

# **APPENDIX F-1**

## **Phase I Environmental Site Assessment**

**Prepared by**

**Moore Twining Associates**

**November 2018**



**PHASE I ENVIRONMENTAL SITE ASSESSMENT  
AQUAMARINE SOLAR PROJECT  
25<sup>TH</sup> AVENUE AND LAUREL AVENUE  
UNINCORPORATED AREA OF KINGS COUNTY, CALIFORNIA**

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## **PHASE I ENVIRONMENTAL SITE ASSESSMENT**

**AQUAMARINE SOLAR PROJECT  
25TH AVENUE AND LAUREL AVENUE  
UNINCORPORATED AREA OF KINGS COUNTY, CALIFORNIA**

### **EXECUTIVE SUMMARY**

Moore Twining Associates, Inc. (Moore Twining) was retained by Mr. Bert Verrips to conduct a Phase I Environmental Site Assessment (Phase I ESA) for a large, rural property located at the intersection of 25<sup>th</sup> Avenue and Laurel Avenue in an unincorporated area of Kings County, west of the City of Stratford, California (Site). This Phase I ESA was conducted in general conformance with the methods and procedures described in the American Society for Testing and Materials (ASTM) "Standard Practice for Environmental Site Assessments: Phase I Environmental Site Assessment Process" (E1527-13), published November 2013, and in accordance with Moore Twining's proposal to Mr. Verrips, dated October 12, 2018.

This summary should be used in conjunction with the entire report. It should be recognized that details were not included or fully developed in this section, and the report must be read in its entirety for a comprehensive understanding of the Site history and conditions. Please review the entire report for more information regarding Moore Twining's findings and opinions.

#### **On-Site Summary**

The Site is located at the intersection of 25<sup>th</sup> Avenue and Laurel Avenue in an unincorporated area of Kings County, west of the City of Stratford, California. The Site has been assigned the following Assessor's Parcel Numbers (APNs): 026-010-037 through 040; 026-260-04, -09, -028, -034, -037; 026-290-08, (discontinuously through) -079 (the latter comprising 22 small parcels).

At the time of the Site reconnaissance, the Site comprised 1,825 acres occupied by agricultural fields and vacant land. For the purpose of this assessment, the Site will be discussed as two (2) main areas; the areas west of 25<sup>th</sup> Avenue and the areas east of 25<sup>th</sup> Avenue. The western portion comprised 871-acres and was being used for agriculture. The eastern portion comprised 954-acres and was primarily vacant land.

Unpaved irrigation canals were located along Laurel Avenue, 25<sup>th</sup> Avenue, and along the eastern and western Site boundaries of the Site. In addition, two lateral unpaved canals were located in the eastern portion of the Site, trending from south to north. Overhead electrical transmission lines were located along 25th Avenue and Laurel Avenue with small power lines branching off through the western and eastern portions of the Site.

Five (5) irrigation wells were observed on the Site with associated tanks, filtration systems, and electrical utilities. The water system was connected to PVC and metal irrigation lines that appeared to be arrayed throughout the Site. Three (3) of the irrigation wells were accompanied by hydraulic pumps and 35-gallon

drums of hydraulic oil. Two (2) of the hydraulic pumps were located in the eastern portion of the Site and appeared to be leaking. Staining was observed on the ground surrounding the drums of hydraulic oil and the hydraulic pumps.

A 20 to 30-foot-deep concrete-lined irrigation cistern was located in the central western portion of the Site.

One large, approximately 4,000-gallon poly tank was observed on the northwest portion of the Site with the Simplot logo. The tank was not labelled with its contents. The poly tank was near an irrigation well. This area also contained a transformer, a drum of hydraulic oil, and a chain-link fence enclosed tank of chlorine gas. No leaking or staining was observed in this area.

Pipeline markers were observed on the Site indicating an underground high-pressure natural gas pipeline. Based on the orientation of the pipeline markers, the pipeline runs through the northwestern portion of the Site trending southwest to northeast, parallel to Avenal Cutoff Road.

Six (6) pole-mounted transformers were observed throughout the Site. Transformers in the eastern and western portions of the Site appeared to be associated with water well pumps, filtration systems, and pumping stations along the canals. No staining or leaking that would prompt an environmental concern was noted.

Minimal trash was observed around the Site.

The Site was not listed on any regulatory databases.

### **Off-Site Summary**

At the time of the Site Reconnaissance, the Site was bordered to the northwest by Avenal Cutoff Road with agricultural fields beyond. The adjoining properties in all directions were agricultural land.

There were no regulatory listings found within the search radius.

### **Conclusions Summary**

On behalf of Mr. Verrips, Moore Twining performed a Phase I Environmental Site Assessment in conformance with the scope and limitations of ASTM E1527-13 for a property located at the intersection of 25<sup>th</sup> Avenue and Laurel Avenue in an unincorporated area of Kings County, west of the City of Stratford, California. This assessment has revealed no evidence of Controlled Recognized Environmental Conditions (CRECs), Historic Recognized Environmental Conditions (HRECs), or Recognized Environmental Conditions (RECs); except for the following:

### **Recognized Environmental Condition**

The two (2) hydraulic pumps associated with agricultural wells located in the eastern portion of the Site were leaking. The hydraulic pumps were accompanied by 35-gallon drums of hydraulic oil. Staining was observed on the soil surrounding the drums of hydraulic oil and the hydraulic pumps. This is considered a REC.

### **Additional Considerations**

The legal application of agricultural chemicals is not considered a REC by the Comprehensive Environmental Response, Compensation and Liability (CERCLA) act of 1980. The exemption is noted in *(4) Application of Pesticides*—Section 107(i) of the ASTM E1527-13 standard. However, a clause is noted in the exemption stating, “The pesticide exemption also contains a “savings clause” that provides that the cost recovery prohibition does not alter or modify any obligations or liability under any other federal or state law for damages, injury or loss resulting from a release of hazardous substances, or for the costs of removal or remedial actions of such hazardous substances.” It has been Moore Twining’s experience that persistent pesticides can exist in soils after long-term use of agricultural chemicals. From the historical documents researched, no information was discovered that would indicate illegal agricultural activities occurred at the Site. As the Site was used from at least the 1950’s for agricultural purposes, persistent pesticides, and other related agricultural chemicals may exist in the soils at the Site. These constituents, even in low concentrations, can result in federal, state and local requirements for movement, disposal, assessment, and remediation. If present, costs could be incurred to address these conditions.

While not considered an environmental business risk, the high-pressure natural gas pipeline located on the Site may present a hazard risk during development. Prior to development, the utility company should be contacted, and the actual line location determined and marked. Development in the area of the gas pipeline should be in accordance with the utility company and with local, state and federal requirements.

The drums of hydraulic oil and any other hazardous chemicals should be kept within secondary containment and adhere to applicable local, state and federal requirements.

### **Recommendations**

It is Moore Twining’s recommendation that, prior to the sale, purchase, and/or development of the property, soil in the areas of former agricultural use should be sampled and analyzed to evaluate the potential for human health risk or special requirements for handling, disposal, assessment and remediation. The presence of pesticides or other constituents of concern in the soil could result in increased disposal fees, and costs for assessment and remediation depending on the concentration of the pesticides and/or other constituents of concern in soils at the Site.

The shallow soil surrounding the leaking hydraulic pumps and oil drums should be removed and disposed of in accordance with local, state, and federal laws and regulations. Following the removal, confirmation samples should be collected and analyzed to confirm that all the contaminated soils have been removed.

## **1.0 INTRODUCTION**

Moore Twining Associates, Inc. (Moore Twining) was retained by Mr. Bert Verrips to conduct a Phase I Environmental Site Assessment (Phase I ESA) for a large, rural property located at the intersection of 25<sup>th</sup> Avenue and Laurel Avenue in an unincorporated area of Kings County, west of the City of Stratford, California (Site). This Phase I ESA was conducted in general conformance with the methods and procedures described in the American Society for Testing and Materials (ASTM) "Standard Practice for Environmental Site Assessments: Phase I Environmental Site Assessment Process" (E1527-13), published November 2013, and in accordance with Moore Twining's proposal to Mr. Verrips, dated October 12, 2018.

### **1.1 Objective**

The objective of this assessment was to identify Recognized Environmental Conditions (RECs) located at the Site or adjacent properties that could present material risk of harm to public health or to the environment. Recognized environmental conditions are defined in ASTM E1527-13 as the presence or likely presence of any hazardous wastes and/or substances or petroleum products on a property under conditions that indicate an existing release, a past release, or a material threat of a release of any hazardous substances or petroleum products into the ground, groundwater, or surface water of the property.

