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August 30, 2011

Mr. Jerry Wickham
Alameda County Health Agency
1131 Harbor Bay Parkway, Suite 250
Alameda, California 94502

RE: Site Assessment Report for 800, 726, and 706 Harrison Street, Oakland, California 94607
Fuel Leak Case No.: RO0000231, RO0000321, and RO0000484
Comingled Plume claim #6678

Dear Mr. Wickham,

I declare under penalty of perjury that to the best of my knowledge the information and/or recommendations contained in the attached report is/are true and correct.

If you have any questions or need additional information, please contact me at (925) 790-6270.

Sincerely,

Roya Kambin
Union Oil of California – Project Manager

Attachment
Site Assessment Report

ARCADIS U.S., Inc.
2000 Powell Street
7th Floor
Emeryville
California 94608
Tel 510.652.4500
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www.arcadis-us.com

ENVIRONMENT

Mr. Jerry Wickham
Senior Hazardous Materials Specialist
Alameda County Department Environmental Health
1131 Harbor Bay Parkway
Alameda, California 94502-6577

Subject:
Site Assessment Report
800, 726, and 706 Harrison Street
Oakland, California 94607
Fuel Leak Case No.: RO0000231, RO0000321, and RO0000484
Comingled Plume claim #6678

Date:
August 30, 2011

Contact:
Katherine Brandt

Phone:
510.596.9675

Email:
Katherine.Brandt@arcadis-us.com

Our ref:
B0047339.0001

Dear Mr. Wickham:

ARCADIS U.S. Inc. (ARCADIS), on behalf of Union Oil of California (Unocal), has prepared this report to present the results of assessment activities associated with the former Unocal Service Station 0752, located at 800 Harrison Street, the former Shell Station located at 726 Harrison Street, and the former Atlantic Richfield Company (ARCO) Service Station located at 706 Harrison Street in Oakland, California (collectively referred to as the site – see Figures 1 and 2). Activities were performed in accordance with Stantec's *Commingled Plume Assessment Work Plan, 800, 726, and 706 Harrison Street, Oakland, California*, (Work Plan) dated March 31, 2011 (Stantec 2011). The Work Plan was approved by the Alameda County Department Environmental Health (ACDEH) in their letter dated April 25, 2011.

This *Site Assessment Report* describes soil and groundwater investigation activities that address data gaps within the area of a commingled plume that affects the site. A Commingled Plume Application was submitted for this site on August 12, 2011. The three Responsible Parties are working together during the application review period pending receipt of the Letter of Commitment, which is anticipated in the second or third quarter 2012.

Site Description and Features

The site location is depicted in Figure 1. The portion of the site located at 800 Harrison Street is the former Unocal 76 Service Station 0752. Current site facilities

consist of a single-story convenience store and smog shop, three product dispenser islands under two canopies, and two 12,000-gallon double-wall poly-steel gasoline underground storage tanks (USTs) (Stantec 2009). The portion of the site at 726 Harrison Street is a former Shell Station/Chan's service station, which consists of an asphalt parking lot and a building (Yee Property). The remaining portion of the adjacent property at 706 Harrison Street is the former ARCO Service Station/Oakland Auto Parts and is currently an asphalt parking lot (Gin Property). Refer to Figure 2 for property locations.

Previous Investigations

800 Harrison Street (Former Unocal)

In November 1990, two gasoline USTs and one waste oil UST were removed from the site. The tanks consisted of one 10,000 gallon regular unleaded gasoline storage tank, one 10,000 gallon super unleaded gasoline storage tank, and one 280 gallon waste oil tank. The waste oil tank was reported to contain one, 1/8 -inch square hole. Based on confirmation soil sampling during the UST removal, the majority of the source area was the soil beneath the former UST pit. In November 1996, one 1,100-gallon waste oil UST and associated product dispensers piping were removed from the site. No apparent holes or cracks were observed in the waste oil tank, or piping at this time.

Gettler-Ryan Inc., in their April 23, 2001 *Site Conceptual Model for 800 Harrison Street*, referenced the source area leak as a potential UST spill bucket containment failure stating that there were several historically documented maintenance reports in which residual rainwater was noted in the spill tank basin after overflow. The spill bucket containment was repaired in November 2001. Since the repair, hydrocarbon concentrations decreased in the short term, but there have been several additional elevated concentrations observed in 2004, which suggests that the spill bucket containment failure was not likely the single contributing source release.

726 Harrison Street (Former Shell)

In October 1995, three 4,000-gallon gasoline USTs, one 8,000-gallon gasoline UST, and one 1,000-gallon waste oil UST were removed from the site. Elevated hydrocarbon concentrations were detected in soil beneath each of the former gasoline USTs. Elevated concentrations of total oil and grease were detected in soil beneath the waste oil UST. Approximately 530 tons of impacted soil was removed

from the excavations to a maximum depth of 20 feet below ground surface (bgs) in December 1995. Seven confirmation soil samples were collected from the bottom and side walls of the excavation to determine the removal of impacted soil. Two of the seven samples contained elevated concentrations of petroleum hydrocarbons at the northern and southern portion of the excavation (Aqua Science Engineers, Inc. [ASE] 2007). Over excavation was not possible due the building location to the southeast and the street to the northwest.

In July 1997, a groundwater monitoring well was installed at the southern edge of the former USTs. Groundwater samples from the well contained elevated concentrations of petroleum hydrocarbons.

In December 1998, three additional wells were installed along the southern property boundary between 706 and 726 Harrison Street. Newly installed wells (MW-3 and MW-4) contained much lower detections of hydrocarbons. MW-2 did not contain hydrocarbons detected above laboratory detection limits.

706 Harrison Street (Former ARCO)

In January 1991, four 1,000-gallon gasoline USTs, two 6,000-gallon gasoline USTs, and one unknown size waste oil tank were removed from the site. Confirmation soil samples were collected beneath the tanks, and elevated petroleum hydrocarbon concentrations were observed in confirmation samples. In December 1991, the UST pipes were removed and a limited subsurface investigation was performed to resample the former tank pit areas (Conestoga-Rovers and Associates [CRA] 2007).

In February 1993, an over excavation of unknown volume was performed from three excavations in the vicinity of the former UST locations. Limitations during the excavation related to shoring prevented removal of all impacted soil (CRA 2007). Soil samples collected at 16 feet bgs contained elevated concentrations of hydrocarbons.

In July 1993, monitoring wells (MW-1 through MW-3) and soil vapor extraction (SVE) wells (VW-1 and VW-2) were installed. Soil samples collected during the installation contained elevated total petroleum hydrocarbons as gasoline and benzene (6,000 parts per million [ppm] and 210 ppm, respectively). In December 1993, additional soil samples were collected from the former pump island locations containing concentrations of organic lead with a maximum of 17 ppm at 2 feet bgs.

In April 1994, a SVE pilot test was conducted and determined to be an effective remedial alternative. In November 1994, additional groundwater monitoring wells, SVE wells, and air sparge (AS) wells were installed for on-site remediation. Operation the AS/SVE began in May 1998 and continued into February 2001. The SVE portion was shut down but the AS system continued to inject air to increase oxygen concentrations to enhance aerobic biodegradation.

Groundwater samples collected from SVE wells determined that the system was effective and AS system was shut down.

Regional Geology

As discussed in the Work Plan, the site is underlain by Holocene and Pleistocene-age eolian sand deposits referred to as the Merrit Sand. The Merrit Sand is described as typically consisting of fine grained, very well sorted, well-drained eolian sand, interfingering with Holocene Bay Mud. The sand deposits can extent to a depth of approximately 50 feet bgs in the Oakland area (U.S. Geological Survey 2000).

Site Geology/Hydrogeology

The subsurface geology at the site consists mainly of fine grained sand and silty sand extending to approximately 30 feet bgs. Deeper cone penetrometer tests (CPTs) were advanced in the area of 800 Harrison Street that indicate the presence of silt and clay between approximate depths of 30 to 42 feet bgs. Below the clay, fine grained sand and silty sand are present (Stantec 2009). It is assumed the Merritt Sand lies under the site, based on visual inspections of soil during the investigations (Stantec 2009).

The nearest surface waters are the Oakland Inner Harbor to the south and west and Lake Merritt to the east and northeast. Each body of water is approximately ½- mile from the site (Stantec 2009).

Groundwater is encountered approximately 15 to 22 feet bgs, within the sand and silty sand units at the site. Historically, depth to groundwater has been observed in monitoring wells between approximately 12 and 22 feet bgs, but typically fluctuates between 15 and 20 feet bgs. Groundwater in the unconfined shallow water-bearing zone (from surface to 30 feet bgs) flows predominately toward the south-southwest, at an approximate gradient of 0.01 feet per feet (Stantec 2009). A deeper water-

bearing zone was encountered during the advancement of the CPTs at depths of 42 to 50 feet bgs. Prior to this site assessment, no wells were installed in the deeper water bearing zone.

Subsurface Investigation

Between June 20 and 24, 2011, site assessment activities at the site were conducted to address the data gaps presented in Stantec's Work Plan (Stantec 2011). ARCADIS oversaw the soil boring advancement on the 800 and 706 Harrison Street properties. ASE oversaw the installation of one monitoring well and one soil boring associated with 726 Harrison Street with observations by ARCADIS. A data report was completed by ASE and is included as Appendix A. All activities were conducted in accordance to the Work Plan with the exception the deviations listed below.

Work Plan Deviations

The following provides a summary of deviations from the Work Plan:

- A grab groundwater sample was collected from GP-3 as an oversight during the field activities. The collection of this sample is not expected to effect the evaluation of data gaps as described in the Work Plan.
- Soil boring location GP-1 located on 800 Harrison and soil boring locations GP-4 and GP-8 through GP-10 associated with 706 Harrison were unable to be advanced at the time of the field activities. GP-9 and GP-10 will be advanced during a subsequent mobilization once an encroachment permit to the park is secured. It is anticipated that results from these activities will be reported in a future addendum to this report as described in the Recommendations section, below.

Permitting

ARCADIS and ASE secured the necessary soil boring permits from ACDEH and an encroachment permit from the City of Oakland prior to commencing field activities for Commingled plume. The executed permits are included in Appendix A and B.

Site-Specific Health and Safety Plan

ARCADIS prepared a site-specific Health and Safety Plan for well installation, direct push drilling, and soil and groundwater sampling activities for the sites, as required

by the Occupational Health and Safety Administration Standard "Hazardous Waste Operations and Emergency Response" guidelines (29 CFR 1910.120). The document was reviewed and signed by ARCADIS personnel and subcontractors performing work at the site.

Underground Utility Locating

Underground Service Alert North (USA North) was contacted 48-hours prior to the start of any intrusive subsurface activities. Each boring location was cleared of utilities by a private utility locator (Cruz Brothers) prior to work.

Soil Boring Advancement and Sampling Methodology

On June 23 and 24, 2011, Gregg Drilling and Testing, Inc., under the supervision of ARCADIS, advanced one Geoprobe soil boring (GP-2) at 800 Harrison Street and advanced three Geoprobe soil borings (GP-5 through GP-7) at 706 Harrison Street (Figure 2). Proposed soil boring locations were adjusted in the field based on USA North and Cruz Brothers underground utility mark-outs. Soil boring locations GP-1 located on 800 Harrison and soil boring locations GP-4 and GP-8 through GP-10 associated with 706 Harrison were unable to be advanced at the time of the field activities. GP-1 was unable to be advanced due to overhead clearance issues with the on-site drilling rig and utilities running from the USTs to the sensors located in the garage. GP-4 was hand cleared to 2.5 feet bgs when a hard object was encountered and it was determined that moving the boring was not considered safe due to unknown metal surrounding the location. GP-4 was properly abandoned by grouting the borehole to surface using neat cement grout. Soil boring locations GP-8 through GP-10 were not advanced due to unknown underground utilities identified by Cruz Brothers on the day of the assessment activities.

Prior to drilling, the soil borings were hand cleared using a 2-inch outer diameter (OD) hand auger to a minimum of depth of 8 feet 1-inch bgs. Soil borings (GP-2, GP-5 through GP-7) were advanced using direct push technology (DPT). Each soil boring was advanced using a truck-mounted rig equipped with a 2-inch diameter Macro Core device to a total depth of approximately 20 feet bgs. Soil borings were terminated above the assumed water table of 20 feet bgs as stated in the Work Plan (Stantec 2011).

ASE completed the advancement of boring location GP-3 located on 726 Harrison Street with observation by ARCADIS. The soil boring was completed as described

above with a direct push rig to a total depth of approximately 24 feet bgs. A grab groundwater sample was collected from the borehole after total depth was reached. The grab groundwater sampled was a deviation in the Work Plan (Stantec 2011). According to ASE, the grab groundwater sample collected from GP-3 was an oversight.

All soil boring locations were grouted with neat cement from total depth to ground surface and then patched to match the surrounding surface (Appendix A and C).

Soil Sampling and Screening

Soil borings were logged continuously to total depth for lithologic classification. Soil samples were field screened with a photo ionization detector (PID). The PID results, in ppm, from the field screening were recorded on the field boring logs, which are included in Appendix A and C. Soil samples were collected for laboratory analysis biased towards the highest probable degree of potential contamination, based on the highest PID readings greater than the background concentration. Soil samples were collected for laboratory analysis at a frequency of every five feet if PID readings were not detected above background concentrations, and if other indicators of potential hydrocarbon impacts (i.e., staining, odor) were absent.

A minimum of three soil samples were collected from each soil boring location and submitted to BC Laboratory, Inc. (BC Laboratory) of Bakersfield, California. Elevated (above background) PID measurements and evidence of potentially impacted soil (i.e., staining, odors) were noted during the advancement of GP-2. The soil boring log notes strong odor and elevated PID detections between 8 and 20 feet bgs. Four soil samples were collected at GP-2 at depths of 5, 10, 14, and 17 feet bgs based on the elevated PID detections. Soil samples were collected at 5-foot intervals at borings GP-5 through GP-7. Soil samples were collected from 7, 10, and 15 feet bgs from boring GP-3; 6.5, 11, and 16 feet bgs from monitoring well MW-6. Soil samples results for all locations are presented on Table 1.

Groundwater Monitoring Well Borehole Installation

On June 20, 2011, V&W Drilling under the direct supervision of ASE and observed by ARCADIS, installed one groundwater monitoring well, MW-6 at 726 Harrison Street (Appendix A).

Following utility clearing, the well location was advanced using a hollow stem auger drill rig. Soil samples for lithological description were collected every five feet from surface to approximately 30 feet bgs using a California-modified split-spoon sampler. Soil samples were collected continuously from 30 feet bgs to the total borehole depth of approximately 49 feet bgs using a core barrel. Soil samples were not collected from the clay unit as proposed in the work plan due to drilling techniques. According to ASE, there were no quality soil samples within the clayey silt unit. In particular, the wood plug that was at the bottom of the conductor casing was pushed by the core barrel and the core barrel did not retain soil that would be acceptable for analysis.

Upon completion of the borehole, monitoring well MW-6 was installed with a conductor casing to minimize open conduits between the identified shallow and deep water bearing zones. Steel conductor casing was advanced and sealed at a depth of approximately 35 feet bgs. The 8.625-inch OD conductor casing was set in a 12-inch diameter borehole. The annulus between the wall of the borehole and the outside of the conductor casing was sealed with neat cement grout from the bottom of the borehole to approximately 1-foot bgs. The neat cement grout was allowed to set for approximately 72-hours. Subsequently, an 8-inch diameter borehole was advanced through the conductor casing to total a depth of approximately 49 feet bgs.

Monitoring well MW-6 was constructed using 2-inch OD schedule 40 polyvinyl chloride (PVC) casing with a five-foot long 0.020-inch machine slotted PVC screen. A number three Monterey sand filter pack was placed around the well screen from the bottom of the borehole to approximately 2 feet above the top of the screen interval. Approximately 2 feet of bentonite chips were placed on top of the filter sand. The remainder of the borehole annulus was tremie-grouted to approximately 1-foot bgs. A traffic rated 12-inch diameter flush-mounted well box was installed at ground surface at each well location. Boring logs and well construction logs for MW-6 are included in Appendix A.

Groundwater Monitoring Well Development and Sampling

The newly installed groundwater monitoring well was developed using a surge block and bailer to remove ten casing volume by ASE on June 23, 2011 prior to the placement of the cement seal. A groundwater sample was collected from MW-6 on June 27, 2011. Data is presented on Figure 4 and in Table 2. Groundwater samples will be collected from the newly installed well during future sampling events. The third quarter 2011 monitoring and sampling event will be conducted in August.

Well Survey

On June 28, 2011, Mid-Coast Engineers, Inc., (Mid-Coast) of Watsonville, California, surveyed the horizontal coordinates and the vertical coordinates of the top of casing at MW-6 and ground surface elevations at all newly completed soil boring locations. Survey coordinates were based on the North America Datum of 1983 and National Geodetic Vertical Datum 29 Datum. The environmental well survey provided by Mid-Coast is included in Appendix A and D.

Soil and Groundwater Sampling and analysis

ARCADIS collected soil samples in Encore samplers provided by BC Laboratory. The Encore samplers were capped and sealed in zip-locked bags. ASE collected soil samples in stainless steel tubes, capped with plastic end caps, and sealed in zip-lock bags. Soil samples were labeled with the boring identification number and the depth of the sampling interval. ASE collected grab groundwater samples from GP-3 (20 to 24 feet bgs) and MW-6 using a disposable bailer and transferred the grab groundwater into 40-milliliter vials with hydrochloric acid preservative.

Soil and groundwater samples were packed on ice, cooled to approximately 4 degrees centigrade, and were submitted, under appropriate chain-of-custody protocols, to BC Laboratory. Laboratory reports and chain-of-custody documentation are included in Appendix A and D and analytical results for soil and groundwater are presented in Tables 1 and 2, respectively.

The soil and groundwater samples were analyzed for the presence of the following constituents:

- Total purgeable petroleum hydrocarbons (TPPH) by LUFT GC/MS Method

- Benzene, toluene, ethylbenzene and total xylenes (collectively, BTEX), methyl tertiary butyl ether (MTBE), 1,2-Dibromoethane (EDB), and 1,2-Dichloroethane, (1,2-DCA) by U.S. Environmental Protection Agency Method 8260B

Site Assessment Results

Subsurface Conditions

Soils encountered during the current assessment generally consisted of fine sand and silty, fine sand for soil boring locations GP-2, GP-3, and GP-5 through GP-7. Soils encountered during the advancement and installation of monitoring well MW-6 consisted of fine sand and silty, fine sand to approximately 35 feet bgs. Higher percentages of silt are encountered from 35 feet bgs to approximately 48 feet bgs with varying amounts of clay and fine sand. Fine sand is encountered from 48 to 49 feet bgs (total depth of MW-6). Groundwater was encountered at between approximately 20 to 25 feet bgs. Groundwater was not encountered in soil borings GP-2, and GP-5 through GP-7.

Soil Analytical Results

Soil samples containing detections above the respective Environmental Screening Levels (ESLs) were limited to samples collected from GP-2. Soil analytical results are summarized in Table 1 and shown on Figure 3. The BC Laboratory analytical report with chain-of-custody documentation is included in Appendix A and D. Maximum and minimum concentrations of petroleum hydrocarbon constituents detected in soil samples collected during this assessment are summarized in the table below.

Constituent	Frequency of Detection Above the MDL[1]	Range of Detected Concentrations in mg/kg[2]	ESL[3] in mg/kg[2]	Frequency of Exceedences	Range of Concentration Exceedences in mg/kg[2] (Well ID)
TPPH	5/20	0.12 J – 3,200	83	2/5	3,200 (GP-2@14.0') 1,000 (GP-2@17.0')
Benzene	0/20	-	0.044	-	-
Toluene	1/20	0.024	2.9	0/1	-
Ethylbenzene	3/20	0.0057 – 0.015	3.3	0/3	-
Total Xylenes	2/20	0.098 – 0.11	2.3	0/2	-
MTBE	6/20	0.00087 J – 0.060	0.023	2/6	0.028 (GP-2@14.0') 0.060 (GP-2@17.0')

Notes:
1. MDL = method detection limit.
2. mg/kg = milligram per kilogram.
3. ESL = Residential Environmental screening level for shallow and deep soils where groundwater is a current or potential source of drinking water.

MTBE = methyl tertiary butyl ether.
TPPH = Total purgeable petroleum hydrocarbons.

Groundwater Analytical Results

Groundwater samples containing detections above the Maximum Contaminant Levels (MCLs) were found in samples collected from GP-3 and MW-6. Groundwater analytical results are summarized in Table 2 and shown on Figure 4. The BC Laboratory analytical report with chain-of-custody documentation is included in Appendix A. Maximum and minimum concentrations of petroleum hydrocarbon constituents detected in groundwater samples collected during this assessment are summarized in the table below.

Constituent	Frequency of Detection Above the MDL[1]	Range of Detected Concentrations in µg/L[2]	California Primary MCL[3] in µg/L[2]	Frequency of Exceedences	Concentration Exceedences in µg/L[2] (Well ID)
TPPH	2/2	210 – 200,000	-	-	-
Benzene	2/2	0.81 – 1,800	1	1/2	1,800 (GP-3)
Toluene	1/2	2,000	150	1/1	2,000 (GP-3)
Ethylbenzene	1/2	1,500	300	1/1	1,500 (GP-3)
Total Xylenes	1/2	5,000	1,750	1/1	5,000 (GP-3)
MTBE	2/2	990 – 4,600	13	2/2	4,600 (GP-3), 990 (MW-6*),
EDB	0/15	-	-	-	-
1,2-DCA	1/2	1.0	-	-	-

Notes:
1. MDL = method detection limit.
2. µg/L = microgram per liter, equivalent to part per billion (ppb).
3. MCL = maximum contaminant level.
* = MW-6 associated with 726 Harrison Street, not with the well with the same identifier associated with 800 Harrison Street.
EDB = 1,2-Dibromoethane.
1,2-DCA = 1,2-Dichloroethane.
MTBE = methyl tertiary butyl ether.
TPPH = Total purgeable petroleum hydrocarbons.

Soil Cuttings and Rinsate Water

One 55-gallon drum with soil cuttings was generated during the assessment activities is currently being stored on site temporarily with a proper labeled pending characterization and disposal.

Summary and Conclusions

The site assessment activities conducted June 20 through June 27, 2011, have further delineated the petroleum hydrocarbon impacts located at the site. The results from the soil and groundwater investigation have further addressed data gaps presented by Stantec's Site Conceptual Model and the letter from ACDEH dated January 4, 2011.

Soil

800 Harrison Street Summary

Soil boring GP-2 was advanced to a depth of approximately 20 feet bgs to delineate the soil stratigraphy and extent of petroleum hydrocarbon impacts to vadose-zone soil. Soil samples collected from boring GP-2 indicate elevated concentrations for TPPH, toluene, ethylbenzene, xylenes, and MTBE at sample depths ranging from 10 feet to 17 feet bgs. Concentrations were detected above ESLs for two of the five analytes; TPPH and MTBE at sample depths of 14 feet and 17 feet bgs (Table 1). Soil boring GP-2 is located northeast of MW-1 and south of the former USTs (Figure 4).

726 Harrison Street Summary

Soil boring GP-3 was advanced to a depth of approximately 20 feet bgs to delineate the soil stratigraphy and extent of petroleum hydrocarbon impacts to vadose-zone soil. Soil collected from GP-3 had concentrations below the detection limit for all analysis except MTBE at 7 feet bgs which had a concentration above the method detection Limit (MDL) but below the ESL (Table 1).

The soil samples were collected at depths of 6.5, 11, and 16 feet bgs from MW-6. The newly installed well was placed south of EW-1, which has previously detected the highest MTBE groundwater concentrations for the comingled plume. Soil samples were not detected at the 6.5 and 11 feet bgs intervals. Elevated concentrations of TPPH and MTBE were detected at 16 feet bgs but concentrations were below the ESLs.

706 Harrison Street Summary

Soil boring locations GP-5 through GP-7 were advanced and sampled to assess the effectiveness of past site remediation events including several over-excavations to remove impacted hydrocarbon soil and the installation of a SVE and AS well system to remediate the property. Data collected from the assessment work indicates that soil has limited impacts in the vadose-zone. Soil samples collected from soil borings GP-6 located southwest of MW-2 within the former UST basin and GP-7 located in the southwestern corner along the fence line of the property, indicated that all analytes were not detected at concentrations in excess of the MDL (Table 1). GP-5 located northeast of MW-4 and within the former UST basin, showed concentrations detected above MDLs for TPPH, ethylbenzene and MTBE at 20 feet bgs. The detections are above MDLs but below ESL for soil.

Groundwater

800 and 706 Harrison Street Summary

Groundwater was not encountered in the boring advanced at GP-2.

726 Harrison Street Summary

Groundwater samples were collected from boring GP-3 (grab sample) and from monitoring well MW-6 (Figure 4). Concentrations of BTEX and MTBE were detected in excess of the MCL in GP-3 and MTBE was detected at a concentration of 990 micrograms per liter at MW-6. Groundwater was encountered at approximately 20 feet bgs at GP-3 and MW-6.

Conclusions - Soil

As indicated in the Work Plan the soil samples were collected to address the data gaps associated with the site. Soil samples from GP-2 contained the highest concentrations of TPPH. The vertical and horizontal extent of TPPH at 800 Harrison Street is not delineated in the area of MW-1 and the former waste oil UST.

Soil samples were collected from borings GP-5 through GP-7 to assess the effectiveness of past remediation. Based on the analytical results the past remediation at 706 Harrison was effective.

Conclusions - Groundwater

MW-6 was installed to access the vertical delineation of hydrocarbons in groundwater. A groundwater sample will be collected from this location during the third quarter 2011 monitoring event. Results from that sampling event will be evaluated as part of the *Second Half 2011 Semiannual Groundwater Sampling Report* to determine if vertical delineation of petroleum hydrocarbons was achieved at this location.

Downgradient groundwater delineation was not completed as noted in the work plan deviation section. ARCADIS is working on securing the required encroachment permits for completion of the downgradient delineation. Final conclusions will be included as an addendum to this report after those additional field activities are completed.

Recommendations

Based on the results of the assessment activities described above, ARCADIS recommends the continued implementation of the *Commingled Plume Assessment Work Plan, 800, 726, and 706 Harrison Street, Oakland, California* (Stantec, 2011). The assessment of the sites would include the advancement of Geoprobe points GP-1, GP-9 and GP-10, the collection of groundwater samples from the GP-9 and GP-10 locations, and the expanded soil sampling analyte list that includes semi volatile organic compounds and metals for GP-1, to further delineate the petroleum hydrocarbon impacts to the soil and groundwater at the site.

Additional historical research is needed regarding the source of the hydrocarbons in soil at EW-1 at 726 Harrison Street. A review of files was completed by ASE. Documents were not found regarding a source in the EW-1 area with the exception of the main UST farm. Additional finds will be presented in the site assessment report addendum.

References

Aqua Science Engineers, Inc. 2007. *Subsurface Utility Study, Area Well Study, and Work Plan for Additional Soil and Groundwater Assessment for 726 Harrison Street, Oakland, California*, December 6.

Conestoga-Rovers and Associates. 2007. *Onsite Characterization Work Plan for 706 Harrison Street, Oakland. California*, October 5.

Gettler-Ryan, Inc. 2001. *Site Conceptual Model for 800 Harrison Street, Oakland, California*, April 23.

Stantec Consulting Corporation (Stantec). 2009. *Site Conceptual Model 800, 726, and 706 Harrison Street Comingled Plume Oakland, California*, September 30, 2009.

Stantec. 2011. *Commingled Plume Assessment Work Plan*, *800, 726, and 706 Harrison Street, Oakland, California*.

U.S. Geological Survey. 2000. USGS, R.W, Graymer, Geologic Mand and Map Database of the Oakland Metropolitan Area, Alameda, Contra Costa, and San Francisco Counties, California.

If you have any questions or comments regarding the contents of this document, please contact Katherine Brandt of ARCADIS at 510.596.9675 or by e-mail at Katherine.Brandt@arcadis-us.com.

Sincerely,

ARCADIS

Katie Wynne
Staff Geologist

David Lay
Professional Geologist

Katherine Brandt
Certified Project Manager

Enclosures:

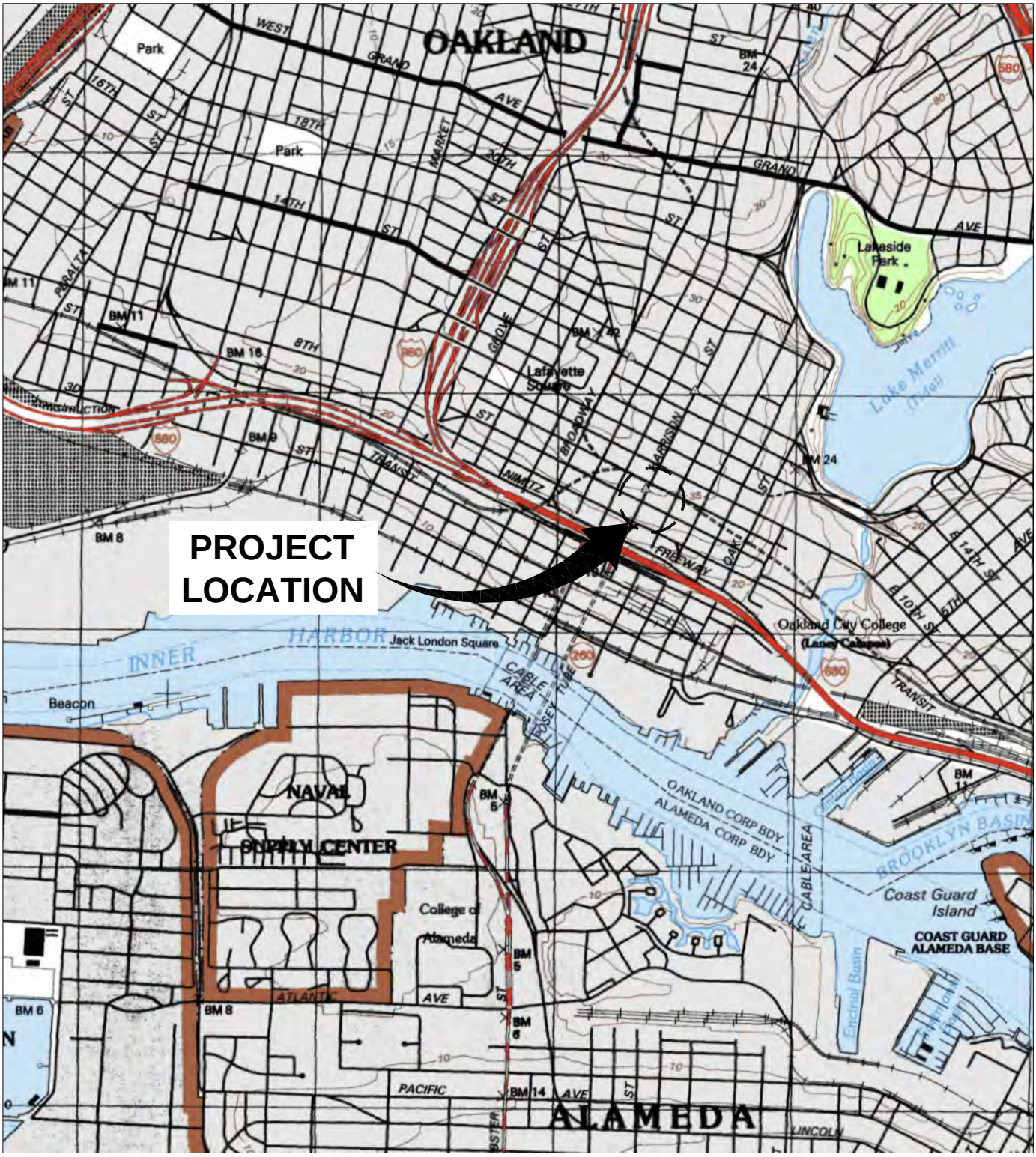
Figure 1	Site Location Map
Figure 2	Site Map
Figure 3	Soil Concentration Map
Figure 4	Groundwater Concentration Map
Table 1	Soil Analytical Results
Table 2	Groundwater Analytical Results
Appendix A	ASE Data Report of Soil and Groundwater Assessment for 726 Harrison Street, Oakland, California
Appendix B	Drilling Permits
Appendix C	Boring Logs (GP-2, GP-5 through GP-7)
Appendix D	Soil Analytical Laboratory Reports and Chain-of-Custody Documentation

Copies:

Ms. Roya Kambin, Chevron Environmental Management Company
Mr. Eric Hetrick, ConocoPhillips Company
Ms. Cherie McCaulou, San Francisco Bay Region RWQCB
Mr. Muhammad Usman and Mr. Mahmood M. Ali, Property Owners – 800 Harrison Street
Mr. Peter Yee and Mr. Kin Chan, Property Owners – 726 Harrison Street
Mr. Bo Gin, Property Owner – 706 Harrison Street

ARCADIS

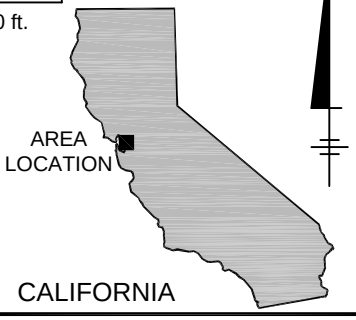
Figures



REFERENCE: BASE MAP USGS 7.5. MIN. TOPO. QUAD., OAKLAND WEST, CALIFORNIA, 1993.

0 2000' 4000'

Approximate Scale: 1 in. = 2000 ft.



