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Alameda County
Environmental Health

Antea USA, Inc.
312 Piercy Road
San Jose, California 95138 USA
www.anteagroup.com

June 29, 2012

Ms. Dilan Roe, P.E.
Alameda County Environmental Health
1131 Harbor Bay Parkway
Alameda, California 94502-6577

Re: **Report Submittal**
Site Investigation & Pilot Test Report
76 (Former BP) Service Station No. 2611117
7210 Bancroft Avenue
Oakland, California

Dear Ms. Roe,

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 call me at (408) 826-1874.

Sincerely,

Douglas K. Umland, P.G.
Senior Project Manager
doug.umland@anteagroup.com
Antea Group

Enc: Antea Group, *Site Investigation & Pilot Test Report* dated June 29, 2012

Atlantic Richfield Company

John C. Skance
Strategy Manager - US Retail & Logistics

PO Box 1257
San Ramon, CA
94583
Phone: (925) 275-3802
Fax: (925) 275-3815
E-Mail: john.skance@bp.com

October 13, 2009

Alameda County LOP
1131 Harbor Bay Parkway
Alameda, CA 94502-6577
Attn: Paresh Khatri

Re: Notice to Agency of Change in Contact Information and Responsible Party Status
Former BP Site # 11117
7210 BANCROFT AVE
OAKLAND, CA 94605
Agency Case Number RO0000356

Dear Mr. Khatri:

This correspondence has been prepared in order to provide you with written notice of the following information for the above referenced location.

After September 15, 2009, Delta Consultants (Delta) will assume all responsibility for any remediation previously being conducted by Atlantic Richfield Company at this location. Delta has been retained to manage the remediation related liabilities, including but not limited to any monitoring and reporting requirements. ConocoPhillips understands that it is still a Responsible Party of record.

Accordingly, the parties are hereby taking this opportunity to notify the Alameda County LOP that effective immediately, all correspondence, directives and other inquiries and information regarding these properties be directed to the following:

Delta Consultants
312 Piercy Road
San Jose, CA 95138
Attn: Douglas Umland

If you have any questions or would like to discuss this matter in greater detail, please feel free to contact me at the number listed above.



John C. Skance
Strategy Manager - US Retail & Logistics

cc: Douglas Umland, Delta Consultants

Site Investigation & Pilot Test Report

76 (Former BP) Service Station No. 11117
7210 Bancroft Avenue
Oakland, California

Alameda County Environmental Health
Case No. RO0000356

Antea Group Project No. I42611117
June 29, 2012

Prepared for:
Ms. Dilan Roe, P.E.
Alameda County Environmental Health
1131 Harbor Bay Parkway
Alameda, California 94502-6577

Prepared by:
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Antea USA, Inc.

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Site Investigation & Pilot Test Report

76 (Former BP) Service Station No. 11117
7120 Bancroft Avenue, Oakland, California
Alameda County Environmental Health
Case No. RO0000356

1.0 INTRODUCTION

Antea[TM]Group is pleased to submit this *Site Investigation & Pilot Test Report*, for the above referenced site located in Oakland, California (**Figure 1**). This report was prepared to summarize the following work performed:

1. Soil investigation and well installation activities from October 3 and October 6, 2011, as outlined in Antea Group's *Remedial Action Work Plan* dated August 3, 2011. The Alameda County Environmental Health Department (ACEHD) approved the scope of work in a letter dated September 1, 2011.
2. Injection pilot test activities performed from March 7 to May 29, 2012 as outlined in Antea Group's *Remedial Investigation Work Plan Addendum* dated December 13, 2011.

The site is currently under the lead regulatory oversight of the ACEHD [Case No. RO0000356]. The site is also under the oversight of the San Francisco Bay Regional Water Quality Control Board (SFBRWQCB) – Region 2 (Case No. 01-0215).

2.0 SITE DESCRIPTION

The site is an active gasoline station that includes a service station building, three 12,000-gallon gasoline underground storage tanks (USTs), one 10,000-gallon diesel UST, and associated piping and dispensers. Asphalt or concrete surfacing covers the site except for planters along the southeastern and southwestern property boundaries and at the north corner of the property (**Figure 2**). Refer to **Appendix A** for additional site information and for a history of the environmental investigations and remedial actions.

2.1 Summary of Geologic and Hydrogeologic Conditions

Fine-grained sediments including clays and silts to depths varying from 6 feet to 10 feet below ground surface (bgs) underlay the site. Coarse-grained sediments consisting of sands, clayey sands, gravels, and clayey gravels underlay the fine-grained sediments to depths varying between approximately 10 feet to 35 bgs. The thickness of the coarse-grained sediments generally ranges between 10 feet to 20 feet across the site.

Table 1 summarizes the historical boring and well construction details. Historically, depth to water has ranged from 9.49 feet below top of casing (BTOC) in well MW-3 in 2nd quarter 2000 to 34.07 feet BTOC in well MW-2 in 4th quarter 1994. Groundwater elevation ranged from 15.43 feet in well MW-3 in fourth quarter 2008 to 41.91 feet in well MW-3 in second quarter 2000. Historical data shows that the groundwater flows predominantly to the northeast at the site, but has also been observed to the southeast. Antea Group calculated historical groundwater flow gradients to be on average 0.015 feet per foot (ft/ft).

During the February 20, 2012 groundwater monitoring event, depth to water ranged from 16.24 feet BTOC (MW-11) to 20.0 feet BTOC (MW-10). Groundwater elevation ranged from 25.47 feet (MW-9) to 27.10 feet (MW-11). Based on the February 20, 2012 data, the groundwater flow direction was variable, but generally to the northeast.

3.0 SOIL INVESTIGATION & WELL INSTALLATION ACTIVITES

Between October 3 to 6, 2011, Cascade Drilling L.P. (Cascade), under the supervision of Antea Group, advanced five soil borings (C-1, C-2, C-3, C-4, and C-5), and installed one soil vapor extraction well (SVE-1) and one air sparge well (AS-1) at locations shown on **Figure 2**.

3.1 Pre-Field Activities

Prior to field activities, Antea Group produced a Site Health and Safety Plan, for daily review by field personnel. Prior to drilling, Antea Group marked all proposed boring locations and contacted Underground Service Alert to request the location and marking of all underground utilities at, or adjacent to, the proposed boring locations. Antea Group subcontracted a private utility locator to identify possible private underground utilities near the proposed boring locations. Due to the site's proximity to areas with a history of crime, Antea Group also subcontracted a private security officer to diminish potential security hazards at the site and safeguard personnel. Antea Group negotiated access with the property manager to advance off-site soil boring, C-4. Soil boring and well installation permits obtained from the Alameda County Public Works Agency are included as **Appendix B**.

3.2 Borehole Clearance

Prior to drilling, Cascade cleared the upper five feet of each soil boring location for utilities using an air-knife vacuum and hand augering. Antea Group's standard operating procedures for borehole clearance are included in **Appendix C**.

3.3 Soil Borings

Using a direct-push technology (Geoprobe®) rig, Cascade advanced soil borings C-1 through C-5 to total depths of 35 feet bgs, to the occurrence of the clay layer underlying the coarse-grained sandy unit. Cascade advanced two additional borings for the installation of remediation wells, AS-1 and SVE-1, to depths of 33 and 38 feet bgs, respectively. Soil samples were continuously logged and screened. To accommodate shallow soil sampling, Cascade advanced all borings to two feet bgs using a hand auger, where a soil sample was collected before clearing each to a depth of five feet bgs using the air knife**.** Once the total depth of each boring was encountered, Cascade backfilled the borehole with neat cement grout the surface. The borings were completed with a concrete patch dyed to match the existing surface conditions. **Table 1** summarizes the soil boring diameters and depths, and **Appendix D** includes boring logs for C-1 through C-5, SVE-1, and AS-1.

3.4 Soil Vapor Well and Air Sparge Well Installation

Antea Group also oversaw the advancement and installation of one soil vapor extraction (SVE) well SVE-1 and one air sparge (AS) well AS-1 during this investigation.

3.4.1 Soil Vapor Well Construction

On October 6, 2011, Cascade advanced and installed SVE-1 at the site using a Geoprobe® drill rig equipped with 10-inch hollow stem augers. Cascade mistakenly advanced the borehole to a total depth of 28 feet bgs. The boring was backfilled using bentonite from 22 to 28 feet bgs. Well SVE-1 was set at 22 feet bgs, approximately 3 feet below first encountered groundwater. Cascade constructed SVE-1 using 4-inch diameter, Schedule 40 polyvinyl chloride (PVC) well casing with 12-feet of screen (0.020-inch screen slots) placed from 10 to 22 feet bgs. Cascade partially filled the annular space with #2/12 sand to approximately two feet above the top of the screened interval, and placed a two-foot thick bentonite transition seal atop the sand filter pack. The driller sealed the well with neat cement grout from approximately the top of the bentonite seal to surface. The well was completed with a traffic-rated vault box concreted in place and dyed to match the existing surface conditions. A boring and well construction log for SVE-1 is included in **Appendix D**.

3.4.2 Air Sparge Well Construction

On October 4, 2011, Cascade advanced and installed AS-1 using a Geoprobe® drill rig equipped with 4.25-inch stainless steel rods. The boring was advanced to a total depth of 33 feet bgs; groundwater was first encountered at approximately 19.5 feet bgs. Cascade constructed AS-1 using 0.5-inch Schedule 40 PVC well casing with 0.25-inch outside diameter Teflon tubing attached to an 6-inch stainless steel sparge point with 0.01-inch slot size. The sparge point was placed from 32.5 to 33 feet bgs. Cascade partially filled the annular space with #2/12 sand to approximately 30.5 feet bgs. A bentonite transition seal was placed on top of the sand pack and hydrated in place to a depth of 28.5 feet bgs. The driller then sealed the well with neat cement grout from the top of the bentonite seal to surface. The well was completed at surface grade with a traffic-rated well box that was cemented in place with concrete dyed to match the existing surface conditions. A boring and well construction log for AS-1 is included in **Appendix D**.

3.5 Well Survey

Mid Coast Engineers surveyed the latitude, longitude and elevation of the new remediation wells and all existing wells on October 24, 2011 using the NAD 83 coordinate system. Survey data has been uploaded to the State of California's Geotracker database. **Appendix E** includes a copy of the survey data and **Table 1** summarizes the monitoring well construction details and the surveyed top of casing elevations.

3.6 Soil Sampling

Samples were collected on October 4 through 6, 2011 during the advancement of borings C-1 through C-5, SVE-1, and AS-1. Antea Group personnel collected photoionization detector (PID) readings from soil samples beginning at 5-feet bgs to the total explored depth. Samples were continuously collected using direct push technology for borings C-1 through C-5 and AS-1 and using a split-spoon sampling rod for boring SVE-1. Antea Group field staff placed a portion of soil from each selected depth interval, into a sealable container. After allowing each reading to stabilize, Antea Group inserted the PID sampling tube into the container and recorded the stabilized PID readings.

Based on the PID readings, field observations, and the objectives of this investigation, Antea Group submitted the following soil samples from borings C-1 through C-5 for laboratory analyses:

- C-1: Soil samples collected at 5-feet, 10-feet, 19-feet, and 35-feet bgs
- C-2: Soil samples collected at 5-feet, 16-feet, and 35-feet bgs
- C-3: Soil samples collected at 5-feet, 18-feet, 20-feet, 28-feet and 35-feet bgs
- C-4: Soil samples collected at 5-feet, 10-feet, 15-feet, 18-feet, 25-feet and 34.5 feet bgs
- C-5: Soil samples collected at 5-feet, 13-feet, 16-feet, 25-feet, 30-feet and 35-feet bgs

Antea Group transferred the samples to an ice-filled cooler and submitted the soil samples under chain-of-custody to Kiff Analytical, LLC (Kiff), a State of California Environmental Laboratory Accreditation Program (ELAP) certified laboratory (Certification No. 08263CA). **Appendix F** presents the complete analytical report. Kiff analyzed the above soil samples for the following constituents:

- Gasoline range organics (GRO), carbon chain range C_{05} to C_{12}, by California LUFT method;
- Benzene, toluene, ethylbenzene, and xylenes (BTEX compounds), MTBE, tertiary-butyl alcohol (TBA), ethyl tertiary-butyl ether (ETBE), tertiary-amyl methyl ether (TAME), di-isopropyl ether (DIPE), ethylene dibromide (EDB), ethanol, and 1,2-dicholoethane (1,2-DCA) by Environmental Protection Agency (EPA) Method 8260.

Antea Group submitted nine soil samples from SVE-1 and AS-1 to JAG Consulting Group, Inc. (JAG) and PTS Laboratory (PTS), a soils testing laboratory, for bench scale feasibility testing of various ISCO remediation treatments (see **Section 3.8**, below).

3.6.1 Soil Analytical Results

The table below summarizes the ranges of contaminant concentrations reported in soil samples collected on October 4 through October 6, 2012 and lists only the contaminants reported above the laboratory's minimum reporting limits (MRL). Of the concentrations reported above the laboratory's MRLs for each respective contaminant, all were below the San Francisco Bay Regional Water Quality Control Board (SFBRWQCB) Environmental Screening Levels (ESLs) for residential land use with the exception of the GRO concentrations

reported in samples collected from boring C-5 at 30 and 35 feet bgs. **Table 2** summarizes the soil analytical data from this investigation and **Figure 3** shows the current and historical soil analytical data.

Contaminant of Concern	Number of Reported Samples Above MRL of Samples Collected	Minimum Reported Concentration, in mg/kg (Sample ID)	Maximum Reported Concentration, in mg/kg (Sample ID)
GRO	3:24	65 (C-5@25)	2,300 (C-5@35)
MTBE	3:24	0.31 (C-4@25 and C-4@34.5)	0.35 (C-3@35)
TBA	5:24	0.0054 (C-5@25)	0.023 (C-1@19)
Ethylbenzene	2:24	0.0029 (C-1@35)	0.93 (C-5@35)
Total Xylenes	2:24	0.030 (C-1@35)	0.98 (C-5@35)

Notes:
mg/kg – milligrams per kilogram
MRL – laboratory minimum reporting limit

3.7 Groundwater Sampling for Engineering Parameters

As part of the scope of work outlined in the August 2011 Work Plan, Antea Group requested subcontractor Blaine Tech Services (Blaine Tech) to collect additional groundwater samples from existing remediation wells EX-1, EX-2, DPE-1, DPE-4, and DPE-5 for analyses of select engineering and monitored natural attenuation parameters. Blaine Tech collected these samples on August 15, 2011, during the regularly scheduled third quarter 2011 semi-annual groundwater event.

These results were presented in the November 8, 2011 *Semi-Annual Monitoring Report – Third Quarter 2011.* A copy of summary of the engineering parameters groundwater analytical data for these parameters is attached as **Table 3**.

No groundwater samples were collected from borings C-1 through C-5, SVE-1, or AS-1 during the recent investigation. A groundwater sample was collected from existing well EX-1 and submitted to JAG and PTS for bench scale feasibility testing of various ISCO remediation treatments (see **Section 3.8**, below).

3.8 ISCO Treatability Study

Soil samples collected from borings SVE-1 and AS-1 and a groundwater sample collected from well EX-1 were received by JAG and PTS laboratory on October 7, 2011 for bench scale testing activated sodium persulfate ISCO treatments. The bench test compared the contaminant destruction effectiveness of the following treatments:

- High pH (greater than 10.5 pH) activated sodium persulfate
- Stabilized hydrogen peroxide activated sodium persulfate

Total oxidant demand (TOD) and soil buffering tests were performed prior to the start of the treatment period to determine the test doses. Based on the TOD and soil buffering data, two doses [5 grams per L (g/L) and 7.5 g/L] were tested for each treatment method for a period of 28 days from October 13 to November 11, 2011.

Based on the results of the high pH activated sodium persulfate bench test, the high persulfate dose of 7.5 g/L was determined to be most effective. JAG reported that excellent reductions in groundwater concentrations were measured for benzene (98%), toluene (85%), xylenes (94%), and MTBE (89%) while moderate reductions were measured for GRO (18% to 31%). JAG reported good to excellent reductions in soil concentrations for toluene (77%), ethylbenzene (90%), and xylenes (86%) and for GRO (45% to 65%).

Based on the results of the stabilized hydrogen peroxide activated sodium persulfate bench test, the lower persulfate dose tested of 5 g/L was determined to be more effective. JAG reported that excellent reductions in groundwater concentrations were measured in benzene (100%), MTBE (98%), and TBA (89%). JAG reported that the soil testing showed good to excellent contaminant reductions in GRO (71%), toluene (88%), ethylbenezene (93%), and xylenes (91%).

JAG sent soil and groundwater samples from the post-treatment test vessels to Calscience Environmental Laboratories (Calscience) for additional analyzes of the following geochemical parameters:

- Hexavalent Chromium by EPA Method 7199
- Sulfate by EPA Method 300.0
- Ferrous Iron by method SM 3500
- Ferric Iron, Manganese, and Total Chromium by EPA Method 6010B

Concentrations of hexavalent chromium at 17 µg/L and 32 µg/L were formed during the high pH activation bench tests using 5 g/L and 7.5 g/L doses, respectively. Trivalent chromium is readily converted to hexavalent chromium under oxidizing conditions. Thus, during a field scale ISCO treatment, a portion of the trivalent chromium may be converted into hexavalent chromium. This conversion is a typically a temporary phenomenon. JAG stated that generally after 45-60 days following an ISCO application, the hexavalent chromium normally returns to trivalent chromium as the oxidizing conditions attenuate over time. Hexavalent chromium was not formed during the peroxide activation tests, which is likely due to the low pH of the peroxide test.

JAG concluded that based on the results of the bench scale test, it appears that either high pH activation or stabilized hydrogen peroxide could be used to effectively treat contaminants of concern at this site. A copy of JAG's *Bench Scale Treatability Report* dated December 10, 2011 is included as **Appendix G**.

3.9 Quality Assurance/Quality Control (QA/QC)

The QA/QC measures applied by Antea Group to the soil data from the current investigation include a detailed QA/QC data validation check of the Kiff analytical results. The groundwater data QA/QC and laboratory validation for the August 2011 groundwater sampling event were included in the third quarter 2011 monitoring report. Antea

Group's laboratory data validation checklists for soil results and laboratory analytical reports are included in **Appendix F.**

Soil Analytical Results	
Laboratory QA/QC Performed:	Yes (validated by Antea Group)
Laboratory Data or Batch Qualifiers:	*Two data qualifiers associated with Kiff Lab Report #78977 (listed below)
Antea Group Revisions	None
Are the data valid for their intended purpose?	Yes, the data are valid

*TBA for C-4d25 and C-4d34.5 may be biased high because a fraction of MTBE converts to TBA during analysis

*MS/MSD for C-4d34.5 affected by higher bias.

3.10 Disposal of Investigation Derived Waste

Antea Group and subcontractors placed all investigation-derived waste (IDW) into 55-gallon Department of Transportation (DOT) drums for temporary on-site storage. This investigation generated 10 drums with soil, decontamination water, and concrete/asphalt. Following waste characterization, Belshire Environmental Services removed the drums from the site and soil was disposed at Soil Safe of California – TPST in Adelanto, CA, and waste water was disposed at Demenno Kerdoon in Compton, California. **Appendix H** includes copies of the non-hazardous waste manifests associated with this investigation.

4.0 PILOT TEST ACTIVITIES

4.1 Postponement of AS/SVE Pilot Test

Antea Group originally proposed to conduct an AS/SVE pilot test utilizing newly installed wells AS-1 and SVE-1. In a *Remedial Investigation Work Plan Addendum*, dated December 13, 2011, Antea Group proposed postponing the AS/SVE pilot test to pilot an injectable sorbent product called Plume Stop™. Upon completion of pilot testing and assessment of Plume Stop, Antea Group will revisit the implementation of the AS/SVE pilot test.

Plume Stop™ is comprised of water-soluble, non-toxic ingredients and typically applied to groundwater via direct push injection or injection wells. This technology is proprietary to Regenesis Bioremediation Products, Inc. After the material is distributed in the subsurface, it undergoes a cross-linking process on the order of days to weeks which forms a sorbent network in the surface of soil. Plume Stop™ reacts in-situ to form a sorbent network throughout the contaminated zone. The function of Plume Stop™ technology is to:

1. Adsorb contaminants and reduce groundwater concentrations
2. Inhibit transport of contaminants in groundwater
3. Provide a compatible matrix for bacteria and contaminants to facilitate natural attenuation

4.2 Plume Stop™ Pilot Test

The Plume Stop™ Pilot Test in centered in an area around monitoring well MW-4. Per our December 13, 2011 *Work Plan Addendum*, the pilot test involves three phases (two of which are completed):

- Phase 1 – Pre-application investigation work [principally Hydraulic Profile Testing (HPT) and baseline groundwater sampling],
- Phase 2 – Plume Stop™ application using direct-push injection, and
- Phase 3 – Post-injection groundwater monitoring of well MW-4

4.2.1 Phase 1: Pre-Application Data Collection

To delineate subsurface conditions in the area surrounding MW-4, Antea Group collected the following data to support the injection design layout for the Plume Stop™ treatment pilot test. **Figure 2** depicts the locations of these points. Soil boring and well installation permits obtained from the Alameda County Public Works Agency are included as **Appendix B**. Prior to drilling activities, the upper five feet of each boring location was cleared for utilities using an air-knife vacuum and hand augering. Antea Group's standard operating procedures for borehole clearance are included in **Appendix C**.

4.2.1.1 Hydraulic Profiling Test using Direct Push Technology (HPT-DPT) Probe Study

Antea Group used a HPT survey to determine the hydraulic properties of the site subsurface. March 13, 2012 Antea Group oversaw the advancement of three borings (HPT-1 through HPT-3) by Vironex, Inc. (Vironex) using HPT technology.

The three HPT locations were advanced throughout our proposed treatment area. Vironex advanced the HPT tests through the targeted injection zone, from 5 feet bgs to a maximum depth of 41 feet bgs. The HPT probe was pushed at a constant rate using a direct-push drill rig and clean water was injected through a screen on the side of the HPT probe at a flow rate, usually less than 300 milliliters per minute (mL/min).

The injection pressure, which is monitored and plotted versus depth, is an indication of the hydraulic properties of the soil. A relatively low-pressure response indicates a relatively large grain size and the ability to easily transmit water. However, a relatively high-pressure response indicates a relatively small grain size, which correlates with the low ability to transmit water. Simultaneously, soil conductivity data is collected for comparison with the HPT data. Upon completion of the HPT borings, data generated includes soil conductivity, flow, and pressure curves plotted with respect to depth.

Appendix I presents the graphical results of the hydraulic profiling test for each boring location. At each location, the HPT test was used to determine if flow into the formation was viable and whether we should proceed with the proposed Plume Stop™ injection. The hydrostatic pressure generally remained below 60 pounds per square inch (psi) in all three borings. However, increases in hydrostatic pressure between 60 and 120 psi were measured at 8

and 40 feet bgs in HPT-2 and between 35 to 40 feet bgs in HPT-3. Based on a review of these HPT results with Vironex and Regenesis, we determined that injections at this site were feasible and decided to proceed with the pilot test injections.

4.2.1.2 Grab Groundwater Sampling and Baseline Sampling

Prior to implementing the pilot test injections, Antea Group subcontracted Blaine Tech Services, Inc. (Blaine Tech) to conduct a baseline sampling event collecting a groundwater sample from well MW-4 on March 7, 2012. Additionally, on March 7, 2012, Vironex collected three grab groundwater samples during the HPT event. One grab groundwater sample, labeled DPT-1-36, was collected from boring HPT-1 at depth 36 feet bgs (screened from 28 to 32 feet bgs). Two grab groundwater samples, labeled DPT-2-32 and DPT-2-40, were collected from boring HPT-2 at depths of 32 feet bgs (screened from 28 to 32 feet bgs) and 40 feet bgs (screened from 36 to 40 feet bgs), respectively.

Antea Group transferred the samples to an ice-filled cooler and submitted the groundwater samples under chain-of-custody to Calscience, a State of California Environmental Laboratory Accreditation Program (ELAP) certified laboratory (Certification No. 03220CA), for analyses of the following constituents of concern:

- GRO, carbon chain range C_{04} – C_{12}, by EPA Method 8015B;
- BTEX, MTBE, TBA, ETBE, TAME, DIPE, EDB, ethanol, and 1,2-DCA by EPA Method 8260.

Calscience's lab reports use the term total petroleum hydrocarbons as gasoline (TPH-g) instead of GRO. However, Antea Group uses the designation GRO for gasoline range organics within the C_{04} – C_{12} carbon range. Soil and groundwater samples are analyzed for GRO (TPH-g) typically by United States Environmental Protection Agency (EPA) method 8015B or 8260B.

Analysis of baseline sample collected from well MW-4 additionally included the following geochemical parameters:

- Total Iron by EPA Method 6010B
- Dissolved Iron by EPA Method 6010B
- Sulfide by method SM4500S2C,D
- Methane, dissolved gases by method RSKSOP-175
- Total Organic Carbon (TOC) by method SM5310C-2000
- Chemical Oxidant Demand by method SM5220D
- Alkalinity by method SM2320B

Analyses of grab groundwater samples DPT-2-32 and DPT-2-40 additionally included methane, dissolved gases by method RSKSOP-175.

Table 4 summarizes the results of the baseline sampling and the grab groundwater sampling. **Table 5** summarizes historical groundwater analytical data for this site. The laboratory analytical reports for the groundwater collected from the HPT borings and from well MW-4 are presented in **Appendix F**.

At point HPT-1, there was little to no water encountered at 28 to 32 feet bgs, therefore the sampling device was further advanced to 36 feet bgs where groundwater was encountered from 32 to 36 feet bgs and a grab sample was collected. The screened interval of the sampling device was further advanced and opened at 36 to 40 feet bgs, however, no groundwater was encountered. The table below summarizes the ranges of contaminant concentrations reported in the pre-injection groundwater grab and baseline samples collected on March 7, 2012. Only the contaminants reported above the laboratory's MRLs.

Contaminant of Concern	Number of Reported Samples Above MRL of Samples Collected	Minimum Reported Concentration, in µg/L (Sample ID)	Maximum Reported Concentration, in µg/L (Sample ID)
GRO	4:4	2,400 (DPT-2-40)	8,500 (MW-4)
Benzene	4:4	480 (DPT-1-36)	7,600 (DPT-2-32)
Ethylbenzene	4:4	58 (DPT-240)	760 (DPT-2-32)
Toluene	4:4	15 (DPT-1-36)	47 (DPT-2-32)
Total Xylenes	4:4	1,090 (MW-4)	96 (DPT-2-32)
MTBE	4:4	11 (DPT-1-36 and DPT-2-40)	400 (MW-4)
TBA	4:4	2,400 (DPT-1-36)	6,700 (DPT-2-32)
ETBE	1:4	3.7 (DPT-2-40)	3.7 (DPT-2-40)

Notes:
µg/L – micrograms per liter
MRL – laboratory minimum reporting limit

4.2.2 Phase 2: Plume Stop Application Phase

Following an evaluation of the field, lithological and contaminant data collected during Phase 1, Antea Group oversaw the injection of Plume Stop™, by drilling subcontractor Vironex, in the proposed injection area surrounding MW-4 and DPE-5 (**Figure 2**). Vironex advanced nine injection points (CC-1 through CC-9) using a direct push technology (DPT) drill rig. Based on the results of the HPT evaluation, the targeted injection zone was modified from 15 to 40 feet bgs to 17 to 41 feet bgs. Depth discrete injections into the first boring location (CC-2) were conducted in 1-foot intervals. Since no surfacing was noted, injections into the remaining eight borings were conducted in 4-foot intervals.

- Test Area Dimensions: Approximately 12 x 17 feet with area of approximately 135 square feet.
- Total Volume: Approximately 4,186 gallons of Plume Stop™ injection solution (813 gallons of Plume Stop™ reagent). This volume was based on initial calculations provided by Regenesis in their review of current and historical impacts in the injection area.

The table below summarizes the final volume of Plume Stop™ solution injected, the range of injection flow rates, and range of injection pressures for each boring. **Appendix J** presents the complete injection report compiled by Vironex.

Injection Point ID	Start Depth to Finish Depth (feet bgs)	Total Injection Volume (gal)	Min/Max Injection Flow Rate (gpm)	Min/Max Sustained Injection Pressure (psi)
CC-1	17 to 41	461	2.1 to 2.6	30 to 60
CC-2	17 to 41	461	1.2 to 2.9	30 to 110
CC-3	17 to 41	461	2.0 to 2.6	40 to 60
CC-4	17 to 41	486*	1.7 to 2.5	30 to 90
CC-5	17 to 41	461	1.2 to 2.9	10 to 70
CC-6	17 to 41	461	2.1 to 2.6	40 to 55
CC-7	17 to 41	461	2.1 to 2.4	40 to 60
CC-8	17 to 41	473*	2.2 to 2.5	30 to 60
CC-9	17 to 41	461	1.7 to 3.4	40 to 90

Notes:
feet bgs = feet below ground surface
gal = gallon
gpm = gallons per minute
psi = pounds per square inch
* = additional injection volume (greater than 461 gallons) resulting from clearing out the solution holding tanks

4.2.3 Phase 3: Post-Injection Monitoring

Antea Group subcontracted Blaine Tech to perform the first and second monitoring and sampling events approximately 30 days and 60 days following the remediation pilot test injections. **Appendix K** includes copies of Blaine Tech's field data sheets, and the table below summarizes the gauging and sampling data. Soil boring and monitoring well construction details are included in **Table 1**.

Well gauging and sampling date:	April 27, 2012 (approximately 30 days post-injection) May 29, 2012 (approximately 60 days post-injection)
Wells gauged:	MW-4
Wells sampled:	MW-4
Purge method:	3 well casing volumes via electric, submersible pump
Sample collection method:	Disposable bailers
Groundwater parameters measured (**Appendix B**):	Temperature, pH, Conductivity, Oxidation-Reduction Potential (ORP), Turbidity, Dissolved Oxygen (DO)

Wells with measurable LNAPL:	None
Depth to water range (feet BTOC):	Min: 13.52 (MW-4, 4/27/12) Max: 15.29 (MW-4, 5/29/12)
Groundwater elevation range (feet):	Min: 30.12 (MW-4, 4/27/12) Max: 28.35 (MW-4, 5/29/12)

Groundwater samples collected during the 30- and 60-day post-injection sampling events were submitted under chain-of-custody documentation to Calscience for analyses of the following constituents of concern:

- GRO, carbon chain range C_{04} – C_{12}, by EPA Method 8015B;
- BTEX, MTBE, TBA, ETBE, TAME, DIPE, EDB, ethanol, and 1,2-DCA by EPA Method 8260.

Groundwater samples collected during the 30- and 60-day post-injection sampling events were additionally analyzed for the following geochemical parameters:

- Total Iron by EPA Method 6010B
- Dissolved Iron by EPA Method 6010B
- Nitrate and sulfate by EPA Method 300.0
- Sulfide by method SM4500S2C,D
- Methane, dissolved gases by method RSKSOP-175
- Total Organic Carbon (TOC) by method SM5310C-2000
- Chemical Oxidant Demand by method SM5220D
- Alkalinity by method SM2320B

4.3 Groundwater Analytical Results and Discussion

The table below summarizes the contaminants of concern (COCs) concentrations reported in the post-injection groundwater samples collected from well MW-4 on April 27 and May 29, 2012 and compares that data to the baseline groundwater concentrations for MW-4 from March 7, 2012. Only the contaminants reported above the laboratory's MRLs. **Appendix F** presents the complete laboratory analytical report. **Figure 4** shows reported concentrations for GRO, benzene, MTBE and TBA. **Tables 5** summarize current and historical analytical data. **Appendix L** contains a time series graph for well MW-4, which presents concentrations of GRO, benzene, MTBE, and TBA overtime with respect to changes in groundwater elevation.

Contaminant of Concern	Baseline (Pre-Injection) Concentration (µg/L) (March 7, 2012)	30-Day Post-Injection Concentration (µg/L) (April 27, 2012)	60-Day Post-Injection Concentration (µg/L) (May 29, 2012)
GRO	8,500	17,000	17,000
Benzene	4,000	2,800	2,800
Ethylbenzene	480	1,500	1,400
Toluene	42	490	380
Total Xylenes	1,090	3,230	2,370
MTBE	400	370	210
TBA	4,900	2,900	2,700

Notes:
µg/L – micrograms per liter
MRL – laboratory minimum reporting limit

As depicted by the hydrograph for well MW-4, concentrations of COCs have historically fluctuated by increasing or decreasing an order of magnitude between sampling events. Although we have only conducted the first two post-remediation monitoring and sampling events, this initial data appears to indicate that Plume Stop™ is positively affecting the plume at MW-4 by stabilizing dissolved concentrations. The 30-day and 60-day post-injection concentrations for GRO, benzene, ethylbenzene, and TBA have a percent difference of zero to 7.14 percent (%); the post-injection concentrations for toluene, total xylenes, and MTBE have a percent difference ranging from 25.3 to 55.2%. This stabilization may also be due to a secondary effect of the Plume Stop™ which potentially encourages bioattenuation.

Increases noted in concentrations since baseline sampling may be attributable to possible desorption of contaminants in the formation resulting from a combination of water table fluctuations and injection of the Plume Stop™ amendment into area.

4.4 Quality Assurance/Quality Control (QA/QC)

The QA/QC measures applied by Antea Group to the groundwater data associated with the injection pilot test include a detailed QA/QC data validation check of the Calscience analytical results. Antea Group's laboratory data validation checklists for the March, April, and May 2012 pilot test-related groundwater sampling laboratory analytical reports are included in **Appendix F.**

Baseline and Post-Injection Groundwater Analytical Results	
Laboratory QA/QC Performed:	Yes (validated by Antea Group)
Laboratory Data or Batch Qualifiers:	*Two data qualifiers associated with Calscience Report No. 12-05-1978 (listed below)
Antea Group Revisions	None
Are the data valid for their intended purpose?	Yes, the data are valid

*H9 and H11 for SS/SD out of control (matrix interference). LCS acceptable, sample accepted based on LCS.

5.0 CONCLUSIONS AND RECOMMENDATIONS

Based on the initial groundwater data following the injection pilot test event, Plume Stop ™ appears to have good initial distribution and a positive effect on stabilizing concentrations of concern in area of well MW-4. At this time, significant changes are likely still occurring between injection points and monitoring locations. Additional time is necessary to better assess and confirm the effect of the injection amendment on concentrations within the injection area. Antea Group recommends extending the post-injection monitoring period to 6 months in order to also evaluate potential bioattentuation effects of Plume Stop™ on contaminant concentrations in the area of MW-4.

Antea Group will continue with the 90-day post-injection monitoring and sampling of well MW-4, which is scheduled to occur on June 27, 2012. Following the completion of the all post-injection monitoring and evaluation of the pilot test, Antea Group will submit a report summarizing our findings and recommendations.

6.0 REMARKS

The recommendations contained in this document represent Antea USA, Inc.'s professional opinions based upon the currently available information and are arrived at in accordance with currently accepted professional standards. This document is based upon a specific scope of work requested by the client. For any reports cited that were not generated by Delta or Antea Group, the data from those reports is used "as is" and is assumed to be accurate. Antea Group does not guarantee the accuracy of this data for the referenced work performed nor the inferences or conclusions stated in these reports. The contract between Antea USA, Inc. and its client outlines the scope of work, and only those tasks specifically authorized by that contract or outlined in this document were performed. This document is intended only for the use of Antea USA, Inc.'s client and anyone else specifically identified in writing by Antea USA, Inc. as a user of this document. Antea USA, Inc. will not and cannot be liable for unauthorized reliance by any other third party. Other than as contained in this paragraph, Antea USA, Inc. makes no express or implied warranty as to the contents of this document.

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Information, conclusions, and recommendations provided by Antea Group regarding the site have been prepared under the supervision of and reviewed by the licensed professional whose signature appears below.

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STATE OF CALIFORNIA

Cc: Geotracker Upload

Tables

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TABLE 1
SOIL BORING AND MONITORING WELL CONSTRUCTION DETAILS
76 (FORMER BP) SERVICE STATION NO. 11117
7210 BANCROFT AVENUE
OAKLAND, CALIFORNIA

Updated 11/09/2011

Boring/Well ID	Well/Boring Completion Date	TOC Elevation[1] (ft)	Borehole Depth (ft bgs)	Borehole Diameter (in)	Well Depth (ft)	Well Casing Diameter (in)	Well Casing Material	Well Screen Slot Size (in)	Well Screen Interval (ft bgs)	Cement Grout Seal Interval (ft bgs)	Bentonite Seal Interval (ft bgs)	Filter Pack Interval (ft bgs)	Comments
Soil Borings													
B-5	Jul-92	NA	50.0	8.0	NA	NA	NA	NA	NA to NA	0.0 to 50.0	NA to NA	NA to NA	
THP-1	Sep-94	NA	45.0	1.75	NA	NA	NA	NA	NA to NA	0.0 to 45.0	NA to NA	NA to NA	
TB-2	Sep-94	NA	45.0	1.75	NA	NA	NA	NA	NA to NA	0.0 to 45.0	NA to NA	NA to NA	
TB-3	Sep-94	NA	45.0	1.75	NA	NA	NA	NA	NA to NA	0.0 to 45.0	NA to NA	NA to NA	
TB-4	Sep-94	NA	45.0	1.75	NA	NA	NA	NA	NA to NA	0.0 to 45.0	NA to NA	NA to NA	
A-1	Sep-05	NA	46.5	4.25	NA	NA	NA	NA	NA to NA	0.0 to 46.5	NA to NA	NA to NA	
A-2	Sep-05	NA	42.0	2.0	NA	NA	NA	NA	NA to NA	0.0 to 42.0	NA to NA	NA to NA	
A-3	Nov-05	NA	36.0	2.0	NA	NA	NA	NA	NA to NA	0.0 to 36.0	NA to NA	NA to NA	
A-4	Nov-05	NA	36.0	2.0	NA	NA	NA	NA	NA to NA	0.0 to 36.0	NA to NA	NA to NA	
A-5	Nov-05	NA	36.0	2.0	NA	NA	NA	NA	NA to NA	0.0 to 36.0	NA to NA	NA to NA	
A-7	Nov-05	NA	36.5	4.25	NA	NA	NA	NA	NA to NA	0.0 to 36.5	NA to NA	NA to NA	
A-8	Nov-05	NA	36.5	4.25	NA	NA	NA	NA	NA to NA	0.0 to 36.5	NA to NA	NA to NA	
A-9	Nov-05	NA	36.5	4.25	NA	NA	NA	NA	NA to NA	0.0 to 36.5	NA to NA	NA to NA	
A-10	Nov-05	NA	39.0	4.25	NA	NA	NA	NA	NA to NA	0.0 to 39.0	NA to NA	NA to NA	
CPT-1	Apr-07	NA	60.0	1.75	NA	NA	NA	NA	NA to NA	0.0 to 60.0	NA to NA	NA to NA	
CPT-2	Apr-07	NA	60.0	1.75	NA	NA	NA	NA	NA to NA	0.0 to 60.0	NA to NA	NA to NA	
CPT-3	Apr-07	NA	60.0	1.75	NA	NA	NA	NA	NA to NA	0.0 to 60.0	NA to NA	NA to NA	
C-1	Oct-11	NA	35.0	3.25	NA	NA	NA	NA	NA to NA	0.0 to 35.0	NA to NA	NA to NA	
C-2	Oct-11	NA	35.0	3.25	NA	NA	NA	NA	NA to NA	0.0 to 35.0	NA to NA	NA to NA	
C-3	Oct-11	NA	35.0	3.25	NA	NA	NA	NA	NA to NA	0.0 to 35.0	NA to NA	NA to NA	
C-4	Oct-11	NA	35.0	3.25	NA	NA	NA	NA	NA to NA	0.0 to 35.0	NA to NA	NA to NA	
C-5	Oct-11	NA	35.0	3.25	NA	NA	NA	NA	NA to NA	0.0 to 35.0	NA to NA	NA to NA	
Groundwater Monitoring Wells													
MW-1	Dec-91	43.14	40	8	40	2	PVC	0.02	20.0 to 40.0	0.0 to 17.0	17.0 to 18.0	18.0 to 40.0	
MW-2	Dec-91	51.07	40	8	40	2	PVC	0.02	20.0 to 40.0	0.0 to 17.0	17.0 to 18.0	18.0 to 40.0	Well destroyed November 17, 2007
MW-3	Dec-89	43.27	45	8	45	2	PVC	0.02	30.0 to 45.0	0.0 to 3.0	3.0 to 25.0	25.0 to 45.0	
MW-4	Jul-92	43.64	40	8	40	2	PVC	0.02	20.0 to 40.0	0.0 to 17.0	17.0 to 18.0	18.0 to 40.0	
MW-6	Jul-92	43.64	40	8	40	2	PVC	0.02	20.0 to 40.0	0.0 to 17.0	17.0 to 18.0	18.0 to 40.0	
MW-7	Oct-94	44.21	45	8	45	2	PVC	0.02	25.0 to 45.0	0.0 to 21.0	21.0 to 23.0	23.0 to 45.0	
MW-8	Oct-94	44.18	40	8	40	2	PVC	0.02	25.0 to 40.0	0.0 to 21.0	21.0 to 23.0	23.0 to 40.0	
MW-9	Oct-94	44.35	40	8	40	2	PVC	0.02	25.0 to 40.0	0.0 to 21.0	21.0 to 23.0	23.0 to 40.0	
MW-10	Jul-97	46.17	37.5	8	35	2	PVC	0.02	15.0 to 35.0	0.0 to 13.0	13.0 to 14.0	14.0 to 37.5	
MW-11	Nov-07	43.34	40	10	40	4	PVC	0.02	15.0 to 40.0	0.0 to 10.0	10.0 to 13.0	13.0 to 40.0	Graphic log indicates TD = 35 ft bgs

TABLE 1
SOIL BORING AND MONITORING WELL CONSTRUCTION DETAILS
76 (FORMER BP) SERVICE STATION NO. 11117
7210 BANCROFT AVENUE
OAKLAND, CALIFORNIA

Updated 11/09/2011

Boring/Well ID	Well/Boring Completion Date	TOC Elevation[1] (ft)	Borehole Depth (ft bgs)	Borehole Diameter (in)	Well Depth (ft)	Well Casing Diameter (in)	Well Casing Material	Well Screen Slot Size (in)	Well Screen Interval (ft bgs)	Cement Grout Seal Interval (ft bgs)	Bentonite Seal Interval (ft bgs)	Filter Pack Interval (ft bgs)	Comments
Remediation Wells													
EX-1	Nov-99	44.20	39.5	10	40	4	PVC	0.02	18.0 to 38.0	0.0 to 15.0	15.0 to 16.0	16.0 to 39.5	
EX-2	Nov-99	45.33	36.5	10	40	4	PVC	0.02	15.0 to 35.0	0.0 to 13.0	13.0 to 13.0	13.0 to 36.5	
DPE-1	Nov-07	44.28	40	10	38	4	PVC	0.02	15.0 to 40.0	0.0 to 10.0	10.0 to 13.0	13.0 to 40.0	
DPE-2	Nov-07	43.03	40	10	40	4	PVC	0.02	15.0 to 40.0	0.0 to 10.0	10.0 to 13.0	13.0 to 40.0	
DPE-3	Nov-07	43.27	40	10	40	4	PVC	0.02	13.0 to 38.0	0.0 to 8.0	8.0 to 11.0	11.0 to 40.0	
DPE-4	Nov-07	44.08	45	10	38	4	PVC	0.01	15.0 to 40.0	0.0 to 10.0	10.0 to 13.0	13.0 to 45.0	Installed in same borehole as destroyed well MW-2
DPE-5	Nov-07	44.60	40	10	35	4	PVC	0.01	15.0 to 40.0	0.0 to 10.0	10.0 to 13.0	13.0 to 40.0	Log indicates Screen Interval at 15-38 ft bgs
SVE-1	Oct-11	44.78	28	10	22	4	PVC	0.02	10.0 to 22.0	0.0 to 6.0	6.0 to 8.0	8.0 to 22.0	Boring backfilled from 22-28' with bentonite
AS-1	Oct-11	44.64	33	4.25	33	0.5	0.25" OD Teflon/SS	NA	33.0 to 32.5	0.0 to 28.5	30.5 to 28.5	30.5 to 33.0	6" SS sparge tip

Notes:

ft = feet	B and C = soil boring
in = inches	A = hydropunch boring
TOC = Top of Casing	CPT = cone pentrometer boring
bgs = below ground surface	MW = monitoring well
NA = not applicable	EX = extraction well
PVC = polyvinyl chloride	DPE = extraction well
SS = stainless steel	AS=air sparge well
OD = outside diameter	SVE=soil vapor extraction well

[1] = TOC Elevations were surveyed to a local datum on the following dates:

MW-2 -- January 1, 1992 by HETI

MW-1, MW-3 hrough MW-11, EX-1, EX-2, DPE-1 through DPE-5, AS-1, and SVE-1 -- October 24, 2011 by Mid Coast Engineers

TABLE 2
SUMMARY OF SOIL ANALYTICAL DATA
76 (Former BP) Service Station No. 11117
7210 Bancroft Avenue
Oakland, California

Field Point	Sample ID	Date Sampled	Sample Depth (feet below grade)	GRO (mg/kg)	BTEX				MTBE (mg/kg)	TBA (mg/kg)	TAME (mg/kg)	DIPE (mg/kg)	ETBE (mg/kg)	EDB (mg/kg)	1,2-DCA (mg/kg)	Ethanol (mg/kg)
					Benzene (mg/kg)	Toluene (mg/kg)	Ethylbenzene (mg/kg)	Xylenes (mg/kg)								
C-1	C-1@5	10/06/11	5	<1.0	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	**<0.0050**	**<0.0050**	<0.050
	C-1@10	10/06/11	10	<1.0	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	**<0.0050**	**<0.0050**	<0.050
	C-1@19	10/06/11	19	<1.0	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	0.023	<0.0050	<0.0050	<0.0050	**<0.0050**	**<0.0050**	<0.050
	C-1@35	10/06/11	35	<1.0	<0.0050	<0.0050	0.029	0.030	<0.0050	0.021	<0.0050	<0.0050	<0.0050	**<0.0050**	**<0.0050**	<0.050
C-2	C-2@5	10/05/11	5	<1.0	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	**<0.0050**	**<0.0050**	<0.050
	C-2@16	10/05/11	16	<1.0	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	**<0.0050**	**<0.0050**	<0.050
	C-2@35	10/05/11	35	<1.0	<0.0050	<0.0050	<0.0050	<0.0050	0.0068	<0.0050	<0.0050	<0.0050	<0.0050	**<0.0050**	**<0.0050**	<0.050
C-3	C-3@5	10/05/11	5	<1.0	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	**<0.0050**	**<0.0050**	<0.050
	C-3@18	10/05/11	18	<1.0	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	**<0.0050**	**<0.0050**	<0.050
	C-3@20	10/05/11	20	<1.0	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	**<0.0050**	**<0.0050**	<0.050
	C-3@28	10/05/11	28	<1.0	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	**<0.0050**	**<0.0050**	<0.050
	C-3@35	10/05/11	35	<1.0	<0.0050	<0.0050	<0.0050	<0.0050	**0.35**	<0.0050	<0.0050	<0.0050	<0.0050	**<0.0050**	**<0.0050**	<0.050
C-4	C-4d5.0	10/04/11	5	<1.0	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	**<0.0050**	**<0.0050**	<0.050
	C-4d10.0	10/04/11	10	<1.0	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	**<0.0050**	**<0.0050**	<0.050
	C-4d15.0	10/04/11	15	<1.0	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	**<0.0050**	**<0.0050**	<0.050
	C-4d18.0	10/04/11	18	<1.0	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	**<0.0050**	**<0.0050**	<0.050
	C-4d25.0	10/04/11	25	<1.0	<0.0050	<0.0050	<0.0050	<0.0050	**0.31**	0.020 J	<0.0050	<0.0050	<0.0050	**<0.0050**	**<0.0050**	<0.050
	C-4d34.5	10/04/11	34.5	<1.0	<0.0050	<0.0050	<0.0050	<0.0050	**0.31**	0.020 J	<0.0050	<0.0050	<0.0050	**<0.0050**	**<0.0050**	<0.050
C-5	C-5@5	10/05/11	5	<1.0	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	**<0.0050**	**<0.0050**	<0.050
	C-5@13	10/05/11	13	<1.0	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	**<0.0050**	**<0.0050**	<0.050
	C-5@16	10/05/11	16	<1.0	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	**<0.0050**	**<0.0050**	<0.050
	C-5@25	10/05/11	25	65	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	**0.0054**	<0.0050	<0.0050	<0.0050	**<0.0050**	**<0.0050**	<0.050
	C-5@30	10/05/11	30	**470**	<0.025	<0.025	<0.025	<0.025	**<0.025**	**<0.15**	<0.025	<0.025	<0.025	**<0.025**	**<0.025**	<0.25
	C-5@35	10/05/11	35	**2,300**	**<0.25**	<0.25	0.93	0.98	**<0.25**	**<1.5**	<0.25	<0.25	<0.25	**<0.25**	**<0.25**	<2.5
SFBRWQCB ESLs (Residential)	**Shallow soil (<9.8 feet) where groundwater is a current or potential source of drinking water**			**83**	**0.044**	**2.9**	**2.3**	**2.3**	**0.023**	**0.075**	NE	NE	NE	**0.00033**	**0.0045**	NE
	Deep soil (>9.8 feet) where groundwater is a current or potential source of drinking water			**83**	**0.044**	**2.9**	**3.3**	**2.3**	**0.023**	**0.075**	NE	NE	NE	**0.00033**	**0.0045**	NE

Notes:
< - Denotes less than the Laboratory Reporting Limit (LRL)
-- Analysis not requested
mg/kg - Micrograms per Kilogram
SFBRWQCB - San Francisco Bay Regional Water Quality Control Board
EPA - U.S. Environmental Protection Agency
ESL - Environmental Screening Level
NE - Not Established
Bold - Reported concentration or reporting limit exceeds the lowest ESL (where established)

Sample analysis by EPA Method 8260B

Analyte Abbreviations:
GRO - Gasoline range organics
MTBE - Methyl tertiary butyl ether
TBA - Tertiary butyl alcohol
TAME - Tertiary amyl methyl ether
DIPE - Di-isopropyl ether
ETBE - Ethyl tertiary butyl ether
EDB - Ethylene dibromide (also known as 1,2-dibromoethane)
1,2-DCA - 1,2-Dichloroethane

Data Qualifier Definitions:
J - TBA results for C-4d25.0 and C-4d34.5 may be biased slightly high. A fraction of MTBE (up to 5%) converts to TBA during the analysis of soil samples. The laboratory considers this conversion to be mathematically significant in samples that contain MTBE/TBA in ratios over 3:1.

TABLE 3
ENGINEERING PARAMETERS GROUNDWATER ANALYTICAL DATA
76 (Former BP) Service Station No. 2611117
7210 BANCROFT AVE
OAKLAND, CALIFORNIA

Well I.D.	Date	GROUNDWATER ANALYTICAL DATA																		
		Biochemical Oxygen Demand (ug/L)	Chemical Oxygen Demand (ug/L)	Chloride (ug/L)	Chromium (ug/L)	Chromium, Hexavalent (ug/L)	Iron SW6010 T (ug/L)	Iron, Ferric (ug/L)	Iron, Ferrous A3500D (ug/L)	Methane (ug/L)	Nitrate as N (ug/L)	Nitrite as N (ug/L)	Nitrogen (ug/L)	Nitrogen, Ammonia (ug/L)	Nitrogen, NO2 plus NO3 (ug/L)	Phosphate, Ortho (ug/L)	Phosphorous (ug/L)	Sulfate (ug/L)	Sulfide (ug/L)	Total Organic Carbon (ug/L)
DPE-1	8/15/2011	4560	27900	25200	0.66	<0.2	11100	9490	1600	1500	108	13.1	<1000	<100	121	219	236	14300	1040	3640
DPE-4	8/15/2011	55000	113000	26400	4	<0.2	10800	3230	7600	16100	<50.0	39.6	1770	<100	62.1	502	732	<1000	1080	14000
DPE-5	8/15/2011	21200	53900	32100	28	<0.2	20500	14000	6500	13900	<50.0	28.8	1320	<100	<50.0	240	134	<1000	1600	9360
EX-1	8/15/2011	8680	29800	19100	2.9	<0.2	1420	<100	1400	5040	52.9	<10.0	1120	185	59.7	148	107	3830	1080	11600
EX-2	8/15/2011	579000	7420	17100	2.2	<0.2	932	932	<100	208	12100	<10.0	<1000	<100	12100	162	106	17600	760	2010
MW-4	4/27/2012	--	120000	--	--	--	--	--	--	5020	--	--	--	--	--	--	--	13000	200	25000
	5/29/2012	--	63000	--	--	--	--	--	--	5870	--	--	--	--	--	--	--	--	<50	7800

Analytical Notes:
-- - No information available
< - Not detected at or above indicated laboratory reporting limit
ug/L - micrograms/liter

TABLE 4
BASELINE AND POST-INJECTION GROUNDWATER GAUGING AND ANALYTICAL DATA
76 (FORMER BP) SERVICE STATION NO. 2611117
7210 BANCROFT AVE
OAKLAND, CALIFORNIA

Well I.D.	Date	GROUNDWATER GAUGING DATA				GROUNDWATER ANALYTICAL DATA												
		TOC Elevation (ft)	Depth to Water (ft)	LNAPL Thickness (ft)	Water Elevation* (ft)	GRO (ug/L)	Benzene (ug/L)	Ethylbenzene (ug/L)	Toluene (ug/L)	Total Xylenes (ug/L)	MTBE (ug/L)	TBA (ug/L)	DIPE (ug/L)	ETBE (ug/L)	TAME (ug/L)	Ethanol (ug/L)	1,2-Dibromoethane (EDB) (ug/L)	1,2-Dichloroethane (ug/L)
MW-4	3/7/2012	43.64	17.75	NP	25.89	8500	4000	480	42	1090	400	4900	<50	<50	<50	<2500	<25	<12
	3/19/2012	43.64	16.42	NP	27.22	15200	4800	562	125	512	768	25200	<0.50	3.2	6.0	<250	<1.0	<1.0
	4/27/2012	43.64	13.52	NP	30.12	17000	2800	1500	490	3230	370	2900	<50	<50	<50	<2500	<25	<12
	5/29/2012	43.64	15.29	NP	28.35	17000	2800	1400	380	2570	210	2700	<50	<50	<50	<2500	<25	<12
DPT-1-36	3/7/2012	--	--	--	--	4900	480	170	15	980	11	2400	<10	<10	<10	<500	<5.0	<2.5
DPT-2-32	3/7/2012	--	--	--	--	5700	7600	760	47	96	13	6700	<2.0	<2.0	<2.0	<100	<1.0	<0.50
DPT-2-40	3/7/2012	--	--	--	--	2400	920	58	44	221	11	4600	<2.0	3.7	<2.0	<100	<1.0	<0.50

Gauging Notes:
TOC - Top of Casing
ft - Feet
NP - LNAPL not present
LNAPL - Light non-aqueous phase liquid
* - Corrected for LNAPL if present (assumes LNAPL specific gravity = 0.75)
-- - No information available

Analytical Notes:
< - Not detected at or above indicated laboratory reporting limit
ug/L - micrograms/liter
GRO- gasoline range organics
MTBE- Methyl tertiary-butyl ether
DIPE- Di-isopropyl ether
ETBE- Ethyl tertiary-butyl ether
TAME- Tertiary-amyl methyl ether
TBA- Tertiary-butyl alcohol

TABLE 5
HISTORICAL GROUNDWATER GAUGING AND ANALYTICAL DATA
76 (Former BP) Service Station No. 2611117
7210 BANCROFT AVE
OAKLAND, CALIFORNIA

Well I.D.	Date	GROUNDWATER GAUGING DATA				GROUNDWATER ANALYTICAL DATA													
		TOC Elevation (ft)	Depth to Water (ft)	LNAPL Thickness (ft)	Water Elevation* (ft)	DRO (ug/L)	GRO (ug/L)	Benzene (ug/L)	Toluene (ug/L)	Ethylbenzene (ug/L)	Total Xylenes (ug/L)	MTBE (ug/L)	DIPE (ug/L)	ETBE (ug/L)	TAME (ug/L)	TBA (ug/L)	Ethanol (ug/L)	1,2-Dibromoethane (EDB) (ug/L)	1,2-Dichloroethane (ug/L)
DPE-1	12/14/2007	38.95	21.62	NP	17.33	--	360	24	<0.5	3.4	<0.5	--	<0.5	3.4	<0.5	1300	<300	<0.5	<0.5
	2/12/2008	38.95	16.13	NP	22.82	--	4700	2000	310	130	360	--	<10	<10	<10	3900	<2000	<10	<10
	5/22/2008	38.95	18.03	NP	20.92	--	16000	3900	94	510	1700	--	<40	<40	<40	4400	<24000	<40	<40
	8/25/2008	38.95	20.95	NP	18.00	--	1300	250	<20	<20	<20	--	<20	<20	<20	4000	<12000	<20	<20
	12/17/2008	38.95	22.33	NP	16.62	--	480	<5	<5	<5	<5	--	<5	<5	<5	1200	<3000	<5	<5
	2/25/2009	38.95	18.15	NP	20.80	--	1100	170	<10	<10	<10	<10	--	--	--	--	--	--	--
	8/15/2011	38.95	16.46	NP	22.49	--	571	16.4	5.4	6.3	12.0	1.1	<0.50	<0.50	<0.50	140	<250	<1.0	<1.0
DPE-2	12/14/2007	37.64	20.09	NP	17.55	--	2500	1.2	0.99	12	32	--	<0.5	<0.5	<0.5	<20	<300	<0.5	<0.5
	2/12/2008	37.64	14.35	NP	23.29	--	1100	9.1	9.3	33	91	--	<0.5	<0.5	<0.5	<10	<100	<0.5	<0.5
	5/22/2008	37.64	16.60	NP	21.04	--	1000	1.2	3.7	11	18	--	<0.5	<0.5	<0.5	<10	<300	<0.5	<0.5
	8/25/2008	37.64	19.47	NP	18.17	--	780	0.52	<0.5	7.1	6.6	--	<0.5	<0.5	<0.5	<10	<300	<0.5	<0.5
	12/17/2008	37.64	21.35	NP	16.29	--	21000	230	180	630	1900	--	<10	<10	<10	<200	<6000	<10	<10
	2/25/2009	37.64	16.60	NP	21.04	--	16000	170	180	580	1500	<10	--	--	--	--	--	--	--
	8/15/2011	37.64	15.29	NP	22.35	--	--	--	--	--	--	--	--	--	--	--	--	--	--
DPE-3	12/14/2007	37.82	20.45	NP	17.37	--	1300	1800	840	830	1200	--	<25	<25	<25	1700	<15000	<25	<25
	2/12/2008	37.82	14.88	NP	22.94	--	50	31	55	140	300	--	<5	<5	<5	<100	<1000	<5	<5
	5/22/2008	37.82	16.92	NP	20.90	--	800	950	160	890	330	--	<20	<20	<20	<400	<12000	<20	<20
	8/25/2008	37.82	19.77	NP	18.05	--	3900	8.5	21	91	260	--	<2.5	<2.5	<2.5	<50	<1500	<2.5	<2.5
	12/17/2008	37.82	21.61	NP	16.21	--	24000	410	210	980	2900	--	<20	<20	<20	<400	<12000	<20	<20
	2/25/2009	37.82	17.18	NP	20.64	--	4400	22	12	130	150	<2.5	--	--	--	--	--	--	--
	8/15/2011	37.82	15.59	NP	22.23	--	--	--	--	--	--	--	--	--	--	--	--	--	--
DPE-4	12/14/2007	38.46	21.00	NP	17.46	--	510000	12000	27000	4900	27000	--	<500	<500	<500	<20000	<300000	<500	<500
	2/12/2008	38.46	15.43	NP	23.03	--	100000	6600	21000	3800	22000	--	<50	<50	55	<1000	<10000	<50	<50
	5/22/2008	38.46	17.38	NP	21.08	--	130000	9700	26000	5000	28000	--	<400	<400	<400	<8000	<240000	<400	<400
	8/25/2008	38.46	20.36	NP	18.10	--	190000	9100	19000	4100	22000	--	<400	<400	<400	<8000	<240000	<400	<400
	12/17/2008	38.46	21.89	NP	16.57	--	160000	10000	20000	4500	22000	--	<400	<400	<400	<8000	<240000	<400	<400
	2/25/2009	38.46	17.59	NP	20.87	--	130000	9900	21000	4600	22000	4500	--	--	--	--	--	--	--
	8/15/2011	38.46	16.15	NP	22.31	--	57600	5920	7240	3830	12100	5560	<0.50	12.2	132	6920	<250	<1.0	<1.0
DPE-5	12/14/2007	38.23	20.86	NP	17.37	--	300000	9200	4100	4600	20000	--	<500	<500	<500	<20000	<300000	<500	<500
	2/12/2008	38.23	15.20	NP	23.03	--	63000	5600	2200	3400	12000	--	<50	<50	<50	2000	<10000	<50	<50
	5/22/2008	38.23	17.37	NP	20.86	--	34000	6800	620	2600	6000	--	<200	<200	<200	4500	<120000	<200	<200
	8/25/2008	38.23	21.80	NP	16.43	--	40000	5200	940	2100	5400	--	<100	<100	<100	5100	<60000	<100	<100
	12/17/2008	38.23	21.96	NP	16.27	--	33000	4800	130	1700	2500	--	<100	<100	<100	6100	<60000	<100	<100
	2/25/2009	38.23	17.47	NP	20.76	--	50000	6600	590	2300	6100	3100	--	--	--	--	--	--	--
	8/15/2011	38.23	15.96	NP	22.27	--	15900	2420	127	1340	1650	773	<0.50	1.2	10.0	2510	<250	<1.0	<1.0
EX-1	5/4/2004	44.20	16.29	NP	27.91	--	12000	2300	430	740	1100	--	<25	<25	38	<1000	<5000	<25	<25
	8/31/2004	44.20	19.39	NP	24.81	--	13000	2500	95	650	1500	--	<50	<50	<50	<2000	<10000	<50	<50
	11/23/2004	44.20	17.90	NP	26.30	--	13000	2700	94	460	1700	--	<25	<25	74	<1000	<5000	<25	<25
	1/18/2005	44.20	14.20	NP	30.00	--	16000	2100	390	570	2500	--	<25	<25	54	<1000	<5000	<25	<25
	6/29/2005	44.20	14.22	NP	29.98	--	6400	1100	52	280	790	--	<25	<25	30	<1000	<5000	<25	<25
	9/1/2005	44.20	17.22	NP	26.98	--	7900	2000	94	400	870	--	<25	<25	46	<1000	<5000	<25	<25
	11/3/2005	44.20	19.92	NP	24.28	--	22000	3200	640	550	3300	--	<25	<25	87	<1000	<5000	<25	<25
	2/14/2006	44.20	15.40	NP	28.80	--	3500	<25	<25	<25	74	--	<25	<25	<25	<1000	<15000	<25	<25
	5/30/2006	44.20	13.43	NP	30.77	--	8600	1400	120	490	1300	--	<25	<25	37	<1000	<15000	<25	<25
	8/29/2006	44.20	17.74	NP	26.46	--	22000	2900	210	1400	3600	--	<25	<25	56	<1000	<15000	<25	<25
	11/29/2006	44.20	20.25	NP	23.95	--	15000	4000	110	770	2700	--	<50	<50	75	<2000	<30000	<50	<50
	2/20/2007	44.20	16.75	NP	27.45	--	10000	2500	<50	550	1300	--	<50	<50	<50	<2000	<30000	<50	<50
	5/25/2007	44.20	17.04	NP	27.16	--	8600	2100	88	700	1400	--	<50	<50	<50	<2000	<30000	<50	<50

TABLE 5
HISTORICAL GROUNDWATER GAUGING AND ANALYTICAL DATA
76 (Former BP) Service Station No. 2611117
7210 BANCROFT AVE
OAKLAND, CALIFORNIA

Well I.D.	Date	GROUNDWATER GAUGING DATA				GROUNDWATER ANALYTICAL DATA													
		TOC Elevation (ft)	Depth to Water (ft)	LNAPL Thickness (ft)	Water Elevation* (ft)	DRO (ug/L)	GRO (ug/L)	Benzene (ug/L)	Toluene (ug/L)	Ethylbenzene (ug/L)	Total Xylenes (ug/L)	MTBE (ug/L)	DIPE (ug/L)	ETBE (ug/L)	TAME (ug/L)	TBA (ug/L)	Ethanol (ug/L)	1,2-Dibromoethane (EDB) (ug/L)	1,2-Dichloroethane (ug/L)
EX-1	8/9/2007	44.20	19.76	NP	24.44	--	4800	870	40	230	460	--	<10	<10	15	440	<6000	<10	<10
	11/9/2007	44.20	21.57	NP	22.63	--	5300	2700	29	220	200	--	<25	<25	<25	1900	<15000	<25	<25
	12/14/2007	38.98	21.60	NP	17.38	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	2/12/2008	38.98	15.92	NP	23.06	--	19000	2500	<50	360	860	320	<50	<50	<50	2200	<10000	<50	<50
	5/22/2008	38.98	17.85	NP	21.13	--	9300	1600	<50	310	1100	970	<50	<50	<50	<1000	<30000	<50	<50
	8/25/2008	38.98	20.71	NP	18.27	--	6100	1100	29	360	370	430	<25	<25	<25	830	<15000	<25	<25
	12/17/2008	38.98	22.20	NP	16.78	--	11000	1400	47	720	360	690	<25	<25	<25	980	<15000	<25	<25
	2/25/2009	38.98	18.01	NP	20.97	--	3300	880	110	190	120	440	--	--	--	--	--	--	--
	5/21/2009	38.98	17.10	NP	21.88	--	5000	2100	100	350	89	570	--	--	--	--	--	--	--
	8/14/2009	38.98	20.55	NP	18.43	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	2/10/2010	38.98	15.61	NP	23.37	--	4040	308	488	393	975	133	<0.50	<0.50	<0.50	43.7	<250	<1.0	<1.0
	8/20/2010	38.98	17.44	NP	21.54	--	14600	1090	1610	1030	3360	267	<0.50	0.78	8.9	275	<250	<1.0	<1.0
	2/7/2011	38.98	15.20	NP	23.78	--	15900	642	1100	846	2500	364	<0.50	0.78	9.3	151	<250	<1.0	<1.0
	8/15/2011	38.98	16.21	NP	22.77	--	1470	470	516	472	1270	54.2	<5.0	<5.0	17.8	188	<2500	<10.0	13.3
	2/20/2012	44.20	18.27	NP	25.93	--	10300	1810	586	350	712	312	<2.5	<2.5	12.9	481	<1250	<5.0	44.1
EX-2	5/4/2004	45.33	16.65	NP	28.68	--	<50	0.63	<0.5	<0.5	0.66	--	<0.5	<0.5	<0.5	<20	<100	<0.5	<0.5
	8/31/2004	45.33	19.90	NP	25.43	--	<250	<2.5	<2.5	<2.5	<2.5	--	<2.5	<2.5	3.4	<100	<500	<2.5	<2.5
	11/23/2004	45.33	18.36	NP	26.97	--	<50	0.74	<0.5	0.83	3	--	<0.5	<0.5	<0.5	<20	<100	<0.5	<0.5
	1/18/2005	45.33	14.67	NP	30.66	--	<50	<0.5	<0.5	<0.5	0.69	--	<0.5	<0.5	<0.5	<20	<100	<0.5	<0.5
	6/29/2005	45.33	14.60	NP	30.73	--	<50	<0.5	<0.5	<0.5	0.5	--	<0.5	<0.5	<0.5	<20	<100	<0.5	<0.5
	9/1/2005	45.33	17.28	NP	28.05	--	<50	<0.5	1.4	<0.5	1.4	--	<0.5	<0.5	0.56	<20	<100	<0.5	<0.5
	11/3/2005	45.33	20.42	NP	24.91	--	<50	0.5	<0.5	<0.5	1.4	--	<0.5	<0.5	0.8	<20	<100	<0.5	<0.5
	2/14/2006	45.33	14.54	NP	30.79	--	220	<0.5	3.2	7.5	33	--	<0.5	<0.5	<0.5	<20	<300	<0.5	<0.5
	5/30/2006	45.33	13.35	NP	31.98	--	<50	<0.5	<0.5	<0.5	0.7	--	<0.5	<0.5	<0.5	<20	<300	<0.5	<0.5
	8/29/2006	45.33	17.92	NP	27.41	--	66	0.67	<0.5	0.79	1.9	--	<0.5	<0.5	0.98	<20	<300	<0.5	<0.5
	11/29/2006	45.33	20.63	NP	24.70	--	<50	<0.5	<0.5	<0.5	<0.5	--	<0.5	<0.5	<0.5	<20	<300	<0.5	<0.5
	2/20/2007	45.33	17.58	NP	27.75	--	<50	<0.5	<0.5	<0.5	2	--	<0.5	<0.5	<0.5	<20	<300	<0.5	<0.5
	5/25/2007	45.33	17.23	0.01	28.11	--	<50	<0.5	<0.5	<0.5	<0.5	--	<0.5	<0.5	<0.5	<20	<300	<0.5	<0.5
	8/9/2007	45.33	20.40	NP	24.93	--	<50	<0.5	<0.5	<0.5	<0.5	--	<0.5	<0.5	<0.5	<20	<300	<0.5	<0.5
	11/9/2007	45.33	22.07	NP	23.26	--	120	<0.5	0.53	0.57	2.7	--	<0.5	<0.5	<0.5	<20	<300	<0.5	<0.5
	12/14/2007	39.63	21.97	NP	17.66	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	2/12/2008	39.63	16.73	NP	22.90	--	<50	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<10	<100	<0.5	<0.5
	5/22/2008	39.63	18.09	NP	21.54	--	<50	<0.5	2.4	0.95	5.5	0.54	<0.5	<0.5	<0.5	<10	<300	<0.5	<0.5
	8/25/2008	39.63	21.51	NP	18.12	--	<50	<0.5	<0.5	<0.5	<0.5	1	<0.5	<0.5	<0.5	<10	<300	<0.5	<0.5
	12/17/2008	39.63	NG	NG	NG	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	2/25/2009	39.63	16.79	NP	22.84	--	<50	<0.50	<0.50	<0.50	<0.50	0.58	--	--	--	--	--	--	--
	5/21/2009	39.63	18.56	NP	21.07	--	<50	<0.50	<0.50	<0.50	<0.50	<0.50	--	--	--	--	--	--	--
	8/14/2009	39.63	21.00	NP	18.63	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	2/10/2010	39.63	16.11	NP	23.52	--	<50.0	<0.50	<0.50	<0.50	<1.5	<0.50	<0.50	<0.50	<0.50	<5.0	<250	<1.0	<1.0
	8/20/2010	39.63	17.20	NP	22.43	--	<50.0	<0.50	<0.50	<0.50	<1.5	26.1	<0.50	<0.50	<0.50	5.6	<250	<1.0	<1.0
	2/7/2011	39.63	15.59	NP	24.04	--	<50.0	<0.50	<0.50	<0.50	<1.5	<0.50	<0.50	<0.50	<0.50	<5.0	<250	<1.0	<1.0
	8/15/2011	39.63	16.39	NP	23.24	--	<50.0	<0.50	<0.50	<0.50	<1.5	3.6	<0.50	<0.50	<0.50	<5.0	<250	<1.0	<1.0
	2/20/2012	45.33	19.10	NP	26.23	--	<50.0	<0.50	<0.50	<0.50	<1.5	<0.50	<0.50	<0.50	<0.50	<5.0	<250	<1.0	<1.0
MW-1	1/5/1992	49.80	33.16	NP	16.64	50000	57000	2400	1000	1100	3100	--	--	--	--	--	--	--	--
	1/10/1992	49.80	33.16	NP	16.64	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	6/5/1992	49.80	29.01	NP	20.79	--	31000	2800	2100	800	2300	--	--	--	--	--	--	--	--
	7/24/1992	49.80	29.45	NP	20.35	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	7/27/1992	49.80	29.45	NP	20.35	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	9/15/1992	49.80	30.53	NP	19.27	1200	40000	3400	3000	1300	3400	--	--	--	--	--	--	--	--

TABLE 5
HISTORICAL GROUNDWATER GAUGING AND ANALYTICAL DATA
76 (Former BP) Service Station No. 2611117
7210 BANCROFT AVE
OAKLAND, CALIFORNIA

Well I.D.	Date	GROUNDWATER GAUGING DATA				GROUNDWATER ANALYTICAL DATA													
		TOC Elevation (ft)	Depth to Water (ft)	LNAPL Thickness (ft)	Water Elevation* (ft)	DRO (ug/L)	GRO (ug/L)	Benzene (ug/L)	Toluene (ug/L)	Ethylbenzene (ug/L)	Total Xylenes (ug/L)	MTBE (ug/L)	DIPE (ug/L)	ETBE (ug/L)	TAME (ug/L)	TBA (ug/L)	Ethanol (ug/L)	1,2-Dibromoethane (EDB) (ug/L)	1,2-Dichloroethane (ug/L)
MW-1	12/15/1992	49.80	31.26	NP	18.54	1100	27000	1700	580	700	1900	--	--	--	--	--	--	--	--
	3/15/1993	49.80	24.80	NP	25.00	580	17000	1700	1200	590	1800	--	--	--	--	--	--	--	--
	6/7/1993	49.80	25.01	NP	24.79	100	750	0.8	0.8	<0.5	<0.5	--	--	--	--	--	--	--	--
	9/23/1993	49.80	28.70	NP	21.10	770	40000	4000	500	920	3000	--	--	--	--	--	--	--	--
	12/27/1993	49.80	28.66	NP	21.14	--	27000	2000	400	940	2600	--	--	--	--	--	--	--	--
	4/5/1994	49.80	26.37	NP	23.43	--	27000	3400	930	950	2900	--	--	--	--	--	--	--	--
	7/22/1994	49.80	26.54	NP	23.26	--	1700	220	2.3	2	3.4	--	--	--	--	--	--	--	--
	10/13/1994	49.80	27.46	NP	22.34	--	1200	250	21	<0.5	3.2	--	--	--	--	--	--	--	--
	1/25/1995	49.80	20.96	NP	28.84	--	1000	420	8	13	4	--	--	--	--	--	--	--	--
	4/19/1995	49.80	19.59	NP	30.21	--	5200	420	51	230	340	--	--	--	--	--	--	--	--
	7/5/1995	49.80	19.61	NP	30.19	--	320	4.2	<0.5	<0.5	<1	--	--	--	--	--	--	--	--
	10/5/1995	49.80	24.40	NP	25.40	--	5800	1000	40	31	180	--	--	--	--	--	--	--	--
	1/12/1996	49.80	25.44	NP	24.36	--	370	<0.5	<0.5	<0.5	<1	--	--	--	--	--	--	--	--
	4/22/1996	49.80	18.02	NP	31.78	--	<50	<0.5	<1	<1	<1	--	--	--	--	--	--	--	--
	7/2/1996	49.80	19.72	NP	30.08	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	7/3/1996	49.80	NG	NG	NG	--	<250	<2.5	<5	<5	<5	--	--	--	--	--	--	--	--
	11/8/1996	49.80	19.98	NP	29.82	--	<50	<0.5	<1	<1	<1	--	--	--	--	--	--	--	--
	1/3/1997	49.80	19.49	NP	30.31	--	<50	<0.5	14	<1	<1	--	--	--	--	--	--	--	--
	4/28/1997	49.80	20.20	NP	29.60	--	<50	<0.5	<1	<1	<1	--	--	--	--	--	--	--	--
	7/1/1997	49.80	22.53	NP	27.27	--	<50	<0.5	<1	<1	<1	--	--	--	--	--	--	--	--
	10/2/1997	49.80	24.27	NP	25.53	--	<50	<0.5	<1	<1	<1	--	--	--	--	--	--	--	--
	1/9/1998	49.80	21.07	NP	28.73	--	<50	<0.5	<1	<1	<1	--	--	--	--	--	--	--	--
	5/6/1998	49.80	14.94	NP	34.86	--	60	<0.5	<1	<1	<1	--	--	--	--	--	--	--	--
	7/21/1998	49.80	15.11	NP	34.69	--	70	<0.5	<1	<1	<1	--	--	--	--	--	--	--	--
	12/30/1998	49.80	19.95	NP	29.85	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	2/2/1999	49.80	19.12	NP	30.68	--	420	<1	<1	<1	<1	--	--	--	--	--	--	--	--
	5/10/1999	49.80	15.51	NP	34.29	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	9/23/1999	49.80	21.65	NP	28.15	--	440	49	<1	<1	<1	--	--	--	--	--	--	--	--
	12/23/1999	49.80	22.32	NP	27.48	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	3/27/2000	49.80	15.72	NP	34.08	--	2500	230	3	83	36	--	--	--	--	--	--	--	--
	5/22/2000	49.80	16.92	NP	32.88	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	8/31/2000	49.80	20.12	NP	29.68	--	1700	18	5.5	7.9	5	--	--	--	--	--	--	--	--
	12/11/2000	49.80	20.72	NP	29.08	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	3/20/2001	49.80	15.91	NP	33.89	--	880	38.2	<0.5	24.1	<1.5	--	--	--	--	--	--	--	--
	6/19/2001	49.80	18.38	NP	31.42	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	9/20/2001	49.80	21.23	NP	28.57	--	3200	400	19.8	42	32.5	--	--	--	--	--	--	--	--
	12/27/2001	49.80	16.72	NP	33.08	--	750	70.1	0.536	4.74	3.76	--	--	--	--	--	--	--	--
	2/28/2002	49.80	15.25	NP	34.55	--	<50	<0.5	<0.5	<0.5	<1	--	--	--	--	--	--	--	--
	6/28/2002	49.80	16.57	NP	33.23	--	110	0.977	<0.5	0.818	<1	--	--	--	--	--	--	--	--
	9/12/2002	49.80	18.41	NP	31.39	--	98	2.7	1.5	1.5	5.4	--	--	--	--	--	--	--	--
	12/12/2002	49.80	20.26	NP	29.54	--	210	1.9	<0.5	<0.5	<0.5	--	--	--	--	--	--	--	--
	3/10/2003	49.80	16.22	NP	33.58	--	<50	<0.5	<0.5	<0.5	<0.5	--	--	--	--	--	--	--	--
	5/12/2003	49.80	14.30	NP	35.50	--	<50	<0.5	<0.5	<0.5	<0.5	--	--	--	--	--	--	--	--
	8/27/2003	49.80	18.15	NP	31.65	--	<50	<0.5	<0.5	<0.5	<0.5	--	<0.5	<0.5	<0.5	<20	<100	--	--
	11/10/2003	49.80	19.24	NP	30.56	--	<50	<0.5	<0.5	<0.5	<0.5	--	<0.5	<0.5	<0.5	<20	<100	--	--
	2/3/2004	49.80	14.84	NP	34.96	--	<50	<0.5	<0.5	<0.5	<0.5	--	<0.5	<0.5	<0.5	<20	<100	<0.5	<0.5
	5/4/2004	49.80	14.67	NP	35.13	--	<50	<0.5	<0.5	<0.5	<0.5	--	<0.5	<0.5	<0.5	<20	<100	<0.5	<0.5

