

F2. Phase II Subsurface Investigations



FERO ENGINEERING

ENVIRONMENTAL ENGINEERING & CONSULTING

January 15, 2014

Calmwater Capital 3, LLC
c/o Mr. Tod Ridgeway
Ridgeway Development Company
2804 Lafayette Ave.
Newport Beach, California 92663

Results of Phase II Subsurface Investigations at
150 Newport Center Drive, Newport Beach, California

Dear Mr. Ridgeway:

The following report presents the results of a Phase II subsurface investigation consisting of a near surface soil gas survey conducted proximate to the fueling system at 150 Newport Center Drive in Newport Beach, California. Fero recently conducted a Phase I Environmental Assessment for the subject site ("Site") which identified low levels of residual fuel organics left in place after dispenser and piping were replaced on the Site. The local oversight agency ("LOA"), the Orange County Health Care Agency ("OCHCA"), determined the organics concentrations to be acceptable and that a cleanup case would not be opened. Based on the OCHCA conclusions, Fero recommended no further investigations, however a confirmation assessment was requested. The assessment is the subject of this report. Improvements on the Site consisted of a one-story carwash building with a paved parking area and a fueling area.

The only hazardous materials identified at the Site were two grades of gasoline contained in a fueling system which consisted of 3-12,000 gallon underground storage tanks ("USTs") and associated piping and dispensers. The fueling system is permitted through the OCHCA and the South Coast Air Quality Management District ("AQMD"). Fero reviewed the OCHCA UST file for the Site on October 29, 2013 as part of the referenced Phase I. The file indicated that the soils tested at the Site during removal of the original USTs in 1989 were "clean". When the dispensers and piping were replaced/upgraded in 2003, some residual Total Petroleum Hydrocarbons - gasoline ("TPHg") and Benzene, Toluene, Ethyl Benzene and Xylenes ("BTEX") were detected below two of the dispensers. The regulatory agency was not concerned with the concentrations detected and did not require any cleanup. The current fueling system has a continuous leak detections system and appears to be in compliance with the OCHCA. No auto repairs occur at the Site and no oil or anti-freeze are sold onsite. The carwash has a reclaimed water system with a three-stage "clarifier" that is permitted through the City of Newport Beach. The solids that settle out in the clarifier are pumped and disposed of as non-hazardous.

The primary potential compound of concern is the gasoline. Fero was retained to conduct a limited soil vapor survey in the area of the USTs and the fuel dispensers to confirm that the fueling system has not leaked and caused a significant impact to the Site.

Subsurface Investigations

Fero conducted the soil vapor survey at the Site on January 7, 2014. The survey was conducted by installing sampling probes into the soil at 8 locations to a depth of 18". Soil vapor probes, SV1-SV4, were located around the underground storage tanks and soil vapor probes, SV5-SV8, were located proximate to the dispensers. The locations of the soil gas sampling points are indicated on Figure 1.

Fero installed the probes using a roto-hammer to drill through the concrete or asphalt pavement to 18" below grade. The depth was selected based on typical LOA requirements for concentration data used in risk screening for project sites with potential volatile organic compound ("VOC") impacts. The probes consisted of Teflon lined polyethylene tubing (1/4 inch) with approximately 6" of perforations at the tip which was inserted into the open annulus. A small amount of coarse sand was allowed to flow through the inside of the annulus to form a permeable sand pack around the perforated section of the probes at depth. The annulus above the sand pack was grouted with bentonite slurry formed in situ from hydrated granular bentonite.

Following an equilibration period of one week, Fero retained Jones Environmental, Inc. (Jones) to collect soil gas samples from each probe on January 14, 2014. Prior to the sampling process, the integrity of the sampling train was evaluated using a shut in test which involves drawing a vacuum on the system with all of the stopcocks open except the probe end. The vacuum, which is drawn on the system with a 125 cc sampling syringe, is measured using an inline vacuum gauge. If the system does not maintain a vacuum, adjustments are made to the valving and connections to prevent leaks. Jones was able to confirm the integrity of each sampling train and to collect samples from all of the probes. A purge test was conducted on probe SV8 in which 1, 3, and 10 volumes were removed from the probe and analyzed to determine the optimum remove volume to give representative concentrations in the soil profile surrounding the probe tip. One volume was determined to be optimum. A duplicate sample was collected from SV1. Each sample was injected directly into an onsite gas chromatograph/mass spectrophotometer ("GC/MS") for analysis using EPA Method 8260b. The results of the sampling are summarized in Table 1. Note that the data presented in Table 1 for probe SV8 are those measured in the sample collected after one purge volume. A copy of Jones' laboratory report is attached in Appendix A.

Conclusions

As indicated in Table 1, only two samples collected proximate to the USTs contained VOCs above the GC/MS detection limits. They were collected from probes SV1 (TPHg at 1.32 µg/L) and SV3 (1,3,5-Trimethylbenzene at 0.042 µg/L). All of the probes collected proximate to the fueling islands (SV5 - SV8) contained TPHg concentrations ranging from 0.3 to 117 µg/L. Probes SV7 & SV8 contained Naphthalene at concentrations ranging from 0.36 to 1.01 µg/L, probe SV8 contained 0.36 µg/L of 4-Isopropyltoluene and 1.84 µg/L of 1,3,5-Trimethylbenzene.

-Table 1-
Soil Vapor Survey Results
150 Newport Center Drive, Newport Beach, California
January 14, 2014
(Concentrations shown are **ug/L**)

Probe	Depth	TMB	Naphthalene	IPT	TPHg
SV1	18"	nd	nd	nd	1.32
SV2	18"	nd	nd	nd	nd
SV3	18"	0.042	nd	nd	nd
SV4	18"	nd	nd	nd	nd
SV5	18"	nd	nd	nd	0.300
SV6	18"	nd	nd	nd	1.60
SV7	18"	nd	0.36	nd	6.20
SV8	18"	1.84	1.01	0.262	117

nd = not detected, TMB - 1,3,5-Trimethylbenzene, IPT - 4-Isopropyltoluene, TPHg – Total Petroleum Hydrocarbons as gasoline

1,3,5-Trimethylbenzene is a laboratory solvent and a product of incomplete combustion of fuel; naphthalene is a constituent of hydrocarbon oil products and its distillates (oil, diesel and to a lesser extent gasoline) and it is produced naturally by certain flora, fauna and fungi; 4-Isopropyltoluene (p-Cymene) is a naturally occurring aromatic organic compound commonly found in essential oils like cumin and thyme. TPHg is the mass of the aliphatic chain in the gasoline range.