### **1.2 Scope of Services**

This Phase I ESA was performed to evaluate the potential presence of environmental conditions that may have resulted from operations at the Site or at nearby properties. The assessment included a Site reconnaissance, a review of available documentation of land-use history for evidence of the use, storage and/or disposal of hazardous substances, and a review of available regulatory information. This Phase I ESA included the following tasks:

- A review of the current and past uses of the Site since 1929;
- A Site reconnaissance to assess evidence of current and/or past use or storage of toxic or hazardous material; on-Site ponds, landfills, drywells, waste streams or other disposal units; visible soil discoloration; aboveground or underground storage tanks; electrical transformers containing polychlorinated biphenyls (PCBs); and drums, barrels and other storage containers;
- Visual observation of adjacent properties in order to determine if current and/or historical operations associated with these properties may pose a threat to the subject Site;
- A review of available federal Environmental Protection Agency (EPA), state EPA and regulatory agency lists of known or potential hazardous waste sites or landfills, and sites



currently under investigation for environmental violations in the Site area. Using area-profile services provided by Environmental Data Resources, Inc. (EDR), Moore Twining cataloged properties near the Site that have been identified on regulatory agency lists. Search criteria were in conformance with ASTM E1527-13;

- Contact with relevant municipal, county and state agencies to review readily available records and permits; and
- Preparation of this report to present our methods, findings and conclusions.

The Scope of Services specifically excluded cultural, archeological, and biological assessments, as well as, sampling and analysis for the potential presence of asbestos containing building materials, lead based paint, or an assessment for radon gas. In addition, the Scope of Services did not include the collection and/or analysis of any materials including air, soil, soil-gas, or groundwater samples.

### **1.3 Limitations and Limited Conditions**

The purpose of an environmental assessment is to reasonably assess the potential for, or actual impact of, past practices on a given site that may pose an environmental impairment to the Site. No assessment is thorough enough to identify all potential environmental impairments at a given site. If environmental impairments have not been identified during the assessment, such a finding should not, therefore, be construed as a guarantee of the absence of such conditions on the Site, but rather the result of the services performed within the scope, limitations, and cost of the work performed.

The conclusions presented in this report are solely professional opinions based on information provided regarding the Site and the findings of the reconnaissance and records search. Information obtained from the aerial photography is an interpretation of features observed in the photographs. Actual conditions at the Site may have been different from those interpreted. Conclusions presented are based on conditions as they existed at the time the work was performed. Changes in existing conditions of the Site due to time lapse, natural causes, or operations adjacent to the Site may deem conclusions presented in this Phase I ESA report invalid, unless the changes are reviewed and the conclusions reevaluated. Such conditions may require additional site reconnaissance and require field exploration and laboratory testing to assess if the conclusions are applicable considering the changed conditions.

This work was performed for the sole use of our client. Any reliance on this report by a third party is at such party's sole risk. Others who seek to rely on the findings have a duty to determine the adequacy of this report for their intended use, time, and location. Moore Twining does not warrant the accuracy of information supplied by others, nor the use of segregated portions of this report. No other warranty, either expressed or implied, is made. The standard of practice is time-dependent. Services provided were performed consistent with generally accepted professional consulting principles and practices for environmental assessors at the time this work was performed. The findings and conclusions presented in this report are solely professional opinions derived in accordance with current standards of professional practice.

## 2.0 SITE DESCRIPTION

Information concerning the Site was obtained from a Site reconnaissance and a review of the documents referenced in Sections 4.0 and 5.0 of this report. The Site reconnaissance was conducted on October 24, 2018 by Mr. Adam Inman, a representative of Moore Twining.

### 2.1 Location and Description of Property

The Site comprises 1,825 acres occupied by open agricultural fields and vacant parcels. The Site is located at the intersection of 25<sup>th</sup> Avenue and Laurel Avenue in an unincorporated area of Kings County, west of the City of Stratford, California (Site). The Site has been assigned the following Assessor's Parcel Numbers (APNs): 026-010-037 through 040; 026-260-04, -09, -028, -034, -037; 026-290-08, (discontinuously through) -079 (the latter comprising 22 small parcels).

The listed owners for the Site are:  
**West Grand Partners & Westlands Water District**

A Site location map is presented as Drawing 1, and a Site plan, which includes Site boundaries, is presented as Drawing 2 in Appendix A. A parcel map is included in Appendix E.

### 2.2 Physical and Environmental Setting of the Site

Environmental characteristics including topography, geology, soil, and hydrogeology were evaluated based on Site observations, and review of published literature and maps. The findings are summarized in the following table.

PHYSICAL SETTING INFORMATION FOR THE SUBJECT SITE AND SURROUNDING AREA		SOURCE
Location	Kings County, California	EDR Report, October 22, 2018
Site Elevation	The Site elevation is approximately 230 feet above mean sea level.	
Topographic Gradient	Minimal sloping toward the east-southeast.	
Closest Surface Water	Unpaved canals transect and border the Site.	
Flood Plains <sup>1</sup>	According to FEMA DFIRM Flood Data provided by EDR, the Site is not located within a 100-year or a 500-year flood zone.	FEMA DFIRM Flood Data Map 06031C0300C
General Soil Characteristics:		

<sup>1</sup> This is for general locational information only. The data presented should not be used for design or development purposes, as a comprehensive flood zone study has not been conducted.

PHYSICAL SETTING INFORMATION FOR THE SUBJECT SITE AND SURROUNDING AREA		SOURCE
Soil Type	Lethent- Clay Loam	United States Department of Agriculture, Soil Survey website; <a href="http://websoilsurvey.sc.egov.usda.gov">http://websoilsurvey.sc.egov.usda.gov</a>
Description	Soils are clayey, partially hydric, moderately well drained, and have very slow infiltration rates.	
Area Specific Geology/Hydrogeology Characteristics:		
Geology	The Site is located within the southern portion of the San Joaquin Valley. The San Joaquin Valley forms the southern half of the Great Valley Geomorphic Province, a topographic and structural basin bound on the east by the Sierra Nevada and to the west by the Coast Range. The Sierra Nevada, a fault block dipping gently to the southwest, is composed of igneous and metamorphic rocks of pre-Tertiary age which comprise the basement complex beneath the valley. The subsurface of the Site and surrounding vicinity is characterized by a thick sequence of unconsolidated sediments from the Pleistocene epoch. Subsurface material beneath the Site is primarily composed of alluvial fan deposits and flood plain over-bank deposits including interbedded silts, sands, clays, and gravels.	(Wagner, 2002)  (California Geologic Survey, 2010)
Hydrogeology	Groundwater and hydraulic gradient data were not available for the subject Site.	EDR Physical Setting Map-2018
Oil and Gas Wells:		
Current Oil and Gas Wells on Subject Site	No oil and/or gas wells were reported to be on the Site.	California Department of Conservation, Division of Oil, Gas, and Geothermal Resources (DOGGR) web site <a href="http://www.conservation.ca.gov/dog/Pages/WellFinder.aspx">http://www.conservation.ca.gov/dog/Pages/WellFinder.aspx</a>
Historical Oil and Gas Wells on Subject Site	No historical oil and/or gas wells were reported to be located on the Site.	California Department of Conservation, DOGGR web site <a href="http://www.conservation.ca.gov/dog/Pages/WellFinder.aspx">http://www.conservation.ca.gov/dog/Pages/WellFinder.aspx</a>

### **3.0 INFORMATION FROM THE SITE RECONNAISSANCE**

The objective of the Site reconnaissance was to observe the Site for specific indicators of environmental conditions. The Site reconnaissance included a systematic search by vehicle of practically accessible areas of the Site and adjacent properties. Several dirt access roads traversed the Site at various locations and were used to scan the property from a slow-moving vehicle. Areas that included structures or features of interest were searched by foot. A Site Plan depicting the Site, adjoining property use, and observed on-Site features is presented in Appendix A. Additionally, photographs were taken during the Site reconnaissance, and selected photographs of the Site are presented in Appendix B.

The Site reconnaissance was conducted on October 24, 2018 by Mr. Adam Inman, a representative of Moore Twining. The findings of the Site reconnaissance are summarized in the following subsections.

#### **3.1 Site Reconnaissance - Description of Structures, Roads, and Other Site Improvements**

At the time of the Site reconnaissance, the Site comprised 1,825 acres occupied by agricultural fields and vacant land. For the purpose of this assessment, the Site will be discussed as two (2) main areas; the areas west of 25<sup>th</sup> Avenue and the areas east of 25<sup>th</sup> Avenue. The western portion comprised 871 acres and was being used for agriculture. The eastern portion comprised 954 acres and was primarily vacant land.

