

PSAI REALTY PARTNERS

COMMERCIAL REAL ESTATE

July 24, 2017

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By Alameda County Environmental Health 10:48 am, Aug 01, 2017

Mr. Keith Nowell, P.G., C.H.G.
Alameda County Health Care Services Agency
Department of Environmental Health
1131 Harbor Bay Parkway, Suite 250
Alameda, CA 94502-6577

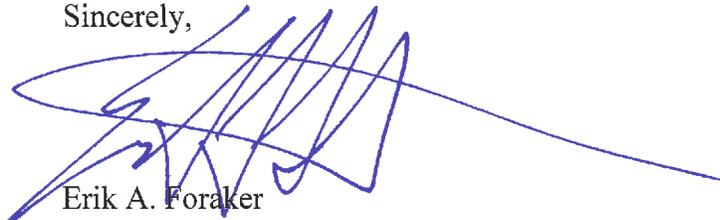
**Subject: Soil Gas Sampling Report, 1708 Wood Street, Oakland, California
(Case No.: RO0003206).**

Dear Mr. Nowell:

Please find attached the Soil Gas Sampling Report prepared by West Environmental Services & Technology, Inc. (WEST) for the 1708 Wood Street property in Oakland, California (the "Site"). I declare, under penalty of perjury, that the information and/or recommendations contained in the attached document or report is true and correct to the best of my knowledge.

Please call me at (415)362-1700 if you have any questions or wish to discuss this further.

Sincerely,



Erik A. Foraker
Managing Director



711 Grand Avenue, Suite 220
San Rafael, California 94901
415.460.6770 • Fax 415.460.6771
main@westenvironmental.com

July 20, 2017

Mr. Martin Ward
PSAI Realty Partners
155 Montgomery Street, Suite 1600
San Francisco, CA 94104

Subject: *Soil Gas Sampling Report*, 1708 Wood Street, Oakland, California, Case No.: RO0003206.

Dear Mr. Ward:

This *Soil Gas Sampling Report* (“*Report*”) has been prepared by West Environmental Services & Technology, Inc., (WEST), on behalf of PSAI Realty Partners (PSAI), for the 1708 Wood Street property located in Oakland, California (“*Site*,” Figure 1). This *Report* presents the findings from the soil gas sampling on the eastern portion of the Site. The soil gas sampling was conducted pursuant to the scope of work presented in the February 2017 *Remedial Action Plan (RAP)* and approved via email on June 2, 2017 by the Alameda County Department of Environmental Health (ACDEH). The ACDEH subsequently approved the *RAP* on July 18, 2017.

The Site is to be redeveloped for multi-family residential use, with multi-story townhomes, landscape and hardscape. The February 2017 *RAP* proposed vapor mitigation measures to address methane in soil gas detected at one location within the eastern portion of the Site during sampling conducted in December 2016. The June 2017 soil gas sampling was performed to further characterize soil gas throughout the eastern portion of the Site and evaluate the need for vapor mitigation measures to control potential methane migration to indoor air within the remaining eight buildings located there (Figure 2).

This *Report* includes: a summary of the June 2017 soil gas sample collection methodology; laboratory analytical results; and recommendations for vapor mitigation measures. Based on the findings from the soil gas sampling, vapor mitigation measures, as presented in the *RAP*, should be implemented for two additional buildings, identified on Figure 3, to be constructed during Site development.

BACKGROUND

The Site has been used for commercial and industrial purposes. Details of the Site background are presented in WEST’s February 2017 *RAP*. Currently, the Site is occupied by Three Rivers Trucking and is utilized as a trucking/shipping terminal and for truck parking.

SITE DESCRIPTION

The approximately 4.3-acre Site is located at 1708 Wood Street in Oakland, Alameda County, California, within a mixed residential, commercial and industrial area (Figure 2). The Site geology is underlain by fill material and unconsolidated sediments comprised of Bay Mud, silts,

clays and sands. Bay Mud was encountered in the borings underlying the fill material within the eastern half of the Site. The Bay Mud is an approximately 5- to 10-foot thick peat layer with high organics content. The depth to groundwater measured within former monitoring wells constructed within the shallow zone has ranged between approximately one-foot to five-feet below ground surface. Details of the Site description are presented in WEST's February 2017 *RAP*.

SUMMARY OF INVESTIGATIONS

Site investigations have been conducted since the 1980s in four main areas: Area 1-Northwest UST Area; Area 2-Central and Eastern UST and Oil-Water Separator Area; Loading Dock Area; and eastern side of the Site. Details of the previous Site investigations were presented in WEST's February 2017 *RAP*. A summary of the June 2017 soil gas sampling is presented below.

Soil Gas Sampling

Pursuant to the *RAP* and the ACDEH approval, 10 vapor samples (SG-1 and SG-5 to SG-13) were collected within the eastern side of the Site to further characterize the presence of methane in the subsurface (Figure 2). The soil gas samples were located within the footprints of the buildings proposed to be constructed during Site development. Details of the vapor sample collection methodology and laboratory analytical results are presented below.

Vapor Probe Installation

Prior to sample collection, semi-permanent sampling probes were installed in accordance with the 2011 California Environmental Protection Agency's (CalEPA) Department of Toxic Substances Control (DTSC) *Final Guidance for the Evaluation and Mitigation of Subsurface Vapor Intrusion to Indoor Air (Vapor Intrusion Guidance)*. The sampling probes were installed by advancing a small diameter boring using a hand-held electric roto-hammer outfitted with an approximately one-inch in diameter drill bit through the asphalt or concrete ground surface to approximately three-inches below the base of the ground cover.

Following completion of the boring, a sample point consisting of 0.125-inch to 0.25-inch stainless steel metal tubing fitted with a permeable probe tip was installed in the boring. Filter sand comprised of #3 Monterey sand was then placed around the probe tip. The boring annulus above the sand filter was then filled with an approximately two-inch thick layer of dry bentonite to above the base of the ground cover. An approximately two-inch thick layer of bentonite hydrated with de-ionized water was then placed above the dry granular bentonite. The top of the vapor probe was then outfitted with a two-inch diameter flush-mounted stainless steel threaded cap. The sample probes were then allowed to equilibrate for at least two hours before sample collection.

Sample Collection Methodology

u

Prior to purging or sampling soil gas, a test was conducted to check for leaks in the aboveground fittings, i.e., “shut-in” test. The shut-in test consisted of assembling the above ground apparatus (e.g., valves, lines and fittings downstream from the top of the probe), and evacuating the lines to a measured vacuum of approximately 100-inches of water column, then shutting the vacuum with closed valves on opposite ends of the sampling equipment. The vacuum gauge connected to the line via “T”-fitting was observed for at least one minute for observable loss of vacuum.

ea

Following the shut-in testing, a shroud was placed over the probe and sampling equipment and a helium tracer gas introduced into the shroud. The helium was released into the shroud through a leak compound addition port and a handheld helium detector was connected to the leak compound sample port. Helium was added until a steady concentration within the shroud of at least 20-percent was achieved using the handheld helium detector. The helium concentrations were recorded on field data forms.

Once the steady-state helium concentration within the shroud was achieved, purging of the vapor probe was conducted. Pursuant to the CalEPA’s July 2015 *Advisory Active Soil Gas Investigation (Advisory)*, approximately three purge volumes were removed. The purge volume (also referred to as the “dead space volume”) was estimated by summation of the internal volume of vapor probe, void space of the sand pack around the probe tip and void space of the dry bentonite. Purge flow rates between 100 to 200 milliliters per minute (ml/min) and vacuums less than 100-inches of water were maintained during purging. The purge effluent was also field screened for total organic compounds using a hand-held photo-ionization detector (PID) equipped with a 10.6 electron Volt (eV) lamp and calibrated to 100 parts per million by volume (ppm_v) as isobutylene gas and for the helium tracer gas. The PID and helium detector readings were recorded on field data sheets.

a

The vapor samples were collected from the sample probes in accordance with CalEPA’s July 2015 *Advisory* and the whole gas sampling technique as outlined in ASTM D 5466 *Standard Test Method for Determination of Volatile Organic Chemicals in Atmospheres – Canister Sampling Methodology* (ASTM D 5466). Following purging (three well volumes) through a laboratory-prepared sampling manifold with 200-ml per minute flow control valve, vapor flow was directed to a laboratory-prepared one-liter Summa[®] canister. The Summa[®] canister contained a vacuum of approximately 30-inches of mercury and was connected to the Teflon tubing and manifold using airtight stainless-steel fittings. Following sample collection, the Summa[®] canister atmosphere was measured with a vacuum gauge and recorded on field data forms.

The Summa[®] canisters were labeled and transported a California Department of Public Health (CDPH) Environmental Laboratory Accreditation Program (ELAP) certified laboratory

following ASTM D 4840 chain-of-custody procedures for chemical analysis. The soil gas samples were analyzed for: methane using ASTM Method 1946 and United States Environmental Protection Agency (USEPA) Method TO-18; oxygen, nitrogen, carbon dioxide and carbon monoxide by ASTM Method 1946; and helium using ASTM Method 1946.

Laboratory Analytical Results

Laboratory analysis of the soil gas samples (SG-1 and SG-5 to SG-13) revealed methane ranging between 11.7 ppm_v (SG-11) to 381,000 ppm_v (SG-6) (Table 1 and Figure 2). The oxygen concentrations measured in the soil gas samples ranged between 9.13 percent (SG-8) to 20.1 percent (SG-11). Nitrogen was detected in the soil gas samples between 32.1 percent (SG-6) to 84.3 percent (SG-5). Carbon dioxide concentrations in the soil gas samples ranged between less than the laboratory-reporting limit of 0.100 percent (SG-12) to 23.2 percent (SG-8). Carbon monoxide was not detected in the soil gas samples above the laboratory-reporting limit of 0.010 percent (Table 3-1). Helium was reported above the laboratory-reporting limit of 0.100 percent in the soil gas samples SG-10 (0.192 percent), SG-11 (0.403 percent) and SG-13 (0.712 percent). A summary of the soil gas sampling data is presented in Table 1. Methane concentrations are depicted on Figure 2. Field data sheets and laboratory analytical data are attached.

Summary

In June 2017, 10 soil gas samples (SG-1 and SG-5 to SG-13) were collected from vapor probes installed with the eastern side of the Site to characterize the extent of methane above the DTSC screening level of 5,000 ppm_v. In December 2016, methane was detected in the soil gas sample collected at location SG-1 at 134,000 ppm_v. Laboratory analysis of the soil gas samples collected in June 2017 revealed methane at approximately equivalent to or above the DTSC screening level of 5,000 ppm_v in the samples collected from SG-6 (381,000 ppm_v) and SG-13 (4,970 ppm_v). Lower concentrations of methane were detected in the remaining soil gas samples ranging between 11.7 ppm_v (SG-11) and 3,570 ppm_v (SG-8). In addition, the soil gas sample collected from location SG-1 revealed a lower concentration of methane, at 43.6 ppm_v, than what was detected in December 2016 (134,000 ppm_v).

RECOMMENDATIONS

In February 2017, the *RAP* proposed implementation of vapor mitigation measures beneath the proposed approximately 3,000-square-foot building (sample location SG-1) within the central portion of the eastern side of the Site (Figure 3). The June 2017 soil gas sampling detected methane equivalently at and above DTSC's 5,000 ppm_v screening level within the central and northern portion of the eastern side of the Site, near sample locations SG-6 and SG-13 (Figure 3).

Based on the Site soil gas data, vapor mitigation measures to control methane migration to indoor air should be installed beneath the following proposed buildings within the northern and central portions of the eastern side of the Site (Figure 3):

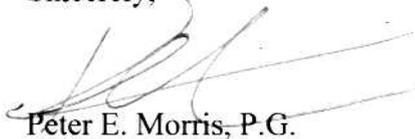
- Proposed building near sample location SG-1 (approximately 3,000-square feet);

- Proposed building near sample locations SG-5 and SG-6 (approximately 8,200-square feet); and
- Proposed building near sample location SG-13 (approximately 3,000-square feet).

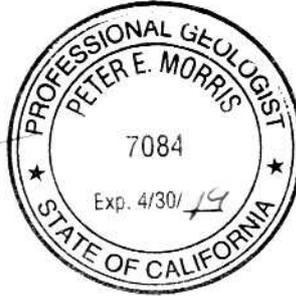
The vapor mitigation measures should be implemented as detailed in section 5.3 (Task 3: Methane Mitigation System) of the approved February 2017 *RAP*.

Please call me at 415/460-6770, extension 206, if you have any questions or wish to discuss this further.

