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April 23, 2013

Alameda County Health Care Services Agency
Environmental Health Services
Environmental Protection
1131 Harbor Bay Parkway, Suite 250
Alameda, California 94502-6577

RECEIVED
By Alameda County Environmental Health at 9:16 am, Apr 24, 2013

Re: **76 Service Station #1156 (Chevron Site #351645)**
4276 MacArthur Boulevard, Oakland, California

ACEH Fuel Leak Case No. RO0000409
RWQCB Case No. 01-2474
GeoTracker Global ID T0600102279

I have reviewed the attached report dated April 22, 2013.

I agree with the conclusions and recommendations presented in the referenced report. The information in this report is accurate to the best of my knowledge and all local Agency/Regional Board guidelines have been followed. This report was prepared by AECOM, upon whose assistance and advice I have relied.

This letter is submitted pursuant to the requirements of California Water Code Section 13257(b)(1) and the regulating implementation entitled Appendix A pertaining thereto.

I declare under penalty of perjury that the foregoing is true and correct to the best of my knowledge.

Sincerely,

Roya Kambin
Project Manager

Attachment: *Report on Limited Site Assessment*

AECOM Environment

Prepared for:
EMC
San Ramon, California

Prepared by:
AECOM
Camarillo, California
April 22, 2013

Report on Limited Site Assessment

76 Service Station No. 1156 (351645)
4276 MacArthur Boulevard
Oakland, California

ACEH Case No. RO0000409
RWQCB Case No. 01-2474

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Report on Limited Site Assessment

76 Service Station No. 1156 (351645)
4276 MacArthur Boulevard
Oakland, California

ACEH Case No. RO0000409
RWQCB Case No. 01-2474

Prepared by:

James Harms
Project Geologist

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Reviewed by:

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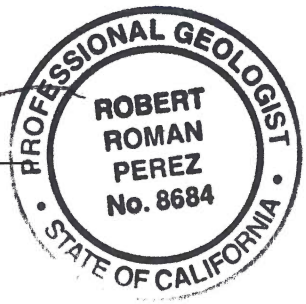

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1.0 Introduction

On behalf of Chevron Environmental Management Company, for itself and as Attorney-in-Fact for Union Oil Company of California (hereinafter "EMC"), AECOM is pleased to submit this report on the limited site assessment recently conducted on-site. AECOM has prepared this report in association with Alameda County Environmental Health (ACEH) Case No. RO0000409, for 76 Service Station No. 1156 (351645), located at 4276 MacArthur Boulevard, Oakland, California (see **Figures 1 and 2**).

1.1 Background and Objectives

The scope of work described in the work plan for limited site assessment (AECOM 2012), dated November 28, 2012, and approved by ACEH on December 10, 2012 (ACEH 2012) was intended to address data gaps identified in the conceptual site model (CSM) that was submitted as an appendix to the work plan. The data gaps to be addressed by the work plan were as follows:

- The horizontal soil and groundwater impacts in vertically isolated water-bearing zones less than 20 feet below ground surface (bgs) had not been sufficiently evaluated to determine potential downgradient migration of source zone residual impacts (e.g., the former underground storage tanks [USTs]).
- The nature of the previously "unidentified underground concrete vault" (that is a sewer cleanout rather than a "vault") had not been sufficiently determined. Therefore, whether the structure is a source of elevated petroleum hydrocarbons detected in soil, soil vapor, and groundwater in the area of former monitoring well MW-1 had not been evaluated.

1.2 Site Location and Description

The site is located in an urbanized area of Oakland, California, at the base of the San Leandro Hills. The site is located at the northern corner of the intersection of MacArthur Boulevard and High Street in Oakland (see **Figures 1 and 2**).

The site area consists of mixed commercial and residential development. The Oakland Veterinary Hospital borders the site to the northwest, beyond which is a pharmacy/drug store. Single-family dwellings border the site to the northeast. An apartment building and commercial businesses (cleaners, tax service, pizza place, and sandwich shop) are present across High Street to the southeast. A vacant lot is located south of the site at the south corner of the MacArthur Boulevard and High Street intersection. A vacant lot is also located across MacArthur Boulevard to the southwest of the site.

Based on site survey data, surface elevations at the site range from 179.42 feet above mean sea level (amsl) at MW-4B to 173.99 feet amsl at MW-2B (refer to Appendix C). Visual observations during site visits further revealed that the elevation at the northeast site boundary is noticeably higher than at MW-4B. Additionally, the elevation at MW-5 is 169.67 feet amsl. MW-5 is located in the street in front of the Oakland Veterinary Hospital (adjacent to the northwest of the site). To summarize, the southwest portion of the site is at least 8 feet lower in elevation than the northeastern portion; and the western corner is approximately 4 feet lower in elevation than the southern corner.

2.0 Proposed Scope of Work

The investigation consisted of installing six collocated groundwater monitoring wells for the purpose of evaluating the groundwater contaminant pathways that may exist in the source areas to complete data gaps identified in the CSM. The locations of the newly installed wells are shown on **Figure 2**. These locations were selected based on their proximity to existing monitoring wells in the permanent saturated zone, and downgradient of known source impacts. The monitoring well locations were moved slightly from the proposed locations to avoid subsurface utilities identified at the site.

In addition, AECOM further investigated the "unknown vault" located in the northwestern portion of the site. Additional information regarding the scopes of work is provided in the subsections below.

2.1 Monitoring Well Installation

AECOM contracted ABC Liovin, Inc., a State of California C-57-licensed drilling contractor, to advance the boreholes and install the monitoring wells.

2.1.1 Soil Borings and Soil Sampling Collection

The focus of the soil boring scope of work was to determine the subsurface lithology at depths up to 20 feet bgs, as this zone had not been sufficiently assessed to determine what (if any) discrete permanent/temporary saturated zones were present. Determining the presence of such zones would facilitate evaluation of source pathways to downgradient receptors.

AECOM supervised a truck-mounted, hollow-stem auger drill rig which advanced and sampled six soil borings (MW-9A/B, MW-10A/B, and MW-11A/B) that were converted into six groundwater monitoring wells (see **Figure 2**). The soil borings were continuously cored with a hand auger from the ground surface to 8 feet bgs and then continuously cored from 8 to 15 or 20 feet bgs, depending on the well target depth.

Soil cores were collected in 1.5- and 2-foot lengths with a 140-pound auto-hammer with a 30-inch drop. Blow counts were recorded and each core was visually inspected and logged in accordance with ASTM guidelines. At each of the paired locations, the deepest boring was advanced first. No perched groundwater was identified during drilling so the well depths were completed as proposed, the shallow wells to 15 feet bgs and the deeper wells to 20 feet bgs. Soil boring logs and well construction diagrams are included in **Appendix A**.

Soil samples for laboratory analyses were collected at 5-foot intervals, and were biased towards the highest probable degree of contamination based on field screening results, when possible. The soil samples were collected in 6-inch stainless steel sleeves and were sealed with Teflon sheets and capped with plastic end caps, labeled, and placed in a cooler with ice. The remaining soil was used for field headspace volatile analysis with a photoionization detector (PID) and lithologic description. For volatile organic compounds (VOCs) and total petroleum hydrocarbon (TPH) volatile fraction analyses, three EnCore® samplers were used for sample collection and field preservation, consistent with United States Environmental Protection Agency (EPA) Method 5035 requirements. The sample containers were sealed, labeled, recorded on a chain-of-custody form, and placed in a cooler with ice pending delivery to the analytical laboratory (**Appendix B**).

2.1.2 Soil Lithology Observations

The lithology observed during this investigation was generally consistent with previous investigations. The subsurface is predominantly fine-grained material made up of fat and lean clays with varying percentages of sands and gravels. AECOM observed coarser-grained material than was noted in previous boring logs from 15 to 20 feet bgs which is likely due to continuously coring the subsurface. In MW-9B, silty sand with gravel was noted from 15 to 18 feet bgs. In MW-10B, silty sand and well-graded sand were noted from 16.5 to 17 feet bgs and wet silty sand with gravel from 18.8 to 20 feet bgs. In MW-11A and MW-11B, silty sand was present from 11.5 to 12.5 feet bgs and 11 to 12 feet bgs, respectively. In MW-11B, silty sand was observed from 18 to18.5 feet bgs.

The soil encountered was generally dry (where finer-grained soil was encountered) to moist at depth, typically greater than 15 feet bgs (where coarser-grained soil was encountered). The shallower wells are unlikely to produce significant water based on the dry condition of the fine-grained soil. However, the deeper wells appear to intersect a coarser-grained layer that was observed as being moist to wet, suggesting it may produce more water than the surrounding clay. However, due to the surrounding clay, water production will likely be limited with low recharge rates.

2.1.3 Groundwater Monitoring Well Installation

Following completion of the soil sampling, each soil boring was completed as a groundwater monitoring well. Each well consisted of a 2-inch-diameter schedule 40 polyvinyl chloride (PVC) well casings with 5 feet of 0.020-inch slot PVC screen at the bottom. Final screen intervals were as proposed with the shallow wells labeled “MW-XA, with screen intervals set from 10 to 15 feet bgs. Intermediate wells were labeled “MW-XB”, with screen intervals set from 15 to 20 feet bgs.

A 2-inch-diameter end cap was added to the bottom of each well casing. A Monterey #3 sand pack was placed in the annular space from the bottom of the well screen to 2 feet above the top slot of the well screen. A 3-foot-long hydrated bentonite seal was placed in the annular space above the sand pack using bentonite chips. The remaining annular space was filled with bentonite cement grout. Well construction diagrams are included on the boring logs provided in **Appendix A**.

Each monitoring well was completed with a traffic-rated well box with a locking well cap. The cap was permanently labeled with the well identification number. The Alameda County Public Works Agency (ACPWA) inspected the wells and placed an inspection label in each well box. The well box was set in concrete colored to match surrounding conditions.

2.1.4 Soil Sample Analytical Results

The soil samples were analyzed by BC Laboratories, a State of California-certified laboratory, for the following constituents:

- TPH carbon chain (TPH-CC) by EPA Method 8015CC; and
- TPH as gasoline (TPH-g)[1], benzene, toluene, ethylbenzene, xylenes (BTEX), and fuel oxygenates, including methyl tertiary-butyl ether (MTBE), tertiary-butyl alcohol (TBA), diisopropyl ether (DIPE), ethyl tertiary-butyl ether (ETBE), tertiary-amyl methyl ether (TAME), and ethanol by EPA Method 8260B

[1] Reported by laboratory as TPPH by LUFT-GC/MS, which is equivalent to TPH-g by 8260B.

Soil sample analytical results are provided in **Tables 1 and 2** and laboratory analytical reports are provided in **Appendix B**. A summary of the maximum observed analytical results is provided in the table below:

Constituent of Concern	Boring ID	Sample Depth [feet bgs]	Concentration [mg/kg]
TPH-g	MW-11A	9.0	1,200
Benzene	MW-11A	9.0	6.5
Toluene	MW-11A	9.0	29
Ethylbenzene	MW-11A	5.0	34
Total Xylenes	MW-11A	9.0	97
MTBE	MW-11B	19.0	7.9
TBA	MW-11B	14.0	0.59

Concentrations of TPH-g and BTEX in the northwestern portion of the property (MW-9A/B and 10A/B) were largely confined to shallow depths of less than 10 feet bgs. These results are consistent with analytical data collected from nearby historical soil borings (SB-17 and MW-1B). TPH-g and BTEX concentrations in the southwestern portion of the property (MW-11A/B) were observed to 19 feet bgs, consistent with historical samples collected from boring MW-3B. MTBE and TBA concentrations were notably higher for MW-11A/B than in samples from MW-9A/B and MW-10A/B, likely due to the location being downgradient from the former USTs.

Carbon chain analysis was performed on each boring sample collected to properly distinguish light hydrocarbon sources from heavy hydrocarbon sources. Results for samples collected in the northwestern portion of the site indicate petroleum impacts are of a heavier range hydrocarbon type. The highest concentration (20 mg/kg) was observed at 5 feet bgs for MW-9A for carbon chain lengths of C29-C32. Carbon chains of this length are consistent with heavy petroleum sources and are likely impacts related to the former upgradient waste oil tank. Only minor concentrations were detected in samples collected from MW-9B and MW-10A/B. The highest hydrocarbon concentration detected at MW-11A was 46 mg/kg at 5 feet bgs for carbon chain lengths of C15-C16, indicating the presence of diesel-range impacts. Hydrocarbons were also detected at 25 mg/kg for C23-C28 for MW-11A. Other major detections at this location are at chain lengths shorter than C14 and are indicative of gasoline impacts likely related to the former upgradient USTs.

2.1.5 Groundwater Monitoring Well Development and Survey

The groundwater monitoring wells were surveyed on April 8, 2013, by Morrow Surveying. The well survey map is included in **Appendix C**.

AECOM subcontracted Gettler-Ryan Inc. to develop the six monitoring wells on April 11, 2013. The wells were first gauged to measure how much water had accumulated in each well. The wells were then developed using a stainless steel bailer to surge along the entire length of well screen for approximately 10 minutes. The wells were then purged using a submersible pump to remove sediments to the extent feasible. Water quality parameters, including temperature, pH, turbidity, were collected from the pump tubing. Copies of the well development logs and Gettler-Ryan Inc.'s standard operating procedure for well development are provided in **Appendix D**.

Depth to water measurements ranged from 3.8 to 7.9 feet below the top of casing, which is above the screen interval in all of the wells. There was only a slight difference in depth to water between the shallow and deep wells pairs. The wells all exhibited slow recharge, but ten full well casing volumes were able to be removed from each of the six wells (**Appendix D**). Observed depth to water measurements are consistent with observed measurements collected from existing monitoring wells in February 2013 (MW-1B and MW-3B). These similarities indicate that multiple water-bearing zones are unlikely and water observed in the newly installed monitoring wells is likely the result of saturation from a water bearing zone under hydrostatic pressure. Discontinuous impermeable lithology is likely the result of both groundwater saturation in the shallow zone and the lack of vertical migration of petroleum impacts.

While the presence of petroleum impacts downgradient of known sources may be a result of mobilization due to shallow soil saturation, mobility is expected to be extremely limited due to tight, semi-permeable soil matrices. This is evidenced by historical soil borings, which indicate minimal impacts in downgradient, shallow soil boring samples (less than10 feet bgs) and no shallow soil impacts have been observed in historical off-site soil borings. In addition, the existing well network indicates vertical contaminant migration is significantly limited, as groundwater concentrations in wells screened from 20 to 25 feet bgs were significantly lower than historical wells (MW-1, MW-2, MW-3, and MW-4) screened from 5 to 25 feet bgs.

2.2 Unknown Vault Investigation

Based on a site reconnaissance conducted by AECOM on November 16, 2012, the “unknown vault” appeared to be a sewer cleanout for the station restroom. The location of the unknown vault is between the station’s restroom facility and the sewer “lateral”, which extends from the manhole along MacArthur Boulevard. Previous investigations determined via ground penetrating radar (GPR) that a subsurface line from the cleanout terminates near the station restroom, but a line from the cleanout to the main sewer line could not be confirmed in past investigations.

AECOM supervised Cruz Brothers Locating, Inc. (Cruz Bros.) who removed the lid from the “unknown vault” which was a sewer cleanout. Cruz Bros. ran a transmitter sonde down the pipe, which allows the aboveground equipment to get a very accurate depth and location signal. The piping ran perpendicular to MacArthur Boulevard for approximately 15 feet at a depth of approximately 4 feet 9 inches bgs and continued towards MacArthur Boulevard before the piping turned to the northwest. This section of the sewer line could only be approximately located by GPR since the line was too small and the bend was too sharp for the sonde or a sewer camera to travel through. The manhole near MacArthur Boulevard was then accessed and the sonde was pushed up the line to trace the entire line as shown on **Figure 2**. This investigation indicates that the subject site and the Oakland Veterinary Hospital are serviced by one main sewer line located approximately on the property boundary, with multiple lines connecting into it via multiple cleanouts for access and servicing various facilities in the two buildings.

A second cleanout lid is located up against the station building behind the restroom. That lid houses the pressure relief valve for the station hydraulic lifts. No hydraulic oil was noticed in the relief valve vault. It was noted during the investigation that the station and neighboring veterinary hospital utility cover/grates do not necessarily identify what utility is contained within. Water utility vaults contained sewer cleanouts in multiple places and cleanout vaults do not always indicate a cleanout.

Based on the above findings, the structure previously referred to as an “unknown vault” is a sewer cleanout and is, therefore, not considered a potential source of elevated petroleum hydrocarbons detected in soil, soil vapor, and groundwater in the area of former monitoring well MW-1.

Field photographs of the sewer cleanout (formerly “unknown vault”), sewer markings, and investigation area are included in **Appendix E**.

3.0 Conclusions and Recommendations

3.1 Findings and Conclusions

The horizontal soil impacts at less than 20 feet bgs have been sufficiently evaluated to determine potential downgradient migration of source zone residual impacts (e.g., the former USTs). Although shallow impacts were observed, they appear to be related to minimal mobilization in semi-saturated zones due to a deep aquifer under hydrostatic pressure. Soil data obtained during the installation of downgradient monitoring wells (off-site) and historical soil data indicate that the shallow impacts are confined to the site property. Significant vertical migration of impacts has not been observed based on wells screened below 20 feet bgs, in which concentrations are stable and/or decreasing.

Soil sample results are consistent with previous investigations, indicating impacts to shallow soils across the site.

The nature of the previously “unidentified underground concrete vault” has been found to be a regular sanitary sewer cleanout. The depth and purpose of this utility is not likely to be a source of impacts in the area of former monitoring well MW-1.

The sewer cleanout (formerly unknown vault) located near the former used-oil UST location is not believed to be a source for preferential pathway for subsurface impacts based on its depth and use.

AECOM has submitted the required electronic files necessary to comply with ACEH and State of California GeoTracker requirements.

3.2 Recommendations

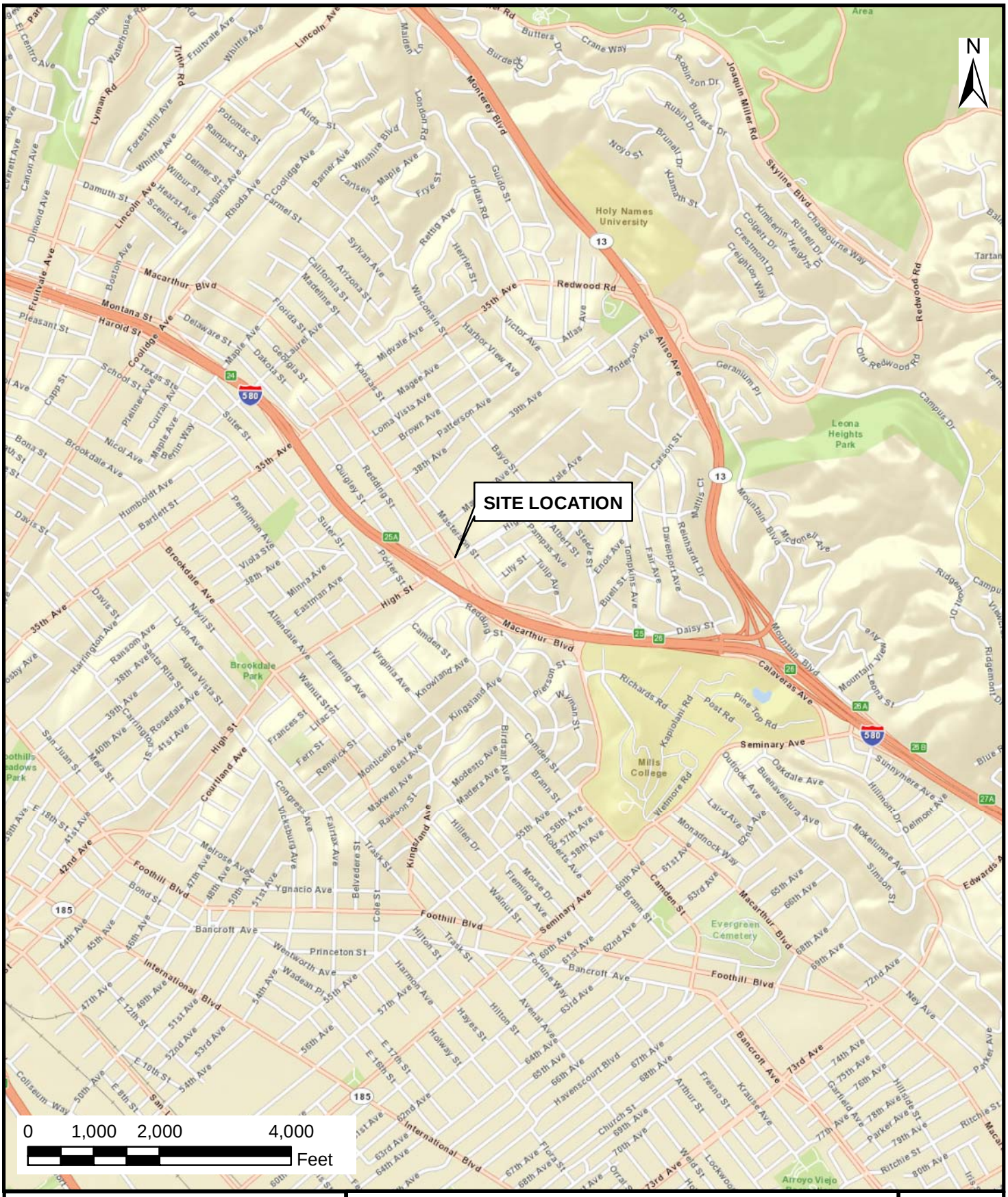
Based upon the above findings and conclusions, AECOM recommends continued monitoring of on-site and off-site groundwater wells. In order to better understand the vertical extent of groundwater impacts; groundwater monitoring will include the six recently installed shallow wells. AECOM will evaluate the results of groundwater sampling in the next semiannual groundwater report and will outline a path forward at that time.

4.0 References

Alameda County Environmental Health. 2012. *Work Plan Approval for Fuel Leak Case No. RO0000409 and GeoTracker Global ID T0600102279, Unocal #1156, 4276 MacArthur Boulevard, Oakland, CA 94619*. December 10.

AECOM. 2012. *Work Plan for Limited Site Assessment, Former Unocal Station No. 1156, (Chevron Facility 351645), 4276 MacArthur Boulevard, Oakland, California, ACEH Case No. RO0000409, RWQCB Case No. 01-2474*. November 28.

FIGURES



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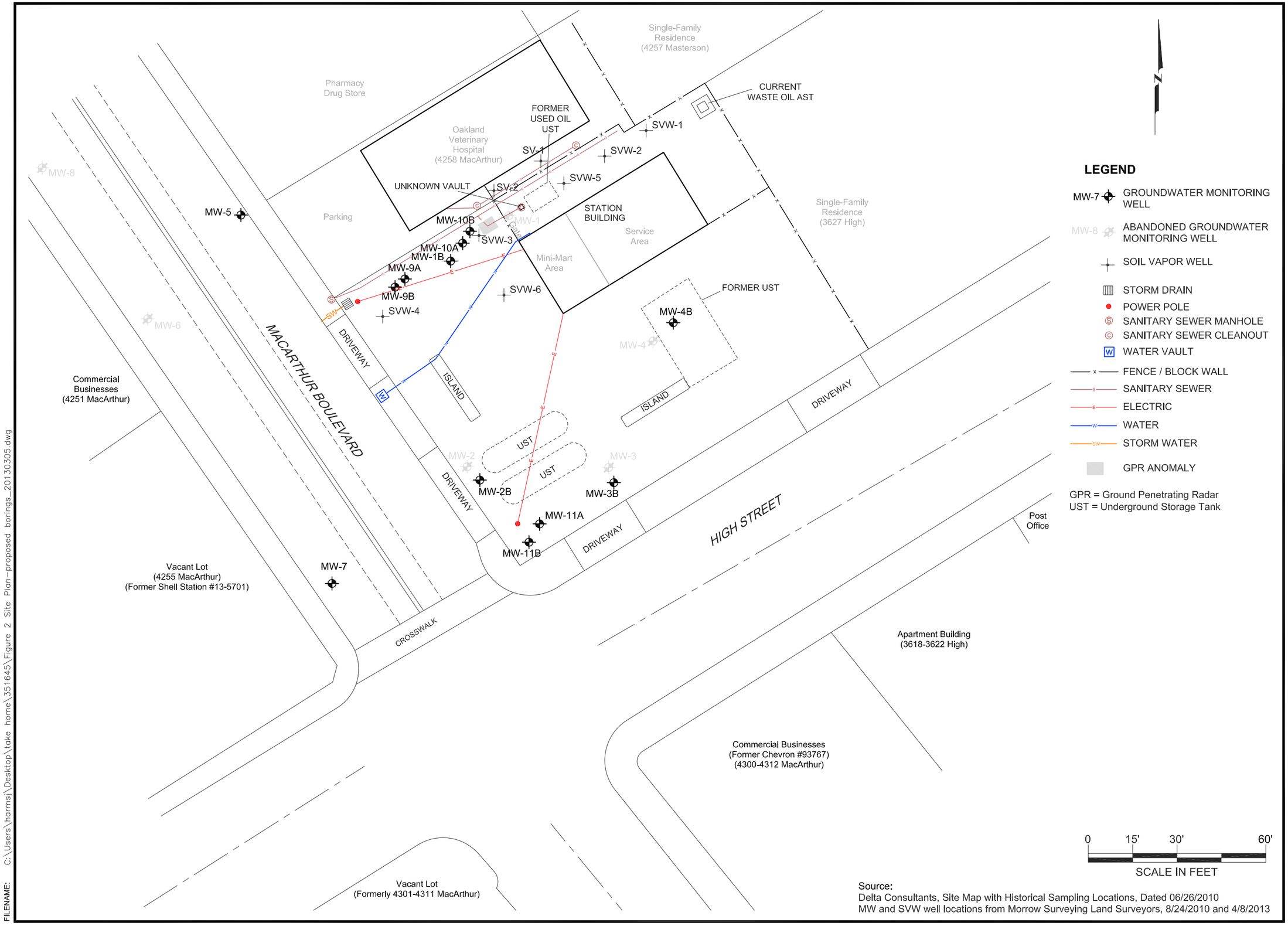
SITE LOCATION MAP

76 Service Station #1156 (Chevron Site #351645)
4276 MacArthur Boulevard
Oakland, California

FIGURE NUMBER:
1

DRAWN BY:	DATE:	PROJECT NUMBER:	SHEET NUMBER:
M. Scop	5/2/2012	60249149	1 of 1



Source:
Delta Consultants, Site Map with Historical Sampling Locations, Dated 06/26/2010
MW and SVW well locations from Morrow Surveying Land Surveyors, 8/24/2010 and 4/8/2013

REVISIONS			
NO.:	DESCRIPTION:	DATE:	BY:

DESIGNED BY:	DRAWN BY:	CHECKED BY:	APPROVED BY:
X	M. Scop	X	B. Evans

AECOM
1220 AVENIDA ACASO
CAMARILLO, CALIFORNIA 93012
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SITE PLAN

Chevron Site #351645 (76 Service Station #1156)
4276 MacArthur Boulevard
Oakland, California

SCALE:	DATE:	PROJECT NUMBER:
1" = 30'	5/2/2012	60264254 - A50

FIGURE NUMBER:
2

SHEET NUMBER:
X

FILENAME: C:\Users\harmsj\Desktop\take home\351645\Figure 2 Site Plan-proposed borings_20130305.dwg

TABLES

Table 1
Laboratory Anaytical Results for Soil
76 Service Station #1156
(Chevron Site #351645)
4276 MacArthur Boulevard
Oakland, California

BORING LOCATION	SAMPLE ID *(ft.)*	SAMPLE DEPTH *(ft.)*	DATE	TPH-g *(mg/kg)*	B *(mg/kg)*	T *(mg/kg)*	E *(mg/kg)*	X *(mg/kg)*	MTBE *(mg/kg)*	TBA *(mg/kg)*	ETHANOL *(mg/kg)*	DIPE *(mg/kg)*	ETBE *(mg/kg)*	TAME *(mg/kg)*
MW-9A	MW-9A-S-N-5.0	5.0	3/18/2013	760	1.0	0.32	12	1.1	<0.12	<1.2	<25	<0.12	<0.12	<0.12
	MW-9A-S-Y-5.0	5.0	3/18/2013	720	0.85	<0.12	10	8.2	<0.12	<1.2	<23	<0.12	<0.12	<0.12
	MW-9A-S-N-8.5	8.5	3/18/2013	280	2.0	0.15	2.5	4.8	<0.10	<1.0	<21	<0.10	<0.10	<0.10
	MW-9A-S-N-14.0	14.0	3/18/2013	1.6	0.18	<0.0044	0.054	<0.0089	<0.0044	0.26	<0.89	<0.0044	<0.0044	<0.0044
MW-9B	MW-9B-S-N-5.0	5.0	3/18/2013	1.7	0.013	<0.0050	0.10	0.026	<0.0050	<0.050	<0.99	<0.0050	<0.0050	<0.0050
	MW-9B-S-N-9.0	9.0	3/18/2013	0.36	<0.0050	<0.0050	<0.0050	<0.0099	<0.0050	<0.050	<0.99	<0.0050	<0.0050	<0.0050
	MW-9B-S-N-14.0	14.0	3/18/2013	<0.19	<0.0048	<0.0048	<0.0048	<0.0097	<0.0048	0.092	<0.97	<0.0048	<0.0048	<0.0048
	MW-9B-S-N-19.0	19.0	3/18/2013	<0.17	<0.0043	<0.0043	<0.0043	<0.0086	<0.0043	<0.043	<0.86	<0.0043	<0.0043	<0.0043
MW-10A	MW-10A-S-N-5.0	5.0	3/18/2013	59	0.22	<0.0045	0.030	<0.0090	0.013	<0.045	<0.90	<0.0045	<0.0045	<0.0045
	MW-10A-S-N-9.0	9.0	3/18/2013	41	1.0	0.093	0.21	0.68	0.018	<0.040	<0.81	<0.0040	<0.0040	<0.0040
	MW-10A-S-N-14.0	14.0	3/18/2013	100	<0.0044	0.42	<0.0044	<0.0089	0.018	<0.044	<0.89	<0.0044	<0.0044	<0.0044
MW-10B	MW-10B-S-N-5.0	5.0	3/18/2013	480	0.35	<0.0043	6.4	8.1	<0.0043	<0.043	<0.86	<0.0043	<0.0043	<0.0043
	MW-10B-S-N-9.0	9.0	3/18/2013	60	1.3	0.034	0.34	4.4	<0.0040	<0.040	<0.79	<0.0040	<0.0040	<0.0040
	MW-10B-S-N-15.0	15.0	3/18/2013	2.0	1.7	0.029	0.053	0.13	0.0054	<0.0043	<0.86	<0.0043	<0.0043	<0.0043
	MW-10B-S-N-20.0	20.0	3/18/2013	0.51	<0.0043	<0.0043	<0.0043	<0.0086	<0.0043	<0.043	<0.86	<0.0043	<0.0043	<0.0043
MW-11A	MW-11A-S-N-5.0	5.0	3/19/2013	680	1.6	0.38	34	59	<0.10	<1.0	<21	<0.10	<0.10	<0.10
	MW-11A-S-N-9.0	9.0	3/19/2013	1,200	6.5	29	19	97	0.32	<0.99	<20	<0.099	<0.099	<0.099
	MW-11A-S-N-14.0	14.0	3/19/2013	0.36	<0.0043	<0.0043	<0.0043	<0.0043	0.0087	0.22	<0.87	<0.0043	<0.0043	<0.0043
MW-11B	MW-11B-S-N-5.0	5.0	3/19/2013	<0.17	<0.0043	<0.0043	<0.0043	<0.0087	<0.0043	<0.043	<0.87	<0.0043	<0.0043	<0.0043
	MW-11B-S-N-10.0	10.0	3/19/2013	14	0.30	0.0082	0.18	0.22	0.12	0.30	<0.84	<0.0042	<0.0042	<0.0042
	MW-11B-S-Y-10.0	10.0	3/19/2013	31	0.22	0.0070	0.16	0.22	0.10	0.28	<0.79	<0.0040	<0.0040	<0.0040
	MW-11B-S-N-14.0	14.0	3/19/2013	13	0.89	0.13	0.17	0.71	0.19	0.59	<0.99	<0.0050	<0.0050	<0.0050
	MW-11B-S-N-19.0	19.0	3/19/2013	0.23	<0.0043	<0.0043	<0.0043	<0.0087	7.9	<0.043	<0.87	<0.0043	<0.0043	<0.0043

EXPLANATIONS:

(ft.) = Feet
(mg/kg) = Milligrams per kilogram
<# = Analyte not detected at or above indicated laboratory practical quantitation limit.

