	2015 Aggregatec	DSL	14	326	0	1.60889E-05	7.39286E-05	0.001062878	0.597874242	3.60175E-05	1.35932E-05	5.704E-06	0.053809
Mojave De	2019 T7 Public	2016 Aggregatec	DSL	14	320	0	1.57416E-05	7.22587E-05	0.001042653	0.587073643	3.53551E-05	1.33365E-05	5.60096E-06	0.052837
Mojave De	2019 T7 Public	2017 Aggregatec	DSL	14	324	0	1.58836E-05	7.28354E-05	0.001054823	0.577654535	3.57911E-05	1.34941E-05	5.51109E-06	0.051989
Mojave De	2019 T7 Public	2018 Aggregatec	DSL	14	310	0	1.51476E-05	6.93876E-05	0.001008594	0.55288129	3.42448E-05	1.29045E-05	5.27475E-06	0.049759
Mojave De	2019 T7 Public	2019 Aggregatec	DSL	12	271	0	1.31803E-05	6.03124E-05	0.000879926	0.482824801	2.98957E-05	1.12599E-05	4.60637E-06	0.043454
Mojave De	2019 T7 Public	2020 Aggregatec	DSL	1	14	0	1.26259E-06	5.26565E-06	0.000106181	0.031482623	1.55854E-06	5.87696E-07	3.00359E-07	0.002833
Mojave De	2019 T7 Single	2010 Aggregatec	DSL	1	122	0	1.75077E-05	5.32992E-05	0.000923999	0.23177647	1.64395E-05	7.9126E-06	2.21126E-06	0.02086
Mojave De	2019 T7 Single	2011 Aggregatec	DSL	7	811	0	7.29546E-05	0.000332858	0.002604872	1.537240678	9.54011E-05	3.93718E-05	1.4666E-05	0.138352
Mojave De	2019 T7 Single	2012 Aggregatec	DSL	81	11,715	0	0.000636603	0.003679715	0.023620939	21.47618561	0.001317149	0.000510502	0.000204893	1.932857
Mojave De	2019 T7 Single	2013 Aggregatec	DSL	18	2,772	0	0.000120088	0.000691691	0.004563497	4.985010633	0.000310581	0.000119737	4.75593E-05	0.448651
Mojave De	2019 T7 Single	2014 Aggregatec	DSL	19	2,976	0	0.000115333	0.000662401	0.002878988	4.699439242	0.000331721	0.00012692	4.48348E-05	0.42295
Mojave De	2019 T7 Single	2015 Aggregatec	DSL	21	3,250	0	0.000120195	0.000689467	0.00268093	5.131547427	0.000361472	0.000137857	4.89574E-05	0.461839
Mojave De	2019 T7 Single	2016 Aggregatec	DSL	20	3,232	0	0.000116068	0.000665269	0.002593687	5.103196993	0.000358986	0.000136616	4.86869E-05	0.459288
Mojave De	2019 T7 Single	2017 Aggregatec	DSL	20	3,135	0	0.000108949	0.000623897	0.002440241	4.808479829	0.000347613	0.000131981	4.58751E-05	0.432763
Mojave De	2019 T7 Single	2018 Aggregatec	DSL	20	3,133	0	0.000105044	0.000600903	0.00235942	4.806189556	0.000346897	0.000131381	4.58533E-05	0.432557
Mojave De	2019 T7 Single	2019 Aggregatec	DSL	16	2,600	0	8.37882E-05	0.000478725	0.001888308	3.988562577	0.000287398	0.000108557	3.80528E-05	0.358971

Mojave De	2019 T7 Single	2020 Aggregate	DSL	3	128	0	4.75399E-06	2.55305E-05	0.000202431	0.205532479	1.41614E-05	5.33551E-06	1.96088E-06	0.018498
Mojave De	2019 T7 single constr	2010 Aggregate	DSL	12	1,137	0	0.000151022	0.000463796	0.008553832	2.140758301	0.000152485	7.31323E-05	2.04238E-05	0.192668
Mojave De	2019 T7 single constr	2011 Aggregate	DSL	16	1,549	0	9.81615E-05	0.000444561	0.004449075	2.829683067	0.000181117	7.41624E-05	2.69965E-05	0.254671
Mojave De	2019 T7 single constr	2012 Aggregate	DSL	44	5,251	0	0.000226783	0.001296251	0.009924581	9.444295663	0.000589339	0.000227798	9.0103E-05	0.849987
Mojave De	2019 T7 single constr	2013 Aggregate	DSL	18	2,466	0	0.00010091	0.000578468	0.004075323	4.419691433	0.000276176	0.0001064	4.21659E-05	0.397772
Mojave De	2019 T7 single constr	2014 Aggregate	DSL	19	2,691	0	9.86608E-05	0.000563671	0.002672154	4.235176946	0.000299857	0.000114658	4.04056E-05	0.381166
Mojave De	2019 T7 single constr	2015 Aggregate	DSL	21	2,888	0	0.000101106	0.000576796	0.002468718	4.544489811	0.000321101	0.000122391	4.33566E-05	0.409004
Mojave De	2019 T7 single constr	2016 Aggregate	DSL	20	2,820	0	9.58979E-05	0.000546582	0.00234954	4.437165728	0.0003131	0.000119088	4.23326E-05	0.399345
Mojave De	2019 T7 single constr	2017 Aggregate	DSL	19	2,745	0	9.04024E-05	0.00051471	0.002223951	4.196832919	0.000304342	0.000115491	4.00397E-05	0.377715
Mojave De	2019 T7 single constr	2018 Aggregate	DSL	19	2,761	0	8.77507E-05	0.000498995	0.002169167	4.220790571	0.000305603	0.000115684	4.02683E-05	0.379871
Mojave De	2019 T7 single constr	2019 Aggregate	DSL	15	2,065	0	6.31215E-05	0.00035843	0.001569166	3.15680552	0.000228187	8.61521E-05	3.01174E-05	0.284112
Mojave De	2019 T7 single constr	2020 Aggregate	DSL	4	184	0	6.65249E-06	3.52011E-05	0.000315766	0.294577938	2.02538E-05	7.62788E-06	2.81041E-06	0.026512
Mojave De	2019 T7 SWCV	2010 Aggregate	DSL	3	156	0	2.37339E-05	8.4279E-05	0.001488097	0.825318982	1.81633E-05	7.36864E-06	7.85853E-06	0.074279
Mojave De	2019 T7 SWCV	2011 Aggregate	DSL	2	81	0	8.8375E-06	0.000776978	0.000175937	0.368575525	9.2302E-06	3.61617E-06	1.66949E-06	0.033172
Mojave De	2019 T7 SWCV	2013 Aggregate	DSL	6	269	0	3.66791E-05	0.001162622	0.000489722	1.285413966	3.08892E-05	1.23509E-05	9.65625E-06	0.115687
Mojave De	2019 T7 SWCV	2014 Aggregate	DSL	6	286	0	1.79639E-05	0.001182336	0.000517006	1.249682251	3.28864E-05	1.31495E-05	9.48483E-06	0.112471
Mojave De	2019 T7 SWCV	2015 Aggregate	DSL	6	280	0	1.24854E-05	0.00114308	0.000504598	1.23385967	3.21665E-05	1.28616E-05	9.38723E-06	0.111047
Mojave De	2019 T7 SWCV	2016 Aggregate	DSL	6	276	0	1.22913E-05	0.001125313	0.000496755	1.214681502	3.16666E-05	1.26617E-05	9.24133E-06	0.109321
Mojave De	2019 T7 SWCV	2017 Aggregate	DSL	6	285	0	1.27189E-05	0.001164461	0.000514037	1.221302512	3.27682E-05	1.31022E-05	9.2917E-06	0.109917
Mojave De	2019 T7 SWCV	2018 Aggregate	DSL	6	280	0	1.24773E-05	0.001142344	0.000504273	1.198105938	3.21458E-05	1.28533E-05	9.11522E-06	0.10783
Mojave De	2019 T7 SWCV	2019 Aggregate	DSL	6	263	0	1.17119E-05	0.001072271	0.000473341	1.124612817	3.0174E-05	1.20649E-05	8.55608E-06	0.101215
Mojave De	2019 T7 SWCV	2020 Aggregate	DSL	1	11	0	6.51458E-07	4.51297E-05	3.86352E-05	0.048895465	1.24761E-06	4.99211E-07	3.71006E-07	0.004401
Mojave De	2019 T7 tractor	2010 Aggregate	DSL	62	7,861	0	0.001437925	0.004310361	0.07823531	14.00819419	0.001181601	0.000627438	0.000133645	1.260737
Mojave De	2019 T7 tractor	2011 Aggregate	DSL	65	8,973	0	0.000784689	0.00358763	0.035043274	15.40213665	0.001098271	0.000476541	0.000146944	1.386192
Mojave De	2019 T7 tractor	2012 Aggregate	DSL	870	128,496	0	0.007722906	0.044747247	0.336860156	219.0051369	0.014748881	0.005888245	0.002089411	19.71046
Mojave De	2019 T7 tractor	2013 Aggregate	DSL	88	13,981	0	0.000781658	0.004528953	0.031851165	23.79206989	0.001596976	0.000633206	0.000226987	2.141286
Mojave De	2019 T7 tractor	2014 Aggregate	DSL	85	14,461	0	0.000660463	0.003816108	0.016677796	21.92951888	0.001632419	0.00063644	0.000209218	1.973657
Mojave De	2019 T7 tractor	2015 Aggregate	DSL	83	14,867	0	0.00060872	0.003513073	0.013251469	22.52027098	0.001668292	0.000644789	0.000214854	2.026824
Mojave De	2019 T7 tractor	2016 Aggregate	DSL	76	14,244	0	0.000544193	0.003138986	0.011706242	21.5594682	0.001592558	0.00061216	0.000205687	1.940352
Mojave De	2019 T7 tractor	2017 Aggregate	DSL	69	13,334	0	0.00047488	0.002736602	0.010136023	19.59956006	0.001485554	0.000568005	0.000186989	1.76396
Mojave De	2019 T7 tractor	2018 Aggregate	DSL	69	13,573	0	0.000450896	0.002594583	0.009610749	19.94652417	0.001507106	0.000573345	0.000190299	1.795187
Mojave De	2019 T7 tractor	2019 Aggregate	DSL	49	9,643	0	0.000297231	0.001706873	0.006356947	14.170245	0.001067036	0.000403838	0.000135191	1.275322
Mojave De	2019 T7 tractor	2020 Aggregate	DSL	19	1,517	0	4.79319E-05	0.000264828	0.001609698	2.281686254	0.000167294	6.29935E-05	2.17684E-05	0.205352
Mojave De	2019 T7 tractor cons	2010 Aggregate	DSL	10	825	0	0.00015691	0.000476279	0.008351621	1.560157384	0.000124062	6.58794E-05	1.48846E-05	0.140414
Mojave De	2019 T7 tractor cons	2011 Aggregate	DSL	13	1,118	0	0.000101004	0.000459457	0.004618356	2.049343735	0.000136815	5.9367E-05	1.95517E-05	0.184441
Mojave De	2019 T7 tractor cons	2012 Aggregate	DSL	37	3,961	0	0.000242772	0.001396729	0.01103437	7.148842752	0.000454623	0.000181508	6.82033E-05	0.643396
Mojave De	2019 T7 tractor cons	2013 Aggregate	DSL	17	2,183	0	0.000123686	0.000713245	0.005197645	3.922431106	0.000249395	9.88886E-05	3.74218E-05	0.353019
Mojave De	2019 T7 tractor cons	2014 Aggregate	DSL	17	2,155	0	0.000100366	0.000575834	0.002761869	3.399068137	0.000243234	9.48344E-05	3.24287E-05	0.305916
Mojave De	2019 T7 tractor cons	2015 Aggregate	DSL	16	2,064	0	8.6682E-05	0.00049579	0.002146718	3.256355448	0.000231662	8.95402E-05	3.10672E-05	0.293072
Mojave De	2019 T7 tractor cons	2016 Aggregate	DSL	15	1,875	0	7.37665E-05	0.000421047	0.001846029	2.956839121	0.000209596	8.05696E-05	2.82096E-05	0.266116
Mojave De	2019 T7 tractor cons	2017 Aggregate	DSL	13	1,715	0	6.31471E-05	0.000359619	0.001598253	2.628125235	0.000191066	7.3058E-05	2.50735E-05	0.236531
Mojave De	2019 T7 tractor cons	2018 Aggregate	DSL	14	1,736	0	5.98011E-05	0.000339735	0.001531843	2.660377477	0.000192778	7.33417E-05	2.53812E-05	0.239434
Mojave De	2019 T7 tractor cons	2019 Aggregate	DSL	9	1,181	0	3.78333E-05	0.000214323	0.000982662	1.809251384	0.000130667	4.94557E-05	1.72611E-05	0.162833
Mojave De	2019 T7 tractor cons	2020 Aggregate	DSL	4	162	0	6.04185E-06	3.16821E-05	0.000303884	0.261520452	1.78456E-05	6.72123E-06	2.49503E-06	0.023537
Mojave De	2019 T7 utility	2012 Aggregate	DSL	5	121	0	7.07288E-06	3.39582E-05	0.000467667	0.256833968	1.33848E-05	5.0767E-06	2.45032E-06	0.023115
Mojave De	2019 T7 utility	2013 Aggregate	DSL	16	375	0	2.17875E-05	0.0001044	0.001423514	0.79792004	4.15571E-05	1.57469E-05	7.61253E-06	0.071813
Mojave De	2019 T7 utility	2014 Aggregate	DSL	2	47	0	2.70643E-06	1.29149E-05	0.000163238	0.088597628	5.24776E-06	1.98477E-06	8.45263E-07	0.007974
Mojave De	2019 T7 utility	2015 Aggregate	DSL	1	34	0	1.91156E-06	9.10651E-06	0.000113673	0.063018918	3.73074E-06	1.40988E-06	6.0123E-07	0.005672
Mojave De	2019 T7 utility	2016 Aggregate	DSL	2	39	0	2.22245E-06	1.05767E-05	0.000132533	0.073582462	4.35461E-06	1.64478E-06	7.02011E-07	0.006622
Mojave De	2019 T7 utility	2017 Aggregate	DSL	2	43	0	2.4346E-06	1.15743E-05	0.000145597	0.07865903	4.78922E-06	1.80798E-06	7.50444E-07	0.007079
Mojave De	2019 T7 utility	2018 Aggregate	DSL	1	31	0	1.74222E-06	8.27397E-06	0.000104487	0.056532756	3.44085E-06	1.29827E-06	5.39349E-07	0.005088
Mojave De	2019 T7 utility	2019 Aggregate	DSL	1	32	0	1.80183E-06	8.548E-06	0.000108373	0.058721236	3.57282E-06	1.34735E-06	5.60228E-07	0.005285
Mojave De	2019 T7 utility	2020 Aggregate	DSL	0	2	0	2.05976E-07	8.84882E-07	1.62824E-05	0.004834635	2.36042E-07	8.91162E-08	4.61247E-08	0.000435

Mojave De	2019	T7IS	2010	Aggregatec	GAS	1	179	26	9.69358E-05	0.006647171	0.000740184	0.344290124	1.62E-05	6.2536E-06	3.54455E-06	0.037808
Mojave De	2019	T7IS	2011	Aggregatec	GAS	2	282	37	0.000138132	0.009745136	0.001094436	0.540687823	2.54894E-05	9.85007E-06	5.55519E-06	0.059254
Mojave De	2019	T7IS	2012	Aggregatec	GAS	1	96	12	4.40293E-05	0.003175075	0.000357541	0.184079596	8.69134E-06	3.3651E-06	1.88896E-06	0.020149
Mojave De	2019	T7IS	2013	Aggregatec	GAS	3	746	60	0.000286807	0.022892372	0.00248232	1.456541662	6.76358E-05	2.62578E-05	1.49095E-05	0.159032
Mojave De	2019	T7IS	2014	Aggregatec	GAS	3	776	58	0.000273997	0.022264971	0.002433832	1.329271696	7.04872E-05	2.74548E-05	1.36289E-05	0.145372
Mojave De	2019	T7IS	2015	Aggregatec	GAS	3	798	55	0.000251586	0.020902573	0.002309702	1.366384398	7.26428E-05	2.83783E-05	1.39771E-05	0.149086
Mojave De	2019	T7IS	2016	Aggregatec	GAS	3	838	53	0.000232134	0.019793775	0.002216201	1.4349758	7.64417E-05	2.99268E-05	1.46436E-05	0.156195
Mojave De	2019	T7IS	2017	Aggregatec	GAS	3	866	51	0.000258302	0.021223198	0.002753657	1.439904972	7.90368E-05	3.09778E-05	1.47163E-05	0.156971
Mojave De	2019	T7IS	2018	Aggregatec	GAS	3	941	51	0.000233973	0.020059623	0.00265954	1.565497069	8.59982E-05	3.37275E-05	1.59507E-05	0.170137
Mojave De	2019	T7IS	2019	Aggregatec	GAS	2	972	49	0.000177827	0.016565323	0.002282754	1.61551527	8.87995E-05	3.48397E-05	1.63928E-05	0.174853

MDAB-wide	Population	VMT (mi/d)	ROG_TOTAL (ton/day)	CO_TOTEX (ton/day)	NOx_TOTEX (ton/day)	CO2_TOTEX (ton/day)	PM10_TOTAL (ton/day)	PM2_5_TOTAL (ton/day)	SOx_TOTEX (ton/day)
ONLY Model Yrs 2010-newer (MHDT = T6)	4,284	293,261	0.012	0.117	0.324	356.775	0.047	0.020	0.003
ONLY Model Yrs 2010-newer (HHDT = T7)	14,950	3,342,262	0.224	1.320	7.582	5681.506	0.384	0.153	0.054
ONLY Model Yrs 2010-newer (T6 + T7)	19,234	3,635,523	0.236	1.437	7.906	6038.281	0.431	0.173	0.058

MDAB-wide	ROG (lb/mi)	CO (lb/mi)	NOx (lb/mi)	CO2 (lb/mi)	PM10 (lb/mi)	PM2.5 (lb/mi)	SOx (lb/mi)
ONLY Model Yrs 2010-newer (MHDT = T6)	8.38E-05	7.97E-04	2.21E-03	2.43E+00	3.20E-04	1.35E-04	2.34E-05
ONLY Model Yrs 2010-newer (HHDT = T7)	1.34E-04	7.90E-04	4.54E-03	3.40E+00	2.30E-04	9.18E-05	3.24E-05
ONLY Model Yrs 2010-newer (T6 + T7)	1.30E-04	7.91E-04	4.35E-03	3.32E+00	2.37E-04	9.54E-05	3.17E-05
MDAB-wide							
All Model Years (MHDT = T6)	4.86E-04	4.09E-03	5.97E-03	2.44E+00	4.64E-04	2.74E-04	2.35E-05
All Model Years (HHDT = T7)	1.95E-04	1.08E-03	7.84E-03	3.48E+00	2.50E-04	1.11E-04	3.32E-05
All Model Years (T6 + T7)	2.24E-04	1.38E-03	7.66E-03	3.38E+00	2.71E-04	1.27E-04	3.22E-05
MHDT: % Reduced w/ ONLY Model Yrs 2010-newer	**82.8%**	**80.5%**	**63.0%**	**0.2%**	**31.2%**	**50.6%**	**0.5%**
HHDT: % Reduced w/ ONLY Model Yrs 2010-newer	**31.5%**	**27.0%**	**42.2%**	**2.3%**	**8.1%**	**17.4%**	**2.3%**
MHDT + HHDT: % Reduced w/ ONLY Model Yrs 2010-newer	**42.0%**	**42.5%**	**43.2%**	**1.6%**	**12.5%**	**25.0%**	**1.7%**

IP Athos

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1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
General Light Industry	148,104.00	1000sqft	3,400.00	148,104,000.00	0

1.2 Other Project Characteristics

Urbanization	Rural	**Wind Speed (m/s)**	2.6	**Precipitation Freq (Days)**	31
Climate Zone	10			**Operational Year**	2022
Utility Company					
CO2 Intensity (lb/MWhr)	0	**CH4 Intensity (lb/MWhr)**	0	**N2O Intensity (lb/MWhr)**	0

1.3 User Entered Comments & Non-Default Data

Project Characteristics - 30-mo construction over 660 work days, w mitigation to avoid overlap and extend to 880 days

Land Use - up to 3400 ac site plus gen-ties

Construction Phase - Overall 30 mo or 660 days of construction -- w mitigation to extend overall to 40 mo or 880 days.
- Extends Ph 1 Site Prep to 6 mo.
- Extends Ph 2 PV Panels to 34 mo.

Off-road Equipment - mix 21 equip ct in Ph 3 - electrical. Equip in Ph 3 ranges from 6 to 8 hr-d.

Off-road Equipment - mix 70 equip ct in Ph 2 - pv panels. Equip in Ph 2 at 4 to 6 hr-d for extending from 20 mo to 34 mo.

Off-road Equipment - mix 31 equip ct in Ph 1 - site prep. Equip in Ph 1 at 6.7 hr-d for extending from 5 mo to 6 mo.

Off-road Equipment - mix 56 equip ct in Ph 4 - throughout construction and restoration. Equip in Ph 4 at 6 hr-d for overall extended to 40 mo or 880 days.

Trips and VMT - 1,060 peak worker commutes and crew, water trucks as vendor class

On-road Fugitive Dust - Water trucks 10% unpaved; HHDT 1% unpaved

Grading - trenching is no net material import or export

Architectural Coating - no coatings needed

Vehicle Trips - TR 0.0004 per 1000sqft per day: fewer than 100 daily operational trips

Road Dust - approx 1% unpaved VMT during ops

Consumer Products - no consumer products

Area Coating - minimal or no coatings needed

Energy Use - energy use not applicable

Water And Wastewater - interior water consumption factors not applicable

Solid Waste - light industrial solid waste factors not applicable

Land Use Change - up to 3400 ac loss of natural carbon uptake

Construction Off-road Equipment Mitigation - Tier 4 offroad; water 2x daily is 55% effective PM10 control per Rule 403; suppressant is 84% effective per Table XI-D; 15 mph

Operational Off-Road Equipment - fleet of 6 equipment ct for occasional routine op-maint activity

Table Name	Column Name	Default Value	New Value
tblAreaCoating	ReapplicationRatePercent	10	0.1
tblConstDustMitigation	WaterUnpavedRoadMoistureContent	0	0.5

tblConstDustMitigation	WaterUnpavedRoadVehicleSpeed	0	15
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	30.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	9.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	3.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	25.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	6.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	13.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	4.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	7.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	7.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	10.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	11.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	45.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	2.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	6.00
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final

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tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstructionPhase	NumDays	155,000.00	220.00
tblConstructionPhase	NumDays	15,500.00	880.00
tblConstructionPhase	NumDays	6,000.00	132.00
tblConsumerProducts	ROG_EF	2.14E-05	0
tblEnergyUse	LightingElect	2.93	0.00
tblEnergyUse	NT24E	5.02	0.00
tblEnergyUse	NT24NG	17.13	0.00
tblEnergyUse	T24E	2.20	0.00
tblEnergyUse	T24NG	15.36	0.00
tblGrading	AcresOfGrading	1,658.25	1,650.00
tblGrading	MaterialExported	0.00	1,005,000.00
tblGrading	MaterialImported	0.00	1,005,000.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	6.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	18.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	2.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	2.00
tblOffRoadEquipment	UsageHours	7.00	8.00
tblOffRoadEquipment	UsageHours	8.00	6.00
tblOffRoadEquipment	UsageHours	8.00	6.00
tblOffRoadEquipment	UsageHours	8.00	6.00
tblOffRoadEquipment	UsageHours	8.00	6.70
tblOffRoadEquipment	UsageHours	8.00	6.00
tblOffRoadEquipment	UsageHours	8.00	6.00
tblOffRoadEquipment	UsageHours	8.00	6.70
tblOnRoadDust	HaulingPercentPave	100.00	99.00

tblOnRoadDust	HaulingPercentPave	100.00	99.00
tblOnRoadDust	HaulingPercentPave	100.00	99.00
tblOnRoadDust	HaulingPercentPave	100.00	99.00
tblOnRoadDust	VendorPercentPave	100.00	90.00
tblOperationalOffRoadEquipment	OperDaysPerYear	260.00	52.00
tblOperationalOffRoadEquipment	OperDaysPerYear	260.00	52.00
tblOperationalOffRoadEquipment	OperDaysPerYear	260.00	52.00
tblOperationalOffRoadEquipment	OperOffRoadEquipmentNumber	0.00	2.00
tblOperationalOffRoadEquipment	OperOffRoadEquipmentNumber	0.00	2.00
tblOperationalOffRoadEquipment	OperOffRoadEquipmentNumber	0.00	2.00
tblProjectCharacteristics	UrbanizationLevel	Urban	Rural
tblRoadDust	RoadPercentPave	100	99
tblSolidWaste	SolidWasteGenerationRate	183,648.96	0.00
tblTripsAndVMT	HaulingTripLength	20.00	150.00
tblTripsAndVMT	HaulingTripLength	20.00	150.00
tblTripsAndVMT	HaulingTripLength	20.00	150.00
tblTripsAndVMT	HaulingTripLength	20.00	150.00
tblTripsAndVMT	HaulingTripNumber	125,625.00	4,440.00
tblTripsAndVMT	HaulingTripNumber	0.00	400.00
tblTripsAndVMT	HaulingTripNumber	0.00	24,900.00
tblTripsAndVMT	HaulingTripNumber	0.00	1,704.00
tblTripsAndVMT	VendorTripLength	6.60	7.00
tblTripsAndVMT	VendorTripLength	6.60	7.00
tblTripsAndVMT	VendorTripLength	6.60	7.00
tblTripsAndVMT	VendorTripLength	6.60	7.00
tblTripsAndVMT	VendorTripNumber	0.00	124.00
tblTripsAndVMT	VendorTripNumber	24,274.00	0.00

tblTripsAndVMT	WorkerTripLength	16.80	75.00
tblTripsAndVMT	WorkerTripLength	16.80	75.00
tblTripsAndVMT	WorkerTripLength	16.80	75.00
tblTripsAndVMT	WorkerTripLength	16.80	75.00
tblTripsAndVMT	WorkerTripNumber	78.00	200.00
tblTripsAndVMT	WorkerTripNumber	140.00	200.00
tblTripsAndVMT	WorkerTripNumber	175.00	660.00
tblTripsAndVMT	WorkerTripNumber	62,204.00	200.00
tblVehicleTrips	CC_TL	6.60	75.00
tblVehicleTrips	CNW_TL	6.60	75.00
tblVehicleTrips	CW_TL	14.70	75.00
tblVehicleTrips	ST_TR	1.32	0.00
tblVehicleTrips	SU_TR	0.68	0.00
tblVehicleTrips	WD_TR	6.97	0.00
tblWater	IndoorWaterUseRate	34,249,050,000.00	0.00

2.0 Emissions Summary

2.1 Overall Construction

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2019	2.7826	27.8372	18.7435	0.0532	18.6202	1.0901	19.7104	3.2193	1.0036	4.2229	0.0000	4,855.7108	4,855.7108	0.8131	0.0000	4,876.0379
2020	5.9202	44.5083	47.4563	0.1470	50.0892	1.7017	51.7909	6.5489	1.5755	8.1244	0.0000	13,229.9481	13,229.9481	1.9321	0.0000	13,278.2504
2021	5.4228	39.3506	45.0807	0.1442	50.0036	1.4768	51.4804	6.5351	1.3670	7.9021	0.0000	12,974.4842	12,974.4842	1.9041	0.0000	13,022.0871
2022	5.1075	33.6819	44.8250	0.1439	49.9804	1.2930	51.2734	6.5681	1.1996	7.7677	0.0000	12,940.8630	12,940.8630	1.8049	0.0000	12,985.9859
Maximum	**5.9202**	**44.5083**	**47.4563**	**0.1470**	**50.0892**	**1.7017**	**51.7909**	**6.5681**	**1.5755**	**8.1244**	**0.0000**	**13,229.9481**	**13,229.9481**	**1.9321**	**0.0000**	**13,278.2504**

2.1 Overall Construction

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2019	1.0277	5.4031	19.2965	0.0532	4.8548	0.0686	4.9234	1.2420	0.0672	1.3092	0.0000	4,855.7080	4,855.7080	0.8131	0.0000	4,876.0351
2020	3.3577	12.0891	55.8628	0.1470	12.3866	0.1668	12.5534	2.6296	0.1627	2.7923	0.0000	13,229.9416	13,229.9416	1.9321	0.0000	13,278.2439
2021	3.1647	11.0740	53.8257	0.1442	12.3549	0.1573	12.5122	2.6218	0.1535	2.7754	0.0000	12,974.4777	12,974.4777	1.9041	0.0000	13,022.0806
2022	3.1079	10.3350	53.0946	0.1439	12.7238	0.1514	12.8752	2.7149	0.1477	2.8626	0.0000	12,940.8567	12,940.8567	1.8049	0.0000	12,985.9795
Maximum	**3.3577**	**12.0891**	**55.8628**	**0.1470**	**12.7238**	**0.1668**	**12.8752**	**2.7149**	**0.1627**	**2.8626**	**0.0000**	**13,229.9416**	**13,229.9416**	**1.9321**	**0.0000**	**13,278.2439**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**44.58**	**73.24**	**-16.64**	**0.00**	**74.91**	**90.22**	**75.40**	**59.74**	**89.68**	**65.24**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