TABLE 5
HISTORICAL GROUNDWATER GAUGING AND ANALYTICAL DATA
76 (Former BP) Service Station No. 2611117
7210 BANCROFT AVE
OAKLAND, CALIFORNIA

Well I.D.	Date	GROUNDWATER GAUGING DATA				GROUNDWATER ANALYTICAL DATA													
		TOC Elevation (ft)	Depth to Water (ft)	LNAPL Thickness (ft)	Water Elevation* (ft)	DRO (ug/L)	GRO (ug/L)	Benzene (ug/L)	Toluene (ug/L)	Ethylbenzene (ug/L)	Total Xylenes (ug/L)	MTBE (ug/L)	DIPE (ug/L)	ETBE (ug/L)	TAME (ug/L)	TBA (ug/L)	Ethanol (ug/L)	1,2-Dibromoethane (EDB) (ug/L)	1,2-Dichloroethane (ug/L)
MW-1	8/31/2004	49.80	17.75	NP	32.05	--	<50	<0.5	<0.5	<0.5	<0.5	--	<0.5	<0.5	<0.5	<20	<100	<0.5	<0.5
	11/23/2004	49.80	16.03	NP	33.77	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	1/18/2005	49.80	12.47	NP	37.33	--	<50	<0.5	<0.5	<0.5	<0.5	--	<0.5	<0.5	<0.5	<20	<100	<0.5	<0.5
	6/29/2005	49.80	12.65	NP	37.15	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	9/1/2005	49.80	15.79	NP	34.01	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	11/3/2005	49.80	18.55	NP	31.25	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	2/14/2006	49.80	12.29	NP	37.51	--	51	<0.5	<0.5	<0.5	<0.5	--	<0.5	<0.5	<0.5	<20	<300	<0.5	<0.5
	5/30/2006	49.80	12.15	NP	37.65	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	8/29/2006	49.80	16.37	NP	33.43	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	11/29/2006	49.80	18.73	NP	31.07	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	2/20/2007	49.80	14.71	NP	35.09	--	110	<0.5	<0.5	0.58	<0.5	--	--	--	--	--	--	--	--
	5/25/2007	49.80	15.59	NP	34.21	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	8/9/2007	49.80	18.38	NP	31.42	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	11/9/2007	49.80	20.00	NP	29.80	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	12/14/2007	37.41	19.83	NP	17.58	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	2/12/2008	37.41	14.00	NP	23.41	--	100	<0.5	<0.5	0.55	<0.5	--	--	--	--	--	--	--	--
	5/22/2008	37.41	16.31	NP	21.10	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	8/25/2008	37.41	19.20	NP	18.21	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	12/17/2008	37.41	NG	NG	NG	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	2/25/2009	37.41	16.30	NP	21.11	--	370	<0.50	<0.50	0.79	<0.50	<0.50	--	--	--	--	--	--	--
	5/21/2009	37.41	15.97	NP	21.44	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	8/14/2009	37.41	19.30	NP	18.11	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	2/10/2010	37.41	14.37	NP	23.04	--	<50.0	<0.50	<0.50	<0.50	<1.5	<0.50	<0.50	<0.50	<0.50	<5.0	<250	<1.0	<1.0
	8/20/2010	37.41	15.72	NP	21.69	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	2/7/2011	37.41	14.02	NP	23.39	--	<50.0	<0.50	<0.50	<0.50	<1.5	<0.50	<0.50	<0.50	<0.50	<5.0	<250	<1.0	<1.0
	8/15/2011	37.41	15.40	NP	22.01	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	2/20/2012	43.14	17.10	NP	26.04	--	<50.0	<0.50	<0.50	<0.50	<1.5	<0.50	<0.50	<0.50	<0.50	<5.0	<250	<1.0	<1.0
MW-2	1/5/1992	49.95	NG	NG	NG	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	1/10/1992	49.95	NG	NG	NG	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	6/5/1992	49.95	30.05	NP	19.90	--	11000	2000	180	490	1900	--	--	--	--	--	--	--	--
	7/24/1992	49.95	30.72	NP	19.23	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	7/27/1992	49.95	30.52	NP	19.43	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	9/15/1992	49.95	31.56	NP	18.39	3200	75000	2000	6500	2300	13000	--	--	--	--	--	--	--	--
	12/15/1992	49.95	32.40	NP	17.55	1600	34000	6200	8900	2000	7900	--	--	--	--	--	--	--	--
	3/15/1993	49.95	26.14	NP	23.81	8400	150000	12000	18000	3200	22000	--	--	--	--	--	--	--	--
	6/7/1993	49.95	26.38	NP	23.57	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	9/23/1993	49.95	31.43	1.92	19.96	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	12/27/1993	49.95	34.07	1.07	16.68	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	4/5/1994	49.95	30.44	3.30	21.99	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	7/22/1994	49.95	28.51	0.80	22.04	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	10/13/1994	49.95	29.33	0.70	21.15	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	1/25/1995	49.95	25.55	4.25	27.59	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	4/19/1995	49.95	19.78	0.12	30.26	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	7/5/1995	49.95	20.88	0.09	29.14	--	140000	14000	30000	3500	26000	--	--	--	--	--	--	--	--
	10/5/1995	49.95	24.68	0.10	25.35	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	1/12/1996	49.95	25.72	0.06	24.28	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	4/22/1996	49.95	19.33	0.08	30.68	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	7/2/1996	49.95	20.01	0.04	29.97	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS

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76 (Former BP) Service Station No. 2611117
7210 BANCROFT AVE
OAKLAND, CALIFORNIA

Well I.D.	Date	GROUNDWATER GAUGING DATA				GROUNDWATER ANALYTICAL DATA													
		TOC Elevation (ft)	Depth to Water (ft)	LNAPL Thickness (ft)	Water Elevation* (ft)	DRO (ug/L)	GRO (ug/L)	Benzene (ug/L)	Toluene (ug/L)	Ethylbenzene (ug/L)	Total Xylenes (ug/L)	MTBE (ug/L)	DIPE (ug/L)	ETBE (ug/L)	TAME (ug/L)	TBA (ug/L)	Ethanol (ug/L)	1,2-Dibromoethane (EDB) (ug/L)	1,2-Dichloroethane (ug/L)
MW-2	11/8/1996	49.95	20.28	0.01	29.68	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	1/3/1997	49.95	19.87	0.02	30.10	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	4/28/1997	49.95	20.59	0.01	29.37	--	560000	1200	1300	290	2310	--	--	--	--	--	--	--	--
	7/1/1997	49.95	22.90	0.01	27.06	--	24000	15000	16000	4900	24400	--	--	--	--	--	--	--	--
	10/2/1997	49.95	24.65	0.02	25.32	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	10/3/1997	49.95	NG	NG	NG	--	250000	32000	39000	6000	42000	--	--	--	--	--	--	--	--
	1/9/1998	49.95	21.22	0.01	28.74	--	420000	23000	29000	5800	43000	--	--	--	--	--	--	--	--
	2/2/1998	49.95	20.11	NP	29.84	--	410000	27000	43000	6700	50000	--	--	--	--	--	--	--	--
	5/6/1998	49.95	15.10	0.01	34.86	--	180000	25000	26000	3400	22900	--	--	--	--	--	--	--	--
	7/21/1998	49.95	15.31	0.01	34.65	--	270000	21000	20000	2700	18800	--	--	--	--	--	--	--	--
	12/30/1998	49.95	21.10	0.10	28.93	--	300000	22000	24000	4200	26000	95000	--	--	--	--	--	--	--
	5/10/1999	49.95	16.68	NP	33.27	--	220000	20000	20000	2800	20000	--	--	--	--	--	--	--	--
	9/23/1999	49.95	22.50	NP	27.45	--	160000	21000	24000	2900	20000	--	--	--	--	--	--	--	--
	12/23/1999	49.95	22.64	NP	27.31	--	170000	25000	41000	3100	24000	--	--	--	--	--	--	--	--
	3/27/2000	49.95	16.88	NP	33.07	--	140000	15000	25000	3400	21000	--	--	--	--	--	--	--	--
	5/22/2000	49.95	17.75	NP	32.20	--	150000	18000	31000	3500	22000	--	--	--	--	--	--	--	--
	8/31/2000	49.95	21.97	NP	27.98	--	200000	16000	26000	2500	16000	--	--	--	--	--	--	--	--
	12/11/2000	49.95	22.05	NP	27.90	--	130000	18600	30000	3250	20600	--	--	--	--	--	--	--	--
	3/20/2001	49.95	17.75	NP	32.20	--	140000	15900	24800	3700	22100	--	--	--	--	--	--	--	--
	6/19/2001	49.95	20.15	NP	29.80	--	130000	15100	19500	3300	21400	--	--	--	--	--	--	--	--
	9/20/2001	49.95	22.14	NP	27.81	--	110000	12400	12600	2230	13000	--	--	--	--	--	--	--	--
	12/27/2001	49.95	18.17	NP	31.78	--	150000	17500	26000	3050	19500	--	--	--	--	--	--	--	--
	2/28/2002	49.95	17.42	NP	32.53	--	120000	13900	18800	3030	19600	--	--	--	--	--	--	--	--
	6/28/2002	49.95	17.04	NP	32.91	--	3700	190	23.3	139	287	--	--	--	--	--	--	--	--
	9/12/2002	49.95	19.52	NP	30.43	--	100000	13000	22000	3600	20000	--	--	--	--	--	--	--	--
	12/12/2002	49.95	21.08	NP	28.87	--	120000	13000	21000	4400	25000	--	--	--	--	--	--	--	--
	3/10/2003	49.95	17.84	NP	32.11	--	100000	17000	21000	3400	20000	--	--	--	--	--	--	--	--
	5/12/2003	49.95	16.66	NP	33.29	--	150000	16000	24000	3500	22000	--	--	--	--	--	--	--	--
	8/27/2003	49.95	19.65	NP	30.30	--	120000	14000	12000	3900	20000	--	<120	<120	140	<5000	<25000	--	--
	11/10/2003	49.95	20.80	NP	29.15	--	97000	12000	9500	3600	15000	--	<250	<250	<250	<10000	<50000	--	--
	2/3/2004	49.95	16.82	NP	33.13	--	130000	14000	19000	3400	20000	--	--	--	--	--	--	--	--
	5/4/2004	49.95	16.19	NP	33.76	--	120000	12000	16000	3700	22000	--	<250	<250	<250	<10000	<50000	<250	<250
	8/31/2004	49.95	19.50	NP	30.45	--	99000	10000	13000	3700	18000	--	--	--	--	--	--	--	--
	11/23/2004	49.95	18.20	NP	31.75	--	110000	8200	17000	4000	23000	--	<250	<250	<250	<10000	<50000	<250	<250
	1/18/2005	49.95	14.91	NP	35.04	--	96000	6500	14000	3500	21000	--	<100	<100	<100	<4000	<20000	<100	<100
	6/29/2005	49.95	13.98	NP	35.97	--	54000	6200	4900	3300	12000	--	--	--	--	--	--	--	--
	9/1/2005	49.95	17.00	NP	32.95	--	58000	6300	6000	3300	15000	--	<100	<100	100	<4000	<20000	<100	<100
	11/3/2005	49.95	20.25	NP	29.70	--	63000	7400	3700	3300	10000	--	<100	<100	100	<4000	<20000	<100	<100
	2/14/2006	49.95	13.72	NP	36.23	--	97000	7500	11000	4300	16000	--	<100	<100	<100	<4000	<60000	<100	<100
	5/30/2006	49.95	13.50	NP	36.45	--	28000	5200	2500	1500	3300	--	<100	<100	<100	<4000	<60000	<100	<100
	8/29/2006	49.95	18.16	NP	31.79	--	65000	7200	4500	3200	11000	--	<100	<100	100	<4000	<60000	<100	<100
	11/29/2006	49.95	20.06	NP	29.89	--	46000	8500	4600	3300	10000	--	<120	<120	120	<5000	<75000	<120	<120
	2/20/2007	49.95	16.43	NP	33.52	--	78000	9700	12000	4100	16000	--	<100	<100	<100	<4000	<60000	<100	<100
	5/25/2007	49.95	16.80	NP	33.15	--	62000	7400	9500	4100	15000	--	<200	<200	<200	<8000	<120000	<200	<200
	8/9/2007	49.95	19.55	NP	30.40	--	58000	7400	5000	3800	12000	--	<100	<100	<100	<4000	<60000	<100	<100
	11/9/2007	49.95	21.53	NP	28.42	--	49000	6300	3300	2900	8300	--	<100	<100	<100	<4000	<60000	<100	<100
MW-3	1/5/1992	43.27	33.69	NP	9.58	4000	7400	790	23	210	40	--	--	--	--	--	--	--	--
	1/10/1992	43.27	33.74	NP	9.53	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS

TABLE 5
HISTORICAL GROUNDWATER GAUGING AND ANALYTICAL DATA
76 (Former BP) Service Station No. 2611117
7210 BANCROFT AVE
OAKLAND, CALIFORNIA

Well I.D.	Date	GROUNDWATER GAUGING DATA				GROUNDWATER ANALYTICAL DATA													
		TOC Elevation (ft)	Depth to Water (ft)	LNAPL Thickness (ft)	Water Elevation* (ft)	DRO (ug/L)	GRO (ug/L)	Benzene (ug/L)	Toluene (ug/L)	Ethylbenzene (ug/L)	Total Xylenes (ug/L)	MTBE (ug/L)	DIPE (ug/L)	ETBE (ug/L)	TAME (ug/L)	TBA (ug/L)	Ethanol (ug/L)	1,2-Dibromoethane (EDB) (ug/L)	1,2-Dichloroethane (ug/L)
MW-3	6/5/1992	43.27	29.65	NP	13.62	--	0	130	5.3	93	20	--	--	--	--	--	--	--	--
	7/24/1992	43.27	30.14	NP	13.13	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	7/27/1992	43.27	30.14	NP	13.13	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	9/15/1992	43.27	31.07	NP	12.20	<50	450	55	3.1	34	7.1	--	--	--	--	--	--	--	--
	12/15/1992	43.27	31.93	NP	11.34	710	12000	940	<50	310	120	--	--	--	--	--	--	--	--
	3/15/1993	43.27	25.71	NP	17.56	60	<50	<0.5	<0.5	<0.5	<0.5	--	--	--	--	--	--	--	--
	6/7/1993	43.27	25.80	NP	17.47	<50	150	3.6	<0.5	0.9	1.3	--	--	--	--	--	--	--	--
	9/23/1993	43.27	29.18	NP	14.09	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	9/24/1993	43.27	NG	NG	NG	<50	160	8.4	<0.5	3.7	1.3	--	--	--	--	--	--	--	--
	12/27/1993	43.27	29.25	NP	14.02	--	9400	1100	48	530	120	--	--	--	--	--	--	--	--
	4/5/1994	43.27	26.84	NP	16.43	--	7000	860	19	330	52	--	--	--	--	--	--	--	--
	7/22/1994	43.27	26.90	NP	16.37	--	<50	<0.5	<0.5	<0.5	<0.5	--	--	--	--	--	--	--	--
	10/13/1994	43.27	27.83	NP	15.44	--	<50	<0.5	<0.5	<0.5	<0.5	--	--	--	--	--	--	--	--
	1/25/1995	51.40	21.65	NP	29.75	--	<50	<0.5	<0.5	<0.5	<1	--	--	--	--	--	--	--	--
	4/19/1995	51.40	19.33	NP	32.07	--	2400	170	8	130	27	--	--	--	--	--	--	--	--
	7/5/1995	51.40	20.27	NP	31.13	--	<50	<0.5	<0.5	<0.5	<1	--	--	--	--	--	--	--	--
	10/5/1995	51.40	23.73	NP	27.67	--	2300	210	3.1	10	5.1	--	--	--	--	--	--	--	--
	1/12/1996	51.40	24.84	NP	26.56	--	<50	<0.5	<0.5	<0.5	<1	--	--	--	--	--	--	--	--
	4/22/1996	51.40	18.60	NP	32.80	--	<50	<0.5	<1	<1	<1	--	--	--	--	--	--	--	--
	7/2/1996	51.40	18.88	NP	32.52	--	<50	<0.5	<1	<1	<1	--	--	--	--	--	--	--	--
	11/8/1996	51.40	19.14	NP	32.26	--	<50	<0.5	<1	<1	<1	--	--	--	--	--	--	--	--
	1/3/1997	51.40	18.72	NP	32.68	--	<50	<0.5	<1	<1	<1	--	--	--	--	--	--	--	--
	4/28/1997	51.40	19.38	NP	32.02	--	<50	<0.5	<1	<1	<1	--	--	--	--	--	--	--	--
	7/1/1997	51.40	21.65	NP	29.75	--	<50	<0.5	<1	<1	<1	--	--	--	--	--	--	--	--
	10/2/1997	51.40	23.45	NP	27.95	--	<50	<0.5	<1	<1	<1	--	--	--	--	--	--	--	--
	1/9/1998	51.40	20.10	NP	31.30	--	<50	<0.5	<1	<1	<1	--	--	--	--	--	--	--	--
	5/6/1998	51.40	15.57	NP	35.83	--	<50	<0.5	<1	<1	<1	--	--	--	--	--	--	--	--
	7/21/1998	51.40	15.88	NP	35.52	--	51	<0.5	<1	<1	<1	--	--	--	--	--	--	--	--
	12/30/1998	51.40	20.30	NP	31.10	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	2/2/1999	51.40	19.75	NP	31.65	--	<50	<1	<1	<1	<1	--	--	--	--	--	--	--	--
	5/10/1999	51.40	16.17	NP	35.23	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	9/23/1999	51.40	22.05	NP	29.35	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	12/23/1999	51.40	22.55	NP	28.85	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	3/27/2000	51.40	16.40	NP	35.00	--	350	22	<0.5	<0.5	<0.5	--	--	--	--	--	--	--	--
	5/22/2000	51.40	9.49	NP	41.91	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	8/31/2000	51.40	13.02	NP	38.38	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	12/11/2000	51.40	13.30	NP	38.10	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	3/20/2001	51.40	16.49	NP	34.91	--	1000	66.4	0.597	6.96	<1.5	--	--	--	--	--	--	--	--
	6/19/2001	51.40	18.82	NP	32.58	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	9/20/2001	51.40	21.59	NP	29.81	--	230	<0.5	0.593	<0.5	<1.5	--	--	--	--	--	--	--	--
	12/27/2001	51.40	17.37	NP	34.03	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	2/28/2002	51.40	15.81	NP	35.59	--	<50	<0.5	<0.5	<0.5	<1	--	--	--	--	--	--	--	--
	6/28/2002	51.40	17.09	NP	34.31	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	9/12/2002	51.40	18.80	NP	32.60	--	52	3.3	8.6	1.7	12	--	--	--	--	--	--	--	--
	12/12/2002	51.40	20.57	NP	30.83	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	3/10/2003	51.40	16.68	NP	34.72	--	<50	<0.5	<0.5	<0.5	<0.5	--	--	--	--	--	--	--	--
	5/12/2003	51.40	14.72	NP	36.68	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	8/27/2003	51.40	18.50	NP	32.90	--	<50	<0.5	<0.5	<0.5	0.5	--	<0.5	<0.5	<0.5	<20	<100	--	--

TABLE 5
HISTORICAL GROUNDWATER GAUGING AND ANALYTICAL DATA
76 (Former BP) Service Station No. 2611117
7210 BANCROFT AVE
OAKLAND, CALIFORNIA

Well I.D.	Date	GROUNDWATER GAUGING DATA				GROUNDWATER ANALYTICAL DATA													
		TOC Elevation (ft)	Depth to Water (ft)	LNAPL Thickness (ft)	Water Elevation* (ft)	DRO (ug/L)	GRO (ug/L)	Benzene (ug/L)	Toluene (ug/L)	Ethylbenzene (ug/L)	Total Xylenes (ug/L)	MTBE (ug/L)	DIPE (ug/L)	ETBE (ug/L)	TAME (ug/L)	TBA (ug/L)	Ethanol (ug/L)	1,2-Dibromoethane (EDB) (ug/L)	1,2-Dichloroethane (ug/L)
MW-3	11/10/2003	51.40	19.66	NP	31.74	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	2/3/2004	51.40	15.33	NP	36.07	--	<50	<0.5	<0.5	<0.5	<0.5	--	<0.5	<0.5	<0.5	<20	<100	<0.5	<0.5
	8/31/2004	51.40	18.13	NP	33.27	--	<50	<0.5	<0.5	<0.5	<0.5	--	<0.5	<0.5	<0.5	<20	<100	<0.5	<0.5
	11/23/2004	51.40	16.48	NP	34.92	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	1/18/2005	51.40	13.06	NP	38.34	--	<50	<0.5	<0.5	<0.5	<0.5	--	<0.5	<0.5	<0.5	<20	<100	<0.5	<0.5
	6/29/2005	51.40	13.00	NP	38.40	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	9/1/2005	51.40	16.00	NP	35.40	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	11/3/2005	51.40	18.91	NP	32.49	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	2/14/2006	51.40	12.90	NP	38.50	--	86	<0.5	<0.5	<0.5	0.55	--	<0.5	<0.5	<0.5	<20	<300	<0.5	<0.5
	5/30/2006	51.40	12.55	NP	38.85	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	8/29/2006	51.40	16.68	NP	34.72	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	11/29/2006	51.40	19.10	NP	32.30	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	2/20/2007	51.40	15.29	NP	36.11	--	56	<0.5	<0.5	<0.5	<0.5	--	<0.5	<0.5	<0.5	<20	<300	<0.5	<0.5
	5/25/2007	51.40	15.94	NP	35.46	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	8/9/2007	51.40	18.70	NP	32.70	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	11/9/2007	51.40	20.27	NP	31.13	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	12/14/2007	37.56	20.21	NP	17.35	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	2/11/2008	37.56	14.68	NP	22.88	--	<50	<0.5	<0.5	<0.5	<0.5	--	<0.5	<0.5	<0.5	<10	<100	<0.5	<0.5
	5/22/2008	37.56	16.64	NP	20.92	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	8/25/2008	37.56	19.40	NP	18.16	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	12/17/2008	37.56	22.13	NP	15.43	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	2/25/2009	37.56	16.81	NP	20.75	--	71	<0.50	<0.50	<0.50	<0.50	<0.50	--	--	--	--	--	--	--
	5/21/2009	37.56	16.40	NP	21.16	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	8/14/2009	37.56	19.60	NP	17.96	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	2/10/2010	37.56	14.81	NP	22.75	--	<50.0	<0.50	<0.50	<0.50	<1.5	<0.50	<0.50	<0.50	<0.50	<5.0	<250	<1.0	<1.0
	8/20/2010	37.56	16.80	NP	20.76	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	2/7/2011	37.56	14.39	NP	23.17	--	<50.0	<0.50	<0.50	<0.50	<1.5	<0.50	<0.50	<0.50	<0.50	<5.0	<250	<1.0	<1.0
	8/15/2011	37.56	15.56	NP	22.00	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	2/20/2012	43.27	17.41	NP	25.86	--	<50.0	<0.50	<0.50	<0.50	<1.5	<0.50	<0.50	<0.50	<0.50	<5.0	<250	<1.0	<1.0
MW-4	7/24/1992	43.64	30.02	NP	13.62	--	42000	3200	3600	1400	4100	--	--	--	--	--	--	--	--
	7/27/1992	43.64	30.02	NP	13.62	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	9/15/1992	43.64	31.14	NP	12.50	1700	55000	7600	13000	2800	9500	--	--	--	--	--	--	--	--
	12/15/1992	43.64	31.98	NP	11.66	2200	36000	3700	4700	1200	4000	--	--	--	--	--	--	--	--
	3/15/1993	43.64	25.34	NP	18.30	1200	69000	7600	15000	2500	11000	--	--	--	--	--	--	--	--
	6/7/1993	43.64	25.67	NP	17.97	2500	73000	10000	19000	3400	14000	--	--	--	--	--	--	--	--
	9/23/1993	43.64	29.37	NP	14.27	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	9/24/1993	43.64	NG	NG	NG	5700	68000	11000	2100	8600	990	--	--	--	--	--	--	--	--
	12/27/1993	43.64	29.40	NP	14.24	--	32000	2500	4400	1300	4400	--	--	--	--	--	--	--	--
	4/5/1994	43.64	27.09	NP	16.55	--	64000	6500	14000	1900	9600	--	--	--	--	--	--	--	--
	7/22/1994	43.64	27.33	NP	16.31	--	85000	10000	20000	3200	13000	--	--	--	--	--	--	--	--
	10/13/1994	43.64	28.25	NP	15.39	--	51000	7100	13000	2100	8900	--	--	--	--	--	--	--	--
	1/25/1995	50.88	21.85	NP	29.03	--	26000	3600	9600	1200	6400	--	--	--	--	--	--	--	--
	4/19/1995	50.88	19.44	NP	31.44	--	89000	12000	24000	3500	18000	--	--	--	--	--	--	--	--
	7/5/1995	50.88	20.52	NP	30.36	--	130000	13000	29000	3300	25000	--	--	--	--	--	--	--	--
	10/5/1995	50.88	24.23	NP	26.65	--	110000	10000	23000	3600	17000	--	--	--	--	--	--	--	--
	1/12/1996	50.88	25.34	NP	25.54	--	46000	3500	8300	1100	8000	--	--	--	--	--	--	--	--
	4/22/1996	50.88	19.13	NP	31.75	--	40000	5100	9600	980	11800	--	--	--	--	--	--	--	--
	7/2/1996	50.88	20.67	NP	30.21	--	74000	9800	21000	2100	16600	--	--	--	--	--	--	--	--

TABLE 5
HISTORICAL GROUNDWATER GAUGING AND ANALYTICAL DATA
76 (Former BP) Service Station No. 2611117
7210 BANCROFT AVE
OAKLAND, CALIFORNIA

Well I.D.	Date	GROUNDWATER GAUGING DATA				GROUNDWATER ANALYTICAL DATA													
		TOC Elevation (ft)	Depth to Water (ft)	LNAPL Thickness (ft)	Water Elevation* (ft)	DRO (ug/L)	GRO (ug/L)	Benzene (ug/L)	Toluene (ug/L)	Ethylbenzene (ug/L)	Total Xylenes (ug/L)	MTBE (ug/L)	DIPE (ug/L)	ETBE (ug/L)	TAME (ug/L)	TBA (ug/L)	Ethanol (ug/L)	1,2-Dibromoethane (EDB) (ug/L)	1,2-Dichloroethane (ug/L)
MW-4	11/8/1996	50.88	20.95	NP	29.93	--	100000	7900	16000	2500	13700	--	--	--	--	--	--	--	--
	1/3/1997	50.88	20.54	NP	30.34	--	99000	17000	30000	4300	22700	--	--	--	--	--	--	--	--
	4/28/1997	50.88	21.28	NP	29.60	--	130000	12000	28000	3800	21000	--	--	--	--	--	--	--	--
	7/1/1997	50.88	23.61	NP	27.27	--	110000	16000	25000	4900	24400	--	--	--	--	--	--	--	--
	10/2/1997	50.88	25.39	NP	25.49	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	10/3/1997	50.88	NG	NG	NG	--	66000	8200	8600	2700	13400	--	--	--	--	--	--	--	--
	1/9/1998	50.88	21.25	NP	29.63	--	100000	9700	3200	1500	4700	--	--	--	--	--	--	--	--
	5/6/1998	50.88	15.96	NP	34.92	--	430000	6900	31000	11000	56000	--	--	--	--	--	--	--	--
	7/21/1998	50.88	16.10	NP	34.78	--	250000	11000	26000	5500	26900	--	--	--	--	--	--	--	--
	12/30/1998	50.88	20.91	NP	29.97	--	370000	11000	22000	8500	40000	92000	--	--	--	--	--	--	--
	2/2/1999	50.88	20.13	NP	30.75	--	190000	4100	19000	4800	32000	--	--	--	--	--	--	--	--
	5/10/1999	50.88	16.63	NP	34.25	--	2700	23	7.1	8.1	25	--	--	--	--	--	--	--	--
	9/23/1999	50.88	22.48	NP	28.40	--	180000	11000	29000	7000	38000	--	--	--	--	--	--	--	--
	12/23/1999	50.88	22.94	NP	27.94	--	66000	6300	5200	2200	7800	--	--	--	--	--	--	--	--
	3/27/2000	50.88	16.84	NP	34.04	--	120000	8700	12000	3800	16000	--	--	--	--	--	--	--	--
	5/22/2000	50.88	17.85	NP	33.03	--	110000	7600	16000	4400	20000	--	--	--	--	--	--	--	--
	8/31/2000	50.88	21.71	NP	29.17	--	110000	8800	7600	3400	14000	--	--	--	--	--	--	--	--
	12/11/2000	50.88	22.05	NP	28.83	--	70000	4580	3480	2550	9220	--	--	--	--	--	--	--	--
	3/20/2001	50.88	17.68	NP	33.20	--	100000	7100	4530	2540	9370	--	--	--	--	--	--	--	--
	6/19/2001	50.88	19.40	NP	31.48	--	180000	7430	14600	5400	25300	--	--	--	--	--	--	--	--
	9/20/2001	50.88	22.01	0.03	28.89	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	12/27/2001	50.88	17.96	NP	32.92	--	120000	6880	9030	2840	14600	--	--	--	--	--	--	--	--
	2/28/2002	50.88	17.06	NP	33.82	--	80000	4920	5450	2220	12300	--	--	--	--	--	--	--	--
	6/28/2002	50.88	17.76	NP	33.12	--	48000	2780	2770	1530	6790	--	--	--	--	--	--	--	--
	9/12/2002	50.88	19.45	NP	31.43	--	46000	4500	6800	2600	10000	--	--	--	--	--	--	--	--
	12/12/2002	50.88	21.29	NP	29.59	--	36000	5200	3400	2000	6500	--	--	--	--	--	--	--	--
	3/10/2003	50.88	17.16	NP	33.72	--	70000	7000	4800	3300	13000	--	--	--	--	--	--	--	--
	5/12/2003	50.88	14.51	NP	36.37	--	75000	7600	3700	3400	13000	--	--	--	--	--	--	--	--
	8/27/2003	50.88	19.32	NP	31.56	--	77000	7500	1300	2100	4000	--	<250	<250	250	<10000	<50000	--	--
	11/10/2003	50.88	20.36	NP	30.52	--	110000	7100	3100	2100	5800	--	<500	<500	<500	<20000	<100000	--	--
	2/3/2004	50.88	16.51	NP	34.37	--	160000	8400	9700	5000	23000	--	<500	<500	<500	<20000	<100000	<500	<500
	5/4/2004	50.88	16.47	NP	34.41	--	110000	8100	7500	4300	17000	--	<250	<250	<250	<10000	<50000	<250	<250
	8/31/2004	50.88	19.16	NP	31.72	--	91000	6600	8400	3700	14000	--	<250	<250	<250	<10000	<50000	<250	<250
	11/23/2004	50.88	18.02	NP	32.86	--	7400000	20000	150000	320000	1400000	--	<2500	<2500	<2500	<100000	<500000	<2500	<2500
	1/18/2005	50.88	14.21	NP	36.67	--	170000	5400	14000	6900	33000	--	<250	<250	<250	<10000	<50000	<250	<250
	6/29/2005	50.88	13.86	NP	37.02	--	640000	3500	25000	24000	110000	--	<250	<250	<250	<10000	<50000	<250	<250
	9/1/2005	50.88	16.89	NP	33.99	--	100000	3800	11000	4900	33000	--	<500	<500	<500	<20000	<100000	<500	<500
	11/3/2005	50.88	19.33	NP	31.55	--	490000	4700	11000	10000	49000	--	<500	<500	<500	<20000	<100000	<500	<500
	2/14/2006	50.88	13.55	NP	37.33	--	970000	60000	7000	36000	140000	--	<500	<500	1000	<20000	<300000	<500	<500
	5/30/2006	50.88	13.52	NP	37.36	--	140000	3000	6600	6200	29000	--	<500	<500	<500	<20000	<300000	<500	<500
	8/29/2006	50.88	17.52	NP	33.36	--	52000	4700	2500	3500	12000	--	<500	<500	<500	<20000	<300000	<500	<500
	11/29/2006	50.88	19.93	0.11	31.03	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	2/20/2007	50.88	16.14	NP	34.74	--	68000	8400	2600	4100	13000	--	<250	<250	<250	<10000	<150000	<250	<250
	5/25/2007	50.88	16.65	NP	34.23	--	37000	5100	1200	2800	6900	--	<200	<200	<200	<8000	<120000	<200	<200
	8/9/2007	50.88	19.29	NP	31.59	--	180000	5600	7700	5700	21000	--	<100	<100	<100	4100	<60000	<100	<100
	11/9/2007	50.88	21.27	NP	29.61	--	110000	3300	2400	3600	13000	--	<100	<100	<100	5700	<60000	<100	<100
	12/14/2007	38.35	21.10	NP	17.25	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	2/11/2008	38.35	15.45	0.01	22.91	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS

TABLE 5
HISTORICAL GROUNDWATER GAUGING AND ANALYTICAL DATA
76 (Former BP) Service Station No. 2611117
7210 BANCROFT AVE
OAKLAND, CALIFORNIA

Well I.D.	Date	GROUNDWATER GAUGING DATA				GROUNDWATER ANALYTICAL DATA													
		TOC Elevation (ft)	Depth to Water (ft)	LNAPL Thickness (ft)	Water Elevation* (ft)	DRO (ug/L)	GRO (ug/L)	Benzene (ug/L)	Toluene (ug/L)	Ethylbenzene (ug/L)	Total Xylenes (ug/L)	MTBE (ug/L)	DIPE (ug/L)	ETBE (ug/L)	TAME (ug/L)	TBA (ug/L)	Ethanol (ug/L)	1,2-Dibromoethane (EDB) (ug/L)	1,2-Dichloroethane (ug/L)
MW-4	5/22/2008	38.35	17.44	NP	20.91	--	48000	4500	880	1400	5000	--	<100	<100	<100	6600	<60000	<100	<100
	8/25/2008	38.35	20.32	0.05	18.07	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	12/17/2008	38.35	22.20	NP	16.15	--	45000	3300	520	910	3000	--	<100	<100	<100	6100	<60000	<100	<100
	2/25/2009	38.35	17.60	NP	20.75	--	39000	4600	2100	1800	6300	1300	--	--	--	--	--	--	--
	5/21/2009	38.35	17.02	NP	21.33	--	51000	3900	1100	1900	6800	3700	--	--	--	--	--	--	--
	8/14/2009	38.35	20.09	NP	18.26	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	2/10/2010	38.35	16.09	NP	22.26	--	2500	4.7	1.5	1.3	4.1	3.4	<0.50	<0.50	<0.50	248	<250	<1.0	<1.0
	8/20/2010	38.35	17.29	NP	21.06	--	3530	39.8	0.89	1.3	15.8	7.0	<0.50	<0.50	<0.50	689	<250	<1.0	<1.0
	2/7/2011	38.35	15.59	NP	22.76	--	3600	7.1	0.76	1.2	5.1	3.7	<0.50	<0.50	<0.50	210	<250	<1.0	<1.0
	8/15/2011	38.35	16.06	NP	22.29	--	87600	3430	280	2880	8500	317	<12.5	<12.5	<12.5	3410	<6250	<25.0	<25.0
	2/20/2012	43.64	17.94	NP	25.70	--	692000	4870	505	7080	29800	228	<25.0	<25.0	<25.0	4700	<12500	<50.0	115
	3/19/2012	43.64	16.42	NP	27.22	--	15200	4800	125	562	512	768	<0.50	3.2	6.0	25200	<250	<1.0	<1.0
	4/27/2012	43.64	13.52	NP	30.12	--	17000	2800	490	1500	--	370	<50	<50	<50	2900	<2500	<25	<12
	5/29/2012	43.64	15.29	NP	28.35	--	8500	4000	42	480	1090	400	<50	<50	<50	4900	<2500	<25	<12
MW-6	7/24/1992	43.64	30.63	NP	13.01	--	--	1.6	--	--	--	--	--	--	--	--	--	--	--
	7/27/1992	43.64	30.63	NP	13.01	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	9/15/1992	43.64	31.52	NP	12.12	<50	<50	<0.5	<0.5	<0.5	<0.5	--	--	--	--	--	--	--	--
	12/15/1992	43.64	32.42	NP	11.22	<50	58	1.3	<0.5	<0.5	<0.5	--	--	--	--	--	--	--	--
	3/15/1993	43.64	26.29	NP	17.35	<50	<50	<0.5	0.6	<0.5	0.7	--	--	--	--	--	--	--	--
	6/7/1993	43.64	26.33	NP	17.31	<50	<50	<0.5	<0.5	<0.5	1.5	--	--	--	--	--	--	--	--
	9/23/1993	43.64	29.64	NP	14.00	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	9/24/1993	43.64	NG	NG	NG	<50	<50	<0.5	<0.5	<0.5	<0.5	--	--	--	--	--	--	--	--
	12/27/1993	43.64	29.75	NP	13.89	--	<50	<0.5	<0.5	<0.5	<0.5	--	--	--	--	--	--	--	--
	4/5/1994	43.64	27.26	NP	16.38	--	<50	<0.5	<0.5	<0.5	<0.5	--	--	--	--	--	--	--	--
	7/22/1994	43.64	27.34	NP	16.30	--	350	<0.5	<0.5	<0.5	<0.5	--	--	--	--	--	--	--	--
	10/13/1994	43.64	NG	NG	NG	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	1/25/1995	51.05	22.16	NP	28.89	--	240	6	<0.5	<0.5	<1	--	--	--	--	--	--	--	--
	4/19/1995	51.05	NG	NG	NG	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	7/5/1995	51.05	20.80	NP	30.25	--	180	<0.5	<0.5	<0.5	<1	--	--	--	--	--	--	--	--
	10/5/1995	51.05	24.20	NP	26.85	--	860	<5	<5	<5	<10	--	--	--	--	--	--	--	--
	1/12/1996	51.05	25.30	NP	25.75	--	860	<5	<5	<5	<10	--	--	--	--	--	--	--	--
	4/22/1996	51.05	19.13	NP	31.92	--	<50	<0.5	<1	<1	<1	--	--	--	--	--	--	--	--
	7/2/1996	51.05	20.66	NP	30.39	--	100	<0.5	<1	<1	<1	--	--	--	--	--	--	--	--
	11/8/1996	51.05	20.98	NP	30.07	--	1100	<5	<10	<10	<10	--	--	--	--	--	--	--	--
	1/3/1997	51.05	20.53	NP	30.52	--	<50	<0.5	<1	<1	<1	--	--	--	--	--	--	--	--
	4/28/1997	51.05	21.25	NP	29.80	--	1400	<0.5	<1	<1	<1	--	--	--	--	--	--	--	--
	7/1/1997	51.05	23.40	NP	27.65	--	6100	<0.5	<1	<1	<1	--	--	--	--	--	--	--	--
	10/2/1997	51.05	25.16	NP	25.89	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	10/3/1997	51.05	NG	NG	NG	--	330	<0.5	<1	<1	<1	--	--	--	--	--	--	--	--
	1/9/1998	51.05	21.13	NP	29.92	--	<50	<0.5	<1	<1	<1	--	--	--	--	--	--	--	--
	5/6/1998	51.05	16.11	NP	34.94	--	410	<0.5	<1	<1	<1	--	--	--	--	--	--	--	--
	7/21/1998	51.05	16.33	NP	34.72	--	4300	<5	<10	<10	<10	--	--	--	--	--	--	--	--
	12/30/1998	51.05	20.89	NP	30.16	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	2/2/1999	51.05	20.20	NP	30.85	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	5/10/1999	51.05	16.75	NP	34.30	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	9/23/1999	51.05	22.55	NP	28.50	--	<50	<1	<1	<1	<1	--	--	--	--	--	--	--	--
	12/23/1999	51.05	23.00	NP	28.05	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	3/27/2000	51.05	16.89	NP	34.16	--	1700	4.4	0.54	<0.5	1	--	--	--	--	--	--	--	--

TABLE 5
HISTORICAL GROUNDWATER GAUGING AND ANALYTICAL DATA
76 (Former BP) Service Station No. 2611117
7210 BANCROFT AVE
OAKLAND, CALIFORNIA

Well I.D.	Date	GROUNDWATER GAUGING DATA				GROUNDWATER ANALYTICAL DATA													
		TOC Elevation (ft)	Depth to Water (ft)	LNAPL Thickness (ft)	Water Elevation* (ft)	DRO (ug/L)	GRO (ug/L)	Benzene (ug/L)	Toluene (ug/L)	Ethylbenzene (ug/L)	Total Xylenes (ug/L)	MTBE (ug/L)	DIPE (ug/L)	ETBE (ug/L)	TAME (ug/L)	TBA (ug/L)	Ethanol (ug/L)	1,2-Dibromoethane (EDB) (ug/L)	1,2-Dichloroethane (ug/L)
MW-6	5/22/2000	51.05	18.02	NP	33.03	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	8/31/2000	51.05	21.62	NP	29.43	--	1200	<0.5	<0.5	<0.5	<0.5	--	--	--	--	--	--	--	--
	12/11/2000	51.05	21.81	NP	29.24	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	3/20/2001	51.05	16.97	NP	34.08	--	3300	<0.5	<0.5	<0.5	<1.5	--	--	--	--	--	--	--	--
	6/19/2001	51.05	19.30	NP	31.75	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	9/20/2001	51.05	22.00	NP	29.05	--	2200	2.04	8.1	3.62	13.7	--	--	--	--	--	--	--	--
	12/27/2001	51.05	17.85	NP	33.20	--	830	0.59	<0.5	<0.5	<1	--	--	--	--	--	--	--	--
	2/28/2002	51.05	16.31	NP	34.74	--	1100	<0.5	<0.5	<0.5	<1	--	--	--	--	--	--	--	--
	6/28/2002	51.05	17.57	NP	33.48	--	<50	<0.5	<0.5	<0.5	<1	--	--	--	--	--	--	--	--
	9/12/2002	51.05	19.27	NP	31.78	--	190	1.9	4.6	1	7.3	--	--	--	--	--	--	--	--
	12/12/2002	51.05	20.94	NP	30.11	--	270	<2.5	<2.5	<2.5	<2.5	--	--	--	--	--	--	--	--
	3/10/2003	51.05	17.11	NP	33.94	--	110	<0.5	<0.5	<0.5	<0.5	--	--	--	--	--	--	--	--
	5/12/2003	51.05	15.18	NP	35.87	--	<50	<0.5	<0.5	<0.5	<0.5	--	--	--	--	--	--	--	--
	8/27/2003	51.05	18.90	NP	32.15	--	<50	<0.5	<0.5	<0.5	<0.5	--	<0.5	<0.5	<0.5	<20	<100	--	--
	11/10/2003	51.05	20.13	NP	30.92	--	<50	<0.5	<0.5	<0.5	<0.5	--	<0.5	<0.5	<0.5	<20	<100	--	--
	2/3/2004	51.05	15.83	NP	35.22	--	<50	<0.5	<0.5	<0.5	<0.5	--	<0.5	<0.5	<0.5	<20	<100	<0.5	<0.5
	5/4/2004	51.05	15.62	NP	35.43	--	<50	<0.5	<0.5	<0.5	<0.5	--	<0.5	<0.5	<0.5	<20	<100	<0.5	<0.5
	8/31/2004	51.05	18.56	NP	32.49	--	<50	<0.5	<0.5	<0.5	<0.5	--	<0.5	<0.5	<0.5	<20	<100	<0.5	<0.5
	11/23/2004	51.05	16.95	NP	34.10	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	1/18/2005	51.05	13.61	NP	37.44	--	<50	<0.5	<0.5	<0.5	<0.5	--	<0.5	<0.5	<0.5	<20	<100	<0.5	<0.5
	6/29/2005	51.05	13.55	NP	37.50	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	9/1/2005	51.05	16.52	NP	34.53	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	11/3/2005	51.05	19.28	NP	31.77	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	2/14/2006	51.05	NG	NG	NG	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	5/30/2006	51.05	NG	NG	NG	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	8/29/2006	51.05	17.15	NP	33.90	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	11/29/2006	51.05	19.50	NP	31.55	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	2/20/2007	51.05	15.81	NP	35.24	--	<50	<0.5	<0.5	<0.5	<0.5	--	<0.5	<0.5	<0.5	<20	<300	<0.5	<0.5
	5/25/2007	51.05	16.38	NP	34.67	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	8/9/2007	51.05	19.15	NP	31.90	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	11/9/2007	51.05	20.70	NP	30.35	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	12/14/2007	51.05	NG	NG	NG	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	2/11/2008	51.05	15.08	NP	35.97	--	<50	<0.5	<0.5	<0.5	<0.5	--	<0.5	<0.5	<0.5	<10	<100	<0.5	<0.5
	5/22/2008	51.05	17.07	NP	33.98	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	8/25/2008	51.05	19.82	NP	31.23	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	12/17/2008	51.05	21.58	NP	29.47	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	2/25/2009	51.05	17.34	NP	33.71	--	120	<0.50	<0.50	<0.50	<0.50	13	--	--	--	--	--	--	--
	5/21/2009	51.05	16.85	NP	34.20	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	8/14/2009	51.05	20.03	NP	31.02	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	2/10/2010	51.05	15.31	NP	35.74	--	<50.0	<0.50	<0.50	<0.50	<1.5	<0.50	<0.50	<0.50	<0.50	<5.0	<250	<1.0	<1.0
	8/20/2010	51.05	16.60	NP	34.45	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	2/7/2011	51.05	14.86	NP	36.19	--	<50.0	<0.50	<0.50	<0.50	<1.5	<0.50	<0.50	<0.50	<0.50	<5.0	<250	<1.0	<1.0
	8/15/2011	51.05	16.07	NP	34.98	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	2/20/2012	43.64	17.83	NP	25.81	--	<50.0	<0.50	<0.50	<0.50	<1.5	0.66	<0.50	<0.50	<0.50	<5.0	<250	<1.0	<1.0
MW-7	1/25/1995	51.40	21.67	NP	29.73	--	<50	<0.5	<0.5	<0.5	<1	--	--	--	--	--	--	--	--
	4/19/1995	51.40	25.27	NP	26.13	--	<50	<0.5	<0.5	<0.5	<1	--	--	--	--	--	--	--	--
	7/5/1995	51.40	24.63	NP	26.77	--	<50	<0.5	<0.5	<0.5	<1	--	--	--	--	--	--	--	--
	10/5/1995	51.40	28.21	NP	23.19	--	83	<0.5	<0.5	<0.5	<1	--	--	--	--	--	--	--	--

TABLE 5
HISTORICAL GROUNDWATER GAUGING AND ANALYTICAL DATA
76 (Former BP) Service Station No. 2611117
7210 BANCROFT AVE
OAKLAND, CALIFORNIA

Well I.D.	Date	GROUNDWATER GAUGING DATA				GROUNDWATER ANALYTICAL DATA													
		TOC Elevation (ft)	Depth to Water (ft)	LNAPL Thickness (ft)	Water Elevation* (ft)	DRO (ug/L)	GRO (ug/L)	Benzene (ug/L)	Toluene (ug/L)	Ethylbenzene (ug/L)	Total Xylenes (ug/L)	MTBE (ug/L)	DIPE (ug/L)	ETBE (ug/L)	TAME (ug/L)	TBA (ug/L)	Ethanol (ug/L)	1,2-Dibromoethane (EDB) (ug/L)	1,2-Dichloroethane (ug/L)
MW-7	1/12/1996	51.40	29.29	NP	22.11	--	63	<0.5	<0.5	<0.5	<1	--	--	--	--	--	--	--	--
	4/22/1996	51.40	23.11	NP	28.29	--	<50	<0.5	<1	<1	<1	--	--	--	--	--	--	--	--
	7/2/1996	51.40	23.56	NP	27.84	--	<50	<0.5	<1	<1	<1	--	--	--	--	--	--	--	--
	11/8/1996	51.40	20.06	NP	31.34	--	<50	<0.5	<1	<1	<1	--	--	--	--	--	--	--	--
	1/3/1997	51.40	23.42	NP	27.98	--	<50	<0.5	<1	<1	<1	--	--	--	--	--	--	--	--
	4/28/1997	51.40	24.12	NP	27.28	--	<50	<0.5	<1	<1	<1	--	--	--	--	--	--	--	--
	7/1/1997	51.40	26.40	NP	25.00	--	<50	<0.5	<1	<1	<1	--	--	--	--	--	--	--	--
	10/2/1997	51.40	28.14	NP	23.26	--	<50	<0.5	<1	<1	<1	--	--	--	--	--	--	--	--
	1/9/1998	51.40	24.02	NP	27.38	--	<50	<0.5	<1	<1	<1	--	--	--	--	--	--	--	--
	5/6/1998	51.40	21.00	NP	30.40	--	1900	<0.5	<1	<1	<1	--	--	--	--	--	--	--	--
	7/21/1998	51.40	21.17	NP	30.23	--	50	<0.5	<1	<1	<1	--	--	--	--	--	--	--	--
	12/30/1998	51.40	22.13	NP	29.27	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	2/2/1999	51.40	22.08	NP	29.32	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	5/10/1999	51.40	18.58	NP	32.82	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	9/23/1999	51.40	24.29	NP	27.11	--	70	<1	<1	<1	<1	--	--	--	--	--	--	--	--
	12/23/1999	51.40	24.53	NP	26.87	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	3/27/2000	51.40	18.58	NP	32.82	--	910	<0.5	<0.5	<0.5	<0.5	--	--	--	--	--	--	--	--
	5/22/2000	51.40	19.49	NP	31.91	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	8/31/2000	51.40	22.53	NP	28.87	--	440	<0.5	<0.5	<0.5	<0.5	--	--	--	--	--	--	--	--
	12/11/2000	51.40	22.75	NP	28.65	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	3/20/2001	51.40	18.79	NP	32.61	--	1100	<0.5	<0.5	<0.5	<1.5	--	--	--	--	--	--	--	--
	6/19/2001	51.40	19.82	NP	31.58	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	9/20/2001	51.40	21.35	NP	30.05	--	1300	1.21	<0.5	<0.5	<1.5	--	--	--	--	--	--	--	--
	12/27/2001	51.40	20.36	NP	31.04	--	510	<0.5	<0.5	<0.5	<1	--	--	--	--	--	--	--	--
	2/28/2002	51.40	21.86	NP	29.54	--	250	<0.5	<0.5	<0.5	<1	--	--	--	--	--	--	--	--
	6/28/2002	51.40	22.64	NP	28.76	--	<50	<0.5	<0.5	<0.5	<1	--	--	--	--	--	--	--	--
	9/12/2002	51.40	23.51	NP	27.89	--	<50	<0.5	<0.5	<0.5	1	--	--	--	--	--	--	--	--
	12/12/2002	51.40	23.75	NP	27.65	--	<50	<0.5	<0.5	<0.5	<0.5	--	--	--	--	--	--	--	--
	3/10/2003	51.40	21.25	NP	30.15	--	61	<0.5	<0.5	<0.5	<0.5	--	--	--	--	--	--	--	--
	5/12/2003	51.40	21.44	NP	29.96	--	<100	<1	<1	<1	<1	--	--	--	--	--	--	--	--
	8/27/2003	51.40	23.30	NP	28.10	--	120	<0.5	<0.5	<0.5	<0.5	--	<0.5	<0.5	<0.5	<20	<100	--	--
	11/10/2003	51.40	20.24	NP	31.16	--	230	<1	<1	<1	<1	--	<1	<1	<1	<40	<200	--	--
	2/3/2004	51.40	20.63	NP	30.77	--	<250	<2.5	<2.5	<2.5	<2.5	--	<2.5	<2.5	<2.5	<100	<500	<2.5	<2.5
	5/4/2004	51.40	21.89	NP	29.51	--	<250	<2.5	<2.5	<2.5	<2.5	--	<2.5	<2.5	<2.5	<100	<500	<2.5	<2.5
	8/31/2004	51.40	23.16	NP	28.24	--	<500	<5	<5	<5	<5	--	<5	<5	<5	<200	<1000	<5	<5
	11/23/2004	51.40	21.65	NP	29.75	--	590	<2.5	5	11	51	--	<2.5	<2.5	<2.5	<100	<500	<2.5	<2.5
	1/18/2005	51.40	16.28	NP	35.12	--	<250	<2.5	<2.5	<2.5	2.5	--	<2.5	<2.5	<2.5	<100	<500	<2.5	<2.5
	6/29/2005	51.40	14.50	NP	36.90	--	2200	43	97	92	390	--	<2.5	<2.5	<2.5	<100	<500	<2.5	<2.5
	9/1/2005	51.40	20.41	NP	30.99	--	<500	<5	<5	<5	<5	--	<5	<5	<5	<200	<1000	<5	<5
	11/3/2005	51.40	21.00	NP	30.40	--	130	<1	<1	<1	1	--	<1	<1	<1	<40	<200	<1	<1
	2/14/2006	51.40	16.31	NP	35.09	--	100	<0.5	<0.5	<0.5	0.87	--	<0.5	<0.5	<0.5	<20	<300	<0.5	<0.5
	5/30/2006	51.40	17.58	NP	33.82	--	<50	<0.5	<0.5	<0.5	<0.5	--	<0.5	<0.5	<0.5	<20	<300	<0.5	<0.5
	8/29/2006	51.40	18.64	NP	32.76	--	100	<2.5	<2.5	<2.5	<2.5	--	<2.5	<2.5	<2.5	<100	<1500	<2.5	<2.5
	11/29/2006	51.40	20.35	NP	31.05	--	84	<2.5	<2.5	<2.5	<2.5	--	<2.5	<2.5	<2.5	<100	<1500	<2.5	<2.5
	2/20/2007	51.40	17.09	NP	34.31	--	160	<2.5	<2.5	<2.5	<2.5	--	<2.5	<2.5	<2.5	<100	<1500	<2.5	<2.5
	5/25/2007	51.40	17.20	NP	34.20	--	70	<1	<1	<1	<1	--	<1	<1	<1	<40	<600	<1	<1
	8/9/2007	51.40	19.95	NP	31.45	--	<50	<0.5	<0.5	<0.5	<0.5	--	<0.5	<0.5	<0.5	<20	<300	<0.5	<0.5
	11/9/2007	51.40	23.28	NP	28.12	--	61	<0.5	<0.5	<0.5	1.3	--	<0.5	<0.5	<0.5	<20	<300	<0.5	<0.5

TABLE 5
HISTORICAL GROUNDWATER GAUGING AND ANALYTICAL DATA
76 (Former BP) Service Station No. 2611117
7210 BANCROFT AVE
OAKLAND, CALIFORNIA

Well I.D.	Date	GROUNDWATER GAUGING DATA				GROUNDWATER ANALYTICAL DATA													
		TOC Elevation (ft)	Depth to Water (ft)	LNAPL Thickness (ft)	Water Elevation* (ft)	DRO (ug/L)	GRO (ug/L)	Benzene (ug/L)	Toluene (ug/L)	Ethylbenzene (ug/L)	Total Xylenes (ug/L)	MTBE (ug/L)	DIPE (ug/L)	ETBE (ug/L)	TAME (ug/L)	TBA (ug/L)	Ethanol (ug/L)	1,2-Dibromoethane (EDB) (ug/L)	1,2-Dichloroethane (ug/L)
MW-7	12/14/2007	38.99	23.07	NP	15.92	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	2/11/2008	38.99	17.21	NP	21.78	--	<50	<0.5	<0.5	<0.5	<0.5	--	<0.5	<0.5	<0.5	<10	<100	<0.5	<0.5
	5/22/2008	38.99	17.55	NP	21.44	--	200	<1	<1	<1	<1	--	<1	<1	<1	<20	<600	<1	<1
	8/25/2008	38.99	20.55	NP	18.44	--	<50	<0.5	<0.5	<0.5	<0.5	--	<0.5	<0.5	<0.5	<10	<300	<0.5	<0.5
	12/17/2008	38.99	21.86	NP	17.13	--	<50	<0.5	<0.5	<0.5	<0.5	--	<0.5	<0.5	<0.5	<10	<300	<0.5	<0.5
	8/14/2009	38.99	20.31	NP	18.68	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	8/20/2010	38.99	16.82	NP	22.17	--	<50.0	<0.50	<0.50	<0.50	<1.5	17.2	<0.50	<0.50	<0.50	9.8	<250	<1.0	<1.0
	8/15/2011	38.99	16.28	NP	22.71	--	<50.0	<0.50	<0.50	<0.50	<1.5	14.8	<0.50	<0.50	<0.50	13.1	<250	<1.0	<1.0
	2/20/2012	44.21	18.48	NP	25.73	--	<50.0	<0.50	<0.50	<0.50	<1.5	9.6	<0.50	<0.50	<0.50	<5.0	<250	<1.0	<1.0
MW-8	1/25/1995	50.88	31.59	NP	19.29	--	54	<0.5	<0.5	<0.5	<1	--	--	--	--	--	--	--	--
	4/19/1995	50.88	19.18	NP	31.70	--	<50	<0.5	<0.5	<0.5	<1	--	--	--	--	--	--	--	--
	7/5/1995	50.88	19.03	NP	31.85	--	<50	<0.5	<0.5	<0.5	<1	--	--	--	--	--	--	--	--
	10/5/1995	50.88	24.40	NP	26.48	--	<50	<0.5	<0.5	<0.5	<1	--	--	--	--	--	--	--	--
	1/12/1996	50.88	25.51	NP	25.37	--	<50	<0.5	<0.5	<0.5	<1	--	--	--	--	--	--	--	--
	4/22/1996	50.88	18.00	NP	32.88	--	<50	<0.5	<1	<1	<1	--	--	--	--	--	--	--	--
	7/2/1996	50.88	19.83	NP	31.05	--	<50	<0.5	<1	<1	<1	--	--	--	--	--	--	--	--
	11/8/1996	50.88	20.09	NP	30.79	--	<50	<0.5	<1	<1	<1	--	--	--	--	--	--	--	--
	1/3/1997	50.88	19.72	NP	31.16	--	<50	<0.5	<1	<1	<1	--	--	--	--	--	--	--	--
	4/28/1997	50.88	20.44	NP	30.44	--	<50	<0.5	<1	<1	<1	--	--	--	--	--	--	--	--
	7/1/1997	50.88	22.72	NP	28.16	--	<50	<0.5	<1	<1	<1	--	--	--	--	--	--	--	--
	10/2/1997	50.88	24.51	NP	26.37	--	<50	<0.5	<1	<1	<1	--	--	--	--	--	--	--	--
	1/9/1998	50.88	21.17	NP	29.71	--	<50	<0.5	<1	<1	<1	--	--	--	--	--	--	--	--
	5/6/1998	50.88	18.34	NP	32.54	--	<50	<0.5	<1	<1	<1	--	--	--	--	--	--	--	--
	7/21/1998	50.88	18.55	NP	32.33	--	90	<0.5	<1	<1	<1	--	--	--	--	--	--	--	--
	12/30/1998	50.88	20.40	NP	30.48	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	2/2/1999	50.88	19.28	NP	31.60	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	5/10/1999	50.88	15.62	NP	35.26	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	9/23/1999	50.88	21.74	NP	29.14	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	12/23/1999	50.88	22.83	NP	28.05	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	3/27/2000	50.88	16.25	NP	34.63	--	<50	<0.5	<0.5	<0.5	<0.5	--	--	--	--	--	--	--	--
	5/22/2000	50.88	17.06	NP	33.82	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	8/31/2000	50.88	21.72	NP	29.16	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	12/11/2000	50.88	22.03	NP	28.85	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	3/20/2001	50.88	16.23	NP	34.65	--	<50	<0.5	<0.5	<0.5	<1.5	--	--	--	--	--	--	--	--
	6/19/2001	50.88	19.35	NP	31.53	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	9/20/2001	50.88	21.95	NP	28.93	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	12/27/2001	50.88	16.98	NP	33.90	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	2/28/2002	50.88	15.38	NP	35.50	--	<50	<0.5	<0.5	<0.5	<1	--	--	--	--	--	--	--	--
	6/28/2002	50.88	16.97	NP	33.91	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	9/12/2002	50.88	19.47	NP	31.41	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	12/12/2002	50.88	20.84	NP	30.04	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	3/10/2003	50.88	16.56	NP	34.32	--	<50	<0.5	<0.5	<0.5	<0.5	--	--	--	--	--	--	--	--
	5/12/2003	50.88	13.63	NP	37.25	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	8/27/2003	50.88	18.90	NP	31.98	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	11/10/2003	50.88	19.68	NP	31.20	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	2/3/2004	50.88	14.76	NP	36.12	--	<50	<0.5	<0.5	<0.5	<0.5	--	<0.5	<0.5	<0.5	<20	<100	<0.5	<0.5
	5/4/2004	50.88	14.69	NP	36.19	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	8/31/2004	50.88	18.08	NP	32.80	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS

TABLE 5
HISTORICAL GROUNDWATER GAUGING AND ANALYTICAL DATA
76 (Former BP) Service Station No. 2611117
7210 BANCROFT AVE
OAKLAND, CALIFORNIA

Well I.D.	Date	GROUNDWATER GAUGING DATA				GROUNDWATER ANALYTICAL DATA													
		TOC Elevation (ft)	Depth to Water (ft)	LNAPL Thickness (ft)	Water Elevation* (ft)	DRO (ug/L)	GRO (ug/L)	Benzene (ug/L)	Toluene (ug/L)	Ethylbenzene (ug/L)	Total Xylenes (ug/L)	MTBE (ug/L)	DIPE (ug/L)	ETBE (ug/L)	TAME (ug/L)	TBA (ug/L)	Ethanol (ug/L)	1,2-Dibromoethane (EDB) (ug/L)	1,2-Dichloroethane (ug/L)
MW-8	11/23/2004	50.88	15.77	NP	35.11	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	1/18/2005	50.88	12.04	NP	38.84	--	<50	<0.5	<0.5	<0.5	<0.5	--	--	--	--	--	--	--	--
	6/29/2005	50.88	NG	NG	NG	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	9/1/2005	50.88	16.12	NP	34.76	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	11/3/2005	50.88	19.42	NP	31.46	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	2/14/2006	50.88	12.43	NP	38.45	--	<50	<0.5	<0.5	<0.5	<0.5	--	<0.5	<0.5	<0.5	<20	<300	<0.5	<0.5
	5/30/2006	50.88	12.40	NP	38.48	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	8/29/2006	50.88	17.16	NP	33.72	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	11/29/2006	50.88	19.35	NP	31.53	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	2/20/2007	50.88	14.57	NP	36.31	--	<50	<0.5	<0.5	<0.5	<0.5	--	<0.5	<0.5	<0.5	<20	<300	<0.5	<0.5
	5/25/2007	50.88	16.11	NP	34.77	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	8/9/2007	50.88	19.25	NP	31.63	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	11/9/2007	50.88	20.92	NP	29.96	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	12/14/2007	38.44	21.26	NP	17.18	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	2/12/2008	38.44	14.00	NP	24.44	--	<50	<0.5	<0.5	<0.5	<0.5	--	<0.5	<0.5	<0.5	<10	<100	<0.5	<0.5
	5/22/2008	38.44	16.86	NP	21.58	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	8/25/2008	38.44	19.92	NP	18.52	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	12/17/2008	38.44	21.45	NP	16.99	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	2/25/2009	38.44	16.19	NP	22.25	--	<50	<0.50	<0.50	<0.50	<0.50	<0.50	--	--	--	--	--	--	--
	5/21/2009	38.44	16.10	NP	22.34	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	8/14/2009	38.44	20.17	NP	18.27	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	2/10/2010	38.44	15.33	NP	23.11	--	<50.0	<0.50	<0.50	<0.50	<1.5	<0.50	<0.50	<0.50	<0.50	<5.0	<250	<1.0	<1.0
	8/20/2010	38.44	16.29	NP	22.15	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	2/7/2011	38.44	14.35	NP	24.09	--	<50.0	<0.50	<0.50	<0.50	<1.5	<0.50	<0.50	<0.50	<0.50	<5.0	<250	<1.0	<1.0
	8/15/2011	38.44	15.83	NP	22.61	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	2/20/2012	44.18	17.50	NP	26.68	--	<50.0	<0.50	<0.50	<0.50	<1.5	<0.50	<0.50	<0.50	<0.50	<5.0	<250	<1.0	<1.0
MW-9	1/25/1995	51.05	22.32	NP	28.73	--	<50	<0.5	<0.5	<0.5	<1	--	--	--	--	--	--	--	--
	4/19/1995	51.05	19.86	NP	31.19	--	<50	<0.5	<0.5	<0.5	<1	--	--	--	--	--	--	--	--
	7/5/1995	51.05	20.78	NP	30.27	--	<50	<0.5	<0.5	<0.5	<1	--	--	--	--	--	--	--	--
	10/5/1995	51.05	24.33	NP	26.72	--	<50	<0.5	<0.5	<0.5	<1	--	--	--	--	--	--	--	--
	1/12/1996	51.05	25.44	NP	25.61	--	<50	<0.5	<0.5	<0.5	<1	--	--	--	--	--	--	--	--
	4/22/1996	51.05	18.01	NP	33.04	--	<50	<0.5	<1	<1	<1	--	--	--	--	--	--	--	--
	7/2/1996	51.05	19.70	NP	31.35	--	<50	<0.5	<1	<1	<1	--	--	--	--	--	--	--	--
	11/8/1996	51.05	19.96	NP	31.09	--	<50	<0.5	<1	<1	<1	--	--	--	--	--	--	--	--
	1/3/1997	51.05	19.52	NP	31.53	--	<250	<2.5	<5	<5	<5	--	--	--	--	--	--	--	--
	4/28/1997	51.05	20.22	NP	30.83	--	<50	<0.5	<1	<1	<1	--	--	--	--	--	--	--	--
	7/1/1997	51.05	22.59	NP	28.46	--	<50	<0.5	<1	<1	<1	--	--	--	--	--	--	--	--
	10/2/1997	51.05	24.33	NP	26.72	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	10/3/1997	51.05	NG	NG	NG	--	<50	<0.5	<1	<1	<1	--	--	--	--	--	--	--	--
	1/9/1998	51.05	21.11	NP	29.94	--	<50	<0.5	<1	<1	<1	--	--	--	--	--	--	--	--
	5/6/1998	51.05	18.26	NP	32.79	--	<50	<0.5	<1	<1	<1	--	--	--	--	--	--	--	--
	7/21/1998	51.05	18.46	NP	32.59	--	70	<0.5	<1	<1	<1	--	--	--	--	--	--	--	--
	12/30/1998	51.05	NG	NG	NG	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	2/2/1999	51.05	NG	NG	NG	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	5/10/1999	51.05	NG	NG	NG	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	9/23/1999	51.05	NG	NG	NG	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	12/23/1999	51.05	NG	NG	NG	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	3/27/2000	51.05	NG	NG	NG	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	5/22/2000	51.05	NG	NG	NG	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS

TABLE 5
HISTORICAL GROUNDWATER GAUGING AND ANALYTICAL DATA
76 (Former BP) Service Station No. 2611117
7210 BANCROFT AVE
OAKLAND, CALIFORNIA

Well I.D.	Date	GROUNDWATER GAUGING DATA				GROUNDWATER ANALYTICAL DATA													
		TOC Elevation (ft)	Depth to Water (ft)	LNAPL Thickness (ft)	Water Elevation* (ft)	DRO (ug/L)	GRO (ug/L)	Benzene (ug/L)	Toluene (ug/L)	Ethylbenzene (ug/L)	Total Xylenes (ug/L)	MTBE (ug/L)	DIPE (ug/L)	ETBE (ug/L)	TAME (ug/L)	TBA (ug/L)	Ethanol (ug/L)	1,2-Dibromoethane (EDB) (ug/L)	1,2-Dichloroethane (ug/L)
MW-9	8/31/2000	51.05	NG	NG	NG	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	12/11/2000	51.05	NG	NG	NG	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	3/20/2001	51.05	NG	NG	NG	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	6/19/2001	51.05	NG	NG	NG	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	9/20/2001	51.05	22.20	NP	28.85	--	6300	2.87	<0.5	<0.5	<1.5	--	--	--	--	--	--	--	--
	12/27/2001	51.05	18.92	NP	32.13	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	2/28/2002	51.05	17.22	NP	33.83	--	19000	1560	61.3	84	111	--	--	--	--	--	--	--	--
	6/28/2002	51.05	18.20	NP	32.85	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	9/12/2002	51.05	19.92	NP	31.13	--	5100	570	180	<25	220	--	--	--	--	--	--	--	--
	12/12/2002	51.05	21.78	NP	29.27	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	3/10/2003	51.05	18.25	NP	32.80	--	26000	2500	<100	<100	<100	--	--	--	--	--	--	--	--
	5/12/2003	51.05	16.29	NP	34.76	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	8/27/2003	51.05	19.69	NP	31.36	--	11000	830	<50	<50	<50	--	<50	<50	<50	<2000	<10000	--	--
	11/10/2003	51.05	19.97	NP	31.08	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	2/3/2004	51.05	17.23	NP	33.82	--	6200	180	<50	<50	<50	--	<50	<50	<50	<2000	<10000	<50	<50
	5/4/2004	51.05	17.17	NP	33.88	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	8/31/2004	51.05	19.71	NP	31.34	--	<2500	210	<25	<25	<25	--	<25	<25	<25	<1000	<5000	<25	<25
	11/23/2004	51.05	18.58	NP	32.47	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	1/18/2005	51.05	14.98	NP	36.07	--	490	32	<2.5	<2.5	8.9	--	<2.5	<2.5	<2.5	150	<500	<2.5	<2.5
	6/29/2005	51.05	14.74	NP	36.31	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	9/1/2005	51.05	17.42	NP	33.63	--	3500	1300	<25	<25	28	--	<25	<25	<25	2700	<5000	<25	<25
	11/3/2005	51.05	19.90	NP	31.15	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	2/14/2006	51.05	12.95	NP	38.10	--	2700	<25	<25	<25	<25	--	<25	<25	<25	<1000	<15000	<25	<25
	5/30/2006	51.05	13.76	NP	37.29	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	8/29/2006	51.05	17.86	NP	33.19	--	1200	580	<25	<25	<25	--	<25	<25	<25	2100	<15000	<25	<25
	11/29/2006	51.05	20.25	NP	30.80	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	2/20/2007	51.05	16.91	NP	34.14	--	780	66	1.5	2	1.4	--	<1	<1	<1	380	<600	<1	<1
	5/25/2007	51.05	17.28	NP	33.77	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	8/9/2007	51.05	19.71	NP	31.34	--	650	150	<0.5	<0.5	2	--	<0.5	<0.5	<0.5	790	<300	<0.5	<0.5
	11/9/2007	51.05	21.62	NP	29.43	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	12/14/2007	38.63	21.66	NP	16.97	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	2/12/2008	38.63	16.30	NP	22.33	--	890	27	2.5	28	5.4	--	<0.5	<0.5	<0.5	37	<100	<0.5	<0.5
	5/22/2008	38.63	18.10	NP	20.53	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	8/25/2008	38.63	20.93	NP	17.70	--	180	<0.5	<0.5	<0.5	<0.5	--	<0.5	<0.5	<0.5	75	<300	<0.5	<0.5
	12/17/2008	38.63	22.86	NP	15.77	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	2/25/2009	38.63	18.78	NP	19.85	--	600	11	0.86	1.1	2.2	<0.50	--	--	--	--	--	--	--
	5/21/2009	38.63	17.95	NP	20.68	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	8/14/2009	38.63	20.81	NP	17.82	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	2/10/2010	38.63	16.71	NP	21.92	--	<50.0	<0.50	<0.50	<0.50	<1.5	<0.50	<0.50	<0.50	<0.50	<5.0	<250	<1.0	<1.0
	8/20/2010	38.63	17.22	NP	21.41	--	137	26.5	<0.50	<0.50	<1.5	0.91	<0.50	<0.50	<0.50	92.5	<250	<1.0	<1.0
	2/7/2011	38.63	16.18	NP	22.45	--	78.5	1.6	<0.50	<0.50	<1.5	0.64	<0.50	<0.50	<0.50	27.6	<250	<1.0	<1.0
	8/15/2011	38.63	VO	VO	VO	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	2/20/2012	44.35	18.88	NP	25.47	--	204	43.2	<0.50	<0.50	<1.5	<0.50	<0.50	<0.50	<0.50	59.1	<250	<1.0	<1.0
MW-10	1/9/1998	46.17	20.97	NP	25.20	--	<50	<0.5	<1	<1	<1	--	--	--	--	--	--	--	--
	5/6/1998	46.17	18.07	NP	28.10	--	800	<0.5	<1	<1	<1	--	--	--	--	--	--	--	--
	7/21/1998	46.17	18.28	NP	27.89	--	80	<0.5	<1	<1	<1	--	--	--	--	--	--	--	--
	12/30/1998	46.17	22.22	NP	23.95	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	2/2/1999	46.17	21.83	NP	24.34	--	940	<10	<10	<10	<10	--	--	--	--	--	--	--	--

TABLE 5
HISTORICAL GROUNDWATER GAUGING AND ANALYTICAL DATA
76 (Former BP) Service Station No. 2611117
7210 BANCROFT AVE
OAKLAND, CALIFORNIA

Well I.D.	Date	GROUNDWATER GAUGING DATA				GROUNDWATER ANALYTICAL DATA													
		TOC Elevation (ft)	Depth to Water (ft)	LNAPL Thickness (ft)	Water Elevation* (ft)	DRO (ug/L)	GRO (ug/L)	Benzene (ug/L)	Toluene (ug/L)	Ethylbenzene (ug/L)	Total Xylenes (ug/L)	MTBE (ug/L)	DIPE (ug/L)	ETBE (ug/L)	TAME (ug/L)	TBA (ug/L)	Ethanol (ug/L)	1,2-Dibromoethane (EDB) (ug/L)	1,2-Dichloroethane (ug/L)
MW-10	5/10/1999	46.17	17.99	NP	28.18	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	9/23/1999	46.17	22.61	NP	23.56	--	<50	<1	<1	<1	1.4	--	--	--	--	--	--	--	--
	12/23/1999	46.17	23.75	NP	22.42	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	3/27/2000	46.17	18.83	NP	27.34	--	1900	<0.5	<0.5	<0.5	<0.5	--	--	--	--	--	--	--	--
	5/22/2000	46.17	19.47	NP	26.70	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	8/31/2000	46.17	22.64	NP	23.53	--	1700	<0.5	<0.5	<0.5	<0.5	--	--	--	--	--	--	--	--
	12/11/2000	46.17	22.84	NP	23.33	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	3/20/2001	46.17	19.57	NP	26.60	--	16000	<0.5	<0.5	<0.5	<1.5	--	--	--	--	--	--	--	--
	6/19/2001	46.17	20.63	NP	25.54	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	9/20/2001	46.17	23.07	NP	23.10	--	5800	<0.5	<0.5	<0.5	<1.5	--	--	--	--	--	--	--	--
	12/27/2001	46.17	20.92	NP	25.25	--	6600	17.3	14.5	<12.5	<25	--	--	--	--	--	--	--	--
	2/28/2002	46.17	18.52	NP	27.65	--	3600	10.8	<0.5	<0.5	<1	--	--	--	--	--	--	--	--
	6/28/2002	46.17	18.41	NP	27.76	--	<50	<0.5	<0.5	<0.5	<1	--	--	--	--	--	--	--	--
	9/12/2002	46.17	20.57	NP	25.60	--	660	<5	<5	<5	<5	--	--	--	--	--	--	--	--
	12/12/2002	46.17	22.80	NP	23.37	--	1400	<5	<5	<5	<5	--	--	--	--	--	--	--	--
	3/10/2003	46.17	19.26	NP	26.91	--	1700	<5	<5	5.3	15	--	--	--	--	--	--	--	--
	5/12/2003	46.17	17.90	NP	28.27	--	1500	<12	<12	<12	<12	--	--	--	--	--	--	--	--
	8/27/2003	46.17	20.82	NP	25.35	--	4100	<25	<25	<25	<25	--	<25	<25	<25	<1000	<5000	--	--
	11/10/2003	46.17	21.92	NP	24.25	--	<5000	<50	<50	<50	<50	--	<50	<50	<50	<2000	<10000	--	--
	2/3/2004	46.17	18.52	NP	27.65	--	5100	<50	<50	<50	<50	--	<50	<50	<50	<2000	<10000	<50	<50
	5/4/2004	46.17	17.63	NP	28.54	--	<2500	<25	<25	<25	<25	--	<25	<25	<25	<1000	<5000	<25	<25
	8/31/2004	46.17	20.67	NP	25.50	--	<5000	<50	<50	<50	<50	--	<50	<50	<50	<2000	<10000	<50	<50
	11/23/2004	46.17	19.79	NP	26.38	--	2600	<25	<25	<25	<25	--	<25	<25	<25	<1000	<5000	<25	<25
	1/18/2005	46.17	16.13	NP	30.04	--	560	<5	<5	<5	<5	--	<5	<5	<5	<200	<1000	<5	<5
	6/29/2005	46.17	15.56	NP	30.61	--	110	1.9	4.6	4.2	17	--	<0.5	<0.5	<0.5	<20	<100	<0.5	<0.5
	9/1/2005	46.17	18.10	NP	28.07	--	<250	<2.5	<2.5	<2.5	<2.5	--	<2.5	<2.5	<2.5	<100	<500	<2.5	<2.5
	11/3/2005	46.17	20.90	NP	25.27	--	800	<5	<5	<5	7	--	<5	<5	<5	<200	<1000	<5	<5
	2/14/2006	46.17	15.58	NP	30.59	--	600	<0.5	<0.5	<0.5	<0.5	--	<0.5	<0.5	1.2	34	<300	<0.5	<0.5
	5/30/2006	46.17	14.70	NP	31.47	--	95	<0.5	<0.5	<0.5	<0.5	--	<0.5	<0.5	<0.5	<20	<300	<0.5	<0.5
	8/29/2006	46.17	18.69	NP	27.48	--	250	<5	<5	<5	<5	--	<5	<5	<5	<200	<3000	<5	<5
	11/29/2006	46.17	21.35	NP	24.82	--	650	<5	<5	<5	<5	--	<5	<5	5.8	<200	<3000	<5	<5
	2/20/2007	46.17	18.65	NP	27.52	--	720	<5	<5	<5	<5	--	<5	<5	<5	<200	<3000	<5	<5
	5/25/2007	46.17	18.15	NP	28.02	--	130	<0.5	<0.5	<0.5	<0.5	--	<0.5	<0.5	0.69	<20	<300	<0.5	<0.5
	8/9/2007	46.17	20.83	NP	25.34	--	970	<10	<10	<10	<10	--	<10	<10	<10	<400	<6000	<10	<10
	11/9/2007	46.17	22.53	NP	23.64	--	1100	<10	<10	<10	13	--	<10	<10	<10	<400	<6000	<10	<10
	12/14/2007	40.45	22.62	NP	17.83	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	2/11/2008	40.45	17.86	NP	22.59	--	<50	<0.5	<0.5	<0.5	<0.5	--	<0.5	<0.5	2.6	<10	<100	<0.5	<0.5
	5/22/2008	40.45	19.05	NP	21.40	--	81	<0.5	<0.5	<0.5	<0.5	--	<0.5	<0.5	<0.5	<10	<300	<0.5	<0.5
	8/25/2008	40.45	21.88	NP	18.57	--	<50	<0.5	1	<0.5	0.98	--	<0.5	<0.5	2.2	<10	<300	<0.5	<0.5
	12/17/2008	40.45	23.32	NP	17.13	--	<50	<20	<20	<20	<20	--	<20	<20	<20	<400	<12000	<20	<20
	2/25/2009	40.45	20.07	NP	20.38	--	84	<5.0	<5.0	<5.0	<5.0	290	--	--	--	--	--	--	--
	5/21/2009	40.45	18.80	NP	21.65	--	<50	<0.50	<0.50	<0.50	<0.50	<0.50	--	--	--	--	--	--	--
	8/14/2009	40.45	21.76	NP	18.69	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	2/10/2010	40.45	17.80	NP	22.65	--	<50.0	<0.50	<0.50	<0.50	<1.5	21.9	<0.50	<0.50	<0.50	<5.0	<250	<1.0	<1.0
	8/20/2010	40.45	18.64	NP	21.81	--	<50.0	<0.50	<0.50	<0.50	<1.5	<0.50	<0.50	<0.50	<0.50	<5.0	<250	<1.0	<1.0
	2/7/2011	40.45	17.02	NP	23.43	--	<50.0	<0.50	<0.50	<0.50	<1.5	0.53	<0.50	<0.50	<0.50	<5.0	<250	<1.0	<1.0
	8/15/2011	40.45	17.76	NP	22.69	--	<50.0	<0.50	<0.50	<0.50	<1.5	13.8	<0.50	<0.50	<0.50	13.1	<250	<1.0	<1.0
	2/20/2012	46.17	20.00	NP	26.17	--	<50.0	<0.50	<0.50	<0.50	<1.5	65.1	<0.50	<0.50	<0.50	5.3	<250	<1.0	<1.0