UNION OIL
STATION NO. 752
800 HARRISON STREET
OAKLAND, CALIFORNIA

SITE LOCATION MAP

ARCADIS

FIGURE 1

CITY: PETALUMA, CA DIV/GROUP: ENV DB: J. HARRIS LD: J. HARRIS PIC: J. VOGELEY PM: K. ABBOTT TM: K. ABBOTT LYR:(Opt)ON=*;OFF=*REF*
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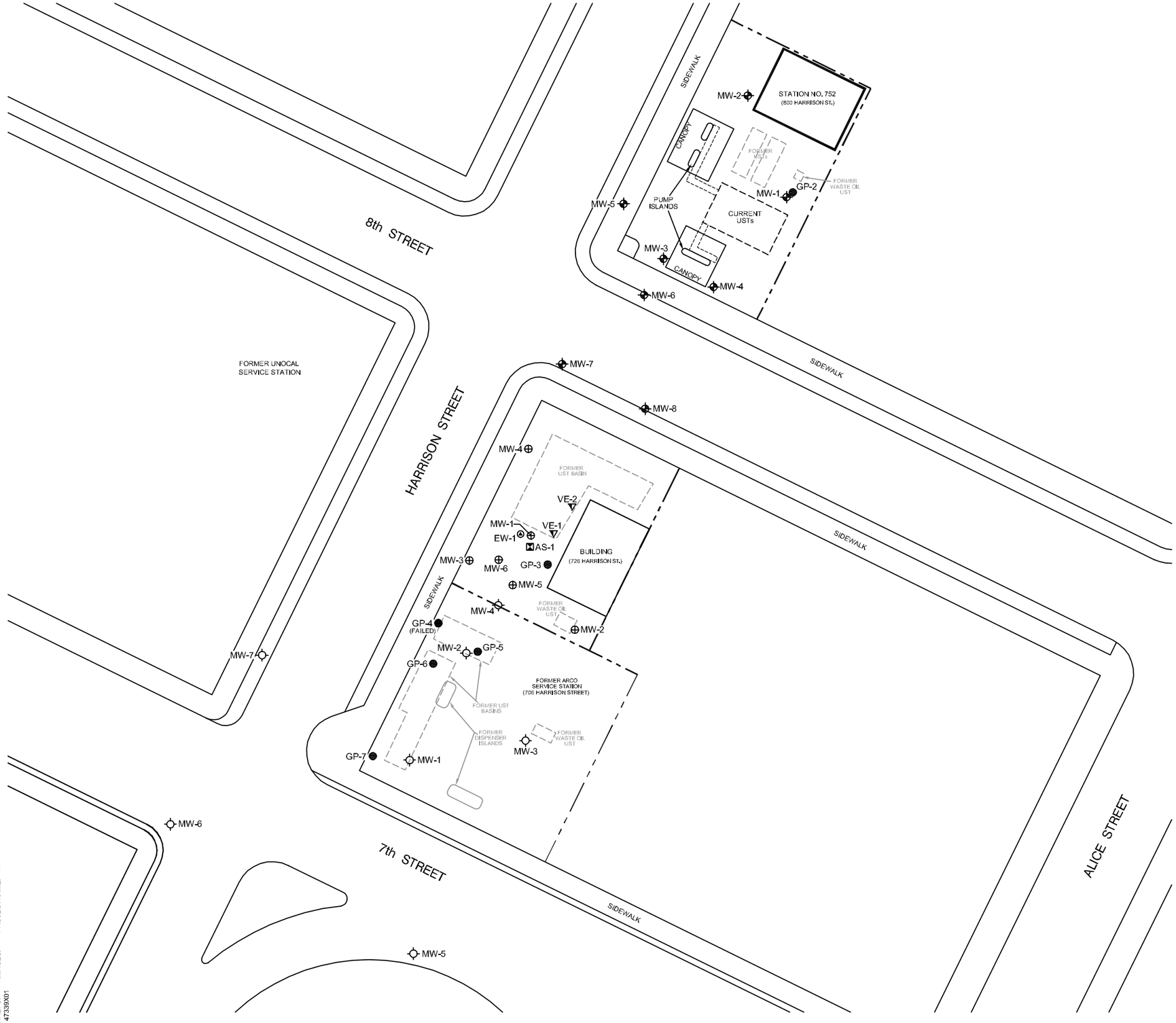

LEGEND

- PROPERTY BOUNDARY
- PRODUCT PIPING
- MW-1 GROUNDWATER MONITORING WELL (UNOCAL 800 HARRISON STREET)
- MW-1 GROUNDWATER MONITORING WELL (GIN 706 HARRISON STREET)
- MW-1 GROUNDWATER MONITORING WELL (YEE 726 HARRISON STREET)
- AS-1 AIR SPARGE WELL (YEE 726 HARRISON STREET)
- EW-1 EXTRACTION WELL (YEE 726 HARRISON STREET)
- VE-1 DESTROYED WELL (YEE 726 HARRISON STREET)
- GP-2 GEOPROBE™ (JUNE 2011)

NOTE:

1. BASE MAP PROVIDED BY MID COAST ENGINEERS, DATED 06/29/11, AT A SCALE OF 1"=50'. ADDITIONAL SITE FEATURES PROVIDED BY STANTEC, INC., DATED 03/05/10, AT A SCALE OF 1"=50'.
2. COORDINATES ARE BASED ON THE CALIFORNIA COORDINATE SYSTEM, ZONE III, NAD 83.

0 50' 100'

GRAPHIC SCALE

UNION OIL
STATION NO. 752
800 HARRISON STREET
OAKLAND, CALIFORNIA

SITE PLAN

ARCADIS

FIGURE 2

CITY: PETALUMA, CA DIV/GROUP: ENV DB: J. HARRIS LD: J. HARRIS PIC: J. VOGELEY PM: K. ABBOTT TM: K. ABBOTT LYR:(Opt)ON=*;OFF=*REF*
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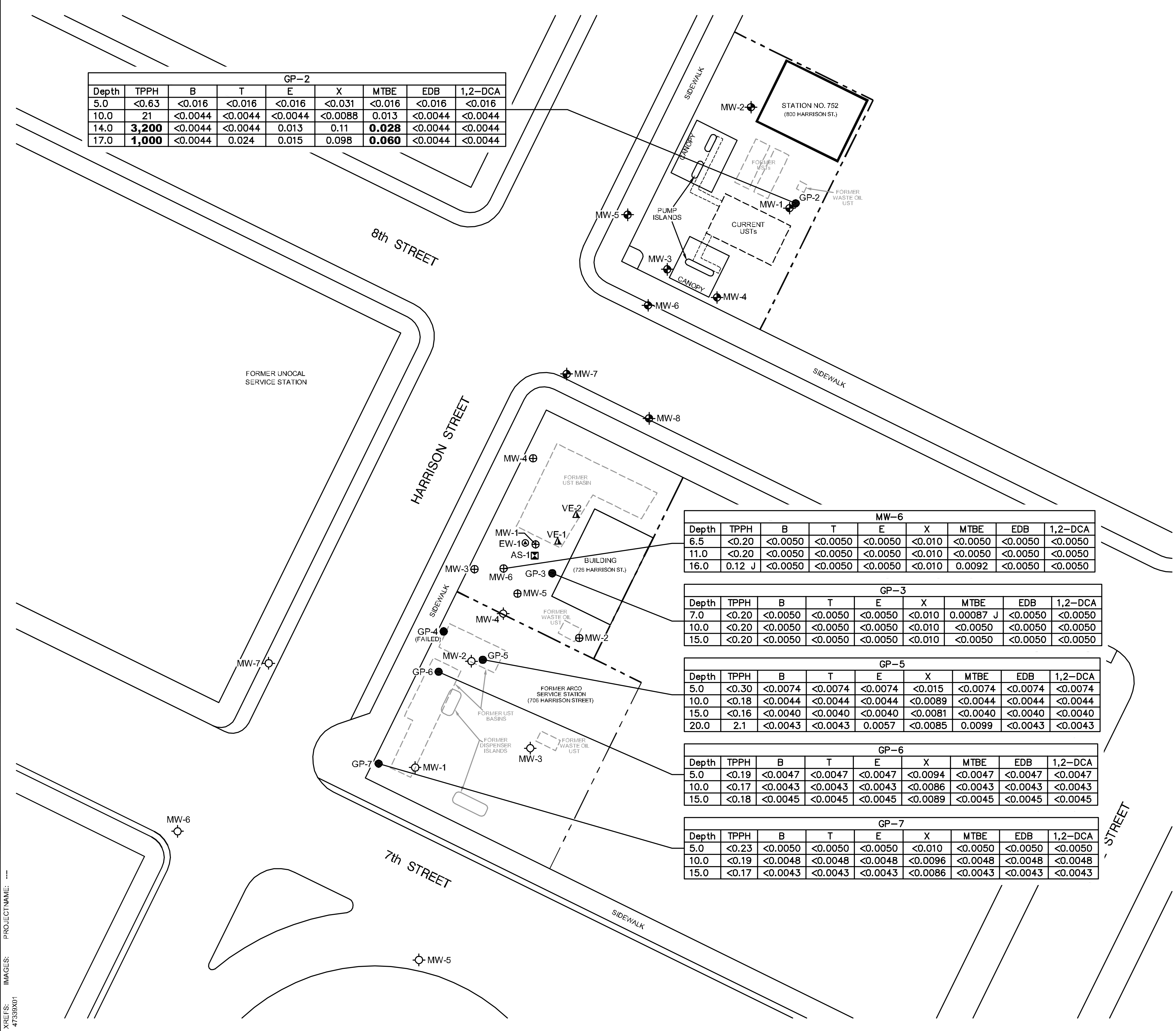


GP-2								
Depth	TPPH	B	T	E	X	MTBE	EDB	1,2-DCA
5.0	<0.63	<0.016	<0.016	<0.016	<0.031	<0.016	<0.016	<0.016
10.0	21	<0.0044	<0.0044	<0.0044	<0.0088	0.013	<0.0044	<0.0044
14.0	**3,200**	<0.0044	<0.0044	0.013	0.11	**0.028**	<0.0044	<0.0044
17.0	**1,000**	<0.0044	0.024	0.015	0.098	**0.060**	<0.0044	<0.0044

MW-6								
Depth	TPPH	B	T	E	X	MTBE	EDB	1,2-DCA
6.5	<0.20	<0.0050	<0.0050	<0.0050	<0.010	<0.0050	<0.0050	<0.0050
11.0	<0.20	<0.0050	<0.0050	<0.0050	<0.010	<0.0050	<0.0050	<0.0050
16.0	0.12 J	<0.0050	<0.0050	<0.0050	<0.010	0.0092	<0.0050	<0.0050

GP-3								
Depth	TPPH	B	T	E	X	MTBE	EDB	1,2-DCA
7.0	<0.20	<0.0050	<0.0050	<0.0050	<0.010	0.00087 J	<0.0050	<0.0050
10.0	<0.20	<0.0050	<0.0050	<0.0050	<0.010	<0.0050	<0.0050	<0.0050
15.0	<0.20	<0.0050	<0.0050	<0.0050	<0.010	<0.0050	<0.0050	<0.0050

GP-5								
Depth	TPPH	B	T	E	X	MTBE	EDB	1,2-DCA
5.0	<0.30	<0.0074	<0.0074	<0.0074	<0.015	<0.0074	<0.0074	<0.0074
10.0	<0.18	<0.0044	<0.0044	<0.0044	<0.0089	<0.0044	<0.0044	<0.0044
15.0	<0.16	<0.0040	<0.0040	<0.0040	<0.0081	<0.0040	<0.0040	<0.0040
20.0	2.1	<0.0043	<0.0043	0.0057	<0.0085	0.0099	<0.0043	<0.0043

GP-6								
Depth	TPPH	B	T	E	X	MTBE	EDB	1,2-DCA
5.0	<0.19	<0.0047	<0.0047	<0.0047	<0.0094	<0.0047	<0.0047	<0.0047
10.0	<0.17	<0.0043	<0.0043	<0.0043	<0.0086	<0.0043	<0.0043	<0.0043
15.0	<0.18	<0.0045	<0.0045	<0.0045	<0.0089	<0.0045	<0.0045	<0.0045

GP-7								
Depth	TPPH	B	T	E	X	MTBE	EDB	1,2-DCA
5.0	<0.23	<0.0050	<0.0050	<0.0050	<0.010	<0.0050	<0.0050	<0.0050
10.0	<0.19	<0.0048	<0.0048	<0.0048	<0.0096	<0.0048	<0.0048	<0.0048
15.0	<0.17	<0.0043	<0.0043	<0.0043	<0.0086	<0.0043	<0.0043	<0.0043

LEGEND

- PROPERTY BOUNDARY
- PRODUCT PIPING
- MW-1 GROUNDWATER MONITORING WELL (UNOCAL 800 HARRISON STREET)
- MW-1 GROUNDWATER MONITORING WELL (GIN 706 HARRISON STREET)
- MW-1 GROUNDWATER MONITORING WELL (YEE 726 HARRISON STREET)
- AS-1 AIR SPARGE WELL (YEE 726 HARRISON STREET)
- EW-1 EXTRACTION WELL (YEE 726 HARRISON STREET)
- VE-1 DESTROYED WELL (YEE 726 HARRISON STREET)
- GP-2 GEOPROBE™ (JUNE 2011)
- TPPH TOTAL PURGEABLE PETROLEUM HYDROCARBONS
- B BENZENE
- T TOLUENE
- E ETHYLBENZENE
- X XYLENES
- MTBE METHYL TERTIARY BUTYL ETHER
- EDB 1,2-DIBROMOETHANE
- 1,2-DCA 1,2-DICHLOROETHANE
- J ESTIMATED VALUE
- < NOT DETECTED AT CONCENTRATION THRESHOLD AS SHOWN
- **BOLD** RESULTS EXCEED ENVIRONMENTAL SCREENING LEVELS (ESLs) FOR RESIDENTIAL SOIL: CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD-SAN FRANCISCO BAY REGION

ALL CONCENTRATIONS ARE IN MILLIGRAMS PER KILOGRAM (mg/kg)

ALL DEPTHS SHOWN ARE IN FEET BELOW GROUND SURFACE (FT BGS)

NOTES:

1. BASE MAP PROVIDED BY MID COAST ENGINEERS, DATED 06/29/11, AT A SCALE OF 1"=50'. ADDITIONAL SITE FEATURES PROVIDED BY STANTEC, INC., DATED 03/05/10, AT A SCALE OF 1"=50'.
2. COORDINATES ARE BASED ON THE CALIFORNIA COORDINATE SYSTEM, ZONE III, NAD 83.

0 50' 100'

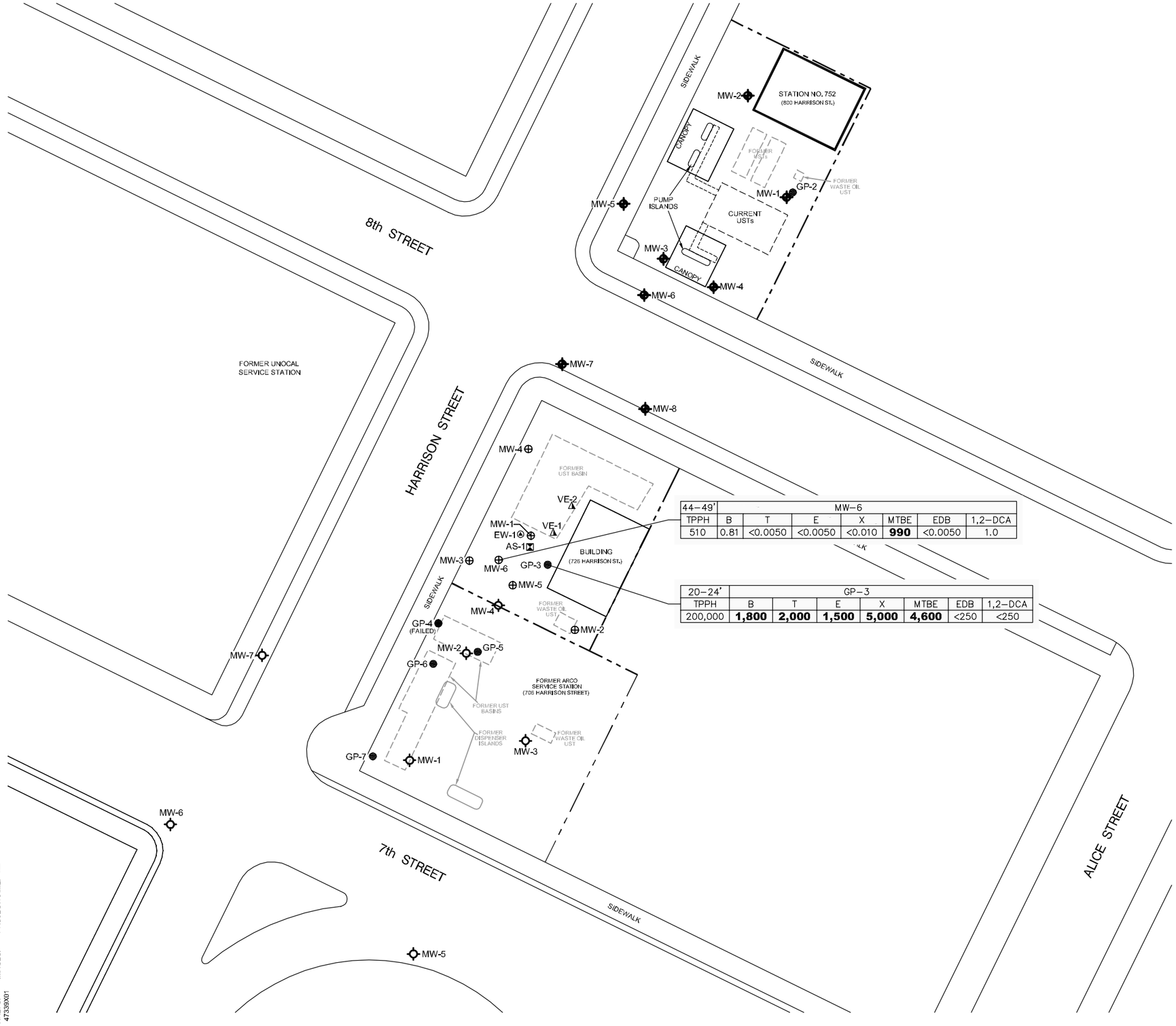
GRAPHIC SCALE

UNION OIL
STATION NO. 752
800 HARRISON STREET
OAKLAND, CALIFORNIA

SOIL HYDROCARBON CONCENTRATION MAP JUNE 2011

ARCADIS

FIGURE 3



44–49'	MW–6							
TPPH	B	T	E	X	MTBE	EDB	1,2–DCA
510	0.81	<0.0050	<0.0050	<0.010	**990**	<0.0050	1.0

20–24'	GP–3						
TPPH	B	T	E	X	MTBE	EDB	1,2–DCA
200,000	**1,800**	**2,000**	**1,500**	**5,000**	**4,600**	<250	<250

LEGEND

- PROPERTY BOUNDARY
- PRODUCT PIPING
- MW-1 GROUNDWATER MONITORING WELL (UNOCAL 800 HARRISON STREET)
- MW-1 GROUNDWATER MONITORING WELL (GIN 706 HARRISON STREET)
- MW-1 GROUNDWATER MONITORING WELL (YEE 726 HARRISON STREET)
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- EW-1 EXTRACTION WELL (YEE 726 HARRISON STREET)
- VE-1 DESTROYED WELL (YEE 726 HARRISON STREET)
- GP-2 GEOPROBE™ (JUNE 2011)

TPPH TOTAL PURGEABLE PETROLEUM HYDROCARBONS
B BENZENE
T TOLUENE
E ETHYLBENZENE
X XYLENES
MTBE METHYL TERTIARY BUTYL ETHER
EDB 1,2-DIBROMOETHANE
1,2-DCA 1,2-DICHLOROETHANE
< NOT DETECTED AT CONCENTRATION THRESHOLD AS SHOWN
BOLD RESULT EXCEEDS MAXIMUM CONTAMINANT LEVELS (MCLs) FOR DRINKING WATER STANDARDS: DEPARTMENT OF CALIFORNIA HEALTH SERVICES

ALL CONCENTRATIONS ARE IN MICROGRAMS PER LITER (µg/L)

NOTES:

1. BASE MAP PROVIDED BY MID COAST ENGINEERS, DATED 06/29/11, AT A SCALE OF 1"=50'. ADDITIONAL SITE FEATURES PROVIDED BY STANTEC, INC., DATED 03/05/10, AT A SCALE OF 1"=50'.
2. COORDINATES ARE BASED ON THE CALIFORNIA COORDINATE SYSTEM, ZONE III, NAD 83.

0 50' 100'
GRAPHIC SCALE

UNION OIL
STATION NO. 752
800 HARRISON STREET
OAKLAND, CALIFORNIA

GROUNDWATER HYDROCARBON CONCENTRATION MAP JUNE 2011

ARCADIS

FIGURE 4

CITY: PETALUMA, CA DIV/GROUP: ENV DB: J. HARRIS LD: J. HARRIS PIC: J. VOGELEY PM: K. ABBOTT TM: K. ABBOTT LYR: (On)ON=*OFF=*REF*
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47339X01
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ARCADIS

Tables

Table 1
Soil Analytical Data
Chevron Site ID 351646
800, 726, and 706 Harrison Street, Oakland, California

Sample Name	Sample Date	Sample Depth (feet bgs)	LUFT GC/MS	EPA 8260B						
			TPPH (mg/kg)	Benzene (mg/kg)	Toluene (mg/kg)	Ethylbenzene (mg/kg)	Xylenes (mg/kg)	MTBE (mg/kg)	EDB (mg/kg)	1,2-DCA (mg/kg)
706 Harrison Street										
GP-5	06/24/11	5.0	<0.30	<0.0074	<0.0074	<0.0074	<0.015	<0.0074	<0.0074	<0.0074
	06/24/11	10.0	<0.18	<0.0044	<0.0044	<0.0044	<0.0089	<0.0044	<0.0044	<0.0044
	06/24/11	15.0	<0.16	<0.0040	<0.0040	<0.0040	<0.0081	<0.0040	<0.0040	<0.0040
	06/24/11	20.0	2.1	<0.0043	<0.0043	0.0057	<0.0085	0.0099	<0.0043	<0.0043
GP-6	06/24/11	5.0	<0.19	<0.0047	<0.0047	<0.0047	<0.0094	<0.0047	<0.0047	<0.0047
	06/24/11	10.0	<0.17	<0.0043	<0.0043	<0.0043	<0.0086	<0.0043	<0.0043	<0.0043
	06/24/11	15.0	<0.18	<0.0045	<0.0045	<0.0045	<0.0089	<0.0045	<0.0045	<0.0045
GP-7	06/24/11	5.0	<0.23	<0.0050	<0.0050	<0.0050	<0.010	<0.0050	<0.0050	<0.0050
	06/24/11	10.0	<0.19	<0.0048	<0.0048	<0.0048	<0.0096	<0.0048	<0.0048	<0.0048
	06/24/11	15.0	<0.17	<0.0043	<0.0043	<0.0043	<0.0086	<0.0043	<0.0043	<0.0043
726 Harrison Street										
GP-3	06/20/11	7.0	<0.20	<0.0050	<0.0050	<0.0050	<0.010	0.00087 J	<0.0050	<0.0050
	06/20/11	10.0	<0.20	<0.0050	<0.0050	<0.0050	<0.010	<0.0050	<0.0050	<0.0050
	06/20/11	15.0	<0.20	<0.0050	<0.0050	<0.0050	<0.010	<0.0050	<0.0050	<0.0050
MW-6	06/20/11	6.5	<0.20	<0.0050	<0.0050	<0.0050	<0.010	<0.0050	<0.0050	<0.0050
	06/20/11	11.0	<0.20	<0.0050	<0.0050	<0.0050	<0.010	<0.0050	<0.0050	<0.0050
	06/20/11	16.0	0.12 J	<0.0050	<0.0050	<0.0050	<0.010	0.0092	<0.0050	<0.0050
800 Harrison Street										
GP-2	06/24/11	5.0	<0.63	<0.016	<0.016	<0.016	<0.031	<0.016	<0.016	<0.016
	06/24/11	10.0	21	<0.0044	<0.0044	<0.0044	<0.0088	0.013	<0.0044	<0.0044
	06/24/11	14.0	**3,200**	<0.0044	<0.0044	0.013	0.11	**0.028**	<0.0044	<0.0044
	06/24/11	17.0	**1,000**	<0.0044	0.024	0.015	0.098	**0.060**	<0.0044	<0.0044
ESLs for Residential Soils			**83**	**0.044**	**2.9**	**3.3**	**2.3**	**0.023**	**-**	**-**

Explanation

bgs	Below ground surface
TPPH	Total purgeable petroleum hydrocarbons
MTBE	Methyl tertiary butyl ether
EDB	1,2-Dibromoethane
1,2-DCA	1,2-Dichloroethane
mg/kg	Milligrams per kilogram
<0.0005	Not detected at concentration threshold as shown
-	Unavailable
ESL	Table C. Environmental Screening Levels (ESLs), Deep Soils (>3meters below ground surface), Groundwater is a Current or Potential Source of Drinking Water, CRWQCB-SFBR, Table C, May 2008

Table 2
Groundwater Analytical Data
Chevron Site ID 351646
800, 726, and 706 Harrison Street, Oakland, California

Sample Name	Sample Date	LUFT GC/MS		EPA 8260B						
		TPPH (µg/L)	DRO (µg/L)	Benzene (µg/L)	Toluene (µg/L)	Ethylbenzene (µg/L)	Xylenes (µg/L)	MTBE (µg/L)	EDB (µg/L)	1,2-DCA (µg/L)
726 Harrison Street										
GP-3	06/20/11	200,000	NA	**1,800**	**2,000**	**1,500**	**5,000**	**4,600**	<250	<250
MW-6	06/27/11	510	NA	0.81	<0.0050	<0.0050	<0.010	**990**	<0.0050	1.0
800 Harrison Street										
MW-1B	06/23/11	81	73	<0.50	<0.50	<0.50	1.0	**200**	<0.50	<0.50
MW-2C	06/23/11	<50	130	<0.50	<0.50	<0.50	1.2	**60**	<0.50	1.6
MW-3B	06/23/11	<50	80	<0.50	<0.50	<0.50	1.2	6.2	<0.50	2.6
MW-4	06/23/11	<50	76	<0.50	<0.50	<0.50	<1.0	<0.50	<0.50	<0.50
MW-5	06/23/11	10,000	7,100	**1,700**	68	**430**	130	**3,700**	<0.50	<0.50
MW-6	06/23/11	52	<44	<0.50	<0.50	<0.50	<1.0	5.4	<0.50	<0.50
MW-7	06/23/11	1,800	160	**72**	<0.50	5.4	1.3	**120**	<0.50	<0.50
MW-8	06/23/11	230	<40	<0.50	<0.50	<0.50	<1.0	**680**	<0.50	<0.50
MW-9	06/23/11	<50	<44	<0.50	<0.50	<0.50	<1.0	3.9	<0.50	<0.50
MW-10	06/23/11	<50	66	<0.50	<0.50	<0.50	1.5	8.0	<0.50	<0.50
MW-11	06/23/11	<50	52	<0.50	<0.50	<0.50	<1.0	<0.50	<0.50	<0.50
MW-12	06/23/11	<50	170	<0.50	<0.50	<0.50	<1.0	<0.50	<0.50	<0.50
MW-13	06/23/11	<50	<40	<0.50	<0.50	<0.50	<1.0	**14**	<0.50	<0.50
MCLs for Groundwater		-	-	**1.0**	**150**	**300**	**1,750**	**13**	**-**	**-**

Explanation

bgs	Below ground surface
TPPH	Total purgeable petroleum hydrocarbons
MTBE	Methyl tertiary butyl ether
EDB	1,2-Dibromoethane
1,2-DCA	1,2-Dichloroethane
µg/L	Micrograms per liter
<0.0005	Not detected at concentration threshold as shown
NA	Not analyzed
-	Unavailable
MCL	Maximum Contaminant Levels for Drinking Water Standards: Department of California Health Services

Appendix A

ASE Data Report or Soil and Groundwater Assessment

Aqua Science Engineers, Inc. 55 Oak Court, Suite 220, Danville, CA 94526
(925) 820-9391 - Fax (925) 837-4853 - www.aquascienceengineers.com

August 24, 2011

DATA REPORT OF SOIL AND GROUNDWATER ASSESSMENT
ASE JOB NO. 3412

at
Yee Property
726 Harrison Street
Oakland, California

Prepared by:
AQUA SCIENCE ENGINEERS, INC.
55 Oak Court, Suite 220
Danville, CA 94526
(925) 820-9391

Aqua Science Engineers, Inc. 55 Oak Court, Suite 220, Danville, CA 94526
(925) 820-9391 - Fax (925) 837-4853 - www.aquascienceengineers.com

TABLE OF CONTENTS

SECTION		PAGE
1.0	INTRODUCTION	1
2.0	SCOPE OF WORK	1
3.0	DRILL SOIL BORING GP-3 USING A DIRECT-PUSH DRILLING RIG AND COLLECT SOIL SAMPLES FOR ANALYSIS	2
4.0	INSTALL, DEVELOP AND SAMPLE MONITORING WELL MW-6	3
5.0	SURVEY AND GROUNDWATER ELEVATIONS	6
6.0	LITHOLOGY AND HYDROGEOLOGY	6
7.0	ANALYTICAL RESULTS FOR SOIL AND GROUNDWATER	6
8.0	WASTE SOIL AND WATER DISPOSAL	7
9.0	CONCLUSIONS	7
10.0	REPORT LIMITATIONS	7

LIST OF FIGURES

FIGURE 1 SITE LOCATION MAP

FIGURE 2 SITE PLAN SHOWING BORINGS AND MONITORING WELL LOCATIONS

LIST OF TABLES

TABLE 1 MW-6 WELL DEVELOPMENT DATA

TABLE 2 ANALYTICAL RESULTS FOR SOIL SAMPLES

TABLE 3 ANALYTICAL RESULTS FOR GROUNDWATER SAMPLES

Aqua Science Engineers, Inc. 55 Oak Court, Suite 220, Danville, CA 94526
(925) 820-9391 - Fax (925) 837-4853 - www.aquascienceengineers.com

TABLE OF CONTENTS
(CONTINUED)

LIST OF APPENDICES

APPENDIX A PERMITS

APPENDIX B BORING LOGS

APPENDIX C SURVEY

APPENDIX D ANALYTICAL REPORTS AND CHAIN OF CUSTODY FORMS FOR SOIL AND GROUNDWATER SAMPLES

APPENDIX E WASTE DISPOSAL MANIFESTS

Aqua Science Engineers, Inc. 55 Oak Court, Suite 220, Danville, CA 94526
(925) 820-9391 - Fax (925) 837-4853 - www.aquascienceengineers.com

1.0 INTRODUCTION

This submittal presents Aqua Science Engineer's, Inc. (ASE) data report for the drilling of one Geoprobe soil boring and the installation of one second-zone groundwater monitoring well at the Yee Property located at 726 Harrison Street in Oakland, California (Figures 1 and 2). Interpretation of the data is not included in this report, but rather will be provided in a report to be prepared by Arcadis, who is preparing a report for the co-mingled plume project consisting of 706, 726 and 800 Harrison Street.

2.0 SCOPE OF WORK (SOW)

The scope of work for this project was presented in "Commingled Plume Assessment Workplan," prepared by Stantec Consulting Corporation and dated March 31, 2011. The scope of work for the portion of the project on the Yee property is to:

1) Obtain drilling permits from the Alameda County Public Works Agency.

2) Contract with a subsurface utility locating service to clear each drilling location of underground utility lines.

3) Drill one soil boring using a Geoprobe and collect soil samples for analysis.

4) Drill one soil boring with a hollow-stem auger drilling rig and set a conductor casing. After the well seal has set, drill within the outer conductor casing and construct a second zone groundwater monitoring well to a depth of approximately 49-feet bgs.

5) Develop the newly installed monitoring well described above using surge block agitation and bailer evacuation.

6) Collect groundwater samples from the newly installed monitoring well.

7) Analyze selective soil and groundwater samples for total petroleum hydrocarbons as gasoline (TPH-G), benzene, toluene, ethyl benzene and total xylenes (collectively known as BTEX), methyl tertiary butyl ether (MTBE), and lead scavengers at a CAL DHS certified analytical laboratory.

8) Survey the elevation and horizontal location of each boring and well to Geotracker standards.

9) Dispose of the soil cuttings produced during this assessment.

10) Prepare this report.

Details of the assessment are presented below.

3.0 DRILL SOIL BORING GP-3 WITH A DIRECT-PUSH DRILLING RIG AND COLLECT SOIL SAMPLES FOR ANALYSIS

3.1 Drilling Permits

Prior to drilling, ASE obtained a drilling permit from the Alameda County Public Works Agency (ACPWA). A copy of the permit is presented in Appendix A.

3.2 Subsurface Utility Location

Prior to drilling, ASE notified Underground Service Alert (USA) to have public underground utility lines marked in the site vicinity. In addition, ASE subcontracted Cruz Brothers Locators of Scott's Valley, California to verify that the drilling location was clear of subsurface utility lines.

3.3 Drill a Soil Boring Using a Geoprobe Drilling Rig

On June 20, 2011, V&W Drilling of Tracy, California drilled soil boring GP-3 using a Geoprobe direct push drilling rig. Prior to drilling with the drilling rig, the first 6-feet of the boring was drilled with a hand-auger. Once at 6-feet, a soil sample was obtained using a slide-hammer attached to a sampler lined with stainless-steel tubes. The sample tube was sealed with Teflon tape and plastic end caps, labeled and chilled in an ice chest with wet ice for transport to BC Laboratories of Bakersfield, California under chain of custody procedures. Following the soil sample collection, the drilling then continued using a hand-auger until a depth of 8.1-feet was obtained. The remainder of the boring below 8.1-feet was drilled using a Geoprobe. The boring location is shown on Figure 2. ASE senior geologist Robert E. Kitay, P.G. directed the drilling.