Quarter	Start Date	End Date	Maximum Unmitigated ROG + NOX (tons/quarter)	Maximum Mitigated ROG + NOX (tons/quarter)
1	**7-1-2019**	**9-30-2019**	15.1678	3.1256
2	**10-1-2019**	**12-31-2019**	15.2274	3.1853
3	**1-1-2020**	**3-31-2020**	12.5141	3.8355
4	**4-1-2020**	**6-30-2020**	12.4376	3.7590
5	**7-1-2020**	**9-30-2020**	12.5743	3.8003
6	**10-1-2020**	**12-31-2020**	12.6516	3.8776
7	**1-1-2021**	**3-31-2021**	11.0345	3.5136
8	**4-1-2021**	**6-30-2021**	11.0893	3.4849

9	**7-1-2021**	**9-30-2021**	11.2111	3.5232
10	**10-1-2021**	**12-31-2021**	11.2797	3.5917
11	**1-1-2022**	**3-31-2022**	11.0964	3.8545
12	**4-1-2022**	**6-30-2022**	11.1837	3.8350
13	**7-1-2022**	**9-30-2022**	11.3066	3.8771
		Highest	15.2274	3.8776

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	1.8429	0.0125	1.3630	1.0000e-004		4.8700e-003	4.8700e-003		4.8700e-003	4.8700e-003	0.0000	2.6464	2.6464	6.9800e-003	0.0000	2.8209
Energy	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Mobile	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Offroad	0.0238	0.2298	0.2770	3.7000e-004		0.0138	0.0138		0.0127	0.0127	0.0000	32.8936	32.8936	0.0106	0.0000	33.1596
Waste						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Water						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**1.8667**	**0.2422**	**1.6401**	**4.7000e-004**	**0.0000**	**0.0187**	**0.0187**	**0.0000**	**0.0176**	**0.0176**	**0.0000**	**35.5400**	**35.5400**	**0.0176**	**0.0000**	**35.9805**

2.2 Overall Operational

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	1.8429	0.0125	1.3630	1.0000e-004		4.8700e-003	4.8700e-003		4.8700e-003	4.8700e-003	0.0000	2.6464	2.6464	6.9800e-003	0.0000	2.8209
Energy	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Mobile	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Offroad	0.0238	0.2298	0.2770	3.7000e-004		0.0138	0.0138		0.0127	0.0127	0.0000	32.8936	32.8936	0.0106	0.0000	33.1596
Waste						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Water						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**1.8667**	**0.2422**	**1.6401**	**4.7000e-004**	**0.0000**	**0.0187**	**0.0187**	**0.0000**	**0.0176**	**0.0176**	**0.0000**	**35.5400**	**35.5400**	**0.0176**	**0.0000**	**35.9805**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

2.3 Vegetation

Vegetation

	CO2e
Category	MT
Vegetation Land Change	-14,654.0000
Total	**-14,654.0000**

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Site Preparation	Site Preparation	7/1/2019	12/31/2019	5	132	1 site prep
2	Throughout Constr	Grading	7/1/2019	11/11/2022	5	880	4 throughout cons
3	PV Panels	Trenching	1/1/2020	11/11/2022	5	748	2 pv panels
4	Electrical	Building Construction	1/3/2022	11/4/2022	5	220	3 electrical

Acres of Grading (Site Preparation Phase): 1650

Acres of Grading (Grading Phase): 0

Acres of Paving: 0

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 0; Non-Residential Outdoor: 0; Striped Parking Area: 0 (Architectural Coating – sqft)

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Site Preparation	Graders	12	6.70	187	0.41
Site Preparation	Rubber Tired Dozers	6	6.70	247	0.40
Site Preparation	Scrapers	9	6.70	367	0.48
Site Preparation	Tractors/Loaders/Backhoes	4	6.70	97	0.37
Throughout Constr	Excavators	2	6.00	158	0.38
Throughout Constr	Forklifts	22	6.00	89	0.20
Throughout Constr	Graders	1	6.00	187	0.41
Throughout Constr	Rubber Tired Dozers	1	6.00	247	0.40
Throughout Constr	Rubber Tired Loaders	10	6.00	203	0.36
Throughout Constr	Scrapers	2	6.00	367	0.48
Throughout Constr	Tractors/Loaders/Backhoes	18	6.00	97	0.37
PV Panels	Bore/Drill Rigs	30	6.00	221	0.50
PV Panels	Cranes	8	4.00	231	0.29
PV Panels	Generator Sets	4	6.00	84	0.74
PV Panels	Other Construction Equipment	4	4.00	172	0.42
PV Panels	Tractors/Loaders/Backhoes	20	6.00	97	0.37
PV Panels	Welders	4	6.00	46	0.45
Electrical	Cranes	1	8.00	231	0.29
Electrical	Excavators	1	8.00	158	0.38
Electrical	Forklifts	3	8.00	89	0.20
Electrical	Generator Sets	2	8.00	84	0.74
Electrical	Rollers	7	6.00	80	0.38
Electrical	Tractors/Loaders/Backhoes	3	7.00	97	0.37
Electrical	Trenchers	2	8.00	78	0.50
Electrical	Welders	2	8.00	46	0.45

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Site Preparation	31	200.00	0.00	4,440.00	75.00	7.00	150.00	LD_Mix	HDT_Mix	HHDT
Throughout Constr	56	200.00	124.00	400.00	75.00	7.00	150.00	LD_Mix	HDT_Mix	HHDT
PV Panels	70	660.00	0.00	24,900.00	75.00	7.00	150.00	LD_Mix	HDT_Mix	HHDT
Electrical	21	200.00	0.00	1,704.00	75.00	7.00	150.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Use Cleaner Engines for Construction Equipment

Use Soil Stabilizer

Replace Ground Cover

Water Exposed Area

Reduce Vehicle Speed on Unpaved Roads

3.2 Site Preparation - 2019

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					3.0134	0.0000	3.0134	1.2137	0.0000	1.2137	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	1.2805	15.3098	7.1595	0.0155		0.6215	0.6215		0.5718	0.5718	0.0000	1,388.6351	1,388.6351	0.4394	0.0000	1,399.6188
Total	**1.2805**	**15.3098**	**7.1595**	**0.0155**	**3.0134**	**0.6215**	**3.6349**	**1.2137**	**0.5718**	**1.7855**	**0.0000**	**1,388.6351**	**1,388.6351**	**0.4394**	**0.0000**	**1,399.6188**

3.2 Site Preparation - 2019

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0596	2.4105	0.3339	0.0107	4.7694	0.0115	4.7809	0.5258	0.0110	0.5368	0.0000	1,013.7019	1,013.7019	0.0146	0.0000	1,014.0672
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.3090	0.3116	2.7018	7.1200e-003	0.7384	4.6100e-003	0.7430	0.1960	4.2500e-003	0.2003	0.0000	643.2568	643.2568	0.0222	0.0000	643.8129
Total	**0.3685**	**2.7221**	**3.0357**	**0.0178**	**5.5077**	**0.0161**	**5.5238**	**0.7218**	**0.0153**	**0.7371**	**0.0000**	**1,656.9587**	**1,656.9587**	**0.0369**	**0.0000**	**1,657.8801**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					1.2882	0.0000	1.2882	0.5189	0.0000	0.5189	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.1896	0.8217	7.1628	0.0155		0.0253	0.0253		0.0253	0.0253	0.0000	1,388.6334	1,388.6334	0.4394	0.0000	1,399.6172
Total	**0.1896**	**0.8217**	**7.1628**	**0.0155**	**1.2882**	**0.0253**	**1.3135**	**0.5189**	**0.0253**	**0.5441**	**0.0000**	**1,388.6334**	**1,388.6334**	**0.4394**	**0.0000**	**1,399.6172**

3.2 Site Preparation - 2019

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0596	2.4105	0.3339	0.0107	0.7242	0.0115	0.7357	0.1221	0.0110	0.1331	0.0000	1,013.7019	1,013.7019	0.0146	0.0000	1,014.0672
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.3090	0.3116	2.7018	7.1200e-003	0.7384	4.6100e-003	0.7430	0.1960	4.2500e-003	0.2003	0.0000	643.2568	643.2568	0.0222	0.0000	643.8129
Total	**0.3685**	**2.7221**	**3.0357**	**0.0178**	**1.4625**	**0.0161**	**1.4787**	**0.3181**	**0.0153**	**0.3334**	**0.0000**	**1,656.9587**	**1,656.9587**	**0.0369**	**0.0000**	**1,657.8801**

3.3 Throughout Constr - 2019

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					1.1730	0.0000	1.1730	0.2583	0.0000	0.2583	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.7905	8.4944	5.6073	0.0103		0.4421	0.4421		0.4068	0.4068	0.0000	924.0591	924.0591	0.2924	0.0000	931.3682
Total	**0.7905**	**8.4944**	**5.6073**	**0.0103**	**1.1730**	**0.4421**	**1.6151**	**0.2583**	**0.4068**	**0.6651**	**0.0000**	**924.0591**	**924.0591**	**0.2924**	**0.0000**	**931.3682**

3.3 Throughout Constr - 2019

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	8.0000e-004	0.0326	4.5100e-003	1.4000e-004	0.4242	1.6000e-004	0.4244	0.0454	1.5000e-004	0.0455	0.0000	13.6987	13.6987	2.0000e-004	0.0000	13.7036
Vendor	0.0333	0.9667	0.2347	2.4200e-003	7.7636	5.5900e-003	7.7692	0.7841	5.3500e-003	0.7894	0.0000	229.1024	229.1024	0.0221	0.0000	229.6543
Worker	0.3090	0.3116	2.7018	7.1200e-003	0.7384	4.6100e-003	0.7430	0.1960	4.2500e-003	0.2003	0.0000	643.2568	643.2568	0.0222	0.0000	643.8129
Total	**0.3430**	**1.3108**	**2.9410**	**9.6800e-003**	**8.9262**	**0.0104**	**8.9365**	**1.0255**	**9.7500e-003**	**1.0352**	**0.0000**	**886.0579**	**886.0579**	**0.0445**	**0.0000**	**887.1708**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.5015	0.0000	0.5015	0.1104	0.0000	0.1104	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.1266	0.5485	6.1569	0.0103		0.0169	0.0169		0.0169	0.0169	0.0000	924.0580	924.0580	0.2924	0.0000	931.3671
Total	**0.1266**	**0.5485**	**6.1569**	**0.0103**	**0.5015**	**0.0169**	**0.5183**	**0.1104**	**0.0169**	**0.1273**	**0.0000**	**924.0580**	**924.0580**	**0.2924**	**0.0000**	**931.3671**

3.3 Throughout Constr - 2019

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	8.0000e-004	0.0326	4.5100e-003	1.4000e-004	0.0598	1.6000e-004	0.0599	9.0100e-003	1.5000e-004	9.1600e-003	0.0000	13.6987	13.6987	2.0000e-004	0.0000	13.7036
Vendor	0.0333	0.9667	0.2347	2.4200e-003	0.8045	5.5900e-003	0.8101	0.0895	5.3500e-003	0.0949	0.0000	229.1024	229.1024	0.0221	0.0000	229.6543
Worker	0.3090	0.3116	2.7018	7.1200e-003	0.7384	4.6100e-003	0.7430	0.1960	4.2500e-003	0.2003	0.0000	643.2568	643.2568	0.0222	0.0000	643.8129
Total	**0.3430**	**1.3108**	**2.9410**	**9.6800e-003**	**1.6026**	**0.0104**	**1.6129**	**0.2946**	**9.7500e-003**	**0.3043**	**0.0000**	**886.0579**	**886.0579**	**0.0445**	**0.0000**	**887.1708**

3.3 Throughout Constr - 2020

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					1.4666	0.0000	1.4666	0.4197	0.0000	0.4197	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	1.4454	15.3782	10.8815	0.0204		0.7756	0.7756		0.7136	0.7136	0.0000	1,793.8876	1,793.8876	0.5802	0.0000	1,808.3921
Total	**1.4454**	**15.3782**	**10.8815**	**0.0204**	**1.4666**	**0.7756**	**2.2422**	**0.4197**	**0.7136**	**1.1333**	**0.0000**	**1,793.8876**	**1,793.8876**	**0.5802**	**0.0000**	**1,808.3921**

3.3 Throughout Constr - 2020

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	1.4900e-003	0.0583	8.4900e-003	2.8000e-004	0.4251	2.6000e-004	0.4254	0.0457	2.5000e-004	0.0460	0.0000	26.8536	26.8536	3.8000e-004	0.0000	26.8631
Vendor	0.0568	1.7529	0.4084	4.7600e-003	15.4096	7.4700e-003	15.4171	1.5563	7.1500e-003	1.5634	0.0000	451.0432	451.0432	0.0423	0.0000	452.1014
Worker	0.5626	0.5470	4.7870	0.0137	1.4655	8.8600e-003	1.4744	0.3891	8.1700e-003	0.3972	0.0000	1,236.8756	1,236.8756	0.0386	0.0000	1,237.8400
Total	**0.6209**	**2.3581**	**5.2039**	**0.0187**	**17.3003**	**0.0166**	**17.3169**	**1.9911**	**0.0156**	**2.0066**	**0.0000**	**1,714.7725**	**1,714.7725**	**0.0813**	**0.0000**	**1,716.8045**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.6270	0.0000	0.6270	0.1794	0.0000	0.1794	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.2512	1.0886	12.2206	0.0204		0.0335	0.0335		0.0335	0.0335	0.0000	1,793.8855	1,793.8855	0.5802	0.0000	1,808.3900
Total	**0.2512**	**1.0886**	**12.2206**	**0.0204**	**0.6270**	**0.0335**	**0.6605**	**0.1794**	**0.0335**	**0.2129**	**0.0000**	**1,793.8855**	**1,793.8855**	**0.5802**	**0.0000**	**1,808.3900**

3.3 Throughout Constr - 2020

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	1.4900e-003	0.0583	8.4900e-003	2.8000e-004	0.0607	2.6000e-004	0.0610	9.3600e-003	2.5000e-004	9.6100e-003	0.0000	26.8536	26.8536	3.8000e-004	0.0000	26.8631
Vendor	0.0568	1.7529	0.4084	4.7600e-003	1.5968	7.4700e-003	1.6042	0.1777	7.1500e-003	0.1849	0.0000	451.0432	451.0432	0.0423	0.0000	452.1014
Worker	0.5626	0.5470	4.7870	0.0137	1.4655	8.8600e-003	1.4744	0.3891	8.1700e-003	0.3972	0.0000	1,236.8756	1,236.8756	0.0386	0.0000	1,237.8400
Total	**0.6209**	**2.3581**	**5.2039**	**0.0187**	**3.1230**	**0.0166**	**3.1396**	**0.5761**	**0.0156**	**0.5917**	**0.0000**	**1,714.7725**	**1,714.7725**	**0.0813**	**0.0000**	**1,716.8045**

3.3 Throughout Constr - 2021

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					1.4643	0.0000	1.4643	0.4185	0.0000	0.4185	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	1.3177	13.8308	10.6411	0.0203		0.6757	0.6757		0.6216	0.6216	0.0000	1,787.3911	1,787.3911	0.5781	0.0000	1,801.8431
Total	**1.3177**	**13.8308**	**10.6411**	**0.0203**	**1.4643**	**0.6757**	**2.1400**	**0.4185**	**0.6216**	**1.0401**	**0.0000**	**1,787.3911**	**1,787.3911**	**0.5781**	**0.0000**	**1,801.8431**

3.3 Throughout Constr - 2021

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	1.3900e-003	0.0505	8.0900e-003	2.8000e-004	0.4251	2.3000e-004	0.4254	0.0457	2.2000e-004	0.0459	0.0000	26.4482	26.4482	3.6000e-004	0.0000	26.4572
Vendor	0.0486	1.5847	0.3565	4.7100e-003	15.3508	2.4300e-003	15.3532	1.5503	2.3200e-003	1.5527	0.0000	445.9741	445.9741	0.0403	0.0000	446.9816
Worker	0.5220	0.4869	4.3626	0.0132	1.4599	8.5500e-003	1.4685	0.3876	7.8800e-003	0.3955	0.0000	1,188.9849	1,188.9849	0.0344	0.0000	1,189.8455
Total	**0.5721**	**2.1221**	**4.7272**	**0.0181**	**17.2359**	**0.0112**	**17.2471**	**1.9836**	**0.0104**	**1.9941**	**0.0000**	**1,661.4072**	**1,661.4072**	**0.0751**	**0.0000**	**1,663.2843**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.6260	0.0000	0.6260	0.1789	0.0000	0.1789	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.2503	1.0845	12.1740	0.0203		0.0334	0.0334		0.0334	0.0334	0.0000	1,787.3890	1,787.3890	0.5781	0.0000	1,801.8409
Total	**0.2503**	**1.0845**	**12.1740**	**0.0203**	**0.6260**	**0.0334**	**0.6594**	**0.1789**	**0.0334**	**0.2123**	**0.0000**	**1,787.3890**	**1,787.3890**	**0.5781**	**0.0000**	**1,801.8409**

3.3 Throughout Constr - 2021

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	1.3900e-003	0.0505	8.0900e-003	2.8000e-004	0.0607	2.3000e-004	0.0609	9.3500e-003	2.2000e-004	9.5700e-003	0.0000	26.4482	26.4482	3.6000e-004	0.0000	26.4572
Vendor	0.0486	1.5847	0.3565	4.7100e-003	1.5907	2.4300e-003	1.5931	0.1770	2.3200e-003	0.1794	0.0000	445.9741	445.9741	0.0403	0.0000	446.9816
Worker	0.5220	0.4869	4.3626	0.0132	1.4599	8.5500e-003	1.4685	0.3876	7.8800e-003	0.3955	0.0000	1,188.9849	1,188.9849	0.0344	0.0000	1,189.8455
Total	**0.5721**	**2.1221**	**4.7272**	**0.0181**	**3.1113**	**0.0112**	**3.1225**	**0.5740**	**0.0104**	**0.5844**	**0.0000**	**1,661.4072**	**1,661.4072**	**0.0751**	**0.0000**	**1,663.2843**

3.3 Throughout Constr - 2022

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					1.3830	0.0000	1.3830	0.3738	0.0000	0.3738	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.9849	10.0500	8.9052	0.0176		0.4749	0.4749		0.4369	0.4369	0.0000	1,541.9390	1,541.9390	0.4987	0.0000	1,554.4064
Total	**0.9849**	**10.0500**	**8.9052**	**0.0176**	**1.3830**	**0.4749**	**1.8580**	**0.3738**	**0.4369**	**0.8107**	**0.0000**	**1,541.9390**	**1,541.9390**	**0.4987**	**0.0000**	**1,554.4064**

3.3 Throughout Constr - 2022

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	1.1200e-003	0.0371	6.6700e-003	2.4000e-004	0.4249	1.6000e-004	0.4250	0.0456	1.5000e-004	0.0458	0.0000	22.5165	22.5165	3.0000e-004	0.0000	22.5239
Vendor	0.0388	1.2867	0.2792	4.0300e-003	13.2334	1.7100e-003	13.2351	1.3365	1.6300e-003	1.3381	0.0000	381.5362	381.5362	0.0329	0.0000	382.3586
Worker	0.4209	0.3765	3.4297	0.0109	1.2586	7.1300e-003	1.2657	0.3341	6.5700e-003	0.3407	0.0000	987.9482	987.9482	0.0265	0.0000	988.6106
Total	**0.4608**	**1.7004**	**3.7155**	**0.0152**	**14.9169**	**9.0000e-003**	**14.9259**	**1.7162**	**8.3500e-003**	**1.7246**	**0.0000**	**1,392.0009**	**1,392.0009**	**0.0597**	**0.0000**	**1,393.4931**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.5912	0.0000	0.5912	0.1598	0.0000	0.1598	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.2157	0.9349	10.4948	0.0176		0.0288	0.0288		0.0288	0.0288	0.0000	1,541.9372	1,541.9372	0.4987	0.0000	1,554.4045
Total	**0.2157**	**0.9349**	**10.4948**	**0.0176**	**0.5912**	**0.0288**	**0.6200**	**0.1598**	**0.0288**	**0.1886**	**0.0000**	**1,541.9372**	**1,541.9372**	**0.4987**	**0.0000**	**1,554.4045**

3.3 Throughout Constr - 2022

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	1.1200e-003	0.0371	6.6700e-003	2.4000e-004	0.0604	1.6000e-004	0.0606	9.2600e-003	1.5000e-004	9.4100e-003	0.0000	22.5165	22.5165	3.0000e-004	0.0000	22.5239
Vendor	0.0388	1.2867	0.2792	4.0300e-003	1.3713	1.7100e-003	1.3730	0.1526	1.6300e-003	0.1543	0.0000	381.5362	381.5362	0.0329	0.0000	382.3586
Worker	0.4209	0.3765	3.4297	0.0109	1.2586	7.1300e-003	1.2657	0.3341	6.5700e-003	0.3407	0.0000	987.9482	987.9482	0.0265	0.0000	988.6106
Total	**0.4608**	**1.7004**	**3.7155**	**0.0152**	**2.6902**	**9.0000e-003**	**2.6992**	**0.4960**	**8.3500e-003**	**0.5044**	**0.0000**	**1,392.0009**	**1,392.0009**	**0.0597**	**0.0000**	**1,393.4931**

3.4 PV Panels - 2020

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	1.8879	20.7009	14.9518	0.0421		0.8609	0.8609		0.8009	0.8009	0.0000	3,672.9639	3,672.9639	1.1156	0.0000	3,700.8536
Total	**1.8879**	**20.7009**	**14.9518**	**0.0421**		**0.8609**	**0.8609**		**0.8009**	**0.8009**	**0.0000**	**3,672.9639**	**3,672.9639**	**1.1156**	**0.0000**	**3,700.8536**

3.4 PV Panels - 2020

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.1093	4.2662	0.6220	0.0207	26.4862	0.0194	26.5056	2.8542	0.0185	2.8728	0.0000	1,966.6346	1,966.6346	0.0277	0.0000	1,967.3280
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.8567	1.8050	15.7971	0.0452	4.8362	0.0293	4.8654	1.2839	0.0270	1.3109	0.0000	4,081.6896	4,081.6896	0.1273	0.0000	4,084.8721
Total	**1.9660**	**6.0712**	**16.4191**	**0.0658**	**31.3224**	**0.0486**	**31.3710**	**4.1382**	**0.0455**	**4.1836**	**0.0000**	**6,048.3241**	**6,048.3241**	**0.1550**	**0.0000**	**6,052.2002**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.5195	2.5713	22.0193	0.0421		0.0681	0.0681		0.0681	0.0681	0.0000	3,672.9595	3,672.9595	1.1156	0.0000	3,700.8492
Total	**0.5195**	**2.5713**	**22.0193**	**0.0421**		**0.0681**	**0.0681**		**0.0681**	**0.0681**	**0.0000**	**3,672.9595**	**3,672.9595**	**1.1156**	**0.0000**	**3,700.8492**

3.4 PV Panels - 2020

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.1093	4.2662	0.6220	0.0207	3.8005	0.0194	3.8198	0.5901	0.0185	0.6087	0.0000	1,966.6346	1,966.6346	0.0277	0.0000	1,967.3280
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.8567	1.8050	15.7971	0.0452	4.8362	0.0293	4.8654	1.2839	0.0270	1.3109	0.0000	4,081.6896	4,081.6896	0.1273	0.0000	4,084.8721
Total	**1.9660**	**6.0712**	**16.4191**	**0.0658**	**8.6367**	**0.0486**	**8.6853**	**1.8741**	**0.0455**	**1.9195**	**0.0000**	**6,048.3241**	**6,048.3241**	**0.1550**	**0.0000**	**6,052.2002**

3.4 PV Panels - 2021

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	1.7082	18.0917	14.7230	0.0420		0.7451	0.7451		0.6931	0.6931	0.0000	3,665.0964	3,665.0964	1.1109	0.0000	3,692.8678
Total	**1.7082**	**18.0917**	**14.7230**	**0.0420**		**0.7451**	**0.7451**		**0.6931**	**0.6931**	**0.0000**	**3,665.0964**	**3,665.0964**	**1.1109**	**0.0000**	**3,692.8678**

3.4 PV Panels - 2021

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.1022	3.6991	0.5928	0.0204	26.4857	0.0166	26.5023	2.8540	0.0159	2.8699	0.0000	1,936.9392	1,936.9392	0.0265	0.0000	1,937.6016
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.7227	1.6069	14.3966	0.0434	4.8177	0.0282	4.8460	1.2790	0.0260	1.3050	0.0000	3,923.6503	3,923.6503	0.1136	0.0000	3,926.4903
Total	**1.8249**	**5.3059**	**14.9894**	**0.0638**	**31.3034**	**0.0448**	**31.3482**	**4.1331**	**0.0419**	**4.1749**	**0.0000**	**5,860.5895**	**5,860.5895**	**0.1401**	**0.0000**	**5,864.0919**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.5176	2.5615	21.9352	0.0420		0.0679	0.0679		0.0679	0.0679	0.0000	3,665.0921	3,665.0921	1.1109	0.0000	3,692.8634
Total	**0.5176**	**2.5615**	**21.9352**	**0.0420**		**0.0679**	**0.0679**		**0.0679**	**0.0679**	**0.0000**	**3,665.0921**	**3,665.0921**	**1.1109**	**0.0000**	**3,692.8634**

3.4 PV Panels - 2021

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.1022	3.6991	0.5928	0.0204	3.7999	0.0166	3.8165	0.5900	0.0159	0.6058	0.0000	1,936.9392	1,936.9392	0.0265	0.0000	1,937.6016
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.7227	1.6069	14.3966	0.0434	4.8177	0.0282	4.8460	1.2790	0.0260	1.3050	0.0000	3,923.6503	3,923.6503	0.1136	0.0000	3,926.4903
Total	**1.8249**	**5.3059**	**14.9894**	**0.0638**	**8.6177**	**0.0448**	**8.6625**	**1.8690**	**0.0419**	**1.9108**	**0.0000**	**5,860.5895**	**5,860.5895**	**0.1401**	**0.0000**	**5,864.0919**

3.4 PV Panels - 2022

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	1.3024	12.7879	12.5123	0.0362		0.5303	0.5303		0.4936	0.4936	0.0000	3,163.5234	3,163.5234	0.9576	0.0000	3,187.4627
Total	**1.3024**	**12.7879**	**12.5123**	**0.0362**		**0.5303**	**0.5303**		**0.4936**	**0.4936**	**0.0000**	**3,163.5234**	**3,163.5234**	**0.9576**	**0.0000**	**3,187.4627**

3.4 PV Panels - 2022

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0821	2.7200	0.4883	0.0173	26.4664	0.0115	26.4778	2.8470	0.0110	2.8580	0.0000	1,649.0020	1,649.0020	0.0217	0.0000	1,649.5432
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.3891	1.2426	11.3180	0.0361	4.1532	0.0235	4.1768	1.1026	0.0217	1.1243	0.0000	3,260.2292	3,260.2292	0.0874	0.0000	3,262.4150
Total	**1.4712**	**3.9626**	**11.8063**	**0.0534**	**30.6196**	**0.0350**	**30.6546**	**3.9496**	**0.0326**	**3.9823**	**0.0000**	**4,909.2312**	**4,909.2312**	**0.1091**	**0.0000**	**4,911.9582**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.4462	2.2082	18.9097	0.0362		0.0585	0.0585		0.0585	0.0585	0.0000	3,163.5197	3,163.5197	0.9576	0.0000	3,187.4589
Total	**0.4462**	**2.2082**	**18.9097**	**0.0362**		**0.0585**	**0.0585**		**0.0585**	**0.0585**	**0.0000**	**3,163.5197**	**3,163.5197**	**0.9576**	**0.0000**	**3,187.4589**

3.4 PV Panels - 2022

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0821	2.7200	0.4883	0.0173	3.7806	0.0115	3.7921	0.5829	0.0110	0.5939	0.0000	1,649.0020	1,649.0020	0.0217	0.0000	1,649.5432
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.3891	1.2426	11.3180	0.0361	4.1532	0.0235	4.1768	1.1026	0.0217	1.1243	0.0000	3,260.2292	3,260.2292	0.0874	0.0000	3,262.4150
Total	**1.4712**	**3.9626**	**11.8063**	**0.0534**	**7.9338**	**0.0350**	**7.9688**	**1.6855**	**0.0326**	**1.7182**	**0.0000**	**4,909.2312**	**4,909.2312**	**0.1091**	**0.0000**	**4,911.9582**

