Appendix D

Methane Investigation Report

Carlin Environmental Consulting, Inc.

Assessment > Remediation > Mitigation Design

February 13, 2017

Prepared for:
Sares-Regis Group
18825 Bardeen Ave.
Irvine, CA 92612

Attn: Tom Guiteras
(Transmitted via email to
tguiteras@sare-regis.com)

Subject: **Methane Investigation Report – Report on Methane Investigation conducted at 13400 Maxella Ave. Marina Del Rey, California.**

Introduction:

Carlin Environmental Consulting, Inc. (CEC) is pleased to prepare this report regarding the methane investigation conducted at 13400 Maxella Avenue in the City of Marina Del Ray, Los Angeles County, California, 90292, hereafter referred to as the Site. The property identified for this investigation consists of two parcels (APN: 4212-004-015 and 4212-004-021). A previous Phase I Environmental Site Assessment Report conducted by California Environmental and published in September 2016 was reviewed by CEC for relevant information regarding this methane investigation.

The Site consists of approximately 6.81 acres combined over two parcels located at the intersection of Maxella Ave and Glencoe Ave. Currently, the Site is occupied with three commercial use buildings, and one building contains multiple tenants. The remainder of the site is covered with asphalt for parking, sidewalks, or landscaping planters.

Methane Probe Installations and Sampling:

On February 3rd, 2017, CEC personnel installed 11 soil vapor probes to depths of approximately 5 feet below ground surface throughout the Site (Figure 1). Borings were hand augured. Probes were placed according to the LADBS Site Testing Standards for Methane (Figure 2).

Soil gas measurements were taken from an RKI Instruments Eagle Series multi-gas detector. This instrument was utilized to determine the methane concentrations from the probes. The rental company, Geotechnical Services of Tustin, California, which is certified by the manufacturer of the instrument to conduct calibration, calibrated it prior to the days of usage. The instrument was

calibrated by the rental company to 25,000 ppm and thus has a +/- accuracy range of 250 ppm. Soil gas measurements were taken on February 8th and 9th.

The field instrument was connected to the probe and allowed to measure methane concentrations continuously as vapor was extracted from the probe. It has been CEC's experience over the last 10+ years that field instrument readings provide equal or better accuracy than laboratory results when measuring methane concentrations. Thus, we recommend no laboratory analysis.

The recorded readings are presented on Table 1 were the highest readings shown by the instrument on each probe. That is some of the values reached a steady state that was slightly lower than the peak value. Nevertheless, we consider the values shown, as indicating that methane in this area of the site needs to be address at the appropriate level.

Investigation Results:

This section provides the results of each of the 11 probes. Each probe was tested twice with at least 24 hours in between. Probe #4 was disturbed and removed between installations and first testing, thus no readings are available.

Table 1 – Methane Probe Readings

Methane Probe Readings (ppm)										
	#1	#2	#3	#5	#6	#7	#8	#9	#10	#11
First Reading 2-8-17	1000	630	15	10	80	460*	440*	n/a*	220*	20
Second Reading 2-9-17	700	1050	40	110	15	300*	230*	290*	380*	120

*Immediate water in tube and unable to acquire reading or immediate water with initial recording.

Conclusions and Recommendations:

The Site is located in a Methane Buffer Zone, as designated by the LADBS. Based on the LADBS Standard Plan for Methane Hazard Mitigation, the Site would be categorized as a Level III Site Design as a result of the highest methane readings being between 1,001 and 5,000 ppm (high of 1,050 ppm) and Design Methane Pressure (inches of water column) ≤ 2".

Under these qualifications, the Site would require, under LADBS Methane Code, no methane mitigation requirements. See the attached Table 1B – Mitigation Requirements for Methane Buffer Zone from Sheet 4 of the LADBS Standard Plan for Methane Hazard Mitigation.