TABLE 5
HISTORICAL GROUNDWATER GAUGING AND ANALYTICAL DATA
76 (Former BP) Service Station No. 2611117
7210 BANCROFT AVE
OAKLAND, CALIFORNIA

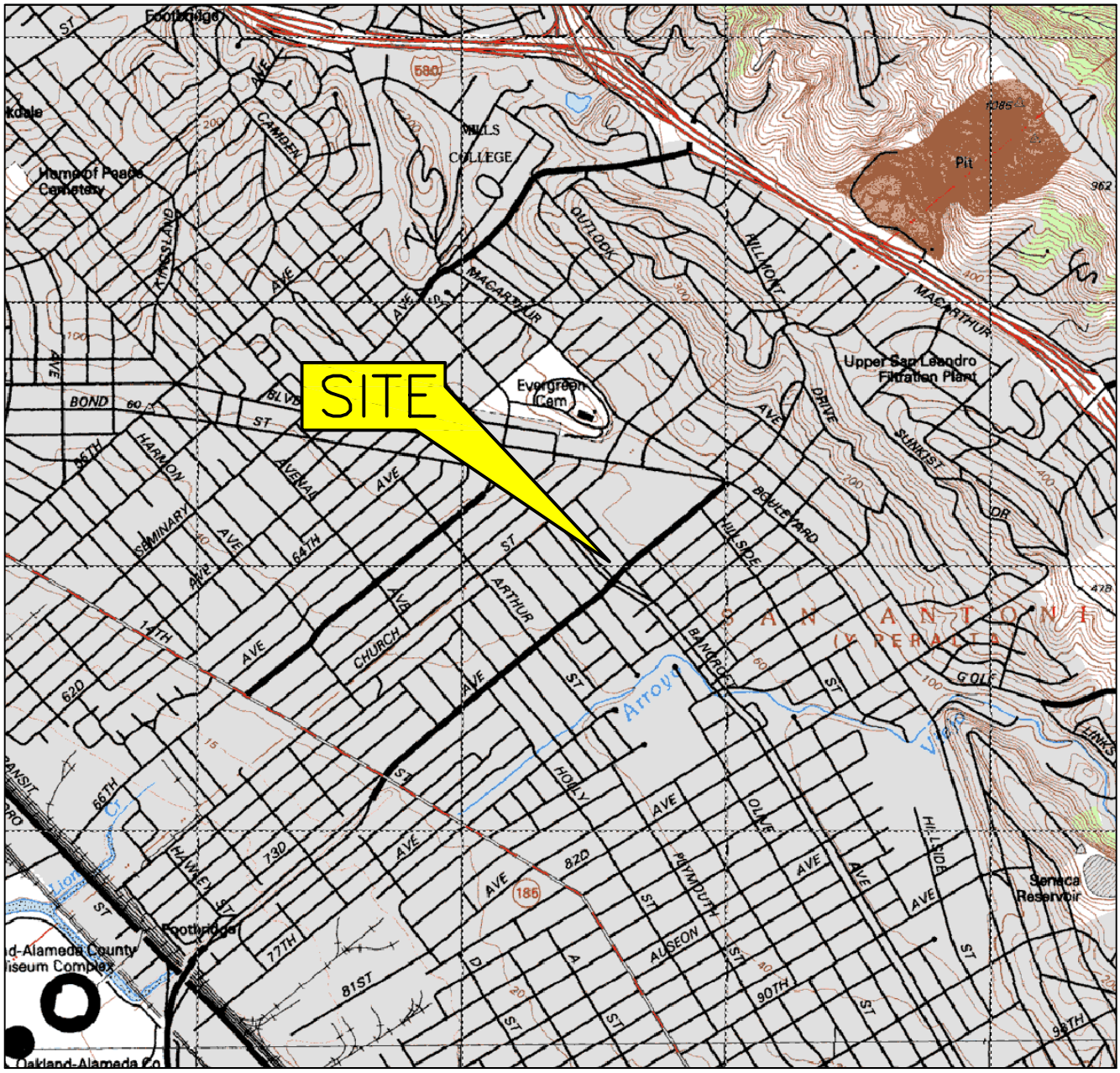
Well I.D.	Date	GROUNDWATER GAUGING DATA				GROUNDWATER ANALYTICAL DATA													
		TOC Elevation (ft)	Depth to Water (ft)	LNAPL Thickness (ft)	Water Elevation* (ft)	DRO (ug/L)	GRO (ug/L)	Benzene (ug/L)	Toluene (ug/L)	Ethylbenzene (ug/L)	Total Xylenes (ug/L)	MTBE (ug/L)	DIPE (ug/L)	ETBE (ug/L)	TAME (ug/L)	TBA (ug/L)	Ethanol (ug/L)	1,2-Dibromoethane (EDB) (ug/L)	1,2-Dichloroethane (ug/L)
MW-11	12/14/2007	37.64	20.16	NP	17.48	--	8000	<10	72	230	760	--	<10	<10	<10	<400	<6000	<10	<10
	2/12/2008	37.64	14.35	NP	23.29	--	5500	46	13	220	160	--	<2.5	<2.5	<2.5	<50	<500	<2.5	<2.5
	5/22/2008	37.64	16.63	NP	21.01	--	5700	80	21	320	150	--	<5	<5	<5	<100	<3000	<5	<5
	8/25/2008	37.64	19.48	NP	18.16	--	5300	<5	20	120	320	--	<5	<5	<5	<100	<3000	<5	<5
	12/17/2008	37.64	21.26	NP	16.38	--	12000	2.4	2.6	30	54	--	<0.5	<0.5	<0.5	<10	<300	<0.5	<0.5
	2/25/2009	37.64	16.38	NP	21.26	--	6800	0.86	20	150	390	<0.50	--	--	--	--	--	--	--
	5/21/2009	37.64	16.16	NP	21.48	--	2500	1.5	4.4	36	82	1.5	--	--	--	--	--	--	--
	8/14/2009	37.64	19.27	NP	18.37	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	2/10/2010	37.64	13.35	NP	24.29	--	820	0.53	0.86	9.0	15.4	1.4	<0.50	<0.50	<0.50	6.1	<250	<1.0	<1.0
	8/20/2010	37.64	15.66	NP	21.98	--	1740	0.52	1.4	16.5	26.1	1.2	<0.50	<0.50	<0.50	8.2	<250	<1.0	<1.0
	2/7/2011	37.64	13.55	NP	24.09	--	1530	<0.50	1.3	14.3	24.1	1.1	<0.50	<0.50	<0.50	<5.0	<250	<1.0	<1.0
	8/15/2011	37.64	14.58	NP	23.06	--	1530	<0.50	0.80	9.2	8.0	<0.50	<0.50	<0.50	<0.50	<5.0	<250	<1.0	<1.0
	2/20/2012	43.34	16.24	NP	27.10	--	2180	0.65	3.5	48.9	70.6	0.73	<0.50	<0.50	<0.50	<5.0	<250	<1.0	<1.0
QC-2	9/15/1992	NSVD	NG	NG	NG	--	<50	<0.5	<0.5	<0.5	<0.5	--	--	--	--	--	--	--	--
	12/15/1992	NSVD	NG	NG	NG	--	<50	<0.5	<0.5	<0.5	<0.5	--	--	--	--	--	--	--	--
	3/15/1993	NSVD	NG	NG	NG	--	<50	<0.5	<0.5	<0.5	<0.5	--	--	--	--	--	--	--	--
	6/7/1993	NSVD	NG	NG	NG	--	<50	<0.5	<0.5	<0.5	<0.5	--	--	--	--	--	--	--	--
	9/24/1993	NSVD	NG	NG	NG	--	<50	<0.5	<0.5	<0.5	<0.5	--	--	--	--	--	--	--	--
	12/27/1993	NSVD	NG	NG	NG	--	<50	<0.5	<0.5	<0.5	<0.5	--	--	--	--	--	--	--	--
	4/5/1994	NSVD	NG	NG	NG	--	<50	<0.5	<0.5	<0.5	<0.5	--	--	--	--	--	--	--	--
	7/22/1994	NSVD	NG	NG	NG	--	<50	<0.5	<0.5	<0.5	<0.5	--	--	--	--	--	--	--	--
	10/13/1994	NSVD	NG	NG	NG	--	<50	<0.5	<0.5	<0.5	<0.5	--	--	--	--	--	--	--	--
	1/25/1995	NSVD	NG	NG	NG	--	<50	<0.5	2	0.6	1	--	--	--	--	--	--	--	--
	4/19/1995	NSVD	NG	NG	NG	--	<50	<0.5	<0.5	<0.5	<0.5	--	--	--	--	--	--	--	--
	7/5/1995	NSVD	NG	NG	NG	--	<50	<0.5	<0.5	<0.5	<1	--	--	--	--	--	--	--	--
	10/5/1995	NSVD	NG	NG	NG	--	<50	<0.5	<0.5	<0.5	<1	--	--	--	--	--	--	--	--
	1/12/1996	NSVD	NG	NG	NG	--	<50	<0.5	<0.5	<0.5	<1	--	--	--	--	--	--	--	--
	4/22/1996	NSVD	NG	NG	NG	--	<50	<0.5	<1	<1	<1	--	--	--	--	--	--	--	--
	7/2/1996	NSVD	NG	NG	NG	--	<50	<0.5	<1	<1	<1	--	--	--	--	--	--	--	--

Gauging Notes:
TOC - Top of Casing
ft - Feet
NP - LNAPL not present
LNAPL - Light non-aqueous phase liquid
* - Corrected for LNAPL if present (assumes LNAPL specific gravity = 0.75)
NG - Not gauged
VO - Vehicle Obstruction
NSVD - Not surveyed
-- - No information available

Analytical Notes:
-- - No information available
< - Not detected at or above indicated laboratory reporting limit
NS - Well not sampled.
ug/L - micrograms/liter
DRO- diesel range organics
GRO- gasoline range organics
MTBE- Methyl tertiary-butyl ether
TBA- Tertiary-butyl alcohol
DIPE- Di-isopropyl ether
ETBE- Ethyl tertiary-butyl ether
TAME- Tertiary-amyl methyl ether

Figures

Figure 1 Site Location Map
Figure 2 Site Plan
Figure 3 Historical Soil Concentration Map
Figure 4 Baseline and Post-Injection Analytical Data Map



QUADRANGLE LOCATION

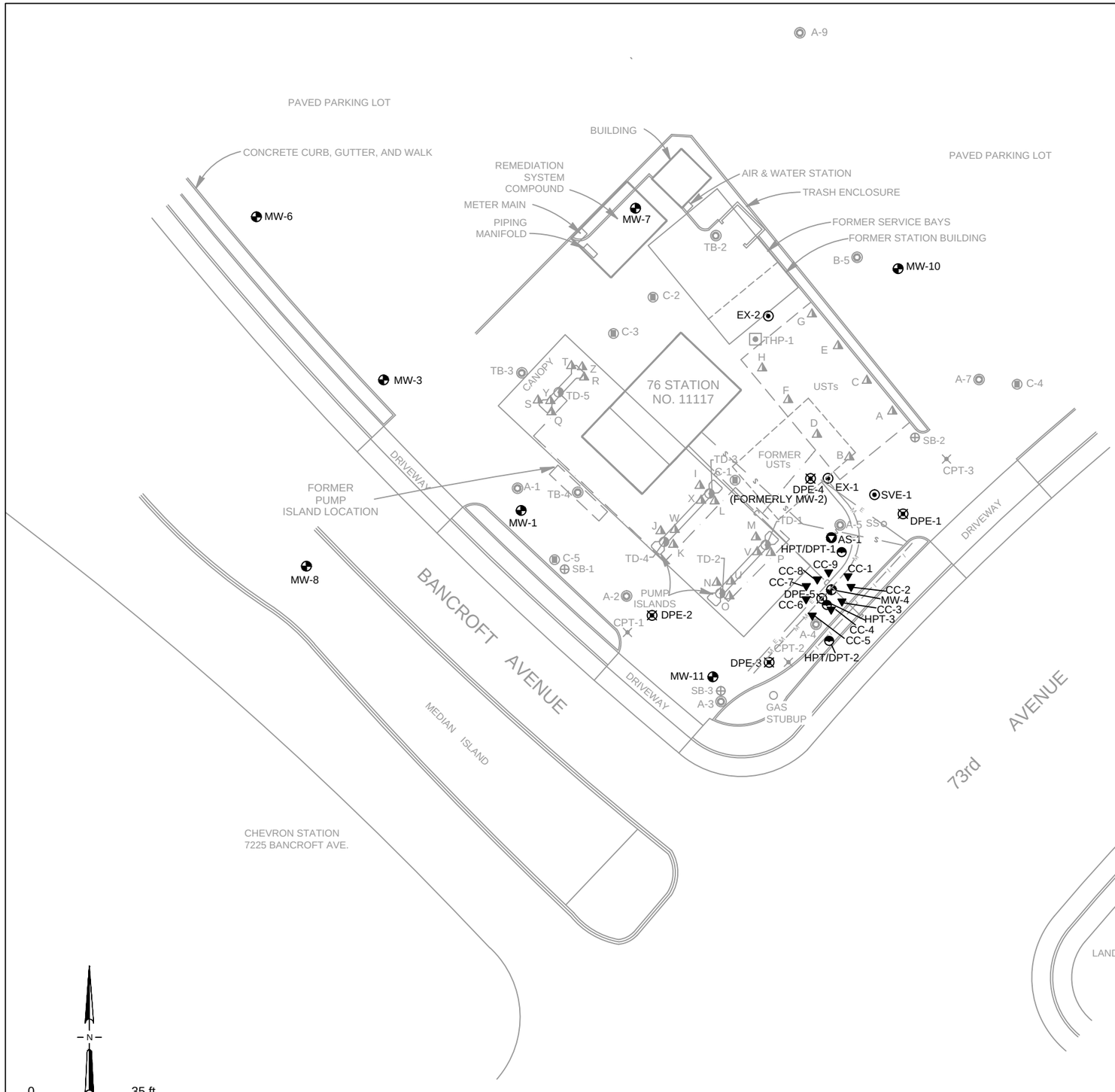
GENERAL NOTES:
BASE MAP FROM USGS, 7.5 MINUTE
TOPOGRAPHIC OAKLAND, CA. PHOTO REVISED 1980

FIGURE 1
SITE LOCATION MAP

76 (FORMER BP) STATION NO 11117
7210 BANCROFT AVENUE
OAKLAND CALIFORNIA

PROJECT NO.	PREPARED BY	DRAWN BY
142611117	DK	JH
DATE	REVIEWED BY	FILE NAME
03/30/11	DU	11117-TOPO

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EXPLANATION

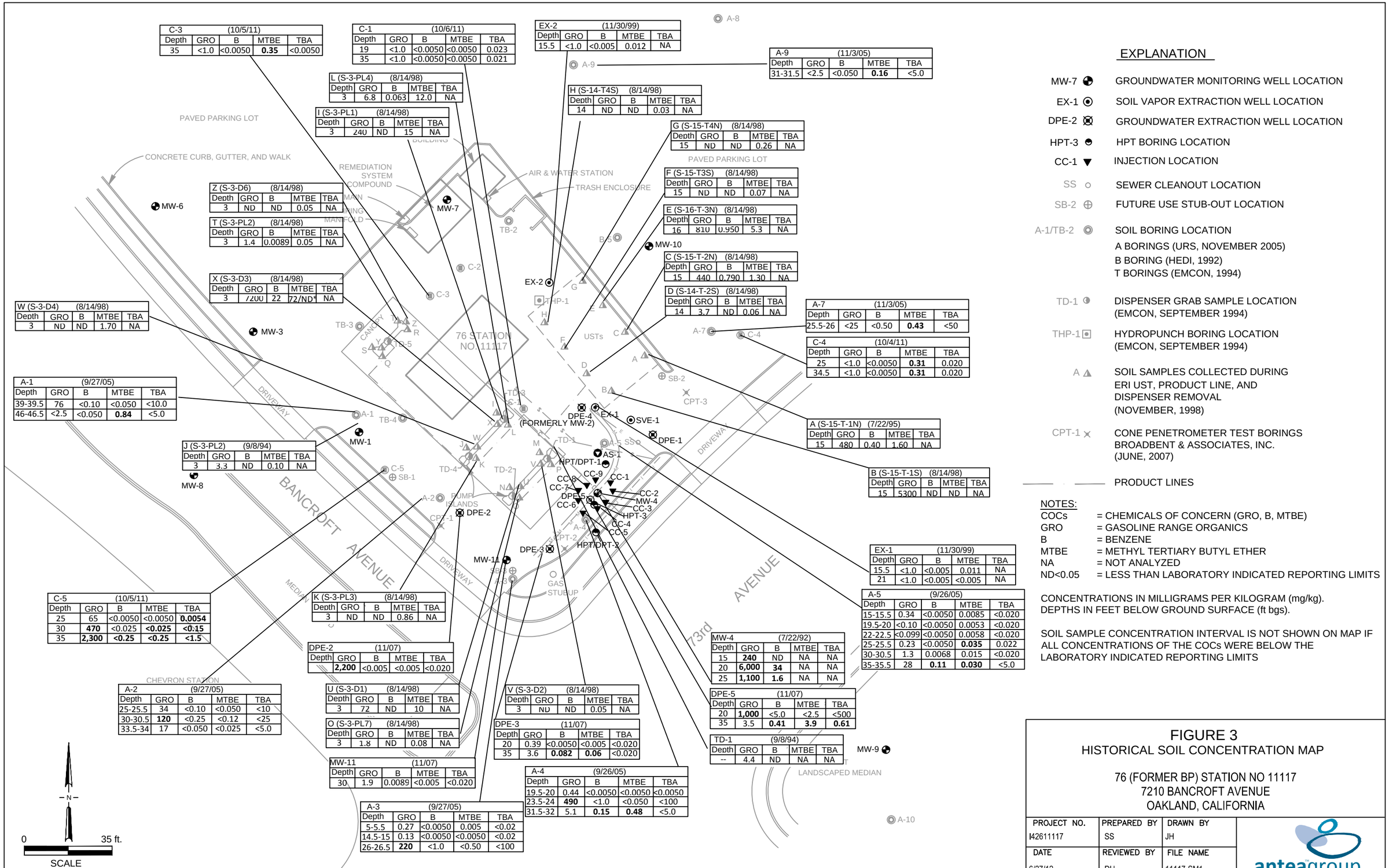
- MW-7 — GROUNDWATER MONITORING WELL LOCATION
- EX-1 — SOIL VAPOR EXTRACTION WELL LOCATION
- DPE-2 — GROUNDWATER EXTRACTION WELL LOCATION
- AS-1 — AIR SPARGE WELL LOCATION
- HPT-3 — HPT BORING LOCATION
- CC-1 — INJECTION LOCATION
- SS — SEWER CLEANOUT LOCATION
- SB-2 — FUTURE USE STUB-OUT LOCATION
- C-1 — SOIL BORING LOCATION (ANTEA GROUP, 2011)
- A-1/TB-2 — SOIL BORING LOCATION
  A BORINGS (URS, NOVEMBER 2005)
  B BORING (HEDI, 1992)
  T BORINGS (EMCON, 1994)
- TD-1 — DISPENSER GRAB SAMPLE LOCATION (EMCON, SEPTEMBER 1994)
- THP-1 — HYDROPUNCH BORING LOCATION (EMCON, SEPTEMBER 1994)
- A — SOIL SAMPLES COLLECTED DURING ERI UST, PRODUCT LINE, AND DISPENSER REMOVAL (NOVEMBER, 1998)
- CPT-1 — CONE PENETROMETER TEST BORINGS BROADBENT & ASSOCIATES, INC. (JUNE, 2007)
- PRODUCT LINES
- C — UNDERGROUND COMMUNICATIONS LINE
- E — UNDERGROUND ELECTRIC LINE
- I — UNDERGROUND IRRIGATION LINE
- M — UNDERGROUND METAL PIPE LINE
- S — UNDERGROUND SEWER LINE

FIGURE 2
SITE PLAN

76 (FORMER BP) STATION NO 11117
7210 BANCROFT AVENUE
OAKLAND, CALIFORNIA

PROJECT NO.	PREPARED BY	DRAWN BY
142611117	JW	JH
DATE	REVIEWED BY	FILE NAME
06/27/12	DU	11117-SMS

antea group



EXPLANATION

- MW-7 — GROUNDWATER MONITORING WELL LOCATION
- EX-1 — SOIL VAPOR EXTRACTION WELL LOCATION
- DPE-2 — GROUNDWATER EXTRACTION WELL LOCATION
- HPT-3 — HPT BORING LOCATION
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- A — SOIL SAMPLES COLLECTED DURING ERI UST, PRODUCT LINE, AND DISPENSER REMOVAL (NOVEMBER, 1998)
- CPT-1 — CONE PENETROMETER TEST BORINGS BROADBENT & ASSOCIATES, INC. (JUNE, 2007)
- PRODUCT LINES

NOTES:

COCs	= CHEMICALS OF CONCERN (GRO, B, MTBE)
GRO	= GASOLINE RANGE ORGANICS
B	= BENZENE
MTBE	= METHYL TERTIARY BUTYL ETHER
NA	= NOT ANALYZED
ND<0.05	= LESS THAN LABORATORY INDICATED REPORTING LIMITS

CONCENTRATIONS IN MILLIGRAMS PER KILOGRAM (mg/kg).
DEPTHS IN FEET BELOW GROUND SURFACE (ft bgs).

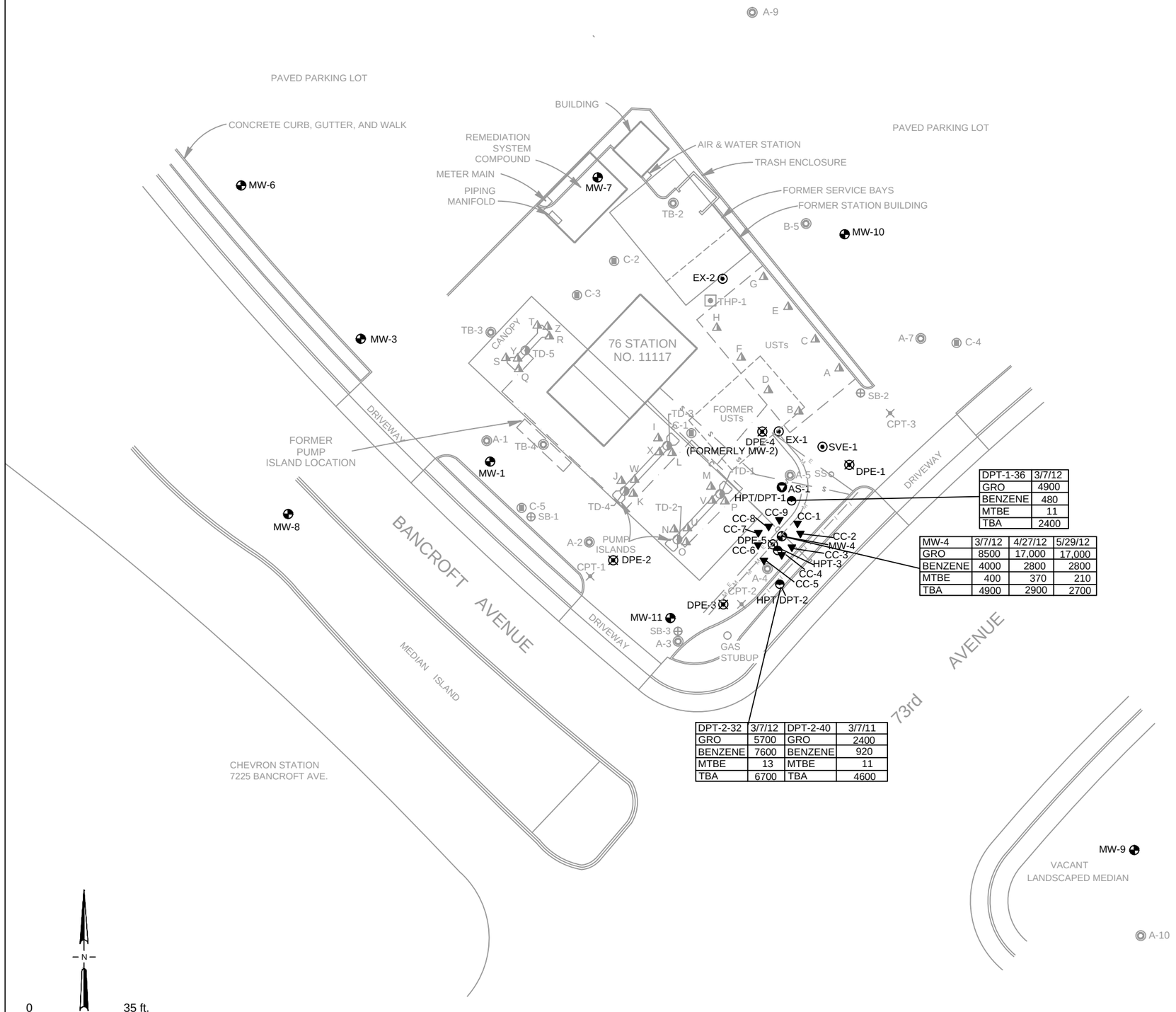
SOIL SAMPLE CONCENTRATION INTERVAL IS NOT SHOWN ON MAP IF ALL CONCENTRATIONS OF THE COCs WERE BELOW THE LABORATORY INDICATED REPORTING LIMITS

FIGURE 3
HISTORICAL SOIL CONCENTRATION MAP

76 (FORMER BP) STATION NO 11117
7210 BANCROFT AVENUE
OAKLAND, CALIFORNIA

PROJECT NO.	PREPARED BY	DRAWN BY
142611117	SS	JH
DATE	REVIEWED BY	FILE NAME
6/27/12	DU	11117-SM1

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DPT-1-36	3/7/12
GRO	4900
BENZENE	480
MTBE	11
TBA	2400

MW-4	3/7/12	4/27/12	5/29/12
GRO	8500	17,000	17,000
BENZENE	4000	2800	2800
MTBE	400	370	210
TBA	4900	2900	2700

DPT-2-32	3/7/12	DPT-2-40	3/7/11
GRO	5700	GRO	2400
BENZENE	7600	BENZENE	920
MTBE	13	MTBE	11
TBA	6700	TBA	4600

EXPLANATION

- MW-7 — GROUNDWATER MONITORING WELL LOCATION
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- I — UNDERGROUND IRRIGATION LINE
- M — UNDERGROUND METAL PIPE LINE
- S — UNDERGROUND SEWER LINE

NOTES:
GRO = GASOLINE RANGE ORGANICS CONCENTRATION
MTBE = METHYL TERTIARY BUTYL ETHER CONCENTRATION
TBA = TERTIARY BUTYL ALCOHOL

CONCENTRATIONS IN MICROGRAMS PER LITER (µg/L).

FIGURE 4
BASELINE AND POST-INJECTION ANALYTICAL DATA

76 (FORMER BP) STATION NO 11117
7210 BANCROFT AVENUE
OAKLAND, CALIFORNIA

PROJECT NO.	PREPARED BY	DRAWN BY
142611117	JW	JH
DATE	REVIEWED BY	FILE NAME
06/27/12	DU	11117-SMS

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Appendix A

Site Details and Summary of Previous Environmental Investigations

SITE LOCATION AND BACKGROUND

The Site is an active 76-brand gasoline retail outlet located on the northern corner of Bancroft Avenue and 73rd Avenue at 7210 Bancroft Avenue in Oakland, Alameda County, California. The site consists of a service station building, three 12,000-gallon gasoline underground storage tanks (USTs), and one 10,000-gallon diesel UST with associated piping and dispensers. The site is covered with asphalt or concrete surfacing except for planters along the southeastern and southwestern property boundaries and at the north corner of the property.

Land use in the immediate vicinity of the site is mixed commercial and residential. BP acquired the facility from Mobil Oil Corporation in 1989. In January 1994, BP transferred the property to TOSCO Marketing Company (TOSCO) and has not operated the facility since that time.

SUMMARY OF PREVIOUS ENVIRONMENTAL INVESTIGATIONS

1984 UST Replacement: In 1984, the pre-existing USTs at the site were removed and three single-walled fiberglass gasoline underground storage tanks (USTs) (6,000-gallon, 10,000-gallon, and 12,000-gallon) and one 6,000-gallon diesel UST were installed in a cavity immediately to the northeast of the former USTs. A UST removal/installation report is not on file, and it is unknown if one was ever prepared. No documentation was reportedly found referencing the conditions of the removed USTs or reporting evidence of the hydrocarbon impacts in the soil and groundwater, if any, at the time of the UST removal.

1989 Phase II Environmental Audit: In December 1989, Hunter Environmental Services, Inc. (Hunter) performed a Phase II Environmental Audit on the adjacent Eastmont Town Center site located to the north and northwest of the former BP Site. Part of the Phase II study included the installation monitoring well MW-3 near the western boundary of the former BP Site. Soil samples collected from 10 and 20 feet below ground surface (bgs) from MW-3 were analyzed for total petroleum hydrocarbons (TPH), benzene, toluene, ethyl benzene, and total xylenes (BTEX), and oil and grease. No analytes were reported above their respective laboratory reporting limits (LRLs). A groundwater sample collected from MW-3 was reported to contain TPH and benzene at concentrations of 2,700 micrograms per liter (µg/L) and 530 µg/L, respectively (Hunter, 1989).

1991 Phase I Subsurface Investigation: In December 1991, Hydro Environmental Technologies, Inc. (Hydro) drilled two on-site soil borings (MW-1 and MW-2) to total depths of 40 feet bgs, and soil samples were collected at 10-foot intervals between 5 and 25 feet bgs. First groundwater was encountered at approximately 30 feet bgs. The analytical results of the soil samples from MW-1 and MW-2 reported total petroleum hydrocarbons as gasoline (TPH-g) and BTEX at concentrations below their respective LRLs (Hydro, 1991).

1992 Phase I Subsurface Investigation: In July 1992, Hydro advanced boring MW-4 and MW-6 to total depths of 40 feet bgs, and boring B-5 was advanced to 50 feet bgs, First groundwater was encountered at approximately 30 feet bgs in borings MW-4 and MW-6, and no free water was encountered in boring B-5. The analytical results of soil samples collected at 30 feet bgs from B-5 and MW-6 reported TPH-g and BTEX at concentrations below their respective LRLs. The maximum TPH-g and BTEX concentrations in soil reported in MW-4 were 6,000 milligrams per kilogram (mg/kg) and 34 mg/kg, respectively, from a depth of 20 feet bgs. Borings MW-4 and MW-6 were subsequently converted into monitoring wells (Hydro, 1992).

1994 Baseline Assessment Report: In September 1994, EMCON performed a Supplemental Site Assessment at the site. Four exploratory soil borings (THP-1, TB-2, TB-3, TB-4) were advanced to a maximum depth of 45 feet bgs north of the former and existing UST complexes (THP-1), at the former service bays (TB-2), north of the northern pump island (TB-3), and at a former pump island (TB-4). Additionally, one soil sample was collected from beneath each of the five dispensers (TD-1 through TD-5). Groundwater was encountered in TB-2 and TB-3 at approximately 33 to 36 feet bgs and groundwater samples were collected from TB-2 and TB-3 via temporarily well points. Maximum concentrations of 16 mg/kg TPH-g (TD-3), TPH as diesel (TPH-d) at concentrations ranging from 110 mg/kg to 5,000 mg/kg (TD-1 through TD-5), and benzene at concentrations below LRLs were reported in soil samples. TPHg was not reported above the LRLs and a maximum concentration of 0.7 µg/L benzene (TB-3) was reported in groundwater samples (EMCON, 1994).

1994 Well Installation: In October 1994, Hydro advanced boring MW-7 to a total depth of 45 feet bgs, and borings MW-8 and MW-9 were advanced to total depths of 40 feet bgs. First encountered groundwater was at approximately 27 feet bgs to 32 feet bgs. TPH-g and BTEX were not detected above their respective LRLs in soil samples collected from 25 feet bgs in each boring. The three borings were subsequently converted into monitoring wells MW-7 through MW-9 (Hydro, 1995).

1997 Offsite Well Installation: In July 1997, Pacific Environmental Group (PEG) drilled one boring (MW-10) offsite to a depth of approximately 37.5 feet bgs. Soil samples were collected and the boring was subsequently converted into a monitoring well. First groundwater was encountered at approximately 26 feet bgs. No TPH-g, BTEX or methyl tertiary butyl ether (MTBE) was detected in soil samples at concentrations above their respective LRLs in MW-10. TPH-g and BTEX were not detected in the groundwater sample from MW-10 at concentrations above their respective LRLs. However, MTBE was detected at concentration of 13 µg/L using EPA Method 8020 (PEG, 1997).

1998 UST and Associated Piping and Dispenser Removal: In August 1998, Environmental Resolutions, Inc. (ERI) removed the three gasoline USTs (6,000-gallon, 10,000-gallon, and 12,000-gallon), one 6,000-gallon diesel UST, and associated dispensers and piping from the site. There was no visible evidence of leakage from the USTs removed. A total of eight native soil samples were collected from beneath each end of the removed USTs (denoted as A through H on **Figure 2**) at depths of 14 to 16 feet bgs, and a total of 18 soil samples (denoted as I through Z on **Figure 2**) were collected from the former dispenser locations and from beneath the associated product lines at three feet bgs (ERI, 1998).

TPH-g was reported in five of the eight UST excavation samples at concentrations ranging from 3.7 mg/kg (S-15-T2S) to 5,300 mg/kg (S-15-T1S). TPH-d was detected at 630 mg/kg (S-15-T1N) and 800mg/kg (S-15 T1S) into two samples, benzene concentrations ranged between 0.40 mg/kg (S-15-T1N) to 0.95 mg/kg (S-16-T3N) in three samples, MTBE concentrations ranged between 0.028 mg/kg (S-14-T4S) to 5.3 mg/kg (S-16-T3N) in seven samples, and lead was not reported in the sample analyzed for lead. TPH-g was reported in nine of the eighteen dispenser and product line samples with concentrations ranging between 1.4 mg/kg (S-3-PL12) to 7,200 mg/kg (S-3-D4). TPH-d was detected between 4.8 mg/kg (S-3-PL12) to 190 mg/kg (S-3-PL11) in five samples, benzene was detected between 0.0089 mg/kg (S-3-PL12) to 22 mg/kg (S-3-D4) in three samples and MTBE was detected between 0.048 mg/kg (S-3-PL12) to 15 mg/kg (S-3-PL1) in ten samples (ERI, 1998).

During the 1998 UST replacement activities, approximately 389 tons of soil and backfill were transported off-site disposal. The existing 10,000-gallon diesel and three 12,000-gallon gasoline USTs were installed as replacements (ERI, 1998).

1999 Groundwater Recovery Test: In April 1999, Alisto Engineering Group (Alisto) conducted groundwater recovery tests on wells MW-1 through MW-4, MW-6, MW-7 and MW-10 to assess the spatial variation in hydraulic conductivity in the shallow water-bearing zone across the Site. Testing by the Bouwer-Rice method yielded hydraulic conductivities of 2.46 x 10^{-2} ft/min for MW-1, 2.42 x 10^{-4} ft/min for MW-2, 3.82 x 10^{-4} ft/min for MW-3, 5.75 x 10-4 ft/min for MW-4, 1.99 x 10^{-2} ft/min for MW-6 1.09 x 10^{-4} ft/min for MW-7 and 8.78 x 10^{-5} ft/min for MW-10. The geometric mean of the hydraulic conductivity and flow velocity values were calculated to be 1.37 x 10-5 feet per second and 73.85 feet per year, respectively (Alisto, 1999).

1999 Extraction Well Installation: In November 1999, Cambria Environmental Technology, Inc. (Cambria) installed two 4-inch diameter wells (EX-1 and EX-2) on-site to facilitate potential remedial activities at the site. Well EX-1 was drilled to 39.5 feet bgs and EX-2 was drilled to 36.5 feet bgs. Groundwater was first encountered at 26 feet bgs. No TPH-G or BTEX, and relatively low MTBE concentrations (below 0.012 mg/kg) were reported in soil samples collected from EX-1 and EX-2 (Cambria, 2000).

2000 Interim Remedial Action and Recovery Testing: Between March 16 and April 30, 2000, Cambria conducted interim remedial activities at the site to evaluate the effectiveness of hydrocarbon and MTBE reduction using short-term groundwater extraction. During eight extraction events, approximately 10,900 gallons of groundwater was extracted from wells EX-1, EX-2 and MW-2. During the extraction events, stable to slightly decreasing hydrocarbon and MTBE concentration trends were reported in samples collected from wells MW-2 and EX-1, located immediately southwest of the existing USTs. Samples from well EX-2, located north of the existing USTs, exhibited lower hydrocarbon and MTBE concentrations than MW-2 and EX-1. In April 2000, during the batch extraction events, recovery tests were conducted on wells EX-1, EX-2 and MW-2. Based on the recovery test measurements, the calculated hydraulic conductivity values ranged from 1.85 x 10^{-4} ft/min to 8.33 x 10^4 ft/min with resulting flow velocities of 16 ft/year to 73 ft/year at well MW-2 (Cambria, 2000).

The calculated hydraulic conductivity values ranged from 2.02 x 10^{5} ft/min to 3.85 x 10^{-5} ft/min for well EX-1 with resulting flow velocities of 1.8 to 3.4 Ft/yr. And a well EX-2, the calculated hydraulic conductivity values ranged from 3.04 x 10^{-4} ft/min to 2.13 x 10^{-3} ft/min for resulting flow velocities of 27 ft/year to 187 ft/year. The geometric mean of these values is a hydraulic conductivity of 3.0 x 10^{-4} ft/min and resulting flow velocity of 26 ft/year (Cambria, 2000).

2001 Dual-Phase Extraction Pilot Test: From October 29, through November 2, 2001, Cambia performed a dual phase soil vapor and groundwater extraction (DPE) pilot test on the monitoring wells with the highest historical hydrocarbon concentrations (i.e., MW-2 and MW-4) and the extraction wells (EX-1 and EX-2) at the site. The DPE test results indicated that the vacuum influence was limited to within 18 to 28 feet of the extraction well. Water levels typically decreased several feet in the extraction wells and had a varied response in the observation wells. Estimated vapor-phase removal rates were approximately 200-pounds of hydrocarbon per day in wells MW-4 and EX-1, and less than 5-pounds of hydrocarbon per day in wells MW-2 and EX-2 (Cambria 2002).

Soil vapor concentrations showed a decreasing trend in wells MW-4 and EX-1 during the short-term pilot tests. Grab water samples collected before and after the pilot tests remained the same order of magnitude. A total of 6,500 gallons of water was extracted during the DPE pilot test and appropriately disposed off-site. Overall, the test results indicated that DPE is a feasible remedial alternative for the site (Cambria, 2002). Alameda County Environmental Health (ACEH) approved Cambria's August 8, 2002, *Dual Phase Extraction Pilot Test Report* as a Corrective Action Plan (CAP).

2005 Soil and Water Investigation: In Fall 2005, URS completed nine Geoprobe soil borings with co-located Hydropunch borings. The first phase of work was on-site source area characterization: five boring locations (A-1 through A-5) were advanced in the vicinity of the possible hydrocarbons source areas such as locations of former and current USTs, products dispensers, and in the vicinity of MW-4 to adequately characterize the lateral and vertical extent of petroleum hydrocarbons in soils in the identified source areas. An off-site assessment was completed during the second phase of work (borings A-7 through A-10) to further define the downgradient, cross-gradient, and up-gradient extent of the groundwater plume (soil boring A-6 was unable to be advanced due to close proximity to electric lines and product piping). Maximum concentrations of gasoline range organics (GRO), benzene, and MTBE were detected in soil at concentrations of 490 mg/kg [A-4 (23.5-24')], 0.11 mg/kg [A-5 (35-35.5')], and 0.84 mg/kg [A-1 (46-46.5')], respectively. Maximum concentrations of GRO, benzene, and MTBE were detected in ground water at concentrations of 510,000 µg/L [A-2 (21.3')], 11,000 µg/L [A-4 (34-36')], and 39,000 ug/L [A-4 (34-36')], respectively (URS, 2005).

The cross-gradient and downgradient lateral extents of the dissolved hydrocarbon plume were characterized during the last investigation. However, the vertical extent of the dissolved-phase hydrocarbons on the southern portion of the site was not defined. Specifically, significantly elevated concentrations were detected in Hydropunch groundwater samples collected from the bottom depths of soil borings A-2, A-3 and A-4. The bottom Hydropunch sample from boring A-2 (40-42 ft bgs) contained concentrations of GRO, benzene, and MTBE at 36,000 µg/L. 1,800 µg/L, and 110 µg/L, respectively. The bottom Hydropunch sample from boring A-3 (34-36 ft bgs) contained concentrations of GRO, benzene, and MTBE at 12,000µg/L, 21µg/L, and 8.3µg/L respectively. The bottom Hydropunch sample from boring A-4 (34-36 ft bgs) contained GRO, benzene, and MTBE concentrations of 120,000µg/L, 11,000µg/L and 39,000 µg/L respectively (URS, 2005).

Therefore, the vertical extent of dissolved phase petroleum hydrocarbon contamination remains unknown in this southern area of the site (URS, 2005). A work plan for soil and water investigation to delineate the vertical extent of contamination in the southern portion of the site was submitted to ACEH in October 2006.

2007 Soil and Groundwater Investigation: In April 2007, Stratus Environmental, Inc. (Stratus) advanced cone penetrometer test (CPT) borings in three locations onsite (CPT-1 through CPT-3) to maximum depths of 60 feet bgs. CPT-1 was advanced southwest of the dispenser islands and southeast of monitoring well MW-1; CPT-2 was advanced south of the dispenser islands and southwest of monitoring well MW-4; CPT-3 was advanced in the eastern corner of the side as requested by the ACEH. An Ultraviolet Induced Fluorescence (UVIF) module was used at each CPT boring location, analyzing the vertical extent of petroleum hydrocarbons in additional to providing soil profiling data. Groundwater samples were collected from multiple depths at each boring locations; physical soil samples were not collected during this investigation.

- GRO was detected above laboratory reporting limits in five of the seven groundwater samples, ranging from 170 µg/L (CPT-3-28-32') to 170,000 µg/L (CPT-1-37-41').
- Benzene was detected above laboratory reporting limits in four of the seven groundwater samples, ranging from 0.51 µg/L (CPT-3-23-27') to 7,700 µg/L (CPT-2-37-41').
- Toluene was detected above laboratory reporting limits in three of the seven groundwater samples, ranging from 57 µg/L (CPT-1-30-34') to 670 µg/L (CPT-2-28-32').

- Ethylbenzene was detected above laboratory reporting limits in four of the seven groundwater samples, ranging from 530 µg/L (CPT-2-37-41') to 2,600 µg/L (CPT-1-37-41').
- Total xylenes were detected above laboratory reporting limits in four of the seven groundwater samples, ranging from 290 µg/L (CPT-2-37-41') to 9,600 µg/L (CPT-1-37-41').
- MTBE was detected above laboratory reporting limits in five of the seven groundwater samples, ranging from 4.4 µg/L (CPT-3-56-60') to 6,500 µg/L (CPT-2-37-41').
- TBA was detected above laboratory reporting limits in groundwater sample CPT-2-37-41' at 2,400 µg/L.

2007-2008 DPE System Installation: Construction of the DPE system was started by Broadbent & Associates, Inc (BAI) and Stratus in late 2007. The system consists of a thermal/catalytic oxidizer with a 25 horsepower liquid ring blower designed to extract water and vapor from six on-site extraction wells. Extracted vapor were to be treated by thermal/catalytic oxidation and discharged to the atmosphere under the oversight of the Bay Area Air Quality Management District. Extracted groundwater was to be treated by a sediment filter and three 1,000 pounds carbon vessels before being discharged into the City of Oakland sanitary sewer system. DPE wells DPE-1 through DPE-5 were installed at the site to total depths ranging from 35 feet to 40 feet bgs. Well MW-2 was overdrilled and destroyed to allow DPE-4 to be installed in the same borehole. The system is currently connected to six wells (DPE-1 through DPE-5 and EX-1) (BAI, 2008a).

As of the end of the fourth quarter 2008 the system had not been started. BAI and Stratus were still coordinating with Pacific Gas & Electric (PG&E) to install electrical service to the system. Natural gas was completed to the site and system in third quarter 2008 (BAI, 2008a).

During DPE construction activities, on-site groundwater monitoring well MW-11 was installed to a total depth of 40 feet bgs on the southern corner of the site. Soil samples collected at 20 feet and 30 feet bgs reported maximum concentrations of 1.9 mg/kg GRO and 0.0089 mg/kg benzene. MTBE was not reported above the LRL in either of the soil samples (BAI, 2008a).

2009-2011 DPE System Startup Efforts: In 2009, Antea Group (formerly Delta Consultants) began coordinating with nearby businesses (Eastmont Mall and Burger King) for the 3-phase power source. Due to financial considerations, Antea Group also explored another alternative for the startup of the DPE system, which included reconfiguring the current system for single phase power.

2011 Remedial Action Site Investigation: Antea Group submitted the *Remedial Action Investigation Work Plan*, dated August 03, 2011 to the ACEH. The ACEH approved the proposed scope of work in an agency letter to Antea Group dated September 1, 2011. In October 2011, Antea Group and subcontractors advanced borings C-1 through C-5, and advanced and installed remedial wells SVE-1 and AS-1 per the August 2011 Work Plan. Antea Group submitted a *Remedial Investigation Work Plan Addendum*, dated December 13, 2011 which proposes a postponement of the AS/SVE pilot test described in the August 3, 2011 *Remedial Action Investigation Work Plan* to utilize a new remedial strategy called Plume Stop, a product created by Regenesis. Between March 26 and 30, 2012, Antea Group and Regenesis oversaw subcontractor Vironex inject Plume Stop at nine soil boring locations using direct push technology. Antea Group is currently conducting the post injection groundwater monitoring events as outlined in the December 2011 Work Plan Addendum.

FREE PRODUCT RECOVERY DURING GROUNDWATER MONITORING EVENTS

Free product was observed in groundwater monitoring well MW-2 between the 1993 and 1998, at thicknesses ranging from 2.60 feet (3/30/1994) to less than 0.01 feet (10/2/1997 to 7/21/1998). When free product was observed in the well, it was removed by bailer. Between 1993 and 1998, a cumulative total of 24.90 gallons of free product had been removed from the well (Alisto, 1998).

Free product was also observed in well MW-4 during the third quarter 2001 (0.03 inches), fourth quarter 2006 (0.11 inches), first quarter 2008 (0.01 inches), and third quarter 2008 (0.05 inches); and in EX-2 during the second quarter 2007 (0.01 inch). With the exception of 1.5 gallons of a free product/water mixture recovered from MW-4 during the third quarter 2008 (BAI, 2008b), free product was not recovered from these wells when observed.

SENSTIVE RECEPTORS

2000 Potential Receptor Survey, Expanded Site Plan and Well Search: In October 2000, Alisto completed a potential receptor survey, prepared an expanded site plan with neighboring property parcel information and underground utilities mapped, and identified wells in the vicinity of the site. A review of the files of the California Department of Water Resources (DWR) was performed to identify all known wells within one-half mile radius of the site. The results of the well search revealed that there were 17 wells other than the on-site monitoring sells. Of these, 11 were offsite monitoring wells; four were cathodic protection wells, one an industrial well, and one an irrigation well for a nearby cemetery. No domestic/municipal water supply wells were identified from review of the DWR files (Alisto, 2000).

2010 Sensitive Receptor Survey: Delta Consultants (Delta) submitted a *Sensitive Receptor Survey* in October 2010. As part of that receptor survey, Delta conducted a records review (environmental database search), a well radius search, and a search for other sensitive receptors which have the potential to be affected by the petroleum hydrocarbon release at the site. Delta's review of the historical aerial photographs indicated that the site in 1939 was primarily used for agricultural purposes with small family residences. In general, the site was developed to the current conditions with the station building in 1974. The historical topographic maps support the indication of residential houses and agriculture in the site region as early as 1915 to 1948. The well search indicated that 10 wells were within a one-mile radius of the site. DWR indicated the presence of 7 wells within a one-mile radius of the site. However, no records were found for the status of these wells as being active or abandoned. The main surface water bodies were Lake Merritt located northwest of the site and San Leandro Bay located west of the site. Several churches, schools and day care centers were located within a one-mile radius of the site. Based on the above identified receptors' distances form the site, directions from the site, and extent of hydrocarbon impact at the site, they were not anticipated to be affected by the petroleum hydrocarbon release at the site.

Appendix B

Alameda County Public Works Agency Soil Boring and Well 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: 09/26/2011 By jamesy

Permit Numbers: W2011-0592 to W2011-0594
Permits Valid from 10/03/2011 to 10/07/2011

Application Id: 1316627614861 **City of Project Site:** Oakland
Site Location: 7210 Bancroft Avenue, Oakland, CA 94605
Project Start Date: 10/03/2011 **Completion Date:** 10/07/2011
Assigned Inspector: Contact Steve Miller at (510) 670-5517 or stevem@acpwa.org

Applicant: Antea Group - Nadine Periat **Phone:** 408-826-1879
312 Piercy Road, San Jose, CA 95138
Property Owner: Eastmont Oakland Associates LLC **Phone:** 510-632-1131
1 Eastmont Town Center, 7200 Bancroft Ave, Oakland, CA 94605
Client: ** same as Property Owner **

	Total Due:	$795.00
Receipt Number: WR2011-0281	**Total Amount Paid:**	$795.00
Payer Name : Antea	Paid By: CHECK	**PAID IN FULL**

Works Requesting Permits:

Borehole(s) for Investigation-Geotechnical Study/CPT's - 5 Boreholes
Driller: Cascade - Lic #: 938110 - Method: other **Work Total: $265.00**

Specifications

Permit Number	Issued Dt	Expire Dt	# Boreholes	Hole Diam	Max Depth
W2011-0592	09/26/2011	01/01/2012	5	3.00 in.	35.00 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.

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. 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.

5. 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.

6. 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.

7. 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.

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.

Remediation Well Construction-Extraction - 1 Wells
Driller: Cascade - Lic #: 938110 - Method: other **Work Total: $265.00**

Specifications

Permit #	Issued Date	Expire Date	Owner Well Id	Hole Diam.	Casing Diam.	Seal Depth	Max. Depth
W2011-0593	09/26/2011	01/01/2012	SVE-1	10.00 in.	4.00 in.	8.00 ft	24.00 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. 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.

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

5. 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.

6. Minimum seal depth (Neat Cement Seal) is 2 feet below ground surface (BGS).

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

8. 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.

9. 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.

Remediation Well Construction-Injection - 1 Wells
Driller: Cascade - Lic #: 938110 - Method: other **Work Total: $265.00**

Specifications

Permit #	Issued Date	Expire Date	Owner Well Id	Hole Diam.	Casing Diam.	Seal Depth	Max. Depth
W2011-0594	09/26/2011	01/01/2012	AS-1	8.00 in.	2.00 in.	31.00 ft	34.00 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. 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.

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

5. 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.

6. Minimum seal depth (Neat Cement Seal) is 2 feet below ground surface (BGS).

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

8. 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.

9. 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.

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: 03/01/2012 By jamesy

Permit Numbers: W2012-0149
Permits Valid from 03/05/2012 to 03/07/2012

Application Id: 1330642222201 **City of Project Site:** Oakland
Site Location: 7210 Bancroft Ave
Project Start Date: 03/05/2012 **Completion Date:** 03/07/2012
Assigned Inspector: Contact Steve Miller at (510) 670-5517 or stevem@acpwa.org

Applicant: Antea Group - Nicole Persaud **Phone:** 407-758-3428
312 Piercy Road, San Jose, CA 95138
Property Owner: Eastmont Oakland Associates, LLC **Phone:** 510-632-1131
7200 Bancroft Ave, Oakland, CA 94605
Client: ** same as Property Owner **

Total Due: $265.00
Receipt Number: WR2012-0063 **Total Amount Paid:** $265.00
Payer Name : Nicole Persaud Paid By: MC **PAID IN FULL**

Works Requesting Permits:

Borehole(s) for Investigation-Environmental/Monitorinig Study - 5 Boreholes
Driller: Vironex, Inc - Lic #: 705927 - Method: DP **Work Total: $265.00**

Specifications

Permit Number	Issued Dt	Expire Dt	# Boreholes	Hole Diam	Max Depth
W2012-0149	03/01/2012	06/03/2012	5	2.00 in.	40.00 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: 03/01/2012 By jamesy

Permit Numbers: W2012-0149
Permits Valid from 03/13/2012 to 04/06/2012

Application Id:	1330642222201	**City of Project Site:**	Oakland
Site Location:	7210 Bancroft Ave		
Project Start Date:	03/05/2012	**Completion Date:**	03/07/2012
Assigned Inspector:	Contact Steve Miller at (510) 670-5517 or stevem@acpwa.org		
Extension Start Date:	03/13/2012	**Extension End Date:**	04/06/2012
Extension Count:	1	**Extended By:**	priest
Applicant:	Antea Group - Nicole Persaud 312 Piercy Road, San Jose, CA 95138	**Phone:**	407-758-3428
Property Owner:	Eastmont Oakland Associates, LLC 7200 Bancroft Ave, Oakland, CA 94605	**Phone:**	510-632-1131
Client:	** same as Property Owner **		

	Total Due:	$265.00
Receipt Number: WR2012-0063	**Total Amount Paid:**	$265.00
Payer Name : Nicole Persaud	Paid By: MC	**PAID IN FULL**

Works Requesting Permits:

Borehole(s) for Investigation-Environmental/Monitorinig Study - 14 Boreholes
Driller: Vironex, Inc - Lic #: 705927 - Method: DP **Work Total: $265.00**

Specifications

Permit Number	Issued Dt	Expire Dt	# Boreholes	Hole Diam	Max Depth
W2012-0149	03/01/2012	06/03/2012	14	2.00 in.	40.00 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.

Appendix C

Standard Operating Procedures

STANDARD OPERATING PROCEDURES

Utility Locating

Prior to drilling, boring and excavation locations and an approximate 15-foot by 15-foot box are marked with white paint or other distinct marking and cleared for underground utilities through Underground Service Alert (USA). In addition, Antea Group will contract an independent locator services to clear boring or excavation locations of subsurface assets. The first five feet (or more in instances where utilities are suspected in close proximity) of each borehole are air-knifed, or carefully advanced with a hand auger if shallow soil samples are necessary, to help evaluate the borehole location for underground structures or utilities in accordance with Antea Group's subsurface hazard avoidance policy.

Subsurface Investigation Methods – GeoProbe®, Sonic, Hollow Stem Auger Drilling, Sampling, and Borehole Completion

Borehole Advancement using Single-Wall GeoProbe®

Pre-cleaned push rods (typically one to two inches in diameter) are advanced using a hydraulic direct push-type rig for the purpose of collecting samples and evaluating subsurface conditions. The sample barrel located at the leading end of the drill rod serves as a soil sampler, and an acetate liner is inserted into the sample barrel rod prior to advancement of the push rod. Once the sample is collected, the rods and sampler are retracted and the acetate sample tubes are removed from the sampler. The sample barrel is then cleaned, filled with clean sample tubes, inserted into the borehole and advanced to the next sampling point where the sample collection process is repeated.

Undisturbed soil samples selected for laboratory analysis are cut away from the acetate sample liner using a hacksaw, or equivalent tool, in sections approximately 6 inches in length. The 6 inch samples are lined at each end with Teflon® sheets and capped with plastic caps. Labels documenting project number, borehole identification, collection date, and depth are affixed to each sample. The samples are then placed into an ice-filled cooler for delivery under chain-of-custody to a laboratory certified by the State of California for analysis. The remaining collected soil that has not been selected for laboratory analysis is logged using the United Soil Classification System (USCS) under the direction of a State Registered Professional Geologist, and is field screened for organic vapors using a photo ionization detector (PID), or an equivalent tool.

Borehole Advancement using Sonic Drilling

Pre-cleaned heavy-walled down-hole casings (typically 6 to 8 inches in diameter) are advanced using a sonic head. A smaller diameter core barrel (typically 4 to 6 inches in diameter) is advanced through the inside of the down-hole casings to remove the soil cuttings from the borehole for sample collection and evaluation of subsurface conditions.

During drilling, soil samples are collected continuously using the sonic core barrel. A physical description of soil characteristics (i.e. moisture content, consistency or density, odor, color, and plasticity), drilling difficulty, and soil type as a function of depth are described on boring logs. The soil cuttings are classified in accordance with the USCS and field screened for organic vapors using a PID.

Borehole Advancement using Hollow Stem Auger

Pre-cleaned hollow stem augers (typically 8 to 10 inches in diameter) are advanced using a drill rig for the purpose of collecting samples and evaluating subsurface conditions. A pre-cleaned split spoon sampler is lined with three 6-inch long brass or stainless steel tubes and attached to the drill rods. The sampler is then driven 18 inches into the underlying soils at the target sample interval by repeatedly dropping a 140-pound hammer over a 30-inch free fall distance. The number of blow counts to drive the sampler each 6-inch interval of sampler advancement are recorded on the field logs. The sampler is driven 18 inches or until the sampler has met refusal (typically 50 blows per six inches), then the sampler is retrieved. Alternatively, soil samples are retrieved by driving the sampler using a pneumatic hammer, when using a limited access rig.

Generally the bottom sample tube is selected for laboratory analysis. The middle tube is extruded for logging and PID screening, and the top tube is considered slough caved off from the sides of the boring prior to sampling.

The retained sample is carefully packaged for chemical analysis by capping each end of the sample with a Teflon sheet followed by a tight-fitting plastic cap and stored in a zip-type plastic bag. A label is affixed to the sample indicating the sample identification number, borehole number, sampling depth, sample collection date, and job number. The sample is then annotated on a chain-of-custody form and placed in an ice-filled cooler for transport to the laboratory.

During the drilling process, a physical description of the encountered soil characteristics (i.e. moisture content, consistency or density, odor, color, and plasticity), drilling difficulty, and soil type as a function of depth are described on boring logs. The soil cuttings are classified in accordance with the USCS.

Grab Groundwater Sample Collection

Once the target groundwater sampling depth has been reached, a Hydropunch™ tip is placed on leading end of the sampling rods. The Hydropunch™ tip is advanced approximately 2 feet to place the sample port within the target groundwater sampling zone (effort is made to position the center of the Hydropunch™ screen across the water table surface, if appropriate), and retracted to expose the Hydropunch™ screen. Grab groundwater samples are collected by lowering a pre-cleaned, single-sample polypropylene, disposable bailer or pre-cleaned stainless steel bailer down the inside of the sampler rod. The groundwater sample is decanted from the bailer to the sample container through a bottom emptying flow control valve to minimize volatilization. Alternatively, groundwater samples are collected by lowering a disposable bailer through the sampler rod or into the borehole.

Collected water samples are decanted directly into laboratory provided, pre-cleaned, vials or containers and sealed with Teflon-lined septum, screw-on lids. Labels documenting sample number, well identification, collection date, and type of preservative (if applicable, i.e. HCl for GRO, BTEX, and fuel oxygenates) are affixed to each sample. The samples are then placed into an ice-filled cooler for delivery under chain-of-custody to a laboratory certified by the State of California to perform the specified tests.

Borehole Completion

Upon completion of drilling and sampling, the inner casing rods are retracted. Neat cement grout, mixed at a ratio of 6 gallons of water per 94 pounds of Portland cement, is introduced via a tremie pipe to displace standing water in the

borehole, through the annulus of the outer casing rods. The outer rods are retracted as the grout is introduced to bottom of the boring to prevent the cross contamination of encountered water bearing zones. Displaced groundwater is collected at the surface and placed into DOT approved 55-gallon steel drums, or an equivalent storage container. In areas where the borehole penetrates asphalt or concrete, the borehole is capped with an equivalent thickness of asphalt or concrete patch to match finished grade.

Well Construction (typical)

Selected borings will be converted to groundwater monitoring wells by the installation of 2-inch or 4-inch diameter Schedule 40 polyvinyl chloride well casing with 0.020-inch factory slotted well screen as stated in the body of the work plan. A filter pack of Monterey #3 grade sand (or equivalent) will be placed in the annular space of the monitoring well borings, extending from the bottom of each well casing to approximately 2-feet above the top of the screened casing. A sanitary seal consisting of a 2-foot bentonite will be placed on above the filter sand and charged with water to create a seal. Neat cement grout, mixed at a ratio of 6 gallons of water per 94 pounds of Portland cement, is introduced via a tremie pipe to displace standing water in the well annulus bentonite to within two feet of the ground surface. Antea Group will install a minimum of a 5-foot annual seal. A traffic-rated well box will be installed on each well to protect and finish the well to surface grade.

The groundwater monitoring wells will be allowed to stabilize for a minimum of 72 hours after installation prior to development. Following development, the wells will be allowed stabilize for a minimum of 48 hours prior to the collection of any groundwater samples.

Organic Vapor Procedures

Soil samples are collected for analysis in the field for ionizable organic compounds using a PID with a 10.2 eV lamp. The test procedure involves measuring approximately 30 grams from an undisturbed soil sample, placing this sub-sample in a Zip-type bag. The container is warmed for approximately 20 minutes in the sun; then the head-space within the container is tested for total organic vapor, measured in parts per million as benzene (ppm; volume/volume). The instrument is calibrated prior to drilling. The results of the field-testing are noted on the boring logs. PID readings are useful as a qualitative indication of relative levels of contamination, but cannot be used to quantify petroleum hydrocarbon concentrations with the confidence of laboratory analyses.

Equipment Decontamination

Equipment that could potentially come in contact subsurface media and compromise the integrity of the samples is carefully decontaminated prior to drilling and sampling. Drilling auger and other large pieces of equipment are decontaminated using high pressure hot water spray. Soil and groundwater sampling apparatus, groundwater pumps, liners and other equipment are decontaminated in an Alconox scrub solution and double rinsed in clean tap water rinse followed by a final distilled water rinse.

The rinsate and other wastewater are contained in 55-gallon DOT-approved drums, labeled (to identify the contents, generation date and project) and stored on-site pending waste profiling and disposal.

Waste Handling and Disposal *(Soil Cuttings and Rinsate/Purge Water)*

Soil cuttings and rinsate/purge water generated during drilling and sampling are stored on-site in DOT-approved 55-gallon steel drums pending characterization. A label is affixed to the drums indicating the contents of the drum, suspected contaminants, date of generation, and the boring number from which the waste is generated. The drums are removed from the site by a licensed waste disposal contractor to an appropriate facility for treatment/recycling.

SOIL VAPOR WELLS STANDARD FIELD AND SAMPLING PROCEDURES

Utility Locating

Prior to drilling, boring and excavation locations and an approximate 15-foot by 15-foot box are marked with white paint or other distinct marking and cleared for underground utilities through Underground Service Alert (USA). In addition, Antea Group will contract an independent locator services to clear boring or excavation locations of subsurface assets. Soil vapor wells are not air-knifed, and are instead carefully advanced using hand auger drilling techniques.

Borehole Advancement using Hand Auger

A pre-cleaned hand auger (typically three inches in diameter) is advanced by hand for the purpose of collecting samples and evaluating subsurface conditions. If required, soil samples are collected into one 6-inch brass or stainless steel tube inserted into the hand auger during advancement. Soil samples may also be collected into pre-cleaned certified laboratory-provided glass jars.

The retained sample is carefully packaged for chemical analysis by capping each end of the sample with a Teflon sheet followed by a tight-fitting plastic cap and stored in a zip-type plastic bag. A label is affixed to the sample indicating the sample identification number, borehole number, sampling depth, sample collection date, and job number. The sample is then annotated on a chain-of-custody form and placed in an ice-filled cooler for transport to the laboratory.

During the drilling process, a physical description of the encountered soil characteristics (i.e. moisture content, consistency or density, odor, color, and plasticity), drilling difficulty, and soil type as a function of depth are described on boring logs. The soil cuttings are classified in accordance with the USCS.

Soil Vapor Well Completion (Typical)

Shallow soil vapor well borings are typically advanced to 5.5 feet below ground surface (bgs), but may be completed deeper if necessary or shallower if groundwater is present. The borings will be completed into soil vapor wells by placing one foot of Monterey #3 or #30 sand into the borehole. A soil vapor probe connected to seven feet of 0.25-inch outside diameter Teflon® tubing and installed in center of the sand pack at a depth of five feet bgs. A one foot interval of dry granular bentonite transition seal is placed on top of the sand pack. A neat cement sanitary seal is placed on top of the transition seal to approximately one foot bgs. Concrete is placed from 1.0 feet bgs to approximately 4 inches below the surface and a traffic-rated well box is installed at the surface. The well is completed by installing a Swagelok® valve on the terminating end of the Teflon® tubing.

Organic Vapor Procedures

Soil samples are collected for analysis in the field for ionizable organic compounds using a PID with a 10.2 eV lamp. The test procedure involves measuring approximately 30 grams from an undisturbed soil sample, placing this sub-sample in a Zip-type bag. The container is warmed for approximately 20 minutes in the sun; then the head-space within the container is tested for total organic vapor, measured in parts per million as benzene (ppm; volume/volume). The instrument is calibrated prior to drilling. The results of the field-testing are noted on the boring logs. PID readings are useful as a qualitative indication of relative levels of contamination, but cannot be used to quantify petroleum hydrocarbon concentrations with the confidence of laboratory analyses.

Equipment Decontamination

Equipment that could potentially come in contact subsurface media and compromise the integrity of the samples is carefully decontaminated prior to drilling and sampling. Drilling auger and other large pieces of equipment are decontaminated using high pressure hot water spray. Soil and groundwater sampling apparatus, groundwater pumps, liners and other equipment are decontaminated in an Alconox scrub solution and double rinsed in clean tap water rinse followed by a final distilled water rinse.

The rinsate and other wastewater are contained in 55-gallon DOT-approved drums, labeled (to identify the contents, generation date and project) and stored on-site pending waste profiling and disposal.

Waste Handling and Disposal (Soil Cuttings and Rinsate/Purge Water)

Soil cuttings and rinsate/purge water generated during drilling and sampling are stored on-site in DOT-approved 55-gallon steel drums pending characterization. A label is affixed to the drums indicating the contents of the drum, suspected contaminants, date of generation, and the boring number from which the waste is generated. The drums are removed from the site by a licensed waste disposal contractor to an appropriate facility for treatment/recycling.

Soil Vapor Well Sampling

Following installation, the soil vapor wells will be allowed to equilibrate for a minimum of three days and then sampled using the standard operating procedure described below:

1. One-foot sections of 0.25-inch outside diameter Teflon tubing will be used to connect the Swagelok wellhead valve to a Swagelok T-union fitting, one 6-liter Summa canister (purge), and one 1-liter or 6-liter Summa canister (sample). Each Summa canister will be outfitted with its own particulate filter, vacuum gauge, and flow regulator calibrated to a flow rate of between 100 and 200 milliliters per minute (ml/min). With the exception of the 6-liter purge Summa canister, dedicated equipment and materials will be used at each well to avoid cross-contamination.
2. Once the sampling train is assembled, a vacuum test will be performed to ensure the integrity of the sampling train. With the Swagelok wellhead valve closed, the 6-liter purge Summa canister will be opened for a minimum of 10 minutes. If a vacuum is not maintained for at least 10 minutes, the fittings will be tightened and the vacuum test repeated.
3. Once the integrity of the sampling train has been verified by the vacuum test, the well will be purged. The purge

amount will be based on Department of Toxic Substances Control (DTSC) guidelines, which involves purging three dead space volumes (tubing volume + void space of the sand pack). Assuming a total well and sampling train tubing length of 10 feet and 35% porosity of the well's sand pack, the well will be purged approximately 1.4 liters (1,400 ml). Assuming a sustained flow rate of 150ml/min, a purging time of 9 minutes and 20 seconds should be anticipated. Total purge times may be adjusted based on actual flow rates observed in the field.

4. After purging activities are complete, Antea Group will construct a sampling shroud and place it over the well and wellhead valve. During sample collection, Antea Group field staff will continually utilize laboratory-grade helium as a leak check compound to evaluate the integrity of the system. Prior to vapor sample collection, the vapor sampling manifold where it exits the well will be enclosed in a vapor containment shroud that will be filled with a known concentration of helium in order to provide an accurate leak test. The shroud will be sealed with a bentonite slurry or appropriate substitute, and a helium detector will be used to verify the percent saturation within the shroud is achieved and maintained throughout the sampling process. It is recommended that a predetermined concentration of 10 to 30 percent by volume of helium be added to the shroud, and that concentration must then be maintained for the duration of sampling activities. If the percent helium cannot maintained at the desired concentration, all fittings, joints, and seals will be checked and helium reapplied until the concentration is maintained at a steady percent. Laboratory analytical results for the leak check compound will be used to determine the air-tightness of the sampling system.

5. Upon completion of shroud construction, the sample Summa canister will be opened and sample collected. Once the sample Summa canister is filled to -5 inches mercury (in Hg), the canister will be closed. All general sampling information, purge times, sample times, and PID readings will be recorded on field sampling forms.

6. After sampling, the Swagelok wellhead valve will be returned to the closed position. Collected samples will be given unique sample names and transported under chain of custody protocol to a California-certified analytical laboratory. Analyzed compounds will include the constituents of concern and the leak check compound used during sampling.

Appendix D

Boring Logs

Project No:	I42611117	Client:	ELT COP	Well/ Boring ID: C-1
Logged By:	Caitlin Morgan	Location:	7210 Bancroft Avenue, Oakland, CA	Page 1 of 2
Driller:	Cascade Drilling	Date Drilled:	10/6/2011	
Drilling Method:	GeoProbe	Hole Diameter:	3 1/4"	
Sampling Method:	Direct Push	Hole Depth:	35'	
Casing Type:	NA	Well Diameter:	NA	
Slot Size:	NA	Well Depth:	NA	
Gravel Pack:	NA	Casing Stickup:	NA	
Elevation		Northing		Easting

Explanation:
- ▼ Static Groundwater Level
- ▽ First Encountered Water
- Neat Cement Grout

Backfill	Static Water Level	Moisture Content	PID Reading (ppm)	Penetration (blows/6")	Depth (feet)	Sample Recovery	Sample Interval	Soil Type	LITHOLOGY / DESCRIPTION
				Air Knife to 5 ft					Asphalt to 3.5"
		Moist	16		5			CL	**Lean Clay (CL)**; brown; 100% fines, trace fine to coarse grained sand
					8				**As Above**; medium brown, low plasticity, trace rounded gravel
		Moist	16		10				
					13				**As Above**
	▽	Very Moist/ Wet	12.2		18				**Sandy Lean Clay (CL)**; brown and black, 60% fines, 40% fine grained sand, low plasticity
		Wet			21			SW	**Well Graded Sand with Gravel (SW)**; medium brown, 15% coarse gravel

Project No:	I42611117	Client:	ELT COP	Well/ Boring ID: C-1	
Logged By:	Caitlin Morgan	Location:	7210 Bancroft Ave., Oakland, CA	Page 2 of 2	
Driller:	Cascade Drilling	Date Drilled:	10/6/2011	Explanation:	
Drilling Method:	GeoProbe	Hole Diameter:	3 1/4"	▼	Static Groundwater Level
Sampling Method:	Direct Push	Hole Depth:	35'	▽	First Encountered Water
Casing Type:	NA	Well Diameter:	NA		Neat Cement Grout
Slot Size:	NA	Well Depth:	NA		
Gravel Pack:	NA	Casing Stickup:	NA		
Elevation		Northing		Easting	

Backfill	Static Water Level	Moisture Content	PID Reading (ppm)	Penetration (blows/6")	Depth (feet)	Sample Recovery	Sample Interval	Soil Type	LITHOLOGY / DESCRIPTION
					23			SW	**Well Graded Sand with Gravel (SW);** medium brown, 20% gravel
					24				**As Above**
	Moist		990		25				
					26				
					27				
					28			SC	**Clayey Sand (SC);** fine to medium grained; grey.
					29				
			1782		30				
					31				
					32				**As Above (SC);** with increasing gravels to the total depth explored
					33				
					34				
			34.9		35				

Boring terminated at 35 feet below ground surface (bgs).

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anteagroup	Project No:	I42611117	Client:	ELT COP	Well/ Boring ID: C-2
	Logged By:	Caitlin Morgan	Location:	7210 Bancroft Avenue, Oakland, CA	Page 1 of 2
	Driller:	Cascade Drilling	Date Drilled:	10/5/2011	Explanation:
	Drilling Method:	GeoProbe	Hole Diameter:	3 1/4"	▼ Static Groundwater Level
	Sampling Method:	Direct Push	Hole Depth:	35'	▽ First Encountered Water
	Casing Type:	NA	Well Diameter:	NA	Neat Cement Grout
	Slot Size:	NA	Well Depth:	NA	
	Gravel Pack:	NA	Casing Stickup:	NA	
	Elevation		Northing		Easting

Backfill	Static Water Level	Moisture Content	PID Reading (ppm)	Penetration (blows/6")	Depth (feet)	Sample Recovery	Sample Interval	Soil Type	LITHOLOGY / DESCRIPTION
				Air Knife to 5 ft	0				Asphalt to 3.5"
					1				
					2				
					3				
					4				
		Moist	0.5		5			ML	**Silt (ML);** brown.
					6				
					7				
					8				
					9				
		Moist	0.3		10				**As Above**
					11				
					12				
					13				
					14				
		Moist			15			SC	**Clayey Sand with Gravel (SC);** brown to red-brown
		Very Moist	0.5		16				
					17				**As Above;** with increasing gravel to 3mm in size, rounded to subrounded
		Very Moist/			18				
	▽	Wet	0.4		19				
					20				
					21				
					22				

anteagroup

Project No:	I42611117	Client:	ELT COP
Logged By:	Caitlin Morgan	Location:	7210 Bancroft Ave., Oakland, CA
Driller:	Cascade Drilling	Date Drilled:	10/5/2011
Drilling Method:	GeoProbe	Hole Diameter:	3 1/4"
Sampling Method:	Direct Push	Hole Depth:	35'
Casing Type:	NA	Well Diameter:	NA
Slot Size:	NA	Well Depth:	NA
Gravel Pack:	NA	Casing Stickup:	NA
Elevation		Northing	Easting

Well/ Boring ID: C-2

Explanation:
- ▼ Static Groundwater Level
- ▽ First Encountered Water
- Neat Cement Grout

Backfill	Static Water Level	Moisture Content	PID Reading (ppm)	Penetration (blows/6")	Depth (feet)	Sample Recovery	Sample Interval	Soil Type	LITHOLOGY / DESCRIPTION
					23			SC	**Clayey Sand with Gravel (SC);** brown to red-brown, increasing gravels
					24				
					25				
	Wet		0.2		26			ML	**Sandy Silt (ML);** dark brown, orange mottling
					27				
					28			SW	**Well Graded Sand with Gravel (SW);** brown, orange mottling
					29				
					30				
	Moist		0.2		31			CL	**Lean Clay (CL);** brown with orange and grey mottling, medium plasticity
					32				
					33				**As Above**
					34				
			2.4		35				**As Above;** dark brown, trace sand and gravel

Boring terminated at 35 feet below ground surface (bgs).
At 23 feet bgs, the driller switched to 2.5 foot rods.