The current regulatory standard for evaluation of the risk to humans from contaminated properties is outlined in the California Environmental Protection Agency's, *Use of California Human Health Screening Levels ("CHHSLs") in Evaluation of Contaminated Properties*, dated January 2005. The CHHSLs were prepared using very conservative risk evaluation criteria for generic conditions under both commercial/industrial and residential scenarios. The list of CHHSLs was prepared as a screening tool to determine whether a site represents a risk to occupants of the site. Naphthalene is the only compound detected in soils at the Site with CHHSLs. The current shallow soil gas (5 ft or less below grade) CHHSLs for Naphthalene are: 0.0319 µg/L for residential use and 0.106 µg/L for commercial/industrial use. The highest Naphthalene concentration of 1.01 µg/L observed during this investigation is above the residential and commercial CHHSLs for Naphthalene therefor the Naphthalene needs further evaluation. Neither TPHg nor 4-Isopropyltoluene are considered carcinogens or a hazard to humans for risk calculation purposes. 1,3,5-Trimethylbenzene is not a carcinogen but it does pose a hazard threat.

Fero conducted a health hazardous risk assessment ("HHRA") screening to determine whether there is a potential for the remaining organics concentrations to pose an adverse risk to Site occupants. Risk assessments are conducted to determine the increased life time cancer risk and/or the potential hazard from non-carcinogenic compounds to occupants of buildings overlying impacted soils.

Because none of the VOCs are considered carcinogenic and because 4-Isopropyltoluene nor TPHg are considered a human hazard, only the potential hazard effects from 1,3,5-Trimethylbenzene and Naphthalene were considered in this HHRA. The maximum allowable hazard quotient is 1.

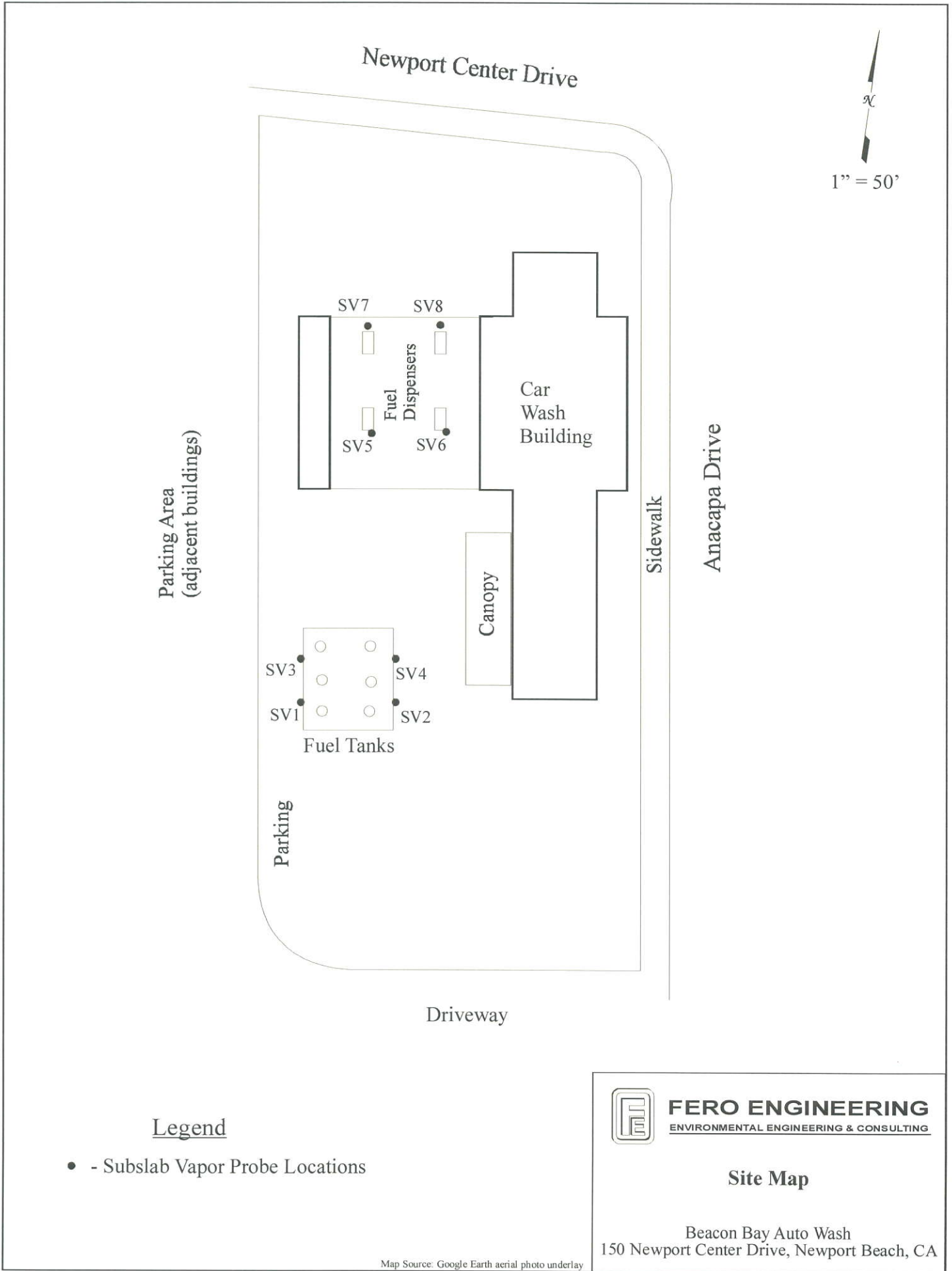
The preliminary HHRA was conducted using the Johnson & Ettinger ("J&E") model, observed Site soil type and defaults from the model including an artificial intrusion rate of 5 L/min into an onsite building. Input VOC concentrations for the model could be the mean of the data however, most LOA recommend using the 95% upper confidence level for a concentration based on a data set as calculated using a program similar to ProUCL. Eight concentrations with four distinct values are the recommended minimum for meaningful bootstrap results using the ProUCL however, the model gives a reasonable estimation of the 95% upper confidence level as the 95% Student's-t value. The ProUCL values calculated for the two VOCs of concern are: Naphthalene – 0.492 $\mu\text{g/L}$ and 1,3,5-Trimethylbenzene – 0.857 $\mu\text{g/L}$. The resulting hazard quotients calculated by the J&E model are Naphthalene – 4.5×10^{-1} and 1,3,5-Trimethylbenzene – 4×10^{-1} . The combined hazard quotient for the Site using worst case generic residential input (assumes a house constructed over the soils with residual organics concentrations) is 8.5×10^{-1} which is well below 1. Copies of the J&E computer runs are included in Appendix B.

The HHRA indicates the residual organics in soils at the Site are not a threat to the Site occupants. Should you have any questions or comments regarding this investigation report, please contact John Petersen or the undersigned at (714) 256-2737.