Unpaved irrigation canals were located along Laurel Avenue, 25<sup>th</sup> Avenue, and along the eastern and western Site boundaries of the Site. In addition, two lateral unpaved canals were located in the eastern portion of the Site, trending from south to north. Overhead electrical transmission lines were located along 25<sup>th</sup> Avenue and Laurel Avenue with small power lines branching off through the western and eastern portions of the Site.

#### **3.2 Current Uses of the Site**

At the time of the Site reconnaissance, the Site was occupied by open agricultural land and vacant parcels of land.

#### **3.3 Current Uses of the Adjoining Properties**

At the time of the Site Reconnaissance, the Site was bordered to the northwest by Avenal Cutoff Road with agricultural fields beyond. The adjoining properties in all directions were agricultural fields.

#### **3.4 Site Reconnaissance - Specific Indicators of Environmental Conditions**

In addition to the general description of the Site, specific indicators of environmental conditions were also evaluated for the Site. Observations made during the Site reconnaissance are summarized in the following table. Affirmative responses are discussed in more detail following the table.

Category	Feature	Observed
<b>Interior (Not Applicable)</b>	Elevators	N/A
	Air Compressors	N/A
	Incinerators	N/A
	Waste Treatment Systems	N/A
	Presses/Stamping Equipment	N/A
	Hydraulic Lifts or Hoists	N/A
	Paint Booth	N/A
	Plating Tanks	N/A
	Lathes, Screw Machines, etc.	N/A
	Regulated Hazardous Materials Use and Storage	N/A
	Floor Drains and Similar Facilities	N/A
<b>Aboveground Chemical or Other Waste Storage or Waste Streams</b>	Aboveground Storage Tanks (ASTs)	No
	Drums, Barrels and/or Containers > than 5-gallons	Yes
	Chip Hoppers	No
	Hazardous or Petroleum Waste Streams	No
<b>Underground Chemical or Waste storage, Drainage or Collection Systems</b>	Underground Storage Tanks (USTs)	No
	Fuel Dispensers	No
	Sumps or Cisterns	Yes
	Dry Wells	No
	Oil/Water Separators	No
	Flood Drains, Trench Drains, etc.	No
	Pipeline Markers	Yes
<b>Exterior Observations</b>	Stressed Vegetation	No
	Stained Soil or Pavement	Yes
	Pad or Pole-Mounted Transformers and/or Capacitors	Yes
	Soil Piles of Unknown Origin	No
	Leachate or Other Waste Seeps	No
	Trash, Debris, and/or Other Waste Materials	No
	Uncontrolled Dumping or Disposal Areas	No
	Surface Water Discoloration, Sheen or Free Product	No
	Strong, Pungent or Noxious Odors	No
	Groundwater Wells	Yes
	Storm Water Retention or Detention Ponds	No
	Pits, Ponds or Lagoons	No

Five (5) irrigation wells were observed on the Site with associated tanks, filtration systems, and electrical utilities. The water system was connected to PVC and metal irrigation lines that appeared to be arrayed throughout the Site. Three (3) of the irrigation wells were accompanied by hydraulic pumps and 35-gallon drums of hydraulic oil. Two (2) of the hydraulic pumps were located in the eastern portion of the Site and

appeared to be leaking. Staining was observed on the ground surrounding the drums of hydraulic oil and the hydraulic pumps.

A 20 to 30 feet deep concrete lined irrigation cistern was located in the central western portion of the Site.

One large, approximately 4,000-gallon poly tank was observed on the northwest portion of the Site with the Simplot logo. The tank was not labelled with its contents. The poly tank was near an associated well. This area also contained a transformer, a drum of hydraulic oil, and a chain-link fence enclosed tank of chlorine gas. No leaking or staining was observed in this area.

Pipeline markers were observed on the Site indicating an underground high-pressure natural gas pipeline. Based on the orientation of the pipeline markers, the pipeline runs through the northwestern portion of the Site trending southwest to northeast, parallel to Avenal Cutoff Road.

Six (6) pole-mounted transformers were observed throughout the Site. Transformers in the eastern and western portions of the Site appeared to be associated with water well pumps, filtration systems, and pumping stations along the canals. No staining or leaking that would prompt an environmental concern was observed.

Minimal trash was observed around the Site.

#### **Other Specific Indicators of Environmental Conditions**

No other specific indicators were observed during the Site reconnaissance.

### **4.0 HISTORICAL AND CURRENT INFORMATION ON THE PROPERTY AND ADJOINING PROPERTIES**

The history of land-use on and near the Site was determined from the review of historic aerial photographs, topographic maps, Sanborn maps, building permits, and historic city directories. The findings are summarized in the following subsections.

#### **4.1 Aerial Photograph Review**

Available historical aerial photographs of the Site and vicinity for the years 1937, 1940, 1954, 1960, 1974, 1984, 1994, 2005, 2009, 2012, and 2016 were reviewed for indications of past Site use and/or Site activities which may have involved the manufacture, generation, use, storage, and/or disposal of hazardous materials. The results of the aerial photograph review are summarized in the following table. Copies of the historical aerial photographs are included in Appendix D.

Year	Summary of Information
<b>1937-1940 (EDR)</b>	The Site appears as undeveloped land. Avenal Cutoff Road borders the Site to the northwest. Roads trend throughout the Site. The adjoining properties are also undeveloped land.
<b>1954-2016 (EDR)</b>	The Site and adjoining properties are occupied by row crop agriculture. 25 <sup>th</sup> Avenue bisects the Site north and south. Laurel Avenue bisects the Site east and west. Canals have been constructed alongside Laurel Avenue and trending along other roads throughout the Site.

#### **4.2 Topographic Map Review**

Available topographic maps of the Site and vicinity for the years 1929, 1940, 1943, 1956, 1981, and 2012 were reviewed for indications of past Site use and/or Site activities which may have involved the manufacture, generation, use, storage, and/or disposal of hazardous materials. Copies of the historical topographic maps are included in Appendix D.

A review of the historical topographic maps did not prompt any environmental concerns.

#### **4.3 Sanborn Fire Insurance Map Review**

Sanborn maps were not available for the subject Site or surrounding areas.

#### **4.4 Historical City Directory Review**

City directories can provide information concerning past and current occupancy of the Site and adjacent areas. Historical city directory information for this assessment was provided by EDR.

There were no listings provided for the subject Site. The only addresses listed in the city directory were off-Site residential listings. A copy of the historical city directories is included in Appendix D.

#### **4.5 Building Permits**

Building records can provide a history of on-Site structures, features, and development. Building permits were not available due to the rural nature of the subject Site.

#### **4.6 User Provided Information**

This section summarizes information provided by the user that assisted in the identification of potential RECs associated with the Site.

#### 4.6.1 Interviews with Site Representatives

Moore Twining submitted an Environmental Questionnaire to Mr. Bert Verrips. Mr. Verrips indicated that agricultural chemical distribution and/or application occurs at the Site and on off-Site properties. Mr. Verrips also indicated the presence of electrical transformers on-Site, an existing agricultural well near the western Site boundary, and Kings County permits issued for pesticide/ herbicide use for on-Site parcels west of 25<sup>th</sup> Avenue. Mr. Verrips reported that previous investigations had been conducted for the Site and provided those documents for review. A copy of the environmental questionnaire is included in Appendix E.

#### 4.6.2 Previous Investigations

Previous investigations have been conducted on-Site and for property located immediately to the north off-Site. Copies of the reports of the previous investigations are presented in Appendix E.

#### On-Site

##### Soil Sampling conducted by Moore Twining, dated November 18, 2016

Moore Twining conducted soil sampling in November 2016 for the northern portion of the Site. Per the Client's request, two soil borings were hand augered on November 3, 2016 for collection of shallow soil samples to characterize organochlorinated pesticides (OCPs) and arsenic in soil. The soil samples were analyzed for OCPs by EPA Method 8081A and arsenic by EPA Method 6010B. Based on the results of the analytical testing, the soil samples did not contain concentrations of OCPs above the laboratory reporting limits. Arsenic was detected in the soil samples at concentrations ranging from 5.6 milligrams per kilogram (mg/kg) to 6.8 mg/kg. These concentrations are considered representative of background concentrations for the vicinity. The detected concentrations of arsenic were of similar magnitude across the Site and are consistent with established background concentrations for California (Kearney Foundation of Soil Science, 1996). In addition, the detected concentrations of arsenic were below the soluble threshold limit concentration of 50 mg/kg for landfill sampling requirements.