Sincerely,



Peter E. Morris, P.G.
Senior Geologist



Attachments

cc: Keith Nowell, P.G., C.H.G., Alameda County Department of Environmental Health

TABLE 1
SUMMARY OF SOIL GAS ANALYTICAL RESULTS
1708 Wood Street
Oakland, California

Sample ID	Depth (feet)	Date	Methane		Oxygen	Nitrogen	Carbon Dioxide	Carbon Monoxide	Helium
			(ppmv)	(%-volume)	(%-volume)	(%-volume)	(%-volume)	(%-volume)	(%-volume)
SG-1	1	12/14/16	134,000	--	--	--	--	--	0.318
		6/20/17	43.6	<1.00	17.4	75.8	6.76	<0.010	<0.100
SG-2	1	12/14/16	30.1	--	--	--	--	--	1.81
SG-3	1	12/14/16	32.6	--	--	--	--	--	0.932
SG-4	1	12/14/16	212	--	--	--	--	--	0.688
SG-5	1	6/20/17	1,540	<1.00	15.2	84.3	0.506	<0.010	<0.100
SG-6	1	6/20/17	381,000	44.5	11.7	32.1	11.7	<0.010	<0.100
SG-7	1	6/20/17	158	<1.00	17.6	77.1	5.26	<0.010	<0.100
SG-8	1	6/20/17	3,570	<1.00	9.13	67.7	23.2	<0.010	<0.100
SG-9	1	6/20/17	14.5	<1.00	10.0	79.8	10.2	<0.010	<0.100
SG-10	1	6/21/17	231	<1.00	11.9	82.7	5.43	<0.010	0.192
SG-11	1	6/21/17	11.7	<1.00	20.1	78.2	1.71	<0.010	0.403
SG-12	1	6/21/17	13.6	<1.00	19.7	80.3	<0.100	<0.010	<0.100
SG-13	1	6/21/17	4,970	<1.00	18.6	80.7	0.462	<0.010	0.712
Residential ESLs			5,000 ^a	--	--	--	--	--	--

Notes:

a: CalEPA Recommended Action Level for Methane, 2005

µg/m³: micrograms per meter cubed

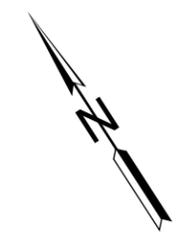
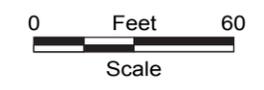
--: not available/not analyzed



EXPLANATION

- Landscape/Proposed Excavation
(3-feet Below Ground Surface)
- Proposed Buildings for Methane Mitigation
- Methane Sampling Location
- | | |
|-------------|----------------------------|
| SG-6 | Sample ID |
| 6/17 | Date Sampled |
| 381,000 | Methane in Soil Gas (ppmv) |

 Methane Sampling Location
- Methane Isocontour (5,000 ppmv)



PROPOSED REMEDIAL ACTION AREAS	
1708 Wood Street, Oakland, California	
WEST <small>Environmental Services & Technology</small>	Figure □ July 2017

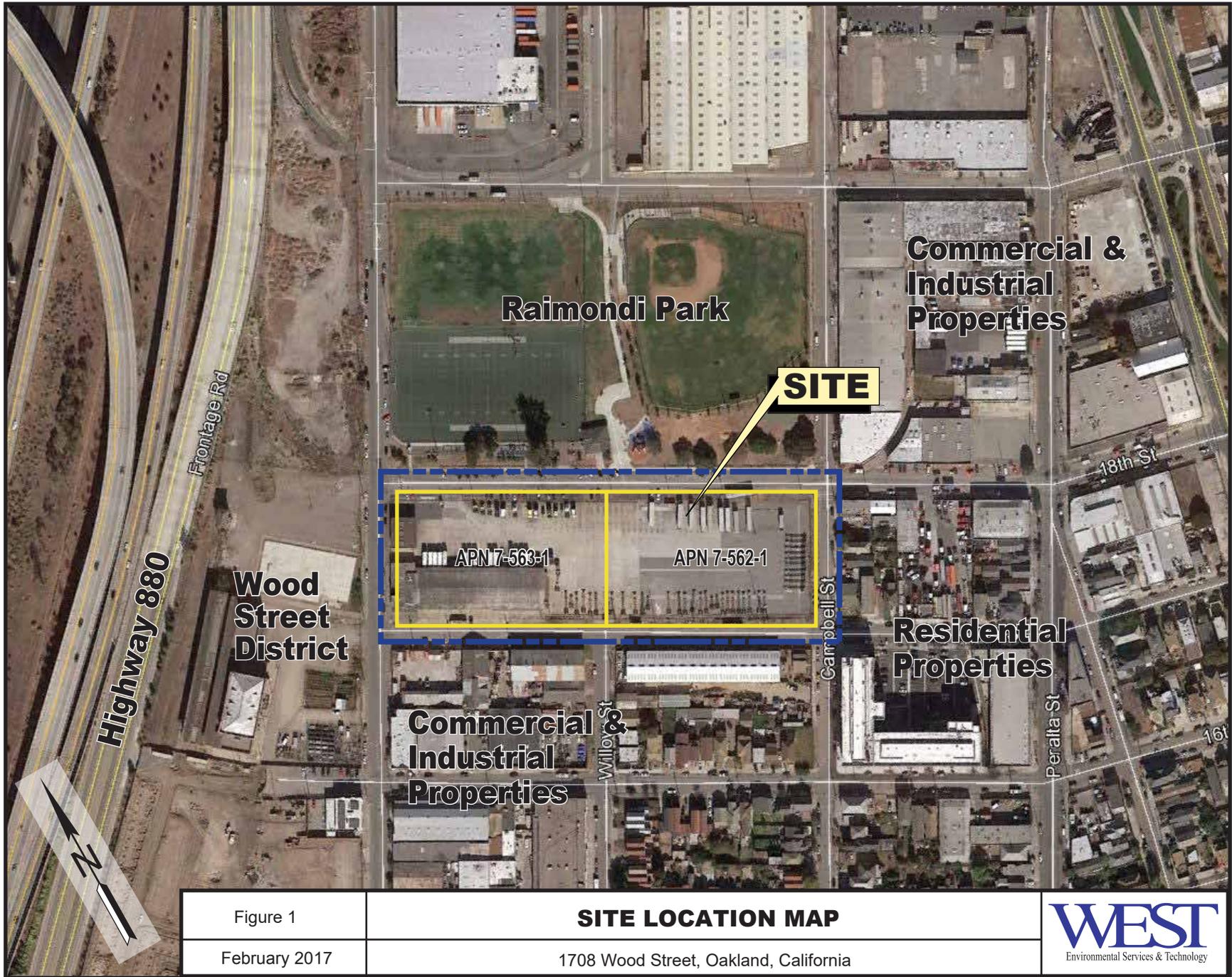


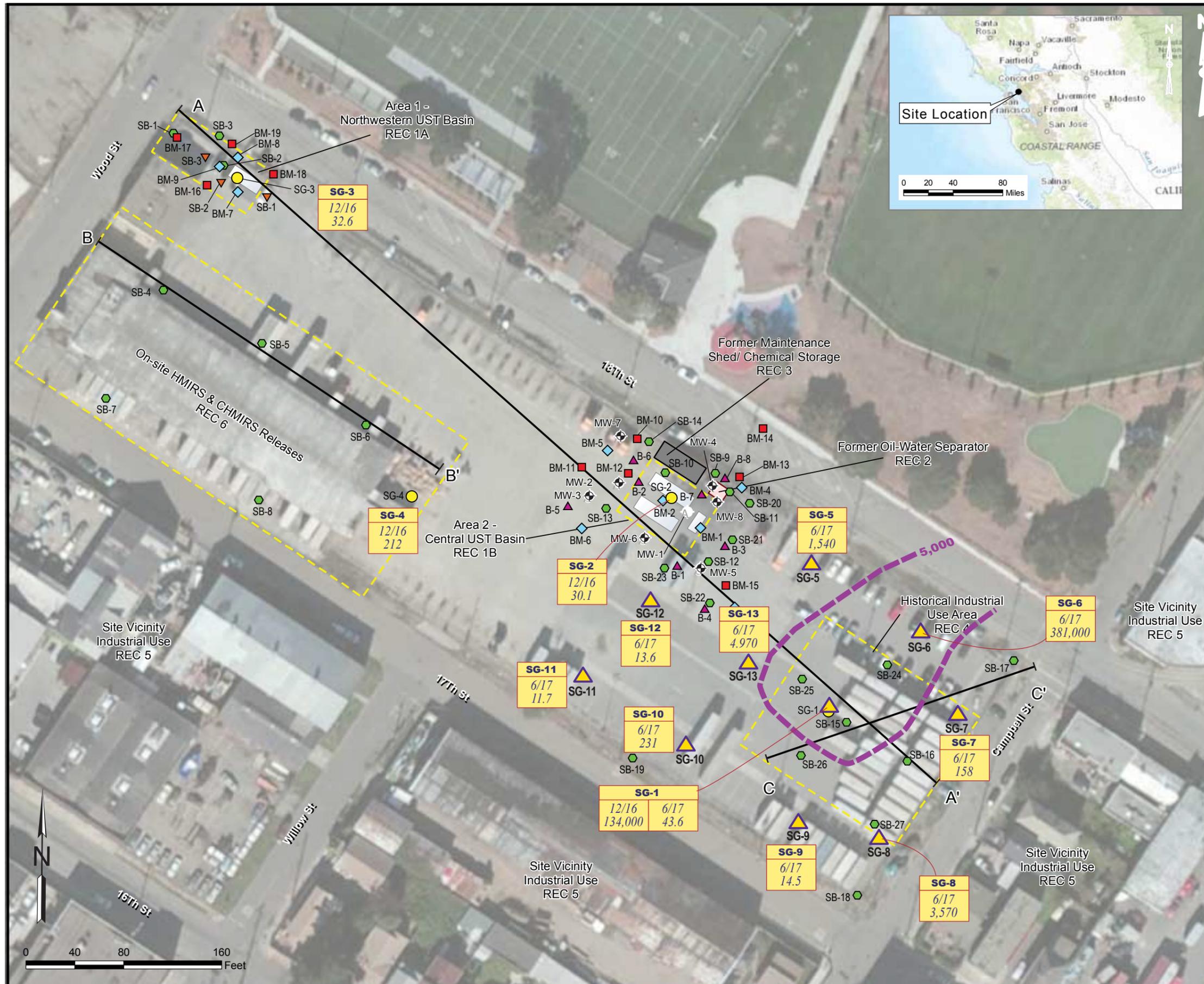
Figure 1

SITE LOCATION MAP

February 2017

1708 Wood Street, Oakland, California





- EXPLANATION**
- Cross Section Profile
 - - - Area of Interest
 - Approximate Location of Former Oil-Water Separator
 - Former Maintenance Shed/Chemical Storage
 - Approximate Location of Abandoned UST
 - ▼ SB-1 to SB-8 Boring Location (Groundwater Technology, 1987)
 - ▲ B-1 to B-8 Boring Location (BCON, 1997)
 - ◆ BM-1 to BM-9 Boring Location (B&M, 2007)
 - BM-10 to BM-19 Boring Location (B&M, 2008)
 - SB-1 to SB-27 Boring Location (ACC, 2011)
 - SG-1 to SG-4 Soil Gas Sample Locations (WEST, 2016)
 - ⊕ MW-1 to MW-2 Monitoring Well Location (R.S. Egan, 1987; Destroyed 2008)
 - ⊕ MW-3 to MW-5 Monitoring Well Location (R.S. Egan, 1987; Destroyed 2008)
 - ⊕ MW-6 to MW-8 Shallow Monitoring Well Location (B&M, 2009; Destroyed 2015)
 - - - Methane Isocontour (5,000 ppmv)
 - SG-1 ▲ Soil Gas Sample Location
- | SG-1 | | Sample ID | Date Sampled | Methane in Soil Gas (ppmv) |
|---------|------|-----------|--------------|----------------------------|
| 12/16 | 6/17 | | | |
| 134,000 | 43.6 | | | |

Notes:
 All locations approximate Taken from ACC Environmental. Consultants sample location figure (2/6/2011). Only samples along the cross-section displayed here.

SITE PLAN
 1708 Wood Street, Oakland, California

	Figure 2
	July 2017

SOIL VAPOR SAMPLING LOG, SAMPLE ID: SG-1

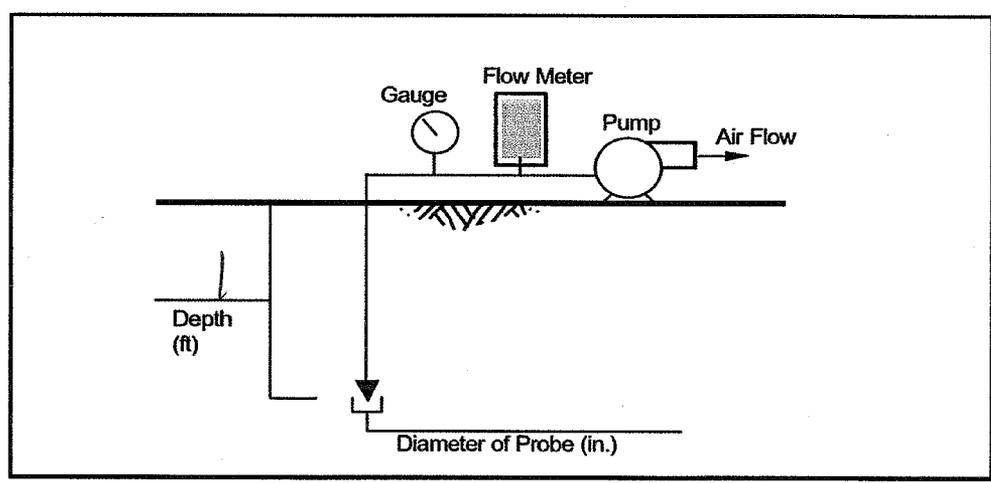
PROJECT NAME: <u>PSAI Oakland</u>						
PROJECT LOCATION: <u>1708 Wood St, Oakland</u>						
WEATHER: <u>clear skies, mid to high 60's, west^{pac} breeze</u>						
DATE: <u>June 20, 2017</u>						
SAMPLED BY: <u>RUM</u>						
WELL TYPE, e.g., PERMANENT; TEMPORARY: <u>Permanent</u>						
SAMPLE DATA	SAMPLE ID:		<u>SG-1</u>			
	VAPOR PROBE SAMPLE DEPTH (FT):		<u>1</u>			
	SUMMA CANISTER ID:		<u>S-356</u>			
	FLOW CONTROLLER SERIAL NO.:		<u>-</u>			
PURGE VOLUME CALCULATION	BORING/WELL DIAMETER (INCH):		<u>1.5</u>			
	DRY BENTONITE INTERVAL (FT)		<u>0.25 to 0.42</u>			
	SAND PACK INTERVAL (FT):		<u>0.42 to 0.83</u>			
	TUBING TYPE:		<u>stainless steel/tetlon</u>			
	TUBING LENGTH (FT):		<u>1 + 2 (36")</u>			
	TUBING ID (INCH):		<u>0.188</u>			
	PURGE VOLUME (CC):		<u>55</u>			
	PURGE RATE (CC/MIN):		<u>100</u>			
	PURGE TIME 1 WELL VOLUME (MIN):		<u>0.55</u>			
	PURGE WELL VOLUMES (CIRCLE)		<u>1</u>	<u>3</u>	<u>7</u>	<u>10</u>
PURGE TIME (MIN):		<u>0.55</u>	<u>1.6</u>	<u>-</u>	<u>-</u>	
SHUT IN/ 10-MINUTE VACUUM TEST	VACUUM HOLD TEST START TIME (24 HR):		<u>1015</u>			
	INITIAL CANISTER VACUUM (IN. Hg)		<u>8</u>			
	VACUUM HOLD TEST END TIME (24 HR):		<u>1025</u>			
	VACUUM HOLD TEST DURATION (MIN):		<u>10</u>			
	FINAL CANISTER VACUUM (IN. Hg):		<u>8</u>			
PURGE AND SAMPLE TRAIN LEAK TEST	MEASUREMENTS WITHIN SHROUD		TIME (24 HR)	HELIUM (%)		
	PRIOR TO PURGE		<u>1025</u>	<u>29.2</u>		
	DURING PURGE		<u>-</u>	<u>-</u>		
	POST PURGE		<u>1029</u>	<u>22.2</u>		
	MEASUREMENTS FROM SAMPLING TRAIN		TIME (24 HR)	HELIUM (%)	PID (PPMV)	
	PURGE START		<u>1026</u>	<u>0</u>	<u>-</u>	
	1 WELL VOLUME		<u>1027</u>	<u>0</u>	<u>0.1</u>	<u>7" H₂O</u>
	3 WELL VOLUMES		<u>1028</u>	<u>0</u>	<u>0.1</u>	
	7 WELL VOLUMES		<u>-</u>	<u>-</u>	<u>-</u>	
	10 WELL VOLUMES		<u>-</u>	<u>-</u>	<u>-</u>	