Attachments

Figure 1 – Probe Map
Figure 2 – Soil Gas Probe Set Up
Table 1 – Methane Probe Results
Figure 3 – Table 1B from LADBS Methane Code
Figure 4 – LADBS Form 1 – Certificate of Compliance for Methane Test Data

We appreciate the opportunity to be of service. Please contact us if there are any further questions or comments.

Sincerely,
Carlin Environmental Consulting, Inc.

Gary Carlin
President
Senior Environmental Scientist

Don Terres
P.G. #4349, C.E.G. #1362

Justin Allen
Staff Environmental Scientist

Carlin Environmental Consulting, Inc.

Assessment > Remediation > Mitigation Design

Paseo Marina Probe Location Map

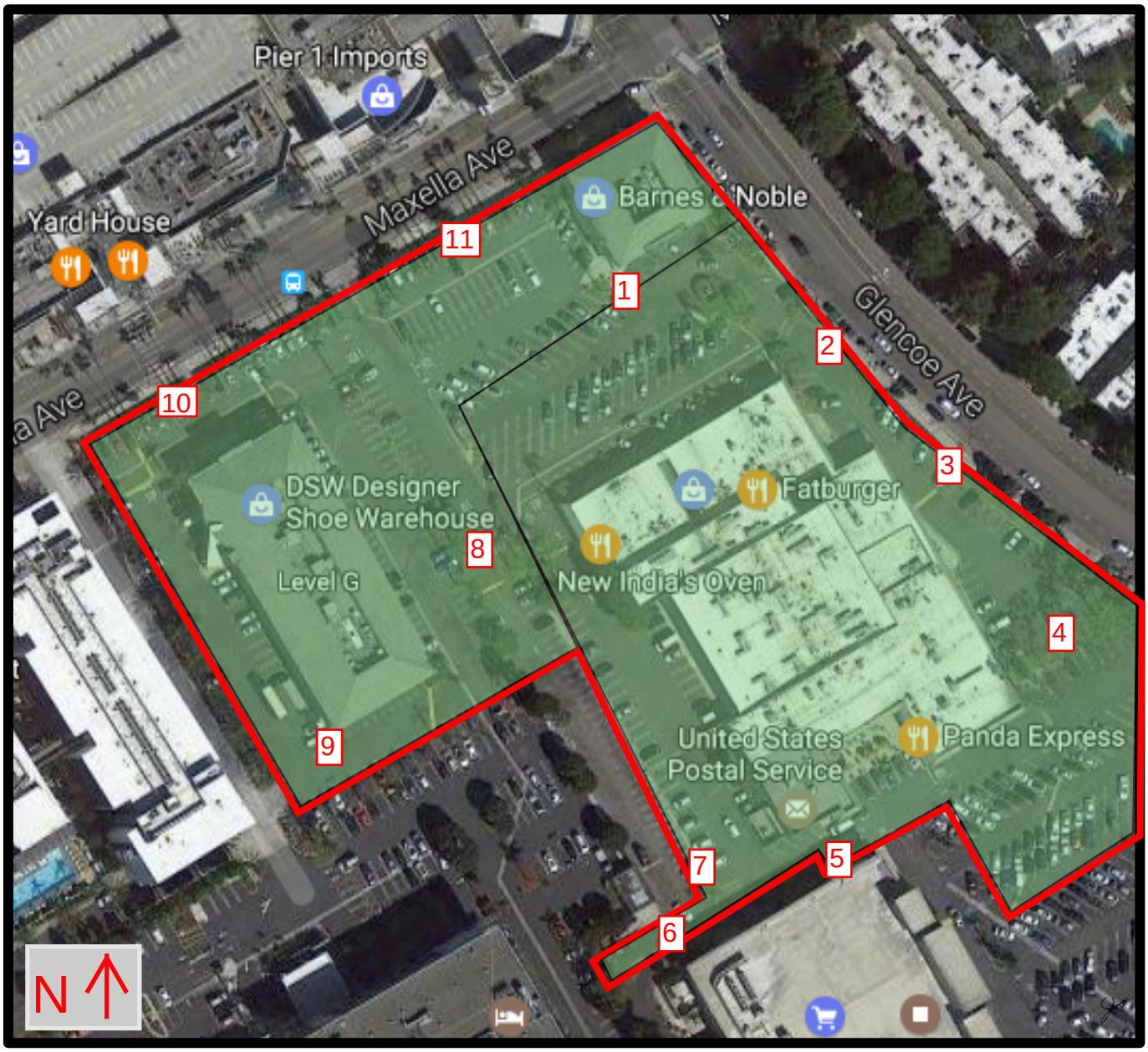


Image taken from Google Maps. 2-9-17

Legend

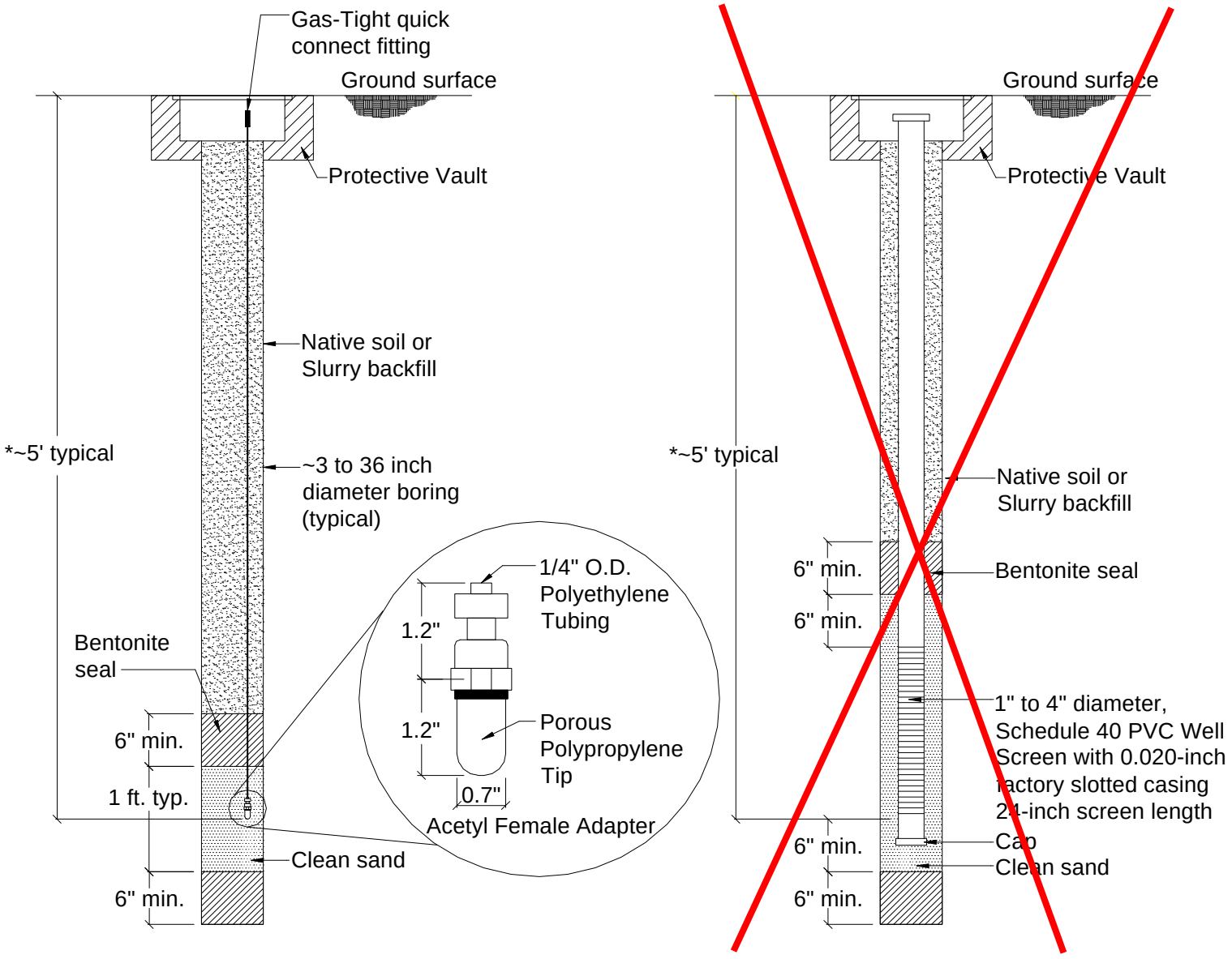
1 Probe Locations with #

Parcel Boundary

Approximate Site Boundary

2522 Chambers Road # 100 Tustin, CA 92780
Phone: 714-508-1111

SHALLOW SOIL GAS TEST EQUIPMENT SET-UP



*Note: Measurement from Shallow Soil Gas Test shall be taken above ground water level.