Undisturbed soil samples were collected continuously as drilling progressed for lithologic and hydrogeologic description and for possible chemical analysis. The samples were collected by driving a sampler lined with acetate tubes using hydraulic direct push methods. Selective soil samples were immediately cut, sealed with Teflon tape and plastic end caps, labeled and chilled in an ice chest with wet ice for transport to BC Laboratories of Bakersfield, California under chain of custody documentation.

Soil from the remaining tubes was described by the site geologist using the Unified Soil Classification System (USCS) and was screened for volatile compounds using a photo ionization detector (PID). The soil was screened by emptying soil from one of the sample tubes into a plastic bag. The bag was then sealed and placed in the sun for approximately 10 minutes. After the VOCs were allowed to volatilize, the PID measured the vapor in the bag through a small hole punched in the bag. PID readings are used as a screening tool only, since the procedures are not as rigorous as those used in the laboratory. The PID readings are shown on the boring logs presented in Appendix B.

3.4 Groundwater Sample Collection

Although not initially included in the workplan, ASE collected a groundwater sample from the boring. Temporary PVC well casing was driven into place for the collection of the groundwater samples, which were removed from the boring with a new polyethylene bailer. The groundwater samples were contained in 40-ml volatile organic analysis (VOA) vials, preserved with hydrochloric acid, and sealed without headspace. The samples were labeled and chilled in an ice chest with wet ice for transport to BC Laboratories of Bakersfield, California under chain of custody documentation.

3.5 Decontamination and Borehole Backfilling

Drilling equipment was cleaned with an Alconox solution between sampling intervals to prevent potential cross-contamination. Following collection of the soil and groundwater samples, the boring was backfilled with neat cement to the ground surface.

3.6 Subsurface Lithology and Hydrogeology

Sediments encountered during the drilling of GP-3 consisted of sand from beneath the asphalt surface to approximately 7-feet below ground surface (bgs), silty sand from 7-feet bgs to 20-feet bgs, sand from 20-feet bgs to 23-feet bgs, and silty sand from 23-feet bgs to the total depth explored of 24-feet bgs. Groundwater was encountered at approximately 20-feet bgs. The boring log is presented in Appendix B.

4.0 INSTALL, DEVELOP AND SAMPLE MONITORING WELL MW-6

4.1 Drilling Permits

Prior to drilling, ASE obtained a well construction permit from the ACPWA. A copy of the permit is presented in Appendix A.

4.2 Subsurface Utility Location

Prior to drilling, notified USA to have public underground utility lines marked in the site vicinity. In addition, ASE subcontracted a Cruz Brothers Locators of Scott's Valley, California to verify that the drilling location was clear of subsurface utility lines.

4.3 Drill a Soil Boring Using a Hollow-Stem Auger Drilling Rig

On June 20, 2011, V&W Drilling of Tracy, California drilled soil boring MW-6 at the site using a drill rig equipped with 12-inch diameter hollow-stem augers The boring location is shown on Figure 2. ASE senior geologist Robert E. Kitay, P.G. directed the drilling.

Prior to drilling with the drilling rig, the first 6-feet of the boring was drilled with a hand-auger. Once at 6-feet, a soil sample was obtained using a slide-hammer attached to a sampler lined with stainless-steel tubes. The sample tube was sealed with Teflon tape and plastic end caps, labeled

and chilled in an ice chest with wet ice for transport to BC Laboratories of Bakersfield, California under chain of custody procedures. Following the soil sample collection, the drilling then continued using a hand-auger until a depth of 8.1-feet was obtained. The remainder of the boring below 8.1-feet was drilled using hollow-stem augers.

Between 8.1 and 35-feet bgs, soil samples were collected at 5-foot intervals in stainless-steel tubes using a split-barrel drive sampler advanced by repeated blows from a 140-lb. hammer dropped 18-inches. Samples to be retained for analysis were immediately removed from the sampler, trimmed, sealed with Teflon tape and plastic caps, and labeled with the site location, sample designation, date and time the sample was collected, and the initials of the person collecting the sample. The samples were placed into an ice chest containing wet ice for delivery under chain of custody to a CAL-DHS certified analytical laboratory under chain of custody documentation.

The remaining soil was then described by the site geologist using the USCS and was screened for volatile compounds using a PID. The geologist screened the soil by emptying soil into a plastic bag. The bag was then sealed and placed in the sun for approximately 10 minutes. After the volatile compounds were allowed to volatilize, the PID measured the vapor in the bag through a small hole punched in the bag. PID readings are used as a screening tool only, since the procedures are not as rigorous as those used in the laboratory. The PID readings are shown on the boring logs presented in Appendix B.

Starting at 30-feet bgs, the soil sampling method was switched to a core-barrel that was lowered to the bottom of the augers and locked into place. After each 5-foot sampling run, the core-barrel was removed and the soil placed onto a soil tray.

Drilling equipment was cleaned with an Alconox solution between sampling intervals to prevent potential cross-contamination.

4.4 Placement of Conductor Casing

Once the drilling reached 35-feet bgs, an 8-5/8-inch steel conductor casing was placed into the augers. The bottom of the conductor casing was sealed with a wood plug to minimize potential issues with heaving sands and hydrocarbon vapors. The casing was lowered into the bottom of the boring and neat Portland cement was tremied into the annular space between the boring and the conductor casing. An at-grade traffic-rated well box was then installed to protect the well. Well construction details are shown on the boring log in Appendix B.

4.5 Continuation of Drilling Using a Hollow-Stem Auger Drilling Rig

On June 23, 2011, V&W Drilling of Tracy, California continued the drilling of MW-6 using a drill rig equipped with 8-inch diameter hollow-stem augers. This drilling took place within the larger diameter conductor casing that sealed off the shallower water-bearing zones.

Soil samples were collected using the core-barrel method for the remainder of the boring. During the initial drilling between 35-feet and 40-feet, the wood plug, although knocked out,

blocked the bottom of the augers and was drug down during the drilling. As a result, there was no sample recovery during this interval and the soil described in the boring log is based on the soil present on the auger flights. There were also poor quality soil samples below this depth, which prevented obtaining a soil sample for analysis within the clayey silt aquitard.

Soil descriptions continued as well as screening for volatile compounds using a PID. The PID readings are shown on the boring log presented in Appendix B.

Drilling equipment was cleaned with an Alconox solution between sampling intervals to prevent potential cross-contamination.

4.6 Monitoring Well Construction

Monitoring well MW-6 was constructed with 2-inch diameter, 0.020-inch slotted, flush-threaded, Schedule 40 PVC well screen and blank casing. The well is screened between 44 and 49-feet bgs to monitor the second water bearing zone encountered. The casing was placed in the hollow-stem augers, and #3 washed Lonestar sand was placed into the annular space between the borehole and the casing from the bottom of the boring to approximately 2-feet above the well screen while the augers were removed. Folowing the placement of the sandpack, the well was developed using surging and evacuation using a bailer. A detailed description of the well development follows in section 4.7. Following the well development, a 2-foot thick hydrated bentonite layer was placed to separate the sand from the overlying cement surface seal. The cement surface seal consists of neat Portland cement. The wellhead is secured with a locking wellplug beneath the previously installed at-grade traffic-rated well box. Well construction details are shown on the boring log in Appendix B.

4.7 Monitoring Well Development

On June 23, 2011, monitoring well MW-6 was developed using two episodes of surge-block agitation and bailer evacuation prior to placement of the well's sanitary seal. Ten well casing volumes of water were removed from the well during development. The pH, water temperature, electrical conductivity and turbidity were monitored during the purging. This data is presented in Table One. Well development purge water was contained in sealed and labeled 55-gallon steel drums and left on-site for temporary storage. No free-floating hydrocarbons were present on the surface of groundwater during well development.

4.8 Monitoring Well Sampling

On June 27, 2011, ASE collected groundwater samples from monitoring well MW-6. No free-floating hydrocarbons or sheen was present on the surface of the groundwater at the time of the sampling.

Prior to sampling, the well was purged of three well casing volumes of groundwater. The pH, temperature, and conductivity of the purge water were monitored during evacuation, and samples were not collected until these parameters stabilized. Groundwater samples were removed from the monitoring well using a new polyethylene bailer. The groundwater samples were contained

in 40-ml volatile organic analysis (VOA) vials, preserved with hydrochloric acid, and sealed without headspace. The samples were then labeled and stored in an ice chest with wet ice for transport to the analytical laboratory under chain of custody. Well sampling purge water was contained in sealed and labeled 55-gallon steel drums and left on-site for temporary storage.

5.0 SURVEY AND GROUNDWATER ELEVATIONS

On June 29, 2011, Mid Coast Engineers of Watsonville, California surveyed the top of casing and ground surface elevation of monitoring well MW-6 relative to mean sea level (msl). The ground surface location of GP-3 was also surveyed, as well as the horizontal locations of both MW-6 and GP-3. Measurements were obtained using conventional survey techniques in combination with GPS techniques (Code CGPS) using control points H016 and H031 as shown on the map entitled "Record of Survey No. 990, "Monumentation System for the Port of Oakland," filed in Book 18 of Surveys at Pages 50-60, Alameda County Records. Longitude and latitude were determined from the California Coordinate System, Zone 3, NAD 83 Datum to an accuracy of +/- 1 cm. GPS equipment is the Trimble 5700/5800 system (Code T57). A copy of the survey is included as Appendix C.

On June 27, 2011, ASE measured the depth to groundwater in monitoring well MW-6 prior to purging. The depth to groundwater was 27.20-feet below top of casing, with a potentiometric surface elevation of 4.84-feet above msl.

6.0 LITHOLOGY AND HYDROGEOLOGY

Sediments encountered beneath the site generally consisted, with some variation, of sand from beneath the asphalt surface to approximately 6-feet bgs, silty sand from approximately 6-feet bgs to 20-feet bgs, sand from 20-feet bgs to approximately 32.5-feet bgs, clayey silt from approximately 32.5-feet bgs to 42-feet bgs, silty sand from 42-feet bgs to 43.5-feet bgs, sandy silt from 43.5-feet bgs to 44-feet bgs, silty sand from 44-feet bgs to 48-feet bgs, and sand from 48-feet bgs to the total depth explored of 49-feet bgs. Free groundwater was encountered at 20-feet bgs in GP-3 and at 25-feet bgs in MW-6, although it is likely that groundwater was actually slightly higher than these depths. Boring logs are presented in Appendix B.

7.0 ANALYTICAL RESULTS FOR SOIL AND GROUNDWATER

Three soil samples were analyzed from each boring, a sample collected between 6.5 and 7.0-feet bgs, a sample collected between 10 and 11-feet bgs, and a sample collected between 15 and 16-feet bgs. These samples were analyzed by BC Laboratories, Inc. of Bakersfield, California (CA ELAP certification #1186) for total petroleum hydrocarbons as gasoline (TPH-G), benzene, toluene, ethyl benzene and total xylenes (collectively known as BTEX), methyl tertiary butyl ether (MTBE), and the lead scavengers 1,2-dibromoethane and 1,2-dichloroethane by EPA Method 8260. The analytical results are tabulated in Table Two, and the certified analytical report and chain of custody forms are included in Appendix D.

Groundwater samples collected from both boring GP-3 and monitoring well MW-6 were also analyzed by BC Laboratories for TPH-G, BTEX, MTBE, 1,2-dibromoethane, and 1,2-

dichloroethane by EPA Method 8260. The analytical results are tabulated in Table Three, and the certified analytical report and chain of custody forms are included in Appendix D.

8.0 WASTE SOIL AND WATER DISPOSAL

Waste soil, well development and sampling purge water, and steam-cleaning rinsate were transported by Decon Environmental of Hayward, California to Evergreen Oil of Newark, California for recycling. The manifest for the waste disposal is included in Appendix E.

9.0 CONCLUSIONS

This is a data report only. Conclusions and recommendations as it related to the comingled plume will be provided in a report prepared and submitted by Arcadis Environmental.

10.0 REPORT LIMITATIONS

The results presented in this report represent conditions at the time of the soil and groundwater sampling, at the specific locations at which the samples were collected, and for the specific parameters analyzed by the laboratory.

This report does not fully characterize the site for contamination resulting from unknown sources or for parameters not analyzed by the laboratory. All of the laboratory work cited in this report was prepared under the direction of an independent CAL-EPA certified laboratory. The independent laboratory is solely responsible for the contents and conclusions of the chemical analysis data.

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Aqua Science Engineers appreciates the opportunity provide environmental consulting services for this project. Should you have any questions or comments, please feel free to call us at (925) 820-9391.

Respectfully submitted,

AQUA SCIENCE ENGINEERS, INC.

Robert E. Kitay, P.G., R.E.A.
Senior Geologist

Attachments: Figures 1 and 2
Tables One through Three
Appendices A through E

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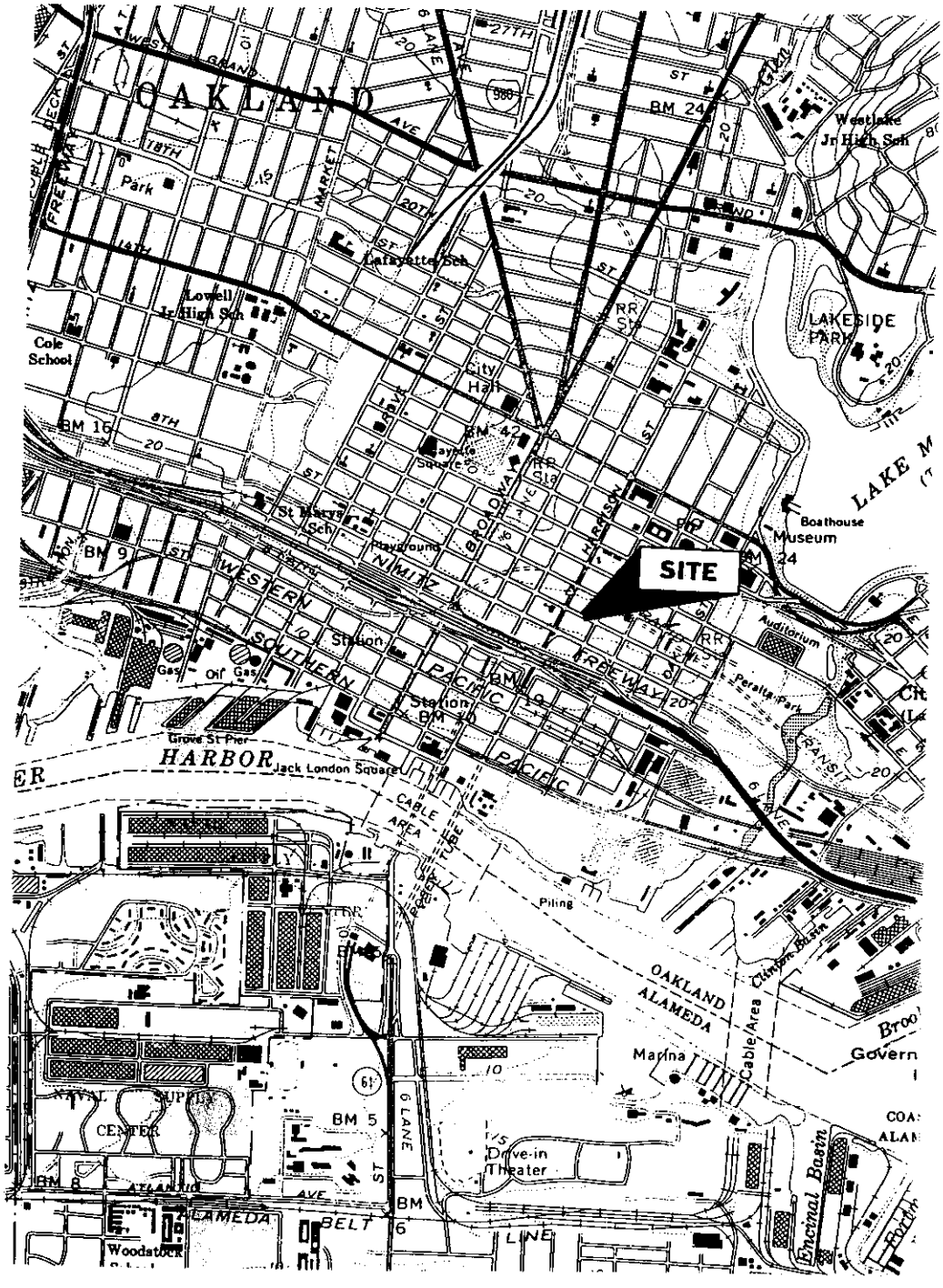
FIGURES

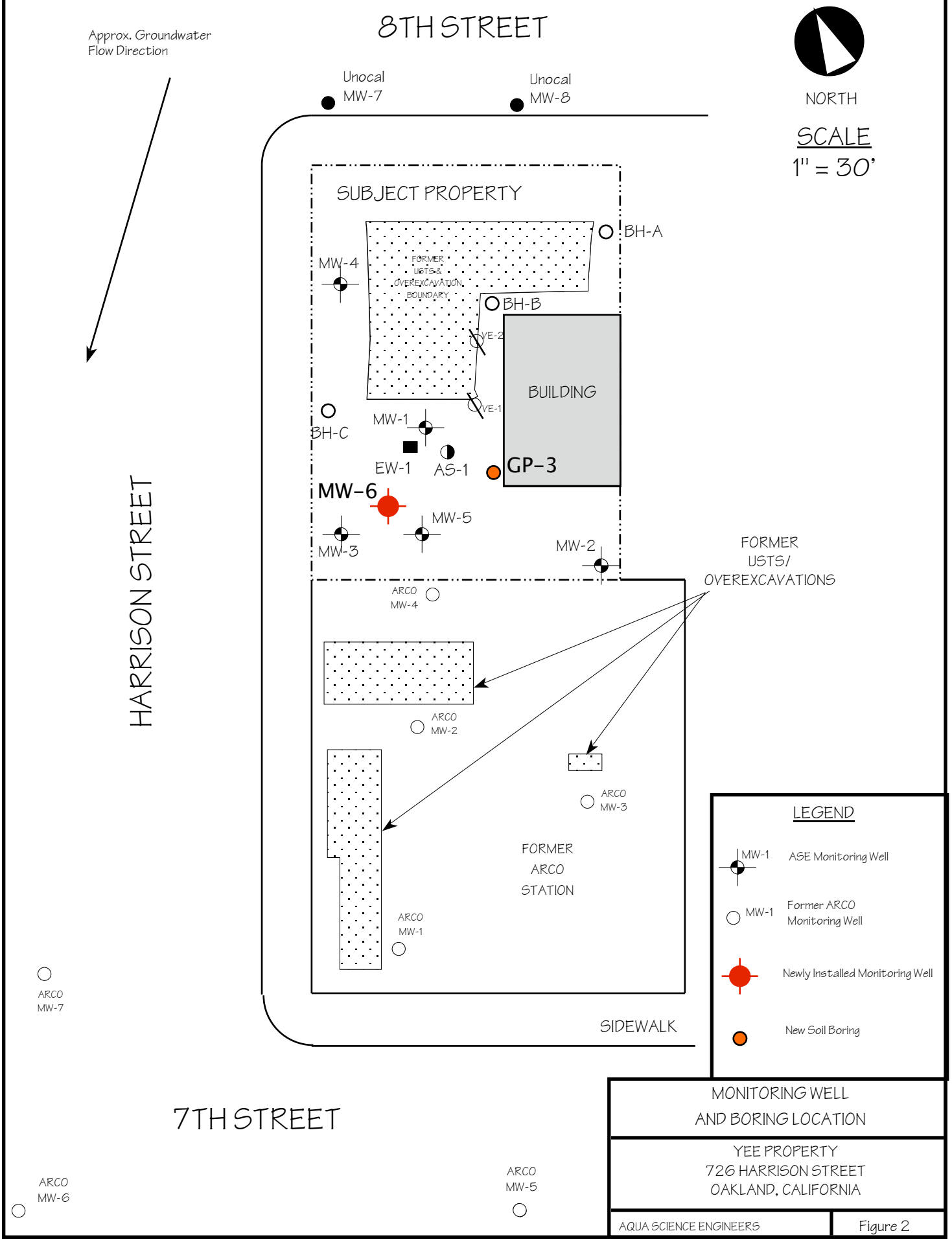
NORTH



SITE LOCATION MAP

YEE PROPERTY
726 HARRISON STREET
OAKLAND, CALIFORNIA

AQUA SCIENCE ENGINEERS | Figure 1



MONITORING WELL AND BORING LOCATION

YEE PROPERTY
726 HARRISON STREET
OAKLAND, CALIFORNIA

AQUA SCIENCE ENGINEERS | Figure 2

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TABLES

TABLE ONE

Well Development Data

Yee Property

726 Harrison Street, Oakland, CA

Gallons Removed	pH (Unitless)	Temperature (Degrees C)	Conductivity (uS)	Turbidity (NTU)
Initial	7.04	21.9	646	193.0
3.5	8.10	20.2	735	30.45
7.0	7.86	19.7	529	621.6
10.5	7.79	19.5	480	1,100+
14.0	7.85	19.2	473	1,100+
17.5	7.88	19.2	474	818
21.0	7.82	19.0	471	1,100+
24.5	7.82	19.1	472	1,100+
28.0	7.84	19.0	474	1097
31.5	7.79	19.0	472	877.4
35.0	7.78	19.0	452	1,100+

TABLE TWO

Summary of Analytical Results for **SOIL** Samples

Yee Property

726 Harrison Street, Oakland, CA

All results are in **mg/kg or parts per million (ppm)**

Well ID or Sample Point	Sample Depth (ft)	TPH Gasoline	Benzene	Toluene	Ethyl-benzene	Total Xylenes	p-m Xylenes	o-Xylene	MTBE	1,2-Dibromoethane	1,2-Dichloroethene
GP-3	7.0	< 0.20	< 0.0050	< 0.0050	< 0.0050	< 0.010	< 0.0050	< 0.0050	0.00087	< 0.0050	< 0.0050
	10.0	< 0.20	< 0.0050	< 0.0050	< 0.0050	< 0.010	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050
	15.0	< 0.20	< 0.0050	< 0.0050	< 0.0050	< 0.010	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050
MW-6	6.5	< 0.20	< 0.0050	< 0.0050	< 0.0050	< 0.010	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050
	11.0	< 0.20	< 0.0050	< 0.0050	< 0.0050	< 0.010	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050
	16.0	0.12J	< 0.0050	< 0.0050	< 0.0050	< 0.010	< 0.0050	< 0.0050	0.0092	< 0.0050	< 0.0050

Notes:

J = Estimate value.

Non-detectable concentrations noted by the less than sign (<) followed by the practical quantitation limit.

TABLE THREE

Summary of Analytical Results for **GROUNDWATER** Samples

Yee Property

726 Harrison Street, Oakland, CA

All results are in **ug/l or parts per billion (ppb)**

Well ID or Sample Point	Sample Date	TPH Gasoline	Benzene	Toluene	Ethyl-benzene	Total Xylenes	p-m Xylenes	o-Xylene	MTBE	1,2-Dibromoethane	1,2-Dichloroethene
GP-3	6-20-2011	200,000	1,800	2,000	1,500	5,000	3,200	1,700	4,600	< 250	< 250
MW-6	6-27-2011	510	0.81	< 0.50	< 0.50	< 1.0	< 0.50	< 0.50	990	< 0.50	1.0

Notes:

Non-detectable concentrations noted by the less than sign (<) followed by the practical quantitation limit.

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APPENDIX A

Permits

Alameda County Public Works Agency - Water Resources Well Permit

399 Elmhurst Street
Hayward, CA 94544-1395
Telephone: (510)670-6633 Fax:(510)782-1939

Application Approved on: 06/10/2011 By jamesy

Permit Numbers: W2011-0388 to W2011-0389
Permits Valid from 06/20/2011 to 06/24/2011

Application Id: 1307406975678 **City of Project Site:** Oakland
Site Location: 726 Harrison Street
Project Start Date: 06/20/2011 **Completion Date:** 06/24/2011
Assigned Inspector: Contact Vicky Hamlin at (510) 670-5443 or vickyh@acpwa.org

Applicant: Aqua Science Engineers - Robert Kitay
55 Oak Court, Suite 220, Danville, CA 94526 **Phone:** 925-820-9391
Property Owner: Peter Yee
1000 San Antonio Avenue, Alameda, CA 94501 **Phone:** --
Client: ** same as Property Owner **

Total Due: $662.00
Receipt Number: WR2011-0172 **Total Amount Paid:** $662.00
Payer Name : Aqua Science Engineers Paid By: VISA **PAID IN FULL**

Works Requesting Permits:

Well Construction-Monitoring-Monitoring - 1 Wells
Driller: V&W Drilling - Lic #: 720904 - Method: auger **Work Total: $397.00**

Specifications

Permit #	Issued Date	Expire Date	Owner Well Id	Hole Diam.	Casing Diam.	Seal Depth	Max. Depth
W2011-0388	06/10/2011	09/18/2011	MW-6	12.00 in.	2.00 in.	40.00 ft	50.00 ft

Specific Work Permit Conditions

1. Permittee shall assume entire responsibility for all activities and uses under this permit and shall indemnify, defend and save the Alameda County Public Works Agency, its officers, agents, and employees free and harmless from any and all expense, cost, liability in connection with or resulting from the exercise of this Permit including, but not limited to, properly damage, personal injury and wrongful death.

2. Permittee, permittee's contractors, consultants or agents shall be responsible to assure that all material or waters generated during drilling, boring destruction, and/or other activities associated with this Permit will be safely handled, properly managed, and disposed of according to all applicable federal, state, and local statutes regulating such. In no case shall these materials and/or waters be allowed to enter, or potentially enter, on or off-site storm sewers, dry wells, or waterways or be allowed to move off the property where work is being completed.

3. Prior to any drilling activities, it shall be the applicant's responsibility to contact and coordinate an Underground Service Alert (USA), obtain encroachment permit(s), excavation permit(s) or any other permits or agreements required for that Federal, State, County or City, and follow all City or County Ordinances. No work shall begin until all the permits and requirements have been approved or obtained. It shall also be the applicants responsibilities to provide to the Cities or to Alameda County an Traffic Safety Plan for any lane closures or detours planned. No work shall begin until all the permits and requirements have been approved or obtained.

4. Compliance with the well-sealing specifications shall not exempt the well-sealing contractor from complying with appropriate State reporting-requirements related to well construction or destruction (Sections 13750 through 13755 (Division 7, Chapter 10, Article 3) of the California Water Code). Contractor must complete State DWR Form 188 and mail original to the Alameda County Public Works Agency, Water Resources Section, within 60 days. Including permit

number and site map.

5. Applicant shall submit the copies of the approved encroachment permit to this office within 60 days.

6. Applicant shall contact Vicky Hamlin for an inspection time at 510-670-5443 or email to vickyh@acpwa.org at least five (5) working days prior to starting, once the permit has been approved. Confirm the scheduled date(s) at least 24 hours prior to drilling.

7. Wells shall have a Christy box or similar structure with a locking cap or cover. Well(s) shall be kept locked at all times. Well(s) that become damaged by traffic or construction shall be repaired in a timely manner or destroyed immediately (through permit process). No well(s) shall be left in a manner to act as a conduit at any time.

8. Minimum surface seal thickness is two inches of cement grout placed by tremie

9. Minimum seal (Neat Cement seal) depth for monitoring wells is 5 feet below ground surface(BGS) or the maximum depth practicable or 20 feet.

10. Copy of approved drilling permit must be on site at all times. Failure to present or show proof of the approved permit application on site shall result in a fine of $500.00.

Borehole(s) for Geo Probes-Sampling 24 to 72 hours only - 1 Boreholes
Driller: V&W Drilling - Lic #: 720904 - Method: auger **Work Total: $265.00**

Specifications

Permit Number	Issued Dt	Expire Dt	# Boreholes	Hole Diam	Max Depth
W2011-0389	06/10/2011	09/18/2011	1	2.50 in.	30.00 ft

Specific Work Permit Conditions

1. Backfill bore hole by tremie with cement grout or cement grout/sand mixture. Upper two-three feet replaced in kind or with compacted cuttings. All cuttings remaining or unused shall be containerized and hauled off site. The containers shall be clearly labeled to the ownership of the container and labeled hazardous or non-hazardous.

2. Boreholes shall not be left open for a period of more than 24 hours. All boreholes left open more than 24 hours will need approval from Alameda County Public Works Agency, Water Resources Section. All boreholes shall be backfilled according to permit destruction requirements and all concrete material and asphalt material shall be to Caltrans Spec or County/City Codes. No borehole(s) shall be left in a manner to act as a conduit at any time.

3. Permittee shall assume entire responsibility for all activities and uses under this permit and shall indemnify, defend and save the Alameda County Public Works Agency, its officers, agents, and employees free and harmless from any and all expense, cost, liability in connection with or resulting from the exercise of this Permit including, but not limited to, properly damage, personal injury and wrongful death.

4. Applicant shall contact Vicky Hamlin for an inspection time at 510-670-5443 or email to vickyh@acpwa.org at least five (5) working days prior to starting, once the permit has been approved. Confirm the scheduled date(s) at least 24 hours prior to drilling.

5. Permittee, permittee's contractors, consultants or agents shall be responsible to assure that all material or waters generated during drilling, boring destruction, and/or other activities associated with this Permit will be safely handled,

properly managed, and disposed of according to all applicable federal, state, and local statutes regulating such. In no case shall these materials and/or waters be allowed to enter, or potentially enter, on or off-site storm sewers, dry wells, or waterways or be allowed to move off the property where work is being completed.

6. Copy of approved drilling permit must be on site at all times. Failure to present or show proof of the approved permit application on site shall result in a fine of $500.00.

7. Prior to any drilling activities onto any public right-of-ways, it shall be the applicants responsibilities to contact and coordinate a Underground Service Alert (USA), obtain encroachment permit(s), excavation permit(s) or any other permits required for that City or to the County and follow all City or County Ordinances. It shall also be the applicants responsibilities to provide to the Cities or to Alameda County a Traffic Safety Plan for any lane closures or detours planned. No work shall begin until all the permits and requirements have been approved or obtained.

8. Permit is valid only for the purpose specified herein. No changes in construction procedures, as described on this permit application. Boreholes shall not be converted to monitoring wells, without a permit application process.

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APPENDIX B

Boring Logs

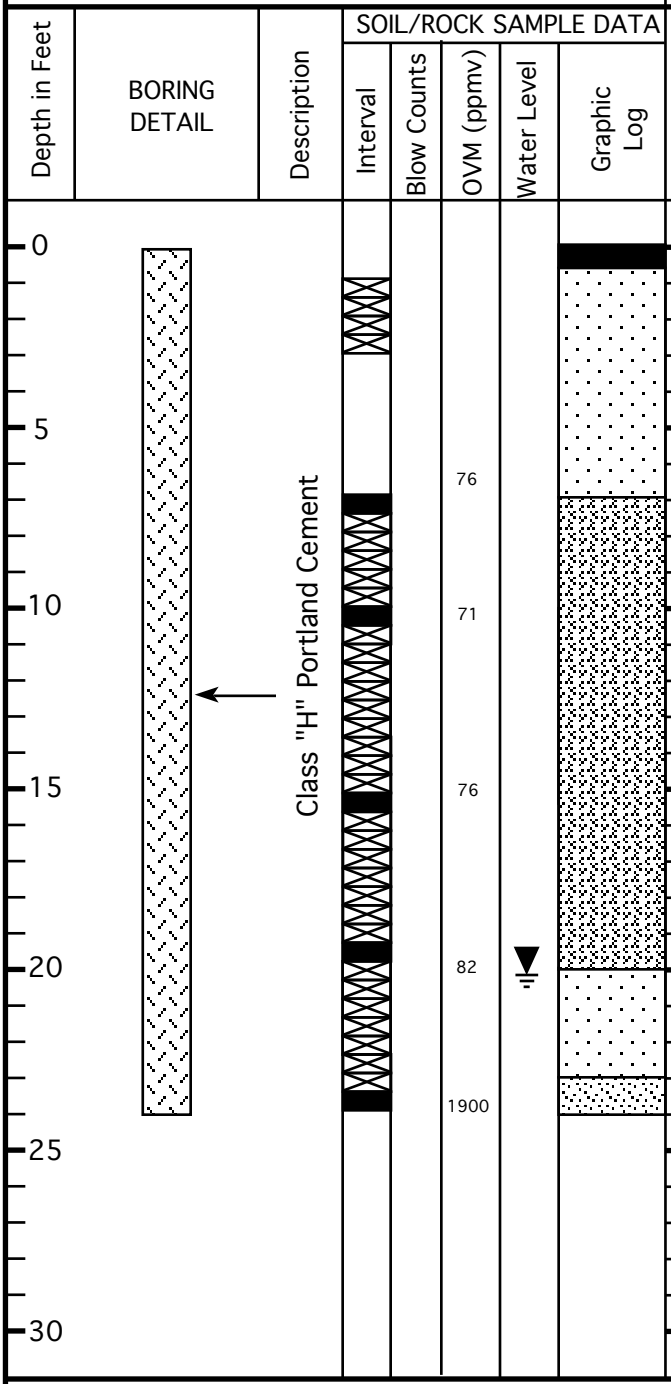
SOIL BORING LOG AND MONITORING WELL COMPLETION DETAILS

BORING: GP-3

Project Name: Yee Property	Project Location: 726 Harrison Street, Oakland, CA	Page 1 of 1
Driller: V&W Drilling	Type of Rig: Geoprobe Direct-Push	Size of Drill: 2.5" Diameter
Logged By: Robert E. Kitay, P.G.	Date Drilled: June 20, 2011	Checked By: Robert E. Kitay, P.G.