SOIL VAPOR SAMPLING LOG, SAMPLE ID: SG-1

PROJECT NAME: PSAI Oakland
 PROJECT LOCATION: 1708 Wood St., Oakland
 DATE: June 20, 2017

SAMPLE COLLECTION AND TRACER GAS MONITORING	INITIAL CANISTER VACUUM (IN. Hg)	29			
	TIME CANISTER OPENED (24 HR) <u>S-356</u>	1030			
	APPLY TRACER GAS WITHIN THE SHROUD	TIME (MINS)	HELIUM (%)	VACUUM (IN. Hg)	
		2	20.3	25	
		4	21.2	21	
		6	20.5	18	
		8	21.0	14	
		10	20.4	10	
		15	20.6	3	
		20	—	—	
30		—	—		
40		—	—		
50	—	—			
60	—	—			
TIME CANISTER CLOSED (24 HR)	1045				
FINAL CANISTER PRESSURE (IN. Hg):	3				
TOTAL SAMPLE TIME (MINS):	15				

INTRINSIC PERMEABILITY TESTING



TEST THRU WELL TUBING/NO MANIFOLD	TEST 1	TEST 2	TEST 3	TEST 4
VACUUM (IN. WATER)	—			
FLOW METER READING	—			
FLOW RATE (CC/MIN)	—			
LENGTH OF TEST (SEC)	—			

SOIL VAPOR SAMPLING LOG, SAMPLE ID: SG-5

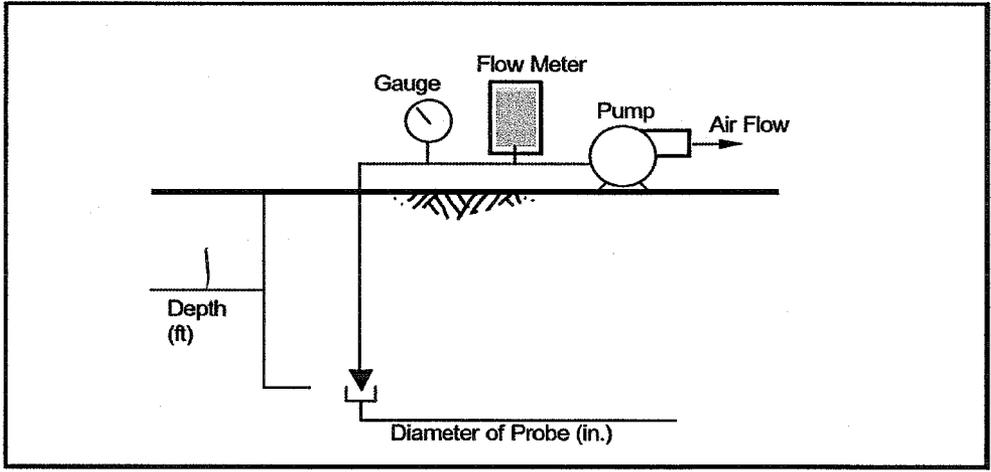
PROJECT NAME: <u>PS&I, Oakland</u>						
PROJECT LOCATION: <u>1708 Wood St, Oakland</u>						
WEATHER: <u>clear skies, mid 70's, west wind to SW</u>						
DATE: <u>June 20, 2017</u>						
SAMPLED BY: <u>RLM</u>						
WELL TYPE, e.g., PERMANENT; TEMPORARY: <u>Permanent</u>						
SAMPLE DATA	SAMPLE ID:		<u>SG-5</u>			
	VAPOR PROBE SAMPLE DEPTH (FT):		<u>1</u>			
	SUMMA CANISTER ID:		<u>S-268</u>			
	FLOW CONTROLLER SERIAL NO.:		<u>-</u>			
PURGE VOLUME CALCULATION	BORING/WELL DIAMETER (INCH):		<u>1</u>			
	DRY BENTONITE INTERVAL (FT)		<u>0.33 to 0.5</u>			
	SAND PACK INTERVAL (FT):		<u>0.5 to 0.92</u>			
	TUBING TYPE:		<u>SS/teflon</u>			
	TUBING LENGTH (FT):		<u>142 (36')</u>			
	TUBING ID (INCH):		<u>0.188</u>			
	PURGE VOLUME (CC):		<u>55</u>			
	PURGE RATE (CC/MIN):		<u>100</u>			
	PURGE TIME 1 WELL VOLUME (MIN):		<u>0.55</u>			
	PURGE WELL VOLUMES (CIRCLE)		<u>1</u>	<u>3</u>	<u>7</u>	<u>10</u>
PURGE TIME (MIN):		<u>0.55</u>	<u>1.64</u>	<u>-</u>	<u>-</u>	
SHUT IN/ 10-MINUTE VACUUM TEST	VACUUM HOLD TEST START TIME (24 HR):		<u>1334</u>			
	INITIAL CANISTER VACUUM (IN. Hg)		<u>5</u>			
	VACUUM HOLD TEST END TIME (24 HR):		<u>1344</u>			
	VACUUM HOLD TEST DURATION (MIN):		<u>10</u>			
	FINAL CANISTER VACUUM (IN. Hg):		<u>5</u>			
PURGE AND SAMPLE TRAIN LEAK TEST	MEASUREMENTS WITHIN SHROUD		TIME	HELIUM		
			(24 HR)	(%)		
	PRIOR TO PURGE		<u>1346</u>	<u>21.2</u>		
	DURING PURGE		<u>-</u>	<u>-</u>		
	POST PURGE		<u>1351</u>	<u>20.8</u>		
	MEASUREMENTS FROM SAMPLING TRAIN		TIME	HELIUM	PID	
			(24 HR)	(%)	(PPMV)	
	PURGE START		<u>1347</u>	<u>0</u>	<u>0.0</u>	
	1 WELL VOLUME		<u>1348</u>	<u>0</u>	<u>0.4</u>	<u>25" H₂O</u>
	3 WELL VOLUMES		<u>1349</u>	<u>0</u>	<u>0.4</u>	
7 WELL VOLUMES		<u>-</u>	<u>-</u>	<u>-</u>		
10 WELL VOLUMES		<u>-</u>	<u>-</u>	<u>-</u>		

SOIL VAPOR SAMPLING LOG, SAMPLE ID: SG-5

PROJECT NAME: PSAI Oakland
 PROJECT LOCATION: 1708 Wood St, Oakland, CA
 DATE: June 20, 2017

SAMPLE COLLECTION AND TRACER GAS MONITORING	INITIAL CANISTER VACUUM (IN. Hg)	30			
	TIME CANISTER OPENED (24 HR) <u>S-268</u>	1353			
	APPLY TRACER GAS WITHIN THE SHROUD	TIME (MINS)	HELIUM (%)	VACUUM (IN. Hg)	
		2	20.8	22	
		4	21.9	15	
		6	20.6	80	
		8	21.3	2.5	
		10	—	—	
		15	—	—	
		20	—	—	
30	—	—			
40	—	—			
50	—	—			
60	—	—			
TIME CANISTER CLOSED (24 HR)	1401				
FINAL CANISTER PRESSURE (IN. Hg):	2.5				
TOTAL SAMPLE TIME (MINS):	8				

INTRINSIC
PERMEABILITY
TESTING



TEST THRU WELL TUBING/NO MANIFOLD	TEST 1	TEST 2	TEST 3	TEST 4
VACUUM (IN. WATER)	15	30	45	
FLOW METER READING	20	25	30	
FLOW RATE (CC/MIN)	235	365	537	
LENGTH OF TEST (SEC)	60	60	60	

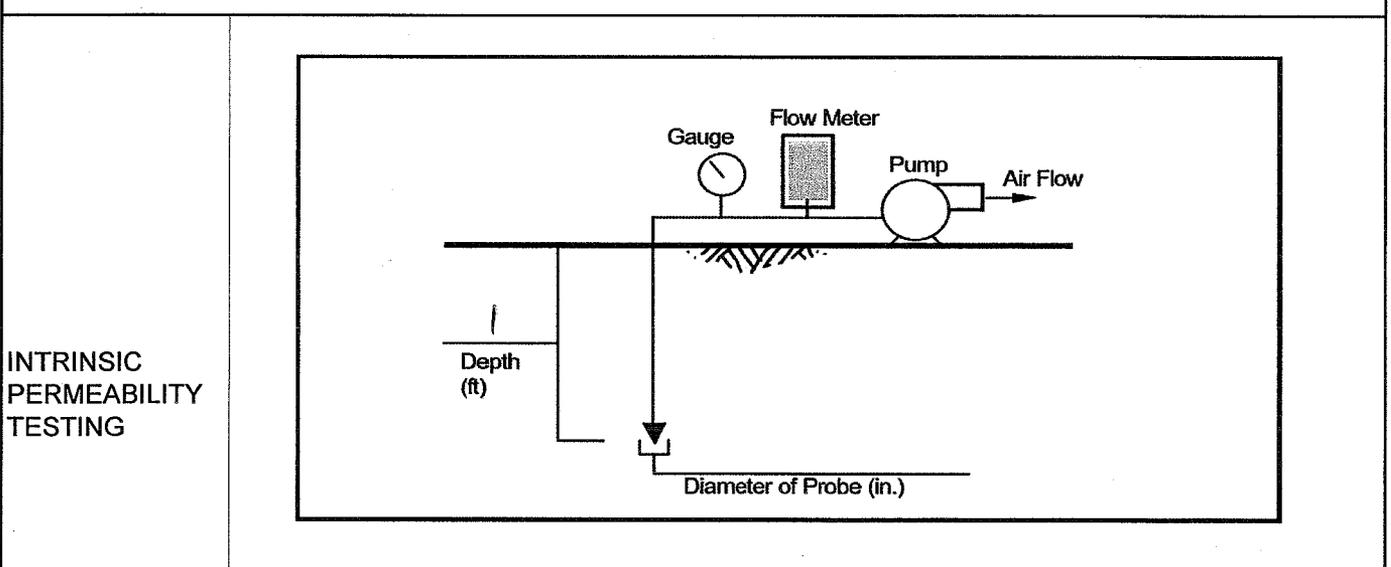
SOIL VAPOR SAMPLING LOG, SAMPLE ID: SG-6

PROJECT NAME: <u>PSAI Oakland</u>					
PROJECT LOCATION: <u>1708 Wood St Oakland, CA</u>					
WEATHER: <u>clear skies, mid 70's, west breeze</u>					
DATE: <u>June 20, 2017</u>					
SAMPLED BY: <u>RLM</u>					
WELL TYPE, e.g., PERMANENT; TEMPORARY: <u>Permanent</u>					
SAMPLE DATA	SAMPLE ID:	<u>SG-6</u>			
	VAPOR PROBE SAMPLE DEPTH (FT):	<u>1</u>			
	SUMMA CANISTER ID:	<u>S-355</u>			
	FLOW CONTROLLER SERIAL NO.:	<u>—</u>			
PURGE VOLUME CALCULATION	BORING/WELL DIAMETER (INCH):	<u>1</u>			
	DRY BENTONITE INTERVAL (FT)	<u>0.25 to 0.42</u>			
	SAND PACK INTERVAL (FT):	<u>0.42 to 0.83</u>			
	TUBING TYPE:	<u>55/teflon</u>			
	TUBING LENGTH (FT):	<u>7+2 (36")</u>			
	TUBING ID (INCH):	<u>0.188</u>			
	PURGE VOLUME (CC):	<u>55</u>			
	PURGE RATE (CC/MIN):	<u>100</u>			
	PURGE TIME 1 WELL VOLUME (MIN):	<u>0.55</u>			
	PURGE WELL VOLUMES (CIRCLE)	<u>1</u>	<u>3</u>	<u>7</u>	<u>10</u>
PURGE TIME (MIN):	<u>0.55</u>	<u>1.6</u>	<u>—</u>	<u>—</u>	
SHUT IN/ 10-MINUTE VACUUM TEST	VACUUM HOLD TEST START TIME (24 HR):	<u>1238</u>			
	INITIAL CANISTER VACUUM (IN. Hg)	<u>10</u>			
	VACUUM HOLD TEST END TIME (24 HR):	<u>1248</u>			
	VACUUM HOLD TEST DURATION (MIN):	<u>10</u>			
	FINAL CANISTER VACUUM (IN. Hg):	<u>10</u>			
PURGE AND SAMPLE TRAIN LEAK TEST	MEASUREMENTS WITHIN SHROUD	TIME (24 HR)	HELIUM (%)		
		<u>1253</u>	<u>23.3</u>		
	PRIOR TO PURGE				
		<u>—</u>	<u>—</u>		
	DURING PURGE				
		<u>—</u>	<u>—</u>		
	POST PURGE				
		<u>1300</u>	<u>20.9</u>		
	MEASUREMENTS FROM SAMPLING TRAIN	TIME (24 HR)	HELIUM (%)	PID (PPMV)	
PURGE START	<u>1255</u>	<u>0</u>	<u>0.6</u>		
1 WELL VOLUME	<u>1256</u>	<u>0</u>	<u>—</u>		
3 WELL VOLUMES	<u>1257</u>	<u>0</u>	<u>1.3</u>		
7 WELL VOLUMES	<u>—</u>	<u>—</u>	<u>—</u>		
10 WELL VOLUMES	<u>—</u>	<u>—</u>	<u>—</u>		