3.5 Electrical - 2022

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.4579	4.1940	4.4211	6.8700e-003		0.2341	0.2341		0.2191	0.2191	0.0000	593.0198	593.0198	0.1491	0.0000	596.7461
Total	**0.4579**	**4.1940**	**4.4211**	**6.8700e-003**		**0.2341**	**0.2341**		**0.2191**	**0.2191**	**0.0000**	**593.0198**	**593.0198**	**0.1491**	**0.0000**	**596.7461**

3.5 Electrical - 2022

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0187	0.6188	0.1111	3.9400e-003	1.8304	2.6100e-003	1.8330	0.2018	2.5000e-003	0.2043	0.0000	375.1548	375.1548	4.9300e-003	0.0000	375.2779
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.4116	0.3682	3.3535	0.0107	1.2306	6.9700e-003	1.2376	0.3267	6.4200e-003	0.3331	0.0000	965.9938	965.9938	0.0259	0.0000	966.6415
Total	**0.4303**	**0.9870**	**3.4646**	**0.0146**	**3.0610**	**9.5800e-003**	**3.0706**	**0.5285**	**8.9200e-003**	**0.5374**	**0.0000**	**1,341.1486**	**1,341.1486**	**0.0308**	**0.0000**	**1,341.9194**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0837	0.5420	4.7038	6.8700e-003		0.0105	0.0105		0.0105	0.0105	0.0000	593.0191	593.0191	0.1491	0.0000	596.7454
Total	**0.0837**	**0.5420**	**4.7038**	**6.8700e-003**		**0.0105**	**0.0105**		**0.0105**	**0.0105**	**0.0000**	**593.0191**	**593.0191**	**0.1491**	**0.0000**	**596.7454**

3.5 Electrical - 2022

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0187	0.6188	0.1111	3.9400e-003	0.2779	2.6100e-003	0.2805	0.0469	2.5000e-003	0.0494	0.0000	375.1548	375.1548	4.9300e-003	0.0000	375.2779
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.4116	0.3682	3.3535	0.0107	1.2306	6.9700e-003	1.2376	0.3267	6.4200e-003	0.3331	0.0000	965.9938	965.9938	0.0259	0.0000	966.6415
Total	**0.4303**	**0.9870**	**3.4646**	**0.0146**	**1.5085**	**9.5800e-003**	**1.5181**	**0.3736**	**8.9200e-003**	**0.3825**	**0.0000**	**1,341.1486**	**1,341.1486**	**0.0308**	**0.0000**	**1,341.9194**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Unmitigated	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
General Light Industry	0.00	0.00	0.00		
Total	0.00	0.00	0.00		

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
General Light Industry	75.00	75.00	75.00	59.00	28.00	13.00	92	5	3

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
General Light Industry	0.542331	0.034995	0.171339	0.106016	0.017524	0.005301	0.010354	0.098286	0.001618	0.001995	0.008295	0.000874	0.001071

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Electricity Mitigated						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Electricity Unmitigated						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
NaturalGas Mitigated	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
NaturalGas Unmitigated	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
General Light Industry	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

5.2 Energy by Land Use - NaturalGas

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
General Light Industry	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

5.3 Energy by Land Use - Electricity

Unmitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
General Light Industry	0	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

5.3 Energy by Land Use - Electricity

Mitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
General Light Industry	0	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

6.0 Area Detail

6.1 Mitigation Measures Area

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	1.8429	0.0125	1.3630	1.0000e-004		4.8700e-003	4.8700e-003		4.8700e-003	4.8700e-003	0.0000	2.6464	2.6464	6.9800e-003	0.0000	2.8209
Unmitigated	1.8429	0.0125	1.3630	1.0000e-004		4.8700e-003	4.8700e-003		4.8700e-003	4.8700e-003	0.0000	2.6464	2.6464	6.9800e-003	0.0000	2.8209

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	1.7162					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	0.1268	0.0125	1.3630	1.0000e-004		4.8700e-003	4.8700e-003		4.8700e-003	4.8700e-003	0.0000	2.6464	2.6464	6.9800e-003	0.0000	2.8209
Total	**1.8429**	**0.0125**	**1.3630**	**1.0000e-004**		**4.8700e-003**	**4.8700e-003**		**4.8700e-003**	**4.8700e-003**	**0.0000**	**2.6464**	**2.6464**	**6.9800e-003**	**0.0000**	**2.8209**

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	1.7162					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	0.1268	0.0125	1.3630	1.0000e-004		4.8700e-003	4.8700e-003		4.8700e-003	4.8700e-003	0.0000	2.6464	2.6464	6.9800e-003	0.0000	2.8209
Total	**1.8429**	**0.0125**	**1.3630**	**1.0000e-004**		**4.8700e-003**	**4.8700e-003**		**4.8700e-003**	**4.8700e-003**	**0.0000**	**2.6464**	**2.6464**	**6.9800e-003**	**0.0000**	**2.8209**

7.0 Water Detail

7.1 Mitigation Measures Water

	Total CO2	CH4	N2O	CO2e
Category	MT/yr			
Mitigated	0.0000	0.0000	0.0000	0.0000
Unmitigated	0.0000	0.0000	0.0000	0.0000

7.2 Water by Land Use

Unmitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
General Light Industry	0 / 0	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

7.2 Water by Land Use

Mitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
General Light Industry	0 / 0	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

8.0 Waste Detail

8.1 Mitigation Measures Waste

Category/Year

	Total CO2	CH4	N2O	CO2e
	MT/yr			
Mitigated	0.0000	0.0000	0.0000	0.0000
Unmitigated	0.0000	0.0000	0.0000	0.0000

8.2 Waste by Land Use

Unmitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
General Light Industry	0	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

Mitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
General Light Industry	0	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

9.0 Operational Offroad

Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type
Forklifts	2	8.00	52	89	0.20	Diesel
Other General Industrial Equipment	2	8.00	52	88	0.34	Diesel
Tractors/Loaders/Backhoes	2	8.00	52	97	0.37	Diesel

UnMitigated/Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Equipment Type	tons/yr										MT/yr					
Forklifts	5.9100e-003	0.0549	0.0600	8.0000e-005		3.6300e-003	3.6300e-003		3.3400e-003	3.3400e-003	0.0000	6.9832	6.9832	2.2600e-003	0.0000	7.0396
Other General Industrial Equipment	9.2900e-003	0.0878	0.1007	1.3000e-004		5.4600e-003	5.4600e-003		5.0300e-003	5.0300e-003	0.0000	11.6999	11.6999	3.7800e-003	0.0000	11.7945
Tractors/Loaders/Backhoes	8.5600e-003	0.0871	0.1164	1.6000e-004		4.6900e-003	4.6900e-003		4.3100e-003	4.3100e-003	0.0000	14.2105	14.2105	4.6000e-003	0.0000	14.3254
Total	**0.0238**	**0.2298**	**0.2770**	**3.7000e-004**		**0.0138**	**0.0138**		**0.0127**	**0.0127**	**0.0000**	**32.8936**	**32.8936**	**0.0106**	**0.0000**	**33.1596**

10.0 Stationary Equipment

Fire Pumps and Emergency Generators

Equipment Type	Number	Hours/Day	Hours/Year	Horse Power	Load Factor	Fuel Type

Boilers

Equipment Type	Number	Heat Input/Day	Heat Input/Year	Boiler Rating	Fuel Type

User Defined Equipment

Equipment Type	Number

11.0 Vegetation

	Total CO2	CH4	N2O	CO2e
Category	MT			
Unmitigated	-14,654.0000	0.0000	0.0000	-14,654.0000

11.1 Vegetation Land Change

Vegetation Type

	Initial/Final	Total CO2	CH4	N2O	CO2e
	Acres	MT			
Grassland	3400 / 0	-14,654.0000	0.0000	0.0000	-14,654.0000
Total		**-14,654.0000**	**0.0000**	**0.0000**	**-14,654.0000**

IP Athos

Mojave Desert Air Basin, Winter

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
General Light Industry	148,104.00	1000sqft	3,400.00	148,104,000.00	0

1.2 Other Project Characteristics

Urbanization	Rural	**Wind Speed (m/s)**	2.6	**Precipitation Freq (Days)**	31
Climate Zone	10			**Operational Year**	2022
Utility Company					
CO2 Intensity (lb/MWhr)	0	**CH4 Intensity (lb/MWhr)**	0	**N2O Intensity (lb/MWhr)**	0

1.3 User Entered Comments & Non-Default Data

IP Athos - Mojave Desert Air Basin, Winter

Project Characteristics - 30-mo construction over 660 work days, w mitigation to avoid overlap and extend to 880 days

Land Use - up to 3400 ac site plus gen-ties

Construction Phase - Overall 30 mo or 660 days of construction -- w mitigation to extend overall to 40 mo or 880 days.
- Extends Ph 1 Site Prep to 6 mo.
- Extends Ph 2 PV Panels to 34 mo.

Off-road Equipment - mix 21 equip ct in Ph 3 - electrical. Equip in Ph 3 ranges from 6 to 8 hr-d.

Off-road Equipment - mix 70 equip ct in Ph 2 - pv panels. Equip in Ph 2 at 4 to 6 hr-d for extending from 20 mo to 34 mo.

Off-road Equipment - mix 31 equip ct in Ph 1 - site prep. Equip in Ph 1 at 6.7 hr-d for extending from 5 mo to 6 mo.

Off-road Equipment - mix 56 equip ct in Ph 4 - throughout construction and restoration. Equip in Ph 4 at 6 hr-d for overall extended to 40 mo or 880 days.

Trips and VMT - 1,060 peak worker commutes and crew, water trucks as vendor class

On-road Fugitive Dust - Water trucks 10% unpaved; HHDT 1% unpaved

Grading - trenching is no net material import or export

Architectural Coating - no coatings needed

Vehicle Trips - TR 0.0004 per 1000sqft per day: fewer than 100 daily operational trips

Road Dust - approx 1% unpaved VMT during ops

Consumer Products - no consumer products

Area Coating - minimal or no coatings needed

Energy Use - energy use not applicable

Water And Wastewater - interior water consumption factors not applicable

Solid Waste - light industrial solid waste factors not applicable

Land Use Change - up to 3400 ac loss of natural carbon uptake

Construction Off-road Equipment Mitigation - Tier 4 offroad; water 2x daily is 55% effective PM10 control per Rule 403; suppressant is 84% effective per Table XI-D; 15 mph

Operational Off-Road Equipment - fleet of 6 equipment ct for occasional routine op-maint activity

Table Name	Column Name	Default Value	New Value
tblAreaCoating	ReapplicationRatePercent	10	0.1
tblConstDustMitigation	WaterUnpavedRoadMoistureContent	0	0.5

IP Athos - Mojave Desert Air Basin, Winter

tblConstDustMitigation	WaterUnpavedRoadVehicleSpeed	0	15
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	30.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	9.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	3.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	25.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	6.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	13.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	4.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	7.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	7.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	10.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	11.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	45.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	2.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	6.00
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final

IP Athos - Mojave Desert Air Basin, Winter

tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstructionPhase	NumDays	155,000.00	220.00
tblConstructionPhase	NumDays	15,500.00	880.00
tblConstructionPhase	NumDays	6,000.00	132.00
tblConsumerProducts	ROG_EF	2.14E-05	0
tblEnergyUse	LightingElect	2.93	0.00
tblEnergyUse	NT24E	5.02	0.00
tblEnergyUse	NT24NG	17.13	0.00
tblEnergyUse	T24E	2.20	0.00
tblEnergyUse	T24NG	15.36	0.00
tblGrading	AcresOfGrading	1,658.25	1,650.00
tblGrading	MaterialExported	0.00	1,005,000.00
tblGrading	MaterialImported	0.00	1,005,000.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	6.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	18.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	2.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	2.00
tblOffRoadEquipment	UsageHours	7.00	8.00
tblOffRoadEquipment	UsageHours	8.00	6.00
tblOffRoadEquipment	UsageHours	8.00	6.00
tblOffRoadEquipment	UsageHours	8.00	6.00
tblOffRoadEquipment	UsageHours	8.00	6.70
tblOffRoadEquipment	UsageHours	8.00	6.00
tblOffRoadEquipment	UsageHours	8.00	6.00
tblOffRoadEquipment	UsageHours	8.00	6.70
tblOnRoadDust	HaulingPercentPave	100.00	99.00

tblOnRoadDust	HaulingPercentPave	100.00	99.00
tblOnRoadDust	HaulingPercentPave	100.00	99.00
tblOnRoadDust	HaulingPercentPave	100.00	99.00
tblOnRoadDust	VendorPercentPave	100.00	90.00
tblOperationalOffRoadEquipment	OperDaysPerYear	260.00	52.00
tblOperationalOffRoadEquipment	OperDaysPerYear	260.00	52.00
tblOperationalOffRoadEquipment	OperDaysPerYear	260.00	52.00
tblOperationalOffRoadEquipment	OperOffRoadEquipmentNumber	0.00	2.00
tblOperationalOffRoadEquipment	OperOffRoadEquipmentNumber	0.00	2.00
tblOperationalOffRoadEquipment	OperOffRoadEquipmentNumber	0.00	2.00
tblProjectCharacteristics	UrbanizationLevel	Urban	Rural
tblRoadDust	RoadPercentPave	100	99
tblSolidWaste	SolidWasteGenerationRate	183,648.96	0.00
tblTripsAndVMT	HaulingTripLength	20.00	150.00
tblTripsAndVMT	HaulingTripLength	20.00	150.00
tblTripsAndVMT	HaulingTripLength	20.00	150.00
tblTripsAndVMT	HaulingTripLength	20.00	150.00
tblTripsAndVMT	HaulingTripNumber	125,625.00	4,440.00
tblTripsAndVMT	HaulingTripNumber	0.00	400.00
tblTripsAndVMT	HaulingTripNumber	0.00	24,900.00
tblTripsAndVMT	HaulingTripNumber	0.00	1,704.00
tblTripsAndVMT	VendorTripLength	6.60	7.00
tblTripsAndVMT	VendorTripLength	6.60	7.00
tblTripsAndVMT	VendorTripLength	6.60	7.00
tblTripsAndVMT	VendorTripLength	6.60	7.00
tblTripsAndVMT	VendorTripNumber	0.00	124.00
tblTripsAndVMT	VendorTripNumber	24,274.00	0.00

tblTripsAndVMT	WorkerTripLength	16.80	75.00
tblTripsAndVMT	WorkerTripLength	16.80	75.00
tblTripsAndVMT	WorkerTripLength	16.80	75.00
tblTripsAndVMT	WorkerTripLength	16.80	75.00
tblTripsAndVMT	WorkerTripNumber	78.00	200.00
tblTripsAndVMT	WorkerTripNumber	140.00	200.00
tblTripsAndVMT	WorkerTripNumber	175.00	660.00
tblTripsAndVMT	WorkerTripNumber	62,204.00	200.00
tblVehicleTrips	CC_TL	6.60	75.00
tblVehicleTrips	CNW_TL	6.60	75.00
tblVehicleTrips	CW_TL	14.70	75.00
tblVehicleTrips	ST_TR	1.32	0.00
tblVehicleTrips	SU_TR	0.68	0.00
tblVehicleTrips	WD_TR	6.97	0.00
tblWater	IndoorWaterUseRate	34,249,050,000.00	0.00

2.0 Emissions Summary

2.1 Overall Construction (Maximum Daily Emission)

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2019	43.2437	420.1986	278.5001	0.7979	289.0890	16.5181	305.6071	49.4545	15.2065	64.6610	0.0000	80,277.3806	80,277.3806	13.5860	0.0000	80,617.0312
2020	47.3611	337.6887	351.3986	1.1070	407.7419	12.9904	420.7323	52.6488	12.0272	64.6759	0.0000	109,796.2874	109,796.2874	16.2386	0.0000	110,202.2529
2021	43.6035	299.6907	335.5313	1.0901	408.5950	11.3169	419.9119	52.7392	10.4754	63.2145	0.0000	108,113.5830	108,113.5830	16.0709	0.0000	108,515.3564
2022	47.9854	298.4642	388.8932	1.2655	473.8611	11.5428	485.4040	61.5345	10.7093	72.2438	0.0000	125,489.8519	125,489.8519	17.7109	0.0000	125,932.6235
Maximum	**47.9854**	**420.1986**	**388.8932**	**1.2655**	**473.8611**	**16.5181**	**485.4040**	**61.5345**	**15.2065**	**72.2438**	**0.0000**	**125,489.8519**	**125,489.8519**	**17.7109**	**0.0000**	**125,932.6235**

2.1 Overall Construction (Maximum Daily Emission)

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2019	16.6545	80.2884	286.8786	0.7979	70.9849	1.0407	72.0257	18.5955	1.0184	19.6140	0.0000	80,277.3806	80,277.3806	13.5860	0.0000	80,617.0312
2020	27.7997	90.2143	415.5709	1.1070	96.5029	1.2739	97.7769	20.4139	1.2421	21.6561	0.0000	109,796.2874	109,796.2874	16.2386	0.0000	110,202.2528
2021	26.3007	83.0116	402.5431	1.0901	96.6193	1.2054	97.8246	20.4308	1.1768	21.6076	0.0000	108,113.5830	108,113.5830	16.0709	0.0000	108,515.3563
2022	30.1358	90.1990	462.4587	1.2655	115.5784	1.3499	116.9283	24.6046	1.3172	25.9218	0.0000	125,489.8518	125,489.8518	17.7109	0.0000	125,932.6234
Maximum	**30.1358**	**90.2143**	**462.4587**	**1.2655**	**115.5784**	**1.3499**	**116.9283**	**24.6046**	**1.3172**	**25.9218**	**0.0000**	**125,489.8518**	**125,489.8518**	**17.7109**	**0.0000**	**125,932.6234**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**44.62**	**74.65**	**-15.74**	**0.00**	**75.96**	**90.70**	**76.43**	**61.16**	**90.18**	**66.46**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	10.8122	0.1383	15.1449	1.1300e-003		0.0541	0.0541		0.0541	0.0541		32.4129	32.4129	0.0855		34.5505
Energy	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Mobile	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Offroad	0.9141	8.8380	10.6548	0.0144		0.5301	0.5301		0.4877	0.4877		1,394.5759	1,394.5759	0.4510		1,405.8517
Total	**11.7262**	**8.9763**	**25.7997**	**0.0155**	**0.0000**	**0.5842**	**0.5842**	**0.0000**	**0.5418**	**0.5418**		**1,426.9888**	**1,426.9888**	**0.5365**	**0.0000**	**1,440.4022**

2.2 Overall Operational

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	10.8122	0.1383	15.1449	1.1300e-003		0.0541	0.0541		0.0541	0.0541		32.4129	32.4129	0.0855		34.5505
Energy	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Mobile	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Offroad	0.9141	8.8380	10.6548	0.0144		0.5301	0.5301		0.4877	0.4877		1,394.5759	1,394.5759	0.4510		1,405.8517
Total	**11.7262**	**8.9763**	**25.7997**	**0.0155**	**0.0000**	**0.5842**	**0.5842**	**0.0000**	**0.5418**	**0.5418**		**1,426.9888**	**1,426.9888**	**0.5365**	**0.0000**	**1,440.4022**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Site Preparation	Site Preparation	7/1/2019	12/31/2019	5	132	1 site prep
2	Throughout Constr	Grading	7/1/2019	11/11/2022	5	880	4 throughout cons
3	PV Panels	Trenching	1/1/2020	11/11/2022	5	748	2 pv panels
4	Electrical	Building Construction	1/3/2022	11/4/2022	5	220	3 electrical

Acres of Grading (Site Preparation Phase): 1650

Acres of Grading (Grading Phase): 0

Acres of Paving: 0

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 0; Non-Residential Outdoor: 0; Striped Parking Area: 0 (Architectural Coating – sqft)

OffRoad Equipment

IP Athos - Mojave Desert Air Basin, Winter

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Site Preparation	Graders	12	6.70	187	0.41
Site Preparation	Rubber Tired Dozers	6	6.70	247	0.40
Site Preparation	Scrapers	9	6.70	367	0.48
Site Preparation	Tractors/Loaders/Backhoes	4	6.70	97	0.37
Throughout Constr	Excavators	2	6.00	158	0.38
Throughout Constr	Forklifts	22	6.00	89	0.20
Throughout Constr	Graders	1	6.00	187	0.41
Throughout Constr	Rubber Tired Dozers	1	6.00	247	0.40
Throughout Constr	Rubber Tired Loaders	10	6.00	203	0.36
Throughout Constr	Scrapers	2	6.00	367	0.48
Throughout Constr	Tractors/Loaders/Backhoes	18	6.00	97	0.37
PV Panels	Bore/Drill Rigs	30	6.00	221	0.50
PV Panels	Cranes	8	4.00	231	0.29
PV Panels	Generator Sets	4	6.00	84	0.74
PV Panels	Other Construction Equipment	4	4.00	172	0.42
PV Panels	Tractors/Loaders/Backhoes	20	6.00	97	0.37
PV Panels	Welders	4	6.00	46	0.45
Electrical	Cranes	1	8.00	231	0.29
Electrical	Excavators	1	8.00	158	0.38
Electrical	Forklifts	3	8.00	89	0.20
Electrical	Generator Sets	2	8.00	84	0.74
Electrical	Rollers	7	6.00	80	0.38
Electrical	Tractors/Loaders/Backhoes	3	7.00	97	0.37
Electrical	Trenchers	2	8.00	78	0.50
Electrical	Welders	2	8.00	46	0.45

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Site Preparation	31	200.00	0.00	4,440.00	75.00	7.00	150.00	LD_Mix	HDT_Mix	HHDT
Throughout Constr	56	200.00	124.00	400.00	75.00	7.00	150.00	LD_Mix	HDT_Mix	HHDT
PV Panels	70	660.00	0.00	24,900.00	75.00	7.00	150.00	LD_Mix	HDT_Mix	HHDT
Electrical	21	200.00	0.00	1,704.00	75.00	7.00	150.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Use Cleaner Engines for Construction Equipment

Use Soil Stabilizer

Replace Ground Cover

Water Exposed Area

Reduce Vehicle Speed on Unpaved Roads

3.2 Site Preparation - 2019

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					45.6570	0.0000	45.6570	18.3893	0.0000	18.3893			0.0000			0.0000
Off-Road	19.4022	231.9671	108.4769	0.2342		9.4173	9.4173		8.6639	8.6639		23,192.5479	23,192.5479	7.3379		23,375.9948
Total	**19.4022**	**231.9671**	**108.4769**	**0.2342**	**45.6570**	**9.4173**	**55.0743**	**18.3893**	**8.6639**	**27.0532**		**23,192.5479**	**23,192.5479**	**7.3379**		**23,375.9948**

3.2 Site Preparation - 2019

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.9099	35.9230	5.1893	0.1609	78.6394	0.1747	78.8141	8.6135	0.1672	8.7807		16,872.2693	16,872.2693	0.2568		16,878.6901
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	5.2100	4.3989	38.0065	0.1046	11.3977	0.0698	11.4675	3.0217	0.0644	3.0860		10,416.8058	10,416.8058	0.3563		10,425.7135
Total	**6.1198**	**40.3219**	**43.1958**	**0.2655**	**90.0370**	**0.2446**	**90.2816**	**11.6352**	**0.2315**	**11.8667**		**27,289.0750**	**27,289.0750**	**0.6132**		**27,304.4036**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					19.5184	0.0000	19.5184	7.8614	0.0000	7.8614			0.0000			0.0000
Off-Road	2.8731	12.4501	108.5281	0.2342		0.3831	0.3831		0.3831	0.3831	0.0000	23,192.5479	23,192.5479	7.3379		23,375.9948
Total	**2.8731**	**12.4501**	**108.5281**	**0.2342**	**19.5184**	**0.3831**	**19.9014**	**7.8614**	**0.3831**	**8.2445**	**0.0000**	**23,192.5479**	**23,192.5479**	**7.3379**		**23,375.9948**

3.2 Site Preparation - 2019

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.9099	35.9230	5.1893	0.1609	11.6603	0.1747	11.8350	1.9289	0.1672	2.0960		16,872.2693	16,872.2693	0.2568		16,878.6901
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	5.2100	4.3989	38.0065	0.1046	11.3977	0.0698	11.4675	3.0217	0.0644	3.0860		10,416.8058	10,416.8058	0.3563		10,425.7135
Total	**6.1198**	**40.3219**	**43.1958**	**0.2655**	**23.0579**	**0.2446**	**23.3025**	**4.9505**	**0.2315**	**5.1820**		**27,289.0750**	**27,289.0750**	**0.6132**		**27,304.4036**

3.3 Throughout Constr - 2019

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					6.5050	0.0000	6.5050	2.6974	0.0000	2.6974			0.0000			0.0000
Off-Road	11.9778	128.7033	84.9597	0.1558		6.6988	6.6988		6.1629	6.1629		15,433.3453	15,433.3453	4.8830		15,555.4190
Total	**11.9778**	**128.7033**	**84.9597**	**0.1558**	**6.5050**	**6.6988**	**13.2038**	**2.6974**	**6.1629**	**8.8603**		**15,433.3453**	**15,433.3453**	**4.8830**		**15,555.4190**

3.3 Throughout Constr - 2019

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0123	0.4855	0.0701	2.1700e-003	7.0016	2.3600e-003	7.0039	0.7459	2.2600e-003	0.7481		228.0036	228.0036	3.4700e-003		228.0904
Vendor	0.5216	14.3218	3.7911	0.0356	128.4908	0.0852	128.5760	12.9652	0.0815	13.0467		3,717.6030	3,717.6030	0.3923		3,727.4099
Worker	5.2100	4.3989	38.0065	0.1046	11.3977	0.0698	11.4675	3.0217	0.0644	3.0860		10,416.8058	10,416.8058	0.3563		10,425.7135
Total	**5.7439**	**19.2062**	**41.8677**	**0.1424**	**146.8900**	**0.1574**	**147.0474**	**16.7327**	**0.1481**	**16.8808**		**14,362.4124**	**14,362.4124**	**0.7521**		**14,381.2138**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					2.7809	0.0000	2.7809	1.1531	0.0000	1.1531			0.0000			0.0000
Off-Road	1.9177	8.3101	93.2871	0.1558		0.2557	0.2557		0.2557	0.2557	0.0000	15,433.3453	15,433.3453	4.8830		15,555.4190
Total	**1.9177**	**8.3101**	**93.2871**	**0.1558**	**2.7809**	**0.2557**	**3.0366**	**1.1531**	**0.2557**	**1.4088**	**0.0000**	**15,433.3453**	**15,433.3453**	**4.8830**		**15,555.4190**

3.3 Throughout Constr - 2019

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0123	0.4855	0.0701	2.1700e-003	0.9674	2.3600e-003	0.9698	0.1436	2.2600e-003	0.1459		228.0036	228.0036	3.4700e-003		228.0904
Vendor	0.5216	14.3218	3.7911	0.0356	13.2627	0.0852	13.3479	1.4652	0.0815	1.5467		3,717.6030	3,717.6030	0.3923		3,727.4099
Worker	5.2100	4.3989	38.0065	0.1046	11.3977	0.0698	11.4675	3.0217	0.0644	3.0860		10,416.8058	10,416.8058	0.3563		10,425.7135
Total	**5.7439**	**19.2062**	**41.8677**	**0.1424**	**25.6278**	**0.1574**	**25.7851**	**4.6305**	**0.1481**	**4.7786**		**14,362.4124**	**14,362.4124**	**0.7521**		**14,381.2138**

3.3 Throughout Constr - 2020

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					6.5050	0.0000	6.5050	2.6974	0.0000	2.6974			0.0000			0.0000
Off-Road	11.0334	117.3905	83.0652	0.1558		5.9207	5.9207		5.4470	5.4470		15,094.8292	15,094.8292	4.8820		15,216.8785
Total	**11.0334**	**117.3905**	**83.0652**	**0.1558**	**6.5050**	**5.9207**	**12.4257**	**2.6974**	**5.4470**	**8.1444**		**15,094.8292**	**15,094.8292**	**4.8820**		**15,216.8785**

3.3 Throughout Constr - 2020

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0115	0.4374	0.0666	2.1500e-003	3.5348	2.0200e-003	3.5368	0.3784	1.9300e-003	0.3804		225.1776	225.1776	3.3600e-003		225.2616
Vendor	0.4499	13.0838	3.3431	0.0353	128.4908	0.0574	128.5482	12.9652	0.0549	13.0201		3,686.9033	3,686.9033	0.3799		3,696.3995
Worker	4.7937	3.8897	33.9333	0.1013	11.3977	0.0677	11.4653	3.0217	0.0623	3.0840		10,091.1493	10,091.1493	0.3117		10,098.9406
Total	**5.2551**	**17.4108**	**37.3429**	**0.1387**	**143.4232**	**0.1271**	**143.5503**	**16.3653**	**0.1192**	**16.4844**		**14,003.2302**	**14,003.2302**	**0.6949**		**14,020.6017**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					2.7809	0.0000	2.7809	1.1531	0.0000	1.1531			0.0000			0.0000
Off-Road	1.9177	8.3101	93.2871	0.1558		0.2557	0.2557		0.2557	0.2557	0.0000	15,094.8292	15,094.8292	4.8820		15,216.8785
Total	**1.9177**	**8.3101**	**93.2871**	**0.1558**	**2.7809**	**0.2557**	**3.0366**	**1.1531**	**0.2557**	**1.4088**	**0.0000**	**15,094.8292**	**15,094.8292**	**4.8820**		**15,216.8785**