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Table 1 - Methane Probe Readings

Sares Regis - Paseo Marina - 13400 Maxella Ave, Marina Del Rey

	2/8/17		2/9/17		Notes	Probe Location
Probe Number	CH4 (ppm)	Time	CH4 (ppm)	Time		
1	1000	8:05 AM	700	2:00 PM		Near Barnes & Noble
2	630	8:10 AM	1050	2:05 PM		In front of Coffee Bean
3	15	8:12 AM	40	2:08 PM		In front of AMC & Fatburger
4	N/A	-	N/A	-	Removed before testing	In front of O' My Sole
5	10	8:16 AM	110	1:35 PM		Side of Pavillions
6	80	8:18 AM	15	1:40 PM		Side of Pavillions
7	460	8:22 AM	300	1:37 PM	Water	Side of Pavillions, further out
8	440	8:27 AM	230	1:43 PM	Water	East side of DSW
9	N/A	8:30 AM	290	1:48 PM	Water	SW side of DSW
10	220	8:35 AM	380	1:52 PM	Water	NW side of DSW
11	20	8:40 AM	120	1:55 PM		West of Barnes & Noble

* Pressure readings for all probes were less than 0.1 inches

CH4 = Methane ppm = parts per million

2-14-17

Table 1B - MITIGATION REQUIREMENTS FOR METHANE BUFFER ZONE (See notes)