##### Phase I Environmental Site Assessment Draft conducted by Moore Twining, dated January 2017

Moore Twining also conducted a Phase I ESA in January 2017. The report for this Phase I ESA was not published. This report is in draft form and was not issued to the client. The report was conducted for an approximately 577-acre parcel of the Site. The assessment revealed no evidence of CRCs, HRECs, or RECs; however, the assessment did reveal business risks. The business risks identified in the report included locating the high-pressure gas pipeline on-Site to prevent hazards during development, addressing soil staining observed near a leaking 50-gallon drum of Rando HD ISO 46 hydraulic lubricating oil, and identifying the contents of two (2) approximately 400-gallon poly-tanks to determine if these tanks contained fertilizers or pesticides.



According to the unpublished Phase I ESA, the risk associated with the past agricultural uses of the Site was judged to be low based on the results of the analytical tests of soil samples collected at the two locations on the Site in Moore Twining's 2016 Soil Sampling, and no further action was recommended.

#### **Off-Site**

##### *Phase I Environmental Site Assessment conducted by Moore Twining, dated December 17, 2014*

Moore Twining conducted a Phase I ESA for a 180-acre property bordering the north of the Site located near the southeastern corner of Avenal Cutoff Road and 25<sup>th</sup> Avenue. The Assessment revealed no evidence of CRCs, HRECs, or RECs.

##### *Soil & Water Analysis Report conducted by Provost & Pritchard Consulting Group, dated August 11, 2014*

A Soil and Water Analysis Report was prepared by Provost & Pritchard Consulting Group dated August 11, 2014 for a 282-acre property bordering the north of the Site located at the southeastern corner of Avenal Cutoff Road and 25<sup>th</sup> Avenue. The report was prepared for Westside Assets Solar Project. The report concluded that the property was not suitable for sustaining long-term agricultural crop production due to saline-sodic soils. Groundwater in the area was reported to indicate high levels of salinity, boron, chloride, sodium, carbonates, and bicarbonates. The report concluded the following:

"Since the proposed project is compatible for use with dry-farm seasonal grazing or a similar agricultural activity, the project is a compatible use with Farmland Security Zone contract pursuant to Government Code Section 51238.1(a) and the County of Kings Implementation Procedures for the California Land Conservation "Williamson" Act of 1965."

The conclusions presented in the reports of off-Site previous investigations generally agree with the on-Site conclusions from Moore Twining in the 2016 Soil Sampling report and the 2017 unpublished Phase I ESA report. These data suggest that the environmental conditions are generally similar in this area.

#### **4.6.3 Title Documentation**

Title documents, including a chain of title and/or title report, can provide the environmental professional with information regarding current and past ownership and information regarding environmental liens and/or land use and activity limitations.

No environmental liens or activity/use restrictions regarding the Site were located; however, title and/or judicial records were not provided by the client or reviewed.

#### **4.6.4 Institutional and Engineering Controls/Land Use Limitations/Environmental Liens**

Institutional and Engineering Controls can indicate the current and/or historical presence of recognized environmental conditions that required remedial activity at the Site.

According to the environmental questionnaire provided by Mr. Verrips, the area located east of 25<sup>th</sup> Avenue is owned by Westlands Water District (WWD). These lands were retired from irrigated agriculture about ten (10) years ago and thus have no entitlement to surface water deliveries from WWD.

#### **4.7 Past Uses of the Property**

According to Moore Twining's review of historical aerial photographs, the Site has been used for agricultural purposes since at least 1954. According to the environmental questionnaire provided by Mr. Verrips, the area west of 25<sup>th</sup> Avenue has been owned by West Grand Partners for approximately 20 years and has been occupied by row crop agriculture. Mr. Verrips also reported that the area east of 25<sup>th</sup> Avenue has been owned by Westlands Water District for approximately ten years and has been occupied by wheat and fallow fields.

#### **4.8 Past Uses of Adjoining Property**

According to Moore Twining's review of historical aerial photographs, Avenal Cutoff Road has bordered the northwest of the Site since at least 1937. The adjoining properties have been used for agricultural purposes since at least 1954.

### **5.0 REGULATORY RECORDS REVIEW**

Requests to review files for the Site were submitted to the Regional Water Quality Control Board (RWQCB), the Department of Toxic Substances Control (DTSC), and the Kings County Department of Public Health (KCDPH).

The RWQCB did not report any files for the Site.

The KCDPH provided a Complaint Investigation filed in March 2018 from the Kings County Environmental Health Service (KCEHS). The report describes an incident involving a small fire possibly involving agriculture chemicals at 25<sup>th</sup> Avenue and Laurel Avenue. The fire reportedly emitted a chemical odor and occurred along the interior of a canal bank on-Site. During a follow up inspection the day after the incident, the KCEHS determined that no further incidents of burning were taking place. The incident was considered abated.

At the time this report was prepared, a response had not been received from the DTSC.

Printouts and information from regulatory databases and agencies are included in Appendix C.

## 5.1 Facilities Identified in the Regulatory Record Review

The information regarding the Site was obtained from the EDR report, the DTSC Envirostor website (<http://envirostor.dtsc.ca.gov/>, Envirostor), and the State Water Resource Control Board's GeoTracker website (<http://geotracker.waterboards.ca.gov/>, GeoTracker). At the time this report was issued to the client, the Site did not appear on the Envirostor or GeoTracker websites.

## 5.2 Facilities Identified in the EDR Report

Moore Twining contracted EDR to perform a search of available federal, state, and local database information systems for identifying known recognized environmental conditions present on the Site and nearby properties that have the potential to adversely impact the Site being assessed in this study. EDR's findings are summarized below. The complete report furnished by EDR is included in Appendix D of the report.

TABLE 1 SUMMARY OF REGULATORY LISTS SEARCHED BY EDR AND RECORDS REVIEWED*								
Database	Target Site	Search Distance (Miles)	< 1/8	1/8 - ¼	1/4 - ½	½ - 1	> 1	Total Plotted
<b>FEDERAL ASTM STANDARD</b>								
NPL		1.000	0	0	0	0	NR	0
Proposed NPL		1.000	0	0	0	0	NR	0
NPL LIENS		TP	NR	NR	NR	NR	NR	0
Delisted NPL		1.000	0	0	0	0	NR	0
Federal Facility		0.500	0	0	0	NR	NR	0
SEMS		0.500	0	0	0	NR	NR	0
SEMS Archive		0.500	0	0	0	NR	NR	0
CORRACTS		1.000	0	0	0	0	NR	0
RCRA-TSDF		0.500	0	0	0	NR	NR	0
RCRA Lg, Quan. Gen.		0.250	0	0	NR	NR	NR	0
RCRA Sm. Quan. Gen.		0.250	0	0	NR	NR	NR	0
RCRA-CESQG		0.250	0	0	NR	NR	NR	0
LUCIS		0.500	0	0	0	NR	NR	0
US ENG CONTROLS		0.500	0	0	0	NR	NR	0
US INST CONTROLS		0.500	0	0	0	NR	NR	0
ERNS		TP	NR	NR	NR	NR	NR	0
<b>STATE ASTM STANDARD</b>								
RESPONSE		1.000	0	0	0	0	NR	0
ENVIROSTOR		1.000	0	0	0	0	NR	0
SWF/LF		0.500	0	0	0	NR	NR	0
LUST		0.500	0	0	0	NR	NR	0

TABLE 1 SUMMARY OF REGULATORY LISTS SEARCHED BY EDR AND RECORDS REVIEWED*								
Database	Target Site	Search Distance (Miles)	< 1/8	1/8 - 1/4	1/4 - 1/2	1/2 - 1	> 1	Total Plotted
INDIAN LUST		0.500	0	0	0	NR	NR	0
SLIC		0.500	0	0	0	NR	NR	0
FEMA UST		0.250	0	0	NR	NR	NR	0
UST		0.250	0	0	NR	NR	NR	0
AST		0.250	0	0	NR	NR	NR	0
INDIAN UST		0.250	0	0	NR	NR	NR	0
VCP		0.500	0	0	0	NR	NR	0
INDIAN VCP		0.500	0	0	0	NR	NR	0
BROWNFIELDS		0.500	0	0	0	NR	NR	0

NR = Not Requested (Beyond Search Distance)

TP = Target Property

\* = Table includes only databases required for ASTM E1527-13 compliance. Other databases are included in the EDR report and discussed in the following sections as appropriate.

### 5.2.1 On-Site

The Site was not listed on any regulatory databases.