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Project No:	I42611117	Client:	ELT COP	Well/ Boring ID: C-3	
Logged By:	Caitlin Morgan	Location:	7210 Bancroft Avenue, Oakland, CA	Page 1 of 2	
Driller:	Cascade Drilling	Date Drilled:	10/5/2011	Explanation:	
Drilling Method:	GeoProbe	Hole Diameter:	3 1/4"	▼	Static Groundwater Level
Sampling Method:	Direct Push	Hole Depth:	35'	▽	First Encountered Water
Casing Type:	NA	Well Diameter:	NA		Neat Cement Grout
Slot Size:	NA	Well Depth:	NA		
Gravel Pack:	NA	Casing Stickup:	NA		
Elevation		Northing		Easting	

Backfill	Static Water Level	Moisture Content	PID Reading (ppm)	Penetration (blows/6")	Depth (feet)	Sample Recovery	Sample Interval	Soil Type	LITHOLOGY / DESCRIPTION
				Air Knife to 5 ft					Asphalt to 3.5"
					1				
					2				
					3				
					4				
		Moist	0.1		5			SM	**Silty Sand (SM);** brown to grey
					6				
					7				
					8				**As Above**
					9				
		Moist	0.3		10				
					11				
					12				
					13				**As Above**
					14				
					15				
					16				
					17				
		Moist	0.5		18			ML	**Silt with Gravel (ML);** grey to black
					19			SP	**Poorly Graded Sand (SP);** brown
	▽	Very Moist	0.5		20			SM	**Silty Sand with Gravel (SM)**
					21			SP	**Poorly Graded Sand with Gravel (SP)**
					22				

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Project No:	I42611117	Client:	ELT COP
Logged By:	Caitlin Morgan	Location:	7210 Bancroft Ave., Oakland, CA
Driller:	Cascade Drilling	Date Drilled:	10/5/2011
Drilling Method:	GeoProbe	Hole Diameter:	3 1/4"
Sampling Method:	Direct Push	Hole Depth:	35'
Casing Type:	NA	Well Diameter:	NA
Slot Size:	NA	Well Depth:	NA
Gravel Pack:	NA	Casing Stickup:	NA
Elevation		Northing	Easting

Well/ Boring ID: C-3

Explanation:
- ▼ Static Groundwater Level
- ▽ First Encountered Water
- Neat Cement Grout

Backfill	Static Water Level	Moisture Content	PID Reading (ppm)	Penetration (blows/6")	Depth (feet)	Sample Recovery	Sample Interval	Soil Type	LITHOLOGY / DESCRIPTION
					23			CL	**Lean Clay (CL);** brown, medium plasticity
					24			SM	**Silty Sand with Gravel (SM)**
		Wet	0.9		25			SP	**Poorly Graded Sand with Gravel (SP);** grey to green, coarse grained sand
					26				
					27				**As Above;** grey, trace roots
			0.8		28				
					29				
			0.6		30				
					31				
					32				**As Above**
					33			CL	**Lean Clay (CL);** brown to orange, medium plasticity
		Wet			34			SP	**Poorly Graded Sand with Gravel (SP)**
			0.6		35				

Boring terminated at 35 feet below ground surface (bgs).
Strong potential petroleum odor present at 26.5 feet bgs.
Driller switched to smaller rods.

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Project No:	142611117	Client:	ELT COP
Logged By:	Caitlin Morgan	Location:	7210 Bancroft Avenue, Oakland, CA
Driller:	Cascade Drilling	Date Drilled:	10/4/2011
Drilling Method:	GeoProbe	Hole Diameter:	3 1/4"
Sampling Method:	Direct Push	Hole Depth:	35'
Casing Type:	NA	Well Diameter:	NA
Slot Size:	NA	Well Depth:	NA
Gravel Pack:	NA	Casing Stickup:	NA
Elevation		Northing	Easting

Well/ Boring ID: C-4

Explanation:
- ▼ Static Groundwater Level
- ▽ First Encountered Water
- Neat Cement Grout

Backfill	Static Water Level	Moisture Content	PID Reading (ppm)	Penetration (blows/6")	Depth (feet)	Sample Recovery	Sample Interval	Soil Type	LITHOLOGY / DESCRIPTION
				Air Knife to 5 ft					Asphalt to 3.5"
		Moist	0.0		5			CL	**Lean Clay with Sand (CL);** brown, fine grained sand
					8				**As Above;** medium grained sand
		Moist	NA		10				
					13				
					15				**As Above**
		Moist	NA		18			SC	**Clayey Sand with Gravel (SC);** brown with orange and black mottling
	▽				20				
					22				

Project No:	I42611117	Client:	ELT COP	Well/ Boring ID: C-4
Logged By:	Caitlin Morgan	Location:	7210 Bancroft Ave., Oakland, CA	Page 2 of 2
Driller:	Cascade Drilling	Date Drilled:	10/4/2011	
Drilling Method:	GeoProbe	Hole Diameter:	3 1/4"	
Sampling Method:	Direct Push	Hole Depth:	35'	
Casing Type:	NA	Well Diameter:	NA	
Slot Size:	NA	Well Depth:	NA	
Gravel Pack:	NA	Casing Stickup:	NA	
Elevation		Northing		Easting

Explanation:
- Static Groundwater Level
- First Encountered Water
- Neat Cement Grout

Backfill	Static Water Level	Moisture Content	PID Reading (ppm)	Penetration (blows/6")	Depth (feet)	Sample Recovery	Sample Interval	Soil Type	LITHOLOGY / DESCRIPTION
					23			SC	**Clayey Sand with Gravel (SC);** brown with orange and black mottling
					24				
					25				
		Moist	0.0					CL	**Lean Clay (CL);** brown, medium plasticity
					26				
					27				
					28				
					29				
					30				
		Moist	20.5						**As Above;** light brown
					31				
					32				
					33				
					34				
					35				**As Above**

Boring terminated at 35 feet below ground surface (bgs).
Driller switched to smaller rods.

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Project No:	I42611117	Client:	ELT COP	Well/ Boring ID: C-5
Logged By:	Caitlin Morgan	Location:	7210 Bancroft Avenue, Oakland, CA	Page 1 of 2
Driller:	Cascade Drilling	Date Drilled:	10/5/2011	
Drilling Method:	GeoProbe	Hole Diameter:	3 1/4"	
Sampling Method:	Direct Push	Hole Depth:	35'	
Casing Type:	NA	Well Diameter:	NA	
Slot Size:	NA	Well Depth:	NA	
Gravel Pack:	NA	Casing Stickup:	NA	
Elevation		Northing		Easting

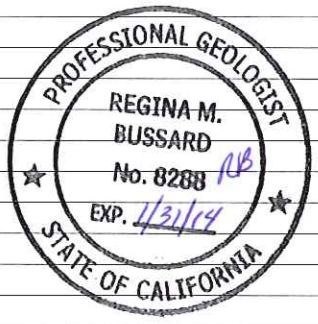
Explanation:
- ▼ Static Groundwater Level
- ▽ First Encountered Water
- Neat Cement Grout

Backfill	Static Water Level	Moisture Content	PID Reading (ppm)	Penetration (blows/6")	Depth (feet)	Sample Recovery	Sample Interval	Soil Type	LITHOLOGY / DESCRIPTION
				Air Knife to 5 ft					Asphalt to 3.5"
					1				
					2				
					3				
					4				
		Moist	1.0		5			CL	**Lean Clay with Sand (CL);** brown to dark brown, trace gravel present
					6				
					7			ML	**Silt (ML);** brown
					8				
					9			CL	**Lean Clay (CL);** brown with orange mottling
		Moist	NA		10				**As Above;** trace medium-sized gravel present, oxidation stains
					11				
		Moist	29		12			CH	**Fat Clay (CH);** grey; medium to high plasticity
					13				
					14				
		Moist	4.6		15			SP	**Poorly Graded Sand with Gravel (SP);** green
					16				**As above;** brown to grey
					17			ML	**Silt (ML);** brown to orange
	▽	Wet	11.6		18			SM	**Silty Sand (SM);** green
					19				
					20				
					21				
					22				

anteagroup	Project No: I42611117	Client: ELT COP		Well/ Boring ID: C-5
	Logged By: Caitlin Morgan	Location: 7210 Bancroft Ave., Oakland, CA		Page 2 of 2
	Driller: Cascade Drilling	Date Drilled: 10/4/2011		Explanation:
	Drilling Method: GeoProbe	Hole Diameter: 3 1/4"		▼ Static Groundwater Level
	Sampling Method: Direct Push	Hole Depth: 35'		▽ First Encountered Water
	Casing Type: NA	Well Diameter: NA		Neat Cement Grout
	Slot Size: NA	Well Depth: NA		
	Gravel Pack: NA	Casing Stickup: NA		
	Elevation	Northing	Easting	

Backfill	Static Water Level	Moisture Content	PID Reading (ppm)	Penetration (blows/6")	Depth (feet)	Sample Recovery	Sample Interval	Soil Type	LITHOLOGY / DESCRIPTION
					23			SM	**Silty Sand (SM);** green
					24				
		Sat	11.2					SP	**Poorly Graded Sand with Gravel (SP);** grey
					25		▼		
					26		▲	ML	**Silt with Sand (ML);** grey to green-grey, fine grained sands, strong odor
					27				
					28		▼		**As Above**
							▲		
					29				
					30		▼		
		Moist	264				▲		**As Above**
					31				
					32				
					33		▼		
							▲		**As Above**
					34			CL	**Lean Clay with Sand (CL)**
			834		35		▼	SP	**Poorly Graded Sand (SP);** fine grained sand

Boring terminated at 35 feet below ground surface (bgs).
Driller switched to smaller rods.



Project No:	I42611117	Client:	ELT COP		Well/ Boring ID: SVE-1
Logged By:	Caitlin Morgan	Location:	7210 Bancroft Avenue, Oakland, CA		Page 1 of 1
Driller: Cascade Drilling		Date Drilled:	10/6/2011	Explanation:	
Drilling Method:	GeoProbe w/ Hollow Stem	Hole Diameter:	10"	▼	Static Groundwater Level
Sampling Method:	CA Mod SS	Hole Depth:	22'	▽	First Encountered Water
Casing Type:	Schedule 40 PVC	Well Diameter:	4"		Blank Well Casing
Slot Size:	0.020	Well Depth:	22'		Well Screen
Gravel Pack:	#2/12	Casing Stickup:	NA		Neat Cement Grout
Elevation		Northing		Easting	Bentonite Seal
					Sand Pack

Well Completion (Backfill / Casing)	Static Water Level	Moisture Content	PID Reading (ppm)	Penetration (blows/6")	Depth (feet)	Sample Recovery	Sample Interval	Soil Type	LITHOLOGY / DESCRIPTION
									Asphalt to 4"
Neat Cement				Air-knifed to 5 ft	1				
					2				
					3				
					4				
		Moist	1.2		5			CL	**Lean Clay with Sand (CL);** brown
Bentonite					6				**Sandy Lean Clay (CL);** 60% fines, 40% medium to coarse grained sand
					7				
					8				
					9				**As above;** oxidation stains
		Moist	1.6		10				**Sandy Lean Clay (CL);** medium brown, 70% fines, 30% coarse grained sand
					11				
					12				
					13				(Strong odor at 12.5 feet bgs)
Sand Pack		Very Moist							**Sandy Lean Clay (CL);** dark to light brown, 70% fines, 30% fine grained sands, visible contamination
					14				
		Very Moist	4.3		15				**As Above**
					16				
					17				
					18				**As above;** strong odor
	▽				19				
			2497		20				
					21				
					22				
Bentonite					23				
					24				
					26				
					27				
					28				

PROFESSIONAL GEOLOGIST
REGINA M. BUSSARD
No. 8289
EXP. 1/31/14
STATE OF CALIFORNIA

Boring terminated at 28 feet below ground surface (bgs). **Drillers extended to borehole 28 feet bgs by accident.

Project No:	I42611117	Client:	ELT COP	Well/ Boring ID: AS-1
Logged By:	Caitlin Morgan	Location:	7210 Bancroft Avenue, Oakland, CA	Page 1 of 2
Driller: Cascade Drilling		Date Drilled:	10/4/2011	
Drilling Method:	GeoProbe	Hole Diameter:	3 1/4"	
Sampling Method:	Direct Push	Hole Depth:	35'	
Casing Type:	Teflon/ Stainless Steel	Well Diameter:	0.25"/2"	
Slot Size:	0.010"	Well Depth:	34'	
Gravel Pack:	#2/12 Sand	Casing Stickup:		
Elevation		Northing		Easting

Explanation:
- Static Groundwater Level
- First Encountered Water
- Blank Well Casing
- Well Screen
- Neat Cement Grout
- Bentonite Seal
- Sand Pack

Well Completion (Backfill / Casing)	Static Water Level	Moisture Content	PID Reading (ppm)	Penetration (blows/6")	Depth (feet)	Sample Recovery	Sample Interval	Soil Type	LITHOLOGY / DESCRIPTION
				Air Knife to 5 ft	1				Asphalt to 3.5"
					2				
					3				
					4				
Neat Cement		Moist	63.3		5			CL	**Sandy Lean Clay (CL);** medium plasticity, firm
					6				
		Moist	1.3		7				**As Above**
					8				
		Moist	52.5		9				
		Moist	68		10				**Lean Clay (CL);** medium brown,100% fines, low plasticity, trace rounded gravel
					11				
					12				
		Moist	30.8		13				**As Above;** mottled brown, red and green in color
					14				
		Moist	51.2		15				**Sandy Lean Clay (CL);** 60% fines, 40% subangular coarse grained sand
			23.7		16				
					17				
		Very Moist	3.6		18				
	▽				19				
		Sat	73		20				
					21				
			4.6		22				

Project No:	142611117	Client:	ELT COP	Well/ Boring ID: AS-1
Logged By:	Caitlin Morgan	Location:	7210 Bancroft Ave., Oakland, CA	Page 2 of 2
Driller:	Cascade Drilling	Date Drilled:	10/6/2011	
Drilling Method:	GeoProbe	Hole Diameter:	3 1/4"	
Sampling Method:	Direct Push	Hole Depth:	35'	
Casing Type:	Teflon/ Stainless Steel	Well Diameter:	0.25"/2"	
Slot Size:	0.010"	Well Depth:	34'	
Gravel Pack:	#2/12 Sand	Casing Stickup:	NA	
Elevation		Northing		Easting

Explanation:
- Static Groundwater Level
- First Encountered Water
- Teflon Tubing
- Well Screen
- Neat Cement Grout
- Bentonite Seal
- Sand Pack

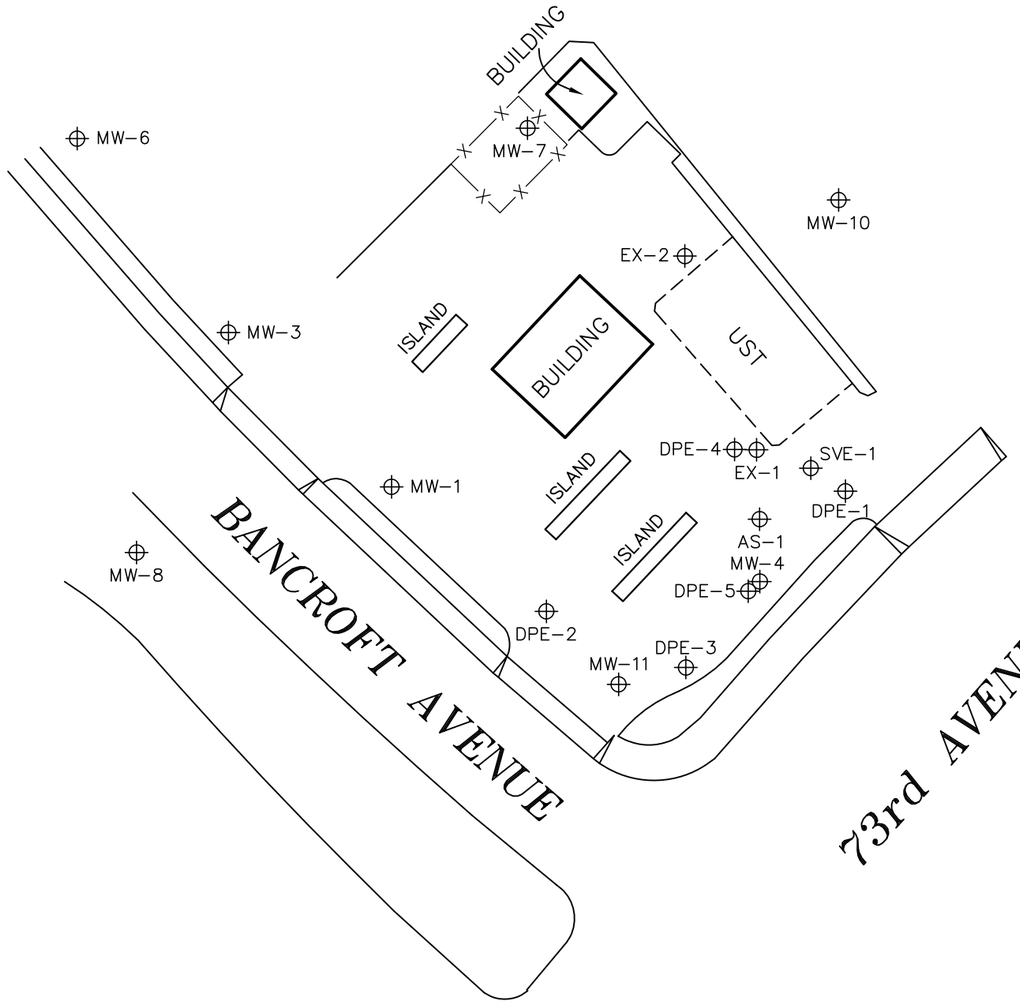
Well Completion (Backfill / Casing)	Static Water Level	Moisture Content	PID Reading (ppm)	Penetration (blows/6")	Depth (feet)	Sample Recovery	Sample Interval	Soil Type	LITHOLOGY / DESCRIPTION
Neat Cement			27.9		23			CL	Sandy Lean Clay (CL)
					24				
			57.1		25				As Above
					26				
					27				
					28				
Bentonite			48.9		29			SP	Poorly Graded Sand with Gravel (SP)
					30				
					31				
Sand Pack			1.8		32				
					33			SC	Clayey Sand (SC); coarse grained sand

Boring terminated at 35 feet below ground surface (bgs).
2.5 foot rods used due to sticking rods.

PROFESSIONAL GEOLOGIST
REGINA M. BUSSARD
No. 8288
EXP. 4/31/14
STATE OF CALIFORNIA

Appendix E

Survey Data



NOTES:

1. COORDINATES ARE BASED ON THE CALIFORNIA COORDINATE SYSTEM, ZONE III, NAD 83.
2. BENCHMARK IS NGS HT0281, DISK ON CONCRETE HEADWALL SOUTHWEST OF SPRR NORTHWEST OF CROSSING OF 98TH AVENUE.
ELEVATION = 14.20 FEET, NAVD 88 DATUM.
3. SURVEYED AT THE REQUEST OF ANTEA GROUP IN OCTOBER 2011, PROJECT NO. 142611117.

MONITORING WELL LOCATION MAP FOR

76 (FORMER BP) STATION NO. 11117

7210 BANCROFT AVENUE
OAKLAND, CALIFORNIA

MID COAST ENGINEERS
CIVIL ENGINEERS AND LAND SURVEYORS
70 PENNY LANE SUITE A WATSONVILLE, CA 95076
(831) 724-2580

SCALE IN FEET
0 40 80

SCALE:	1"=40'
JOB NO.	11104
DATE:	OCTOBER 27, 2011
SHEET:	1 OF 1

76 (FORMER BP) STATION NO. 11117
7210 Bancroft Avenue
Oakland, California

ANTEA Project No. 142611117

Mid Coast Engineers Project : 11104
User name MCE Date & Time 9:25:42 AM 10/27/2011
Coordinate System US State Plane 1983 Zone California Zone 3 0403
Project Datum NAD 1983 (Conus)
Vertical Datum NAVD 88
Coordinate Units US survey feet
Distance Units US survey feet
Elevation Units US survey feet

Point Number	Northing	Easting	Elevation	Description
19	2105824.19	6076948.02	44.64	AS-1tob
15	2105831.54	6076970.65	44.28	DPE-1toc
16	2105832.30	6076970.66	45.03	DPE-1tob
143	2105799.84	6076891.70	43.03	DPE-2toc
144	2105800.46	6076891.69	43.73	DPE-2tob
24	2105785.02	6076928.55	43.27	DPE-3toc
25	2105785.92	6076928.44	44.04	DPE-3tob
11	2105842.59	6076941.38	44.08	DPE-4toc
12	2105843.15	6076941.23	44.88	DPE-4tob
20	2105805.18	6076945.01	43.60	DPE-5toc
21	2105805.73	6076945.20	44.41	DPE-5tob
13	2105842.47	6076947.22	44.20	EX-1toc
14	2105843.01	6076947.02	45.03	EX-1tob
5	2105893.61	6076928.28	45.33	EX-2toc
6	2105893.89	6076928.39	45.58	EX-2tob
141	2105832.71	6076850.83	43.14	MW-1toc
142	2105833.13	6076850.80	43.60	MW-1tob
139	2105873.43	6076807.78	43.27	MW-3toc
140	2105873.88	6076807.97	43.62	MW-3tob
22	2105807.72	6076948.07	43.64	MW-4toc
23	2105808.58	6076948.01	44.45	MW-4tob
89	2105924.60	6076767.84	43.64	MW-6toc
90	2105924.84	6076767.90	43.90	MW-6tob
7	2105927.36	6076886.73	44.21	MW-7toc
8	2105927.76	6076886.76	45.32	MW-7tob

76 (FORMER BP) STATION NO. 11117
7210 Bancroft Avenue
Oakland, California

ANTEA Project No. 142611117

Point Number	Northing	Easting	Elevation	Description
120	2105815.39	6076783.54	44.18	MW-8toc
121	2105815.61	6076783.68	44.37	MW-8tob
28	2105703.19	6077065.34	44.35	MW-9toc
29	2105703.59	6077065.58	44.82	MW-9tob
3	2105908.39	6076968.86	46.17	MW-10toc
4	2105908.69	6076968.84	46.45	MW-10tob
26	2105780.58	6076910.77	43.34	MW-11toc
27	2105780.95	6076910.80	43.63	MW-11tob
17	2105837.64	6076961.52	44.78	SVE-1toc
18	2105838.03	6076961.58	45.24	SVE-1tob
1003	2097964.84	6073181.68	14.20	HT0281

Appendix F

Laboratory Analytical Reports and Validation Forms

Is the Data Set Valid? (circle)	Preservation Temperature (if Known): 1.6 °C
Yes / **No**	

Antea™ Group Laboratory Data Validation Sheet

Project/Client: 76 Service Station No. 1117
Project #: I426111I7
Date of Validation: 10/17/2011 **Date of Analysis:** 10/12-10/18/2011
Sample Date: 10/5/2011 **Completed By:** S. Meininger
Signature:

Circle **Yes / No** (below)

Analytical Lab Used and Report # (if any): Kiff No. ~~I59776~~ 759777

		Circle Yes / No
1.	Were the analyses the ones requested?	Yes / No
2.	Do the sample number(s) on the chain-of-custody (COC) match the one(s) that appear on the laboratory data sheet?	Yes / No
3.	Were samples prepared (extracted, filtered, etc.) within EPA holding times?	Yes / No
4.	Once prepared/extracted, were the samples analyzed within the EPA holding times?	Yes / No
5.	Were Laboratory blanks performed, if so, were they non-detect?	Yes / No
6.	Are the units correct? (i.e., soil samples in mg/kg or ug/g, water samples mg/L, ug/L, and air samples in volume mg/m^3,etc.)	Yes / No
7.	Were appropriate Matrix Spike (MS) and Matrix Spike Duplicate (MSD) samples included in the laboratory batch sample?	Yes / No
8.	In lieu of MS/ MSD, were surrogate spike (SS) or surrogate spike duplicate (SSD) samples included in the laboratory batch samples?	Yes / No
9.	Were MS/ MSD (or SS/SSD) within the acceptable range of % recovery (i.e., approximately 80-120%, depending on the analyte)?	Yes / No
10.	Were MS/MSD (or SS/SSD) values used to calculate Relative Percent Difference (RPD)?	Yes / No
11.	Were Relative Percent Difference values within the acceptable range (i.e. ±25%)?	Yes / No

If any answer is no, explain why and what corrective action was taken (use additional sheet(s), as necessary:

TBA for CHd 25 and 34.5 may be biased high because a fraction of MTBE converts to TBA during analysis.

MS/MSD for CHd 34.5 affected by high bias.

KIFF Analytical LLC

Report Number : 78977
Date : 10/12/2011

Laboratory Results

Douglas Umland
Antea Group
312 Piercy Rd.
San Jose, CA 95138

Subject : 6 Soil Samples
Project Name : COP #11117
Project Number : I42611117
P.O. Number : I42611117

Dear Mr. Umland,

Chemical analysis of the samples referenced above has been completed. Summaries of the data are contained on the following pages. Sample(s) were received under documented chain-of-custody. US EPA protocols for sample storage and preservation were followed. Testing procedures comply with the 2003 NELAC standard. All soil samples are reported on a total weight (wet weight) basis unless noted otherwise in the case narrative. Laboratory results relate only to the samples tested. This report may be freely reproduced in full, but may only be reproduced in part with the express permission of Kiff Analytical, LLC. Kiff Analytical, LLC is certified by the State of California under the National Environmental Laboratory Accreditation Program (NELAP), lab # 08263CA. If you have any questions regarding procedures or results, please call me at 530-297-4800.

Sincerely,

Joel Kiff

KIFF Analytical LLC

Report Number : 78977
Date : 10/12/2011

Subject : 6 Soil Samples
Project Name : COP #11117
Project Number : I42611117
P.O. Number : I42611117

Case Narrative

Tert-Butanol results for samples C-4d25.0 and C-4d34.5 may be biased slightly high and are flagged with a 'J'. A fraction of MtBE (up to 5%) converts to Tert-Butanol during the analysis of soil samples. We consider this conversion effect to be mathematically significant in samples that contain MtBE/Tert-Butanol in ratios of over 3:1.

Matrix Spike/Matrix Spike Duplicate results associated with sample C-4d34.5 for the analyte Methyl-t-butyl ether were affected by the analyte concentrations already present in the un-spiked sample.

KIFF Analytical LLC

Analysis Summary

Report Number : 78977
Date : 10/12/11

Attention : Douglas Umland
Antea Group
312 Piercy Rd.
San Jose, CA 95138

Project Name :COP #11117
Project Number : I42611117

			Sample Name	C-4d5.0	C-4d10.0		C-4d15.0		C-4d18.0		C-4d25.0		C-4d34.5	
			Sample Date	10/04/11	10/04/11		10/04/11		10/04/11		10/04/11		10/04/11	
Analyte	Method	Units		MRL	Results	MRL	Results	MRL	Results	MRL	Results	MRL	Results	MRL	Results
Benzene	EPA 8260B	mg/Kg		0.0050	ND	0.0050	ND	0.0050	ND	0.0050	ND	0.0050	ND	0.0050	ND
Ethylbenzene	EPA 8260B	mg/Kg		0.0050	ND	0.0050	ND	0.0050	ND	0.0050	ND	0.0050	ND	0.0050	ND
Toluene	EPA 8260B	mg/Kg		0.0050	ND	0.0050	ND	0.0050	ND	0.0050	ND	0.0050	ND	0.0050	ND
Total Xylenes	EPA 8260B	mg/Kg		0.0050	ND	0.0050	ND	0.0050	ND	0.0050	ND	0.0050	ND	0.0050	ND
Diisopropyl ether (DIPE)	EPA 8260B	mg/Kg		0.0050	ND	0.0050	ND	0.0050	ND	0.0050	ND	0.0050	ND	0.0050	ND
Ethanol	EPA 8260B	mg/Kg		0.050	ND	0.050	ND	0.050	ND	0.050	ND	0.050	ND	0.050	ND
Ethyl-t-butyl ether (ETBE)	EPA 8260B	mg/Kg		0.0050	ND	0.0050	ND	0.0050	ND	0.0050	ND	0.0050	ND	0.0050	ND
Methyl-t-butyl ether (MTBE)	EPA 8260B	mg/Kg		0.0050	ND	0.0050	ND	0.0050	ND	0.0050	ND	0.0050	**0.31**	0.0050	**0.31**
Tert-Butanol	EPA 8260B	mg/Kg		0.0050	ND	0.0050	ND	0.0050	ND	0.0050	ND	0.0050	**0.020 J**	0.0050	**0.020 J**
Tert-amyl methyl ether (TAME)	EPA 8260B	mg/Kg		0.0050	ND	0.0050	ND	0.0050	ND	0.0050	ND	0.0050	ND	0.0050	ND
TPH as Gasoline	EPA 8260B	mg/Kg		1.0	ND	1.0	ND	1.0	ND	1.0	ND	1.0	ND	1.0	ND
1,2-Dibromoethane	EPA 8260B	mg/Kg		0.0050	ND	0.0050	ND	0.0050	ND	0.0050	ND	0.0050	ND	0.0050	ND
1,2-Dichloroethane	EPA 8260B	mg/Kg		0.0050	ND	0.0050	ND	0.0050	ND	0.0050	ND	0.0050	ND	0.0050	ND
1,2-Dichloroethane-d4 (Surr)	EPA 8260B	%			103		103		102		101		104		103
Toluene - d8 (Surr)	EPA 8260B	%			99.8		100		99.8		99.8		100		99.8

MRL = Method Reporting Limit
ND = Not Detected

2795 2nd St., Suite 300 Davis, CA 95616 530-297-4800
ELAP # 2236

KIFF Analytical LLC

Report Number : 78977
Date : 10/12/11

Project Name : **COP #11117**
Project Number : **I42611117**

Sample : **C-4d5.0** Matrix : Soil Lab Number : 78977-01
Sample Date :10/04/11

Parameter	Measured Value	Method Reporting Limit	Units	Analysis Method	Date/Time Analyzed
Benzene	< 0.0050	0.0050	mg/Kg	EPA 8260B	10/07/11 00:43
Toluene	< 0.0050	0.0050	mg/Kg	EPA 8260B	10/07/11 00:43
Ethylbenzene	< 0.0050	0.0050	mg/Kg	EPA 8260B	10/07/11 00:43
Total Xylenes	< 0.0050	0.0050	mg/Kg	EPA 8260B	10/07/11 00:43
Methyl-t-butyl ether (MTBE)	< 0.0050	0.0050	mg/Kg	EPA 8260B	10/07/11 00:43
Diisopropyl ether (DIPE)	< 0.0050	0.0050	mg/Kg	EPA 8260B	10/07/11 00:43
Ethyl-t-butyl ether (ETBE)	< 0.0050	0.0050	mg/Kg	EPA 8260B	10/07/11 00:43
Tert-amyl methyl ether (TAME)	< 0.0050	0.0050	mg/Kg	EPA 8260B	10/07/11 00:43
Tert-Butanol	< 0.0050	0.0050	mg/Kg	EPA 8260B	10/07/11 00:43
Ethanol	< 0.050	0.050	mg/Kg	EPA 8260B	10/07/11 00:43
TPH as Gasoline	< 1.0	1.0	mg/Kg	EPA 8260B	10/07/11 00:43
1,2-Dichloroethane	< 0.0050	0.0050	mg/Kg	EPA 8260B	10/07/11 00:43
1,2-Dibromoethane	< 0.0050	0.0050	mg/Kg	EPA 8260B	10/07/11 00:43
1,2-Dichloroethane-d4 (Surr)	103		% Recovery	EPA 8260B	10/07/11 00:43
Toluene - d8 (Surr)	99.8		% Recovery	EPA 8260B	10/07/11 00:43

KIFF Analytical LLC

Report Number : 78977

Date : 10/12/11

Project Name : **COP #11117**

Project Number : **I42611117**

Sample : **C-4d10.0** Matrix : Soil Lab Number : 78977-02

Sample Date :10/04/11

Parameter	Measured Value	Method Reporting Limit	Units	Analysis Method	Date/Time Analyzed
Benzene	< 0.0050	0.0050	mg/Kg	EPA 8260B	10/07/11 01:20
Toluene	< 0.0050	0.0050	mg/Kg	EPA 8260B	10/07/11 01:20
Ethylbenzene	< 0.0050	0.0050	mg/Kg	EPA 8260B	10/07/11 01:20
Total Xylenes	< 0.0050	0.0050	mg/Kg	EPA 8260B	10/07/11 01:20
Methyl-t-butyl ether (MTBE)	< 0.0050	0.0050	mg/Kg	EPA 8260B	10/07/11 01:20
Diisopropyl ether (DIPE)	< 0.0050	0.0050	mg/Kg	EPA 8260B	10/07/11 01:20
Ethyl-t-butyl ether (ETBE)	< 0.0050	0.0050	mg/Kg	EPA 8260B	10/07/11 01:20
Tert-amyl methyl ether (TAME)	< 0.0050	0.0050	mg/Kg	EPA 8260B	10/07/11 01:20
Tert-Butanol	< 0.0050	0.0050	mg/Kg	EPA 8260B	10/07/11 01:20
Ethanol	< 0.050	0.050	mg/Kg	EPA 8260B	10/07/11 01:20
TPH as Gasoline	< 1.0	1.0	mg/Kg	EPA 8260B	10/07/11 01:20
1,2-Dichloroethane	< 0.0050	0.0050	mg/Kg	EPA 8260B	10/07/11 01:20
1,2-Dibromoethane	< 0.0050	0.0050	mg/Kg	EPA 8260B	10/07/11 01:20
1,2-Dichloroethane-d4 (Surr)	103		% Recovery	EPA 8260B	10/07/11 01:20
Toluene - d8 (Surr)	100		% Recovery	EPA 8260B	10/07/11 01:20

KIFF Analytical LLC

Report Number : 78977

Date : 10/12/11

Project Name : **COP #11117**

Project Number : **I42611117**

Sample : **C-4d15.0** Matrix : Soil Lab Number : 78977-03

Sample Date :10/04/11

Parameter	Measured Value	Method Reporting Limit	Units	Analysis Method	Date/Time Analyzed
Benzene	< 0.0050	0.0050	mg/Kg	EPA 8260B	10/07/11 01:57
Toluene	< 0.0050	0.0050	mg/Kg	EPA 8260B	10/07/11 01:57
Ethylbenzene	< 0.0050	0.0050	mg/Kg	EPA 8260B	10/07/11 01:57
Total Xylenes	< 0.0050	0.0050	mg/Kg	EPA 8260B	10/07/11 01:57
Methyl-t-butyl ether (MTBE)	< 0.0050	0.0050	mg/Kg	EPA 8260B	10/07/11 01:57
Diisopropyl ether (DIPE)	< 0.0050	0.0050	mg/Kg	EPA 8260B	10/07/11 01:57
Ethyl-t-butyl ether (ETBE)	< 0.0050	0.0050	mg/Kg	EPA 8260B	10/07/11 01:57
Tert-amyl methyl ether (TAME)	< 0.0050	0.0050	mg/Kg	EPA 8260B	10/07/11 01:57
Tert-Butanol	< 0.0050	0.0050	mg/Kg	EPA 8260B	10/07/11 01:57
Ethanol	< 0.050	0.050	mg/Kg	EPA 8260B	10/07/11 01:57
TPH as Gasoline	< 1.0	1.0	mg/Kg	EPA 8260B	10/07/11 01:57
1,2-Dichloroethane	< 0.0050	0.0050	mg/Kg	EPA 8260B	10/07/11 01:57
1,2-Dibromoethane	< 0.0050	0.0050	mg/Kg	EPA 8260B	10/07/11 01:57
1,2-Dichloroethane-d4 (Surr)	102		% Recovery	EPA 8260B	10/07/11 01:57
Toluene - d8 (Surr)	99.8		% Recovery	EPA 8260B	10/07/11 01:57

KIFF Analytical LLC

Report Number : 78977
Date : 10/12/11

Project Name : **COP #11117**
Project Number : **I42611117**

Sample : **C-4d18.0** Matrix : Soil Lab Number : 78977-04
Sample Date :10/04/11

Parameter	Measured Value	Method Reporting Limit	Units	Analysis Method	Date/Time Analyzed
Benzene	< 0.0050	0.0050	mg/Kg	EPA 8260B	10/06/11 22:50
Toluene	< 0.0050	0.0050	mg/Kg	EPA 8260B	10/06/11 22:50
Ethylbenzene	< 0.0050	0.0050	mg/Kg	EPA 8260B	10/06/11 22:50
Total Xylenes	< 0.0050	0.0050	mg/Kg	EPA 8260B	10/06/11 22:50
Methyl-t-butyl ether (MTBE)	< 0.0050	0.0050	mg/Kg	EPA 8260B	10/06/11 22:50
Diisopropyl ether (DIPE)	< 0.0050	0.0050	mg/Kg	EPA 8260B	10/06/11 22:50
Ethyl-t-butyl ether (ETBE)	< 0.0050	0.0050	mg/Kg	EPA 8260B	10/06/11 22:50
Tert-amyl methyl ether (TAME)	< 0.0050	0.0050	mg/Kg	EPA 8260B	10/06/11 22:50
Tert-Butanol	< 0.0050	0.0050	mg/Kg	EPA 8260B	10/06/11 22:50
Ethanol	< 0.050	0.050	mg/Kg	EPA 8260B	10/06/11 22:50
TPH as Gasoline	< 1.0	1.0	mg/Kg	EPA 8260B	10/06/11 22:50
1,2-Dichloroethane	< 0.0050	0.0050	mg/Kg	EPA 8260B	10/06/11 22:50
1,2-Dibromoethane	< 0.0050	0.0050	mg/Kg	EPA 8260B	10/06/11 22:50
1,2-Dichloroethane-d4 (Surr)	101		% Recovery	EPA 8260B	10/06/11 22:50
Toluene - d8 (Surr)	99.8		% Recovery	EPA 8260B	10/06/11 22:50

KIFF Analytical LLC

Report Number : 78977

Date : 10/12/11

Project Name : **COP #11117**

Project Number : **I42611117**

Sample : **C-4d25.0** Matrix : Soil Lab Number : 78977-05

Sample Date :10/04/11

Parameter	Measured Value	Method Reporting Limit	Units	Analysis Method	Date/Time Analyzed
Benzene	< 0.0050	0.0050	mg/Kg	EPA 8260B	10/07/11 02:34
Toluene	< 0.0050	0.0050	mg/Kg	EPA 8260B	10/07/11 02:34
Ethylbenzene	< 0.0050	0.0050	mg/Kg	EPA 8260B	10/07/11 02:34
Total Xylenes	< 0.0050	0.0050	mg/Kg	EPA 8260B	10/07/11 02:34
Methyl-t-butyl ether (MTBE)	**0.31**	0.0050	mg/Kg	EPA 8260B	10/07/11 02:34
Diisopropyl ether (DIPE)	< 0.0050	0.0050	mg/Kg	EPA 8260B	10/07/11 02:34
Ethyl-t-butyl ether (ETBE)	< 0.0050	0.0050	mg/Kg	EPA 8260B	10/07/11 02:34
Tert-amyl methyl ether (TAME)	< 0.0050	0.0050	mg/Kg	EPA 8260B	10/07/11 02:34
Tert-Butanol	**0.020 J**	0.0050	mg/Kg	EPA 8260B	10/07/11 02:34
Ethanol	< 0.050	0.050	mg/Kg	EPA 8260B	10/07/11 02:34
TPH as Gasoline	< 1.0	1.0	mg/Kg	EPA 8260B	10/07/11 02:34
1,2-Dichloroethane	< 0.0050	0.0050	mg/Kg	EPA 8260B	10/07/11 02:34
1,2-Dibromoethane	< 0.0050	0.0050	mg/Kg	EPA 8260B	10/07/11 02:34
1,2-Dichloroethane-d4 (Surr)	104		% Recovery	EPA 8260B	10/07/11 02:34
Toluene - d8 (Surr)	100		% Recovery	EPA 8260B	10/07/11 02:34

KIFF Analytical LLC

Report Number : 78977

Date : 10/12/11

Project Name : **COP #11117**

Project Number : **I42611117**

Sample : **C-4d34.5** Matrix : Soil Lab Number : 78977-06

Sample Date :10/04/11

Parameter	Measured Value	Method Reporting Limit	Units	Analysis Method	Date/Time Analyzed
Benzene	< 0.0050	0.0050	mg/Kg	EPA 8260B	10/07/11 14:28
Toluene	< 0.0050	0.0050	mg/Kg	EPA 8260B	10/07/11 14:28
Ethylbenzene	< 0.0050	0.0050	mg/Kg	EPA 8260B	10/07/11 14:28
Total Xylenes	< 0.0050	0.0050	mg/Kg	EPA 8260B	10/07/11 14:28
Methyl-t-butyl ether (MTBE)	**0.31**	0.0050	mg/Kg	EPA 8260B	10/07/11 14:28
Diisopropyl ether (DIPE)	< 0.0050	0.0050	mg/Kg	EPA 8260B	10/07/11 14:28
Ethyl-t-butyl ether (ETBE)	< 0.0050	0.0050	mg/Kg	EPA 8260B	10/07/11 14:28
Tert-amyl methyl ether (TAME)	< 0.0050	0.0050	mg/Kg	EPA 8260B	10/07/11 14:28
Tert-Butanol	**0.020 J**	0.0050	mg/Kg	EPA 8260B	10/07/11 14:28
Ethanol	< 0.050	0.050	mg/Kg	EPA 8260B	10/07/11 14:28
TPH as Gasoline	< 1.0	1.0	mg/Kg	EPA 8260B	10/07/11 14:28
1,2-Dichloroethane	< 0.0050	0.0050	mg/Kg	EPA 8260B	10/07/11 14:28
1,2-Dibromoethane	< 0.0050	0.0050	mg/Kg	EPA 8260B	10/07/11 14:28
1,2-Dichloroethane-d4 (Surr)	103		% Recovery	EPA 8260B	10/07/11 14:28
Toluene - d8 (Surr)	99.8		% Recovery	EPA 8260B	10/07/11 14:28

Report Number : 78977

Date : 10/12/11

QC Report : Method Blank Data

Project Name : **COP #11117**

Project Number : **I42611117**

Parameter	Measured Value	Method Reporting Limit	Units	Analysis Method	Date Analyzed
Benzene	< 0.0050	0.0050	mg/Kg	EPA 8260B	10/06/11
Ethylbenzene	< 0.0050	0.0050	mg/Kg	EPA 8260B	10/06/11
Toluene	< 0.0050	0.0050	mg/Kg	EPA 8260B	10/06/11
Total Xylenes	< 0.0050	0.0050	mg/Kg	EPA 8260B	10/06/11
Diisopropyl ether (DIPE)	< 0.0050	0.0050	mg/Kg	EPA 8260B	10/06/11
Ethanol	< 0.050	0.050	mg/Kg	EPA 8260B	10/06/11
Ethyl-t-butyl ether (ETBE)	< 0.0050	0.0050	mg/Kg	EPA 8260B	10/06/11
Methyl-t-butyl ether (MTBE)	< 0.0050	0.0050	mg/Kg	EPA 8260B	10/06/11
Tert-Butanol	< 0.0050	0.0050	mg/Kg	EPA 8260B	10/06/11
Tert-amyl methyl ether (TAME)	< 0.0050	0.0050	mg/Kg	EPA 8260B	10/06/11
TPH as Gasoline	< 1.0	1.0	mg/Kg	EPA 8260B	10/06/11
1,2-Dibromoethane	< 0.0050	0.0050	mg/Kg	EPA 8260B	10/06/11
1,2-Dichloroethane	< 0.0050	0.0050	mg/Kg	EPA 8260B	10/06/11
1,2-Dichloroethane-d4 (Surr)	105		%	EPA 8260B	10/06/11
Toluene - d8 (Surr)	99.7		%	EPA 8260B	10/06/11
Benzene	< 0.0050	0.0050	mg/Kg	EPA 8260B	10/07/11
Ethylbenzene	< 0.0050	0.0050	mg/Kg	EPA 8260B	10/07/11
Toluene	< 0.0050	0.0050	mg/Kg	EPA 8260B	10/07/11
Total Xylenes	< 0.0050	0.0050	mg/Kg	EPA 8260B	10/07/11
Diisopropyl ether (DIPE)	< 0.0050	0.0050	mg/Kg	EPA 8260B	10/07/11
Ethanol	< 0.050	0.050	mg/Kg	EPA 8260B	10/07/11
Ethyl-t-butyl ether (ETBE)	< 0.0050	0.0050	mg/Kg	EPA 8260B	10/07/11
Methyl-t-butyl ether (MTBE)	< 0.0050	0.0050	mg/Kg	EPA 8260B	10/07/11
Tert-Butanol	< 0.0050	0.0050	mg/Kg	EPA 8260B	10/07/11
Tert-amyl methyl ether (TAME)	< 0.0050	0.0050	mg/Kg	EPA 8260B	10/07/11
TPH as Gasoline	< 1.0	1.0	mg/Kg	EPA 8260B	10/07/11
1,2-Dibromoethane	< 0.0050	0.0050	mg/Kg	EPA 8260B	10/07/11
1,2-Dichloroethane	< 0.0050	0.0050	mg/Kg	EPA 8260B	10/07/11
1,2-Dichloroethane-d4 (Surr)	103		%	EPA 8260B	10/07/11
Toluene - d8 (Surr)	100		%	EPA 8260B	10/07/11

KIFF ANALYTICAL, LLC

2795 2nd Street, Suite 300 Davis, CA 95618 530-297-4800

Report Number : 78977

QC Report : Matrix Spike/ Matrix Spike Duplicate

Date : 10/12/11

Project Name : **COP #11117**

Project Number : **I42611117**

Parameter	Spiked Sample	Sample Value	Spike Level	Spike Dup. Level	Spiked Sample Value	Duplicate Spiked Sample Value	Units	Analysis Method	Date Analyzed	Spiked Sample Percent Recov.	Duplicate Spiked Sample Percent Recov.	Relative Percent Diff.	Spiked Sample Percent Recov. Limit	Relative Percent Diff. Limit
1,2-Dibromoethane														
	78977-04	<0.0050	0.0394	0.0393	0.0403	0.0425	mg/Kg	EPA 8260B	10/6/11	102	108	5.79	67.2-121	25
1,2-Dichloroethane														
	78977-04	<0.0050	0.0396	0.0394	0.0358	0.0373	mg/Kg	EPA 8260B	10/6/11	90.5	94.5	4.33	64.0-124	25
Benzene														
	78977-04	<0.0050	0.0396	0.0394	0.0362	0.0366	mg/Kg	EPA 8260B	10/6/11	91.4	92.9	1.61	67.9-120	25
Diisopropyl ether														
	78977-04	<0.0050	0.0392	0.0391	0.0356	0.0361	mg/Kg	EPA 8260B	10/6/11	90.6	92.3	1.86	65.2-122	25
Ethanol														
	78977-04	<0.050	0.0988	0.0984	0.106	0.0844	mg/Kg	EPA 8260B	10/6/11	108	85.8	22.6	37.1-156	25
Ethyl-tert-butyl ether														
	78977-04	<0.0050	0.0395	0.0394	0.0358	0.0369	mg/Kg	EPA 8260B	10/6/11	90.6	93.8	3.42	64.6-122	25
Ethylbenzene														
	78977-04	<0.0050	0.0396	0.0394	0.0410	0.0410	mg/Kg	EPA 8260B	10/6/11	103	104	0.517	65.5-127	25
Methyl-t-butyl ether														
	78977-04	<0.0050	0.0398	0.0396	0.0324	0.0356	mg/Kg	EPA 8260B	10/6/11	81.4	89.9	10.0	57.0-122	25
P + M Xylene														
	78977-04	<0.0050	0.0396	0.0394	0.0408	0.0412	mg/Kg	EPA 8260B	10/6/11	103	104	1.15	62.5-124	25
Tert-Butanol														
	78977-04	<0.0050	0.192	0.191	0.176	0.167	mg/Kg	EPA 8260B	10/6/11	91.9	87.3	5.12	64.3-122	25

KIFF ANALYTICAL, LLC

2795 2nd Street, Suite 300 Davis, CA 95618 530-297-4800

QC Report : Matrix Spike/ Matrix Spike Duplicate

Date : 10/12/2011

Project Name : **COP #11117**

Project Number : **I42611117**

Parameter	Spiked Sample	Sample Value	Spike Level	Spike Dup. Level	Spiked Sample Value	Duplicate Spiked Sample Value	Units	Analysis Method	Date Analyzed	Spiked Sample Percent Recov.	Duplicate Spiked Sample Percent Recov.	Relative Percent Diff.	Spiked Sample Percent Recov. Limit	Relative Percent Diff. Limit
Tert-amyl-methyl ether														
	78977-04	<0.0050	0.0395	0.0393	0.0363	0.0370	mg/Kg	EPA 8260B	10/6/11	92.0	94.1	2.22	64.9-122	25
Toluene														
	78977-04	<0.0050	0.0396	0.0394	0.0377	0.0380	mg/Kg	EPA 8260B	10/6/11	95.2	96.2	1.03	65.7-120	25
1,2-Dibromoethane														
	78977-06	<0.0050	0.0393	0.0384	0.0412	0.0398	mg/Kg	EPA 8260B	10/7/11	105	103	1.33	67.2-121	25
1,2-Dichloroethane														
	78977-06	<0.0050	0.0394	0.0386	0.0360	0.0350	mg/Kg	EPA 8260B	10/7/11	91.4	90.6	0.850	64.0-124	25
Benzene														
	78977-06	<0.0050	0.0394	0.0386	0.0361	0.0351	mg/Kg	EPA 8260B	10/7/11	91.5	91.0	0.587	67.9-120	25
Diisopropyl ether														
	78977-06	<0.0050	0.0391	0.0382	0.0362	0.0353	mg/Kg	EPA 8260B	10/7/11	92.7	92.4	0.350	65.2-122	25
Ethanol														
	78977-06	<0.050	0.0984	0.0963	0.0777	0.0776	mg/Kg	EPA 8260B	10/7/11	79.0	80.6	2.00	37.1-156	25
Ethyl-tert-butyl ether														
	78977-06	<0.0050	0.0394	0.0385	0.0373	0.0372	mg/Kg	EPA 8260B	10/7/11	94.8	96.4	1.73	64.6-122	25
Ethylbenzene														
	78977-06	<0.0050	0.0394	0.0386	0.0411	0.0398	mg/Kg	EPA 8260B	10/7/11	104	103	0.936	65.5-127	25

KIFF ANALYTICAL, LLC

2795 2nd Street, Suite 300 Davis, CA 95618 530-297-4800

Report Number : 78977

QC Report : Matrix Spike/ Matrix Spike Duplicate

Date : 10/12/2011

Project Name : **COP #11117**

Project Number : **I42611117**

Parameter	Spiked Sample	Sample Value	Spike Level	Spike Dup. Level	Spiked Sample Value	Duplicate Spiked Sample Value	Units	Analysis Method	Date Analyzed	Spiked Sample Percent Recov.	Duplicate Spiked Sample Percent Recov.	Relative Percent Diff.	Spiked Sample Percent Recov. Limit	Relative Percent Diff. Limit
Methyl-t-butyl ether														
	78977-06	0.31	0.0396	0.0388	0.342	0.381	mg/Kg	EPA 8260B	10/7/11	74.1	**176**	**81.5**	57.0-122	25
P + M Xylene														
	78977-06	<0.0050	0.0394	0.0386	0.0410	0.0399	mg/Kg	EPA 8260B	10/7/11	104	103	0.630	62.5-124	25
Tert-Butanol														
	78977-06	0.020	0.191	0.187	0.188	0.186	mg/Kg	EPA 8260B	10/7/11	88.0	88.6	0.694	64.3-122	25
Tert-amyl-methyl ether														
	78977-06	<0.0050	0.0393	0.0385	0.0387	0.0383	mg/Kg	EPA 8260B	10/7/11	98.3	99.5	1.18	64.9-122	25
Toluene														
	78977-06	<0.0050	0.0394	0.0386	0.0377	0.0365	mg/Kg	EPA 8260B	10/7/11	95.6	94.5	1.15	65.7-120	25

KIFF ANALYTICAL, LLC

2795 2nd Street, Suite 300 Davis, CA 95618 530-297-4800

QC Report : Laboratory Control Sample (LCS)

Project Name : **COP #11117**

Project Number : **I42611117**

Parameter	Spike Level	Units	Analysis Method	Date Analyzed	LCS Percent Recov.	LCS Percent Recov. Limit
1,2-Dibromoethane	0.0395	mg/Kg	EPA 8260B	10/6/11	108	67.2-121
1,2-Dichloroethane	0.0397	mg/Kg	EPA 8260B	10/6/11	95.1	64.0-124
Benzene	0.0397	mg/Kg	EPA 8260B	10/6/11	93.1	67.9-120
Diisopropyl ether	0.0393	mg/Kg	EPA 8260B	10/6/11	94.0	65.2-122
Ethanol	0.0990	mg/Kg	EPA 8260B	10/6/11	74.2	37.1-156
Ethyl-tert-butyl ether	0.0396	mg/Kg	EPA 8260B	10/6/11	97.8	64.6-122
Ethylbenzene	0.0397	mg/Kg	EPA 8260B	10/6/11	105	65.5-127
Methyl-t-butyl ether	0.0399	mg/Kg	EPA 8260B	10/6/11	97.9	57.0-122
P + M Xylene	0.0397	mg/Kg	EPA 8260B	10/6/11	104	62.5-124
Tert-Butanol	0.192	mg/Kg	EPA 8260B	10/6/11	88.8	64.3-122
Tert-amyl-methyl ether	0.0396	mg/Kg	EPA 8260B	10/6/11	96.9	64.9-122
Toluene	0.0397	mg/Kg	EPA 8260B	10/6/11	97.4	65.7-120
1,2-Dibromoethane	0.0390	mg/Kg	EPA 8260B	10/7/11	103	67.2-121
1,2-Dichloroethane	0.0392	mg/Kg	EPA 8260B	10/7/11	92.4	64.0-124
Benzene	0.0392	mg/Kg	EPA 8260B	10/7/11	93.1	67.9-120
Diisopropyl ether	0.0388	mg/Kg	EPA 8260B	10/7/11	93.8	65.2-122
Ethanol	0.0978	mg/Kg	EPA 8260B	10/7/11	95.6	37.1-156
Ethyl-tert-butyl ether	0.0391	mg/Kg	EPA 8260B	10/7/11	94.7	64.6-122
Ethylbenzene	0.0392	mg/Kg	EPA 8260B	10/7/11	105	65.5-127
Methyl-t-butyl ether	0.0394	mg/Kg	EPA 8260B	10/7/11	88.4	57.0-122
P + M Xylene	0.0392	mg/Kg	EPA 8260B	10/7/11	104	62.5-124
Tert-Butanol	0.190	mg/Kg	EPA 8260B	10/7/11	92.1	64.3-122

Report Number : 78977

QC Report : Laboratory Control Sample (LCS)

Date : 10/12/2011

Project Name : **COP #11117**

Project Number : **I42611117**

Parameter	Spike Level	Units	Analysis Method	Date Analyzed	LCS Percent Recov.	LCS Percent Recov. Limit
Tert-amyl-methyl ether	0.0391	mg/Kg	EPA 8260B	10/7/11	95.2	64.9-122
Toluene	0.0392	mg/Kg	EPA 8260B	10/7/11	96.9	65.7-120

KIFF ANALYTICAL, LLC

2795 2nd Street, Suite 300 Davis, CA 95618 530-297-4800

KIFF Analytical LLC

2795 2nd Street, Suite 300
Davis, CA 95618
Lab: 530.297.4800
Fax: 530.297.4802

SRG # / Lab No. 78977

Page 1 of 1

Chain-of-Custody Record and Analysis Request

Project Contact (Hardcopy or PDF To): Douglas Umland	California EDF Report? ☑ Yes ☐ No
Company / Address: 312 Piercy Road, San Jose, CA	Sampling Company Log Code:
Phone Number: (408) 826-1874	Global ID: T0600100201
Fax Number: (408) 225-8506	EDF Deliverable To (Email Address): doug.umland@anteagroup.com
Project #: I42611117 / P.O. #: I42611117	Bill to: Douglas Umland (Antea Group)
Project Name: COP #11117	Sampler Print Name: Caitlin Morgan
	Sampler Signature: Caitlin Morgan

Project Address: 7210 Bancroft Avenue Oakland, CA

Analysis Request — CIRCLE METHOD

TAT: ☐ 12 hr ☐ 24 hr ☐ 48hr ☐ 72hr ☑ 1 wk

Sample Designation	Date	Time	Container: 40 ml VOA	Sleeve	Poly	Glass	Tedlar	Acetate	Preservative: HCl	HNO_3	None	Matrix: Water	Soil	Air	MTBE @ 0.5 ppb (EPA 8260B)	BTEX (EPA 8260B)	TPH Gas (EPA 8260B)	5 Oxygenates (MTBE, DIPE, ETBE, TAME, TBA) (EPA 8260B)	7 Oxygenates (5 oxy + EtOH, MeOH) (EPA 8260B)	Lead Scav. (1,2 DCA & 1,2 EDB) (EPA 8260B)	Volatile Halocarbons (EPA 8260B)	Volatile Organics Full List (EPA 8260B)	Volatile Organics (EPA 524.2 Drinking Water)	TPH as Diesel (EPA 8015M)	TPH as Motor Oil (EPA 8015M)	CAM 17 Metals (EPA 200.7 / 6010)	5 Waste Oil Metals (Cd,Cr,Ni,Pb,Zn) (EPA 200.7 / 6010)	Mercury (EPA 245.1 / 7470 / 7471)	Total Lead (EPA 200.7 / 6010)	W.E.T. Lead (STLC)	Ethanol (EPA 8260B)				For Lab Use Only
C-4d5.0	10/4/11	1320						X			X		X			X	X	X		X											X				01
C-4d10.0	10/4/11	1325						X			X		X			X	X	X		X											X				02
C-4d15.0	10/4/11	1327						X			X		X			X	X	X		X											X				03
C-4d18.0	10/4/11	1337						X			X		X			X	X	X		X											X				04
C-4d25.0	10/4/11	1345						X			X		X			X	X	X		X											X				05
C-4d34.5	10/4/11	1400						X			X		X			X	X	X		X											X				06
								X			X		X			X	X	X		X											X				
								X			X		X			X	X	X		X											X				
								X			X		X			X	X	X		X											X				
								X			X		X			X	X	X		X											X				

Relinquished by:	Date	Time	Received by:
Sara Sichler	10/5/11	0800	
Relinquished by:	Date	Time	Received by:
Relinquished by:	Date	Time	Received by Laboratory:
	100511	1050	with Analytical

Remarks:

Page 1 of 1

Distribution: White - Lab; Pink - Originator
Rev: 060409

KIFF Analytical LLC

SAMPLE RECEIPT CHECKLIST

RECEIVER Initials: EAS

SRG#: 78977 Date: 100511

Project ID: COP #11117

Method of Receipt: ☒ Courier ☐ Over-the-counter ☐ Shipper

COC Inspection

Is COC present?	☒ Yes	☐ No		
Custody seals on shipping container?	☐ Intact	☐ Broken	☐ Not present	☒ N/A
Is COC Signed by Relinquisher? ☒ Yes ☐ No Dated?	☒ Yes	☐ No		
Is sampler name legibly indicated on COC?	☒ Yes	☐ No		
Is analysis or hold requested for all samples	☒ Yes	☐ No		
Is the turnaround time indicated on COC?	☒ Yes	☐ No		
Is COC free of whiteout and uninitialed cross-outs?	☒ Yes	☐ No, Whiteout	☐ No, Cross-outs	

Sample Inspection

Coolant Present: ☒ Yes ☐ No (includes water)

Temperature °C 1.8 Therm. ID# 125 Initial EAS Date/Time 100511 1430 ☐ N/A

Are there custody seals on sample containers?	☐ Intact	☐ Broken	☒ Not present	
Do containers match COC? ☒ Yes ☐ No ☐ No, COC lists absent sample(s)	☐ No, Extra sample(s) present			
Are there samples matrices other than soil, water, air or carbon?	☐ Yes	☒ No		
Are any sample containers broken, leaking or damaged?	☐ Yes	☒ No		
Are preservatives indicated? ☐ Yes, on sample containers	☐ Yes, on COC	☐ Not indicated	☒ N/A	
Are preservatives correct for analyses requested?	☐ Yes	☐ No	☒ N/A	
Are samples within holding time for analyses requested?	☒ Yes	☐ No		
Are the correct sample containers used for the analyses requested?	☒ Yes	☐ No		
Is there sufficient sample to perform testing?	☒ Yes	☐ No		

Does any sample contain product, have strong odor or are otherwise suspected to be hot? ☐ Yes ☒ No

Receipt Details

Matrix SO Container type Sleeve # of containers received 6

Matrix _____ Container type _____ # of containers received _____

Matrix _____ Container type _____ # of containers received _____

Date and Time Sample Put into Temp Storage Date: 100511 Time: 1435

Quicklog

Are the Sample ID's indicated:	☐ On COC	☐ On sample container(s)	☒ On Both	☐ Not indicated	
If Sample ID's are listed on both COC and containers, do they all match?	☒ Yes	☐ No	☐ N/A		
Is the Project ID indicated:	☐ On COC	☐ On sample container(s)	☒ On Both	☐ Not indicated	
If project ID is listed on both COC and containers, do they all match?	☒ Yes	☐ No	☐ N/A		
Are the sample collection dates indicated:	☐ On COC	☐ On sample container(s)	☒ On Both	☐ Not indicated	
If collection dates are listed on both COC and containers, do they all match?	☒ Yes	☐ No	☐ N/A		
Are the sample collection times indicated:	☐ On COC	☐ On sample container(s)	☒ On Both	☐ Not indicated	
If collection times are listed on both COC and containers, do they all match?	☒ Yes	☐ No	☐ N/A		

COMMENTS:

Is the Data Set Valid?	Preservation Temperature
(circle) **Yes / No**	*(if Known)*: 2.2 °C

Antea™Group Laboratory Data Validation Sheet

Project/Client: 76 Service Station No. 1117
Project #: 1426117
Date of Validation: 10/17/2011 **Date of Analysis:** 10/12/2011
Sample Date: 10/5-10/6/2011 **Completed By:** B. Mentzer
Signature:

Circle **Yes / No** (below)

Analytical Lab Used and Report # (if any): KAR No. 78498

		Circle
1.	Were the analyses the ones requested?	**Yes / No**
2.	Do the sample number(s) on the chain-of-custody (COC) match the one(s) that appear on the laboratory data sheet?	**Yes / No**
3.	Were samples prepared (extracted, filtered, etc.) within EPA holding times?	**Yes / No**
4.	Once prepared/extracted, were the samples analyzed within the EPA holding times?	**Yes / No**
5.	Were Laboratory blanks performed, if so, were they non-detect?	**Yes / No**
6.	Are the units correct? (i.e., soil samples in mg/kg or ug/g, water samples mg/L, ug/L, and air samples in volume mg/m^3,etc.)	**Yes / No**
7.	Were appropriate Matrix Spike (MS) and Matrix Spike Duplicate (MSD) samples included in the laboratory batch sample?	**Yes / No**
8.	In lieu of MS/ MSD, were surrogate spike (SS) or surrogate spike duplicate (SSD) samples included in the laboratory batch samples?	N/A ~~Yes / No~~
9.	Were MS/ MSD (or SS/SSD) within the acceptable range of % recovery (i.e., approximately 80-120%, depending on the analyte)?	**Yes / No**
10.	Were MS/MSD (or SS/SSD) values used to calculate Relative Percent Difference (RPD)?	**Yes / No**
11.	Were Relative Percent Difference values within the acceptable range (i.e. ±25%)?	**Yes / No**

If any answer is no, explain why and what corrective action was taken (use additional sheet(s), as necessary:

N/A

KIFF Analytical LLC

Report Number : 78998
Date : 10/14/2011

Laboratory Results

Douglas Umland
Antea Group
312 Piercy Rd.
San Jose, CA 95138

Subject : 14 Soil Samples
Project Name : COP #11117
Project Number : I42611117
P.O. Number : I42611117

Dear Mr. Umland,

Chemical analysis of the samples referenced above has been completed. Summaries of the data are contained on the following pages. Sample(s) were received under documented chain-of-custody. US EPA protocols for sample storage and preservation were followed. Testing procedures comply with the 2003 NELAC standard. All soil samples are reported on a total weight (wet weight) basis unless noted otherwise in the case narrative. Laboratory results relate only to the samples tested. This report may be freely reproduced in full, but may only be reproduced in part with the express permission of Kiff Analytical, LLC. Kiff Analytical, LLC is certified by the State of California under the National Environmental Laboratory Accreditation Program (NELAP), lab # 08263CA. If you have any questions regarding procedures or results, please call me at 530-297-4800.

Sincerely,

Joel Kiff

KIFF Analytical LLC

Analysis Summary

Report Number : 78998

Date : 10/14/11

Attention : Douglas Umland
Antea Group
312 Piercy Rd.
San Jose, CA 95138

Project Name :COP #11117
Project Number : I42611117

			Sample Name	C-2@5'		C-2@16'		C-2@35'		C-3@5'		C-3@18'		C-3@20'		C-3@28'		C-3@35'	
			Sample Date	10/05/11		10/05/11		10/05/11		10/05/11		10/05/11		10/05/11		10/05/11		10/05/11	
Analyte	Method	Units		MRL	Results	MRL	Results	MRL	Results	MRL	Results	MRL	Results	MRL	Results	MRL	Results	MRL	Results
Benzene	EPA 8260B	mg/Kg		0.0050	ND	0.0050	ND	0.0050	ND	0.0050	ND	0.0050	ND	0.0050	ND	0.0050	ND	0.0050	ND
Ethylbenzene	EPA 8260B	mg/Kg		0.0050	ND	0.0050	ND	0.0050	ND	0.0050	ND	0.0050	ND	0.0050	ND	0.0050	ND	0.0050	ND
Toluene	EPA 8260B	mg/Kg		0.0050	ND	0.0050	ND	0.0050	ND	0.0050	ND	0.0050	ND	0.0050	ND	0.0050	ND	0.0050	ND
Total Xylenes	EPA 8260B	mg/Kg		0.0050	ND	0.0050	ND	0.0050	ND	0.0050	ND	0.0050	ND	0.0050	ND	0.0050	ND	0.0050	ND
Diisopropyl ether (DIPE)	EPA 8260B	mg/Kg		0.0050	ND	0.0050	ND	0.0050	ND	0.0050	ND	0.0050	ND	0.0050	ND	0.0050	ND	0.0050	ND
Ethanol	EPA 8260B	mg/Kg		0.050	ND	0.050	ND	0.050	ND	0.050	ND	0.050	ND	0.050	ND	0.050	ND	0.050	ND
Ethyl-t-butyl ether (ETBE)	EPA 8260B	mg/Kg		0.0050	ND	0.0050	ND	0.0050	ND	0.0050	ND	0.0050	ND	0.0050	ND	0.0050	ND	0.0050	ND
Methyl-t-butyl ether (MTBE)	EPA 8260B	mg/Kg		0.0050	ND	0.0050	ND	0.0050	**0.0068**	0.0050	ND	0.0050	ND	0.0050	ND	0.0050	ND	0.0050	**0.35**
Tert-Butanol	EPA 8260B	mg/Kg		0.0050	ND	0.0050	ND	0.0050	ND	0.0050	ND	0.0050	ND	0.0050	ND	0.0050	ND	0.0050	ND
Tert-amyl methyl ether (TAME)	EPA 8260B	mg/Kg		0.0050	ND	0.0050	ND	0.0050	ND	0.0050	ND	0.0050	ND	0.0050	ND	0.0050	ND	0.0050	ND
TPH as Gasoline	EPA 8260B	mg/Kg		1.0	ND	1.0	ND	1.0	ND	1.0	ND	1.0	ND	1.0	ND	1.0	ND	1.0	ND
1,2-Dibromoethane	EPA 8260B	mg/Kg		0.0050	ND	0.0050	ND	0.0050	ND	0.0050	ND	0.0050	ND	0.0050	ND	0.0050	ND	0.0050	ND
1,2-Dichloroethane	EPA 8260B	mg/Kg		0.0050	ND	0.0050	ND	0.0050	ND	0.0050	ND	0.0050	ND	0.0050	ND	0.0050	ND	0.0050	ND
1,2-Dichloroethane-d4 (Surr)	EPA 8260B	%			102		105		101		102		105		104		104		102
Toluene - d8 (Surr)	EPA 8260B	%			102		101		101		101		102		101		101		101

MRL = Method Reporting Limit
ND = Not Detected

KIFF Analytical LLC

Analysis Summary

Report Number : 78998
Date : 10/14/11

Attention : Douglas Umland
Antea Group
312 Piercy Rd.
San Jose, CA 95138

Project Name :COP #11117
Project Number : I42611117

			Sample Name	C-5@5'		C-5@13'		C-5@16'		C-5@25'		C-5@30'		C-5@35'	
			Sample Date	10/05/11		10/05/11		10/05/11		10/05/11		10/05/11		10/05/11	
Analyte	Method	Units		MRL	Results	MRL	Results	MRL	Results	MRL	Results	MRL	Results	MRL	Results
Benzene	EPA 8260B	mg/Kg		0.0050	ND	0.0050	ND	0.0050	ND	0.0050	ND	0.025	ND	0.25	ND
Ethylbenzene	EPA 8260B	mg/Kg		0.0050	ND	0.0050	ND	0.0050	ND	0.0050	ND	0.025	ND	0.25	**0.93**
Toluene	EPA 8260B	mg/Kg		0.0050	ND	0.0050	ND	0.0050	ND	0.0050	ND	0.025	ND	0.25	ND
Total Xylenes	EPA 8260B	mg/Kg		0.0050	ND	0.0050	ND	0.0050	ND	0.0050	ND	0.025	ND	0.25	**0.98**
Diisopropyl ether (DIPE)	EPA 8260B	mg/Kg		0.0050	ND	0.0050	ND	0.0050	ND	0.0050	ND	0.025	ND	0.25	ND
Ethanol	EPA 8260B	mg/Kg		0.050	ND	0.050	ND	0.050	ND	0.050	ND	0.25	ND	2.5	ND
Ethyl-t-butyl ether (ETBE)	EPA 8260B	mg/Kg		0.0050	ND	0.0050	ND	0.0050	ND	0.0050	ND	0.025	ND	0.25	ND
Methyl-t-butyl ether (MTBE)	EPA 8260B	mg/Kg		0.0050	ND	0.0050	ND	0.0050	ND	0.0050	ND	0.025	ND	0.25	ND
Tert-Butanol	EPA 8260B	mg/Kg		0.0050	ND	0.0050	ND	0.0050	ND	0.0050	**0.0054**	0.15	ND	1.5	ND
Tert-amyl methyl ether (TAME)	EPA 8260B	mg/Kg		0.0050	ND	0.0050	ND	0.0050	ND	0.0050	ND	0.025	ND	0.25	ND
TPH as Gasoline	EPA 8260B	mg/Kg		1.0	ND	1.0	ND	1.0	ND	5.0	**65**	25	**470**	25	**2300**
1,2-Dibromoethane	EPA 8260B	mg/Kg		0.0050	ND	0.0050	ND	0.0050	ND	0.0050	ND	0.025	ND	0.25	ND
1,2-Dichloroethane	EPA 8260B	mg/Kg		0.0050	ND	0.0050	ND	0.0050	ND	0.0050	ND	0.025	ND	0.25	ND
1,2-Dichloroethane-d4 (Surr)	EPA 8260B	%			105		105		101		91.7		100		99.6
2-Bromochlorobenzene (Surr)	EPA 8260B	%									102		94.8		89.7
Toluene - d8 (Surr)	EPA 8260B	%			101		101		101		94.3		105		102

MRL = Method Reporting Limit
ND = Not Detected

KIFF Analytical LLC

Report Number : 78998

Date : 10/14/11

Project Name : **COP #11117**

Project Number : **I42611117**

Sample : **C-2@5'** Matrix : Soil Lab Number : 78998-01

Sample Date :10/05/11

Parameter	Measured Value	Method Reporting Limit	Units	Analysis Method	Date/Time Analyzed
Benzene	< 0.0050	0.0050	mg/Kg	EPA 8260B	10/12/11 15:03
Toluene	< 0.0050	0.0050	mg/Kg	EPA 8260B	10/12/11 15:03
Ethylbenzene	< 0.0050	0.0050	mg/Kg	EPA 8260B	10/12/11 15:03
Total Xylenes	< 0.0050	0.0050	mg/Kg	EPA 8260B	10/12/11 15:03
Methyl-t-butyl ether (MTBE)	< 0.0050	0.0050	mg/Kg	EPA 8260B	10/12/11 15:03
Diisopropyl ether (DIPE)	< 0.0050	0.0050	mg/Kg	EPA 8260B	10/12/11 15:03
Ethyl-t-butyl ether (ETBE)	< 0.0050	0.0050	mg/Kg	EPA 8260B	10/12/11 15:03
Tert-amyl methyl ether (TAME)	< 0.0050	0.0050	mg/Kg	EPA 8260B	10/12/11 15:03
Tert-Butanol	< 0.0050	0.0050	mg/Kg	EPA 8260B	10/12/11 15:03
Ethanol	< 0.050	0.050	mg/Kg	EPA 8260B	10/12/11 15:03
TPH as Gasoline	< 1.0	1.0	mg/Kg	EPA 8260B	10/12/11 15:03
1,2-Dichloroethane	< 0.0050	0.0050	mg/Kg	EPA 8260B	10/12/11 15:03
1,2-Dibromoethane	< 0.0050	0.0050	mg/Kg	EPA 8260B	10/12/11 15:03
1,2-Dichloroethane-d4 (Surr)	102		% Recovery	EPA 8260B	10/12/11 15:03
Toluene - d8 (Surr)	102		% Recovery	EPA 8260B	10/12/11 15:03

KIFF Analytical LLC

Report Number : 78998

Date : 10/14/11

Project Name : **COP #11117**

Project Number : **I42611117**

Sample : **C-2@16'** Matrix : Soil Lab Number : 78998-02

Sample Date :10/05/11

Parameter	Measured Value	Method Reporting Limit	Units	Analysis Method	Date/Time Analyzed
Benzene	< 0.0050	0.0050	mg/Kg	EPA 8260B	10/12/11 10:56
Toluene	< 0.0050	0.0050	mg/Kg	EPA 8260B	10/12/11 10:56
Ethylbenzene	< 0.0050	0.0050	mg/Kg	EPA 8260B	10/12/11 10:56
Total Xylenes	< 0.0050	0.0050	mg/Kg	EPA 8260B	10/12/11 10:56
Methyl-t-butyl ether (MTBE)	< 0.0050	0.0050	mg/Kg	EPA 8260B	10/12/11 10:56
Diisopropyl ether (DIPE)	< 0.0050	0.0050	mg/Kg	EPA 8260B	10/12/11 10:56
Ethyl-t-butyl ether (ETBE)	< 0.0050	0.0050	mg/Kg	EPA 8260B	10/12/11 10:56
Tert-amyl methyl ether (TAME)	< 0.0050	0.0050	mg/Kg	EPA 8260B	10/12/11 10:56
Tert-Butanol	< 0.0050	0.0050	mg/Kg	EPA 8260B	10/12/11 10:56
Ethanol	< 0.050	0.050	mg/Kg	EPA 8260B	10/12/11 10:56
TPH as Gasoline	< 1.0	1.0	mg/Kg	EPA 8260B	10/12/11 10:56
1,2-Dichloroethane	< 0.0050	0.0050	mg/Kg	EPA 8260B	10/12/11 10:56
1,2-Dibromoethane	< 0.0050	0.0050	mg/Kg	EPA 8260B	10/12/11 10:56
1,2-Dichloroethane-d4 (Surr)	105		% Recovery	EPA 8260B	10/12/11 10:56
Toluene - d8 (Surr)	101		% Recovery	EPA 8260B	10/12/11 10:56

KIFF Analytical LLC

Report Number : 78998

Date : 10/14/11

Project Name : **COP #11117**

Project Number : **I42611117**

Sample : **C-2@35'** Matrix : Soil Lab Number : 78998-04

Sample Date :10/05/11

Parameter	Measured Value	Method Reporting Limit	Units	Analysis Method	Date/Time Analyzed
Benzene	< 0.0050	0.0050	mg/Kg	EPA 8260B	10/12/11 14:29
Toluene	< 0.0050	0.0050	mg/Kg	EPA 8260B	10/12/11 14:29
Ethylbenzene	< 0.0050	0.0050	mg/Kg	EPA 8260B	10/12/11 14:29
Total Xylenes	< 0.0050	0.0050	mg/Kg	EPA 8260B	10/12/11 14:29
Methyl-t-butyl ether (MTBE)	**0.0068**	0.0050	mg/Kg	EPA 8260B	10/12/11 14:29
Diisopropyl ether (DIPE)	< 0.0050	0.0050	mg/Kg	EPA 8260B	10/12/11 14:29
Ethyl-t-butyl ether (ETBE)	< 0.0050	0.0050	mg/Kg	EPA 8260B	10/12/11 14:29
Tert-amyl methyl ether (TAME)	< 0.0050	0.0050	mg/Kg	EPA 8260B	10/12/11 14:29
Tert-Butanol	< 0.0050	0.0050	mg/Kg	EPA 8260B	10/12/11 14:29
Ethanol	< 0.050	0.050	mg/Kg	EPA 8260B	10/12/11 14:29
TPH as Gasoline	< 1.0	1.0	mg/Kg	EPA 8260B	10/12/11 14:29
1,2-Dichloroethane	< 0.0050	0.0050	mg/Kg	EPA 8260B	10/12/11 14:29
1,2-Dibromoethane	< 0.0050	0.0050	mg/Kg	EPA 8260B	10/12/11 14:29
1,2-Dichloroethane-d4 (Surr)	101		% Recovery	EPA 8260B	10/12/11 14:29
Toluene - d8 (Surr)	101		% Recovery	EPA 8260B	10/12/11 14:29