TPH-g = Total Petroleum Hydrocarbons as Gasoline
B = Benzene
T = Toluene
E = Ethylbenzene
X = Total xylenes

MTBE = Methyl tertiary-butyl ether
TBA = Tertiary-butyl alcohol
DIPE = Diisopropyl ether
ETBE = Ethyl tertiary-butyl ether
TAME = Tertiary-amyl methyl ether

Table 2
Laboratory Anaytical Results for Soil - Purgeable Aromatics and Total Petroleum Hydrocarbons
76 Service Station #1156
(Chevron Site #351645)
4276 MacArthur Boulevard
Oakland, California

BORING LOCATION	SAMPLE ID (ft.)	SAMPLE DEPTH (ft.)	DATE	TPH C8 - C9 (mg/kg)	TPH C10 - C11 (mg/kg)	TPH C12 - C14 (mg/kg)	TPH C15 - C16 (mg/kg)	TPH C17 - C18 (mg/kg)	TPH C19 - C20 (mg/kg)	TPH C21 - C22 (mg/kg)	TPH C23 - C28 (mg/kg)	TPH C29 - C32 (mg/kg)	TPH C33 - C36 (mg/kg)	TPH C37 - C40 (mg/kg)	TPH C41 - C43 (mg/kg)	TPH C44+ (mg/kg)	TPH (Total) (mg/kg)
MW-9A	MW-9A-S-N-5.0	5.0	3/18/2013	<1.0	<1.0	4.3	4.3	1.5	2.0	2.2	11	14	7.3	<1.0	<1.0	<1.0	47
	MW-9A-S-Y-5.0	5.0	3/18/2013	<1.0	1.9	5.0	4.7	1.8	2.3	2.7	18	20	11	<1.0	<1.0	<1.0	67
	MW-9A-S-N-8.5	8.5	3/18/2013	<1.0	1.4	2.6	2.9	1.4	1.8	2.4	11	6.2	3.2	<1.0	<1.0	<1.0	33
	MW-9A-S-N-14.0	14.0	3/18/2013	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<10
MW-9B	MW-9B-S-N-5.0	5.0	3/18/2013	<1.0	<1.0	1.2	<1.0	<1.0	<1.0	<1.0	1.9	<1.0	<1.0	<1.0	<1.0	<1.0	<10
	MW-9B-S-N-9.0	9.0	3/18/2013	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<10
	MW-9B-S-N-14.0	14.0	3/18/2013	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<10
	MW-9B-S-N-19.0	19.0	3/18/2013	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<10
MW-10A	MW-10A-S-N-5.0	5.0	3/18/2013	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	1.5	<1.0	<1.0	<1.0	<1.0	<1.0	<10
	MW-10A-S-N-9.0	9.0	3/18/2013	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<10
	MW-10A-S-N-14.0	14.0	3/18/2013	<1.0	2.8	3.3	<1.0	<1.0	<1.0	<1.0	2.5	<1.0	<1.0	<1.0	<1.0	<1.0	11
MW-10B	MW-10B-S-N-5.0	5.0	3/18/2013	<1.0	1.2	1.5	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<10
	MW-10B-S-N-9.0	9.0	3/18/2013	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<10
	MW-10B-S-N-15.0	15.0	3/18/2013	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<10
	MW-10B-S-N-20.0	20.0	3/18/2013	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<10
MW-11A	MW-11A-S-N-5.0	5.0	3/19/2013	<1.0	12	38	46	6.7	6.3	6.3	25	21	12	<1.0	<1.0	<1.0	170
	MW-11A-S-N-9.0	9.0	3/19/2013	<1.0	1.3	2.6	3.5	1.5	2.2	1.9	7.4	3.5	<1.0	<1.0	<1.0	<1.0	24
	MW-11A-S-N-14.0	14.0	3/19/2013	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
MW-11B	MW-11B-S-N-5.0	5.0	3/19/2013	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<10
	MW-11B-S-N-10.0	10.0	3/19/2013	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<10
	MW-11B-S-Y-10.0	10.0	3/19/2013	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<10
	MW-11B-S-N-14.0	14.0	3/19/2013	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<10
	MW-11B-S-N-19.0	19.0	3/19/2013	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<10

EXPLANATIONS:

(ft.) = Feet
mg/kg = Milligrams per kilogram
<# = Analyte not detected at or above indicated laboratory practical quantitation limit.

APPENDIX A

Boring Logs and Well Construction Diagrams

AECOM Environment
1220 Avenida Acaso
Camarillo, CA 93012
(805) 388-3775
www.aecom.com

Client: Chevron Enviornmental Management Company

Project Number: 60287515

Boring No. MW-10A

Site Description/Location: Former Unocal #1156 (Chevron 351645), Oakland, California

Ambient PID Reading: 0.0

Coordinates: See Survey *Elevation:* 174.85 FT *Datum:*

Sheet: 1 *of* 1

Drilling Equipment/Method: /Hollow Stem Auger *Weather:* 60* Clear

Monitoring Well Installed: Yes

Sample Type(s): Split Spoon *Boring Diameter:* 8 IN.

Screened Interval: 10-15 ft.

Approved By: R. Perez, P.G *Logged By:* J.Harms *Date/Time Started:* 03-18-13 / 10:40

Depth of Boring: 15 FT BGS

Drilling Contractor: ABC *Backfill:* grout *Date/Time Finished:* 03-18-13 / 11:00

Water Level: Not Encountered

DEPTH (ft)	Sample ID	Sample Depth (ft)	Blows per 6"/RQD	Recovery (ft)	PID Reading (ppm)	USCS	Graphic Log	MATERIAL IDENTIFICATION, color, description of fine grained material (silt and clay), description of coarse grained material (sand and gravel), structural or mineralogical features, density or stiffness, moisture content, odors or staining.
						ML		(0-2")ASPHALT (2"-2.0') SILT WITH GRAVEL, reddish brown (5YR 5/4), 70% silt, 20% fine-grained gravel (max size 0.25 inches), 10% clay, medium dense, dry, Hydrocarbon odor
					346	CL		(2-3') CLAY WITH LITTLE GRAVEL, black (7.5 YR 2.5/1), medium-plastic, 80% clay, 10% silt, 10% fine-grained gravel, subangular, medium dense, dry
						CH		(3-8.5') FAT CLAY WITH TRACE OF SAND AND SILT, gray (2.5Y 5/1), high-plastic, 90% clay, 5% fine-grained sand, 5% silt, stiff, dry
5	5.0			1	657			-(increasing silt and sand @ 4')
			6 8 9, 10					medium-plastic, 80% clay, 10% fine-grained sand, 10% silt @ 7.5'
	9.0			2	325	CL		(8.5-13') LEAN CLAY WITH SAND, olive (5Y 5/3), medium-plastic, 70% clay, 20% fine-grained sand, 10% silt, stiff, dry, Iron staining from 12 to 15 feet
10			9 11 12	1.5				
			8 11 13	1.5	1011			
						ML		(13-14') SILT WITH SAND AND GRAVEL, olive (5Y 5/3), 70% silt, 20% fine to medium-grained sand, 5% clay, 5% gravel, stiff, dry-(13.8 - 14 feet decreased silt increase from fine to medium grained sand)
	14.0		9 10 11, 12	2	3222			-(moist at 14')
15								

Well Diagram

2" Diameter Sched. 40 PVC, Concrete

Bentonite Cement Grout

Hydrated Bentonite Seal

Monterey No. 3 Sand

0.020" Slotted Screen,

Bottom of Well

Notes: Continuous Split Spoon from 8 Feet

AECOM Environment
1220 Avenida Acaso
Camarillo, CA 93012
(805) 388-3775
www.aecom.com

Client: Chevron Enviornmental Management Company

Project Number: 60287515

Site Description/Location: Former Unocal #1156 (Chevron 351645), Oakland, California

Coordinates: See Survey *Elevation:* 174.58 FT *Datum:*

Drilling Equipment/Method: /Hollow Stem Auger *Weather:* 60* Clear

Sample Type(s): Split Spoon *Boring Diameter:* 8 IN.

Approved By: R. Perez, P.G *Logged By:* J.Harms *Date/Time Started:* 03-18-13 / 08:50

Drilling Contractor: ABC *Backfill:* grout *Date/Time Finished:* 03-18-13 / 09:45

Boring No. MW-10B

Ambient PID Reading: 0.0

Sheet: 1 *of* 1

Monitoring Well Installed: Yes

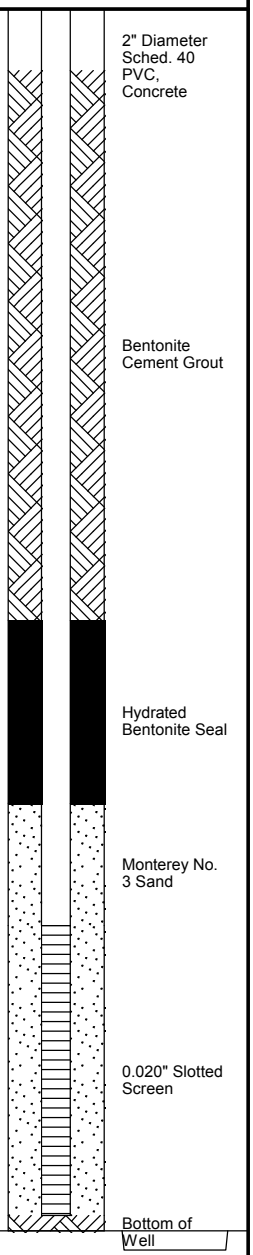
Screened Interval: 15-20 ft.

Depth of Boring: 20 FT BGS

Water Level: 19 FT BGS

DEPTH (ft)	Sample ID	Sample Depth (ft)	Blows per 6"/RQD	Recovery (ft)	PID Reading (ppm)	USCS	Graphic Log	MATERIAL IDENTIFICATION, color, description of fine grained material (silt and clay), description of coarse grained material (sand and gravel), structural or mineralogical features, density or stiffness, moisture content, odors or staining.
						ML		(0-2") ASPHALT (2"-2') LEAN CLAY WITH SAND AND GRAVEL, reddish brown (5 YR 5/4), low plastic, 70% clay, 20% fine to medium-grained sand, 10% fine-grained gravel (max size 0.25 inches), medium dense, dry
						CL		(2-5') LEAN CLAY, olive gray (5Y 5/2), medium-plastic, 90% clay, 10% silt, stiff, dry, hydrocarbon odor at 4 feet
5	5.0				593	CH		(5-11.5') FAT CLAY, olive gray (5Y 5/2), medium-plastic, 90% clay, 10% silt, stiff, dry, hydrocarbon odor
	9.0		6 8 9, 11	2	255			
10			9 12 14	1.5				increase in silt, odor decreased at 10 feet to 12 feet
			9 12 14	1.5		CL		(11.5-13') LEAN CLAY WITH SILT, light yellowish brown (10YR 6/4), mottled at 7 feet, low-plastic, 80% clay, 20% silt, very stiff, dry
			9 11 12, 14	1.5		CL		(13-16') LEAN CLAY WITH SAND, light yellowish brown (10YR 6/4), low plastic, 70% clay, 20% fine to coarse-grained sand, 10% fine-grained gravel, very stiff, dry
15	15.0		9 11 15	2				(Iron staining and deposits at 15 to 20 feet)
			8 9 13	1.5		ML SM SW CL		(16-16.5') SILT WITH CLAY, brown (10YR 4/3), 80% silt, 15% sand, 5% clay, medium dense, moist (16.5-16.8') SILTY SAND, brown (10YR 4/3), 75% fine-grained sand, 20% silt, 5% clay, medium dense, moist (16.8-17') WELL GRADED SAND, brownish yellow (10YR 6/6), 80% fine to medium-grained sand, 10% silt, 10% fine-grained gravel (max size 0.25 inches), medium dense, moist, odor decreases
			10 11 13,17			SM		(17-18.8') LEAN CLAY WITH SILT AND GRAVEL, brownish yellow (10YR 6/6), low-plastic, 70% clay, 10% silt, 10% fine to medium-grained sand, 10% fine-grained gravel, very stiff, dry-(clay, odor decreases 18.5 - 18.8 feet)
20	20.0			2	7.7			(18.8-20')SILTY SAND WITH GRAVEL, dark gray (10YR 4/1), 50%fine to coarse-grained sand, 40% silt, 10% fine-grained gravel (max size 0.25 inches), medium dense, wet-(coarse gravel 19 -20 feet)

Well Diagram



Notes: GW at 19Ft, Cont. SS after 8 Ft

AECOM Environment
1220 Avenida Acaso
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(805) 388-3775
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Client: Chevron Enviornmental Management Company		**Boring No. MW-11A**
Project Number: 60287515		
Site Description/Location: Former Unocal #1156 (Chevron 351645), Oakland, California		*Ambient PID Reading:* 0.0
Coordinates: See Survey	*Elevation:* 175.85 FT *Datum:*	*Sheet:* 1 *of* 1
Drilling Equipment/Method: /Hollow Stem Auger	*Weather:* 60* Clear	*Monitoring Well Installed:* Yes
Sample Type(s): Split Spoon	*Boring Diameter:* 8 IN.	*Screened Interval:* 10-15 ft.
Approved By: R. Perez, P.G	*Logged By:* J.Harms	*Date/Time Started:* 03-19-13 / 10:15
Drilling Contractor: ABC / Kenny	*Backfill:* grout	*Date/Time Finished:* 03-19-13 / 10:35
		Depth of Boring: 15 FT BGS
		Water Level: Not Encountered

DEPTH (ft)	Sample ID	Sample Depth (ft)	Blows per 6"/RQD	Recovery (ft)	PID Reading (ppm)	USCS	Graphic Log	MATERIAL IDENTIFICATION, color, description of fine grained material (silt and clay), description of coarse grained material (sand and gravel), structural or mineralogical features, density or stiffness, moisture content, odors or staining.
								(0-10") ASPHALT AND BASE
						ML		(10"-10')SILT WITH SAND AND GRAVEL, dark yellowish brown (10YR 4/6), low-plastic, 60% silt, 20% fine to medium-grained sand, 10% clay, 10% fine to coarse-grained gravel (max size 3 inches), medium dense, dry, Hydrocarbon odor-(large cobbles at 2-2.5 feet)
					4.3			
5	5.0				1380			-(gray staining at 4.5 feet)
			6 8 10, 14					
	9.0			2	4557			
10			6 8 10	1.5		CL		(10-11.5') LEAN CLAY, dark yellowish brown (10YR 4/6), medium-plastic, 70% clay, 15% silt, 10% fine-grained sand, 5% fine-grained subangular gravel, very stiff, dry
						SM		(11.5-12.5') SILTY SAND, olive (5Y 5/3), 60% fine to coarse-grained sand, 30% silt, 10% fine-grained gravel, medium dense, wet, Hydrocarbon odor
			4 6 13	1.5	2530	CH		(12.5-15')FAT CLAY, dark reddish gray (5YR 4/2)/ olive yellow (5Y 6/6), mottled, high-plastic, 80% clay, 10% silt, 10% fine-grained sand, very stiff, dry, odor decreases, (Fe and Mn staining and nodules)
	14		6 8 8, 13	2	116			
15								

Well Diagram

2" Diameter Sched. 40 PVC, Concrete

Bentonite Cement Grout

Hydrated Bentonite Seal

Monterey No. 3 Sand

0.020" Slotted Screen,

Bottom of Well

Notes: Continuous Split Spoon from 8 Feet

AECOM Environment
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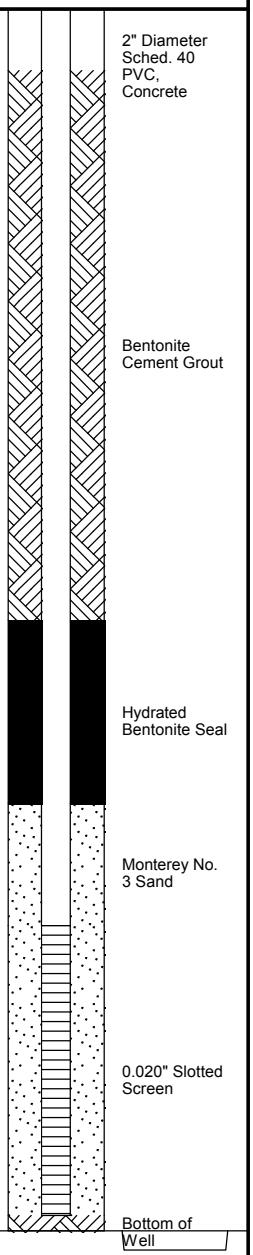
Client: Chevron Enviornmental Management Company		**Boring No. MW-11B**
Project Number: 60287515		
Site Description/Location: Former Unocal #1156 (Chevron 351645), Oakland, California		*Ambient PID Reading:* 0.0
Coordinates: See Survey	*Elevation:* 175.37 FT *Datum:*	*Sheet:* 1 *of* 1
Drilling Equipment/Method: /Hollow Stem Auger	*Weather:* 60* Clear	*Monitoring Well Installed:* Yes
Sample Type(s): Split Spoon	*Boring Diameter:* 8 IN.	*Screened Interval:* 15-20 ft.
Approved By: R. Perez, P.G	*Logged By:* J.Harms *Date/Time Started:* 03-19-13 / 08:05	*Depth of Boring:* 20 FT BGS
Drilling Contractor: ABC / Kenny	*Backfill:* grout *Date/Time Finished:* 03-19-13 / 09:00	*Water Level:* Not Encountered

DEPTH (ft)	Sample ID	Sample Depth (ft)	Blows per 6"/RQD	Recovery (ft)	PID Reading (ppm)	USCS	Graphic Log	MATERIAL IDENTIFICATION, color, description of fine grained material (silt and clay), description of coarse grained material (sand and gravel), structural or mineralogical features, density or stiffness, moisture content, odors or staining.
								(0-9") ASPHALT AND BASE
						ML		(0.9"-7.5') SILT WITH SAND AND GRAVEL, dark yellowish brown (10YR 4/6), low-plastic, 60% silt, 20% fine to medium grained sand, 10% clay, 10% fine-grained gravel (max size .25 inches), medium dense, dry, no odor
					5.1			
	5.0				2.6			-(decreased gravel, fine-grained sand at 3 feet)
5								
					0.0	CL		(7.5-8.5') LEAN CLAY WITH SILT, brown (10YR 5/3), medium-plastic, 70% clay, 20% silt, 10% fine-grained sand, medium dense, dry, no odor
			6 8 10, 12		202	ML		(8.5-10.5')SILT WITH SAND, brown (10YR 5/3), 60% silt, 25% fine to medium-grained sand, 10% clay, 5% fine-grained gravel, medium dense, dry, odor/gray hydrocarbon staining
10	10, Dup			2	1047			
						CH		(10.5-11') FAT CLAY, brown (7.5YR 5/4), high-plastic, 70% clay,10% silt, 10% fine to medium-grained sand, 10% fine to coarse-grained gravel (max size 0.5 inches), stiff, dry, hydrocarbon odor
			6 6 8	1.5	3519	SM		
			6 8 10	1.5	3991	CH		(11-12') SILTY SAND, olive gray (5Y 5/2), 60% fine to medium-grained sand, 20% silt, 20% fine to coarse-grained gravel (max size 0.5 inches), medium dense, dry, hydrocarbon odor
								(12-16.5') FAT CLAY, brownish yellow (10YR 6/6), high-plastic, 80% clay, 10% fine-grained sand, 10% silt, very stiff, dry, hydrocarbon odor, iron staining
	14.0		8, 8 10 12	2	842			
15								-(odor decreases at 14.5 feet)
			8 10 10	1.5	32.2			
								(70% clay, 10% silt, 20% fine to medium-grained sand) at 16 Feet
			8 8 8	1.5		CL		(16.5-18') LEAN CLAY WITH SAND, brownish yellow (10YR 6/6), medium-plastic, 70% clay, 20% fine to medium-grained sand, 5% silt, 5% fine-grained gravel (max size 0.25 inches), stiff, dry
						SM		(18-18.5') SILTY SAND, brownish yellow (10YR 6/6), 60% fine to coarse-grained sand, 20% silt, 10% fine-grained subangular gravel (max size 0.25 inches), medium dense, moist, hydrocarbon odor
	19.0		6 8 10, 11	2	5.1	CL		(18.5-20') LEAN CLAY WITH SAND, brownish yellow (10YR 6/6), low-plastic, 70% clay, 20% fine to medium-grained sand, 5% silt, 5% fine-grained gravel (max size 0.25 inches), stiff, moist, decreased hydrocarbon odor
20								

Well Diagram



Notes: Continuous Split Spoon from 8 Feet

AECOM Environment
1220 Avenida Acaso
Camarillo, CA 93012
(805) 388-3775
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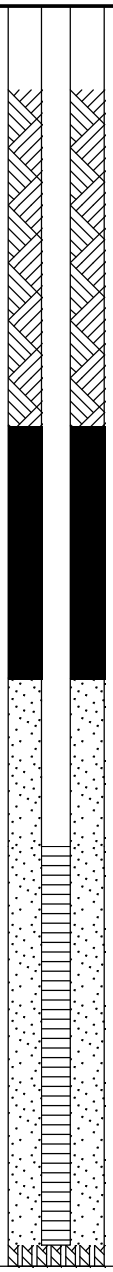
Client: Chevron Enviornmental Management Company		**Boring No. MW-9A**
Project Number: 60287515		
Site Description/Location: Former Unocal #1156 (Chevron 351645), Oakland, California		*Ambient PID Reading:* 0.0
Coordinates: See Survey	*Elevation:* 173.36 FT *Datum:*	*Sheet:* 1 *of* 1
Drilling Equipment/Method: /Hollow Stem Auger	*Weather:* 60* Clear	*Monitoring Well Installed:* Yes
Sample Type(s): Split Spoon	*Boring Diameter:* 8 IN.	*Screened Interval:* 10-15 ft.
Approved By: R. Perez, P.G	*Logged By:* J.Harms / *Date/Time Started:* 03-18-13 / 13:05	*Depth of Boring:* 15 FT BGS
Drilling Contractor: ABC	*Backfill:* grout / *Date/Time Finished:* 03-18-13 / 13:20	*Water Level:* Not Encountered

DEPTH (ft)	Sample ID	Sample Depth (ft)	Blows per 6"/RQD	Recovery (ft)	PID Reading (ppm)	USCS	Graphic Log	MATERIAL IDENTIFICATION, color, description of fine grained material (silt and clay), description of coarse grained material (sand and gravel), structural or mineralogical features, density or stiffness, moisture content, odors or staining.
								(0-5") ASPHALT
						CL		(5"- 2.5') LEAN CLAY, very dark gray (5Y 3/1), medium-plastic, 90% clay, 5% silt, 5% fine-grained gravel, stiff, dry, Hydrocarbon odor
					242	CH		(2.5-6') FAT CLAY, olive gray (5Y4/2), high-plastic, 90% clay, 5% silt, 5% fine-grained gravel, very stiff, dry, Hydrocarbon odor
5	5.0, 5.0Dup				3770			
						CL		(6-9') LEAN CLAY, olive gray (5Y4/2), medium-plastic, 80% clay, 10% silt, 10% fine-grained gravel, very stiff, dry, Hydrocarbon odor
	8.5		8 9 11, 11	2	1005			
						CH		(9-12.5') FAT CLAY, olive gray (5Y4/2), high-plastic, 80% clay, 10% silt, 10% fine-grained gravel, very stiff, dry, Hydrocarbon odor
10			9 12 13	1.5				
			13 14 15	1.5				dark reddish gray (5YR 4/2) / olive yellow (5Y 6/6), mottled
					1347	CL		(12.5- 15') LEAN CLAY, dark reddish gray (5YR 4/2) / olive yellow (5Y 6/6) mottled, medium-plastic, 70% clay, 10% silt, 15% fine-grained gravel, 5% fine to coarse-grained sand, very stiff, dry, Iron staining starts at 13 Feet
	14		8 10 12, 14	1	237			
15								

Well Diagram



Notes: Continuous Split Spoon from 8 Feet

AECOM Environment
1220 Avenida Acaso
Camarillo, CA 93012
(805) 388-3775
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Client: Chevron Enviornmental Management Company

Project Number: 60287515

Boring No. MW-9B

Site Description/Location: Former Unocal #1156 (Chevron 351645), Oakland, California

Ambient PID Reading: 0.0

Coordinates: See Survey *Elevation:* 173.12 FT *Datum:*

Sheet: 1 *of* 1

Drilling Equipment/Method: /Hollow Stem Auger *Weather:* 60* Clear

Monitoring Well Installed: Yes

Sample Type(s): Split Spoon *Boring Diameter:* 8 IN.

Screened Interval: 15-20 ft.

Approved By: R. Perez, P.G *Logged By:* J.Harms *Date/Time Started:* 03-15-13 / 13:20

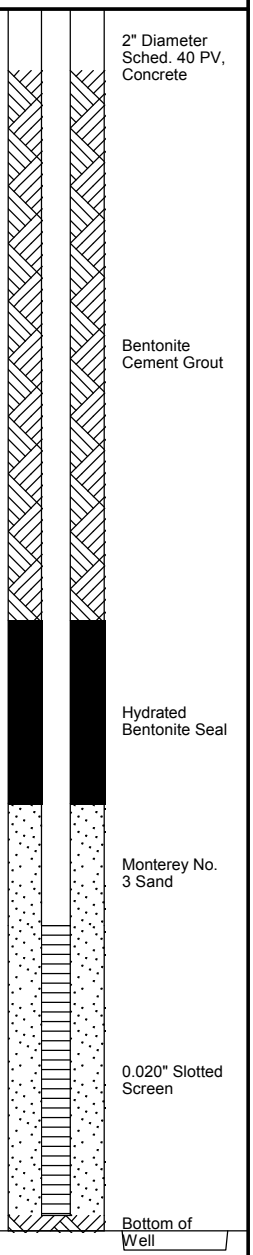
Depth of Boring: 20 FT BGS

Drilling Contractor: ABC *Backfill:* grout *Date/Time Finished:* 03-15-13 / 14:00

Water Level: Not Encountered

DEPTH (ft)	Sample ID	Sample Depth (ft)	Blows per 6"/RQD	Recovery (ft)	PID Reading (ppm)	USCS	Graphic Log	MATERIAL IDENTIFICATION, color, description of fine grained material (silt and clay), description of coarse grained material (sand and gravel), structural or mineralogical features, density or stiffness, moisture content, odors or staining.
								(0-6") ASPHALT
						CL		(6"-2.5') LEAN CLAY, very dark gray (5Y 3/1), medium-plastic, 90% clay, 5% silt, 5% gravel, medium dense, dry, Hydrocarbon odor (stronger at 4')
					3247	CH		(2.5-7.0') FAT CLAY, olive gray (5Y 4/2), high-plastic, 90% clay, 5% silt, 5% gravel, stiff, dry, Hydrocarbon odor
5	5.0				2416			
			6 8 9, 11	2	41.2	CL		(7.0-12') LEAN CLAY, olive gray (5Y 4/2), medium-plastic, 80% clay, 10% silt, 10% fine-grained gravel, very stiff, dry, Mn nodules, fine sand laminations
10	9.0			1.5	573			
			6 8 12					
						CL		(12-13.5') LEAN CLAY, dark reddish gray (5YR 4/2) / olive yellow (5Y 6/6) mottled, medium-plastic , 80% clay, 10% silt, 10% fine to coarse-grained gravel, very stiff, dry, Iron staining at 12 feet, odor decreasing at 13 feet brownish yellow (10YR 6/6)
			6 8 9, 11	1.5	7.9	ML		(13.5-15') SILT WITH SAND, olive (5Y 5/3) mottled, low-plastic, 60% silt, 30% fine-grained sand, 10% clay, dense, dry
15	14.0			2	128			
			6 8 9			SM		(15-18') SILTY SAND WITH GRAVEL, light brown (7.5YR 6/4), 40% fine to medium-grained sand, 40% silt, 20% fine to coarse-grained gravel (max size 0.5 inches), medium dense, moist
				1.5				
			6 9 9			ML		(18-20') SILT WITH SAND AND GRAVEL, reddish brown (5YR 4/4), low-plastic, 50% silt, 20% fine to medium-grained sand, 20% fine-coarse grained gravel (max size 0.5 inches), 10% clay, medium dense, moist, slight odor at 18.5-18.8 feet in layer of coarse gravel
	19.0		6 8 10,12	2	0.7			
20								

Well Diagram



Notes: Continuous Split Spoon from 8 Feet

APPENDIX B

Laboratory Analytical Data

BC Laboratories, Inc.
Environmental Testing Laboratory Since 1949

Date of Report: 04/02/2013

Brenda Evans

AECOM
1220 Avenida Acaso
Camarillo, CA 93012

Project: 1156
BC Work Order: 1305466
Invoice ID: B142951

Enclosed are the results of analyses for samples received by the laboratory on 3/18/2013. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Molly Meyers

Contact Person: Molly Meyers
Client Service Rep

Authorized Signature

4100 Atlas Court Bakersfield, CA 93308 (661) 327-4911 FAX (661) 327-1918 www.bclabs.com

Table of Contents

CHAIN OF CUSTODY

AECOM

Lab: BC Laboratories

TAT: Standard

Report results to:

Name	Brenda Evans (brenda.evans@aecom.com)
Company	AECOM
Mailing Address	1220 Avenida Acaso
City, State, Zip	Camarillo, CA 93012
Telephone No.	805.233.3988
Fax No.	805.388.3577

Project Information

Chevron Facility:	351645
Site Address:	4276 MacArthur Blvd, Oakland CA
AECOM No.	60287515.A10

13-054466

Special instructions and/or specific regulatory requirements:

oxys include: MTBE, TBA, DIPE, ETBE, TAME, and Ethanol.

	Sample Identification	Date Sampled	Time Sampled	Matrix/ Media	No. of Conts.	TPH-CC 8015M	TPHg, BTEX, oxys 8260B	5035 encore method	Sample Condition/Comments	Preservative
1	MW-10A-5-N-5.0-20130318	3/18/13	1040	Soil	4	X	X	X		none
2	MW-10A-5-N-9.0-20130318		1050	Soil	4	X	X	X		none
3	MW-10A-5-N-14.0-20130318		1100	Soil	4	X	X	X		none
4	MW-10B-5-N-5.0-20130318		0850	Soil	4	X	X	X		none
5	MW-10B-5-N-9.0-20130318		0915	Soil	4	X	X	X		none
6	MW-10B-5-N-15.0-20130318		0930	Soil	4	X	X	X		none
7	MW-10B-5-N-20.0-20130318		0945	Soil	4	X	X	X		none
8	MW-9B-5-N-5.0-20130318		1320	Soil	4	X	X	X		none
9	MW-9B-5-N-9.0-20130318		1330	Soil	4	X	X	X		none
10	MW-9B-5-N-14.0-20130318	3/18/13	1340	Soil	4	X	X	X		none

CHK BY DISTRIBUTION SUB-OUT

Relinquished by:	Date/Time 3/18/13 1455	***Received by:***	Date/Time 3-18-13 1455
Relinquished by:	Date/Time 3-18-13 1815	***Received by:***	Date/Time 3-18-13 18:15
Method of Shipment:	~~Fedex~~ Courier	***Sample Condition on Receipt:***	

REL. @ 3-18-13 21:55 3/18/13 2155

4100 Atlas Court Bakersfield, CA 93308 (661) 327-4911 FAX (661) 327-1918 www.bclabs.com

CHAIN OF CUSTODY

AECOM

Lab: BC Laboratories

TAT: Standard

Report results to:

Name	Brenda Evans (brenda.evans@aecom.com)
Company	AECOM
Mailing Address	1220 Avenida Acaso
City, State, Zip	Camarillo, CA 93012
Telephone No.	805.233.3988
Fax No.	805.388.3577

Project Information

Chevron Facility:	351645
Site Address:	4276 MacArthur Blvd, Oakland CA
AECOM No.	60287515.A10

1305466

Special instructions and/or specific regulatory requirements:

oxys include: MTBE, TBA, DIPE, ETBE, TAME, and Ethanol.