### 5.2.2 Off-Site

Moore Twining's review of the referenced databases also considered the potential or likelihood of contamination from adjoining and nearby properties impacting this Site. To evaluate which of the adjoining and nearby properties identified in the regulatory database report present an environmental risk to the subject Site, Moore Twining considered the following criteria:

- The type of database on which the property is identified;
- The topographic position of the property relative to the subject Site;
- The direction and distance of the property from the subject Site;
- Local soil conditions in the area of the Site;
- The known or inferred groundwater flow direction;
- The status of the respective regulatory agency-required investigation(s) of the identified property, if any; and
- Surface and subsurface obstructions and diversions (e.g., buildings, roads, sewer systems, utility service lines, rivers, lakes and ditches) located between the property and the subject Site.

No regulatory listings were reported for the area within the stated search radius.

### 5.2.3 Orphan Sites

An Orphan Site is a listed property in the same zip code as the subject Site which cannot be mapped because of inadequate address information. Moore Twining reviewed forty-four (44) reported Orphan Sites provided by EDR. The Orphan Sites are summarized in the following table:

Summary of Orphan Properties					
Listing	Location	Database	Location Confirmed	Distance from Site	Risk, Rationale
Pacific Gas & Electric	NE Corner of Avenue 7 $\frac{1}{2}$ and Quebec	HAZNET	Yes	21 miles	No, distance from Site
Pacific Gas & Electric	NW Corner of Avenue 10 and Pueblo	HAZNET	Yes	15.7 miles	No, distance from Site
Pacific Gas & Electric	1.3 miles east of 10 <sup>th</sup> Avenue	HAZNET	Yes	14 miles	No, distance from Site
Michael & Shelly Woolf Children's Trust	25 <sup>th</sup> Avenue and Idaho Avenue	CUPA Listings, FINDS	Yes	4.87 miles	No, distance from Site
(No Listing)	North Dover Avenue, east of Highway 43	CDL	Yes	22 miles	No, distance from Site
(No Listing)	Southbound 41 and $\frac{1}{2}$ mile south of Laurel	CHMIRS	Yes	5.3 miles	No, distance from Site
AutoZone 5348 Lemoore	East of Cinnamon Avenue and north of Lemoore Avenue	CIWQS	Yes	9.8 miles	No, distance from Site
West Hills Community College	2500 Block of west Bush Street	CIWQS	Yes	9.3 miles	No, distance from Site

Summary of Orphan Properties					
Listing	Location	Database	Location Confirmed	Distance from Site	Risk, Rationale
Naval Air Station Lemoore	Intersection of Avenger Street and F	CIWQS	Yes	4.9 miles	No, distance from Site
Marine Reserve Training Center	Northwest of Franklin Avenue and Enterprise Avenue	CIWQS	Yes	5.1 miles	No, distance from Site
Vine Street, south Highway 198	Vine Street, south of Highway 198	CIWQS	Yes	8.7 miles	No, distance from Site
(No Listing)	South of Highway 41	ERNS	Yes	4.3 miles	No, distance from Site
A.T.O. Farming Company, 1 mile	North 25 <sup>th</sup> Avenue and Idaho	AST	Yes	5.6 miles	No, distance from Site
Double O Ranch-Dudley Shop	Idaho and 25 <sup>th</sup> Avenue	AST	Yes	5.6 miles	No, distance from Site
(No Listing)	East side of Highway 41 JNO Hanford-Armona Road	CHMIRS	Yes	10.1	No, distance from Site
(No Listing)	$\frac{1}{4}$ mile west of 15 <sup>th</sup> Avenue, $\frac{1}{2}$ mile north of Jackson Avenue	CHMIRS	Yes	10.9	No, distance from Site

Summary of Orphan Properties					
Listing	Location	Database	Location Confirmed	Distance from Site	Risk, Rationale
(No Listing)	1 mile west of Naval Station Lemoore	CHMIRS	Yes	5.25	No, distance from Site
(No Listing)	Outside of Building 722 at the Headworks Pit	CHMIRS	No	Unknown	No, 100-gallons of sulfuric acid was released due to a valve failure on a sulfuric acid tank in August 2006. Cleanup date is not reported.
(No Listing)	Eastbound Highway 198 east of the Kings River Bridge	CHMIRS	Yes	5.6 miles	No, distance from Site
(No Listing)	Murphy Ranch Road, 600 feet west of Avenal Cutoff Road	CHMIRS	Yes	4.7 miles	No, distance from Site
Stone Land River Ranch	25 <sup>th</sup> Avenue & AMP; Grangeville	FINDS	Yes	10.6 miles	No, distance from Site
PG&E: Henrietta Substation	25 <sup>th</sup> Avenue, $\frac{1}{2}$ mile south of Highway 198	FINDS	Yes	4.4 miles	No, distance from Site
Lemoore City Public Works	19 <sup>th</sup> Avenue south of Highway 198	EMI	Yes	8.9 miles	No, distance from Site
Artesia Ready Mix Concrete Co.	Southwest corner of Idaho Avenue and 19 <sup>th</sup> Avenue	EMI	Yes	8 miles	No, distance from Site

Summary of Orphan Properties					
Listing	Location	Database	Location Confirmed	Distance from Site	Risk, Rationale
Pacific Gas & Electric	North south of Elder Avenue	HAZNET	Yes	13.5 miles	No, distance from Site
Lemoore NAS	39 823 Acres 35 miles south of fre	HIST CORTESE	Yes	4.9 miles	No, distance from Site
PG&E: ARCO Substation	2.5 miles west of 25 <sup>th</sup> Avenue, 4.5 miles north of Twisselman Road	FINDS	Yes	30 miles	No, distance from Site
(No Listing)	67750 Bailey Road, 600 yards west of Domestic sewage pond	CHMIRS	Yes	16 miles	No, distance from Site
(No Listing)	1500 feet west of 20 $\frac{1}{2}$ Avenue	ERNS	Yes	4.5 miles	No, distance from Site
(No Listing)	14 $\frac{1}{2}$ Avenue and Laurel Avenue	CDL	Yes	10.4 miles	No, distance from Site
Texaco SS Stratford	Main and Empire	HIST UST	Yes	4.7 miles	No, distance from Site
Westfarmers	Corner of Avenal Cutoff	HIST UST	Yes	0.7 miles	No, distance from Site
(No Listing)	Highway 41 just south of Nevada Avenue	CHMIRS	Yes	3.8 miles	No, distance from Site
(No Listing)	West side of Quebec Avenue and 6 <sup>th</sup> Avenue	CHMIRS	Yes	21 miles	No, distance from Site



Summary of Orphan Properties					
Listing	Location	Database	Location Confirmed	Distance from Site	Risk, Rationale
(No Listing)	Avenue 20, $\frac{1}{4}$ mile north of Quebec	CHMIRS	Yes	10.5 miles	No, distance from Site
(No Listing)	24 <sup>th</sup> Avenue and Laurel Avenue	CHMIRS	Yes	At eastern Site boundary	No, 30-gallons of non-PCB mineral oil was released when a power pole fell to the ground due to inclement weather. The cleanup occurred the following day on 3/29/2017.
(No Listing)	Laurel Avenue	CHMIRS	No	Unknown	No, Drug lab waste was illegally dumped into the Kings River in April 2000.
Chevron Laurel Avenue, Stratford and a King Co.	Laurel Avenue and 17 <sup>th</sup> Avenue	FINDS	Yes	9 miles	No, distance from Site
Stone Land Co.	25 <sup>th</sup> Avenue	CUPA Listings	Yes	9.6 miles	No, distance from Site
County of Kings	Northeast corner of Laurel Avenue and Empire	EMI	Yes	4.7 miles	No, distance from Site
John M. Camara	19726 and 19762 Laurel Avenue	HAZNET	Yes	5.3 miles	No, distance from Site
PG&E	1500 feet west of 20 <sup>th</sup> , $\frac{1}{2}$ Avenue	HAZNET	Yes	4 miles	No, distance from Site

Summary of Orphan Properties					
Listing	Location	Database	Location Confirmed	Distance from Site	Risk, Rationale
(No Listing)	Wood Ranch, Gale Avenue, $\frac{1}{2}$ mile east of Biola Avenue and Huron	CHMIRS	No	Unknown	No, 250-gallons of diesel fuel was released in May 1997 when thieves stole an agricultural irrigation pump and left a fuel line open. The fuel reportedly went into an irrigation ditch only with no outlet to a waterway.
(No Listing)	Highway 41 and Hanford Armona Road, southeast corner of the intersection	CHMIRS	Yes	10 miles	No, distance from Site

Forty (40) of the provided Orphan Site locations were confirmed and determined to be located in positions considered to be cross gradient, downgradient, or hydrologically isolated from the Site, or were beyond the applicable ASTM search parameters.

One of the provided Orphan Sites was found to be located at the northeastern Site boundary at the intersection of 24<sup>th</sup> Avenue and Laurel Avenue. The Orphan Site is listed on the CHMIRS database due to a 30-gallon release of non-PCB mineral oil in March 2017. The cleanup occurred the following day.