3.3 Throughout Constr - 2020

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0115	0.4374	0.0666	2.1500e-003	0.4947	2.0200e-003	0.4967	0.0750	1.9300e-003	0.0769		225.1776	225.1776	3.3600e-003		225.2616
Vendor	0.4499	13.0838	3.3431	0.0353	13.2627	0.0574	13.3201	1.4652	0.0549	1.5201		3,686.9033	3,686.9033	0.3799		3,696.3995
Worker	4.7937	3.8897	33.9333	0.1013	11.3977	0.0677	11.4653	3.0217	0.0623	3.0840		10,091.1493	10,091.1493	0.3117		10,098.9406
Total	**5.2551**	**17.4108**	**37.3429**	**0.1387**	**25.1550**	**0.1271**	**25.2821**	**4.5619**	**0.1192**	**4.6810**		**14,003.2302**	**14,003.2302**	**0.6949**		**14,020.6017**

3.3 Throughout Constr - 2021

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					6.5050	0.0000	6.5050	2.6974	0.0000	2.6974			0.0000			0.0000
Off-Road	10.0971	105.9834	81.5413	0.1559		5.1776	5.1776		4.7634	4.7634		15,097.7889	15,097.7889	4.8829		15,219.8621
Total	**10.0971**	**105.9834**	**81.5413**	**0.1559**	**6.5050**	**5.1776**	**11.6826**	**2.6974**	**4.7634**	**7.4608**		**15,097.7889**	**15,097.7889**	**4.8829**		**15,219.8621**

3.3 Throughout Constr - 2021

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0108	0.3806	0.0637	2.1200e-003	3.5483	1.7400e-003	3.5500	0.3798	1.6600e-003	0.3815		222.6205	222.6205	3.2300e-003		222.7012
Vendor	0.3880	11.8733	2.9476	0.0350	128.4908	0.0189	128.5097	12.9652	0.0181	12.9833		3,658.9464	3,658.9464	0.3638		3,668.0412
Worker	4.4718	3.4757	31.0448	0.0977	11.3977	0.0655	11.4632	3.0217	0.0604	3.0820		9,737.6984	9,737.6984	0.2794		9,744.6834
Total	**4.8706**	**15.7296**	**34.0562**	**0.1348**	**143.4367**	**0.0862**	**143.5229**	**16.3667**	**0.0801**	**16.4468**		**13,619.2653**	**13,619.2653**	**0.6464**		**13,635.4258**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					2.7809	0.0000	2.7809	1.1531	0.0000	1.1531			0.0000			0.0000
Off-Road	1.9177	8.3101	93.2871	0.1559		0.2557	0.2557		0.2557	0.2557	0.0000	15,097.7888	15,097.7888	4.8829		15,219.8621
Total	**1.9177**	**8.3101**	**93.2871**	**0.1559**	**2.7809**	**0.2557**	**3.0366**	**1.1531**	**0.2557**	**1.4088**	**0.0000**	**15,097.7888**	**15,097.7888**	**4.8829**		**15,219.8621**

3.3 Throughout Constr - 2021

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0108	0.3806	0.0637	2.1200e-003	0.4965	1.7400e-003	0.4983	0.0753	1.6600e-003	0.0769		222.6205	222.6205	3.2300e-003		222.7012
Vendor	0.3880	11.8733	2.9476	0.0350	13.2627	0.0189	13.2816	1.4652	0.0181	1.4833		3,658.9464	3,658.9464	0.3638		3,668.0412
Worker	4.4718	3.4757	31.0448	0.0977	11.3977	0.0655	11.4632	3.0217	0.0604	3.0820		9,737.6984	9,737.6984	0.2794		9,744.6834
Total	**4.8706**	**15.7296**	**34.0562**	**0.1348**	**25.1568**	**0.0862**	**25.2430**	**4.5621**	**0.0801**	**4.6422**		**13,619.2653**	**13,619.2653**	**0.6464**		**13,635.4258**

3.3 Throughout Constr - 2022

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					6.5050	0.0000	6.5050	2.6974	0.0000	2.6974			0.0000			0.0000
Off-Road	8.7548	89.3334	79.1575	0.1560		4.2216	4.2216		3.8839	3.8839		15,108.4163	15,108.4163	4.8864		15,230.5755
Total	**8.7548**	**89.3334**	**79.1575**	**0.1560**	**6.5050**	**4.2216**	**10.7266**	**2.6974**	**3.8839**	**6.5813**		**15,108.4163**	**15,108.4163**	**4.8864**		**15,230.5755**

3.3 Throughout Constr - 2022

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0101	0.3246	0.0609	2.1000e-003	4.1137	1.3900e-003	4.1150	0.4398	1.3300e-003	0.4411		219.8395	219.8395	3.0600e-003		219.9160
Vendor	0.3593	11.1844	2.6910	0.0347	128.4908	0.0154	128.5062	12.9652	0.0147	12.9799		3,630.0403	3,630.0403	0.3451		3,638.6683
Worker	4.1913	3.1174	28.3164	0.0941	11.3977	0.0634	11.4610	3.0217	0.0584	3.0800		9,385.9627	9,385.9627	0.2497		9,392.2059
Total	**4.5607**	**14.6264**	**31.0682**	**0.1310**	**144.0021**	**0.0802**	**144.0823**	**16.4266**	**0.0744**	**16.5010**		**13,235.8424**	**13,235.8424**	**0.5979**		**13,250.7903**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					2.7809	0.0000	2.7809	1.1531	0.0000	1.1531			0.0000			0.0000
Off-Road	1.9177	8.3101	93.2871	0.1560		0.2557	0.2557		0.2557	0.2557	0.0000	15,108.4163	15,108.4163	4.8864		15,230.5755
Total	**1.9177**	**8.3101**	**93.2871**	**0.1560**	**2.7809**	**0.2557**	**3.0366**	**1.1531**	**0.2557**	**1.4088**	**0.0000**	**15,108.4163**	**15,108.4163**	**4.8864**		**15,230.5755**

3.3 Throughout Constr - 2022

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0101	0.3246	0.0609	2.1000e-003	0.5736	1.3900e-003	0.5750	0.0865	1.3300e-003	0.0878		219.8395	219.8395	3.0600e-003		219.9160
Vendor	0.3593	11.1844	2.6910	0.0347	13.2627	0.0154	13.2781	1.4652	0.0147	1.4799		3,630.0403	3,630.0403	0.3451		3,638.6683
Worker	4.1913	3.1174	28.3164	0.0941	11.3977	0.0634	11.4610	3.0217	0.0584	3.0800		9,385.9627	9,385.9627	0.2497		9,392.2059
Total	**4.5607**	**14.6264**	**31.0682**	**0.1310**	**25.2339**	**0.0802**	**25.3141**	**4.5733**	**0.0744**	**4.6478**		**13,235.8424**	**13,235.8424**	**0.5979**		**13,250.7903**

3.4 PV Panels - 2020

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	14.4116	158.0221	114.1357	0.3210		6.5715	6.5715		6.1138	6.1138		30,906.4859	30,906.4859	9.3872		31,141.1664
Total	**14.4116**	**158.0221**	**114.1357**	**0.3210**		**6.5715**	**6.5715**		**6.1138**	**6.1138**		**30,906.4859**	**30,906.4859**	**9.3872**		**31,141.1664**

3.4 PV Panels - 2020

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.8417	32.0293	4.8750	0.1573	220.2014	0.1479	220.3493	23.6147	0.1415	23.7562		16,490.9495	16,490.9495	0.2461		16,497.1024
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	15.8193	12.8361	111.9799	0.3342	37.6123	0.2233	37.8356	9.9715	0.2057	10.1772		33,300.7926	33,300.7926	1.0285		33,326.5039
Total	**16.6610**	**44.8654**	**116.8548**	**0.4915**	**257.8136**	**0.3712**	**258.1848**	**33.5861**	**0.3472**	**33.9334**		**49,791.7421**	**49,791.7421**	**1.2746**		**49,823.6063**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	3.9659	19.6280	168.0861	0.3210		0.5200	0.5200		0.5200	0.5200	0.0000	30,906.4859	30,906.4859	9.3872		31,141.1664
Total	**3.9659**	**19.6280**	**168.0861**	**0.3210**		**0.5200**	**0.5200**		**0.5200**	**0.5200**	**0.0000**	**30,906.4859**	**30,906.4859**	**9.3872**		**31,141.1664**

3.4 PV Panels - 2020

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.8417	32.0293	4.8750	0.1573	30.9547	0.1479	31.1026	4.7275	0.1415	4.8690		16,490.9495	16,490.9495	0.2461		16,497.1024
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	15.8193	12.8361	111.9799	0.3342	37.6123	0.2233	37.8356	9.9715	0.2057	10.1772		33,300.7926	33,300.7926	1.0285		33,326.5039
Total	**16.6610**	**44.8654**	**116.8548**	**0.4915**	**68.5670**	**0.3712**	**68.9382**	**14.6989**	**0.3472**	**15.0462**		**49,791.7421**	**49,791.7421**	**1.2746**		**49,823.6063**

3.4 PV Panels - 2021

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	13.0893	138.6338	112.8200	0.3215		5.7096	5.7096		5.3109	5.3109		30,958.4462	30,958.4462	9.3832		31,193.0262
Total	**13.0893**	**138.6338**	**112.8200**	**0.3215**		**5.7096**	**5.7096**		**5.3109**	**5.3109**		**30,958.4462**	**30,958.4462**	**9.3832**		**31,193.0262**

3.4 PV Panels - 2021

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.7897	27.8741	4.6659	0.1555	221.0409	0.1273	221.1682	23.7037	0.1218	23.8254		16,303.6780	16,303.6780	0.2364		16,309.5869
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	14.7568	11.4699	102.4478	0.3224	37.6123	0.2162	37.8285	9.9715	0.1992	10.1707		32,134.4048	32,134.4048	0.9220		32,157.4553
Total	**15.5465**	**39.3439**	**107.1137**	**0.4779**	**258.6532**	**0.3435**	**258.9967**	**33.6751**	**0.3210**	**33.9961**		**48,438.0827**	**48,438.0827**	**1.1584**		**48,467.0422**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	3.9659	19.6280	168.0861	0.3215		0.5200	0.5200		0.5200	0.5200	0.0000	30,958.4461	30,958.4461	9.3832		31,193.0262
Total	**3.9659**	**19.6280**	**168.0861**	**0.3215**		**0.5200**	**0.5200**		**0.5200**	**0.5200**	**0.0000**	**30,958.4461**	**30,958.4461**	**9.3832**		**31,193.0262**

3.4 PV Panels - 2021

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.7897	27.8741	4.6659	0.1555	31.0692	0.1273	31.1965	4.7441	0.1218	4.8659		16,303.6780	16,303.6780	0.2364		16,309.5869
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	14.7568	11.4699	102.4478	0.3224	37.6123	0.2162	37.8285	9.9715	0.1992	10.1707		32,134.4048	32,134.4048	0.9220		32,157.4553
Total	**15.5465**	**39.3439**	**107.1137**	**0.4779**	**68.6815**	**0.3435**	**69.0250**	**14.7156**	**0.3210**	**15.0365**		**48,438.0827**	**48,438.0827**	**1.1584**		**48,467.0422**

3.4 PV Panels - 2022

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	11.5770	113.6698	111.2201	0.3220		4.7141	4.7141		4.3876	4.3876		30,997.2236	30,997.2236	9.3826		31,231.7884
Total	**11.5770**	**113.6698**	**111.2201**	**0.3220**		**4.7141**	**4.7141**		**4.3876**	**4.3876**		**30,997.2236**	**30,997.2236**	**9.3826**		**31,231.7884**

3.4 PV Panels - 2022

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.7364	23.7714	4.4582	0.1536	256.2358	0.1021	256.3378	27.4339	0.0977	27.5316		16,100.0070	16,100.0070	0.2243		16,105.6153
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	13.8312	10.2875	93.4440	0.3107	37.6123	0.2092	37.8214	9.9715	0.1927	10.1641		30,973.6768	30,973.6768	0.8241		30,994.2795
Total	**14.5676**	**34.0589**	**97.9022**	**0.4642**	**293.8481**	**0.3112**	**294.1593**	**37.4054**	**0.2903**	**37.6957**		**47,073.6838**	**47,073.6838**	**1.0484**		**47,099.8948**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	3.9659	19.6280	168.0861	0.3220		0.5200	0.5200		0.5200	0.5200	0.0000	30,997.2235	30,997.2235	9.3826		31,231.7884
Total	**3.9659**	**19.6280**	**168.0861**	**0.3220**		**0.5200**	**0.5200**		**0.5200**	**0.5200**	**0.0000**	**30,997.2235**	**30,997.2235**	**9.3826**		**31,231.7884**

3.4 PV Panels - 2022

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.7364	23.7714	4.4582	0.1536	35.8686	0.1021	35.9707	5.4409	0.0977	5.5385		16,100.0070	16,100.0070	0.2243		16,105.6153
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	13.8312	10.2875	93.4440	0.3107	37.6123	0.2092	37.8214	9.9715	0.1927	10.1641		30,973.6768	30,973.6768	0.8241		30,994.2795
Total	**14.5676**	**34.0589**	**97.9022**	**0.4642**	**73.4809**	**0.3112**	**73.7921**	**15.4123**	**0.2903**	**15.7026**		**47,073.6838**	**47,073.6838**	**1.0484**		**47,099.8948**

3.5 Electrical - 2022

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	4.1627	38.1271	40.1916	0.0625		2.1286	2.1286		1.9920	1.9920		5,942.6589	5,942.6589	1.4936		5,979.9994
Total	**4.1627**	**38.1271**	**40.1916**	**0.0625**		**2.1286**	**2.1286**		**1.9920**	**1.9920**		**5,942.6589**	**5,942.6589**	**1.4936**		**5,979.9994**

3.5 Electrical - 2022

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.1714	5.5310	1.0373	0.0357	18.1083	0.0238	18.1321	1.9834	0.0227	2.0062		3,746.0643	3,746.0643	0.0522		3,747.3692
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	4.1913	3.1174	28.3164	0.0941	11.3977	0.0634	11.4610	3.0217	0.0584	3.0800		9,385.9627	9,385.9627	0.2497		9,392.2059
Total	**4.3626**	**8.6484**	**29.3537**	**0.1299**	**29.5060**	**0.0871**	**29.5931**	**5.0051**	**0.0811**	**5.0862**		**13,132.0270**	**13,132.0270**	**0.3019**		**13,139.5751**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.7612	4.9270	42.7614	0.0625		0.0957	0.0957		0.0957	0.0957	0.0000	5,942.6589	5,942.6589	1.4936		5,979.9994
Total	**0.7612**	**4.9270**	**42.7614**	**0.0625**		**0.0957**	**0.0957**		**0.0957**	**0.0957**	**0.0000**	**5,942.6589**	**5,942.6589**	**1.4936**		**5,979.9994**

3.5 Electrical - 2022

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.1714	5.5310	1.0373	0.0357	2.6850	0.0238	2.7088	0.4442	0.0227	0.4669		3,746.0643	3,746.0643	0.0522		3,747.3692
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	4.1913	3.1174	28.3164	0.0941	11.3977	0.0634	11.4610	3.0217	0.0584	3.0800		9,385.9627	9,385.9627	0.2497		9,392.2059
Total	**4.3626**	**8.6484**	**29.3537**	**0.1299**	**14.0827**	**0.0871**	**14.1698**	**3.4658**	**0.0811**	**3.5469**		**13,132.0270**	**13,132.0270**	**0.3019**		**13,139.5751**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Unmitigated	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
General Light Industry	0.00	0.00	0.00		
Total	0.00	0.00	0.00		

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
General Light Industry	75.00	75.00	75.00	59.00	28.00	13.00	92	5	3

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
General Light Industry	0.542331	0.034995	0.171339	0.106016	0.017524	0.005301	0.010354	0.098286	0.001618	0.001995	0.008295	0.000874	0.001071

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
NaturalGas Mitigated	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
NaturalGas Unmitigated	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
General Light Industry	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

5.2 Energy by Land Use - NaturalGas

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
General Light Industry	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

6.0 Area Detail

6.1 Mitigation Measures Area

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	10.8122	0.1383	15.1449	1.1300e-003		0.0541	0.0541		0.0541	0.0541		32.4129	32.4129	0.0855		34.5505
Unmitigated	10.8122	0.1383	15.1449	1.1300e-003		0.0541	0.0541		0.0541	0.0541		32.4129	32.4129	0.0855		34.5505

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	9.4036					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	1.4086	0.1383	15.1449	1.1300e-003		0.0541	0.0541		0.0541	0.0541		32.4129	32.4129	0.0855		34.5505
Total	**10.8122**	**0.1383**	**15.1449**	**1.1300e-003**		**0.0541**	**0.0541**		**0.0541**	**0.0541**		**32.4129**	**32.4129**	**0.0855**		**34.5505**

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	9.4036					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	1.4086	0.1383	15.1449	1.1300e-003		0.0541	0.0541		0.0541	0.0541		32.4129	32.4129	0.0855		34.5505
Total	**10.8122**	**0.1383**	**15.1449**	**1.1300e-003**		**0.0541**	**0.0541**		**0.0541**	**0.0541**		**32.4129**	**32.4129**	**0.0855**		**34.5505**

7.0 Water Detail

7.1 Mitigation Measures Water

8.0 Waste Detail

8.1 Mitigation Measures Waste

9.0 Operational Offroad

Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type
Forklifts	2	8.00	52	89	0.20	Diesel
Other General Industrial Equipment	2	8.00	52	88	0.34	Diesel
Tractors/Loaders/Backhoes	2	8.00	52	97	0.37	Diesel

UnMitigated/Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Equipment Type	lb/day										lb/day					
Forklifts	0.2272	2.1098	2.3075	3.0600e-003		0.1398	0.1398		0.1286	0.1286		296.0617	296.0617	0.0958		298.4555
Other General Industrial Equipment	0.3575	3.3769	3.8714	5.1200e-003		0.2101	0.2101		0.1933	0.1933		496.0363	496.0363	0.1604		500.0470
Tractors/Loaders/Backhoes	0.3294	3.3513	4.4759	6.2200e-003		0.1802	0.1802		0.1658	0.1658		602.4779	602.4779	0.1949		607.3492
Total	**0.9141**	**8.8380**	**10.6548**	**0.0144**		**0.5301**	**0.5301**		**0.4877**	**0.4877**		**1,394.5759**	**1,394.5759**	**0.4510**		**1,405.8517**

10.0 Stationary Equipment

Fire Pumps and Emergency Generators

Equipment Type	Number	Hours/Day	Hours/Year	Horse Power	Load Factor	Fuel Type

Boilers

Equipment Type	Number	Heat Input/Day	Heat Input/Year	Boiler Rating	Fuel Type

User Defined Equipment

Equipment Type	Number

11.0 Vegetation

Appendix M

Noise Calculations

Traffic Noise Calculations

Project Number: 3397 IP Athos

Model Description: Reference Energy Mean Emission Levels (REMEL): speed-dependent emission levels from FHWA-RD-77-108
See Caltrans Technical Noise Supplement (TeNS 2013): Table 4-2

Model Assumptions: no shielding, no barriers, no finite road adjustment
Results given for Peak or Event Hour [Leq(h)] vph; CNEL from ADT vpd-distributed per time fractions

Day	**Evening**	**Night**
7am-7pm	7pm-10pm	10pm-7am
12	3	9

Road Segment / Receptor Inputs

Road Name/Segment: SR177 at So Access
Scenario: baseline or existing

Average Daily Traffic Mix (%)		
7am-7pm	7pm-10pm	10pm-7am
85	5	10

Receptor Distance: >15m Ref: 30.5 (m)
100.1 (ft)

Drop-off (alpha 0.5=soft, 0=hard): 0.00 (alpha)
Speed: 65 (mph)
105 (kph)

ADT (vpd)	**Peak Hr (vph)**	**Day (vph)**	**Evening (vph)**	**Night (vph)**
2800	125	198.3	46.7	31.1

Ref: 4/16/2018 Traffic Study, Fig 3 (p.9)
(baseline peak hr counts shown as lower than avg daytime hr)

Vehicle Type Mix	ADT Mix (%)	Peak Hr (vph)	Day (vph)	Evening (vph)	Night (vph)
Autos	92.50	115.6	183.5	43.2	28.8
Medium Duty Trucks	3.75	4.7	7.4	1.8	1.2
Heavy Duty Trucks	3.75	4.7	7.4	1.8	1.2

Ref: Caltrans 2016 Daily Truck Traffic (7.5% trucks - equal MDT & HDT)

REMEL Traffic Flow Adjustment

	(TeNS 2013)	Peak Hr	Day	Evening	Night
Autos	76.8	-12.8	-10.8	-17.1	-18.9
MD Trucks	82.2	-26.8	-24.7	-31.0	-32.8
HD Trucks	86.3	-26.8	-24.7	-31.0	-32.8

Distance Adjustment
-3.1

	A	B	C
Autos	41.7408	1.1485	50.128
MD Trucks	33.919	20.591	68.003
HD Trucks	35.8799	21.0197	74.298

Scenario Results

Leq(h) Peak Hour (dBA)	Leq(h) Day (dBA)	Leq(h) Evening (dBA)	Leq(h) Night (dBA)	Ldn @ Rec (dBA)	CNEL @ Rec (dBA)
62.7	64.7	58.4	56.6	65.2	65.4

Centerline Distance to CNEL Contour

70 Contour XX CNEL (ft)	*65 Contour YY CNEL (ft)*	*60 Contour ZZ CNEL (ft)*	*55 Contour ZZ CNEL (ft)*
49.5	*106.6*	*229.7*	*495.0*

Traffic Noise Calculations

Project Number: 3397 IP Athos

Model Description: Reference Energy Mean Emission Levels (REMEL): speed-dependent emission levels from FHWA-RD-77-108
See Caltrans Technical Noise Supplement (TeNS 2013): Table 4-2

Model Assumptions: no shielding, no barriers, no finite road adjustment
Results given for Peak or Event Hour [Leq(h)] vph; CNEL from ADT vpd-distributed per time fractions

Day	**Evening**	**Night**
7am-7pm	7pm-10pm	10pm-7am
12	3	9

Road Segment / Receptor Inputs

Road Name/Segment: SR177 at So Access
Scenario: ambient + project

Average Daily Traffic Mix (%)

7am-7pm	7pm-10pm	10pm-7am
85	5	10

Receptor Distance: >15m Ref: 30.5 (m)
100.1 (ft)

Drop-off (alpha 0.5=soft, 0=hard): 0.00 (alpha)
Speed: 65 (mph)
105 (kph)

ADT (vpd)	**Peak Hr (vph)**	**Day (vph)**	**Evening (vph)**	**Night (vph)**
3940	605	279.1	65.7	43.8

Ref: 4/16/2018 Traffic Study, Fig 4 (p.18) & Table 2
(project adds ~480 veh/peak hr on SR177)

Vehicle Type Mix	ADT Mix (%)	Peak Hr (vph)	Day (vph)	Evening (vph)	Night (vph)
Autos	97.00	586.9	270.7	63.7	42.5
Medium Duty Trucks	1.00	6.1	2.8	0.7	0.4
Heavy Duty Trucks	2.00	12.1	5.6	1.3	0.9

Ref: 4/16/2018 Traffic Study, Table 2, project adds 6 trucks/peak hr

REMEL Traffic Flow Adjustment

	(TeNS 2013)	Peak Hr	Day	Evening	Night
Autos	76.8	-5.8	-9.1	-15.4	-17.2
MD Trucks	82.2	-25.6	-29.0	-35.3	-37.1
HD Trucks	86.3	-22.6	-26.0	-32.3	-34.0

Distance Adjustment
-3.1

A	B	C
41.7408	1.1485	50.128
33.919	20.591	68.003
35.8799	21.0197	74.298

Scenario Results

Leq(h) Peak Hour (dBA)	Leq(h) Day (dBA)	Leq(h) Evening (dBA)	Leq(h) Night (dBA)	Ldn @ Rec (dBA)	CNEL @ Rec (dBA)
68.8	65.5	59.2	57.4	66.0	66.2

Centerline Distance to CNEL Contour

70 Contour XX CNEL (ft)	*65 Contour YY CNEL (ft)*	*60 Contour ZZ CNEL (ft)*	*55 Contour ZZ CNEL (ft)*
55.8	*120.2*	*259.1*	*558.1*

Construction Equipment Noise Calculation

Project Number: 3397 IP Athos

Model Description: Composite Noise Level Calc, Various Distances, No Shielding
Model Approach and Cite: FTA, 2006: Transit Noise and Vibration Impact Assessment Guidelines. Table 12-1
Use Factors: FHWA, 2006: Roadway Construction Noise Model, User's Guide. Table 1 (Actual measured Lmax).

								Ordinance Equivalent Leq(h) at __ (ft)
	Loudest Equipment	**Lmax**	**Acoustic Use Factor**	**Leq(h)**	**Individ**	**Refc (ft)**	**Leq(h) at Refc (dBA)**	**25 (dBA)**
Noise Ordinance Limit: Single Source	Single >>>>>>>>>>>>>>	**(dBA)**	**(%)**	**(dBA)**	**SPL(h)**	100	55.0	67.0
	Theoretical Maximum Level	55	100	55	3.2E+05			

					Refc (ft)			
					50			**Composite at Receptor**
Activity	**Equipment**	**Lmax**	**Acoustic Use Factor**	**Leq(h)**		**Leq at Recept**	**Individ**	**Leq(h) (dBA)**
(Location)	Composite >>>>>>>>>>>>>>	**(dBA)**	**(%)**	**(dBA)**	**Receptor (ft)**	**(dBA)**	**SPL(h)**	83.1
Site Preparation	Grader	85	40	81.0	50	81.0	1.3E+08	
	Dozer	82	40	78.0	50	78.0	6.3E+07	
	Dump Truck	76	40	72.0	50	72.0	1.6E+07	
								Composite at Receptor
								Leq(h) (dBA)
								94.1
PV Panel System Installation	Pile Driver (Impact or Vibratory)	101	20	94.0	50	94.0	2.5E+09	
	Crane	81	20	74.0	50	74.0	2.5E+07	
	Backhoe	78	40	74.0	50	74.0	2.5E+07	
	Dump Truck	76	40	72.0	50	72.0	1.6E+07	
								Composite at Receptor
								Leq(h) (dBA)
								83.2
Electrical System Installation	Crane	81	20	74.0	50	74.0	2.5E+07	
	Bore/Auger Drill Rig	84	20	77.0	50	77.0	5.0E+07	
	Concrete Mixer Truck	79	40	75.0	50	75.0	3.2E+07	
	Compactor	83	20	76.0	50	76.0	4.0E+07	
	Generator	81	50	78.0	50	78.0	6.3E+07	
								Composite at Receptor
								Leq(h) (dBA)
								42.7
Operations (Inverters/Tracker Motors)	Inverters (spec. @ 10m, SMA 2015)	66	100	66.0	800	41.9	1.6E+04	
	Tracker Motors (estd. PVMS DEIR p.3.11-15)	50	10	40.0	500	20.0	1.0E+02	
	Pickup Truck (RCNM, sporadic use factor)	75	1	55.0	500	35.0	3.2E+03	

								Composite at Receptor Leq(h) (dBA)
								54.3
Operations (Inverters/Tracker Motors)	Inverters (spec. @ 10m, SMA 2015)	66	100	66.0	200	54.0	2.5E+05	
	Tracker Motors (estd. PVMS DEIR p.3.11-15)	50	10	40.0	200	28.0	6.3E+02	
	Pickup Truck (RCNM, sporadic use factor)	75	1	55.0	200	43.0	2.0E+04	

								Composite at Receptor Leq(h) (dBA)
								45.8
Operations (hypothetical a/c system for battery)	Generic Equiv (81 dB @ 10 ft, Sta Paula 2017 IS)	67	100	67.0	800	42.9	2.0E+04	
	Inverters (spec. @ 10m, SMA 2015)	66	100	66.0	800	41.9	1.6E+04	
	Tracker Motors (estd. PVMS DEIR p.3.11-15)	50	10	40.0	500	20.0	1.0E+02	
	Pickup Truck (RCNM, sporadic use factor)	75	1	55.0	500	35.0	3.2E+03	

Vibration Source Levels for Construction Equipment

Project Number: 3397 IP Athos

Model Approach and Cite: FTA, 2006: Table 12-2

Reference Source (at 25 ft):	PPV	0.210	in/sec , Vibratory Roller (compactor)
Reference Source (at 25 ft):	Lv	94	VdB, Vibratory Roller (compactor)

Vibration Assessment FTA, 2006: p 12-11	D (ft) =	ppv(eq) =		Building Damage (over 0.5 in/sec)	Adverse Reaction Threshold (over 0.2 in/sec)	Lv(D) =		Human Annoyance (over 80 VdB)
(ref)	25	0.210	in/sec	No	Yes	94.0	VdB	Yes
At 50 feet	50	0.074	in/sec	No	No	85.0	VdB	Yes
At 100 feet	100	0.026	in/sec	No	No	75.9	VdB	No
At 300 feet	300	0.005	in/sec	No	No	61.6	VdB	No

Reference Source (at 25 ft):	PPV	1.518	in/sec , Pile Driver (impact, upper range)
Reference Source (at 25 ft):	Lv	112	VdB, Pile Driver (impact, upper range)

Vibration Assessment FTA, 2006: p 12-11	D (ft) =	ppv(eq) =		Building Damage (over 0.5 in/sec)	Adverse Reaction Threshold (over 0.2 in/sec)	Lv(D) =		Human Annoyance (over 80 VdB)
(ref)	25	1.518	in/sec	Yes	Yes	112.0	VdB	Yes
At 50 feet	50	0.537	in/sec	Yes	Yes	103.0	VdB	Yes
At 100 feet	100	0.190	in/sec	No	No	93.9	VdB	Yes
At 300 feet	300	0.037	in/sec	No	No	79.6	VdB	No

Reference Source (at 25 ft):	PPV	0.089	in/sec , Large Bulldozer
Reference Source (at 25 ft):	Lv	87	VdB, Large Bulldozer

Vibration Assessment FTA, 2006: p 12-11	D (ft) =	ppv(eq) =		Building Damage (over 0.5 in/sec)	Adverse Reaction Threshold (over 0.2 in/sec)	Lv(D) =		Human Annoyance (over 80 VdB)
(ref)	25	0.089	in/sec	No	No	87.0	VdB	Yes
At 50 feet	50	0.031	in/sec	No	No	78.0	VdB	No
At 100 feet	100	0.011	in/sec	No	No	68.9	VdB	No
At 300 feet	300	0.002	in/sec	No	No	54.6	VdB	No

Reference Source (at 25 ft):	PPV	0.076	in/sec , Loaded Trucks
Reference Source (at 25 ft):	Lv	86	VdB, Loaded Trucks

Vibration Assessment FTA, 2006: p 12-11	D (ft) =	ppv(eq) =		Building Damage (over 0.5 in/sec)	Adverse Reaction Threshold (over 0.2 in/sec)	Lv(D) =		Human Annoyance (over 80 VdB)
(ref)	25	0.076	in/sec	No	No	86.0	VdB	Yes
At 50 feet	50	0.027	in/sec	No	No	77.0	VdB	No
At 100 feet	100	0.010	in/sec	No	No	67.9	VdB	No
At 300 feet	300	0.002	in/sec	No	No	53.6	VdB	No

Appendix N

Regulatory Framework

Appendix N
Regulatory Framework

N.1 Aesthetics

Federal Regulatory Setting

Federal Land Policy and Management Act. Section 102(a) of the Federal Land Policy and Management Act of 1976 (BLM, 2001) states that "...the public lands are to be managed in a manner that will protect the quality of scientific, scenic, historical, ecological, environmental, air and atmospheric, water resource, and archeological values." Section 103(c) identifies "scenic values" as one of the resources for which public land should be managed. Section 201(a) states, "the Secretary shall prepare and maintain on a continuing basis an inventory of all public lands and their resources and other values (including scenic values)." Section 505(a) requires that "each ROW shall contain terms and conditions which will …minimize damage to the scenic and esthetic values."