Site Design Level			Level I		Level II		Level III		Level IV		Level V
Design Methane Concentration (ppmv)			0 - 100		101 - 1,000		1,001 - 5,000		5,001 - 12,500		> 12,500
Design Methane Pressure (See note 1) (Inches of water column)			≤ 2"	> 2"	≤ 2"	> 2"	≤ 2"	> 2"	≤ 2"	> 2"	All Pressure
PASSIVE SYSTEM	De-watering System			X		X		X	X	X	X
	Sub-Slab Vent System	Perforated Horizontal Pipes		X		X		X	X	X	X
		Gravel Blanket Thickness Under Impervious Membrane		2"		3"		3"	2"	4"	4"
		Gravel Thickness Surrounding Perforated Horizontal Pipes		2"		3"		3"	2"	4"	4"
		Vent Risers		X		X		X	X	X	X
	Impervious Membrane			X		X		X	X	X	X
ACTIVE SYSTEM	Sub-Slab System	Mechanical Extraction System (See note 2)								X	X
	Lowest Occupied Space System	Gas Detection System (See note 3)		X		X		X	X	X	X
		Mechanical Ventilation (See Notes 3, 4, 5)		X		X		X	X	X	X
		Alarm System		X		X		X	X	X	X
	Control Panel			X		X		X	X	X	X
MISC. SYSTEM	Trench Dam			X		X		X	X	X	X
	Conduit or Cable Seal Fitting			X		X		X	X	X	X
	Additional Vent Risers (See note 5)										X