WATER AND WELL DATA

Depth of Water First Encountered: 20'	Total Depth of Well Completed: NA
	Well Screen Type and Diameter:NA
Static Depth of Water in Well: NA	Well Screen Slot Size: NA
Total Depth of Boring: 24'	Type of Soil Sampler: Macro-Core



DESCRIPTION OF LITHOLOGY

standard classification, texture, relative moisture, density, stiffness, odor-staining, USCS designation.

0 — Asphalt

SAND (SP); yellow brown; loose; dry; 100% fine sand; non-plastic; high estimated K; no odor

Silty SAND (SM); olive; loose; dry; 90% fine sand; 10% silt; non-plastic; medium estimated K; slight to moderate hydrocarbon odor

moderate hydrocarbon odor at 10'

moderate hydrocarbon odor at 15'

very strong hydrocarbon odor at 19'

20 — SAND (SP); olive; loose; wet; 100% fine to medium sand; non-plastic; high estimated K; strong hydrocarbon odor

Silty SAND (SM); olive; medium dense; wet; 90% fine sand; 10% silt; trace clay; moderate plasticity; medium estimated K; strong hydrocarbon odor

End of Boring at 24'

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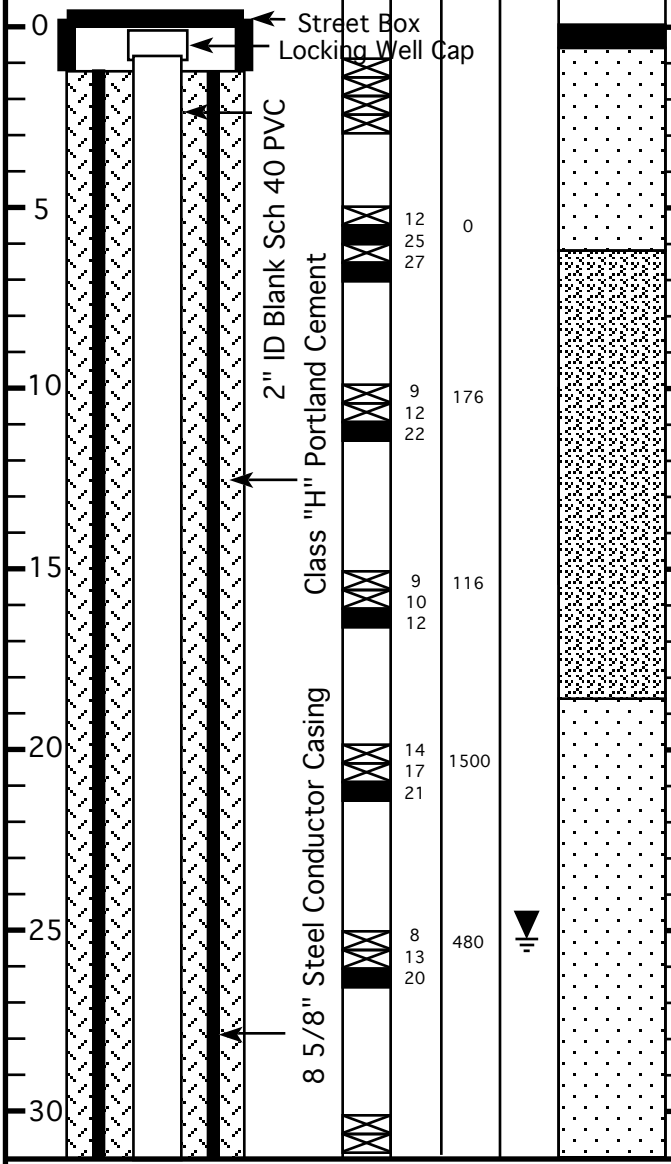
SOIL BORING LOG AND MONITORING WELL COMPLETION DETAILS		BORING: MW-6
Project Name: Yee Property	Project Location: 726 Harrison Street, Oakland, CA	Page 1 of 2
Driller: V&W Drilling	Type of Rig: Hollow-Stem Auger	Size of Drill: 12" O.D. to 35'/8" O.D. below 35'
Logged By: Robert E. Kitay, P.G.	Date Drilled: June 20 & 23, 2011	Checked By: Robert E. Kitay, P.G.

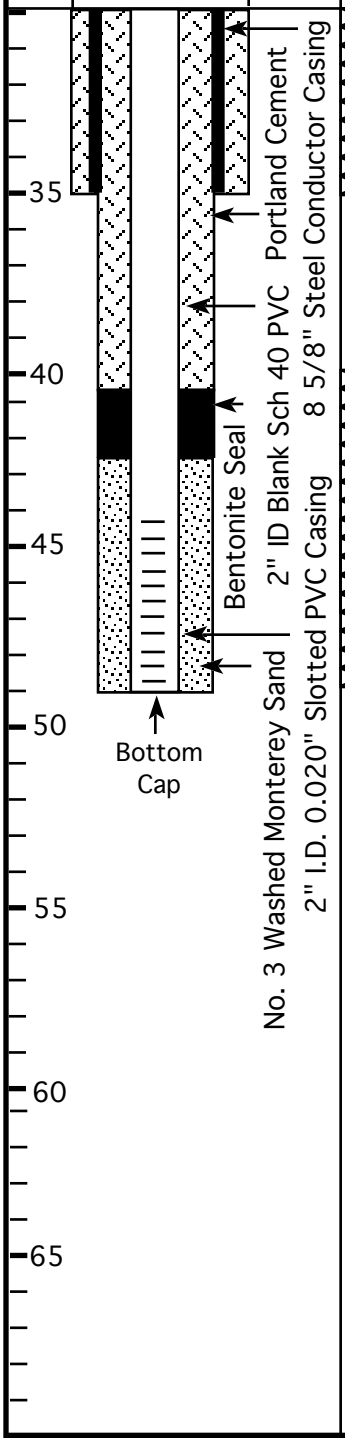
WATER AND WELL DATA	
Depth of Water First Encountered: 25'	Total Depth of Well Completed: 49'
	Well Screen Type and Diameter: 2.0" Diameter Sch. 40 PVC
Static Depth of Water in Well: 27.2'	Well Screen Slot Size: 0.020"
Total Depth of Boring: 49'	Type of Soil Sampler: 2.0" Split-Barrel Sampler/Coring Below 25'

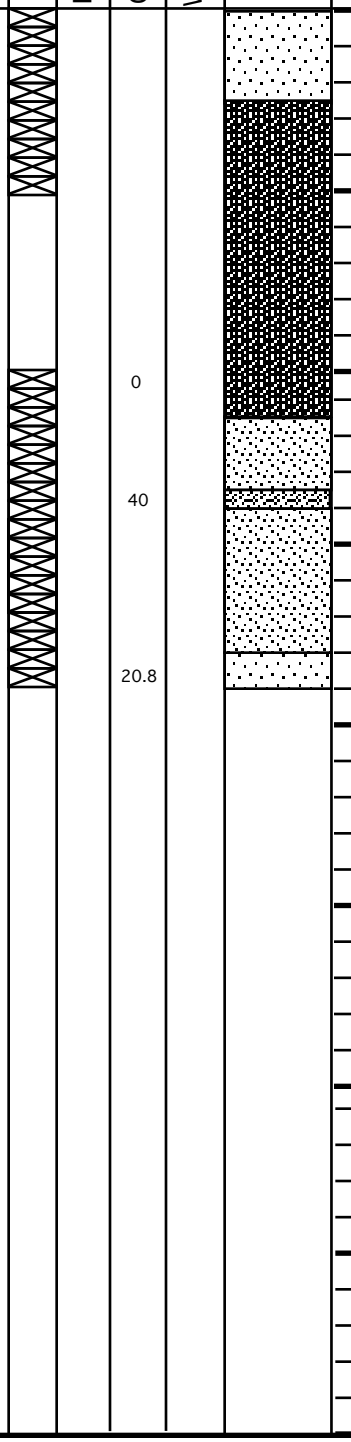


DESCRIPTION OF LITHOLOGY	
standard classification, texture, relative moisture, density, stiffness, odor-staining, USCS designation.	
0	Asphalt
	SAND (SP); yellow brown; loose; dry; 100% fine sand; non-plastic; high estimated K; no odor
5	
	Silty SAND (SM); olive; dry; 90% fine sand; 10% silt; trace clay; non-plastic; medium estimated K; faint hydrocarbon odor
10	
15	
	SAND (SP); olive; loose; damp; 100% fine to medium sand; non-plastic; high estimated K; strong hydrocarbon odor
20	
25	wet at 25'; very strong hydrocarbon odors
30	

AQUA SCIENCE ENGINEERS, INC.

SOIL BORING LOG AND MONITORING WELL COMPLETION DETAILS	BORING: MW-6
Project Name: Yee Property	Project Location: 726 Harrison Street, Oakland, CA





DESCRIPTION OF LITHOLOGY

standard classification, texture, relative moisture, density, stiffness, odor-staining, USCS designation.

Clayey SILT (MH); yellow brown; stiff; dry; 60% silt; 40% clay; medium to high plasticity; very low estimated K; no odor
[No recovery from 35-40' due to wood plug being pushed down. Clayey silt present on auger flights.]

Clayey SILT as described at 32.5'

Silty SAND (SM); olive; 60% fine sand; 30% silt; 10% clay; low plasticity; low estimated K; no odor; abundent shells at 43'

Sandy CLAY (CH); olive; stiff; 60% clay; 40% fine sand: high plasticity; very low estimated K; no odor

Silty SAND (SM); olive; 60% fine sand; 30% silt; 10% clay; low plasticity; low estimated K; no odor; shells from 44 to 45'; no shells below 45'

SAND (SP); yellow brown; loose; wet; 100% fine to medium sand; non-plastic; high estimated K; no odor

End of Boring at 49'

Aqua Science Engineers, Inc. 55 Oak Court, Suite 220, Danville, CA 94526
(925) 820-9391 - Fax (925) 837-4853 - www.aquascienceengineers.com

APPENDIX C

Survey

Mid Coast Engineers

Civil Engineers and Land Surveyors

70 Penny Lane, Suite A - Watsonville, CA 95076
phone: (831) 724-2580
fax: (831) 724-8025
e-mail: lee@midcoastengineers.com

Richard A. Wadsworth
Civil Engineer

Stanley O. Nielsen
Land Surveyor

Lee D. Vaage
Land Surveyor

Jeff S. Nielsen
Land Surveyor

June 29, 2011

Robert Kitay
Aqua Science Engineers
55 Oak Court, Suite 220
Danville, CA 94526

Re: **UNOCAL #0752/YEE/GIN COMMINGLE, 800/726/706 Harrison Street, Oakland, California;** AQUA SCIENCE ENGINEERS Project, MCE Job No. 09111X

Dear Mr. Kitay,

As you requested, on June 28 we surveyed one monitoring well and one boring location at the Yee Parcel, part of the referenced project. Our findings are listed on the attached sheets, expressed in State Plane Coordinates and in Latitude/Longitude, and are consistent with our previous survey for Stantec in September 2009.

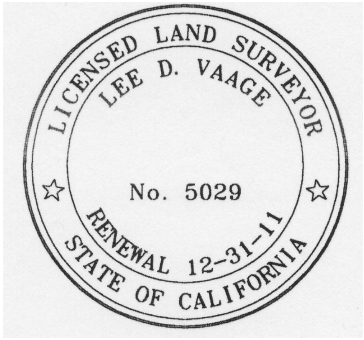
For the well, a notch was cut in the north rim of the PVC casing (TOC) and a cross chiseled in the north rim of the box (TOB). Measurements were taken for the boring at ground level in the approximate center of the boring.

Measurements were obtained from conventional survey techniques in combination with GPS techniques (Code CGPS), using control points H016 and H031 as shown on the map entitled "Record of Survey No. 990, "Monumentation System for the Port of Oakland", filed in Book 18 of Surveys at Pages 50-60, Alameda County Records. Latitude and Longitude as shown were determined from the California Coordinate System, Zone 3, NAD 83 Datum. The accuracy range of the reported information is +/- 1cmm. GPS equipment is the Trimble 5700/5800 system (Code T57).

The benchmark is City of Oakland BM 25A, a brass pin in monument box in the sidewalk at the northeast corner of the intersection of 7th Street and Harrison. Elevation =25.812, City of Oakland Datum. To obtain NGVD '29 datum, 3.0 feet are added to the City Datum; therefore, Elevation = **28.812 feet, NGVD 29 datum**.

Please let me know if you have questions or need additional information.

Yours truly,



Lee D. Vaage

UNOCAL NO. 0752 - YEE/GIN COMMINGLE
800/726/706 Harrison Street
Oakland, California

AQUA SCIENCE ENGINEERS Project

Project : 09111X
User name MCE Date & Time 9:31:18 AM 6/29/2011
Coordinate System US State Plane 1983 Zone California Zone 3 0403
Project Datum NAD 1983 (Conus)
Vertical Datum NGVD 29
Coordinate Units US survey feet
Distance Units US survey feet
Elevation Units US survey feet

Pt. Number	Northing	Easting	Elevation	Description
209	2118018.44	6050262.23	32.81	GP-3
210	2118020.80	6050238.43	32.04	MW-6toc
211	2118021.16	6050237.97	32.24	MW-6tob

UNOCAL NO. 0752 - YEE/GIN COMMINGLE
800/726/706 Harrison Street
Oakland, California

AQUA SCIENCE ENGINEERS Project

Project : 09111X
User name MCE Date & Time 9:31:18 AM 6/29/2011
Coordinate System US State Plane 1983 Zone California Zone 3 0403
Project Datum NAD 1983 (Conus)
Vertical Datum NGVD 29
Coordinate Units US survey feet
Distance Units US survey feet
Elevation Units US survey feet

Pt. Number	Latitude	Longitude	Elevation	Description
209	37.798412295°N	122.270097772°W	32.81	GP-3
210	37.798417534°N	122.270180297°W	32.04	MW-6toc
211	37.798418495°N	122.270181923°W	32.24	MW-6tob

	A	B	C	D	E	F	G	H	I	J	K	L
1	**UNOCAL NO. 0752 - YEE/GIN COMMINGLE**											
2	**800/726/706 Harrison Street**											
3	**Oakland, California**											
4												
5	**AQUA SCIENCE ENGINEERS Project**											
6												
7	Project : 09111X											
8	User name MCE			Date & Time 9:31:18 AM 6/29/2011								
9	Coordinate System US State Plane 1983				Zone California Zone 3 0403							
10	Project Datum NAD 1983 (Conus)											
11	Vertical Datum NGVD 29											
12	Coordinate Units US survey feet											
13	Distance Units US survey feet											
14	Elevation Units US survey feet											
15												
16		GP-3	BH	06/28/2011	37.7984123	-122.2700978	CGPS	NAD83	1	Mid Coast Engineers	T57	ground
17												
18		MW-6	MW	06/28/2011	37.7984175	-122.2701803	CGPS	NAD83	1	Mid Coast Engineers	T57	top of casing

	A	B	C	D	E	F	G	H	I	J
1	**UNOCAL NO. 0752 - YEE/GIN COMMINGLE**									
2	**800/726/706 Harrison Street**									
3	**Oakland, California**									
4										
5	**AQUA SCIENCE ENGINEERS Project**									
6										
7	Project : 09111X									
8	User name MCE		Date & Time 9:31:18 AM 6/29/2011							
9	Coordinate System US State Plane 1983				Zone California Zone 3 0403					
10	Project Datum NAD 1983 (Conus)									
11	Vertical Datum NGVD 29									
12	Coordinate Units US survey feet									
13	Distance Units US survey feet									
14	Elevation Units US survey feet									
15										
16		GP-3	06/28/2011	32.81	CGPS	29	0.5	Mid Coast Engineers		BM CITY OF OAKLAND 25A EL=28.812 FEET
17										
18		MW-6	06/28/2011	32.04	CGPS	29	0.5	Mid Coast Engineers	-0.20	BM CITY OF OAKLAND 25A EL=28.812 FEET

Aqua Science Engineers, Inc. 55 Oak Court, Suite 220, Danville, CA 94526
(925) 820-9391 - Fax (925) 837-4853 - www.aquascienceengineers.com

APPENDIX D

Certified Analytical Reports
and
Chain of Custody Documentation

BC Laboratories, Inc.
Environmental Testing Laboratory Since 1949

Date of Report: 06/29/2011

Robert Kitay

Aqua Science Engineers, Inc.
55 Oak Court, Ste. 220
Danville, CA 94526

Project:	Yee
BC Work Order:	1109879
Invoice ID:	B102942

Enclosed are the results of analyses for samples received by the laboratory on 6/22/2011. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Linda Phoudamneun

Contact Person: Linda Phoudamneun
Client Service Rep

Authorized Signature

Table of Contents

Sample Information

Chain of Custody and Cooler Receipt form 3
Laboratory / Client Sample Cross Reference 7

Sample Results

1109879-01 - GP-3 7.0'
Volatile Organic Analysis (EPA Method 8260) 9

1109879-02 - GP-3 10.0'
Volatile Organic Analysis (EPA Method 8260) 10

1109879-03 - GP-3 15.0'
Volatile Organic Analysis (EPA Method 8260) 11

1109879-07 - MW-6 6.5'
Volatile Organic Analysis (EPA Method 8260) 12

1109879-08 - MW-6 11.0'
Volatile Organic Analysis (EPA Method 8260) 13

1109879-09 - MW-6 16.0'
Volatile Organic Analysis (EPA Method 8260) 14

1109879-13 - GP-3
Volatile Organic Analysis (EPA Method 8260) 15

Quality Control Reports

Volatile Organic Analysis (EPA Method 8260)
Method Blank Analysis 16
Laboratory Control Sample 18
Precision and Accuracy 19

Notes

Notes and Definitions 20

Aqua Science Engineers, Inc.
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FAX (925) 837-4853
rkitay@aquascienceengineers.com

Chain of Custody

~~1109878~~ JNW 6-22-11

1109879

PAGE 1 of 2

SAMPLER (SIGNATURE) [signature]

PROJECT NAME Yee JOB NO. 3412

ADDRESS 726 Harrison Street, Oakland, CA

ANALYSIS REQUEST

SPECIAL INSTRUCTIONS:

SAMPLE ID.	DATE	TIME	MATRIX	QUANTITY	TPH-GAS / MTBE & BTEX (EPA 5030/8015-8020)	TPH-DIESEL (EPA 3510/8015)	TPH-DIESEL & MOTOR OIL (EPA 3510/8015)	CAM 17 METALS (EPA 6010+7000)	SEMI-VOLATILE ORGANICS (EPA 625/8270)	Pb (TOTAL or DISSOLVED) (EPA 6010)	PESTICIDES (EPA 8081)	FUEL OXYGENATES (EPA 8260)	PURGEABLE HALOCARBONS (EPA 601/8010)	TPH-G/BTEX/5 OXYS (EPA METHOD 8260)	MULTI-RANGE HYDROCARBONS WITH SILICA GEL CLEANUP (EPA 8015)	VOLATILE ORGANICS (EPA 624/8240/8260)	LUFT METALS (5) (EPA 6010+7000)	~~COMPOSITE~~ HOLD	EDF	TPH-G/BTEX/MTBE/ 1,2-DCA + EDB (EPA 8260B)
GP-3 7.0' -1	6-20-11	1020	S	1															x	X
GP-3 10.0' -2	↓	1028	↓	↓															X	X
GP-3 15.0' -3		1037																	X	X
GP-3 19.0' -4		1105																X		
GP-3 23.5' -5		1128																X		
MW-6 5.5' -6		1006																X		
MW-6 6.5' -7		1009																	X	X
MW-6 11.0' -8		1045																	X	X
MW-6 16.0' -9		1052																	X	X
MW-6 21.0' -10		1056																X		
MW-6 26.0' -11	↓	1122	↓	↓														X		

CHK BY [initials] DISTRIBUTION [initials]

SUB-OUT ☐

RELINQUISHED BY:	RECEIVED BY:	RELINQUISHED BY:	RECEIVED BY LABORATORY:	COMMENTS:
[signature] 1624 (signature) (time)	Ross Dickey 1624 (signature) (time)	Ross Dickey ~~1624~~ 1850 (signature) (time)	Mayram 2130 (signature) (time)	
Robert C. Kitay 6-22-11 (printed name) (date)	Ross Dickey 6-22-11 (printed name) (date)	Ross Dickey 6-22-11 (printed name) (date)	Mayram 6-22-11 (printed name) (date)	TURN AROUND TIME: (STANDARD) 24Hr 48Hr 72Hr
Company-ASE, INC.	Company- BCLAB	Company- BCLAB	Company-	OTHER:

Rec. R. Rey [initials] 6-22-11 1850 Rel. R. Rey [initials] 6-22-11 2130

Aqua Science Engineers, Inc.
55 Oak Court, Suite 220
Danville, CA 94526
(925) 820-9391
FAX (925) 837-4853
rKitay@aquascienceengineers.com

Chain of Custody

110979

PAGE 2 of 2

SAMPLER (SIGNATURE) Robert C. Kitay

PROJECT NAME Yee JOB NO. 3412

ADDRESS 726 Harrison Street, Oakland, CA

ANALYSIS REQUEST

SPECIAL INSTRUCTIONS:

SAMPLE ID.	DATE	TIME	MATRIX	QUANTITY	TPH-GAS / MTBE & BTEX (EPA 5030/8015-8020)	TPH-DIESEL (EPA 3510/8015)	TPH-DIESEL & MOTOR OIL (EPA 3510/8015)	CAM 17 METALS (EPA 6010+7000)	SEMI-VOLATILE ORGANICS (EPA 625/8270)	Pb (TOTAL or DISSOLVED) (EPA 6010)	PESTICIDES (EPA 8081)	FUEL OXYGENATES (EPA 8260)	PURGEABLE HALOCARBONS (EPA 601/8010)	TPH-G/BTEX/5 OXYS (EPA METHOD 8260)	MULTI-RANGE HYDROCARBONS WITH SILICA GEL CLEANUP (EPA 8015)	VOLATILE ORGANICS (EPA 624/8240/8260)	LUFT METALS (5) (EPA 6010+7000)	COMPOSITE (4) Hold	EDF	TPH-G/BTEX/MTBE/ 1,2-DCA + EDB (EPA 8260B)
MW-6 340 -12	6/20/11	1145	S	1														X		
GP-3 -13	6/20/11	1210	W	6															X	X

RELINQUISHED BY:	RECEIVED BY:	RELINQUISHED BY:	RECEIVED BY LABORATORY:
Robert C. Kitay 1624 (signature) (time)	Ross Dickey 1624 (signature) (time)	Ross Dickey 1850 (signature) (time)	Mayra M 2130 (signature) (time)
Robert C. Kitay 6-22-11 (printed name) (date)	Ross Dickey 6-22-11 (printed name) (date)	Ross Dickey 6-22-11 (printed name) (date)	Mayra M 6-22-11 (printed name) (date)
Company-ASE, INC.	Company- BCLabs	Company- BCLabs	Company- BCL

COMMENTS:

TURN AROUND TIME
STANDARD 24Hr 48Hr 72Hr
OTHER:

Rec. Rkuy 6-22-11 1810 Rec. Rkuy 6-22-11 2130

Chain of Custody and Cooler Receipt Form for 1109879 Page 3 of 4

BC LABORATORIES INC. SAMPLE RECEIPT FORM Rev. No. 12 05/24/08 Page 1 of 2

Submission #: 1109879

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: 0.94 Container: Soil Sleeve Thermometer ID: IR82 (IR30 5-22-11)

Temperature: A 7.5 °C / C 8.5 °C

Date/Time 5-22-11 2140

Analyst Init JNW

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										
1oz. NITRATE / NITRITE										
PT TOTAL ORGANIC CARBON										
PT TOX										
PT CHEMICAL OXYGEN DEMAND										
P1A 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-	A	A	A					
~~PCB VIAL~~ Soil Sleeve						A	A	A	A	A
PLASTIC BAG										
FERROUS IRON										
ENCORE										

Comments:

Sample Numbering Completed By: JNW Date/Time: 5/22/11 2240

A = Actual / C = Corrected

[R:\DOCS\WP80\LAB_DOCS\FORMS\SAMREC2.WPD]

Chain of Custody and Cooler Receipt Form for 1109879 Page 4 of 4

BC LABORATORIES INC. SAMPLE RECEIPT FORM Rev. No. 12 06/24/08 Page 2 Of 2

Submission #: 1109879

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: ~~103~~-82 (JNW 6-22-11)	Date/Time 6-22-11 2140
	Temperature: A 7.5 °C / C 8.5 °C	Analyst Init JNW

SAMPLE CONTAINERS	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			A(0							
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										

Comments:______

Sample Numbering Completed By: JNW Date/Time: 6/22/11 2210

A = Actual / C = Corrected

[H:\DOCS\WP80\LAB_DOCS\FORMS\SAMREC2.WPD]

Aqua Science Engineers, Inc.
55 Oak Court, Ste. 220
Danville, CA 94526

Reported: 06/29/2011 9:59
Project: Yee
Project Number: 3412
Project Manager: Robert Kitay

Laboratory / Client Sample Cross Reference

Laboratory	Client Sample Information			
1109879-01	**COC Number:**	---	**Receive Date:**	06/22/2011 21:30
	Project Number:	---	**Sampling Date:**	06/20/2011 10:20
	Sampling Location:	---	**Sample Depth:**	---
	Sampling Point:	GP-3 7.0'	**Lab Matrix:**	Solids
	Sampled By:	---	**Sample Type:**	Soil
1109879-02	**COC Number:**	---	**Receive Date:**	06/22/2011 21:30
	Project Number:	---	**Sampling Date:**	06/20/2011 10:28
	Sampling Location:	---	**Sample Depth:**	---
	Sampling Point:	GP-3 10.0'	**Lab Matrix:**	Solids
	Sampled By:	---	**Sample Type:**	Soil
1109879-03	**COC Number:**	---	**Receive Date:**	06/22/2011 21:30
	Project Number:	---	**Sampling Date:**	06/20/2011 10:37
	Sampling Location:	---	**Sample Depth:**	---
	Sampling Point:	GP-3 15.0'	**Lab Matrix:**	Solids
	Sampled By:	---	**Sample Type:**	Soil
1109879-04	**COC Number:**	---	**Receive Date:**	06/22/2011 21:30
	Project Number:	---	**Sampling Date:**	06/20/2011 11:05
	Sampling Location:	---	**Sample Depth:**	---
	Sampling Point:	GP-3 19.0'	**Lab Matrix:**	Solids
	Sampled By:	---	**Sample Type:**	Soil
1109879-05	**COC Number:**	---	**Receive Date:**	06/22/2011 21:30
	Project Number:	---	**Sampling Date:**	06/20/2011 11:28
	Sampling Location:	---	**Sample Depth:**	---
	Sampling Point:	GP-3 23.5'	**Lab Matrix:**	Solids
	Sampled By:	---	**Sample Type:**	Soil
1109879-06	**COC Number:**	---	**Receive Date:**	06/22/2011 21:30
	Project Number:	---	**Sampling Date:**	06/20/2011 10:06
	Sampling Location:	---	**Sample Depth:**	---
	Sampling Point:	MW-6 5.5'	**Lab Matrix:**	Solids
	Sampled By:	---	**Sample Type:**	Soil
1109879-07	**COC Number:**	---	**Receive Date:**	06/22/2011 21:30
	Project Number:	---	**Sampling Date:**	06/20/2011 10:09
	Sampling Location:	---	**Sample Depth:**	---
	Sampling Point:	MW-6 6.5'	**Lab Matrix:**	Solids
	Sampled By:	---	**Sample Type:**	Soil

Aqua Science Engineers, Inc.
55 Oak Court, Ste. 220
Danville, CA 94526

Reported: 06/29/2011 9:59
Project: Yee
Project Number: 3412
Project Manager: Robert Kitay

Laboratory / Client Sample Cross Reference

Laboratory	Client Sample Information			
1109879-08	**COC Number:**	---	**Receive Date:**	06/22/2011 21:30
	Project Number:	---	**Sampling Date:**	06/20/2011 10:45
	Sampling Location:	---	**Sample Depth:**	---
	Sampling Point:	MW-6 11.0'	**Lab Matrix:**	Solids
	Sampled By:	---	**Sample Type:**	Soil
1109879-09	**COC Number:**	---	**Receive Date:**	06/22/2011 21:30
	Project Number:	---	**Sampling Date:**	06/20/2011 10:52
	Sampling Location:	---	**Sample Depth:**	---
	Sampling Point:	MW-6 16.0'	**Lab Matrix:**	Solids
	Sampled By:	---	**Sample Type:**	Soil
1109879-10	**COC Number:**	---	**Receive Date:**	06/22/2011 21:30
	Project Number:	---	**Sampling Date:**	06/20/2011 10:56
	Sampling Location:	---	**Sample Depth:**	---
	Sampling Point:	MW-6 21.0'	**Lab Matrix:**	Solids
	Sampled By:	---	**Sample Type:**	Soil
1109879-11	**COC Number:**	---	**Receive Date:**	06/22/2011 21:30
	Project Number:	---	**Sampling Date:**	06/20/2011 11:22
	Sampling Location:	---	**Sample Depth:**	---
	Sampling Point:	MW-6 26.0'	**Lab Matrix:**	Solids
	Sampled By:	---	**Sample Type:**	Soil
1109879-12	**COC Number:**	---	**Receive Date:**	06/22/2011 21:30
	Project Number:	---	**Sampling Date:**	06/20/2011 11:45
	Sampling Location:	---	**Sample Depth:**	---
	Sampling Point:	MW-6 34.0'	**Lab Matrix:**	Solids
	Sampled By:	---	**Sample Type:**	Soil
1109879-13	**COC Number:**	---	**Receive Date:**	06/22/2011 21:30
	Project Number:	---	**Sampling Date:**	06/20/2011 12:10
	Sampling Location:	---	**Sample Depth:**	---
	Sampling Point:	GP-3	**Lab Matrix:**	Water
	Sampled By:	---	**Sample Type:**	Water

Aqua Science Engineers, Inc.
55 Oak Court, Ste. 220
Danville, CA 94526

Reported: 06/29/2011 9:59
Project: Yee
Project Number: 3412
Project Manager: Robert Kitay

Volatile Organic Analysis (EPA Method 8260)

BCL Sample ID: 1109879-01 | **Client Sample Name:** GP-3 7.0', 6/20/2011 10:20:00AM

Constituent	Result	Units	PQL	MDL	Method	MB Bias	Lab Quals	Run #
Benzene	ND	mg/kg	0.0050	0.0013	EPA-8260	ND		1
1,2-Dibromoethane	ND	mg/kg	0.0050	0.0010	EPA-8260	ND		1
1,2-Dichloroethane	ND	mg/kg	0.0050	0.00085	EPA-8260	ND		1
Ethylbenzene	ND	mg/kg	0.0050	0.0015	EPA-8260	ND		1
Methyl t-butyl ether	**0.00087**	**mg/kg**	**0.0050**	**0.00050**	**EPA-8260**	**ND**	**J**	1
Toluene	ND	mg/kg	0.0050	0.0012	EPA-8260	ND		1
Total Xylenes	ND	mg/kg	0.010	0.0034	EPA-8260	ND		1
p- & m-Xylenes	ND	mg/kg	0.0050	0.0022	EPA-8260	ND		1
o-Xylene	ND	mg/kg	0.0050	0.0012	EPA-8260	ND		1
Total Purgeable Petroleum Hydrocarbons	ND	mg/kg	0.20	0.020	Luft-GC/MS	ND		1
1,2-Dichloroethane-d4 (Surrogate)	92.5	%	70 - 121 (LCL - UCL)		EPA-8260			1
Toluene-d8 (Surrogate)	98.5	%	81 - 117 (LCL - UCL)		EPA-8260			1
4-Bromofluorobenzene (Surrogate)	92.3	%	74 - 121 (LCL - UCL)		EPA-8260			1

Run #	Method	Prep Date	Run Date/Time	Analyst	Instrument	Dilution	QC Batch ID
1	EPA-8260	06/23/11	06/24/11 01:04	MCQ	MS-V3	1	BUF1528

Aqua Science Engineers, Inc.
55 Oak Court, Ste. 220
Danville, CA 94526

Reported: 06/29/2011 9:59
Project: Yee
Project Number: 3412
Project Manager: Robert Kitay

Volatile Organic Analysis (EPA Method 8260)

BCL Sample ID: 1109879-02 | **Client Sample Name:** GP-3 10.0', 6/20/2011 10:28:00AM

Constituent	Result	Units	PQL	MDL	Method	MB Bias	Lab Quals	Run #
Benzene	ND	mg/kg	0.0050	0.0013	EPA-8260	ND		1
1,2-Dibromoethane	ND	mg/kg	0.0050	0.0010	EPA-8260	ND		1
1,2-Dichloroethane	ND	mg/kg	0.0050	0.00085	EPA-8260	ND		1
Ethylbenzene	ND	mg/kg	0.0050	0.0015	EPA-8260	ND		1
Methyl t-butyl ether	ND	mg/kg	0.0050	0.00050	EPA-8260	ND		1
Toluene	ND	mg/kg	0.0050	0.0012	EPA-8260	ND		1
Total Xylenes	ND	mg/kg	0.010	0.0034	EPA-8260	ND		1
p- & m-Xylenes	ND	mg/kg	0.0050	0.0022	EPA-8260	ND		1
o-Xylene	ND	mg/kg	0.0050	0.0012	EPA-8260	ND		1
Total Purgeable Petroleum Hydrocarbons	ND	mg/kg	0.20	0.020	Luft-GC/MS	ND		1
1,2-Dichloroethane-d4 (Surrogate)	90.1	%	70 - 121 (LCL - UCL)		EPA-8260			1
Toluene-d8 (Surrogate)	98.2	%	81 - 117 (LCL - UCL)		EPA-8260			1
4-Bromofluorobenzene (Surrogate)	92.9	%	74 - 121 (LCL - UCL)		EPA-8260			1