BLM Visual Resource Management (VRM) System. BLM uses the VRM System to inventory and manage scenic values on lands under its jurisdiction. Guidelines for applying the system are described in the BLM Manual Section 8400 et seq (BLM, 1984). VRM classes are assigned through Resource Management Plans (RMPs). The assignment of VRM classes is based on the management decisions made in the RMPs. As noted above, the 2016 DRECP LUPA assigned a VRM Class IV to the DFA that contains the Proposed Action site.

California Desert Conservation Area (CDCA) Plan and Northern and Eastern Colorado Desert Coordination Management Plan. The Recreation Element of the CDCA Plan specifies that VRM objectives and the contrast rating procedure be used to manage visual resources (BLM, 1999). VRM objectives provide the visual management standards for future projects and for rehabilitation of existing projects. Activities within the landscape are designed or evaluated using contrast ratings (BLM, 1986b).

Local Regulatory Setting

The solar facility would be subject to visual policies from the Riverside County General Plan.

Riverside County General Plan. The Riverside County General Plan is applicable to all unincorporated lands within Riverside County (County). The following are the County-wide policies that seek to preserve visual quality; they are located in the Riverside County General Plan Land Use Element (Riverside County, 2017), Multipurpose Open Space Element (Riverside County, 2015a), Circulation Element (Riverside County, 2015b), and Desert Center Area Plan (Riverside County, 2015c).

Land Use Element (LU).

I-10 is not a State- or County-designated scenic highway; however, it has been identified by the County in its Circulation Element as eligible for designation as a scenic corridor. The County has indicated in its General Plan Land Use Element that I-10 should be designated a scenic highway and has developed General Plan scenic corridor policies. These policies seek to maintain resources in corridors along scenic highways; these policies include:

- ***Policy LU 4.1.*** Require that new developments be located and designed to visually enhance, not degrade the character of the surrounding area through consideration of the following concepts:

a. Compliance with the design standards of the appropriate area plan land use category.

b. Require that structures be constructed in accordance with the requirements of Riverside County's zoning, building, and other pertinent codes and regulations.

c. Require that an appropriate landscape plan be submitted and implemented for development projects subject to discretionary review…

f. Incorporate water conservation techniques, such as groundwater recharge basins, use of porous pavement, drought tolerant landscaping, and water recycling, as appropriate…

k. Locate site entries and storage bays to minimize conflicts with adjacent residential neighbor-hoods.

l. Mitigate noise, odor, lighting, and other impacts on surrounding properties…

o. Preserve natural features, such as unique natural terrain, arroyos, canyons, and other drainage ways, and native vegetation, wherever possible, particularly where they provide continuity with more extensive regional systems.

- ***Policy LU 7.4.*** Retain and enhance the integrity of existing residential, employment, agricultural, and open space areas by protecting them from encroachment of land uses that would result in impacts from noise, noxious fumes, glare, shadowing, and traffic.
- ***Policy LU 9.1***. Provide for permanent preservation of open space lands that contain important natural resources, cultural resources, hazards, water features, watercourses including arroyos and canyons, and scenic and recreational values.
- ***Policy LU 14.1.*** Preserve and protect outstanding scenic vistas and visual features for the enjoyment of the traveling public.
- ***Policy LU 14.2.*** Incorporate riding, hiking, and bicycle trails and other compatible public recreational facilities within scenic corridors.
- ***Policy LU 14.3.*** Ensure that the design and appearance of new landscaping, structures, equipment, signs or grading within Designated and Eligible State and County Scenic Highways corridors are compatible with the surrounding scenic setting or environment.
- ***Policy LU 14.4.*** Maintain at least a 50-foot setback from the edge of the right-of-way for new development adjacent to Designated and Eligible State and County Scenic Highways.
- ***Policy LU 14.5.*** Requires "new or relocated electric or communication distribution lines, which would be visible from Designated and Eligible State and County Scenic Highways, to be placed underground."
- ***Policy LU 14.6.*** Prohibit off-site outdoor advertising displays that are visible from Designated and Eligible State and County Scenic Highways.
- ***Policy LU 14.7.*** Require that the size, height, and type of on-premise signs visible from Designated and Eligible State and County Scenic Highways be the minimum necessary for identification. The design, materials, color, and location of the signs shall blend with the environment, utilizing natural materials where possible.
- ***Policy LU 14.8.*** Avoid the blocking of public views by solid walls.
- ***Policy LU 30.8.*** Require that industrial development be designed to consider the surroundings and visually enhance, not degrade the character of the surrounding area.
- ***Policy LU-31.5.*** Requires that "public facilities be designed to consider their surroundings and visually enhance, not degrade the character of the surrounding area."

Multipurpose Open Space (OS) Element

- ***Policy OS-20.2*** Prevent unnecessary extension of public facilities, services, and utilities, for urban uses, into Open Space-Conservation designated areas.
- ***Policy OS-21.1.*** Identify and conserve the skylines, view corridors, and outstanding scenic vistas within Riverside County.

Circulation Element

Policies that seek to protect and maintain resources along scenic highways are incorporated into the Circulation Element; these include the following:

- ***Policy C-19.1.*** Preserve scenic routes that have exceptional or unique visual features in accordance with Caltrans' (the California Department of Transportation's) Scenic Highways Plan.
- ***Policy C-25.2.*** Locate new and relocated utilities underground when possible and feasible. All remaining utilities shall be located or screened in a manner that minimizes their visibility by the public

Desert Center Area Plan

- ***Policy DCAP 4.1*** When outdoor lighting is used, require the use of fixtures that would minimize effects on the nighttime sky and wildlife habitat areas, except as necessary for security reasons.
- ***Policy DCAP 8.1*** Protect the scenic highways within the Desert Center Area Plan from change that would diminish the aesthetic value of adjacent properties through adherence to the policies found in the Scenic Corridors sections of the General Plan Land Use, Multipurpose Open Space, and Circulation Elements.

N.2 Agricultural and Forestry Resources

Federal Regulatory Setting

Federal Farmland Protection Policy Act. The Farmland Protection Policy Act (7 U.S. Code [USC] Section 4201 et seq.; see also 7 Code of Federal Regulations [CFR] part 658) is overseen by the United States Department of Agriculture's (USDA) Natural Resources Conservation Service (NRCS). The Farmland Protection Policy Act is intended to "minimize the extent to which federal programs contribute to the unnecessary conversion of farmland to nonagricultural uses." The Act applies to projects and programs that are sponsored or financed in whole or in part by the federal government.

State Regulatory Setting

Land Conservation Act of 1965 (Williamson Act). The Williamson Act is intended to help preserve farmland. In creating the Act, the legislature noted that "the preservation of the maximum amount of the limited supply of agricultural land is necessary to the conservation of the State's economic resources, and is necessary not only to the maintenance of the agricultural economy of the State, but also for the assurance of adequate, healthful and nutritious food for future residents of this State and nation" (Government Code Section 51220). The Act enables participating local governments to enter into land conservation contracts with private landowners. Williamson Act contracts restrict specific parcels of land to agricultural and open space uses for a minimum term of ten years in return for reduced property tax assessments. The Williamson Act program is locally administered by counties (and some cities) to ensure compliance with the Williamson Act (Government Code Sections 51200–51207), local uniform rules, and individual contracts. The California Department of Conservation provides guidance and oversight to local govern-

ments to ensure consistency with the government code. Starting in 1972, the State provided counties with partial replacement of foregone local property tax revenues (Open Space Subvention Act). These subvention payments were suspended in 2009 due to State-level budget constraints.

Farmland Mapping and Monitoring Program. The California Department of Conservation established the Farmland Mapping and Monitoring Program (FMMP) in 1982 to identify important agricultural lands and track the conversion of agricultural land to other uses. Through the FMMP, the California Department of Conservation (DOC) maintains statewide maps of agricultural lands. The maps cover 98 percent of the State's private lands (DOC, 2014b). The Department of Conservation updates farmland mapping using aerial photos. In order to qualify as Prime Farmland or Farmland of Statewide Importance, land must have been irrigated during the previous four years in addition to having prime soil characteristics.

The list below includes the agricultural categories mapped by the DOC. Collectively, lands classified as Prime Farmland, Farmland of Statewide Importance, Unique Farmland, and Farmland of Local Importance are referred to as "Important Farmland." Other Land is that which is not included in any of the other mapping categories.

Prime Farmland. Farmland that has the best combination of physical and chemical features able to sustain long-term agricultural production. This land has the soil quality, growing season, and moisture supply needed to produce sustained high yields. Land must have been used for irrigated agricultural production at some time during the four years prior to the mapping date.

Farmland of Statewide Importance. Farmland similar to Prime Farmland but with minor shortcomings, such as greater slopes or less ability to store soil moisture. Land must have been used for irrigated agricultural production at some time during the four years prior to the mapping date.

Unique Farmland. Farmland of lesser quality soils used for the production of the State's leading agricultural crops. This land is usually irrigated, but may include non-irrigated orchards or vineyards as found in some climatic zones in California. Land must have been cropped at some time during the four years prior to the mapping date.

Farmland of Local Importance. Land of importance to the local agricultural economy as determined by each county's board of supervisors and a local advisory committee.

Grazing Land. Land on which the existing vegetation is suited to the grazing of livestock. This category was developed in cooperation with the California Cattlemen's Association, University of California Cooperative Extension, and other groups interested in the extent of grazing activities. The minimum mapping unit for Grazing Land is 40 acres.

Local Regulatory Setting

Riverside County General Plan. The intent of the Agricultural Resources section of the Land Use Element of the Riverside County General Plan is to identify and preserve areas where agricultural uses are the long term desirable use and to minimize the conflicts between agricultural and urban/suburban uses. The following policies included in the Land Use Element generally relate to the proposed Project with respect to agricultural resources (Riverside County, 2017).

Policy LU 7.1. Require land uses to develop in accordance with the General Plan and area plans to ensure compatibility and minimize impacts.

Policy LU 7.4. Retain and enhance the integrity of existing residential, employment, agricultural, and open space areas by protecting them from encroachment of land uses that would result in impacts from noise, noxious fumes, glare, shadowing, and traffic.

Policy 20.1. Encourage retaining agriculturally designated lands where agricultural activity can be sustained at an operational scale, where it accommodates lifestyle choice, and in locations where impacts to and from potentially incompatible uses, such as residential uses, are minimized, through incentives such as tax credits.

Policy LU 20.2. Protect agricultural uses, including those with industrial characteristics (dairies, poultry, hog farms, etc.) by discouraging inappropriate land division in the immediate proximity and allowing only uses and intensities that are compatible with agricultural uses.

Policy LU 20.4. Encourage conservation of productive agricultural lands. Preserve prime agricultural lands for high-value crop production.

Policy LU 20.5*.* Continue to participate in the California Land Conservation Act (the Williamson Act) of 1965.

Policy LU 7.5. Require buffering to the extent possible between urban uses and adjacent rural/equestrian oriented land uses.

The intent of the Agriculture section of the Multipurpose Open Space Element of the Riverside County General Plan regarding agricultural use is to protect agricultural lands and landscapes as historical, cultural, and scenic resources. The following policy included in the Multipurpose Open Space Element generally relates to the proposed Project with respect to agricultural resources (Riverside County, 2017).

Policy OS 7.3. Encourage conservation of productive agricultural lands and preservation of prime agricultural lands.

Desert Center Area Plan. The intent of the Land Use section of the Desert Center Area Plan is to enhance and/or preserve the identity, character, and features unique to the Desert Center area. The following policy included in the Desert Center Area Plan generally relates to the proposed Project with respect to agricultural resources (Riverside County, 2015).

Policy DCAP 3.1*.* Protect farmland and agricultural resources in Desert Center through adherence to the Agricultural Resources section of the General Plan Multipurpose Open Space Element and the Agriculture section of the General Plan Land Use Element, as well as the provisions of the agriculture land use designation.

Riverside County Agricultural Preserve Ordinance – Ordinance No. 509. The Riverside County Agricultural Preserve Ordinance provides for the administration of lands placed in agricultural preserves, including procedures for initiating, filing, and processing requests to establish, enlarge, disestablish, or diminish agricultural preserves, pursuant to the California Land Conservation Act.

Riverside County Ordinance No. 348.4705. Zoning ordinance 348.4705 permits a solar power plant in several districts, including agricultural districts, with a use permit. Ordinance No. 348.4705 was enacted at the same time as and implements General Plan Policy LU-15.15, which states: "Permit and encourage, in an environmentally and fiscally responsible manner, the development of renewable energy resources and related infrastructure, including but not limited to, the development of solar power plants in the County of Riverside."

Riverside County Ordinance No. 625, the "Right to Farm" Ordinance. Ordinance No. 625 factors into Riverside County's standard significance thresholds. It was enacted to conserve, protect, and encourage the development, improvement, and continued viability of agricultural land. The intent of the ordinance is to reduce the loss to the County of its agricultural resources by limiting the circumstances under which agricultural operations may be deemed to constitute a nuisance. Nothing in the ordinance is to be

construed to limit the right of any owner of real property to request that the county consider a change in the zoning classification.

N.3 Air Quality

Ambient Air Quality Standards. The California Air Resources Board (ARB) and the U.S. Environmental Protection Agency (U.S. EPA) have independent authority to develop and establish health-protective ambient air quality standards, although the different legislative and scientific contexts cause some diversity between State and Federal standards currently in effect in California. The monitored levels of the pollutants are compared to the current National and California Ambient Air Quality Standards (NAAQS and CAAQS) to determine degree of existing air quality degradation. The standards currently in effect in California are shown in Table N-1.

Table N-1. National and California Ambient Air Quality Standards

Pollutant	Averaging Time	California Standards	National Standards
Ozone	1-hour	0.09 ppm	—
	8-hour	0.070 ppm	0.070 ppm
Respirable Particulate Matter (PM10)	24-hour	50 µg/m^3	150 µg/m^3
	Annual Mean	20 µg/m^3	—
Fine Particulate Matter (PM2.5)	24-hour	—	35 µg/m^3
	Annual Mean	12 µg/m^3	12.0 µg/m^3
Carbon Monoxide (CO)	1-hour	20 ppm	35 ppm
	8-hour	9.0 ppm	9 ppm
Nitrogen Dioxide (NO_2)	1-hour	0.18 ppm	0.100 ppm
	Annual Mean	0.030 ppm	0.053 ppm
Sulfur Dioxide (SO_2)	1-hour	0.25 ppm	0.075 ppm
	24-hour	0.04 ppm	0.14 ppm
	Annual Mean	—	0.030 ppm

Notes: ppm=parts per million; µg/m3= micrograms per cubic meter; "—" =no standard.
Source: ARB (http://www.arb.ca.gov/research/aaqs/aaqs2.pdf), May, 2016.

Ambient Air Quality Attainment Status and Air Quality Plans. The U.S. EPA, ARB, and the local air district classify an area as attainment, unclassified, or nonattainment with regard to certain pollutants, and these designations dictate the air quality management planning activities needed to make future air pollutant reductions. The classification depends on whether the monitored ambient air quality data show compliance, insufficient data available, or noncompliance with the ambient air quality standards, respectively. Table N-2 summarizes attainment status for criteria pollutants in comparison with both the state and federal standards, for the Mojave Desert Air Basin portion of Riverside County.

Table N-2. Attainment Status for Mojave Desert Air Basin Portion of Riverside County

Pollutant	California Designation	Federal Designation
Ozone	Nonattainment	Attainment
PM10	Nonattainment	Attainment
PM2.5	Attainment	Attainment
NO_2	Attainment	Attainment
CO	Attainment	Attainment
SO_2	Attainment	Attainment

Source: ARB, 2018; U.S.EPA, 2018.

The 2016 Air Quality Management Plan (AQMP) is SCAQMD's strategy for attaining the ambient air quality standards in the South Coast Air Basin and Coachella Valley, which are regions that influence air quality in

the Mojave Desert (SCAQMD, 2017). By establishing strategies and control measures for air pollutants in the upwind areas, air quality improvements would be achieved in the Mojave Desert Air Basin portion of Riverside County through the implementation of the 2016 AQMP.

Toxic Air Contaminants. Toxic air contaminants (TACs) are air pollutants that may lead to serious illness or increased mortality, even when present in relatively low concentrations. Potential human health effects of TACs include birth defects, neurological damage, cancer, and death. There are hundreds of different types of TACs with varying degrees of toxicity. Individual TACs vary greatly in the health risk they present; at a given level of exposure, one TAC may pose a hazard that is many times greater than another's. TACs do not have ambient air quality standards, but are regulated by the local air districts using a risk-based approach. The solar facility would not be considered a stationary source subject to risk assessment programs. Diesel particulate matter (DPM) is classified as a TAC, and statewide programs focus on managing this pollutant through motor vehicle fuels, engine, and tailpipe standards because many toxic compounds adhere to diesel exhaust particles. The local air districts support these programs by issuing permits and requiring controls for larger stationary sources of DPM, including diesel powered engines rated over 50 horsepower.

Federal Regulatory Setting

Federal Clean Air Act (CAA). The NAAQS for criteria air pollutants were established in 1970 with a mandate for periodic updating. The CAA places responsibility on state and local air agencies to maintain these ambient air quality standards. In the Proposed Action area, the SCAQMD has the responsibility to establish regulations, enforce air pollution control requirements, and develop the necessary air quality management to achieve the NAAQS. The U.S. EPA implements most aspects of the CAA, and reviews local and state air quality management plans and regulations to ensure attainment with the NAAQS. Because there are no federal nonattainment or maintenance designations in the MDAB portion of Riverside County, federal agency actions in the MDAB portion of Riverside County are not subject to CAA general conformity review requirements.

Visibility and Federal Class I Areas. The federal CAA requires U.S. EPA to administer programs so that all areas of the country achieve the federal ambient air quality standards within various specified time frames. For attainment areas that already meet the federal ambient air quality standards, the federal Prevention of Significant Deterioration (PSD) permit program includes a three-tier classification defining the extent to which baseline air quality conditions can be degraded. Class I areas have the smallest allowable air quality deterioration limits. Class II areas allow greater deterioration of air quality but must maintain air quality conditions better than the federal air quality standards. Class III areas allow deterioration of air quality to the level of the federal ambient air quality standards.

The boundary of the Joshua Tree National Park (JTNP) Class I area is 0.9 miles (1.4 km) away, northeast of the edge of the northernmost solar facility parcels, Parcel Group A. Visibility is considered an important air quality value to be protected within JTNP. There are no other Class I areas within 62 miles (100 km) of the Proposed Action. Data from the Federal Land Manager Environmental Database (CIRA, 2016) indicate that visibility in the JTNP Class I area has been improving since 2001. For JTNP and other Class I areas in southern California, the Western Regional Air Partnership shows that the visual range has improved more than 20 percent in the most recent years (2010-2014) when compared to the baseline (2000-2004), and that this improvement is largely due to the local authorities having the ability to control anthropogenic emissions (WRAP, 2016).

State Regulatory Setting

California Clean Air Act. Implemented by the ARB, the California Clean Air Act establishes broad authority for California to regulate emissions from mobile sources and requires regions to develop and enforce strategies to attain CAAQS. In the Proposed Action area, the SCAQMD is responsible for demonstrating how these standards are met.

U.S. EPA/ARB Off-Road Mobile Sources Emission Reduction Program. The California Clean Air Act mandates that ARB achieve the maximum degree of emission reductions from all off-road mobile sources to attain the state ambient air quality standards. Off-road mobile sources include construction equipment. The earliest (Tier 1) standards for large compression-ignition engines used in off-road mobile sources became effective in California in 1996. Since then, the Tier 3 standards for large compression-ignition engines used in off-road mobile sources went into effect in California for most engine classes in 2006, and Tier 4 or Tier 4 Interim (4i) standards apply to all off-road diesel engines model year 2012 or newer. These standards and standards applicable to fleets that are already in-use address emissions of NOx and toxic particulate matter from diesel combustion.

ARB In-Use Off-Road Diesel-Fueled Fleets Regulation. The regulations for in-use off-road diesel equipment are designed to reduce NOx and toxic diesel particulate matter (DPM) from existing fleets of equipment. Depending on the size of the fleet, the owner would need to ensure that the average emissions performance of the fleet meets certain state-wide standards. In lieu of improving the emissions performance of the fleet, electric systems can be installed to replace diesel equipment in the fleet average calculations. Presently, all equipment owners are subject to a five-minute idling restriction in the rule (13 California Code of Regulations, Chapter 10, Section 2449).

ARB Portable Equipment Registration Program (PERP). This program allows owners or operators of portable engines and associated equipment commonly used for construction or farming to register their units under a statewide portable program that allows them to operate their equipment throughout California without having to obtain individual permits from local air districts.

Local Regulatory Setting

SCAQMD Rules and Regulations. The Proposed Action site is under the jurisdiction of the SCAQMD in the Mojave Desert Air Basin; the MDAB includes portions of Kern, Los Angeles, San Bernardino, and Riverside Counties. The SCAQMD has a number of rules presented in Table N-3 relevant to controlling emissions from construction-related activities.

Table N-3. SCAQMD Rules and Regulations

Applicable Rules	Description
Rules 201, 203, and 212 – Permit to Construct; Permit to Operate; and Standards for Approving Permits and Issuing Public Notice	Establishes the requirements to obtain a Permit to Construct and Permit to Operate for stationary sources of emissions. For exemption categories, see Rule 219: Equipment Not Requiring a Written Permit Pursuant to Regulation II.
Rule 401 – Visible Emissions	Limits visible emissions.
Rule 402 – Nuisance	Prohibits the discharge of air contaminants or other material which cause injury, detriment, nuisance, or annoyance to the public or which endanger the comfort, response, health or safety of the public or which cause injury or damage to business or property.

Table N-3. SCAQMD Rules and Regulations

Applicable Rules	Description
Rule 403 – Fugitive Dust	Limits fugitive emissions from certain bulk storage, earthmoving, construction and demolition, and manmade conditions that may cause wind erosion.
Rule 404 – Particulate Matter Concentration	The rule limits particulate matter emissions as a function of the exhaust flow rate from the regulated device.
Rule 463 – Organic Liquids Storage	Sets standards for storage of organic liquids with a true vapor pressure of 0.5 pounds per square inch or greater and standards for above-ground tanks used for gasoline storage with a capacity over 250 gallons.
Rule 1110.2 – Emissions from Gaseous and Liquid-Fueled Internal Combustion Engines	The purpose of this rule is to reduce NOx, VOCs, and CO from engines.
Regulation XIII – New Source Review	Establishes the pre-construction review requirements, including Best Available Control Technology and emission offset requirements for new, modified or relocated facilities to ensure that these facilities do not interfere with progress in attainment of the national ambient air quality standards.

Riverside County General Plan. Riverside County adopted the Air Quality Element of the County General Plan in 2015. The air quality element includes policies supporting regional cooperation with other jurisdictions to improve air quality; requiring compliance with federal, state, and regional air quality regulations; encouraging programs to reduce vehicle miles traveled; encouraging energy conservation in urban land uses; and encouraging development patterns that improve the County's jobs/housing balance.

The Air Quality Element of the General Plan includes one policy directly relevant to the proposed solar facility, to facilitate development and siting of renewable energy facilities and transmission lines in appropriate locations (*Policy AQ 20.19*).

N.4 Biological Resources

Federal Regulatory Setting

Federal Land Policy and Management Act (FLPMA; 43 U.S.C. Sections 1701-1787). Directs management of public lands managed by the U.S. Forest Service, National Park Service, and BLM; addresses land use planning, rights-of-way, wilderness, and multiple use policies.

Endangered Species Act (ESA; 16 USC Sections 1531-1543). Establishes legal requirements for the conservation of endangered and threatened species and the ecosystems upon which they depend. The ESA is administered by the USFWS for terrestrial species. Under the ESA, the USFWS may designate critical habitat for listed species. Section 7 of the ESA requires federal agencies to consult with the USFWS to ensure that their actions are not likely to jeopardize listed threatened or endangered species, or cause destruction or adverse modification of critical habitat. Section 10 of the ESA provides for similar consultation to authorize incidental take of listed species for non-federal applicants.

Migratory Bird Treaty Act (MBTA; 16 USC Sections 703-711). Prohibits take of any migratory bird, including eggs or active nests, except as permitted by regulation (e.g., licensed hunting of waterfowl or upland game species). Under the MBTA, "migratory bird" is broadly defined as "any species or family of birds that live, reproduce or migrate within or across international borders at some point during their annual life

cycle" and thus applies to most native bird species. The U.S. Department of Interior has recently issued a solicitor's opinion interpreting the MBTA prohibitions as being inapplicable to "incidental take."

Bald and Golden Eagle Protection Act (BGEPA; 16 USC Section 668). The Bald and Golden Eagle Protection Act (BGEPA) prohibits the take, possession, and commerce of bald eagles and golden eagles. Under the BGEPA and subsequent rules published by the USFWS, "take" may include actions that injure an eagle, or affect reproductive success (productivity) by substantially interfering with normal behavior or causing nest abandonment. The USFWS can authorize incidental take of bald and golden eagles for otherwise lawful activities.

Noxious Weed Act (7 USC Sections 2801 et seq.). Provides for the "management of undesirable plants on Federal lands."

Executive Order 13112, Invasive Species. Establishes the National Invasive Species Council and directs federal agencies to prevent the introduction of invasive species, provide for their control, and minimize the economic, ecological, and human health impacts caused by invasive species.

Executive Order 13186, Responsibilities of Federal Agencies to Protect Migratory Birds. Directs federal agencies to review the effects of actions and agency plans on migratory birds according to NEPA or other established environmental review processes, with emphasis on species of concern (Section 6 of the order) and identify unintentional take reasonably attributable to agency actions, focusing first on species of concern, priority habitats, and key risk factors and to develop and use principles, standards, and practices to lessen the amount of unintentional take (Section 9).