Respectfully,
Fero Environmental Engineering, Inc.


Rick L. Fero, P.E.
President





FERO ENGINEERING
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Site Map

Beacon Bay Auto Wash
150 Newport Center Drive, Newport Beach, CA

Figure 1

Attachment A

Soil Gas Analytical Data



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**JONES ENVIRONMENTAL
LABORATORY RESULTS**

Client:	Fero Environmental Engineering Inc.	Report date:	1/15/2014
Client Address:	431 W. Lambert Rd., Suite 305 Brea, CA 92821	JEL Ref. No.:	A-7162
		Client Ref. No.:	13-816A
Attn:	John Petersen	Date Sampled:	1/14/2014
		Date Received:	1/14/2014
Project Name:	Beacon Bay Autowash	Date Analyzed:	1/14/2014
Project Address:	150 Newport Center Dr. Newport Beach, CA	Physical State:	Soil Gas

ANALYSES REQUESTED

1. EPA 8260B - Volatile Organics by GC/MS + Oxygenates/Total Petroleum Hydrocarbons

Sampling – Soil Gas samples were collected in glass gas-tight syringes equipped with Teflon plungers. Tubing placed in the ground for soil gas sampling was purged three different times as recommended by DTSC/RWQCB guidance documents. This purge test determined how many purges of the soil gas tubing were needed throughout the project. One, three and ten purge volumes were analyzed to make this determination.

A tracer gas mixture of n-propanol and n-pentane was placed at the tubing-surface interface before sampling. These compounds were analyzed during the 8260B analytical run to determine if there were surface leaks into the subsurface due to improper installation of the probe. No n-propanol or n-pentane was found in any of the samples reported herein.

The sampling rate was approximately 200 cc/min except when noted differently on the chain of custody record using a gas tight syringe. 1 purge volume was used since this purging level gave the highest results for the compound(s) of greatest interest.

Prior to purging and sampling of soil gas at each point, a shut-in test was conducted to check for leaks in the above ground fittings. The shut-in test was performed on the above ground apparatus by evacuating the line to a vacuum of 100 inches of water, sealing the entire system and watching the vacuum for at least one minute. A vacuum gauge attached in parallel to the apparatus measured the vacuum. If there was any observable loss of vacuum, the fittings were adjusted as needed until the vacuum did not change noticeably. The soil gas sample was then taken.

No flow conditions occur when a sampling rate greater than 10 mL/min cannot be maintained without applying a vacuum greater than 100 inches of water to the sampling train. The sampling train is left at a vacuum for no less than three minutes. If the vacuum does not subside appreciably after three minutes, the sample location is determined to be a no flow sample.

Analytical – Soil Gas samples were analyzed using EPA Method 8260 that includes extra compounds required by DTSC/RWQCB (such as Freon 113). Instrument Continuing Calibration Verification, QC Reference Standards, Instrument Blanks and Sampling Blanks were analyzed every 12 hours as prescribed by the method. In addition, Matrix Spike (MS) and Matrix Spike Duplicates (MSD) were analyzed with each batch of Soil Gas samples. A duplicate/replicate sample was analyzed each day of the sampling activity. All samples were injected into the GC/MS system within 30 minutes of sampling.

Approval: _____

Steve Jones, Ph.D.
Laboratory Manager



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Project:	Beacon Bay Autowash	Date Analyzed:	1/14/2014
Project Address:	150 Newport Center Dr. Newport Beach, CA	Physical State:	Soil Gas

EPA 8260B-Volatile Organics by GC/MS + Oxygenates/Total Petroleum Hydrocarbons

<u>Sample ID:</u>	SV8 1P	SV8 3P	SV8 10P	SV7	SV6	<u>Practical Quantitation</u>	<u>Units</u>
<u>JEL ID:</u>	A-7162-01	A-7162-02	A-7162-03	A-7162-04	A-7162-05	<u>Limit</u>	
Analytes:							
Benzene	ND	ND	ND	ND	ND	0.020	µg/L
Bromobenzene	ND	ND	ND	ND	ND	0.020	µg/L
Bromodichloromethane	ND	ND	ND	ND	ND	0.020	µg/L
Bromoform	ND	ND	ND	ND	ND	0.020	µg/L
n-Butylbenzene	ND	ND	ND	ND	ND	0.020	µg/L
sec-Butylbenzene	ND	ND	ND	ND	ND	0.020	µg/L
tert-Butylbenzene	ND	ND	ND	ND	ND	0.020	µg/L
Carbon tetrachloride	ND	ND	ND	ND	ND	0.020	µg/L
Chlorobenzene	ND	ND	ND	ND	ND	0.020	µg/L
Chloroform	ND	ND	ND	ND	ND	0.020	µg/L
2-Chlorotoluene	ND	ND	ND	ND	ND	0.020	µg/L
4-Chlorotoluene	ND	ND	ND	ND	ND	0.020	µg/L
Dibromochloromethane	ND	ND	ND	ND	ND	0.020	µg/L
1,2-Dibromo-3-chloropropane	ND	ND	ND	ND	ND	0.020	µg/L
1,2-Dibromoethane (EDB)	ND	ND	ND	ND	ND	0.020	µg/L
Dibromomethane	ND	ND	ND	ND	ND	0.020	µg/L
1,2- Dichlorobenzene	ND	ND	ND	ND	ND	0.020	µg/L
1,3-Dichlorobenzene	ND	ND	ND	ND	ND	0.020	µg/L
1,4-Dichlorobenzene	ND	ND	ND	ND	ND	0.020	µg/L
Dichlorodifluoromethane	ND	ND	ND	ND	ND	0.020	µg/L
1,1-Dichloroethane	ND	ND	ND	ND	ND	0.020	µg/L
1,2-Dichloroethane	ND	ND	ND	ND	ND	0.020	µg/L
1,1-Dichloroethene	ND	ND	ND	ND	ND	0.020	µg/L
cis-1,2-Dichloroethene	ND	ND	ND	ND	ND	0.020	µg/L
trans-1,2-Dichloroethene	ND	ND	ND	ND	ND	0.020	µg/L
1,2-Dichloropropane	ND	ND	ND	ND	ND	0.020	µg/L
1,3-Dichloropropane	ND	ND	ND	ND	ND	0.020	µg/L
2,2-Dichloropropane	ND	ND	ND	ND	ND	0.020	µg/L
1,1-Dichloropropene	ND	ND	ND	ND	ND	0.020	µg/L