Run #	Method	Prep Date	Run Date/Time	Analyst	Instrument	Dilution	QC Batch ID
1	EPA-8260	06/23/11	06/24/11 18:17	MCQ	MS-V3	1	BUF1528

Aqua Science Engineers, Inc.
55 Oak Court, Ste. 220
Danville, CA 94526

Reported: 06/29/2011 9:59
Project: Yee
Project Number: 3412
Project Manager: Robert Kitay

Volatile Organic Analysis (EPA Method 8260)

BCL Sample ID: 1109879-03 | **Client Sample Name:** GP-3 15.0', 6/20/2011 10:37:00AM

Constituent	Result	Units	PQL	MDL	Method	MB Bias	Lab Quals	Run #
Benzene	ND	mg/kg	0.0050	0.0013	EPA-8260	ND		1
1,2-Dibromoethane	ND	mg/kg	0.0050	0.0010	EPA-8260	ND		1
1,2-Dichloroethane	ND	mg/kg	0.0050	0.00085	EPA-8260	ND		1
Ethylbenzene	ND	mg/kg	0.0050	0.0015	EPA-8260	ND		1
Methyl t-butyl ether	ND	mg/kg	0.0050	0.00050	EPA-8260	ND		1
Toluene	ND	mg/kg	0.0050	0.0012	EPA-8260	ND		1
Total Xylenes	ND	mg/kg	0.010	0.0034	EPA-8260	ND		1
p- & m-Xylenes	ND	mg/kg	0.0050	0.0022	EPA-8260	ND		1
o-Xylene	ND	mg/kg	0.0050	0.0012	EPA-8260	ND		1
Total Purgeable Petroleum Hydrocarbons	ND	mg/kg	0.20	0.020	Luft-GC/MS	ND		1
1,2-Dichloroethane-d4 (Surrogate)	89.0	%	70 - 121 (LCL - UCL)		EPA-8260			1
Toluene-d8 (Surrogate)	98.3	%	81 - 117 (LCL - UCL)		EPA-8260			1
4-Bromofluorobenzene (Surrogate)	91.8	%	74 - 121 (LCL - UCL)		EPA-8260			1

Run #	Method	Prep Date	Run Date/Time	Analyst	Instrument	Dilution	QC Batch ID
1	EPA-8260	06/23/11	06/24/11 18:43	MCQ	MS-V3	1	BUF1528

Aqua Science Engineers, Inc.
55 Oak Court, Ste. 220
Danville, CA 94526

Reported: 06/29/2011 9:59
Project: Yee
Project Number: 3412
Project Manager: Robert Kitay

Volatile Organic Analysis (EPA Method 8260)

BCL Sample ID: 1109879-07 | **Client Sample Name:** MW-6 6.5', 6/20/2011 10:09:00AM

Constituent	Result	Units	PQL	MDL	Method	MB Bias	Lab Quals	Run #
Benzene	ND	mg/kg	0.0050	0.0013	EPA-8260	ND		1
1,2-Dibromoethane	ND	mg/kg	0.0050	0.0010	EPA-8260	ND		1
1,2-Dichloroethane	ND	mg/kg	0.0050	0.00085	EPA-8260	ND		1
Ethylbenzene	ND	mg/kg	0.0050	0.0015	EPA-8260	ND		1
Methyl t-butyl ether	ND	mg/kg	0.0050	0.00050	EPA-8260	ND		1
Toluene	ND	mg/kg	0.0050	0.0012	EPA-8260	ND		1
Total Xylenes	ND	mg/kg	0.010	0.0034	EPA-8260	ND		1
p- & m-Xylenes	ND	mg/kg	0.0050	0.0022	EPA-8260	ND		1
o-Xylene	ND	mg/kg	0.0050	0.0012	EPA-8260	ND		1
Total Purgeable Petroleum Hydrocarbons	ND	mg/kg	0.20	0.020	Luft-GC/MS	ND		1
1,2-Dichloroethane-d4 (Surrogate)	92.7	%	70 - 121 (LCL - UCL)		EPA-8260			1
Toluene-d8 (Surrogate)	96.6	%	81 - 117 (LCL - UCL)		EPA-8260			1
4-Bromofluorobenzene (Surrogate)	91.4	%	74 - 121 (LCL - UCL)		EPA-8260			1

Run #	Method	Prep Date	Run Date/Time	Analyst	Instrument	Dilution	QC Batch ID
1	EPA-8260	06/23/11	06/24/11 02:23	MCQ	MS-V3	1	BUF1528

Aqua Science Engineers, Inc.
55 Oak Court, Ste. 220
Danville, CA 94526

Reported: 06/29/2011 9:59
Project: Yee
Project Number: 3412
Project Manager: Robert Kitay

Volatile Organic Analysis (EPA Method 8260)

BCL Sample ID: 1109879-08 | **Client Sample Name:** MW-6 11.0', 6/20/2011 10:45:00AM

Constituent	Result	Units	PQL	MDL	Method	MB Bias	Lab Quals	Run #
Benzene	ND	mg/kg	0.0050	0.0013	EPA-8260	ND		1
1,2-Dibromoethane	ND	mg/kg	0.0050	0.0010	EPA-8260	ND		1
1,2-Dichloroethane	ND	mg/kg	0.0050	0.00085	EPA-8260	ND		1
Ethylbenzene	ND	mg/kg	0.0050	0.0015	EPA-8260	ND		1
Methyl t-butyl ether	ND	mg/kg	0.0050	0.00050	EPA-8260	ND		1
Toluene	ND	mg/kg	0.0050	0.0012	EPA-8260	ND		1
Total Xylenes	ND	mg/kg	0.010	0.0034	EPA-8260	ND		1
p- & m-Xylenes	ND	mg/kg	0.0050	0.0022	EPA-8260	ND		1
o-Xylene	ND	mg/kg	0.0050	0.0012	EPA-8260	ND		1
Total Purgeable Petroleum Hydrocarbons	ND	mg/kg	0.20	0.020	Luft-GC/MS	ND		1
1,2-Dichloroethane-d4 (Surrogate)	94.7	%	70 - 121 (LCL - UCL)		EPA-8260			1
Toluene-d8 (Surrogate)	99.0	%	81 - 117 (LCL - UCL)		EPA-8260			1
4-Bromofluorobenzene (Surrogate)	92.9	%	74 - 121 (LCL - UCL)		EPA-8260			1

Run #	Method	Prep Date	Run Date/Time	Analyst	Instrument	Dilution	QC Batch ID
1	EPA-8260	06/23/11	06/24/11 02:49	MCQ	MS-V3	1	BUF1529

Aqua Science Engineers, Inc.
55 Oak Court, Ste. 220
Danville, CA 94526

Reported: 06/29/2011 9:59
Project: Yee
Project Number: 3412
Project Manager: Robert Kitay

Volatile Organic Analysis (EPA Method 8260)

BCL Sample ID: 1109879-09 | **Client Sample Name:** MW-6 16.0', 6/20/2011 10:52:00AM

Constituent	Result	Units	PQL	MDL	Method	MB Bias	Lab Quals	Run #
Benzene	ND	mg/kg	0.0050	0.0013	EPA-8260	ND		1
1,2-Dibromoethane	ND	mg/kg	0.0050	0.0010	EPA-8260	ND		1
1,2-Dichloroethane	ND	mg/kg	0.0050	0.00085	EPA-8260	ND		1
Ethylbenzene	ND	mg/kg	0.0050	0.0015	EPA-8260	ND		1
Methyl t-butyl ether	**0.0092**	**mg/kg**	**0.0050**	**0.00050**	**EPA-8260**	**ND**		1
Toluene	ND	mg/kg	0.0050	0.0012	EPA-8260	ND		1
Total Xylenes	ND	mg/kg	0.010	0.0034	EPA-8260	ND		1
p- & m-Xylenes	ND	mg/kg	0.0050	0.0022	EPA-8260	ND		1
o-Xylene	ND	mg/kg	0.0050	0.0012	EPA-8260	ND		1
Total Purgeable Petroleum Hydrocarbons	**0.12**	**mg/kg**	**0.20**	**0.020**	**Luft-GC/MS**	**ND**	**J**	1
1,2-Dichloroethane-d4 (Surrogate)	92.9	%	70 - 121 (LCL - UCL)		EPA-8260			1
Toluene-d8 (Surrogate)	99.0	%	81 - 117 (LCL - UCL)		EPA-8260			1
4-Bromofluorobenzene (Surrogate)	92.1	%	74 - 121 (LCL - UCL)		EPA-8260			1

Run #	Method	Prep Date	Run Date/Time	Analyst	Instrument	Dilution	QC Batch ID
1	EPA-8260	06/23/11	06/24/11 03:16	MCQ	MS-V3	1	BUF1529

Aqua Science Engineers, Inc.
55 Oak Court, Ste. 220
Danville, CA 94526

Reported: 06/29/2011 9:59
Project: Yee
Project Number: 3412
Project Manager: Robert Kitay

Volatile Organic Analysis (EPA Method 8260)

BCL Sample ID: 1109879-13 | **Client Sample Name:** GP-3, 6/20/2011 12:10:00PM

Constituent	Result	Units	PQL	MDL	Method	MB Bias	Lab Quals	Run #
Benzene	**1800**	**ug/L**	**250**	**42**	**EPA-8260**	**ND**	**A01**	1
1,2-Dibromoethane	ND	ug/L	250	80	EPA-8260	ND	A01	1
1,2-Dichloroethane	ND	ug/L	250	85	EPA-8260	ND	A01	1
Ethylbenzene	**1500**	**ug/L**	**250**	**49**	**EPA-8260**	**ND**	**A01**	1
Methyl t-butyl ether	**4600**	**ug/L**	**250**	**55**	**EPA-8260**	**ND**	**A01**	1
Toluene	**2000**	**ug/L**	**250**	**46**	**EPA-8260**	**ND**	**A01**	1
Total Xylenes	**5000**	**ug/L**	**500**	**180**	**EPA-8260**	**ND**	**A01**	1
p- & m-Xylenes	**3200**	**ug/L**	**250**	**140**	**EPA-8260**	**ND**	**A01**	1
o-Xylene	**1700**	**ug/L**	**250**	**41**	**EPA-8260**	**ND**	**A01**	1
Total Purgeable Petroleum Hydrocarbons	**200000**	**ug/L**	**25000**	**3600**	**Luft-GC/MS**	**ND**	**A01**	1
1,2-Dichloroethane-d4 (Surrogate)	101	%	76 - 114 (LCL - UCL)		EPA-8260			1
Toluene-d8 (Surrogate)	97.6	%	88 - 110 (LCL - UCL)		EPA-8260			1
4-Bromofluorobenzene (Surrogate)	105	%	86 - 115 (LCL - UCL)		EPA-8260			1

Run #	Method	Prep Date	Run Date/Time	Analyst	Instrument	Dilution	QC Batch ID
1	EPA-8260	06/23/11	06/25/11 06:16	JCC	HPCHEM	500	BUF1501

Aqua Science Engineers, Inc.
55 Oak Court, Ste. 220
Danville, CA 94526

Reported: 06/29/2011 9:59
Project: Yee
Project Number: 3412
Project Manager: Robert Kitay

Volatile Organic Analysis (EPA Method 8260)

Quality Control Report - Method Blank Analysis

Constituent	QC Sample ID	MB Result	Units	PQL	MDL	Lab Quals
QC Batch ID: BUF1501						
Benzene	BUF1501-BLK1	ND	ug/L	0.50	0.083	
1,2-Dibromoethane	BUF1501-BLK1	ND	ug/L	0.50	0.16	
1,2-Dichloroethane	BUF1501-BLK1	ND	ug/L	0.50	0.17	
Ethylbenzene	BUF1501-BLK1	ND	ug/L	0.50	0.098	
Methyl t-butyl ether	BUF1501-BLK1	ND	ug/L	0.50	0.11	
Toluene	BUF1501-BLK1	ND	ug/L	0.50	0.093	
Total Xylenes	BUF1501-BLK1	ND	ug/L	1.0	0.36	
p- & m-Xylenes	BUF1501-BLK1	ND	ug/L	0.50	0.28	
o-Xylene	BUF1501-BLK1	ND	ug/L	0.50	0.082	
Total Purgeable Petroleum Hydrocarbons	BUF1501-BLK1	ND	ug/L	50	7.2	
1,2-Dichloroethane-d4 (Surrogate)	BUF1501-BLK1	95.0	%	76 - 114 (LCL - UCL)		
Toluene-d8 (Surrogate)	BUF1501-BLK1	99.5	%	88 - 110 (LCL - UCL)		
4-Bromofluorobenzene (Surrogate)	BUF1501-BLK1	99.2	%	86 - 115 (LCL - UCL)		
QC Batch ID: BUF1528						
Benzene	BUF1528-BLK1	ND	mg/kg	0.0050	0.0013	
1,2-Dibromoethane	BUF1528-BLK1	ND	mg/kg	0.0050	0.0010	
1,2-Dichloroethane	BUF1528-BLK1	ND	mg/kg	0.0050	0.00085	
Ethylbenzene	BUF1528-BLK1	ND	mg/kg	0.0050	0.0015	
Methyl t-butyl ether	BUF1528-BLK1	ND	mg/kg	0.0050	0.00050	
Toluene	BUF1528-BLK1	ND	mg/kg	0.0050	0.0012	
Total Xylenes	BUF1528-BLK1	ND	mg/kg	0.010	0.0034	
p- & m-Xylenes	BUF1528-BLK1	ND	mg/kg	0.0050	0.0022	
o-Xylene	BUF1528-BLK1	ND	mg/kg	0.0050	0.0012	
Total Purgeable Petroleum Hydrocarbons	BUF1528-BLK1	ND	mg/kg	0.20	0.020	
1,2-Dichloroethane-d4 (Surrogate)	BUF1528-BLK1	89.7	%	70 - 121 (LCL - UCL)		
Toluene-d8 (Surrogate)	BUF1528-BLK1	97.0	%	81 - 117 (LCL - UCL)		
4-Bromofluorobenzene (Surrogate)	BUF1528-BLK1	94.2	%	74 - 121 (LCL - UCL)		
QC Batch ID: BUF1529						
Benzene	BUF1529-BLK1	ND	mg/kg	0.0050	0.0013	
1,2-Dibromoethane	BUF1529-BLK1	ND	mg/kg	0.0050	0.0010	
1,2-Dichloroethane	BUF1529-BLK1	ND	mg/kg	0.0050	0.00085	
Ethylbenzene	BUF1529-BLK1	ND	mg/kg	0.0050	0.0015	
Methyl t-butyl ether	BUF1529-BLK1	ND	mg/kg	0.0050	0.00050	

Aqua Science Engineers, Inc.
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Danville, CA 94526

Reported: 06/29/2011 9:59
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Project Manager: Robert Kitay

Volatile Organic Analysis (EPA Method 8260)

Quality Control Report - Method Blank Analysis

Constituent	QC Sample ID	MB Result	Units	PQL	MDL	Lab Quals
QC Batch ID: BUF1529						
Toluene	BUF1529-BLK1	ND	mg/kg	0.0050	0.0012	
Total Xylenes	BUF1529-BLK1	ND	mg/kg	0.010	0.0034	
p- & m-Xylenes	BUF1529-BLK1	ND	mg/kg	0.0050	0.0022	
o-Xylene	BUF1529-BLK1	ND	mg/kg	0.0050	0.0012	
Total Purgeable Petroleum Hydrocarbons	BUF1529-BLK1	ND	mg/kg	0.20	0.020	
1,2-Dichloroethane-d4 (Surrogate)	BUF1529-BLK1	89.8	%	70 - 121 (LCL - UCL)		
Toluene-d8 (Surrogate)	BUF1529-BLK1	98.0	%	81 - 117 (LCL - UCL)		
4-Bromofluorobenzene (Surrogate)	BUF1529-BLK1	92.5	%	74 - 121 (LCL - UCL)		

Aqua Science Engineers, Inc.
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Danville, CA 94526

Reported: 06/29/2011 9:59
Project: Yee
Project Number: 3412
Project Manager: Robert Kitay

Volatile Organic Analysis (EPA Method 8260)

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: BUF1501										
Benzene	BUF1501-BS1	LCS	25.910	25.000	ug/L	104		70 - 130		
Toluene	BUF1501-BS1	LCS	24.300	25.000	ug/L	97.2		70 - 130		
1,2-Dichloroethane-d4 (Surrogate)	BUF1501-BS1	LCS	9.6900	10.000	ug/L	96.9		76 - 114		
Toluene-d8 (Surrogate)	BUF1501-BS1	LCS	9.9800	10.000	ug/L	99.8		88 - 110		
4-Bromofluorobenzene (Surrogate)	BUF1501-BS1	LCS	10.300	10.000	ug/L	103		86 - 115		
QC Batch ID: BUF1528										
Benzene	BUF1528-BS1	LCS	0.15034	0.12500	mg/kg	120		70 - 130		
Toluene	BUF1528-BS1	LCS	0.13399	0.12500	mg/kg	107		70 - 130		
1,2-Dichloroethane-d4 (Surrogate)	BUF1528-BS1	LCS	0.045152	0.050000	mg/kg	90.3		70 - 121		
Toluene-d8 (Surrogate)	BUF1528-BS1	LCS	0.048486	0.050000	mg/kg	97.0		81 - 117		
4-Bromofluorobenzene (Surrogate)	BUF1528-BS1	LCS	0.047385	0.050000	mg/kg	94.8		74 - 121		
QC Batch ID: BUF1529										
Benzene	BUF1529-BS1	LCS	0.14824	0.12500	mg/kg	119		70 - 130		
Toluene	BUF1529-BS1	LCS	0.13103	0.12500	mg/kg	105		70 - 130		
1,2-Dichloroethane-d4 (Surrogate)	BUF1529-BS1	LCS	0.044560	0.050000	mg/kg	89.1		70 - 121		
Toluene-d8 (Surrogate)	BUF1529-BS1	LCS	0.049170	0.050000	mg/kg	98.3		81 - 117		
4-Bromofluorobenzene (Surrogate)	BUF1529-BS1	LCS	0.046295	0.050000	mg/kg	92.6		74 - 121		

Aqua Science Engineers, Inc.
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Danville, CA 94526

Reported: 06/29/2011 9:59
Project: Yee
Project Number: 3412
Project Manager: Robert Kitay

Volatile Organic Analysis (EPA Method 8260)

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: BUF1501	Used client sample: N										
Benzene	MS	1109537-24	ND	25.370	25.000	ug/L		101		70 - 130	
	MSD	1109537-24	ND	25.980	25.000	ug/L	2.4	104	20	70 - 130	
Toluene	MS	1109537-24	ND	24.040	25.000	ug/L		96.2		70 - 130	
	MSD	1109537-24	ND	24.320	25.000	ug/L	1.2	97.3	20	70 - 130	
1,2-Dichloroethane-d4 (Surrogate)	MS	1109537-24	ND	9.9300	10.000	ug/L		99.3		76 - 114	
	MSD	1109537-24	ND	10.140	10.000	ug/L	2.1	101		76 - 114	
Toluene-d8 (Surrogate)	MS	1109537-24	ND	10.120	10.000	ug/L		101		88 - 110	
	MSD	1109537-24	ND	10.150	10.000	ug/L	0.3	102		88 - 110	
4-Bromofluorobenzene (Surrogate)	MS	1109537-24	ND	9.7800	10.000	ug/L		97.8		86 - 115	
	MSD	1109537-24	ND	10.400	10.000	ug/L	6.1	104		86 - 115	
QC Batch ID: BUF1528	Used client sample: N										
Benzene	MS	1107512-78	ND	0.14854	0.12500	mg/kg		119		70 - 130	
	MSD	1107512-78	ND	0.14557	0.12500	mg/kg	2.0	116	20	70 - 130	
Toluene	MS	1107512-78	ND	0.11703	0.12500	mg/kg		93.6		70 - 130	
	MSD	1107512-78	ND	0.12788	0.12500	mg/kg	8.9	102	20	70 - 130	
1,2-Dichloroethane-d4 (Surrogate)	MS	1107512-78	ND	0.044795	0.050000	mg/kg		89.6		70 - 121	
	MSD	1107512-78	ND	0.046872	0.050000	mg/kg	4.5	93.7		70 - 121	
Toluene-d8 (Surrogate)	MS	1107512-78	ND	0.048667	0.050000	mg/kg		97.3		81 - 117	
	MSD	1107512-78	ND	0.048906	0.050000	mg/kg	0.5	97.8		81 - 117	
4-Bromofluorobenzene (Surrogate)	MS	1107512-78	ND	0.047666	0.050000	mg/kg		95.3		74 - 121	
	MSD	1107512-78	ND	0.047609	0.050000	mg/kg	0.1	95.2		74 - 121	
QC Batch ID: BUF1529	Used client sample: N										
Benzene	MS	1107512-80	ND	0.13721	0.12500	mg/kg		110		70 - 130	
	MSD	1107512-80	ND	0.14837	0.12500	mg/kg	7.8	119	20	70 - 130	
Toluene	MS	1107512-80	ND	0.12304	0.12500	mg/kg		98.4		70 - 130	
	MSD	1107512-80	ND	0.13067	0.12500	mg/kg	6.0	105	20	70 - 130	
1,2-Dichloroethane-d4 (Surrogate)	MS	1107512-80	ND	0.044697	0.050000	mg/kg		89.4		70 - 121	
	MSD	1107512-80	ND	0.045736	0.050000	mg/kg	2.3	91.5		70 - 121	
Toluene-d8 (Surrogate)	MS	1107512-80	ND	0.049259	0.050000	mg/kg		98.5		81 - 117	
	MSD	1107512-80	ND	0.048799	0.050000	mg/kg	0.9	97.6		81 - 117	
4-Bromofluorobenzene (Surrogate)	MS	1107512-80	ND	0.047531	0.050000	mg/kg		95.1		74 - 121	
	MSD	1107512-80	ND	0.047594	0.050000	mg/kg	0.1	95.2		74 - 121	

Aqua Science Engineers, Inc.
55 Oak Court, Ste. 220
Danville, CA 94526

Reported: 06/29/2011 9:59
Project: Yee
Project Number: 3412
Project Manager: Robert Kitay

Notes And Definitions

J	Estimated Value (CLP Flag)
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: 06/30/2011

Robert Kitay

Aqua Science Engineers, Inc.
55 Oak Court, Ste. 220
Danville, CA 94526

Project:	Yee
BC Work Order:	1110121
Invoice ID:	B102942

Enclosed are the results of analyses for samples received by the laboratory on 6/29/2011. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Linda Phoudamneun
Contact Person: Linda Phoudamneun
Client Service Rep

Steven Bennett
Authorized Signature

Table of Contents

Sample Information

Chain of Custody and Cooler Receipt form..... 3
Laboratory / Client Sample Cross Reference..... 5

Sample Results

1110121-01 - MW-6

Volatile Organic Analysis (EPA Method 8260)..... 6

Quality Control Reports

Volatile Organic Analysis (EPA Method 8260)

Method Blank Analysis..... 7
Laboratory Control Sample..... 8
Precision and Accuracy..... 9

Notes

Notes and Definitions..... 10

Aqua Science Engineers, Inc.
55 Oak Court, Suite 220
Danville, CA 94526
(925) 820-9391
FAX (925) 837-4853

Chain of Custody

#111021 11-10121

PAGE 1 of 1

SAMPLER (SIGNATURE)

PROJECT NAME Yee JOB NO. 3412

ADDRESS 726 Harrison Street, Oakland, CA

ANALYSIS REQUEST

SPECIAL INSTRUCTIONS:

SAMPLE ID.	DATE	TIME	MATRIX	QUANTITY	TPH-GAS / MTBE & BTEX (EPA 5030/8015-8020)	TPH-DIESEL (EPA 3510/8015)	TPH-DIESEL & MOTOR OIL (EPA 3510/8015)	CAM 17 METALS (EPA 6010+7000)	SEMI-VOLATILE ORGANICS (EPA 625/8270)	Pb (TOTAL or DISSOLVED) (EPA 6010)	PESTICIDES (EPA 8081)	FUEL OXYGENATES (EPA 8260)	PURGEABLE HALOCARBONS (EPA 601/8010)	TPH-G/BTEX/5 OXYS (EPA METHOD 8260)	MULTI-RANGE HYDROCARBONS WITH SILICA GEL CLEANUP (EPA 8015)	VOLATILE ORGANICS (EPA 624/8240/8260)	LUFT METALS (5) (EPA 6010+7000)	COMPOSITE 4:1	EDF	TPH-G/BTEX/MTBE/Pb scav. (EPA 8260B)
MW-6	6-27-11	0735	W	3															X	X

CHK BY BLT

DISTRIBUTION

SUB-OUT

RELINQUISHED BY: (signature) (time)	RECEIVED BY: (signature) (time)	RELINQUISHED BY: (signature) (time)	RECEIVED BY LABORATORY: (signature) (time)	COMMENTS:
1007	1007	1415		
DAVID ALLEN 6/28/11	P. BINS BCL 6/28/11	P. BINS 6/28/11		TURN AROUND TIME
(printed name) (date)	(printed name) (date)	(printed name) (date)	(printed name) (date)	STANDARD 24Hr 48Hr 72Hr
Company-ASE, INC.	Company- BCL	Company- BCL	Company-	OTHER:

Rel. Rec'd 6-28-11 1915 Rel. Rec'd 6-28-11 0830

Chain of Custody and Cooler Receipt Form for 1110121 Page 2 of 2

BC LABORATORIES INC. SAMPLE RECEIPT FORM Rev. No. 12 06/24/08 Page 1 Of 1

Submission #: 1110121

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: 098 Container: Other Thermometer ID: 163

Temperature: A 5.7 °C / C 5.5 °C

Date/Time 6/23/11 0630

Analyst Init CMM

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	A (3)	( )	( )	( )	( )	( )	( )	( )	( )	( )
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										
PCB VIAL										
PLASTIC BAG										
FERROUS IRON										
ENCORE										

Comments:
Sample Numbering Completed By: CMM Date/Time: 6/23/11 0630
A = Actual / C = Corrected

[H:\DOCS\WP80\LAB_DOCS\FORMS\SAMREC2.WPD]

Aqua Science Engineers, Inc.
55 Oak Court, Ste. 220
Danville, CA 94526

Reported: 06/30/2011 14:58
Project: Yee
Project Number: 3412
Project Manager: Robert Kitay

Laboratory / Client Sample Cross Reference

Laboratory	Client Sample Information			
1110121-01	**COC Number:**	---	**Receive Date:**	06/29/2011 06:30
	Project Number:	---	**Sampling Date:**	06/27/2011 07:35
	Sampling Location:	---	**Sample Depth:**	---
	Sampling Point:	MW-6	**Lab Matrix:**	Water
	Sampled By:	---	**Sample Type:**	Water

Aqua Science Engineers, Inc.
55 Oak Court, Ste. 220
Danville, CA 94526

Reported: 06/30/2011 14:58
Project: Yee
Project Number: 3412
Project Manager: Robert Kitay

Volatile Organic Analysis (EPA Method 8260)

BCL Sample ID: 1110121-01 | **Client Sample Name:** MW-6, 6/27/2011 7:35:00AM

Constituent	Result	Units	PQL	MDL	Method	MB Bias	Lab Quals	Run #
Benzene	**0.81**	**ug/L**	**0.50**	**0.083**	**EPA-8260**	ND		1
1,2-Dibromoethane	ND	ug/L	0.50	0.16	EPA-8260	ND		1
1,2-Dichloroethane	**1.0**	**ug/L**	**0.50**	**0.17**	**EPA-8260**	ND		1
Ethylbenzene	ND	ug/L	0.50	0.098	EPA-8260	ND		1
Methyl t-butyl ether	**990**	**ug/L**	**12**	**2.8**	**EPA-8260**	ND	**A01**	2
Toluene	ND	ug/L	0.50	0.093	EPA-8260	ND		1
Total Xylenes	ND	ug/L	1.0	0.36	EPA-8260	ND		1
p- & m-Xylenes	ND	ug/L	0.50	0.28	EPA-8260	ND		1
o-Xylene	ND	ug/L	0.50	0.082	EPA-8260	ND		1
Total Purgeable Petroleum Hydrocarbons	**510**	**ug/L**	**50**	**7.2**	**Luft-GC/MS**	ND		1
1,2-Dichloroethane-d4 (Surrogate)	92.8	%	76 - 114 (LCL - UCL)		EPA-8260			1
1,2-Dichloroethane-d4 (Surrogate)	97.3	%	76 - 114 (LCL - UCL)		EPA-8260			2
Toluene-d8 (Surrogate)	102	%	88 - 110 (LCL - UCL)		EPA-8260			1
Toluene-d8 (Surrogate)	101	%	88 - 110 (LCL - UCL)		EPA-8260			2
4-Bromofluorobenzene (Surrogate)	97.5	%	86 - 115 (LCL - UCL)		EPA-8260			1
4-Bromofluorobenzene (Surrogate)	100	%	86 - 115 (LCL - UCL)		EPA-8260			2

Run #	Method	Prep Date	Run Date/Time	Analyst	Instrument	Dilution	QC Batch ID
1	EPA-8260	06/29/11	06/29/11 12:28	JCC	MS-V4	1	BUF1752
2	EPA-8260	06/29/11	06/29/11 20:09	JCC	MS-V4	25	BUF1752

Aqua Science Engineers, Inc.
55 Oak Court, Ste. 220
Danville, CA 94526

Reported: 06/30/2011 14:58
Project: Yee
Project Number: 3412
Project Manager: Robert Kitay

Volatile Organic Analysis (EPA Method 8260)

Quality Control Report - Method Blank Analysis

Constituent	QC Sample ID	MB Result	Units	PQL	MDL	Lab Quals
QC Batch ID: BUF1752						
Benzene	BUF1752-BLK1	ND	ug/L	0.50	0.083	
1,2-Dibromoethane	BUF1752-BLK1	ND	ug/L	0.50	0.16	
1,2-Dichloroethane	BUF1752-BLK1	ND	ug/L	0.50	0.17	
Ethylbenzene	BUF1752-BLK1	ND	ug/L	0.50	0.098	
Methyl t-butyl ether	BUF1752-BLK1	ND	ug/L	0.50	0.11	
Toluene	BUF1752-BLK1	ND	ug/L	0.50	0.093	
Total Xylenes	BUF1752-BLK1	ND	ug/L	1.0	0.36	
p- & m-Xylenes	BUF1752-BLK1	ND	ug/L	0.50	0.28	
o-Xylene	BUF1752-BLK1	ND	ug/L	0.50	0.082	
Total Purgeable Petroleum Hydrocarbons	BUF1752-BLK1	ND	ug/L	50	7.2	
1,2-Dichloroethane-d4 (Surrogate)	BUF1752-BLK1	97.2	%	76 - 114 (LCL - UCL)		
Toluene-d8 (Surrogate)	BUF1752-BLK1	104	%	88 - 110 (LCL - UCL)		
4-Bromofluorobenzene (Surrogate)	BUF1752-BLK1	98.8	%	86 - 115 (LCL - UCL)		

Aqua Science Engineers, Inc.
55 Oak Court, Ste. 220
Danville, CA 94526

Reported: 06/30/2011 14:58
Project: Yee
Project Number: 3412
Project Manager: Robert Kitay

Volatile Organic Analysis (EPA Method 8260)

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: BUF1752										
Benzene	BUF1752-BS1	LCS	27.680	25.000	ug/L	111		70 - 130		
Toluene	BUF1752-BS1	LCS	25.920	25.000	ug/L	104		70 - 130		
1,2-Dichloroethane-d4 (Surrogate)	BUF1752-BS1	LCS	9.7700	10.000	ug/L	97.7		76 - 114		
Toluene-d8 (Surrogate)	BUF1752-BS1	LCS	10.070	10.000	ug/L	101		88 - 110		
4-Bromofluorobenzene (Surrogate)	BUF1752-BS1	LCS	10.380	10.000	ug/L	104		86 - 115		

Aqua Science Engineers, Inc.
55 Oak Court, Ste. 220
Danville, CA 94526

Reported: 06/30/2011 14:58
Project: Yee
Project Number: 3412
Project Manager: Robert Kitay

Volatile Organic Analysis (EPA Method 8260)

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: BUF1752	Used client sample: N										
Benzene	MS	1110041-18	ND	33.950	25.000	ug/L		136		70 - 130	Q03
	MSD	1110041-18	ND	34.390	25.000	ug/L	1.3	138	20	70 - 130	Q03
Toluene	MS	1110041-18	ND	26.220	25.000	ug/L		105		70 - 130	
	MSD	1110041-18	ND	25.870	25.000	ug/L	1.3	103	20	70 - 130	
1,2-Dichloroethane-d4 (Surrogate)	MS	1110041-18	ND	9.0100	10.000	ug/L		90.1		76 - 114	
	MSD	1110041-18	ND	9.2100	10.000	ug/L	2.2	92.1		76 - 114	
Toluene-d8 (Surrogate)	MS	1110041-18	ND	10.180	10.000	ug/L		102		88 - 110	
	MSD	1110041-18	ND	9.9300	10.000	ug/L	2.5	99.3		88 - 110	
4-Bromofluorobenzene (Surrogate)	MS	1110041-18	ND	9.4600	10.000	ug/L		94.6		86 - 115	
	MSD	1110041-18	ND	9.4700	10.000	ug/L	0.1	94.7		86 - 115	

Aqua Science Engineers, Inc.
55 Oak Court, Ste. 220
Danville, CA 94526

Reported: 06/30/2011 14:58
Project: Yee
Project Number: 3412
Project Manager: Robert Kitay

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.
Q03	Matrix spike recovery(s) is(are) not within the control limits.