SOIL VAPOR SAMPLING LOG, SAMPLE ID: SG-6

PROJECT NAME: PSAI, Oakland
 PROJECT LOCATION: 1708 Wood St, Oakland, CA
 DATE: June 20, 2017

SAMPLE COLLECTION AND TRACER GAS MONITORING	INITIAL CANISTER VACUUM (IN. Hg)	29			
	TIME CANISTER OPENED (24 HR) <u>S-355</u>	1301			
	APPLY TRACER GAS WITHIN THE SHROUD	TIME (MINS)	HELIUM (%)	VACUUM (IN. Hg)	
		2	21.0	22	
		4	20.4	15	
		6	21.1	8	
		8	20.9	2	
		10	—	—	
		15	—	—	
		20	—	—	
		30	—	—	
		40	—	—	
50	—	—			
60	—	—			
TIME CANISTER CLOSED (24 HR)	1309				
FINAL CANISTER PRESSURE (IN. Hg):	2				
TOTAL SAMPLE TIME (MINS):	8				



TEST THRU WELL TUBING/NO MANIFOLD	TEST 1	TEST 2	TEST 3	TEST 4
VACUUM (IN. WATER)	—			
FLOW METER READING	—			
FLOW RATE (CC/MIN)	—			
LENGTH OF TEST (SEC)	—			

SOIL VAPOR SAMPLING LOG, SAMPLE ID: SG-7

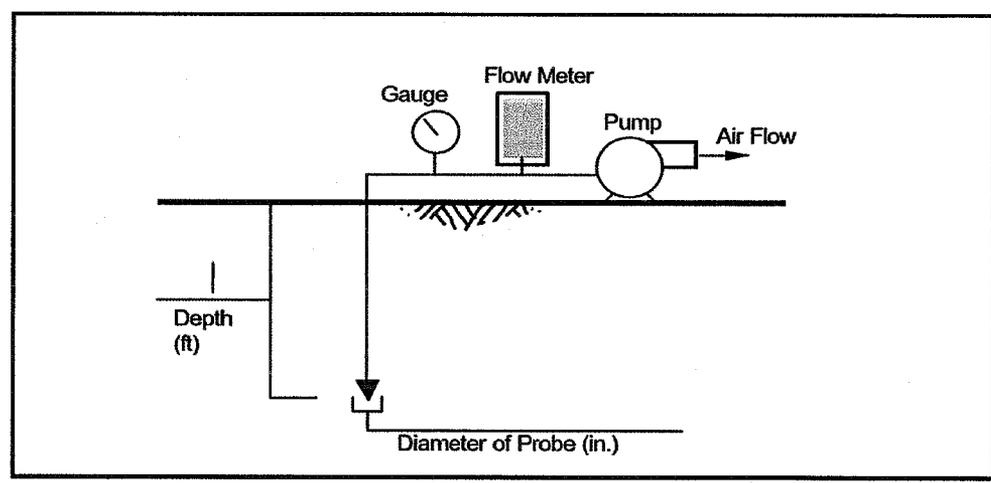
PROJECT NAME: <u>PSAT, Oakland</u>						
PROJECT LOCATION: <u>1708 Wood St, Oakland, CA</u>						
WEATHER: <u>clear skies, mid 70°F, west breeze to 5mph</u>						
DATE: <u>June 20, 2017</u>						
SAMPLED BY: <u>RLM</u>						
WELL TYPE, e.g., PERMANENT; TEMPORARY: <u>Permanent</u>						
SAMPLE DATA	SAMPLE ID:		<u>SG-7</u>			
	VAPOR PROBE SAMPLE DEPTH (FT):		<u>1</u>			
	SUMMA CANISTER ID:		<u>S-610</u>			
	FLOW CONTROLLER SERIAL NO.:		<u>-</u>			
PURGE VOLUME CALCULATION	BORING/WELL DIAMETER (INCH):		<u>1</u>			
	DRY BENTONITE INTERVAL (FT)		<u>0.25 to 0.42</u>			
	SAND PACK INTERVAL (FT):		<u>0.42 to 0.83</u>			
	TUBING TYPE:		<u>stainless steel/Helton</u>			
	TUBING LENGTH (FT):		<u>142 (36')</u>			
	TUBING ID (INCH):		<u>0.199</u>			
	PURGE VOLUME (CC):		<u>65</u>			
	PURGE RATE (CC/MIN):		<u>100</u>			
	PURGE TIME 1 WELL VOLUME (MIN):		<u>0.65</u>			
	PURGE WELL VOLUMES (CIRCLE)		<u>1</u>	<u>3</u>	<u>7</u>	<u>10</u>
PURGE TIME (MIN):		<u>0.65</u>	<u>1.6</u>	<u>-</u>	<u>-</u>	
SHUT IN/ 10-MINUTE VACUUM TEST	VACUUM HOLD TEST START TIME (24 HR):		<u>1200</u>			
	INITIAL CANISTER VACUUM (IN. Hg)		<u>13</u>			
	VACUUM HOLD TEST END TIME (24 HR):		<u>1210</u>			
	VACUUM HOLD TEST DURATION (MIN):		<u>10</u>			
	FINAL CANISTER VACUUM (IN. Hg):		<u>13</u>			
PURGE AND SAMPLE TRAIN LEAK TEST	MEASUREMENTS WITHIN SHROUD		TIME	HELIUM		
			(24 HR)	(%)		
	PRIOR TO PURGE		<u>1211</u>	<u>24.4</u>		
	DURING PURGE		<u>-</u>	<u>-</u>		
	POST PURGE		<u>1216</u>			
	MEASUREMENTS FROM SAMPLING TRAIN		TIME	HELIUM	PID	
			(24 HR)	(%)	(PPMV)	
	PURGE START		<u>1212</u>	<u>0</u>	<u>0.5</u>	
	1 WELL VOLUME		<u>1213</u>	<u>0</u>	<u>-</u>	
	3 WELL VOLUMES		<u>1214</u>	<u>0</u>	<u>0.3</u>	
7 WELL VOLUMES		<u>-</u>	<u>-</u>	<u>-</u>		
10 WELL VOLUMES		<u>-</u>	<u>-</u>	<u>-</u>		

SOIL VAPOR SAMPLING LOG, SAMPLE ID: SG-7

PROJECT NAME: PSAI, Oakland
 PROJECT LOCATION: 1708 Wood St, Oakland
 DATE: June 20, 2017

SAMPLE COLLECTION AND TRACER GAS MONITORING	INITIAL CANISTER VACUUM (IN. Hg)	30			
	TIME CANISTER OPENED (24 HR) <u>5-610</u>	1218			
	APPLY TRACER GAS WITHIN THE SHROUD	TIME (MINS)	HELIUM (%)	VACUUM (IN. Hg)	
		2	22.0	25	
		4	21.3	22	
		6	20.8	19	
		8	20.0	16	
		10	21.1	12	
		15	20.6	4	
		20	—	—	
		30	—	—	
		40	—	—	
50	—	—			
60	—	—			
TIME CANISTER CLOSED (24 HR)	1233				
FINAL CANISTER PRESSURE (IN. Hg):	4				
TOTAL SAMPLE TIME (MINS):	15				

INTRINSIC PERMEABILITY TESTING



TEST THRU WELL TUBING/NO MANIFOLD	TEST 1	TEST 2	TEST 3	TEST 4
VACUUM (IN. WATER)	30	45	15	
FLOW METER READING	20	25	15	
FLOW RATE (CC/MIN)	235	365	537	
LENGTH OF TEST (SEC)	45	45	45	

SOIL VAPOR SAMPLING LOG, SAMPLE ID: SG-8

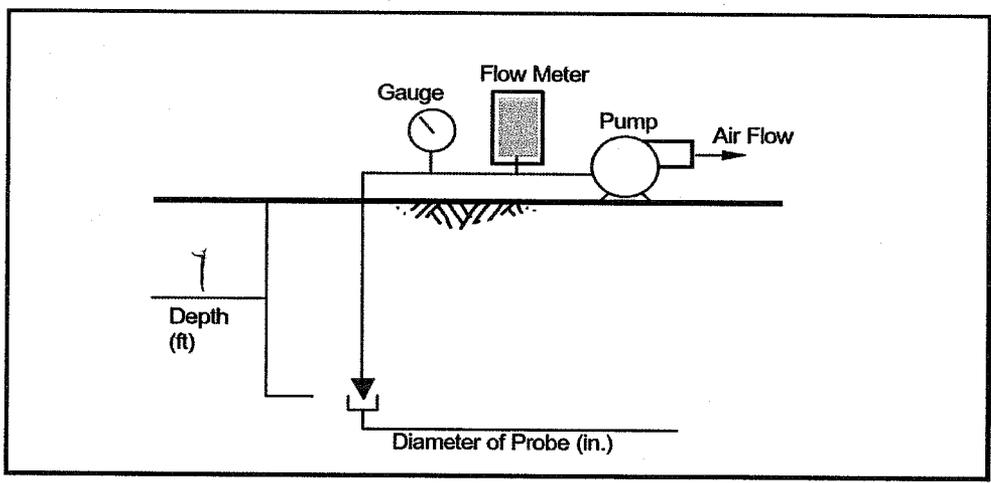
PROJECT NAME: <u>PSAI, Oakland</u>						
PROJECT LOCATION: <u>1708 Wood St, Oakland</u>						
WEATHER: <u>clear skies, hot, low 70's, occ. w. breeze</u>						
DATE: <u>June 20, 2017</u>						
SAMPLED BY: <u>RLM</u>						
WELL TYPE, e.g., PERMANENT; TEMPORARY: <u>Permanent</u>						
SAMPLE DATA	SAMPLE ID:	<u>SG-8</u>				
	VAPOR PROBE SAMPLE DEPTH (FT):	<u>1</u>				
	SUMMA CANISTER ID:	<u>S-112</u>				
	FLOW CONTROLLER SERIAL NO.:	<u>-</u>				
PURGE VOLUME CALCULATION	BORING/WELL DIAMETER (INCH):	<u>1</u>				
	DRY BENTONITE INTERVAL (FT)	<u>0.25 to 0.42</u>				
	SAND PACK INTERVAL (FT):	<u>0.42 to 0.83</u>				
	TUBING TYPE:	<u>Stainless steel/Teflon</u>				
	TUBING LENGTH (FT):	<u>14 ? (36')</u>				
	TUBING ID (INCH):	<u>0.198</u>				
	PURGE VOLUME (CC):	<u>55</u>				
	PURGE RATE (CC/MIN):	<u>100</u>				
	PURGE TIME 1 WELL VOLUME (MIN):	<u>0.55</u>				
	PURGE WELL VOLUMES (CIRCLE)	<u>1</u>	<u>3</u>	<u>7</u>	<u>10</u>	
PURGE TIME (MIN):	<u>0.55</u>	<u>1.6</u>	<u>-</u>	<u>-</u>		
SHUT IN/ 10-MINUTE VACUUM TEST	VACUUM HOLD TEST START TIME (24 HR):	<u>1050</u>				
	INITIAL CANISTER VACUUM (IN. Hg)	<u>8</u>				
	VACUUM HOLD TEST END TIME (24 HR):	<u>1100</u>				
	VACUUM HOLD TEST DURATION (MIN):	<u>10</u>				
	FINAL CANISTER VACUUM (IN. Hg):	<u>8</u>				
PURGE AND SAMPLE TRAIN LEAK TEST	MEASUREMENTS WITHIN SHROUD	TIME (24 HR)	HELIUM (%)			
		PRIOR TO PURGE	<u>1101</u>	<u>22.0</u>		
		DURING PURGE	<u>-</u>	<u>-</u>		
	POST PURGE	<u>1106</u>				
	MEASUREMENTS FROM SAMPLING TRAIN	TIME (24 HR)	HELIUM (%)	PID (PPMV)		
		PURGE START	<u>1102</u>	<u>0</u>	<u>-</u>	
		1 WELL VOLUME	<u>1103</u>	<u>0</u>	<u>0.1</u>	
		3 WELL VOLUMES	<u>1104</u>	<u>0</u>	<u>0.3</u>	
		7 WELL VOLUMES	<u>-</u>	<u>-</u>	<u>-</u>	
		10 WELL VOLUMES	<u>-</u>	<u>-</u>	<u>-</u>	

SOIL VAPOR SAMPLING LOG, SAMPLE ID: 56-8

PROJECT NAME: PSAI, Oakland
 PROJECT LOCATION: 1708 Wood St Oakland, CA
 DATE: June 20, 2017