ND= Not Detected

JONES ENVIRONMENTAL LABORATORY RESULTS

EPA 8260B-Volatile Organics by GC/MS + Oxygenates/Total Petroleum Hydrocarbons

<u>Sample ID:</u>	SV8 1P	SV8 3P	SV8 10P	SV7	SV6		
<u>JEL ID:</u>	A-7162-01	A-7162-02	A-7162-03	A-7162-04	A-7162-05	<u>Practical Quantitation</u>	<u>Units</u>
Analytes:						<u>Limit</u>	
cis-1,3-Dichloropropene	ND	ND	ND	ND	ND	0.020	µg/L
trans-1,3-Dichloropropene	ND	ND	ND	ND	ND	0.020	µg/L
Ethylbenzene	ND	ND	ND	ND	ND	0.020	µg/L
Freon 113	ND	ND	ND	ND	ND	0.100	µg/L
Hexachlorobutadiene	ND	ND	ND	ND	ND	0.020	µg/L
Isopropylbenzene	ND	ND	ND	ND	ND	0.020	µg/L
4-Isopropyltoluene	0.262	0.161	0.026	ND	ND	0.020	µg/L
Methylene chloride	ND	ND	ND	ND	ND	0.020	µg/L
Naphthalene	1.01	1.21	1.10	0.036	ND	0.020	µg/L
n-Propylbenzene	ND	ND	ND	ND	ND	0.020	µg/L
Styrene	ND	ND	ND	ND	ND	0.020	µg/L
1,1,1,2-Tetrachloroethane	ND	ND	ND	ND	ND	0.020	µg/L
1,1,2,2-Tetrachloroethane	ND	ND	ND	ND	ND	0.020	µg/L
Tetrachloroethylene	ND	ND	ND	ND	ND	0.020	µg/L
Toluene	ND	ND	ND	ND	ND	0.020	µg/L
1,2,3-Trichlorobenzene	ND	ND	ND	ND	ND	0.020	µg/L
1,2,4-Trichlorobenzene	ND	ND	ND	ND	ND	0.020	µg/L
1,1,1-Trichloroethane	ND	ND	ND	ND	ND	0.020	µg/L
1,1,2-Trichloroethane	ND	ND	ND	ND	ND	0.020	µg/L
Trichloroethylene	ND	ND	ND	ND	ND	0.020	µg/L
Trichlorofluoromethane	ND	ND	ND	ND	ND	0.020	µg/L
1,2,3-Trichloropropane	ND	ND	ND	ND	ND	0.020	µg/L
1,2,4-Trimethylbenzene	ND	ND	ND	ND	ND	0.020	µg/L
1,3,5-Trimethylbenzene	1.84	1.26	0.737	ND	ND	0.020	µg/L
Vinyl chloride	ND	ND	ND	ND	ND	0.020	µg/L
Xylenes	ND	ND	ND	ND	ND	0.020	µg/L
MTBE	ND	ND	ND	ND	ND	0.100	µg/L
Ethyl-tert-butylether	ND	0.108	ND	ND	ND	0.100	µg/L
Di-isopropylether	ND	ND	ND	ND	ND	0.100	µg/L
tert-amylmethylether	ND	ND	ND	ND	ND	0.100	µg/L
tert-Butylalcohol	ND	ND	ND	ND	ND	1.000	µg/L
TPH Gasoline Range	117	100	68.9	6.20	1.60	0.200	µg/L
TIC:							
n-propanol	ND	ND	ND	ND	ND	0.200	µg/L
n-pentane	ND	ND	ND	ND	ND	0.020	µg/L
Dilution Factor	1	1	1	1	1		
Surrogate Recoveries:						QC Limits	
Dibromofluoromethane	120%	115%	119%	115%	108%	75 - 125	
Toluene-d ₈	105%	105%	108%	107%	102%	75 - 125	
4-Bromofluorobenzene	●	●	●	92%	92%	75 - 125	

A2-011414- A2-011414- A2-011414- A2-011414- A2-011414-
A-7161 A-7161 A-7161 A-7161 A-7161

ND= Not Detected

● = High Hydrocarbon concentration in this sample prevented adequate surrogate recovery



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JONES ENVIRONMENTAL LABORATORY RESULTS

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Project:	Beacon Bay Autowash	Date Analyzed:	1/14/2014
Project Address:	150 Newport Center Dr. Newport Beach, CA	Physical State:	Soil Gas

EPA 8260B-Volatile Organics by GC/MS + Oxygenates/Total Petroleum Hydrocarbons

<u>Sample ID:</u>	SV5	SV4	SV3	SV2	SV1		
<u>JEL ID:</u>	A-7162-06	A-7162-07	A-7162-08	A-7162-09	A-7162-10	<u>Practical</u>	<u>Units</u>
<u>Analytes:</u>						<u>Quantitation</u>	
						<u>Limit</u>	
Benzene	ND	ND	ND	ND	ND	0.020	µg/L
Bromobenzene	ND	ND	ND	ND	ND	0.020	µg/L
Bromodichloromethane	ND	ND	ND	ND	ND	0.020	µg/L
Bromoform	ND	ND	ND	ND	ND	0.020	µg/L
n-Butylbenzene	ND	ND	ND	ND	ND	0.020	µg/L
sec-Butylbenzene	ND	ND	ND	ND	ND	0.020	µg/L
tert-Butylbenzene	ND	ND	ND	ND	ND	0.020	µg/L
Carbon tetrachloride	ND	ND	ND	ND	ND	0.020	µg/L
Chlorobenzene	ND	ND	ND	ND	ND	0.020	µg/L
Chloroform	ND	ND	ND	ND	ND	0.020	µg/L
2-Chlorotoluene	ND	ND	ND	ND	ND	0.020	µg/L
4-Chlorotoluene	ND	ND	ND	ND	ND	0.020	µg/L
Dibromochloromethane	ND	ND	ND	ND	ND	0.020	µg/L
1,2-Dibromo-3-chloropropane	ND	ND	ND	ND	ND	0.020	µg/L
1,2-Dibromoethane (EDB)	ND	ND	ND	ND	ND	0.020	µg/L
Dibromomethane	ND	ND	ND	ND	ND	0.020	µg/L
1,2- Dichlorobenzene	ND	ND	ND	ND	ND	0.020	µg/L
1,3-Dichlorobenzene	ND	ND	ND	ND	ND	0.020	µg/L
1,4-Dichlorobenzene	ND	ND	ND	ND	ND	0.020	µg/L
Dichlorodifluoromethane	ND	ND	ND	ND	ND	0.020	µg/L
1,1-Dichloroethane	ND	ND	ND	ND	ND	0.020	µg/L
1,2-Dichloroethane	ND	ND	ND	ND	ND	0.020	µg/L
1,1-Dichloroethene	ND	ND	ND	ND	ND	0.020	µg/L
cis-1,2-Dichloroethene	ND	ND	ND	ND	ND	0.020	µg/L
trans-1,2-Dichloroethene	ND	ND	ND	ND	ND	0.020	µg/L
1,2-Dichloropropane	ND	ND	ND	ND	ND	0.020	µg/L
1,3-Dichloropropane	ND	ND	ND	ND	ND	0.020	µg/L
2,2-Dichloropropane	ND	ND	ND	ND	ND	0.020	µg/L
1,1-Dichloropropene	ND	ND	ND	ND	ND	0.020	µg/L