Aqua Science Engineers, Inc. 55 Oak Court, Suite 220, Danville, CA 94526
(925) 820-9391 - Fax (925) 837-4853 - www.aquascienceengineers.com

APPENDIX E

Waste Disposal Manifests

NON-HAZARDOUS WASTE MANIFEST	1. Generator ID Number N/A	2. Page 1 of 1	3. Emergency Response Phone 1-800-925-4794	4. Waste Tracking Number NH6010

5. Generator's Name and Mailing Address

YEE PROPERTY
827 HARRISON ST
OAKLAND, CA 94606

Generator's Site Address (if different than mailing address)

Generator's Phone:

6. Transporter 1 Company Name: DECON Environmental Service, Inc. — U.S. EPA ID Number: CAD982458183

7. Transporter 2 Company Name — U.S. EPA ID Number

8. Designated Facility Name and Site Address

EVERGREEN OIL, INC
6880 SMITH AVE
NEWARK, CA 94560

U.S. EPA ID Number: CAD980887418

Facility's Phone: 510-795-4400

	9. Waste Shipping Name and Description	10. Containers No.	10. Containers Type	11. Total Quantity	12. Unit Wt./Vol.	
1.	NON HAZARDOUS WASTE SOLID	009	DM	4500	P	
2.	NON HAZARDOUS WASTE LIQUID	005	DM	220	G	
3.						
4.						

13. Special Handling Instructions and Additional Information

9b1) SOIL, 9 X 55G DMS
9b2) WATER, 5 X 55G DMS

WEAR APPROPRIATE PPE WHEN HANGLING JIS#6010
BILL TO DECON ENV SVS

14. GENERATOR'S CERTIFICATION: I certify the materials described above on this manifest are not subject to federal regulations for reporting proper disposal of Hazardous Waste.

Generator's/Offeror's Printed/Typed Name: Robert Kitay of ASE for Peter Yee — Signature: Robert Kitay — Month 7 Day 7 Year 11

15. International Shipments ☐ Import to U.S. ☐ Export from U.S. Port of entry/exit:
Transporter Signature (for exports only): Date leaving U.S.:

16. Transporter Acknowledgment of Receipt of Materials

Transporter 1 Printed/Typed Name: Desmond Amoah for DECON ENV — Signature — Month 7 Day 13 Year 11

Transporter 2 Printed/Typed Name — Signature — Month Day Year

17. Discrepancy

17a. Discrepancy Indication Space ☐ Quantity ☐ Type ☐ Residue ☐ Partial Rejection ☐ Full Rejection

Manifest Reference Number:

17b. Alternate Facility (or Generator) — U.S. EPA ID Number

Facility's Phone:

17c. Signature of Alternate Facility (or Generator) — Month Day Year

18. Designated Facility Owner or Operator: Certification of receipt of materials covered by the manifest except as noted in Item 17a

Printed/Typed Name: Chantel Uperine — Signature — Month 07 Day 13 Year 11

GENERATOR | INT'L | TRANSPORTER | DESIGNATED FACILITY

Appendix B

Drilling Permits

Alameda County Public Works Agency - Water Resources Well Permit

399 Elmhurst Street
Hayward, CA 94544-1395
Telephone: (510)670-6633 Fax:(510)782-1939

Application Approved on: 06/10/2011 By jamesy

Permit Numbers: W2011-0386
Permits Valid from 06/24/2011 to 06/28/2011

Application Id: 1307378885990
City of Project Site: Oakland
Site Location: 706 Harrison St, Oakland, CA
Project Start Date: 06/24/2011
Completion Date: 06/28/2011

Assigned Inspector: Contact Steve Miller at (510) 670-5517 or stevem@acpwa.org

Applicant: Arcadis - Katherine Brandt
2000 Powell St, 7th Flr., Emeryville, CA 94608
Phone: 510-596-9675

Property Owner: Bo Gin
342 Lester Avenue, Oakland, CA 94606
Phone: 510-893-6556

Client: Roya Kam Bin
6101 Bollinger Canyon Rd, 5th Flr., San Ramon, CA 94583
Phone: 925-790-6270 x

Total Due: $265.00
Receipt Number: WR2011-0170 **Total Amount Paid:** $265.00
Payer Name : Arcadis Paid By: CHECK **PAID IN FULL**

Works Requesting Permits:

Borehole(s) for Investigation-Environmental/Monitorinig Study - 4 Boreholes
Driller: Gregg - Lic #: 485165 - Method: other **Work Total: $265.00**

Specifications

Permit Number	Issued Dt	Expire Dt	# Boreholes	Hole Diam	Max Depth
W2011-0386	06/10/2011	09/22/2011	4	2.00 in.	20.00 ft

Specific Work Permit Conditions

1. Backfill bore hole by tremie with cement grout or cement grout/sand mixture. Upper two-three feet replaced in kind or with compacted cuttings. All cuttings remaining or unused shall be containerized and hauled off site. The containers shall be clearly labeled to the ownership of the container and labeled hazardous or non-hazardous.

2. Boreholes shall not be left open for a period of more than 24 hours. All boreholes left open more than 24 hours will need approval from Alameda County Public Works Agency, Water Resources Section. All boreholes shall be backfilled according to permit destruction requirements and all concrete material and asphalt material shall be to Caltrans Spec or County/City Codes. No borehole(s) shall be left in a manner to act as a conduit at any time.

3. Permittee shall assume entire responsibility for all activities and uses under this permit and shall indemnify, defend and save the Alameda County Public Works Agency, its officers, agents, and employees free and harmless from any and all expense, cost, liability in connection with or resulting from the exercise of this Permit including, but not limited to, properly damage, personal injury and wrongful death.

4. Applicant shall contact Steve Miller for an inspection time at (510) 670-5517 or email to stevem@acpwa.org at least five (5) working days prior to starting, once the permit has been approved. Confirm the scheduled date(s) at least 24 hours prior to drilling.

5. Copy of approved drilling permit must be on site at all times. Failure to present or show proof of the approved permit application on site shall result in a fine of $500.00.

6. Prior to any drilling activities onto any public right-of-ways, it shall be the applicants responsibilities to contact and coordinate a Underground Service Alert (USA), obtain encroachment permit(s), excavation permit(s) or any other permits required for that City or to the County and follow all City or County Ordinances. It shall also be the applicants responsibilities to provide to the Cities or to Alameda County a Traffic Safety Plan for any lane closures or detours planned. No work shall begin until all the permits and requirements have been approved or obtained.

7. Permit is valid only for the purpose specified herein. No changes in construction procedures, as described on this permit application. Boreholes shall not be converted to monitoring wells, without a permit application process.

Alameda County Public Works Agency - Water Resources Well Permit

399 Elmhurst Street
Hayward, CA 94544-1395
Telephone: (510)670-6633 Fax:(510)782-1939

Application Approved on: 06/10/2011 By jamesy

Permit Numbers: W2011-0385
Permits Valid from 06/24/2011 to 06/28/2011

Application Id: 1307143652284
City of Project Site: Oakland
Site Location: 800 Harrison St, Oakland, CA
Project Start Date: 06/24/2011
Completion Date: 06/28/2011

Assigned Inspector: Contact Steve Miller at (510) 670-5517 or stevem@acpwa.org

Applicant: Arcadis - Katherine Brandt
2000 Powell St, 7th Flr., Emeryville, CA 94608
Phone: 510-596-9675

Property Owner: Muhammed Usman
800 Harrison St., Oakland, CA 94607
Phone: 510-893-2356

Client: Roya Kambin
6101 Bollinger Canyon Rd, San Ramon, CA 94583
Phone: 925-790-6270 x

Total Due: $265.00
Receipt Number: WR2011-0169 **Total Amount Paid:** $265.00
Payer Name : Arcadis Paid By: CHECK **PAID IN FULL**

Works Requesting Permits:

Borehole(s) for Investigation-Environmental/Monitorinig Study - 8 Boreholes
Driller: Gregg - Lic #: 485165 - Method: other **Work Total: $265.00**

Specifications

Permit Number	Issued Dt	Expire Dt	# Boreholes	Hole Diam	Max Depth
W2011-0385	06/10/2011	09/22/2011	8	2.00 in.	20.00 ft

Specific Work Permit Conditions

1. Backfill bore hole by tremie with cement grout or cement grout/sand mixture. Upper two-three feet replaced in kind or with compacted cuttings. All cuttings remaining or unused shall be containerized and hauled off site. The containers shall be clearly labeled to the ownership of the container and labeled hazardous or non-hazardous.

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7. Permit is valid only for the purpose specified herein. No changes in construction procedures, as described on this permit application. Boreholes shall not be converted to monitoring wells, without a permit application process.

CITY OF OAKLAND

Public Works Agency • 250 Frank H. Ogawa Plaza • Suite 4344 • Oakland, California 94612-2033
Transportation Services Division

Office (510) 238-3466
FAX (510) 238-7415
TDD (510) 839-6451

Traffic Engineering Services Analysis Fee Invoice

Date: June 7, 2011

TSD Invoice # : 11-0046

To: Katie Wynne
Company: Arcadis
Address: 950 Glenn Drive, Suite 125, Folsom, CA 95630
Phone: 510-746-6923

Created/Received By: Joe Watson

Location	Description of Work	Project Name / Permit #	# of Hours *
Intersection of Harrison Street and 7th Street	Lane Closure		1
		Total Hours	**1**
		TSD Service Rate	**$ 123.00**
		Total Fee	**$ 123.00**

* - minimum 1 hour service

FOR CITY USE ONLY	
Cost Center No.	W045
Organization No.	30264
Account No.	45119
Fund No.	1750

Cc: Rosalie

APPLICATION FOR TRAFFIC CONTROL PLAN

[redacted]

Public Works Agency
Transportation Services Division

Transportation Services Fee: $123/hour
(Check or Money Order Only)

Check the box that apply:
- ☑ **New Application** (Utility, Excavation)
- ☐ **Renewal Application**
- ☐ **New Development w/ Mgmt Plan**
- ☐ **City of Oakland Project**

Please Read the Following Statements Below:

1. Processing time for a Traffic Control Application is a **minimum of 10 business days.**
2. Traffic Control review is scheduled **only** on **Tuesdays** and **Thursdays from 8:30am thru 11:30am by appointment only.**
3. A scheduled **appointment** by phone or email with a TSD staff member is necessary to discuss any and all traffic control application and plans.
4. **Please call ahead** to confirm that the traffic control application is ready for pickup @ 510-238-3467.
5. Businesses and residences adjacent to the work area must be provided **72 hour advance notice.**
6. **A completed** traffic control application may be faxed to (510) 238-7415.
7. **Incomplete** traffic control applications will not be processed and returned to applicant immediately.
8. The initial approval for a traffic control plan is 1 month, the renewal submittal may be approved up to 3 months.
9. The traffic control provision dates cannot be changed or extended if work has already commenced.
10. After receiving TSD approval of the traffic control application, contractor shall proceed to the Permit Center to obtain an obstruction permit. **"Obstruction**

Contact Person: Katie Lynne Phone: 916.985-2079 ext. 33

Name of Company: ARCADIS Fax: 916.985.2093

Address of Company: 950 Glenn Drive, Suite 125, Folsom, CA 95630

Describe type of work to be performed: 6 soil borings to ~ 20 feet below ground surface. See Attached TCP for locations

Location of work: 7th Street Between*: Harrison Street And*: Alice Street

Work date (s): 6/23/11 – 6/24/11 ☑ Mon-Fri ☐ Sat-Sun Work Hours: 8 AM to 5 PM

Please Follow these Steps in Order to Complete a Traffic Control Plan:

A. **Drawing Area:** The full width of all streets adjacent to the site MUST be included in the drawing. Include the entire block in which your work is located for every street that is adjacent to your site.

B. **Include Street Names, Direction of Traffic on the Street, and North Arrow**

C. **Show Existing Number of Lanes in all Directions** (with any pavement arrows)

D. **Check the Box(s) that Apply:** All checked items **MUST** be shown on the drawing

- ☑ Lane Closure
- ☐ Street Closures (must provide detour plan)
- ☐ Use of Median
- ☐ Use Parking Lane
- ☐ Sidewalk Closure (must provide pedestrian walk way)

E. **Show All Dimensions** of street widths (curb to curb), lane widths, sidewalk widths, and work area dimension.
(Note: Traffic Control Application / Plans missing the above information will not be accepted or processed.)

F. **Show the Name and Locations** of all advanced warning devices, flaggers, delineators, warning and construction signs to be used.

RENEWAL PROCESS: Resubmit a completed Traffic Control Application with the old approved plan (with the necessary modifications / changes to the plans).

FOR HELP in preparing a traffic control plan, see Temporary Traffic Control Pocket Reference Guide 2007, Work Area Traffic Control Handbook 2006, or the California Manual on Uniform Traffic Control (MUTCD) 2003, Chapter 6.
http://www.dot.ca.gov/hq/traffops/signtech/mutcdsupp/ca_mutcd.htm
For City website: http://www.oaklandpw.com/Page546.aspx

* Name the streets that are the boundaries of your work area.

SPECIAL PROVISION 7-10.1 TRAFFIC REQUIREMENTS

Project Name: _____
Project Number: TSD-11[illegible]0046
Reviewed By: J.Watson
Date: 6/07/2011_
Permit good from__6/23/2011__
to___6/24/2011___

ADD NEW SUBSECTION TO READ:
SP 7-10.1.4 Vehicular Traffic

Attention is directed to Section 7-10. Public Convenience and Safety, of the City of Oakland Standard Specification for Public Works Construction, 2006 Edition (Include this paragraph for p-jobs, excavation permits or obstruction permits).

The Contractor shall conduct its work in such a manner as to provide public convenience and safety and according to the provisions in this subsection. The provisions shall not be modified or altered without written approval from the Engineer.

Standard traffic control devices shall be placed at the construction zone according to the latest edition of the Work Area Traffic Control Handbook or Manual on Uniform Traffic Control Devices (MUTCD), Chapter 6 – "Traffic Controls for Construction and Maintenance Work Zone," or as directed by the Engineer.

All trenches and excavations in any public street or roadway shall be back filled and opened to traffic, or covered with suitable steel plates securely placed and opened to traffic at all times except during actual construction operations unless otherwise permitted by the Engineer.

Each section of work shall be completed or temporarily paved and open to traffic in not more than 5 days after commencing work unless otherwise permitted in writing by the Engineer.

Where construction encroaches into the sidewalk area, a minimum of 5 ½ feet of unobstructed sidewalk shall be maintained at all times for pedestrian use. Pedestrian barricades, shelter, and detour signs per Caltrans standards may be required.

The contractor shall conduct its operation in such a manner as to leave the following traffic lanes unobstructed and in a condition satisfactory for vehicular travel during the Obstruction Period. At all times traffic lanes will be restricted and reopened to travel. Emergency access shall be provided at all times.

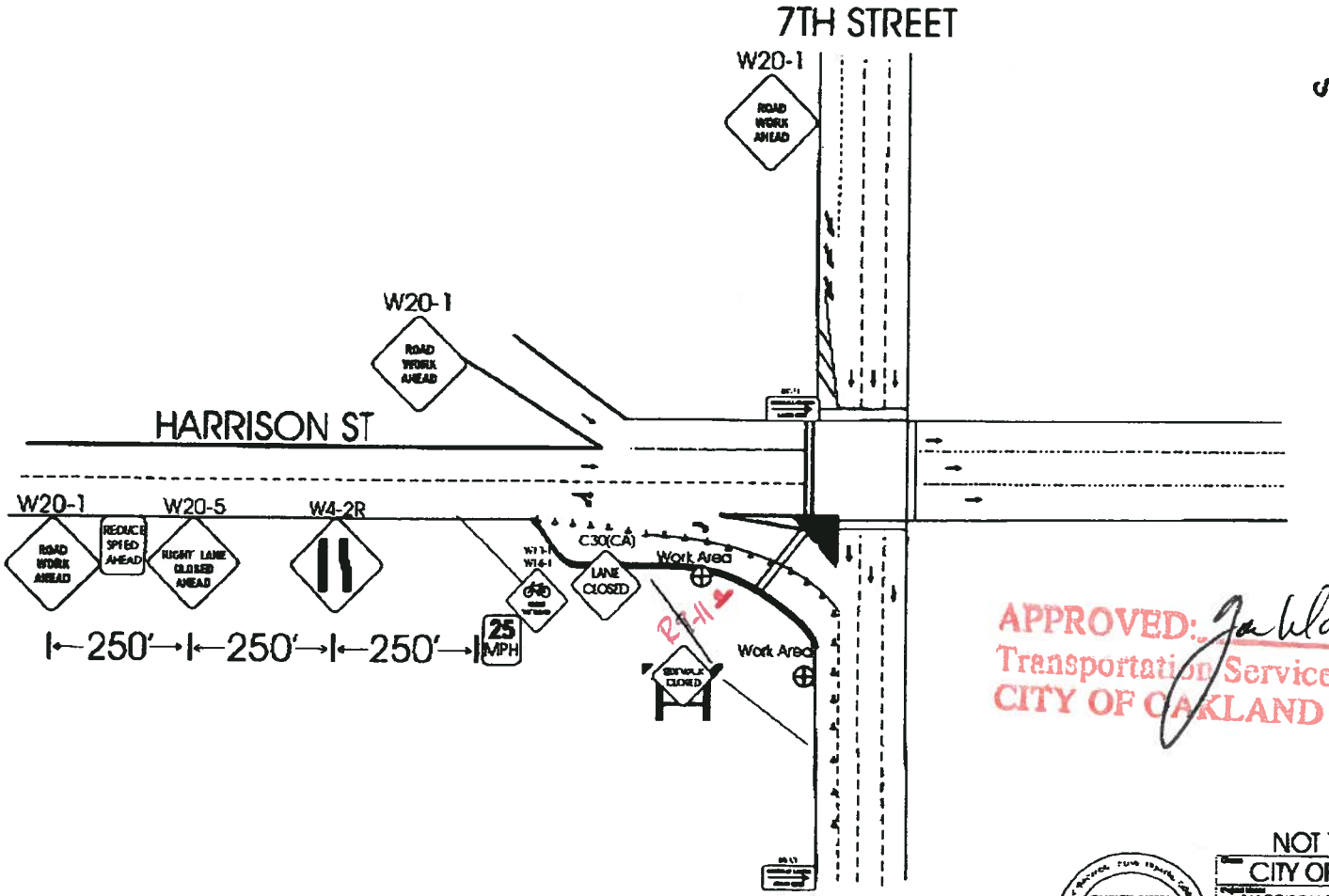
Street Name Limits	Obstruction Period	North Bound	South Bound	East Bound	West Bound
7th Street between Harrison Street and Alice Street	Mon. – Fri. 9am – 4pm	N/A	N/A	3-10' lane open minimum	N/A
Harrison Street between 7th Street and Webster Tube	Mon. – Fri. 9am – 4pm	4-10' lane open minimum	N/A	N/A	N/A

The Contractor Shall Also include all check item:

1. ☐ Design a construction traffic control plan and submit (2) copies to the Engineer for approval prior to starting any work.
2. ☒ Replace all signs, pavement markings, and traffic detector loops damaged or removed due to construction within 3 days of completion of work or the final pavement lift.
3. ☒ Provide advance notice to Oakland Police at (510) 777-3333 (24-hrs) and Oakland Fire at (510) 238-3331 (2-rhs) when a single lane of traffic or less is provided on any street.
4. ☒ Provide 72-hour advance notice to AC Transit at (510) 891-4750 when affecting a bus stop.
5. ☒ For Caltrans roadways, ramps, or maintained facilities, the Contractor shall obtain appropriate permits and notify the Traffic Management Center 24 hours in advance of any work.
6. ☒ Flagger control is required. Certified Flagger is required.
7. ☐ Pedestrian walkway by K-rail, Canopy or Plywood is required. (See detour plan)
8. ☒ Pedestrian traffic shall be maintained and guided through the project at all times.
9. ☒ Provide advance notice to Business and Residence within 72-hours.
10. ☒ Allow all traffic movement at intersection.

SPECIAL PROVISION 7-10.1 TRAFFIC REQUIREMENTS

Nothing specified herein shall prohibit emergency work and/or repair necessary to ensure public health and safety.

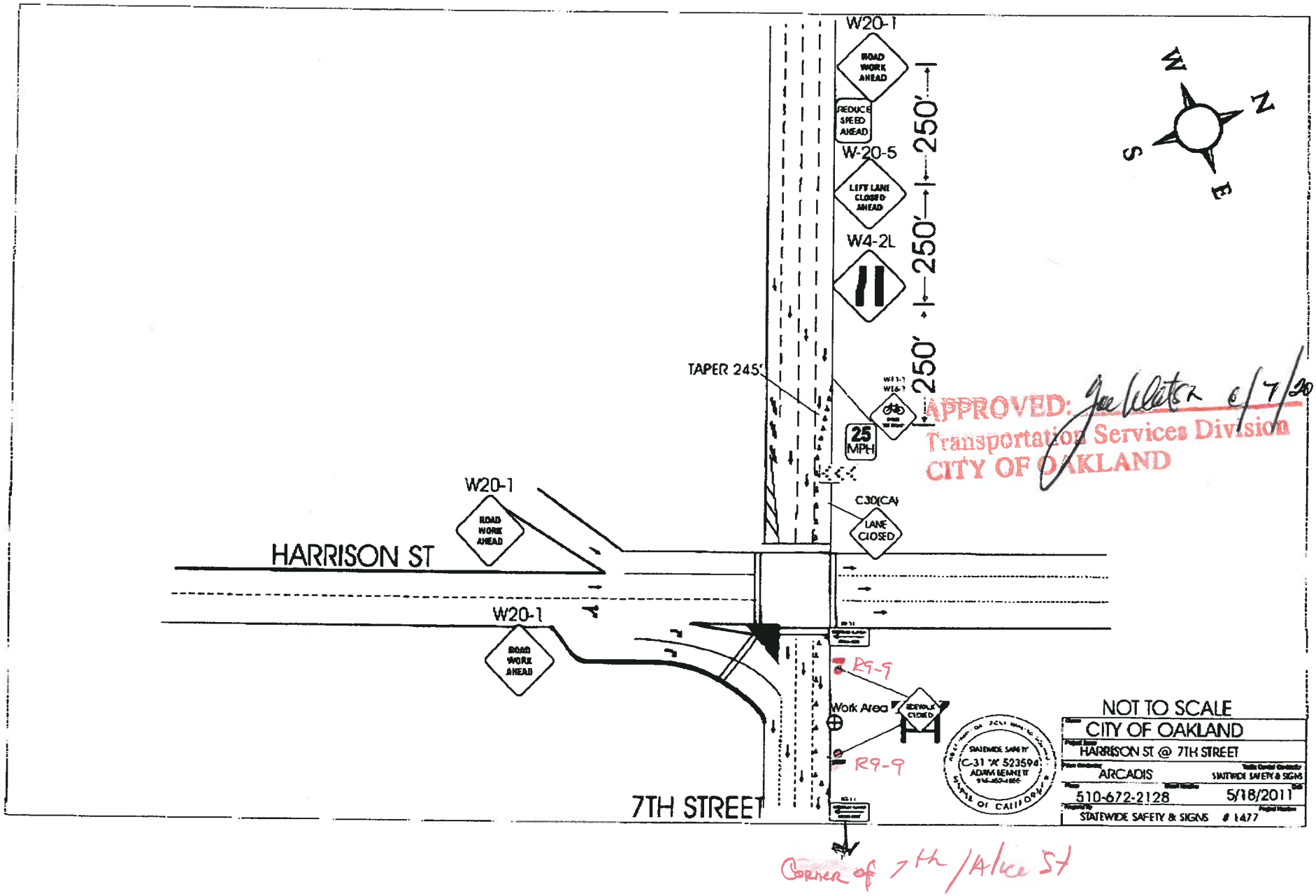


APPROVED: [signature] 6/7/11
Transportation Services Division
CITY OF OAKLAND

NOT TO SCALE

CITY OF OAKLAND	
HARRISON ST @ 7TH STREET	
ARCADIS	STATEWIDE SAFETY & SIGNS
510-672-2128	5/18/2011
STATEWIDE SAFETY & SIGNS # 1476	

TRAFFIC SAFETY
C-31 "A" 523594
ADAM BENNETT
STATE OF CALIFORNIA



Corner of 7th / Alice St

CITY OF OAKLAND • Community and Economic Development Agency

250 Frank H. Ogawa Plaza, 2nd Floor, Oakland, CA 94612 • Phone (510) 238-3443 • Fax (510) 238-2263

Applications for which no permit is issued within 180 days shall expire by limitation. No refund after 180 days when expired.

Appl# OB110397 Job Site 800 HARRISON ST Parcel# 001 -0185-013-00

Block traffic lanes per approved TSD11-0046 and reserve parking along 7th Street east & west side of Harrison
Soil borings on 7th St & Harrison St sides.

Permit Issued 06/10/11

Display on Dashboard

Nbr of days: 1
Effective: 06/23/11

Linear feet: 775
Expiration: 06/23/11

SHORT TERM NON-METERED

		Applcnt	Phone#	Lic#	--License Classes--
Owner	USMAN MUHAMMAD				
Contractor	GREGG DRILLING & TESTING, INC.	X	(925)313-5800	485165	C57
Arch/Engr					
Agent	ARCADIS/ K BRANDT		(925)202-7948		
Applic Addr	950 HOWE RD, MARTINEZ, CA., 94553				

$694.81 FEES TO BE PAID AT FILING

$71.00	Applic	$534.50	Permit
$.00	Process	$57.52	Rec Mgmt
$.00	Gen Plan	$.00	Invstg
$.00	Other	$31.79	Tech Enh

$.00 FEES TO BE PAID AT ISSUANCE

JOB SITE

Display on Dashboard

TCP needs to be approved by Transportation Services every 30 days or whenever deviated from the previously approved plan.

ADDRESS:

Applicant: _____ _____

Issued by: _____ _____

DIST:

CITY OF OAKLAND

PAID
GMC 6/10/11

CITY OF OAKLAND • Community and Economic Development Agency

250 Frank H. Ogawa Plaza, 2nd Floor, Oakland, CA 94612 • Phone (510) 238-3443 • Fax (510) 238-2263

Applications for which no permit is issued within 180 days shall expire by limitation. No refund after 180 days when expired.

Appl# X1100622 Job Site 800 HARRISON ST Parcel# 001 -0185-013-00

Descr Soil boring on Harrison St side. Call PWA INSPECTION prior to start: 510-238-3651. 4th FLOOR. OBstruction permit req'd monitoring wells. recorded: 3/8/93 Permit Issued 06/10/11

Work Type EXCAVATION-PRIVATE P

USA # Util Co. Job # Acctg#:

Util Fund #:

		Applcnt	Phone#	Lic#	--License Classes--
Owner	USMAN MUHAMMAD				
Contractor	GREGG DRILLING & TESTING, INC.	X	(925)313-5800	485165	C57
Arch/Engr					
Agent	ARCADIS/ K BRANDT		(925)202-7948		

Applic Addr 950 HOWE RD, MARTINEZ, CA., 94553

JOB SITE

$436.05 FEES TO BE PAID AT ISSUANCE

$71.00 Applic	$309.00 Permit
$.00 Process	$36.10 Rec Mgmt
$.00 Gen Plan	$.00 Invstg
$.00 Other	$19.95 Tech Enh

Permit Issued By _____ Date: _____

Finaled By _____ Date: _____

ADDRESS:

DIST:

CITY OF OAKLAND

PAID
SMC 6/10/11

CITY OF OAKLAND • Community and Economic Development Agency
250 Frank H. Ogawa Plaza, 2nd Floor, Oakland, CA 94612 • Phone (510) 238-3443 • Fax (510) 238-2263

Applications for which no permit is issued within 180 days shall expire by limitation. No refund after 180 days when expired.

Permit No. X1100622 Parcel #: 001 -0185-013-00
Project Address: 800 HARRISON ST

Licensed Contractors' Declaration
I hereby affirm under penalty of perjury that I am licensed under provisions of Chapter 9 (commencing with Section 7000) of Division 3 of the Business and Professions Code, and my license is in full force and effect.

Construction Lending Agency Declaration
I hereby affirm under penalty of perjury that there is a construction-lending agency for the performance of the work for which this permit is issued, as provided by Section 3097 of the Business and Professions Code. N/A under Lender implies No Lending Agency.

Lender_____ Address_____

Workers' Compensation Declaration

I hereby affirm under penalty of perjury one of the following declarations:

[ ] I have and will maintain a certificate of consent to self-insure for workers' compensation, as provided for by Section 3700 of the Labor Code, for the performance of the work for which this permit is issued.

[ ] I have and will maintain workers' compensation insurance, as required by Section 3700 of the Labor Code, for the performance of the work for which this permit is issued.

CARRIER:_____POLICY NO. _____

[ ] I certify that in the performance of the work for which this permit is issued, I shall not employ any person in any manner so as to become subject to the workers' compensation laws of California, and agree that if I should become subject to the workers' compensation provisions of Section 3700 of the Labor Code, I shall forthwith comply with those provisions.

WARNING: FAILURE TO SECURE WORKERS' COMPENSATION COVERAGE IS UNLAWFUL, AND SHALL SUBJECT AN EMPLOYER TO CRIMINAL PENALTIES AND CIVIL FINES UP TO ONE HUNDRED THOUSAND DOLLARS, IN ADDITION TO THE COST OF COMPENSATION, DAMAGES AS PROVIDED FOR IN SECTION 3707 OF THE LABOR CODE, INTEREST, AND ATTORNEY'S FEES.

Hazardous Materials Declaration

I hereby affirm that the intended occupancy [ ] WILL [ ] WILL NOT use, handle or store any hazardous, or acutely hazardous, materials. (Checking "WILL" acknowledges that Sections 25505, 25533, & 25534 of the Health & Safety Code, as well as filing instructions, were made available to you.)

I HEREBY CERTIFY THE FOLLOWING: That I have read this document; that the above information is correct; and that I have truthfully affirmed all applicable declarations contained in this document. I agree to comply with all city and county ordinances and state laws relating to building construction, and hereby authorize representatives of this city to enter upon the above-mentioned property for inspection. I am fully authorized by the owner and to perform the work authorized by this permit.

DIST:_____ ADDRESS:_____

PRINT NAME _____ Signature [ ] Contractor, or [ ] Agent _____ Date

CITY OF OAKLAND • Community and Economic Development Agency

250 Frank H. Ogawa Plaza, 2nd Floor, Oakland, CA 94612 • Phone (510) 238-3443 • Fax (510) 238-2263

Applications for which no permit is issued within 180 days shall expire by limitation. No refund after 180 days when expired.

Appl# X1100615 Job Site 800 HARRISON ST Parcel# 001 -0185-013-00

Descr Soil boring(s) on 7th Street side. Call PWA INSPECTION prior Permit Issued 06/09/11
to start: 510-238-3651. 4th FLOOR. OBstruction permit req'd
monitoring wells. recorded: 3/8/93
Work Type EXCAVATION-PRIVATE P

USA # Util Co. Job # 211602148 Acctg#:
Util Fund #:

		Applcnt	Phone#	Lic#	--License Classes--
Owner	USMAN MUHAMMAD				
Contractor	GREGG DRILLING & TESTING, INC.	X	(925)313-5800	485165	C57
Arch/Engr					
Agent	ARCADIS/ A VALDIVIA		(510)502-3694		

Applic Addr 950 HOWE RD, MARTINEZ, CA., 94553

$436.05 FEES TO BE PAID AT FILING $.00 FEES TO BE PAID AT ISSUANCE

$71.00 Applic	$309.00 Permit
$.00 Process	$36.10 Rec Mgmt
$.00 Gen Plan	$.00 Invstg
$.00 Other	$19.95 Tech Enh

Permit Issued By _____ Date: _____

Finaled By _____ Date: _____

JOB SITE

ADDRESS:

DIST:

CITY OF OAKLAND

PAID
SMC 6/10/11

CITY OF OAKLAND • Community and Economic Development Agency
250 Frank H. Ogawa Plaza, 2nd Floor, Oakland, CA 94612 • Phone (510) 238-3443 • Fax (510) 238-2263

Applications for which no permit is issued within 180 days shall expire by limitation. No refund after 180 days when expired.

Permit No. X1100615 Parcel #: 001 -0185-013-00
Project Address: 800 HARRISON ST

Licensed Contractors' Declaration
I hereby affirm under penalty of perjury that I am licensed under provisions of Chapter 9 (commencing with Section 7000) of Division 3 of the Business and Professions Code, and my license is in full force and effect.

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WARNING: FAILURE TO SECURE WORKERS' COMPENSATION COVERAGE IS UNLAWFUL, AND SHALL SUBJECT AN EMPLOYER TO CRIMINAL PENALTIES AND CIVIL FINES UP TO ONE HUNDRED THOUSAND DOLLARS, IN ADDITION TO THE COST OF COMPENSATION, DAMAGES AS PROVIDED FOR IN SECTION 3707 OF THE LABOR CODE, INTEREST, AND ATTORNEY'S FEES.

Hazardous Materials Declaration

I hereby affirm that the intended occupancy [ ] WILL [ ] WILL NOT use, handle or store any hazardous, or acutely hazardous, materials. (Checking "WILL" acknowledges that Sections 25505, 25533, & 25534 of the Health & Safety Code, as well as filing instructions, were made available to you.)