Sample Identification	Date Sampled	Time Sampled	Matrix/ Media	No. of Conts.	TPH-CC 8015M	TPHg, BTEX, oxys 8260B	5035 encore method						Sample Condition/Comments	Preservative
MW-9B-5-N-19.0-20130318	3/18/13	1400	Soil	4	X	X	X							none
			Soil	4	X	X	X							none
			Soil	4	X	X	X							none
			Soil	4	X	X	X							none
			Soil	4	X	X	X							none
			Soil	4	X	X	X							none
			Soil	4	X	X	X							none
			Soil	4	X	X	X							none
			Soil	4	X	X	X							none
			Soil	4	X	X	X							none

Relinquished by:	***Date/Time*** 3/18/13 1455	***Received by:*** Tony Bogan	***Date/Time*** 3-18-13 1455
Relinquished by: Tony Bogan	***Date/Time*** 3-18-13 1815	***Received by:***	***Date/Time*** 3-18-13 18:15
Method of Shipment: ~~Fedex~~ Courier		***Sample Condition on Receipt:***	

REL. 3-18-13 21:55 3/18/13 2155

4100 Atlas Court Bakersfield, CA 93308 (661) 327-4911 FAX (661) 327-1918 www.bclabs.com

Chain of Custody and Cooler Receipt Form for 1305466 Page 3 of 4

BC LABORATORIES INC. COOLER RECEIPT FORM Rev. No. 13 08/17/12 Page 1 Of 2

Submission #: 13-054666

SHIPPING INFORMATION
Federal Express ☐ UPS ☐ Hand Delivery ☐
BC Lab Field Service ☒ Other ☐ (Specify)_____

SHIPPING CONTAINER
Ice Chest ☒ None ☐
Box ☐ Other ☐ (Specify)_____

Refrigerant: Ice ☒ Blue Ice ☐ None ☐ Other ☐ Comments:

Custody Seals: Ice Chest ☐ Intact? Yes ☐ No ☐ | Containers ☐ Intact? Yes ☐ No ☐ | None ☒ Comments:

All samples received? Yes ☑ No ☐ All samples containers intact? Yes ☑ No ☐ Description(s) match COC? Yes ☑ No ☐

COC Received ☒ YES ☐ NO

Emissivity: 0.9* Container: Soil Sleeve Thermometer ID: 20782 JNW 3/18 °C

Temperature: (A) 2.1 °C / (C) 2.3 °C

Date/Time 3-18-13

Analyst Init JNW 2205

SAMPLE CONTAINERS	SAMPLE NUMBERS									
	1	2	3	4	5	6	7	8	9	10
QT GENERAL MINERAL/ GENERAL PHYSICAL										
PT PE UNPRESERVED										
QT INORGANIC CHEMICAL METALS										
PT INORGANIC CHEMICAL METALS										
PT CYANIDE										
PT NITROGEN FORMS										
PT TOTAL SULFIDE										
2oz. NITRATE / NITRITE										
PT TOTAL ORGANIC CARBON										
PT TOX										
PT CHEMICAL OXYGEN DEMAND										
PLA PHENOLICS										
40ml VOA VIAL TRAVEL BLANK										
40ml VOA VIAL	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )
QT EPA 413.1, 413.2, 418.1										
PT ODOR										
RADIOLOGICAL										
BACTERIOLOGICAL										
40 ml VOA VIAL- 504										
QT EPA 508/608/8080										
QT EPA 515.1/8150										
QT EPA 525										
QT EPA 525 TRAVEL BLANK										
100ml EPA 547										
100ml EPA 531.1										
QT EPA 548										
QT EPA 549										
QT EPA 632										
QT EPA 8015M										
QT AMBER										
4 OZ. JAR										
2 OZ. JAR										
SOIL SLEEVE	A	A	A	A	A	A	A	A	A	A
VOA VIAL										
PLASTIC BAG										
FERROUS IRON										
ENCORE	B	B	B	BCD	BCD	B	B	B	B	B
SMART KIT										

Comments:

Sample Numbering Completed By: KIQ Date/Time: 3/18/13 2245

A = Actual / C = Corrected

Chain of Custody and Cooler Receipt Form for 1305466 Page 4 of 4

BC LABORATORIES INC. COOLER RECEIPT FORM Rev. No. 13 08/17/12 Page 1 of 1

Submission #: 13-054666

SHIPPING INFORMATION	SHIPPING CONTAINER
Federal Express ☐ UPS ☐ Hand Delivery ☐	Ice Chest ☒ None ☐
BC Lab Field Service ☒ Other ☐ (Specify)_____	Box ☐ Other ☐ (Specify)_____

Refrigerant: Ice ☒ Blue Ice ☐ None ☐ Other ☐ Comments:

Custody Seals: Ice Chest ☐ (Intact? Yes ☐ No ☐) Containers ☐ (Intact? Yes ☐ No ☐) None ☒ Comments:

All samples received? Yes ☒ No ☐ All samples containers intact? Yes ☒ No ☐ Description(s) match COC? Yes ☒ No ☐

COC Received ☒ YES ☐ NO

Emissivity: 0.9* Container: Soil Sleeve Thermometer ID: ~~20782~~ JNW 3/18

Temperature: (A) 2.1 °C / (C) 2.3 °C

Date/Time 3-18-13

Analyst Init JNW 2205

SAMPLE CONTAINERS	SAMPLE NUMBERS									
	1	2	3	4	5	6	7	8	9	10
QT GENERAL MINERAL/ GENERAL PHYSICAL										
PT PE UNPRESERVED										
QT INORGANIC CHEMICAL METALS										
PT INORGANIC CHEMICAL METALS										
PT CYANIDE										
PT NITROGEN FORMS										
PT TOTAL SULFIDE										
4oz. NITRATE / NITRITE										
PT TOTAL ORGANIC CARBON										
PT TOX										
PT CHEMICAL OXYGEN DEMAND										
PIA PHENOLICS										
40ml VOA VIAL TRAVEL BLANK										
40ml VOA VIAL	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )
QT EPA 413.1, 413.2, 418.1										
PT ODOR										
RADIOLOGICAL										
BACTERIOLOGICAL										
40 ml VOA VIAL- 504										
QT EPA 508/608/8080										
QT EPA 515.1/8150										
QT EPA 525										
QT EPA 525 TRAVEL BLANK										
100ml EPA 547										
100ml EPA 531.1										
QT EPA 548										
QT EPA 549										
QT EPA 632										
QT EPA 8015M										
QT AMBER										
8 OZ. JAR										
32 OZ. JAR										
SOIL SLEEVE	A									
PCB VIAL										
PLASTIC BAG										
FERROUS IRON										
ENCORE	B									
SMART KIT										

Comments:

Sample Numbering Completed By: KIO Date/Time: 3/18/13 2245

A = Actual C = Corrected

AECOM
1220 Avenida Acaso
Camarillo, CA 93012

Reported: 04/02/2013 11:18
Project: 1156
Project Number: 351645
Project Manager: Brenda Evans

Laboratory / Client Sample Cross Reference

Laboratory	Client Sample Information			
1305466-01	**COC Number:**	---	**Receive Date:**	03/18/2013 21:55
	Project Number:	1156	**Sampling Date:**	03/18/2013 10:40
	Sampling Location:	---	**Sample Depth:**	---
	Sampling Point:	MW-10A-S-N-5.0-130318	**Lab Matrix:**	Solids
	Sampled By:	AEOR	**Sample Type:**	Soil
			Delivery Work Order:	
			Global ID:	
			Location ID (FieldPoint):	MW-10A
			Matrix:	SO
			Sample QC Type (SACode):	CS
			Cooler ID:	
1305466-02	**COC Number:**	---	**Receive Date:**	03/18/2013 21:55
	Project Number:	1156	**Sampling Date:**	03/18/2013 10:50
	Sampling Location:	---	**Sample Depth:**	---
	Sampling Point:	MW-10A-S-N-9.0-130318	**Lab Matrix:**	Solids
	Sampled By:	AEOR	**Sample Type:**	Soil
			Delivery Work Order:	
			Global ID:	
			Location ID (FieldPoint):	MW-10A
			Matrix:	SO
			Sample QC Type (SACode):	CS
			Cooler ID:	
1305466-03	**COC Number:**	---	**Receive Date:**	03/18/2013 21:55
	Project Number:	1156	**Sampling Date:**	03/18/2013 11:00
	Sampling Location:	---	**Sample Depth:**	---
	Sampling Point:	MW-10A-S-N-14.0-130318	**Lab Matrix:**	Solids
	Sampled By:	AEOR	**Sample Type:**	Soil
			Delivery Work Order:	
			Global ID:	
			Location ID (FieldPoint):	MW-10A
			Matrix:	SO
			Sample QC Type (SACode):	CS
			Cooler ID:	

AECOM
1220 Avenida Acaso
Camarillo, CA 93012

Reported: 04/02/2013 11:18
Project: 1156
Project Number: 351645
Project Manager: Brenda Evans

Laboratory / Client Sample Cross Reference

Laboratory	Client Sample Information			
1305466-04	**COC Number:**	---	**Receive Date:**	03/18/2013 21:55
	Project Number:	1156	**Sampling Date:**	03/18/2013 08:50
	Sampling Location:	---	**Sample Depth:**	---
	Sampling Point:	MW-10B-S-N-5.0-130318	**Lab Matrix:**	Solids
	Sampled By:	AEOR	**Sample Type:**	Soil
			Delivery Work Order:	
			Global ID:	
			Location ID (FieldPoint):	MW-10B
			Matrix:	SO
			Sample QC Type (SACode):	CS
			Cooler ID:	
1305466-05	**COC Number:**	---	**Receive Date:**	03/18/2013 21:55
	Project Number:	1156	**Sampling Date:**	03/18/2013 09:15
	Sampling Location:	---	**Sample Depth:**	---
	Sampling Point:	MW-10B-S-N-9.0-130318	**Lab Matrix:**	Solids
	Sampled By:	AEOR	**Sample Type:**	Soil
			Delivery Work Order:	
			Global ID:	
			Location ID (FieldPoint):	MW-10B
			Matrix:	SO
			Sample QC Type (SACode):	CS
			Cooler ID:	
1305466-06	**COC Number:**	---	**Receive Date:**	03/18/2013 21:55
	Project Number:	1156	**Sampling Date:**	03/18/2013 09:30
	Sampling Location:	---	**Sample Depth:**	---
	Sampling Point:	MW-10B-S-N-15.0-130318	**Lab Matrix:**	Solids
	Sampled By:	AEOR	**Sample Type:**	Soil
			Delivery Work Order:	
			Global ID:	
			Location ID (FieldPoint):	MW-10B
			Matrix:	SO
			Sample QC Type (SACode):	CS
			Cooler ID:	

AECOM
1220 Avenida Acaso
Camarillo, CA 93012

Reported: 04/02/2013 11:18
Project: 1156
Project Number: 351645
Project Manager: Brenda Evans

Laboratory / Client Sample Cross Reference

Laboratory	Client Sample Information			
1305466-07	**COC Number:**	---	**Receive Date:**	03/18/2013 21:55
	Project Number:	1156	**Sampling Date:**	03/18/2013 09:45
	Sampling Location:	---	**Sample Depth:**	---
	Sampling Point:	MW-10B-S-N-20.0-130318	**Lab Matrix:**	Solids
	Sampled By:	AEOR	**Sample Type:**	Soil
			Delivery Work Order:	
			Global ID:	
			Location ID (FieldPoint):	MW-10B
			Matrix:	SO
			Sample QC Type (SACode):	CS
			Cooler ID:	
1305466-08	**COC Number:**	---	**Receive Date:**	03/18/2013 21:55
	Project Number:	1156	**Sampling Date:**	03/18/2013 13:20
	Sampling Location:	---	**Sample Depth:**	---
	Sampling Point:	MW-9B-S-N-5.0-130318	**Lab Matrix:**	Solids
	Sampled By:	AEOR	**Sample Type:**	Soil
			Delivery Work Order:	
			Global ID:	
			Location ID (FieldPoint):	MW-9B
			Matrix:	SO
			Sample QC Type (SACode):	CS
			Cooler ID:	
1305466-09	**COC Number:**	---	**Receive Date:**	03/18/2013 21:55
	Project Number:	1156	**Sampling Date:**	03/18/2013 13:30
	Sampling Location:	---	**Sample Depth:**	---
	Sampling Point:	MW-9B-S-N-9.0-130318	**Lab Matrix:**	Solids
	Sampled By:	AEOR	**Sample Type:**	Soil
			Delivery Work Order:	
			Global ID:	
			Location ID (FieldPoint):	MW-9B
			Matrix:	SO
			Sample QC Type (SACode):	CS
			Cooler ID:	

AECOM
1220 Avenida Acaso
Camarillo, CA 93012

Reported: 04/02/2013 11:18
Project: 1156
Project Number: 351645
Project Manager: Brenda Evans

Laboratory / Client Sample Cross Reference

Laboratory	Client Sample Information			
1305466-10	**COC Number:**	---	**Receive Date:**	03/18/2013 21:55
	Project Number:	1156	**Sampling Date:**	03/18/2013 13:40
	Sampling Location:	---	**Sample Depth:**	---
	Sampling Point:	MW-9B-S-N-14.0-130318	**Lab Matrix:**	Solids
	Sampled By:	AEOR	**Sample Type:**	Soil
			Delivery Work Order:	
			Global ID:	
			Location ID (FieldPoint):	MW-9B
			Matrix:	SO
			Sample QC Type (SACode):	CS
			Cooler ID:	
1305466-11	**COC Number:**	---	**Receive Date:**	03/18/2013 21:55
	Project Number:	1156	**Sampling Date:**	03/18/2013 14:00
	Sampling Location:	---	**Sample Depth:**	---
	Sampling Point:	MW-9B-S-N-19.0-130318	**Lab Matrix:**	Solids
	Sampled By:	AEOR	**Sample Type:**	Soil
			Delivery Work Order:	
			Global ID:	
			Location ID (FieldPoint):	MW-9B
			Matrix:	SO
			Sample QC Type (SACode):	CS
			Cooler ID:	

AECOM
1220 Avenida Acaso
Camarillo, CA 93012

Reported: 04/02/2013 11:18
Project: 1156
Project Number: 351645
Project Manager: Brenda Evans

Volatile Organic Analysis (EPA Method 8260/5035)

BCL Sample ID: 1305466-01 | **Client Sample Name:** 1156, MW-10A-S-N-5.0-130318, 3/18/2013 10:40:00AM

Constituent	Result	Units	PQL	Method	MB Bias	Lab Quals	Run #
Benzene	**0.22**	**mg/kg**	**0.0045**	**EPA-8260B**	ND		1
Ethylbenzene	**0.030**	**mg/kg**	**0.0045**	**EPA-8260B**	ND		1
Methyl t-butyl ether	**0.013**	**mg/kg**	**0.0045**	**EPA-8260B**	ND		1
Toluene	ND	mg/kg	0.0045	EPA-8260B	ND		1
Total Xylenes	ND	mg/kg	0.0090	EPA-8260B	ND		1
t-Amyl Methyl ether	ND	mg/kg	0.0045	EPA-8260B	ND		1
t-Butyl alcohol	ND	mg/kg	0.045	EPA-8260B	ND		1
Diisopropyl ether	ND	mg/kg	0.0045	EPA-8260B	ND		1
Ethanol	ND	mg/kg	0.90	EPA-8260B	ND		1
Ethyl t-butyl ether	ND	mg/kg	0.0045	EPA-8260B	ND		1
Total Purgeable Petroleum Hydrocarbons	**59**	**mg/kg**	**5.0**	**Luft-GC/MS**	ND	**A01**	2
1,2-Dichloroethane-d4 (Surrogate)	110	%	70 - 121 (LCL - UCL)	EPA-8260B			1
1,2-Dichloroethane-d4 (Surrogate)	93.8	%	70 - 121 (LCL - UCL)	EPA-8260B			2
Toluene-d8 (Surrogate)	115	%	81 - 117 (LCL - UCL)	EPA-8260B			1
Toluene-d8 (Surrogate)	106	%	81 - 117 (LCL - UCL)	EPA-8260B			2
4-Bromofluorobenzene (Surrogate)	112	%	74 - 121 (LCL - UCL)	EPA-8260B			1
4-Bromofluorobenzene (Surrogate)	93.8	%	74 - 121 (LCL - UCL)	EPA-8260B			2

Run #	Method	Prep Date	Run Date/Time	Analyst	Instrument	Dilution	QC Batch ID
1	EPA-8260B	03/19/13	03/19/13 03:51	ML	MS-V3	0.900	BWC1195
2	EPA-8260B	03/19/13	03/20/13 00:02	ML	MS-V3	25	BWC1195

AECOM
1220 Avenida Acaso
Camarillo, CA 93012

Reported: 04/02/2013 11:18
Project: 1156
Project Number: 351645
Project Manager: Brenda Evans

Purgeable Aromatics and Total Petroleum Hydrocarbons

BCL Sample ID: 1305466-01 | **Client Sample Name:** 1156, MW-10A-S-N-5.0-130318, 3/18/2013 10:40:00AM

Constituent	Result	Units	PQL	Method	MB Bias	Lab Quals	Run #
TPH - C8 - C9	ND	mg/kg	1.0	EPA-8015CC	ND		1
TPH - C10 - C11	ND	mg/kg	1.0	EPA-8015CC	ND		1
TPH - C12 - C14	ND	mg/kg	1.0	EPA-8015CC	ND		1
TPH - C15 - C16	ND	mg/kg	1.0	EPA-8015CC	ND		1
TPH - C17 - C18	ND	mg/kg	1.0	EPA-8015CC	ND		1
TPH - C19 - C20	ND	mg/kg	1.0	EPA-8015CC	ND		1
TPH - C21 - C22	ND	mg/kg	1.0	EPA-8015CC	ND		1
TPH - C23 - C28	**1.5**	**mg/kg**	**1.0**	**EPA-8015CC**	ND		1
TPH - C29 - C32	ND	mg/kg	1.0	EPA-8015CC	ND		1
TPH - C33 - C36	ND	mg/kg	1.0	EPA-8015CC	ND		1
TPH - C37 - C40	ND	mg/kg	1.0	EPA-8015CC	ND		1
TPH - C41 - C43	ND	mg/kg	1.0	EPA-8015CC	ND		1
TPH - C44 plus	ND	mg/kg	1.0	EPA-8015CC	ND		1
TPH (Total)	ND	mg/kg	10	EPA-8015CC	ND		1
Tetracosane (Surrogate)	44.4	%	20 - 145 (LCL - UCL)	EPA-8015CC			1

Run #	Method	Prep Date	Run Date/Time	Analyst	Instrument	Dilution	QC Batch ID
1	EPA-8015CC	03/23/13	04/01/13 01:15	MWB	GC-13	1.014	BWD0110

AECOM
1220 Avenida Acaso
Camarillo, CA 93012

Reported: 04/02/2013 11:18
Project: 1156
Project Number: 351645
Project Manager: Brenda Evans

Volatile Organic Analysis (EPA Method 8260/5035)

BCL Sample ID: 1305466-02 | **Client Sample Name:** 1156, MW-10A-S-N-9.0-130318, 3/18/2013 10:50:00AM

Constituent	Result	Units	PQL	Method	MB Bias	Lab Quals	Run #
Benzene	**1.0**	**mg/kg**	**0.12**	**EPA-8260B**	ND	**A01**	1
Ethylbenzene	**0.21**	**mg/kg**	**0.0040**	**EPA-8260B**	ND		2
Methyl t-butyl ether	**0.018**	**mg/kg**	**0.0040**	**EPA-8260B**	ND		2
Toluene	**0.093**	**mg/kg**	**0.0040**	**EPA-8260B**	ND		2
Total Xylenes	**0.68**	**mg/kg**	**0.0081**	**EPA-8260B**	ND		2
t-Amyl Methyl ether	ND	mg/kg	0.0040	EPA-8260B	ND		2
t-Butyl alcohol	ND	mg/kg	0.040	EPA-8260B	ND		2
Diisopropyl ether	ND	mg/kg	0.0040	EPA-8260B	ND		2
Ethanol	ND	mg/kg	0.81	EPA-8260B	ND		2
Ethyl t-butyl ether	ND	mg/kg	0.0040	EPA-8260B	ND		2
Total Purgeable Petroleum Hydrocarbons	**41**	**mg/kg**	**5.0**	**Luft-GC/MS**	ND	**A01**	1
1,2-Dichloroethane-d4 (Surrogate)	96.9	%	70 - 121 (LCL - UCL)	EPA-8260B			1
1,2-Dichloroethane-d4 (Surrogate)	96.3	%	70 - 121 (LCL - UCL)	EPA-8260B			2
Toluene-d8 (Surrogate)	102	%	81 - 117 (LCL - UCL)	EPA-8260B			1
Toluene-d8 (Surrogate)	108	%	81 - 117 (LCL - UCL)	EPA-8260B			2
4-Bromofluorobenzene (Surrogate)	94.1	%	74 - 121 (LCL - UCL)	EPA-8260B			1
4-Bromofluorobenzene (Surrogate)	104	%	74 - 121 (LCL - UCL)	EPA-8260B			2

Run #	Method	Prep Date	Run Date/Time	Analyst	Instrument	Dilution	QC Batch ID
1	EPA-8260B	03/19/13	03/20/13 00:28	ML	MS-V3	25	BWC1195
2	EPA-8260B	03/19/13	03/19/13 04:18	ML	MS-V3	0.810	BWC1195

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1220 Avenida Acaso
Camarillo, CA 93012

Reported: 04/02/2013 11:18
Project: 1156
Project Number: 351645
Project Manager: Brenda Evans

Purgeable Aromatics and Total Petroleum Hydrocarbons

BCL Sample ID: 1305466-02 | **Client Sample Name:** 1156, MW-10A-S-N-9.0-130318, 3/18/2013 10:50:00AM

Constituent	Result	Units	PQL	Method	MB Bias	Lab Quals	Run #
TPH - C8 - C9	ND	mg/kg	1.0	EPA-8015CC	ND		1
TPH - C10 - C11	ND	mg/kg	1.0	EPA-8015CC	ND		1
TPH - C12 - C14	ND	mg/kg	1.0	EPA-8015CC	ND		1
TPH - C15 - C16	ND	mg/kg	1.0	EPA-8015CC	ND		1
TPH - C17 - C18	ND	mg/kg	1.0	EPA-8015CC	ND		1
TPH - C19 - C20	ND	mg/kg	1.0	EPA-8015CC	ND		1
TPH - C21 - C22	ND	mg/kg	1.0	EPA-8015CC	ND		1
TPH - C23 - C28	ND	mg/kg	1.0	EPA-8015CC	ND		1
TPH - C29 - C32	ND	mg/kg	1.0	EPA-8015CC	ND		1
TPH - C33 - C36	ND	mg/kg	1.0	EPA-8015CC	ND		1
TPH - C37 - C40	ND	mg/kg	1.0	EPA-8015CC	ND		1
TPH - C41 - C43	ND	mg/kg	1.0	EPA-8015CC	ND		1
TPH - C44 plus	ND	mg/kg	1.0	EPA-8015CC	ND		1
TPH (Total)	ND	mg/kg	10	EPA-8015CC	ND		1
Tetracosane (Surrogate)	48.0	%	20 - 145 (LCL - UCL)	EPA-8015CC			1

Run #	Method	Prep Date	Run Date/Time	Analyst	Instrument	Dilution	QC Batch ID
1	EPA-8015CC	03/23/13	03/31/13 21:52	MWB	GC-13	0.993	BWD0110

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Reported: 04/02/2013 11:18
Project: 1156
Project Number: 351645
Project Manager: Brenda Evans

Volatile Organic Analysis (EPA Method 8260/5035)

BCL Sample ID: 1305466-03 | **Client Sample Name:** 1156, MW-10A-S-N-14.0-130318, 3/18/2013 11:00:00AM

Constituent	Result	Units	PQL	Method	MB Bias	Lab Quals	Run #
Benzene	ND	mg/kg	0.0044	EPA-8260B	ND		1
Ethylbenzene	ND	mg/kg	0.0044	EPA-8260B	ND		1
Methyl t-butyl ether	**0.018**	**mg/kg**	**0.0044**	**EPA-8260B**	ND		1
Toluene	**0.42**	**mg/kg**	**0.0044**	**EPA-8260B**	ND		1
Total Xylenes	ND	mg/kg	0.0089	EPA-8260B	ND		1
t-Amyl Methyl ether	ND	mg/kg	0.0044	EPA-8260B	ND		1
t-Butyl alcohol	ND	mg/kg	0.044	EPA-8260B	ND		1
Diisopropyl ether	ND	mg/kg	0.0044	EPA-8260B	ND		1
Ethanol	ND	mg/kg	0.89	EPA-8260B	ND		1
Ethyl t-butyl ether	ND	mg/kg	0.0044	EPA-8260B	ND		1
Total Purgeable Petroleum Hydrocarbons	**100**	**mg/kg**	**10**	**Luft-GC/MS**	ND	**A01**	2
1,2-Dichloroethane-d4 (Surrogate)	85.2	%	70 - 121 (LCL - UCL)	EPA-8260B			1
1,2-Dichloroethane-d4 (Surrogate)	93.8	%	70 - 121 (LCL - UCL)	EPA-8260B			2
Toluene-d8 (Surrogate)	116	%	81 - 117 (LCL - UCL)	EPA-8260B			1
Toluene-d8 (Surrogate)	100	%	81 - 117 (LCL - UCL)	EPA-8260B			2
4-Bromofluorobenzene (Surrogate)	99.3	%	74 - 121 (LCL - UCL)	EPA-8260B			1
4-Bromofluorobenzene (Surrogate)	102	%	74 - 121 (LCL - UCL)	EPA-8260B			2

Run #	Method	Prep Date	Run Date/Time	Analyst	Instrument	Dilution	QC Batch ID
1	EPA-8260B	03/19/13	03/20/13 20:03	ML	MS-V3	0.890	BWC1195
2	EPA-8260B	03/19/13	03/22/13 05:12	ML	MS-V3	50	BWC1195

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Reported: 04/02/2013 11:18
Project: 1156
Project Number: 351645
Project Manager: Brenda Evans

Purgeable Aromatics and Total Petroleum Hydrocarbons

BCL Sample ID: 1305466-03 | **Client Sample Name:** 1156, MW-10A-S-N-14.0-130318, 3/18/2013 11:00:00AM

Constituent	Result	Units	PQL	Method	MB Bias	Lab Quals	Run #
TPH - C8 - C9	ND	mg/kg	1.0	EPA-8015CC	ND		1
TPH - C10 - C11	**2.8**	**mg/kg**	**1.0**	**EPA-8015CC**	ND		1
TPH - C12 - C14	**3.3**	**mg/kg**	**1.0**	**EPA-8015CC**	ND		1
TPH - C15 - C16	ND	mg/kg	1.0	EPA-8015CC	ND		1
TPH - C17 - C18	ND	mg/kg	1.0	EPA-8015CC	ND		1
TPH - C19 - C20	ND	mg/kg	1.0	EPA-8015CC	ND		1
TPH - C21 - C22	ND	mg/kg	1.0	EPA-8015CC	ND		1
TPH - C23 - C28	**2.5**	**mg/kg**	**1.0**	**EPA-8015CC**	ND		1
TPH - C29 - C32	ND	mg/kg	1.0	EPA-8015CC	ND		1
TPH - C33 - C36	ND	mg/kg	1.0	EPA-8015CC	ND		1
TPH - C37 - C40	ND	mg/kg	1.0	EPA-8015CC	ND		1
TPH - C41 - C43	ND	mg/kg	1.0	EPA-8015CC	ND		1
TPH - C44 plus	ND	mg/kg	1.0	EPA-8015CC	ND		1
TPH (Total)	**11**	**mg/kg**	**10**	**EPA-8015CC**	ND		1
Tetracosane (Surrogate)	44.0	%	20 - 145 (LCL - UCL)	EPA-8015CC			1

Run #	Method	Prep Date	Run Date/Time	Analyst	Instrument	Dilution	QC Batch ID
1	EPA-8015CC	03/23/13	03/31/13 22:15	MWB	GC-13	1.014	BWD0110

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Reported: 04/02/2013 11:18
Project: 1156
Project Number: 351645
Project Manager: Brenda Evans

Volatile Organic Analysis (EPA Method 8260/5035)

BCL Sample ID: 1305466-04 | **Client Sample Name:** 1156, MW-10B-S-N-5.0-130318, 3/18/2013 8:50:00AM

Constituent	Result	Units	PQL	Method	MB Bias	Lab Quals	Run #
Benzene	**0.35**	**mg/kg**	**0.0043**	**EPA-8260B**	ND		1
Ethylbenzene	**6.4**	**mg/kg**	**0.12**	**EPA-8260B**	ND	**A01**	2
Methyl t-butyl ether	ND	mg/kg	0.0043	EPA-8260B	ND		1
Toluene	ND	mg/kg	0.0043	EPA-8260B	ND		1
Total Xylenes	**8.1**	**mg/kg**	**0.25**	**EPA-8260B**	ND	**A01**	2
t-Amyl Methyl ether	ND	mg/kg	0.0043	EPA-8260B	ND		1
t-Butyl alcohol	ND	mg/kg	0.043	EPA-8260B	ND		1
Diisopropyl ether	ND	mg/kg	0.0043	EPA-8260B	ND		1
Ethanol	ND	mg/kg	0.86	EPA-8260B	ND		1
Ethyl t-butyl ether	ND	mg/kg	0.0043	EPA-8260B	ND		1
Total Purgeable Petroleum Hydrocarbons	**480**	**mg/kg**	**100**	**Luft-GC/MS**	ND	**A01**	3
1,2-Dichloroethane-d4 (Surrogate)	108	%	70 - 121 (LCL - UCL)	EPA-8260B			1
1,2-Dichloroethane-d4 (Surrogate)	87.3	%	70 - 121 (LCL - UCL)	EPA-8260B			2
1,2-Dichloroethane-d4 (Surrogate)	97.1	%	70 - 121 (LCL - UCL)	EPA-8260B			3
Toluene-d8 (Surrogate)	111	%	81 - 117 (LCL - UCL)	EPA-8260B			1
Toluene-d8 (Surrogate)	104	%	81 - 117 (LCL - UCL)	EPA-8260B			2
Toluene-d8 (Surrogate)	96.1	%	81 - 117 (LCL - UCL)	EPA-8260B			3
4-Bromofluorobenzene (Surrogate)	111	%	74 - 121 (LCL - UCL)	EPA-8260B			1
4-Bromofluorobenzene (Surrogate)	99.5	%	74 - 121 (LCL - UCL)	EPA-8260B			2
4-Bromofluorobenzene (Surrogate)	94.7	%	74 - 121 (LCL - UCL)	EPA-8260B			3

Run #	Method	Prep Date	Run Date/Time	Analyst	Instrument	Dilution	QC Batch ID
1	EPA-8260B	03/19/13	03/19/13 10:24	ML	MS-V3	0.860	BWC1195
2	EPA-8260B	03/19/13	03/20/13 00:54	ML	MS-V3	25	BWC1195
3	EPA-8260B	03/19/13	03/21/13 00:53	ML	MS-V3	500	BWC1195

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Reported: 04/02/2013 11:18
Project: 1156
Project Number: 351645
Project Manager: Brenda Evans

Purgeable Aromatics and Total Petroleum Hydrocarbons

BCL Sample ID: 1305466-04 | **Client Sample Name:** 1156, MW-10B-S-N-5.0-130318, 3/18/2013 8:50:00AM