SAMPLE COLLECTION AND TRACER GAS MONITORING	INITIAL CANISTER VACUUM (IN. Hg)	29			
	TIME CANISTER OPENED (24 HR)	5-112			
	APPLY TRACER GAS WITHIN THE SHROUD	TIME (MINS)	HELIUM (%)	VACUUM (IN. Hg)	
		2	20.8	72	
		4	21.3	14	
		6	22.0	8	
		8	21.7	3	
		10	—	—	
		15	—	—	
		20	—	—	
30		—	—		
40		—	—		
50	—	—			
60	—	—			
	TIME CANISTER CLOSED (24 HR)	1114			
	FINAL CANISTER PRESSURE (IN. Hg):	3			
	TOTAL SAMPLE TIME (MINS):	1018 8			

INTRINSIC PERMEABILITY TESTING



TEST THRU WELL TUBING/NO MANIFOLD	TEST 1	TEST 2	TEST 3	TEST 4
VACUUM (IN. WATER)	1	1.5	2	
FLOW METER READING	20	25	30	
FLOW RATE (CC/MIN)	235	365	537	
LENGTH OF TEST (SEC)	45	45	45	

SOIL VAPOR SAMPLING LOG, SAMPLE ID: SG-9

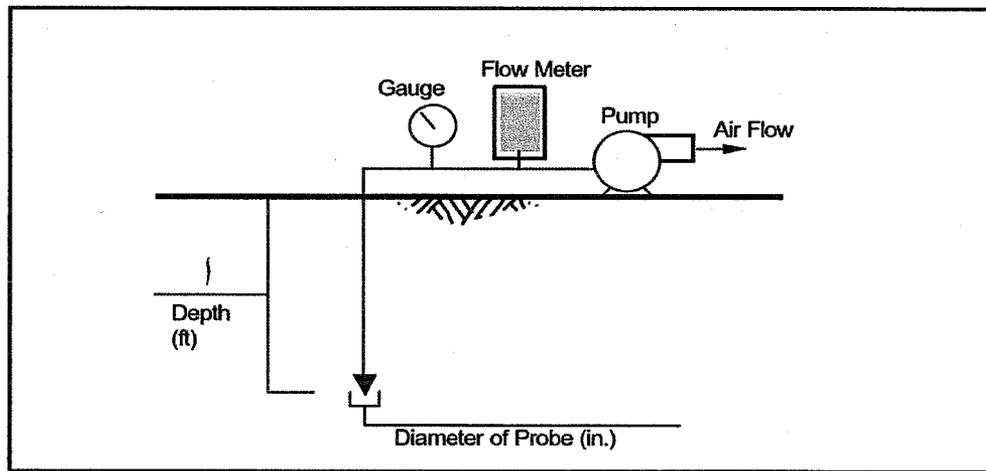
PROJECT NAME: <u>PSAI Oakland</u>						
PROJECT LOCATION: <u>1708 Wood St, Oakland, CA</u>						
WEATHER: <u>clear skies, 72°F, slight w. breeze</u>						
DATE: <u>June 20, 2017</u>						
SAMPLED BY: <u>BLM</u>						
WELL TYPE, e.g., PERMANENT; TEMPORARY: <u>Permanent</u>						
SAMPLE DATA	SAMPLE ID:		<u>SG-9</u>			
	VAPOR PROBE SAMPLE DEPTH (FT):		<u>1</u>			
	SUMMA CANISTER ID:		<u>S-850</u>			
	FLOW CONTROLLER SERIAL NO.:		<u>-</u>			
PURGE VOLUME CALCULATION	BORING/WELL DIAMETER (INCH):		<u>1</u>			
	DRY BENTONITE INTERVAL (FT)		<u>0.29 to 0.42</u>			
	SAND PACK INTERVAL (FT):		<u>0.42 to 0.83</u>			
	TUBING TYPE:		<u>Stainless steel/telton</u>			
	TUBING LENGTH (FT):		<u>42 (36")</u>			
	TUBING ID (INCH):		<u>0.188</u>			
	PURGE VOLUME (CC):		<u>95</u>			
	PURGE RATE (CC/MIN):		<u>100</u>			
	PURGE TIME 1 WELL VOLUME (MIN):		<u>0.95</u>			
	PURGE WELL VOLUMES (CIRCLE)		<u>1</u>	<u>3</u>	<u>7</u>	<u>10</u>
PURGE TIME (MIN):		<u>0.95</u>	<u>1.4</u>	<u>-</u>	<u>-</u>	
SHUT IN/ 10-MINUTE VACUUM TEST	VACUUM HOLD TEST START TIME (24 HR):		<u>1122</u>			
	INITIAL CANISTER VACUUM (IN. Hg)		<u>6</u>			
	VACUUM HOLD TEST END TIME (24 HR):		<u>1132</u>			
	VACUUM HOLD TEST DURATION (MIN):		<u>10</u>			
	FINAL CANISTER VACUUM (IN. Hg):		<u>6</u>			
PURGE AND SAMPLE TRAIN LEAK TEST	MEASUREMENTS WITHIN SHROUD		TIME (24 HR)	HELIUM (%)		
	PRIOR TO PURGE		<u>1133</u>	<u>20.5</u>		
	DURING PURGE		<u>-</u>	<u>-</u>		
	POST PURGE		<u>1139</u>	<u>21.7</u>		
	MEASUREMENTS FROM SAMPLING TRAIN		TIME (24 HR)	HELIUM (%)	PID (PPMV)	
	PURGE START		<u>1134</u>	<u>0</u>	<u>0.2</u>	
	1 WELL VOLUME		<u>1135</u>	<u>0</u>	<u>0.1</u>	
	3 WELL VOLUMES		<u>1136</u>	<u>0</u>	<u>0.1</u>	<u>50"</u>
	7 WELL VOLUMES		<u>-</u>	<u>-</u>	<u>-</u>	
	10 WELL VOLUMES		<u>-</u>	<u>-</u>	<u>-</u>	

SOIL VAPOR SAMPLING LOG, SAMPLE ID: SG-9

PROJECT NAME: PSAI Oakland
 PROJECT LOCATION: 1708 Wood St, Oakland, CA
 DATE: 6/20/17

SAMPLE COLLECTION AND TRACER GAS MONITORING	INITIAL CANISTER VACUUM (IN. Hg)	30			
	TIME CANISTER OPENED (24 HR) <u>5-050</u>	1139			
	APPLY TRACER GAS WITHIN THE SHROUD	TIME (MINS)	HELIUM (%)	VACUUM (IN. Hg)	
		2	22.1	26	
		4	21.0	22	
		6	20.6	18	
		8	21.9	15	
		10	20.9	11	
		15	—	—	
		20	—	—	
30		—	—		
40		—	—		
50	—	—			
60	—	—			
TIME CANISTER CLOSED (24 HR)	1153				
FINAL CANISTER PRESSURE (IN. Hg):	4				
TOTAL SAMPLE TIME (MINS):	17				

INTRINSIC
PERMEABILITY
TESTING



TEST THRU WELL TUBING/NO MANIFOLD	TEST 1	TEST 2	TEST 3	TEST 4
VACUUM (IN. WATER)	6	11	16	
FLOW METER READING	20	25	30	
FLOW RATE (CC/MIN)	235	365	537	
LENGTH OF TEST (SEC)	60	60	60	

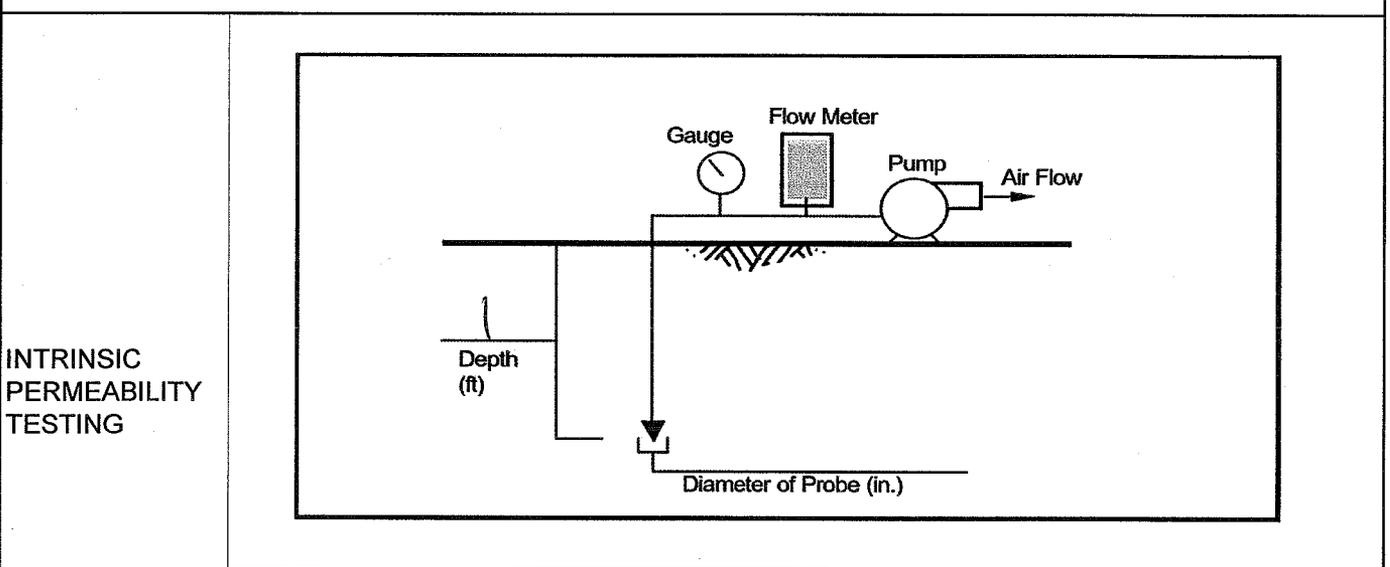
SOIL VAPOR SAMPLING LOG, SAMPLE ID: SG-10

PROJECT NAME: <u>PSAI, Oakland</u>						
PROJECT LOCATION: <u>1708 Wood St Oakland</u>						
WEATHER: <u>clear skies, low 60's, occ. SW breeze</u>						
DATE: <u>June 21, 2017</u>						
SAMPLED BY: <u>RLM</u>						
WELL TYPE, e.g., PERMANENT; TEMPORARY: <u>Permanent</u>						
SAMPLE DATA	SAMPLE ID:		<u>SG-10</u>			
	VAPOR PROBE SAMPLE DEPTH (FT):		<u>1</u>			
	SUMMA CANISTER ID:		<u>S-432</u>			
	FLOW CONTROLLER SERIAL NO.:		<u>-</u>			
PURGE VOLUME CALCULATION	BORING/WELL DIAMETER (INCH):		<u>1</u>			
	DRY BENTONITE INTERVAL (FT)		<u>0.25 to 0.42</u>			
	SAND PACK INTERVAL (FT):		<u>0.42 to 0.83</u>			
	TUBING TYPE:		<u>ss/teclon</u>			
	TUBING LENGTH (FT):		<u>142 (36")</u>			
	TUBING ID (INCH):		<u>0.188</u>			
	PURGE VOLUME (CC):		<u>55</u>			
	PURGE RATE (CC/MIN):		<u>100</u>			
	PURGE TIME 1 WELL VOLUME (MIN):		<u>0.55</u>			
	PURGE WELL VOLUMES (CIRCLE)		<u>1</u>	<u>3</u>	<u>7</u>	<u>10</u>
PURGE TIME (MIN):		<u>0.55</u>	<u>1.6</u>	<u>-</u>	<u>-</u>	
SHUT IN/ 10-MINUTE VACUUM TEST	VACUUM HOLD TEST START TIME (24 HR):		<u>0850</u>			
	INITIAL CANISTER VACUUM (IN. Hg)		<u>7</u>			
	VACUUM HOLD TEST END TIME (24 HR):		<u>0900</u>			
	VACUUM HOLD TEST DURATION (MIN):		<u>10</u>			
	FINAL CANISTER VACUUM (IN. Hg):		<u>7</u>			
PURGE AND SAMPLE TRAIN LEAK TEST	MEASUREMENTS WITHIN SHROUD		TIME	HELIUM		
			(24 HR)	(%)		
	PRIOR TO PURGE		<u>0903</u>	<u>24.1</u>		
	DURING PURGE		<u>-</u>	<u>-</u>		
	POST PURGE		<u>0908</u>	<u>22.3</u>		
	MEASUREMENTS FROM SAMPLING TRAIN		TIME	HELIUM	PID	
			(24 HR)	(%)	(PPMV)	
	PURGE START		<u>0904</u>	<u>0</u>	<u>0.2</u>	
	1 WELL VOLUME		<u>0905</u>	<u>0</u>	<u>0.2</u>	
	3 WELL VOLUMES		<u>0906</u>	<u>0</u>	<u>0.2</u>	
7 WELL VOLUMES		<u>-</u>	<u>-</u>	<u>-</u>		
10 WELL VOLUMES		<u>-</u>	<u>-</u>	<u>-</u>		

SOIL VAPOR SAMPLING LOG, SAMPLE ID: SG-10

PROJECT NAME: PSAI - Oakland
 PROJECT LOCATION: 1708 Wood St, Oakland, CA
 DATE: June 21, 2017

SAMPLE COLLECTION AND TRACER GAS MONITORING	INITIAL CANISTER VACUUM (IN. Hg)	30			
	TIME CANISTER OPENED (24 HR) <u>S-432</u>	0909			
	APPLY TRACER GAS WITHIN THE SHROUD	TIME (MINS)	HELIUM (%)	VACUUM (IN. Hg)	
		2	21.3	24	
		4	20.8	17	
		6	21.9	9	
		8	20.7	3	
		10	—	—	
		15	—	—	
		20	—	—	
30		—	—		
40		—	—		
50	—	—			
60	—	—			
TIME CANISTER CLOSED (24 HR)	0917				
FINAL CANISTER PRESSURE (IN. Hg):	3				
TOTAL SAMPLE TIME (MINS):	8				