Three (3) of the provided Orphan Sites locations were unable to be confirmed. All three (3) Orphan Sites were listed on the CHMIRS database for releases or spills of a hazardous substance. In May 1997, 250-gallons of diesel fuel was released when thieves tampered with an irrigation pump and left a fuel line open. The diesel fuel reportedly went into an irrigation ditch only with no outlet to a waterway. In April 2000, an unreported amount of drug lab waste was illegally dumped into the Kings River. In August 2006, 100-gallons of sulfuric acid was released due to a valve failure on a sulfuric acid tank.

It is considered a low potential that the Orphan Sites have adversely impacted the environmental condition of the Site.

## **6.0 SUMMARY OF FINDINGS AND OPINIONS**

The findings of the Phase I ESA are summarized in the following sections:

### **6.1 On-Site**

The Site is located at the intersection of 25<sup>th</sup> Avenue and Laurel Avenue in an unincorporated area of Kings County, west of the City of Stratford, California. The Site has been assigned the following Assessor's Parcel Numbers (APNs): 026-010-037 through 040; 026-260-04, -09, -028, -034, -037; 026-290-08, (discontinuously through) -079 (the latter comprising 22 small parcels).

At the time of the Site reconnaissance, the Site comprised 1,825 acres occupied by agricultural fields and vacant land. For the purpose of this assessment, the Site will be discussed as two (2) main areas; the areas west of 25<sup>th</sup> Avenue and the areas east of 25<sup>th</sup> Avenue. The western portion comprises 871-acres and was being used for agriculture. The eastern portion comprises 954-acres and was primarily vacant land.

Unpaved irrigation canals were located along Laurel Avenue, 25<sup>th</sup> Avenue, and along the eastern and western Site boundaries. In addition, two lateral unpaved canals were located in the eastern portion of the Site, trending from south to north. Overhead electrical transmission lines were located along 25<sup>th</sup> Avenue and Laurel Avenue with small power lines branching off through the western and eastern portions of the Site.

Five (5) irrigation wells were observed on the Site with associated tanks, filtration systems, and electrical utilities. The water system was connected to PVC and metal irrigation lines that appeared to be arrayed throughout the Site. Three (3) of the irrigation wells were accompanied by hydraulic pumps and 35-gallon drums of hydraulic oil. Two (2) of the hydraulic pumps were located in the eastern portion of the Site and appeared to be leaking. Staining was observed on the ground surrounding the drums of hydraulic oil and the hydraulic pumps.

A 20 to 30-foot-deep concrete-lined irrigation cistern was located in the central western portion of the Site.

One large, approximately 4,000-gallon poly tank was observed on the northwest portion of the Site with the Simplot logo. The tank was not labelled with its contents. The poly tank was near an irrigation well. This area also contained a transformer, a drum of hydraulic oil, and a chain-link fence enclosed tank of chlorine gas. No leaking or staining was observed in this area.

Pipeline markers were observed on the Site indicating an underground high-pressure natural gas pipeline. Based on the orientation of pipeline markers, the pipeline runs through the northwestern portion of the Site trending southwest to northeast, parallel to Avenal Cutoff Road.

Six (6) pole-mounted transformers were observed throughout the Site. Transformers in the eastern and western portions of the Site appeared to be associated with water well pumps, filtration systems, and pumping stations along the canals. No staining or leaking that would prompt an environmental concern was noted.

Minimal trash was observed around the Site.

The Site was not listed on any regulatory databases.

## **6.2 Off-Site**

At the time of the Site Reconnaissance, the Site was bordered to the northwest by Avenal Cutoff Road with agricultural fields beyond. The adjoining properties in all directions were agricultural land.

There were no regulatory listings found within the search radius.

## **6.3 Data Gaps, Limitations, and Deviations**

Data gaps are described as a lack of or inability to obtain information required by the standards and practices listed in ASTM E1527-13, despite good faith efforts by the environmental professional or prospective landowner.

At the time this report was issued to the client, there had not been a response from the DTSC. This is not considered a significant data gap due to information made available by other sources.

The material content of this report is intended to be consistent with a standard of practice as defined by ASTM E1527-13. However, the report format differs in style, arrangement, and presentation of material facts from the format described by ASTM.

## **7.0 CONCLUSIONS AND RECOMMENDATIONS**

On behalf of Mr. Bert Verrips, Moore Twining performed a Phase I Environmental Site Assessment in conformance with the scope and limitations of ASTM E1527-13 for a property located at the intersection of 25<sup>th</sup> Avenue and Laurel Avenue in an unincorporated area of Kings County, west of the City of Stratford, California. This assessment has revealed no evidence of CRECs, HRECs, or RECs; except for the following:

### **Recognized Environmental Condition**

The two (2) hydraulic pumps associated with the irrigation wells located in the eastern portion of the Site were leaking. The hydraulic pumps were accompanied by 35-gallon drums of hydraulic oil. Staining was observed on the soil surrounding the drums of hydraulic oil and the hydraulic pumps. This is considered a REC.

### **Additional Considerations**

The legal application of agricultural chemicals is not considered a REC by the Comprehensive Environmental Response, Compensation and Liability (CERCLA) act of 1980. The exemption is noted in (4) *Application of Pesticides*—Section 107(i) of the ASTM E1527-13 standard. However, a clause is noted in the exemption stating, “The pesticide exemption also contains a “savings clause” that provides that the cost recovery prohibition does not alter or modify any obligations or liability under any other federal or state law for damages, injury or loss resulting from a release of hazardous substances, or for the costs of removal or remedial actions of such hazardous substances.” It has been Moore Twining’s experience that persistent pesticides can exist in soils after long-term use of agricultural chemicals. From the historical documents researched, no information was discovered that would indicate illegal agricultural activities occurred at the Site. As the Site was used from at least the 1950’s for agricultural purposes, persistent pesticides, and other related agricultural chemicals may exist in the soils at the Site. These constituents, even in low concentrations, can result in federal, state and local requirements for movement, disposal, assessment, and remediation. If present, costs could be incurred to address these conditions.

While not considered an environmental business risk, the high-pressure natural gas pipeline located on the Site may present a hazard risk during development. Prior to development, the utility company should be contacted, and the actual line location determined and marked. Development in the area of the gas pipeline should be in accordance with the utility company and with local, state and federal requirements.

The drums of hydraulic oil and any other hazardous chemicals should be kept within secondary containment and comply with all applicable local, state, and federal regulations.

### **Recommendations**

It is Moore Twining’s recommendation that, prior to the sale, purchase, and/or development of the property, the soil in the areas of former agricultural use should be sampled and analyzed to evaluate the potential for human health risk or special requirements for handling, disposal, assessment and remediation. The presence of pesticides or other constituents of concern in the soil could result in increased disposal fees, and costs for assessment and remediation depending on the concentration of the pesticides and/or other constituents of concern in soils at the Site.

The shallow soil surrounding the leaking hydraulic pumps and oil drums should be removed and disposed of in accordance with local, state, and federal laws and regulations. Following the removal, confirmation samples should be collected and analyzed to confirm that all the contaminated soils have been removed.

## 8.0 CLOSING

Moore Twining Associates, Inc. performed a Phase I Environmental Site Assessment in conformance with the scope and limitations of ASTM E1527-13 for the subject Site. Any exceptions to, or deletions from, this practice are described Section 6.3 of this report.

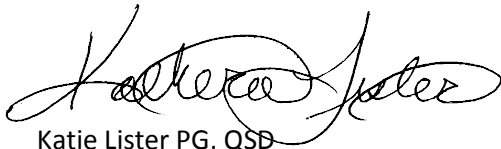
We appreciate the opportunity to be of service to Mr. Bert Verrips, AICP, Environmental Consulting, on this project. Please contact our office at (800) 268-7021 if you have any questions regarding this report.

Sincerely,

**MOORE TWINING ASSOCIATES, INC.**  
Environmental Services Division



Cecilia Simpson  
Phase I Assessment Project Manager



Katie Lister PG, QSD  
Environmental Division Manager

*"I declare that, to the best of my knowledge and belief, I meet the definition of Environmental Professional. I have the specific qualifications based on education, training, and experience to assess a property of the nature, history, and setting of the subject property. I have developed and performed the all appropriate inquiries in conformance with the standards and practices set forth in 40 CFR Part 312."*

## 9.0 REFERENCES

American Society for Testing and Materials. (2013). *ASTM Standards of Environmental Site Assessments for Commercial Real Estate, E1527-13, 2nd ed.* West Conshohocken, Pennsylvania: ASTM International.