Constituent	Result	Units	PQL	Method	MB Bias	Lab Quals	Run #
TPH - C8 - C9	ND	mg/kg	1.0	EPA-8015CC	ND		1
TPH - C10 - C11	**1.2**	**mg/kg**	**1.0**	**EPA-8015CC**	ND		1
TPH - C12 - C14	**1.5**	**mg/kg**	**1.0**	**EPA-8015CC**	ND		1
TPH - C15 - C16	ND	mg/kg	1.0	EPA-8015CC	ND		1
TPH - C17 - C18	ND	mg/kg	1.0	EPA-8015CC	ND		1
TPH - C19 - C20	ND	mg/kg	1.0	EPA-8015CC	ND		1
TPH - C21 - C22	ND	mg/kg	1.0	EPA-8015CC	ND		1
TPH - C23 - C28	ND	mg/kg	1.0	EPA-8015CC	ND		1
TPH - C29 - C32	ND	mg/kg	1.0	EPA-8015CC	ND		1
TPH - C33 - C36	ND	mg/kg	1.0	EPA-8015CC	ND		1
TPH - C37 - C40	ND	mg/kg	1.0	EPA-8015CC	ND		1
TPH - C41 - C43	ND	mg/kg	1.0	EPA-8015CC	ND		1
TPH - C44 plus	ND	mg/kg	1.0	EPA-8015CC	ND		1
TPH (Total)	ND	mg/kg	10	EPA-8015CC	ND		1
Tetracosane (Surrogate)	43.1	%	20 - 145 (LCL - UCL)	EPA-8015CC			1

Run #	Method	Prep Date	Run Date/Time	Analyst	Instrument	Dilution	QC Batch ID
1	EPA-8015CC	03/23/13	04/01/13 01:38	MWB	GC-13	0.984	BWD0110

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Reported: 04/02/2013 11:18
Project: 1156
Project Number: 351645
Project Manager: Brenda Evans

Volatile Organic Analysis (EPA Method 8260/5035)

BCL Sample ID: 1305466-05 | **Client Sample Name:** 1156, MW-10B-S-N-9.0-130318, 3/18/2013 9:15:00AM

Constituent	Result	Units	PQL	Method	MB Bias	Lab Quals	Run #
Benzene	**1.3**	**mg/kg**	**0.12**	**EPA-8260B**	ND	**A01**	1
Ethylbenzene	**0.34**	**mg/kg**	**0.0040**	**EPA-8260B**	ND		2
Methyl t-butyl ether	ND	mg/kg	0.0040	EPA-8260B	ND		2
Toluene	**0.034**	**mg/kg**	**0.0040**	**EPA-8260B**	ND		2
Total Xylenes	**4.4**	**mg/kg**	**0.25**	**EPA-8260B**	ND	**A01**	1
t-Amyl Methyl ether	ND	mg/kg	0.0040	EPA-8260B	ND		2
t-Butyl alcohol	ND	mg/kg	0.040	EPA-8260B	ND		2
Diisopropyl ether	ND	mg/kg	0.0040	EPA-8260B	ND		2
Ethanol	ND	mg/kg	0.79	EPA-8260B	ND		2
Ethyl t-butyl ether	ND	mg/kg	0.0040	EPA-8260B	ND		2
Total Purgeable Petroleum Hydrocarbons	**60**	**mg/kg**	**5.0**	**Luft-GC/MS**	ND	**A01**	1
1,2-Dichloroethane-d4 (Surrogate)	96.5	%	70 - 121 (LCL - UCL)	EPA-8260B			1
1,2-Dichloroethane-d4 (Surrogate)	98.0	%	70 - 121 (LCL - UCL)	EPA-8260B			2
Toluene-d8 (Surrogate)	106	%	81 - 117 (LCL - UCL)	EPA-8260B			1
Toluene-d8 (Surrogate)	116	%	81 - 117 (LCL - UCL)	EPA-8260B			2
4-Bromofluorobenzene (Surrogate)	98.3	%	74 - 121 (LCL - UCL)	EPA-8260B			1
4-Bromofluorobenzene (Surrogate)	111	%	74 - 121 (LCL - UCL)	EPA-8260B			2

Run #	Method	Prep Date	Run Date/Time	Analyst	Instrument	Dilution	QC Batch ID
1	EPA-8260B	03/19/13	03/20/13 01:20	ML	MS-V3	25	BWC1195
2	EPA-8260B	03/19/13	03/19/13 10:50	ML	MS-V3	0.790	BWC1195

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Reported: 04/02/2013 11:18
Project: 1156
Project Number: 351645
Project Manager: Brenda Evans

Purgeable Aromatics and Total Petroleum Hydrocarbons

BCL Sample ID: 1305466-05 | **Client Sample Name:** 1156, MW-10B-S-N-9.0-130318, 3/18/2013 9:15:00AM

Constituent	Result	Units	PQL	Method	MB Bias	Lab Quals	Run #
TPH - C8 - C9	ND	mg/kg	1.0	EPA-8015CC	ND		1
TPH - C10 - C11	ND	mg/kg	1.0	EPA-8015CC	ND		1
TPH - C12 - C14	ND	mg/kg	1.0	EPA-8015CC	ND		1
TPH - C15 - C16	ND	mg/kg	1.0	EPA-8015CC	ND		1
TPH - C17 - C18	ND	mg/kg	1.0	EPA-8015CC	ND		1
TPH - C19 - C20	ND	mg/kg	1.0	EPA-8015CC	ND		1
TPH - C21 - C22	ND	mg/kg	1.0	EPA-8015CC	ND		1
TPH - C23 - C28	ND	mg/kg	1.0	EPA-8015CC	ND		1
TPH - C29 - C32	ND	mg/kg	1.0	EPA-8015CC	ND		1
TPH - C33 - C36	ND	mg/kg	1.0	EPA-8015CC	ND		1
TPH - C37 - C40	ND	mg/kg	1.0	EPA-8015CC	ND		1
TPH - C41 - C43	ND	mg/kg	1.0	EPA-8015CC	ND		1
TPH - C44 plus	ND	mg/kg	1.0	EPA-8015CC	ND		1
TPH (Total)	ND	mg/kg	10	EPA-8015CC	ND		1
Tetracosane (Surrogate)	43.6	%	20 - 145 (LCL - UCL)	EPA-8015CC			1

Run #	Method	Prep Date	Run Date/Time	Analyst	Instrument	Dilution	QC Batch ID
1	EPA-8015CC	03/23/13	04/01/13 02:01	MWB	GC-13	1.003	BWD0110

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Reported: 04/02/2013 11:18
Project: 1156
Project Number: 351645
Project Manager: Brenda Evans

Volatile Organic Analysis (EPA Method 8260/5035)

BCL Sample ID: 1305466-06 | **Client Sample Name:** 1156, MW-10B-S-N-15.0-130318, 3/18/2013 9:30:00AM

Constituent	Result	Units	PQL	Method	MB Bias	Lab Quals	Run #
Benzene	**1.7**	**mg/kg**	**0.12**	**EPA-8260B**	ND	**A01**	1
Ethylbenzene	**0.053**	**mg/kg**	**0.0043**	**EPA-8260B**	ND		2
Methyl t-butyl ether	**0.0054**	**mg/kg**	**0.0043**	**EPA-8260B**	ND		2
Toluene	**0.029**	**mg/kg**	**0.0043**	**EPA-8260B**	ND		2
Total Xylenes	**0.13**	**mg/kg**	**0.0086**	**EPA-8260B**	ND		2
t-Amyl Methyl ether	ND	mg/kg	0.0043	EPA-8260B	ND		2
t-Butyl alcohol	ND	mg/kg	0.043	EPA-8260B	ND		2
Diisopropyl ether	ND	mg/kg	0.0043	EPA-8260B	ND		2
Ethanol	ND	mg/kg	0.86	EPA-8260B	ND		2
Ethyl t-butyl ether	ND	mg/kg	0.0043	EPA-8260B	ND		2
Total Purgeable Petroleum Hydrocarbons	**2.0**	**mg/kg**	**0.17**	**Luft-GC/MS**	ND		2
1,2-Dichloroethane-d4 (Surrogate)	92.5	%	70 - 121 (LCL - UCL)	EPA-8260B			1
1,2-Dichloroethane-d4 (Surrogate)	112	%	70 - 121 (LCL - UCL)	EPA-8260B			2
Toluene-d8 (Surrogate)	103	%	81 - 117 (LCL - UCL)	EPA-8260B			1
Toluene-d8 (Surrogate)	104	%	81 - 117 (LCL - UCL)	EPA-8260B			2
4-Bromofluorobenzene (Surrogate)	102	%	74 - 121 (LCL - UCL)	EPA-8260B			1
4-Bromofluorobenzene (Surrogate)	108	%	74 - 121 (LCL - UCL)	EPA-8260B			2

Run #	Method	Prep Date	Run Date/Time	Analyst	Instrument	Dilution	QC Batch ID
1	EPA-8260B	03/19/13	03/20/13 01:46	ML	MS-V3	25	BWC1195
2	EPA-8260B	03/19/13	03/19/13 11:16	ML	MS-V3	0.860	BWC1195

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Reported: 04/02/2013 11:18
Project: 1156
Project Number: 351645
Project Manager: Brenda Evans

Purgeable Aromatics and Total Petroleum Hydrocarbons

BCL Sample ID: 1305466-06 | **Client Sample Name:** 1156, MW-10B-S-N-15.0-130318, 3/18/2013 9:30:00AM

Constituent	Result	Units	PQL	Method	MB Bias	Lab Quals	Run #
TPH - C8 - C9	ND	mg/kg	1.0	EPA-8015CC	ND		1
TPH - C10 - C11	ND	mg/kg	1.0	EPA-8015CC	ND		1
TPH - C12 - C14	ND	mg/kg	1.0	EPA-8015CC	ND		1
TPH - C15 - C16	ND	mg/kg	1.0	EPA-8015CC	ND		1
TPH - C17 - C18	ND	mg/kg	1.0	EPA-8015CC	ND		1
TPH - C19 - C20	ND	mg/kg	1.0	EPA-8015CC	ND		1
TPH - C21 - C22	ND	mg/kg	1.0	EPA-8015CC	ND		1
TPH - C23 - C28	ND	mg/kg	1.0	EPA-8015CC	ND		1
TPH - C29 - C32	ND	mg/kg	1.0	EPA-8015CC	ND		1
TPH - C33 - C36	ND	mg/kg	1.0	EPA-8015CC	ND		1
TPH - C37 - C40	ND	mg/kg	1.0	EPA-8015CC	ND		1
TPH - C41 - C43	ND	mg/kg	1.0	EPA-8015CC	ND		1
TPH - C44 plus	ND	mg/kg	1.0	EPA-8015CC	ND		1
TPH (Total)	ND	mg/kg	10	EPA-8015CC	ND		1
Tetracosane (Surrogate)	45.0	%	20 - 145 (LCL - UCL)	EPA-8015CC			1

Run #	Method	Prep Date	Run Date/Time	Analyst	Instrument	Dilution	QC Batch ID
1	EPA-8015CC	03/23/13	04/01/13 02:23	MWB	GC-13	1.014	BWD0110

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Reported: 04/02/2013 11:18
Project: 1156
Project Number: 351645
Project Manager: Brenda Evans

Volatile Organic Analysis (EPA Method 8260/5035)

BCL Sample ID: 1305466-07 | **Client Sample Name:** 1156, MW-10B-S-N-20.0-130318, 3/18/2013 9:45:00AM

Constituent	Result	Units	PQL	Method	MB Bias	Lab Quals	Run #
Benzene	ND	mg/kg	0.0043	EPA-8260B	ND		1
Ethylbenzene	ND	mg/kg	0.0043	EPA-8260B	ND		1
Methyl t-butyl ether	ND	mg/kg	0.0043	EPA-8260B	ND		1
Toluene	ND	mg/kg	0.0043	EPA-8260B	ND		1
Total Xylenes	ND	mg/kg	0.0086	EPA-8260B	ND		1
t-Amyl Methyl ether	ND	mg/kg	0.0043	EPA-8260B	ND		1
t-Butyl alcohol	ND	mg/kg	0.043	EPA-8260B	ND		1
Diisopropyl ether	ND	mg/kg	0.0043	EPA-8260B	ND		1
Ethanol	ND	mg/kg	0.86	EPA-8260B	ND		1
Ethyl t-butyl ether	ND	mg/kg	0.0043	EPA-8260B	ND		1
Total Purgeable Petroleum Hydrocarbons	**0.51**	**mg/kg**	**0.17**	**Luft-GC/MS**	ND		1
1,2-Dichloroethane-d4 (Surrogate)	106	%	70 - 121 (LCL - UCL)	EPA-8260B			1
Toluene-d8 (Surrogate)	103	%	81 - 117 (LCL - UCL)	EPA-8260B			1
4-Bromofluorobenzene (Surrogate)	100	%	74 - 121 (LCL - UCL)	EPA-8260B			1

Run #	Method	Prep Date	Run Date/Time	Analyst	Instrument	Dilution	QC Batch ID
1	EPA-8260B	03/26/13	03/26/13 10:31	ADC	MS-V2	0.859	BWC1344

AECOM
1220 Avenida Acaso
Camarillo, CA 93012

Reported: 04/02/2013 11:18
Project: 1156
Project Number: 351645
Project Manager: Brenda Evans

Purgeable Aromatics and Total Petroleum Hydrocarbons

BCL Sample ID: 1305466-07 | **Client Sample Name:** 1156, MW-10B-S-N-20.0-130318, 3/18/2013 9:45:00AM

Constituent	Result	Units	PQL	Method	MB Bias	Lab Quals	Run #
TPH - C8 - C9	ND	mg/kg	1.0	EPA-8015CC	ND		1
TPH - C10 - C11	ND	mg/kg	1.0	EPA-8015CC	ND		1
TPH - C12 - C14	ND	mg/kg	1.0	EPA-8015CC	ND		1
TPH - C15 - C16	ND	mg/kg	1.0	EPA-8015CC	ND		1
TPH - C17 - C18	ND	mg/kg	1.0	EPA-8015CC	ND		1
TPH - C19 - C20	ND	mg/kg	1.0	EPA-8015CC	ND		1
TPH - C21 - C22	ND	mg/kg	1.0	EPA-8015CC	ND		1
TPH - C23 - C28	ND	mg/kg	1.0	EPA-8015CC	ND		1
TPH - C29 - C32	ND	mg/kg	1.0	EPA-8015CC	ND		1
TPH - C33 - C36	ND	mg/kg	1.0	EPA-8015CC	ND		1
TPH - C37 - C40	ND	mg/kg	1.0	EPA-8015CC	ND		1
TPH - C41 - C43	ND	mg/kg	1.0	EPA-8015CC	ND		1
TPH - C44 plus	ND	mg/kg	1.0	EPA-8015CC	ND		1
TPH (Total)	ND	mg/kg	10	EPA-8015CC	ND		1
Tetracosane (Surrogate)	53.8	%	20 - 145 (LCL - UCL)	EPA-8015CC			1

Run #	Method	Prep Date	Run Date/Time	Analyst	Instrument	Dilution	QC Batch ID
1	EPA-8015CC	03/23/13	04/01/13 02:46	MWB	GC-13	0.984	BWD0110

AECOM
1220 Avenida Acaso
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Reported: 04/02/2013 11:18
Project: 1156
Project Number: 351645
Project Manager: Brenda Evans

Volatile Organic Analysis (EPA Method 8260/5035)

BCL Sample ID: 1305466-08 | **Client Sample Name:** 1156, MW-9B-S-N-5.0-130318, 3/18/2013 1:20:00PM

Constituent	Result	Units	PQL	Method	MB Bias	Lab Quals	Run #
Benzene	**0.013**	**mg/kg**	**0.0050**	**EPA-8260B**	ND		1
Ethylbenzene	**0.10**	**mg/kg**	**0.0050**	**EPA-8260B**	ND		1
Methyl t-butyl ether	ND	mg/kg	0.0050	EPA-8260B	ND		1
Toluene	ND	mg/kg	0.0050	EPA-8260B	ND		1
Total Xylenes	**0.026**	**mg/kg**	**0.0099**	**EPA-8260B**	ND		1
t-Amyl Methyl ether	ND	mg/kg	0.0050	EPA-8260B	ND		1
t-Butyl alcohol	ND	mg/kg	0.050	EPA-8260B	ND		1
Diisopropyl ether	ND	mg/kg	0.0050	EPA-8260B	ND		1
Ethanol	ND	mg/kg	0.99	EPA-8260B	ND		1
Ethyl t-butyl ether	ND	mg/kg	0.0050	EPA-8260B	ND		1
Total Purgeable Petroleum Hydrocarbons	**1.7**	**mg/kg**	**0.20**	**Luft-GC/MS**	ND		1
1,2-Dichloroethane-d4 (Surrogate)	110	%	70 - 121 (LCL - UCL)	EPA-8260B			1
Toluene-d8 (Surrogate)	105	%	81 - 117 (LCL - UCL)	EPA-8260B			1
4-Bromofluorobenzene (Surrogate)	107	%	74 - 121 (LCL - UCL)	EPA-8260B			1

Run #	Method	Prep Date	Run Date/Time	Analyst	Instrument	Dilution	QC Batch ID
1	EPA-8260B	03/26/13	03/26/13 11:24	ADC	MS-V2	0.990	BWC1344

AECOM
1220 Avenida Acaso
Camarillo, CA 93012

Reported: 04/02/2013 11:18
Project: 1156
Project Number: 351645
Project Manager: Brenda Evans

Purgeable Aromatics and Total Petroleum Hydrocarbons

BCL Sample ID: 1305466-08 | **Client Sample Name:** 1156, MW-9B-S-N-5.0-130318, 3/18/2013 1:20:00PM

Constituent	Result	Units	PQL	Method	MB Bias	Lab Quals	Run #
TPH - C8 - C9	ND	mg/kg	1.0	EPA-8015CC	ND		1
TPH - C10 - C11	ND	mg/kg	1.0	EPA-8015CC	ND		1
TPH - C12 - C14	**1.2**	**mg/kg**	**1.0**	**EPA-8015CC**	ND		1
TPH - C15 - C16	ND	mg/kg	1.0	EPA-8015CC	ND		1
TPH - C17 - C18	ND	mg/kg	1.0	EPA-8015CC	ND		1
TPH - C19 - C20	ND	mg/kg	1.0	EPA-8015CC	ND		1
TPH - C21 - C22	ND	mg/kg	1.0	EPA-8015CC	ND		1
TPH - C23 - C28	**1.9**	**mg/kg**	**1.0**	**EPA-8015CC**	ND		1
TPH - C29 - C32	ND	mg/kg	1.0	EPA-8015CC	ND		1
TPH - C33 - C36	ND	mg/kg	1.0	EPA-8015CC	ND		1
TPH - C37 - C40	ND	mg/kg	1.0	EPA-8015CC	ND		1
TPH - C41 - C43	ND	mg/kg	1.0	EPA-8015CC	ND		1
TPH - C44 plus	ND	mg/kg	1.0	EPA-8015CC	ND		1
TPH (Total)	ND	mg/kg	10	EPA-8015CC	ND		1
Tetracosane (Surrogate)	47.0	%	20 - 145 (LCL - UCL)	EPA-8015CC			1

Run #	Method	Prep Date	Run Date/Time	Analyst	Instrument	Dilution	QC Batch ID
1	EPA-8015CC	03/23/13	04/01/13 03:08	MWB	GC-13	1.014	BWD0110

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1220 Avenida Acaso
Camarillo, CA 93012

Reported: 04/02/2013 11:18
Project: 1156
Project Number: 351645
Project Manager: Brenda Evans

Volatile Organic Analysis (EPA Method 8260/5035)

BCL Sample ID: 1305466-09 | **Client Sample Name:** 1156, MW-9B-S-N-9.0-130318, 3/18/2013 1:30:00PM

Constituent	Result	Units	PQL	Method	MB Bias	Lab Quals	Run #
Benzene	ND	mg/kg	0.0050	EPA-8260B	ND		1
Ethylbenzene	ND	mg/kg	0.0050	EPA-8260B	ND		1
Methyl t-butyl ether	ND	mg/kg	0.0050	EPA-8260B	ND		1
Toluene	ND	mg/kg	0.0050	EPA-8260B	ND		1
Total Xylenes	ND	mg/kg	0.0099	EPA-8260B	ND		1
t-Amyl Methyl ether	ND	mg/kg	0.0050	EPA-8260B	ND		1
t-Butyl alcohol	ND	mg/kg	0.050	EPA-8260B	ND		1
Diisopropyl ether	ND	mg/kg	0.0050	EPA-8260B	ND		1
Ethanol	ND	mg/kg	0.99	EPA-8260B	ND		1
Ethyl t-butyl ether	ND	mg/kg	0.0050	EPA-8260B	ND		1
Total Purgeable Petroleum Hydrocarbons	**0.36**	**mg/kg**	**0.20**	**Luft-GC/MS**	ND		1
1,2-Dichloroethane-d4 (Surrogate)	93.1	%	70 - 121 (LCL - UCL)	EPA-8260B			1
Toluene-d8 (Surrogate)	100	%	81 - 117 (LCL - UCL)	EPA-8260B			1
4-Bromofluorobenzene (Surrogate)	98.0	%	74 - 121 (LCL - UCL)	EPA-8260B			1

Run #	Method	Prep Date	Run Date/Time	Analyst	Instrument	Dilution	QC Batch ID
1	EPA-8260B	03/26/13	03/26/13 14:40	ADC	MS-V2	0.990	BWC1344

AECOM
1220 Avenida Acaso
Camarillo, CA 93012

Reported: 04/02/2013 11:18
Project: 1156
Project Number: 351645
Project Manager: Brenda Evans

Purgeable Aromatics and Total Petroleum Hydrocarbons

BCL Sample ID: 1305466-09 | **Client Sample Name:** 1156, MW-9B-S-N-9.0-130318, 3/18/2013 1:30:00PM

Constituent	Result	Units	PQL	Method	MB Bias	Lab Quals	Run #
TPH - C8 - C9	ND	mg/kg	1.0	EPA-8015CC	ND		1
TPH - C10 - C11	ND	mg/kg	1.0	EPA-8015CC	ND		1
TPH - C12 - C14	ND	mg/kg	1.0	EPA-8015CC	ND		1
TPH - C15 - C16	ND	mg/kg	1.0	EPA-8015CC	ND		1
TPH - C17 - C18	ND	mg/kg	1.0	EPA-8015CC	ND		1
TPH - C19 - C20	ND	mg/kg	1.0	EPA-8015CC	ND		1
TPH - C21 - C22	ND	mg/kg	1.0	EPA-8015CC	ND		1
TPH - C23 - C28	ND	mg/kg	1.0	EPA-8015CC	ND		1
TPH - C29 - C32	ND	mg/kg	1.0	EPA-8015CC	ND		1
TPH - C33 - C36	ND	mg/kg	1.0	EPA-8015CC	ND		1
TPH - C37 - C40	ND	mg/kg	1.0	EPA-8015CC	ND		1
TPH - C41 - C43	ND	mg/kg	1.0	EPA-8015CC	ND		1
TPH - C44 plus	ND	mg/kg	1.0	EPA-8015CC	ND		1
TPH (Total)	ND	mg/kg	10	EPA-8015CC	ND		1
Tetracosane (Surrogate)	46.6	%	20 - 145 (LCL - UCL)	EPA-8015CC			1

Run #	Method	Prep Date	Run Date/Time	Analyst	Instrument	Dilution	QC Batch ID
1	EPA-8015CC	03/23/13	04/01/13 04:38	MWB	GC-13	1.007	BWD0110

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Reported: 04/02/2013 11:18
Project: 1156
Project Number: 351645
Project Manager: Brenda Evans

Volatile Organic Analysis (EPA Method 8260/5035)

BCL Sample ID: 1305466-10 | **Client Sample Name:** 1156, MW-9B-S-N-14.0-130318, 3/18/2013 1:40:00PM

Constituent	Result	Units	PQL	Method	MB Bias	Lab Quals	Run #
Benzene	ND	mg/kg	0.0048	EPA-8260B	ND		1
Ethylbenzene	ND	mg/kg	0.0048	EPA-8260B	ND		1
Methyl t-butyl ether	ND	mg/kg	0.0048	EPA-8260B	ND		1
Toluene	ND	mg/kg	0.0048	EPA-8260B	ND		1
Total Xylenes	ND	mg/kg	0.0097	EPA-8260B	ND		1
t-Amyl Methyl ether	ND	mg/kg	0.0048	EPA-8260B	ND		1
t-Butyl alcohol	**0.092**	**mg/kg**	**0.048**	**EPA-8260B**	ND		1
Diisopropyl ether	ND	mg/kg	0.0048	EPA-8260B	ND		1
Ethanol	ND	mg/kg	0.97	EPA-8260B	ND		1
Ethyl t-butyl ether	ND	mg/kg	0.0048	EPA-8260B	ND		1
Total Purgeable Petroleum Hydrocarbons	ND	mg/kg	0.19	Luft-GC/MS	ND		1
1,2-Dichloroethane-d4 (Surrogate)	113	%	70 - 121 (LCL - UCL)	EPA-8260B			1
Toluene-d8 (Surrogate)	104	%	81 - 117 (LCL - UCL)	EPA-8260B			1
4-Bromofluorobenzene (Surrogate)	104	%	74 - 121 (LCL - UCL)	EPA-8260B			1

Run #	Method	Prep Date	Run Date/Time	Analyst	Instrument	Dilution	QC Batch ID
1	EPA-8260B	03/19/13	03/19/13 13:01	ML	MS-V3	0.970	BWC1195

AECOM
1220 Avenida Acaso
Camarillo, CA 93012

Reported: 04/02/2013 11:18
Project: 1156
Project Number: 351645
Project Manager: Brenda Evans

Purgeable Aromatics and Total Petroleum Hydrocarbons

BCL Sample ID: 1305466-10 | **Client Sample Name:** 1156, MW-9B-S-N-14.0-130318, 3/18/2013 1:40:00PM

Constituent	Result	Units	PQL	Method	MB Bias	Lab Quals	Run #
TPH - C8 - C9	ND	mg/kg	1.0	EPA-8015CC	ND		1
TPH - C10 - C11	ND	mg/kg	1.0	EPA-8015CC	ND		1
TPH - C12 - C14	ND	mg/kg	1.0	EPA-8015CC	ND		1
TPH - C15 - C16	ND	mg/kg	1.0	EPA-8015CC	ND		1
TPH - C17 - C18	ND	mg/kg	1.0	EPA-8015CC	ND		1
TPH - C19 - C20	ND	mg/kg	1.0	EPA-8015CC	ND		1
TPH - C21 - C22	ND	mg/kg	1.0	EPA-8015CC	ND		1
TPH - C23 - C28	ND	mg/kg	1.0	EPA-8015CC	ND		1
TPH - C29 - C32	ND	mg/kg	1.0	EPA-8015CC	ND		1
TPH - C33 - C36	ND	mg/kg	1.0	EPA-8015CC	ND		1
TPH - C37 - C40	ND	mg/kg	1.0	EPA-8015CC	ND		1
TPH - C41 - C43	ND	mg/kg	1.0	EPA-8015CC	ND		1
TPH - C44 plus	ND	mg/kg	1.0	EPA-8015CC	ND		1
TPH (Total)	ND	mg/kg	10	EPA-8015CC	ND		1
Tetracosane (Surrogate)	42.1	%	20 - 145 (LCL - UCL)	EPA-8015CC			1

Run #	Method	Prep Date	Run Date/Time	Analyst	Instrument	Dilution	QC Batch ID
1	EPA-8015CC	03/23/13	04/01/13 05:01	MWB	GC-13	0.997	BWD0110

AECOM
1220 Avenida Acaso
Camarillo, CA 93012

Reported: 04/02/2013 11:18
Project: 1156
Project Number: 351645
Project Manager: Brenda Evans

Volatile Organic Analysis (EPA Method 8260/5035)

BCL Sample ID: 1305466-11 | **Client Sample Name:** 1156, MW-9B-S-N-19.0-130318, 3/18/2013 2:00:00PM

Constituent	Result	Units	PQL	Method	MB Bias	Lab Quals	Run #
Benzene	ND	mg/kg	0.0043	EPA-8260B	ND		1
Ethylbenzene	ND	mg/kg	0.0043	EPA-8260B	ND		1
Methyl t-butyl ether	ND	mg/kg	0.0043	EPA-8260B	ND		1
Toluene	ND	mg/kg	0.0043	EPA-8260B	ND		1
Total Xylenes	ND	mg/kg	0.0086	EPA-8260B	ND		1
t-Amyl Methyl ether	ND	mg/kg	0.0043	EPA-8260B	ND		1
t-Butyl alcohol	ND	mg/kg	0.043	EPA-8260B	ND		1
Diisopropyl ether	ND	mg/kg	0.0043	EPA-8260B	ND		1
Ethanol	ND	mg/kg	0.86	EPA-8260B	ND		1
Ethyl t-butyl ether	ND	mg/kg	0.0043	EPA-8260B	ND		1
Total Purgeable Petroleum Hydrocarbons	ND	mg/kg	0.17	Luft-GC/MS	ND		1
1,2-Dichloroethane-d4 (Surrogate)	110	%	70 - 121 (LCL - UCL)	EPA-8260B			1
Toluene-d8 (Surrogate)	103	%	81 - 117 (LCL - UCL)	EPA-8260B			1
4-Bromofluorobenzene (Surrogate)	110	%	74 - 121 (LCL - UCL)	EPA-8260B			1

Run #	Method	Prep Date	Run Date/Time	Analyst	Instrument	Dilution	QC Batch ID
1	EPA-8260B	03/19/13	03/19/13 13:27	ML	MS-V3	0.860	BWC1195

AECOM
1220 Avenida Acaso
Camarillo, CA 93012

Reported: 04/02/2013 11:18
Project: 1156
Project Number: 351645
Project Manager: Brenda Evans

Purgeable Aromatics and Total Petroleum Hydrocarbons

BCL Sample ID: 1305466-11 | **Client Sample Name:** 1156, MW-9B-S-N-19.0-130318, 3/18/2013 2:00:00PM

Constituent	Result	Units	PQL	Method	MB Bias	Lab Quals	Run #
TPH - C8 - C9	ND	mg/kg	1.0	EPA-8015CC	ND		1
TPH - C10 - C11	ND	mg/kg	1.0	EPA-8015CC	ND		1
TPH - C12 - C14	ND	mg/kg	1.0	EPA-8015CC	ND		1
TPH - C15 - C16	ND	mg/kg	1.0	EPA-8015CC	ND		1
TPH - C17 - C18	ND	mg/kg	1.0	EPA-8015CC	ND		1
TPH - C19 - C20	ND	mg/kg	1.0	EPA-8015CC	ND		1
TPH - C21 - C22	ND	mg/kg	1.0	EPA-8015CC	ND		1
TPH - C23 - C28	ND	mg/kg	1.0	EPA-8015CC	ND		1
TPH - C29 - C32	ND	mg/kg	1.0	EPA-8015CC	ND		1
TPH - C33 - C36	ND	mg/kg	1.0	EPA-8015CC	ND		1
TPH - C37 - C40	ND	mg/kg	1.0	EPA-8015CC	ND		1
TPH - C41 - C43	ND	mg/kg	1.0	EPA-8015CC	ND		1
TPH - C44 plus	ND	mg/kg	1.0	EPA-8015CC	ND		1
TPH (Total)	ND	mg/kg	10	EPA-8015CC	ND		1
Tetracosane (Surrogate)	40.3	%	20 - 145 (LCL - UCL)	EPA-8015CC			1

Run #	Method	Prep Date	Run Date/Time	Analyst	Instrument	Dilution	QC Batch ID
1	EPA-8015CC	03/23/13	04/01/13 05:24	MWB	GC-13	1	BWD0110

AECOM
1220 Avenida Acaso
Camarillo, CA 93012

Reported: 04/02/2013 11:18
Project: 1156
Project Number: 351645
Project Manager: Brenda Evans