ND= Not Detected

JONES ENVIRONMENTAL LABORATORY RESULTS

EPA 8260B-Volatile Organics by GC/MS + Oxygenates/Total Petroleum Hydrocarbons

<u>Sample ID:</u>	SV5	SV4	SV3	SV2	SV1		
<u>JEL ID:</u>	A-7162-06	A-7162-07	A-7162-08	A-7162-09	A-7162-10	<u>Practical</u> <u>Quantitation</u>	<u>Units</u>
<u>Analytes:</u>						<u>Limit</u>	
cis-1,3-Dichloropropene	ND	ND	ND	ND	ND	0.020	µg/L
trans-1,3-Dichloropropene	ND	ND	ND	ND	ND	0.020	µg/L
Ethylbenzene	ND	ND	ND	ND	ND	0.020	µg/L
Freon 113	ND	ND	ND	ND	ND	0.100	µg/L
Hexachlorobutadiene	ND	ND	ND	ND	ND	0.020	µg/L
Isopropylbenzene	ND	ND	ND	ND	ND	0.020	µg/L
4-Isopropyltoluene	ND	ND	ND	ND	ND	0.020	µg/L
Methylene chloride	ND	ND	ND	ND	ND	0.020	µg/L
Naphthalene	ND	ND	ND	ND	ND	0.020	µg/L
n-Propylbenzene	ND	ND	ND	ND	ND	0.020	µg/L
Styrene	ND	ND	ND	ND	ND	0.020	µg/L
1,1,1,2-Tetrachloroethane	ND	ND	ND	ND	ND	0.020	µg/L
1,1,2,2-Tetrachloroethane	ND	ND	ND	ND	ND	0.020	µg/L
Tetrachloroethylene	ND	ND	ND	ND	ND	0.020	µg/L
Toluene	ND	ND	ND	ND	ND	0.020	µg/L
1,2,3-Trichlorobenzene	ND	ND	ND	ND	ND	0.020	µg/L
1,2,4-Trichlorobenzene	ND	ND	ND	ND	ND	0.020	µg/L
1,1,1-Trichloroethane	ND	ND	ND	ND	ND	0.020	µg/L
1,1,2-Trichloroethane	ND	ND	ND	ND	ND	0.020	µg/L
Trichloroethylene	ND	ND	ND	ND	ND	0.020	µg/L
Trichlorofluoromethane	ND	ND	ND	ND	ND	0.020	µg/L
1,2,3-Trichloropropane	ND	ND	ND	ND	ND	0.020	µg/L
1,2,4-Trimethylbenzene	ND	ND	ND	ND	ND	0.020	µg/L
1,3,5-Trimethylbenzene	ND	ND	0.042	ND	ND	0.020	µg/L
Vinyl chloride	ND	ND	ND	ND	ND	0.020	µg/L
Xylenes	ND	ND	ND	ND	ND	0.020	µg/L
MTBE	ND	ND	ND	ND	ND	0.100	µg/L
Ethyl-tert-butylether	ND	ND	ND	ND	ND	0.100	µg/L
Di-isopropylether	ND	ND	ND	ND	ND	0.100	µg/L
tert-amylmethylether	ND	ND	ND	ND	ND	0.100	µg/L
tert-Butylalcohol	ND	ND	ND	ND	ND	1.000	µg/L
TPH Gasoline Range	0.300	ND	ND	ND	1.32	0.200	µg/L
<u>TIC:</u>							
n-propanol	ND	ND	ND	ND	ND	0.200	µg/L
n-pentane	ND	ND	ND	ND	ND	0.020	µg/L
<u>Dilution Factor</u>	1	1	1	1	1		
<u>Surrogate Recoveries:</u>						<u>QC Limits</u>	
Dibromofluoromethane	110%	120%	115%	112%	110%	75 - 125	
Toluene-d ₈	98%	108%	104%	104%	101%	75 - 125	
4-Bromofluorobenzene	88%	89%	92%	98%	97%	75 - 125	

A2-011414- A2-011414- A2-011414- A2-011414- A2-011414-
A-7161 A-7161 A-7161 A-7161 A-7161

ND= Not Detected



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JONES ENVIRONMENTAL LABORATORY RESULTS

Client:	Fero Environmental Engineering Inc.	Report date:	1/15/2014
Client Address:	431 W. Lambert Rd., Suite 305 Brea, CA 92821	JEL Ref. No.:	A-7162
		Client Ref. No.:	13-816A
Attn:	John Petersen	Date Sampled:	1/14/2014
		Date Received:	1/14/2014
Project:	Beacon Bay Autowash	Date Analyzed:	1/14/2014
Project Address:	150 Newport Center Dr. Newport Beach, CA	Physical State:	Soil Gas

EPA 8260B-Volatile Organics by GC/MS + Oxygenates/Total Petroleum Hydrocarbons

Sample ID: SV1 REP

JEL ID: A-7162-11

Analytes:		Practical Quantitation	Units
		Limit	
Benzene	ND	0.020	µg/L
Bromobenzene	ND	0.020	µg/L
Bromodichloromethane	ND	0.020	µg/L
Bromoform	ND	0.020	µg/L
n-Butylbenzene	ND	0.020	µg/L
sec-Butylbenzene	ND	0.020	µg/L
tert-Butylbenzene	ND	0.020	µg/L
Carbon tetrachloride	ND	0.020	µg/L
Chlorobenzene	ND	0.020	µg/L
Chloroform	ND	0.020	µg/L
2-Chlorotoluene	ND	0.020	µg/L
4-Chlorotoluene	ND	0.020	µg/L
Dibromochloromethane	ND	0.020	µg/L
1,2-Dibromo-3-chloropropane	ND	0.020	µg/L
1,2-Dibromoethane (EDB)	ND	0.020	µg/L
Dibromomethane	ND	0.020	µg/L
1,2- Dichlorobenzene	ND	0.020	µg/L
1,3-Dichlorobenzene	ND	0.020	µg/L
1,4-Dichlorobenzene	ND	0.020	µg/L
Dichlorodifluoromethane	ND	0.020	µg/L
1,1-Dichloroethane	ND	0.020	µg/L
1,2-Dichloroethane	ND	0.020	µg/L
1,1-Dichloroethene	ND	0.020	µg/L
cis-1,2-Dichloroethene	ND	0.020	µg/L
trans-1,2-Dichloroethene	ND	0.020	µg/L
1,2-Dichloropropane	ND	0.020	µg/L
1,3-Dichloropropane	ND	0.020	µg/L
2,2-Dichloropropane	ND	0.020	µg/L
1,1-Dichloropropene	ND	0.020	µg/L