TEST THRU WELL TUBING/NO MANIFOLD	TEST 1	TEST 2	TEST 3	TEST 4
VACUUM (IN. WATER)	8	12	16	
FLOW METER READING	20	25	30	
FLOW RATE (CC/MIN)	235	365	537	
LENGTH OF TEST (SEC)	60	60	60	

SOIL VAPOR SAMPLING LOG, SAMPLE ID: SG-11

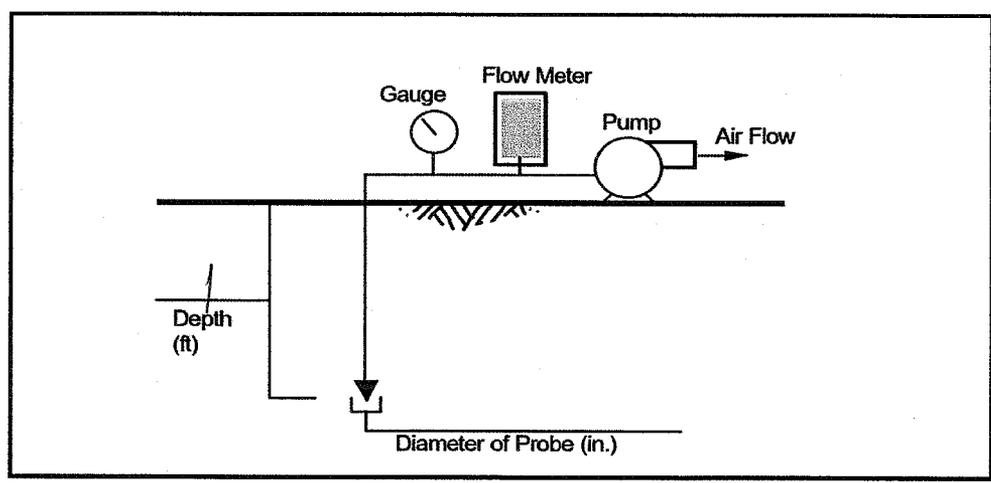
PROJECT NAME: <u>PSAI. Oakland</u>						
PROJECT LOCATION: <u>1708 Wood St, Oakland CA</u>						
WEATHER: <u>clear skies, mid 60s, occ. SW breeze</u>						
DATE: <u>June 21, 2017</u>						
SAMPLED BY: <u>RLM</u>						
WELL TYPE, e.g., PERMANENT; TEMPORARY: <u>Permanent</u>						
SAMPLE DATA	SAMPLE ID:	<u>SG-11</u>				
	VAPOR PROBE SAMPLE DEPTH (FT):	<u>1</u>				
	SUMMA CANISTER ID:	<u>S-293</u>				
	FLOW CONTROLLER SERIAL NO.:	<u>-</u>				
PURGE VOLUME CALCULATION	BORING/WELL DIAMETER (INCH):	<u>1</u>				
	DRY BENTONITE INTERVAL (FT)	<u>0.25 to 0.42</u>				
	SAND PACK INTERVAL (FT):	<u>0.42 to 0.83</u>				
	TUBING TYPE:	<u>SS/teflon</u>				
	TUBING LENGTH (FT):	<u>1+2 (36")</u>				
	TUBING ID (INCH):	<u>0.188</u>				
	PURGE VOLUME (CC):	<u>55</u>				
	PURGE RATE (CC/MIN):	<u>100</u>				
	PURGE TIME 1 WELL VOLUME (MIN):	<u>0.55</u>				
	PURGE WELL VOLUMES (CIRCLE)	<u>1</u>	<u>3</u>	<u>7</u>	<u>10</u>	
PURGE TIME (MIN):	<u>0.55</u>	<u>1.6</u>	<u>-</u>	<u>-</u>		
SHUT IN/ 10-MINUTE VACUUM TEST	VACUUM HOLD TEST START TIME (24 HR):	<u>0925</u>				
	INITIAL CANISTER VACUUM (IN. Hg)	<u>9</u>				
	VACUUM HOLD TEST END TIME (24 HR):	<u>0935</u>				
	VACUUM HOLD TEST DURATION (MIN):	<u>10</u>				
	FINAL CANISTER VACUUM (IN. Hg):	<u>9</u>				
PURGE AND SAMPLE TRAIN LEAK TEST	MEASUREMENTS WITHIN SHROUD	TIME (24 HR)	HELIUM (%)			
		PRIOR TO PURGE	<u>0936</u>	<u>21.7</u>		
		DURING PURGE	<u>-</u>	<u>-</u>		
	POST PURGE	<u>0940</u>	<u>22.2</u>			
	MEASUREMENTS FROM SAMPLING TRAIN	TIME (24 HR)	HELIUM (%)	PID (PPMV)		
		PURGE START	<u>0937</u>	<u>0</u>	<u>0.2</u>	
		1 WELL VOLUME	<u>0938</u>	<u>0</u>	<u>0.1</u>	
		3 WELL VOLUMES	<u>0939</u>	<u>0</u>	<u>0.1</u>	
		7 WELL VOLUMES	<u>-</u>	<u>-</u>	<u>-</u>	
		10 WELL VOLUMES	<u>-</u>	<u>-</u>	<u>-</u>	

SOIL VAPOR SAMPLING LOG, SAMPLE ID: SG-11

PROJECT NAME: PSAI Oakland
 PROJECT LOCATION: 1708 Wood St, Oakland, CA
 DATE: 6/21/17

SAMPLE COLLECTION AND TRACER GAS MONITORING	INITIAL CANISTER VACUUM (IN. Hg)	30			
	TIME CANISTER OPENED (24 HR)	5-29 ³ 0941			
	APPLY TRACER GAS WITHIN THE SHROUD	TIME (MINS)	HELIUM (%)	VACUUM (IN. Hg)	
		2	21.7	22	
		4	20.3	14	
		6	21.2	7	
		8	✓	—	
		10	—	—	
		15	—	—	
		20	—	—	
30		—	—		
40		—	—		
50	—	—			
60	—	—			
TIME CANISTER CLOSED (24 HR)	0948				
FINAL CANISTER PRESSURE (IN. Hg):	4				
TOTAL SAMPLE TIME (MINS):	7				

INTRINSIC PERMEABILITY TESTING



TEST THRU WELL TUBING/NO MANIFOLD	TEST 1	TEST 2	TEST 3	TEST 4
VACUUM (IN. WATER)	5	9	13	
FLOW METER READING	20	35	30	
FLOW RATE (CC/MIN)	235	365	537	
LENGTH OF TEST (SEC)	120	120	120	

SOIL VAPOR SAMPLING LOG, SAMPLE ID: SG-12

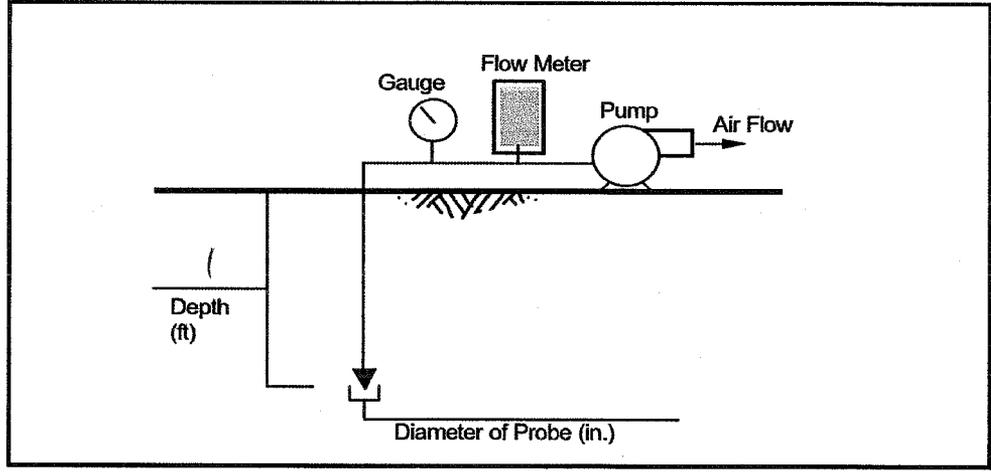
PROJECT NAME: <u>PSAI, Oakland</u>					
PROJECT LOCATION: <u>1708 Wood St Oakland</u>					
WEATHER: <u>clear skies, mid '60's, (69°F in sun), slight SW breeze to sample</u>					
DATE: <u>June 21, 2017</u>					
SAMPLED BY: <u>RJM</u>					
WELL TYPE, e.g., PERMANENT; TEMPORARY: <u>Permanent</u>					
SAMPLE DATA	SAMPLE ID:	<u>SG-12</u>			
	VAPOR PROBE SAMPLE DEPTH (FT):	<u>1</u>			
	SUMMA CANISTER ID:	<u>S-362</u>			
	FLOW CONTROLLER SERIAL NO.:	<u>-</u>			
PURGE VOLUME CALCULATION	BORING/WELL DIAMETER (INCH):	<u>1</u>			
	DRY BENTONITE INTERVAL (FT)	<u>0.29 to 0.42</u>			
	SAND PACK INTERVAL (FT):	<u>0.42 to 0.83</u>			
	TUBING TYPE:	<u>SS/teflon</u>			
	TUBING LENGTH (FT):	<u>1+2 (36")</u>			
	TUBING ID (INCH):	<u>0.188</u>			
	PURGE VOLUME (CC):	<u>55</u>			
	PURGE RATE (CC/MIN):	<u>100</u>			
	PURGE TIME 1 WELL VOLUME (MIN):	<u>0.55</u>			
	PURGE WELL VOLUMES (CIRCLE)	<u>1</u>	<u>3</u>	<u>7</u>	<u>10</u>
PURGE TIME (MIN):	<u>0.55</u>	<u>1.6</u>	<u>-</u>	<u>-</u>	
SHUT IN/ 10-MINUTE VACUUM TEST	VACUUM HOLD TEST START TIME (24 HR):	<u>0955</u>			
	INITIAL CANISTER VACUUM (IN. Hg)	<u>12</u>			
	VACUUM HOLD TEST END TIME (24 HR):	<u>1005</u>			
	VACUUM HOLD TEST DURATION (MIN):	<u>10</u>			
	FINAL CANISTER VACUUM (IN. Hg):	<u>12</u>			
PURGE AND SAMPLE TRAIN LEAK TEST	MEASUREMENTS WITHIN SHROUD	TIME (24 HR)	HELIUM (%)		
		<u>1007</u>	<u>21.9</u>		
	DURING PURGE				
		<u>-</u>	<u>-</u>		
	POST PURGE	<u>1012</u>	<u>21.6</u>		
	MEASUREMENTS FROM SAMPLING TRAIN	TIME (24 HR)	HELIUM (%)	PID (PPMV)	
		<u>1008</u>	<u>0</u>	<u>0.2</u>	<u>vac.</u>
	PURGE START	<u>1008</u>	<u>0</u>	<u>0.0</u>	<u>50</u>
	1 WELL VOLUME	<u>1009</u>	<u>0</u>	<u>0.0</u>	
	3 WELL VOLUMES	<u>1010</u>	<u>0</u>	<u>0.0</u>	
7 WELL VOLUMES	<u>-</u>	<u>-</u>	<u>-</u>		
10 WELL VOLUMES	<u>-</u>	<u>-</u>	<u>-</u>		

SOIL VAPOR SAMPLING LOG, SAMPLE ID: SG-12

PROJECT NAME: PSAI, Oakland
 PROJECT LOCATION: 1708 Wood St, Oakland, CA
 DATE: June 24, 2017

SAMPLE COLLECTION AND TRACER GAS MONITORING	INITIAL CANISTER VACUUM (IN. Hg)	30			
	TIME CANISTER OPENED (24 HR) <u>S-302</u>	1013			
	APPLY TRACER GAS WITHIN THE SHROUD	TIME (MINS)	HELIUM (%)	VACUUM (IN. Hg)	
		2	21.2	25	
		4	20.4	21	
		6	20.0	17	
		8	21.7	13	
		10	22.1	9	
		15	—	—	
		20	—	—	
30		—	—		
40		—	—		
50	—	—			
60	—	—			
TIME CANISTER CLOSED (24 HR)	1026				
FINAL CANISTER PRESSURE (IN. Hg):	4				
TOTAL SAMPLE TIME (MINS):	13				

INTRINSIC PERMEABILITY TESTING



TEST THRU WELL TUBING/NO MANIFOLD	TEST 1	TEST 2	TEST 3	TEST 4
VACUUM (IN. WATER)	0.2	0.4	0.6	
FLOW METER READING	20	25	30	
FLOW RATE (CC/MIN)	235	365	537	
LENGTH OF TEST (SEC)	60	60	60	