Volatile Organic Analysis (EPA Method 8260/5035)

Quality Control Report - Method Blank Analysis

Constituent	QC Sample ID	MB Result	Units	PQL	MDL	Lab Quals
QC Batch ID: BWC1195						
Benzene	BWC1195-BLK1	ND	mg/kg	0.0050		
Ethylbenzene	BWC1195-BLK1	ND	mg/kg	0.0050		
Methyl t-butyl ether	BWC1195-BLK1	ND	mg/kg	0.0050		
Toluene	BWC1195-BLK1	ND	mg/kg	0.0050		
Total Xylenes	BWC1195-BLK1	ND	mg/kg	0.010		
t-Amyl Methyl ether	BWC1195-BLK1	ND	mg/kg	0.0050		
t-Butyl alcohol	BWC1195-BLK1	ND	mg/kg	0.050		
Diisopropyl ether	BWC1195-BLK1	ND	mg/kg	0.0050		
Ethanol	BWC1195-BLK1	ND	mg/kg	1.0		
Ethyl t-butyl ether	BWC1195-BLK1	ND	mg/kg	0.0050		
Total Purgeable Petroleum Hydrocarbons	BWC1195-BLK1	ND	mg/kg	0.20		
1,2-Dichloroethane-d4 (Surrogate)	BWC1195-BLK1	101	%	70 - 121 (LCL - UCL)		
Toluene-d8 (Surrogate)	BWC1195-BLK1	98.6	%	81 - 117 (LCL - UCL)		
4-Bromofluorobenzene (Surrogate)	BWC1195-BLK1	97.8	%	74 - 121 (LCL - UCL)		
QC Batch ID: BWC1344						
Benzene	BWC1344-BLK1	ND	mg/kg	0.0050		
Ethylbenzene	BWC1344-BLK1	ND	mg/kg	0.0050		
Methyl t-butyl ether	BWC1344-BLK1	ND	mg/kg	0.0050		
Toluene	BWC1344-BLK1	ND	mg/kg	0.0050		
Total Xylenes	BWC1344-BLK1	ND	mg/kg	0.010		
t-Amyl Methyl ether	BWC1344-BLK1	ND	mg/kg	0.0050		
t-Butyl alcohol	BWC1344-BLK1	ND	mg/kg	0.050		
Diisopropyl ether	BWC1344-BLK1	ND	mg/kg	0.0050		
Ethanol	BWC1344-BLK1	ND	mg/kg	1.0		
Ethyl t-butyl ether	BWC1344-BLK1	ND	mg/kg	0.0050		
Total Purgeable Petroleum Hydrocarbons	BWC1344-BLK1	ND	mg/kg	0.20		
1,2-Dichloroethane-d4 (Surrogate)	BWC1344-BLK1	97.4	%	70 - 121 (LCL - UCL)		
Toluene-d8 (Surrogate)	BWC1344-BLK1	101	%	81 - 117 (LCL - UCL)		
4-Bromofluorobenzene (Surrogate)	BWC1344-BLK1	97.2	%	74 - 121 (LCL - UCL)		

AECOM
1220 Avenida Acaso
Camarillo, CA 93012

Reported: 04/02/2013 11:18
Project: 1156
Project Number: 351645
Project Manager: Brenda Evans

Volatile Organic Analysis (EPA Method 8260/5035)

Quality Control Report - Laboratory Control Sample

Constituent	QC Sample ID	Type	Result	Spike Level	Units	Percent Recovery	RPD	Control Limits Percent Recovery	Control Limits RPD	Lab Quals
QC Batch ID: BWC1195										
Benzene	BWC1195-BS1	LCS	0.14206	0.12500	mg/kg	114		70 - 130		
Toluene	BWC1195-BS1	LCS	0.13348	0.12500	mg/kg	107		70 - 130		
1,2-Dichloroethane-d4 (Surrogate)	BWC1195-BS1	LCS	0.050910	0.050000	mg/kg	102		70 - 121		
Toluene-d8 (Surrogate)	BWC1195-BS1	LCS	0.049970	0.050000	mg/kg	99.9		81 - 117		
4-Bromofluorobenzene (Surrogate)	BWC1195-BS1	LCS	0.055210	0.050000	mg/kg	110		74 - 121		
QC Batch ID: BWC1344										
Benzene	BWC1344-BS1	LCS	0.12231	0.12500	mg/kg	97.8		70 - 130		
Toluene	BWC1344-BS1	LCS	0.12536	0.12500	mg/kg	100		70 - 130		
1,2-Dichloroethane-d4 (Surrogate)	BWC1344-BS1	LCS	0.048160	0.050000	mg/kg	96.3		70 - 121		
Toluene-d8 (Surrogate)	BWC1344-BS1	LCS	0.049080	0.050000	mg/kg	98.2		81 - 117		
4-Bromofluorobenzene (Surrogate)	BWC1344-BS1	LCS	0.049680	0.050000	mg/kg	99.4		74 - 121		

AECOM
1220 Avenida Acaso
Camarillo, CA 93012

Reported: 04/02/2013 11:18
Project: 1156
Project Number: 351645
Project Manager: Brenda Evans

Volatile Organic Analysis (EPA Method 8260/5035)

Quality Control Report - Precision & Accuracy

Constituent	Type	Source Sample ID	Source Result	Result	Spike Added	Units	RPD	Percent Recovery	Control Limits RPD	Control Limits Percent Recovery	Lab Quals
QC Batch ID: BWC1195	Used client sample: N										
Benzene	MS	1302378-92	ND	0.12194	0.12500	mg/kg		97.6		70 - 130	
	MSD	1302378-92	ND	0.12630	0.12500	mg/kg	3.5	101	20	70 - 130	
Toluene	MS	1302378-92	ND	0.11278	0.12500	mg/kg		90.2		70 - 130	
	MSD	1302378-92	ND	0.11568	0.12500	mg/kg	2.5	92.5	20	70 - 130	
1,2-Dichloroethane-d4 (Surrogate)	MS	1302378-92	ND	0.052700	0.050000	mg/kg		105		70 - 121	
	MSD	1302378-92	ND	0.051860	0.050000	mg/kg	1.6	104		70 - 121	
Toluene-d8 (Surrogate)	MS	1302378-92	ND	0.051610	0.050000	mg/kg		103		81 - 117	
	MSD	1302378-92	ND	0.051410	0.050000	mg/kg	0.4	103		81 - 117	
4-Bromofluorobenzene (Surrogate)	MS	1302378-92	ND	0.055250	0.050000	mg/kg		110		74 - 121	
	MSD	1302378-92	ND	0.054360	0.050000	mg/kg	1.6	109		74 - 121	
QC Batch ID: BWC1344	Used client sample: N										
Benzene	MS	1305402-11	ND	0.12642	0.12500	mg/kg		101		70 - 130	
	MSD	1305402-11	ND	0.12497	0.12500	mg/kg	1.2	100	20	70 - 130	
Toluene	MS	1305402-11	ND	0.12176	0.12500	mg/kg		97.4		70 - 130	
	MSD	1305402-11	ND	0.12894	0.12500	mg/kg	5.7	103	20	70 - 130	
1,2-Dichloroethane-d4 (Surrogate)	MS	1305402-11	ND	0.049190	0.050000	mg/kg		98.4		70 - 121	
	MSD	1305402-11	ND	0.047750	0.050000	mg/kg	3.0	95.5		70 - 121	
Toluene-d8 (Surrogate)	MS	1305402-11	ND	0.048640	0.050000	mg/kg		97.3		81 - 117	
	MSD	1305402-11	ND	0.049160	0.050000	mg/kg	1.1	98.3		81 - 117	
4-Bromofluorobenzene (Surrogate)	MS	1305402-11	ND	0.048700	0.050000	mg/kg		97.4		74 - 121	
	MSD	1305402-11	ND	0.048930	0.050000	mg/kg	0.5	97.9		74 - 121	

AECOM
1220 Avenida Acaso
Camarillo, CA 93012

Reported: 04/02/2013 11:18
Project: 1156
Project Number: 351645
Project Manager: Brenda Evans

Purgeable Aromatics and Total Petroleum Hydrocarbons

Quality Control Report - Method Blank Analysis

Constituent	QC Sample ID	MB Result	Units	PQL	MDL	Lab Quals
QC Batch ID: BWD0110						
TPH - C8 - C9	BWD0110-BLK1	ND	mg/kg	1.0		
TPH - C10 - C11	BWD0110-BLK1	ND	mg/kg	1.0		
TPH - C12 - C14	BWD0110-BLK1	ND	mg/kg	1.0		
TPH - C15 - C16	BWD0110-BLK1	ND	mg/kg	1.0		
TPH - C17 - C18	BWD0110-BLK1	ND	mg/kg	1.0		
TPH - C19 - C20	BWD0110-BLK1	ND	mg/kg	1.0		
TPH - C21 - C22	BWD0110-BLK1	ND	mg/kg	1.0		
TPH - C23 - C28	BWD0110-BLK1	ND	mg/kg	1.0		
TPH - C29 - C32	BWD0110-BLK1	ND	mg/kg	1.0		
TPH - C33 - C36	BWD0110-BLK1	ND	mg/kg	1.0		
TPH - C37 - C40	BWD0110-BLK1	ND	mg/kg	1.0		
TPH - C41 - C43	BWD0110-BLK1	ND	mg/kg	1.0		
TPH - C44 plus	BWD0110-BLK1	ND	mg/kg	1.0		
TPH (Total)	BWD0110-BLK1	ND	mg/kg	10		
TPH - Diesel (FFP)	BWD0110-BLK1	ND	mg/kg	10		
Tetracosane (Surrogate)	BWD0110-BLK1	45.3	%	20 - 145 (LCL - UCL)		

AECOM
1220 Avenida Acaso
Camarillo, CA 93012

Reported: 04/02/2013 11:18
Project: 1156
Project Number: 351645
Project Manager: Brenda Evans

Purgeable Aromatics and Total Petroleum Hydrocarbons

Quality Control Report - Laboratory Control Sample

Constituent	QC Sample ID	Type	Result	Spike Level	Units	Percent Recovery	RPD	Control Limits Percent Recovery	Control Limits RPD	Lab Quals
QC Batch ID: BWD0110										
TPH - Diesel (FFP)	BWD0110-BS1	LCS	60.010	83.893	mg/kg	71.5		64 - 124		
Tetracosane (Surrogate)	BWD0110-BS1	LCS	2.3473	5.0336	mg/kg	46.6		20 - 145		

AECOM
1220 Avenida Acaso
Camarillo, CA 93012

Reported: 04/02/2013 11:18
Project: 1156
Project Number: 351645
Project Manager: Brenda Evans

Purgeable Aromatics and Total Petroleum Hydrocarbons

Quality Control Report - Precision & Accuracy

Constituent	Type	Source Sample ID	Source Result	Result	Spike Added	Units	RPD	Percent Recovery	Control Limits RPD	Control Limits Percent Recovery	Lab Quals
QC Batch ID: BWD0110	Used client sample: Y - Description: MW-10A-S-N-5.0-130318, 03/18/2013 10:40										
TPH - Diesel (FFP)	MS	1305466-01	ND	65.702	84.746	mg/kg		77.5		52 - 131	
	MSD	1305466-01	ND	68.769	84.175	mg/kg	4.6	81.7	30	52 - 131	
Tetracosane (Surrogate)	MS	1305466-01	ND	2.4249	5.0847	mg/kg		47.7		20 - 145	
	MSD	1305466-01	ND	2.7559	5.0505	mg/kg	12.8	54.6		20 - 145	

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1220 Avenida Acaso
Camarillo, CA 93012

Reported: 04/02/2013 11:18
Project: 1156
Project Number: 351645
Project Manager: Brenda Evans

Notes And Definitions

MDL	Method Detection Limit
ND	Analyte Not Detected at or above the reporting limit
PQL	Practical Quantitation Limit
RPD	Relative Percent Difference
A01	PQL's and MDL's are raised due to sample dilution.

BC Laboratories, Inc.
Environmental Testing Laboratory Since 1949

Date of Report: 04/03/2013

Brenda Evans

AECOM
1220 Avenida Acaso
Camarillo, CA 93012

Project: 1156
BC Work Order: 1305573
Invoice ID: B143012

Enclosed are the results of analyses for samples received by the laboratory on 3/19/2013. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Molly Meyers

Contact Person: Molly Meyers
Client Service Rep

Authorized Signature

Table of Contents

1305573

CHAIN OF CUSTODY

AECOM

Lab: BC Laboratories

TAT: Standard

Report results to:

Name	Brenda Evans (brenda.evans@aecom.com)
Company	AECOM
Mailing Address	1220 Avenida Acaso
City, State, Zip	Camarillo, CA 93012
Telephone No.	805.233.3988
Fax No.	805.388.3577

Project Information

Chevron Facility:	351645
Site Address:	4276 MacArthur Blvd, Oakland CA
AECOM No.	60287515.A10

Special instructions and/or specific regulatory requirements:

oxys include: MTBE, TBA, DIPE, ETBE, TAME, and Ethanol.

	Sample Identification	Date Sampled	Time Sampled	Matrix/ Media	No. of Conts	TPH-CC 8015M	TPHg, BTEX, oxys 8260B	5035 encore method	Sample Condition/Comments	Preservative
1	MW-11A-S-N-5.0-20130319	3/19/13	1015	Soil	4	X	X	X		none
2	MW-11A-S-N-9.0-20130319	3/19/13	1025	Soil	4	X	X	X		none
3	MW-11A-S-N-14.0-20130319	3/19/13	1035	Soil	4	X	X	X		none
4	MW-9A-S-N-5.0-20130318	3/18/13	1505	Soil	4	X	X	X		none
5	MW-9A-S-N-5.0-20130318	3/18/13	1510	Soil	4	X	X	X		none
6	MW-9A-S-N-8.5-20130318	3/18/13	1515	Soil	4	X	X	X		none
7	MW-9A-S-N-14.0-20130318	3/18/13	1520	Soil	4	X	X	X		none
8	MW-11B-S-N-5.0-20130319	3/19/13	0805	Soil	4	X	X	X		none
9	MW-11B-S-N-10.0-20130319	3/19/13	0840	Soil	4	X	X	X		none
10	MW-11B-S-N-10.0-20130319	3/19/13	0840	Soil	4	X	X	X		none

CHK BY DISTRIBUTION
KIQ SUB OUT
SHORT HOLDING TIME
Cr^{+6} NO_2 NO_3 OP SS
DO Cl_2 BOD MBAS COT
JWN 3/19/13

Relinquished by:	Date/Time 3/19/13 1430	**Received by:**	Date/Time 3/19/13 1430
Relinquished by:	Date/Time 3/19/13 1831	**Received by:**	Date/Time 3-19-13 1830
Method of Shipment:	Fedex Courier	**Sample Condition on Receipt:**	

REL Gary Bogar 3-19-13 1915 REC

REL. 3-19-13 22:55 3/19/13 2255

4100 Atlas Court Bakersfield, CA 93308 (661) 327-4911 FAX (661) 327-1918 www.bclabs.com

1305573

CHAIN OF CUSTODY

Page 2 of 2

AECOM

Lab: BC Laboratories

TAT: Standard

Report results to:

Name	Brenda Evans (brenda.evans@aecom.com)
Company	AECOM
Mailing Address	1220 Avenida Acaso
City, State, Zip	Camarillo, CA 93012
Telephone No.	805.233.3988
Fax No.	805.388.3577

Project Information

Chevron Facility:	351645
Site Address:	4276 MacArthur Blvd, Oakland CA
AECOM No.	60287515.A10

Special instructions and/or specific regulatory requirements:

oxys include: MTBE, TBA, DIPE, ETBE, TAME, and Ethanol.

	Sample Identification	Date Sampled	Time Sampled	Matrix/ Media	No. of Conts.	TPH-CC 8015M	TPHg, BTEX, oxys 8260B	5035 encore method						Sample Condition/Comments	Preservative
11	MW-11B-5-N-1410-20130319	3-19-13	0850	Soil	4	X	X	X							none
2	MW-11B-5-N-1900-20130319	3-19-13	0900	Soil	4	X	X	X							none
				Soil	4	X	X	X							none
				Soil	4	X	X	X							none
				Soil	4	X	X	X							none
				Soil	4	X	X	X							none
				Soil	4	X	X	X							none
				Soil	4	X	X	X							none
				Soil	4	X	X	X							none
				Soil	4	X	X	X							none

Relinquished by: [signature] Date/Time 3/19/13 1430 **Received by:** Ross Dickey Date/Time 3-19-13 1430

Relinquished by: Ross Dickey Date/Time 3-19-13 1830 **Received by:** Hang Bogan Date/Time 3-19-13 1830

Method of Shipment: ~~Fedex~~ Courier **Sample Condition on Receipt:**

REL Hang Bogan 3-19-13 1915 REC [signature] @ 3-19-13 19:15

REL [signature] @ 3-19-13 22:55 [signature] 3-19-13 2255

Chain of Custody and Cooler Receipt Form for 1305573 Page 3 of 4

BC LABORATORIES INC. COOLER RECEIPT FORM Rev. No. 13 08/17/12 Page 1 Of 2

Submission #: 1305573

SHIPPING INFORMATION	SHIPPING CONTAINER
Federal Express ☐ UPS ☐ Hand Delivery ☐	Ice Chest ☒ None ☐
BC Lab Field Service ☒ Other ☐ (Specify)_____	Box ☐ Other ☐ (Specify)_____

Refrigerant: Ice ☒ Blue Ice ☐ None ☐ Other ☐ Comments:

Custody Seals: Ice Chest ☐ (Intact? Yes ☐ No ☐) Containers ☐ (Intact? Yes ☐ No ☐) None ☒ Comments:

All samples received? Yes ☒ No ☐ All samples containers intact? Yes ☒ No ☐ Description(s) match COC? Yes ☒ No ☐

COC Received ☒ YES ☐ NO

Emissivity: — Container: soil Sleeve Thermometer ID: 82

Temperature: (A) 3.0 °C / (C) 3.5 °C

Date/Time 3-19-13

Analyst Init JNW 2320

SAMPLE CONTAINERS	SAMPLE NUMBERS 1	2	3	4	5	6	7	8	9	10
QT GENERAL MINERAL/ GENERAL PHYSICAL										
PT PE UNPRESERVED										
QT INORGANIC CHEMICAL METALS										
PT INORGANIC CHEMICAL METALS										
PT CYANIDE										
PT NITROGEN FORMS										
PT TOTAL SULFIDE										
2oz. NITRATE / NITRITE										
PT TOTAL ORGANIC CARBON										
PT TOX										
PT CHEMICAL OXYGEN DEMAND										
PtA PHENOLICS										
40ml VOA VIAL TRAVEL BLANK										
40ml VOA VIAL										
QT EPA 413.1, 4132, 418.1										
PT ODOR										
RADIOLOGICAL										
BACTERIOLOGICAL										
40 ml VOA VIAL- 504										
QT EPA 508/608/8080										
QT EPA 515.1/8150										
QT EPA 525										
QT EPA 525 TRAVEL BLANK										
100ml EPA 547										
100ml EPA 531.1										
QT EPA 548										
QT EPA 549										
QT EPA 632										
QT EPA 8015M										
QT AMBER										
8 OZ. JAR										
32 OZ. JAR										
SOIL SLEEVE	A	A	A	A	A	A	A	A	A	A
PCB VIAL										
PLASTIC BAG										
FERROUS IRON										
ENCORE	B	B	B	B	B	B	B	B	B	B
SMART KIT										

Comments:

Sample Numbering Completed By: JNW Date/Time: 3/20/13 0030

A = Actual / C = Corrected

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Chain of Custody and Cooler Receipt Form for 1305573 Page 4 of 4

BC LABORATORIES INC. COOLER RECEIPT FORM Rev. No. 13 08/17/12 Page 2 of 2

Submission #: 1305573

SHIPPING INFORMATION	SHIPPING CONTAINER
Federal Express ☐ UPS ☐ Hand Delivery ☐	Ice Chest ☒ None ☐
BC Lab Field Service ☒ Other ☐ (Specify)_____	Box ☐ Other ☐ (Specify)_____

Refrigerant: Ice ☒ Blue Ice ☐ None ☐ Other ☐ Comments:

Custody Seals: Ice Chest ☐ Intact? Yes ☐ No ☐ | Containers ☐ Intact? Yes ☐ No ☐ | None ☒ Comments:

All samples received? Yes ☑ No ☐ All samples containers intact? Yes ☑ No ☐ Description(s) match COC? Yes ☑ No ☐

COC Received ☒ YES ☐ NO

Emissivity: — Container: soil sleeve Thermometer ID: 82

Temperature: (A) 3.6 °C / (C) 3.8 °C

Date/Time 3-19-13

Analyst Init JNW 2320

SAMPLE CONTAINERS	SAMPLE NUMBERS									
	1	2	3	4	5	6	7	8	9	10
QT GENERAL MINERAL/ GENERAL PHYSICAL										
PT PE UNPRESERVED										
QT INORGANIC CHEMICAL METALS										
PT INORGANIC CHEMICAL METALS										
PT CYANIDE										
PT NITROGEN FORMS										
PT TOTAL SULFIDE										
2oz. NITRATE / NITRITE										
PT TOTAL ORGANIC CARBON										
PT TOX										
PT CHEMICAL OXYGEN DEMAND										
PtA PHENOLICS										
40ml VOA VIAL TRAVEL BLANK										
40ml VOA VIAL	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )
QT EPA 413.1, 413.2, 418.1										
PT ODOR										
RADIOLOGICAL										
BACTERIOLOGICAL										
40 ml VOA VIAL- 504										
QT EPA 508/608/8080										
QT EPA 515.1/8150										
QT EPA 525										
QT EPA 525 TRAVEL BLANK										
100ml EPA 547										
100ml EPA 531.1										
QT EPA 548										
QT EPA 549										
QT EPA 632										
QT EPA 8015M										
QT AMBER										
8 OZ. JAR										
32 OZ. JAR										
SOIL SLEEVE	A	A								
PCB VIAL										
PLASTIC BAG										
FERROUS IRON										
ENCORE	B	B								
SMART KIT										

Comments:

Sample Numbering Completed By: JNW Date/Time: 3/20/13 0030

A = Actual / C = Corrected

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AECOM
1220 Avenida Acaso
Camarillo, CA 93012

Reported: 04/03/2013 14:40
Project: 1156
Project Number: 351645
Project Manager: Brenda Evans

Laboratory / Client Sample Cross Reference

Laboratory	Client Sample Information			
1305573-01	**COC Number:**	---	**Receive Date:**	03/19/2013 22:55
	Project Number:	1156	**Sampling Date:**	03/19/2013 10:15
	Sampling Location:	---	**Sample Depth:**	---
	Sampling Point:	MW-11A-S-N-5.0-130319	**Lab Matrix:**	Solids
	Sampled By:	AEOR	**Sample Type:**	Soil
			Delivery Work Order:	
			Global ID:	
			Location ID (FieldPoint):	MW-11A
			Matrix:	SO
			Sample QC Type (SACode):	CS
			Cooler ID:	
1305573-02	**COC Number:**	---	**Receive Date:**	03/19/2013 22:55
	Project Number:	1156	**Sampling Date:**	03/19/2013 10:25
	Sampling Location:	---	**Sample Depth:**	---
	Sampling Point:	MW-11A-S-N-9.0-130319	**Lab Matrix:**	Solids
	Sampled By:	AEOR	**Sample Type:**	Soil
			Delivery Work Order:	
			Global ID:	
			Location ID (FieldPoint):	MW-11A
			Matrix:	SO
			Sample QC Type (SACode):	CS
			Cooler ID:	
1305573-03	**COC Number:**	---	**Receive Date:**	03/19/2013 22:55
	Project Number:	1156	**Sampling Date:**	03/19/2013 10:35
	Sampling Location:	---	**Sample Depth:**	---
	Sampling Point:	MW-11A-S-N-14.0-130319	**Lab Matrix:**	Solids
	Sampled By:	AEOR	**Sample Type:**	Soil
			Delivery Work Order:	
			Global ID:	
			Location ID (FieldPoint):	MW-11A
			Matrix:	SO
			Sample QC Type (SACode):	CS
			Cooler ID:	

AECOM
1220 Avenida Acaso
Camarillo, CA 93012

Reported: 04/03/2013 14:40
Project: 1156
Project Number: 351645
Project Manager: Brenda Evans

Laboratory / Client Sample Cross Reference

Laboratory	Client Sample Information			
1305573-04	**COC Number:**	---	**Receive Date:**	03/19/2013 22:55
	Project Number:	1156	**Sampling Date:**	03/19/2013 15:05
	Sampling Location:	---	**Sample Depth:**	---
	Sampling Point:	MW-9A-S-N-5.0-130319	**Lab Matrix:**	Solids
	Sampled By:	AEOR	**Sample Type:**	Soil
			Delivery Work Order:	
			Global ID:	
			Location ID (FieldPoint):	MW-9A
			Matrix:	SO
			Sample QC Type (SACode):	CS
			Cooler ID:	
1305573-05	**COC Number:**	---	**Receive Date:**	03/19/2013 22:55
	Project Number:	1156	**Sampling Date:**	03/19/2013 15:10
	Sampling Location:	---	**Sample Depth:**	---
	Sampling Point:	MW-9A-S-Y-5.0-130319	**Lab Matrix:**	Solids
	Sampled By:	AEOR	**Sample Type:**	Soil
			Delivery Work Order:	
			Global ID:	
			Location ID (FieldPoint):	MW-9A
			Matrix:	SO
			Sample QC Type (SACode):	CS
			Cooler ID:	
1305573-06	**COC Number:**	---	**Receive Date:**	03/19/2013 22:55
	Project Number:	1156	**Sampling Date:**	03/19/2013 15:15
	Sampling Location:	---	**Sample Depth:**	---
	Sampling Point:	MW-9A-S-N-8.5-130319	**Lab Matrix:**	Solids
	Sampled By:	AEOR	**Sample Type:**	Soil
			Delivery Work Order:	
			Global ID:	
			Location ID (FieldPoint):	MW-9A
			Matrix:	SO
			Sample QC Type (SACode):	CS
			Cooler ID:	

AECOM
1220 Avenida Acaso
Camarillo, CA 93012

Reported: 04/03/2013 14:40
Project: 1156
Project Number: 351645
Project Manager: Brenda Evans

Laboratory / Client Sample Cross Reference

Laboratory	Client Sample Information			
1305573-07	**COC Number:**	---	**Receive Date:**	03/19/2013 22:55
	Project Number:	1156	**Sampling Date:**	03/19/2013 15:20
	Sampling Location:	---	**Sample Depth:**	---
	Sampling Point:	MW-9A-S-N-14.0-130319	**Lab Matrix:**	Solids
	Sampled By:	AEOR	**Sample Type:**	Soil
			Delivery Work Order:	
			Global ID:	
			Location ID (FieldPoint):	MW-9A
			Matrix:	SO
			Sample QC Type (SACode):	CS
			Cooler ID:	
1305573-08	**COC Number:**	---	**Receive Date:**	03/19/2013 22:55
	Project Number:	1156	**Sampling Date:**	03/19/2013 08:05
	Sampling Location:	---	**Sample Depth:**	---
	Sampling Point:	MW-11B-S-N-5.0-130319	**Lab Matrix:**	Solids
	Sampled By:	AEOR	**Sample Type:**	Soil
			Delivery Work Order:	
			Global ID:	
			Location ID (FieldPoint):	MW-11B
			Matrix:	SO
			Sample QC Type (SACode):	CS
			Cooler ID:	
1305573-09	**COC Number:**	---	**Receive Date:**	03/19/2013 22:55
	Project Number:	1156	**Sampling Date:**	03/19/2013 08:40
	Sampling Location:	---	**Sample Depth:**	---
	Sampling Point:	MW-11B-S-N-10.0-130319	**Lab Matrix:**	Solids
	Sampled By:	AEOR	**Sample Type:**	Soil
			Delivery Work Order:	
			Global ID:	
			Location ID (FieldPoint):	MW-11B
			Matrix:	SO
			Sample QC Type (SACode):	CS
			Cooler ID:	

AECOM
1220 Avenida Acaso
Camarillo, CA 93012

Reported: 04/03/2013 14:40
Project: 1156
Project Number: 351645
Project Manager: Brenda Evans

Laboratory / Client Sample Cross Reference

Laboratory	Client Sample Information			
1305573-10	**COC Number:**	---	**Receive Date:**	03/19/2013 22:55
	Project Number:	1156	**Sampling Date:**	03/19/2013 08:40
	Sampling Location:	---	**Sample Depth:**	---
	Sampling Point:	MW-11B-S-Y-10.0-130319	**Lab Matrix:**	Solids
	Sampled By:	AEOR	**Sample Type:**	Soil
			Delivery Work Order:	
			Global ID:	
			Location ID (FieldPoint):	MW-11B
			Matrix:	SO
			Sample QC Type (SACode):	CS
			Cooler ID:	
1305573-11	**COC Number:**	---	**Receive Date:**	03/19/2013 22:55
	Project Number:	1156	**Sampling Date:**	03/19/2013 08:50
	Sampling Location:	---	**Sample Depth:**	---
	Sampling Point:	MW-11B-S-N-14.0-130319	**Lab Matrix:**	Solids
	Sampled By:	AEOR	**Sample Type:**	Soil
			Delivery Work Order:	
			Global ID:	
			Location ID (FieldPoint):	MW-11B
			Matrix:	SO
			Sample QC Type (SACode):	CS
			Cooler ID:	
1305573-12	**COC Number:**	---	**Receive Date:**	03/19/2013 22:55
	Project Number:	1156	**Sampling Date:**	03/19/2013 09:00
	Sampling Location:	---	**Sample Depth:**	---
	Sampling Point:	MW-11B-S-N-19.0-130319	**Lab Matrix:**	Solids
	Sampled By:	AEOR	**Sample Type:**	Soil
			Delivery Work Order:	
			Global ID:	
			Location ID (FieldPoint):	MW-11B
			Matrix:	SO
			Sample QC Type (SACode):	CS
			Cooler ID:	

AECOM
1220 Avenida Acaso
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Reported: 04/03/2013 14:40
Project: 1156
Project Number: 351645
Project Manager: Brenda Evans

Volatile Organic Analysis (EPA Method 8260/5035)

BCL Sample ID: 1305573-01 | **Client Sample Name:** 1156, MW-11A-S-N-5.0-130319, 3/19/2013 10:15:00AM

Constituent	Result	Units	PQL	Method	MB Bias	Lab Quals	Run #
Benzene	**1.6**	**mg/kg**	**0.10**	**EPA-8260B**	ND	**A01**	1
Ethylbenzene	**34**	**mg/kg**	**0.42**	**EPA-8260B**	ND	**A01**	2
Methyl t-butyl ether	ND	mg/kg	0.10	EPA-8260B	ND	A01	1
Toluene	**0.38**	**mg/kg**	**0.10**	**EPA-8260B**	ND	**A01**	1
Total Xylenes	**59**	**mg/kg**	**0.84**	**EPA-8260B**	ND	**A01**	2
t-Amyl Methyl ether	ND	mg/kg	0.10	EPA-8260B	ND	A01	1
t-Butyl alcohol	ND	mg/kg	1.0	EPA-8260B	ND	A01	1
Diisopropyl ether	ND	mg/kg	0.10	EPA-8260B	ND	A01	1
Ethanol	ND	mg/kg	21	EPA-8260B	ND	A01	1
Ethyl t-butyl ether	ND	mg/kg	0.10	EPA-8260B	ND	A01	1
Total Purgeable Petroleum Hydrocarbons	**680**	**mg/kg**	**84**	**Luft-GC/MS**	ND	**A01**	3
1,2-Dichloroethane-d4 (Surrogate)	91.9	%	70 - 121 (LCL - UCL)	EPA-8260B			1
1,2-Dichloroethane-d4 (Surrogate)	97.8	%	70 - 121 (LCL - UCL)	EPA-8260B			2
1,2-Dichloroethane-d4 (Surrogate)	94.8	%	70 - 121 (LCL - UCL)	EPA-8260B			3
Toluene-d8 (Surrogate)	113	%	81 - 117 (LCL - UCL)	EPA-8260B			1
Toluene-d8 (Surrogate)	105	%	81 - 117 (LCL - UCL)	EPA-8260B			2
Toluene-d8 (Surrogate)	101	%	81 - 117 (LCL - UCL)	EPA-8260B			3
4-Bromofluorobenzene (Surrogate)	107	%	74 - 121 (LCL - UCL)	EPA-8260B			1
4-Bromofluorobenzene (Surrogate)	103	%	74 - 121 (LCL - UCL)	EPA-8260B			2
4-Bromofluorobenzene (Surrogate)	99.2	%	74 - 121 (LCL - UCL)	EPA-8260B			3