I HEREBY CERTIFY THE FOLLOWING: That I have read this document; that the above information is correct; and that I have truthfully affirmed all applicable declarations contained in this document. I agree to comply with all city and county ordinances and state laws relating to building construction, and hereby authorize representatives of this city to enter upon the above-mentioned property for inspection. I am fully authorized by the owner and to perform the work authorized by this permit.

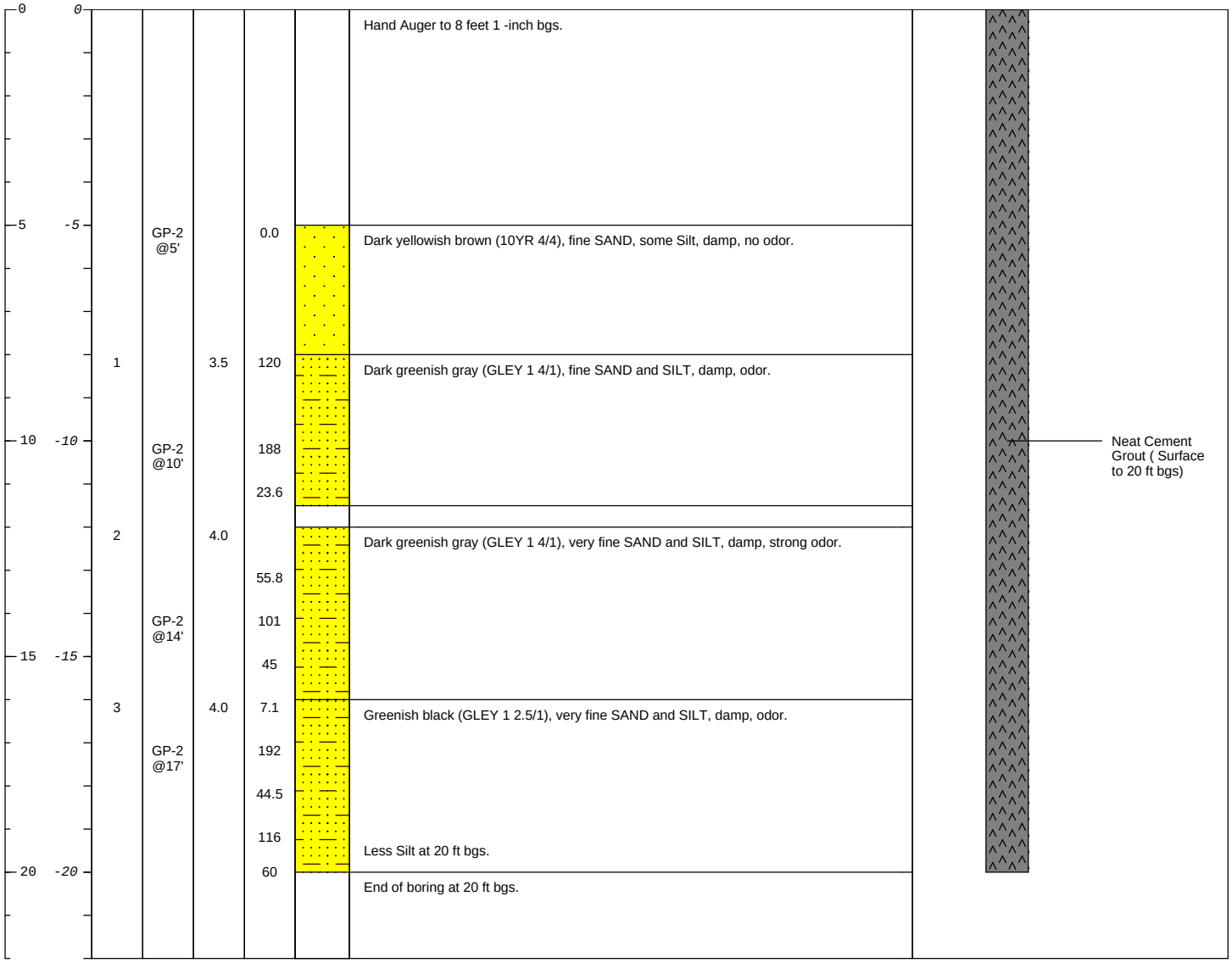
DIST:_____ ADDRESS:_____

PRINT NAME _____ Signature [ ] Contractor, or [ ] Agent _____ Date _____

Appendix C

Boring Logs (GP-2, GP-5 through GP-7)

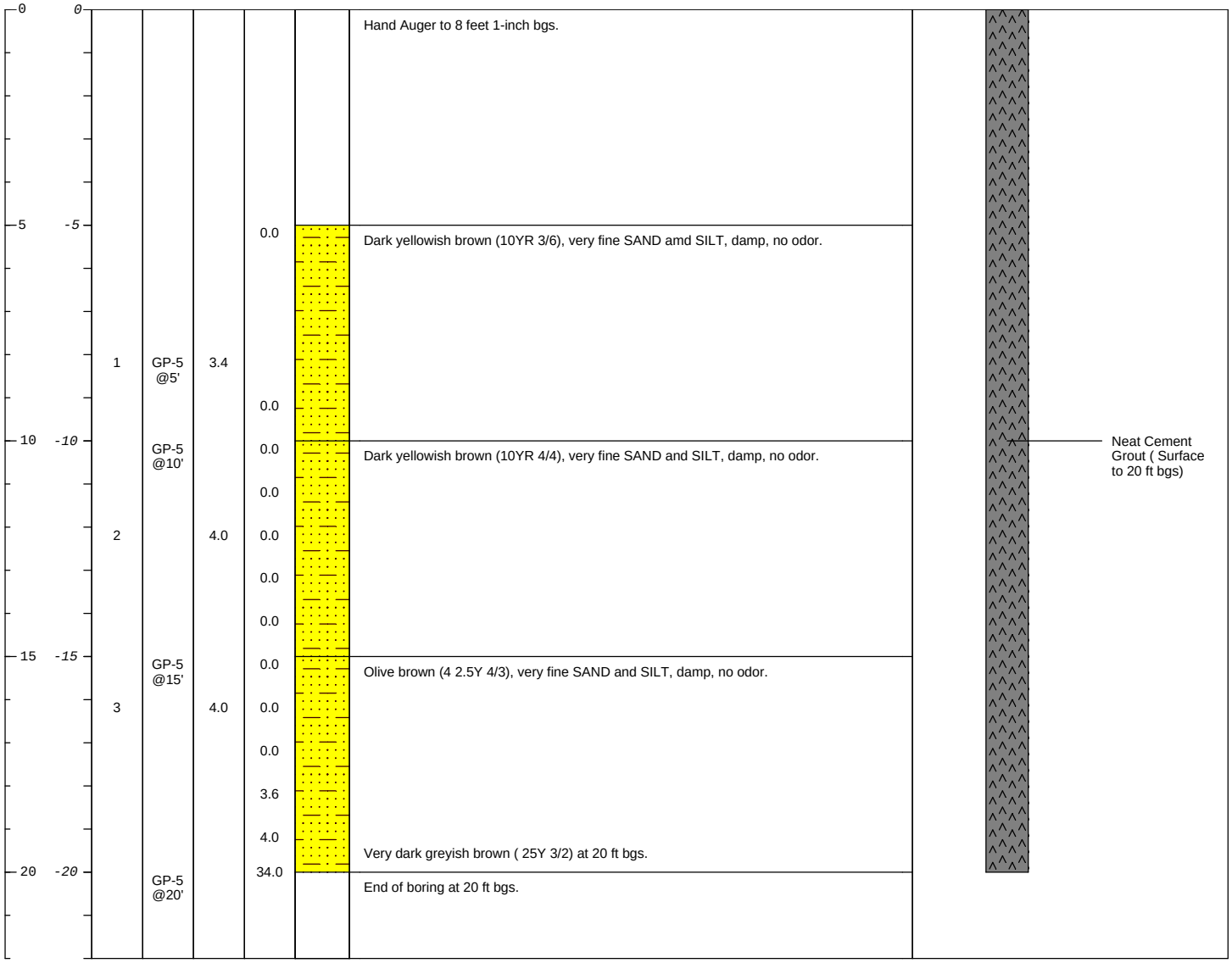
Date Start/Finish: 6/24/11 **Drilling Company:** Gregg Drilling & Testing, Inc. **Driller's Name:** Jesse **Drilling Method:** Direct Push Rig **Sampling Method:** Acetate Liners **Rig Type:** Direct Push Rig	**Northing:** 2118199.27 **Easting:** 6050381.27 **Casing Elevation:** N/A **Borehole Depth:** 20 ft bgs **Surface Elevation:** 35.03 **Descriptions By:** N. Arceneaux	**Well/Boring ID:** **GP-2** **Client:** Union Oil of California **Location:** 800 Harrison Street, Oakland, CA



ARCADIS
Infrastructure, environment, facilities

Remarks: ft bgs - feet below ground surface
N/A Not Available
' - feet
ppm - parts per million

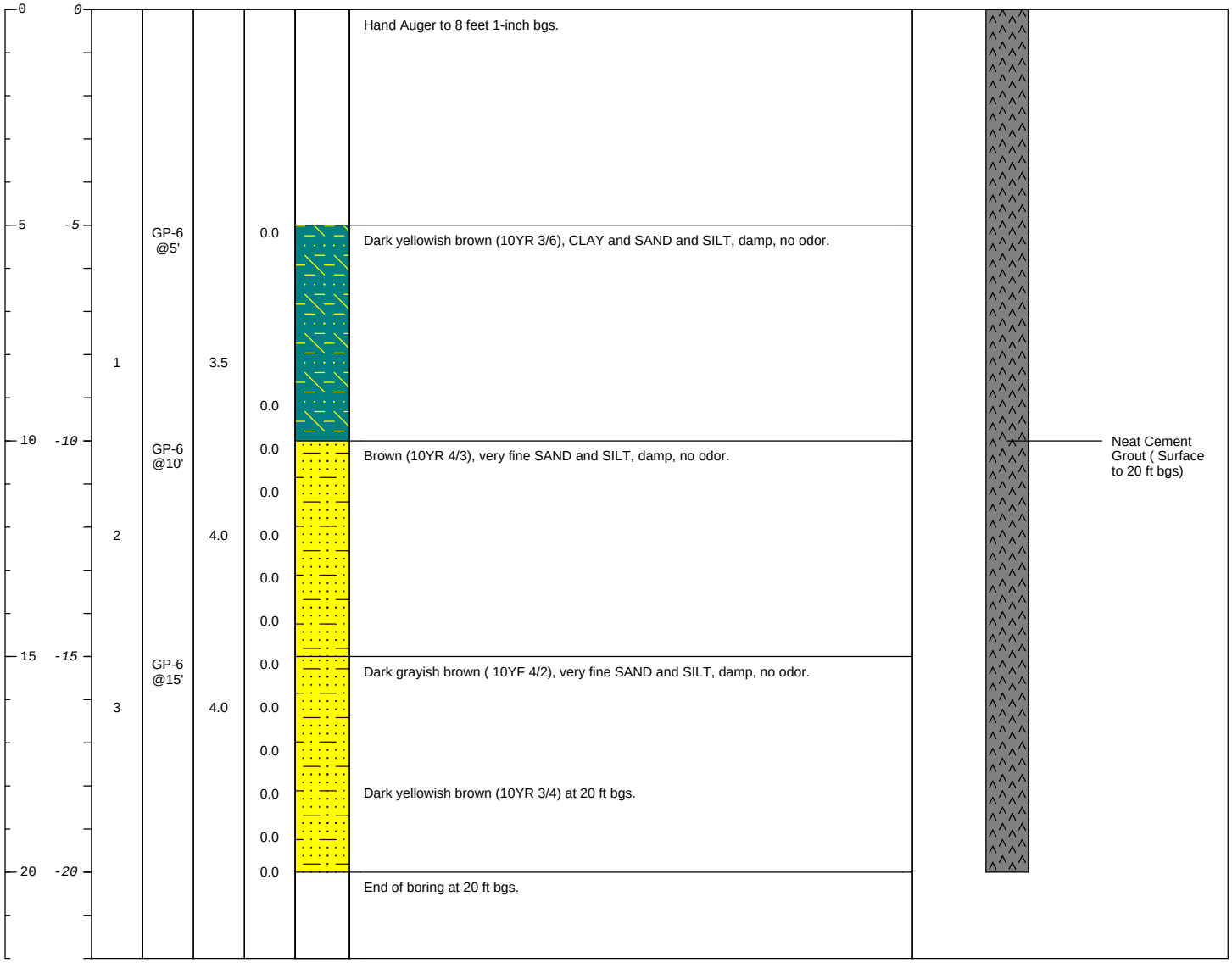
Date Start/Finish: 6/24/11 **Drilling Company:** Gregg Drilling & Testing, Inc. **Driller's Name:** Jesse **Drilling Method:** Direct Push Rig **Sampling Method:** Acetate Liners **Rig Type:** Direct Push Rig	**Northing:** 2117976.20 **Easting:** 6050228.26 **Casing Elevation:** N/A **Borehole Depth:** 20 ft bgs **Surface Elevation:** 31.16 **Descriptions By:** N. Arceneaux	**Well/Boring ID:** **GP-5** **Client:** Union Oil of California **Location:** 706 Harrison Street, Oakland, CA



ARCADIS
Infrastructure, environment, facilities

Remarks: ft bgs - feet below ground surface
N/A Not Available
' - feet
ppm - parts per million

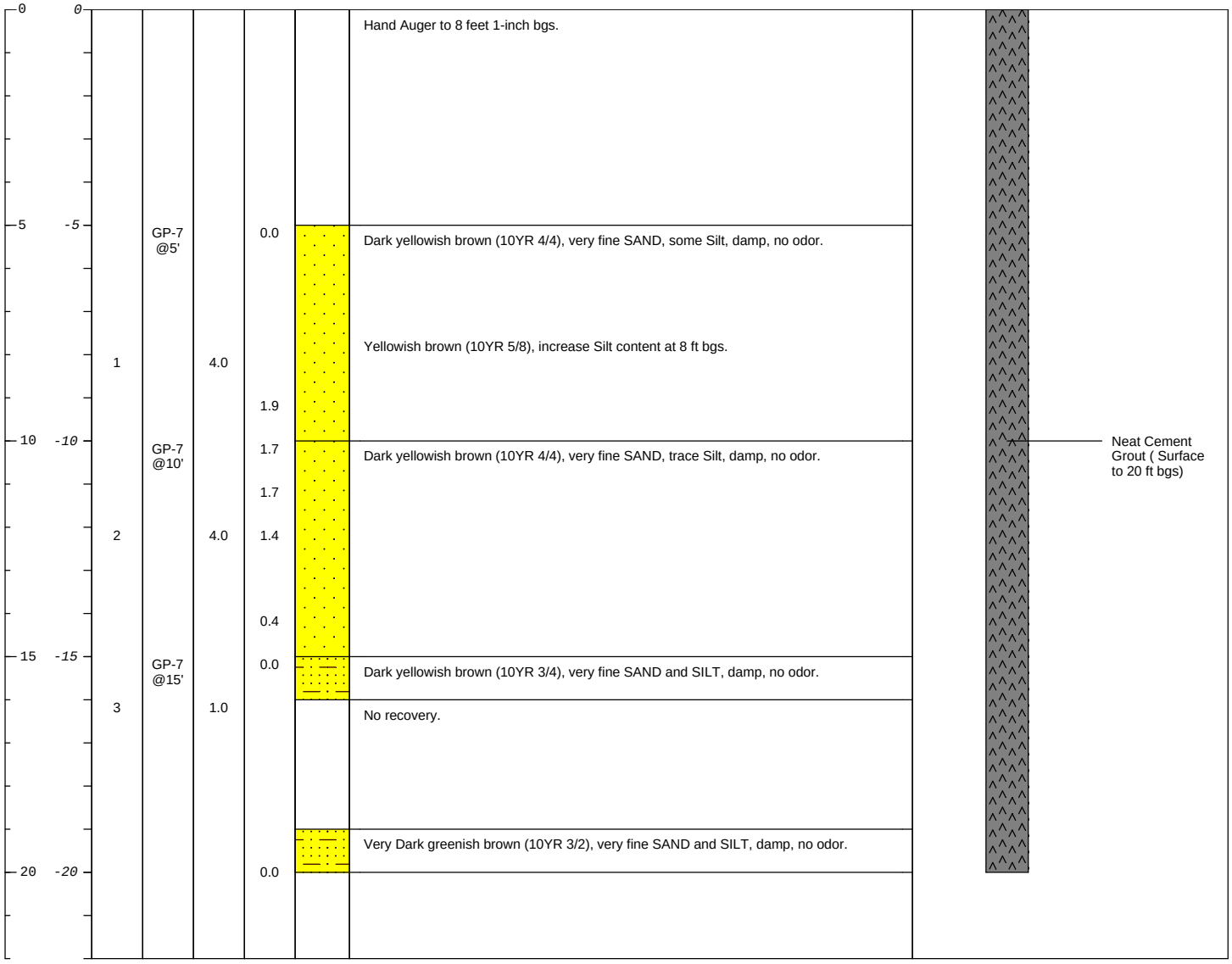
Date Start/Finish: 6/24/11 **Drilling Company:** Gregg Drilling & Testing, Inc. **Driller's Name:** Jesse **Drilling Method:** Direct Push Rig **Sampling Method:** Acetate Liners **Rig Type:** Direct Push Rig	**Northing:** 2117970.33 **Easting:** 6050206.64 **Casing Elevation:** N/A **Borehole Depth:** 20 ft bgs **Surface Elevation:** 31.19 **Descriptions By:** N. Arceneaux	**Well/Boring ID:** **GP-6** **Client:** Union Oil of California **Location:** 706 Harrison Street, Oakland, CA



ARCADIS
Infrastructure, environment, facilities

Remarks: ft bgs - feet below ground surface
N/A Not Available
' - feet
ppm - parts per million

Date Start/Finish: 6/24/11 **Drilling Company:** Gregg Drilling & Testing, Inc. **Driller's Name:** Jesse **Drilling Method:** Direct Push Rig **Sampling Method:** Acetate Liners **Rig Type:** Direct Push Rig	**Northing:** 2117925.45 **Easting:** 6050177.31 **Casing Elevation:** N/A **Borehole Depth:** 20 ft bgs **Surface Elevation:** 30.29 **Descriptions By:** N. Arceneaux	**Well/Boring ID:** **GP-7** **Client:** Union Oil of California **Location:** 706 Harrison Street, Oakland, CA



ARCADIS
Infrastructure, environment, facilities

Remarks: ft bgs - feet below ground surface
N/A Not Available
' - feet
ppm - parts per million

Appendix D

Soil Analytical Laboratory Reports and Chain-of-Custody Documentation

BC Laboratories, Inc.
Environmental Testing Laboratory Since 1949

Date of Report: 06/29/2011

Kathy Brandt

Arcadis
1900 Powell Street 12th Floor
Emeryville, CA 94608

Project:	0752
BC Work Order:	1109999
Invoice ID:	B103054

Enclosed are the results of analyses for samples received by the laboratory on 6/25/2011. 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

Sample Information

Chain of Custody and Cooler Receipt form 3
Laboratory / Client Sample Cross Reference 7

Sample Results

1109999-01 - GP-2-S-5-110624
Volatile Organic Analysis (EPA Method 8260/5035) 12
1109999-02 - GP-2-S-10-110624
Volatile Organic Analysis (EPA Method 8260/5035) 13
1109999-03 - GP-2-S-14-110624
Volatile Organic Analysis (EPA Method 8260/5035) 14
1109999-04 - GP-2-S-17-110624
Volatile Organic Analysis (EPA Method 8260/5035) 15
1109999-05 - GP-7-S-5-110624
Volatile Organic Analysis (EPA Method 8260/5035) 16
1109999-06 - GP-7-S-10-110624
Volatile Organic Analysis (EPA Method 8260/5035) 17
1109999-07 - GP-7-S-15-110624
Volatile Organic Analysis (EPA Method 8260/5035) 18
1109999-08 - GP-5-S-5-110624
Volatile Organic Analysis (EPA Method 8260/5035) 19
1109999-09 - GP-5-S-10-110624
Volatile Organic Analysis (EPA Method 8260/5035) 20
1109999-10 - GP-5-S-15-110624
Volatile Organic Analysis (EPA Method 8260/5035) 21
1109999-11 - GP-5-S-20-110624
Volatile Organic Analysis (EPA Method 8260/5035) 22
1109999-12 - GP-6-S-5-110624
Volatile Organic Analysis (EPA Method 8260/5035) 23
1109999-13 - GP-6-S-10-110624
Volatile Organic Analysis (EPA Method 8260/5035) 24
1109999-14 - GP-6-S-15-110624
Volatile Organic Analysis (EPA Method 8260/5035) 25

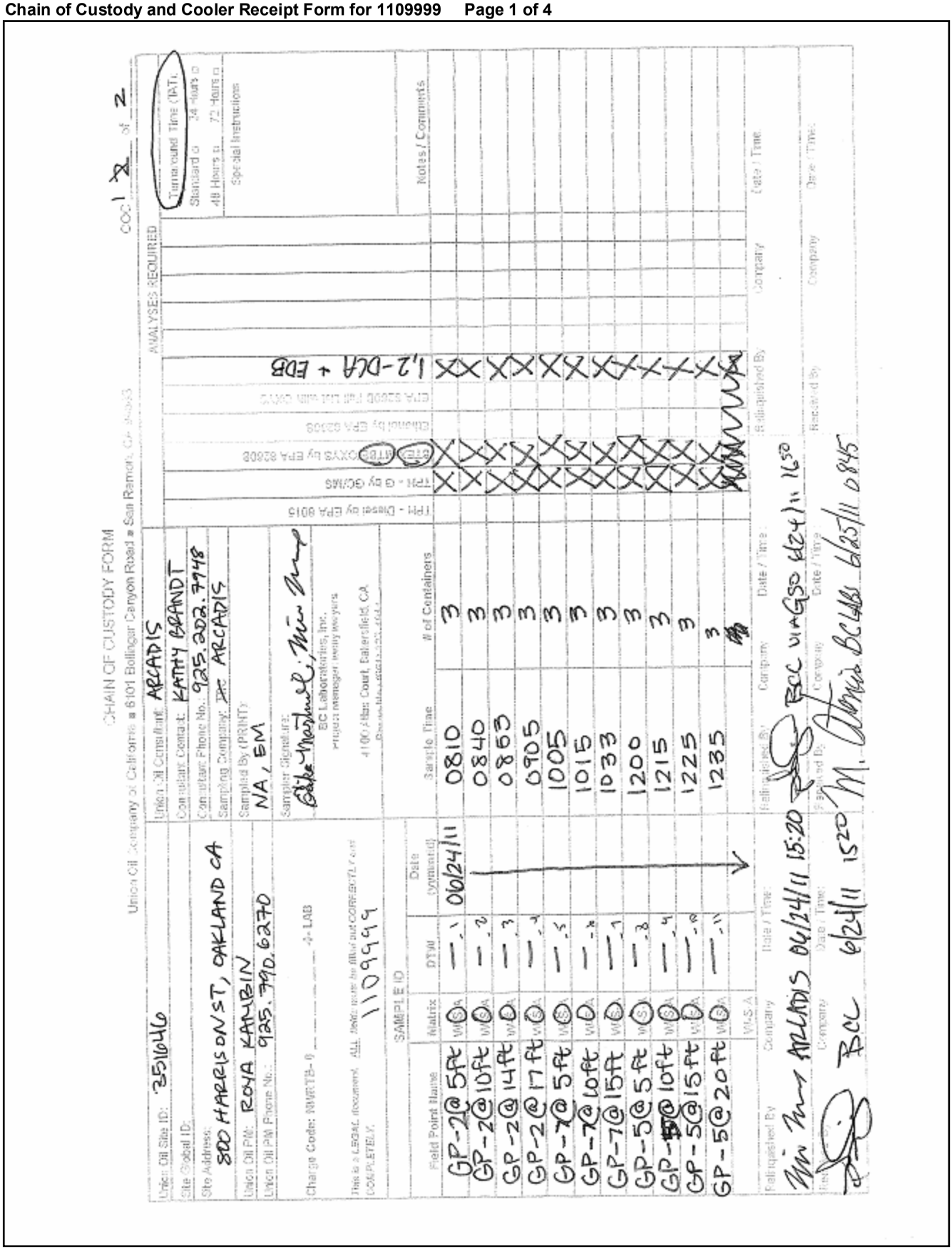
Quality Control Reports

Volatile Organic Analysis (EPA Method 8260/5035)
Method Blank Analysis 26
Laboratory Control Sample 27
Precision and Accuracy 28

Notes

Notes and Definitions 29

Chain of Custody and Cooler Receipt Form for 1109999 Page 1 of 4



BC Laboratories, Inc.
Environmental Testing Laboratory Since 1949

CHAIN OF CUSTODY FORM

Union Oil Company of California ■ 6101 Bollinger Canyon Road ■ San Ramon, CA 94583

COC 2 of 2

Union Oil Site ID: 351646	Union Oil Consultant: ARCADIS
Site Global ID:	Consultant Contact: KATHY BRANDT
Site Address: 800 Harrison St, Oakland CA	Consultant Phone No.: 925.202.7948
	Sampling Company: ~~TRC~~ ARCADIS
Union Oil PM: Roya Kambin	Sampled By (PRINT): NA, EM
Union Oil PM Phone No.: 925.790.6270	Sampler Signature: [signatures]
Charge Code: NWRTB-0 ___ -0- LAB	BC Laboratories, Inc. Project Manager: Molly Meyers
This is a LEGAL document. ALL fields must be filled out CORRECTLY and COMPLETELY. 1109999	4100 Atlas Court, Bakersfield, CA Phone No.: (661) 327-4911

ANALYSES REQUIRED

Turnaround Time (TAT): Standard ☐ 24 Hours ☐ 48 Hours ☐ 72 Hours ☐

Special Instructions

Field Point Name	Matrix	DTW	Date (yymmdd)	Sample Time	# of Containers	TPH - Diesel by EPA 8015	TPH - G by GC/MS	BTEX/MTBE/OXYS by EPA 8260B	Ethanol by EPA 8260B	EPA 8260B Full List with OXYS	1,2-DCA + EDB					Notes / Comments
GP-6@5ft	W-(S)-A	— .12	06/24/11	1330	3		X	X			X					
GP-6@10ft	W-(S)-A	— .13	↓	1340	3		X	X			X					
GP-6@15ft	W-(S)-A	— .14	↓	1347	3		X	X			X					
	W-S-A															
	W-S-A															
	W-S-A															
	W-S-A															
	W-S-A															
	W-S-A															
	W-S-A															
	W-S-A															
	W-S-A															

Relinquished By	Company	Date / Time	Relinquished By	Company	Date / Time	Relinquished By	Company	Date / Time
[signature]	ARCADIS	06/24/11 1520	[signature]	BCL VIA GSO	6/24/11 1650			
Received By	**Company**	**Date / Time**	**Received By**	**Company**	**Date / Time**	**Received By**	**Company**	**Date / Time**
[signature]	BCL	6/24/11 1520	M. Artomo	BCLABS	6/25/11 0845			

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

Chain of Custody and Cooler Receipt Form for 1109999 Page 3 of 4

BC LABORATORIES INC. SAMPLE RECEIPT FORM Rev. No. 12 06/24/08 Page 1 Of 2

Submission #: 1109999

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

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: ____ Container: Loose Thermometer ID: 158

Temperature: A 5.0 °C / C 5.0 °C

Date/Time 6/25/11 0900

Analyst Init MA

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										
PCB VIAL										
PLASTIC BAG										
FERROUS IRON										
ENCORE	A	A	A	A	A	A	A	A	A	A

CHK BY [illegible] DISTRIBUTION [illegible] SUB-OUT ☐

Comments:

Sample Numbering Completed By: MA Date/Time: 6/25/11 @ 0920

A = Actual / C = Corrected

[H:\DOCS\WP80\LAB_DOCS\FORMS\SAMREC2.WPD]

Chain of Custody and Cooler Receipt Form for 1109999 Page 4 of 4

BC LABORATORIES INC. SAMPLE RECEIPT FORM Rev. No. 12 06/24/08 Page 2 of 2

Submission #: 1109999

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

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: ____ Container: Cooler Thermometer ID: 158

Temperature: A 5.0 °C / C 5.0 °C

Date/Time 6/25/11 0930

Analyst Init MA

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										
PCB VIAL										
PLASTIC BAG										
FERROUS IRON										
ENCORE	A	A	A	A						

Comments:

Sample Numbering Completed By: MA Date/Time: 6/25/11 @ 0930

A = Actual / C = Corrected

(H:\DOCS\WP80\LAB_DOCS\FORMS\SAMREC2.WPD)

Arcadis
1900 Powell Street 12th Floor
Emeryville, CA 94608

Reported: 06/29/2011 14:52
Project: 0752
Project Number: 351646
Project Manager: Kathy Brandt

Laboratory / Client Sample Cross Reference

Laboratory	Client Sample Information			
1109999-01	**COC Number:**	---	**Receive Date:**	06/25/2011 08:45
	Project Number:	0752	**Sampling Date:**	06/24/2011 08:10
	Sampling Location:	---	**Sample Depth:**	---
	Sampling Point:	GP-2-S-5-110624	**Lab Matrix:**	Solids
	Sampled By:	AGMR	**Sample Type:**	Soil
			Delivery Work Order:	
			Global ID:	
			Location ID (FieldPoint):	GP-2
			Matrix:	SO
			Sample QC Type (SACode):	CS
			Cooler ID:	
1109999-02	**COC Number:**	---	**Receive Date:**	06/25/2011 08:45
	Project Number:	0752	**Sampling Date:**	06/24/2011 08:40
	Sampling Location:	---	**Sample Depth:**	---
	Sampling Point:	GP-2-S-10-110624	**Lab Matrix:**	Solids
	Sampled By:	AGMR	**Sample Type:**	Soil
			Delivery Work Order:	
			Global ID:	
			Location ID (FieldPoint):	GP-2
			Matrix:	SO
			Sample QC Type (SACode):	CS
			Cooler ID:	
1109999-03	**COC Number:**	---	**Receive Date:**	06/25/2011 08:45
	Project Number:	0752	**Sampling Date:**	06/24/2011 08:53
	Sampling Location:	---	**Sample Depth:**	---
	Sampling Point:	GP-2-S-14-110624	**Lab Matrix:**	Solids
	Sampled By:	AGMR	**Sample Type:**	Soil
			Delivery Work Order:	
			Global ID:	
			Location ID (FieldPoint):	GP-2
			Matrix:	SO
			Sample QC Type (SACode):	CS
			Cooler ID:	

Arcadis
1900 Powell Street 12th Floor
Emeryville, CA 94608

Reported: 06/29/2011 14:52
Project: 0752
Project Number: 351646
Project Manager: Kathy Brandt

Laboratory / Client Sample Cross Reference

Laboratory	Client Sample Information			
1109999-04	**COC Number:**	---	**Receive Date:**	06/25/2011 08:45
	Project Number:	0752	**Sampling Date:**	06/24/2011 09:05
	Sampling Location:	---	**Sample Depth:**	---
	Sampling Point:	GP-2-S-17-110624	**Lab Matrix:**	Solids
	Sampled By:	AGMR	**Sample Type:**	Soil
			Delivery Work Order:	
			Global ID:	
			Location ID (FieldPoint):	GP-2
			Matrix:	SO
			Sample QC Type (SACode):	CS
			Cooler ID:	
1109999-05	**COC Number:**	---	**Receive Date:**	06/25/2011 08:45
	Project Number:	0752	**Sampling Date:**	06/24/2011 10:05
	Sampling Location:	---	**Sample Depth:**	---
	Sampling Point:	GP-7-S-5-110624	**Lab Matrix:**	Solids
	Sampled By:	AGMR	**Sample Type:**	Soil
			Delivery Work Order:	
			Global ID:	
			Location ID (FieldPoint):	GP-7
			Matrix:	SO
			Sample QC Type (SACode):	CS
			Cooler ID:	
1109999-06	**COC Number:**	---	**Receive Date:**	06/25/2011 08:45
	Project Number:	0752	**Sampling Date:**	06/24/2011 10:15
	Sampling Location:	---	**Sample Depth:**	---
	Sampling Point:	GP-7-S-10-110624	**Lab Matrix:**	Solids
	Sampled By:	AGMR	**Sample Type:**	Soil
			Delivery Work Order:	
			Global ID:	
			Location ID (FieldPoint):	GP-7
			Matrix:	SO
			Sample QC Type (SACode):	CS
			Cooler ID:	

Arcadis
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Emeryville, CA 94608

Reported: 06/29/2011 14:52
Project: 0752
Project Number: 351646
Project Manager: Kathy Brandt

Laboratory / Client Sample Cross Reference

Laboratory	Client Sample Information			
1109999-07	**COC Number:**	---	**Receive Date:**	06/25/2011 08:45
	Project Number:	0752	**Sampling Date:**	06/24/2011 10:33
	Sampling Location:	---	**Sample Depth:**	---
	Sampling Point:	GP-7-S-15-110624	**Lab Matrix:**	Solids
	Sampled By:	AGMR	**Sample Type:**	Soil
			Delivery Work Order:	
			Global ID:	
			Location ID (FieldPoint):	GP-7
			Matrix:	SO
			Sample QC Type (SACode):	CS
			Cooler ID:	
1109999-08	**COC Number:**	---	**Receive Date:**	06/25/2011 08:45
	Project Number:	0752	**Sampling Date:**	06/24/2011 12:00
	Sampling Location:	---	**Sample Depth:**	---
	Sampling Point:	GP-5-S-5-110624	**Lab Matrix:**	Solids
	Sampled By:	AGMR	**Sample Type:**	Soil
			Delivery Work Order:	
			Global ID:	
			Location ID (FieldPoint):	GP-5
			Matrix:	SO
			Sample QC Type (SACode):	CS
			Cooler ID:	
1109999-09	**COC Number:**	---	**Receive Date:**	06/25/2011 08:45
	Project Number:	0752	**Sampling Date:**	06/24/2011 12:15
	Sampling Location:	---	**Sample Depth:**	---
	Sampling Point:	GP-5-S-10-110624	**Lab Matrix:**	Solids
	Sampled By:	AGMR	**Sample Type:**	Soil
			Delivery Work Order:	
			Global ID:	
			Location ID (FieldPoint):	GP-5
			Matrix:	SO
			Sample QC Type (SACode):	CS
			Cooler ID:	