ND= Not Detected

JONES ENVIRONMENTAL LABORATORY RESULTS

EPA 8260B-Volatile Organics by GC/MS + Oxygenates/Total Petroleum Hydrocarbons

Sample ID: SV1 REP

JEL ID: A-7162-11

Analytes:

		<u>Practical Quantitation</u>	<u>Units</u>
		<u>Limit</u>	
cis-1,3-Dichloropropene	ND	0.020	µg/L
trans-1,3-Dichloropropene	ND	0.020	µg/L
Ethylbenzene	ND	0.020	µg/L
Freon 113	ND	0.100	µg/L
Hexachlorobutadiene	ND	0.020	µg/L
Isopropylbenzene	ND	0.020	µg/L
4-Isopropyltoluene	ND	0.020	µg/L
Methylene chloride	ND	0.020	µg/L
Naphthalene	ND	0.020	µg/L
n-Propylbenzene	ND	0.020	µg/L
Styrene	ND	0.020	µg/L
1,1,1,2-Tetrachloroethane	ND	0.020	µg/L
1,1,2,2-Tetrachloroethane	ND	0.020	µg/L
Tetrachloroethylene	ND	0.020	µg/L
Toluene	ND	0.020	µg/L
1,2,3-Trichlorobenzene	ND	0.020	µg/L
1,2,4-Trichlorobenzene	ND	0.020	µg/L
1,1,1-Trichloroethane	ND	0.020	µg/L
1,1,2-Trichloroethane	ND	0.020	µg/L
Trichloroethylene	ND	0.020	µg/L
Trichlorofluoromethane	ND	0.020	µg/L
1,2,3-Trichloropropane	ND	0.020	µg/L
1,2,4-Trimethylbenzene	0.156	0.020	µg/L
1,3,5-Trimethylbenzene	0.179	0.020	µg/L
Vinyl chloride	ND	0.020	µg/L
Xylenes	0.051	0.020	µg/L
MTBE	ND	0.100	µg/L
Ethyl-tert-butylether	ND	0.100	µg/L
Di-isopropylether	ND	0.100	µg/L
tert-amylmethylether	ND	0.100	µg/L
tert-Butylalcohol	ND	1.000	µg/L
TPH Gasoline Range	2.69	0.200	µg/L

TIC:

n-propanol	ND	0.200	µg/L
n-pentane	ND	0.020	µg/L

Dilution Factor

1

Surrogate Recoveries:

		<u>QC Limits</u>
Dibromofluoromethane	106%	75 - 125
Toluene-d ₈	101%	75 - 125
4-Bromofluorobenzene	95%	75 - 125

A2-011414-
A-7161

ND= Not Detected



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JONES ENVIRONMENTAL LABORATORY RESULTS

Client:	Fero Environmental Engineering Inc.	Report date:	1/15/2014
Client Address:	431 W. Lambert Rd., Suite 305 Brea, CA 92821	JEL Ref. No.:	A-7162
		Client Ref. No.:	13-816A
Attn:	John Petersen	Date Sampled:	1/14/2014
		Date Received:	1/14/2014
Project:	Beacon Bay Autowash	Date Analyzed:	1/14/2014
Project Address:	150 Newport Center Dr Newport Beach, CA	Physical State:	Soil Gas

EPA 8260B-Volatile Organics by GC/MS + Oxygenates/Total Petroleum Hydrocarbons

<u>Sample ID:</u>	METHOD BLANK	SAMPLING BLANK	<u>Practical Quantitation Limit</u>	<u>Units</u>
<u>JEL ID:</u>	A-7162-12	A-7162-13		
Analytes:				
Benzene	ND	ND	0.020	µg/L
Bromobenzene	ND	ND	0.020	µg/L
Bromodichloromethane	ND	ND	0.020	µg/L
Bromoform	ND	ND	0.020	µg/L
n-Butylbenzene	ND	ND	0.020	µg/L
sec-Butylbenzene	ND	ND	0.020	µg/L
tert-Butylbenzene	ND	ND	0.020	µg/L
Carbon tetrachloride	ND	ND	0.020	µg/L
Chlorobenzene	ND	ND	0.020	µg/L
Chloroform	ND	ND	0.020	µg/L
2-Chlorotoluene	ND	ND	0.020	µg/L
4-Chlorotoluene	ND	ND	0.020	µg/L
Dibromochloromethane	ND	ND	0.020	µg/L
1,2-Dibromo-3-chloropropane	ND	ND	0.020	µg/L
1,2-Dibromoethane (EDB)	ND	ND	0.020	µg/L
Dibromomethane	ND	ND	0.020	µg/L
1,2- Dichlorobenzene	ND	ND	0.020	µg/L
1,3-Dichlorobenzene	ND	ND	0.020	µg/L
1,4-Dichlorobenzene	ND	ND	0.020	µg/L
Dichlorodifluoromethane	ND	ND	0.020	µg/L
1,1-Dichloroethane	ND	ND	0.020	µg/L
1,2-Dichloroethane	ND	ND	0.020	µg/L
1,1-Dichloroethene	ND	ND	0.020	µg/L
cis-1,2-Dichloroethene	ND	ND	0.020	µg/L
trans-1,2-Dichloroethene	ND	ND	0.020	µg/L
1,2-Dichloropropane	ND	ND	0.020	µg/L
1,3-Dichloropropane	ND	ND	0.020	µg/L
2,2-Dichloropropane	ND	ND	0.020	µg/L
1,1-Dichloropropene	ND	ND	0.020	µg/L