California Geologic Survey. (2010). *Geologic Map of California 1:750,000 Scale.*

Environmental Data Resources, Inc. (October 22, 2018). *Aquamarine, South of 25<sup>th</sup> Avenue and Avenal Cutoff, Lemoore, CA 93245- Inquiry Number: 05457480.4r.* Environmental Data Resources, Inc.

Kearney Foundation of Soil Science. (1996). *Background Concentrations of Trace and Major Elements in California Soils.*

Moore Twining Associates, Inc. (2014). *Phase I Environmental Site Assessment Westside Solar Project.*

Moore Twining Associates, Inc. (2017). *Phase I Environmental Site Assessment and Soil Sampling Westside Solar Project Phases 3 and 4.*

Moore Twining Associates, Inc. (2016). *Analytical Results for Samples.*

Provost & Pritchard Consulting Group. (2014). *Soil and Water Analysis Report for Westside Assets Solar Project.*

Wagner, D. (2002). *Note 36: Geomorphic Map of California.* California Geologic Survey.

## 10.0 QUALIFICATIONS OF ENVIRONMENTAL PROFESSIONALS

**Moore Twining Associates, Inc.** Phase I Environmental Site Assessment staff is composed of a group of environmental professionals that perform Environmental Site Assessments on a routine basis. The Phase I ESA staff is managed and supervised by individuals who conduct, prepare, oversee, and/or review Environmental Site Assessments on a daily basis. Qualification profiles for these individuals are provided in the following section.

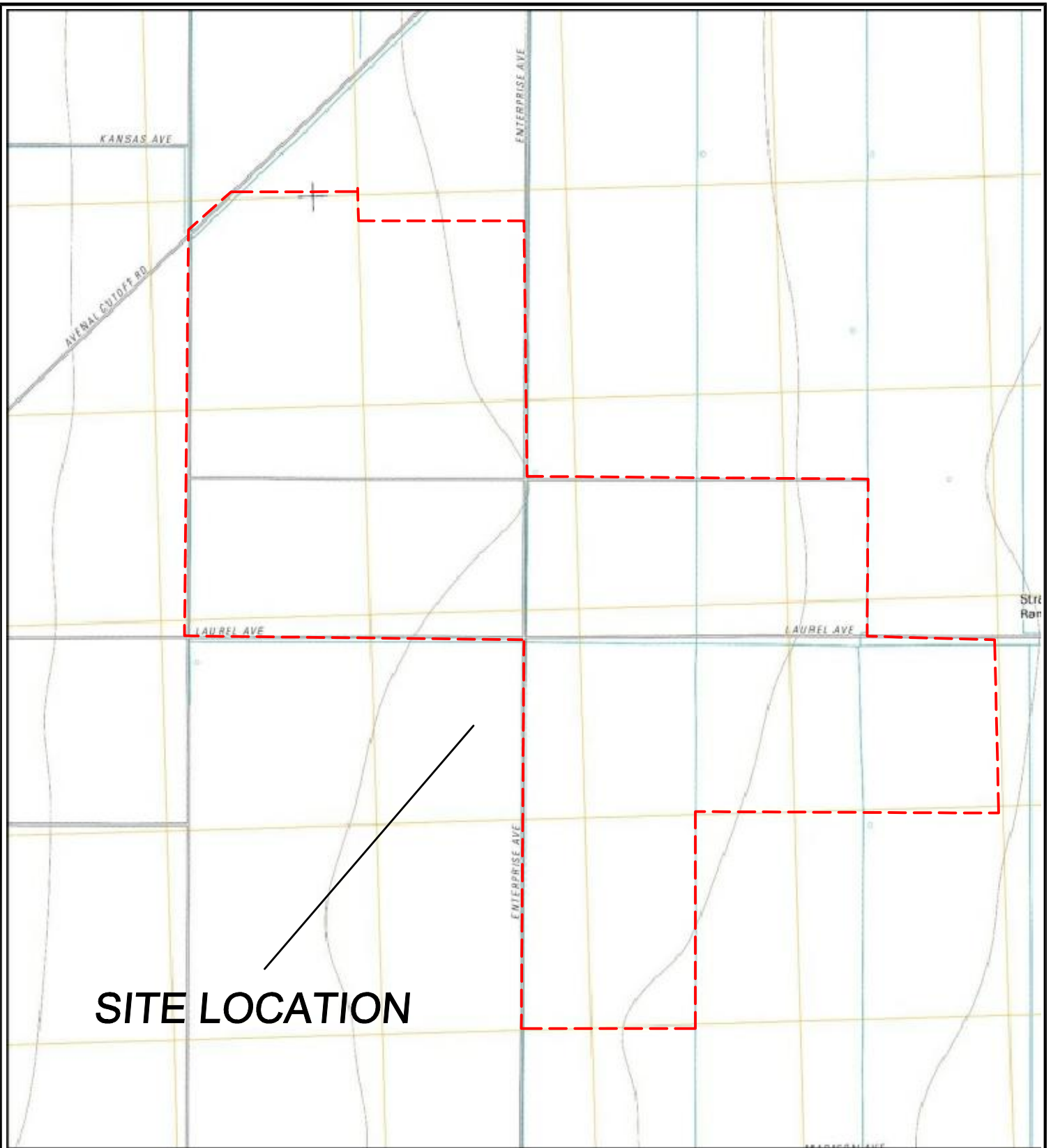
Reviewed by  
**Katie Lister PG, QSD**  
Environmental Division Manager

Mrs. Lister has fifteen years of experience conducting Phase I Environmental Site Assessments, Phase II assessment work, and Phase III remediation. Mrs. Lister has conducted environmental site assessments for a number of different project types including pesticide production facilities, shopping centers, gas stations, school sites, mines, large vacant properties, and agricultural sites.