KIFF Analytical LLC

Report Number : 78998

Date : 10/14/11

Project Name : **COP #11117**

Project Number : **I42611117**

Sample : **C-3@5'** Matrix : Soil Lab Number : 78998-05

Sample Date :10/05/11

Parameter	Measured Value	Method Reporting Limit	Units	Analysis Method	Date/Time Analyzed
Benzene	< 0.0050	0.0050	mg/Kg	EPA 8260B	10/12/11 15:37
Toluene	< 0.0050	0.0050	mg/Kg	EPA 8260B	10/12/11 15:37
Ethylbenzene	< 0.0050	0.0050	mg/Kg	EPA 8260B	10/12/11 15:37
Total Xylenes	< 0.0050	0.0050	mg/Kg	EPA 8260B	10/12/11 15:37
Methyl-t-butyl ether (MTBE)	< 0.0050	0.0050	mg/Kg	EPA 8260B	10/12/11 15:37
Diisopropyl ether (DIPE)	< 0.0050	0.0050	mg/Kg	EPA 8260B	10/12/11 15:37
Ethyl-t-butyl ether (ETBE)	< 0.0050	0.0050	mg/Kg	EPA 8260B	10/12/11 15:37
Tert-amyl methyl ether (TAME)	< 0.0050	0.0050	mg/Kg	EPA 8260B	10/12/11 15:37
Tert-Butanol	< 0.0050	0.0050	mg/Kg	EPA 8260B	10/12/11 15:37
Ethanol	< 0.050	0.050	mg/Kg	EPA 8260B	10/12/11 15:37
TPH as Gasoline	< 1.0	1.0	mg/Kg	EPA 8260B	10/12/11 15:37
1,2-Dichloroethane	< 0.0050	0.0050	mg/Kg	EPA 8260B	10/12/11 15:37
1,2-Dibromoethane	< 0.0050	0.0050	mg/Kg	EPA 8260B	10/12/11 15:37
1,2-Dichloroethane-d4 (Surr)	102		% Recovery	EPA 8260B	10/12/11 15:37
Toluene - d8 (Surr)	101		% Recovery	EPA 8260B	10/12/11 15:37

KIFF Analytical LLC

Report Number : 78998

Date : 10/14/11

Project Name : **COP #11117**

Project Number : **I42611117**

Sample : **C-3@18'** Matrix : Soil Lab Number : 78998-07

Sample Date :10/05/11

Parameter	Measured Value	Method Reporting Limit	Units	Analysis Method	Date/Time Analyzed
Benzene	< 0.0050	0.0050	mg/Kg	EPA 8260B	10/12/11 15:54
Toluene	< 0.0050	0.0050	mg/Kg	EPA 8260B	10/12/11 15:54
Ethylbenzene	< 0.0050	0.0050	mg/Kg	EPA 8260B	10/12/11 15:54
Total Xylenes	< 0.0050	0.0050	mg/Kg	EPA 8260B	10/12/11 15:54
Methyl-t-butyl ether (MTBE)	< 0.0050	0.0050	mg/Kg	EPA 8260B	10/12/11 15:54
Diisopropyl ether (DIPE)	< 0.0050	0.0050	mg/Kg	EPA 8260B	10/12/11 15:54
Ethyl-t-butyl ether (ETBE)	< 0.0050	0.0050	mg/Kg	EPA 8260B	10/12/11 15:54
Tert-amyl methyl ether (TAME)	< 0.0050	0.0050	mg/Kg	EPA 8260B	10/12/11 15:54
Tert-Butanol	< 0.0050	0.0050	mg/Kg	EPA 8260B	10/12/11 15:54
Ethanol	< 0.050	0.050	mg/Kg	EPA 8260B	10/12/11 15:54
TPH as Gasoline	< 1.0	1.0	mg/Kg	EPA 8260B	10/12/11 15:54
1,2-Dichloroethane	< 0.0050	0.0050	mg/Kg	EPA 8260B	10/12/11 15:54
1,2-Dibromoethane	< 0.0050	0.0050	mg/Kg	EPA 8260B	10/12/11 15:54
1,2-Dichloroethane-d4 (Surr)	105		% Recovery	EPA 8260B	10/12/11 15:54
Toluene - d8 (Surr)	102		% Recovery	EPA 8260B	10/12/11 15:54

KIFF Analytical LLC

Report Number : 78998

Date : 10/14/11

Project Name : **COP #11117**

Project Number : **I42611117**

Sample : **C-3@20'** Matrix : Soil Lab Number : 78998-08

Sample Date :10/05/11

Parameter	Measured Value	Method Reporting Limit	Units	Analysis Method	Date/Time Analyzed
Benzene	< 0.0050	0.0050	mg/Kg	EPA 8260B	10/12/11 13:55
Toluene	< 0.0050	0.0050	mg/Kg	EPA 8260B	10/12/11 13:55
Ethylbenzene	< 0.0050	0.0050	mg/Kg	EPA 8260B	10/12/11 13:55
Total Xylenes	< 0.0050	0.0050	mg/Kg	EPA 8260B	10/12/11 13:55
Methyl-t-butyl ether (MTBE)	< 0.0050	0.0050	mg/Kg	EPA 8260B	10/12/11 13:55
Diisopropyl ether (DIPE)	< 0.0050	0.0050	mg/Kg	EPA 8260B	10/12/11 13:55
Ethyl-t-butyl ether (ETBE)	< 0.0050	0.0050	mg/Kg	EPA 8260B	10/12/11 13:55
Tert-amyl methyl ether (TAME)	< 0.0050	0.0050	mg/Kg	EPA 8260B	10/12/11 13:55
Tert-Butanol	< 0.0050	0.0050	mg/Kg	EPA 8260B	10/12/11 13:55
Ethanol	< 0.050	0.050	mg/Kg	EPA 8260B	10/12/11 13:55
TPH as Gasoline	< 1.0	1.0	mg/Kg	EPA 8260B	10/12/11 13:55
1,2-Dichloroethane	< 0.0050	0.0050	mg/Kg	EPA 8260B	10/12/11 13:55
1,2-Dibromoethane	< 0.0050	0.0050	mg/Kg	EPA 8260B	10/12/11 13:55
1,2-Dichloroethane-d4 (Surr)	104		% Recovery	EPA 8260B	10/12/11 13:55
Toluene - d8 (Surr)	101		% Recovery	EPA 8260B	10/12/11 13:55

KIFF Analytical LLC

Report Number : 78998

Date : 10/14/11

Project Name : **COP #11117**

Project Number : **I42611117**

Sample : **C-3@28'** Matrix : Soil Lab Number : 78998-10

Sample Date :10/05/11

Parameter	Measured Value	Method Reporting Limit	Units	Analysis Method	Date/Time Analyzed
Benzene	< 0.0050	0.0050	mg/Kg	EPA 8260B	10/12/11 15:18
Toluene	< 0.0050	0.0050	mg/Kg	EPA 8260B	10/12/11 15:18
Ethylbenzene	< 0.0050	0.0050	mg/Kg	EPA 8260B	10/12/11 15:18
Total Xylenes	< 0.0050	0.0050	mg/Kg	EPA 8260B	10/12/11 15:18
Methyl-t-butyl ether (MTBE)	< 0.0050	0.0050	mg/Kg	EPA 8260B	10/12/11 15:18
Diisopropyl ether (DIPE)	< 0.0050	0.0050	mg/Kg	EPA 8260B	10/12/11 15:18
Ethyl-t-butyl ether (ETBE)	< 0.0050	0.0050	mg/Kg	EPA 8260B	10/12/11 15:18
Tert-amyl methyl ether (TAME)	< 0.0050	0.0050	mg/Kg	EPA 8260B	10/12/11 15:18
Tert-Butanol	< 0.0050	0.0050	mg/Kg	EPA 8260B	10/12/11 15:18
Ethanol	< 0.050	0.050	mg/Kg	EPA 8260B	10/12/11 15:18
TPH as Gasoline	< 1.0	1.0	mg/Kg	EPA 8260B	10/12/11 15:18
1,2-Dichloroethane	< 0.0050	0.0050	mg/Kg	EPA 8260B	10/12/11 15:18
1,2-Dibromoethane	< 0.0050	0.0050	mg/Kg	EPA 8260B	10/12/11 15:18
1,2-Dichloroethane-d4 (Surr)	104		% Recovery	EPA 8260B	10/12/11 15:18
Toluene - d8 (Surr)	101		% Recovery	EPA 8260B	10/12/11 15:18

KIFF Analytical LLC

Report Number : 78998

Date : 10/14/11

Project Name : **COP #11117**

Project Number : **I42611117**

Sample : **C-3@35'** Matrix : Soil Lab Number : 78998-11

Sample Date :10/05/11

Parameter	Measured Value	Method Reporting Limit	Units	Analysis Method	Date/Time Analyzed
Benzene	< 0.0050	0.0050	mg/Kg	EPA 8260B	10/13/11 10:56
Toluene	< 0.0050	0.0050	mg/Kg	EPA 8260B	10/13/11 10:56
Ethylbenzene	< 0.0050	0.0050	mg/Kg	EPA 8260B	10/13/11 10:56
Total Xylenes	< 0.0050	0.0050	mg/Kg	EPA 8260B	10/13/11 10:56
Methyl-t-butyl ether (MTBE)	**0.35**	0.0050	mg/Kg	EPA 8260B	10/13/11 16:37
Diisopropyl ether (DIPE)	< 0.0050	0.0050	mg/Kg	EPA 8260B	10/13/11 10:56
Ethyl-t-butyl ether (ETBE)	< 0.0050	0.0050	mg/Kg	EPA 8260B	10/13/11 10:56
Tert-amyl methyl ether (TAME)	< 0.0050	0.0050	mg/Kg	EPA 8260B	10/13/11 10:56
Tert-Butanol	< 0.0050	0.0050	mg/Kg	EPA 8260B	10/13/11 10:56
Ethanol	< 0.050	0.050	mg/Kg	EPA 8260B	10/13/11 10:56
TPH as Gasoline	< 1.0	1.0	mg/Kg	EPA 8260B	10/13/11 10:56
1,2-Dichloroethane	< 0.0050	0.0050	mg/Kg	EPA 8260B	10/13/11 10:56
1,2-Dibromoethane	< 0.0050	0.0050	mg/Kg	EPA 8260B	10/13/11 10:56
1,2-Dichloroethane-d4 (Surr)	102		% Recovery	EPA 8260B	10/13/11 10:56
Toluene - d8 (Surr)	101		% Recovery	EPA 8260B	10/13/11 10:56

KIFF Analytical LLC

Report Number : 78998

Date : 10/14/11

Project Name : **COP #11117**

Project Number : **I42611117**

Sample : **C-5@5'** Matrix : Soil Lab Number : 78998-12

Sample Date :10/05/11

Parameter	Measured Value	Method Reporting Limit	Units	Analysis Method	Date/Time Analyzed
Benzene	< 0.0050	0.0050	mg/Kg	EPA 8260B	10/12/11 16:16
Toluene	< 0.0050	0.0050	mg/Kg	EPA 8260B	10/12/11 16:16
Ethylbenzene	< 0.0050	0.0050	mg/Kg	EPA 8260B	10/12/11 16:16
Total Xylenes	< 0.0050	0.0050	mg/Kg	EPA 8260B	10/12/11 16:16
Methyl-t-butyl ether (MTBE)	< 0.0050	0.0050	mg/Kg	EPA 8260B	10/12/11 16:16
Diisopropyl ether (DIPE)	< 0.0050	0.0050	mg/Kg	EPA 8260B	10/12/11 16:16
Ethyl-t-butyl ether (ETBE)	< 0.0050	0.0050	mg/Kg	EPA 8260B	10/12/11 16:16
Tert-amyl methyl ether (TAME)	< 0.0050	0.0050	mg/Kg	EPA 8260B	10/12/11 16:16
Tert-Butanol	< 0.0050	0.0050	mg/Kg	EPA 8260B	10/12/11 16:16
Ethanol	< 0.050	0.050	mg/Kg	EPA 8260B	10/12/11 16:16
TPH as Gasoline	< 1.0	1.0	mg/Kg	EPA 8260B	10/12/11 16:16
1,2-Dichloroethane	< 0.0050	0.0050	mg/Kg	EPA 8260B	10/12/11 16:16
1,2-Dibromoethane	< 0.0050	0.0050	mg/Kg	EPA 8260B	10/12/11 16:16
1,2-Dichloroethane-d4 (Surr)	105		% Recovery	EPA 8260B	10/12/11 16:16
Toluene - d8 (Surr)	101		% Recovery	EPA 8260B	10/12/11 16:16

KIFF Analytical LLC

Report Number : 78998

Date : 10/14/11

Project Name : **COP #11117**

Project Number : **I42611117**

Sample : **C-5@13'** Matrix : Soil Lab Number : 78998-14

Sample Date :10/05/11

Parameter	Measured Value	Method Reporting Limit	Units	Analysis Method	Date/Time Analyzed
Benzene	< 0.0050	0.0050	mg/Kg	EPA 8260B	10/12/11 14:05
Toluene	< 0.0050	0.0050	mg/Kg	EPA 8260B	10/12/11 14:05
Ethylbenzene	< 0.0050	0.0050	mg/Kg	EPA 8260B	10/12/11 14:05
Total Xylenes	< 0.0050	0.0050	mg/Kg	EPA 8260B	10/12/11 14:05
Methyl-t-butyl ether (MTBE)	< 0.0050	0.0050	mg/Kg	EPA 8260B	10/12/11 14:05
Diisopropyl ether (DIPE)	< 0.0050	0.0050	mg/Kg	EPA 8260B	10/12/11 14:05
Ethyl-t-butyl ether (ETBE)	< 0.0050	0.0050	mg/Kg	EPA 8260B	10/12/11 14:05
Tert-amyl methyl ether (TAME)	< 0.0050	0.0050	mg/Kg	EPA 8260B	10/12/11 14:05
Tert-Butanol	< 0.0050	0.0050	mg/Kg	EPA 8260B	10/12/11 14:05
Ethanol	< 0.050	0.050	mg/Kg	EPA 8260B	10/12/11 14:05
TPH as Gasoline	< 1.0	1.0	mg/Kg	EPA 8260B	10/12/11 14:05
1,2-Dichloroethane	< 0.0050	0.0050	mg/Kg	EPA 8260B	10/12/11 14:05
1,2-Dibromoethane	< 0.0050	0.0050	mg/Kg	EPA 8260B	10/12/11 14:05
1,2-Dichloroethane-d4 (Surr)	105		% Recovery	EPA 8260B	10/12/11 14:05
Toluene - d8 (Surr)	101		% Recovery	EPA 8260B	10/12/11 14:05

KIFF Analytical LLC

Report Number : 78998

Date : 10/14/11

Project Name : **COP #11117**

Project Number : **I42611117**

Sample : **C-5@16'** Matrix : Soil Lab Number : 78998-15

Sample Date :10/05/11

Parameter	Measured Value	Method Reporting Limit	Units	Analysis Method	Date/Time Analyzed
Benzene	< 0.0050	0.0050	mg/Kg	EPA 8260B	10/12/11 16:50
Toluene	< 0.0050	0.0050	mg/Kg	EPA 8260B	10/12/11 16:50
Ethylbenzene	< 0.0050	0.0050	mg/Kg	EPA 8260B	10/12/11 16:50
Total Xylenes	< 0.0050	0.0050	mg/Kg	EPA 8260B	10/12/11 16:50
Methyl-t-butyl ether (MTBE)	< 0.0050	0.0050	mg/Kg	EPA 8260B	10/12/11 16:50
Diisopropyl ether (DIPE)	< 0.0050	0.0050	mg/Kg	EPA 8260B	10/12/11 16:50
Ethyl-t-butyl ether (ETBE)	< 0.0050	0.0050	mg/Kg	EPA 8260B	10/12/11 16:50
Tert-amyl methyl ether (TAME)	< 0.0050	0.0050	mg/Kg	EPA 8260B	10/12/11 16:50
Tert-Butanol	< 0.0050	0.0050	mg/Kg	EPA 8260B	10/12/11 16:50
Ethanol	< 0.050	0.050	mg/Kg	EPA 8260B	10/12/11 16:50
TPH as Gasoline	< 1.0	1.0	mg/Kg	EPA 8260B	10/12/11 16:50
1,2-Dichloroethane	< 0.0050	0.0050	mg/Kg	EPA 8260B	10/12/11 16:50
1,2-Dibromoethane	< 0.0050	0.0050	mg/Kg	EPA 8260B	10/12/11 16:50
1,2-Dichloroethane-d4 (Surr)	101		% Recovery	EPA 8260B	10/12/11 16:50
Toluene - d8 (Surr)	101		% Recovery	EPA 8260B	10/12/11 16:50

KIFF Analytical LLC

Report Number : 78998

Date : 10/14/11

Project Name : **COP #11117**

Project Number : **I42611117**

Sample : **C-5@25'** Matrix : Soil Lab Number : 78998-17

Sample Date :10/05/11

Parameter	Measured Value	Method Reporting Limit	Units	Analysis Method	Date/Time Analyzed
Benzene	< 0.0050	0.0050	mg/Kg	EPA 8260B	10/12/11 17:44
Toluene	< 0.0050	0.0050	mg/Kg	EPA 8260B	10/12/11 17:44
Ethylbenzene	< 0.0050	0.0050	mg/Kg	EPA 8260B	10/12/11 17:44
Total Xylenes	< 0.0050	0.0050	mg/Kg	EPA 8260B	10/12/11 17:44
Methyl-t-butyl ether (MTBE)	< 0.0050	0.0050	mg/Kg	EPA 8260B	10/12/11 17:44
Diisopropyl ether (DIPE)	< 0.0050	0.0050	mg/Kg	EPA 8260B	10/12/11 17:44
Ethyl-t-butyl ether (ETBE)	< 0.0050	0.0050	mg/Kg	EPA 8260B	10/12/11 17:44
Tert-amyl methyl ether (TAME)	< 0.0050	0.0050	mg/Kg	EPA 8260B	10/12/11 17:44
Tert-Butanol	**0.0054**	0.0050	mg/Kg	EPA 8260B	10/12/11 17:44
Ethanol	< 0.050	0.050	mg/Kg	EPA 8260B	10/12/11 17:44
TPH as Gasoline	**65**	5.0	mg/Kg	EPA 8260B	10/13/11 12:39
1,2-Dichloroethane	< 0.0050	0.0050	mg/Kg	EPA 8260B	10/12/11 17:44
1,2-Dibromoethane	< 0.0050	0.0050	mg/Kg	EPA 8260B	10/12/11 17:44
1,2-Dichloroethane-d4 (Surr)	91.7		% Recovery	EPA 8260B	10/12/11 17:44
Toluene - d8 (Surr)	94.3		% Recovery	EPA 8260B	10/12/11 17:44
2-Bromochlorobenzene (Surr)	102		% Recovery	EPA 8260B	10/13/11 12:39

KIFF Analytical LLC

Report Number : 78998

Date : 10/14/11

Project Name : **COP #11117**

Project Number : **I42611117**

Sample : **C-5@30'** Matrix : Soil Lab Number : 78998-18

Sample Date :10/05/11

Parameter	Measured Value	Method Reporting Limit	Units	Analysis Method	Date/Time Analyzed
Benzene	< 0.025	0.025	mg/Kg	EPA 8260B	10/13/11 13:27
Toluene	< 0.025	0.025	mg/Kg	EPA 8260B	10/13/11 13:27
Ethylbenzene	< 0.025	0.025	mg/Kg	EPA 8260B	10/13/11 13:27
Total Xylenes	< 0.025	0.025	mg/Kg	EPA 8260B	10/13/11 13:27
Methyl-t-butyl ether (MTBE)	< 0.025	0.025	mg/Kg	EPA 8260B	10/13/11 13:27
Diisopropyl ether (DIPE)	< 0.025	0.025	mg/Kg	EPA 8260B	10/13/11 13:27
Ethyl-t-butyl ether (ETBE)	< 0.025	0.025	mg/Kg	EPA 8260B	10/13/11 13:27
Tert-amyl methyl ether (TAME)	< 0.025	0.025	mg/Kg	EPA 8260B	10/13/11 13:27
Tert-Butanol	< 0.15	0.15	mg/Kg	EPA 8260B	10/13/11 13:27
Ethanol	< 0.25	0.25	mg/Kg	EPA 8260B	10/13/11 13:27
TPH as Gasoline	**470**	25	mg/Kg	EPA 8260B	10/13/11 16:01
1,2-Dichloroethane	< 0.025	0.025	mg/Kg	EPA 8260B	10/13/11 13:27
1,2-Dibromoethane	< 0.025	0.025	mg/Kg	EPA 8260B	10/13/11 13:27
1,2-Dichloroethane-d4 (Surr)	100		% Recovery	EPA 8260B	10/13/11 13:27
Toluene - d8 (Surr)	105		% Recovery	EPA 8260B	10/13/11 13:27
2-Bromochlorobenzene (Surr)	94.8		% Recovery	EPA 8260B	10/13/11 13:27

KIFF Analytical LLC

Report Number : 78998

Date : 10/14/11

Project Name : **COP #11117**

Project Number : **I42611117**

Sample : **C-5@35'** Matrix : Soil Lab Number : 78998-19

Sample Date :10/05/11

Parameter	Measured Value	Method Reporting Limit	Units	Analysis Method	Date/Time Analyzed
Benzene	< 0.25	0.25	mg/Kg	EPA 8260B	10/13/11 12:53
Toluene	< 0.25	0.25	mg/Kg	EPA 8260B	10/13/11 12:53
Ethylbenzene	**0.93**	0.25	mg/Kg	EPA 8260B	10/13/11 12:53
Total Xylenes	**0.98**	0.25	mg/Kg	EPA 8260B	10/13/11 12:53
Methyl-t-butyl ether (MTBE)	< 0.25	0.25	mg/Kg	EPA 8260B	10/13/11 12:53
Diisopropyl ether (DIPE)	< 0.25	0.25	mg/Kg	EPA 8260B	10/13/11 12:53
Ethyl-t-butyl ether (ETBE)	< 0.25	0.25	mg/Kg	EPA 8260B	10/13/11 12:53
Tert-amyl methyl ether (TAME)	< 0.25	0.25	mg/Kg	EPA 8260B	10/13/11 12:53
Tert-Butanol	< 1.5	1.5	mg/Kg	EPA 8260B	10/13/11 12:53
Ethanol	< 2.5	2.5	mg/Kg	EPA 8260B	10/13/11 12:53
TPH as Gasoline	**2300**	25	mg/Kg	EPA 8260B	10/13/11 12:53
1,2-Dichloroethane	< 0.25	0.25	mg/Kg	EPA 8260B	10/13/11 12:53
1,2-Dibromoethane	< 0.25	0.25	mg/Kg	EPA 8260B	10/13/11 12:53
1,2-Dichloroethane-d4 (Surr)	99.6		% Recovery	EPA 8260B	10/13/11 12:53
Toluene - d8 (Surr)	102		% Recovery	EPA 8260B	10/13/11 12:53
2-Bromochlorobenzene (Surr)	89.7		% Recovery	EPA 8260B	10/13/11 12:53

Report Number : 78998

Date : 10/14/11

QC Report : Method Blank Data

Project Name : **COP #11117**

Project Number : **I42611117**

Parameter	Measured Value	Method Reporting Limit	Units	Analysis Method	Date Analyzed
Benzene	< 0.0050	0.0050	mg/Kg	EPA 8260B	10/12/11
Ethylbenzene	< 0.0050	0.0050	mg/Kg	EPA 8260B	10/12/11
Toluene	< 0.0050	0.0050	mg/Kg	EPA 8260B	10/12/11
Total Xylenes	< 0.0050	0.0050	mg/Kg	EPA 8260B	10/12/11
Diisopropyl ether (DIPE)	< 0.0050	0.0050	mg/Kg	EPA 8260B	10/12/11
Ethanol	< 0.050	0.050	mg/Kg	EPA 8260B	10/12/11
Ethyl-t-butyl ether (ETBE)	< 0.0050	0.0050	mg/Kg	EPA 8260B	10/12/11
Methyl-t-butyl ether (MTBE)	< 0.0050	0.0050	mg/Kg	EPA 8260B	10/12/11
Tert-Butanol	< 0.0050	0.0050	mg/Kg	EPA 8260B	10/12/11
Tert-amyl methyl ether (TAME)	< 0.0050	0.0050	mg/Kg	EPA 8260B	10/12/11
TPH as Gasoline	< 1.0	1.0	mg/Kg	EPA 8260B	10/12/11
1,2-Dibromoethane	< 0.0050	0.0050	mg/Kg	EPA 8260B	10/12/11
1,2-Dichloroethane	< 0.0050	0.0050	mg/Kg	EPA 8260B	10/12/11
1,2-Dichloroethane-d4 (Surr)	104		%	EPA 8260B	10/12/11
Toluene - d8 (Surr)	100		%	EPA 8260B	10/12/11
Methyl-t-butyl ether (MTBE)	< 0.0050	0.0050	mg/Kg	EPA 8260B	10/13/11
TPH as Gasoline	< 1.0	1.0	mg/Kg	EPA 8260B	10/13/11

Parameter	Measured Value	Method Reporting Limit	Units	Analysis Method	Date Analyzed

Report Number : 78998

QC Report : Matrix Spike/ Matrix Spike Duplicate

Date : 10/14/11

Project Name : **COP #11117**

Project Number : **I42611117**

Parameter	Spiked Sample	Sample Value	Spike Level	Spike Dup. Level	Spiked Sample Value	Duplicate Spiked Sample Value	Units	Analysis Method	Date Analyzed	Spiked Sample Percent Recov.	Duplicate Spiked Sample Percent Recov.	Relative Percent Diff.	Spiked Sample Percent Recov. Limit	Relative Percent Diff. Limit
1,2-Dibromoethane														
	78998-02	<0.0050	0.0398	0.0394	0.0430	0.0419	mg/Kg	EPA 8260B	10/12/11	108	106	1.50	67.2-121	25
1,2-Dichloroethane														
	78998-02	<0.0050	0.0400	0.0396	0.0419	0.0416	mg/Kg	EPA 8260B	10/12/11	105	105	0.174	64.0-124	25
Benzene														
	78998-02	<0.0050	0.0400	0.0396	0.0420	0.0419	mg/Kg	EPA 8260B	10/12/11	105	106	0.817	67.9-120	25
Diisopropyl ether														
	78998-02	<0.0050	0.0396	0.0392	0.0413	0.0416	mg/Kg	EPA 8260B	10/12/11	104	106	1.59	65.2-122	25
Ethanol														
	78998-02	<0.050	0.0997	0.0988	0.0870	0.103	mg/Kg	EPA 8260B	10/12/11	87.2	104	17.4	37.1-156	25
Ethyl-tert-butyl ether														
	78998-02	<0.0050	0.0399	0.0395	0.0405	0.0415	mg/Kg	EPA 8260B	10/12/11	101	105	3.33	64.6-122	25
Ethylbenzene														
	78998-02	<0.0050	0.0400	0.0396	0.0388	0.0389	mg/Kg	EPA 8260B	10/12/11	97.0	98.3	1.36	65.5-127	25
Methyl-t-butyl ether														
	78998-02	<0.0050	0.0402	0.0398	0.0412	0.0416	mg/Kg	EPA 8260B	10/12/11	102	104	1.88	57.0-122	25
P + M Xylene														
	78998-02	<0.0050	0.0400	0.0396	0.0390	0.0390	mg/Kg	EPA 8260B	10/12/11	97.6	98.4	0.884	62.5-124	25
Tert-Butanol														
	78998-02	<0.0050	0.193	0.192	0.193	0.192	mg/Kg	EPA 8260B	10/12/11	99.8	100	0.163	64.3-122	25

Report Number : 78998

QC Report : Matrix Spike/ Matrix Spike Duplicate

Date : 10/14/2011

Project Name : **COP #11117**

Project Number : **I42611117**

Parameter	Spiked Sample	Sample Value	Spike Level	Spike Dup. Level	Spiked Sample Value	Duplicate Spiked Sample Value	Units	Analysis Method	Date Analyzed	Spiked Sample Percent Recov.	Duplicate Spiked Sample Percent Recov.	Relative Percent Diff.	Spiked Sample Percent Recov. Limit	Relative Percent Diff. Limit
Tert-amyl-methyl ether														
	78998-02	<0.0050	0.0399	0.0395	0.0411	0.0410	mg/Kg	EPA 8260B	10/12/11	103	104	0.674	64.9-122	25
Toluene														
	78998-02	<0.0050	0.0400	0.0396	0.0417	0.0418	mg/Kg	EPA 8260B	10/12/11	104	105	1.20	65.7-120	25
Methyl-t-butyl ether														
	78998-04	0.013	0.0392	0.0388	0.0464	0.0390	mg/Kg	EPA 8260B	10/13/11	84.1	66.1	24.0	57.0-122	25

Report Number : 78998

QC Report : Laboratory Control Sample (LCS)

Date : 10/14/2011

Project Name : **COP #11117**

Project Number : **I42611117**

Parameter	Spike Level	Units	Analysis Method	Date Analyzed	LCS Percent Recov.	LCS Percent Recov. Limit
1,2-Dibromoethane	0.0398	mg/Kg	EPA 8260B	10/12/11	102	67.2-121
1,2-Dichloroethane	0.0400	mg/Kg	EPA 8260B	10/12/11	102	64.0-124
Benzene	0.0400	mg/Kg	EPA 8260B	10/12/11	102	67.9-120
Diisopropyl ether	0.0396	mg/Kg	EPA 8260B	10/12/11	100	65.2-122
Ethanol	0.0997	mg/Kg	EPA 8260B	10/12/11	94.8	37.1-156
Ethyl-tert-butyl ether	0.0399	mg/Kg	EPA 8260B	10/12/11	94.9	64.6-122
Ethylbenzene	0.0400	mg/Kg	EPA 8260B	10/12/11	95.4	65.5-127
Methyl-t-butyl ether	0.0402	mg/Kg	EPA 8260B	10/12/11	94.3	57.0-122
P + M Xylene	0.0400	mg/Kg	EPA 8260B	10/12/11	95.9	62.5-124
Tert-Butanol	0.193	mg/Kg	EPA 8260B	10/12/11	96.7	64.3-122
Tert-amyl-methyl ether	0.0399	mg/Kg	EPA 8260B	10/12/11	95.8	64.9-122
Toluene	0.0400	mg/Kg	EPA 8260B	10/12/11	102	65.7-120
Methyl-t-butyl ether	0.0392	mg/Kg	EPA 8260B	10/13/11	93.4	57.0-122

KIFF Analytical LLC

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Fax: 530.297.4802

SRG # / Lab No. 78998

Page 1 of 2

Chain-of-Custody Record and Analysis Request

Project Contact (Hardcopy or PDF To): Douglas Umland	California EDF Report? ☑ Yes ☐ No
Company / Address: 312 Piercy Road, San Jose, CA	Sampling Company Log Code:
Phone Number: (408) 826-1874	Global ID:
Fax Number: (408) 225-8506	EDF Deliverable To (Email Address): doug.umland@anteagroup.com
Project #: T2611117 / P.O. #: T2611117	Bill to: Douglas Umland (AnteaGroup)
Project Name: COP # 11117	Sampler Print Name: CAITLIN MORGAN
	Sampler Signature:

TAT: ☐ 12 hr ☐ 24 hr ☐ 48hr ☐ 72hr ☑ 1 wk

Project Address: 7210 Bancroft Avenue Oakland, CA	Sampling		Container					Preservative					Matrix			Analysis Request (CIRCLE METHOD)																				For Lab Use Only
Sample Designation	Date	Time	40 ml VOA	Sleeve	Poly	Glass	Tedlar	Acetate liner	HCl	HNO_3	None			Water	Soil	Air	MTBE @ 0.5 ppb (EPA 8260B)	BTEX (EPA 8260B)	TPH Gas (EPA 8260B)	5 Oxygenates (MTBE, DIPE, ETBE, TAME, TBA) (EPA 8260B)	7 Oxygenates (5 oxy + EtOH, MeOH) (EPA 8260B)	Lead Scav. (1,2 DCA & 1,2 EDB) (EPA 8260B)	Volatile Halocarbons (EPA 8260B)	Volatile Organics Full List (EPA 8260B)	Volatile Organics (EPA 524.2 Drinking Water)	TPH as Diesel (EPA 8015M)	TPH as Motor Oil (EPA 8015M)	CAM 17 Metals (EPA 200.7 / 6010)	5 Waste Oil Metals (Cd,Cr,Ni,Pb,Zn) (EPA 200.7 / 6010)	Mercury (EPA 245.1 / 7470 / 7471)	Total Lead (EPA 200.7 / 6010)	W.E.T. Lead (STLC)	Ethanol (EPA 8260B)					
C-2@5' ★	10/5/11	10:00						X			X				X			X	X	X		X											X				01
C-2@10' ★	10/5/11	10:10						X			X				X			X	X	X		X											X				02
C-2@25'	10/5/11	10:30						X			X				X			X	X	X		X											X				03
C-2@35' ★	10/5/11	10:42						X			X				X			X	X	X		X											X				04
C-3@5' ★	10/5/11	11:25						X			X				X			X	X	X		X											X				05
C-3@10'	10/5/11	11:27						X			X				X			X	X	X		X											X				06
C-3@18' ★	10/5/11	11:31						X			X				X			X	X	X		X											X				07
C-3@20' ★	10/5/11	11:41						X			X				X			X	X	X		X											X				08
C-3@25.5'	10/5/11	11:45						X			X				X			X	X	X		X											X				09
C-3@28' *	10/5/11	11:45						X			X				X			X	X	X		X											X				10

Relinquished by:	Date: 10/06/2011	Time: 11:00	Received by:	Remarks: C-3@25' strong odor
Relinquished by:	Date:	Time:	Received by:	
Relinquished by:	Date: 10/06/11	Time: 1100	Received by Laboratory: Kiff Analytical	RUN all ★ sample IDs. HOLD all others

Distribution: White - Lab; Pink - Originator
Rev: 060409

KIFF Analytical LLC

2795 2nd Street, Suite 300
Davis, CA 95618
Lab: 530.297.4800
Fax: 530.297.4802

SRG # / Lab No. 78998

Chain-of-Custody Record and Analysis Request

Project Contact (Hardcopy or PDF To): Douglas Umland	California EDF Report? ☑ Yes ☐ No
Company / Address: 92 Pierry Rd San Jose, CA	Sampling Company Log Code:
Phone Number: (408) 536-1874	Global ID:
Fax Number: (408) 225-8506	EDF Deliverable To (Email Address): doug.umlandcanteagroup.com
Project #: 1426111117 / P.O. #: 1426111117	Bill to: Douglas Umland (Antea Group)
Project Name: COP #1117	Sampler Print Name: CAITLIN MORGAN
	Sampler Signature:
Project Address: 7210 Bancroft Avenue, Oakland, CA	

Analysis Request — CIRCLE METHOD

TAT: ☐ 12 hr ☐ 24 hr ☐ 48hr ☐ 72hr ☑ 1 wk

Sample Designation	Sampling Date	Sampling Time	Container: 40 ml VOA	Sleeve	Poly	Glass	Tedlar	Acetate liner	Preservative: HCl	HNO_3	None			Matrix: Water	Soil	Air	MTBE @ 0.5 ppb (EPA 8260B)	BTEX (EPA 8260B)	TPH Gas (EPA 8260B)	5 Oxygenates (MTBE, DIPE, ETBE, TAME, TBA) (EPA 8260B)	7 Oxygenates (5 oxy + EtOH, MeOH) (EPA 8260B)	Lead Scav. (1,2 DCA & 1,2 EDB) (EPA 8260B)	Volatile Halocarbons (EPA 8260B)	Volatile Organics Full List (EPA 8260B)	Volatile Organics (EPA 524.2 Drinking Water)	TPH as Diesel (EPA 8015M)	TPH as Motor Oil (EPA 8015M)	CAM 17 Metals (EPA 200.7 / 6010)	5 Waste Oil Metals (Cd,Cr,Ni,Pb,Zn) (EPA 200.7 / 6010)	Mercury (EPA 245.1 / 7470 / 7471)	Total Lead (EPA 200.7 / 6010)	W.E.T. Lead (STLC)	Ethanol (EPA 8260B)				For Lab Use Only
C-3@28.5'	10/5/11	11:40						X			X				X			X	X	X			X									X				11
C-3@35' ★	10/5/11	12:13						X			X				X			X	X	X			X									X				12 11
C-5@5' ★	10/5/11	2:11						X			X				X			X	X	X			X									X				13 12
C-5@10	10/5/11	2:17						X			X				X			X	X	X			X									X				14 13
C-5@13' ★	10/5/11	2:54						X			X				X			X	X	X			X									X				15 14
C-5@15' ★	10/5/11	2:40						X			X				X			X	X	X			X									X				16 15
C-5@20'	10/5/11	2:42						X			X				X			X	X	X			X									X				17 16
C-5@25' ★	10/5/11	2:59						X			X				X			X	X	X			X									X				18 17
C-5@30' ★	10/5/11	3:15						X			X				X			X	X	X			X									X				19 18
C-5@35' ★	10/5/11	3:18						X			X				X			X	X	X			X									X				20 19

Relinquished by:	Date: 10/06/2011	Time: 11:00	Received by:
Relinquished by:	Date:	Time:	Received by:
Relinquished by:	Date: 100611	Time: 1100	Received by Laboratory: Kiff Analytical

Remarks:
C-5@30', high PID, 264.0 ppm
C-5@35', high PID, 854.0 ppm
C-5@25', showed distinct change in lithology
C-3@28.5' - Not Present in fridge — DKU 20111006 (Line 2)
RUN all ★ sample IDs. HOLD all others.

Distribution: White - Lab; Pink - Originator
Rev: 060409

KIFF Analytical LLC

SAMPLE RECEIPT CHECKLIST

RECEIVER: Initials

SRG#: 78998 Date: 100611

Project ID: COP # 11117

Method of Receipt: ☒ Courier ☐ Over-the-counter ☐ Shipper

COC Inspection

Is COC present?	☒ Yes	☐ No	
Custody seals on shipping container?	☐ Intact	☐ Broken ☐ Not present	☒ N/A
Is COC Signed by Relinquisher? ☒ Yes ☐ No Dated?	☒ Yes	☐ No	
Is sampler name legibly indicated on COC?	☒ Yes	☐ No	
Is analysis or hold requested for all samples	☒ Yes	☐ No	
Is the turnaround time indicated on COC?	☒ Yes	☐ No	
Is COC free of whiteout and uninitialed cross-outs?	☒ Yes	☐ No, Whiteout ☐ No, Cross-outs	

Sample Inspection

Coolant Present: ☒ Yes ☐ No (includes water)

Temperature °C 2.2 Therm. ID# LR-5 Initial EAS Date/Time 100611 1430 ☐ N/A

Are there custody seals on sample containers?	☐ Intact	☐ Broken	☒ Not present
Do containers match COC? ☒ Yes ☐ No ☐ No, COC lists absent sample(s)		☐ No, Extra sample(s) present	
Are there samples matrices other than soil, water, air or carbon?	☐ Yes	☒ No	
Are any sample containers broken, leaking or damaged?	☐ Yes	☒ No	
Are preservatives indicated? ☐ Yes, on sample containers	☐ Yes, on COC	☐ Not indicated	☒ N/A
Are preservatives correct for analyses requested?	☐ Yes	☐ No	☒ N/A
Are samples within holding time for analyses requested?	☒ Yes	☐ No	
Are the correct sample containers used for the analyses requested?	☒ Yes	☐ No	
Is there sufficient sample to perform testing?	☒ Yes	☐ No	

Does any sample contain product, have strong odor or are otherwise suspected to be hot? ☐ Yes ☒ No

Receipt Details

Matrix SO	Container type sleeve	# of containers received 19
Matrix	Container type	# of containers received
Matrix	Container type	# of containers received

Date and Time Sample Put into Temp Storage Date: 100611 Time: 1440

Quicklog

Are the Sample ID's indicated:	☐ On COC	☐ On sample container(s)	☒ On Both	☐ Not indicated
If Sample ID's are listed on both COC and containers, do they all match?	☒ Yes	☐ No		☐ N/A
Is the Project ID indicated:	☐ On COC	☐ On sample container(s)	☒ On Both	☐ Not indicated
If project ID is listed on both COC and containers, do they all match?	☒ Yes	☐ No		☐ N/A
Are the sample collection dates indicated:	☐ On COC	☐ On sample container(s)	☒ On Both	☐ Not indicated
If collection dates are listed on both COC and containers, do they all match?	☒ Yes	☐ No		☐ N/A
Are the sample collection times indicated:	☐ On COC	☐ On sample container(s)	☒ On Both	☐ Not indicated
If collection times are listed on both COC and containers, do they all match?	☐ Yes	☒ No		☐ N/A

COMMENTS: Time on -09 sleeve is 1148. -13 bags two times on the sleeve. One time matches the COC, the other is 2:11. VJR100611. 1627

O:\old_ed\samprec\Forms\Sample Receipt Checklist rev 051409.doc

Is the Data Set Valid?	Preservation Temperature
(circle) **Yes / No**	*(if Known)*: 5.2 °C

Antea™Group Laboratory Data Validation Sheet

Project/Client: 76 Service Station No. 1117
Project #: 1426111.17
Date of Validation: 10/17/2011 **Date of Analysis:** 10/13/2011
Sample Date: 10/6/2011 **Completed By:** S. Meunier
Signature:

Circle **Yes / No** (below)

Analytical Lab Used and Report # (if any): Ref No. 740009

		Circle Yes / No
1.	Were the analyses the ones requested?	Yes / No
2.	Do the sample number(s) on the chain-of-custody (COC) match the one(s) that appear on the laboratory data sheet?	Yes / No
3.	Were samples prepared (extracted, filtered, etc.) within EPA holding times?	Yes / No
4.	Once prepared/extracted, were the samples analyzed within the EPA holding times?	Yes / No
5.	Were Laboratory blanks performed, if so, were they non-detect?	Yes / No
6.	Are the units correct? (i.e., soil samples in mg/kg or ug/g, water samples mg/L, ug/L, and air samples in volume mg/m^3,etc.)	Yes / No
7.	Were appropriate Matrix Spike (MS) and Matrix Spike Duplicate (MSD) samples included in the laboratory batch sample?	Yes / No
8.	In lieu of MS/ MSD, were surrogate spike (SS) or surrogate spike duplicate (SSD) samples included in the laboratory batch samples?	N/A Yes / ~~No~~
9.	Were MS/ MSD (or SS/SSD) within the acceptable range of % recovery (i.e., approximately 80-120%, depending on the analyte)?	Yes / No
10.	Were MS/MSD (or SS/SSD) values used to calculate Relative Percent Difference (RPD)?	Yes / No
11.	Were Relative Percent Difference values within the acceptable range (i.e. ±25%)?	Yes / No

If any answer is no, explain why and what corrective action was taken (use additional sheet(s), as necessary:

N/A

KIFF Analytical LLC

Report Number : 79009
Date : 10/13/2011

Laboratory Results

Douglas Umland
Antea Group
312 Piercy Rd.
San Jose, CA 95138

Subject : 4 Soil Samples
Project Name : COP #11117
Project Number : I42611117
P.O. Number : I42611117

Dear Mr. Umland,

Chemical analysis of the samples referenced above has been completed. Summaries of the data are contained on the following pages. Sample(s) were received under documented chain-of-custody. US EPA protocols for sample storage and preservation were followed. Testing procedures comply with the 2003 NELAC standard. All soil samples are reported on a total weight (wet weight) basis unless noted otherwise in the case narrative. Laboratory results relate only to the samples tested. This report may be freely reproduced in full, but may only be reproduced in part with the express permission of Kiff Analytical, LLC. Kiff Analytical, LLC is certified by the State of California under the National Environmental Laboratory Accreditation Program (NELAP), lab # 08263CA. If you have any questions regarding procedures or results, please call me at 530-297-4800.

Sincerely,

Joel Kiff

KIFF Analytical LLC

Analysis Summary

Report Number : 79009
Date : 10/13/11

Attention : Douglas Umland
Antea Group
312 Piercy Rd.
San Jose, CA 95138

Project Name :COP #11117
Project Number : I42611117

			Sample Name	C-1@5'		C-1@10'		C-1@19'		C-1@35'	
			Sample Date	10/06/11		10/06/11		10/06/11		10/06/11	
Analyte	Method	Units		MRL	Results	MRL	Results	MRL	Results	MRL	Results
Benzene	EPA 8260B	mg/Kg		0.0050	ND	0.0050	ND	0.0050	ND	0.0050	ND
Ethylbenzene	EPA 8260B	mg/Kg		0.0050	ND	0.0050	ND	0.0050	ND	0.0050	**0.029**
Toluene	EPA 8260B	mg/Kg		0.0050	ND	0.0050	ND	0.0050	ND	0.0050	ND
Total Xylenes	EPA 8260B	mg/Kg		0.0050	ND	0.0050	ND	0.0050	ND	0.0050	**0.030**
Diisopropyl ether (DIPE)	EPA 8260B	mg/Kg		0.0050	ND	0.0050	ND	0.0050	ND	0.0050	ND
Ethanol	EPA 8260B	mg/Kg		0.050	ND	0.050	ND	0.050	ND	0.050	ND
Ethyl-t-butyl ether (ETBE)	EPA 8260B	mg/Kg		0.0050	ND	0.0050	ND	0.0050	ND	0.0050	ND
Methyl-t-butyl ether (MTBE)	EPA 8260B	mg/Kg		0.0050	ND	0.0050	ND	0.0050	ND	0.0050	ND
Tert-Butanol	EPA 8260B	mg/Kg		0.0050	ND	0.0050	ND	0.0050	**0.023**	0.0050	**0.021**
Tert-amyl methyl ether (TAME)	EPA 8260B	mg/Kg		0.0050	ND	0.0050	ND	0.0050	ND	0.0050	ND
TPH as Gasoline	EPA 8260B	mg/Kg		1.0	ND	1.0	ND	1.0	ND	1.0	ND
1,2-Dibromoethane	EPA 8260B	mg/Kg		0.0050	ND	0.0050	ND	0.0050	ND	0.0050	ND
1,2-Dichloroethane	EPA 8260B	mg/Kg		0.0050	ND	0.0050	ND	0.0050	ND	0.0050	ND
1,2-Dichloroethane-d4 (Surr)	EPA 8260B	%			104		104		107		107
Toluene - d8 (Surr)	EPA 8260B	%			102		101		101		102

MRL = Method Reporting Limit
ND = Not Detected

2795 2nd St., Suite 300 Davis, CA 95616 530-297-4800
ELAP # 2236

KIFF Analytical LLC

Report Number : 79009

Date : 10/13/11

Project Name : **COP #11117**

Project Number : **I42611117**

Sample : **C-1@5'** Matrix : Soil Lab Number : 79009-01

Sample Date :10/06/11

Parameter	Measured Value	Method Reporting Limit	Units	Analysis Method	Date/Time Analyzed
Benzene	< 0.0050	0.0050	mg/Kg	EPA 8260B	10/13/11 15:57
Toluene	< 0.0050	0.0050	mg/Kg	EPA 8260B	10/13/11 15:57
Ethylbenzene	< 0.0050	0.0050	mg/Kg	EPA 8260B	10/13/11 15:57
Total Xylenes	< 0.0050	0.0050	mg/Kg	EPA 8260B	10/13/11 15:57
Methyl-t-butyl ether (MTBE)	< 0.0050	0.0050	mg/Kg	EPA 8260B	10/13/11 15:57
Diisopropyl ether (DIPE)	< 0.0050	0.0050	mg/Kg	EPA 8260B	10/13/11 15:57
Ethyl-t-butyl ether (ETBE)	< 0.0050	0.0050	mg/Kg	EPA 8260B	10/13/11 15:57
Tert-amyl methyl ether (TAME)	< 0.0050	0.0050	mg/Kg	EPA 8260B	10/13/11 15:57
Tert-Butanol	< 0.0050	0.0050	mg/Kg	EPA 8260B	10/13/11 15:57
Ethanol	< 0.050	0.050	mg/Kg	EPA 8260B	10/13/11 15:57
TPH as Gasoline	< 1.0	1.0	mg/Kg	EPA 8260B	10/13/11 15:57
1,2-Dichloroethane	< 0.0050	0.0050	mg/Kg	EPA 8260B	10/13/11 15:57
1,2-Dibromoethane	< 0.0050	0.0050	mg/Kg	EPA 8260B	10/13/11 15:57
1,2-Dichloroethane-d4 (Surr)	104		% Recovery	EPA 8260B	10/13/11 15:57
Toluene - d8 (Surr)	102		% Recovery	EPA 8260B	10/13/11 15:57

KIFF Analytical LLC

Report Number : 79009

Date : 10/13/11

Project Name : **COP #11117**

Project Number : **I42611117**

Sample : **C-1@10'** Matrix : Soil Lab Number : 79009-02

Sample Date :10/06/11

Parameter	Measured Value	Method Reporting Limit	Units	Analysis Method	Date/Time Analyzed
Benzene	< 0.0050	0.0050	mg/Kg	EPA 8260B	10/13/11 16:34
Toluene	< 0.0050	0.0050	mg/Kg	EPA 8260B	10/13/11 16:34
Ethylbenzene	< 0.0050	0.0050	mg/Kg	EPA 8260B	10/13/11 16:34
Total Xylenes	< 0.0050	0.0050	mg/Kg	EPA 8260B	10/13/11 16:34
Methyl-t-butyl ether (MTBE)	< 0.0050	0.0050	mg/Kg	EPA 8260B	10/13/11 16:34
Diisopropyl ether (DIPE)	< 0.0050	0.0050	mg/Kg	EPA 8260B	10/13/11 16:34
Ethyl-t-butyl ether (ETBE)	< 0.0050	0.0050	mg/Kg	EPA 8260B	10/13/11 16:34
Tert-amyl methyl ether (TAME)	< 0.0050	0.0050	mg/Kg	EPA 8260B	10/13/11 16:34
Tert-Butanol	< 0.0050	0.0050	mg/Kg	EPA 8260B	10/13/11 16:34
Ethanol	< 0.050	0.050	mg/Kg	EPA 8260B	10/13/11 16:34
TPH as Gasoline	< 1.0	1.0	mg/Kg	EPA 8260B	10/13/11 16:34
1,2-Dichloroethane	< 0.0050	0.0050	mg/Kg	EPA 8260B	10/13/11 16:34
1,2-Dibromoethane	< 0.0050	0.0050	mg/Kg	EPA 8260B	10/13/11 16:34
1,2-Dichloroethane-d4 (Surr)	104		% Recovery	EPA 8260B	10/13/11 16:34
Toluene - d8 (Surr)	101		% Recovery	EPA 8260B	10/13/11 16:34

KIFF Analytical LLC

Report Number : 79009

Date : 10/13/11

Project Name : **COP #11117**

Project Number : **I42611117**

Sample : **C-1@19'** Matrix : Soil Lab Number : 79009-03

Sample Date :10/06/11

Parameter	Measured Value	Method Reporting Limit	Units	Analysis Method	Date/Time Analyzed
Benzene	< 0.0050	0.0050	mg/Kg	EPA 8260B	10/13/11 17:11
Toluene	< 0.0050	0.0050	mg/Kg	EPA 8260B	10/13/11 17:11
Ethylbenzene	< 0.0050	0.0050	mg/Kg	EPA 8260B	10/13/11 17:11
Total Xylenes	< 0.0050	0.0050	mg/Kg	EPA 8260B	10/13/11 17:11
Methyl-t-butyl ether (MTBE)	< 0.0050	0.0050	mg/Kg	EPA 8260B	10/13/11 17:11
Diisopropyl ether (DIPE)	< 0.0050	0.0050	mg/Kg	EPA 8260B	10/13/11 17:11
Ethyl-t-butyl ether (ETBE)	< 0.0050	0.0050	mg/Kg	EPA 8260B	10/13/11 17:11
Tert-amyl methyl ether (TAME)	< 0.0050	0.0050	mg/Kg	EPA 8260B	10/13/11 17:11
Tert-Butanol	**0.023**	0.0050	mg/Kg	EPA 8260B	10/13/11 17:11
Ethanol	< 0.050	0.050	mg/Kg	EPA 8260B	10/13/11 17:11
TPH as Gasoline	< 1.0	1.0	mg/Kg	EPA 8260B	10/13/11 17:11
1,2-Dichloroethane	< 0.0050	0.0050	mg/Kg	EPA 8260B	10/13/11 17:11
1,2-Dibromoethane	< 0.0050	0.0050	mg/Kg	EPA 8260B	10/13/11 17:11
1,2-Dichloroethane-d4 (Surr)	107		% Recovery	EPA 8260B	10/13/11 17:11
Toluene - d8 (Surr)	101		% Recovery	EPA 8260B	10/13/11 17:11

KIFF Analytical LLC

Report Number : 79009

Date : 10/13/11

Project Name : **COP #11117**

Project Number : **I42611117**

Sample : **C-1@35'** Matrix : Soil Lab Number : 79009-06

Sample Date :10/06/11

Parameter	Measured Value	Method Reporting Limit	Units	Analysis Method	Date/Time Analyzed
Benzene	< 0.0050	0.0050	mg/Kg	EPA 8260B	10/13/11 17:48
Toluene	< 0.0050	0.0050	mg/Kg	EPA 8260B	10/13/11 17:48
Ethylbenzene	**0.029**	0.0050	mg/Kg	EPA 8260B	10/13/11 17:48
Total Xylenes	**0.030**	0.0050	mg/Kg	EPA 8260B	10/13/11 17:48
Methyl-t-butyl ether (MTBE)	< 0.0050	0.0050	mg/Kg	EPA 8260B	10/13/11 17:48
Diisopropyl ether (DIPE)	< 0.0050	0.0050	mg/Kg	EPA 8260B	10/13/11 17:48
Ethyl-t-butyl ether (ETBE)	< 0.0050	0.0050	mg/Kg	EPA 8260B	10/13/11 17:48
Tert-amyl methyl ether (TAME)	< 0.0050	0.0050	mg/Kg	EPA 8260B	10/13/11 17:48
Tert-Butanol	**0.021**	0.0050	mg/Kg	EPA 8260B	10/13/11 17:48
Ethanol	< 0.050	0.050	mg/Kg	EPA 8260B	10/13/11 17:48
TPH as Gasoline	< 1.0	1.0	mg/Kg	EPA 8260B	10/13/11 17:48
1,2-Dichloroethane	< 0.0050	0.0050	mg/Kg	EPA 8260B	10/13/11 17:48
1,2-Dibromoethane	< 0.0050	0.0050	mg/Kg	EPA 8260B	10/13/11 17:48
1,2-Dichloroethane-d4 (Surr)	107		% Recovery	EPA 8260B	10/13/11 17:48
Toluene - d8 (Surr)	102		% Recovery	EPA 8260B	10/13/11 17:48

Report Number : 79009

Date : 10/13/11

QC Report : Method Blank Data

Project Name : **COP #11117**

Project Number : **I42611117**

Parameter	Measured Value	Method Reporting Limit	Units	Analysis Method	Date Analyzed
Benzene	< 0.0050	0.0050	mg/Kg	EPA 8260B	10/12/11
Ethylbenzene	< 0.0050	0.0050	mg/Kg	EPA 8260B	10/12/11
Toluene	< 0.0050	0.0050	mg/Kg	EPA 8260B	10/12/11
Total Xylenes	< 0.0050	0.0050	mg/Kg	EPA 8260B	10/12/11
Diisopropyl ether (DIPE)	< 0.0050	0.0050	mg/Kg	EPA 8260B	10/12/11
Ethanol	< 0.050	0.050	mg/Kg	EPA 8260B	10/12/11
Ethyl-t-butyl ether (ETBE)	< 0.0050	0.0050	mg/Kg	EPA 8260B	10/12/11
Methyl-t-butyl ether (MTBE)	< 0.0050	0.0050	mg/Kg	EPA 8260B	10/12/11
Tert-Butanol	< 0.0050	0.0050	mg/Kg	EPA 8260B	10/12/11
Tert-amyl methyl ether (TAME)	< 0.0050	0.0050	mg/Kg	EPA 8260B	10/12/11
TPH as Gasoline	< 1.0	1.0	mg/Kg	EPA 8260B	10/12/11
1,2-Dibromoethane	< 0.0050	0.0050	mg/Kg	EPA 8260B	10/12/11
1,2-Dichloroethane	< 0.0050	0.0050	mg/Kg	EPA 8260B	10/12/11
1,2-Dichloroethane-d4 (Surr)	105		%	EPA 8260B	10/12/11
Toluene - d8 (Surr)	101		%	EPA 8260B	10/12/11

Parameter	Measured Value	Method Reporting Limit	Units	Analysis Method	Date Analyzed

KIFF ANALYTICAL, LLC

2795 2nd Street, Suite 300 Davis, CA 95618 530-297-4800

Report Number : 79009

QC Report : Matrix Spike/ Matrix Spike Duplicate

Date : 10/13/11

Project Name : **COP #11117**

Project Number : **I42611117**

Parameter	Spiked Sample	Sample Value	Spike Level	Spike Dup. Level	Spiked Sample Value	Duplicate Spiked Sample Value	Units	Analysis Method	Date Analyzed	Spiked Sample Percent Recov.	Duplicate Spiked Sample Percent Recov.	Relative Percent Diff.	Spiked Sample Percent Recov. Limit	Relative Percent Diff. Limit
1,2-Dibromoethane														
	79020-01	<0.0050	0.0394	0.0387	0.0406	0.0394	mg/Kg	EPA 8260B	10/12/11	103	102	0.928	67.2-121	25
1,2-Dichloroethane														
	79020-01	<0.0050	0.0396	0.0388	0.0399	0.0393	mg/Kg	EPA 8260B	10/12/11	101	101	0.535	64.0-124	25
Benzene														
	79020-01	<0.0050	0.0396	0.0388	0.0398	0.0387	mg/Kg	EPA 8260B	10/12/11	100	99.7	0.694	67.9-120	25
Diisopropyl ether														
	79020-01	<0.0050	0.0392	0.0385	0.0393	0.0387	mg/Kg	EPA 8260B	10/12/11	100	101	0.436	65.2-122	25
Ethanol														
	79020-01	<0.050	0.0988	0.0968	0.0743	0.0880	mg/Kg	EPA 8260B	10/12/11	75.2	90.9	18.9	37.1-156	25
Ethyl-tert-butyl ether														
	79020-01	<0.0050	0.0395	0.0388	0.0388	0.0383	mg/Kg	EPA 8260B	10/12/11	98.2	98.8	0.563	64.6-122	25
Ethylbenzene														
	79020-01	<0.0050	0.0396	0.0388	0.0357	0.0343	mg/Kg	EPA 8260B	10/12/11	90.2	88.4	2.06	65.5-127	25
Methyl-t-butyl ether														
	79020-01	<0.0050	0.0398	0.0390	0.0394	0.0390	mg/Kg	EPA 8260B	10/12/11	98.9	100	1.12	57.0-122	25
P + M Xylene														
	79020-01	<0.0050	0.0396	0.0388	0.0359	0.0346	mg/Kg	EPA 8260B	10/12/11	90.6	89.0	1.79	62.5-124	25
Tert-Butanol														
	79020-01	<0.0050	0.192	0.188	0.191	0.181	mg/Kg	EPA 8260B	10/12/11	99.7	96.5	3.27	64.3-122	25

KIFF ANALYTICAL, LLC

2795 2nd Street, Suite 300 Davis, CA 95618 530-297-4800

Report Number : 79009

QC Report : Matrix Spike/ Matrix Spike Duplicate

Date : 10/13/2011

Project Name : **COP #11117**

Project Number : **I42611117**

Parameter	Spiked Sample	Sample Value	Spike Level	Spike Dup. Level	Spiked Sample Value	Duplicate Spiked Sample Value	Units	Analysis Method	Date Analyzed	Spiked Sample Percent Recov.	Duplicate Spiked Sample Percent Recov.	Relative Percent Diff.	Spiked Sample Percent Recov. Limit	Relative Percent Diff. Limit
Tert-amyl-methyl ether														
	79020-01	<0.0050	0.0395	0.0387	0.0385	0.0383	mg/Kg	EPA 8260B	10/12/11	97.5	98.9	1.40	64.9-122	25
Toluene														
	79020-01	<0.0050	0.0396	0.0388	0.0392	0.0376	mg/Kg	EPA 8260B	10/12/11	99.0	96.8	2.31	65.7-120	25

KIFF ANALYTICAL, LLC

2795 2nd Street, Suite 300 Davis, CA 95618 530-297-4800

QC Report : Laboratory Control Sample (LCS)

Project Name : **COP #11117**

Project Number : **I42611117**

Parameter	Spike Level	Units	Analysis Method	Date Analyzed	LCS Percent Recov.	LCS Percent Recov. Limit
1,2-Dibromoethane	0.0398	mg/Kg	EPA 8260B	10/12/11	107	67.2-121
1,2-Dichloroethane	0.0399	mg/Kg	EPA 8260B	10/12/11	105	64.0-124
Benzene	0.0399	mg/Kg	EPA 8260B	10/12/11	106	67.9-120
Diisopropyl ether	0.0395	mg/Kg	EPA 8260B	10/12/11	105	65.2-122
Ethanol	0.0995	mg/Kg	EPA 8260B	10/12/11	88.8	37.1-156
Ethyl-tert-butyl ether	0.0398	mg/Kg	EPA 8260B	10/12/11	104	64.6-122
Ethylbenzene	0.0399	mg/Kg	EPA 8260B	10/12/11	98.6	65.5-127
Methyl-t-butyl ether	0.0401	mg/Kg	EPA 8260B	10/12/11	102	57.0-122
P + M Xylene	0.0399	mg/Kg	EPA 8260B	10/12/11	99.2	62.5-124
Tert-Butanol	0.193	mg/Kg	EPA 8260B	10/12/11	102	64.3-122
Tert-amyl-methyl ether	0.0398	mg/Kg	EPA 8260B	10/12/11	104	64.9-122
Toluene	0.0399	mg/Kg	EPA 8260B	10/12/11	107	65.7-120

KIFF ANALYTICAL, LLC

2795 2nd Street, Suite 300 Davis, CA 95618 530-297-4800

KIFF Analytical LLC

2795 2nd Street, Suite 300
Davis, CA 95618
Lab: 530.297.4800
Fax: 530.297.4802

SRG # / Lab No. 79009

Page 1 of 1

Chain-of-Custody Record and Analysis Request

Project Contact (Hardcopy or PDF To): Douglas Umland

Company / Address: 3121 Piera Rd. San Jose, CA

Phone Number: (408) 826-1874

Fax Number: (408) 225-8500

Project #: 1424.1117 P.O. #: 1424.1117

Project Name: COP #11117

California EDF Report? ☑ Yes ☐ No

Sampling Company Log Code:

Global ID:

EDF Deliverable To (Email Address): doug.umland@anteagroup.com

Bill to: Doug Umland, Anteagroup

Sampler Print Name: Caitlin Mercado

Sampler Signature: Caitlin Mercado

Project Address: 7210 Bancroft Ave. Oakland, CA.

Sample Designation	Date	Time	Container: 40 ml VOA	Sleeve	Poly	Glass	Tedlar	Acetate liner	Preservative: HCl	HNO_3	None	Matrix: Water	Soil	Air	MTBE @ 0.5 ppb (EPA 8260B)	BTEX (EPA 8260B)	TPH Gas (EPA 8260B)	5 Oxygenates (MTBE, DIPE, ETBE, TAME, TBA) (EPA 8260B)	7 Oxygenates (5 oxy + EtOH, MeOH) (EPA 8260B)	Lead Scav. (1,2 DCA & 1,2 EDB) (EPA 8260B)	Volatile Halocarbons (EPA 8260B)	Volatile Organics Full List (EPA 8260B)	Volatile Organics (EPA 524.2 Drinking Water)	TPH as Diesel (EPA 8015M)	TPH as Motor Oil (EPA 8015M)	CAM 17 Metals (EPA 200.7 / 6010)	5 Waste Oil Metals (Cd,Cr,Ni,Pb,Zn) (EPA 200.7 / 6010)	Mercury (EPA 245.1 / 7470 / 7471)	Total Lead (EPA 200.7 / 6010)	W.E.T. Lead (STLC)	Ethanol (EPA 8260B)				For Lab Use Only
C-1 @ 5' ⊕	10/6	9:32						X			X		X		X	X	X	X		X											X				01
C-1 @ 10' ⊕	10/6	9:38						X			X		X		X	X	X	X		X											X				02
C-1 @ 19' ⊕	10/6	9:53						X			X		X		X	X	X	X		X											X				03
C-1 @ 25'	10/6	10:21						X			X		X		X	X	X	X		X											X				04
C-1 @ 30'	10/6	10:26						X			X		X		X	X	X	X		X											X				05
C-1 @ 35' ⊕	10/6	10:57						X			X		X		X	X	X	X		X											X				06

TAT: ☐ 12 hr ☐ 24 hr ☐ 48hr ☐ 72hr ☒ 1 wk

CIRCLE METHOD

Relinquished by:	Date	Time	Received by:
Angela Barillas	10/7/11	1:40	
Relinquished by:	Date	Time	Received by:
Relinquished by:	Date	Time	Received by Laboratory:
	100711	1340	Kiff Analytical

Remarks:
C-1 @ 25' had high PID of 990 ppm
C-1 @ 30' had high PID of 1782 ppm
RUN all ⊕ sample designations; Hold all others.

Page 11 of 15

Distribution: White - Lab; Pink - Originator
Rev: 060409

KIFF Analytical LLC

SAMPLE RECEIPT CHECKLIST

RECEIVER LJR Initials

SRG#: 79009 Date: 100711

Project ID: COP #11117

Method of Receipt: ☒ Courier ☐ Over-the-counter ☐ Shipper

COC Inspection

Is COC present?	☒ Yes	☐ No		
Custody seals on shipping container?	☐ Intact	☐ Broken	☐ Not present	☒ N/A
Is COC Signed by Relinquisher? ☒ Yes ☐ No	Dated? ☒ Yes	☐ No		
Is sampler name legibly indicated on COC?	☒ Yes	☐ No		
Is analysis or hold requested for all samples	☒ Yes	☐ No		
Is the turnaround time indicated on COC?	☒ Yes	☐ No		
Is COC free of whiteout and uninitialed cross-outs?	☒ Yes	☐ No, Whiteout	☐ No, Cross-outs	

Sample Inspection

Coolant Present: ☒ Yes ☐ No (includes water)

Temperature °C 5.2 Therm. ID# IR-5 Initial LJR Date/Time 100711/1758 ☐ N/A

Are there custody seals on sample containers?	☐ Intact	☐ Broken	☒ Not present	
Do containers match COC? ☒ Yes ☐ No ☐ No, COC lists absent sample(s)	☐ No, Extra sample(s) present			
Are there samples matrices other than soil, water, air or carbon?	☐ Yes	☒ No		
Are any sample containers broken, leaking or damaged?	☐ Yes	☒ No		
Are preservatives indicated? ☐ Yes, on sample containers	☐ Yes, on COC	☐ Not indicated	☒ N/A	
Are preservatives correct for analyses requested?	☐ Yes	☐ No	☒ N/A	
Are samples within holding time for analyses requested?	☒ Yes	☐ No		
Are the correct sample containers used for the analyses requested?	☒ Yes	☐ No		
Is there sufficient sample to perform testing?	☒ Yes	☐ No		

Does any sample contain product, have strong odor or are otherwise suspected to be hot? ☐ Yes ☒ No

Receipt Details

Matrix SO Container type Sleeve # of containers received 6

Matrix _____ Container type _____ # of containers received _____

Matrix _____ Container type _____ # of containers received _____

Date and Time Sample Put into Temp Storage Date: 100711 Time: 1805

Quicklog

Are the Sample ID's indicated:	☐ On COC	☐ On sample container(s)	☒ On Both	☐ Not indicated
If Sample ID's are listed on both COC and containers, do they all match?	☒ Yes	☐ No	☐ N/A	
Is the Project ID indicated:	☐ On COC	☐ On sample container(s)	☒ On Both	☐ Not indicated
If project ID is listed on both COC and containers, do they all match?	☒ Yes	☐ No	☐ N/A	
Are the sample collection dates indicated:	☐ On COC	☐ On sample container(s)	☒ On Both	☐ Not indicated
If collection dates are listed on both COC and containers, do they all match?	☒ Yes	☐ No	☐ N/A	
Are the sample collection times indicated:	☐ On COC	☐ On sample container(s)	☒ On Both	☐ Not indicated
If collection times are listed on both COC and containers, do they all match?	☒ Yes	☐ No	☐ N/A	

COMMENTS:

Is the Data Set Valid?

(circle)

Yes / No

Preservation Temperature

(if Known): 5.2 °C

Antea™Group Laboratory Data Validation Sheet

Project/Client: 76 Service Station No. 1117

Project #: IN261117

Date of Validation: 10/21/2011 **Date of Analysis:** 10/11-10/14/2011

Sample Date: 10/6/2011 **Completed By:** S. Meininger

Signature:

Circle **Yes / No** (below)

Analytical Lab Used and Report # (if any): Kiff No. 79010

1.	Were the analyses the ones requested?	**Yes** / No
2.	Do the sample number(s) on the chain-of-custody (COC) match the one(s) that appear on the laboratory data sheet?	**Yes** / No
3.	Were samples prepared (extracted, filtered, etc.) within EPA holding times?	**Yes** / No
4.	Once prepared/extracted, were the samples analyzed within the EPA holding times?	**Yes** / No
5.	Were Laboratory blanks performed, if so, were they non-detect?	**Yes** / No
6.	Are the units correct? (i.e., soil samples in mg/kg or ug/g, water samples mg/L, ug/L, and air samples in volume mg/m^3,etc.)	**Yes** / No
7.	Were appropriate Matrix Spike (MS) and Matrix Spike Duplicate (MSD) samples included in the laboratory batch sample?	**Yes** / No
8.	In lieu of MS/ MSD, were surrogate spike (SS) or surrogate spike duplicate (SSD) samples included in the laboratory batch samples?	**Yes** / N/A / No
9.	Were MS/ MSD (or SS/SSD) within the acceptable range of % recovery (i.e., approximately 80-120%, depending on the analyte)?	Yes / **No**
10.	Were MS/MSD (or SS/SSD) values used to calculate Relative Percent Difference (RPD)?	**Yes** / No
11.	Were Relative Percent Difference values within the acceptable range (i.e. ±25%)?	**Yes** / No

If any answer is no, explain why and what corrective action was taken (use additional sheet(s), as necessary:

Matrix Spike/Matrix Spike Duplicate results associated with sample 20111006-COMPB-1 for the analyte Ethanol were outside of control limits. This may indicate a bias for the sample that was spiked. Since the LCS recoveries were within control limits, no data are flagged.

KIFF Analytical LLC

Report Number : 79010
Date : 10/14/2011

Laboratory Results

Douglas Umland
Antea Group
312 Piercy Rd.
San Jose, CA 95138

Subject : 4 Soil Samples and 1 Water Sample
Project Name : COP #11117
Project Number : I4211117
P.O. Number : I42611117

Dear Mr. Umland,

Chemical analysis of the samples referenced above has been completed. Summaries of the data are contained on the following pages. Sample(s) were received under documented chain-of-custody. US EPA protocols for sample storage and preservation were followed. Testing procedures comply with the 2003 NELAC standard. All soil samples are reported on a total weight (wet weight) basis unless noted otherwise in the case narrative. Laboratory results relate only to the samples tested. This report may be freely reproduced in full, but may only be reproduced in part with the express permission of Kiff Analytical, LLC. Kiff Analytical, LLC is certified by the State of California under the National Environmental Laboratory Accreditation Program (NELAP), lab # 08263CA. If you have any questions regarding procedures or results, please call me at 530-297-4800.

Sincerely,

Joel Kiff

KIFF Analytical LLC

Report Number : 79010
Date : 10/14/2011

Subject : 4 Soil Samples and 1 Water Sample
Project Name : COP #11117
Project Number : I4211117
P.O. Number : I42611117

Case Narrative

Matrix Spike/Matrix Spike Duplicate results associated with sample 20111006-COMPB-1 for the analyte Ethanol were outside of control limits. This may indicate a bias for the sample that was spiked. Since the LCS recoveries were within control limits, no data are flagged.