ND= Not Detected

JONES ENVIRONMENTAL LABORATORY RESULTS

EPA 8260B-Volatile Organics by GC/MS + Oxygenates/Total Petroleum Hydrocarbons

<u>Sample ID:</u>	METHOD BLANK	SAMPLING BLANK		
<u>JEL ID:</u>	A-7162-12	A-7162-13	<u>Practical Quantitation</u>	<u>Units</u>
<u>Analytes:</u>			<u>Limit</u>	
cis-1,3-Dichloropropene	ND	ND	0.020	µg/L
trans-1,3-Dichloropropene	ND	ND	0.020	µg/L
Ethylbenzene	ND	ND	0.020	µg/L
Freon 113	ND	ND	0.100	µg/L
Hexachlorobutadiene	ND	ND	0.020	µg/L
Isopropylbenzene	ND	ND	0.020	µg/L
4-Isopropyltoluene	ND	ND	0.020	µg/L
Methylene chloride	ND	ND	0.020	µg/L
Naphthalene	ND	ND	0.020	µg/L
n-Propylbenzene	ND	ND	0.020	µg/L
Styrene	ND	ND	0.020	µg/L
1,1,1,2-Tetrachloroethane	ND	ND	0.020	µg/L
1,1,2,2-Tetrachloroethane	ND	ND	0.020	µg/L
Tetrachloroethylene	ND	ND	0.020	µg/L
Toluene	ND	ND	0.020	µg/L
1,2,3-Trichlorobenzene	ND	ND	0.020	µg/L
1,2,4-Trichlorobenzene	ND	ND	0.020	µg/L
1,1,1-Trichloroethane	ND	ND	0.020	µg/L
1,1,2-Trichloroethane	ND	ND	0.020	µg/L
Trichloroethylene	ND	ND	0.020	µg/L
Trichlorofluoromethane	ND	ND	0.020	µg/L
1,2,3-Trichloropropane	ND	ND	0.020	µg/L
1,2,4-Trimethylbenzene	ND	ND	0.020	µg/L
1,3,5-Trimethylbenzene	ND	ND	0.020	µg/L
Vinyl chloride	ND	ND	0.020	µg/L
Xylenes	ND	ND	0.020	µg/L
MTBE	ND	ND	0.100	µg/L
Ethyl-tert-butylether	ND	ND	0.100	µg/L
Di-isopropylether	ND	ND	0.100	µg/L
tert-amylmethylether	ND	ND	0.100	µg/L
tert-Butylalcohol	ND	ND	1.000	µg/L
TPH Gasoline Range	ND	ND	0.200	µg/L
TIC:				
n-propanol	ND	ND	0.200	µg/L
n-pentane	ND	ND	0.020	µg/L
Dilution Factor	1	1		
Surrogate Recoveries:			QC Limits	
Dibromofluoromethane	109%	113%	75 - 125	
Toluene-d ₈	105%	100%	75 - 125	
4-Bromofluorobenzene	122%	96%	75 - 125	
	A-011414- A-7161	A-011414- A-7161		

ND= Not Detected



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**JONES ENVIRONMENTAL
QUALITY CONTROL INFORMATION**

Client:	Fero Environmental Engineering Inc.	Report date:	1/15/2014
Client Address:	431 W. Lambert Rd., Suite 305 Brea, CA 92821	JEL Ref. No.:	A-7162
		Client Ref. No.:	13-816A
Attn:	John Petersen	Date Sampled:	1/14/2014
		Date Received:	1/14/2014
Project:	Beacon Bay Autowash	Date Analyzed:	1/14/2014
Project Address:	150 Newport Center Dr. Newport Beach, CA	Physical State:	Soil Gas

EPA 8260B-Volatile Organics by GC/MS + Oxygenates/Total Petroleum Hydrocarbons

Sample Spiked:	Ambient Air		GC#: A2-011414-A-7161			
JEL ID:	A-7162-15	A-7162-16	A-7162-14			
<u>Parameter</u>	<u>MS Recovery (%)</u>	<u>MSD Recovery (%)</u>	<u>RPD</u>	<u>Acceptability Range (%)</u>	<u>LCS</u>	<u>Acceptability Range (%)</u>
Vinyl Chloride	109%	98%	9.9%	70-130	94%	70-130
1,1-Dichloroethylene	114%	114%	0.1%	70-130	103%	70-130
Cis-1,2-Dichloroethene	93%	99%	6.5%	70-130	73%	70-130
1,1,1-Trichloroethane	105%	102%	3.6%	70-130	104%	70-130
Benzene	102%	101%	0.8%	70-130	92%	70-130
Trichloroethylene	102%	99%	3.0%	70-130	102%	70-130
Toluene	105%	99%	5.8%	70-130	96%	70-130
Tetrachloroethene	110%	102%	7.8%	70-130	103%	70-130
Chlorobenzene	104%	98%	5.1%	70-130	110%	70-130
Ethylbenzene	106%	98%	7.9%	70-130	106%	70-130
1,2,4 Trimethylbenzene	92%	83%	11%	70-130	104%	70-130
TPH Gasoline Range	104%	102%	2.5%	70-130		
<u>Surrogate Recovery:</u>						
Dibromofluoromethane	99%	100%		75-125	110%	75-125
Toluene-d ₈	103%	100%		75-125	105%	75-125
4-Bromofluorobenzene	87%	84%		75-125	85%	75-125

Method Blank = Not Detected

MS = Matrix Spike

MSD = Matrix Spike Duplicate

RPD = Relative Percent Difference; Acceptability range for RPD is ≤ 15%



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Chain-of-Custody Record

Client Fero Environmental Engineering Inc
Project Name Beacon Bay Awtowash
Project Address 150 Newport Center Dr
 Newport Beach, CA
Project Contact John Peterson

Date 01/14/13
Client Project # 13-816A

Turn Around Requested:
 Immediate Attention
 Rush 24-48 Hours
 Rush 72-96 Hours
 Normal
 Mobile Lab

SOIL GAS
 Purge Number: 1P 3P 7P 10P
 Purge Rate: ~200 cc/min
 Shut in Test Y N
 Tracer: n-propanol n-pentane 1,1-DFA Helium

JEL Project # A-7162
Page 1 of 2
Lab Use Only
 Sample Condition as Received: Chilled yes no
 Sealed yes no

Sample ID	Purge Number	Purge Volume	Date	Sample Collection Time	Sample Analysis Time	Laboratory Sample Number	Sample Matrix: Soil (S), Sludge (SL), Aqueous (A), Soil Gas (SG)	Sample Matrix: TPH	Sample Matrix: B2608	Sample Matrix: Y/N	Analysis Requested	Number of Containers	Magnetic Vacuum (ml/H ₂ O)	Remarks/Special Instructions	Total Number of Containers
SUB 1P	1	53	0652	0652		A-7162-01	SG	+	X		LS	1			
SUB 3P	3	158	0710	0710		A-7162-02	SG	Y	X		LS	1			
SUB 10P	10	526	0725	0725		A-7162-03	SG	X	X		LS	1			
SUB 7	1	53	800	800		A-7162-04	SG	X	X		LS	1			
SUB 6	1	53	0813	0813		A-7162-05	SG	X	X		LS	1			
SUB 5	1	53	0828	0828		A-7162-06	SG	X	X		LS	1			
SUB 4	1	53	0847	0847		A-7162-07	SG	X	X		LS	1			
SUB 3	1	53	0902	0902		A-7162-08	SG	X	X		S	1			
SUB 2	1	53	0920	0920		A-7162-09	SG	X	X		S	1			
SUB 1	1	53	0938	0938		A-7162-10	SG	X	X			1			
1 Relinquished by (signature) <i>John Peterson</i> Date 01/14/14 Time 1005 Company Fero Eng															
2 Received by (signature) <i>JEL</i> Date 01/14/14 Time 1005 Company JEL															
3 Relinquished by (signature) Date Company															
4 Received by Laboratory (signature) Date Company															

The delivery of samples and the signature on this Chain of Custody form constitutes authorization to perform the analyses specified above under the Terms and Conditions set forth on the back hereof.