Run #	Method	Prep Date	Run Date/Time	Analyst	Instrument	Dilution	QC Batch ID
1	EPA-8260B	03/20/13	03/20/13 17:01	ADC	MS-V2	20.900	BWC1077
2	EPA-8260B	03/20/13	03/21/13 13:03	ADC	MS-V2	83.700	BWC1077
3	EPA-8260B	03/20/13	03/21/13 12:37	ADC	MS-V2	418	BWC1077

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Reported: 04/03/2013 14:40
Project: 1156
Project Number: 351645
Project Manager: Brenda Evans

Purgeable Aromatics and Total Petroleum Hydrocarbons

BCL Sample ID: 1305573-01 | **Client Sample Name:** 1156, MW-11A-S-N-5.0-130319, 3/19/2013 10:15:00AM

Constituent	Result	Units	PQL	Method	MB Bias	Lab Quals	Run #
TPH - C8 - C9	ND	mg/kg	1.0	EPA-8015CC	ND		1
TPH - C10 - C11	**12**	**mg/kg**	**1.0**	**EPA-8015CC**	ND		1
TPH - C12 - C14	**38**	**mg/kg**	**1.0**	**EPA-8015CC**	ND		1
TPH - C15 - C16	**46**	**mg/kg**	**1.0**	**EPA-8015CC**	ND		1
TPH - C17 - C18	**6.7**	**mg/kg**	**1.0**	**EPA-8015CC**	ND		1
TPH - C19 - C20	**6.3**	**mg/kg**	**1.0**	**EPA-8015CC**	ND		1
TPH - C21 - C22	**6.3**	**mg/kg**	**1.0**	**EPA-8015CC**	ND		1
TPH - C23 - C28	**25**	**mg/kg**	**1.0**	**EPA-8015CC**	ND		1
TPH - C29 - C32	**21**	**mg/kg**	**1.0**	**EPA-8015CC**	ND		1
TPH - C33 - C36	**12**	**mg/kg**	**1.0**	**EPA-8015CC**	ND		1
TPH - C37 - C40	ND	mg/kg	1.0	EPA-8015CC	ND		1
TPH - C41 - C43	ND	mg/kg	1.0	EPA-8015CC	ND		1
TPH - C44 plus	ND	mg/kg	1.0	EPA-8015CC	ND		1
TPH (Total)	**170**	**mg/kg**	**10**	**EPA-8015CC**	ND		1
Tetracosane (Surrogate)	82.2	%	20 - 145 (LCL - UCL)	EPA-8015CC			1

Run #	Method	Prep Date	Run Date/Time	Analyst	Instrument	Dilution	QC Batch ID
1	EPA-8015CC	03/23/13	04/01/13 15:19	MWB	GC-2	1.017	BWD0114

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Reported: 04/03/2013 14:40
Project: 1156
Project Number: 351645
Project Manager: Brenda Evans

Volatile Organic Analysis (EPA Method 8260/5035)

BCL Sample ID: 1305573-02 | **Client Sample Name:** 1156, MW-11A-S-N-9.0-130319, 3/19/2013 10:25:00AM

Constituent	Result	Units	PQL	Method	MB Bias	Lab Quals	Run #
Benzene	**6.5**	**mg/kg**	**0.099**	**EPA-8260B**	ND	**A01**	1
Ethylbenzene	**19**	**mg/kg**	**0.79**	**EPA-8260B**	ND	**A01**	2
Methyl t-butyl ether	**0.32**	**mg/kg**	**0.099**	**EPA-8260B**	ND	**A01**	1
Toluene	**29**	**mg/kg**	**0.79**	**EPA-8260B**	ND	**A01**	2
Total Xylenes	**97**	**mg/kg**	**1.6**	**EPA-8260B**	ND	**A01**	2
t-Amyl Methyl ether	ND	mg/kg	0.099	EPA-8260B	ND	A01	1
t-Butyl alcohol	ND	mg/kg	0.99	EPA-8260B	ND	A01	1
Diisopropyl ether	ND	mg/kg	0.099	EPA-8260B	ND	A01	1
Ethanol	ND	mg/kg	20	EPA-8260B	ND	A01	1
Ethyl t-butyl ether	ND	mg/kg	0.099	EPA-8260B	ND	A01	1
Total Purgeable Petroleum Hydrocarbons	**1200**	**mg/kg**	**160**	**Luft-GC/MS**	ND	**A01**	3
1,2-Dichloroethane-d4 (Surrogate)	93.4	%	70 - 121 (LCL - UCL)	EPA-8260B			1
1,2-Dichloroethane-d4 (Surrogate)	97.1	%	70 - 121 (LCL - UCL)	EPA-8260B			2
1,2-Dichloroethane-d4 (Surrogate)	94.2	%	70 - 121 (LCL - UCL)	EPA-8260B			3
Toluene-d8 (Surrogate)	106	%	81 - 117 (LCL - UCL)	EPA-8260B			1
Toluene-d8 (Surrogate)	104	%	81 - 117 (LCL - UCL)	EPA-8260B			2
Toluene-d8 (Surrogate)	99.2	%	81 - 117 (LCL - UCL)	EPA-8260B			3
4-Bromofluorobenzene (Surrogate)	105	%	74 - 121 (LCL - UCL)	EPA-8260B			1
4-Bromofluorobenzene (Surrogate)	101	%	74 - 121 (LCL - UCL)	EPA-8260B			2
4-Bromofluorobenzene (Surrogate)	98.3	%	74 - 121 (LCL - UCL)	EPA-8260B			3

Run #	Method	Prep Date	Run Date/Time	Analyst	Instrument	Dilution	QC Batch ID
1	EPA-8260B	03/20/13	03/20/13 17:28	ADC	MS-V2	19.800	BWC1077
2	EPA-8260B	03/20/13	03/21/13 13:55	ADC	MS-V2	158	BWC1077
3	EPA-8260B	03/20/13	03/21/13 13:29	ADC	MS-V2	794	BWC1077

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Reported: 04/03/2013 14:40
Project: 1156
Project Number: 351645
Project Manager: Brenda Evans

Purgeable Aromatics and Total Petroleum Hydrocarbons

BCL Sample ID: 1305573-02 | **Client Sample Name:** 1156, MW-11A-S-N-9.0-130319, 3/19/2013 10:25:00AM

Constituent	Result	Units	PQL	Method	MB Bias	Lab Quals	Run #
TPH - C8 - C9	ND	mg/kg	1.0	EPA-8015CC	ND		1
TPH - C10 - C11	**1.3**	**mg/kg**	**1.0**	**EPA-8015CC**	ND		1
TPH - C12 - C14	**2.6**	**mg/kg**	**1.0**	**EPA-8015CC**	ND		1
TPH - C15 - C16	**3.5**	**mg/kg**	**1.0**	**EPA-8015CC**	ND		1
TPH - C17 - C18	**1.5**	**mg/kg**	**1.0**	**EPA-8015CC**	ND		1
TPH - C19 - C20	**2.2**	**mg/kg**	**1.0**	**EPA-8015CC**	ND		1
TPH - C21 - C22	**1.9**	**mg/kg**	**1.0**	**EPA-8015CC**	ND		1
TPH - C23 - C28	**7.4**	**mg/kg**	**1.0**	**EPA-8015CC**	ND		1
TPH - C29 - C32	**3.5**	**mg/kg**	**1.0**	**EPA-8015CC**	ND		1
TPH - C33 - C36	ND	mg/kg	1.0	EPA-8015CC	ND		1
TPH - C37 - C40	ND	mg/kg	1.0	EPA-8015CC	ND		1
TPH - C41 - C43	ND	mg/kg	1.0	EPA-8015CC	ND		1
TPH - C44 plus	ND	mg/kg	1.0	EPA-8015CC	ND		1
TPH (Total)	**24**	**mg/kg**	**10**	**EPA-8015CC**	ND		1
Tetracosane (Surrogate)	42.3	%	20 - 145 (LCL - UCL)	EPA-8015CC			1

Run #	Method	Prep Date	Run Date/Time	Analyst	Instrument	Dilution	QC Batch ID
1	EPA-8015CC	03/23/13	04/01/13 15:42	MWB	GC-2	1	BWD0114

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Reported: 04/03/2013 14:40
Project: 1156
Project Number: 351645
Project Manager: Brenda Evans

Volatile Organic Analysis (EPA Method 8260/5035)

BCL Sample ID: 1305573-03 | **Client Sample Name:** 1156, MW-11A-S-N-14.0-130319, 3/19/2013 10:35:00AM

Constituent	Result	Units	PQL	Method	MB Bias	Lab Quals	Run #
Benzene	ND	mg/kg	0.0043	EPA-8260B	ND		1
Ethylbenzene	ND	mg/kg	0.0043	EPA-8260B	ND		1
Methyl t-butyl ether	**0.064**	**mg/kg**	**0.0043**	**EPA-8260B**	ND		1
Toluene	ND	mg/kg	0.0043	EPA-8260B	ND		1
Total Xylenes	ND	mg/kg	0.0087	EPA-8260B	ND		1
t-Amyl Methyl ether	ND	mg/kg	0.0043	EPA-8260B	ND		1
t-Butyl alcohol	**0.22**	**mg/kg**	**0.043**	**EPA-8260B**	ND		1
Diisopropyl ether	ND	mg/kg	0.0043	EPA-8260B	ND		1
Ethanol	ND	mg/kg	0.87	EPA-8260B	ND		1
Ethyl t-butyl ether	ND	mg/kg	0.0043	EPA-8260B	ND		1
Total Purgeable Petroleum Hydrocarbons	**0.36**	**mg/kg**	**0.17**	**Luft-GC/MS**	ND		1
1,2-Dichloroethane-d4 (Surrogate)	103	%	70 - 121 (LCL - UCL)	EPA-8260B			1
Toluene-d8 (Surrogate)	99.8	%	81 - 117 (LCL - UCL)	EPA-8260B			1
4-Bromofluorobenzene (Surrogate)	97.3	%	74 - 121 (LCL - UCL)	EPA-8260B			1

Run #	Method	Prep Date	Run Date/Time	Analyst	Instrument	Dilution	QC Batch ID
1	EPA-8260B	03/20/13	03/20/13 15:42	ADC	MS-V2	0.868	BWC1077

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Reported: 04/03/2013 14:40
Project: 1156
Project Number: 351645
Project Manager: Brenda Evans

Purgeable Aromatics and Total Petroleum Hydrocarbons

BCL Sample ID: 1305573-03 | **Client Sample Name:** 1156, MW-11A-S-N-14.0-130319, 3/19/2013 10:35:00AM

Constituent	Result	Units	PQL	Method	MB Bias	Lab Quals	Run #
TPH - C8 - C9	ND	mg/kg	1.0	EPA-8015CC	ND		1
TPH - C10 - C11	ND	mg/kg	1.0	EPA-8015CC	ND		1
TPH - C12 - C14	ND	mg/kg	1.0	EPA-8015CC	ND		1
TPH - C15 - C16	ND	mg/kg	1.0	EPA-8015CC	ND		1
TPH - C17 - C18	ND	mg/kg	1.0	EPA-8015CC	ND		1
TPH - C19 - C20	ND	mg/kg	1.0	EPA-8015CC	ND		1
TPH - C21 - C22	ND	mg/kg	1.0	EPA-8015CC	ND		1
TPH - C23 - C28	ND	mg/kg	1.0	EPA-8015CC	ND		1
TPH - C29 - C32	ND	mg/kg	1.0	EPA-8015CC	ND		1
TPH - C33 - C36	ND	mg/kg	1.0	EPA-8015CC	ND		1
TPH - C37 - C40	ND	mg/kg	1.0	EPA-8015CC	ND		1
TPH - C41 - C43	ND	mg/kg	1.0	EPA-8015CC	ND		1
TPH - C44 plus	ND	mg/kg	1.0	EPA-8015CC	ND		1
TPH (Total)	ND	mg/kg	10	EPA-8015CC	ND		1
Tetracosane (Surrogate)	42.6	%	20 - 145 (LCL - UCL)	EPA-8015CC			1

Run #	Method	Prep Date	Run Date/Time	Analyst	Instrument	Dilution	QC Batch ID
1	EPA-8015CC	03/23/13	04/01/13 16:05	MWB	GC-2	1.010	BWD0114

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Reported: 04/03/2013 14:40
Project: 1156
Project Number: 351645
Project Manager: Brenda Evans

Volatile Organic Analysis (EPA Method 8260/5035)

BCL Sample ID: 1305573-04 | **Client Sample Name:** 1156, MW-9A-S-N-5.0-130319, 3/19/2013 3:05:00PM

Constituent	Result	Units	PQL	Method	MB Bias	Lab Quals	Run #
Benzene	**1.0**	**mg/kg**	**0.12**	**EPA-8260B**	ND	**A01**	1
Ethylbenzene	**12**	**mg/kg**	**0.12**	**EPA-8260B**	ND	**A01**	1
Methyl t-butyl ether	ND	mg/kg	0.12	EPA-8260B	ND	A01	1
Toluene	**0.32**	**mg/kg**	**0.12**	**EPA-8260B**	ND	**A01**	1
Total Xylenes	**1.1**	**mg/kg**	**0.25**	**EPA-8260B**	ND	**A01**	1
t-Amyl Methyl ether	ND	mg/kg	0.12	EPA-8260B	ND	A01	1
t-Butyl alcohol	ND	mg/kg	1.2	EPA-8260B	ND	A01	1
Diisopropyl ether	ND	mg/kg	0.12	EPA-8260B	ND	A01	1
Ethanol	ND	mg/kg	25	EPA-8260B	ND	A01	1
Ethyl t-butyl ether	ND	mg/kg	0.12	EPA-8260B	ND	A01	1
Total Purgeable Petroleum Hydrocarbons	**760**	**mg/kg**	**99**	**Luft-GC/MS**	ND	**A01**	2
1,2-Dichloroethane-d4 (Surrogate)	92.6	%	70 - 121 (LCL - UCL)	EPA-8260B			1
1,2-Dichloroethane-d4 (Surrogate)	98.8	%	70 - 121 (LCL - UCL)	EPA-8260B			2
Toluene-d8 (Surrogate)	111	%	81 - 117 (LCL - UCL)	EPA-8260B			1
Toluene-d8 (Surrogate)	101	%	81 - 117 (LCL - UCL)	EPA-8260B			2
4-Bromofluorobenzene (Surrogate)	122	%	74 - 121 (LCL - UCL)	EPA-8260B		A19,S09	1
4-Bromofluorobenzene (Surrogate)	99.3	%	74 - 121 (LCL - UCL)	EPA-8260B			2

Run #	Method	Prep Date	Run Date/Time	Analyst	Instrument	Dilution	QC Batch ID
1	EPA-8260B	03/20/13	03/20/13 17:54	ADC	MS-V2	24.700	BWC1077
2	EPA-8260B	03/20/13	03/21/13 14:22	ADC	MS-V2	495	BWC1077

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Reported: 04/03/2013 14:40
Project: 1156
Project Number: 351645
Project Manager: Brenda Evans

Purgeable Aromatics and Total Petroleum Hydrocarbons

BCL Sample ID: 1305573-04 | **Client Sample Name:** 1156, MW-9A-S-N-5.0-130319, 3/19/2013 3:05:00PM

Constituent	Result	Units	PQL	Method	MB Bias	Lab Quals	Run #
TPH - C8 - C9	ND	mg/kg	1.0	EPA-8015CC	ND		1
TPH - C10 - C11	ND	mg/kg	1.0	EPA-8015CC	ND		1
TPH - C12 - C14	**4.3**	**mg/kg**	**1.0**	**EPA-8015CC**	ND		1
TPH - C15 - C16	**4.3**	**mg/kg**	**1.0**	**EPA-8015CC**	ND		1
TPH - C17 - C18	**1.5**	**mg/kg**	**1.0**	**EPA-8015CC**	ND		1
TPH - C19 - C20	**2.0**	**mg/kg**	**1.0**	**EPA-8015CC**	ND		1
TPH - C21 - C22	**2.2**	**mg/kg**	**1.0**	**EPA-8015CC**	ND		1
TPH - C23 - C28	**11**	**mg/kg**	**1.0**	**EPA-8015CC**	ND		1
TPH - C29 - C32	**14**	**mg/kg**	**1.0**	**EPA-8015CC**	ND		1
TPH - C33 - C36	**7.3**	**mg/kg**	**1.0**	**EPA-8015CC**	ND		1
TPH - C37 - C40	ND	mg/kg	1.0	EPA-8015CC	ND		1
TPH - C41 - C43	ND	mg/kg	1.0	EPA-8015CC	ND		1
TPH - C44 plus	ND	mg/kg	1.0	EPA-8015CC	ND		1
TPH (Total)	**47**	**mg/kg**	**10**	**EPA-8015CC**	ND		1
Tetracosane (Surrogate)	44.5	%	20 - 145 (LCL - UCL)	EPA-8015CC			1

Run #	Method	Prep Date	Run Date/Time	Analyst	Instrument	Dilution	QC Batch ID
1	EPA-8015CC	03/23/13	04/01/13 16:30	MWB	GC-2	0.984	BWD0114

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Reported: 04/03/2013 14:40
Project: 1156
Project Number: 351645
Project Manager: Brenda Evans

Volatile Organic Analysis (EPA Method 8260/5035)

BCL Sample ID: 1305573-05 | **Client Sample Name:** 1156, MW-9A-S-Y-5.0-130319, 3/19/2013 3:10:00PM

Constituent	Result	Units	PQL	Method	MB Bias	Lab Quals	Run #
Benzene	**0.85**	**mg/kg**	**0.12**	**EPA-8260B**	ND	**A01**	1
Ethylbenzene	**10**	**mg/kg**	**0.12**	**EPA-8260B**	ND	**A01**	1
Methyl t-butyl ether	ND	mg/kg	0.12	EPA-8260B	ND	A01	1
Toluene	ND	mg/kg	0.12	EPA-8260B	ND	A01	1
Total Xylenes	**8.2**	**mg/kg**	**0.23**	**EPA-8260B**	ND	**A01**	1
t-Amyl Methyl ether	ND	mg/kg	0.12	EPA-8260B	ND	A01	1
t-Butyl alcohol	ND	mg/kg	1.2	EPA-8260B	ND	A01	1
Diisopropyl ether	ND	mg/kg	0.12	EPA-8260B	ND	A01	1
Ethanol	ND	mg/kg	23	EPA-8260B	ND	A01	1
Ethyl t-butyl ether	ND	mg/kg	0.12	EPA-8260B	ND	A01	1
Total Purgeable Petroleum Hydrocarbons	**720**	**mg/kg**	**92**	**Luft-GC/MS**	ND	**A01**	2
1,2-Dichloroethane-d4 (Surrogate)	91.0	%	70 - 121 (LCL - UCL)	EPA-8260B			1
1,2-Dichloroethane-d4 (Surrogate)	97.8	%	70 - 121 (LCL - UCL)	EPA-8260B			2
Toluene-d8 (Surrogate)	107	%	81 - 117 (LCL - UCL)	EPA-8260B			1
Toluene-d8 (Surrogate)	102	%	81 - 117 (LCL - UCL)	EPA-8260B			2
4-Bromofluorobenzene (Surrogate)	122	%	74 - 121 (LCL - UCL)	EPA-8260B		A19,S09	1
4-Bromofluorobenzene (Surrogate)	99.6	%	74 - 121 (LCL - UCL)	EPA-8260B			2

Run #	Method	Prep Date	Run Date/Time	Analyst	Instrument	Dilution	QC Batch ID
1	EPA-8260B	03/20/13	03/20/13 18:21	ADC	MS-V2	23.100	BWC1077
2	EPA-8260B	03/20/13	03/21/13 14:48	ADC	MS-V2	462	BWC1077

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Reported: 04/03/2013 14:40
Project: 1156
Project Number: 351645
Project Manager: Brenda Evans

Purgeable Aromatics and Total Petroleum Hydrocarbons

BCL Sample ID: 1305573-05 | **Client Sample Name:** 1156, MW-9A-S-Y-5.0-130319, 3/19/2013 3:10:00PM

Constituent	Result	Units	PQL	Method	MB Bias	Lab Quals	Run #
TPH - C8 - C9	ND	mg/kg	1.0	EPA-8015CC	ND		1
TPH - C10 - C11	**1.9**	**mg/kg**	**1.0**	**EPA-8015CC**	ND		1
TPH - C12 - C14	**5.0**	**mg/kg**	**1.0**	**EPA-8015CC**	ND		1
TPH - C15 - C16	**4.7**	**mg/kg**	**1.0**	**EPA-8015CC**	ND		1
TPH - C17 - C18	**1.8**	**mg/kg**	**1.0**	**EPA-8015CC**	ND		1
TPH - C19 - C20	**2.3**	**mg/kg**	**1.0**	**EPA-8015CC**	ND		1
TPH - C21 - C22	**2.7**	**mg/kg**	**1.0**	**EPA-8015CC**	ND		1
TPH - C23 - C28	**18**	**mg/kg**	**1.0**	**EPA-8015CC**	ND		1
TPH - C29 - C32	**20**	**mg/kg**	**1.0**	**EPA-8015CC**	ND		1
TPH - C33 - C36	**11**	**mg/kg**	**1.0**	**EPA-8015CC**	ND		1
TPH - C37 - C40	ND	mg/kg	1.0	EPA-8015CC	ND		1
TPH - C41 - C43	ND	mg/kg	1.0	EPA-8015CC	ND		1
TPH - C44 plus	ND	mg/kg	1.0	EPA-8015CC	ND		1
TPH (Total)	**67**	**mg/kg**	**10**	**EPA-8015CC**	ND		1
Tetracosane (Surrogate)	39.5	%	20 - 145 (LCL - UCL)	EPA-8015CC			1

Run #	Method	Prep Date	Run Date/Time	Analyst	Instrument	Dilution	QC Batch ID
1	EPA-8015CC	03/23/13	04/01/13 16:53	MWB	GC-2	1	BWD0114

AECOM
1220 Avenida Acaso
Camarillo, CA 93012

Reported: 04/03/2013 14:40
Project: 1156
Project Number: 351645
Project Manager: Brenda Evans

Volatile Organic Analysis (EPA Method 8260/5035)

BCL Sample ID: 1305573-06 | **Client Sample Name:** 1156, MW-9A-S-N-8.5-130319, 3/19/2013 3:15:00PM

Constituent	Result	Units	PQL	Method	MB Bias	Lab Quals	Run #
Benzene	**2.0**	**mg/kg**	**0.10**	**EPA-8260B**	ND	**A01**	1
Ethylbenzene	**2.5**	**mg/kg**	**0.10**	**EPA-8260B**	ND	**A01**	1
Methyl t-butyl ether	ND	mg/kg	0.10	EPA-8260B	ND	A01	1
Toluene	**0.15**	**mg/kg**	**0.10**	**EPA-8260B**	ND	**A01**	1
Total Xylenes	**4.8**	**mg/kg**	**0.21**	**EPA-8260B**	ND	**A01**	1
t-Amyl Methyl ether	ND	mg/kg	0.10	EPA-8260B	ND	A01	1
t-Butyl alcohol	ND	mg/kg	1.0	EPA-8260B	ND	A01	1
Diisopropyl ether	ND	mg/kg	0.10	EPA-8260B	ND	A01	1
Ethanol	ND	mg/kg	21	EPA-8260B	ND	A01	1
Ethyl t-butyl ether	ND	mg/kg	0.10	EPA-8260B	ND	A01	1
Total Purgeable Petroleum Hydrocarbons	**280**	**mg/kg**	**33**	**Luft-GC/MS**	ND	**A01**	2
1,2-Dichloroethane-d4 (Surrogate)	94.2	%	70 - 121 (LCL - UCL)	EPA-8260B			1
1,2-Dichloroethane-d4 (Surrogate)	93.9	%	70 - 121 (LCL - UCL)	EPA-8260B			2
Toluene-d8 (Surrogate)	107	%	81 - 117 (LCL - UCL)	EPA-8260B			1
Toluene-d8 (Surrogate)	99.4	%	81 - 117 (LCL - UCL)	EPA-8260B			2
4-Bromofluorobenzene (Surrogate)	108	%	74 - 121 (LCL - UCL)	EPA-8260B			1
4-Bromofluorobenzene (Surrogate)	99.7	%	74 - 121 (LCL - UCL)	EPA-8260B			2

Run #	Method	Prep Date	Run Date/Time	Analyst	Instrument	Dilution	QC Batch ID
1	EPA-8260B	03/20/13	03/20/13 18:47	ADC	MS-V2	20.700	BWC1344
2	EPA-8260B	03/20/13	03/21/13 15:14	ADC	MS-V2	165	BWC1344

AECOM
1220 Avenida Acaso
Camarillo, CA 93012

Reported: 04/03/2013 14:40
Project: 1156
Project Number: 351645
Project Manager: Brenda Evans

Purgeable Aromatics and Total Petroleum Hydrocarbons

BCL Sample ID: 1305573-06 | **Client Sample Name:** 1156, MW-9A-S-N-8.5-130319, 3/19/2013 3:15:00PM

Constituent	Result	Units	PQL	Method	MB Bias	Lab Quals	Run #
TPH - C8 - C9	ND	mg/kg	1.0	EPA-8015CC	ND		1
TPH - C10 - C11	**1.4**	**mg/kg**	**1.0**	**EPA-8015CC**	ND		1
TPH - C12 - C14	**2.6**	**mg/kg**	**1.0**	**EPA-8015CC**	ND		1
TPH - C15 - C16	**2.9**	**mg/kg**	**1.0**	**EPA-8015CC**	ND		1
TPH - C17 - C18	**1.4**	**mg/kg**	**1.0**	**EPA-8015CC**	ND		1
TPH - C19 - C20	**1.8**	**mg/kg**	**1.0**	**EPA-8015CC**	ND		1
TPH - C21 - C22	**2.4**	**mg/kg**	**1.0**	**EPA-8015CC**	ND		1
TPH - C23 - C28	**11**	**mg/kg**	**1.0**	**EPA-8015CC**	ND		1
TPH - C29 - C32	**6.2**	**mg/kg**	**1.0**	**EPA-8015CC**	ND		1
TPH - C33 - C36	**3.2**	**mg/kg**	**1.0**	**EPA-8015CC**	ND		1
TPH - C37 - C40	ND	mg/kg	1.0	EPA-8015CC	ND		1
TPH - C41 - C43	ND	mg/kg	1.0	EPA-8015CC	ND		1
TPH - C44 plus	ND	mg/kg	1.0	EPA-8015CC	ND		1
TPH (Total)	**33**	**mg/kg**	**10**	**EPA-8015CC**	ND		1
Tetracosane (Surrogate)	47.0	%	20 - 145 (LCL - UCL)	EPA-8015CC			1

Run #	Method	Prep Date	Run Date/Time	Analyst	Instrument	Dilution	QC Batch ID
1	EPA-8015CC	03/23/13	04/01/13 18:04	MWB	GC-2	1.003	BWD0114

AECOM
1220 Avenida Acaso
Camarillo, CA 93012

Reported: 04/03/2013 14:40
Project: 1156
Project Number: 351645
Project Manager: Brenda Evans

Volatile Organic Analysis (EPA Method 8260/5035)

BCL Sample ID: 1305573-07 | **Client Sample Name:** 1156, MW-9A-S-N-14.0-130319, 3/19/2013 3:20:00PM

Constituent	Result	Units	PQL	Method	MB Bias	Lab Quals	Run #
Benzene	**0.18**	**mg/kg**	**0.0044**	**EPA-8260B**	ND		1
Ethylbenzene	**0.054**	**mg/kg**	**0.0044**	**EPA-8260B**	ND		1
Methyl t-butyl ether	ND	mg/kg	0.0044	EPA-8260B	ND		1
Toluene	ND	mg/kg	0.0044	EPA-8260B	ND		1
Total Xylenes	ND	mg/kg	0.0089	EPA-8260B	ND		1
t-Amyl Methyl ether	ND	mg/kg	0.0044	EPA-8260B	ND		1
t-Butyl alcohol	**0.26**	**mg/kg**	**0.044**	**EPA-8260B**	ND		1
Diisopropyl ether	ND	mg/kg	0.0044	EPA-8260B	ND		1
Ethanol	ND	mg/kg	0.89	EPA-8260B	ND		1
Ethyl t-butyl ether	ND	mg/kg	0.0044	EPA-8260B	ND		1
Total Purgeable Petroleum Hydrocarbons	**1.6**	**mg/kg**	**0.18**	**Luft-GC/MS**	ND		1
1,2-Dichloroethane-d4 (Surrogate)	103	%	70 - 121 (LCL - UCL)	EPA-8260B			1
Toluene-d8 (Surrogate)	99.1	%	81 - 117 (LCL - UCL)	EPA-8260B			1
4-Bromofluorobenzene (Surrogate)	98.7	%	74 - 121 (LCL - UCL)	EPA-8260B			1

Run #	Method	Prep Date	Run Date/Time	Analyst	Instrument	Dilution	QC Batch ID
1	EPA-8260B	03/20/13	03/21/13 15:41	ADC	MS-V2	0.890	BWC1344

AECOM
1220 Avenida Acaso
Camarillo, CA 93012

Reported: 04/03/2013 14:40
Project: 1156
Project Number: 351645
Project Manager: Brenda Evans

Purgeable Aromatics and Total Petroleum Hydrocarbons

BCL Sample ID: 1305573-07 | **Client Sample Name:** 1156, MW-9A-S-N-14.0-130319, 3/19/2013 3:20:00PM

Constituent	Result	Units	PQL	Method	MB Bias	Lab Quals	Run #
TPH - C8 - C9	ND	mg/kg	1.0	EPA-8015CC	ND		1
TPH - C10 - C11	ND	mg/kg	1.0	EPA-8015CC	ND		1
TPH - C12 - C14	ND	mg/kg	1.0	EPA-8015CC	ND		1
TPH - C15 - C16	ND	mg/kg	1.0	EPA-8015CC	ND		1
TPH - C17 - C18	ND	mg/kg	1.0	EPA-8015CC	ND		1
TPH - C19 - C20	ND	mg/kg	1.0	EPA-8015CC	ND		1
TPH - C21 - C22	ND	mg/kg	1.0	EPA-8015CC	ND		1
TPH - C23 - C28	ND	mg/kg	1.0	EPA-8015CC	ND		1
TPH - C29 - C32	ND	mg/kg	1.0	EPA-8015CC	ND		1
TPH - C33 - C36	ND	mg/kg	1.0	EPA-8015CC	ND		1
TPH - C37 - C40	ND	mg/kg	1.0	EPA-8015CC	ND		1
TPH - C41 - C43	ND	mg/kg	1.0	EPA-8015CC	ND		1
TPH - C44 plus	ND	mg/kg	1.0	EPA-8015CC	ND		1
TPH (Total)	ND	mg/kg	10	EPA-8015CC	ND		1
Tetracosane (Surrogate)	39.0	%	20 - 145 (LCL - UCL)	EPA-8015CC			1

Run #	Method	Prep Date	Run Date/Time	Analyst	Instrument	Dilution	QC Batch ID
1	EPA-8015CC	03/23/13	04/01/13 14:55	MWB	GC-2	1.017	BWD0114

AECOM
1220 Avenida Acaso
Camarillo, CA 93012

Reported: 04/03/2013 14:40
Project: 1156
Project Number: 351645
Project Manager: Brenda Evans

Volatile Organic Analysis (EPA Method 8260/5035)