KIFF Analytical LLC

Analysis Summary

Report Number : 79010
Date : 10/14/11

Attention : Douglas Umland
Antea Group
312 Piercy Rd.
San Jose, CA 95138

Project Name :COP #11117
Project Number : I4211117

			Sample Name	20111006-COMP	20110006-COMP		20111006-COMP		20111006-COMP	
			Sample Date	10/06/11	10/06/11		10/06/11		10/06/11	
Analyte	Method	Units		MRL	Results	MRL	Results	MRL	Results	MRL	Results
Lead	EPA 6010B	mg/Kg		0.50	**8.8**	0.50	**5.8**	0.50	**4.5**	0.50	**3.8**
Benzene	EPA 8260B	mg/Kg		0.0050	ND	0.0050	ND	0.0050	ND	0.050	**0.52**
Ethylbenzene	EPA 8260B	mg/Kg		0.0050	ND	0.0050	ND	0.0050	ND	0.25	**22**
Toluene	EPA 8260B	mg/Kg		0.0050	ND	0.0050	ND	0.0050	ND	0.050	**14**
Total Xylenes	EPA 8260B	mg/Kg		0.0050	ND	0.0050	ND	0.0050	ND	0.25	**140**
Diisopropyl ether (DIPE)	EPA 8260B	mg/Kg		0.0050	ND	0.0050	ND	0.0050	ND	0.050	ND
Ethanol	EPA 8260B	mg/Kg		0.050	ND	0.050	ND	0.050	ND	0.50	ND
Ethyl-t-butyl ether (ETBE)	EPA 8260B	mg/Kg		0.0050	ND	0.0050	ND	0.0050	ND	0.050	ND
Methyl-t-butyl ether (MTBE)	EPA 8260B	mg/Kg		0.0050	ND	0.0050	ND	0.0050	ND	0.050	ND
Tert-Butanol	EPA 8260B	mg/Kg		0.0050	ND	0.0050	ND	0.0050	ND	0.25	ND
Tert-amyl methyl ether (TAME)	EPA 8260B	mg/Kg		0.0050	ND	0.0050	ND	0.0050	ND	0.050	ND
TPH as Gasoline	EPA 8260B	mg/Kg		1.0	**1.2**	1.0	ND	1.0	ND	25	**1500**
1,2-Dibromoethane	EPA 8260B	mg/Kg		0.0050	ND	0.0050	ND	0.0050	ND	0.050	ND
1,2-Dichloroethane	EPA 8260B	mg/Kg		0.0050	ND	0.0050	ND	0.0050	ND	0.050	ND
1,2-Dichloroethane-d4 (Surr)	EPA 8260B	%			102		102		104		93.2
2-Bromochlorobenzene (Surr)	EPA 8260B	%									96.4
Toluene - d8 (Surr)	EPA 8260B	%			100		99.6		101		95.1

MRL = Method Reporting Limit
ND = Not Detected

2795 2nd St., Suite 300 Davis, CA 95616 530-297-4800
ELAP # 2236

KIFF Analytical LLC

Analysis Summary

Report Number : 79010
Date : 10/14/11

Attention : Douglas Umland
Antea Group
312 Piercy Rd.
San Jose, CA 95138

Project Name :COP #11117
Project Number : I4211117

			Sample Name	20111006-COMP
			Sample Date	10/06/11
Analyte	Method	Units	MRL	Results
Benzene	EPA 8260B	ug/L	15	ND
Ethylbenzene	EPA 8260B	ug/L	15	ND
Toluene	EPA 8260B	ug/L	15	ND
Total Xylenes	EPA 8260B	ug/L	15	ND
Diisopropyl ether (DIPE)	EPA 8260B	ug/L	15	ND
Ethanol	EPA 8260B	ug/L	150	**24000**
Ethyl-t-butyl ether (ETBE)	EPA 8260B	ug/L	15	ND
Methyl-t-butyl ether (MTBE)	EPA 8260B	ug/L	15	ND
Tert-Butanol	EPA 8260B	ug/L	70	ND
Tert-amyl methyl ether (TAME)	EPA 8260B	ug/L	15	ND
TPH as Gasoline	EPA 8260B	ug/L	1500	ND
1,2-Dibromoethane	EPA 8260B	ug/L	15	ND
1,2-Dichloroethane	EPA 8260B	ug/L	15	ND
1,2-Dichloroethane-d4 (Surr)	EPA 8260B	%		101
Toluene - d8 (Surr)	EPA 8260B	%		99.5

MRL = Method Reporting Limit
ND = Not Detected

2795 2nd St., Suite 300 Davis, CA 95616 530-297-4800
ELAP # 2236

KIFF Analytical LLC

Report Number : 79010
Date : 10/14/11

Project Name : **COP #11117**
Project Number : **I4211117**

Sample : **20111006-COMPA-1** Matrix : Soil Lab Number : 79010-01
Sample Date :10/06/11

Parameter	Measured Value	Method Reporting Limit	Units	Analysis Method	Date/Time Analyzed
Lead	**8.8**	0.50	mg/Kg	EPA 6010B	10/11/11 14:28
Benzene	< 0.0050	0.0050	mg/Kg	EPA 8260B	10/14/11 02:38
Toluene	< 0.0050	0.0050	mg/Kg	EPA 8260B	10/14/11 02:38
Ethylbenzene	< 0.0050	0.0050	mg/Kg	EPA 8260B	10/14/11 02:38
Total Xylenes	< 0.0050	0.0050	mg/Kg	EPA 8260B	10/14/11 02:38
Methyl-t-butyl ether (MTBE)	< 0.0050	0.0050	mg/Kg	EPA 8260B	10/14/11 02:38
Diisopropyl ether (DIPE)	< 0.0050	0.0050	mg/Kg	EPA 8260B	10/14/11 02:38
Ethyl-t-butyl ether (ETBE)	< 0.0050	0.0050	mg/Kg	EPA 8260B	10/14/11 02:38
Tert-amyl methyl ether (TAME)	< 0.0050	0.0050	mg/Kg	EPA 8260B	10/14/11 02:38
Tert-Butanol	< 0.0050	0.0050	mg/Kg	EPA 8260B	10/14/11 02:38
Ethanol	< 0.050	0.050	mg/Kg	EPA 8260B	10/14/11 02:38
TPH as Gasoline	**1.2**	1.0	mg/Kg	EPA 8260B	10/14/11 02:38
1,2-Dichloroethane	< 0.0050	0.0050	mg/Kg	EPA 8260B	10/14/11 02:38
1,2-Dibromoethane	< 0.0050	0.0050	mg/Kg	EPA 8260B	10/14/11 02:38
1,2-Dichloroethane-d4 (Surr)	102		% Recovery	EPA 8260B	10/14/11 02:38
Toluene - d8 (Surr)	100		% Recovery	EPA 8260B	10/14/11 02:38

KIFF Analytical LLC

Report Number : 79010
Date : 10/14/11

Project Name : **COP #11117**
Project Number : **I4211117**

Sample : **20110006-COMPA-2** Matrix : Soil Lab Number : 79010-02
Sample Date :10/06/11

Parameter	Measured Value	Method Reporting Limit	Units	Analysis Method	Date/Time Analyzed
Lead	**5.8**	0.50	mg/Kg	EPA 6010B	10/11/11 14:40
Benzene	< 0.0050	0.0050	mg/Kg	EPA 8260B	10/14/11 02:03
Toluene	< 0.0050	0.0050	mg/Kg	EPA 8260B	10/14/11 02:03
Ethylbenzene	< 0.0050	0.0050	mg/Kg	EPA 8260B	10/14/11 02:03
Total Xylenes	< 0.0050	0.0050	mg/Kg	EPA 8260B	10/14/11 02:03
Methyl-t-butyl ether (MTBE)	< 0.0050	0.0050	mg/Kg	EPA 8260B	10/14/11 02:03
Diisopropyl ether (DIPE)	< 0.0050	0.0050	mg/Kg	EPA 8260B	10/14/11 02:03
Ethyl-t-butyl ether (ETBE)	< 0.0050	0.0050	mg/Kg	EPA 8260B	10/14/11 02:03
Tert-amyl methyl ether (TAME)	< 0.0050	0.0050	mg/Kg	EPA 8260B	10/14/11 02:03
Tert-Butanol	< 0.0050	0.0050	mg/Kg	EPA 8260B	10/14/11 02:03
Ethanol	< 0.050	0.050	mg/Kg	EPA 8260B	10/14/11 02:03
TPH as Gasoline	< 1.0	1.0	mg/Kg	EPA 8260B	10/14/11 02:03
1,2-Dichloroethane	< 0.0050	0.0050	mg/Kg	EPA 8260B	10/14/11 02:03
1,2-Dibromoethane	< 0.0050	0.0050	mg/Kg	EPA 8260B	10/14/11 02:03
1,2-Dichloroethane-d4 (Surr)	102		% Recovery	EPA 8260B	10/14/11 02:03
Toluene - d8 (Surr)	99.6		% Recovery	EPA 8260B	10/14/11 02:03

KIFF Analytical LLC

Report Number : 79010
Date : 10/14/11

Project Name : **COP #11117**
Project Number : **I4211117**

Sample : **20111006-COMPA-3** Matrix : Soil Lab Number : 79010-03
Sample Date :10/06/11

Parameter	Measured Value	Method Reporting Limit	Units	Analysis Method	Date/Time Analyzed
Lead	**4.5**	0.50	mg/Kg	EPA 6010B	10/11/11 14:44
Benzene	< 0.0050	0.0050	mg/Kg	EPA 8260B	10/11/11 13:06
Toluene	< 0.0050	0.0050	mg/Kg	EPA 8260B	10/11/11 13:06
Ethylbenzene	< 0.0050	0.0050	mg/Kg	EPA 8260B	10/11/11 13:06
Total Xylenes	< 0.0050	0.0050	mg/Kg	EPA 8260B	10/11/11 13:06
Methyl-t-butyl ether (MTBE)	< 0.0050	0.0050	mg/Kg	EPA 8260B	10/11/11 13:06
Diisopropyl ether (DIPE)	< 0.0050	0.0050	mg/Kg	EPA 8260B	10/11/11 13:06
Ethyl-t-butyl ether (ETBE)	< 0.0050	0.0050	mg/Kg	EPA 8260B	10/11/11 13:06
Tert-amyl methyl ether (TAME)	< 0.0050	0.0050	mg/Kg	EPA 8260B	10/11/11 13:06
Tert-Butanol	< 0.0050	0.0050	mg/Kg	EPA 8260B	10/11/11 13:06
Ethanol	< 0.050	0.050	mg/Kg	EPA 8260B	10/11/11 13:06
TPH as Gasoline	< 1.0	1.0	mg/Kg	EPA 8260B	10/11/11 13:06
1,2-Dichloroethane	< 0.0050	0.0050	mg/Kg	EPA 8260B	10/11/11 13:06
1,2-Dibromoethane	< 0.0050	0.0050	mg/Kg	EPA 8260B	10/11/11 13:06
1,2-Dichloroethane-d4 (Surr)	104		% Recovery	EPA 8260B	10/11/11 13:06
Toluene - d8 (Surr)	101		% Recovery	EPA 8260B	10/11/11 13:06

KIFF Analytical LLC

Report Number : 79010
Date : 10/14/11

Project Name : **COP #11117**
Project Number : **I4211117**

Sample : **20111006-COMPA-4** Matrix : Soil Lab Number : 79010-04
Sample Date :10/06/11

Parameter	Measured Value	Method Reporting Limit	Units	Analysis Method	Date/Time Analyzed
Lead	**3.8**	0.50	mg/Kg	EPA 6010B	10/11/11 14:48
Benzene	**0.52**	0.050	mg/Kg	EPA 8260B	10/14/11 06:03
Toluene	**14**	0.050	mg/Kg	EPA 8260B	10/14/11 06:03
Ethylbenzene	**22**	0.25	mg/Kg	EPA 8260B	10/14/11 16:38
Total Xylenes	**140**	0.25	mg/Kg	EPA 8260B	10/14/11 16:38
Methyl-t-butyl ether (MTBE)	< 0.050	0.050	mg/Kg	EPA 8260B	10/14/11 06:03
Diisopropyl ether (DIPE)	< 0.050	0.050	mg/Kg	EPA 8260B	10/14/11 06:03
Ethyl-t-butyl ether (ETBE)	< 0.050	0.050	mg/Kg	EPA 8260B	10/14/11 06:03
Tert-amyl methyl ether (TAME)	< 0.050	0.050	mg/Kg	EPA 8260B	10/14/11 06:03
Tert-Butanol	< 0.25	0.25	mg/Kg	EPA 8260B	10/14/11 06:03
Ethanol	< 0.50	0.50	mg/Kg	EPA 8260B	10/14/11 06:03
TPH as Gasoline	**1500**	25	mg/Kg	EPA 8260B	10/14/11 16:38
1,2-Dichloroethane	< 0.050	0.050	mg/Kg	EPA 8260B	10/14/11 06:03
1,2-Dibromoethane	< 0.050	0.050	mg/Kg	EPA 8260B	10/14/11 06:03
1,2-Dichloroethane-d4 (Surr)	93.2		% Recovery	EPA 8260B	10/14/11 06:03
Toluene - d8 (Surr)	95.1		% Recovery	EPA 8260B	10/14/11 06:03
2-Bromochlorobenzene (Surr)	96.4		% Recovery	EPA 8260B	10/14/11 06:03

KIFF Analytical LLC

Report Number : 79010
Date : 10/14/11

Project Name : **COP #11117**
Project Number : **I4211117**

Sample : **20111006-COMPB-1** Matrix : Water Lab Number : 79010-05
Sample Date :10/06/11

Parameter	Measured Value	Method Reporting Limit	Units	Analysis Method	Date/Time Analyzed
Benzene	< 15	15	ug/L	EPA 8260B	10/14/11 05:28
Toluene	< 15	15	ug/L	EPA 8260B	10/14/11 05:28
Ethylbenzene	< 15	15	ug/L	EPA 8260B	10/14/11 05:28
Total Xylenes	< 15	15	ug/L	EPA 8260B	10/14/11 05:28
Methyl-t-butyl ether (MTBE)	< 15	15	ug/L	EPA 8260B	10/14/11 05:28
Diisopropyl ether (DIPE)	< 15	15	ug/L	EPA 8260B	10/14/11 05:28
Ethyl-t-butyl ether (ETBE)	< 15	15	ug/L	EPA 8260B	10/14/11 05:28
Tert-amyl methyl ether (TAME)	< 15	15	ug/L	EPA 8260B	10/14/11 05:28
Tert-Butanol	< 70	70	ug/L	EPA 8260B	10/14/11 05:28
Ethanol	**24000**	150	ug/L	EPA 8260B	10/14/11 05:28
TPH as Gasoline	< 1500	1500	ug/L	EPA 8260B	10/14/11 05:28
1,2-Dichloroethane	< 15	15	ug/L	EPA 8260B	10/14/11 05:28
1,2-Dibromoethane	< 15	15	ug/L	EPA 8260B	10/14/11 05:28
1,2-Dichloroethane-d4 (Surr)	101		% Recovery	EPA 8260B	10/14/11 05:28
Toluene - d8 (Surr)	99.5		% Recovery	EPA 8260B	10/14/11 05:28

Report Number : 79010

Date : 10/14/11

QC Report : Method Blank Data

Project Name : **COP #11117**

Project Number : **I4211117**

Parameter	Measured Value	Method Reporting Limit	Units	Analysis Method	Date Analyzed
Lead	< 0.50	0.50	mg/Kg	EPA 6010B	10/11/11
Benzene	< 0.0050	0.0050	mg/Kg	EPA 8260B	10/11/11
Ethylbenzene	< 0.0050	0.0050	mg/Kg	EPA 8260B	10/11/11
Toluene	< 0.0050	0.0050	mg/Kg	EPA 8260B	10/11/11
Total Xylenes	< 0.0050	0.0050	mg/Kg	EPA 8260B	10/11/11
Diisopropyl ether (DIPE)	< 0.0050	0.0050	mg/Kg	EPA 8260B	10/11/11
Ethanol	< 0.050	0.050	mg/Kg	EPA 8260B	10/11/11
Ethyl-t-butyl ether (ETBE)	< 0.0050	0.0050	mg/Kg	EPA 8260B	10/11/11
Methyl-t-butyl ether (MTBE)	< 0.0050	0.0050	mg/Kg	EPA 8260B	10/11/11
Tert-Butanol	< 0.0050	0.0050	mg/Kg	EPA 8260B	10/11/11
Tert-amyl methyl ether (TAME)	< 0.0050	0.0050	mg/Kg	EPA 8260B	10/11/11
TPH as Gasoline	< 1.0	1.0	mg/Kg	EPA 8260B	10/11/11
1,2-Dibromoethane	< 0.0050	0.0050	mg/Kg	EPA 8260B	10/11/11
1,2-Dichloroethane	< 0.0050	0.0050	mg/Kg	EPA 8260B	10/11/11
1,2-Dichloroethane-d4 (Surr)	104		%	EPA 8260B	10/11/11
Toluene - d8 (Surr)	101		%	EPA 8260B	10/11/11
Benzene	< 0.0050	0.0050	mg/Kg	EPA 8260B	10/12/11
Ethylbenzene	< 0.0050	0.0050	mg/Kg	EPA 8260B	10/12/11
Toluene	< 0.0050	0.0050	mg/Kg	EPA 8260B	10/12/11
Total Xylenes	< 0.0050	0.0050	mg/Kg	EPA 8260B	10/12/11
Diisopropyl ether (DIPE)	< 0.0050	0.0050	mg/Kg	EPA 8260B	10/12/11
Ethanol	< 0.050	0.050	mg/Kg	EPA 8260B	10/12/11
Ethyl-t-butyl ether (ETBE)	< 0.0050	0.0050	mg/Kg	EPA 8260B	10/12/11
Methyl-t-butyl ether (MTBE)	< 0.0050	0.0050	mg/Kg	EPA 8260B	10/12/11
Tert-Butanol	< 0.0050	0.0050	mg/Kg	EPA 8260B	10/12/11
Tert-amyl methyl ether (TAME)	< 0.0050	0.0050	mg/Kg	EPA 8260B	10/12/11
TPH as Gasoline	< 1.0	1.0	mg/Kg	EPA 8260B	10/12/11
1,2-Dibromoethane	< 0.0050	0.0050	mg/Kg	EPA 8260B	10/12/11
1,2-Dichloroethane	< 0.0050	0.0050	mg/Kg	EPA 8260B	10/12/11
1,2-Dichloroethane-d4 (Surr)	105		%	EPA 8260B	10/12/11
Toluene - d8 (Surr)	101		%	EPA 8260B	10/12/11

Parameter	Measured Value	Method Reporting Limit	Units	Analysis Method	Date Analyzed
Benzene	< 0.50	0.50	ug/L	EPA 8260B	10/13/11
Ethylbenzene	< 0.50	0.50	ug/L	EPA 8260B	10/13/11
Toluene	< 0.50	0.50	ug/L	EPA 8260B	10/13/11
Total Xylenes	< 0.50	0.50	ug/L	EPA 8260B	10/13/11
Diisopropyl ether (DIPE)	< 0.50	0.50	ug/L	EPA 8260B	10/13/11
Ethanol	< 5.0	5.0	ug/L	EPA 8260B	10/13/11
Ethyl-t-butyl ether (ETBE)	< 0.50	0.50	ug/L	EPA 8260B	10/13/11
Methyl-t-butyl ether (MTBE)	< 0.50	0.50	ug/L	EPA 8260B	10/13/11
Tert-Butanol	< 5.0	5.0	ug/L	EPA 8260B	10/13/11
Tert-amyl methyl ether (TAME)	< 0.50	0.50	ug/L	EPA 8260B	10/13/11
TPH as Gasoline	< 50	50	ug/L	EPA 8260B	10/13/11
1,2-Dibromoethane	< 0.50	0.50	ug/L	EPA 8260B	10/13/11
1,2-Dichloroethane	< 0.50	0.50	ug/L	EPA 8260B	10/13/11
1,2-Dichloroethane-d4 (Surr)	101		%	EPA 8260B	10/13/11
Toluene - d8 (Surr)	102		%	EPA 8260B	10/13/11

KIFF ANALYTICAL, LLC

2795 2nd Street, Suite 300 Davis, CA 95618 530-297-4800

Report Number : 79010

QC Report : Matrix Spike/ Matrix Spike Duplicate

Date : 10/14/11

Project Name : **COP #11117**

Project Number : **I4211117**

Parameter	Spiked Sample	Sample Value	Spike Level	Spike Dup. Level	Spiked Sample Value	Duplicate Spiked Sample Value	Units	Analysis Method	Date Analyzed	Spiked Sample Percent Recov.	Duplicate Spiked Sample Percent Recov.	Relative Percent Diff.	Spiked Sample Percent Recov. Limit	Relative Percent Diff. Limit
Lead														
	79010-01	8.8	50.0	50.0	50.4	50.7	mg/Kg	EPA 6010B	10/11/11	83.4	83.9	0.494	75-125	20
1,2-Dibromoethane														
	79010-03	<0.0050	0.0397	0.0395	0.0322	0.0399	mg/Kg	EPA 8260B	10/11/11	80.9	101	22.1	67.2-121	25
1,2-Dichloroethane														
	79010-03	<0.0050	0.0399	0.0397	0.0320	0.0388	mg/Kg	EPA 8260B	10/11/11	80.2	97.7	19.7	64.0-124	25
Benzene														
	79010-03	<0.0050	0.0399	0.0397	0.0321	0.0390	mg/Kg	EPA 8260B	10/11/11	80.5	98.2	19.8	67.9-120	25
Diisopropyl ether														
	79010-03	<0.0050	0.0395	0.0393	0.0315	0.0388	mg/Kg	EPA 8260B	10/11/11	79.6	98.8	21.5	65.2-122	25
Ethanol														
	79010-03	<0.050	0.0995	0.0989	0.0740	0.0870	mg/Kg	EPA 8260B	10/11/11	74.3	87.9	16.8	37.1-156	25
Ethyl-tert-butyl ether														
	79010-03	<0.0050	0.0398	0.0396	0.0318	0.0388	mg/Kg	EPA 8260B	10/11/11	79.8	98.0	20.5	64.6-122	25
Ethylbenzene														
	79010-03	<0.0050	0.0399	0.0397	0.0300	0.0363	mg/Kg	EPA 8260B	10/11/11	75.2	91.5	19.6	65.5-127	25
Methyl-t-butyl ether														
	79010-03	<0.0050	0.0401	0.0399	0.0321	0.0394	mg/Kg	EPA 8260B	10/11/11	80.0	98.7	21.0	57.0-122	25

KIFF ANALYTICAL, LLC

2795 2nd Street, Suite 300 Davis, CA 95618 530-297-4800

Report Number : 79010

QC Report : Matrix Spike/ Matrix Spike Duplicate

Date : 10/14/2011

Project Name : **COP #11117**

Project Number : **I4211117**

Parameter	Spiked Sample	Sample Value	Spike Level	Spike Dup. Level	Spiked Sample Value	Duplicate Spiked Sample Value	Units	Analysis Method	Date Analyzed	Spiked Sample Percent Recov.	Duplicate Spiked Sample Percent Recov.	Relative Percent Diff.	Spiked Sample Percent Recov. Limit	Relative Percent Diff. Limit
P + M Xylene														
	79010-03	<0.0050	0.0399	0.0397	0.0302	0.0367	mg/Kg	EPA 8260B	10/11/11	75.7	92.4	19.9	62.5-124	25
Tert-Butanol														
	79010-03	<0.0050	0.193	0.192	0.150	0.183	mg/Kg	EPA 8260B	10/11/11	77.4	95.5	20.9	64.3-122	25
Tert-amyl-methyl ether														
	79010-03	<0.0050	0.0398	0.0396	0.0316	0.0391	mg/Kg	EPA 8260B	10/11/11	79.4	98.9	21.9	64.9-122	25
Toluene														
	79010-03	<0.0050	0.0399	0.0397	0.0322	0.0388	mg/Kg	EPA 8260B	10/11/11	80.6	97.7	19.1	65.7-120	25
1,2-Dibromoethane														
	79020-01	<0.0050	0.0394	0.0387	0.0406	0.0394	mg/Kg	EPA 8260B	10/12/11	103	102	0.928	67.2-121	25
1,2-Dichloroethane														
	79020-01	<0.0050	0.0396	0.0388	0.0399	0.0393	mg/Kg	EPA 8260B	10/12/11	101	101	0.535	64.0-124	25
Benzene														
	79020-01	<0.0050	0.0396	0.0388	0.0398	0.0387	mg/Kg	EPA 8260B	10/12/11	100	99.7	0.694	67.9-120	25
Diisopropyl ether														
	79020-01	<0.0050	0.0392	0.0385	0.0393	0.0387	mg/Kg	EPA 8260B	10/12/11	100	101	0.436	65.2-122	25
Ethanol														
	79020-01	<0.050	0.0988	0.0968	0.0743	0.0880	mg/Kg	EPA 8260B	10/12/11	75.2	90.9	18.9	37.1-156	25

KIFF ANALYTICAL, LLC

2795 2nd Street, Suite 300 Davis, CA 95618 530-297-4800

Report Number : 79010

QC Report : Matrix Spike/ Matrix Spike Duplicate

Date : 10/14/2011

Project Name : **COP #11117**

Project Number : **I4211117**

Parameter	Spiked Sample	Sample Value	Spike Level	Spike Dup. Level	Spiked Sample Value	Duplicate Spiked Sample Value	Units	Analysis Method	Date Analyzed	Spiked Sample Percent Recov.	Duplicate Spiked Sample Percent Recov.	Relative Percent Diff.	Spiked Sample Percent Recov. Limit	Relative Percent Diff. Limit
Ethyl-tert-butyl ether														
	79020-01	<0.0050	0.0395	0.0388	0.0388	0.0383	mg/Kg	EPA 8260B	10/12/11	98.2	98.8	0.563	64.6-122	25
Ethylbenzene														
	79020-01	<0.0050	0.0396	0.0388	0.0357	0.0343	mg/Kg	EPA 8260B	10/12/11	90.2	88.4	2.06	65.5-127	25
Methyl-t-butyl ether														
	79020-01	<0.0050	0.0398	0.0390	0.0394	0.0390	mg/Kg	EPA 8260B	10/12/11	98.9	100	1.12	57.0-122	25
P + M Xylene														
	79020-01	<0.0050	0.0396	0.0388	0.0359	0.0346	mg/Kg	EPA 8260B	10/12/11	90.6	89.0	1.79	62.5-124	25
Tert-Butanol														
	79020-01	<0.0050	0.192	0.188	0.191	0.181	mg/Kg	EPA 8260B	10/12/11	99.7	96.5	3.27	64.3-122	25
Tert-amyl-methyl ether														
	79020-01	<0.0050	0.0395	0.0387	0.0385	0.0383	mg/Kg	EPA 8260B	10/12/11	97.5	98.9	1.40	64.9-122	25
Toluene														
	79020-01	<0.0050	0.0396	0.0388	0.0392	0.0376	mg/Kg	EPA 8260B	10/12/11	99.0	96.8	2.31	65.7-120	25
1,2-Dibromoethane														
	78996-05	<0.50	39.7	39.8	43.1	40.5	ug/L	EPA 8260B	10/13/11	108	102	6.50	80-120	25
1,2-Dichloroethane														
	78996-05	<0.50	39.9	40.0	42.6	41.4	ug/L	EPA 8260B	10/13/11	107	104	2.99	75.7-122	25

KIFF ANALYTICAL, LLC

2795 2nd Street, Suite 300 Davis, CA 95618 530-297-4800

Report Number : 79010

QC Report : Matrix Spike/ Matrix Spike Duplicate

Date : 10/14/2011

Project Name : **COP #11117**

Project Number : **I4211117**

Parameter	Spiked Sample	Sample Value	Spike Level	Spike Dup. Level	Spiked Sample Value	Duplicate Spiked Sample Value	Units	Analysis Method	Date Analyzed	Spiked Sample Percent Recov.	Duplicate Spiked Sample Percent Recov.	Relative Percent Diff.	Spiked Sample Percent Recov. Limit	Relative Percent Diff. Limit
Benzene														
	78996-05	<0.50	39.9	40.0	42.2	42.0	ug/L	EPA 8260B	10/13/11	106	105	0.665	80-120	25
Diisopropyl ether														
	78996-05	<0.50	39.5	39.6	43.9	43.3	ug/L	EPA 8260B	10/13/11	111	109	1.70	80-120	25
Ethanol														
	78996-05	6.5	99.5	99.7	112	160	ug/L	EPA 8260B	10/13/11	106	153	**36.2**	55.1-159	25
Ethyl-tert-butyl ether														
	78996-05	<0.50	39.8	39.9	40.7	39.4	ug/L	EPA 8260B	10/13/11	102	98.8	3.24	76.5-120	25
Ethylbenzene														
	78996-05	<0.50	39.9	40.0	39.2	38.9	ug/L	EPA 8260B	10/13/11	98.1	97.3	0.781	80-120	25
Methyl-t-butyl ether														
	78996-05	<0.50	40.1	40.2	43.0	41.4	ug/L	EPA 8260B	10/13/11	107	103	3.95	69.7-121	25
P + M Xylene														
	78996-05	<0.50	39.9	40.0	39.7	39.8	ug/L	EPA 8260B	10/13/11	99.4	99.4	0.0134	76.8-120	25
Tert-Butanol														
	78996-05	<5.0	193	193	202	204	ug/L	EPA 8260B	10/13/11	104	105	0.908	80-120	25
Tert-amyl-methyl ether														
	78996-05	<0.50	39.8	39.9	40.4	38.8	ug/L	EPA 8260B	10/13/11	101	97.2	4.26	78.9-120	25
Toluene														
	78996-05	<0.50	39.9	40.0	42.4	42.3	ug/L	EPA 8260B	10/13/11	106	106	0.597	80-120	25

KIFF ANALYTICAL, LLC

2795 2nd Street, Suite 300 Davis, CA 95618 530-297-4800

QC Report : Laboratory Control Sample (LCS)

Project Name : **COP #11117**

Project Number : **I4211117**

Parameter	Spike Level	Units	Analysis Method	Date Analyzed	LCS Percent Recov.	LCS Percent Recov. Limit
Lead	50.0	mg/Kg	EPA 6010B	10/11/11	102	85-115
1,2-Dibromoethane	0.0398	mg/Kg	EPA 8260B	10/11/11	105	67.2-121
1,2-Dichloroethane	0.0400	mg/Kg	EPA 8260B	10/11/11	102	64.0-124
Benzene	0.0400	mg/Kg	EPA 8260B	10/11/11	102	67.9-120
Diisopropyl ether	0.0396	mg/Kg	EPA 8260B	10/11/11	101	65.2-122
Ethanol	0.0997	mg/Kg	EPA 8260B	10/11/11	69.5	37.1-156
Ethyl-tert-butyl ether	0.0399	mg/Kg	EPA 8260B	10/11/11	101	64.6-122
Ethylbenzene	0.0400	mg/Kg	EPA 8260B	10/11/11	95.6	65.5-127
Methyl-t-butyl ether	0.0402	mg/Kg	EPA 8260B	10/11/11	101	57.0-122
P + M Xylene	0.0400	mg/Kg	EPA 8260B	10/11/11	95.9	62.5-124
Tert-Butanol	0.193	mg/Kg	EPA 8260B	10/11/11	101	64.3-122
Tert-amyl-methyl ether	0.0399	mg/Kg	EPA 8260B	10/11/11	101	64.9-122
Toluene	0.0400	mg/Kg	EPA 8260B	10/11/11	102	65.7-120
1,2-Dibromoethane	0.0398	mg/Kg	EPA 8260B	10/12/11	107	67.2-121
1,2-Dichloroethane	0.0399	mg/Kg	EPA 8260B	10/12/11	105	64.0-124
Benzene	0.0399	mg/Kg	EPA 8260B	10/12/11	106	67.9-120
Diisopropyl ether	0.0395	mg/Kg	EPA 8260B	10/12/11	105	65.2-122
Ethanol	0.0995	mg/Kg	EPA 8260B	10/12/11	88.8	37.1-156
Ethyl-tert-butyl ether	0.0398	mg/Kg	EPA 8260B	10/12/11	104	64.6-122
Ethylbenzene	0.0399	mg/Kg	EPA 8260B	10/12/11	98.6	65.5-127

KIFF ANALYTICAL, LLC

2795 2nd Street, Suite 300 Davis, CA 95618 530-297-4800

QC Report : Laboratory Control Sample (LCS)

Project Name : **COP #11117**

Project Number : **I4211117**

Parameter	Spike Level	Units	Analysis Method	Date Analyzed	LCS Percent Recov.	LCS Percent Recov. Limit
Methyl-t-butyl ether	0.0401	mg/Kg	EPA 8260B	10/12/11	102	57.0-122
P + M Xylene	0.0399	mg/Kg	EPA 8260B	10/12/11	99.2	62.5-124
Tert-Butanol	0.193	mg/Kg	EPA 8260B	10/12/11	102	64.3-122
Tert-amyl-methyl ether	0.0398	mg/Kg	EPA 8260B	10/12/11	104	64.9-122
Toluene	0.0399	mg/Kg	EPA 8260B	10/12/11	107	65.7-120
1,2-Dibromoethane	39.8	ug/L	EPA 8260B	10/13/11	103	80-120
1,2-Dichloroethane	40.0	ug/L	EPA 8260B	10/13/11	105	75.7-122
Benzene	40.0	ug/L	EPA 8260B	10/13/11	105	80-120
Diisopropyl ether	39.6	ug/L	EPA 8260B	10/13/11	108	80-120
Ethanol	99.7	ug/L	EPA 8260B	10/13/11	105	55.1-159
Ethyl-tert-butyl ether	39.9	ug/L	EPA 8260B	10/13/11	106	76.5-120
Ethylbenzene	40.0	ug/L	EPA 8260B	10/13/11	98.0	80-120
Methyl-t-butyl ether	40.2	ug/L	EPA 8260B	10/13/11	107	69.7-121
P + M Xylene	40.0	ug/L	EPA 8260B	10/13/11	99.5	76.8-120
Tert-Butanol	193	ug/L	EPA 8260B	10/13/11	102	80-120
Tert-amyl-methyl ether	39.9	ug/L	EPA 8260B	10/13/11	104	78.9-120
Toluene	40.0	ug/L	EPA 8260B	10/13/11	106	80-120

KIFF ANALYTICAL, LLC

2795 2nd Street, Suite 300 Davis, CA 95618 530-297-4800

KIFF Analytical LLC

2795 2nd Street, Suite 300
Davis, CA 95618
Lab: 530.297.4800
Fax: 530.297.4802

SRG # / Lab No. 79010

Page 1 of 1

Chain-of-Custody Record and Analysis Request

Project Contact (Hardcopy or PDF To): Douglas Umland	California EDF Report? ☑ Yes ☐ No
Company / Address: 312 Pierce Rd. San Jose, CA	Sampling Company Log Code:
Phone Number: (408) 836-1874	Global ID: doug.umland@antea group.com
Fax Number: (408) 225-8506	EDF Deliverable To (Email Address): Doug.umland, antea group
Project #: 1921111 7 P.O. #: 1921111 7	Bill to:
Project Name: COP #1117	Sampler Print Name: Christine Morgan
	Sampler Signature:

Project Address: 7210 Bancroft ave. Oakland, CA

Sample Designation	Sampling: Date	Sampling: Time	Container: 40 ml VOA	Container: Sleeve	Container: Poly	Container: Glass	Container: Tedlar	Container: Acetate liner	Preservative: HCl	Preservative: HNO_3	Preservative: None	Matrix: Water	Matrix: Soil	Matrix: Air
20111006-COMPA-1	10/6	11:00						X			X		X	
20111006-COMPA-2	10/6	11:05						X			X		X	
20111006-COMPA-3	10/6	11:10		X							X		X	
20111006-COMPA-4	10/6	11:15						X			X		X	
20111006-COMPB-1	10/6	4:30	X (10)						X			X		

Analysis Request

CIRCLE METHOD

MTBE @ 0.5 ppb (EPA 8260B)	BTEX (EPA 8260B)	TPH Gas (EPA 8260B)	5 Oxygenates (MTBE, DIPE, ETBE, TAME, TBA) (EPA 8260B)	7 Oxygenates (5 oxy + EtOH, MeOH) (EPA 8260B)	Lead Scav. (1,2 DCA & 1,2 EDB) (EPA 8260B)	Volatile Halocarbons (EPA 8260B)	Volatile Organics Full List (EPA 8260B)	Volatile Organics (EPA 524.2 Drinking Water)	TPH as Diesel (EPA 8015M)	TPH as Motor Oil (EPA 8015M)	CAM 17 Metals (EPA 200.7 / 6010)	5 Waste Oil Metals (Cd,Cr,Ni,Pb,Zn) (EPA 200.7 / 6010)	Mercury (EPA 245.1 / 7470 / 7471)	Total Lead (EPA 200.7 / 6010)	W.E.T. Lead (STLC)	Ethanol (EPA 8260B)	[illegible]	[illegible]	TOTAL LEAD 6010
	X	X	X		X											X	X		X
	X	X	X		X											X	X		X
	X	X	X		X											X	X		X
	X	X	X		X											X	X		X
	X	X	X		X											X			

TAT: ☐ 12 hr ☐ 24 hr ☐ 48hr ☐ 72hr ☒ 1 wk

For Lab Use Only: 01, 02, 03, 04, 05

Relinquished by:	Date	Time	Received by:
Cayla Bandleon	10/7/11	1640	
Relinquished by:	Date	Time	Received by:
Relinquished by:	Date	Time	Received by Laboratory:
	100711	1340	Kiff Analytical

Remarks:
* if exceeds regulatory levels, run necessary STLC and/or TCLP for TOTAL Lead (only).

Page 1 of 1

Distribution: White - Lab; Pink - Originator
Rev: 060409

KIFF Analytical LLC

SAMPLE RECEIPT CHECKLIST

RECEIVER: LJR Initials

SRG#: 79010 Date: 100711

Project ID: COP #11117

Method of Receipt: ☒ Courier ☐ Over-the-counter ☐ Shipper

COC Inspection

Is COC present?	☒ Yes	☐ No		
Custody seals on shipping container?	☐ Intact	☐ Broken	☐ Not present	☒ N/A
Is COC Signed by Relinquisher? ☒ Yes ☐ No	Dated? ☒ Yes	☐ No		
Is sampler name legibly indicated on COC?	☒ Yes	☐ No		
Is analysis or hold requested for all samples	☒ Yes	☐ No		
Is the turnaround time indicated on COC?	☒ Yes	☐ No		
Is COC free of whiteout and uninitialed cross-outs?	☐ Yes	☐ No, Whiteout	☒ No, Cross-outs	

Sample Inspection

Coolant Present: ☒ Yes ☐ No (includes water)

Temperature °C 5.2 Therm. ID# IR-5 Initial LJR Date/Time 100711/1758 ☐ N/A

Are there custody seals on sample containers?	☐ Intact	☐ Broken	☒ Not present	
Do containers match COC? ☒ Yes ☐ No ☐ No, COC lists absent sample(s)	☐ No, Extra sample(s) present			
Are there samples matrices other than soil, water, air or carbon?	☐ Yes	☒ No		
Are any sample containers broken, leaking or damaged?	☐ Yes	☒ No		
Are preservatives indicated? ☐ Yes, on sample containers	☒ Yes, on COC	☐ Not indicated	☐ N/A	
Are preservatives correct for analyses requested?	☒ Yes	☐ No	☐ N/A	
Are samples within holding time for analyses requested?	☒ Yes	☐ No		
Are the correct sample containers used for the analyses requested?	☒ Yes	☐ No		
Is there sufficient sample to perform testing?	☒ Yes	☐ No		
Does any sample contain product, have strong odor or are otherwise suspected to be hot?	☐ Yes	☒ No		

Receipt Details

Matrix WA	Container type VOA	# of containers received 6
Matrix SO	Container type sleeve	# of containers received 4
Matrix	Container type	# of containers received

Date and Time Sample Put into Temp Storage Date: 100711 Time: 1805

Quicklog

Are the Sample ID's indicated:	☐ On COC	☐ On sample container(s)	☒ On Both	☐ Not indicated
If Sample ID's are listed on both COC and containers, do they all match?	☐ Yes	☒ No	☐ N/A	
Is the Project ID indicated:	☒ On COC	☐ On sample container(s)	☐ On Both	☐ Not indicated
If project ID is listed on both COC and containers, do they all match?	☐ Yes	☐ No	☒ N/A	
Are the sample collection dates indicated:	☐ On COC	☐ On sample container(s)	☒ On Both	☐ Not indicated
If collection dates are listed on both COC and containers, do they all match?	☒ Yes	☐ No	☐ N/A	
Are the sample collection times indicated:	☐ On COC	☐ On sample container(s)	☒ On Both	☐ Not indicated
If collection times are listed on both COC and containers, do they all match?	☒ Yes	☐ No	☐ N/A	

COMMENTS: For sample -05 a single label is attached to three VOAs at a time (only two labels total for the six VOAs). LJR100711-1916

Sample ID on -02 label is 20111006-Comp A-2. Logged in as per COC. LJR100711-1925

Sample labels for -05 had to be cut to put samples in Sample Manager storage. COC lists Sample -02's ~~MAS~~ container as Acetate liner and sample -03's container as a sleeve. Sample -02 is in a metal sleeve. Sample -03 is in an acetate sleeve. MAS 10011 0804.

KIFF Analytical LLC

Report Number : 79010
Date : 10/14/2011

Laboratory Results

Douglas Umland
Antea Group
312 Piercy Rd.
San Jose, CA 95138

Subject : 4 Soil Samples and 1 Water Sample
Project Name : COP #11117
Project Number : I4211117
P.O. Number : I42611117

Dear Mr. Umland,

Chemical analysis of the samples referenced above has been completed. Summaries of the data are contained on the following pages. Sample(s) were received under documented chain-of-custody. US EPA protocols for sample storage and preservation were followed. Testing procedures comply with the 2003 NELAC standard. All soil samples are reported on a total weight (wet weight) basis unless noted otherwise in the case narrative. Laboratory results relate only to the samples tested. This report may be freely reproduced in full, but may only be reproduced in part with the express permission of Kiff Analytical, LLC. Kiff Analytical, LLC is certified by the State of California under the National Environmental Laboratory Accreditation Program (NELAP), lab # 08263CA. If you have any questions regarding procedures or results, please call me at 530-297-4800.

Sincerely,

Joel Kiff

KIFF Analytical LLC

Report Number : 79010
Date : 10/14/2011

Subject : 4 Soil Samples and 1 Water Sample
Project Name : COP #11117
Project Number : I4211117
P.O. Number : I42611117

Case Narrative

Matrix Spike/Matrix Spike Duplicate results associated with sample 20111006-COMPB-1 for the analyte Ethanol were outside of control limits. This may indicate a bias for the sample that was spiked. Since the LCS recoveries were within control limits, no data are flagged.

KIFF Analytical LLC

Analysis Summary

Report Number : 79010
Date : 10/14/11

Attention : Douglas Umland
Antea Group
312 Piercy Rd.
San Jose, CA 95138

Project Name :COP #11117
Project Number : I4211117

			Sample Name	20111006-COMP	20110006-COMP		20111006-COMP		20111006-COMP	
			Sample Date	10/06/11	10/06/11		10/06/11		10/06/11	
Analyte	Method	Units		MRL	Results	MRL	Results	MRL	Results	MRL	Results
Lead	EPA 6010B	mg/Kg		0.50	**8.8**	0.50	**5.8**	0.50	**4.5**	0.50	**3.8**
Benzene	EPA 8260B	mg/Kg		0.0050	ND	0.0050	ND	0.0050	ND	0.050	**0.52**
Ethylbenzene	EPA 8260B	mg/Kg		0.0050	ND	0.0050	ND	0.0050	ND	0.25	**22**
Toluene	EPA 8260B	mg/Kg		0.0050	ND	0.0050	ND	0.0050	ND	0.050	**14**
Total Xylenes	EPA 8260B	mg/Kg		0.0050	ND	0.0050	ND	0.0050	ND	0.25	**140**
Diisopropyl ether (DIPE)	EPA 8260B	mg/Kg		0.0050	ND	0.0050	ND	0.0050	ND	0.050	ND
Ethanol	EPA 8260B	mg/Kg		0.050	ND	0.050	ND	0.050	ND	0.50	ND
Ethyl-t-butyl ether (ETBE)	EPA 8260B	mg/Kg		0.0050	ND	0.0050	ND	0.0050	ND	0.050	ND
Methyl-t-butyl ether (MTBE)	EPA 8260B	mg/Kg		0.0050	ND	0.0050	ND	0.0050	ND	0.050	ND
Tert-Butanol	EPA 8260B	mg/Kg		0.0050	ND	0.0050	ND	0.0050	ND	0.25	ND
Tert-amyl methyl ether (TAME)	EPA 8260B	mg/Kg		0.0050	ND	0.0050	ND	0.0050	ND	0.050	ND
TPH as Gasoline	EPA 8260B	mg/Kg		1.0	**1.2**	1.0	ND	1.0	ND	25	**1500**
1,2-Dibromoethane	EPA 8260B	mg/Kg		0.0050	ND	0.0050	ND	0.0050	ND	0.050	ND
1,2-Dichloroethane	EPA 8260B	mg/Kg		0.0050	ND	0.0050	ND	0.0050	ND	0.050	ND
1,2-Dichloroethane-d4 (Surr)	EPA 8260B	%			102		102		104		93.2
2-Bromochlorobenzene (Surr)	EPA 8260B	%									96.4
Toluene - d8 (Surr)	EPA 8260B	%			100		99.6		101		95.1

MRL = Method Reporting Limit
ND = Not Detected

2795 2nd St., Suite 300 Davis, CA 95616 530-297-4800
ELAP # 2236

KIFF Analytical LLC

Analysis Summary

Report Number : 79010
Date : 10/14/11

Attention : Douglas Umland
Antea Group
312 Piercy Rd.
San Jose, CA 95138

Project Name :COP #11117
Project Number : I4211117

			Sample Name	20111006-COMP
			Sample Date	10/06/11
Analyte	Method	Units	MRL	Results
Benzene	EPA 8260B	ug/L	15	ND
Ethylbenzene	EPA 8260B	ug/L	15	ND
Toluene	EPA 8260B	ug/L	15	ND
Total Xylenes	EPA 8260B	ug/L	15	ND
Diisopropyl ether (DIPE)	EPA 8260B	ug/L	15	ND
Ethanol	EPA 8260B	ug/L	150	**24000**
Ethyl-t-butyl ether (ETBE)	EPA 8260B	ug/L	15	ND
Methyl-t-butyl ether (MTBE)	EPA 8260B	ug/L	15	ND
Tert-Butanol	EPA 8260B	ug/L	70	ND
Tert-amyl methyl ether (TAME)	EPA 8260B	ug/L	15	ND
TPH as Gasoline	EPA 8260B	ug/L	1500	ND
1,2-Dibromoethane	EPA 8260B	ug/L	15	ND
1,2-Dichloroethane	EPA 8260B	ug/L	15	ND
1,2-Dichloroethane-d4 (Surr)	EPA 8260B	%		101
Toluene - d8 (Surr)	EPA 8260B	%		99.5

MRL = Method Reporting Limit
ND = Not Detected

2795 2nd St., Suite 300 Davis, CA 95616 530-297-4800
ELAP # 2236

KIFF Analytical LLC

Report Number : 79010
Date : 10/14/11

Project Name : **COP #11117**
Project Number : **I4211117**

Sample : **20111006-COMPA-1** Matrix : Soil Lab Number : 79010-01
Sample Date :10/06/11

Parameter	Measured Value	Method Reporting Limit	Units	Analysis Method	Date/Time Analyzed
Lead	**8.8**	0.50	mg/Kg	EPA 6010B	10/11/11 14:28
Benzene	< 0.0050	0.0050	mg/Kg	EPA 8260B	10/14/11 02:38
Toluene	< 0.0050	0.0050	mg/Kg	EPA 8260B	10/14/11 02:38
Ethylbenzene	< 0.0050	0.0050	mg/Kg	EPA 8260B	10/14/11 02:38
Total Xylenes	< 0.0050	0.0050	mg/Kg	EPA 8260B	10/14/11 02:38
Methyl-t-butyl ether (MTBE)	< 0.0050	0.0050	mg/Kg	EPA 8260B	10/14/11 02:38
Diisopropyl ether (DIPE)	< 0.0050	0.0050	mg/Kg	EPA 8260B	10/14/11 02:38
Ethyl-t-butyl ether (ETBE)	< 0.0050	0.0050	mg/Kg	EPA 8260B	10/14/11 02:38
Tert-amyl methyl ether (TAME)	< 0.0050	0.0050	mg/Kg	EPA 8260B	10/14/11 02:38
Tert-Butanol	< 0.0050	0.0050	mg/Kg	EPA 8260B	10/14/11 02:38
Ethanol	< 0.050	0.050	mg/Kg	EPA 8260B	10/14/11 02:38
TPH as Gasoline	**1.2**	1.0	mg/Kg	EPA 8260B	10/14/11 02:38
1,2-Dichloroethane	< 0.0050	0.0050	mg/Kg	EPA 8260B	10/14/11 02:38
1,2-Dibromoethane	< 0.0050	0.0050	mg/Kg	EPA 8260B	10/14/11 02:38
1,2-Dichloroethane-d4 (Surr)	102		% Recovery	EPA 8260B	10/14/11 02:38
Toluene - d8 (Surr)	100		% Recovery	EPA 8260B	10/14/11 02:38

KIFF Analytical LLC

Report Number : 79010
Date : 10/14/11

Project Name : **COP #11117**
Project Number : **I4211117**

Sample : **20110006-COMPA-2** Matrix : Soil Lab Number : 79010-02
Sample Date :10/06/11

Parameter	Measured Value	Method Reporting Limit	Units	Analysis Method	Date/Time Analyzed
Lead	**5.8**	0.50	mg/Kg	EPA 6010B	10/11/11 14:40
Benzene	< 0.0050	0.0050	mg/Kg	EPA 8260B	10/14/11 02:03
Toluene	< 0.0050	0.0050	mg/Kg	EPA 8260B	10/14/11 02:03
Ethylbenzene	< 0.0050	0.0050	mg/Kg	EPA 8260B	10/14/11 02:03
Total Xylenes	< 0.0050	0.0050	mg/Kg	EPA 8260B	10/14/11 02:03
Methyl-t-butyl ether (MTBE)	< 0.0050	0.0050	mg/Kg	EPA 8260B	10/14/11 02:03
Diisopropyl ether (DIPE)	< 0.0050	0.0050	mg/Kg	EPA 8260B	10/14/11 02:03
Ethyl-t-butyl ether (ETBE)	< 0.0050	0.0050	mg/Kg	EPA 8260B	10/14/11 02:03
Tert-amyl methyl ether (TAME)	< 0.0050	0.0050	mg/Kg	EPA 8260B	10/14/11 02:03
Tert-Butanol	< 0.0050	0.0050	mg/Kg	EPA 8260B	10/14/11 02:03
Ethanol	< 0.050	0.050	mg/Kg	EPA 8260B	10/14/11 02:03
TPH as Gasoline	< 1.0	1.0	mg/Kg	EPA 8260B	10/14/11 02:03
1,2-Dichloroethane	< 0.0050	0.0050	mg/Kg	EPA 8260B	10/14/11 02:03
1,2-Dibromoethane	< 0.0050	0.0050	mg/Kg	EPA 8260B	10/14/11 02:03
1,2-Dichloroethane-d4 (Surr)	102		% Recovery	EPA 8260B	10/14/11 02:03
Toluene - d8 (Surr)	99.6		% Recovery	EPA 8260B	10/14/11 02:03

KIFF Analytical LLC

Report Number : 79010
Date : 10/14/11

Project Name : **COP #11117**
Project Number : **I4211117**

Sample : **20111006-COMPA-3** Matrix : Soil Lab Number : 79010-03
Sample Date :10/06/11

Parameter	Measured Value	Method Reporting Limit	Units	Analysis Method	Date/Time Analyzed
Lead	**4.5**	0.50	mg/Kg	EPA 6010B	10/11/11 14:44
Benzene	< 0.0050	0.0050	mg/Kg	EPA 8260B	10/11/11 13:06
Toluene	< 0.0050	0.0050	mg/Kg	EPA 8260B	10/11/11 13:06
Ethylbenzene	< 0.0050	0.0050	mg/Kg	EPA 8260B	10/11/11 13:06
Total Xylenes	< 0.0050	0.0050	mg/Kg	EPA 8260B	10/11/11 13:06
Methyl-t-butyl ether (MTBE)	< 0.0050	0.0050	mg/Kg	EPA 8260B	10/11/11 13:06
Diisopropyl ether (DIPE)	< 0.0050	0.0050	mg/Kg	EPA 8260B	10/11/11 13:06
Ethyl-t-butyl ether (ETBE)	< 0.0050	0.0050	mg/Kg	EPA 8260B	10/11/11 13:06
Tert-amyl methyl ether (TAME)	< 0.0050	0.0050	mg/Kg	EPA 8260B	10/11/11 13:06
Tert-Butanol	< 0.0050	0.0050	mg/Kg	EPA 8260B	10/11/11 13:06
Ethanol	< 0.050	0.050	mg/Kg	EPA 8260B	10/11/11 13:06
TPH as Gasoline	< 1.0	1.0	mg/Kg	EPA 8260B	10/11/11 13:06
1,2-Dichloroethane	< 0.0050	0.0050	mg/Kg	EPA 8260B	10/11/11 13:06
1,2-Dibromoethane	< 0.0050	0.0050	mg/Kg	EPA 8260B	10/11/11 13:06
1,2-Dichloroethane-d4 (Surr)	104		% Recovery	EPA 8260B	10/11/11 13:06
Toluene - d8 (Surr)	101		% Recovery	EPA 8260B	10/11/11 13:06

KIFF Analytical LLC

Report Number : 79010
Date : 10/14/11

Project Name : **COP #11117**
Project Number : **I4211117**

Sample : **20111006-COMPA-4** Matrix : Soil Lab Number : 79010-04
Sample Date :10/06/11

Parameter	Measured Value	Method Reporting Limit	Units	Analysis Method	Date/Time Analyzed
Lead	**3.8**	0.50	mg/Kg	EPA 6010B	10/11/11 14:48
Benzene	**0.52**	0.050	mg/Kg	EPA 8260B	10/14/11 06:03
Toluene	**14**	0.050	mg/Kg	EPA 8260B	10/14/11 06:03
Ethylbenzene	**22**	0.25	mg/Kg	EPA 8260B	10/14/11 16:38
Total Xylenes	**140**	0.25	mg/Kg	EPA 8260B	10/14/11 16:38
Methyl-t-butyl ether (MTBE)	< 0.050	0.050	mg/Kg	EPA 8260B	10/14/11 06:03
Diisopropyl ether (DIPE)	< 0.050	0.050	mg/Kg	EPA 8260B	10/14/11 06:03
Ethyl-t-butyl ether (ETBE)	< 0.050	0.050	mg/Kg	EPA 8260B	10/14/11 06:03
Tert-amyl methyl ether (TAME)	< 0.050	0.050	mg/Kg	EPA 8260B	10/14/11 06:03
Tert-Butanol	< 0.25	0.25	mg/Kg	EPA 8260B	10/14/11 06:03
Ethanol	< 0.50	0.50	mg/Kg	EPA 8260B	10/14/11 06:03
TPH as Gasoline	**1500**	25	mg/Kg	EPA 8260B	10/14/11 16:38
1,2-Dichloroethane	< 0.050	0.050	mg/Kg	EPA 8260B	10/14/11 06:03
1,2-Dibromoethane	< 0.050	0.050	mg/Kg	EPA 8260B	10/14/11 06:03
1,2-Dichloroethane-d4 (Surr)	93.2		% Recovery	EPA 8260B	10/14/11 06:03
Toluene - d8 (Surr)	95.1		% Recovery	EPA 8260B	10/14/11 06:03
2-Bromochlorobenzene (Surr)	96.4		% Recovery	EPA 8260B	10/14/11 06:03

KIFF Analytical LLC

Report Number : 79010
Date : 10/14/11

Project Name : **COP #11117**
Project Number : **I4211117**

Sample : **20111006-COMPB-1** Matrix : Water Lab Number : 79010-05
Sample Date :10/06/11

Parameter	Measured Value	Method Reporting Limit	Units	Analysis Method	Date/Time Analyzed
Benzene	< 15	15	ug/L	EPA 8260B	10/14/11 05:28
Toluene	< 15	15	ug/L	EPA 8260B	10/14/11 05:28
Ethylbenzene	< 15	15	ug/L	EPA 8260B	10/14/11 05:28
Total Xylenes	< 15	15	ug/L	EPA 8260B	10/14/11 05:28
Methyl-t-butyl ether (MTBE)	< 15	15	ug/L	EPA 8260B	10/14/11 05:28
Diisopropyl ether (DIPE)	< 15	15	ug/L	EPA 8260B	10/14/11 05:28
Ethyl-t-butyl ether (ETBE)	< 15	15	ug/L	EPA 8260B	10/14/11 05:28
Tert-amyl methyl ether (TAME)	< 15	15	ug/L	EPA 8260B	10/14/11 05:28
Tert-Butanol	< 70	70	ug/L	EPA 8260B	10/14/11 05:28
Ethanol	**24000**	150	ug/L	EPA 8260B	10/14/11 05:28
TPH as Gasoline	< 1500	1500	ug/L	EPA 8260B	10/14/11 05:28
1,2-Dichloroethane	< 15	15	ug/L	EPA 8260B	10/14/11 05:28
1,2-Dibromoethane	< 15	15	ug/L	EPA 8260B	10/14/11 05:28
1,2-Dichloroethane-d4 (Surr)	101		% Recovery	EPA 8260B	10/14/11 05:28
Toluene - d8 (Surr)	99.5		% Recovery	EPA 8260B	10/14/11 05:28

Report Number : 79010

Date : 10/14/11

QC Report : Method Blank Data

Project Name : **COP #11117**

Project Number : **I4211117**

Parameter	Measured Value	Method Reporting Limit	Units	Analysis Method	Date Analyzed
Lead	< 0.50	0.50	mg/Kg	EPA 6010B	10/11/11
Benzene	< 0.0050	0.0050	mg/Kg	EPA 8260B	10/11/11
Ethylbenzene	< 0.0050	0.0050	mg/Kg	EPA 8260B	10/11/11
Toluene	< 0.0050	0.0050	mg/Kg	EPA 8260B	10/11/11
Total Xylenes	< 0.0050	0.0050	mg/Kg	EPA 8260B	10/11/11
Diisopropyl ether (DIPE)	< 0.0050	0.0050	mg/Kg	EPA 8260B	10/11/11
Ethanol	< 0.050	0.050	mg/Kg	EPA 8260B	10/11/11
Ethyl-t-butyl ether (ETBE)	< 0.0050	0.0050	mg/Kg	EPA 8260B	10/11/11
Methyl-t-butyl ether (MTBE)	< 0.0050	0.0050	mg/Kg	EPA 8260B	10/11/11
Tert-Butanol	< 0.0050	0.0050	mg/Kg	EPA 8260B	10/11/11
Tert-amyl methyl ether (TAME)	< 0.0050	0.0050	mg/Kg	EPA 8260B	10/11/11
TPH as Gasoline	< 1.0	1.0	mg/Kg	EPA 8260B	10/11/11
1,2-Dibromoethane	< 0.0050	0.0050	mg/Kg	EPA 8260B	10/11/11
1,2-Dichloroethane	< 0.0050	0.0050	mg/Kg	EPA 8260B	10/11/11
1,2-Dichloroethane-d4 (Surr)	104		%	EPA 8260B	10/11/11
Toluene - d8 (Surr)	101		%	EPA 8260B	10/11/11
Benzene	< 0.0050	0.0050	mg/Kg	EPA 8260B	10/12/11
Ethylbenzene	< 0.0050	0.0050	mg/Kg	EPA 8260B	10/12/11
Toluene	< 0.0050	0.0050	mg/Kg	EPA 8260B	10/12/11
Total Xylenes	< 0.0050	0.0050	mg/Kg	EPA 8260B	10/12/11
Diisopropyl ether (DIPE)	< 0.0050	0.0050	mg/Kg	EPA 8260B	10/12/11
Ethanol	< 0.050	0.050	mg/Kg	EPA 8260B	10/12/11
Ethyl-t-butyl ether (ETBE)	< 0.0050	0.0050	mg/Kg	EPA 8260B	10/12/11
Methyl-t-butyl ether (MTBE)	< 0.0050	0.0050	mg/Kg	EPA 8260B	10/12/11
Tert-Butanol	< 0.0050	0.0050	mg/Kg	EPA 8260B	10/12/11
Tert-amyl methyl ether (TAME)	< 0.0050	0.0050	mg/Kg	EPA 8260B	10/12/11
TPH as Gasoline	< 1.0	1.0	mg/Kg	EPA 8260B	10/12/11
1,2-Dibromoethane	< 0.0050	0.0050	mg/Kg	EPA 8260B	10/12/11
1,2-Dichloroethane	< 0.0050	0.0050	mg/Kg	EPA 8260B	10/12/11
1,2-Dichloroethane-d4 (Surr)	105		%	EPA 8260B	10/12/11
Toluene - d8 (Surr)	101		%	EPA 8260B	10/12/11

Parameter	Measured Value	Method Reporting Limit	Units	Analysis Method	Date Analyzed
Benzene	< 0.50	0.50	ug/L	EPA 8260B	10/13/11
Ethylbenzene	< 0.50	0.50	ug/L	EPA 8260B	10/13/11
Toluene	< 0.50	0.50	ug/L	EPA 8260B	10/13/11
Total Xylenes	< 0.50	0.50	ug/L	EPA 8260B	10/13/11
Diisopropyl ether (DIPE)	< 0.50	0.50	ug/L	EPA 8260B	10/13/11
Ethanol	< 5.0	5.0	ug/L	EPA 8260B	10/13/11
Ethyl-t-butyl ether (ETBE)	< 0.50	0.50	ug/L	EPA 8260B	10/13/11
Methyl-t-butyl ether (MTBE)	< 0.50	0.50	ug/L	EPA 8260B	10/13/11
Tert-Butanol	< 5.0	5.0	ug/L	EPA 8260B	10/13/11
Tert-amyl methyl ether (TAME)	< 0.50	0.50	ug/L	EPA 8260B	10/13/11
TPH as Gasoline	< 50	50	ug/L	EPA 8260B	10/13/11
1,2-Dibromoethane	< 0.50	0.50	ug/L	EPA 8260B	10/13/11
1,2-Dichloroethane	< 0.50	0.50	ug/L	EPA 8260B	10/13/11
1,2-Dichloroethane-d4 (Surr)	101		%	EPA 8260B	10/13/11
Toluene - d8 (Surr)	102		%	EPA 8260B	10/13/11

KIFF ANALYTICAL, LLC

2795 2nd Street, Suite 300 Davis, CA 95618 530-297-4800

Report Number : 79010

QC Report : Matrix Spike/ Matrix Spike Duplicate

Date : 10/14/11

Project Name : **COP #11117**

Project Number : **I4211117**

Parameter	Spiked Sample	Sample Value	Spike Level	Spike Dup. Level	Spiked Sample Value	Duplicate Spiked Sample Value	Units	Analysis Method	Date Analyzed	Spiked Sample Percent Recov.	Duplicate Spiked Sample Percent Recov.	Relative Percent Diff.	Spiked Sample Percent Recov. Limit	Relative Percent Diff. Limit
Lead														
	79010-01	8.8	50.0	50.0	50.4	50.7	mg/Kg	EPA 6010B	10/11/11	83.4	83.9	0.494	75-125	20
1,2-Dibromoethane														
	79010-03	<0.0050	0.0397	0.0395	0.0322	0.0399	mg/Kg	EPA 8260B	10/11/11	80.9	101	22.1	67.2-121	25
1,2-Dichloroethane														
	79010-03	<0.0050	0.0399	0.0397	0.0320	0.0388	mg/Kg	EPA 8260B	10/11/11	80.2	97.7	19.7	64.0-124	25
Benzene														
	79010-03	<0.0050	0.0399	0.0397	0.0321	0.0390	mg/Kg	EPA 8260B	10/11/11	80.5	98.2	19.8	67.9-120	25
Diisopropyl ether														
	79010-03	<0.0050	0.0395	0.0393	0.0315	0.0388	mg/Kg	EPA 8260B	10/11/11	79.6	98.8	21.5	65.2-122	25
Ethanol														
	79010-03	<0.050	0.0995	0.0989	0.0740	0.0870	mg/Kg	EPA 8260B	10/11/11	74.3	87.9	16.8	37.1-156	25
Ethyl-tert-butyl ether														
	79010-03	<0.0050	0.0398	0.0396	0.0318	0.0388	mg/Kg	EPA 8260B	10/11/11	79.8	98.0	20.5	64.6-122	25
Ethylbenzene														
	79010-03	<0.0050	0.0399	0.0397	0.0300	0.0363	mg/Kg	EPA 8260B	10/11/11	75.2	91.5	19.6	65.5-127	25
Methyl-t-butyl ether														
	79010-03	<0.0050	0.0401	0.0399	0.0321	0.0394	mg/Kg	EPA 8260B	10/11/11	80.0	98.7	21.0	57.0-122	25

KIFF ANALYTICAL, LLC

2795 2nd Street, Suite 300 Davis, CA 95618 530-297-4800

Report Number : 79010

QC Report : Matrix Spike/ Matrix Spike Duplicate

Date : 10/14/2011

Project Name : **COP #11117**

Project Number : **I4211117**

Parameter	Spiked Sample	Sample Value	Spike Level	Spike Dup. Level	Spiked Sample Value	Duplicate Spiked Sample Value	Units	Analysis Method	Date Analyzed	Spiked Sample Percent Recov.	Duplicate Spiked Sample Percent Recov.	Relative Percent Diff.	Spiked Sample Percent Recov. Limit	Relative Percent Diff. Limit
P + M Xylene														
	79010-03	<0.0050	0.0399	0.0397	0.0302	0.0367	mg/Kg	EPA 8260B	10/11/11	75.7	92.4	19.9	62.5-124	25
Tert-Butanol														
	79010-03	<0.0050	0.193	0.192	0.150	0.183	mg/Kg	EPA 8260B	10/11/11	77.4	95.5	20.9	64.3-122	25
Tert-amyl-methyl ether														
	79010-03	<0.0050	0.0398	0.0396	0.0316	0.0391	mg/Kg	EPA 8260B	10/11/11	79.4	98.9	21.9	64.9-122	25
Toluene														
	79010-03	<0.0050	0.0399	0.0397	0.0322	0.0388	mg/Kg	EPA 8260B	10/11/11	80.6	97.7	19.1	65.7-120	25
1,2-Dibromoethane														
	79020-01	<0.0050	0.0394	0.0387	0.0406	0.0394	mg/Kg	EPA 8260B	10/12/11	103	102	0.928	67.2-121	25
1,2-Dichloroethane														
	79020-01	<0.0050	0.0396	0.0388	0.0399	0.0393	mg/Kg	EPA 8260B	10/12/11	101	101	0.535	64.0-124	25
Benzene														
	79020-01	<0.0050	0.0396	0.0388	0.0398	0.0387	mg/Kg	EPA 8260B	10/12/11	100	99.7	0.694	67.9-120	25
Diisopropyl ether														
	79020-01	<0.0050	0.0392	0.0385	0.0393	0.0387	mg/Kg	EPA 8260B	10/12/11	100	101	0.436	65.2-122	25
Ethanol														
	79020-01	<0.050	0.0988	0.0968	0.0743	0.0880	mg/Kg	EPA 8260B	10/12/11	75.2	90.9	18.9	37.1-156	25

KIFF ANALYTICAL, LLC

2795 2nd Street, Suite 300 Davis, CA 95618 530-297-4800

Report Number : 79010

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Date : 10/14/2011

Project Name : **COP #11117**

Project Number : **I4211117**

Parameter	Spiked Sample	Sample Value	Spike Level	Spike Dup. Level	Spiked Sample Value	Duplicate Spiked Sample Value	Units	Analysis Method	Date Analyzed	Spiked Sample Percent Recov.	Duplicate Spiked Sample Percent Recov.	Relative Percent Diff.	Spiked Sample Percent Recov. Limit	Relative Percent Diff. Limit
Ethyl-tert-butyl ether														
	79020-01	<0.0050	0.0395	0.0388	0.0388	0.0383	mg/Kg	EPA 8260B	10/12/11	98.2	98.8	0.563	64.6-122	25
Ethylbenzene														
	79020-01	<0.0050	0.0396	0.0388	0.0357	0.0343	mg/Kg	EPA 8260B	10/12/11	90.2	88.4	2.06	65.5-127	25
Methyl-t-butyl ether														
	79020-01	<0.0050	0.0398	0.0390	0.0394	0.0390	mg/Kg	EPA 8260B	10/12/11	98.9	100	1.12	57.0-122	25
P + M Xylene														
	79020-01	<0.0050	0.0396	0.0388	0.0359	0.0346	mg/Kg	EPA 8260B	10/12/11	90.6	89.0	1.79	62.5-124	25
Tert-Butanol														
	79020-01	<0.0050	0.192	0.188	0.191	0.181	mg/Kg	EPA 8260B	10/12/11	99.7	96.5	3.27	64.3-122	25
Tert-amyl-methyl ether														
	79020-01	<0.0050	0.0395	0.0387	0.0385	0.0383	mg/Kg	EPA 8260B	10/12/11	97.5	98.9	1.40	64.9-122	25
Toluene														
	79020-01	<0.0050	0.0396	0.0388	0.0392	0.0376	mg/Kg	EPA 8260B	10/12/11	99.0	96.8	2.31	65.7-120	25
1,2-Dibromoethane														
	78996-05	<0.50	39.7	39.8	43.1	40.5	ug/L	EPA 8260B	10/13/11	108	102	6.50	80-120	25
1,2-Dichloroethane														
	78996-05	<0.50	39.9	40.0	42.6	41.4	ug/L	EPA 8260B	10/13/11	107	104	2.99	75.7-122	25

KIFF ANALYTICAL, LLC

2795 2nd Street, Suite 300 Davis, CA 95618 530-297-4800

Report Number : 79010

QC Report : Matrix Spike/ Matrix Spike Duplicate

Date : 10/14/2011

Project Name : **COP #11117**

Project Number : **I4211117**

Parameter	Spiked Sample	Sample Value	Spike Level	Spike Dup. Level	Spiked Sample Value	Duplicate Spiked Sample Value	Units	Analysis Method	Date Analyzed	Spiked Sample Percent Recov.	Duplicate Spiked Sample Percent Recov.	Relative Percent Diff.	Spiked Sample Percent Recov. Limit	Relative Percent Diff. Limit
Benzene														
	78996-05	<0.50	39.9	40.0	42.2	42.0	ug/L	EPA 8260B	10/13/11	106	105	0.665	80-120	25
Diisopropyl ether														
	78996-05	<0.50	39.5	39.6	43.9	43.3	ug/L	EPA 8260B	10/13/11	111	109	1.70	80-120	25
Ethanol														
	78996-05	6.5	99.5	99.7	112	160	ug/L	EPA 8260B	10/13/11	106	153	**36.2**	55.1-159	25
Ethyl-tert-butyl ether														
	78996-05	<0.50	39.8	39.9	40.7	39.4	ug/L	EPA 8260B	10/13/11	102	98.8	3.24	76.5-120	25
Ethylbenzene														
	78996-05	<0.50	39.9	40.0	39.2	38.9	ug/L	EPA 8260B	10/13/11	98.1	97.3	0.781	80-120	25
Methyl-t-butyl ether														
	78996-05	<0.50	40.1	40.2	43.0	41.4	ug/L	EPA 8260B	10/13/11	107	103	3.95	69.7-121	25
P + M Xylene														
	78996-05	<0.50	39.9	40.0	39.7	39.8	ug/L	EPA 8260B	10/13/11	99.4	99.4	0.0134	76.8-120	25
Tert-Butanol														
	78996-05	<5.0	193	193	202	204	ug/L	EPA 8260B	10/13/11	104	105	0.908	80-120	25
Tert-amyl-methyl ether														
	78996-05	<0.50	39.8	39.9	40.4	38.8	ug/L	EPA 8260B	10/13/11	101	97.2	4.26	78.9-120	25
Toluene														
	78996-05	<0.50	39.9	40.0	42.4	42.3	ug/L	EPA 8260B	10/13/11	106	106	0.597	80-120	25

KIFF ANALYTICAL, LLC

2795 2nd Street, Suite 300 Davis, CA 95618 530-297-4800

QC Report : Laboratory Control Sample (LCS)

Project Name : **COP #11117**

Project Number : **I4211117**

Parameter	Spike Level	Units	Analysis Method	Date Analyzed	LCS Percent Recov.	LCS Percent Recov. Limit
Lead	50.0	mg/Kg	EPA 6010B	10/11/11	102	85-115
1,2-Dibromoethane	0.0398	mg/Kg	EPA 8260B	10/11/11	105	67.2-121
1,2-Dichloroethane	0.0400	mg/Kg	EPA 8260B	10/11/11	102	64.0-124
Benzene	0.0400	mg/Kg	EPA 8260B	10/11/11	102	67.9-120
Diisopropyl ether	0.0396	mg/Kg	EPA 8260B	10/11/11	101	65.2-122
Ethanol	0.0997	mg/Kg	EPA 8260B	10/11/11	69.5	37.1-156
Ethyl-tert-butyl ether	0.0399	mg/Kg	EPA 8260B	10/11/11	101	64.6-122
Ethylbenzene	0.0400	mg/Kg	EPA 8260B	10/11/11	95.6	65.5-127
Methyl-t-butyl ether	0.0402	mg/Kg	EPA 8260B	10/11/11	101	57.0-122
P + M Xylene	0.0400	mg/Kg	EPA 8260B	10/11/11	95.9	62.5-124
Tert-Butanol	0.193	mg/Kg	EPA 8260B	10/11/11	101	64.3-122
Tert-amyl-methyl ether	0.0399	mg/Kg	EPA 8260B	10/11/11	101	64.9-122
Toluene	0.0400	mg/Kg	EPA 8260B	10/11/11	102	65.7-120
1,2-Dibromoethane	0.0398	mg/Kg	EPA 8260B	10/12/11	107	67.2-121
1,2-Dichloroethane	0.0399	mg/Kg	EPA 8260B	10/12/11	105	64.0-124
Benzene	0.0399	mg/Kg	EPA 8260B	10/12/11	106	67.9-120
Diisopropyl ether	0.0395	mg/Kg	EPA 8260B	10/12/11	105	65.2-122
Ethanol	0.0995	mg/Kg	EPA 8260B	10/12/11	88.8	37.1-156
Ethyl-tert-butyl ether	0.0398	mg/Kg	EPA 8260B	10/12/11	104	64.6-122
Ethylbenzene	0.0399	mg/Kg	EPA 8260B	10/12/11	98.6	65.5-127

KIFF ANALYTICAL, LLC

2795 2nd Street, Suite 300 Davis, CA 95618 530-297-4800

QC Report : Laboratory Control Sample (LCS)

Project Name : **COP #11117**

Project Number : **I4211117**

Parameter	Spike Level	Units	Analysis Method	Date Analyzed	LCS Percent Recov.	LCS Percent Recov. Limit
Methyl-t-butyl ether	0.0401	mg/Kg	EPA 8260B	10/12/11	102	57.0-122
P + M Xylene	0.0399	mg/Kg	EPA 8260B	10/12/11	99.2	62.5-124
Tert-Butanol	0.193	mg/Kg	EPA 8260B	10/12/11	102	64.3-122
Tert-amyl-methyl ether	0.0398	mg/Kg	EPA 8260B	10/12/11	104	64.9-122
Toluene	0.0399	mg/Kg	EPA 8260B	10/12/11	107	65.7-120
1,2-Dibromoethane	39.8	ug/L	EPA 8260B	10/13/11	103	80-120
1,2-Dichloroethane	40.0	ug/L	EPA 8260B	10/13/11	105	75.7-122
Benzene	40.0	ug/L	EPA 8260B	10/13/11	105	80-120
Diisopropyl ether	39.6	ug/L	EPA 8260B	10/13/11	108	80-120
Ethanol	99.7	ug/L	EPA 8260B	10/13/11	105	55.1-159
Ethyl-tert-butyl ether	39.9	ug/L	EPA 8260B	10/13/11	106	76.5-120
Ethylbenzene	40.0	ug/L	EPA 8260B	10/13/11	98.0	80-120
Methyl-t-butyl ether	40.2	ug/L	EPA 8260B	10/13/11	107	69.7-121
P + M Xylene	40.0	ug/L	EPA 8260B	10/13/11	99.5	76.8-120
Tert-Butanol	193	ug/L	EPA 8260B	10/13/11	102	80-120
Tert-amyl-methyl ether	39.9	ug/L	EPA 8260B	10/13/11	104	78.9-120
Toluene	40.0	ug/L	EPA 8260B	10/13/11	106	80-120

KIFF ANALYTICAL, LLC

2795 2nd Street, Suite 300 Davis, CA 95618 530-297-4800

KIFF Analytical LLC

2795 2nd Street, Suite 300
Davis, CA 95618
Lab: 530.297.4800
Fax: 530.297.4802

SRG # / Lab No. 79010

Page 1 of 1

Chain-of-Custody Record and Analysis Request

Project Contact (Hardcopy or PDF To): Douglas Umland	California EDF Report? ☑ Yes ☐ No
Company / Address: 312 Pierce Rd. San Jose, CA	Sampling Company Log Code:
Phone Number: (408) 836-1874	Global ID: doug.umland@antea group.com
Fax Number: (408) 225-8506	EDF Deliverable To (Email Address): Doug.umland, antea group
Project #: 1921111 7 P.O. #: 1921111 7	Bill to:
Project Name: COP #1117	Sampler Print Name: Christine Morgan
	Sampler Signature:

Project Address: 7210 Bancroft ave. Oakland, CA

Sample Designation	Sampling: Date	Sampling: Time	Container: 40 ml VOA	Container: Sleeve	Container: Poly	Container: Glass	Container: Tedlar	Container: Acetate liner	Preservative: HCl	Preservative: HNO_3	Preservative: None	Matrix: Water	Matrix: Soil	Matrix: Air
20111006-COMPA-1	10/6	11:00						X			X		X	
20111006-COMPA-2	10/6	11:05						X			X		X	
20111006-COMPA-3	10/6	11:10		X							X		X	
20111006-COMPA-4	10/6	11:15						X			X		X	
20111006-COMPB-1	10/6	4:30	X (10)						X			X		

Analysis Request

CIRCLE METHOD

MTBE @ 0.5 ppb (EPA 8260B)	BTEX (EPA 8260B)	TPH Gas (EPA 8260B)	5 Oxygenates (MTBE, DIPE, ETBE, TAME, TBA) (EPA 8260B)	7 Oxygenates (5 oxy + EtOH, MeOH) (EPA 8260B)	Lead Scav. (1,2 DCA & 1,2 EDB) (EPA 8260B)	Volatile Halocarbons (EPA 8260B)	Volatile Organics Full List (EPA 8260B)	Volatile Organics (EPA 524.2 Drinking Water)	TPH as Diesel (EPA 8015M)	TPH as Motor Oil (EPA 8015M)	CAM 17 Metals (EPA 200.7 / 6010)	5 Waste Oil Metals (Cd,Cr,Ni,Pb,Zn) (EPA 200.7 / 6010)	Mercury (EPA 245.1 / 7470 / 7471)	Total Lead (EPA 200.7 / 6010)	W.E.T. Lead (STLC)	Ethanol (EPA 8260B)	[illegible]	[illegible]	TOTAL LEAD 6010
	X	X	X		X											X	X		X
	X	X	X		X											X	X		X
	X	X	X		X											X	X		X
	X	X	X		X											X	X		X
	X	X	X		X											X			

TAT: ☐ 12 hr ☐ 24 hr ☐ 48hr ☐ 72hr ☒ 1 wk

For Lab Use Only: 01, 02, 03, 04, 05

Relinquished by:	Date	Time	Received by:
Cayla Bandleon	10/7/11	1640	
Relinquished by:	Date	Time	Received by:
Relinquished by:	Date	Time	Received by Laboratory:
	100711	1340	Kiff Analytical

Remarks:
* if exceeds regulatory levels, run necessary STLC and/or TCLP for TOTAL Lead (only).

Page 1 of 1

Distribution: White - Lab; Pink - Originator
Rev: 060409

KIFF Analytical LLC

SAMPLE RECEIPT CHECKLIST

RECEIVER: LJR Initials

SRG#: 79010 Date: 100711

Project ID: COP #11117

Method of Receipt: ☒ Courier ☐ Over-the-counter ☐ Shipper

COC Inspection

Is COC present?	☒ Yes	☐ No		
Custody seals on shipping container?	☐ Intact	☐ Broken	☐ Not present	☒ N/A
Is COC Signed by Relinquisher? ☒ Yes ☐ No	Dated? ☒ Yes	☐ No		
Is sampler name legibly indicated on COC?	☒ Yes	☐ No		
Is analysis or hold requested for all samples	☒ Yes	☐ No		
Is the turnaround time indicated on COC?	☒ Yes	☐ No		
Is COC free of whiteout and uninitialed cross-outs?	☐ Yes	☐ No, Whiteout	☒ No, Cross-outs	

Sample Inspection

Coolant Present: ☒ Yes ☐ No (includes water)

Temperature °C 5.2 Therm. ID# IR-5 Initial LJR Date/Time 100711/1758 ☐ N/A

Are there custody seals on sample containers?	☐ Intact	☐ Broken	☒ Not present	
Do containers match COC? ☒ Yes ☐ No ☐ No, COC lists absent sample(s)	☐ No, Extra sample(s) present			
Are there samples matrices other than soil, water, air or carbon?	☐ Yes	☒ No		
Are any sample containers broken, leaking or damaged?	☐ Yes	☒ No		
Are preservatives indicated? ☐ Yes, on sample containers	☒ Yes, on COC	☐ Not indicated	☐ N/A	
Are preservatives correct for analyses requested?	☒ Yes	☐ No	☐ N/A	
Are samples within holding time for analyses requested?	☒ Yes	☐ No		
Are the correct sample containers used for the analyses requested?	☒ Yes	☐ No		
Is there sufficient sample to perform testing?	☒ Yes	☐ No		
Does any sample contain product, have strong odor or are otherwise suspected to be hot?	☐ Yes	☒ No		

Receipt Details

Matrix WA	Container type VOA	# of containers received 6
Matrix SO	Container type sleeve	# of containers received 4
Matrix	Container type	# of containers received

Date and Time Sample Put into Temp Storage Date: 100711 Time: 1805

Quicklog

Are the Sample ID's indicated:	☐ On COC	☐ On sample container(s)	☒ On Both	☐ Not indicated
If Sample ID's are listed on both COC and containers, do they all match?	☐ Yes	☒ No	☐ N/A	
Is the Project ID indicated:	☒ On COC	☐ On sample container(s)	☐ On Both	☐ Not indicated
If project ID is listed on both COC and containers, do they all match?	☐ Yes	☐ No	☒ N/A	
Are the sample collection dates indicated:	☐ On COC	☐ On sample container(s)	☒ On Both	☐ Not indicated
If collection dates are listed on both COC and containers, do they all match?	☒ Yes	☐ No	☐ N/A	
Are the sample collection times indicated:	☐ On COC	☐ On sample container(s)	☒ On Both	☐ Not indicated
If collection times are listed on both COC and containers, do they all match?	☒ Yes	☐ No	☐ N/A	

COMMENTS: For sample -05 a single label is attached to three VOAs at a time (only two labels total for the six VOAs). LJR100711-1916

Sample ID on -02 label is 20111006-Comp A-2. Logged in as per COC. LJR100711-1925

Sample labels for -05 had to be cut to put samples in Sample Manager storage. COC lists Sample -02's ~~MAS~~ container as Acetate liner and sample -03's container as a sleeve. Sample -02 is in a metal sleeve. Sample -03 is in an acetate sleeve. MAS 10011 0804.

Is the Data Set Valid?	Preservation Temperature
(circle) **Yes / No**	*(if Known)*: 1.9 ºC

Antea™Group Laboratory Data Validation Sheet

Project/Client: COP ECT #11117

Project #: F4261117

Date of Validation: 6/7/12 **Date of Analysis:** 3/8/12 & 3/9/12

Sample Date: 3/7/12 **Completed By:** Josh W

Signature:

Circle or Highlight **Yes / No** (below)

Analytical Lab Used and Report # (if any): Calscience lab report # 12-03-0498

1.	Were the analyses the ones requested?	**Yes** / No
2.	Do the sample number(s) on the chain-of-custody (COC) match the one(s) that appear on the laboratory data sheet?	**Yes** / No
3.	Were samples prepared (extracted, filtered, etc.) within EPA holding times?	**Yes** / No
4.	Once prepared/extracted, were the samples analyzed within the EPA holding times?	**Yes** / No
5.	Were Laboratory blanks performed, if so, were they non-detect?	**Yes** / No
6.	Are the units correct? (i.e., soil samples in mg/kg or ug/g, water samples mg/L, ug/L, and air samples in volume mg/m^3,etc.)	**Yes** / No
7.	Were appropriate Matrix Spike (MS) and Matrix Spike Duplicate (MSD) samples included in the laboratory batch sample?	Yes / **No**
8.	In lieu of MS/ MSD, were surrogate spike (SS) or surrogate spike duplicate (SSD) samples included in the laboratory batch samples?	**Yes** / No
9.	Were MS/ MSD (or SS/SSD) within the acceptable range of % recovery (i.e., approximately 80-120%, depending on the analyte)?	**Yes** / No
10.	Were MS/MSD (or SS/SSD) values used to calculate Relative Percent Difference (RPD)?	**Yes** / No
11.	Were Relative Percent Difference values within the acceptable range (i.e. ±25%)?	**Yes** / No

If any answer is no, explain why and what corrective action was taken (use additional sheet(s), as necessary:

Data Qualifiers:

Calscience Environmental Laboratories, Inc.