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 www.jonesenvironmental.com

Chain-of-Custody Record

Client: Fero Environmental Engineering, Inc.
Project Name: Beacon Bay Autowash
Project Address: 150 Newport Center Dr
Newport Beach, CA
John Petersen

Date: 01/14/14
Client Project #: 13-816A

Turn Around Requested:
 Immediate Attention
 Rush 24-48 Hours
 Rush 72-96 Hours
 Normal
 Mobile Lab

SOIL GAS
 Purge Number: 1P 3P 7P 10P
 Purge Rate: ~200 cc/min
 Shut in Test: N

Tracer:
 n-propanol
 n-pentane
 1,1-DFA
 Helium

Analysis Requested:
 Magnetetic Vacuum (In/H₂O) _____
 Number of Containers _____

Sample Matrix: *SOIL, SLUDGE, TPH*
 Soil (S), Sludge (SL), Aqueous (A), Soil Gas (SG)

Sample ID	Purge Number	Purge Volume	Date	Sample Collection Time	Sample Analysis Time	Laboratory Sample Number	Sample Matrix:	Soil (S), Sludge (SL), Aqueous (A), Soil Gas (SG)	Shut in Test (Y/N)	Purge Rate	Purge Number	Date	Time	Received by (signature)	Company	Received by (signature)	Company	Relinquished by (signature)	Company
SUI REF	1	53	01/14	0939		A-7161-11	SO	SO	X					[Signature]		[Signature]		[Signature]	

Relinquished by (signature): [Signature] **Company:** Fero Eng

Received by (signature): [Signature] **Company:** JEI

Relinquished by (signature): _____ **Company:** _____

Received by (signature): _____ **Company:** _____

Date: 01/14/14 **Time:** 1005

Date: 01/14/14 **Time:** 1015

Total Number of Containers: 1

Remarks/Special Instructions:

The delivery of samples and the signature on this Chain of Custody form constitutes authorization to perform the analyses specified above under the Terms and Conditions set forth on the back hereof.

JEL Project #: A-71612
Page: 2 of 2
Lab Use Only
Sample Condition as Received:
 Chilled yes no
 Sealed yes no

Attachment B

HHRA Modelling

DATA ENTRY SHEET

SG-SCREEN
Version 3.1; 02/04

Reset to Defaults

Soil Gas Concentration Data

ENTER Chemical CAS No. (numbers only, no dashes)	ENTER Soil gas conc., C_a ($\mu\text{g}/\text{m}^3$)	OR	ENTER Soil gas conc., C_a (ppmv)	Chemical
91203	4.92E+02			Naphthalene

ENTER Depth below grade to bottom of enclosed space floor, L_f (15 or 200 cm)	ENTER Soil gas sampling depth below grade, L_s (cm)	ENTER Average soil temperature, T_s ($^{\circ}\text{C}$)	ENTER Vadose zone SCS soil type (used to estimate soil vapor permeability)	ENTER User-defined vadose zone soil vapor permeability, k_v (cm^2)
15	45	20	SIL	

MORE ↓

ENTER Vadose zone SCS soil type (Lookup Soil Parameters)	ENTER Vadose zone soil dry bulk density, ρ_b^A (g/cm^3)	ENTER Vadose zone soil total porosity, n^V (unitless)	ENTER Vadose zone soil water-filled porosity, θ_w^V (cm^3/cm^3)	ENTER Average vapor flow rate into bldg. (Leave blank to calculate) Q_{soil} (L/m)
SIL	1.49	0.439	0.18	5

MORE ↓

ENTER Averaging time for carcinogens, AT_C (yrs)	ENTER Averaging time for noncarcinogens, AT_{NC} (yrs)	ENTER Exposure duration, ED (yrs)	ENTER Exposure frequency, EF (days/yr)
70	30	30	350

MORE ↓

END

RESULTS SHEET

INCREMENTAL RISK CALCULATIONS:

Incremental risk from vapor intrusion to indoor air, carcinogen (unitless)	Hazard quotient from vapor intrusion to indoor air, noncarcinogen (unitless)
NA	4.5E-01

MESSAGE SUMMARY BELOW:

END

DATA ENTRY SHEET

SG-SCREEN
Version 3.1; 02/04

Reset to Defaults

Soil Gas Concentration Data

ENTER Chemical CAS No. (numbers only, no dashes)	ENTER Soil gas conc., C_a ($\mu\text{g}/\text{m}^3$)	OR	ENTER Soil gas conc., C_a (ppmv)	Chemical
108678	8.57E+02			1,3,5-Trimethylbenzene

ENTER Depth below grade to bottom of enclosed space floor, L_f (15 or 200 cm)	ENTER Soil gas sampling depth below grade, L_s (cm)	ENTER Average soil temperature, T_s ($^{\circ}\text{C}$)	ENTER Vadose zone SCS soil type (used to estimate soil vapor permeability)	ENTER User-defined vadose zone soil vapor permeability, k_v (cm^2)
15	45	20	SIL	

MORE ↓

ENTER Vadose zone SCS soil type	ENTER Vadose zone soil dry bulk density, ρ_b^A (g/cm^3)	ENTER Vadose zone soil total porosity, n^V (unitless)	ENTER Vadose zone soil water-filled porosity, θ_w^V (cm^3/cm^3)	ENTER Average vapor flow rate into bldg. (Leave blank to calculate) Q_{soil} (L/m)
SIL	1.49	0.439	0.18	5

MORE ↓

ENTER Averaging time for carcinogens, AT_c (yrs)	ENTER Averaging time for noncarcinogens, AT_{NC} (yrs)	ENTER Exposure duration, ED (yrs)	ENTER Exposure frequency, EF (days/yr)
70	30	30	350

MORE ↓

END

RESULTS SHEET

INCREMENTAL RISK CALCULATIONS:

Incremental risk from vapor intrusion to indoor air, carcinogen (unitless) Hazard quotient from vapor intrusion to indoor air, noncarcinogen (unitless)

NA	4.0E-01
----	---------

[MESSAGE SUMMARY BELOW:](#)

END