SOIL VAPOR SAMPLING LOG, SAMPLE ID: SG-13

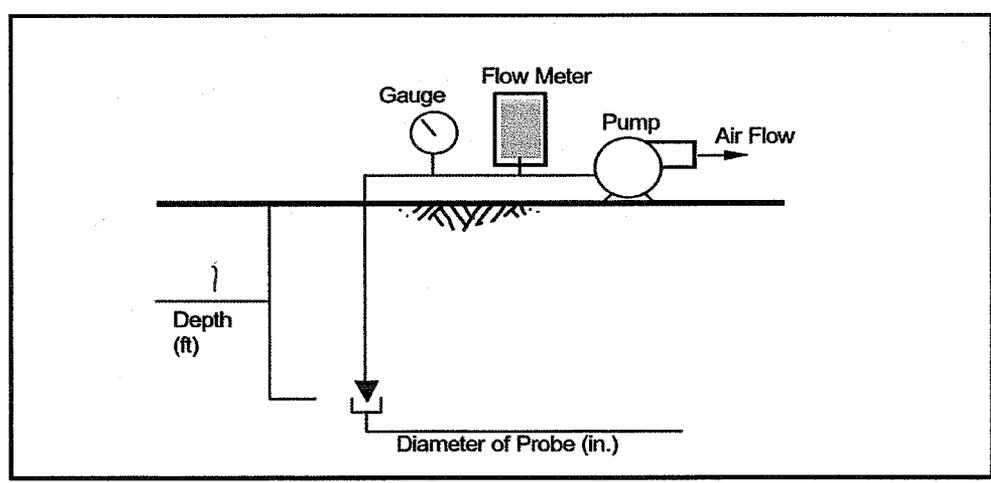
PROJECT NAME: <u>PSAI, Oakland</u>						
PROJECT LOCATION: <u>1708 Wood St, Oakland</u>						
WEATHER: <u>clear skies, high 60's, occ. west breeze</u>						
DATE: <u>June 21, 2017</u>						
SAMPLED BY: <u>RLM</u>						
WELL TYPE, e.g., PERMANENT; TEMPORARY: <u>Permanent</u>						
SAMPLE DATA	SAMPLE ID:	<u>SG-13</u>				
	VAPOR PROBE SAMPLE DEPTH (FT):	<u>1</u>				
	SUMMA CANISTER ID:	<u>S-525</u>				
	FLOW CONTROLLER SERIAL NO.:	<u>—</u>				
PURGE VOLUME CALCULATION	BORING/WELL DIAMETER (INCH):	<u>1</u>				
	DRY BENTONITE INTERVAL (FT)	<u>0.35 to 0.42</u>				
	SAND PACK INTERVAL (FT):	<u>0.42 to 0.83</u>				
	TUBING TYPE:	<u>stainless steel/telton</u>				
	TUBING LENGTH (FT):	<u>1+2</u>				
	TUBING ID (INCH):	<u>0.188</u>				
	PURGE VOLUME (CC):	<u>55</u>				
	PURGE RATE (CC/MIN):	<u>100</u>				
	PURGE TIME 1 WELL VOLUME (MIN):	<u>0.55</u>				
	PURGE WELL VOLUMES (CIRCLE)	<u>1</u>	<u>3</u>	<u>7</u>	<u>10</u>	
PURGE TIME (MIN):	<u>0.55</u>	<u>1.64</u>	<u>—</u>	<u>—</u>		
SHUT IN/ 10-MINUTE VACUUM TEST	VACUUM HOLD TEST START TIME (24 HR):	<u>1035</u>				
	INITIAL CANISTER VACUUM (IN. Hg)	<u>6</u>				
	VACUUM HOLD TEST END TIME (24 HR):	<u>1045</u>				
	VACUUM HOLD TEST DURATION (MIN):	<u>10</u>				
	FINAL CANISTER VACUUM (IN. Hg):	<u>6</u>				
PURGE AND SAMPLE TRAIN LEAK TEST	MEASUREMENTS WITHIN SHROUD	TIME	HELIUM			
		(24 HR)	(%)			
	PRIOR TO PURGE	<u>1048</u>	<u>24.4</u>			
	DURING PURGE	<u>—</u>	<u>—</u>			
	POST PURGE	<u>1053</u>	<u>21.5</u>			
	MEASUREMENTS FROM SAMPLING TRAIN	TIME	HELIUM	PID		
		(24 HR)	(%)	(PPMV)		
		PURGE START	<u>1049</u>	<u>0</u>	<u>0.0</u>	
		1 WELL VOLUME	<u>1050</u>	<u>0</u>	<u>0.1</u>	
		3 WELL VOLUMES	<u>1051</u>	<u>0</u>	<u>0.1</u>	
7 WELL VOLUMES		<u>—</u>	<u>—</u>	<u>—</u>		
10 WELL VOLUMES	<u>—</u>	<u>—</u>	<u>—</u>			

SOIL VAPOR SAMPLING LOG, SAMPLE ID: SG-13

PROJECT NAME: PSAI.0 Oakland
 PROJECT LOCATION: 1708 wood st, Oakland, CA
 DATE: June 21, 2017

SAMPLE COLLECTION AND TRACER GAS MONITORING	INITIAL CANISTER VACUUM (IN. Hg)	30			
	TIME CANISTER OPENED (24 HR) <u>S-925</u>	1055			
	APPLY TRACER GAS WITHIN THE SHROUD	TIME (MINS)	HELIUM (%)	VACUUM (IN. Hg)	
		2	21.2	26	
		4	20.1	23	
		6	20.3	19	
		8	21.0	16	
		10	22.0	12	
		15	21.8	6	
		20	—	—	
30		—	—		
40					
50					
60					
TIME CANISTER CLOSED (24 HR)	1112				
FINAL CANISTER PRESSURE (IN. Hg):	3				
TOTAL SAMPLE TIME (MINS):	17				

INTRINSIC
PERMEABILITY
TESTING



TEST THRU WELL TUBING/NO MANIFOLD	TEST 1	TEST 2	TEST 3	TEST 4
VACUUM (IN. WATER)	20	45	70	
FLOW METER READING	20	25	30	
FLOW RATE (CC/MIN)	235	365	537	
LENGTH OF TEST (SEC)	120	120	120	

K PRIME, INC.
LABORATORY REPORT

K PRIME PROJECT: 9946
CLIENT PROJECT: PSAL.OAKLAND

METHOD: METHANE, OXYGEN, NITROGEN
REFERENCE: ASTM D 1946

SAMPLE ID: SG-5
LAB NO: 155692
BATCH NO: 062217A3
DATE SAMPLED: 06/20/2017
TIME SAMPLED: 13:53
DATE ANALYZED: 06/23/2017

SAMPLE TYPE: AIR
UNITS: %-V

COMPOUND NAME	REPORTING LIMIT	SAMPLE CONC
METHANE	1.00	ND
OXYGEN	1.00	15.2
NITROGEN(BALANCE)	1.00	84.3

NOTES:

ND - NOT DETECTED AT OR ABOVE THE STATED METHOD REPORTING LIMIT
NA - NOT APPLICABLE OR AVAILABLE

APPROVED BY: _____
DATE: 6/29/17

K PRIME, INC.
LABORATORY REPORT

K PRIME PROJECT: 9946
CLIENT PROJECT: PSAL.OAKLAND

METHOD: METHANE, OXYGEN, NITROGEN
REFERENCE: ASTM D 1946

SAMPLE ID: SG-9
LAB NO: 155696
BATCH NO: 062217A3
DATE SAMPLED: 06/20/2017
TIME SAMPLED: 11:39
DATE ANALYZED: 06/23/2017

SAMPLE TYPE: AIR
UNITS: %-V

COMPOUND NAME	REPORTING LIMIT	SAMPLE CONC
METHANE	1.00	ND
OXYGEN	1.00	10.0
NITROGEN(BALANCE)	1.00	79.8

NOTES:

ND - NOT DETECTED AT OR ABOVE THE STATED METHOD REPORTING LIMIT
NA - NOT APPLICABLE OR AVAILABLE

APPROVED BY: _____
DATE: _____

RMK
6/29/17

K PRIME, INC.
LABORATORY REPORT

K PRIME PROJECT: 9946
CLIENT PROJECT: PSAL.OAKLAND

SAMPLE ID: SG-12
LAB NO: 155699
BATCH NO: 062217A3
DATE SAMPLED: 06/21/2017
TIME SAMPLED: 10:13
DATE ANALYZED: 06/23/2017

METHOD: METHANE, OXYGEN, NITROGEN
REFERENCE: ASTM D 1946

SAMPLE TYPE: AIR
UNITS: %-V

COMPOUND NAME	REPORTING LIMIT	SAMPLE CONC
METHANE	1.00	ND
OXYGEN	1.00	19.7
NITROGEN(BALANCE)	1.00	80.3

NOTES:

ND - NOT DETECTED AT OR ABOVE THE STATED METHOD REPORTING LIMIT
NA - NOT APPLICABLE OR AVAILABLE

APPROVED BY: _____
DATE: _____

RYM
6/29/17

K PRIME, INC.
LABORATORY REPORT

K PRIME PROJECT: 9946
CLIENT PROJECT: PSAI.OAKLAND

METHOD: C1-C3 HYDROCARBONS
REFERENCE: EPA METHOD 18

SAMPLE ID: SG-1
LAB NO: 155691
DATE SAMPLED: 06/20/2017
TIME SAMPLED: 10:30
BATCH NO: 062917A1
DATE ANALYZED: 06/29/2017

SAMPLE TYPE: AIR
UNITS: PPMV

COMPOUND NAME	CAS NO.	REPORTING LIMIT	SAMPLE CONC
METHANE	74-82-8	10.0	43.6

APPROVED BY: _____
DATE: 6/29/17

K PRIME, INC.
LABORATORY REPORT

K PRIME PROJECT: 9946
CLIENT PROJECT: PSAI.OAKLAND

METHOD: C1-C3 HYDROCARBONS
REFERENCE: EPA METHOD 18

SAMPLE ID: SG-5
LAB NO: 155692
DATE SAMPLED: 06/20/2017
TIME SAMPLED: 13:53
BATCH NO: 062917A1
DATE ANALYZED: 06/29/2017

SAMPLE TYPE: AIR
UNITS: PPMV

COMPOUND NAME	CAS NO.	REPORTING LIMIT	SAMPLE CONC
METHANE	74-82-8	10.0	1540

APPROVED BY: _____
DATE: 6/29/17

K PRIME, INC.
LABORATORY REPORT

K PRIME PROJECT: 9946
CLIENT PROJECT: PSAI.OAKLAND

METHOD: C1-C3 HYDROCARBONS
REFERENCE: EPA METHOD 18

SAMPLE ID: SG-6
LAB NO: 155693
DATE SAMPLED: 06/20/2017
TIME SAMPLED: 13:01
BATCH NO: 062917A1
DATE ANALYZED: 06/29/2017

SAMPLE TYPE: AIR
UNITS: PPMV

COMPOUND NAME	CAS NO.	REPORTING LIMIT	SAMPLE CONC
METHANE	74-82-8	10.0	381000

APPROVED BY: _____
DATE: _____

PMK
6/29/17

K PRIME, INC.
LABORATORY REPORT

K PRIME PROJECT: 9946
CLIENT PROJECT: PSAI.OAKLAND

METHOD: C1-C3 HYDROCARBONS
REFERENCE: EPA METHOD 18

SAMPLE ID: SG-7
LAB NO: 155694
DATE SAMPLED: 06/20/2017
TIME SAMPLED: 12:18
BATCH NO: 062917A1
DATE ANALYZED: 06/29/2017

SAMPLE TYPE: AIR
UNITS: PPMV

COMPOUND NAME	CAS NO.	REPORTING LIMIT	SAMPLE CONC
METHANE	74-82-8	10.0	158

APPROVED BY: _____
DATE: 6/29/17

K PRIME, INC.
LABORATORY REPORT

K PRIME PROJECT: 9946
CLIENT PROJECT: PSAI.OAKLAND

METHOD: C1-C3 HYDROCARBONS
REFERENCE: EPA METHOD 18

SAMPLE ID: SG-8
LAB NO: 155695
DATE SAMPLED: 06/20/2017
TIME SAMPLED: 11:06
BATCH NO: 062917A1
DATE ANALYZED: 06/29/2017

SAMPLE TYPE: AIR
UNITS: PPMV

COMPOUND NAME	CAS NO.	REPORTING LIMIT	SAMPLE CONC
METHANE	74-82-8	10.0	3570

APPROVED BY: _____
DATE: 6/29/17

K PRIME, INC.
LABORATORY REPORT

K PRIME PROJECT: 9946
CLIENT PROJECT: PSAI.OAKLAND

METHOD: C1-C3 HYDROCARBONS
REFERENCE: EPA METHOD 18

SAMPLE ID: SG-9
LAB NO: 155696
DATE SAMPLED: 06/20/2017
TIME SAMPLED: 11:39
BATCH NO: 062917A1
DATE ANALYZED: 06/29/2017

SAMPLE TYPE: AIR
UNITS: PPMV

COMPOUND NAME	CAS NO.	REPORTING LIMIT	SAMPLE CONC
METHANE	74-82-8	10.0	14.5

APPROVED BY: _____
DATE: 6/29/17

K PRIME, INC.
LABORATORY REPORT

K PRIME PROJECT: 9946
CLIENT PROJECT: PSAI.OAKLAND

SAMPLE ID: SG-12
LAB NO: 155699
DATE SAMPLED: 06/21/2017
TIME SAMPLED: 10:13
BATCH NO: 062917A1
DATE ANALYZED: 06/29/2017

METHOD: C1-C3 HYDROCARBONS
REFERENCE: EPA METHOD 18

SAMPLE TYPE: AIR
UNITS: PPMV

COMPOUND NAME	CAS NO.	REPORTING LIMIT	SAMPLE CONC
METHANE	74-82-8	10.0	13.6

APPROVED BY: _____
DATE: 6/29/17

K PRIME, INC.
LABORATORY REPORT

K PRIME PROJECT: 9946
CLIENT PROJECT: PSAI.OAKLAND

SAMPLE ID: SG-13
LAB NO: 155700
DATE SAMPLED: 06/21/2017
TIME SAMPLED: 10:55
BATCH NO: 062917A1
DATE ANALYZED: 06/29/2017