CALSCIENCE

WORK ORDER NUMBER: 12-03-0498

The difference is service



AIR | SOIL | WATER | MARINE CHEMISTRY

Analytical Report For

Client: Regenesis

Client Project Name: Antea Oakland

Attention: Joy Gravitt
1011 Calle Sombra
San Clemente, CA 92673-4204

Approved for release on 03/12/2012 by:
Don Burley
Project Manager

ResultLink

Email your PM

Calscience Environmental Laboratories certifies that the test results provided in this report meet all NELAC requirements for parameters for which accreditation is required or available. Any exceptions to NELAC requirements are noted in the case narrative. The original report of subcontracted analyses, if any, is provided herein, and follows the standard Calscience data package. The results in this analytical report are limited to the samples tested and any reproduction thereof must be made in its entirety. Note that the Chain-of-Custody Record and Sample Receipt Form are integral parts of this report.

Calscience Environmental Laboratories, Inc.

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Client Project Name: Antea Oakland
Work Order Number: 12-03-0498

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Calscience Environmental Laboratories, Inc.

Client:	Regenesis	Work Order:	12-03-0498
	1011 Calle Sombra	Project Name:	Antea Oakland
	San Clemente, CA 92673-4204	Received:	03/08/12 10:30
Attn:	Joy Gravitt		

DETECTIONS SUMMARY

Client Sample ID Analyte	Result	Qualifiers	Reporting Limit	Units	Method	Extraction
MW-4						
Methane	**5870**		20.0	ug/L	RSK-175M	N/A
Iron	**4.55**		0.100	mg/L	EPA 6010B	EPA 3010A Total
Iron	**2.08**		0.100	mg/L	EPA 6010B	EPA 3005A Filt.
Alkalinity, Total (as CaCO3)	**525**		5.00	mg/L	SM 2320B	N/A
Chemical Oxygen Demand	**63**		5.0	mg/L	EPA 410.4	N/A
Carbon, Total Organic	**7.8**		2.5	mg/L	SM 5310 B	N/A
TPH as Gasoline	**8500**		50	ug/L	EPA 8015B (M)	EPA 5030C
Benzene	**4000**		12	ug/L	EPA 8260B	EPA 5030C
Ethylbenzene	**480**		25	ug/L	EPA 8260B	EPA 5030C
Toluene	**42**		25	ug/L	EPA 8260B	EPA 5030C
p/m-Xylene	**890**		25	ug/L	EPA 8260B	EPA 5030C
o-Xylene	**200**		25	ug/L	EPA 8260B	EPA 5030C
Methyl-t-Butyl Ether (MTBE)	**400**		25	ug/L	EPA 8260B	EPA 5030C
Tert-Butyl Alcohol (TBA)	**4900**		250	ug/L	EPA 8260B	EPA 5030C
DPT-1-36						
TPH as Gasoline	**4900**		100	ug/L	EPA 8015B (M)	EPA 5030C
Benzene	**480**		2.5	ug/L	EPA 8260B	EPA 5030C
Ethylbenzene	**170**		5.0	ug/L	EPA 8260B	EPA 5030C
Toluene	**15**		5.0	ug/L	EPA 8260B	EPA 5030C
p/m-Xylene	**710**		5.0	ug/L	EPA 8260B	EPA 5030C
o-Xylene	**270**		5.0	ug/L	EPA 8260B	EPA 5030C
Methyl-t-Butyl Ether (MTBE)	**11**		5.0	ug/L	EPA 8260B	EPA 5030C
Tert-Butyl Alcohol (TBA)	**2400**		50	ug/L	EPA 8260B	EPA 5030C
DPT-2-32						
Methane	**1880**		8.00	ug/L	RSK-175M	N/A
TPH as Gasoline	**5700**		50	ug/L	EPA 8015B (M)	EPA 5030C
Benzene	**7600**		25	ug/L	EPA 8260B	EPA 5030C
Ethylbenzene	**760**		50	ug/L	EPA 8260B	EPA 5030C
Toluene	**47**		1.0	ug/L	EPA 8260B	EPA 5030C
p/m-Xylene	**78**		1.0	ug/L	EPA 8260B	EPA 5030C
o-Xylene	**18**		1.0	ug/L	EPA 8260B	EPA 5030C
Methyl-t-Butyl Ether (MTBE)	**13**		1.0	ug/L	EPA 8260B	EPA 5030C
Tert-Butyl Alcohol (TBA)	**6700**		500	ug/L	EPA 8260B	EPA 5030C

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*MDL is shown.

Calscience Environmental Laboratories, Inc.

Client:	Regenesis	Work Order:	12-03-0498
	1011 Calle Sombra	Project Name:	Antea Oakland
	San Clemente, CA 92673-4204	Received:	03/08/12 10:30
Attn:	Joy Gravitt		

DETECTIONS SUMMARY

Client Sample ID Analyte	Result	Qualifiers	Reporting Limit	Units	Method	Extraction
DPT-2-40						
Methane	**4790**		20.0	ug/L	RSK-175M	N/A
TPH as Gasoline	**2400**		50	ug/L	EPA 8015B (M)	EPA 5030C
Benzene	**920**		2.5	ug/L	EPA 8260B	EPA 5030C
Ethylbenzene	**58**		1.0	ug/L	EPA 8260B	EPA 5030C
Toluene	**44**		1.0	ug/L	EPA 8260B	EPA 5030C
p/m-Xylene	**150**		1.0	ug/L	EPA 8260B	EPA 5030C
o-Xylene	**71**		1.0	ug/L	EPA 8260B	EPA 5030C
Methyl-t-Butyl Ether (MTBE)	**11**		1.0	ug/L	EPA 8260B	EPA 5030C
Tert-Butyl Alcohol (TBA)	**4600**		50	ug/L	EPA 8260B	EPA 5030C
Ethyl-t-Butyl Ether (ETBE)	**3.7**		2.0	ug/L	EPA 8260B	EPA 5030C

Subcontracted analyses, if any, are not included in this summary.

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*MDL is shown.

Calscience Environmental Laboratories, Inc.

Analytical Report

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Regenesis
1011 Calle Sombra
San Clemente, CA 92673-4204

Date Received: 03/08/12
Work Order No: 12-03-0498
Preparation: N/A
Method: RSK-175M

Project: Antea Oakland

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
MW-4	**12-03-0498-1-A**	**03/07/12 09:00**	**Aqueous**	**GC 61**	**N/A**	**03/08/12 19:14**	**120308L01**

Parameter	Result	RL	DF	Qual	Units
Methane	5870	20.0	20		ug/L

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
DPT-2-32	**12-03-0498-3-A**	**03/07/12 13:20**	**Aqueous**	**GC 61**	**N/A**	**03/08/12 22:37**	**120308L01**

Parameter	Result	RL	DF	Qual	Units
Methane	1880	8.00	8		ug/L

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
DPT-2-40	**12-03-0498-4-A**	**03/07/12 14:05**	**Aqueous**	**GC 61**	**N/A**	**03/08/12 20:40**	**120308L01**

Parameter	Result	RL	DF	Qual	Units
Methane	4790	20.0	20		ug/L

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
Method Blank	**099-12-663-1,530**	**N/A**	**Aqueous**	**GC 61**	**N/A**	**03/08/12 11:52**	**120308L01**

Parameter	Result	RL	DF	Qual	Units
Methane	ND	1.00	1		ug/L

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RL - Reporting Limit , DF - Dilution Factor , Qual - Qualifiers

Calscience Environmental Laboratories, Inc.

Analytical Report

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Regenesis
1011 Calle Sombra
San Clemente, CA 92673-4204

Date Received: 03/08/12
Work Order No: 12-03-0498
Preparation: EPA 5030C
Method: EPA 8015B (M)

Project: Antea Oakland

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
MW-4	**12-03-0498-1-E**	**03/07/12 09:00**	**Aqueous**	**GC 22**	**03/08/12**	**03/09/12 12:41**	**120308B02**

Parameter	Result	RL	DF	Qual	Units
TPH as Gasoline	8500	50	1		ug/L

Surrogates:	REC (%)	Control Limits	Qual
1,4-Bromofluorobenzene	153	38-134	2,7

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
DPT-1-36	**12-03-0498-2-E**	**03/07/12 10:45**	**Aqueous**	**GC 22**	**03/08/12**	**03/09/12 14:19**	**120308B02**

Parameter	Result	RL	DF	Qual	Units
TPH as Gasoline	4900	100	2		ug/L

Surrogates:	REC (%)	Control Limits	Qual
1,4-Bromofluorobenzene	96	38-134	

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
DPT-2-32	**12-03-0498-3-F**	**03/07/12 13:20**	**Aqueous**	**GC 22**	**03/08/12**	**03/09/12 13:14**	**120308B02**

Parameter	Result	RL	DF	Qual	Units
TPH as Gasoline	5700	50	1		ug/L

Surrogates:	REC (%)	Control Limits	Qual
1,4-Bromofluorobenzene	140	38-134	2,7

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
DPT-2-40	**12-03-0498-4-E**	**03/07/12 14:05**	**Aqueous**	**GC 22**	**03/08/12**	**03/09/12 13:46**	**120308B02**

Parameter	Result	RL	DF	Qual	Units
TPH as Gasoline	2400	50	1		ug/L

Surrogates:	REC (%)	Control Limits	Qual
1,4-Bromofluorobenzene	90	38-134	

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RL - Reporting Limit , DF - Dilution Factor , Qual - Qualifiers

Calscience Environmental Laboratories, Inc.

Analytical Report

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Regenesis		Date Received:	03/08/12
1011 Calle Sombra		Work Order No:	12-03-0498
San Clemente, CA 92673-4204		Preparation:	EPA 5030C
		Method:	EPA 8015B (M)

Project: Antea Oakland

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
Method Blank	**099-12-436-7,207**	**N/A**	**Aqueous**	**GC 22**	**03/08/12**	**03/09/12 06:44**	**120308B02**

Parameter	Result	RL	DF	Qual	Units
TPH as Gasoline	ND	50	1		ug/L

Surrogates:	REC (%)	Control Limits	Qual
1,4-Bromofluorobenzene	81	38-134	

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Calscience Environmental Laboratories, Inc.

Analytical Report

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Regenesis
1011 Calle Sombra
San Clemente, CA 92673-4204

Date Received: 03/08/12
Work Order No: 12-03-0498
Preparation: EPA 5030C
Method: EPA 8260B
Units: ug/L

Project: Antea Oakland

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
MW-4	**12-03-0498-1-A**	**03/07/12 09:00**	**Aqueous**	**GC/MS WW**	**03/08/12**	**03/08/12 21:07**	**120308L01**

Parameter	Result	RL	DF	Qual	Parameter	Result	RL	DF	Qual
Benzene	4000	12	25		Methyl-t-Butyl Ether (MTBE)	400	25	25	
1,2-Dibromoethane	ND	25	25		Tert-Butyl Alcohol (TBA)	4900	250	25	
1,2-Dichloroethane	ND	12	25		Diisopropyl Ether (DIPE)	ND	50	25	
Ethylbenzene	480	25	25		Ethyl-t-Butyl Ether (ETBE)	ND	50	25	
Toluene	42	25	25		Tert-Amyl-Methyl Ether (TAME)	ND	50	25	
p/m-Xylene	890	25	25		Ethanol	ND	2500	25	
o-Xylene	200	25	25						

Surrogates:	REC (%)	Control Limits	Qual	Surrogates:	REC (%)	Control Limits	Qual
1,4-Bromofluorobenzene	93	80-120		Dibromofluoromethane	92	80-126	
1,2-Dichloroethane-d4	92	80-134		Toluene-d8	100	80-120	

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
DPT-1-36	**12-03-0498-2-A**	**03/07/12 10:45**	**Aqueous**	**GC/MS WW**	**03/08/12**	**03/08/12 21:36**	**120308L01**

Parameter	Result	RL	DF	Qual	Parameter	Result	RL	DF	Qual
Benzene	480	2.5	5		Methyl-t-Butyl Ether (MTBE)	11	5.0	5	
1,2-Dibromoethane	ND	5.0	5		Tert-Butyl Alcohol (TBA)	2400	50	5	
1,2-Dichloroethane	ND	2.5	5		Diisopropyl Ether (DIPE)	ND	10	5	
Ethylbenzene	170	5.0	5		Ethyl-t-Butyl Ether (ETBE)	ND	10	5	
Toluene	15	5.0	5		Tert-Amyl-Methyl Ether (TAME)	ND	10	5	
p/m-Xylene	710	5.0	5		Ethanol	ND	500	5	
o-Xylene	270	5.0	5						

Surrogates:	REC (%)	Control Limits	Qual	Surrogates:	REC (%)	Control Limits	Qual
1,4-Bromofluorobenzene	98	80-120		Dibromofluoromethane	91	80-126	
1,2-Dichloroethane-d4	93	80-134		Toluene-d8	101	80-120	

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
DPT-2-32	**12-03-0498-3-A**	**03/07/12 13:20**	**Aqueous**	**GC/MS JJ**	**03/08/12**	**03/09/12 13:38**	**120309L01**

Parameter	Result	RL	DF	Qual	Parameter	Result	RL	DF	Qual
Benzene	7600	25	50		Methyl-t-Butyl Ether (MTBE)	13	1.0	1	
1,2-Dibromoethane	ND	1.0	1		Tert-Butyl Alcohol (TBA)	6700	500	50	
1,2-Dichloroethane	ND	0.50	1		Diisopropyl Ether (DIPE)	ND	2.0	1	
Ethylbenzene	760	50	50		Ethyl-t-Butyl Ether (ETBE)	ND	2.0	1	
Toluene	47	1.0	1		Tert-Amyl-Methyl Ether (TAME)	ND	2.0	1	
p/m-Xylene	78	1.0	1		Ethanol	ND	100	1	
o-Xylene	18	1.0	1						

Surrogates:	REC (%)	Control Limits	Qual	Surrogates:	REC (%)	Control Limits	Qual
1,4-Bromofluorobenzene	99	80-120		Dibromofluoromethane	101	80-126	
1,2-Dichloroethane-d4	100	80-134		Toluene-d8	101	80-120	

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RL - Reporting Limit , DF - Dilution Factor , Qual - Qualifiers

Calscience Environmental Laboratories, Inc.

Analytical Report

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Regenesis		Date Received:	03/08/12
1011 Calle Sombra		Work Order No:	12-03-0498
San Clemente, CA 92673-4204		Preparation:	EPA 5030C
		Method:	EPA 8260B
		Units:	ug/L

Project: Antea Oakland

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
DPT-2-40	**12-03-0498-4-A**	**03/07/12 14:05**	**Aqueous**	**GC/MS JJ**	**03/08/12**	**03/09/12 14:04**	**120309L01**

Parameter	Result	RL	DF	Qual	Parameter	Result	RL	DF	Qual
Benzene	920	2.5	5		Methyl-t-Butyl Ether (MTBE)	11	1.0	1	
1,2-Dibromoethane	ND	1.0	1		Tert-Butyl Alcohol (TBA)	4600	50	5	
1,2-Dichloroethane	ND	0.50	1		Diisopropyl Ether (DIPE)	ND	2.0	1	
Ethylbenzene	58	1.0	1		Ethyl-t-Butyl Ether (ETBE)	3.7	2.0	1	
Toluene	44	1.0	1		Tert-Amyl-Methyl Ether (TAME)	ND	2.0	1	
p/m-Xylene	150	1.0	1		Ethanol	ND	100	1	
o-Xylene	71	1.0	1						

Surrogates:	REC (%)	Control Limits	Qual	Surrogates:	REC (%)	Control Limits	Qual
1,4-Bromofluorobenzene	99	80-120		Dibromofluoromethane	103	80-126	
1,2-Dichloroethane-d4	101	80-134		Toluene-d8	102	80-120	

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
Method Blank	**099-14-001-7,212**	**N/A**	**Aqueous**	**GC/MS WW**	**03/08/12**	**03/08/12 14:25**	**120308L01**

Parameter	Result	RL	DF	Qual	Parameter	Result	RL	DF	Qual
Benzene	ND	0.50	1		Methyl-t-Butyl Ether (MTBE)	ND	1.0	1	
1,2-Dibromoethane	ND	1.0	1		Tert-Butyl Alcohol (TBA)	ND	10	1	
1,2-Dichloroethane	ND	0.50	1		Diisopropyl Ether (DIPE)	ND	2.0	1	
Ethylbenzene	ND	1.0	1		Ethyl-t-Butyl Ether (ETBE)	ND	2.0	1	
Toluene	ND	1.0	1		Tert-Amyl-Methyl Ether (TAME)	ND	2.0	1	
p/m-Xylene	ND	1.0	1		Ethanol	ND	100	1	
o-Xylene	ND	1.0	1						

Surrogates:	REC (%)	Control Limits	Qual	Surrogates:	REC (%)	Control Limits	Qual
1,4-Bromofluorobenzene	94	80-120		Dibromofluoromethane	91	80-126	
1,2-Dichloroethane-d4	92	80-134		Toluene-d8	99	80-120	

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
Method Blank	**099-14-001-7,214**	**N/A**	**Aqueous**	**GC/MS JJ**	**03/08/12**	**03/08/12 14:25**	**120308L01**

Parameter	Result	RL	DF	Qual	Parameter	Result	RL	DF	Qual
Benzene	ND	0.50	1		Methyl-t-Butyl Ether (MTBE)	ND	1.0	1	
1,2-Dibromoethane	ND	1.0	1		Tert-Butyl Alcohol (TBA)	ND	10	1	
1,2-Dichloroethane	ND	0.50	1		Diisopropyl Ether (DIPE)	ND	2.0	1	
Ethylbenzene	ND	1.0	1		Ethyl-t-Butyl Ether (ETBE)	ND	2.0	1	
Toluene	ND	1.0	1		Tert-Amyl-Methyl Ether (TAME)	ND	2.0	1	
p/m-Xylene	ND	1.0	1		Ethanol	ND	100	1	
o-Xylene	ND	1.0	1						

Surrogates:	REC (%)	Control Limits	Qual	Surrogates:	REC (%)	Control Limits	Qual
1,4-Bromofluorobenzene	96	80-120		Dibromofluoromethane	109	80-126	
1,2-Dichloroethane-d4	117	80-134		Toluene-d8	99	80-120	

RL - Reporting Limit , DF - Dilution Factor , Qual - Qualifiers

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Calscience Environmental Laboratories, Inc.

Analytical Report

Regenesis		Date Received:	03/08/12
1011 Calle Sombra		Work Order No:	12-03-0498
San Clemente, CA 92673-4204		Preparation:	EPA 5030C
		Method:	EPA 8260B
		Units:	ug/L

Project: Antea Oakland

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
Method Blank	**099-14-001-7,225**	**N/A**	**Aqueous**	**GC/MS RR**	**03/09/12**	**03/09/12 11:51**	**120309L01**

Parameter	Result	RL	DF	Qual	Parameter	Result	RL	DF	Qual
Benzene	ND	0.50	1		Methyl-t-Butyl Ether (MTBE)	ND	1.0	1	
1,2-Dibromoethane	ND	1.0	1		Tert-Butyl Alcohol (TBA)	ND	10	1	
1,2-Dichloroethane	ND	0.50	1		Diisopropyl Ether (DIPE)	ND	2.0	1	
Ethylbenzene	ND	1.0	1		Ethyl-t-Butyl Ether (ETBE)	ND	2.0	1	
Toluene	ND	1.0	1		Tert-Amyl-Methyl Ether (TAME)	ND	2.0	1	
p/m-Xylene	ND	1.0	1		Ethanol	ND	100	1	
o-Xylene	ND	1.0	1						
Surrogates:	REC (%)	Control Limits		Qual	Surrogates:	REC (%)	Control Limits		Qual
1,4-Bromofluorobenzene	104	80-120			Dibromofluoromethane	102	80-126		
1,2-Dichloroethane-d4	109	80-134			Toluene-d8	101	80-120		

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RL - Reporting Limit , DF - Dilution Factor , Qual - Qualifiers

Calscience Environmental Laboratories, Inc.

Analytical Report

ACCREDITED IN ACCORDANCE WITH nelac

Regenesis
1011 Calle Sombra
San Clemente, CA 92673-4204

Date Received: 03/08/12
Work Order No: 12-03-0498
Preparation: EPA 3005A Filt.
Method: EPA 6010B

Project: Antea Oakland

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
MW-4	**12-03-0498-1-J**	**03/07/12 09:00**	**Aqueous**	**ICP 5300**	**03/08/12**	**03/09/12 14:00**	**120308LA3F**

Parameter	Result	RL	DF	Qual	Units
Iron	2.08	0.100	1		mg/L

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
Method Blank	**097-01-003-12,441**	**N/A**	**Aqueous**	**ICP 5300**	**03/08/12**	**03/08/12 17:20**	**120308LA3F**

Parameter	Result	RL	DF	Qual	Units
Iron	ND	0.100	1		mg/L

Return to Contents

RL - Reporting Limit , DF - Dilution Factor , Qual - Qualifiers

Calscience Environmental Laboratories, Inc.

Analytical Report

ACCREDITED IN ACCORDANCE WITH nelac

Regenesis		Date Received:	03/08/12
1011 Calle Sombra		Work Order No:	12-03-0498
San Clemente, CA 92673-4204		Preparation:	EPA 3010A Total
		Method:	EPA 6010B

Project: Antea Oakland

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
MW-4	**12-03-0498-1-K**	**03/07/12 09:00**	**Aqueous**	**ICP 5300**	**03/08/12**	**03/09/12 14:04**	**120308LA3**

Parameter	Result	RL	DF	Qual	Units
Iron	4.55	0.100	1		mg/L

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
Method Blank	**097-01-003-12,440**	**N/A**	**Aqueous**	**ICP 5300**	**03/08/12**	**03/08/12 17:20**	**120308LA3**

Parameter	Result	RL	DF	Qual	Units
Iron	ND	0.100	1		mg/L

Return to Contents

RL - Reporting Limit , DF - Dilution Factor , Qual - Qualifiers

Calscience Environmental Laboratories, Inc.

Analytical Report

ACCREDITED IN ACCORDANCE WITH nelac

Regenesis
1011 Calle Sombra
San Clemente, CA 92673-4204

Date Received: 03/08/12
Work Order No: 12-03-0498

Project: Antea Oakland

Client Sample Number	Lab Sample Number	Date Collected	Matrix
MW-4	**12-03-0498-1**	**03/07/12**	**Aqueous**

Parameter	Results	RL	DF	Qual	Units	Date Prepared	Date Analyzed	Method
Chemical Oxygen Demand	63	5.0	1		mg/L	03/08/12	03/08/12	EPA 410.4
Alkalinity, Total (as CaCO3)	525	5.00	1		mg/L	N/A	03/09/12	SM 2320B
Sulfide, Total	ND	0.050	1		mg/L	03/08/12	03/08/12	SM 4500 S2 - D
Carbon, Total Organic	7.8	2.5	5		mg/L	N/A	03/09/12	SM 5310 B

Method Blank			**N/A**	**Aqueous**

Parameter	Results	RL	DF	Qual	Units	Date Prepared	Date Analyzed	Method
Chemical Oxygen Demand	ND	5.0	1		mg/L	03/08/12	03/08/12	EPA 410.4
Alkalinity, Total (as CaCO3)	ND	1.0	1		mg/L	N/A	03/09/12	SM 2320B
Sulfide, Total	ND	0.050	1		mg/L	03/08/12	03/08/12	SM 4500 S2 - D
Carbon, Total Organic	ND	0.50	1		mg/L	N/A	03/09/12	SM 5310 B

Return to Contents

RL - Reporting Limit , DF - Dilution Factor , Qual - Qualifiers

Calscience Environmental Laboratories, Inc.

Quality Control - Spike/Spike Duplicate

ACCREDITED IN ACCORDANCE WITH nelac

Regenesis
1011 Calle Sombra
San Clemente, CA 92673-4204

Date Received: 03/08/12
Work Order No: 12-03-0498
Preparation: EPA 3010A Total
Method: EPA 6010B

Project Antea Oakland

Quality Control Sample ID	Matrix	Instrument	Date Prepared	Date Analyzed	MS/MSD Batch Number
12-03-0462-1	**Aqueous**	**ICP 5300**	**03/08/12**	**03/08/12**	**120308SA3**

Parameter	SPIKE ADDED	MS %REC	MSD %REC	%REC CL	RPD	RPD CL	Qualifiers
Iron	0.5000	4X	4X	65-149	4X	0-21	Q

Return to Contents

RPD - Relative Percent Difference , CL - Control Limit

Calscience Environmental Laboratories, Inc.

Quality Control - PDS / PDSD

ACCREDITED IN ACCORDANCE WITH nelac

Regenesis		Date Received	03/08/12
1011 Calle Sombra		Work Order No:	12-03-0498
San Clemente, CA 92673-4204		Preparation:	EPA 3010A Total
		Method:	EPA 6010B

Project: Antea Oakland

Quality Control Sample ID	Matrix	Instrument	Date Prepared	Date Analyzed	PDS / PDSD Batch Number
12-03-0462-1	**Aqueous**	**ICP 5300**	**03/08/12**	**03/08/12**	**120308SA3**

Parameter	SPIKE ADDED	PDS %REC	PDSD %REC	%REC CL	RPD	RPD CL	Qualifiers
Iron	0.5000	4X	4X	75-125	4X	0-21	Q

Return to Contents

RPD - Relative Percent Difference , CL - Control Limit

Calscience Environmental Laboratories, Inc.

Quality Control - Spike/Spike Duplicate

ACCREDITED IN ACCORDANCE WITH nelac

Regenesis
1011 Calle Sombra
San Clemente, CA 92673-4204

Date Received: 03/08/12
Work Order No: 12-03-0498
Preparation: EPA 5030C
Method: EPA 8015B (M)

Project Antea Oakland

Quality Control Sample ID	Matrix	Instrument	Date Prepared	Date Analyzed	MS/MSD Batch Number
12-03-0290-1	**Aqueous**	**GC 22**	**03/08/12**	**03/09/12**	**120308S02**

Parameter	SPIKE ADDED	MS %REC	MSD %REC	%REC CL	RPD	RPD CL	Qualifiers
TPH as Gasoline	2000	91	92	68-122	1	0-18	

Return to Contents

RPD - Relative Percent Difference , CL - Control Limit

Calscience Environmental Laboratories, Inc.

Quality Control - Spike/Spike Duplicate

ACCREDITED IN ACCORDANCE WITH nelac

Regenesis
1011 Calle Sombra
San Clemente, CA 92673-4204

Date Received: 03/08/12
Work Order No: 12-03-0498
Preparation: EPA 5030C
Method: EPA 8260B

Project Antea Oakland

Quality Control Sample ID	Matrix	Instrument	Date Prepared	Date Analyzed	MS/MSD Batch Number
12-03-0364-1	**Aqueous**	**GC/MS JJ**	**03/08/12**	**03/08/12**	**120308S01**

Parameter	SPIKE ADDED	MS %REC	MSD %REC	%REC CL	RPD	RPD CL	Qualifiers
Benzene	50.00	96	96	78-120	0	0-20	
Carbon Tetrachloride	50.00	109	109	67-139	0	0-20	
Chlorobenzene	50.00	95	95	80-120	0	0-20	
1,2-Dibromoethane	50.00	103	102	80-123	0	0-20	
1,2-Dichlorobenzene	50.00	98	100	76-120	1	0-20	
1,2-Dichloroethane	50.00	107	105	76-130	3	0-20	
1,1-Dichloroethene	50.00	106	107	70-130	1	0-27	
Ethylbenzene	50.00	101	101	73-127	0	0-20	
Toluene	50.00	100	101	72-126	0	0-20	
Trichloroethene	50.00	99	100	74-122	1	0-20	
Vinyl Chloride	50.00	111	115	65-131	3	0-24	
Methyl-t-Butyl Ether (MTBE)	50.00	93	97	69-123	4	0-20	
Tert-Butyl Alcohol (TBA)	250.0	107	115	65-131	7	0-22	
Diisopropyl Ether (DIPE)	50.00	102	106	68-128	4	0-22	
Ethyl-t-Butyl Ether (ETBE)	50.00	94	98	69-123	4	0-21	
Tert-Amyl-Methyl Ether (TAME)	50.00	96	97	70-124	1	0-20	
Ethanol	500.0	110	99	41-155	10	0-35	

Return to Contents

RPD - Relative Percent Difference , CL - Control Limit

Calscience Environmental Laboratories, Inc.

Quality Control - Spike/Spike Duplicate

ACCREDITED IN ACCORDANCE WITH nelac

Regenesis
1011 Calle Sombra
San Clemente, CA 92673-4204

Date Received: 03/08/12
Work Order No: 12-03-0498
Preparation: EPA 5030C
Method: EPA 8260B

Project Antea Oakland

Quality Control Sample ID	Matrix	Instrument	Date Prepared	Date Analyzed	MS/MSD Batch Number
12-03-0410-1	**Aqueous**	**GC/MS WW**	**03/08/12**	**03/08/12**	**120308S01**

Parameter	SPIKE ADDED	MS %REC	MSD %REC	%REC CL	RPD	RPD CL	Qualifiers
Benzene	50.00	107	106	78-120	1	0-20	
Carbon Tetrachloride	50.00	93	93	67-139	0	0-20	
Chlorobenzene	50.00	115	111	80-120	3	0-20	
1,2-Dibromoethane	50.00	107	103	80-123	3	0-20	
1,2-Dichlorobenzene	50.00	113	114	76-120	1	0-20	
1,2-Dichloroethane	50.00	113	113	76-130	0	0-20	
1,1-Dichloroethene	50.00	116	117	70-130	1	0-27	
Ethylbenzene	50.00	106	103	73-127	3	0-20	
Toluene	50.00	107	107	72-126	1	0-20	
Trichloroethene	50.00	102	96	74-122	6	0-20	
Vinyl Chloride	50.00	122	120	65-131	2	0-24	
Methyl-t-Butyl Ether (MTBE)	50.00	94	95	69-123	0	0-20	
Tert-Butyl Alcohol (TBA)	250.0	115	100	65-131	11	0-22	
Diisopropyl Ether (DIPE)	50.00	100	100	68-128	0	0-22	
Ethyl-t-Butyl Ether (ETBE)	50.00	92	93	69-123	0	0-21	
Tert-Amyl-Methyl Ether (TAME)	50.00	103	101	70-124	1	0-20	
Ethanol	500.0	137	126	41-155	8	0-35	

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RPD - Relative Percent Difference , CL - Control Limit

Calscience Environmental Laboratories, Inc.

Quality Control - Spike/Spike Duplicate

ACCREDITED IN ACCORDANCE WITH nelac

Regenesis
1011 Calle Sombra
San Clemente, CA 92673-4204

Date Received: 03/08/12
Work Order No: 12-03-0498
Preparation: EPA 5030C
Method: EPA 8260B

Project Antea Oakland

Quality Control Sample ID	Matrix	Instrument	Date Prepared	Date Analyzed	MS/MSD Batch Number
12-03-0593-1	**Aqueous**	**GC/MS RR**	**03/09/12**	**03/09/12**	**120309S01**

Parameter	SPIKE ADDED	MS %REC	MSD %REC	%REC CL	RPD	RPD CL	Qualifiers
Benzene	50.00	104	104	78-120	0	0-20	
Carbon Tetrachloride	50.00	122	125	67-139	2	0-20	
Chlorobenzene	50.00	112	113	80-120	1	0-20	
1,2-Dibromoethane	50.00	106	108	80-123	2	0-20	
1,2-Dichlorobenzene	50.00	110	112	76-120	2	0-20	
1,2-Dichloroethane	50.00	121	120	76-130	0	0-20	
1,1-Dichloroethene	50.00	107	109	70-130	2	0-27	
Ethylbenzene	50.00	111	111	73-127	0	0-20	
Toluene	50.00	107	107	72-126	0	0-20	
Trichloroethene	50.00	111	111	74-122	0	0-20	
Vinyl Chloride	50.00	113	118	65-131	4	0-24	
Methyl-t-Butyl Ether (MTBE)	50.00	98	104	69-123	6	0-20	
Tert-Butyl Alcohol (TBA)	250.0	95	99	65-131	5	0-22	
Diisopropyl Ether (DIPE)	50.00	99	103	68-128	4	0-22	
Ethyl-t-Butyl Ether (ETBE)	50.00	101	104	69-123	3	0-21	
Tert-Amyl-Methyl Ether (TAME)	50.00	106	105	70-124	1	0-20	
Ethanol	500.0	87	84	41-155	3	0-35	

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RPD - Relative Percent Difference , CL - Control Limit

Calscience Environmental Laboratories, Inc.

Quality Control - Spike/Spike Duplicate

ACCREDITED IN ACCORDANCE WITH nelac

Regenesis
1011 Calle Sombra
San Clemente, CA 92673-4204

Date Received: N/A
Work Order No: 12-03-0498

Project: Antea Oakland

Matrix: Aqueous or Solid

Parameter	Method	Quality Control Sample ID	Date Analyzed	Date Extracted	MS% REC	MSD % REC	%REC CL	RPD	RPD CL	Qualifiers
Carbon, Total Organic	SM 5310 B	12-03-0310-1	03/09/12	N/A	92	94	70-130	2	0-25	

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RPD - Relative Percent Difference , CL - Control Limit

Calscience Environmental Laboratories, Inc.

Quality Control - Duplicate

ACCREDITED IN ACCORDANCE WITH nelac

Regenesis
1011 Calle Sombra
San Clemente, CA 92673-4204

Date Received: N/A
Work Order No: 12-03-0498

Project: Antea Oakland

Matrix: Aqueous or Solid

Parameter	Method	QC Sample ID	Date Analyzed	Sample Conc	DUP Conc	RPD	RPD CL	Qualifiers
Alkalinity, Total (as CaCO3)	SM 2320B	12-03-0646-1	03/09/12	90.0	90.0	0	0-25	
Bicarbonate (as CaCO3)	SM 2320B	12-03-0646-1	03/09/12	58.8	59.2	1	0-25	
Carbonate (as CaCO3)	SM 2320B	12-03-0646-1	03/09/12	31.2	30.8	1	0-25	
Hydroxide (as CaCO3)	SM 2320B	12-03-0646-1	03/09/12	ND	ND	NA	0-25	
Sulfide, Total	SM 4500 S2 - D	MW-4	03/08/12	ND	ND	NA	0-25	
Chemical Oxygen Demand	EPA 410.4	MW-4	03/08/12	63	64	2	0-25	

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RPD - Relative Percent Difference , CL - Control Limit

Calscience Environmental Laboratories, Inc.

Quality Control - LCS/LCS Duplicate

ACCREDITED IN ACCORDANCE WITH nelac

Regenesis		Date Received:	N/A
1011 Calle Sombra		Work Order No:	12-03-0498
San Clemente, CA 92673-4204		Preparation:	N/A
		Method:	RSK-175M

Project: Antea Oakland

Quality Control Sample ID	Matrix	Instrument	Date Prepared	Date Analyzed	LCS/LCSD Batch Number
099-12-663-1,530	**Aqueous**	**GC 61**	**N/A**	**03/08/12**	**120308L01**

Parameter	SPIKE ADDED	LCS %REC	LCSD %REC	%REC CL	RPD	RPD CL	Qualifiers
Methane	100.0	99	87	79-109	12	0-20	

Return to Contents

RPD - Relative Percent Difference , CL - Control Limit

Calscience Environmental Laboratories, Inc.

Quality Control - LCS/LCS Duplicate

ACCREDITED IN ACCORDANCE WITH nelac

Regenesis		Date Received:	N/A
1011 Calle Sombra		Work Order No:	12-03-0498
San Clemente, CA 92673-4204		Preparation:	EPA 3010A Total
		Method:	EPA 6010B

Project: Antea Oakland

Quality Control Sample ID	Matrix	Instrument	Date Prepared	Date Analyzed	LCS/LCSD Batch Number
097-01-003-12,440	**Aqueous**	**ICP 5300**	**03/08/12**	**03/08/12**	**120308LA3**

Parameter	SPIKE ADDED	LCS %REC	LCSD %REC	%REC CL	RPD	RPD CL	Qualifiers
Iron	0.5000	107	109	80-120	1	0-20	

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RPD - Relative Percent Difference , CL - Control Limit

Calscience Environmental Laboratories, Inc.

Quality Control - LCS/LCS Duplicate

ACCREDITED IN ACCORDANCE WITH nelac

Regenesis		Date Received:	N/A
1011 Calle Sombra		Work Order No:	12-03-0498
San Clemente, CA 92673-4204		Preparation:	EPA 3005A Filt.
		Method:	EPA 6010B

Project: Antea Oakland

Quality Control Sample ID	Matrix	Instrument	Date Prepared	Date Analyzed	LCS/LCSD Batch Number
097-01-003-12,441	**Aqueous**	**ICP 5300**	**03/08/12**	**03/08/12**	**120308LA3F**

Parameter	SPIKE ADDED	LCS %REC	LCSD %REC	%REC CL	RPD	RPD CL	Qualifiers
Iron	0.5000	107	109	80-120	1	0-20	

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RPD - Relative Percent Difference , CL - Control Limit

Calscience Environmental Laboratories, Inc.

Quality Control - LCS/LCS Duplicate

ACCREDITED IN ACCORDANCE WITH nelac

Regenesis		Date Received:	N/A
1011 Calle Sombra		Work Order No:	12-03-0498
San Clemente, CA 92673-4204		Preparation:	EPA 5030C
		Method:	EPA 8015B (M)

Project: Antea Oakland

Quality Control Sample ID	Matrix	Instrument	Date Prepared	Date Analyzed	LCS/LCSD Batch Number
099-12-436-7,207	**Aqueous**	**GC 22**	**03/08/12**	**03/09/12**	**120308B02**

Parameter	SPIKE ADDED	LCS %REC	LCSD %REC	%REC CL	RPD	RPD CL	Qualifiers
TPH as Gasoline	2000	93	95	78-120	2	0-10	

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RPD - Relative Percent Difference , CL - Control Limit

Calscience Environmental Laboratories, Inc.

Quality Control - LCS/LCS Duplicate

ACCREDITED IN ACCORDANCE WITH nelac

Regenesis
1011 Calle Sombra
San Clemente, CA 92673-4204

Date Received: N/A
Work Order No: 12-03-0498
Preparation: EPA 5030C
Method: EPA 8260B

Project: Antea Oakland

Quality Control Sample ID	Matrix	Instrument	Date Prepared	Date Analyzed	LCS/LCSD Batch Number
099-14-001-7,214	**Aqueous**	**GC/MS JJ**	**03/08/12**	**03/08/12**	**120308L01**

Parameter	SPIKE ADDED	LCS %REC	LCSD %REC	%REC CL	ME_CL	RPD	RPD CL	Qualifiers
Benzene	50.00	103	100	80-120	73-127	3	0-20	
Carbon Tetrachloride	50.00	108	106	66-138	54-150	2	0-20	
Chlorobenzene	50.00	98	95	80-120	73-127	3	0-20	
1,2-Dibromoethane	50.00	104	102	80-120	73-127	2	0-20	
1,2-Dichlorobenzene	50.00	99	96	80-120	73-127	3	0-20	
1,2-Dichloroethane	50.00	109	106	80-129	72-137	3	0-20	
1,1-Dichloroethene	50.00	108	105	71-131	61-141	3	0-20	
Ethylbenzene	50.00	103	100	80-123	73-130	4	0-20	
Toluene	50.00	103	100	79-121	72-128	3	0-20	
Trichloroethene	50.00	106	102	80-120	73-127	4	0-20	
Vinyl Chloride	50.00	114	112	70-136	59-147	2	0-20	
Methyl-t-Butyl Ether (MTBE)	50.00	97	97	72-126	63-135	0	0-22	
Tert-Butyl Alcohol (TBA)	250.0	106	96	71-125	62-134	10	0-25	
Diisopropyl Ether (DIPE)	50.00	103	102	69-129	59-139	1	0-20	
Ethyl-t-Butyl Ether (ETBE)	50.00	97	98	69-129	59-139	1	0-20	
Tert-Amyl-Methyl Ether (TAME)	50.00	101	101	67-133	56-144	0	0-20	
Ethanol	500.0	119	101	47-155	29-173	16	0-36	

Total number of LCS compounds : 17
Total number of ME compounds : 0
Total number of ME compounds allowed : 1
LCS ME CL validation result : Pass

Return to Contents

RPD - Relative Percent Difference , CL - Control Limit

Calscience Environmental Laboratories, Inc.

Quality Control - LCS/LCS Duplicate

ACCREDITED IN ACCORDANCE WITH nelac

Regenesis		Date Received:	N/A
1011 Calle Sombra		Work Order No:	12-03-0498
San Clemente, CA 92673-4204		Preparation:	EPA 5030C
		Method:	EPA 8260B

Project: Antea Oakland

Quality Control Sample ID	Matrix	Instrument	Date Prepared	Date Analyzed	LCS/LCSD Batch Number
099-14-001-7,212	**Aqueous**	**GC/MS WW**	**03/08/12**	**03/08/12**	**120308L01**

Parameter	SPIKE ADDED	LCS %REC	LCSD %REC	%REC CL	ME_CL	RPD	RPD CL	Qualifiers
Benzene	50.00	98	106	80-120	73-127	8	0-20	
Carbon Tetrachloride	50.00	95	96	66-138	54-150	1	0-20	
Chlorobenzene	50.00	112	111	80-120	73-127	1	0-20	
1,2-Dibromoethane	50.00	107	103	80-120	73-127	4	0-20	
1,2-Dichlorobenzene	50.00	115	116	80-120	73-127	0	0-20	
1,2-Dichloroethane	50.00	104	110	80-129	72-137	5	0-20	
1,1-Dichloroethene	50.00	116	115	71-131	61-141	1	0-20	
Ethylbenzene	50.00	104	102	80-123	73-130	2	0-20	
Toluene	50.00	106	107	79-121	72-128	1	0-20	
Trichloroethene	50.00	104	104	80-120	73-127	0	0-20	
Vinyl Chloride	50.00	126	122	70-136	59-147	3	0-20	
Methyl-t-Butyl Ether (MTBE)	50.00	95	93	72-126	63-135	2	0-22	
Tert-Butyl Alcohol (TBA)	250.0	105	95	71-125	62-134	10	0-25	
Diisopropyl Ether (DIPE)	50.00	99	99	69-129	59-139	1	0-20	
Ethyl-t-Butyl Ether (ETBE)	50.00	93	93	69-129	59-139	1	0-20	
Tert-Amyl-Methyl Ether (TAME)	50.00	99	100	67-133	56-144	1	0-20	
Ethanol	500.0	139	128	47-155	29-173	8	0-36	

Total number of LCS compounds : 17
Total number of ME compounds : 0
Total number of ME compounds allowed : 1
LCS ME CL validation result : Pass

Return to Contents

RPD - Relative Percent Difference , CL - Control Limit

Calscience Environmental Laboratories, Inc.

Quality Control - LCS/LCS Duplicate

ACCREDITED IN ACCORDANCE WITH nelac

Regenesis		Date Received:	N/A
1011 Calle Sombra		Work Order No:	12-03-0498
San Clemente, CA 92673-4204		Preparation:	EPA 5030C
		Method:	EPA 8260B

Project: Antea Oakland

Quality Control Sample ID	Matrix	Instrument	Date Prepared	Date Analyzed	LCS/LCSD Batch Number
099-14-001-7,225	**Aqueous**	**GC/MS RR**	**03/09/12**	**03/09/12**	**120309L01**

Parameter	SPIKE ADDED	LCS %REC	LCSD %REC	%REC CL	ME_CL	RPD	RPD CL	Qualifiers
Benzene	50.00	99	100	80-120	73-127	1	0-20	
Carbon Tetrachloride	50.00	119	118	66-138	54-150	1	0-20	
Chlorobenzene	50.00	100	101	80-120	73-127	1	0-20	
1,2-Dibromoethane	50.00	102	104	80-120	73-127	2	0-20	
1,2-Dichlorobenzene	50.00	99	103	80-120	73-127	4	0-20	
1,2-Dichloroethane	50.00	113	115	80-129	72-137	2	0-20	
1,1-Dichloroethene	50.00	95	94	71-131	61-141	1	0-20	
Ethylbenzene	50.00	107	108	80-123	73-130	1	0-20	
Toluene	50.00	102	102	79-121	72-128	1	0-20	
Trichloroethene	50.00	106	105	80-120	73-127	1	0-20	
Vinyl Chloride	50.00	105	103	70-136	59-147	1	0-20	
Methyl-t-Butyl Ether (MTBE)	50.00	98	101	72-126	63-135	3	0-22	
Tert-Butyl Alcohol (TBA)	250.0	99	92	71-125	62-134	7	0-25	
Diisopropyl Ether (DIPE)	50.00	96	97	69-129	59-139	1	0-20	
Ethyl-t-Butyl Ether (ETBE)	50.00	100	100	69-129	59-139	0	0-20	
Tert-Amyl-Methyl Ether (TAME)	50.00	99	104	67-133	56-144	5	0-20	
Ethanol	500.0	83	78	47-155	29-173	5	0-36	

Total number of LCS compounds : 17
Total number of ME compounds : 0
Total number of ME compounds allowed : 1
LCS ME CL validation result : Pass

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RPD - Relative Percent Difference , CL - Control Limit

Calscience Environmental Laboratories, Inc.

Quality Control - LCS/LCS Duplicate

ACCREDITED IN ACCORDANCE WITH nelac

Regenesis
1011 Calle Sombra
San Clemente, CA 92673-4204

Date Received: N/A
Work Order No: 12-03-0498

Project: Antea Oakland

Matrix: Aqueous or Solid

Parameter	Method	Quality Control Sample ID	Date Extracted	Date Analyzed	LCS % REC	LCSD % REC	%REC CL	RPD	RPD CL	Qual
Carbon, Total Organic	SM 5310 B	099-05-097-4,535	N/A	03/09/12	99	101	80-120	2	0-20	

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RPD - Relative Percent Difference , CL - Control Limit

Calscience Environmental Laboratories, Inc.

Glossary of Terms and Qualifiers

ACCREDITED IN ACCORDANCE WITH nelac

Work Order Number: 12-03-0498

Qualifier	Definition
*	See applicable analysis comment.
<	Less than the indicated value.
>	Greater than the indicated value.
1	Surrogate compound recovery was out of control due to a required sample dilution. Therefore, the sample data was reported without further clarification.
2	Surrogate compound recovery was out of control due to matrix interference. The associated method blank surrogate spike compound was in control and, therefore, the sample data was reported without further clarification.
3	Recovery of the Matrix Spike (MS) or Matrix Spike Duplicate (MSD) compound was out of control due to matrix interference. The associated LCS and/or LCSD was in control and, therefore, the sample data was reported without further clarification.
4	The MS/MSD RPD was out of control due to matrix interference. The LCS/LCSD RPD was in control and, therefore, the sample data was reported without further clarification.
5	The PDS/PDSD or PES/PESD associated with this batch of samples was out of control due to a matrix interference effect. The associated batch LCS/LCSD was in control and, hence, the associated sample data was reported without further clarification.
6	Surrogate recovery below the acceptance limit.
7	Surrogate recovery above the acceptance limit.
B	Analyte was present in the associated method blank.
BU	Sample analyzed after holding time expired.
E	Concentration exceeds the calibration range.
ET	Sample was extracted past end of recommended max. holding time.
HD	The chromatographic pattern was inconsistent with the profile of the reference fuel standard.
HDH	The sample chromatographic pattern for TPH matches the chromatographic pattern of the specified standard but heavier hydrocarbons were also present (or detected).
HDL	The sample chromatographic pattern for TPH matches the chromatographic pattern of the specified standard but lighter hydrocarbons were also present (or detected).
J	Analyte was detected at a concentration below the reporting limit and above the laboratory method detection limit. Reported value is estimated.
ME	LCS/LCSD Recovery Percentage is within Marginal Exceedance (ME) Control Limit range.
ND	Parameter not detected at the indicated reporting limit.
Q	Spike recovery and RPD control limits do not apply resulting from the parameter concentration in the sample exceeding the spike concentration by a factor of four or greater.
SG	The sample extract was subjected to Silica Gel treatment prior to analysis.
X	% Recovery and/or RPD out-of-range.
Z	Analyte presence was not confirmed by second column or GC/MS analysis.

Solid - Unless otherwise indicated, solid sample data is reported on a wet weight basis, not corrected for % moisture. All QC results are reported on a wet weight basis.
MPN - Most Probable Number

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Calscience Environmental Laboratories, Inc.
7440 LINCOLN WAY
GARDEN GROVE, CA 92841-1427
TEL: (714) 895-5494 . FAX: (714) 894-7501

CHAIN OF CUSTODY RECORD

DATE: 3.7.12

PAGE: 1 OF 2

LABORATORY CLIENT: Regenesis

ADDRESS: 1011 Calle Sombra

CITY: San Clemente STATE: CA ZIP: 92673

TEL: 949.366.8000 FAX: 949.366.8090 E-MAIL: jgravitt@regenesis.com

CLIENT PROJECT NAME / NUMBER: Antea Oakland

P.O. NO.:

PROJECT CONTACT: Joy Gravitt

LAB CONTACT OR QUOTE NO.: Alan Kemp

SAMPLER(S): (SIGNATURE) Blaine Env. Ben Powell & Mark McCulloch

LAB USE ONLY: 12-03-0498

TURNAROUND TIME:
☐ SAME DAY ☐ 24 HR ☒ 48 HR ☐ 72 HR ☐ 5 DAYS ☐ 10 DAYS

SPECIAL REQUIREMENTS (ADDITIONAL COSTS MAY APPLY)
☐ RWQCB REPORTING ☐ ARCHIVE SAMPLES UNTIL ___/___/___

SPECIAL INSTRUCTIONS:
Please see Joy Gravitt for questions or concerns.
*Required Oxygenates: BTEX, MTBE, TBA, ETBE, TAME, DIPE, EDB, ethanol, 1,2-DCA

REQUESTED ANALYSIS

LAB USE ONLY	SAMPLE ID	LOCATION / DESCRIPTION	SAMPLING DATE	SAMPLING TIME	MATRIX	NO. OF CONT.	TPH-g (EPA 8015)	BTEX/Oxygenates* (EPA 8260)	Nitrate/Sulfate (EPA 300.0)	Total Iron (EPA 6010B)	Dissolved Iron (EPA 6010B)	Sulfide (SM4500S2D)	Methane (RSK-175)	TOC (SM5310D)	COD (SM5220D)	Alkalinity (SM2320B)
1	MW-4		3.7.12	9:00	GW	3	X									
2	MW-4					3		X								
3	MW-4					2							X			
4	MW-4					1								X	X	
5	MW-4					1				X						
6	MW-4					1					X					
7	MW-4					1										X
8	MW-4					1						X				
9																
10																

Relinquished by: (Signature)	Received by: (Signature) CEL	Date: 3-7-12	Time: 1530
Relinquished by: (Signature) TW GSD 3/7/12 1830	Received by: (Signature)	Date:	Time:
Relinquished by: (Signature)	Received by: (Signature)	Date: 3/8/12	Time: 1030

06/01/10 Revision

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Calscience Environmental Laboratories, Inc.
7440 LINCOLN WAY
GARDEN GROVE, CA 92841-1427
TEL: (714) 895-5494 . FAX: (714) 894-7501

CHAIN OF CUSTODY RECORD

DATE: 03.07.12
PAGE: 2 OF 2

LABORATORY CLIENT: Regenesis
ADDRESS: 1011 Calle Sombra
CITY: San Clemente STATE: CA ZIP: 92673
TEL: 949.366.8000 FAX: 949.366.8090 E-MAIL: jgravitt@regenesis.com

CLIENT PROJECT NAME / NUMBER: Antea Oakland
P.O. NO.:
PROJECT CONTACT: Joy Gravitt
LAB CONTACT OR QUOTE NO.: Alan Kemp
SAMPLER(S): (SIGNATURE) Joel G. Virdner
LAB USE ONLY: 03-0497 8

TURNAROUND TIME:
☐ SAME DAY ☐ 24 HR ☒ 48 HR ☐ 72 HR ☐ 5 DAYS ☐ 10 DAYS

SPECIAL REQUIREMENTS (ADDITIONAL COSTS MAY APPLY)
☐ RWQCB REPORTING ☐ ARCHIVE SAMPLES UNTIL ____/____/____

SPECIAL INSTRUCTIONS:
Please see Joy Gravitt for questions or concerns.
*Required Oxygenates: BTEX, MTBE, TBA, ETBE, TAME, DIPE, EDB, ethanol, 1,2-DCA

REQUESTED ANALYSIS

LAB USE ONLY	SAMPLE ID	LOCATION / DESCRIPTION	SAMPLING DATE	SAMPLING TIME	MATRIX	NO. OF CONT.	TPH-g (EPA 8015)	BTEX/Oxygenates* (EPA 8260)	Nitrate/Sulfate (EPA 300.0)	Total Iron (EPA 6010B)	Dissolved Iron (EPA 6010B)	Sulfide (SM4500S2D)	Methane (RSK-175)	TOC (SM5310D)	COD (SM5220D)	Alkalinity (SM2320B)	Comments
2	DPT-1-36	adj AS-1	3.7.12	10:45	GW	3	X										
	DPT-1-36	adj AS-1	3.7.12	10:45	GW	3		X									
	DPT-2-32	planter	3.7.12	1:20	GW	3	X										
3	DPT-2-32	planter	3.7.12	1:20	GW	3		X									
	DPT-2-32	planter	3.7.12	1:20	GW	1							X				Add MeOH before run: mpy
	DPT-2-40	planter	3.7.12	2:05	GW	3	X										
4	DPT-2-40	planter	3.7.12	2:05	GW	3		X									
	DPT-2-40	planter	3.7.12	2:05	GW	1							X				

Relinquished by: (Signature)	Received by: (Signature) CEL	Date: 3/7/12	Time: 1530
Relinquished by: (Signature) CSD 3/7/12 1730	Received by: (Signature)	Date:	Time:
Relinquished by: (Signature)	Received by: (Signature)	Date: 3/8/12	Time: 1030

06/01/10 Revision

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GSO GOLDEN STATE OVERNIGHT

WebShip 800-322-5555 www.gso.com

0498

Ship From:
ALAN KEMP
CAL SCIENCE- CONCORD
5063 COMMERCIAL CIRCLE #H
CONCORD, CA 94520

Ship To:
SAMPLE RECEIVING
CEL
7440 LINCOLN WAY
GARDEN GROVE, CA 92841

COD:
$0.00

Reference:
YOLO, CRA, PEGENESIS
Delivery Instructions:

Signature Type:
SIGNATURE REQUIRED

Tracking #: 518618824

NPS

ORC **A**

GARDEN GROVE

D92841A

99256531

Print Date : 03/07/12 16:50 PM

Package 2 of 2

Send Label To Printer | ☑ Print All | Edit Shipment | Finish

LABEL INSTRUCTIONS:

Do not copy or reprint this label for additional shipments - each package must have a unique barcode.

STEP 1 - Use the "Send Label to Printer" button on this page to print the shipping label on a laser or inkjet printer.
STEP 2 - Fold this page in half.
STEP 3 - Securely attach this label to your package, do not cover the barcode.
STEP 4 - Request an on-call pickup for your package, if you do not have scheduled daily pickup service or Drop-off your package at the nearest GSO drop box. Locate nearest GSO dropbox locations using this link.

ADDITIONAL OPTIONS:

Send Label Via Email | Create Return Label

TERMS AND CONDITIONS:

By giving us your shipment to deliver, you agree to all the service terms and conditions described in this section. Our liability for loss or damage to any package is limited to your actual damages or $100 whichever is less, unless you pay for and declare a higher authorized value. If you declare a higher value and pay the additional charge, our liability will be the lesser of your declared value or the actual value of your loss or damage. In any event, we will not be liable for any damage, whether direct, incidental, special or consequential, in excess of the declared value of a shipment whether or not we had knowledge that such damage might be incurred including but not limited to loss of income or profit. We will not be liable for your acts or omissions, including but not limited to improper or insufficient packaging, securing, marking or addressing. Also, we will not be liable if you or the recipient violates any of the terms of our agreement. We will not be liable for loss, damage or delay caused by events we cannot control, including but not limited to acts of God, perils of the air, weather conditions, act of public enemies, war, strikes, or civil commotion. The highest declared value for our GSO Priority Letter or GSO Priority Package is $500. For other shipments the highest declared value is $10,000 unless your package contains items of "extraordinary value", in which case the highest declared value we allow is $500. Items of "extraordinary value" include, but or not limited to, artwork, jewelry, furs, precious metals, tickets, negotiable instruments and other items with intrinsic value.

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Calscience Environmental Laboratories, Inc.

WORK ORDER #: 12-03-0498

SAMPLE RECEIPT FORM

Cooler 1 of 1

CLIENT: Regenesis DATE: 03/08/12

TEMPERATURE: Thermometer ID: SC3 (Criteria: 0.0 °C – 6.0 °C, not frozen)

Temperature 2.2 °C - 0.3 °C (CF) = 1.9 °C ☑ Blank ☐ Sample

☐ Sample(s) outside temperature criteria (PM/APM contacted by: _____).

☐ Sample(s) outside temperature criteria but received on ice/chilled on same day of sampling.

☐ **Received at ambient temperature, placed on ice for transport by Courier.**

Ambient Temperature: ☐ Air ☐ Filter Initial: _____

CUSTODY SEALS INTACT:

☑ Cooler ☐_____ ☐ No (Not Intact) ☐ Not Present ☐ N/A Initial: _____

☐ Sample ☐_____ ☐ No (Not Intact) ☑ Not Present Initial: _____

SAMPLE CONDITION:	Yes	No	N/A
Chain-Of-Custody (COC) document(s) received with samples	☑	☐	☐
COC document(s) received complete	☑	☐	☐
☐ Collection date/time, matrix, and/or # of containers logged in based on sample labels.			
☐ No analysis requested. ☐ Not relinquished. ☐ No date/time relinquished.			
Sampler's name indicated on COC	☑	☐	☐
Sample container label(s) consistent with COC	☑	☐	☐
Sample container(s) intact and good condition	☑	☐	☐
Proper containers and sufficient volume for analyses requested	☑	☐	☐
Analyses received within holding time	☑	☐	☐
pH / Res. Chlorine / Diss. Sulfide / Diss. Oxygen received within 24 hours	☐	☐	☑
Proper preservation noted on COC or sample container	☐	☑	☐
☐ Unpreserved vials received for Volatiles analysis			
Volatile analysis container(s) free of headspace	☐	☑	☐
Tedlar bag(s) free of condensation	☐	☐	☑

CONTAINER TYPE:

Solid: ☐4ozCGJ ☐8ozCGJ ☐16ozCGJ ☐Sleeve (_____) ☐EnCores® ☐TerraCores® ☐_____

Water: ☐VOA ☑VOA**h** ☐VOA**na$_2$** ☐125AGB ☐125AGB**h** ☐125AGB**p** ☐1AGB ☐1AGB**na$_2$** ☐1AGB**s**

☐500AGB ☐500AGJ ☐500AGJ**s** ☐250AGB ☐250CGB ☑250CGB**s** ☐1PB ☐1PB**na** ☐500PB

☑250PB ☐250PB**n** ☐125PB ☑125PB**znna** ☐100PJ ☐100PJ**na$_2$** ☑250PB**f** ☐_____ ☐_____

Air: ☐Tedlar® ☐Summa® **Other:** ☐_____ **Trip Blank Lot#:**_____ **Labeled/Checked by:** D.L

Container: **C:** Clear **A:** Amber **P:** Plastic **G:** Glass **J:** Jar **B:** Bottle **Z:** Ziploc/Resealable Bag **E:** Envelope **Reviewed by:** JDL

Preservative: **h:** HCL **n:** HNO_3 **na$_2$:**$Na_2S_2O_3$ **na:** NaOH **p:** H_3PO_4 **s:** H_2SO_4 **u:** Ultra-pure **znna:** $ZnAc_2$+NaOH **f:** Filtered **Scanned by:** _____

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Calscience Environmental Laboratories, Inc.

WORK ORDER #: 12-03-0498

SAMPLE ANOMALY FORM

SAMPLES - CONTAINERS & LABELS:

- ☐ **Sample(s) NOT RECEIVED but listed on COC**
- ☐ **Sample(s) received but NOT LISTED on COC**
- ☐ **Holding time expired** – list sample ID(s) and test
- ☐ **Insufficient quantities for analysis** – list test
- ☐ **Improper container(s) used** – list test
- ☑ **Improper preservative used** – list test
- ☐ **No preservative noted on COC or label** – list test & notify lab
- ☐ **Sample labels illegible** – note test/container type
- ☐ **Sample label(s) do not match COC** – Note in comments
  - ☐ **Sample ID**
  - ☐ **Date and/or Time Collected**
  - ☐ **Project Information**
  - ☐ **# of Container(s)**
  - ☐ **Analysis**
- ☐ **Sample container(s) compromised** – Note in comments
  - ☐ **Water present in sample container**
  - ☐ **Broken**
- ☐ **Sample container(s) not labeled**
- ☐ **Air sample container(s) compromised** – Note in comments
  - ☐ **Flat**
  - ☐ **Very low in volume**
  - ☐ **Leaking (Not transferred - duplicate bag submitted)**
  - ☐ **Leaking (transferred into Calscience Tedlar® Bag*)**
  - ☐ **Leaking (transferred into Client's Tedlar® Bag*)**
- ☐ **Other:** _____

Comments:

(-1) received Dissolved Metals filtered but not preserved.

HEADSPACE – Containers with Bubble > 6mm or ¼ inch:

Sample #	Container ID(s)	# of Vials Received	Sample #	Container ID(s)	# of Vials Received	Sample #	Container ID(s)	# of Cont. received	Analysis
3	C, E, F	7							

Comments: _____

*Transferred at Client's request.

Initial / Date: DL 03/08/12

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Is the Data Set Valid?	Preservation Temperature
(circle) **Yes / No**	*(if Known)*: 2.7 ºC

Antea™Group Laboratory Data Validation Sheet

Project/Client: COP ELT #11117

Project #: E426 11117

Date of Validation: 6/7/12 **Date of Analysis:** 4/28/12-5/1/12

Sample Date: 4/27/12 **Completed By:** JOSH WOLFF

Signature:

Circle or Highlight Yes / No (below)

Analytical Lab Used and Report # (if any): Calscience lab report # 12-04-1763

1.	Were the analyses the ones requested?	**Yes** / No
2.	Do the sample number(s) on the chain-of-custody (COC) match the one(s) that appear on the laboratory data sheet?	**Yes** / No
3.	Were samples prepared (extracted, filtered, etc.) within EPA holding times?	**Yes** / No
4.	Once prepared/extracted, were the samples analyzed within the EPA holding times?	**Yes** / No
5.	Were Laboratory blanks performed, if so, were they non-detect?	**Yes** / No
6.	Are the units correct? (i.e., soil samples in mg/kg or ug/g, water samples mg/L, ug/L, and air samples in volume mg/m^3,etc.)	**Yes** / No
7.	Were appropriate Matrix Spike (MS) and Matrix Spike Duplicate (MSD) samples included in the laboratory batch sample?	Yes / **No**
8.	In lieu of MS/ MSD, were surrogate spike (SS) or surrogate spike duplicate (SSD) samples included in the laboratory batch samples?	**Yes** / No
9.	Were MS/ MSD (or SS/SSD) within the acceptable range of % recovery (i.e., approximately 80-120%, depending on the analyte)?	**Yes** / No
10.	Were MS/MSD (or SS/SSD) values used to calculate Relative Percent Difference (RPD)?	**Yes** / No
11.	Were Relative Percent Difference values within the acceptable range (i.e. ±25%)?	**Yes** / No

If any answer is no, explain why and what corrective action was taken (use additional sheet(s), as necessary:

Data Qualifiers:

Calscience Environmental Laboratories, Inc.

CALSCIENCE

WORK ORDER NUMBER: 12-04-1763

The difference is service



AIR | SOIL | WATER | MARINE CHEMISTRY

Analytical Report For

Client: Regenesis

Client Project Name: Antea Oakland - Bancroft Ave.

Attention: Joy Gravitt
1011 Calle Sombra
San Clemente, CA 92673-4204

Approved for release on 05/7/2012 by:
Richard Villafania
Project Manager

ResultLink

Email your PM

Calscience Environmental Laboratories, Inc. (Calscience) certifies that the test results provided in this report meet all NELAC requirements for parameters for which accreditation is required or available. Any exceptions to NELAC requirements are noted in the case narrative. The original report of subcontracted analyses, if any, is attached to this report. The results in this report are limited to the sample(s) tested and any reproduction thereof must be made in its entirety. The client or recipient of this report is specifically prohibited from making material changes to said report and, to the extent that such changes are made, Calscience is not responsible, legally or otherwise. The client or recipient agrees to indemnify Calscience for any defense to any litigation which may arise.

Calscience Environmental Laboratories, Inc.

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Work Order Number: 12-04-1763

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Calscience Environmental Laboratories, Inc.

Client:	Regenesis	Work Order:	12-04-1763
	1011 Calle Sombra	Project name:	Antea Oakland - Bancroft Ave.
	San Clemente, CA 92673-4204	Received:	04/28/12 09:30
Attn:	Joy Gravitt		

DETECTIONS SUMMARY

Client Sample ID Analyte	Result	Qualifiers	Reporting Limit	Units	Method	Extraction
MW-4 (12-04-1763-1)						
Methane	**5020**		20.0	ug/L	RSK-175M	N/A
Iron	**4.89**		0.100	mg/L	EPA 6010B	EPA 3010A Total
Iron	**2.23**		0.100	mg/L	EPA 6010B	EPA 3005A Filt.
Sulfate	**13**		1.0	mg/L	EPA 300.0	N/A
Alkalinity, Total (as CaCO3)	**742**		5.00	mg/L	SM 2320B	N/A
Chemical Oxygen Demand	**120**		5.0	mg/L	EPA 410.4	N/A
Sulfide, Total	**0.20**		0.050	mg/L	SM 4500 S2 - D	N/A
Carbon, Total Organic	**25**		2.5	mg/L	SM 5310 B	N/A
TPH as Gasoline	**17000**		250	ug/L	EPA 8015B (M)	EPA 5030C
Benzene	**2800**		12	ug/L	EPA 8260B	EPA 5030C
Ethylbenzene	**1500**		25	ug/L	EPA 8260B	EPA 5030C
Toluene	**490**		25	ug/L	EPA 8260B	EPA 5030C
p/m-Xylene	**2500**		25	ug/L	EPA 8260B	EPA 5030C
o-Xylene	**730**		25	ug/L	EPA 8260B	EPA 5030C
Methyl-t-Butyl Ether (MTBE)	**370**		25	ug/L	EPA 8260B	EPA 5030C
Tert-Butyl Alcohol (TBA)	**2900**		250	ug/L	EPA 8260B	EPA 5030C

Subcontracted analyses, if any, are not included in this summary.

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*MDL is shown.

Calscience Environmental Laboratories, Inc.

Analytical Report

ACCREDITED IN ACCORDANCE WITH nelac

Regenesis		Date Received:	04/28/12
1011 Calle Sombra		Work Order No:	12-04-1763
San Clemente, CA 92673-4204		Preparation:	N/A
		Method:	RSK-175M

Project: Antea Oakland - Bancroft Ave.

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
MW-4	**12-04-1763-1-G**	**04/27/12 09:00**	**Aqueous**	**GC 61**	**N/A**	**04/28/12 15:35**	**120428L01**

Parameter	Result	RL	DF	Qual	Units
Methane	5020	20.0	20		ug/L

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
Method Blank	**099-12-663-1,586**	**N/A**	**Aqueous**	**GC 61**	**N/A**	**04/28/12 10:25**	**120428L01**

Parameter	Result	RL	DF	Qual	Units
Methane	ND	1.00	1		ug/L

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RL - Reporting Limit , DF - Dilution Factor , Qual - Qualifiers

Calscience Environmental Laboratories, Inc.

Analytical Report

ACCREDITED IN ACCORDANCE WITH nelac

Regenesis
1011 Calle Sombra
San Clemente, CA 92673-4204

Date Received: 04/28/12
Work Order No: 12-04-1763
Preparation: EPA 5030C
Method: EPA 8015B (M)

Project: Antea Oakland - Bancroft Ave.

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
MW-4	**12-04-1763-1-E**	**04/27/12 09:00**	**Aqueous**	**GC 25**	**05/01/12**	**05/01/12 23:19**	**120501B01**

Parameter	Result	RL	DF	Qual	Units
TPH as Gasoline	17000	250	5		ug/L

Surrogates:	REC (%)	Control Limits	Qual
1,4-Bromofluorobenzene	103	38-134	

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
Method Blank	**099-12-436-7,384**	**N/A**	**Aqueous**	**GC 25**	**05/01/12**	**05/01/12 12:37**	**120501B01**

Parameter	Result	RL	DF	Qual	Units
TPH as Gasoline	ND	50	1		ug/L

Surrogates:	REC (%)	Control Limits	Qual
1,4-Bromofluorobenzene	67	38-134	

Return to Contents

RL - Reporting Limit , DF - Dilution Factor , Qual - Qualifiers

Calscience Environmental Laboratories, Inc.

Analytical Report

ACCREDITED IN ACCORDANCE WITH nelac

Regenesis		Date Received:	04/28/12
1011 Calle Sombra		Work Order No:	12-04-1763
San Clemente, CA 92673-4204		Preparation:	EPA 5030C
		Method:	EPA 8260B
		Units:	ug/L

Project: Antea Oakland - Bancroft Ave.

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
MW-4	**12-04-1763-1-A**	**04/27/12 09:00**	**Aqueous**	**GC/MS FFF**	**04/28/12**	**04/28/12 12:45**	**120428L01**

Parameter	Result	RL	DF	Qual	Parameter	Result	RL	DF	Qual
Benzene	2800	12	25		Methyl-t-Butyl Ether (MTBE)	370	25	25	
1,2-Dibromoethane	ND	25	25		Tert-Butyl Alcohol (TBA)	2900	250	25	
1,2-Dichloroethane	ND	12	25		Diisopropyl Ether (DIPE)	ND	50	25	
Ethylbenzene	1500	25	25		Ethyl-t-Butyl Ether (ETBE)	ND	50	25	
Toluene	490	25	25		Tert-Amyl-Methyl Ether (TAME)	ND	50	25	
p/m-Xylene	2500	25	25		Ethanol	ND	2500	25	
o-Xylene	730	25	25						

Surrogates:	REC (%)	Control Limits	Qual	Surrogates:	REC (%)	Control Limits	Qual
1,4-Bromofluorobenzene	99	80-120		Dibromofluoromethane	86	80-126	
1,2-Dichloroethane-d4	87	80-134		Toluene-d8	99	80-120	

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
Method Blank	**099-14-001-7,662**	**N/A**	**Aqueous**	**GC/MS FFF**	**04/28/12**	**04/28/12 11:36**	**120428L01**

Parameter	Result	RL	DF	Qual	Parameter	Result	RL	DF	Qual
Benzene	ND	0.50	1		Methyl-t-Butyl Ether (MTBE)	ND	1.0	1	
1,2-Dibromoethane	ND	1.0	1		Tert-Butyl Alcohol (TBA)	ND	10	1	
1,2-Dichloroethane	ND	0.50	1		Diisopropyl Ether (DIPE)	ND	2.0	1	
Ethylbenzene	ND	1.0	1		Ethyl-t-Butyl Ether (ETBE)	ND	2.0	1	
Toluene	ND	1.0	1		Tert-Amyl-Methyl Ether (TAME)	ND	2.0	1	
p/m-Xylene	ND	1.0	1		Ethanol	ND	100	1	
o-Xylene	ND	1.0	1						

Surrogates:	REC (%)	Control Limits	Qual	Surrogates:	REC (%)	Control Limits	Qual
1,4-Bromofluorobenzene	99	80-120		Dibromofluoromethane	85	80-126	
1,2-Dichloroethane-d4	88	80-134		Toluene-d8	98	80-120	

Return to Contents

RL - Reporting Limit , DF - Dilution Factor , Qual - Qualifiers

Calscience Environmental Laboratories, Inc.

Analytical Report

ACCREDITED IN ACCORDANCE WITH nelac

Regenesis
1011 Calle Sombra
San Clemente, CA 92673-4204

Date Received: 04/28/12
Work Order No: 12-04-1763
Preparation: EPA 3005A Filt.
Method: EPA 6010B

Project: Antea Oakland - Bancroft Ave.

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
MW-4	**12-04-1763-1-L**	**04/27/12 09:00**	**Aqueous**	**ICP 5300**	**04/30/12**	**05/01/12 12:55**	**120430LA3F**

Parameter	Result	RL	DF	Qual	Units
Iron	2.23	0.100	1		mg/L

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
Method Blank	**097-01-003-12,591**	**N/A**	**Aqueous**	**ICP 5300**	**04/30/12**	**05/01/12 16:31**	**120430LA3F**

Parameter	Result	RL	DF	Qual	Units
Iron	ND	0.100	1		mg/L

Return to Contents

RL - Reporting Limit , DF - Dilution Factor , Qual - Qualifiers

Calscience Environmental Laboratories, Inc.

Analytical Report

ACCREDITED IN ACCORDANCE WITH nelac

Regenesis
1011 Calle Sombra
San Clemente, CA 92673-4204

Date Received: 04/28/12
Work Order No: 12-04-1763
Preparation: EPA 3010A Total
Method: EPA 6010B

Project: Antea Oakland - Bancroft Ave.

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
MW-4	**12-04-1763-1-K**	**04/27/12 09:00**	**Aqueous**	**ICP 5300**	**04/30/12**	**05/01/12 12:56**	**120430LA3**

Parameter	Result	RL	DF	Qual	Units
Iron	4.89	0.100	1		mg/L

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
Method Blank	**097-01-003-12,590**	**N/A**	**Aqueous**	**ICP 5300**	**04/30/12**	**05/01/12 11:44**	**120430LA3**

Parameter	Result	RL	DF	Qual	Units
Iron	ND	0.100	1		mg/L

Return to Contents

RL - Reporting Limit , DF - Dilution Factor , Qual - Qualifiers

Calscience Environmental Laboratories, Inc.

Analytical Report

ACCREDITED IN ACCORDANCE WITH nelac

Regenesis
1011 Calle Sombra
San Clemente, CA 92673-4204

Date Received: 04/28/12
Work Order No: 12-04-1763

Project: Antea Oakland - Bancroft Ave.

Client Sample Number	Lab Sample Number	Date Collected	Matrix
MW-4	**12-04-1763-1**	**04/27/12**	**Aqueous**

Parameter	Results	RL	DF	Qual	Units	Date Prepared	Date Analyzed	Method
Nitrate (as N)	ND	0.10	1		mg/L	N/A	04/28/12	EPA 300.0
Sulfate	13	1.0	1		mg/L	N/A	04/28/12	EPA 300.0
Chemical Oxygen Demand	120	5.0	1		mg/L	05/02/12	05/02/12	EPA 410.4
Alkalinity, Total (as CaCO3)	742	5.00	1		mg/L	N/A	04/30/12	SM 2320B
Sulfide, Total	0.20	0.050	1		mg/L	05/01/12	05/01/12	SM 4500 S2 - D
Carbon, Total Organic	25	2.5	5		mg/L	04/30/12	04/30/12	SM 5310 B

Method Blank					**N/A**	**Aqueous**		

Parameter	Results	RL	DF	Qual	Units	Date Prepared	Date Analyzed	Method
Nitrate (as N)	ND	0.10	1		mg/L	N/A	04/28/12	EPA 300.0
Sulfate	ND	1.0	1		mg/L	N/A	04/28/12	EPA 300.0
Chemical Oxygen Demand	ND	5.0	1		mg/L	05/02/12	05/02/12	EPA 410.4
Alkalinity, Total (as CaCO3)	ND	1.0	1		mg/L	N/A	04/30/12	SM 2320B
Sulfide, Total	ND	0.050	1		mg/L	05/01/12	05/01/12	SM 4500 S2 - D
Carbon, Total Organic	ND	0.50	1		mg/L	04/30/12	04/30/12	SM 5310 B

Return to Contents

RL - Reporting Limit , DF - Dilution Factor , Qual - Qualifiers

Calscience Environmental Laboratories, Inc.

Quality Control - Duplicate

ACCREDITED IN ACCORDANCE WITH nelac

Regenesis		Date Received:	04/28/12
1011 Calle Sombra		Work Order No:	12-04-1763
San Clemente, CA 92673-4204		Preparation:	N/A
		Method:	RSK-175M

Project: Antea Oakland - Bancroft Ave.

Quality Control Sample ID	Matrix	Instrument	Date Prepared:	Date Analyzed:	Duplicate Batch Number
12-04-1561-1	**Aqueous**	**GC 61**	**N/A**	**04/28/12**	**120428D01**

Parameter	Sample Conc	DUP Conc	RPD	RPD CL	Qualifiers
Methane	7.426	7.100	4	0-20	

Return to Contents

RPD - Relative Percent Difference , CL - Control Limit

Calscience Environmental Laboratories, Inc.

Quality Control - Spike/Spike Duplicate

Regenesis		Date Received:	04/28/12
1011 Calle Sombra		Work Order No:	12-04-1763
San Clemente, CA 92673-4204		Preparation:	EPA 3010A Total
		Method:	EPA 6010B

Project Antea Oakland - Bancroft Ave.

Quality Control Sample ID	Matrix	Instrument	Date Prepared	Date Analyzed	MS/MSD Batch Number
12-04-1753-2	**Aqueous**	**ICP 5300**	**04/30/12**	**05/01/12**	**120430SA3**

Parameter	SPIKE ADDED	MS %REC	MSD %REC	%REC CL	RPD	RPD CL	Qualifiers
Iron	0.5000	4X	4X	65-149	4X	0-21	Q

Return to Contents

RPD - Relative Percent Difference , CL - Control Limit

Calscience Environmental Laboratories, Inc.