## **APPENDIX A**

### **DRAWINGS**



**SITE LOCATION**



APPX 1:24000

SITE LOCATION MAP  
AQUAMARINE SOLAR PROJECT  
25TH AVENUE AND LAUREL AVENUE  
KINGS COUNTY, CALIFORNIA

FILE NO.  
Site Loc Map

DRAWN BY:  
CS

PROJECT NO.  
18-1091

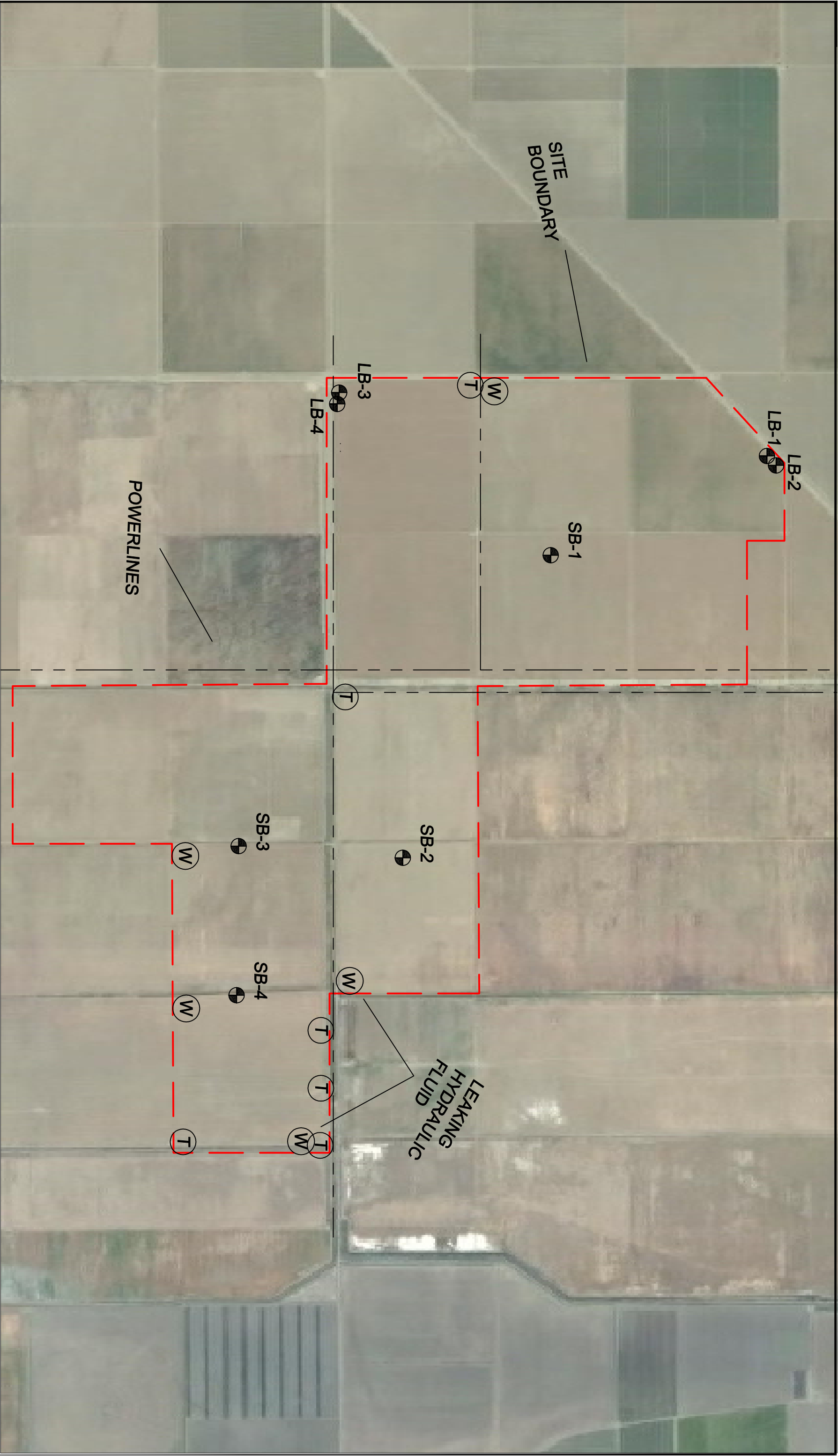
DATE DRAWN:  
11/9/2018

APPROVED BY:

DRAWING NO.  
1



**MOORE TWINING  
ASSOCIATES, INC.**



POWERLINES

W

WELL

T

TRANSFORMER

SAMPLE LOCATION

0

2,000

APPROXIMATE SCALE

IN FEET

MOORE TWINING ASSOCIATES, INC.

AQUAMARINE SOLAR PROJECT  
25TH AVENUE AND LAUREL AVENUE  
KINGS COUNTY, CALIFORNIA

FILE NO.	DATE DRAWN:
DRAWN BY: CS	APPROVED BY:
PROJECT NO. 18-1091	DRAWING NO. 1

**APPENDIX B**

**SITE PHOTOGRAPHS**



Looking east across the northern portion of the Site



4,000-gallon poly tank and irrigation equipment in northeastern portion of Site.



Irrigation and filtration equipment located in the northwest portion of the Site.



View of the chlorine gas container





Close-up of chlorine gas container



View of well-head and hydraulic oil drum located in the northwest portion of the Site.



Cistern in central western portion of Site.



Looking east along Laurel Avenue





General view of the northern portion of the Site



Looking north along 25<sup>th</sup> Avenue and Irrigation canal



View of Irrigation canal running parallel to Laurel Avenue



General view of the southern portion of the Site, looking east



General view of irrigation canal



Concrete standpipe with pump in the southern portion of the Site.



Pumping station in canal along Laurel Avenue



Pole-mounted transformer located on-Site.





Hydraulic pump with staining in eastern portion of Site.



Staining from hydraulic fluid in eastern portion of Site.

**APPENDIX C**

**REGULATORY AGENCY DOCUMENTATION**

## Cecilia Simpson

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**From:** Martin, Kelly@Waterboards <Kelly.Martin@Waterboards.ca.gov>  
**Sent:** Friday, October 19, 2018 4:02 PM  
**To:** Cecilia Simpson  
**Subject:** RE: 25th and Laurel Avenue Map

To Cecilia Simpson,

Central Valley Regional Water Quality Control Board has no information for the following addresses:

- Intersection of Laurel Avenue and 25<sup>th</sup> Avenue, Lemoore, CA.

Thank You,

Kelly Martin  
Scientific Aide  
Central Valley Regional Water Quality Control Board  
Fresno Office  
(559) 444-2489  
Kelly.Martin@Waterboards.ca.gov

---

**From:** Cecilia Simpson <CeciliaS@mooretwinning.com>  
**Sent:** Friday, October 19, 2018 3:19 PM  
**To:** Martin, Kelly@Waterboards <Kelly.Martin@Waterboards.ca.gov>  
**Subject:** 25th and Laurel Avenue Map

Hello Kelly,

Here is the site map for 25<sup>th</sup> Avenue and Laurel Avenue south of Lemoore.

Thank You!



Cecilia Simpson  
Phase I Assessment Project Manager  
Moore Twining Associates, Inc.  
2527 Fresno St.  
Fresno, CA 93721  
Ph: (559) 268-7021 Ext: 279  
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Kings Co Environmental Health Service

## Complaint Investigation - Final Report

Report# 5108

Date run 10/29/2011

Run by: Mari

Record ID# **CO0009156**

Facility Name:

Location: 25th & Laurel Ave. west of Stratford Facility ID#

Date Received: 3/18/2018 Program Element: 2700 2700 EMERGENCY RESPONSE ACTIVITII

Received by: EE0000216 Status: 03 Abated

Assigned to: EE0000216 Owner:

Address:

Home phone#

Work phone#

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At approximately 1:45 PM 3-18-18 Kings County dispatch called and stated KC Fire is requesting EHS response to a illegal dumping, possible Haz Mat issue. 216 asked for contact information for the on site IC. 216 was given Roy Woodcock, KC Fire contact information, (286-7429). KC Fire, Roy Woodcock, stated they responded to a citizen complaint regarding possible gas odor at 25th & Laurel Ave. Upon further investigation by KC Fire they observed some type of discarded AG Chemicals that appeared to have involved in a small fire along the interior of a canal bank and would like EHS on site.

216 responded to the site and arrive at approximately 2:50 PM. 216 observed the following: Four one gallon jugs with a yellow appearance, two bags that were broken open that contained a grayish-white powder. Other items were melted or burned. A chemical odor was detected during the site visit. The canal was observed with running water about one to two feet deep. One AG pump was observed pumping water into the canal. It could not be determined if any other of the materials were in the water. 216 and KC Fire contacted multiple persons to find out who was responsible for the operation and maintenance of the canal. Ceil Howe III was contacted to see if this canal was operated by Westlake Farms. Ceil Howe III arrived on site and determined this canal was not under the operation of Westlake Farms. Mr. Howe III stated the canal might be under the operation of Westlands Water District or by one of the other farms in the area. Mr. Howe III gave the names of some of the other farm operations in the area, Gary Esijian, Steve Jackson or Sandridge Partners.

216 contacted Randy from Westlands Water district. Randy stated it was most likely a private farmer canal but he would have on of his senior operators come out to the site. Lupe Vasquez (647-3950) arrived on site, he stated this canal is not under their operation.

216 then contacted Steve Jackson (804-1878) and Gary Essijian (779-1000). Mr. Esijian stated the canal was not under his operation, however he did stated he did observed a person on a Kubota tractor in that area that appeared to be near or in the canal bank area with a shovel. Later Mr. Esijain stated he observed him driving away and smoke coming from the canal area where the materials were observed. Mr. Essijain further stated that KCSO was called out about two or three weeks Prior to this event for some material that was illegally dumped on 25th Ave. approximately 1 mile north of Laurel Ave. Mr. Essijain sated the farmer (Tony Azavedo?) for that area cleaned up the materials.

216 contacted Steve Jackson. Mr. Jackson stated this canal is most likely being operated at this time by Sandridge Partners. Mr. Jackson stated he will have the site cleaned by early Monday morning.

3-19-18 7:59 PM 216 received a text message from Gary Essijian stating he drove up Laurel Ave. and the same guy (peron on a Kubota Tractor) is out burning right now and there is still a bag of chemical in the middle of 25th Ave. 216 texted back to call the fire dept. and that 216 could not get out to the site at this time. 216 called KC Fire and let them know the same guy on the Kubota tractor was observed burning some material as per Gary Essijain.

3-19-18 259 & 260 responded to the site to verify no further incidents of burning were taking place. No evidence of burnt materials were noted during our follow-up inspection. A hispanic man on a small Kubota tractor was identified near 23rd and Laurel Avenues, approximately 2 miles east of the reported burnt site. We stopped to ask him questions concerning the burning of chemicals near 25th and Laurel Avenues and he responded that he was not involved or aware of that incident. Instead he directed us to the canal bank, north of Laurel Ave, where he had burnt a small patch of dead brush on 3-18-18. He did it to clear a path leading to the water meter that sits on the pipeline ~3 feet to the bottom of the canal. Photos of where the small patch of brush was burnt were taken on 3-19-18. He further stated that the fire department drove by as he was burning the brush and was told to stop burning along the canal. We advised him to do the same and to use a shovel or rake to remove the dead brush if necessary. The incident is considered abated. #259 & 260

**APPENDIX D**

**EDR REPORT**