Arcadis
1900 Powell Street 12th Floor
Emeryville, CA 94608

Reported: 06/29/2011 14:52
Project: 0752
Project Number: 351646
Project Manager: Kathy Brandt

Laboratory / Client Sample Cross Reference

Laboratory	Client Sample Information		
1109999-10	**COC Number:**	---	**Receive Date:** 06/25/2011 08:45
	Project Number:	0752	**Sampling Date:** 06/24/2011 12:25
	Sampling Location:	---	**Sample Depth:** ---
	Sampling Point:	GP-5-S-15-110624	**Lab Matrix:** Solids
	Sampled By:	AGMR	**Sample Type:** Soil
			Delivery Work Order:
			Global ID:
			Location ID (FieldPoint): GP-5
			Matrix: SO
			Sample QC Type (SACode): CS
			Cooler ID:
1109999-11	**COC Number:**	---	**Receive Date:** 06/25/2011 08:45
	Project Number:	0752	**Sampling Date:** 06/24/2011 12:35
	Sampling Location:	---	**Sample Depth:** ---
	Sampling Point:	GP-5-S-20-110624	**Lab Matrix:** Solids
	Sampled By:	AGMR	**Sample Type:** Soil
			Delivery Work Order:
			Global ID:
			Location ID (FieldPoint): GP-5
			Matrix: SO
			Sample QC Type (SACode): CS
			Cooler ID:
1109999-12	**COC Number:**	---	**Receive Date:** 06/25/2011 08:45
	Project Number:	0752	**Sampling Date:** 06/24/2011 13:30
	Sampling Location:	---	**Sample Depth:** ---
	Sampling Point:	GP-6-S-5-110624	**Lab Matrix:** Solids
	Sampled By:	AGMR	**Sample Type:** Soil
			Delivery Work Order:
			Global ID:
			Location ID (FieldPoint): GP-6
			Matrix: SO
			Sample QC Type (SACode): CS
			Cooler ID:

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Emeryville, CA 94608

Reported: 06/29/2011 14:52
Project: 0752
Project Number: 351646
Project Manager: Kathy Brandt

Laboratory / Client Sample Cross Reference

Laboratory	Client Sample Information			
1109999-13	**COC Number:**	---	**Receive Date:**	06/25/2011 08:45
	Project Number:	0752	**Sampling Date:**	06/24/2011 13:40
	Sampling Location:	---	**Sample Depth:**	---
	Sampling Point:	GP-6-S-10-110624	**Lab Matrix:**	Solids
	Sampled By:	AGMR	**Sample Type:**	Soil
			Delivery Work Order:	
			Global ID:	
			Location ID (FieldPoint):	GP-6
			Matrix:	SO
			Sample QC Type (SACode):	CS
			Cooler ID:	
1109999-14	**COC Number:**	---	**Receive Date:**	06/25/2011 08:45
	Project Number:	0752	**Sampling Date:**	06/24/2011 13:47
	Sampling Location:	---	**Sample Depth:**	---
	Sampling Point:	GP-6-S-15-110624	**Lab Matrix:**	Solids
	Sampled By:	AGMR	**Sample Type:**	Soil
			Delivery Work Order:	
			Global ID:	
			Location ID (FieldPoint):	GP-6
			Matrix:	SO
			Sample QC Type (SACode):	CS
			Cooler ID:	

Arcadis
1900 Powell Street 12th Floor
Emeryville, CA 94608

Reported: 06/29/2011 14:52
Project: 0752
Project Number: 351646
Project Manager: Kathy Brandt

Volatile Organic Analysis (EPA Method 8260/5035)

BCL Sample ID: 1109999-01 | **Client Sample Name:** 0752, GP-2-S-5-110624, 6/24/2011 8:10:00AM

Constituent	Result	Units	PQL	Method	MB Bias	Lab Quals	Run #
Benzene	ND	mg/kg	0.016	EPA-8260	ND	A11	1
1,2-Dibromoethane	ND	mg/kg	0.016	EPA-8260	ND	A11	1
1,2-Dichloroethane	ND	mg/kg	0.016	EPA-8260	ND	A11	1
Ethylbenzene	ND	mg/kg	0.016	EPA-8260	ND	A11	1
Methyl t-butyl ether	ND	mg/kg	0.016	EPA-8260	ND	A11	1
Toluene	ND	mg/kg	0.016	EPA-8260	ND	A11	1
Total Xylenes	ND	mg/kg	0.031	EPA-8260	ND	A11	1
Total Purgeable Petroleum Hydrocarbons	ND	mg/kg	0.63	Luft-GC/MS	ND	A11	1
1,2-Dichloroethane-d4 (Surrogate)	105	%	70 - 121 (LCL - UCL)	EPA-8260			1
Toluene-d8 (Surrogate)	102	%	81 - 117 (LCL - UCL)	EPA-8260			1
4-Bromofluorobenzene (Surrogate)	96.4	%	74 - 121 (LCL - UCL)	EPA-8260			1

Run #	Method	Prep Date	Run Date/Time	Analyst	Instrument	Dilution	QC Batch ID
1	EPA-8260	06/27/11	06/27/11 17:59	ADC	MS-V2	3.140	BUF1603

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1900 Powell Street 12th Floor
Emeryville, CA 94608

Reported: 06/29/2011 14:52
Project: 0752
Project Number: 351646
Project Manager: Kathy Brandt

Volatile Organic Analysis (EPA Method 8260/5035)

BCL Sample ID: 1109999-02 | **Client Sample Name:** 0752, GP-2-S-10-110624, 6/24/2011 8:40:00AM

Constituent	Result	Units	PQL	Method	MB Bias	Lab Quals	Run #
Benzene	ND	mg/kg	0.0044	EPA-8260	ND		1
1,2-Dibromoethane	ND	mg/kg	0.0044	EPA-8260	ND		1
1,2-Dichloroethane	ND	mg/kg	0.0044	EPA-8260	ND		1
Ethylbenzene	ND	mg/kg	0.0044	EPA-8260	ND		1
Methyl t-butyl ether	**0.013**	**mg/kg**	**0.0044**	**EPA-8260**	**ND**		1
Toluene	ND	mg/kg	0.0044	EPA-8260	ND		1
Total Xylenes	ND	mg/kg	0.0088	EPA-8260	ND		1
Total Purgeable Petroleum Hydrocarbons	**21**	**mg/kg**	**9.8**	**Luft-GC/MS**	**ND**	**A01**	2
1,2-Dichloroethane-d4 (Surrogate)	96.2	%	70 - 121 (LCL - UCL)	EPA-8260			1
1,2-Dichloroethane-d4 (Surrogate)	91.2	%	70 - 121 (LCL - UCL)	EPA-8260			2
Toluene-d8 (Surrogate)	101	%	81 - 117 (LCL - UCL)	EPA-8260			1
Toluene-d8 (Surrogate)	99.6	%	81 - 117 (LCL - UCL)	EPA-8260			2
4-Bromofluorobenzene (Surrogate)	172	%	74 - 121 (LCL - UCL)	EPA-8260		S09	1
4-Bromofluorobenzene (Surrogate)	98.9	%	74 - 121 (LCL - UCL)	EPA-8260			2

Run #	Method	Prep Date	Run Date/Time	Analyst	Instrument	Dilution	QC Batch ID
1	EPA-8260	06/27/11	06/27/11 12:27	ADC	MS-V2	0.883	BUF1603
2	EPA-8260	06/27/11	06/28/11 13:41	ADC	MS-V2	48.800	BUF1603

Arcadis
1900 Powell Street 12th Floor
Emeryville, CA 94608

Reported: 06/29/2011 14:52
Project: 0752
Project Number: 351646
Project Manager: Kathy Brandt

Volatile Organic Analysis (EPA Method 8260/5035)

BCL Sample ID: 1109999-03 | **Client Sample Name:** 0752, GP-2-S-14-110624, 6/24/2011 8:53:00AM

Constituent	Result	Units	PQL	Method	MB Bias	Lab Quals	Run #
Benzene	ND	mg/kg	0.0044	EPA-8260	ND		1
1,2-Dibromoethane	ND	mg/kg	0.0044	EPA-8260	ND		1
1,2-Dichloroethane	ND	mg/kg	0.0044	EPA-8260	ND		1
Ethylbenzene	**0.013**	**mg/kg**	**0.0044**	**EPA-8260**	**ND**		1
Methyl t-butyl ether	**0.028**	**mg/kg**	**0.0044**	**EPA-8260**	**ND**		1
Toluene	ND	mg/kg	0.0044	EPA-8260	ND		1
Total Xylenes	**0.11**	**mg/kg**	**0.0088**	**EPA-8260**	**ND**		1
Total Purgeable Petroleum Hydrocarbons	**3200**	**mg/kg**	**1000**	**Luft-GC/MS**	**ND**	**A01**	2
1,2-Dichloroethane-d4 (Surrogate)	89.6	%	70 - 121 (LCL - UCL)	EPA-8260			1
1,2-Dichloroethane-d4 (Surrogate)	89.1	%	70 - 121 (LCL - UCL)	EPA-8260			2
Toluene-d8 (Surrogate)	113	%	81 - 117 (LCL - UCL)	EPA-8260			1
Toluene-d8 (Surrogate)	101	%	81 - 117 (LCL - UCL)	EPA-8260			2
4-Bromofluorobenzene (Surrogate)	2210	%	74 - 121 (LCL - UCL)	EPA-8260		S09	1
4-Bromofluorobenzene (Surrogate)	99.4	%	74 - 121 (LCL - UCL)	EPA-8260			2

Run #	Method	Prep Date	Run Date/Time	Analyst	Instrument	Dilution	QC Batch ID
1	EPA-8260	06/27/11	06/27/11 12:53	ADC	MS-V2	0.882	BUF1603
2	EPA-8260	06/27/11	06/28/11 14:06	ADC	MS-V2	5081	BUF1603

Arcadis
1900 Powell Street 12th Floor
Emeryville, CA 94608

Reported: 06/29/2011 14:52
Project: 0752
Project Number: 351646
Project Manager: Kathy Brandt

Volatile Organic Analysis (EPA Method 8260/5035)

BCL Sample ID: 1109999-04 | **Client Sample Name:** 0752, GP-2-S-17-110624, 6/24/2011 9:05:00AM

Constituent	Result	Units	PQL	Method	MB Bias	Lab Quals	Run #
Benzene	ND	mg/kg	0.0054	EPA-8260	ND		1
1,2-Dibromoethane	ND	mg/kg	0.0054	EPA-8260	ND		1
1,2-Dichloroethane	ND	mg/kg	0.0054	EPA-8260	ND		1
Ethylbenzene	**0.015**	**mg/kg**	**0.0054**	**EPA-8260**	**ND**		1
Methyl t-butyl ether	**0.060**	**mg/kg**	**0.0054**	**EPA-8260**	**ND**		1
Toluene	**0.024**	**mg/kg**	**0.0054**	**EPA-8260**	**ND**		1
Total Xylenes	**0.098**	**mg/kg**	**0.011**	**EPA-8260**	**ND**		1
Total Purgeable Petroleum Hydrocarbons	**1000**	**mg/kg**	**100**	**Luft-GC/MS**	**ND**	**A01**	2
1,2-Dichloroethane-d4 (Surrogate)	89.0	%	70 - 121 (LCL - UCL)	EPA-8260			1
1,2-Dichloroethane-d4 (Surrogate)	91.6	%	70 - 121 (LCL - UCL)	EPA-8260			2
Toluene-d8 (Surrogate)	100	%	81 - 117 (LCL - UCL)	EPA-8260			1
Toluene-d8 (Surrogate)	100	%	81 - 117 (LCL - UCL)	EPA-8260			2
4-Bromofluorobenzene (Surrogate)	418	%	74 - 121 (LCL - UCL)	EPA-8260		S09	1
4-Bromofluorobenzene (Surrogate)	112	%	74 - 121 (LCL - UCL)	EPA-8260			2

Run #	Method	Prep Date	Run Date/Time	Analyst	Instrument	Dilution	QC Batch ID
1	EPA-8260	06/27/11	06/27/11 13:18	ADC	MS-V2	1.080	BUF1603
2	EPA-8260	06/27/11	06/28/11 15:49	ADC	MS-V2	501	BUF1603

Arcadis
1900 Powell Street 12th Floor
Emeryville, CA 94608

Reported: 06/29/2011 14:52
Project: 0752
Project Number: 351646
Project Manager: Kathy Brandt

Volatile Organic Analysis (EPA Method 8260/5035)

BCL Sample ID: 1109999-05 | **Client Sample Name:** 0752, GP-7-S-5-110624, 6/24/2011 10:05:00AM

Constituent	Result	Units	PQL	Method	MB Bias	Lab Quals	Run #
Benzene	ND	mg/kg	0.0050	EPA-8260	ND		1
1,2-Dibromoethane	ND	mg/kg	0.0050	EPA-8260	ND		1
1,2-Dichloroethane	ND	mg/kg	0.0050	EPA-8260	ND		1
Ethylbenzene	ND	mg/kg	0.0050	EPA-8260	ND		1
Methyl t-butyl ether	ND	mg/kg	0.0050	EPA-8260	ND		1
Toluene	ND	mg/kg	0.0050	EPA-8260	ND		1
Total Xylenes	ND	mg/kg	0.010	EPA-8260	ND		1
Total Purgeable Petroleum Hydrocarbons	ND	mg/kg	0.23	Luft-GC/MS	ND		2
1,2-Dichloroethane-d4 (Surrogate)	85.6	%	70 - 121 (LCL - UCL)	EPA-8260			1
1,2-Dichloroethane-d4 (Surrogate)	94.9	%	70 - 121 (LCL - UCL)	EPA-8260			2
Toluene-d8 (Surrogate)	94.0	%	81 - 117 (LCL - UCL)	EPA-8260			1
Toluene-d8 (Surrogate)	102	%	81 - 117 (LCL - UCL)	EPA-8260			2
4-Bromofluorobenzene (Surrogate)	92.0	%	74 - 121 (LCL - UCL)	EPA-8260			1
4-Bromofluorobenzene (Surrogate)	97.3	%	74 - 121 (LCL - UCL)	EPA-8260			2

Run #	Method	Prep Date	Run Date/Time	Analyst	Instrument	Dilution	QC Batch ID
1	EPA-8260	06/27/11	06/27/11 13:44	ADC	MS-V2	1.010	BUF1603
2	EPA-8260	06/27/11	06/28/11 15:23	ADC	MS-V2	1.150	BUF1603

Arcadis
1900 Powell Street 12th Floor
Emeryville, CA 94608

Reported: 06/29/2011 14:52
Project: 0752
Project Number: 351646
Project Manager: Kathy Brandt

Volatile Organic Analysis (EPA Method 8260/5035)

BCL Sample ID: 1109999-06 | **Client Sample Name:** 0752, GP-7-S-10-110624, 6/24/2011 10:15:00AM

Constituent	Result	Units	PQL	Method	MB Bias	Lab Quals	Run #
Benzene	ND	mg/kg	0.0048	EPA-8260	ND		1
1,2-Dibromoethane	ND	mg/kg	0.0048	EPA-8260	ND		1
1,2-Dichloroethane	ND	mg/kg	0.0048	EPA-8260	ND		1
Ethylbenzene	ND	mg/kg	0.0048	EPA-8260	ND		1
Methyl t-butyl ether	ND	mg/kg	0.0048	EPA-8260	ND		1
Toluene	ND	mg/kg	0.0048	EPA-8260	ND		1
Total Xylenes	ND	mg/kg	0.0096	EPA-8260	ND		1
Total Purgeable Petroleum Hydrocarbons	ND	mg/kg	0.19	Luft-GC/MS	ND		1
1,2-Dichloroethane-d4 (Surrogate)	84.3	%	70 - 121 (LCL - UCL)	EPA-8260			1
Toluene-d8 (Surrogate)	93.8	%	81 - 117 (LCL - UCL)	EPA-8260			1
4-Bromofluorobenzene (Surrogate)	93.2	%	74 - 121 (LCL - UCL)	EPA-8260			1

Run #	Method	Prep Date	Run Date/Time	Analyst	Instrument	Dilution	QC Batch ID
1	EPA-8260	06/27/11	06/27/11 14:09	ADC	MS-V2	0.956	BUF1603

Arcadis
1900 Powell Street 12th Floor
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Reported: 06/29/2011 14:52
Project: 0752
Project Number: 351646
Project Manager: Kathy Brandt

Volatile Organic Analysis (EPA Method 8260/5035)

BCL Sample ID: 1109999-07 | **Client Sample Name:** 0752, GP-7-S-15-110624, 6/24/2011 10:33:00AM

Constituent	Result	Units	PQL	Method	MB Bias	Lab Quals	Run #
Benzene	ND	mg/kg	0.0043	EPA-8260	ND		1
1,2-Dibromoethane	ND	mg/kg	0.0043	EPA-8260	ND		1
1,2-Dichloroethane	ND	mg/kg	0.0043	EPA-8260	ND		1
Ethylbenzene	ND	mg/kg	0.0043	EPA-8260	ND		1
Methyl t-butyl ether	ND	mg/kg	0.0043	EPA-8260	ND		1
Toluene	ND	mg/kg	0.0043	EPA-8260	ND		1
Total Xylenes	ND	mg/kg	0.0086	EPA-8260	ND		1
Total Purgeable Petroleum Hydrocarbons	ND	mg/kg	0.17	Luft-GC/MS	ND		1
1,2-Dichloroethane-d4 (Surrogate)	83.2	%	70 - 121 (LCL - UCL)	EPA-8260			1
Toluene-d8 (Surrogate)	92.6	%	81 - 117 (LCL - UCL)	EPA-8260			1
4-Bromofluorobenzene (Surrogate)	92.9	%	74 - 121 (LCL - UCL)	EPA-8260			1

Run #	Method	Prep Date	Run Date/Time	Analyst	Instrument	Dilution	QC Batch ID
1	EPA-8260	06/27/11	06/27/11 14:35	ADC	MS-V2	0.865	BUF1603

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Project: 0752
Project Number: 351646
Project Manager: Kathy Brandt

Volatile Organic Analysis (EPA Method 8260/5035)

BCL Sample ID: 1109999-08 | **Client Sample Name:** 0752, GP-5-S-5-110624, 6/24/2011 12:00:00PM

Constituent	Result	Units	PQL	Method	MB Bias	Lab Quals	Run #
Benzene	ND	mg/kg	0.0074	EPA-8260	ND		1
1,2-Dibromoethane	ND	mg/kg	0.0074	EPA-8260	ND		1
1,2-Dichloroethane	ND	mg/kg	0.0074	EPA-8260	ND		1
Ethylbenzene	ND	mg/kg	0.0074	EPA-8260	ND		1
Methyl t-butyl ether	ND	mg/kg	0.0074	EPA-8260	ND		1
Toluene	ND	mg/kg	0.0074	EPA-8260	ND		1
Total Xylenes	ND	mg/kg	0.015	EPA-8260	ND		1
Total Purgeable Petroleum Hydrocarbons	ND	mg/kg	0.30	Luft-GC/MS	ND		1
1,2-Dichloroethane-d4 (Surrogate)	91.1	%	70 - 121 (LCL - UCL)	EPA-8260			1
Toluene-d8 (Surrogate)	96.0	%	81 - 117 (LCL - UCL)	EPA-8260			1
4-Bromofluorobenzene (Surrogate)	97.6	%	74 - 121 (LCL - UCL)	EPA-8260			1

Run #	Method	Prep Date	Run Date/Time	Analyst	Instrument	Dilution	QC Batch ID
1	EPA-8260	06/27/11	06/27/11 15:01	ADC	MS-V2	1.490	BUF1603

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Project: 0752
Project Number: 351646
Project Manager: Kathy Brandt

Volatile Organic Analysis (EPA Method 8260/5035)

BCL Sample ID: 1109999-09 | **Client Sample Name:** 0752, GP-5-S-10-110624, 6/24/2011 12:15:00PM

Constituent	Result	Units	PQL	Method	MB Bias	Lab Quals	Run #
Benzene	ND	mg/kg	0.0044	EPA-8260	ND		1
1,2-Dibromoethane	ND	mg/kg	0.0044	EPA-8260	ND		1
1,2-Dichloroethane	ND	mg/kg	0.0044	EPA-8260	ND		1
Ethylbenzene	ND	mg/kg	0.0044	EPA-8260	ND		1
Methyl t-butyl ether	ND	mg/kg	0.0044	EPA-8260	ND		1
Toluene	ND	mg/kg	0.0044	EPA-8260	ND		1
Total Xylenes	ND	mg/kg	0.0089	EPA-8260	ND		1
Total Purgeable Petroleum Hydrocarbons	ND	mg/kg	0.18	Luft-GC/MS	ND		1
1,2-Dichloroethane-d4 (Surrogate)	88.2	%	70 - 121 (LCL - UCL)	EPA-8260			1
Toluene-d8 (Surrogate)	95.6	%	81 - 117 (LCL - UCL)	EPA-8260			1
4-Bromofluorobenzene (Surrogate)	96.0	%	74 - 121 (LCL - UCL)	EPA-8260			1

Run #	Method	Prep Date	Run Date/Time	Analyst	Instrument	Dilution	QC Batch ID
1	EPA-8260	06/27/11	06/27/11 15:26	ADC	MS-V2	0.887	BUF1603

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Reported: 06/29/2011 14:52
Project: 0752
Project Number: 351646
Project Manager: Kathy Brandt

Volatile Organic Analysis (EPA Method 8260/5035)

BCL Sample ID: 1109999-10 | **Client Sample Name:** 0752, GP-5-S-15-110624, 6/24/2011 12:25:00PM

Constituent	Result	Units	PQL	Method	MB Bias	Lab Quals	Run #
Benzene	ND	mg/kg	0.0040	EPA-8260	ND		1
1,2-Dibromoethane	ND	mg/kg	0.0040	EPA-8260	ND		1
1,2-Dichloroethane	ND	mg/kg	0.0040	EPA-8260	ND		1
Ethylbenzene	ND	mg/kg	0.0040	EPA-8260	ND		1
Methyl t-butyl ether	ND	mg/kg	0.0040	EPA-8260	ND		1
Toluene	ND	mg/kg	0.0040	EPA-8260	ND		1
Total Xylenes	ND	mg/kg	0.0081	EPA-8260	ND		1
Total Purgeable Petroleum Hydrocarbons	ND	mg/kg	0.16	Luft-GC/MS	ND		1
1,2-Dichloroethane-d4 (Surrogate)	86.5	%	70 - 121 (LCL - UCL)	EPA-8260			1
Toluene-d8 (Surrogate)	95.0	%	81 - 117 (LCL - UCL)	EPA-8260			1
4-Bromofluorobenzene (Surrogate)	95.4	%	74 - 121 (LCL - UCL)	EPA-8260			1

Run #	Method	Prep Date	Run Date/Time	Analyst	Instrument	Dilution	QC Batch ID
1	EPA-8260	06/27/11	06/27/11 15:52	ADC	MS-V2	0.809	BUF1603

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Reported: 06/29/2011 14:52
Project: 0752
Project Number: 351646
Project Manager: Kathy Brandt

Volatile Organic Analysis (EPA Method 8260/5035)

BCL Sample ID: 1109999-11 | **Client Sample Name:** 0752, GP-5-S-20-110624, 6/24/2011 12:35:00PM

Constituent	Result	Units	PQL	Method	MB Bias	Lab Quals	Run #
Benzene	ND	mg/kg	0.0043	EPA-8260	ND		1
1,2-Dibromoethane	ND	mg/kg	0.0043	EPA-8260	ND		1
1,2-Dichloroethane	ND	mg/kg	0.0043	EPA-8260	ND		1
Ethylbenzene	**0.0057**	**mg/kg**	**0.0043**	**EPA-8260**	**ND**		1
Methyl t-butyl ether	**0.0099**	**mg/kg**	**0.0043**	**EPA-8260**	**ND**		1
Toluene	ND	mg/kg	0.0043	EPA-8260	ND		1
Total Xylenes	ND	mg/kg	0.0085	EPA-8260	ND		1
Total Purgeable Petroleum Hydrocarbons	**2.1**	**mg/kg**	**0.17**	**Luft-GC/MS**	**ND**		1
1,2-Dichloroethane-d4 (Surrogate)	93.4	%	70 - 121 (LCL - UCL)	EPA-8260			1
Toluene-d8 (Surrogate)	103	%	81 - 117 (LCL - UCL)	EPA-8260			1
4-Bromofluorobenzene (Surrogate)	110	%	74 - 121 (LCL - UCL)	EPA-8260			1

Run #	Method	Prep Date	Run Date/Time	Analyst	Instrument	Dilution	QC Batch ID
1	EPA-8260	06/27/11	06/27/11 16:17	ADC	MS-V2	0.853	BUF1603

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Reported: 06/29/2011 14:52
Project: 0752
Project Number: 351646
Project Manager: Kathy Brandt

Volatile Organic Analysis (EPA Method 8260/5035)

BCL Sample ID: 1109999-12 | **Client Sample Name:** 0752, GP-6-S-5-110624, 6/24/2011 1:30:00PM

Constituent	Result	Units	PQL	Method	MB Bias	Lab Quals	Run #
Benzene	ND	mg/kg	0.0047	EPA-8260	ND		1
1,2-Dibromoethane	ND	mg/kg	0.0047	EPA-8260	ND		1
1,2-Dichloroethane	ND	mg/kg	0.0047	EPA-8260	ND		1
Ethylbenzene	ND	mg/kg	0.0047	EPA-8260	ND		1
Methyl t-butyl ether	ND	mg/kg	0.0047	EPA-8260	ND		1
Toluene	ND	mg/kg	0.0047	EPA-8260	ND		1
Total Xylenes	ND	mg/kg	0.0094	EPA-8260	ND		1
Total Purgeable Petroleum Hydrocarbons	ND	mg/kg	0.19	Luft-GC/MS	ND		1
1,2-Dichloroethane-d4 (Surrogate)	88.4	%	70 - 121 (LCL - UCL)	EPA-8260			1
Toluene-d8 (Surrogate)	98.2	%	81 - 117 (LCL - UCL)	EPA-8260			1
4-Bromofluorobenzene (Surrogate)	95.3	%	74 - 121 (LCL - UCL)	EPA-8260			1

Run #	Method	Prep Date	Run Date/Time	Analyst	Instrument	Dilution	QC Batch ID
1	EPA-8260	06/27/11	06/27/11 16:42	ADC	MS-V2	0.936	BUF1603

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Reported: 06/29/2011 14:52
Project: 0752
Project Number: 351646
Project Manager: Kathy Brandt

Volatile Organic Analysis (EPA Method 8260/5035)

BCL Sample ID: 1109999-13 | **Client Sample Name:** 0752, GP-6-S-10-110624, 6/24/2011 1:40:00PM

Constituent	Result	Units	PQL	Method	MB Bias	Lab Quals	Run #
Benzene	ND	mg/kg	0.0043	EPA-8260	ND		1
1,2-Dibromoethane	ND	mg/kg	0.0043	EPA-8260	ND		1
1,2-Dichloroethane	ND	mg/kg	0.0043	EPA-8260	ND		1
Ethylbenzene	ND	mg/kg	0.0043	EPA-8260	ND		1
Methyl t-butyl ether	ND	mg/kg	0.0043	EPA-8260	ND		1
Toluene	ND	mg/kg	0.0043	EPA-8260	ND		1
Total Xylenes	ND	mg/kg	0.0086	EPA-8260	ND		1
Total Purgeable Petroleum Hydrocarbons	ND	mg/kg	0.17	Luft-GC/MS	ND		1
1,2-Dichloroethane-d4 (Surrogate)	90.2	%	70 - 121 (LCL - UCL)	EPA-8260			1
Toluene-d8 (Surrogate)	97.3	%	81 - 117 (LCL - UCL)	EPA-8260			1
4-Bromofluorobenzene (Surrogate)	95.6	%	74 - 121 (LCL - UCL)	EPA-8260			1

Run #	Method	Prep Date	Run Date/Time	Analyst	Instrument	Dilution	QC Batch ID
1	EPA-8260	06/27/11	06/27/11 17:08	ADC	MS-V2	0.865	BUF1603

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Reported: 06/29/2011 14:52
Project: 0752
Project Number: 351646
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Volatile Organic Analysis (EPA Method 8260/5035)

BCL Sample ID: 1109999-14 | **Client Sample Name:** 0752, GP-6-S-15-110624, 6/24/2011 1:47:00PM

Constituent	Result	Units	PQL	Method	MB Bias	Lab Quals	Run #
Benzene	ND	mg/kg	0.0045	EPA-8260	ND		1
1,2-Dibromoethane	ND	mg/kg	0.0045	EPA-8260	ND		1
1,2-Dichloroethane	ND	mg/kg	0.0045	EPA-8260	ND		1
Ethylbenzene	ND	mg/kg	0.0045	EPA-8260	ND		1
Methyl t-butyl ether	ND	mg/kg	0.0045	EPA-8260	ND		1
Toluene	ND	mg/kg	0.0045	EPA-8260	ND		1
Total Xylenes	ND	mg/kg	0.0089	EPA-8260	ND		1
Total Purgeable Petroleum Hydrocarbons	ND	mg/kg	0.18	Luft-GC/MS	ND		1
1,2-Dichloroethane-d4 (Surrogate)	92.5	%	70 - 121 (LCL - UCL)	EPA-8260			1
Toluene-d8 (Surrogate)	99.8	%	81 - 117 (LCL - UCL)	EPA-8260			1
4-Bromofluorobenzene (Surrogate)	97.5	%	74 - 121 (LCL - UCL)	EPA-8260			1

Run #	Method	Prep Date	Run Date/Time	Analyst	Instrument	Dilution	QC Batch ID
1	EPA-8260	06/27/11	06/27/11 17:33	ADC	MS-V2	0.893	BUF1603

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Reported: 06/29/2011 14:52
Project: 0752
Project Number: 351646
Project Manager: Kathy Brandt

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: BUF1603						
Benzene	BUF1603-BLK1	ND	mg/kg	0.0050		
1,2-Dibromoethane	BUF1603-BLK1	ND	mg/kg	0.0050		
1,2-Dichloroethane	BUF1603-BLK1	ND	mg/kg	0.0050		
Ethylbenzene	BUF1603-BLK1	ND	mg/kg	0.0050		
Methyl t-butyl ether	BUF1603-BLK1	ND	mg/kg	0.0050		
Toluene	BUF1603-BLK1	ND	mg/kg	0.0050		
Total Xylenes	BUF1603-BLK1	ND	mg/kg	0.010		
Total Purgeable Petroleum Hydrocarbons	BUF1603-BLK1	ND	mg/kg	0.20		
1,2-Dichloroethane-d4 (Surrogate)	BUF1603-BLK1	100	%	70 - 121 (LCL - UCL)		
Toluene-d8 (Surrogate)	BUF1603-BLK1	104	%	81 - 117 (LCL - UCL)		
4-Bromofluorobenzene (Surrogate)	BUF1603-BLK1	96.1	%	74 - 121 (LCL - UCL)		

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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: BUF1603										
Benzene	BUF1603-BS1	LCS	0.13336	0.12500	mg/kg	107		70 - 130		
Toluene	BUF1603-BS1	LCS	0.12233	0.12500	mg/kg	97.9		70 - 130		
1,2-Dichloroethane-d4 (Surrogate)	BUF1603-BS1	LCS	0.048452	0.050000	mg/kg	96.9		70 - 121		
Toluene-d8 (Surrogate)	BUF1603-BS1	LCS	0.050962	0.050000	mg/kg	102		81 - 117		
4-Bromofluorobenzene (Surrogate)	BUF1603-BS1	LCS	0.050769	0.050000	mg/kg	102		74 - 121		

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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: BUF1603	Used client sample: N										
Benzene	MS	1107512-79	ND	0.13621	0.12500	mg/kg		109		70 - 130	
	MSD	1107512-79	ND	0.13214	0.12500	mg/kg	3.0	106	20	70 - 130	
Toluene	MS	1107512-79	ND	0.12843	0.12500	mg/kg		103		70 - 130	
	MSD	1107512-79	ND	0.12176	0.12500	mg/kg	5.3	97.4	20	70 - 130	
1,2-Dichloroethane-d4 (Surrogate)	MS	1107512-79	ND	0.048551	0.050000	mg/kg		97.1		70 - 121	
	MSD	1107512-79	ND	0.047802	0.050000	mg/kg	1.6	95.6		70 - 121	
Toluene-d8 (Surrogate)	MS	1107512-79	ND	0.051698	0.050000	mg/kg		103		81 - 117	
	MSD	1107512-79	ND	0.050802	0.050000	mg/kg	1.7	102		81 - 117	
4-Bromofluorobenzene (Surrogate)	MS	1107512-79	ND	0.053273	0.050000	mg/kg		107		74 - 121	
	MSD	1107512-79	ND	0.050893	0.050000	mg/kg	4.6	102		74 - 121	

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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.
A11	PQL's and/or MDL's were raised due to inadequate sample size received.
S09	The surrogate recovery on the sample for this compound was not within the control limits.