METHOD: C1-C3 HYDROCARBONS
REFERENCE: EPA METHOD 18

SAMPLE TYPE: AIR
UNITS: PPMV

COMPOUND NAME	CAS NO.	REPORTING LIMIT	SAMPLE CONC
METHANE	74-82-8	10.0	4970

APPROVED BY: AM
DATE: 6/29/17

K PRIME, INC.
LABORATORY REPORT

K PRIME PROJECT: 9946
CLIENT PROJECT: PSAI.OAKLAND

METHOD: CARBON MONOXIDE
REFERENCE: ASTM D 1946

SAMPLE TYPE: AIR
UNITS: %-V

SAMPLE ID	LAB NO	BATCH NO	DATE SAMPLED	TIME SAMPLED	DATE ANALYZED	MRL	SAMPLE CONC
SG-1	155691	062217A2	06/20/2017	10:30	06/22/2017	0.010	ND
SG-5	155692	062217A2	06/20/2017	13:53	06/22/2017	0.010	ND
SG-6	155693	062217A2	06/20/2017	13:01	06/22/2017	0.010	ND
SG-7	155694	062217A2	06/20/2017	12:18	06/22/2017	0.010	ND
SG-8	155695	062217A2	06/20/2017	11:06	06/22/2017	0.010	ND
SG-9	155696	062217A2	06/20/2017	11:39	06/22/2017	0.010	ND
SG-10	155697	062217A2	06/21/2017	09:09	06/22/2017	0.010	ND
SG-11	155698	062217A2	06/21/2017	09:41	06/22/2017	0.010	ND
SG-12	155699	062217A2	06/21/2017	10:13	06/22/2017	0.010	ND
SG-13	155700	062217A2	06/21/2017	10:55	06/22/2017	0.010	ND

NOTES:

ND - NOT DETECTED AT OR ABOVE THE STATED METHOD REPORTING LIMIT
NA - NOT APPLICABLE OR AVAILABLE
MRL - METHOD REPORTING LIMIT

APPROVED BY: TJ
DATE: 6/27/2017

K PRIME, INC.
LABORATORY REPORT

K PRIME PROJECT: 9946
CLIENT PROJECT: PSAI.OAKLAND

METHOD: CARBON DIOXIDE
REFERENCE: ASTM D 1946

SAMPLE TYPE: AIR
UNITS: %-V

SAMPLE ID	LAB NO.	DATE SAMPLED	TIME SAMPLED	BATCH NO	DATE ANALYZED	MRL	SAMPLE CONC
SG-1	155691	06/20/2017	10:30	062317A3	06/26/2017	0.100	6.76
SG-5	155692	06/20/2017	13:53	062317A3	06/26/2017	0.100	0.506
SG-6	155693	06/20/2017	13:01	062317A3	06/26/2017	0.100	11.7
SG-7	155694	06/20/2017	12:18	062317A3	06/26/2017	0.100	5.26
SG-8	155695	06/20/2017	11:06	062317A3	06/26/2017	0.100	23.2
SG-9	155696	06/20/2017	11:39	062317A3	06/26/2017	0.100	10.2
SG-10	155697	06/21/2017	09:09	062317A3	06/26/2017	0.100	5.43
SG-11	155698	06/21/2017	09:41	062317A3	06/26/2017	0.100	1.71
SG-12	155699	06/21/2017	10:13	062317A3	06/26/2017	0.100	ND
SG-13	155700	06/21/2017	10:55	062317A3	06/26/2017	0.100	0.462

NOTES:

ND - NOT DETECTED AT OR ABOVE THE STATED METHOD REPORTING LIMIT
NA - NOT APPLICABLE OR AVAILABLE
MRL - METHOD REPORTING LIMIT

APPROVED BY: TD
DATE: 0/27/2017

K PRIME, INC.
LABORATORY REPORT

K PRIME PROJECT: 9946
CLIENT PROJECT: PSAI.OAKLAND

METHOD: HELIUM
REFERENCE: ASTM D 1946

SAMPLE TYPE: AIR
UNITS: %-V

SAMPLE ID	LAB NO	BATCH NO	DATE SAMPLED	TIME SAMPLED	DATE ANALYZED	MRL	SAMPLE CONC
SG-1	155691	062317A2	06/20/2017	10:30	06/23/2017	0.100	ND
SG-5	155692	062317A2	06/20/2017	13:53	06/23/2017	0.100	ND
SG-6	155693	062317A2	06/20/2017	13:01	06/23/2017	0.100	ND
SG-7	155694	062317A2	06/20/2017	12:18	06/23/2017	0.100	ND
SG-8	155695	062317A2	06/20/2017	11:06	06/23/2017	0.100	ND
SG-9	155696	062317A2	06/20/2017	11:39	06/23/2017	0.100	ND
SG-10	155697	062317A2	06/21/2017	09:09	06/23/2017	0.100	0.192
SG-11	155698	062317A2	06/21/2017	09:41	06/23/2017	0.100	0.403
SG-12	155699	062317A2	06/21/2017	10:13	06/23/2017	0.100	ND
SG-13	155700	062317A2	06/21/2017	10:55	06/23/2017	0.100	0.712

NOTES:

ND - NOT DETECTED AT OR ABOVE THE STATED METHOD REPORTING LIMIT
NA - NOT APPLICABLE OR AVAILABLE
MRL - METHOD REPORTING LIMIT

APPROVED BY: TR
DATE: 6/27/2017

K PRIME, INC.
LABORATORY BATCH QC REPORT

SAMPLE ID: B062217A3
SPIKE ID: L062217A3
DUPLICATE ID: D062217A3
BATCH NO: 062217A3
DATE ANALYZED: 06/22/2017

METHOD: METHANE, OXYGEN, NITROGEN (BALANCE)
REFERENCE: ASTM D 1946

SAMPLE TYPE: AIR
UNITS: %-V

METHOD BLANK

COMPOUND NAME	REPORTING LIMIT	SAMPLE RESULT
METHANE	1.00	ND
OXYGEN	1.00	ND

ACCURACY (MATRIX SPIKE)

COMPOUND NAME	SPIKE ADDED	SAMPLE RESULT	SPIKE RESULT	RECOVERY (%)	LIMITS (%)
METHANE	50.0	ND	50.8	102	90-110
OXYGEN	10.0	ND	10.2	102	90-110
NITROGEN (BALANCE)	40.0	ND	39.0	98	90-110

PRECISION (SPIKE DUPLICATE)

COMPOUND NAME	REPORTING LIMIT	SPIKE RESULT	DUPLICATE RESULT	RPD (%)	LIMITS (%)
METHANE	1.00	50.8	51.0	0.4	±10
OXYGEN	1.00	10.2	10.2	0.0	±10
NITROGEN (BALANCE)	1.00	39.0	38.8	0.5	±10

K PRIME, INC.
LABORATORY BATCH QC REPORT

SAMPLE ID: B062917A1
SPIKE ID: L062917A1
DUPLICATE ID: D062917A1
BATCH NO: 062917A1
DATE ANALYZED: 06/29/2017

METHOD: C1-C3 HYDROCARBONS
REFERENCE: EPA METHOD 18

SAMPLE TYPE: AIR
UNITS: PPMV

METHOD BLANK

COMPOUND NAME	REPORTING LIMIT	SAMPLE RESULT
METHANE	10.0	ND
ETHANE	1.00	ND
PROPANE	1.00	ND

ACCURACY (MATRIX SPIKE)

COMPOUND NAME	SPIKE ADDED	SPIKE RESULT	RECOVERY (%)	LIMITS (%)
METHANE	1000	1100	110	60-140
ETHANE	1000	1090	109	60-140
PROPANE	1000	1050	105	60-140

PRECISION (SPIKE DUPLICATE)

COMPOUND NAME	SPIKE RESULT	DUPLICATE RESULT	RPD (%)	LIMITS (%)
METHANE	1100	1120	1.8	±30
ETHANE	1090	1100	0.9	±30
PROPANE	1050	1070	1.9	±30

NOTES:

ND - NOT DETECTED AT OR ABOVE THE STATED METHOD REPORTING LIMIT
NA - NOT APPLICABLE OR AVAILABLE

K PRIME, INC.
LABORATORY BATCH QC REPORT

SAMPLE ID: B062217A2
SPIKE ID: L062217A2
DUPLICATE ID: D062217A2
BATCH NO: 062217A2
DATE ANALYZED: 06/22/2017

METHOD: CARBON MONOXIDE
REFERENCE: ASTM D 1946

SAMPLE TYPE: AIR
UNITS: %-V

METHOD BLANK

COMPOUND NAME	REPORTING LIMIT	SAMPLE RESULT
CARBON MONOXIDE	0.005	ND

ACCURACY (MATRIX SPIKE)

COMPOUND NAME	SPIKE ADDED	SAMPLE RESULT	SPIKE RESULT	RECOVERY (%)	LIMITS (%)
CARBON MONOXIDE	0.100	ND	0.099	99	70-130

PRECISION (SPIKE DUPLICATE)

COMPOUND NAME	REPORTING LIMIT	SPIKE RESULT	DUPLICATE RESULT	RPD (%)	LIMITS (%)
CARBON MONOXIDE	0.005	0.099	0.100	1.01	±20

NOTES:

ND - NOT DETECTED AT OR ABOVE THE STATED REPORTING LIMIT
NA - NOT AVAILABLE OR APPLICABLE

K PRIME, INC.
LABORATORY BATCH QC REPORT

SAMPLE ID: B062317A3
SPIKE ID: L062317A3
DUPLICATE ID: D062317A3
BATCH NO: 062317A3
DATE ANALYZED: 06/23/2017

METHOD: CARBON DIOXIDE
REFERENCE: ASTM D 1946

SAMPLE TYPE: AIR
UNITS: %-V

METHOD BLANK

COMPOUND NAME	REPORTING LIMIT	SAMPLE RESULT
CARBON DIOXIDE	0.050	ND

ACCURACY (MATRIX SPIKE)

COMPOUND NAME	SPIKE ADDED	SAMPLE RESULT	SPIKE RESULT	RECOVERY (%)	LIMITS (%)
CARBON DIOXIDE	1.00	ND	1.02	102	70-130

PRECISION (SPIKE DUPLICATE)

COMPOUND NAME	REPORTING LIMIT	SPIKE RESULT	DUPLICATE RESULT	RPD (%)	LIMITS (%)
CARBON DIOXIDE	0.050	1.02	1.02	0.654	±20

NOTES:

ND - NOT DETECTED AT OR ABOVE THE STATED REPORTING LIMIT
NA - NOT AVAILABLE OR APPLICABLE

K PRIME, INC.
LABORATORY BATCH QC REPORT

SAMPLE ID: B062317A2
SPIKE ID: L062317A2
DUPLICATE ID: D062317A2
BATCH NO: 062317A2
DATE ANALYZED: 06/23/2017

METHOD: HELIUM
REFERENCE: ASTM D 1946

SAMPLE TYPE: AIR
UNITS: %-V

METHOD BLANK

COMPOUND NAME	REPORTING LIMIT	SAMPLE RESULT
HELIUM	0.050	ND

ACCURACY (MATRIX SPIKE)

COMPOUND NAME	SPIKE ADDED	SAMPLE RESULT	SPIKE RESULT	RECOVERY (%)	LIMITS (%)
HELIUM	10.0	ND	9.75	98	70-130

PRECISION (SPIKE DUPLICATE)

COMPOUND NAME	REPORTING LIMIT	SPIKE RESULT	DUPLICATE RESULT	RPD (%)	LIMITS (%)
HELIUM	0.050	9.75	9.90	1.5	±20

NOTES:

ND - NOT DETECTED AT OR ABOVE THE STATED REPORTING LIMIT
NA - NOT AVAILABLE OR APPLICABLE



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 San Rafael, California 94901
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 main@westenvironmental.com

SAMPLE ANALYSIS/COMPOSITE REQUEST FORM
CHAIN-OF-CUSTODY

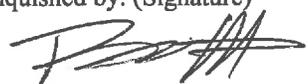
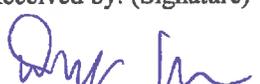
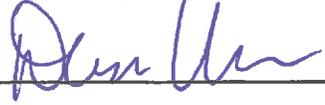
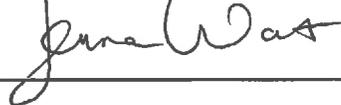
Invoice to: WEST, Inc.		Date: 6/21/17	Page 1 of 1						
Project: PSAL.Oakland		Location: 1708 Wood Street, Oakland, CA							
Project Manager: Peter Morris, WEST, Inc.		Phone: 415/460-6770	Fax: 415/460-6771						
Laboratory: KPrime, Inc, Santa Rosa, CA		Turnaround time (days)	1	2	3	5	7	10	Std.
Sampler Signature: 						X			

Sample ID	Summa ID	Date	Time	Type	# Containers	Composite	Analyses Requested										KPI #	HOLD
							CO2, CO, N2, O2, CH4 (ASTM D1946)	Helium (ASTM D1946)										
SG-1	S-356	6/20/17	1050 1045	A	1	-	X	X									155691	
SG-5	S-268	6/20/17	1353 1401	A	1	-	X	X									155692	
SG-6	S-355	6/20/17	1301 1309	A	1	-	X	X									155693	
SG-7	S-610	6/20/17	1218 1233	A	1	-	X	X									155694	
SG-8	S-112	6/20/17	1106 1114	A	1	-	X	X									155695	
SG-9	S-850	6/20/17	1139 1153	A	1	-	X	X									155696	
SG-10	S-432	6/21/17	0909 0917	A	1	-	X	X									155697	
SG-11	S-293	6/21/17	0941 0948	A	1	-	X	X									155698	
SG-12	S-362	6/21/17	1013 1026	A	1	-	X	X									155699	
SG-13	S-525	6/21/17	1055 1112	A	1	-	X	X									155700	

NOTES:

EDF Log Code: WESS

Global ID: _____

Relinquished by: (Signature) 	Date/Time 6/21/17 12:40	Received by: (Signature) 	Date/Time 6/21/17 12:40
Relinquished by: (Signature) 	Date/Time 6/21/17 17:09	Received by: (Signature) 	Date/Time 6/21/17 17:09