California Desert Conservation Area Plan, As Amended (CDCA Plan). The CDCA Plan guides the management of approximately 12 million acres of BLM-administered lands in the California Desert District, including the Mojave, Sonoran, and a small portion of the Great Basin Deserts. BLM lands within the Project area are within the CDCA Plan Area. The CDCA Plan directs management policy for multiple resources, including the following biological resources: Wildlife and Vegetation.

Northern and Eastern Colorado Desert Coordinated Management Plan (NECO). Provides more specific management direction for BLM lands in the Colorado Desert, including the BLM lands located within the Project area. Establishes several Desert Wildlife Management Areas (DWMAs), which cover much of the USFWS-designated critical habitat for the desert tortoise.

Desert Renewable Energy Conservation Plan (DRECP), Land Use Plan Amendment to the CDCA. The purpose of the DRECP is to conserve and manage plant and wildlife communities in the desert regions of California while facilitating the timely permitting of compatible renewable energy projects. The DRECP covers over 10 million acres of BLM land. The BLM Record of Decision (ROD) for the DRECP was issued in September 2016.

State Regulatory Setting

California Endangered Species Act (CESA; Fish and Game Code Section 2050 et seq.). Prohibits take of state-listed threatened or endangered species, or candidates for listing, except as authorized by the CDFW. Authorization may be issued as an Incidental Take Permit or, for species listed under both CESA and the federal ESA, through a Consistency Determination with the federal incidental take authorization.

Fully Protected Designations (Fish and Game Code Sections 3511, 4700, 5050, and 5515). The California Fish and Game Code designates 36 fish and wildlife species as "fully protected" from take, including

hunting, harvesting, and other activities. The CDFW may only authorize take of designated fully protected species through a Natural Community Conservation Plan (NCCP) or for necessary scientific research.

Birds (Fish and Game Code Sections 3503 and 3513). The California Fish and Game Code prohibits take, possession, or needless destruction of bird nests or eggs except as otherwise provided by the code. Section 3513 provides for the adoption of the MBTA's provisions (above).

Protected Furbearers (California Code of Regulations Title 14 Section 460). Specifies that several furbearing mammals, including desert kit fox, may not be taken at any time. The CDFW may permit capture or handing of these species for scientific research but does not issue Incidental Take Permits for other purposes.

Native Plant Protection Act (Fish and Game Code Sections 1900 1913). Prior to enactment of CESA and the federal ESA, California adopted the Native Plant Protection Act (NPPA). CESA (above) generally replaces the NPPA for plants originally listed as endangered under the NPPA. However, plants originally listed as rare retain that designation, and take is regulated under provisions of the NPPA. The California Fish and Game Commission adopted revisions to the NPPA allowing CDFW to issue incidental take authorization for listed rare plants, effective January 1, 2015.

Lake and Streambed Alteration (Fish and Game Code Sections 1600 1616). The CDFW regulates project activities that would divert, obstruct or change the natural flow, bed, channel, or bank of any river, stream, or lake.

Porter-Cologne Water Quality Control Act of 1969 (California Water Code Sections 13000 et seq.). Provides Regional Water Quality Control Boards (RWQCBs) regulation of Waters of the State including State coordination with the Clean Water Act where federally jurisdictional waters are present. The Project site is within the Colorado River RWQCB area.

Local Regulatory Setting

Riverside County General Plan (2015). Includes policies addressing biological resources within the Land Use (LU) and Open Space (OS) elements, as follows:

- ***Policy LU 9.1***: Provide for permanent preservation of open space lands that contain important natural resources, cultural resources, hazards, water features, watercourses including arroyos and canyons, and scenic and recreational values (AI 10).
- ***Policy LU 9.2***: Require that development protect environmental resources by compliance with the Multipurpose Open Space Element of the General Plan and Federal and State regulations such as CEQA, NEPA, the Clean Air Act, and the Clean Water Act.
- ***Policy LU 24.1***: Cooperate with the CDFW, USFWS, and any other appropriate agencies in establishing programs for the voluntary protection, and where feasible, voluntary restoration of significant environmental habitats (AI 10).
- ***Policy OS 18.1***: Preserve multi-species habitat resources in the County of Riverside through the enforcement of the provisions of applicable MSHCPs and through implementing related Riverside County policies. (The Project site is not within an MSHCP area).

N.5 Cultural Resources

Federal Regulatory Setting

There are numerous federal regulations, executive orders, and policies that direct management of cultural resources on federal lands and by federal agencies. These include the NHPA, the Archaeological Resources Protection Act (ARPA), the Native American Graves Protection and Repatriation Act (NAGPRA), the American Indian Religious Freedom Act (AIRFA), Executive Order (EO) 13007, and the Antiquities Act. For the Bureau of Land Management (BLM) in particular, the Federal Land Policy and Management Act (FLPMA) and several sections of BLM Manuals are relevant as well. The following is a discussion of the most pertinent laws affecting the Athos Renewable Energy Project.

The principal federal law addressing cultural resources is the **NHPA of 1966, as amended (54 United States Code [USC], Section 300101),** and its implementing regulations (36 Code of Federal Regulations [CFR], Part 800), that primarily address compliance with Section 106 of the act. Section 106 of the act requires that Federal agencies take into account the effect of any undertaking on historic properties, and to afford the Advisory Council on Historic Preservation (ACHP) a reasonable opportunity to comment. The implementing regulations describe the process for identifying and evaluating historic properties, for assessing the effects of federal actions on historic properties, and for consulting with interested parties, including the State Historic Preservation Office (SHPO), Indian tribes, local governments, and the public to develop measures that would avoid, reduce, or minimize adverse effects to historic properties.

The term historic properties refers to cultural resources that are listed on, or meet specific criteria of eligibility for listing on, the National Register of Historic Places. These criteria evaluate the quality and significance in American history, architecture, archaeology, engineering, and culture present in districts, sites, buildings, structures, and objects that possess integrity of location, design, setting, materials, workmanship, feeling, and association, and:

A. That are associated with events that have made a significant contribution to the broad patterns of our history; or

B. That are associated with the lives of persons significant in our past; or

C. That embody the distinctive characteristics of a type, period, or method of construction, or that represent the work of a master, or that possess high artistic values, or that represent a significant and distinguishable entity whose components may lack individual distinction; or

D. That have yielded, or may be likely to yield, information important in prehistory or history.

Archaeological Resources Protection Act of 1979 (ARPA) (16 USC 470aa et seq.) and its implementing regulations found at Title 43 CFR Part 7 protect archaeological resources from vandalism and unauthorized collecting on public and Indian lands.

Requirements for responding to discoveries of Native American human remains and associated funerary objects on federal land are addressed under the NAGPRA (Public Law 101-601) and its implementing regulations found at Title 43 CFR Part 10. For those portions of the Proposed Action or alternative on public land, the BLM will comply with the law and regulations by determining lineal descendants and culturally affiliated Indian tribes and by carrying out appropriate treatment and disposition of any discovered remains, including transfer of custody.

The American Indian Religious Freedom Act of 1978 (AIRFA) (Title 42, U.S. Code, Section 1996) establishes policy of respect and protection of Native American religious practices. It seeks to correct federal policies and practices that could (a) deny access to sacred sites required in traditional religions, (b) prohibit use and possession of sacred objects necessary for religious ceremonies, and (c) intrude upon or interfere with religious ceremonies. The BLM complies with AIRFA by obtaining and considering the views of traditional religious practitioners as part of the NEPA compliance process.

EO 13007 directs federal agencies to accommodate access to, and ceremonial use of, Indian sacred sites by Indian religious practitioners. It requires federal agencies to avoid adversely affecting the physical integrity of sacred sites to the extent practicable, permitted by law, and not clearly inconsistent with essential agency functions. EO 13007 reinforces the purposes expressed in AIRFA. The BLM complies with EO 13007 by consulting with tribal governments and Indian religious practitioners as part of the NEPA compliance process.

The **Antiquities Act of 1906 [16 United States Code (USC) 431–433]** establishes criminal penalties for unauthorized destruction or appropriation of "any historic or prehistoric ruin or monument, or any object of antiquity" on federal land and empowers the President to establish historical monuments and landmarks.

FLPMA establishes policy and goals to be followed in the administration of public lands by the BLM. The intent of FLPMA is to protect and administer public lands within the framework of a program of multiple-use and sustained yield. Particular emphasis is placed on the protection of the quality of scientific, scenic, historical, ecological, environmental, air and atmospheric, water resources and archaeological values.

State Regulatory Setting

There are numerous state regulations and policies that direct management of cultural resources on state lands and by state agencies. The following is a discussion of the most pertinent laws affecting the Project and impact analysis from a state perspective. These laws identify four types of resources: historical resources, unique archaeological resources, human remains and tribal cultural resources.

Historical Resources

Under CEQA, cultural resources listed in, or determined to be eligible for listing in, the CRHR or a local register meet the CEQA definition of "historical resources" and must be given consideration in the CEQA process. For this Draft EIR, effects on historical resources may be considered impacts of the Project. Under the California Code of Regulations, Title 14, Chapter 11.5, properties listed on or formally determined to be eligible for listing in the NRHP are automatically eligible for listing in the CRHR. A resource is generally considered to be historically significant under CEQA if it meets the criteria for listing in the CRHR. These criteria are essentially the same as the eligibility criteria for the NRHP. In addition to being at least 50 years old, a resource must meet at least one (and may meet more than one) of the following four criteria:

- *Criterion 1, is associated with events that have made a significant contribution to the broad patterns of our history;*
- *Criterion 2, is associated with the lives of persons significant in our past;*
- *Criterion 3, embodies the distinctive characteristics of a type, period, or method of construction, or represents the work of a master, or possesses high artistic values; or*
- *Criterion 4, has yielded, or may be likely to yield, information important to history or prehistory.*

In addition, historical resources must also possess integrity of location, design, setting, materials, workmanship, feeling, and association.

Unique Archaeological Resources

Additionally, CEQA states that it is the responsibility of the lead agency to determine whether the project will have a significant effect on "unique" archaeological resources. An archaeological artifact, object, or site can meet CEQA's definition of a unique archaeological resource even if it does not qualify as a historical resource (PRC 21083.2[g]; 14 CCR 15064.5[c][3]). An archaeological artifact, object, or site is considered a unique archaeological resource if "it can be clearly demonstrated that, without merely adding to the current body of knowledge, there is a high probability that it meets any of the following criteria (PRC 21083.2[g]):

- Contains information needed to answer important scientific research questions and there is a demonstrable public interest in that information.
- Has a special and particular quality such as being the oldest of its type or the best available example of its type.
- Is directly associated with a scientifically recognized important prehistoric or historic event or person."
- If it can be demonstrated that a project will cause damage to a unique archaeological resource, the lead agency may require that reasonable efforts be taken to preserve these resources in place or provide mitigation measures.

Human Remains

Public Resources Code (PRC), Section 5097.98(b) and (e) requires a landowner on whose property Native American human remains are found to limit further development activity in the vicinity until he/she confers with the Native American Heritage Commission-identified Most Likely Descendants (MLD) to consider treatment options. In the absence of MLDs or of a treatment acceptable to all parties, the landowner is required to re-inter the remains elsewhere on the property in a location not subject to further disturbance. Section 5097.99 establishes as a felony the acquisition, possession, sale, or dissection with malice or wantonness Native American remains or funerary artifacts. Finally, Section 5097.991 establishes as state policy the repatriation of Native American remains and funerary artifacts.

Health and Safety Code (HSC), Section 7050 makes it a misdemeanor to mutilate, disinter, wantonly disturb, or willfully remove human remains found outside a cemetery and further requires a project owner to halt construction if human remains are discovered and to contact the county coroner.

Tribal Cultural Resources

PRC Sections 21073, 21074, 21080.3, 21082.3, 21083.09, 21084.2, and 5097.94 (Assembly Bill AB 52 2014). The Public Resources Code section 21074 defines a TCR as "a site, feature, place, cultural landscape that is geographically defined in terms of the size and scope of the landscape, sacred place, or object with cultural value to a California Native American tribe." TCRs also include "non-unique archaeological resources" that may not be scientifically significant, but still hold sacred or cultural value to a consulting tribe.

CEQA requires that impacts to TCRs be identified and, if impacts will be significant, that mitigation measures be implemented to reduce those impacts to the extent feasible (PRC § 21081). In the protection and

management of the cultural environment, both the statute and the CEQA Guidelines (14 California Code of Regulations Section 15000 et seq.) provide definitions and standards for management of TCRs.

A resource shall be considered significant if it is: (1) listed or eligible for listing in the California Register of Historical Resources, or in a local register of historical resources as defined in PCR § 5020.1(k) (discussed in detail above); or (2) a resource determined by the lead agency, in its discretion and supported by substantial evidence, to be significant pursuant to criteria set forth in of PCR § 5024.1(c). In applying these criteria, the lead agency must consider the significance of the resource to a California Native American tribe.

A project may have substantial adverse change in the significance of a TCR if:

- The adverse change is identified through consultation with any California Native American tribe that requests consultation and is traditionally and culturally affiliated with the geographic area of a proposed project (PCR § 21084.2).
- The resource is listed, or eligible for listing, in the California Register of Historical Resources or in a local register of historical resources, and it is demolished as described in detail above (State CEQA Guidelines section 15064.5 (b)).

The fact that a TCR is not listed in, or determined to be ineligible for listing in, the CRHR, is not included in a local register of historical resources or is not identified in a historical resources survey does not preclude a lead agency from determining that the resource may be a historical resource.

Local Regulatory Setting

Riverside County General Plan

The following policies outlined in the Riverside County General Plan (2015) address cultural resources:

- ***Policy OS 19.1*** Cultural resources (both prehistoric and historic) are a valued part of the history of the County of Riverside.
- ***Policy OS 19.2*** The County of Riverside shall establish a Cultural Resources Program in consultation with Tribes and the professional cultural resources consulting community that, at a minimum would address each of the following: application of the Cultural Resources Program to projects subject to environmental review; government-to-government consultation; application processing requirements; information database(s); confidentiality of site locations; content and review of technical studies; professional consultant qualifications and requirements; site monitoring; examples of preservation and mitigation techniques and methods; curation and the descendant community consultation requirements of local, state and federal law. (AI 144)
- ***Policy OS 19.3*** Review proposed development for the possibility of cultural resources and for compliance with the cultural resources program.
- ***Policy OS 19.4*** To the extent feasible, designate as open space and allocate resources and/or tax credits to prioritize the protection of cultural resources preserved in place or left in an undisturbed state. (AI 145)
- ***Policy OS 19.5*** Exercise sensitivity and respect for human remains from both prehistoric and historic time periods and comply with all applicable laws concerning such remains.

N.6 Geology, Soils and Mineral Resources

State Regulatory Setting

California Building Code. The CBC is promulgated under the CCR, Title 24, Parts 1 through 12 (also known as the California Building Standards Code) and is administered by the California Building Standards Commission. The solar facility is subject to the applicable sections of the CBC. The Riverside County Building Department is responsible for implementing the CBC. The solar facility would comply with applicable seismic design and construction criteria of the most recent CBC.

The earthquake design requirements consider the occupancy category of the structure, site class, soil classifications, and various seismic coefficients which are used to determine a Seismic Design Category (SDC) for a project as described in Chapter 16 of the CBC. The SDC is a classification system that combines the occupancy categories with the level of expected ground motions at the site and ranges from SDC A (very small seismic vulnerability) to SDC E (very high seismic vulnerability and near a major fault). For Seismic Design Categories D, E, and F, Chapter 18 requires analysis of slope instability, liquefaction, and surface rupture attributable to faulting or lateral spreading, plus an evaluation of lateral pressures on basement and retaining walls, liquefaction and soil strength loss, and lateral movement or reduction in foundation soil-bearing capacity. It also addresses mitigation measures to be considered in structural design, which may include ground stabilization, selecting appropriate foundation type and depths, selecting appropriate structural systems to accommodate anticipated displacements, or any combination of these measures.

Local Regulatory Setting

Riverside County Code of Ordinances. Title 15 of the Riverside County Code of Ordinances regulates buildings and construction by adopting by reference the CBC, in addition to County-specific amendments which are equal to or more stringent than the provisions of the CBC. The County requires project applicants to obtain a grading permit from the building official prior to conducting grading or clearing of any kind. County Ordinance No. 457.98 requires a grading permit for any exploratory excavations consisting of 1,000 cubic yards or greater in any one location of one acre or more. This applies to all trenching, borings, and any access road clearing/construction that may be necessary.

Riverside County General Plan – Desert Center Area Plan: Seismic. Seismic hazards pose significant threats to life and property in the area. The most significant fault within the plan area runs northerly of and parallel to Interstate 10 through the Desert Center community. Threats from seismic events include ground shaking, fault rupture, and landslides. Liquefaction is a moderate threat within much of the area. The use of special building techniques, the enforcement of setbacks, and practical avoidance measures will help to mitigate these potentially dangerous circumstances.

- ***Policy DCAP 11.1*** Protect health and safety from seismic-related incidents through adherence to the Seismic Hazards section of the General Plan Safety Element.

Desert Center Area Plan: Slope. The Chuckwalla, Eagle, and Coxcomb Mountains play an integral part in establishing the character and atmosphere of Desert Center. While densities are limited in the Open Space-Rural land use designation, development that does occur must prevent or minimize the potential for erosion and landslides, preserve significant views, and minimize grading and scarring. The following policies are intended to protect life and property while maintaining the natural character of this area.

- ***Policy DCAP 12.1*** Protect life and property, and maintain the character of Desert Center, through adherence to the Hillside Development and Slope section of the General Plan Land Use Element, the Rural Mountainous and Open Space land use designations within the General Plan Land Use Element, and the Slope and Soil Instability Hazards section of the General Plan Safety Element.

N.7 Greenhouse Gas Emissions

Federal Regulatory Setting

Presidential Executive Order 13783 on Promoting Energy Independence and Economic Growth, dated March 28, 2017, revoked the preceding Executive Order 13653 (Preparing the United States for the Impacts of Climate Change), dated November 1, 2013. The 2017 Order also rescinded the President's Climate Action Plan from June 2013 and the Climate Action Plan Strategy to Reduce Methane Emissions from March 2014. Further, the Order directs the Council on Environmental Quality to rescind its final guidance entitled "Final Guidance for Federal Departments and Agencies on Consideration of Greenhouse Gas Emissions and the Effects of Climate Change in National Environmental Policy Act Reviews," which is referred to in "Notice of Availability," 81 Fed. Reg. 51866 (August 5, 2016). As soon as practicable, each agency is to suspend, revise, or rescind, or publish for notice and comment proposed rules suspending, revising, or rescinding any such actions, consistent with existing law and the policies of Order 13783.

State Regulatory Setting

California Global Warming Solutions Act of 2006 [Assembly Bill 32 (AB 32)]. The California Global Warming Solutions Act of 2006 (AB 32) required that California's GHG emissions be reduced to 1990 levels by 2020. The reduction is being accomplished through an enforceable statewide cap on global warming emissions, which began in 2012. AB 32 directs the ARB to develop regulations and a mandatory reporting system to track and monitor global warming emissions levels (AB 32, Chapter 488, Statutes of 2006). The ARB Climate Change Scoping Plan, initially approved December 2008 and most recently updated by ARB in December 2017, provides the framework for achieving California's goals (ARB, 2017b).

In passing AB 32, the California Legislature found that:

> *Global warming poses a serious threat to the economic well-being, public health, natural resources, and the environment of California. The potential adverse impacts of global warming include the exacerbation of air quality problems, a reduction in the quality and supply of water to the state from the Sierra snowpack, a rise in sea levels resulting in the displacement of thousands of coastal businesses and residences, damage to marine ecosystems and the natural environment, and an increase in the incidences of infectious diseases, asthma, and other human health-related problem."*

Other major Executive Orders, legislation, and regulations adopted for the purpose of reducing GHG emissions support the implementation of AB 32 and California's climate goals, as described below.

California Governor's Executive Orders on GHG Emissions. In September 2018, Executive Order B-55-18 established a new statewide goal to achieve carbon neutrality as soon as possible, and no later than 2045, and achieve and maintain net negative emissions thereafter. The ARB was directed to develop the framework for implementing the goal of carbon neutrality. Executive Order B-30-15 (April 2015) established a California GHG reduction target of 40 percent below 1990 levels by 2030. One purpose of this interim target is to ensure California meets its target of reducing greenhouse gas emissions to 80 percent below 1990 levels by 2050. This executive order also specifically addresses the need for climate adaptation and

directs state agencies to update the California Climate Adaptation Strategy to identify how climate change will affect California infrastructure and industry and what actions the state can take to reduce the risks posed by climate change. Senate Bill 32 (SB 32) of 2016 codified this GHG emissions target to 40 percent below the 1990 level by 2030.

California Renewables Portfolio Standard (RPS) Program. Electric utilities in California must procure a minimum quantity of the sales from eligible renewable energy resources as specified by RPS requirements. The Clean Energy and Pollution Reduction Act of 2015 [Senate Bill 350 (SB 350)] established California's state policy objectives on long-term energy planning and procurement as signed into law on October 7, 2015. The 100 Percent Clean Energy Act of 2018 [Senate Bill 100 (SB 100)] revised the RPS targets to establish the policy that eligible renewable energy resources and zero-carbon resources supply 100 percent of retail sales of electricity to California end-use customers and 100 percent of electricity procured to serve all state agencies by December 31, 2045. With SB 350 and SB 100, California's objectives include:

- *To set the Renewable Portfolio Standard (RPS) for the procurement of California's electricity from renewable sources at 33 percent by 2020, 50 percent by 2026, and 60 percent by 2030;*
- *To plan for 100 percent of total retail sales of electricity in California to come from eligible renewable energy resources and zero-carbon resources by December 31, 2045; and*
- *To double the energy efficiency savings in electricity and natural gas end uses by retail customers by 2030.*

Cap-and-Trade Program (17 CCR 95801 to 96022). The California Cap on Greenhouse Gas Emissions and Market-Based Compliance Mechanisms Regulation (Cap-and-Trade Program) was initially approved by ARB in 2011. The Cap-and-Trade Program applies to covered entities that fall within certain source categories, including petroleum refiners and suppliers of transportation fuels, and is triggered when facility emissions exceed 25,000 metric tons of CO_2 equivalent (MTCO2e) in a year. The covered entities must hold compliance instruments sufficient to cover the actual GHG emissions, as evidenced through the ARB Mandatory Reporting of Greenhouse Gas Emissions requirements, also known as the mandatory reporting rule (MRR). This means that transportation fuel suppliers bear the GHG compliance obligation in the Cap-and-Trade Program for the GHG emissions from motor vehicle and off-road equipment fuels used by construction workforces and crews.

Emission Reductions of SF_6 from Gas Insulated Switchgear (17 CCR 95350 to 95359). In 2010, ARB adopted a regulation for reducing or phasing-out SF_6 emissions from electric power system gas insulated switchgear. The regulation requires owners of such switchgear to: (1) annually report their SF_6 emissions; (2) determine the emission rate relative to the SF_6 capacity of the switchgear; (3) provide a complete inventory of all gas insulated switchgear and their SF_6 capacities; (4) produce a SF_6 gas container inventory; and (5) keep all information current for ARB enforcement staff inspection and verification.

Local Regulatory Setting

County of Riverside Climate Action Plan (CAP). The Climate Action Plan, adopted December 8, 2015, establishes goals and policies for the County of Riverside to incorporate environmental responsibility into its daily management of residential, commercial and industrial growth. The CAP includes GHG inventories of community-wide and municipal sources based on the data available for the year 2008. Emissions within the scope of the inventories include transportation, electricity and natural gas use, landscaping, water and wastewater pumping and treatment, and treatment and decomposition of solid waste. The County's 2008 community-wide inventory amounted to 7.013 MMTCO2e for the unincorporated areas, and 226,753 MTCO2e from municipal operations (Riverside County, 2015).

The CAP also provides an implementation tool to guide future decisions made by the County, including a guidance document in Appendix F of the CAP titled "Greenhouse Gas Emissions, Screening Tables." The procedures for evaluating GHG impacts includes a threshold level of 3,000 MTCO2e per year that allows Riverside County to identify projects that may require a project-specific technical analysis to quantify and mitigate emissions (Riverside County, 2015).

The County General Plan includes one policy directly relevant to the proposed solar facility, to facilitate development and siting of renewable energy facilities and transmission lines in appropriate locations (***Policy AQ 20.19***).

N.8 Hazards and Hazardous Materials

Federal Regulatory Setting

Toxic Substances Control Act. The federal Toxic Substances Control Act (1976) and the Resource Conservation and Recovery Act of 1976 (RCRA) established a program administered by the U.S. Environmental Protection Agency (EPA) for the regulation of the generation, transportation, treatment, storage, and disposal of hazardous waste. RCRA was amended in 1984 by the Hazardous and Solid Waste Act (HSWA), which affirmed and extended the "cradle to grave" system of regulating hazardous wastes. The use of certain techniques for the disposal of some hazardous wastes was specifically prohibited by HSWA.

CERCLA, including the Superfund program, was enacted by Congress on December 11, 1980. This law provided broad federal authority to respond directly to releases or threatened releases of hazardous substances that may endanger public health or the environment. CERCLA established requirements concerning closed and abandoned hazardous waste sites; provided for liability of persons responsible for releases of hazardous waste at these sites; and established a trust fund to provide for cleanup when no responsible party could be identified. CERCLA also enabled the revision of the National Contingency Plan (NCP). The NCP provided the guidelines and procedures needed to respond to releases and threatened releases of hazardous substances, pollutants, and/or contaminants. The NCP also established the National Priorities List (NPL). CERCLA was amended by the Superfund Amendments and Reauthorization Act (SARA) on October 17, 1986.

State Regulatory Setting

California Environmental Protection Agency. The California Environmental Protection Agency (Cal/EPA) was created in 1991, which unified California's environmental authority in a single cabinet-level agency and brought the Air Resources Board (ARB), State Water Resources Control Board (SWRCB), Regional Water Quality Control Boards (RWQCBs), Integrated Waste Management Board (IWMB), Department of Toxic Substance Control (DTSC), Office of Environmental Health Hazard Assessment (OEHHA), and Department of Pesticide Regulation (DPR) under one agency. These agencies were placed within the Cal/EPA "umbrella" for the protection of human health and the environment and to ensure the coordinated deployment of State resources. Their mission is to restore, protect and enhance the environment, to ensure public health, environmental quality, and economic vitality.

California Hazardous Waste Control Law. The California Hazardous Waste Control Law (HWCL) is administered by Cal/EPA to regulate hazardous wastes. While the HWCL is generally more stringent than RCRA, until the EPA approves the California program, both the State and federal laws apply in California. The HWCL lists 791 chemicals and about 300 common materials that may be hazardous; establishes criteria for identifying, packaging and labeling hazardous wastes; prescribes management controls; establishes permit

requirements for treatment, storage, disposal and transportation; and identifies some wastes that cannot be disposed of in landfills.

California Department of Toxic Substance Control. DTSC is a department of Cal/EPA and is the primary agency in California that regulates hazardous waste, cleans up existing contamination, and looks for ways to reduce the hazardous waste produced in California. DTSC regulates hazardous waste in California primarily under the authority of RCRA and the California Health and Safety Code. Other laws that affect hazardous waste are specific to handling, storage, transportation, disposal, treatment, reduction, cleanup, and emergency planning.

California Department of Industrial Relations, Division of Occupational Safety and Health Administration. The California Occupational Safety and Health Administration (Cal/OSHA) is the primary agency responsible for worker safety in the handling and use of chemicals in the workplace. Cal/OSHA standards are generally more stringent than federal regulations. The employer is required to monitor worker exposure to listed hazardous substances and notify workers of exposure (8 CCR Sections 337-340). The regulations specify requirements for employee training, availability of safety equipment, accident-prevention programs, and hazardous substance exposure warnings.

Local Regulatory Setting

Riverside County General Plan. The intent of the Safety Element of the Riverside County General Plan is to reduce death, injuries, property damage, and economic and social impact from hazards. The following policies included in the Safety Element generally relate to the proposed with respect to hazards and hazardous materials (Riverside County, 2016).

- ***Policy S 5.1.*** Develop and enforce construction and design standards that ensure that proposed development incorporates fire prevention features through the following:
  - All proposed development and construction within Fire Hazard Severity Zones shall be reviewed by the Riverside County Fire and Building and Safety departments.
  - All proposed development and construction shall meet minimum standards for fire safety as defined in the Riverside County Building or County Fire Codes, or by County zoning, or as dictated by the Building Official or the Transportation Land Management Agency based on building type, design, occupancy, and use.
  - In addition to the standards and guidelines of the California Building Code and California Fire Code fire safety provisions, continue to implement additional standards for high-risk, high occupancy, dependent, and essential facilities where appropriate under the Riverside County Fire Code (Ordinance No. 787) Protection Ordinance. These shall include assurance that structural and nonstructural architectural elements of the building will not impede emergency egress for fire safety staffing/personnel, equipment, and apparatus; nor hinder evacuation from fire, including potential blockage of stairways or fire doors.
  - Proposed development and construction in Fire Hazard Severity Zones shall provide secondary public access, in accordance with Riverside County Ordinances.
  - Proposed development and construction in Fire Hazard Severity Zones shall use single loaded roads to enhance fuel modification areas, unless otherwise determined by the Riverside County Fire Chief.
  - Proposed development and construction in Fire Hazard Severity Zones shall provide a defensible space or fuel modification zones to be located, designed, and constructed that provide adequate defensibility from wildfires.