BCL Sample ID: 1305573-08 | **Client Sample Name:** 1156, MW-11B-S-N-5.0-130319, 3/19/2013 8:05:00AM

Constituent	Result	Units	PQL	Method	MB Bias	Lab Quals	Run #
Benzene	ND	mg/kg	0.0043	EPA-8260B	ND		1
Ethylbenzene	ND	mg/kg	0.0043	EPA-8260B	ND		1
Methyl t-butyl ether	ND	mg/kg	0.0043	EPA-8260B	ND		1
Toluene	ND	mg/kg	0.0043	EPA-8260B	ND		1
Total Xylenes	ND	mg/kg	0.0087	EPA-8260B	ND		1
t-Amyl Methyl ether	ND	mg/kg	0.0043	EPA-8260B	ND		1
t-Butyl alcohol	ND	mg/kg	0.043	EPA-8260B	ND		1
Diisopropyl ether	ND	mg/kg	0.0043	EPA-8260B	ND		1
Ethanol	ND	mg/kg	0.87	EPA-8260B	ND		1
Ethyl t-butyl ether	ND	mg/kg	0.0043	EPA-8260B	ND		1
Total Purgeable Petroleum Hydrocarbons	ND	mg/kg	0.17	Luft-GC/MS	ND		1
1,2-Dichloroethane-d4 (Surrogate)	109	%	70 - 121 (LCL - UCL)	EPA-8260B			1
Toluene-d8 (Surrogate)	100	%	81 - 117 (LCL - UCL)	EPA-8260B			1
4-Bromofluorobenzene (Surrogate)	93.6	%	74 - 121 (LCL - UCL)	EPA-8260B			1

Run #	Method	Prep Date	Run Date/Time	Analyst	Instrument	Dilution	QC Batch ID
1	EPA-8260B	03/20/13	03/20/13 16:08	ADC	MS-V2	0.868	BWC1344

AECOM
1220 Avenida Acaso
Camarillo, CA 93012

Reported: 04/03/2013 14:40
Project: 1156
Project Number: 351645
Project Manager: Brenda Evans

Purgeable Aromatics and Total Petroleum Hydrocarbons

BCL Sample ID: 1305573-08 | **Client Sample Name:** 1156, MW-11B-S-N-5.0-130319, 3/19/2013 8:05:00AM

Constituent	Result	Units	PQL	Method	MB Bias	Lab Quals	Run #
TPH - C8 - C9	ND	mg/kg	1.0	EPA-8015CC	ND		1
TPH - C10 - C11	ND	mg/kg	1.0	EPA-8015CC	ND		1
TPH - C12 - C14	ND	mg/kg	1.0	EPA-8015CC	ND		1
TPH - C15 - C16	ND	mg/kg	1.0	EPA-8015CC	ND		1
TPH - C17 - C18	ND	mg/kg	1.0	EPA-8015CC	ND		1
TPH - C19 - C20	ND	mg/kg	1.0	EPA-8015CC	ND		1
TPH - C21 - C22	ND	mg/kg	1.0	EPA-8015CC	ND		1
TPH - C23 - C28	ND	mg/kg	1.0	EPA-8015CC	ND		1
TPH - C29 - C32	ND	mg/kg	1.0	EPA-8015CC	ND		1
TPH - C33 - C36	ND	mg/kg	1.0	EPA-8015CC	ND		1
TPH - C37 - C40	ND	mg/kg	1.0	EPA-8015CC	ND		1
TPH - C41 - C43	ND	mg/kg	1.0	EPA-8015CC	ND		1
TPH - C44 plus	ND	mg/kg	1.0	EPA-8015CC	ND		1
TPH (Total)	ND	mg/kg	10	EPA-8015CC	ND		1
Tetracosane (Surrogate)	35.3	%	20 - 145 (LCL - UCL)	EPA-8015CC			1

Run #	Method	Prep Date	Run Date/Time	Analyst	Instrument	Dilution	QC Batch ID
1	EPA-8015CC	03/23/13	04/01/13 18:28	MWB	GC-2	1.010	BWD0114

AECOM
1220 Avenida Acaso
Camarillo, CA 93012

Reported: 04/03/2013 14:40
Project: 1156
Project Number: 351645
Project Manager: Brenda Evans

Volatile Organic Analysis (EPA Method 8260/5035)

BCL Sample ID: 1305573-09 | **Client Sample Name:** 1156, MW-11B-S-N-10.0-130319, 3/19/2013 8:40:00AM

Constituent	Result	Units	PQL	Method	MB Bias	Lab Quals	Run #
Benzene	**0.30**	**mg/kg**	**0.0042**	**EPA-8260B**	ND		1
Ethylbenzene	**0.18**	**mg/kg**	**0.0042**	**EPA-8260B**	ND		1
Methyl t-butyl ether	**0.12**	**mg/kg**	**0.0042**	**EPA-8260B**	ND		1
Toluene	**0.0082**	**mg/kg**	**0.0042**	**EPA-8260B**	ND		1
Total Xylenes	**0.22**	**mg/kg**	**0.0084**	**EPA-8260B**	ND		1
t-Amyl Methyl ether	ND	mg/kg	0.0042	EPA-8260B	ND		1
t-Butyl alcohol	**0.30**	**mg/kg**	**0.042**	**EPA-8260B**	ND		1
Diisopropyl ether	ND	mg/kg	0.0042	EPA-8260B	ND		1
Ethanol	ND	mg/kg	0.84	EPA-8260B	ND		1
Ethyl t-butyl ether	ND	mg/kg	0.0042	EPA-8260B	ND		1
Total Purgeable Petroleum Hydrocarbons	**14**	**mg/kg**	**4.3**	**Luft-GC/MS**	ND	**A01**	2
1,2-Dichloroethane-d4 (Surrogate)	101	%	70 - 121 (LCL - UCL)	EPA-8260B			1
1,2-Dichloroethane-d4 (Surrogate)	96.7	%	70 - 121 (LCL - UCL)	EPA-8260B			2
Toluene-d8 (Surrogate)	105	%	81 - 117 (LCL - UCL)	EPA-8260B			1
Toluene-d8 (Surrogate)	100	%	81 - 117 (LCL - UCL)	EPA-8260B			2
4-Bromofluorobenzene (Surrogate)	103	%	74 - 121 (LCL - UCL)	EPA-8260B			1
4-Bromofluorobenzene (Surrogate)	98.8	%	74 - 121 (LCL - UCL)	EPA-8260B			2

Run #	Method	Prep Date	Run Date/Time	Analyst	Instrument	Dilution	QC Batch ID
1	EPA-8260B	03/20/13	03/21/13 16:07	ADC	MS-V2	0.837	BWC1344
2	EPA-8260B	03/20/13	03/20/13 19:40	ADC	MS-V2	21.510	BWC1344

AECOM
1220 Avenida Acaso
Camarillo, CA 93012

Reported: 04/03/2013 14:40
Project: 1156
Project Number: 351645
Project Manager: Brenda Evans

Purgeable Aromatics and Total Petroleum Hydrocarbons

BCL Sample ID: 1305573-09 | **Client Sample Name:** 1156, MW-11B-S-N-10.0-130319, 3/19/2013 8:40:00AM

Constituent	Result	Units	PQL	Method	MB Bias	Lab Quals	Run #
TPH - C8 - C9	ND	mg/kg	1.0	EPA-8015CC	ND		1
TPH - C10 - C11	ND	mg/kg	1.0	EPA-8015CC	ND		1
TPH - C12 - C14	ND	mg/kg	1.0	EPA-8015CC	ND		1
TPH - C15 - C16	ND	mg/kg	1.0	EPA-8015CC	ND		1
TPH - C17 - C18	ND	mg/kg	1.0	EPA-8015CC	ND		1
TPH - C19 - C20	ND	mg/kg	1.0	EPA-8015CC	ND		1
TPH - C21 - C22	ND	mg/kg	1.0	EPA-8015CC	ND		1
TPH - C23 - C28	ND	mg/kg	1.0	EPA-8015CC	ND		1
TPH - C29 - C32	ND	mg/kg	1.0	EPA-8015CC	ND		1
TPH - C33 - C36	ND	mg/kg	1.0	EPA-8015CC	ND		1
TPH - C37 - C40	ND	mg/kg	1.0	EPA-8015CC	ND		1
TPH - C41 - C43	ND	mg/kg	1.0	EPA-8015CC	ND		1
TPH - C44 plus	ND	mg/kg	1.0	EPA-8015CC	ND		1
TPH (Total)	ND	mg/kg	10	EPA-8015CC	ND		1
Tetracosane (Surrogate)	46.6	%	20 - 145 (LCL - UCL)	EPA-8015CC			1

Run #	Method	Prep Date	Run Date/Time	Analyst	Instrument	Dilution	QC Batch ID
1	EPA-8015CC	03/23/13	04/01/13 18:52	MWB	GC-2	0.984	BWD0114

AECOM
1220 Avenida Acaso
Camarillo, CA 93012

Reported: 04/03/2013 14:40
Project: 1156
Project Number: 351645
Project Manager: Brenda Evans

Volatile Organic Analysis (EPA Method 8260/5035)

BCL Sample ID: 1305573-10 | **Client Sample Name:** 1156, MW-11B-S-Y-10.0-130319, 3/19/2013 8:40:00AM

Constituent	Result	Units	PQL	Method	MB Bias	Lab Quals	Run #
Benzene	**0.22**	**mg/kg**	**0.0040**	**EPA-8260B**	ND		1
Ethylbenzene	**0.16**	**mg/kg**	**0.0040**	**EPA-8260B**	ND		1
Methyl t-butyl ether	**0.10**	**mg/kg**	**0.0040**	**EPA-8260B**	ND		1
Toluene	**0.0070**	**mg/kg**	**0.0040**	**EPA-8260B**	ND		1
Total Xylenes	**0.22**	**mg/kg**	**0.0079**	**EPA-8260B**	ND		1
t-Amyl Methyl ether	ND	mg/kg	0.0040	EPA-8260B	ND		1
t-Butyl alcohol	**0.28**	**mg/kg**	**0.040**	**EPA-8260B**	ND		1
Diisopropyl ether	ND	mg/kg	0.0040	EPA-8260B	ND		1
Ethanol	ND	mg/kg	0.79	EPA-8260B	ND		1
Ethyl t-butyl ether	ND	mg/kg	0.0040	EPA-8260B	ND		1
Total Purgeable Petroleum Hydrocarbons	**31**	**mg/kg**	**4.3**	**Luft-GC/MS**	ND	**A01**	2
1,2-Dichloroethane-d4 (Surrogate)	107	%	70 - 121 (LCL - UCL)	EPA-8260B			1
1,2-Dichloroethane-d4 (Surrogate)	97.8	%	70 - 121 (LCL - UCL)	EPA-8260B			2
Toluene-d8 (Surrogate)	102	%	81 - 117 (LCL - UCL)	EPA-8260B			1
Toluene-d8 (Surrogate)	97.4	%	81 - 117 (LCL - UCL)	EPA-8260B			2
4-Bromofluorobenzene (Surrogate)	105	%	74 - 121 (LCL - UCL)	EPA-8260B			1
4-Bromofluorobenzene (Surrogate)	93.9	%	74 - 121 (LCL - UCL)	EPA-8260B			2

Run #	Method	Prep Date	Run Date/Time	Analyst	Instrument	Dilution	QC Batch ID
1	EPA-8260B	03/20/13	03/21/13 16:33	ADC	MS-V2	0.794	BWC1344
2	EPA-8260B	03/20/13	03/21/13 03:10	ADC	MS-V2	21.600	BWC1344

AECOM
1220 Avenida Acaso
Camarillo, CA 93012

Reported: 04/03/2013 14:40
Project: 1156
Project Number: 351645
Project Manager: Brenda Evans

Purgeable Aromatics and Total Petroleum Hydrocarbons

BCL Sample ID: 1305573-10 | **Client Sample Name:** 1156, MW-11B-S-Y-10.0-130319, 3/19/2013 8:40:00AM

Constituent	Result	Units	PQL	Method	MB Bias	Lab Quals	Run #
TPH - C8 - C9	ND	mg/kg	1.0	EPA-8015CC	ND		1
TPH - C10 - C11	ND	mg/kg	1.0	EPA-8015CC	ND		1
TPH - C12 - C14	ND	mg/kg	1.0	EPA-8015CC	ND		1
TPH - C15 - C16	ND	mg/kg	1.0	EPA-8015CC	ND		1
TPH - C17 - C18	ND	mg/kg	1.0	EPA-8015CC	ND		1
TPH - C19 - C20	ND	mg/kg	1.0	EPA-8015CC	ND		1
TPH - C21 - C22	ND	mg/kg	1.0	EPA-8015CC	ND		1
TPH - C23 - C28	ND	mg/kg	1.0	EPA-8015CC	ND		1
TPH - C29 - C32	ND	mg/kg	1.0	EPA-8015CC	ND		1
TPH - C33 - C36	ND	mg/kg	1.0	EPA-8015CC	ND		1
TPH - C37 - C40	ND	mg/kg	1.0	EPA-8015CC	ND		1
TPH - C41 - C43	ND	mg/kg	1.0	EPA-8015CC	ND		1
TPH - C44 plus	ND	mg/kg	1.0	EPA-8015CC	ND		1
TPH (Total)	ND	mg/kg	10	EPA-8015CC	ND		1
Tetracosane (Surrogate)	48.3	%	20 - 145 (LCL - UCL)	EPA-8015CC			1

Run #	Method	Prep Date	Run Date/Time	Analyst	Instrument	Dilution	QC Batch ID
1	EPA-8015CC	03/23/13	04/01/13 19:17	MWB	GC-2	0.984	BWD0114

AECOM
1220 Avenida Acaso
Camarillo, CA 93012

Reported: 04/03/2013 14:40
Project: 1156
Project Number: 351645
Project Manager: Brenda Evans

Volatile Organic Analysis (EPA Method 8260/5035)

BCL Sample ID: 1305573-11 | **Client Sample Name:** 1156, MW-11B-S-N-14.0-130319, 3/19/2013 8:50:00AM

Constituent	Result	Units	PQL	Method	MB Bias	Lab Quals	Run #
Benzene	**0.89**	**mg/kg**	**0.10**	**EPA-8260B**	ND	**A01**	1
Ethylbenzene	**0.17**	**mg/kg**	**0.0050**	**EPA-8260B**	ND		2
Methyl t-butyl ether	**0.19**	**mg/kg**	**0.0050**	**EPA-8260B**	ND		2
Toluene	**0.13**	**mg/kg**	**0.0050**	**EPA-8260B**	ND		2
Total Xylenes	**0.71**	**mg/kg**	**0.0099**	**EPA-8260B**	ND		2
t-Amyl Methyl ether	ND	mg/kg	0.0050	EPA-8260B	ND		2
t-Butyl alcohol	**0.59**	**mg/kg**	**0.050**	**EPA-8260B**	ND		2
Diisopropyl ether	ND	mg/kg	0.0050	EPA-8260B	ND		2
Ethanol	ND	mg/kg	0.99	EPA-8260B	ND		2
Ethyl t-butyl ether	ND	mg/kg	0.0050	EPA-8260B	ND		2
Total Purgeable Petroleum Hydrocarbons	**13**	**mg/kg**	**4.1**	**Luft-GC/MS**	ND	**A01**	1
1,2-Dichloroethane-d4 (Surrogate)	102	%	70 - 121 (LCL - UCL)	EPA-8260B			1
1,2-Dichloroethane-d4 (Surrogate)	102	%	70 - 121 (LCL - UCL)	EPA-8260B			2
Toluene-d8 (Surrogate)	98.8	%	81 - 117 (LCL - UCL)	EPA-8260B			1
Toluene-d8 (Surrogate)	103	%	81 - 117 (LCL - UCL)	EPA-8260B			2
4-Bromofluorobenzene (Surrogate)	101	%	74 - 121 (LCL - UCL)	EPA-8260B			1
4-Bromofluorobenzene (Surrogate)	99.9	%	74 - 121 (LCL - UCL)	EPA-8260B			2

Run #	Method	Prep Date	Run Date/Time	Analyst	Instrument	Dilution	QC Batch ID
1	EPA-8260B	03/20/13	03/21/13 03:36	ADC	MS-V2	20.700	BWC1344
2	EPA-8260B	03/20/13	03/21/13 17:00	ADC	MS-V2	0.990	BWC1344

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1220 Avenida Acaso
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Reported: 04/03/2013 14:40
Project: 1156
Project Number: 351645
Project Manager: Brenda Evans

Purgeable Aromatics and Total Petroleum Hydrocarbons

BCL Sample ID: 1305573-11 | **Client Sample Name:** 1156, MW-11B-S-N-14.0-130319, 3/19/2013 8:50:00AM

Constituent	Result	Units	PQL	Method	MB Bias	Lab Quals	Run #
TPH - C8 - C9	ND	mg/kg	1.0	EPA-8015CC	ND		1
TPH - C10 - C11	ND	mg/kg	1.0	EPA-8015CC	ND		1
TPH - C12 - C14	ND	mg/kg	1.0	EPA-8015CC	ND		1
TPH - C15 - C16	ND	mg/kg	1.0	EPA-8015CC	ND		1
TPH - C17 - C18	ND	mg/kg	1.0	EPA-8015CC	ND		1
TPH - C19 - C20	ND	mg/kg	1.0	EPA-8015CC	ND		1
TPH - C21 - C22	ND	mg/kg	1.0	EPA-8015CC	ND		1
TPH - C23 - C28	ND	mg/kg	1.0	EPA-8015CC	ND		1
TPH - C29 - C32	ND	mg/kg	1.0	EPA-8015CC	ND		1
TPH - C33 - C36	ND	mg/kg	1.0	EPA-8015CC	ND		1
TPH - C37 - C40	ND	mg/kg	1.0	EPA-8015CC	ND		1
TPH - C41 - C43	ND	mg/kg	1.0	EPA-8015CC	ND		1
TPH - C44 plus	ND	mg/kg	1.0	EPA-8015CC	ND		1
TPH (Total)	ND	mg/kg	10	EPA-8015CC	ND		1
Tetracosane (Surrogate)	40.1	%	20 - 145 (LCL - UCL)	EPA-8015CC			1

Run #	Method	Prep Date	Run Date/Time	Analyst	Instrument	Dilution	QC Batch ID
1	EPA-8015CC	03/23/13	04/01/13 19:40	MWB	GC-2	1	BWD0114

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Reported: 04/03/2013 14:40
Project: 1156
Project Number: 351645
Project Manager: Brenda Evans

Volatile Organic Analysis (EPA Method 8260/5035)

BCL Sample ID: 1305573-12 | **Client Sample Name:** 1156, MW-11B-S-N-19.0-130319, 3/19/2013 9:00:00AM

Constituent	Result	Units	PQL	Method	MB Bias	Lab Quals	Run #
Benzene	ND	mg/kg	0.0043	EPA-8260B	ND		1
Ethylbenzene	ND	mg/kg	0.0043	EPA-8260B	ND		1
Methyl t-butyl ether	**7.9**	**mg/kg**	**0.0043**	**EPA-8260B**	ND		1
Toluene	ND	mg/kg	0.0043	EPA-8260B	ND		1
Total Xylenes	ND	mg/kg	0.0087	EPA-8260B	ND		1
t-Amyl Methyl ether	ND	mg/kg	0.0043	EPA-8260B	ND		1
t-Butyl alcohol	ND	mg/kg	0.043	EPA-8260B	ND		1
Diisopropyl ether	ND	mg/kg	0.0043	EPA-8260B	ND		1
Ethanol	ND	mg/kg	0.87	EPA-8260B	ND		1
Ethyl t-butyl ether	ND	mg/kg	0.0043	EPA-8260B	ND		1
Total Purgeable Petroleum Hydrocarbons	**0.23**	**mg/kg**	**0.17**	**Luft-GC/MS**	ND		1
1,2-Dichloroethane-d4 (Surrogate)	106	%	70 - 121 (LCL - UCL)	EPA-8260B			1
Toluene-d8 (Surrogate)	97.9	%	81 - 117 (LCL - UCL)	EPA-8260B			1
4-Bromofluorobenzene (Surrogate)	93.2	%	74 - 121 (LCL - UCL)	EPA-8260B			1

Run #	Method	Prep Date	Run Date/Time	Analyst	Instrument	Dilution	QC Batch ID
1	EPA-8260B	03/20/13	03/20/13 16:35	ADC	MS-V2	0.868	BWC1344

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Reported: 04/03/2013 14:40
Project: 1156
Project Number: 351645
Project Manager: Brenda Evans

Purgeable Aromatics and Total Petroleum Hydrocarbons

BCL Sample ID: 1305573-12 | **Client Sample Name:** 1156, MW-11B-S-N-19.0-130319, 3/19/2013 9:00:00AM

Constituent	Result	Units	PQL	Method	MB Bias	Lab Quals	Run #
TPH - C8 - C9	ND	mg/kg	1.0	EPA-8015CC	ND		1
TPH - C10 - C11	ND	mg/kg	1.0	EPA-8015CC	ND		1
TPH - C12 - C14	ND	mg/kg	1.0	EPA-8015CC	ND		1
TPH - C15 - C16	ND	mg/kg	1.0	EPA-8015CC	ND		1
TPH - C17 - C18	ND	mg/kg	1.0	EPA-8015CC	ND		1
TPH - C19 - C20	ND	mg/kg	1.0	EPA-8015CC	ND		1
TPH - C21 - C22	ND	mg/kg	1.0	EPA-8015CC	ND		1
TPH - C23 - C28	ND	mg/kg	1.0	EPA-8015CC	ND		1
TPH - C29 - C32	ND	mg/kg	1.0	EPA-8015CC	ND		1
TPH - C33 - C36	ND	mg/kg	1.0	EPA-8015CC	ND		1
TPH - C37 - C40	ND	mg/kg	1.0	EPA-8015CC	ND		1
TPH - C41 - C43	ND	mg/kg	1.0	EPA-8015CC	ND		1
TPH - C44 plus	ND	mg/kg	1.0	EPA-8015CC	ND		1
TPH (Total)	ND	mg/kg	10	EPA-8015CC	ND		1
Tetracosane (Surrogate)	43.1	%	20 - 145 (LCL - UCL)	EPA-8015CC			1

Run #	Method	Prep Date	Run Date/Time	Analyst	Instrument	Dilution	QC Batch ID
1	EPA-8015CC	03/23/13	04/01/13 20:05	MWB	GC-2	0.990	BWD0114

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1220 Avenida Acaso
Camarillo, CA 93012

Reported: 04/03/2013 14:40
Project: 1156
Project Number: 351645
Project Manager: Brenda Evans

Volatile Organic Analysis (EPA Method 8260/5035)

Quality Control Report - Method Blank Analysis

Constituent	QC Sample ID	MB Result	Units	PQL	MDL	Lab Quals
QC Batch ID: BWC1077						
Benzene	BWC1077-BLK1	ND	mg/kg	0.0050		
Ethylbenzene	BWC1077-BLK1	ND	mg/kg	0.0050		
Methyl t-butyl ether	BWC1077-BLK1	ND	mg/kg	0.0050		
Toluene	BWC1077-BLK1	ND	mg/kg	0.0050		
Total Xylenes	BWC1077-BLK1	ND	mg/kg	0.010		
t-Amyl Methyl ether	BWC1077-BLK1	ND	mg/kg	0.0050		
t-Butyl alcohol	BWC1077-BLK1	ND	mg/kg	0.050		
Diisopropyl ether	BWC1077-BLK1	ND	mg/kg	0.0050		
Ethanol	BWC1077-BLK1	ND	mg/kg	1.0		
Ethyl t-butyl ether	BWC1077-BLK1	ND	mg/kg	0.0050		
Total Purgeable Petroleum Hydrocarbons	BWC1077-BLK1	ND	mg/kg	0.20		
1,2-Dichloroethane-d4 (Surrogate)	BWC1077-BLK1	99.9	%	70 - 121 (LCL - UCL)		
Toluene-d8 (Surrogate)	BWC1077-BLK1	97.6	%	81 - 117 (LCL - UCL)		
4-Bromofluorobenzene (Surrogate)	BWC1077-BLK1	96.8	%	74 - 121 (LCL - UCL)		
QC Batch ID: BWC1344						
Benzene	BWC1344-BLK1	ND	mg/kg	0.0050		
Ethylbenzene	BWC1344-BLK1	ND	mg/kg	0.0050		
Methyl t-butyl ether	BWC1344-BLK1	ND	mg/kg	0.0050		
Toluene	BWC1344-BLK1	ND	mg/kg	0.0050		
Total Xylenes	BWC1344-BLK1	ND	mg/kg	0.010		
t-Amyl Methyl ether	BWC1344-BLK1	ND	mg/kg	0.0050		
t-Butyl alcohol	BWC1344-BLK1	ND	mg/kg	0.050		
Diisopropyl ether	BWC1344-BLK1	ND	mg/kg	0.0050		
Ethanol	BWC1344-BLK1	ND	mg/kg	1.0		
Ethyl t-butyl ether	BWC1344-BLK1	ND	mg/kg	0.0050		
Total Purgeable Petroleum Hydrocarbons	BWC1344-BLK1	ND	mg/kg	0.20		
1,2-Dichloroethane-d4 (Surrogate)	BWC1344-BLK1	97.4	%	70 - 121 (LCL - UCL)		
Toluene-d8 (Surrogate)	BWC1344-BLK1	101	%	81 - 117 (LCL - UCL)		
4-Bromofluorobenzene (Surrogate)	BWC1344-BLK1	97.2	%	74 - 121 (LCL - UCL)		

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Camarillo, CA 93012

Reported: 04/03/2013 14:40
Project: 1156
Project Number: 351645
Project Manager: Brenda Evans

Volatile Organic Analysis (EPA Method 8260/5035)

Quality Control Report - Laboratory Control Sample

Constituent	QC Sample ID	Type	Result	Spike Level	Units	Percent Recovery	RPD	Control Limits Percent Recovery	Control Limits RPD	Lab Quals
QC Batch ID: BWC1077										
Benzene	BWC1077-BS1	LCS	0.11936	0.12500	mg/kg	95.5		70 - 130		
Toluene	BWC1077-BS1	LCS	0.12377	0.12500	mg/kg	99.0		70 - 130		
1,2-Dichloroethane-d4 (Surrogate)	BWC1077-BS1	LCS	0.048200	0.050000	mg/kg	96.4		70 - 121		
Toluene-d8 (Surrogate)	BWC1077-BS1	LCS	0.048450	0.050000	mg/kg	96.9		81 - 117		
4-Bromofluorobenzene (Surrogate)	BWC1077-BS1	LCS	0.049240	0.050000	mg/kg	98.5		74 - 121		
QC Batch ID: BWC1344										
Benzene	BWC1344-BS1	LCS	0.12231	0.12500	mg/kg	97.8		70 - 130		
Toluene	BWC1344-BS1	LCS	0.12536	0.12500	mg/kg	100		70 - 130		
1,2-Dichloroethane-d4 (Surrogate)	BWC1344-BS1	LCS	0.048160	0.050000	mg/kg	96.3		70 - 121		
Toluene-d8 (Surrogate)	BWC1344-BS1	LCS	0.049080	0.050000	mg/kg	98.2		81 - 117		
4-Bromofluorobenzene (Surrogate)	BWC1344-BS1	LCS	0.049680	0.050000	mg/kg	99.4		74 - 121		

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Reported: 04/03/2013 14:40
Project: 1156
Project Number: 351645
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Volatile Organic Analysis (EPA Method 8260/5035)

Quality Control Report - Precision & Accuracy

Constituent	Type	Source Sample ID	Source Result	Result	Spike Added	Units	RPD	Percent Recovery	Control Limits RPD	Control Limits Percent Recovery	Lab Quals
QC Batch ID: BWC1077	Used client sample: N										
Benzene	MS	1302378-89	ND	0.11697	0.12500	mg/kg		93.6		70 - 130	
	MSD	1302378-89	ND	0.11056	0.12500	mg/kg	5.6	88.4	20	70 - 130	
Toluene	MS	1302378-89	ND	0.12308	0.12500	mg/kg		98.5		70 - 130	
	MSD	1302378-89	ND	0.10585	0.12500	mg/kg	15.1	84.7	20	70 - 130	
1,2-Dichloroethane-d4 (Surrogate)	MS	1302378-89	ND	0.047760	0.050000	mg/kg		95.5		70 - 121	
	MSD	1302378-89	ND	0.049660	0.050000	mg/kg	3.9	99.3		70 - 121	
Toluene-d8 (Surrogate)	MS	1302378-89	ND	0.049440	0.050000	mg/kg		98.9		81 - 117	
	MSD	1302378-89	ND	0.048140	0.050000	mg/kg	2.7	96.3		81 - 117	
4-Bromofluorobenzene (Surrogate)	MS	1302378-89	ND	0.050740	0.050000	mg/kg		101		74 - 121	
	MSD	1302378-89	ND	0.049120	0.050000	mg/kg	3.2	98.2		74 - 121	
QC Batch ID: BWC1344	Used client sample: N										
Benzene	MS	1305402-11	ND	0.12642	0.12500	mg/kg		101		70 - 130	
	MSD	1305402-11	ND	0.12497	0.12500	mg/kg	1.2	100	20	70 - 130	
Toluene	MS	1305402-11	ND	0.12176	0.12500	mg/kg		97.4		70 - 130	
	MSD	1305402-11	ND	0.12894	0.12500	mg/kg	5.7	103	20	70 - 130	
1,2-Dichloroethane-d4 (Surrogate)	MS	1305402-11	ND	0.049190	0.050000	mg/kg		98.4		70 - 121	
	MSD	1305402-11	ND	0.047750	0.050000	mg/kg	3.0	95.5		70 - 121	
Toluene-d8 (Surrogate)	MS	1305402-11	ND	0.048640	0.050000	mg/kg		97.3		81 - 117	
	MSD	1305402-11	ND	0.049160	0.050000	mg/kg	1.1	98.3		81 - 117	
4-Bromofluorobenzene (Surrogate)	MS	1305402-11	ND	0.048700	0.050000	mg/kg		97.4		74 - 121	
	MSD	1305402-11	ND	0.048930	0.050000	mg/kg	0.5	97.9		74 - 121	

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Purgeable Aromatics and Total Petroleum Hydrocarbons

Quality Control Report - Method Blank Analysis

Constituent	QC Sample ID	MB Result	Units	PQL	MDL	Lab Quals
QC Batch ID: BWD0114						
TPH - C8 - C9	BWD0114-BLK1	ND	mg/kg	1.0		
TPH - C10 - C11	BWD0114-BLK1	ND	mg/kg	1.0		
TPH - C12 - C14	BWD0114-BLK1	ND	mg/kg	1.0		
TPH - C15 - C16	BWD0114-BLK1	ND	mg/kg	1.0		
TPH - C17 - C18	BWD0114-BLK1	ND	mg/kg	1.0		
TPH - C19 - C20	BWD0114-BLK1	ND	mg/kg	1.0		
TPH - C21 - C22	BWD0114-BLK1	ND	mg/kg	1.0		
TPH - C23 - C28	BWD0114-BLK1	ND	mg/kg	1.0		
TPH - C29 - C32	BWD0114-BLK1	ND	mg/kg	1.0		
TPH - C33 - C36	BWD0114-BLK1	ND	mg/kg	1.0		
TPH - C37 - C40	BWD0114-BLK1	ND	mg/kg	1.0		
TPH - C41 - C43	BWD0114-BLK1	ND	mg/kg	1.0		
TPH - C44 plus	BWD0114-BLK1	ND	mg/kg	1.0		
TPH (Total)	BWD0114-BLK1	ND	mg/kg	10		
TPH - Diesel (FFP)	BWD0114-BLK1	ND	mg/kg	10		
Tetracosane (Surrogate)	BWD0114-BLK1	51.5	%	20 - 145 (LCL - UCL)		

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Reported: 04/03/2013 14:40
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Purgeable Aromatics and Total Petroleum Hydrocarbons

Quality Control Report - Laboratory Control Sample

Constituent	QC Sample ID	Type	Result	Spike Level	Units	Percent Recovery	RPD	Control Limits Percent Recovery	Control Limits RPD	Lab Quals
QC Batch ID: BWD0114										
TPH - Diesel (FFP)	BWD0114-BS1	LCS	67.222	81.967	mg/kg	82.0		64 - 124		
Tetracosane (Surrogate)	BWD0114-BS1	LCS	2.6620	4.9180	mg/kg	54.1		20 - 145		

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Reported: 04/03/2013 14:40
Project: 1156
Project Number: 351645
Project Manager: Brenda Evans

Purgeable Aromatics and Total Petroleum Hydrocarbons

Quality Control Report - Precision & Accuracy

Constituent	Type	Source Sample ID	Source Result	Result	Spike Added	Units	RPD	Percent Recovery	Control Limits RPD	Control Limits Percent Recovery	Lab Quals
QC Batch ID: BWD0114	Used client sample: Y - Description: MW-9A-S-N-14.0-130319, 03/19/2013 15:20										
TPH - Diesel (FFP)	MS	1305573-07	ND	42.583	83.893	mg/kg		50.8		52 - 131	Q03
	MSD	1305573-07	ND	39.837	82.237	mg/kg	6.7	48.4	30	52 - 131	Q03
Tetracosane (Surrogate)	MS	1305573-07	ND	1.8475	5.0336	mg/kg		36.7		20 - 145	
	MSD	1305573-07	ND	1.6967	4.9342	mg/kg	8.5	34.4		20 - 145	

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Reported: 04/03/2013 14:40
Project: 1156
Project Number: 351645
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Notes And Definitions

MDL	Method Detection Limit
ND	Analyte Not Detected at or above the reporting limit
PQL	Practical Quantitation Limit
RPD	Relative Percent Difference
A01	PQL's and MDL's are raised due to sample dilution.
A19	Surrogate is high due to matrix interference. Interferences verified through second extraction/analysis.
Q03	Matrix spike recovery(s) is(are) not within the control limits.
S09	The surrogate recovery on the sample for this compound was not within the control limits.