Produced from Sheet 4 of the LADBS Methane Code

2-16-17

FORM 1 - CERTIFICATE OF COMPLIANCE FOR METHANE TEST DATA

Part 1: Certification Sheet

Site Address: 13400 Maxella Ave Marina Del Rey, CA 90292

Legal Description: Tract: Lot: Block:

Building Use: Commercial

Architect's, Engineer's or Geologist's Stamp:

CERTIFIED ENGINEERING GEOLOGIST
DONALD A. TERRES
No. CEG 1362
Exp. 1-31-19
STATE OF CALIFORNIA

Name of Architect, Engineer, or Geologist:
Carlin Environmental Consulting, Inc.
Mailing Address:
25272 Chambers Rd #100
Lustin, CA 92780
Telephone: (714) 508-1111

Name of Testing Laboratory:
GeoTracers
City Test Lab License #: TA 10234
Telephone: (714) 508-1111

I hereby certify that I have tested the above site for the purpose of methane mitigation and that all procedures were conducted by a City of Los Angeles licensed testing agency in conformity with the requirements of the LADBS Information Bulletin P/BC 2002-101. Where the inspection and testing of all or part of the work above is delegated, full responsibility shall be assumed by the architect, engineer or geologist whose signature is affixed thereon.

Signed: _____ date 2-15-2017

Required Data:

- Project is in the (Methane Zone) or (Methane Buffer Zone) (Tidal influence)
- Depth of ground water observed during testing: 6-8' feet below the Impervious Membrane.
- Depth of Historical High Ground Water Table Elevation*: 15' feet below the Impervious Membrane.
- Design Methane Concentration**: 1050 parts per million in volume (ppmv).
- Design Methane Pressure***: <2" inches of water column.
- Site Design Level: (Level I, Level II, (Level III) Level IV, Level V) with ≤2" inches of water column.

De-watering:

- De-watering (is) (is not) required per Section 91.7104.3.7.
- Pump discharge rate N/A cubic feet per minute per reference geology or soil report: N/A dated N/A.

Additional Investigation:

- Additional investigation (was) ((was not)) conducted.

Latest Grading on Site:

- Date of last grading on site (was) (was not) more than 30 days before Site Testing.
- See Attached explanation of the effect on soil gas survey results by grading operations.

Notes:

* Historical High Ground Water Table Elevation shall mean the highest recorded elevation of ground water table based on historical records and field investigations as determined by the engineer for the methane mitigation system.

** Design Methane Concentration shall mean the highest recorded measured methane concentration from either Shallow Soil Gas Test or any Gas Probe Set on the site.

*** Design Methane Pressure shall mean the highest total pressure measured from any Gas Probe Set on the site.

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FORM 1 (CONTINUED) - CERTIFICATE OF COMPLIANCE FOR METHANE TEST DATA

Part 2: Test Data - Shallow Soil Gas Test and Gas Probe Test

Site Address: 13400 Maxella Ave

Description of Gas Analysis Instrument(s):

Instrument Name and Model: RKI Eagle Instrument Accuracy: ± 250 ppmv.

City of Los Angeles Testing License #: TA 10234

Date	Time	Probe Set #	Concentration (ppmv)	Pressure (inches water column)	Probe Depth (feet)	Description / Probe Location
2-8-17	8:05	1	1000	<2"	5'	See map
	8:10	2	630			See map
	8:12	3	15			probe removed
	-	4	-			See map
	8:16	5	10			"
	8:18	6	80			"
	8:22	7	460			"
	8:27	8	440			"
	8:30	9	-			"
	8:35	10	220			"
	8:40	11	20			"
2-9-17	2:00	1	700			"
	2:05	2	1050			"
	2:08	3	40			"
	-	4	-			probe removed
	1:35	5	110			See map
	1:40	6	15			"
	1:37	7	300			"
	1:43	8	230			"
	1:48	9	290			"
	1:52	10	380			"
	1:55	11	120			"

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