- ***Policy S 5.4***. Limit or prohibit development or activities in areas lacking water and access roads.
- ***Policy S 5.6***. Demonstrate that the proposed development can provide fire services that meet the minimum travel times identified in Riverside County Fire Department Fire Protection and EMS Strategic Master Plan.
- ***Policy S 6.1.*** Enforce the policies and siting criteria and implement the programs identified in the County of Riverside Hazardous Waste Management plan, which includes the following: (AI 98)
  1. *Comply with federal and state laws pertaining to the management of hazardous wastes and materials.*
  2. *Ensure active public participation in hazardous waste and hazardous materials management decisions in Riverside County.*
  3. *Coordinate hazardous waste facility responsibilities on a regional basis through the Southern California Hazardous Waste Management Authority (SCHWMA).*
  4. *Encourage and promote the programs, practices, and recommendations contained in the County Hazardous Waste Management Plan, giving the highest waste management priority to the reduction of hazardous waste at its source.*
- ***Policy S 7.3***. Require commercial businesses, utilities, and industrial facilities that handle hazardous materials to: install automatic fire and hazardous materials detection, reporting and shut-off devices; and install an alternative communication system in the event power is out or telephone service is saturated following an earthquake.

Riverside County Hazardous Waste Management Plan. The Riverside County Hazardous Waste Management Plan (CHWMP) uses a framework of 24 existing and recommended programs. The CHWMP serves as the County's primary planning document for the management of hazardous substances. Although the title refers only to hazardous waste, the CHWMP is a comprehensive document containing all of the County programs for managing both hazardous materials and waste.

Riverside County Airport Land Use Compatibility Plan. The Riverside County Airport Land Use Compatibility Plan (RCALUCP) sets forth the criteria and policies that the Riverside County Airport Land Use Commission (ALUC) uses in assessing the compatibility between the principal airports in Riverside County and proposed land use development in the areas surrounding them. The RCALUCP primarily deals with review of local general plans, specific plans, zoning ordinances, and other land use documents covering broad geographic areas. Certain individual land use development proposals also may be reviewed by the ALUC as provided in the policies identified in the RCALUCP. The ALUC does not have authority over existing incompatible land uses or the operation of any airport. (RCALUCP, 2004)

The ALUC adopts Airport Land Use Compatibility Plans for the areas surrounding the airports within its jurisdiction. Local development approvals must be found consistent with the RCALUCP unless approved by a 4/5th supermajority vote. The RCALUCP identifies Airport Influence Ares (AIAs) to protect the public from the adverse effects of aircraft noise, ensure that facilities and people are not concentrated in areas susceptible to aircraft accidents, and ensure that no structures or activities adversely affect or encroach upon the use of navigable airspace. The Desert Center Airport became private in 2004. The Desert Center Area Plan Public Review Draft dated February 2015 removes the discussion regarding the Desert Center Airport Influence Area. No Compatibility Plan has been prepared for Desert Center Airport and there are no additional compatibility policies with respect to Desert Center Airport[EC1]. (RCALUCP, 2004)

N.9 Hydrology and Water Quality

Federal Regulatory Setting

Clean Water Act (CWA) (33 USC Section 1251 et seq.). Formerly the Federal Water Pollution Control Act of 1972, the CWA was enacted with the intent of restoring and maintaining the chemical, physical, and biological integrity of the waters of the United States. The CWA, enforced by the United States Environmental Protection Agency (EPA), requires states to set standards to protect, maintain, and restore water quality through the regulation of point source and certain non-point source discharges to surface water.

Section 402 of the CWA requires that direct and indirect discharges and stormwater discharges into waters of the United States be pursuant to a National Pollutant Discharge Elimination System (NPDES) permit for industrial or construction activities. NPDES permits contain industry-specific, technology-based limits and may include additional water quality-based limits, and pollutant-monitoring requirements. An NPDES permit may include discharge limits based on Federal or State water quality criteria or standards. NPDES permitting authority is delegated to, and administered by, the California State Water Resources Control Board (SWRCB) and its nine regional water quality control boards (RWQCBs) as described below under State regulations.

Section 404 of the CWA authorizes the U.S. Army Corps of Engineers to regulate the discharge of dredged or fill material to the waters of the U.S. and adjacent wetlands. Discharges to waters of the U.S. must be avoided where possible and minimized and mitigated where avoidance is not possible. Permits are issued by the Corps of Engineers. The Corps of Engineers has determined that waters on the proposed site are not jurisdictional under Section 404. Coverage under Section 404 would not be required.

Section 401 of the CWA requires that any activity that may result in a discharge into waters of the U.S. be certified by the RWQCB. This certification ensures that the proposed activity follow State and/or federal water quality standards. The Corps of Engineers has determined that waters on the proposed site are not jurisdictional under Section 404. Coverage under Section 404 would not be required. Therefore, coverage under Section 401 would not be required.

National Flood Insurance Act/Flood Disaster Protection Act. The National Flood Insurance Act of 1968 made flood insurance available for the first time. The Flood Disaster Protection Act of 1973 made the purchase of flood insurance mandatory for the protection of property located in Special Flood Hazard Areas. These laws led to mapping of regulatory floodplains and to local management of floodplain areas according to federal guidelines which include prohibiting or restricting development in flood hazard zones.

Colorado River Accounting Surface. Based on the Colorado River Compact of 1922, and the 1928 apportionment of lower Colorado River water by the U.S. Congress, groundwater in the river aquifer beneath the flood plain is Colorado River water, and water pumped from wells on the flood plain is presumed to be river water and is accounted for as Colorado River water (USGS, 2009). The accounting-surface method was developed in the 1990s by the U.S. Geological Survey, in cooperation with the Bureau of Reclamation, to identify wells outside the flood plain of the lower Colorado River that yield water that will be replaced by water from the river. This method was needed to identify which wells require an entitlement for diversion of water from the Colorado River and need to be included in accounting for consumptive use of Colorado River water as outlined in the Consolidated Decree of the United States Supreme Court in Arizona v. California. The method is based on the concept of a river aquifer and an accounting surface within the river aquifer. Wells within the CVGB that draw water from below the accounting surface require an entitlement for the use of that water (USGS, 2009). Within the Proposed action area, the accounting surface is at elevation 238 to 240 feet (USGS, 2009). Extractions of water

below that elevation are prohibited without an entitlement. Entitlements to extract and use the groundwater below the accounting surface are granted by the USBR through their designated representative in California, the Colorado River Board of California.

State Regulatory Setting

California Streambed Alteration Agreement. Sections 1600–1616 of the California Fish and Game Code require that any entity that proposes an activity that will substantially divert or obstruct the natural flow of any river, stream or lake, or substantially change or use any material from the bed, channel, or bank of, any river, stream, or lake, or deposit material into any river, stream, or lake, must notify the California Department of Fish and Wildlife (CDFW). If the CDFW determines the proposed alteration will impact a jurisdictional river, stream or lake, a Lake or Streambed Alteration Agreement (LSAA) will be prepared. The LSAA includes conditions necessary to protect those resources. The Agreement applies to any stream including ephemeral streams and desert washes.

California Porter Cologne Water Quality Control Act. The Porter Cologne Water Quality Control Act of 1967, Water Code Section 13000 et seq., requires the SWRCB to adopt water quality criteria to protect State waters. Each RWQCB has developed a Water Quality Control Plan (Basin Plan) specifying water quality objectives, beneficial uses, numerical standards of pollution concentrations, and implementation procedures for Waters of the State. Waters of the State is defined by the Porter Cologne Water Quality Control Act as "any surface water or groundwater, including saline waters, within the boundaries of the State." General objectives of the Basin Plans state that all waters (of the State) shall be maintained free of toxic substances in concentrations which are toxic to, or which produce detrimental physiological responses in, human, plant, animal, or aquatic life. The water quality control plans are intended to protect designated beneficial uses of waters, avoid altering the sediment discharge rate of surface waters, and avoid introducing toxic pollutants to the water resource. The Porter Cologne Water Quality Control Act requires anyone proposing to discharge waste that could affect the quality of the waters of the State to report the waste discharge to the appropriate RWQCB.

SWRCB Storm Water Program Construction General Permit (General Construction Storm Water Permit). The Construction General Permit, required by the federal Clean Water Act, regulates storm water runoff from construction sites of one acre or more in size. The Construction General Permit is a statewide, standing permit. Qualifying construction activities, which would include the proposed action, must obtain coverage under the permit by filing a Notice of Intent with the Regional Water Quality Control Board, and development of and compliance with a Storm Water Pollution Prevention Plan (SWPPP) describing Best Management Practices the discharger will use to protect storm water runoff. The SWPPP must contain a visual monitoring program, a chemical monitoring program for "non-visible" pollutants to be implemented if there is a failure of BMPs, and a sediment monitoring plan if the site discharges directly to a water body listed on the Section 303(d) list (described below) for sediment.

The General Permit prohibits the discharge of pollutants other than storm water and non-storm water discharges authorized by the General Permit or another NPDES permit and prohibits all discharges which contain a hazardous substance in excess of reportable quantities established in 40 C.F.R. §§ 117.3 and 302.4 (pursuant to Section 311 of the Clean Water Act), unless a separate NPDES Permit has been issued to regulate those discharges. In addition, the General Permit incorporates discharge prohibitions contained in water quality control plans, as implemented by the nine Regional Water Boards. Discharges to Areas of Special Biological Significance are prohibited unless covered by an exception that the State Water Board has approved. Authorized non-storm water discharges must be: infeasible to eliminate; comply with Best Management Practices (BMPs) as described in the SWPPP; filtered or treated using appropriate

technology; meet the established numeric action levels for pH and turbidity; and, not cause or contribute to a violation of water quality standards. Discharges to storm water that cause or threaten to cause pollution, contamination, or nuisance are prohibited. Pollutant controls must utilize best available technology economically achievable (BAT) for toxic pollutants and non-conventional pollutants and best conventional pollutant control technology (BCT) for conventional pollutants.

The CWA provides definitions for the types of controls that can be used to satisfy BAT and BCT requirements. Specific BAT and BCT pollution controls and Best Management Practices may include runoff control, soil stabilization, sediment control, proper stream crossing techniques, waste management, spill prevention and control, and a wide variety of other measures depending on the site and situation.

State Water Resources Control Board Policies. The Anti-Degradation Policy (Resolution No. 68-16). Requires the RWQCB, in regulating the discharge of waste, to: (a) maintain existing high quality Waters of the State until it is demonstrated that any change in quality will be consistent with maximum benefit to the people of the State, will not unreasonably affect present and anticipated beneficial uses, and will not result in water quality less than that described in State or Regional Water Boards policies; and (b) require that any activity which produces or may produce a waste or increased volume or concentration of waste and which discharges or proposes to discharge to existing high quality waters to meet waste discharge requirements which will result in the best practicable treatment or control of the discharge necessary to assure that: a) a pollution or nuisance will not occur and b) the highest water quality consistent with maximum benefit to the people of the State will be maintained (BLM, 2018).

Sources of Drinking Water Policy (Resolution No. 88-63). This policy designates all groundwater and surface Waters of the States as potential sources of drinking water, worthy of protection for current or future beneficial uses, except where: (a) the total dissolved solids are greater than 3,000 milligrams per liter, (b) the well yield is less than 200 gallons per day (gpd) from a single well, (c) the water is a geothermal resource, or in a water conveyance facility, or (d) the water cannot reasonably be treated for domestic use using either best management practices or best economically achievable treatment practices (BLM, 2018).

Policies and Procedures for Investigations and Clean-up and Abatement of Discharges Under CWC Section 13304 (Resolution No. 92-49). This policy establishes requirements for investigation and cleanup and abatement of discharges. Under this policy, clean-up and abatement actions are to implement applicable provisions of Title 23 CCR Chapter 15, to the extent feasible. The policy also requires the application of Section 2550.4 of Chapter 15 when approving any alternative cleanup levels less stringent than background. It requires remediation of the groundwater to the lowest concentration levels of constituents technically and economically feasible, which must at least protect the beneficial uses of groundwater, but need not be more stringent than is necessary to achieve background levels of the constituents in groundwater (BLM, 2018).

Local Regulatory Setting

Riverside County Ordinance No. 682 (As Amended Through 682.4) an Ordinance of The County of Riverside Regulating the Construction, Reconstruction, Abandonment and Destruction of Wells and Incorporating by Reference Ordinance No. 725. This ordinance provides minimum standards for construction, reconstruction, abandonment and destruction of all wells to: (a) protect underground water resources; and (b) provide safe water to persons within Riverside County.

Ordinance No. 650 (As Amended Through 650.5) an Ordinance of the County of Riverside Amending Ordinance No. 650 Chapter 8.124 of the Riverside County Code Regulating the Discharge of Sewage in

the Unincorporated Areas of the County of Riverside and Incorporating by Reference Ordinance No. 725 protects water quality and public health by establishing regulations for the installation, replacement, and performance of Onsite Wastewater Treatment Systems.

Ordinance No. 458: An Ordinance of the County of Riverside Regulating Flood Hazard Areas and Implementing the National Insurance Program was developed to comply with Title 44 CFR Part 65 regarding requirements for the identification and mapping of areas identified as FEMA Special Flood Hazard Areas. The ordinance is applicable to development within unincorporated areas of Riverside County and is integrated into the process of application for development permits under other county ordinances. The Project site does not lie within a designated FEMA 100-year or 500-year flood plain. However, as described in Section 3.10.1 large portions of the site, including areas designated by the California Department of Water Resources as flood hazard zones, would be subject to flooding and subject to Ordinance No. 458.

N.10 Land Use and Planning

Federal Regulatory Setting

Federal Land Policy and Management Act, 1976 As Amended. The U.S. Congress passed the FLPMA in 1976. Title V, "Rights-of-Way (ROW)," of the FLPMA establishes public land policy and guidelines for administration, provides for management, protection, development, and enhancement of public lands, and provides the BLM authorization to grant ROWs. Authorization of systems for generation, transmission, and distribution of electric energy is addressed in Section 501(4) of Title V. In addition, Section 503 specifically addresses "Right of Way Corridors" and requires common ROWs "to the extent practical." FLPMA, Title V, Section 501(a)(6) states, "[t]he Secretary, with respect to the public lands (including public lands, as defined in section 103(e) of this Act, which are reserved from entry pursuant to section 24 of the Federal Power Act (16 USC 818)) [P.L. 102-486, 1992] and, the Secretary of Agriculture, with respect to lands within the National Forest System (except in each case land designated as wilderness), are authorized to grant, issue, or renew rights-of-way over, upon, under, or through such lands for roads, trails, highways, railroads, canals, tunnels, tramways, airways, livestock driveways, or other means of transportation except where such facilities are constructed and maintained in connection with commercial recreation facilities on lands in the National Forest System." The primary directive guiding all of BLM's decisions under FLPMA is to put public lands to their highest and best use.

The Applicant is requesting a grant of ROW approval from the BLM (Palm Springs-South Coast Field Office) for the portion of the gen-tie line on land under the jurisdiction of the BLM.

California Desert Conservation Area Plan, 1980 As Amended. Section 601 of the FLPMA required preparation of a long-range plan for the CDCA. The CDCA Plan was adopted in 1980 to provide for the use of public lands and resources of the CDCA in a manner that enhances, wherever possible, and does not diminish, on balance, the environmental, cultural, and aesthetic values of the Desert and its productivity. The CDCA Plan is a comprehensive, long-range plan covering 25 million acres. Approximately 12 million acres (about half) of this total are public lands administered by the BLM on behalf of the CDCA.

The CDCA Plan contains goals and specific actions for the management, use, development, and protection of the resources and public lands within the CDCA, and is based on the concepts of multiple use, sustained yield, and maintenance of environmental quality.

The Project's gen-tie line would be partially located within BLM Designated Utility Corridor K, as identified in the CDCA Plan. The CDCA Plan designated utility Corridor K for "multi-modal use," allowing for new

electrical gen-tie towers and cables of 161 kV or above. Utility Corridor K is also designated as Section 368 Federal Energy Corridor 30-52 in the Record of Decision for the West-Wide Energy Corridor (WWEC) PEIS. Energy Corridor 30-52 is identified for "multi-modal use," which allows for electricity transmission and distribution facilities. Section 368 corridors are identified with a numeric designation and are often overlain on locally designated corridors, as is the case with the east-west Section 368 two-mile-wide Corridor 30-52 overlying BLM Designated Utility Corridor K.

Western Solar Plan. The Departments of the Interior and Energy identified Solar Study Areas determined to have high potential for development of solar energy facilities. After the release of these maps, the BLM filed an application for withdrawal with the Secretary of the Interior that identified 676,048 acres of land in Arizona, California, Colorado, Nevada, New Mexico, and Utah to be "withdrawn from settlement, sale, location or entry under the general land laws, including the mining laws, on behalf of the BLM to protect and preserve solar energy study areas for future solar energy development." The BLM issued the Final Programmatic EIS for Solar Energy Development in those six states in July 2012 and signed the associated Record of Decision on October 12, 2012. The Western Solar Plan analyzed was adopted through the Approved Resource Management Plan Amendments/ROD for Solar Energy Development in Six Southwestern States in October 2012. As part of the Western Solar Plan, the BLM identified priority development areas called solar energy zones (SEZs) to preserve these sites for future solar energy development. Included in this amendment was the Riverside East SEZ in Riverside County. The Gen-tie line is in this SEZ. SEZs are "developable" areas for solar power development.

Desert Renewable Energy and Conservation Plan Amendment to the CDCA. The Desert Renewable Energy Conservation Plan is a collaboration between the California Energy Commission, California Department of Fish and Game, Bureau of Land Management, and the U.S. Fish and Wildlife Service. The Record of Decision for the DRECP Land Use Plan Amendment, Phase I of the larger collaboration, was signed in 2016 and is intended to facilitate the development of utility-scale renewable energy and transmission projects in the Mojave and Colorado deserts in California to reach federal and state energy targets while conserving sensitive species and habitats as well as cultural, scenic, and social resources. The LUPA applies to nearly 11,000,000 acres of BLM-managed federal lands. The Project is located within an area designated as a Development Focus Area.

Local Regulatory Setting

Riverside County General Plan. The Riverside County General Plan (RCGP) was adopted on October 7, 2003. Through a series of resolutions, the Board of Supervisors adopted an update on December 8, 2015. The RCGP consists of a vision statement and the following elements: Land Use, Circulation, Multi-purpose Open Space, Safety, Noise, Housing, Air Quality, and Administration. The RCGP sets forth County land use policies and guidance for implementation. The RCGP is augmented by more detailed Area Plans covering the County's territory. Area Plans provide a clear and more focused opportunity to enhance community identity within the County and stimulate quality of life at the community level.

RCGP land use designations within the Project area include Open Space Rural and some Agriculture. The Open Space-Rural land use designation is applied to remote, privately owned open space areas with limited access and a lack of public services. Single-family residential uses are permitted at a density of one dwelling unit per 20 acres. The extraction of mineral resources subject to an approved surface mining permit may be permissible, provided that the proposed Project can be undertaken in a manner that is consistent with maintenance of scenic resources and views from residential neighborhoods and major roadways and that the Project does not detract from efforts to protect endangered species.

The Agriculture land use designation is established to help conserve productive agricultural lands within the County. These include row crops, nurseries, citrus groves and vineyards, dairies, ranches, poultry and hog farms, and other agriculture-related uses. Areas designated AG generally lack infrastructure that is supportive of urban development. This land use designation allows one single-family residence per 10 acres except as otherwise specified by a policy or an overlay.

Policies at the General Plan and Area Plan levels implement the vision and goals of Riverside County. The County of Riverside Vision details the physical, environmental, and economic qualities that the County aspires to achieve by the year 2020. Using that Vision as the primary foundation, the RCGP establishes policies for development and conservation within the entire unincorporated County territory. The General Plan's policy goals that are potentially relevant to land use for the Project are provided below.

Land Use Element:

- ***Policy LU 2.1.c.*** The County shall provide a broad range of land uses, including a range of residential, commercial, business, industry, open space, recreation and public facility uses.
- ***Policy LU 5.1.*** Ensure that development does not exceed the ability to adequately provide supporting infrastructure and services, such as libraries, recreational facilities, educational and day care centers, transportation systems, and fire/police/medical services
- ***Policy LU 7.1.*** Require land uses to develop in accordance with the Riverside County General Plan (RCGP) and area plans to ensure compatibility and minimize impacts.
- ***Policy LU 8.1.*** The County shall accommodate the development of a balance of land uses that maintain and enhance the County's fiscal viability, economic diversity and environmental integrity (General Plan LU-26).
- ***Policy LU 9.1.*** Provide for permanent preservation of open space lands that contain important natural resources, cultural resources, hazards, water features, watercourses including arroyos and canyons, and scenic and recreational values.
- ***Policy LU 9.2.*** Require that development protect environmental resources by compliance with the Multipurpose Open Space Element of the RCGP and federal and state regulations such as CEQA, NEPA, the Clean Air Act, and the Clean Water Act.
- ***Policy LU 10.1.*** Require that new development contribute their fair share to fund infrastructure and public facilities such as police and fire facilities.
- ***Policy LU 14.1.*** The County shall preserve and protect outstanding scenic vistas and visual features for the enjoyment of the traveling public.
- ***Policy LU 14.5.*** Require new or relocated electric or communication distribution lines, which would be visible from Designated and Eligible State and County Scenic Highways, to be placed underground.
- ***Policy LU 17.2*** Permit and encourage, in an environmentally and fiscally responsible manner, the development of renewable energy resources and related infrastructure, including but not limited to, the development of solar power plants in the County of Riverside.
- ***Policy LU 26.3*** Ensure that development does not adversely impact the open space and rural character of the surrounding area. (AI 3)
- ***Policy LU 26.4*** Encourage parcel consolidation. (AI 29)
- ***Policy LU 26.5*** Provide programs and incentives that allow Open Space-Rural areas to maintain and enhance their existing and desired character. (AI 9)

Multi-Purpose Open Space Element

- ***Policy OS 11.1*** Enforce the state Solar Shade Control Act, which promotes all feasible means of energy conservation and all feasible uses of alternative energy supply sources.
- ***Policy OS 11.2*** Support and encourage voluntary efforts to provide active and passive solar access opportunities in new developments.
- ***Policy OS 11.3*** Permit and encourage the use of passive solar devices and other state-of-the-art energy resources.
- ***Policy OS 11.4*** Encourage site-planning and building design that maximizes solar energy use/potential in future development applications.

Desert Center Area Plan. The Project is located within the Desert Center Area Plan. The Desert Center Area Plan provides customized direction specifically for this portion of the County and guides the evolving character of the agricultural and desert area. The Area Plan envisioned little new development for the planning horizon (through 2020), except for infill and/or revitalization of the Eagle Mountain Townsite and contiguous expansion of the Desert Center and Lake Tamarisk communities. It was written in 2010 before widespread development of utility-scale renewable projects and as a result is largely silent on such development.

Riverside County Land Use Ordinance. Ordinance No. 348.4705 amends Ordinance No. 348 to authorize solar power plants on lots ten acres or larger, subject to a conditional use permit in the following zone classifications: General Commercial (C-1/C-P), Commercial Tourist (C-T), Scenic Highway Commercial (C-P-S), Rural Commercial (C-R), Industrial Park (I-P), Manufacturing Servicing Commercial (M-SC), Medium Manufacturing (M-M), Heavy Manufacturing (M-H), Mineral Resources (M-R), Mineral Resource and Related Manufacturing (M-R-A), Light Agriculture (A-1), Light Agriculture with Poultry (AP), Heavy Agriculture (A-2), Agriculture-Dairy (A-D), Controlled Development (W-2), Regulated Development Areas (R-D), Natural Assets (N-A), Waterways and Watercourses (W-1), and Wind Energy Resource Zone (W-E).

N.11 Noise

Regulating environmental noise is generally the responsibility of local governments. The U.S. EPA once published guidelines on recommended maximum noise levels to protect public health and welfare (U.S. EPA, 1974), and the State of California maintains recommendations for local jurisdictions in the General Plan Guidelines published by the Governor's Office of Planning and Research (OPR, 2017). The following summarizes the local requirements.

To protect workers from excessive onsite noise levels, the Occupational Safety and Health Act of 1970 (OSHA) sets onsite occupational noise exposure levels, which are regulated in California via the California Occupational Safety and Health Administration (Cal/OSHA). The maximum time-weighted average noise exposure level of workers is 90 dBA over an eight-hour work shift (29 CFR Section 1910.95).

Riverside County General Plan Noise Element

Land Use Compatibility. The County's General Plan Noise Element (2015) provides the guidelines on Land Use Compatibility for Community Noise Exposure, which are used to evaluate potential noise impacts and to set the criteria for environmental impact findings and conditions for project approval. Land use compatibility defines the acceptability of a land use in a specified noise environment. The land use compatibility criteria adopted by Riverside County as part of the Noise Element of the General Plan appear in Table N-4.

Table N-4. Riverside County Land Use Compatibility Standards

Land Use	CNEL or Ldn Noise Level			
	Normally Acceptable	Conditionally Acceptable	Normally Unacceptable	Clearly Unacceptable
Residential – Low-density (single-family, duplex, mobile homes)	Up to 60 dBA	55–70 dBA	70–75 dBA	Over 75 dBA
Residential – Multiple-family	Up to 65 dBA	60–70 dBA	70–75 dBA	Over 75 dBA
Transient lodging, motels, hotels	Up to 65 dBA	60–70 dBA	70–80 dBA	Over 80 dBA
Schools, libraries, churches, hospitals, nursing homes	Up to 70 dBA	60–70 dBA	70–80 dBA	Over 80 dBA
Auditoriums, concert halls, amphitheaters	Category not used	Up to 70 dBA	Over 65 dBA	Category not used
Sports arenas, outdoor spectator sports	Category not used	Up to 75 dBA	Over 70 dBA	Category not used
Playgrounds, neighborhood parks	Up to 70 dBA	Category not used	67.5–75 dBA	Over 72.5 dBA
Golf courses, riding stables, water recreation, cemeteries	Up to 75 dBA	Category not used	70–80 dBA	Over 80 dBA
Office buildings, business commercial, professional	Up to 70 dBA	67.5–77.5 dBA	Category not used	Over 75 dBA
Industrial, manufacturing, utilities, agriculture	Up to 75 dBA	70 – 80 dBA	Category not used	Over 75 dBA

Source: Noise Element Table N-1 (Riverside County, 2015).

Policies for Noise Compatibility. The following General Plan Noise Element (2015) policies protect noise-sensitive land uses from noise emitted by outside sources, and prevent new projects from generating adverse noise levels on adjacent properties.

- ***Policy N 1.1*** Protect noise-sensitive land uses from high levels of noise by restricting noise-producing land uses from these areas. If the noise-producing land use cannot be relocated, then noise buffers such as setbacks, landscaping, or block walls shall be used.
- ***Policy N 1.2*** Guide noise-tolerant land uses into areas irrevocably committed to land uses that are noise-producing, such as transportation corridors or within the projected noise contours of any adjacent airports.
- ***Policy N 1.4****.* Determine if existing land uses will present noise compatibility issues with proposed projects by undertaking site surveys.
- ***Policy N 1.5.*** Prevent and mitigate the adverse impacts of excessive noise exposure on the residents, employees, visitors, and noise-sensitive uses of Riverside County.
- ***Policy N 1.6.*** Minimize noise spillover or encroachment from commercial and industrial land uses into adjoining residential neighborhoods or noise-sensitive uses.
- ***Policy N 1.8*** Limit the maximum permitted noise levels that cross property lines and impact adjacent land uses, except when dealing with noise emissions from wind turbines.

- ***Policy N 3.2****.* Require acoustical studies and subsequent approval by the Planning Department and the Office of Industrial Hygiene, to help determine effective noise mitigation strategies in noise-producing areas.
- ***Policy N 3.3****.* Ensure compatibility between industrial development and adjacent land uses. To achieve compatibility, industrial development projects may be required to include noise mitigation measures to avoid or minimize project impacts on adjacent uses.
- ***Policy N 3.5****.* Require that a noise analysis be conducted by an acoustical specialist for all proposed projects that are noise producers. Include recommendations for design mitigation if the project is to be located either within proximity of a noise-sensitive land use, or land designated for noise sensitive land uses.
- ***Policy N 3.6.*** Discourage projects that are incapable of successfully mitigating excessive noise.
- ***Policy N 3.7****.* Encourage noise-tolerant land uses such as commercial or industrial, to locate in areas already committed to land uses that are noise-producing.