APPENDIX C

Well Survey Map

Monitoring Well Exhibit

Prepared For:

AECOM

BASIS OF COORDINATES:

COORDINATES ARE CALIFORNIA STATE PLANE ZONE 3 COORDINATES FROM GPS OBSERVATIONS USING UNIVERSITY OF CALIFORNIA BAY AREA DEFORMATION CORS STATION OBSERVATION FILES AND BASED ON THE CALIFORNIA SPATIAL REFERENCE CENTER DATUM, REFERENCE EPOCH 2000.35.
COORDINATE DATUM IS NAD 83(CORS)
DATUM ELLIPSOID IS GRS80
REFERENCE GEOID IS GEOID99
VERTICAL DATUM IS NAVD 88 FROM GPS OBSERVATIONS

CORS STATION USED WAS DIAB AND MOLA.

*Note: MW-1, 2, 3, 4, 6, and 8 have been abandoned. MW-1, 2, 3, and 4 have been replaced by MW-1B, 2B, 3B, and 4B as of 8-24-10. MAM

DESC.	NORTHING	EASTING	LATITUDE	LONGITUDE	EL. PVC	EL. BOX
WELLS SURVEYED FOR DELTA IN 2008 AND 2010:						
MW-1B	2113738.0	6071926.4	37.7877602	-122.1948610	174.05	174.58
MW-2B	2113664.1	6071936.3	37.7875576	-122.1948223	173.55	173.99
MW-3B	2113663.2	6071981.6	37.7875574	-122.1946655	177.77	178.37
MW-4B	2113717.2	6072001.6	37.7877067	-122.1945995	179.07	179.42
MW-5	2113753.6	6071855.6	37.7877993	-122.1951072	169.18	169.67
MW-7	2113629.1	6071886.3	37.7874591	-122.1949929	172.11	172.39
SVW-1	2113782.1	6071992.4	37.7878845	-122.1946353		
SVW-2	2113773.4	6071978.4	37.7878600	-122.1946833		
SVW-3	2113746.7	6071936.0	37.7877844	-122.1948285		
SVW-4	2113719.2	6071903.5	37.7877075	-122.1949393		
SVW-5	2113764.2	6071964.7	37.7878341	-122.1947304		
SVW-6	2113726.5	6071944.4	37.7877295	-122.1947980		
WELLS SURVEYED FOR AECOM ON 4-8-13:						
MW-9A	2113731.9	6071911.0	37.7877426	-122.1949142	173.01	173.36
MW-9B	2113729.2	6071907.6	37.7877351	-122.1949255	172.78	173.12
MW-10A	2113744.1	6071930.5	37.7877770	-122.1948474	174.48	174.85
MW-10B	2113748.1	6071932.9	37.7877881	-122.1948392	174.62	174.98
MW-11A	2113649.2	6071956.5	37.7875179	-122.1947515	175.37	175.85
MW-11B	2113643.1	6071952.9	37.7875008	-122.1947635	174.65	175.37
SV-1	2113771.8	6071956.9	37.7878544	-122.1947577		175.71
SV-2	2113761.8	6071941.0	37.7878262	-122.1948120		175.85

76 Service Station # 1156
4276 MacArthur Blvd.
Oakland
Alameda County
California

Morrow Surveying
LAND SURVEYORS
1255 Starboard Drive
West Sacramento
California 95691
(916) 372-8124
mark@morrowsurveying.com

Date: April, 2013
Field: 4-8-13 RL
Scale: 1" = 30'
Revised:
Field Book: 1152
Dwg. 1856-046 MAM
Reference Dwg. 1275-106 MAM

APPENDIX D

Well Development Logs and Standard Operating Procedures

GETTLER-RYAN INC.

TRANSMITTAL

April 16, 2013
G-R #385646

TO: Ms. Brenda Evans
AECOM
1220 Avenida Acaso
Camarillo, California 93012

FROM: Deanna L. Harding
Project Coordinator
Gettler-Ryan Inc.
6747 Sierra Court, Suite J
Dublin, California 94568

RE: Chevron Facility
#351645/1156
4276 Mac Arthur Boulevard
Oakland, California

WE HAVE ENCLOSED THE FOLLOWING:

COPIES	DESCRIPTION
VIA PDF	Groundwater Monitoring and Sampling Data Package **Well Development Event of April 11, 2013**

COMMENTS:

Pursuant to your request, we are providing you with copies of the above referenced data for your use.

Please provide us the updated historical data prior to the next monitoring and sampling event for our field use.

Please feel free to contact me if you have any comments/questions.

trans/351645/1156

WELL CONDITION STATUS SHEET

Client/
Facility #: **Chevron #351645 / 1156**

Site Address: **4276 Macarthur Blvd.**

City: **Oakland, CA**

Job #: **385646**

Event Date: 4/11/13

Sampler: G. MEDINA

WELL ID	Vault Frame Condition	Gasket/ O-Ring (M) Missing (R) Replaced	Bolts (M) Missing (R) Replaced	Bolt Flanges B=Broken S=Stripped R=Retap	Apron Condition C=Cracked B=Broken G=Gone	Grout Seal (Deficient) Inches from TOC	Casing (Condition prevents tight cap seal)	REPLACE LOCK Y/N	REPLACE CAP Y/N	WELL VAULT Manufacture/Size/ # of Bolts	Pictures Taken Y/N
MW-9A	OK							Y	N	EMCO / 8 / 2	N
MW-9B	OK										
MW-10A	OK										
MW-10B	OK										
MW-11A	OK										
MW-11B	OK										

Comments

GETTLER-RYAN INC.

WELL MONITORING/DEVELOPMENT FIELD DATA SHEET

Client/Facility#: **Chevron #351645 / 1156** Job Number: **385646**

Site Address: **4276 Macarthur Blvd.** Event Date: 4/11/13 (inclusive)

City: **Oakland, CA** Sampler: GM

Well ID **MW-9A** Date Monitored: 4/11/13

Well Diameter **2** in.

Initial Total Depth 15.11 ft.

Final Total Depth 15.11 ft.

Depth to Water 5.90 ft. ☐ Check if water column is less then 0.50 ft.

Volume Factor (VF)	3/4"= 0.02	1"= 0.04	2"= 0.17	3"= 0.38
	4"= 0.66	5"= 1.02	6"= 1.50	12"= 5.80

9.21 xVF 0.17 = 1.56 x10 case volume = Estimated Purge Volume: 16 gal.

Depth to Water w/ 80% Recharge [(Height of Water Column x 0.20) + DTW]: _____

Purge Equipment:

- Disposable Bailer: _____
- Stainless Steel Bailer: ✓
- Stack Pump: ✓
- Suction Pump: _____
- Grundfos: _____
- Peristaltic Pump: _____
- QED Bladder Pump: _____
- Other: _____

Sampling Equipment:

- Disposable Bailer: ✓
- Pressure Bailer: _____
- Metal Filters: _____
- Peristaltic Pump: _____
- QED Bladder Pump: _____
- Other: _____

Time Started: _____ (2400 hrs)
Time Completed: _____ (2400 hrs)
Depth to Product: _____ ft
Depth to Water: _____ ft
Hydrocarbon Thickness: _____ ft
Visual Confirmation/Description: _____
Skimmer / Absorbant Sock (circle one)
Amt Removed from Skimmer: _____ gal
Amt Removed from Well: _____ gal
Water Removed: _____

Start Time (purge): 0925 Weather Conditions: Sunny

Sample Time/Date: ____ Water Color: Brown Odor (Y) N SLIGHT

Approx. Flow Rate: 1 gpm. Sediment Description: SILT

Did well de-water? YES If yes, Time: 0935 Volume: 3 gal. DTW @ Sampling: NA

Time (2400 hr.)	Volume (gal.)	pH	Conductivity (µmhos/cm (µS))	Temperature (C / F)	D.O. (mg/L)	ORP (mV)
0930	2	7.42	1943	22.1		
1025	4	7.40	1916	21.5		
1040	5.5	7.44	1922	21.5		
1050	7	7.43	1926	21.4		
1059	8.5	7.43	1921	21.6		
1110	10	7.40	1909	21.6		
1122	11.5	7.47	1916	21.5		
1130	13	7.42	1911	21.4		
1137	14.5	7.42	1926	21.3		
1150	16	7.44	1920	21.2		

LABORATORY INFORMATION

SAMPLE ID	(#) CONTAINER	REFRIG.	PRESERV. TYPE	LABORATORY	ANALYSES

COMMENTS: **INITIAL CGI READING:** 0.0

DEVELOP ONLY SLOW RECOVERY

Add/Replaced Gasket: _____ Add/Replaced Bolt: _____ Add/Replaced Lock: _____ Add/Replaced Plug: _____

GETTLER-RYAN INC.

WELL MONITORING/DEVELOPMENT FIELD DATA SHEET

Client/Facility#: **Chevron #351645 / 1156** Job Number: **385646**

Site Address: **4276 Macarthur Blvd.** Event Date: 4/11/13 (inclusive)

City: **Oakland, CA** Sampler: GM

Well ID **MW-9B** Date Monitored: 4/11/13

Well Diameter **2** in.

Initial Total Depth 20.19 ft.

Final Total Depth 20.19 ft.

Depth to Water 5.29 ft. ☐ Check if water column is less then 0.50 ft.

Volume Factor (VF)	3/4"= 0.02	1"= 0.04	2"= 0.17	3"= 0.38
	4"= 0.66	5"= 1.02	6"= 1.50	12"= 5.80

14.90 xVF 0.17 = 2.53 x10 case volume = Estimated Purge Volume: 26 gal.

Depth to Water w/ 80% Recharge [(Height of Water Column x 0.20) + DTW]: _____

Purge Equipment:

Disposable Bailer	
Stainless Steel Bailer	✓
Stack Pump	✓
Suction Pump	
Grundfos	
Peristaltic Pump	
QED Bladder Pump	
Other:	

Sampling Equipment:

Disposable Bailer	
Pressure Bailer	
Metal Filters	
Peristaltic Pump	
QED Bladder Pump	
Other:	

Time Started: _____ (2400 hrs)
Time Completed: _____ (2400 hrs)
Depth to Product: _____ ft
Depth to Water: _____ ft
Hydrocarbon Thickness: 0 ft
Visual Confirmation/Description: _____
Skimmer / Absorbant Sock (circle one)
Amt Removed from Skimmer: _____ gal
Amt Removed from Well: _____ gal
Water Removed: _____

Start Time (purge): 0945 Weather Conditions: Sunny

Sample Time/Date: _____ Water Color: CLEAR Odor: (Y) N SLIGHT

Approx. Flow Rate: 2→1 gpm. Sediment Description: NONE (FINE SAND @ BEGINNING)

Did well de-water? NO If yes, Time: — Volume: — gal. DTW @ Sampling: NA

Time (2400 hr.)	Volume (gal.)	pH	Conductivity (µmhos/cm - µS)	Temperature (C / F)	D.O. (mg/L)	ORP (mV)
0950	3	7.57	912	20.5		
0955	6	7.43	792	20.3		
1000	8.5	7.36	790	20.3		
1001	11	7.30	785	20.2		
1002	13.5	7.27	790	20.2		
1004	16	7.25	945	20.1		
1007	18.5	7.23	810	20.0		
1010	21	7.23	797	20.0		
1012	23.5	7.21	790	20.0		
1015	26	7.20	791	19.9		

LABORATORY INFORMATION

SAMPLE ID	(#) CONTAINER	REFRIG.	PRESERV. TYPE	LABORATORY	ANALYSES

COMMENTS: INITIAL CGI READING: 0.0

DEVELOP ONLY SLO

Add/Replaced Gasket: _____ Add/Replaced Bolt: _____ Add/Replaced Lock: _____ Add/Replaced Plug: _____

GETTLER-RYAN INC.

WELL MONITORING/DEVELOPMENT FIELD DATA SHEET

Client/Facility#: **Chevron #351645 / 1156** Job Number: **385646**

Site Address: **4276 Macarthur Blvd.** Event Date: 4/11/13 (inclusive)

City: **Oakland, CA** Sampler: GM

Well ID **MW-10A** Date Monitored: 4/11/13

Well Diameter **2** in.

Initial Total Depth 14.48 ft.

Final Total Depth 14.50 ft.

Depth to Water 7.72 ft. ☐ Check if water column is less then 0.50 ft.

Volume Factor (VF)	3/4"= 0.02	1"= 0.04	2"= 0.17	3"= 0.38
	4"= 0.66	5"= 1.02	6"= 1.50	12"= 5.80

6.76 xVF 0.17 = 1.15 x10 case volume = Estimated Purge Volume: 12 gal.

Depth to Water w/ 80% Recharge [(Height of Water Column x 0.20) + DTW]: _____

Purge Equipment:

- Disposable Bailer: _____
- Stainless Steel Bailer: ✓
- Stack Pump: ✓
- Suction Pump: _____
- Grundfos: _____
- Peristaltic Pump: _____
- QED Bladder Pump: _____
- Other: _____

Sampling Equipment:

- Disposable Bailer: _____
- Pressure Bailer: _____
- Metal Filters: _____
- Peristaltic Pump: _____
- QED Bladder Pump: _____
- Other: _____

Time Started: _____ (2400 hrs)
Time Completed: _____ (2400 hrs)
Depth to Product: _____ ft
Depth to Water: _____ ft
Hydrocarbon Thickness: ~~0~~ ft
Visual Confirmation/Description: _____
Skimmer / Absorbant Sock (circle one)
Amt Removed from Skimmer: _____ gal
Amt Removed from Well: _____ gal
Water Removed: _____

Start Time (purge): 1210 Weather Conditions: SUNNY

Sample Time/Date: ~~1~~ Water Color: TAN Odor (Y) N SLIGHT

Approx. Flow Rate: 1 gpm. Sediment Description: SILT

Did well de-water? YES If yes, Time: 1230 Volume: 5.5 gal. DTW @ Sampling: _____

Time (2400 hr.)	Volume (gal.)	pH	Conductivity (µmhos/cm - (mS))	Temperature ((C) F)	D.O. (mg/L)	ORP (mV)
1215	2	7.60	1996	19.5		
1220	4	7.41	1990	19.0		
1225	5	7.45	1991	19.0		
1309	6	7.43	1985	19.1		
1314	7	7.43	1993	19.4		
1319	8	7.40	1990	19.1		
1325	9	7.42	1986	18.9		
1330	10	7.41	1990	18.9		
1337	11	7.40	1985	18.8		
1343	12	7.45	1987	18.9		

LABORATORY INFORMATION

SAMPLE ID	(#) CONTAINER	REFRIG.	PRESERV. TYPE	LABORATORY	ANALYSES

COMMENTS: **INITIAL CGI READING:** 0.0

DEVELOP ONLY SLOW RECOVERY

Add/Replaced Gasket: _____ Add/Replaced Bolt: _____ Add/Replaced Lock: _____ Add/Replaced Plug: _____

GETTLER-RYAN INC.

WELL MONITORING/DEVELOPMENT FIELD DATA SHEET

Client/Facility#: Chevron #351645 / 1156 Job Number: 385646
Site Address: 4276 Macarthur Blvd. Event Date: 4/11/13 (inclusive)
City: Oakland, CA Sampler: GM

Well ID MW-10B Date Monitored: 4/11/13
Well Diameter 2 in.
Initial Total Depth 19.25 ft.
Final Total Depth 19.25 ft.
Depth to Water 7.92 ft. ☐ Check if water column is less then 0.50 ft.

Volume Factor (VF)	3/4"= 0.02	1"= 0.04	2"= 0.17	3"= 0.38
	4"= 0.66	5"= 1.02	6"= 1.50	12"= 5.80

11.33 xVF 0.17 = 1.92 x10 case volume = Estimated Purge Volume: 20 gal.

Depth to Water w/ 80% Recharge [(Height of Water Column x 0.20) + DTW]: —

Purge Equipment:
Disposable Bailer
Stainless Steel Bailer ✓
Stack Pump ✓
Suction Pump
Grundfos
Peristaltic Pump
QED Bladder Pump
Other:

Sampling Equipment:
Disposable Bailer
Pressure Bailer
Metal Filters
Peristaltic Pump
QED Bladder Pump
Other:

Time Started: (2400 hrs)
Time Completed: (2400 hrs)
Depth to Product: ft
Depth to Water: ft
Hydrocarbon Thickness: 0 ft
Visual Confirmation/Description:
Skimmer / Absorbant Sock (circle one)
Amt Removed from Skimmer: gal
Amt Removed from Well: gal
Water Removed:

Start Time (purge): 1240 Weather Conditions: Sunny
Sample Time/Date: 1401 Water Color: TAN Odor: (Y) N SLIGHT
Approx. Flow Rate: 2-71 gpm. Sediment Description: SILT
Did well de-water? YES If yes, Time: 1302 Volume: 11 gal. DTW @ Sampling: NA

Time (2400 hr.)	Volume (gal.)	pH	Conductivity (µmhos/cm - µS)	Temperature (C) F)	D.O. (mg/L)	ORP (mV)
1245	2	7.07	1140	20.0		
1250	4	7.03	1016	19.9		
1255	6	7.02	990	19.7		
1256	8	7.05	999	19.5		
1258	10	7.10	1026	19.4		
1355	12	7.01	1016	19.6		
1357	14	7.04	1002	19.6		
1400	16	7.08	980	19.5		
1402	18	7.06	996	19.1		
1404	20	7.06	990	19.3		

LABORATORY INFORMATION

SAMPLE ID	(#) CONTAINER	REFRIG.	PRESERV. TYPE	LABORATORY	ANALYSES

COMMENTS: INITIAL CGI READING: 0.0
DEVELOP ONLY Slow Recovery

Add/Replaced Gasket: _____ Add/Replaced Bolt: _____ Add/Replaced Lock: _____ Add/Replaced Plug: _____

GETTLER-RYAN INC.

WELL MONITORING/DEVELOPMENT FIELD DATA SHEET

Client/Facility#: **Chevron #351645 / 1156** Job Number: **385646**

Site Address: **4276 Macarthur Blvd.** Event Date: 4/11/13 (inclusive)

City: **Oakland, CA** Sampler: GM

Well ID **MW-11A** Date Monitored: 4/11/13

Well Diameter **2** in.

Initial Total Depth 14.99 ft.

Final Total Depth 15.00 ft.

Depth to Water 3.80 ft. ☐ Check if water column is less then 0.50 ft.

Volume Factor (VF)	3/4"= 0.02	1"= 0.04	2"= 0.17	3"= 0.38
	4"= 0.66	5"= 1.02	6"= 1.50	12"= 5.80

11.19 xVF 0.17 = 1.90 x10 case volume = Estimated Purge Volume: 20 gal.

Depth to Water w/ 80% Recharge [(Height of Water Column x 0.20) + DTW]: 6.03

Purge Equipment:

Disposable Bailer	
Stainless Steel Bailer	✓
Stack Pump	✓
Suction Pump	
Grundfos	
Peristaltic Pump	
QED Bladder Pump	
Other:	

Sampling Equipment:

Disposable Bailer	
Pressure Bailer	
Metal Filters	
Peristaltic Pump	
QED Bladder Pump	
Other:	

Time Started: _____ (2400 hrs)
Time Completed: _____ (2400 hrs)
Depth to Product: _____ ft
Depth to Water: _____ ft
Hydrocarbon Thickness: @ ft
Visual Confirmation/Description: _____
Skimmer / Absorbant Sock (circle one)
Amt Removed from Skimmer: _____ gal
Amt Removed from Well: _____ gal
Water Removed: _____

Start Time (purge): 1420 Weather Conditions: SUNNY

Sample Time/Date: — Water Color: TAN Odor: (Y) N SLIGHT

Approx. Flow Rate: 2 → 1 gpm. Sediment Description: SILT

Did well de-water? Yes If yes, Time: 1448 Volume: 7.5 gal. DTW @ Sampling: NA

Time (2400 hr.)	Volume (gal.)	pH	Conductivity (µmhos/cm - uS)	Temperature (C / F)	D.O. (mg/L)	ORP (mV)
1425	2	7.29	1980	20.1		
1430	4	7.32	1971	19.6		
1435	6	7.30	1974	19.6		
1450	8	7.25	1972	19.4		
1457	10	7.28	1979	19.3		
1504	12	7.29	1981	19.5		
1515	14	7.27	1977	19.2		
1523	16	7.38	1975	19.2		
1531	18	7.31	1978	19.4		
1539	20	7.30	1979	19.4		

LABORATORY INFORMATION

SAMPLE ID	(#) CONTAINER	REFRIG.	PRESERV. TYPE	LABORATORY	ANALYSES

COMMENTS: INITIAL CGI READING: 0.0

DEVELOP ONLY Slow Recovery

Add/Replaced Gasket: _____ Add/Replaced Bolt: _____ Add/Replaced Lock: _____ Add/Replaced Plug: _____

GETTLER-RYAN INC.

WELL MONITORING/DEVELOPMENT FIELD DATA SHEET

Client/Facility#: **Chevron #351645 / 1156** Job Number: **385646**

Site Address: **4276 Macarthur Blvd.** Event Date: 4/11/13 (inclusive)

City: **Oakland, CA** Sampler: GM

Well ID **MW-11B** Date Monitored: 4/11/13

Well Diameter **2** in.

Initial Total Depth 20.21 ft.

Final Total Depth 20.21 ft.

Depth to Water 4.03 ft. ☐ Check if water column is less then 0.50 ft.

16.18 xVF 0.17 = 2.75 x10 case volume = Estimated Purge Volume: 28 gal.

Volume Factor (VF)	3/4"= 0.02	1"= 0.04	2"= 0.17	3"= 0.38
	4"= 0.66	5"= 1.02	6"= 1.50	12"= 5.80

Depth to Water w/ 80% Recharge [(Height of Water Column x 0.20) + DTW]: 7.26

Purge Equipment:

- Disposable Bailer
- Stainless Steel Bailer ✓
- Stack Pump ✓
- Suction Pump
- Grundfos
- Peristaltic Pump
- QED Bladder Pump
- Other:

Sampling Equipment:

- Disposable Bailer
- Pressure Bailer
- Metal Filters
- Peristaltic Pump
- QED Bladder Pump
- Other:

Time Started: (2400 hrs)

Time Completed: (2400 hrs)

Depth to Product: ft

Depth to Water: ft

Hydrocarbon Thickness: 0 ft

Visual Confirmation/Description:

Skimmer / Absorbant Sock (circle one)

Amt Removed from Skimmer: gal

Amt Removed from Well: gal

Water Removed:

Start Time (purge): 1550 Weather Conditions: SUNNY

Sample Time/Date: Water Color: TAN Odor: (Y) N SLIGHT

Approx. Flow Rate: 2 → 1 gpm. Sediment Description: SILT

Did well de-water? Yes If yes, Time: 1607 Volume: 8 gal. DTW @ Sampling: N/A

Time (2400 hr.)	Volume (gal.)	pH	Conductivity (µmhos/cm - (µS))	Temperature (C / F)	D.O. (mg/L)	ORP (mV)
1555	3	7.43	1884	19.5		
1602	6	7.42	1880	19.4		
1607	9	7.40	1760	19.0		
1617	12	7.33	1784	18.6		
1627	15	7.33	1776	18.6		
1637	18	7.36	1786	18.6		
1647	21	7.35	1781	18.9		
1657	24	7.30	1779	18.9		
1706	26	7.31	1773	19.0		
1720	28	7.31	1776	18.9		

LABORATORY INFORMATION

SAMPLE ID	(#) CONTAINER	REFRIG.	PRESERV. TYPE	LABORATORY	ANALYSES

COMMENTS: **INITIAL CGI READING:** 0.0

DEVELOP ONLY SLOW RECOVER

Add/Replaced Gasket: _____ Add/Replaced Bolt: _____ Add/Replaced Lock: _____ Add/Replaced Plug: _____

STANDARD OPERATING PROCEDURE –WELL DEVELOPMENT
GROUNDWATER SAMPLING

Gettler-Ryan Inc. (GR) field personnel adhere to the following procedures for the collection and handling of groundwater samples prior to analysis by the analytical laboratory. All work is performed in accordance with the GR Health & Safety Plan and all client-specific programs. The scope of work and type of analysis to be performed is determined prior to commencing field work.

Prior to well development, each well is monitored for the presence of free-phase hydrocarbons and the depth to water is recorded. Wells are then developed by alternately surging the well with the bailer, then purging the well with a pump to remove accumulated sediments and draw groundwater into the well. Development continues until the groundwater parameters (temperature, pH, and conductivity) have stabilized.

Prior to sampling, the presence or absence of free-phase hydrocarbons is determined using an interface probe. Product thickness, if present, is measured to the nearest 0.01 foot and is noted in the field notes. In addition, all depth to water level measurements are collected with a static water level indicator and are also recorded in the field notes, prior to purging and sampling any wells.

After water levels are collected and prior to sampling, if purging is to occur, each well is purged a minimum of three well casing volumes of water using pre-cleaned pumps (stack, peristaltic or Grundfos), or disposable bailers. Temperature, pH and electrical conductivity are measured a minimum of three times during the purging (additional parameters such as dissolved oxygen, oxidation reduction potential, turbidity may also be measured, depending on specific scope of work.). Purging continues until these parameters stabilize.

Groundwater samples are collected using disposable bailers. The water samples are transferred from the bailer into appropriate containers. Pre-preserved containers, supplied by analytical laboratories, are used. When pre-preserved containers are not available, the laboratory is instructed to preserve the sample as appropriate. Duplicate samples are collected for the laboratory to use in maintaining quality assurance/quality control standards, as directed by the scope of work. The samples are labeled to include the job number, sample identification, collection date and time, analysis, preservation (if any), and the sample collector's initials. The water samples are placed in a cooler, maintained at 4°C for transport to the laboratory. Once collected in the field, all samples are maintained under chain of custody until delivered to the laboratory.

The chain of custody document includes the job number, type of preservation, if any, analysis requested, sample identification, date and time collected, and the sample collector's name. The chain of custody is signed and dated (including time of transfer) by each person who receives or surrenders the samples, beginning with the field personnel and ending with the laboratory personnel.

A laboratory supplied trip blank accompanies each sampling set. The trip blank is analyzed for some or all of the same compounds as the groundwater samples.

As requested by Chevron Environmental Management Company, the purge water and decontamination water generated during sampling activities is transported by Clean Harbors Environmental Services to Evergreen Oil located in Newark, California.

APPENDIX E

“Unknown Vault” (Sewer Cleanout) Photographs

PHOTOGRAPH LOG

Site Name:	Site Location:	Project No.
Former Unocal # 1156	4276 MacArthur Boulevard, Oakland California	60287515

Photo No.	Date:
1	02/25/13

Direction Photo Taken:

Southwest

Description:

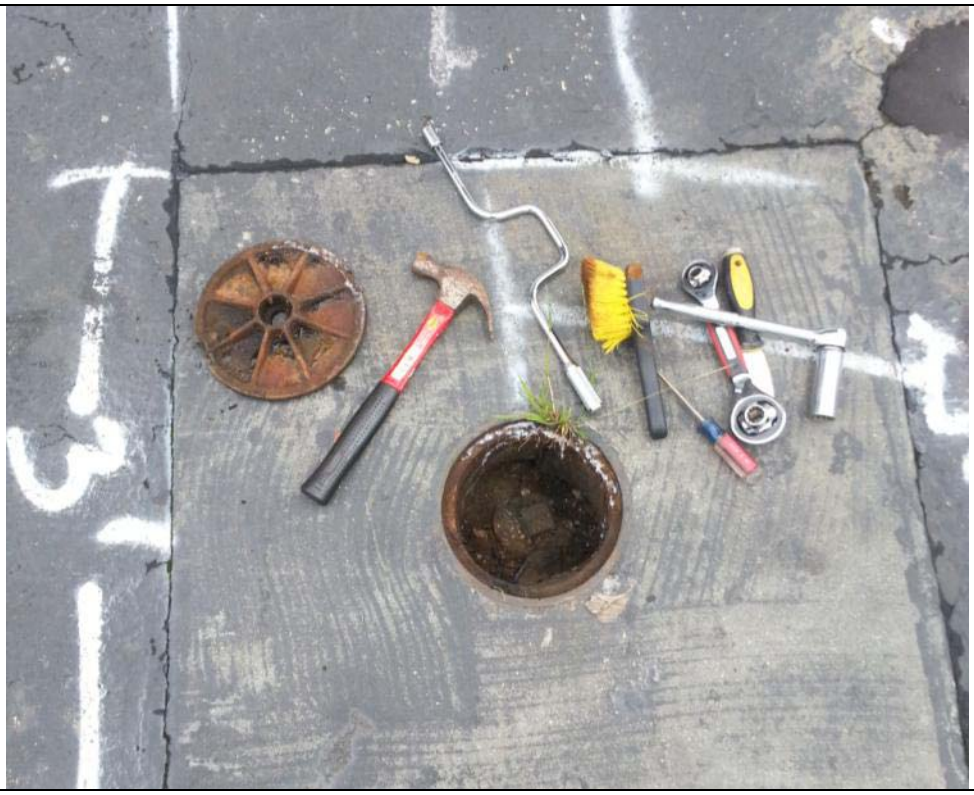
Unknown vault utility mark-out. Sewer line path drawn in.

Photo No.	Date:
2	11/16/12

Direction Photo Taken:

Description:

Unknown Vault, cleanout cap, partially covered.



AECOM

PHOTOGRAPH LOG

Site Name:	Site Location:	Project No.
Former Unocal # 1156	4276 MacArthur Boulevard, Oakland California	60287515

Photo No. 3	Date: 11/16/12

Direction Photo Taken:

Description:

Unknown vault close up.

Photo No. 4	Date: 11/16/12

Direction Photo Taken:

Description:

Unknown vault after cleaning.

AECOM

PHOTOGRAPH LOG

Site Name:	Site Location:	Project No.
Former Unocal # 1156	4276 MacArthur Boulevard, Oakland California	60287515

Photo No.	Date:
5	11/16/12

Direction Photo Taken:

Description:

Pressure relief valve vault outside of restroom wall.

Photo No.	Date:
6	02/12/13

Direction Photo Taken:

Description:

Pressure relief valve vault outside of restroom wall, close-up