Temporary Construction. The Noise Element of the General Plan includes numerous policies intended to minimize noise-related conflicts between adjacent types of land uses. Policies addressing "temporary construction" activities include:

- ***Policy N 13.1.*** Minimize the impacts of construction noise on adjacent uses within acceptable practices.
- ***Policy N 13.2.*** Ensure that construction activities are regulated to establish hours of operation in order to prevent and/or mitigate the generation of excessive or adverse noise impacts on surrounding areas.
- ***Policy N 13.4.*** Require that all construction equipment utilize noise reduction features (e.g., mufflers and engine shrouds) that are no less effective than those originally installed by the manufacturer.

Stationary Sources of Noise. The Noise Element of the General Plan also identifies preferred noise standards for stationary noise sources that affect residential land uses, as shown in Table N-5.

Table N-5. Stationary Source Land Use Noise Standards

Land Use	Time of Day	Interior Noise Standard	Exterior Noise Standard
Residential	10:00 p.m. to 7:00 a.m.	40 Leq, 10-minute	45 Leq, 10-minute
Residential	7:00 a.m. to 10:00 p.m.	45 Leq, 10-minute	65 Leq, 10-minute

Source: Noise Element Table N-2 (Riverside County, 2015).
Note: The Noise Element of the General Plan indicates that these levels are preferred standards; final decision will be made by the Riverside County Planning Department and Office of Public Health.

Vibration. Ground-borne vibrations can be a source of annoyance to people or a source of structural damage to some types of buildings. Although vibration measurements can be presented in many different forms, PPV is the unit of measure used most often to assess building damage potential. Table N-6 describes human reaction to typical vibration levels.

The General Plan Noise Element (2015) includes consideration of ground-borne vibrations. Residential areas, schools, and sensitive research operations are among the land uses that are vibration sensitive.

Table N-6. Human Reaction to Typical Vibration Levels

Vibration Level PPV (inches/second)	Human Reaction
0.0059–0.0188	Threshold of perception, possibility of intrusion
0.0787	Vibrations readily perceptible
0.0984	Continuous vibration begins to annoy people
0.1968	Vibrations annoying to people in buildings
0.3937–0.5905	Vibrations considered unpleasant when continuously subjected and unacceptable by some walking on bridges

Source: Caltrans data in Noise Element Table N-3 (Riverside County, 2015).

Riverside County Noise Ordinance

The County Noise Ordinance allows for different levels of acceptable noise depending upon land use. The Noise Ordinance or Ordinance No. 847 (Regulating Noise) is incorporated in the County Code as Chapter 9.52 (Noise Regulation). The standards in Chapter 9.52.040 (and also Section 4 of Ordinance No. 847) limit noise sources on any property from causing excessive exterior noise on any other nearby occupied property. The maximum decibel level standards depend on the receiving land use, such that sound levels in a low-density "Rural Community" shall not exceed 55 dBA Lmax during the daytime hours (7:00 a.m. to 10:00 p.m.) or 45 dBA during the nighttime hours (10:00 p.m. to 7:00 a.m.). These County standards protect the noise-sensitive receptors within the very low-density rural area surrounding the solar facility site.

Exceptions to the noise standards can be requested for construction-related reasons. Section 2 of Ordinance No. 847 specifies that the following construction activities are exempt from the provisions of the noise ordinance:

- Private construction projects located a quarter mile or more from the nearest inhabited dwelling; and
- Private construction projects located within a quarter mile of an inhabited dwelling provided that construction activities are limited to 6:00 a.m. to 6:00 p.m. during the months of June through September and are limited to 7:00 a.m. to 6:00 p.m. during the months of October through May.

N.12 Paleontological Resources

Federal Regulatory Setting

Paleontological Resources Preservation Act of 2009. The PRPA was signed into law as part of the Omnibus Public Lands Management Act (OPLMA) of 2009. The OPLMA-PRP requires the Secretary of the Interior to manage and protect paleontological resources on federal land using scientific principles and expertise and requires the BLM to develop appropriate plans for inventorying and monitoring, and the scientific and educational use of, paleontological resources, in accordance with applicable agency laws, regulations, and policies. Where possible, these plans should emphasize interagency coordination and collaborative efforts with non-federal partners, the scientific community, and the general public. The OPLMA-PRP is

the new authority for the Department of the Interior (DOI) and USDA Forest Service for permits to collect paleontological resources, as well as curation of these resources in an approved repository.

Antiquities Act of 1906. The Antiquities Act was the first law enacted to specifically establish that archaeological sites on public lands are important public resources, and it obligated federal agencies that manage public lands to preserve the scientific, commemorative, and cultural values of such sites. This act does not refer to paleontological resources specifically; however, the act does provide for the protection of "objects of antiquity" (understood to include paleontological resources) by various federal agencies not covered by the OPLMA-PRP.

Federal Land Policy and Management Act of 1976 as Amended. The Federal Land Policy and Management Act of 1976 requires the Secretary of the Interior to retain and maintain public lands in a manner that protects the quality of scientific, scenic, historical, ecological, environmental, air and atmospheric water resource, archeological and other values [Section 1701(a)(8)]. FLPMA also requires the BLM to develop regulations and plans for the protection of public land areas of critical environmental concern, "which include important historic, cultural or scenic values," and to protect life and safety from natural hazards.

Bureau of Land Management Plans and Guidelines

California Desert Conservation Area Plan. With respect to paleontological resources (discussed in the Cultural Resource Element), the CDCA Plan aims to: (1) ensure that paleontological resources are given full consideration in land use planning and management decisions, (2) preserve and protect a representative sample of the full array of the CDCA's paleontological resources, and (3) ensure proper data recovery of significant paleontological resources where adverse impacts cannot be avoided or otherwise mitigated.

BLM National Instruction Memorandums (IM) 2008-009 and 2009-011. Instructional Memorandum (IM) 2008-009 formalizes the use of a new classification system for identifying fossil potential on public lands. The Potential Fossil Yield Classification (PFYC) system is based on the potential for the occurrence of significant paleontological resources in a geologic unit, and the associated risk for impacts to the resource based on federal management actions. Occurrences of paleontological resources are closely tied to the geologic units (i.e., formations, members, or beds) that contain them.

Using the PFYC system, geologic units are classified (Class 1 – Very Low through Class 5 – Very High) based on the relative abundance of vertebrate fossils or scientifically significant invertebrate or plant fossils and their sensitivity to adverse impacts, with a higher class number indicating a higher potential for adverse impacts. Although significant localities may occasionally occur in a geologic unit, a few widely scattered important fossils or localities do not necessarily indicate a higher class; instead, the relative abundance of significant localities is intended to be the major determinant for the class assignment. The PFYC system is used to set management policies and is not intended to be applied to specific paleontological localities or small areas within units.

As defined in IM 2009-011, Assessment and Mitigation of Potential Impacts to Paleontological Resources, Appendix A, a significant paleontological resource is any resource that is considered to be of scientific interest, including most vertebrate fossil remains and traces, and certain rare or unusual invertebrate and plant fossils. A significant resource is considered to be scientifically important because it is a rare or previously unknown species, it is of high quality and well-preserved, it preserves a previously unknown anatomical or other characteristic, provides new information about the history of life on earth, or has identified educational or recreational value. Paleontological resources that may be considered to not

have paleontological significance include those that lack provenience or context, lack physical integrity because of decay or natural erosion, or that are overly redundant or are otherwise not useful for research.

BLM Manuals and Handbooks. BLM Manual 8270 and BLM Handbook H-8270-1 contain the agency's guidance for managing paleontological resources on public land. The manual has more information on the authorities and regulations related to paleontological resources. The handbook gives procedures for permit issuance, requirements for qualified applicants, information on paleontology and planning, and a classification system for potential fossil-bearing geologic formations on public lands. This classification system was superseded by IM-2008-009.

State Regulatory Setting

California Public Resources Code. Section 5097.5 specifies that any unauthorized removal of paleontological remains is a misdemeanor.

California Penal Code. Section 622.5 sets the penalties for damage or removal of paleontological resources.

Local Regulatory Setting

Riverside County General Plan. The following policies outlined in the General Plan 2015 provide direction for paleontological resources:

- ***Policy OS 19.6*** – Whenever existing information indicates that a site proposed for development has high paleontological sensitivity as shown on Figure OS-8, a paleontological resource impact mitigation program (PRIMP) shall be filed with the County Geologist prior to site grading. The PRIMP shall specify the steps to be taken to mitigate impacts to paleontological resources.
- ***Policy OS 19.7*** – Whenever existing information indicates that a site proposed for development has low paleontological sensitivity as shown on Figure OS-8, no direct mitigation is required unless a fossil is encountered during site development. Should a fossil be encountered, the County Geologist shall be notified and a paleontologist shall be retained by the project proponent. The paleontologist shall document the extent and potential significance of the paleontological resources on the site and establish appropriate mitigation measures for further site development.
- ***Policy OS 19.8*** – Whenever existing information indicates that a site proposed for development has undetermined paleontological sensitivity as shown on Figure OS-8, a report shall be filed with the County Geologist documenting the extent and potential significance of the paleontological resources on site and identifying mitigation measures for the fossil and for impacts to significant paleontological resources prior to approval of that department.
- ***Policy OS 19.9*** – Whenever paleontological resources are found, the County Geologist shall direct them to a facility within Riverside County for their curation, including the Western Science Center in the City of Hemet.

N.13 Population and Housing

There are no federal, state or local regulations, plans, and standards for population and housing that apply to the proposed Project.

N.14 Public Services and Utilities

There are no federal or local regulations, plans, and standards for public services and utilities that apply to the proposed Project.

State Regulatory Setting

2010 Strategic Fire Plan for California. The 2010 Strategic Fire Plan for California was developed in coordination with the State Board of Forestry and Fire Protection and CAL FIRE to reduce and prevent the impacts of fire in California. Goal 6 of the Plan sets objectives to determine the level of suppression resources (staffing and equipment) needed to protect private and public state resources. Specific objectives include, but are not limited to, maintaining an initial attack policy which prioritizes life, property, and natural resources; determining suppression resources allocation criteria; analyzing appropriate staffing levels and equipment needs in relation to the current and future conditions; increasing the number of CAL FIRE crews for fighting wildfires and other emergency response activities; maintaining cooperative agreements with local, state, and federal partners; and implementing new technologies to improve firefighter safety, where available (State Board of Forestry and Fire Protection). The standards outlined are applicable to the fire protection agency serving unincorporated Riverside County.

California Integrated Waste Management Act of 1989. Assembly Bill 939 codified the California Integrated Waste Management Act of 1989 in the Public Resources Code and established a hierarchy to help the California Integrated Waste Management Board (CIWMB) and local agencies implement three major priorities under the Integrated Waste Management Act: source reductions; recycling and composting; and environmentally safe transformation and land disposal. Waste diversion mandates are included under these priorities. The duties and responsibilities of the CIWMB have since been transferred to the California Department of Resources Recycling and Recovery (CalRecycle) after the abolishment of the CIWMB in 2010, but all other aspects of the Act remain unchanged.

The Act requires all local and county governments to adopt a waste reduction measure designed to manage and reduce the amount of solid waste sent to landfills. This Act established reduction goals of 25 percent by the year 1995 and 50 percent by the year 2000. Senate Bill 1016 (2007) streamlines the process of goal measurement related to Assembly Bill 939 by using a disposal-based indicator: the per capita disposal rate. The per capita disposal rate uses only two factors: the jurisdiction's population (employment can be considered in place of population in certain circumstances) and the jurisdiction's disposal as reported by disposal facilities. CalRecycle encourages reduction measures through the continued implementation of reduction measures, legislation, infrastructure, and support of local requirements for new developments to include areas for waste disposal and recycling on-site.

California Code of Regulations (Title 27). Title 27 (Environmental Protection) of the California Code of Regulations defines regulations and minimum standards for the treatment, storage, processing, and disposal of solid waste at disposal sites. The State Water Resources Control Board maintains and regulates compliance with Title 27 (Environmental Protection) of the California Code of Regulations by establishing waste and site classifications and waste management requirements for solid waste treatment, storage, or disposal in landfills, surface impoundments, waste piles, and land treatment units. The compliance of the proposed Project would be enforced by the Colorado River RWQCB Region 7 and the California Department of Resources Recycling and Recovery (CalRecycle) (formerly the California Integrated Waste Management Board). Compost facilities are regulated under CCR Title 14, Division 7, Chapter 3.1 Section 17850 through 17895, by CalRecycle. Permit requests, Reports of Waste Discharge, and Reports and Disposal Site Information are submitted to the RWQCB and CalRecycle, and are used by the two agencies to review, permit, and monitor these facilities.

N.15 Recreation

Federal Regulatory Setting

Federal Land Policy and Management Act. FLPMA recognizes the value of public lands and requires a multiple use/sustained yield framework for management of public lands and their resource values "so that they are utilized in the combination that will best meet the present and future needs of the American people . . . ." (43 U.S.C. § 1702(c).). Title VI of FLPMA, *Designated Management Areas, California Desert Conservation Area*, acknowledges the recreational resources contained within the California desert environment and directs the BLM to develop a multiple use and sustained yield management plan to conserve the desert's resources, particularly recreational use. The solar facility site is governed by these pieces of legislation, and its various alternatives would impact the recreational opportunities available in the vicinity.

CDCA Plan. The CDCA Plan establishes goals for management of recreation in the California Desert (BLM, 1999). As with the FLPMA, recreational opportunities in the study area are framed by the CDCA Plan. The goals are to provide for the use of the public lands and resources of the CDCA, including recreational uses, in a manner that enhances wherever possible — and that does not diminish — the environmental, cultural, and aesthetic values of the desert. The goals of the Recreation Element of the plan are to:

- *Provide for a wide range of quality recreation opportunities and experiences emphasizing dispersed undeveloped use;*
- *Provide a minimum of recreation facilities. Those facilities should emphasize resource protection and visitor safety;*
- *Manage recreation use to minimize user conflicts, provide a safe recreation environment, and protect desert resources;*
- *Emphasize the use of public information and education techniques to increase public awareness, enjoyment, and sensitivity to desert resources;*
- *Adjust management approach to accommodate changing visitor use patterns and preferences;*
- *Encourage the use and enjoyment of desert recreation opportunities by special populations, and provide facilities to meet the needs of those groups; and*
- *Provide for off-road vehicle recreation use where appropriate in conformance with FLPMA, Section 601, and Executive Orders 11644 and 11989.*

ACECs are also identified as special management areas in the CDCA Plan. These include areas where special management attention is required to protect important historic, cultural, scenic, biological, or other natural resources.

The CDCA Plan also contains a motorized-vehicle access element, which provides a system and a set of rules that governs access to the CDCA by motor vehicles. The rules include providing for constrained motor-vehicle access, while protecting desert resources (BLM, 1999). When the CDCA Plan was first adopted, the BLM designated a network of motorized vehicle routes on public lands within the northern and eastern Mojave Desert. The BLM designated routes for north-central and southern portions of the CDCA. The BLM manages OHV use, so the conditions of special status species and other natural and cultural resources are maintained.

Northern and Eastern Colorado Desert Coordinated Management Plan. The NECO Plan, an amendment to the CDCA Plan, provides for management of recreation within the California Desert area of El Centro, Blythe, Needles, and cities in the Coachella Valley (BLM, 2002). The NECO Plan specifies the types of recreational activities allowed in Multiple-Use Classes on BLM-administered land. Under this plan, all routes outside closed and OHV open areas are designated as open, closed, or limited. The NECO plan includes an off-highway vehicles (OHV) route inventory and designated routes of travel (approximately 95 percent of existing routes remained available for vehicle access under the plan). Open routes through the Athos solar facility area include DC 948, 949, 950, 952, and CM511. However, "open" does not mean unrestricted. Special Recreation Permits (SRPs) are authorizations that allow for recreation uses of the public lands and related waters. They are issued as a means to control visitor use, protect recreational and natural resources, and provide for the health and safety of visitors.

Desert Renewable Energy Conservation Plan. The BLM published the Land Use Plan Amendment (LUPA) and Final EIS for the DRECP in November 2015. The DRECP amended the CDCA Plan with the signing of the Record of Decision in September of 2016. It designates SRMAs and Extensive Recreation Management Areas within the California Desert, including the study area (BLM, 2015). The DRECP includes additional conservation management actions for recreation that dictate the types of activities allowed near certain recreational features.

Off-Road Vehicles (43 CFR § 8340, et seq.) This regulation establishes criteria for designating public lands as open, limited, or closed to the use of OHVs and for establishing controls governing the use and operation of OHVs in such areas, while protecting resources, promoting safety, and minimizing user conflicts. Recreational use under Title VI "includes the use, where appropriate, of off-road recreational vehicles".

N.16 Traffic and Transportation

Federal Regulatory Setting

CFR, Title 49, Subtitle B. This regulation includes procedures and regulations pertaining to interstate and intrastate transport (including hazardous materials program procedures) and provides safety measures for motor carriers and motor vehicles that operate on public highways.

CFR Part 77 – Safe, Efficient Use, and Preservation of the Navigable Airspace. Construction of a project could potentially impact aviation activities if a structure or equipment were positioned such that it would be a hazard to navigable airspace. The Federal Aviation Administration (FAA) has established reporting requirements for construction or alterations around airport and heliport facilities that meet certain criteria regarding final height above ground level and penetration of an imaginary conical surface extending out from the air facility.

With regard to aviation safety, Subpart B, Section 77.9 of the regulations indicates that for areas around airports having runways longer than 3,200 feet, if any construction that is more than 200 feet above ground level or results in an object penetrating an imaginary surface extending outward and upward at a ratio of 100 to 1 from a public or military airport runway out to a horizontal distance of 20,000 feet (approximately 3.78 miles), then an applicant is required to submit FAA Form 7460-1, Notice of Proposed Construction or Alteration, to the Manager, Air Traffic Division, FAA Regional Office having jurisdiction over the area for review and approval of the Project (FAA, 2018). For areas around heliports, this same requirement applies to any construction that is more than 200 feet above ground level or would penetrate an imaginary surface extending outward and upward at a ratio 25 to 1 from a public or military heliport out to a horizontal distance of 5,000 feet.

FAA – Technical Guidance for Evaluating Selected Solar Technologies on Airports. With respect to solar glare on aviation safety, currently, no defined thresholds for project size, type, or distance from the airport are available that automatically trigger FAA airspace review (FAA, 2010). However, proximity to the airport and solar technology are two indicators of likely FAA interest in a solar project (FAA, 2010). According to this FAA technical guidance document, it is the responsibility of local governments, solar developers, and other stakeholders in the vicinity of an airport to check with the airport sponsor and the FAA to ensure there are no potential safety or navigational problems with a proposed solar facility, especially if it is a large facility (FAA, 2010). Sponsors should notify the FAA when such activities are proposed, and the FAA needs to participate in public meetings or permitting processes (FAA, 2010).

State Regulatory Setting

California Vehicle Code (CVC). The CVC includes regulations pertaining to licensing, size, weight, and load of vehicles operated on highways; safe operation of vehicles; and the transportation of hazardous materials.

California Government Code. Sections 65352, 65404, 65940, and 65944, amended by Senate Bill 1462, requires local planning agencies to notify the military whenever a proposed development project or general plan amendment is located within 1,000 feet of a military installation, located within special use airspace, or is located beneath a low-level flight path.

Caltrans. Within the Guide for the Preparation of Traffic Impact Studies (TIS), the following criterion are a starting point in determining when a TIS for a project is needed (Caltrans, 2002):

1. *Generates over 100 peak hour trips assigned to a State highway facility.*
2. *Generates 50 to 100 peak hour trips assigned to a State highway facility – and, affected State highway facilities are experiencing noticeable delay; approaching unstable traffic flow conditions (LOS "C" or "D").*
3. *Generates 1 to 49 peak hour trips assigned to a State highway facility – and, affected State highway facilities are experiencing significant delay; unstable or forced traffic flow conditions (LOS "E" or "F").*

As discussed later in Sections 3.17.5 through 3.17.8, during construction, the proposed Project would generate over 100 peak hour trips to I-10 and SR-177. As stated in Caltrans' *Guide for the Preparation of Traffic Impact Studies*, a TIS may be as simple as providing a traffic count to as complex as a microscopic simulation (Caltrans, 2002). The appropriate level of study is determined by the particulars of a project, the prevailing highway conditions, and the forecasted traffic. Appendix I provides a TIS prepared for the proposed Project. The analysis provided in Sections 3.17.5 through 3.17.8compares the worst-case daily construction and operational trips against the existing volumes and capacities of study area roadways. This level of analysis is considered consistent with the *Guide for the Preparation of Traffic Impact Studies.*

Local Regulatory Setting

County of Riverside Congestion Management Plan. Riverside County's Congestion Management Plan (CMP) specifies that all CMP roadways operate at a Level of Service (LOS) of "E" or better. All state highways and principal arterials are CMP roadways. I-10 and SR-177 are the only CMP roadways in the Project study area. The CMP was first established in 1990 under Proposition 111.

Proposition 111 established a process for each metropolitan county in California to designate a Congestion Management Agency (CMA) that would be responsible for development and implementation of the CMP within county boundaries. The Riverside County Transportation Commission (RCTC) was designated as the

CMA in 1990 and, therefore, prepares the CMP updates in consultation with the Technical Advisory Committee (TAC), which consists of local agencies, the County of Riverside, transit agencies, and subregional agencies.

The RCTC's adopted minimum LOS threshold is LOS "E." Therefore, when a CMP street or highway segment falls to "F," a deficiency plan must be required. Preparation of a deficiency plan will be the responsibility of the local agency where the deficiency is located. Other agencies identified as contributors to the deficiency will also be required to coordinate with the development of the plan. The plan must contain mitigation measures, including consideration of Transportation Demand Management (TDM) strategies and transit alternatives, and a schedule for mitigating the deficiency.

Regional Comprehensive Plan and Regional Transportation Plan. Southern California Association of Governments' (SCAG) Intergovernmental Review section, part of the Environmental Planning Division of Planning and Policy, is responsible for performing consistency review of regionally significant local plans, projects, and programs. Regionally significant projects are required to be consistent with SCAG's adopted regional plans and policies, such as the Regional Comprehensive Plan and the Regional Transportation Plan. The criteria for projects of regional significance are outlined in CEQA Guidelines Sections 15125 and 15206. According to the SCAG Intergovernmental Review Procedures Handbook, "new or expanded electrical generating facilities and transmission lines" qualify as regionally significant projects.

Riverside County General Plan – Circulation Element. The Riverside County General Plan (adopted December 2015) is applicable to all unincorporated lands within Riverside County. Countywide policies that address traffic and transportation within the County boundaries are located in the Circulation Element and Land Use Element of the County General Plan, and include (Riverside County, 2015):

- ***Policy C1.8****:* Ensure that all development applications comply with the California Complete Streets Act of 2008 as set forth in California Government Code Sections 65040.2 and 65302.
- ***Policy C2.1:*** The following minimum target levels of service have been designated for the review of development proposals in the unincorporated areas of Riverside County with respect to transportation impacts on roadways designated in the Riverside County Circulation Plan (Figure C-1), which are currently County maintained, or are intended to be accepted into the County maintained roadway system:
  - LOS C shall apply to all development proposals in any area of the Riverside County not located within the boundaries of an Area Plan, as well those areas located within the following Area Plans: REMAP, Eastern Coachella Valley, Desert Center, Palo Verde Valley, and those non- Community Development areas of the Elsinore, Lake Mathews/Woodcrest, Mead Valley and Temescal Canyon Area Plans.
  - LOS D shall apply to all development proposals located within any of the following Area Plans: Eastvale, Jurupa, Highgrove, Reche Canyon/Badlands, Lakeview/Nuevo, Sun City/Menifee Valley, Harvest Valley/Winchester, Southwest Area, The Pass, San Jacinto Valley, Western Coachella Valley and those Community Development Areas of the Elsinore, Lake Mathews/Woodcrest, Mead Valley and Temescal Canyon Area Plans.
  - LOS E may be allowed by the Board of Supervisors within designated areas where transit oriented development and walkable communities are proposed.

  Notwithstanding the forgoing minimum LOS targets, the Board of Supervisors may, on occasion by virtue of their discretionary powers, approve a project that fails to meet these LOS targets in order to balance congestion management considerations in relation to benefits, environmental impacts and costs, provided an Environmental Impact Report, or equivalent, has been completed to fully evaluate

the impacts of such approval. Any such approval must incorporate all feasible mitigation measures, make specific findings to support the decision, and adopt a statement of overriding considerations.

- ***Policy C2.2****:* Require that new development prepare a traffic impact analysis as warranted by the Riverside County Traffic Impact Analysis Preparation Guidelines or as approved by the Director of Transportation. Apply level of service targets to new development per the Riverside County Traffic Impact Analysis Preparation Guidelines to evaluate traffic impacts and identify appropriate mitigation measures for new development.
- ***Policy C2.3****:* Traffic studies prepared for development entitlements (tracts, plot plans, public use permits, conditional use permits, etc.) Shall identify project related traffic impacts and determine the "significance" of such impacts in compliance with CEQA and the Riverside County Congestion Management Program Requirements.
- ***Policy C2.4****:* The direct project related traffic impacts of new development proposals shall be mitigated via conditions of approval requiring the construction of any improvements identified as necessary to meet level of service targets.
- ***Policy C2.8****:* Riverside County shall coordinate with Caltrans, RCTC and adjacent local jurisdictions in conformance with the Riverside County Congestion Management Program to determine the appropriate LOS threshold for determining significance when reviewing development proposals that directly impact nearby State Highway facilities or city streets.
- ***Policy C3.6****:* Require private developers to be primarily responsible for the improvement of streets and highways that serve as access to developing commercial, industrial, and residential areas. These may include road construction or widening, installation of turning lanes and traffic signals, and the improvement of any drainage facility or other auxiliary facility necessary for the safe and efficient movement of traffic or the protection of road facilities.
- ***Policy C3.8****:* Restrict heavy duty truck through-traffic in residential and community center areas and plan land uses so that trucks do not need to traverse these areas.
- ***Policy C3.9****:* Design off-street loading facilities for all new commercial and industrial developments so that they do not face surrounding roadways or residential neighborhoods. Truck backing and maneuvering to access loading areas shall not be permitted on the public road system, except when specifically permitted by the Transportation Department.
- ***Policy C3.10****:* Require private and public land developments to provide all on-site auxiliary facility improvements necessary to mitigate any development-generated circulation impacts. A review of each proposed land development project shall be undertaken to identify project impacts to the circulation system and its auxiliary facilities. The Transportation Department may require developers and/or subdividers to provide traffic impact studies prepared by qualified professionals to identify the impacts of a development.
- ***Policy C6.1****:* Provide dedicated and recorded public access to all parcels of land, except as provided for under the statutes of the State of California.
- ***Policy C6.2****:* Require all-weather access to all new development.
- ***Policy C7.1****:* Work with incorporated cities to mitigate the cumulative impacts of incorporated and unincorporated development on the countywide transportation system.
- ***Policy C7.9****:* Review development applications in cooperation with RCTC and as appropriate, to identify the precise location of CETAP corridors and act to preserve such areas from any permanent

encroachments, pending dedication or acquisition. Coordinate with RCTC to evaluate and update the CETAP corridors periodically as conditions warrant.

Riverside County Municipal Code Title 10, Chapter 10.08, Sections 10.08.010 – 10.08.180. These regulations establish requirements and permits for oversize and overweight vehicles.

Riverside County Ordinance No. 460. This ordinance specifies that all new access roads shall conform to the requirements of the Riverside County Transportation Department Subdivision Regulations.

Riverside County Ordinance No. 461. This ordinance specifies that all new access roads shall conform to the requirements of the Riverside County Transportation Department Road Improvement Standards and Specifications.

N.17 Energy

State Regulatory Setting

Energy Action Plan and Loading Order. California has mandated and implemented aggressive energy-use reduction programs for electricity and other resources. In 2003, California's first Energy Action Plan (EAP) established a high-level, coherent approach to meeting California's electricity and natural gas needs and set forth the "loading order" to address California's future energy needs. The "loading order" established that the state, in meeting its energy needs, would invest first in energy efficiency and demand-side resources, followed by renewable resources, and only then in clean conventional electricity supply (CPUC, 2008). Since that time, the CPUC and California Energy Commission (CEC) have overseen the plans, policies, and programs for prioritizing the preferred resources, including energy efficiency and renewable energy.

Senate Bill 100. On September 10, 2018, Senate Bill (SB) 100 was passed, making California the second state in the nation with a deadline to move to 100% zero-carbon electricity. SB 100 will accelerate California's renewable portfolio standard (RPS) requirements of electricity utility providers to 50% renewable energy sources by 2025, 60% by 2030, and will require that the next 40% comes from zero-carbon sources of electricity by 2045.

State CEQA Guidelines. The California Natural Resources Agency adopted certain amendments to the State CEQA Guidelines effective in 2019, to change how CEQA Lead Agencies consider the environmental impacts of energy use. The State CEQA Guidelines, §15126.2(b) requires analysis of a project's energy use, in order to assure that energy implications are considered in project decisions. CEQA requires a discussion of the potential environmental effects of energy resources used by projects, with particular emphasis on avoiding or reducing the "wasteful, inefficient, and unnecessary consumption of energy" (see Public Resources Code section 21100(b)(3)).