Quality Control - PDS / PDSD

ACCREDITED IN ACCORDANCE WITH nelac

Regenesis		Date Received	04/28/12
1011 Calle Sombra		Work Order No:	12-04-1763
San Clemente, CA 92673-4204		Preparation:	EPA 3010A Total
		Method:	EPA 6010B

Project: Antea Oakland - Bancroft Ave.

Quality Control Sample ID	Matrix	Instrument	Date Prepared	Date Analyzed	PDS / PDSD Batch Number
12-04-1753-2	**Aqueous**	**ICP 5300**	**04/30/12**	**05/01/12**	**120430SA3**

Parameter	SPIKE ADDED	PDS %REC	PDSD %REC	%REC CL	RPD	RPD CL	Qualifiers
Iron	0.5000	4X	4X	75-125	4X	0-21	Q

Return to Contents

RPD - Relative Percent Difference , CL - Control Limit

Calscience Environmental Laboratories, Inc.

Quality Control - Spike/Spike Duplicate

ACCREDITED IN ACCORDANCE WITH nelac

Regenesis
1011 Calle Sombra
San Clemente, CA 92673-4204

Date Received: 04/28/12
Work Order No: 12-04-1763
Preparation: EPA 5030C
Method: EPA 8015B (M)

Project Antea Oakland - Bancroft Ave.

Quality Control Sample ID	Matrix	Instrument	Date Prepared	Date Analyzed	MS/MSD Batch Number
12-04-1825-1	**Aqueous**	**GC 25**	**05/01/12**	**05/01/12**	**120501S01**

Parameter	SPIKE ADDED	MS %REC	MSD %REC	%REC CL	RPD	RPD CL	Qualifiers
TPH as Gasoline	2000	93	91	68-122	2	0-18	

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RPD - Relative Percent Difference , CL - Control Limit

Calscience Environmental Laboratories, Inc.

Quality Control - Spike/Spike Duplicate

ACCREDITED IN ACCORDANCE WITH nelac

Regenesis
1011 Calle Sombra
San Clemente, CA 92673-4204

Date Received: 04/28/12
Work Order No: 12-04-1763
Preparation: EPA 5030C
Method: EPA 8260B

Project Antea Oakland - Bancroft Ave.

Quality Control Sample ID	Matrix	Instrument	Date Prepared	Date Analyzed	MS/MSD Batch Number
12-04-1733-1	**Aqueous**	**GC/MS FFF**	**04/28/12**	**04/28/12**	**120428S01**

Parameter	SPIKE ADDED	MS %REC	MSD %REC	%REC CL	RPD	RPD CL	Qualifiers
Benzene	50.00	93	93	78-120	0	0-20	
Carbon Tetrachloride	50.00	87	91	67-139	5	0-20	
Chlorobenzene	50.00	92	92	80-120	0	0-20	
1,2-Dibromoethane	50.00	95	96	80-123	2	0-20	
1,2-Dichlorobenzene	50.00	89	91	76-120	2	0-20	
1,2-Dichloroethane	50.00	91	92	76-130	1	0-20	
1,1-Dichloroethene	50.00	81	81	70-130	0	0-27	
Ethylbenzene	50.00	99	99	73-127	0	0-20	
Toluene	50.00	94	93	72-126	0	0-20	
Trichloroethene	50.00	95	95	74-122	0	0-20	
Vinyl Chloride	50.00	75	75	65-131	1	0-24	
Methyl-t-Butyl Ether (MTBE)	50.00	78	78	69-123	0	0-20	
Tert-Butyl Alcohol (TBA)	250.0	135	129	65-131	4	0-22	3
Diisopropyl Ether (DIPE)	50.00	82	82	68-128	0	0-22	
Ethyl-t-Butyl Ether (ETBE)	50.00	85	86	69-123	1	0-21	
Tert-Amyl-Methyl Ether (TAME)	50.00	92	94	70-124	2	0-20	
Ethanol	500.0	88	93	41-155	6	0-35	

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RPD - Relative Percent Difference , CL - Control Limit

Calscience Environmental Laboratories, Inc.

Quality Control - Spike/Spike Duplicate

ACCREDITED IN ACCORDANCE WITH nelac

Regenesis
1011 Calle Sombra
San Clemente, CA 92673-4204

Date Received: N/A
Work Order No: 12-04-1763

Project: Antea Oakland - Bancroft Ave.

Matrix: Aqueous or Solid

Parameter	Method	Quality Control Sample ID	Date Analyzed	Date Extracted	MS% REC	MSD % REC	%REC CL	RPD	RPD CL	Qualifiers
Nitrate (as N)	EPA 300.0	12-04-1760-4	04/28/12	N/A	102	102	80-120	0	0-20	
Sulfate	EPA 300.0	12-04-1760-4	04/28/12	N/A	99	99	80-120	0	0-20	
Carbon, Total Organic	SM 5310 B	MW-4	04/30/12	4/30/12	101	103	70-130	1	0-25	

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RPD - Relative Percent Difference , CL - Control Limit

Calscience Environmental Laboratories, Inc.

Quality Control - Duplicate

ACCREDITED IN ACCORDANCE WITH nelac

Regenesis
1011 Calle Sombra
San Clemente, CA 92673-4204

Date Received: N/A
Work Order No: 12-04-1763

Project: Antea Oakland - Bancroft Ave.

Matrix: Aqueous or Solid

Parameter	Method	QC Sample ID	Date Analyzed	Sample Conc	DUP Conc	RPD	RPD CL	Qualifiers
Alkalinity, Total (as CaCO3)	SM 2320B	12-04-1760-7	04/30/12	544	544	0	0-25	
Bicarbonate (as CaCO3)	SM 2320B	12-04-1760-7	04/30/12	544	544	0	0-25	
Carbonate (as CaCO3)	SM 2320B	12-04-1760-7	04/30/12	ND	ND	NA	0-25	
Hydroxide (as CaCO3)	SM 2320B	12-04-1760-7	04/30/12	ND	ND	NA	0-25	
Sulfide, Total	SM 4500 S2 - D	12-04-1747-3	05/01/12	ND	ND	NA	0-25	
Chemical Oxygen Demand	EPA 410.4	12-04-1705-1	05/02/12	7.0	8.0	13	0-25	

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RPD - Relative Percent Difference , CL - Control Limit

Calscience Environmental Laboratories, Inc.

Quality Control - LCS/LCS Duplicate

ACCREDITED IN ACCORDANCE WITH nelac

Regenesis		Date Received:	N/A
1011 Calle Sombra		Work Order No:	12-04-1763
San Clemente, CA 92673-4204		Preparation:	N/A
		Method:	RSK-175M

Project: Antea Oakland - Bancroft Ave.

Quality Control Sample ID	Matrix	Instrument	Date Prepared	Date Analyzed	LCS/LCSD Batch Number
099-12-663-1,586	**Aqueous**	**GC 61**	**N/A**	**04/28/12**	**120428L01**

Parameter	SPIKE ADDED	LCS %REC	LCSD %REC	%REC CL	RPD	RPD CL	Qualifiers
Methane	100.0	91	92	79-109	1	0-20	

Return to Contents

RPD - Relative Percent Difference , CL - Control Limit

Calscience Environmental Laboratories, Inc.

Quality Control - LCS/LCS Duplicate

ACCREDITED IN ACCORDANCE WITH nelac

Regenesis		Date Received:	N/A
1011 Calle Sombra		Work Order No:	12-04-1763
San Clemente, CA 92673-4204		Preparation:	EPA 3010A Total
		Method:	EPA 6010B

Project: Antea Oakland - Bancroft Ave.

Quality Control Sample ID	Matrix	Instrument	Date Prepared	Date Analyzed	LCS/LCSD Batch Number
097-01-003-12,590	**Aqueous**	**ICP 5300**	**04/30/12**	**05/01/12**	**120430LA3**

Parameter	SPIKE ADDED	LCS %REC	LCSD %REC	%REC CL	RPD	RPD CL	Qualifiers
Iron	0.5000	109	109	80-120	0	0-20	

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RPD - Relative Percent Difference , CL - Control Limit

Calscience Environmental Laboratories, Inc.

Quality Control - LCS/LCS Duplicate

ACCREDITED IN ACCORDANCE WITH nelac

Regenesis		Date Received:	N/A
1011 Calle Sombra		Work Order No:	12-04-1763
San Clemente, CA 92673-4204		Preparation:	EPA 3005A Filt.
		Method:	EPA 6010B

Project: Antea Oakland - Bancroft Ave.

Quality Control Sample ID	Matrix	Instrument	Date Prepared	Date Analyzed	LCS/LCSD Batch Number
097-01-003-12,591	**Aqueous**	**ICP 5300**	**04/30/12**	**05/01/12**	**120430LA3F**

Parameter	SPIKE ADDED	LCS %REC	LCSD %REC	%REC CL	RPD	RPD CL	Qualifiers
Iron	0.5000	109	109	80-120	0	0-20	

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RPD - Relative Percent Difference , CL - Control Limit

Calscience Environmental Laboratories, Inc.

Quality Control - LCS/LCS Duplicate

ACCREDITED IN ACCORDANCE WITH nelac

Regenesis		Date Received:	N/A
1011 Calle Sombra		Work Order No:	12-04-1763
San Clemente, CA 92673-4204		Preparation:	EPA 5030C
		Method:	EPA 8015B (M)

Project: Antea Oakland - Bancroft Ave.

Quality Control Sample ID	Matrix	Instrument	Date Prepared	Date Analyzed	LCS/LCSD Batch Number
099-12-436-7,384	**Aqueous**	**GC 25**	**05/01/12**	**05/01/12**	**120501B01**

Parameter	SPIKE ADDED	LCS %REC	LCSD %REC	%REC CL	RPD	RPD CL	Qualifiers
TPH as Gasoline	2000	88	90	78-120	3	0-10	

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RPD - Relative Percent Difference , CL - Control Limit

Calscience Environmental Laboratories, Inc.

Quality Control - LCS/LCS Duplicate

ACCREDITED IN ACCORDANCE WITH nelac

Regenesis		Date Received:	N/A
1011 Calle Sombra		Work Order No:	12-04-1763
San Clemente, CA 92673-4204		Preparation:	EPA 5030C
		Method:	EPA 8260B

Project: Antea Oakland - Bancroft Ave.

Quality Control Sample ID	Matrix	Instrument	Date Prepared	Date Analyzed	LCS/LCSD Batch Number
099-14-001-7,662	**Aqueous**	**GC/MS FFF**	**04/28/12**	**04/28/12**	**120428L01**

Parameter	SPIKE ADDED	LCS %REC	LCSD %REC	%REC CL	ME_CL	RPD	RPD CL	Qualifiers
Benzene	50.00	97	94	80-120	73-127	4	0-20	
Carbon Tetrachloride	50.00	93	91	66-138	54-150	1	0-20	
Chlorobenzene	50.00	95	93	80-120	73-127	2	0-20	
1,2-Dibromoethane	50.00	96	96	80-120	73-127	0	0-20	
1,2-Dichlorobenzene	50.00	92	91	80-120	73-127	0	0-20	
1,2-Dichloroethane	50.00	92	91	80-129	72-137	2	0-20	
1,1-Dichloroethene	50.00	98	81	71-131	61-141	19	0-20	
Ethylbenzene	50.00	105	101	80-123	73-130	3	0-20	
Toluene	50.00	99	95	79-121	72-128	4	0-20	
Trichloroethene	50.00	102	97	80-120	73-127	4	0-20	
Vinyl Chloride	50.00	78	74	70-136	59-147	6	0-20	
Methyl-t-Butyl Ether (MTBE)	50.00	78	81	72-126	63-135	3	0-22	
Tert-Butyl Alcohol (TBA)	250.0	98	97	71-125	62-134	1	0-25	
Diisopropyl Ether (DIPE)	50.00	83	80	69-129	59-139	4	0-20	
Ethyl-t-Butyl Ether (ETBE)	50.00	87	85	69-129	59-139	3	0-20	
Tert-Amyl-Methyl Ether (TAME)	50.00	94	93	67-133	56-144	1	0-20	
Ethanol	500.0	71	89	47-155	29-173	22	0-36	

Total number of LCS compounds : 17
Total number of ME compounds : 0
Total number of ME compounds allowed : 1
LCS ME CL validation result : Pass

Return to Contents

RPD - Relative Percent Difference , CL - Control Limit

Calscience Environmental Laboratories, Inc.

Quality Control - LCS/LCS Duplicate

ACCREDITED IN ACCORDANCE WITH nelac

Regenesis
1011 Calle Sombra
San Clemente, CA 92673-4204

Date Received: N/A
Work Order No: 12-04-1763

Project: Antea Oakland - Bancroft Ave.

Matrix: Aqueous or Solid

Parameter	Method	Quality Control Sample ID	Date Extracted	Date Analyzed	LCS % REC	LCSD % REC	%REC CL	RPD	RPD CL	Qual
Nitrate (as N)	EPA 300.0	099-12-906-2,680	N/A	04/28/12	101	101	90-110	0	0-15	
Sulfate	EPA 300.0	099-12-906-2,680	N/A	04/28/12	101	101	90-110	0	0-15	
Carbon, Total Organic	SM 5310 B	099-05-097-4,588	04/30/12	04/30/12	104	101	80-120	3	0-20	

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RPD - Relative Percent Difference , CL - Control Limit

Calscience Environmental Laboratories, Inc.

Glossary of Terms and Qualifiers

ACCREDITED IN ACCORDANCE WITH nelac

Work Order Number: 12-04-1763

Qualifier	Definition
*	See applicable analysis comment.
<	Less than the indicated value.
>	Greater than the indicated value.
1	Surrogate compound recovery was out of control due to a required sample dilution. Therefore, the sample data was reported without further clarification.
2	Surrogate compound recovery was out of control due to matrix interference. The associated method blank surrogate spike compound was in control and, therefore, the sample data was reported without further clarification.
3	Recovery of the Matrix Spike (MS) or Matrix Spike Duplicate (MSD) compound was out of control due to matrix interference. The associated LCS and/or LCSD was in control and, therefore, the sample data was reported without further clarification.
4	The MS/MSD RPD was out of control due to matrix interference. The LCS/LCSD RPD was in control and, therefore, the sample data was reported without further clarification.
5	The PDS/PDSD or PES/PESD associated with this batch of samples was out of control due to a matrix interference effect. The associated batch LCS/LCSD was in control and, hence, the associated sample data was reported without further clarification.
6	Surrogate recovery below the acceptance limit.
7	Surrogate recovery above the acceptance limit.
B	Analyte was present in the associated method blank.
BU	Sample analyzed after holding time expired.
E	Concentration exceeds the calibration range.
ET	Sample was extracted past end of recommended max. holding time.
HD	The chromatographic pattern was inconsistent with the profile of the reference fuel standard.
HDH	The sample chromatographic pattern for TPH matches the chromatographic pattern of the specified standard but heavier hydrocarbons were also present (or detected).
HDL	The sample chromatographic pattern for TPH matches the chromatographic pattern of the specified standard but lighter hydrocarbons were also present (or detected).
J	Analyte was detected at a concentration below the reporting limit and above the laboratory method detection limit. Reported value is estimated.
ME	LCS/LCSD Recovery Percentage is within Marginal Exceedance (ME) Control Limit range.
ND	Parameter not detected at the indicated reporting limit.
Q	Spike recovery and RPD control limits do not apply resulting from the parameter concentration in the sample exceeding the spike concentration by a factor of four or greater.
SG	The sample extract was subjected to Silica Gel treatment prior to analysis.
X	% Recovery and/or RPD out-of-range.
Z	Analyte presence was not confirmed by second column or GC/MS analysis.

Solid - Unless otherwise indicated, solid sample data is reported on a wet weight basis, not corrected for % moisture. All QC results are reported on a wet weight basis.
MPN - Most Probable Number

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Calscience Environmental Laboratories, Inc.
7440 LINCOLN WAY
GARDEN GROVE, CA 92841-1427
TEL: (714) 895-5494 . FAX: (714) 894-7501

CHAIN OF CUSTODY RECORD

DATE: 4-27-12

PAGE: 1 OF 1

LABORATORY CLIENT: Regenesis

ADDRESS: 1011 Calle Sombra

CITY: San Clemente STATE: CA ZIP: 92673

TEL: 949.366.8000 FAX: 949.366.8090 E-MAIL: jgravitt@regenesis.com

CLIENT PROJECT NAME / NUMBER: Antea Oakland - Bancroft Ave.

P.O. NO.:

PROJECT CONTACT: Joy Gravitt

LAB CONTACT OR QUOTE NO.: Alan Kemp

SAMPLER(S): (SIGNATURE) B Rell

LAB USE ONLY 12-04-1763

TURNAROUND TIME:

☐ SAME DAY ☐ 24 HR ☐ 48 HR ☐ 72 HR ☒ 5 DAYS ☐ 10 DAYS

SPECIAL REQUIREMENTS (ADDITIONAL COSTS MAY APPLY)

☐ RWQCB REPORTING ☐ ARCHIVE SAMPLES UNTIL ____/____/____

SPECIAL INSTRUCTIONS:

Please see Joy Gravitt for questions or concerns.

*Required Oxygenates: BTEX, MTBE, TBA, ETBE, TAME, DIPE, EDB, ethanol, 1,2-DCA

REQUESTED ANALYSIS

LAB USE ONLY	SAMPLE ID	LOCATION / DESCRIPTION	SAMPLING DATE	SAMPLING TIME	MATRIX	NO. OF CONT.	TPH-g (EPA 8015)	BTEX/Oxygenates* (EPA 8260)	Nitrate/Sulfate (EPA 300.0)	Total Iron (EPA 6010B)	Dissolved Iron (EPA 6010B)	Sulfide (SM4500S2D)	Methane (RSK-175)	TOC (SM5310D)	COD (SM5220D)	Alkalinity (SM2320B)
	MW-4		4/27/2012	0900	w	13	x	x	x	x	x	x	x	x	x	x
				0900	GW	3	X									
				0900		3		X								
				0900		1			X							X
				0955		1				X						
				0900		1					X					
				0955		1						X				
				0900		2							X			
				0955		1								X	X	

Relinquished by: (Signature) B Rell	Received by: (Signature) Tom Malley CER	Date: 4-27-12	Time: 1000
Relinquished by: (Signature) Tom Malley TO GSO 4/27/12 1730	Received by: (Signature) CER	Date: 4/28/12	Time: 0930
Relinquished by: (Signature)	Received by: (Signature)	Date:	Time:

06/01/10 Revision

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1763

GSO

WebShip > > > > >

800-322-5555 www.gso.com

Ship From:
ALAN KEMP
CAL SCIENCE- CONCORD
5063 COMMERCIAL CIRCLE #H
CONCORD, CA 94520

Ship To:
SAMPLE RECEIVING
CEL
7440 LINCOLN WAY
GARDEN GROVE, CA 92841

COD:
$0.00

Reference:
ERM, REGENESIS

Delivery Instructions:

Signature Type:
SIGNATURE REQUIRED

Tracking #: 518991346

SDS

ORC

A

GARDEN GROVE

D92841A

806943

Print Date : 04/27/12 12:44 PM

Package 1 of 1

Send Label To Printer | ☑ Print All | Edit Shipment | Finish

LABEL INSTRUCTIONS:

Do not copy or reprint this label for additional shipments - each package must have a unique barcode.

STEP 1 - Use the "Send Label to Printer" button on this page to print the shipping label on a laser or inkjet printer.
STEP 2 - Fold this page in half.
STEP 3 - Securely attach this label to your package, do not cover the barcode.
STEP 4 - Request an on-call pickup for your package, if you do not have scheduled daily pickup service or Drop-off your package at the nearest GSO drop box. Locate nearest GSO dropbox locations using this link.

ADDITIONAL OPTIONS:

Send Label Via Email | Create Return Label

TERMS AND CONDITIONS:

By giving us your shipment to deliver, you agree to all the service terms and conditions described in this section.
Our liability for loss or damage to any package is limited to your actual damages or $100 whichever is less, unless you pay for and declare a higher authorized value. If you declare a higher value and pay the additional charge, our liability will be the lesser of your declared value or the actual value of your loss or damage. In any event, we will not be liable for any damage, whether direct, incidental, special or consequential, in excess of the declared value of a shipment whether or not we had knowledge that such damage might be incurred including but not limited to loss of income or profit. We will not be liable for your acts or omissions, including but not limited to improper or insufficient packaging, securing, marking or addressing. Also, we will not be liable if you or the recipient violates any of the terms of our agreement. We will not be liable for loss, damage or delay caused by events we cannot control, including but not limited to acts of God, perils of the air, weather conditions, act of public enemies, war, strikes, or civil commotion. The highest declared value for our GSO Priority Letter or GSO Priority Package is $500. For other shipments the highest declared value is $10,000 unless your package contains items of "extraordinary value", in which case the highest declared value we allow is $500. Items of "extraordinary value" include, but or not limited to, artwork, jewelry, furs, precious metals, tickets, negotiable instruments and other items with intrinsic value.

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Calscience Environmental Laboratories, Inc.

WORK ORDER #: 12-04-1763

SAMPLE RECEIPT FORM

Cooler 1 of 1

CLIENT: Regenesis DATE: 04/28/12

TEMPERATURE: Thermometer ID: SC2 (Criteria: 0.0 °C – 6.0 °C, not frozen)

Temperature 3.0 °C - 0.3 °C (CF) = 2.7 °C ☑ Blank ☐ Sample

☐ Sample(s) outside temperature criteria (PM/APM contacted by: _____).

☐ Sample(s) outside temperature criteria but received on ice/chilled on same day of sampling.

☐ **Received at ambient temperature, placed on ice for transport by Courier.**

Ambient Temperature: ☐ Air ☐ Filter Initial: YL

CUSTODY SEALS INTACT:

☑ Cooler ☐_____ ☐ No (Not Intact) ☐ Not Present ☐ N/A Initial: YL

☐ Sample ☐_____ ☐ No (Not Intact) ☑ Not Present Initial: TS

SAMPLE CONDITION:	Yes	No	N/A
Chain-Of-Custody (COC) document(s) received with samples	☑	☐	☐
COC document(s) received complete	☑	☐	☐
☐ Collection date/time, matrix, and/or # of containers logged in based on sample labels.			
☐ No analysis requested. ☐ Not relinquished. ☐ No date/time relinquished.			
Sampler's name indicated on COC	☑	☐	☐
Sample container label(s) consistent with COC	☑	☐	☐
Sample container(s) intact and good condition	☑	☐	☐
Proper containers and sufficient volume for analyses requested	☑	☐	☐
Analyses received within holding time	☑	☐	☐
pH / Res. Chlorine / Diss. Sulfide / Diss. Oxygen received within 24 hours	☐	☐	☑
Proper preservation noted on COC or sample container	☑	☐	☐
☐ Unpreserved vials received for Volatiles analysis			
Volatile analysis container(s) free of headspace	☑	☐	☐
Tedlar bag(s) free of condensation	☐	☐	☑

CONTAINER TYPE:

Solid: ☐4ozCGJ ☐8ozCGJ ☐16ozCGJ ☐Sleeve (_____) ☐EnCores® ☐TerraCores® ☐_____

Water: ☐VOA ☑VOA**h** ☐VOA**na$_2$** ☐125AGB ☐125AGB**h** ☐125AGB**p** ☐1AGB ☐1AGB**na$_2$** ☐1AGB**s**

☐500AGB ☐500AGJ ☐500AGJ**s** ☐250AGB ☐250CGB ☑250CGB**s** ☐1PB ☐1PB**na** ☐500PB

~~☐250PB~~ ☑250PB**n** ☐125PB ☑125PB**znna** ☐100PJ ☐100PJ**na$_2$** ☐_____ ☐_____ ☐_____

Air: ☐Tedlar® ☐Summa® **Other:** ☐_____ **Trip Blank Lot#:**_____ **Labeled/Checked by:** TS

Container: **C:** Clear **A:** Amber **P:** Plastic **G:** Glass **J:** Jar **B:** Bottle **Z:** Ziploc/Resealable Bag **E:** Envelope **Reviewed by:** WSC

Preservative: **h:** HCL **n:** HNO_3 **na$_2$:**$Na_2S_2O_3$ **na:** NaOH **p:** H_3PO_4 **s:** H_2SO_4 **u:** Ultra-pure **znna:** $ZnAc_2$+NaOH **f:** Filtered **Scanned by:**

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Is the Data Set Valid?	Preservation Temperature
(circle) **Yes** / **No**	*(if Known)*: 1.9 ºC

Antea™Group Laboratory Data Validation Sheet

Project/Client: COP ELT 11117
Project #: E426 11117
Date of Validation: 6/7/12 **Date of Analysis:** 5/30/12 – 5/31/12
Sample Date: 5/29/12 **Completed By:** Josh Mbuff
Signature:

Circle or Highlight Yes / No (below)

Analytical Lab Used and Report # (if any): Calscience Lab Report # 12-05-1978

1.	Were the analyses the ones requested?	**Yes** / No
2.	Do the sample number(s) on the chain-of-custody (COC) match the one(s) that appear on the laboratory data sheet?	**Yes** / No
3.	Were samples prepared (extracted, filtered, etc.) within EPA holding times?	**Yes** / No
4.	Once prepared/extracted, were the samples analyzed within the EPA holding times?	**Yes** / No
5.	Were Laboratory blanks performed, if so, were they non-detect?	**Yes** / No
6.	Are the units correct? (i.e., soil samples in mg/kg or ug/g, water samples mg/L, ug/L, and air samples in volume mg/m^3,etc.)	**Yes** / No
7.	Were appropriate Matrix Spike (MS) and Matrix Spike Duplicate (MSD) samples included in the laboratory batch sample?	Yes / **No**
8.	In lieu of MS/ MSD, were surrogate spike (SS) or surrogate spike duplicate (SSD) samples included in the laboratory batch samples?	**Yes** / No
9.	Were MS/ MSD (or SS/SSD) within the acceptable range of % recovery (i.e., approximately 80-120%, depending on the analyte)?	Yes / **No**
10.	Were MS/MSD (or SS/SSD) values used to calculate Relative Percent Difference (RPD)?	**Yes** / No
11.	Were Relative Percent Difference values within the acceptable range (i.e. ±25%)?	Yes / **No**

If any answer is no, explain why and what corrective action was taken (use additional sheet(s), as necessary:

Data Qualifiers:
#9 & #11 – note 4: SS/SD out of control (matrix interference). LCS acceptable, sample accepted based on LCS.

Calscience Environmental Laboratories, Inc.

CALSCIENCE

WORK ORDER NUMBER: 12-05-1978

The difference is service



AIR | SOIL | WATER | MARINE CHEMISTRY

Analytical Report For

Client: Regenesis

Client Project Name: Antea Oakland

Attention: Joy Gravitt
1011 Calle Sombra
San Clemente, CA 92673-4204

Approved for release on 06/6/2012 by:
Richard Villafania
Project Manager

ResultLink

Email your PM

Calscience Environmental Laboratories, Inc. (Calscience) certifies that the test results provided in this report meet all NELAC requirements for parameters for which accreditation is required or available. Any exceptions to NELAC requirements are noted in the case narrative. The original report of subcontracted analyses, if any, is attached to this report. The results in this report are limited to the sample(s) tested and any reproduction thereof must be made in its entirety. The client or recipient of this report is specifically prohibited from making material changes to said report and, to the extent that such changes are made, Calscience is not responsible, legally or otherwise. The client or recipient agrees to indemnify Calscience for any defense to any litigation which may arise.

Calscience Environmental Laboratories, Inc.

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Client Project Name: Antea Oakland
Work Order Number: 12-05-1978

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Calscience Environmental Laboratories, Inc.

Client:	Regenesis	Work Order:	12-05-1978
	1011 Calle Sombra	Project name:	Antea Oakland
	San Clemente, CA 92673-4204	Received:	05/30/12 09:30
Attn:	Joy Gravitt		

DETECTIONS SUMMARY

Client Sample ID Analyte	Result	Qualifiers	Reporting Limit	Units	Method	Extraction
MW-4 (12-05-1978-1)						
Methane	**4300**		8.00	ug/L	RSK-175M	N/A
Iron	**5.62**		0.100	mg/L	EPA 6010B	EPA 3010A Total
Iron	**3.88**		0.100	mg/L	EPA 6010B	EPA 3005A Filt.
Alkalinity, Total (as CaCO3)	**496**		5.00	mg/L	SM 2320B	N/A
Chemical Oxygen Demand	**100**		5.0	mg/L	EPA 410.4	N/A
Sulfide, Total	**0.25**		0.050	mg/L	SM 4500 S2 - D	N/A
Carbon, Total Organic	**63**		5.0	mg/L	SM 5310 D	N/A
TPH as Gasoline	**17000**		250	ug/L	EPA 8015B (M)	EPA 5030C
Benzene	**2800**		12	ug/L	EPA 8260B	EPA 5030C
Ethylbenzene	**1400**		25	ug/L	EPA 8260B	EPA 5030C
Toluene	**380**		25	ug/L	EPA 8260B	EPA 5030C
p/m-Xylene	**2000**		25	ug/L	EPA 8260B	EPA 5030C
o-Xylene	**570**		25	ug/L	EPA 8260B	EPA 5030C
Methyl-t-Butyl Ether (MTBE)	**210**		25	ug/L	EPA 8260B	EPA 5030C
Tert-Butyl Alcohol (TBA)	**2700**		250	ug/L	EPA 8260B	EPA 5030C

Subcontracted analyses, if any, are not included in this summary.

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*MDL is shown.

Calscience Environmental Laboratories, Inc.

Analytical Report

ACCREDITED IN ACCORDANCE WITH nelac

Regenesis
1011 Calle Sombra
San Clemente, CA 92673-4204

Date Received: 05/30/12
Work Order No: 12-05-1978
Preparation: N/A
Method: RSK-175M

Project: Antea Oakland

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
MW-4	**12-05-1978-1-G**	**05/29/12 09:00**	**Aqueous**	**GC 52**	**N/A**	**05/31/12 18:13**	**120531L01**

Parameter	Result	RL	DF	Qual	Units
Methane	4300	8.00	8		ug/L

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
Method Blank	**099-12-663-1,619-A**	**N/A**	**Aqueous**	**GC 52**	**N/A**	**05/31/12 10:53**	**120531L01**

Parameter	Result	RL	DF	Qual	Units
Methane	ND	1.00	1		ug/L

Return to Contents

RL - Reporting Limit , DF - Dilution Factor , Qual - Qualifiers

Calscience Environmental Laboratories, Inc.

Analytical Report

ACCREDITED IN ACCORDANCE WITH nelac

Regenesis
1011 Calle Sombra
San Clemente, CA 92673-4204

Date Received: 05/30/12
Work Order No: 12-05-1978
Preparation: EPA 5030C
Method: EPA 8015B (M)

Project: Antea Oakland

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
MW-4	**12-05-1978-1-D**	**05/29/12 09:00**	**Aqueous**	**GC 56**	**05/31/12**	**05/31/12 15:35**	**120531B02**

Parameter	Result	RL	DF	Qual	Units
TPH as Gasoline	17000	250	5		ug/L

Surrogates:	REC (%)	Control Limits	Qual
1,4-Bromofluorobenzene	110	38-134	

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
Method Blank	**099-12-436-7,473**	**N/A**	**Aqueous**	**GC 56**	**05/31/12**	**05/31/12 02:50**	**120531B02**

Parameter	Result	RL	DF	Qual	Units
TPH as Gasoline	ND	50	1		ug/L

Surrogates:	REC (%)	Control Limits	Qual
1,4-Bromofluorobenzene	81	38-134	

Return to Contents

RL - Reporting Limit , DF - Dilution Factor , Qual - Qualifiers

Calscience Environmental Laboratories, Inc.

Analytical Report

ACCREDITED IN ACCORDANCE WITH nelac

Regenesis		Date Received:	05/30/12
1011 Calle Sombra		Work Order No:	12-05-1978
San Clemente, CA 92673-4204		Preparation:	EPA 5030C
		Method:	EPA 8260B
		Units:	ug/L

Project: Antea Oakland

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
MW-4	**12-05-1978-1-A**	**05/29/12 09:00**	**Aqueous**	**GC/MS CC**	**05/30/12**	**05/30/12 23:03**	**120530L01**

Parameter	Result	RL	DF	Qual	Parameter	Result	RL	DF	Qual
Benzene	2800	12	25		Methyl-t-Butyl Ether (MTBE)	210	25	25	
1,2-Dibromoethane	ND	25	25		Tert-Butyl Alcohol (TBA)	2700	250	25	
1,2-Dichloroethane	ND	12	25		Diisopropyl Ether (DIPE)	ND	50	25	
Ethylbenzene	1400	25	25		Ethyl-t-Butyl Ether (ETBE)	ND	50	25	
Toluene	380	25	25		Tert-Amyl-Methyl Ether (TAME)	ND	50	25	
p/m-Xylene	2000	25	25		Ethanol	ND	2500	25	
o-Xylene	570	25	25						

Surrogates:	REC (%)	Control Limits	Qual	Surrogates:	REC (%)	Control Limits	Qual
1,4-Bromofluorobenzene	97	80-120		Dibromofluoromethane	112	80-126	
1,2-Dichloroethane-d4	108	80-134		Toluene-d8	101	80-120	

Method Blank	099-14-001-7,919	N/A	Aqueous	GC/MS CC	05/30/12	05/30/12 14:01	120530L01

Parameter	Result	RL	DF	Qual	Parameter	Result	RL	DF	Qual
Benzene	ND	0.50	1		Methyl-t-Butyl Ether (MTBE)	ND	1.0	1	
1,2-Dibromoethane	ND	1.0	1		Tert-Butyl Alcohol (TBA)	ND	10	1	
1,2-Dichloroethane	ND	0.50	1		Diisopropyl Ether (DIPE)	ND	2.0	1	
Ethylbenzene	ND	1.0	1		Ethyl-t-Butyl Ether (ETBE)	ND	2.0	1	
Toluene	ND	1.0	1		Tert-Amyl-Methyl Ether (TAME)	ND	2.0	1	
p/m-Xylene	ND	1.0	1		Ethanol	ND	100	1	
o-Xylene	ND	1.0	1						

Surrogates:	REC (%)	Control Limits	Qual	Surrogates:	REC (%)	Control Limits	Qual
1,4-Bromofluorobenzene	95	80-120		Dibromofluoromethane	124	80-126	
1,2-Dichloroethane-d4	118	80-134		Toluene-d8	100	80-120	

Return to Contents

RL - Reporting Limit , DF - Dilution Factor , Qual - Qualifiers

Calscience Environmental Laboratories, Inc.

Analytical Report

ACCREDITED IN ACCORDANCE WITH nelac

Regenesis
1011 Calle Sombra
San Clemente, CA 92673-4204

Date Received: 05/30/12
Work Order No: 12-05-1978
Preparation: EPA 3005A Filt.
Method: EPA 6010B

Project: Antea Oakland

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
MW-4	**12-05-1978-1-K**	**05/29/12 09:00**	**Aqueous**	**ICP 5300**	**05/30/12**	**05/30/12 16:22**	**120530LA2F**

Parameter	Result	RL	DF	Qual	Units
Iron	3.88	0.100	1		mg/L

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
Method Blank	**097-01-003-12,647**	**N/A**	**Aqueous**	**ICP 5300**	**05/30/12**	**05/30/12 16:39**	**120530LA2F**

Parameter	Result	RL	DF	Qual	Units
Iron	ND	0.100	1		mg/L

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RL - Reporting Limit , DF - Dilution Factor , Qual - Qualifiers

Calscience Environmental Laboratories, Inc.

Analytical Report

ACCREDITED IN ACCORDANCE WITH nelac

Regenesis
1011 Calle Sombra
San Clemente, CA 92673-4204

Date Received: 05/30/12
Work Order No: 12-05-1978
Preparation: EPA 3010A Total
Method: EPA 6010B

Project: Antea Oakland

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
MW-4	**12-05-1978-1-I**	**05/29/12 09:00**	**Aqueous**	**ICP 5300**	**05/30/12**	**05/30/12 16:23**	**120530LA2**

Parameter	Result	RL	DF	Qual	Units
Iron	5.62	0.100	1		mg/L

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
Method Blank	**097-01-003-12,646**	**N/A**	**Aqueous**	**ICP 5300**	**05/30/12**	**05/30/12 16:37**	**120530LA2**

Parameter	Result	RL	DF	Qual	Units
Iron	ND	0.100	1		mg/L

Return to Contents

RL - Reporting Limit , DF - Dilution Factor , Qual - Qualifiers

Calscience Environmental Laboratories, Inc.

Analytical Report

ACCREDITED IN ACCORDANCE WITH nelac

Regenesis
1011 Calle Sombra
San Clemente, CA 92673-4204

Date Received: 05/30/12
Work Order No: 12-05-1978

Project: Antea Oakland

Client Sample Number	Lab Sample Number	Date Collected	Matrix
MW-4	**12-05-1978-1**	**05/29/12**	**Aqueous**

Parameter	Results	RL	DF	Qual	Units	Date Prepared	Date Analyzed	Method
Nitrate (as N)	ND	0.10	1		mg/L	N/A	05/30/12	EPA 300.0
Sulfate	ND	1.0	1		mg/L	N/A	05/30/12	EPA 300.0
Chemical Oxygen Demand	100	5.0	1		mg/L	06/01/12	06/01/12	EPA 410.4
Alkalinity, Total (as CaCO3)	496	5.00	1		mg/L	N/A	05/31/12	SM 2320B
Sulfide, Total	0.25	0.050	1		mg/L	05/31/12	05/31/12	SM 4500 S2 - D
Carbon, Total Organic	63	5.0	10		mg/L	05/30/12	05/30/12	SM 5310 D

Method Blank					**N/A**	**Aqueous**		

Parameter	Results	RL	DF	Qual	Units	Date Prepared	Date Analyzed	Method
Nitrate (as N)	ND	0.10	1		mg/L	N/A	05/30/12	EPA 300.0
Sulfate	ND	1.0	1		mg/L	N/A	05/30/12	EPA 300.0
Chemical Oxygen Demand	ND	5.0	1		mg/L	06/01/12	06/01/12	EPA 410.4
Alkalinity, Total (as CaCO3)	ND	1.0	1		mg/L	N/A	05/31/12	SM 2320B
Sulfide, Total	ND	0.050	1		mg/L	05/31/12	05/31/12	SM 4500 S2 - D
Carbon, Total Organic	ND	0.50	1		mg/L	05/30/12	05/30/12	SM 5310 D

Return to Contents

RL - Reporting Limit , DF - Dilution Factor , Qual - Qualifiers

Calscience Environmental Laboratories, Inc.

Quality Control - Spike/Spike Duplicate

ACCREDITED IN ACCORDANCE WITH nelac

Regenesis
1011 Calle Sombra
San Clemente, CA 92673-4204

Date Received: 05/30/12
Work Order No: 12-05-1978
Preparation: EPA 3010A Total
Method: EPA 6010B

Project Antea Oakland

Quality Control Sample ID	Matrix	Instrument	Date Prepared	Date Analyzed	MS/MSD Batch Number
12-05-1952-1	**Aqueous**	**ICP 5300**	**05/30/12**	**05/30/12**	**120530SA2**

Parameter	SAMPLE CONC	SPIKE ADDED	MS CONC	MS %REC	MSD CONC	MSD %REC	%REC CL	RPD	RPD CL	Qualifiers
Iron	0.1882	0.5000	0.6920	101	0.6779	98	65-149	2	0-21	

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RPD - Relative Percent Difference , CL - Control Limit

Calscience Environmental Laboratories, Inc.

Quality Control - Spike/Spike Duplicate

ACCREDITED IN ACCORDANCE WITH nelac

Regenesis
1011 Calle Sombra
San Clemente, CA 92673-4204

Date Received: 05/30/12
Work Order No: 12-05-1978
Preparation: N/A
Method: EPA 300.0

Project Antea Oakland

Quality Control Sample ID	Matrix	Instrument	Date Prepared	Date Analyzed	MS/MSD Batch Number
MW-4	**Aqueous**	**IC 10**	**N/A**	**05/30/12**	**120530S01**

Parameter	SAMPLE CONC	SPIKE ADDED	MS CONC	MS %REC	MSD CONC	MSD %REC	%REC CL	RPD	RPD CL	Qualifiers
Nitrate (as N)	ND	500	500	99	500	99	80-120	0	0-20	
Sulfate	ND	5000	4900	99	4900	99	80-120	0	0-20	

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RPD - Relative Percent Difference , CL - Control Limit

Calscience Environmental Laboratories, Inc.

Quality Control - Spike/Spike Duplicate

ACCREDITED IN ACCORDANCE WITH nelac

Regenesis
1011 Calle Sombra
San Clemente, CA 92673-4204

Date Received: 05/30/12
Work Order No: 12-05-1978
Preparation: N/A
Method: SM 5310 D

Project Antea Oakland

Quality Control Sample ID	Matrix	Instrument	Date Prepared	Date Analyzed	MS/MSD Batch Number
MW-4	**Aqueous**	**TOC 6**	**05/30/12**	**05/30/12**	**C0530TOCS1**

Parameter	SAMPLE CONC	SPIKE ADDED	MS CONC	MS %REC	MSD CONC	MSD %REC	%REC CL	RPD	RPD CL	Qualifiers
Carbon, Total Organic	63	50	110	99	120	103	75-125	2	0-25	

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RPD - Relative Percent Difference , CL - Control Limit

Calscience Environmental Laboratories, Inc.

Quality Control - Spike/Spike Duplicate

Regenesis
1011 Calle Sombra
San Clemente, CA 92673-4204

Date Received: 05/30/12
Work Order No: 12-05-1978
Preparation: EPA 5030C
Method: EPA 8015B (M)

Project Antea Oakland

Quality Control Sample ID	Matrix	Instrument	Date Prepared	Date Analyzed	MS/MSD Batch Number
12-05-1719-15	**Aqueous**	**GC 56**	**05/31/12**	**05/31/12**	**120531S01**

Parameter	SAMPLE CONC	SPIKE ADDED	MS CONC	MS %REC	MSD CONC	MSD %REC	%REC CL	RPD	RPD CL	Qualifiers
TPH as Gasoline	ND	2000	1769	88	1751	88	68-122	1	0-18	

Return to Contents

RPD - Relative Percent Difference , CL - Control Limit

Calscience Environmental Laboratories, Inc.

Quality Control - Spike/Spike Duplicate

ACCREDITED IN ACCORDANCE WITH nelac

Regenesis
1011 Calle Sombra
San Clemente, CA 92673-4204

Date Received: 05/30/12
Work Order No: 12-05-1978
Preparation: EPA 5030C
Method: EPA 8260B

Project Antea Oakland

Quality Control Sample ID	Matrix	Instrument	Date Prepared	Date Analyzed	MS/MSD Batch Number
12-05-1951-1	**Aqueous**	**GC/MS CC**	**05/30/12**	**05/30/12**	**120530S01**

Parameter	SAMPLE CONC	SPIKE ADDED	MS CONC	MS %REC	MSD CONC	MSD %REC	%REC CL	RPD	RPD CL	Qualifiers
Benzene	ND	50.00	45.69	91	46.81	94	78-120	2	0-20	
Carbon Tetrachloride	ND	50.00	53.79	108	55.08	110	67-139	2	0-20	
Chlorobenzene	ND	50.00	46.22	92	49.37	99	80-120	7	0-20	
1,2-Dibromoethane	ND	50.00	41.05	82	45.28	91	80-123	10	0-20	
1,2-Dichlorobenzene	ND	50.00	47.29	95	49.39	99	76-120	4	0-20	
1,2-Dichloroethane	ND	50.00	47.95	96	51.67	103	76-130	7	0-20	
1,1-Dichloroethene	ND	50.00	42.89	86	45.36	91	70-130	6	0-27	
Ethylbenzene	ND	50.00	47.43	95	50.20	100	73-127	6	0-20	
Toluene	ND	50.00	46.21	92	47.71	95	72-126	3	0-20	
Trichloroethene	ND	50.00	43.64	87	45.34	91	74-122	4	0-20	
Vinyl Chloride	ND	50.00	50.94	102	54.49	109	65-131	7	0-24	
Methyl-t-Butyl Ether (MTBE)	ND	50.00	44.21	88	46.22	92	69-123	4	0-20	
Tert-Butyl Alcohol (TBA)	ND	250.0	249.5	100	282.3	113	65-131	12	0-22	
Diisopropyl Ether (DIPE)	ND	50.00	38.00	76	56.22	112	68-128	39	0-22	4
Ethyl-t-Butyl Ether (ETBE)	ND	50.00	49.38	99	50.77	102	69-123	3	0-21	
Tert-Amyl-Methyl Ether (TAME)	ND	50.00	40.43	81	42.83	86	70-124	6	0-20	
Ethanol	ND	500.0	494.7	99	562.1	112	41-155	13	0-35	

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RPD - Relative Percent Difference , CL - Control Limit

Calscience Environmental Laboratories, Inc.

Quality Control - Duplicate

ACCREDITED IN ACCORDANCE WITH nelac

Regenesis
1011 Calle Sombra
San Clemente, CA 92673-4204

Date Received: N/A
Work Order No: 12-05-1978

Project: Antea Oakland

Matrix: Aqueous or Solid

Parameter	Method	QC Sample ID	Date Analyzed	Sample Conc	DUP Conc	RPD	RPD CL	Qualifiers
Alkalinity, Total (as CaCO3)	SM 2320B	MW-4	05/31/12	496	500	1	0-25	
Sulfide, Total	SM 4500 S2 - D	12-05-2010-1	05/31/12	ND	ND	NA	0-25	
Chemical Oxygen Demand	EPA 410.4	12-05-1952-1	06/01/12	8.0	8.0	0	0-25	

Return to Contents

RPD - Relative Percent Difference , CL - Control Limit

Calscience Environmental Laboratories, Inc.

Quality Control - LCS/LCS Duplicate

ACCREDITED IN ACCORDANCE WITH nelac

Regenesis		Date Received:	N/A
1011 Calle Sombra		Work Order No:	12-05-1978
San Clemente, CA 92673-4204		Preparation:	N/A
		Method:	RSK-175M

Project: Antea Oakland

Quality Control Sample ID	Matrix	Instrument	Date Prepared	Date Analyzed	LCS/LCSD Batch Number
099-12-663-1,619	**Aqueous**	**GC 52**	**N/A**	**05/31/12**	**120531L01**

Parameter	SPIKE ADDED	LCS CONC	LCS %REC	LCSD CONC	LCSD %REC	%REC CL	RPD	RPD CL	Qualifiers
Methane	98.50	95.09	97	93.87	95	79-109	1	0-20	

Return to Contents

RPD - Relative Percent Difference , CL - Control Limit

Calscience Environmental Laboratories, Inc.

Quality Control - LCS/LCS Duplicate

ACCREDITED IN ACCORDANCE WITH nelac

Regenesis		Date Received:	N/A
1011 Calle Sombra		Work Order No:	12-05-1978
San Clemente, CA 92673-4204		Preparation:	EPA 3010A Total
		Method:	EPA 6010B

Project: Antea Oakland

Quality Control Sample ID	Matrix	Instrument	Date Prepared	Date Analyzed	LCS/LCSD Batch Number
097-01-003-12,646	**Aqueous**	**ICP 5300**	**05/30/12**	**05/30/12**	**120530LA2**

Parameter	SPIKE ADDED	LCS CONC	LCS %REC	LCSD CONC	LCSD %REC	%REC CL	RPD	RPD CL	Qualifiers
Iron	0.5000	0.5138	103	0.5089	102	80-120	1	0-20	

Return to Contents

RPD - Relative Percent Difference , CL - Control Limit

Calscience Environmental Laboratories, Inc.

Quality Control - LCS/LCS Duplicate

ACCREDITED IN ACCORDANCE WITH nelac

Regenesis		Date Received:	N/A
1011 Calle Sombra		Work Order No:	12-05-1978
San Clemente, CA 92673-4204		Preparation:	EPA 3005A Filt.
		Method:	EPA 6010B

Project: Antea Oakland

Quality Control Sample ID	Matrix	Instrument	Date Prepared	Date Analyzed	LCS/LCSD Batch Number
097-01-003-12,647	**Aqueous**	**ICP 5300**	**05/30/12**	**05/30/12**	**120530LA2F**

Parameter	SPIKE ADDED	LCS CONC	LCS %REC	LCSD CONC	LCSD %REC	%REC CL	RPD	RPD CL	Qualifiers
Iron	0.5000	0.5138	103	0.5089	102	80-120	1	0-20	

Return to Contents

RPD - Relative Percent Difference , CL - Control Limit

Calscience Environmental Laboratories, Inc.

Quality Control - LCS/LCS Duplicate

ACCREDITED IN ACCORDANCE WITH nelac

Regenesis		Date Received:	N/A
1011 Calle Sombra		Work Order No:	12-05-1978
San Clemente, CA 92673-4204		Preparation:	N/A
		Method:	EPA 300.0

Project: Antea Oakland

Quality Control Sample ID	Matrix	Instrument	Date Prepared	Date Analyzed	LCS/LCSD Batch Number
099-12-906-2,751	**Aqueous**	**IC 10**	**N/A**	**05/30/12**	**120530L01**

Parameter	SPIKE ADDED	LCS CONC	LCS %REC	LCSD CONC	LCSD %REC	%REC CL	RPD	RPD CL	Qualifiers
Nitrate (as N)	5.0	5.1	101	5.1	102	90-110	1	0-15	
Sulfate	50	50	101	51	102	90-110	1	0-15	

Return to Contents

RPD - Relative Percent Difference , CL - Control Limit

Calscience Environmental Laboratories, Inc.

Quality Control - LCS/LCS Duplicate

ACCREDITED IN ACCORDANCE WITH nelac

Regenesis		Date Received:	N/A
1011 Calle Sombra		Work Order No:	12-05-1978
San Clemente, CA 92673-4204		Preparation:	N/A
		Method:	SM 5310 D

Project: Antea Oakland

Quality Control Sample ID	Matrix	Instrument	Date Prepared	Date Analyzed	LCS/LCSD Batch Number
099-05-097-4,620	**Aqueous**	**TOC 6**	**05/30/12**	**05/30/12**	**C0530TOCL1**

Parameter	SPIKE ADDED	LCS CONC	LCS %REC	LCSD CONC	LCSD %REC	%REC CL	RPD	RPD CL	Qualifiers
Carbon, Total Organic	5.0	5.1	102	5.0	101	80-120	1	0-20	

Return to Contents

RPD - Relative Percent Difference , CL - Control Limit

Calscience Environmental Laboratories, Inc.

Quality Control - LCS/LCS Duplicate

ACCREDITED IN ACCORDANCE WITH nelac

Regenesis		Date Received:	N/A
1011 Calle Sombra		Work Order No:	12-05-1978
San Clemente, CA 92673-4204		Preparation:	EPA 5030C
		Method:	EPA 8015B (M)

Project: Antea Oakland

Quality Control Sample ID	Matrix	Instrument	Date Prepared	Date Analyzed	LCS/LCSD Batch Number
099-12-436-7,473	**Aqueous**	**GC 56**	**05/31/12**	**05/31/12**	**120531B02**

Parameter	SPIKE ADDED	LCS CONC	LCS %REC	LCSD CONC	LCSD %REC	%REC CL	RPD	RPD CL	Qualifiers
TPH as Gasoline	2000	1866	93	1895	95	78-120	2	0-10	

Return to Contents

RPD - Relative Percent Difference , CL - Control Limit

Calscience Environmental Laboratories, Inc.

Quality Control - LCS/LCS Duplicate

ACCREDITED IN ACCORDANCE WITH nelac

Regenesis
1011 Calle Sombra
San Clemente, CA 92673-4204

Date Received: N/A
Work Order No: 12-05-1978
Preparation: EPA 5030C
Method: EPA 8260B

Project: Antea Oakland

Quality Control Sample ID	Matrix	Instrument	Date Prepared	Date Analyzed	LCS/LCSD Batch Number
099-14-001-7,919	**Aqueous**	**GC/MS CC**	**05/30/12**	**05/30/12**	**120530L01**

Parameter	SPIKE ADDED	LCS CONC	LCS %REC	LCSD CONC	LCSD %REC	%REC CL	ME_CL	RPD	RPD CL	Qualifiers
Benzene	50.00	40.92	82	46.11	92	80-120	73-127	12	0-20	
Carbon Tetrachloride	50.00	48.97	98	55.46	111	66-138	54-150	12	0-20	
Chlorobenzene	50.00	43.18	86	46.96	94	80-120	73-127	8	0-20	
1,2-Dibromoethane	50.00	39.37	79	43.17	86	80-120	73-127	9	0-20	ME
1,2-Dichlorobenzene	50.00	44.08	88	47.94	96	80-120	73-127	8	0-20	
1,2-Dichloroethane	50.00	45.10	90	47.70	95	80-129	72-137	6	0-20	
1,1-Dichloroethene	50.00	39.40	79	43.29	87	71-131	61-141	9	0-20	
Ethylbenzene	50.00	44.48	89	47.87	96	80-123	73-130	7	0-20	
Toluene	50.00	41.87	84	46.48	93	79-121	72-128	10	0-20	
Trichloroethene	50.00	40.31	81	44.41	89	80-120	73-127	10	0-20	
Vinyl Chloride	50.00	46.93	94	53.24	106	70-136	59-147	13	0-20	
Methyl-t-Butyl Ether (MTBE)	50.00	40.90	82	44.33	89	72-126	63-135	8	0-22	
Tert-Butyl Alcohol (TBA)	250.0	219.6	88	234.1	94	71-125	62-134	6	0-25	
Diisopropyl Ether (DIPE)	50.00	49.44	99	50.83	102	69-129	59-139	3	0-20	
Ethyl-t-Butyl Ether (ETBE)	50.00	44.99	90	48.16	96	69-129	59-139	7	0-20	
Tert-Amyl-Methyl Ether (TAME)	50.00	37.79	76	41.36	83	67-133	56-144	9	0-20	
Ethanol	500.0	482.9	97	494.1	99	47-155	29-173	2	0-36	

Total number of LCS compounds : 17
Total number of ME compounds : 1
Total number of ME compounds allowed : 1
LCS ME CL validation result : Pass

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RPD - Relative Percent Difference , CL - Control Limit

Calscience Environmental Laboratories, Inc.

Glossary of Terms and Qualifiers

ACCREDITED IN ACCORDANCE WITH nelac

Work Order Number: 12-05-1978

Qualifier	Definition
*	See applicable analysis comment.
<	Less than the indicated value.
>	Greater than the indicated value.
1	Surrogate compound recovery was out of control due to a required sample dilution. Therefore, the sample data was reported without further clarification.
2	Surrogate compound recovery was out of control due to matrix interference. The associated method blank surrogate spike compound was in control and, therefore, the sample data was reported without further clarification.
3	Recovery of the Matrix Spike (MS) or Matrix Spike Duplicate (MSD) compound was out of control due to matrix interference. The associated LCS and/or LCSD was in control and, therefore, the sample data was reported without further clarification.
4	The MS/MSD RPD was out of control due to matrix interference. The LCS/LCSD RPD was in control and, therefore, the sample data was reported without further clarification.
5	The PDS/PDSD or PES/PESD associated with this batch of samples was out of control due to a matrix interference effect. The associated batch LCS/LCSD was in control and, hence, the associated sample data was reported without further clarification.
6	Surrogate recovery below the acceptance limit.
7	Surrogate recovery above the acceptance limit.
B	Analyte was present in the associated method blank.
BU	Sample analyzed after holding time expired.
E	Concentration exceeds the calibration range.
ET	Sample was extracted past end of recommended max. holding time.
HD	The chromatographic pattern was inconsistent with the profile of the reference fuel standard.
HDH	The sample chromatographic pattern for TPH matches the chromatographic pattern of the specified standard but heavier hydrocarbons were also present (or detected).
HDL	The sample chromatographic pattern for TPH matches the chromatographic pattern of the specified standard but lighter hydrocarbons were also present (or detected).
J	Analyte was detected at a concentration below the reporting limit and above the laboratory method detection limit. Reported value is estimated.
ME	LCS/LCSD Recovery Percentage is within Marginal Exceedance (ME) Control Limit range.
ND	Parameter not detected at the indicated reporting limit.
Q	Spike recovery and RPD control limits do not apply resulting from the parameter concentration in the sample exceeding the spike concentration by a factor of four or greater.
SG	The sample extract was subjected to Silica Gel treatment prior to analysis.
X	% Recovery and/or RPD out-of-range.
Z	Analyte presence was not confirmed by second column or GC/MS analysis.

Solid - Unless otherwise indicated, solid sample data is reported on a wet weight basis, not corrected for % moisture. All QC results are reported on a wet weight basis.
MPN - Most Probable Number

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Global ID: T0600100201

Calscience Environmental Laboratories, Inc.
7440 LINCOLN WAY
GARDEN GROVE, CA 92841-1427
TEL: (714) 895-5494 . FAX: (714) 894-7501

CHAIN OF CUSTODY RECORD

DATE: May 29, 2012
PAGE: 1 OF 1

LABORATORY CLIENT: Regenesis
ADDRESS: 1011 Calle Sombra
CITY: San Clemente STATE: CA ZIP: 92673
TEL: 949.366.8000 FAX: 949.366.8090 E-MAIL: jgravitt@regenesis.com

CLIENT PROJECT NAME / NUMBER: Antea Oakland
P.O. NO.:
PROJECT CONTACT: Joy Gravitt
LAB CONTACT OR QUOTE NO.: Alan Kemp
SAMPLER(S): (SIGNATURE)
LAB USE ONLY: 12-05-1978

TURNAROUND TIME:
☐ SAME DAY ☐ 24 HR ☐ 48 HR ☐ 72 HR ☑ 5 DAYS ☐ 10 DAYS

SPECIAL REQUIREMENTS (ADDITIONAL COSTS MAY APPLY)
☐ RWQCB REPORTING ☐ ARCHIVE SAMPLES UNTIL ___/___/___

SPECIAL INSTRUCTIONS:
Please see Joy Gravitt for questions or concerns.
*Required Oxygenates: BTEX, MTBE, TBA, ETBE, TAME, DIPE, EDB, ethanol, 1,2-DCA

REQUESTED ANALYSIS

LAB USE ONLY	SAMPLE ID	LOCATION / DESCRIPTION	SAMPLING DATE	SAMPLING TIME	MATRIX	NO. OF CONT.	TPH-g (EPA 8015)	BTEX/Oxygenates* (EPA 8260)	Nitrate/Sulfate (EPA 300.0)	Total Iron (EPA 6010B)	Dissolved Iron (EPA 6010B)	Sulfide (SM4500S2D)	Methane (RSK-175)	TOC (SM5310D)	COD (SM5220D)	Alkalinity (SM2320B)
1	MW-21	Oakland, CA	5/29/12	9:00 am	W	13	X	X	X	X	X	X	X	X	X	X

Relinquished by: (Signature) — Received by: (Signature) — Date: 5/29/12 — Time: 8:45 am
Relinquished by: (Signature) — Received by: (Signature) — Date: 5/29/12 — Time: 1655
Relinquished by: (Signature) — Received by: (Signature) — Date: 5/30/12 — Time: 0930

to GSD 5-29-12 1730

06/01/10 Revision

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1978

GSO

WebShip > > > > >

800-322-5555 www.gso.com

Ship From:
ALAN KEMP
CAL SCIENCE- CONCORD
5063 COMMERCIAL CIRCLE #H
CONCORD, CA 94520

Ship To:
SAMPLE RECEIVING
CEL
7440 LINCOLN WAY
GARDEN GROVE, CA 92841

COD:
$0.00

Reference:
ERM, PHILLIPS 66, CURTIS & TOMPKINS, REGENESIS

Delivery Instructions:

Signature Type:
SIGNATURE REQUIRED

Tracking #: 519210074

NPS

ORC

A

GARDEN GROVE

D92841A

1666796

Print Date : 05/29/12 14:17 PM

Package 1 of 1

Send Label To Printer | ☑ Print All | Edit Shipment | Finish

LABEL INSTRUCTIONS:

Do not copy or reprint this label for additional shipments - each package must have a unique barcode.

STEP 1 - Use the "Send Label to Printer" button on this page to print the shipping label on a laser or inkjet printer.
STEP 2 - Fold this page in half.
STEP 3 - Securely attach this label to your package, do not cover the barcode.
STEP 4 - Request an on-call pickup for your package, if you do not have scheduled daily pickup service or Drop-off your package at the nearest GSO drop box. Locate nearest GSO dropbox locations using this link.

ADDITIONAL OPTIONS:

Send Label Via Email | Create Return Label

TERMS AND CONDITIONS:

By giving us your shipment to deliver, you agree to all the service terms and conditions described in this section.
Our liability for loss or damage to any package is limited to your actual damages or $100 whichever is less, unless you pay for and declare a higher authorized value. If you declare a higher value and pay the additional charge, our liability will be the lesser of your declared value or the actual value of your loss or damage. In any event, we will not be liable for any damage, whether direct, incidental, special or consequential, in excess of the declared value of a shipment whether or not we had knowledge that such damage might be incurred including but not limited to loss of income or profit. We will not be liable for your acts or omissions, including but not limited to improper or insufficient packaging, securing, marking or addressing. Also, we will not be liable if you or the recipient violates any of the terms of our agreement. We will not be liable for loss, damage or delay caused by events we cannot control, including but not limited to acts of God, perils of the air, weather conditions, act of public enemies, war, strikes, or civil commotion. The highest declared value for our GSO Priority Letter or GSO Priority Package is $500. For other shipments the highest declared value is $10,000 unless your package contains items of "extraordinary value", in which case the highest declared value we allow is $500. Items of "extraordinary value" include, but or not limited to, artwork, jewelry, furs, precious metals, tickets, negotiable instruments and other items with intrinsic value.

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Calscience Environmental Laboratories, Inc.

WORK ORDER #: 12-05-1971

SAMPLE RECEIPT FORM

Cooler 1 of 1

CLIENT: Regenesis DATE: 05/30/12

TEMPERATURE: Thermometer ID: SC2 (Criteria: 0.0 °C – 6.0 °C, not frozen)

Temperature 2.2 °C - 0.3 °C (CF) = 1.9 °C ☑ Blank ☐ Sample

☐ Sample(s) outside temperature criteria (PM/APM contacted by: _____).

☐ Sample(s) outside temperature criteria but received on ice/chilled on same day of sampling.

☐ **Received at ambient temperature, placed on ice for transport by Courier.**

Ambient Temperature: ☐ Air ☐ Filter Initial: JP

CUSTODY SEALS INTACT:

☑ Cooler ☐_____ ☐ No (Not Intact) ☐ Not Present ☐ N/A Initial: JP

☐ Sample ☐_____ ☐ No (Not Intact) ☑ Not Present Initial: JP

SAMPLE CONDITION:	Yes	No	N/A
Chain-Of-Custody (COC) document(s) received with samples	☑	☐	☐
COC document(s) received complete	☑	☐	☐
☐ Collection date/time, matrix, and/or # of containers logged in based on sample labels.			
☐ No analysis requested. ☐ Not relinquished. ☐ No date/time relinquished.			
Sampler's name indicated on COC	☐	☑	☐
Sample container label(s) consistent with COC	☑	☐	☐
Sample container(s) intact and good condition	☑	☐	☐
Proper containers and sufficient volume for analyses requested	☑	☐	☐
Analyses received within holding time	☑	☐	☐
pH / Res. Chlorine / Diss. Sulfide / Diss. Oxygen received within 24 hours	☐	☐	☑
Proper preservation noted on COC or sample container	☑	☐	☐
☐ Unpreserved vials received for Volatiles analysis			
Volatile analysis container(s) free of headspace	☑	☐	☐
Tedlar bag(s) free of condensation	☐	☐	☑

CONTAINER TYPE:

Solid: ☐4ozCGJ ☐8ozCGJ ☐16ozCGJ ☐Sleeve (_____) ☐EnCores® ☐TerraCores® ☐_____

Water: ☐VOA ☑VOA**h** (6) ☐VOA**na$_2$** ☐125AGB ☐125AGB**h** ☐125AGB**p** ☐1AGB ☐1AGB**na$_2$** ☐1AGB**s**

☐500AGB ☐500AGJ ☐500AGJ**s** ☐250AGB ☐250CGB ☑250CGB**s** ☐1PB ☐1PB**na** ☐500PB

☑250PB (2) ☑250PB**n** ☐125PB ☑125PB**znna** ☐100PJ ☐100PJ**na$_2$** ☐_____ ☐_____ ☐_____

Air: ☐Tedlar® ☐Summa® **Other:** ☐_____ **Trip Blank Lot#:**_____ **Labeled/Checked by:** PS

Container: **C:** Clear **A:** Amber **P:** Plastic **G:** Glass **J:** Jar **B:** Bottle **Z:** Ziploc/Resealable Bag **E:** Envelope **Reviewed by:** JAM

Preservative: **h:** HCL **n:** HNO_3 **na$_2$:**$Na_2S_2O_3$ **na:** NaOH **p:** H_3PO_4 **s:** H_2SO_4 **u:** Ultra-pure **znna:** $ZnAc_2$+NaOH **f:** Filtered **Scanned by:** AM

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Appendix G

JAG's Bench Scale Treatability Report (December 10, 2011)

BENCH SCALE TREATABILITY REPORT

76 Service Station
7210 Bancroft Avenue
Oakland, CA

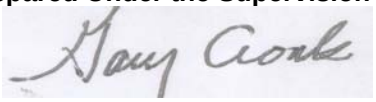
Prepared for:

Antea Group
1350 Treat Boulevard, Suite 250
Walnut Creek, CA 94597

Prepared By:

JAG Consulting Group, Inc.
3340 S. Crawford Glen
Santa Ana, California 92704
714-241-7722

Prepared Under the Supervision of:



Gary Cronk, P.E.
Consulting Environmental Engineer



December 10, 2011

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Appendix A Laboratory Analytical Reports (Calscience Labs)
Appendix B Treatability Lab Report (PTS Laboratories)

1.0 Introduction

JAG Consulting Group, Inc. has prepared this report of bench scale treatability testing performed on samples collected from the 76 Service Station property located at 7210 Bancroft Avenue in Oakland, CA (the Site). This treatability test evaluated the contaminant destruction effectiveness of two chemical oxidation treatments; one using high pH activated sodium persulfate and one using stabilized hydrogen peroxide (SHP) activated sodium persulfate. Antea Group collected the saturated soil samples and groundwater samples on October 6, 2011.

This report describes the objectives and procedures of the treatability test, provides a summary of the analytical results, and discusses the test results as they relate to use of chemical oxidation as a remediation strategy at the Site.

1.1 Site Background

The Site is impacted by elevated levels of petroleum hydrocarbons, including TPH as gasoline, BTEX constituents, MTBE, and TBA. The results of this treatability test are intended for use in developing an injection design for chemical oxidation treatment of the source area which measures approximately 50 feet by 80 feet (4,000 square feet) near wells DPE-4, DPE-5, and MW-4. Depth to groundwater beneath the Site is approximately 15-16 feet below ground surface (bgs). Soils consist primarily of silts and silty sands from 15 feet to 30 feet bgs.

1.2 Activation of Sodium Persulfate

In the last eight years, sodium persulfate has become a commonly used oxidant for cleanup of many contaminated groundwater sites. Sodium persulfate is a strong and versatile oxidant capable of treating a wide spectrum of organic contaminants. The activation of sodium persulfate can be achieved by any of the following methods:

- High pH (over 10.5 pH)
- Catalyzed Hydrogen Peroxide or Stabilized Hydrogen Peroxide
- Chelated Iron or Ferrous Iron
- Heat (over 140 degrees F)

Once the persulfate is activated by one of the above methods, it results in the formation of sulfate free radicals (SO_4-•) as represented in Equations 1 through 6 below. The sulfate radicals can also produce hydroxyl radicals (see Equation 2). Free radicals are molecular fragments that have an unpaired electron causing them to be strong oxidizing agents and are known to rapidly oxidize many VOCs. In addition to its oxidizing strength, sulfate radical oxidation has several advantages over other oxidants. First, it is kinetically fast. Second, the sulfate radical is more stable than the hydroxyl radical and thus able to transport (diffuse) greater distances and create a larger radius of treatment.

Sulfate Radical Generation and Reactions:

Initiation: NaS_2O_8 + Activator → $2SO_4$-• + Na
(Generation of Sulfate Radicals (SO_4-•) (Equation 1)

Propagation: SO_4•- + H_2O → OH-• + HSO_4-
(Generation of Hydroxyl Radicals (OH-•) (Equation 2)
SO_4•- + RH → R• + HSO_4-
(Generation of Organic Radicals (R-•) (Equation 3)
OH• + RH → R• + H_2O
(Generation of More Organic Radicals (R•) (Equation 4)
R• + S_2O_8- → SO_4-• + HSO_4- + R
(Generation of More Sulfate Radicals (SO_4-•) (Equation 5)
SO_4•- + OH → OH• + SO_4^{-2}
(Generation of More Hydroxyl Radicals (OH•) (Equation 6)

Where: RH represents an organic compound;
R• represents oxidized organic compound
Soil oxidant demand and reduced metals also contribute to oxidant consumption.
Note: Free radical chemistry is not necessarily stoichiometric or straightforward.

Catalyzed hydrogen peroxide (CHP) is a modified Fenton's reaction where the hydrogen peroxide (typically 8% to 10% concentration) is catalyzed by a ferrous iron solution (5,000 ppm) under low pH conditions (typically 3.5 to 5.0 pH). The catalyzed peroxide creates hydroxyl radicals (OH•) which are extremely strong oxidants that can destroy many organic contaminants. In addition, the reaction is an exothermic reaction and the excess heat given off is useful in the desorption of contaminants from the soil, allowing them to be destroyed in the dissolved phase.

The hydrogen peroxide can also be used with sodium citrate stabilizer. The stabilized hydrogen peroxide (SHP) slows down the rapid decomposition of hydrogen peroxide that normally occurs with CHP. The life of the peroxide can be extended from less than 1 day to over 7 days by the use of citrate stabilizer. The citrate SHP reaction does not generate the excess heat and rapid oxygen release and thereby helps to minimize the field conditions responsible for daylighting of chemicals.

Hydroxyl Radical Generation and Reactions:

Initiation Reaction:

$H_2O_2 + Fe+^2 \rightarrow OH\bullet + OH- + Fe+^3$

(Generation of Hydroxyl Radicals (OH•) (Equation 1)

Propagation Reactions:

$OH\bullet + H_2O \rightarrow HO_2\bullet + H_20$

(Generation of Hydroperoxide Radicals (HO_2•) (Equation 2)

$HO_2\bullet \rightarrow O_2-\bullet + H+$

(Generation of Superoxide Radicals (O_2-•) (Equation 3)

$OH\bullet + RH \rightarrow R\bullet + OH-$

(Generation of Organic Radicals (R•) (Equation 4)

$R\bullet + H_2O_2 \rightarrow ROH + OH\bullet$

(Generation of more Hydroxyl Radicals (OH•) (Equation 5)

2.0 Objectives

This bench scale treatability test was designed for the Shell Service Station site in Santa Barbara, CA to evaluate an effective range of oxidant concentrations for field injection to treat VOC-impacted groundwater and soil. This bench test compared the contaminant destruction effectiveness of the following tests:

- Test A: Sodium persulfate activated by high pH (sodium hydroxide)
- Test B; Sodium persulfate activated by stabilized hydrogen peroxide.

The specific objectives for the treatability test are described below.

- Evaluate Contaminant Reductions. The reductions in TPH as gas, BTEX constituents, MTBE, and TBA following application of sodium persulfate will be determined by comparing the analytical results for the reacted samples with the corresponding control sample.
- Evaluate Activators. The contaminant destruction effectiveness of high pH activation will be compared to hydrogen peroxide activation.
- Mass Balance. A mass balance will be performed by calculating the mass of petroleum hydrocarbons and VOCs in micrograms for both the groundwater and soil samples. The estimated amount of VOCs destroyed during each treatability test will be calculated.
- Determine Total Oxidant Demand. It is important to determine the total oxidant demand (TOD) prior to field injections, to help in the selection of the proper dosage rate of oxidant. The TOD is a combined measurement of both the soil oxidant demand (SOD) and the stoichiometric (contaminant) demand. Contributors to SOD include naturally occurring organics in the soil, the presence of reduced metals, and from high alkalinity and total dissolved solid (TDS) levels which can cause scavenging of oxidants. Elevated SOD levels can cause inefficiencies in the oxidation of contaminants.
- Evaluate Water Quality Effects. The change in concentrations of hexavalent chromium, total chromium, sulfate, manganese, ferrous iron, and ferric iron will

be compared between the reacted samples. Periodic measurements of pH, dissolved oxygen, ORP, conductivity, and temperature during the test will also be taken.

- Field Injection Design Parameters. The results of the treatability test is intended to provide a basis for the design of field chemical injection parameters, such as oxidant dose (concentration), radius of influence, injection rate, intervals of injection, number of injection wells (or points), and number of days of injection.

3.0 Testing Procedures

3.1 Sample Receipt and Preparation.

Soil and groundwater samples were collected by Antea Group personnel. The samples included twenty-one 1-inch by 6-inch long sleeves of saturated soil and 25 one-liter containers of groundwater. PTS Laboratories (Santa Fe Springs, CA) received the samples on October 7, 2011 and the treatability test was performed from October 13 to November 10, 2011. The samples were refrigerated until the tests were performed.

Prior to testing, soil samples were sieved to remove particles greater than 4 mesh and the soils were then homogenized. The groundwater samples from the 1 liter containers were also composited before testing.

3.2 Treatability Test Procedures

Test A: High pH Activated Persulfate. Approximately 700 grams of soil was placed into each of four 2-liter reactor vessels. Approximately 1,400 ml of groundwater was then added into each of the reactor vessels. The reactor vessels were labeled as follows: Control Time = 0, Control A, Medium Dose with Medium Caustic, and High Dose with High Caustic. The following sacrificial time samples were collected and analyzed:

- Time = 0 (Control)
- Time = 28 Days (Control and Two Reactor Vessels)

Incremental doses of sodium persulfate were added to each of the reactor vessels as follows: 5 g/L for the Medium Dose, and 7.5 g/L for the High Dose. The control samples did not receive any sodium persulfate. The amount of sodium hydroxide was determined by performing a soil buffering test as described below. The reagent quantities used for Test A are shown in Table 1 below.

Table 1. Reagent Quantities for High pH Activated Persulfate (Test A)

Test	Soil (grams)	Groundwater (ml)	Sodium Persulfate (g/L)	Sodium Hydroxide (ml)
Control Time=0	700	1,400	0	0
Control A	700	1,400	0	0
Medium Persulfate with Medium Caustic	700	1,400	5	6.1

Test	Soil (grams)	Groundwater (ml)	Sodium Persulfate (g/L)	Sodium Hydroxide (ml)
High Persulfate with High Caustic	700	1,400	7.5	9.1

Soil Buffering Test. To maintain the pH at alkaline levels during the test, 6-Normal sodium hydroxide was titrated into each of the three reactor vessels at regular intervals. The pH of each reactor vessel was maintained at or above a pH of 10.5 units by the addition of sodium hydroxide at the following intervals; initial conditions, 1 hour, 2 hours, 4 hours, and 24 hours. Two doses of sodium hydroxide as the activator were used in the test; a medium dose derived from the 2-hour titration and a high dose derived from the 24-hour titration.

Test B: Hydrogen Peroxide Activated Persulfate. Test B was set up similarly to Test A with 700 grams of soil and 1,400 ml of groundwater added into each of three 2-liter reactor vessels. The same dose of sodium persulfate (5 g/L) was added to each of the two reactor vessels. The amount of hydrogen peroxide required as an activator was determined by calculating a 5:1 molar ratio (peroxide to persulfate) for the medium activator dose and a 7.5:1 molar ratio for the high activator dose. In addition, sodium citrate was added as a stabilizer for the two peroxide doses. The reagent quantities used for Test B are shown in Table 2 below.

Table 2. Reagent Quantities for CHP Activated Persulfate (Test B)

Test	Soil (grams)	Ground-water (ml)	Sodium Persulfate (g/L)	Hydrogen Peroxide (10%) (ml)	Sodium Citrate (g)
Control B	700	1,400	0	0	0
Medium Persulfate with Medium Peroxide	700	1,400	5	50	2.06
Medium Persulfate with High Peroxide	700	1,400	5	75	4.12

At Time=0 and at the conclusion of the treatability testing (28 days), the water phase was decanted from the soil-water mixture and separate water and soil samples were prepared for shipment to the analytical laboratory. A copy of the chain of custody form used for shipping the samples to the analytical lab is provided in Appendix A.

3.3 Residual Oxidant and TOD Testing

Residual peroxide was measured at the completion of 2 days, 7 days, 14 days, and 28 days of testing on the three peroxide activation tests (Test B only). The residual peroxide was measured by use of peroxide test strips on the reaction vessels.

Total Oxidant Demand (TOD) testing (residual persulfate testing) was performed at 2 days, 14 days, and 28 days for Test A. Note that residual persulfate could not be measured in Test B, because peroxide interferes with the persulfate titration method. For the TOD test, two reactor vessels were set up using 250 ml amber jars. Initially, 40 grams of soil was added to each vessel. Then two doses of persulfate solution were prepared at 5 g/L and 7.5 g/L using site groundwater and 200 ml of each persulfate dose was added to the vessels. A medium and high dose of sodium hydroxide was added to the vessels based on the soil buffering titration.

The vessels were placed on a shaker table and rotated at low velocity (50-100 rpm). The quantities of chemical reagents for the TOD test are summarized in Table 3 below.

Table 3. TOD Test Reagents

TOD Test	Soil (grams)	Ground-water (ml)	Sodium Persulfate (g/L)	Sodium Hydroxide 6N (ml)
Test A – Med Dose + Med Caustic Activator	40	200	5	0.9
Test A – High Dose + High Caustic Activator	40	200	7.5	1.3

At the scheduled time, the soil was allowed to settle and the aqueous portion was decanted. PTS Laboratories measured the residual persulfate remaining using standard back titration (via permanganate). This data was then used to determine the Total Oxidant Demand (TOD) by use of the following equation:

$$\mathbf{TOD\ (g/kg) = (C_o - C_f) * V / M}$$

Where C_o = initial concentration of persulfate at time 0 (g/L)
C_f = concentration of persulfate after 48 hours (g/L)
V = volume of groundwater used in sample (L)
M = mass of soil used in sample (kg)

3.4 Chemical Analytical Testing

The groundwater and soil samples generated during the treatability test were sent to an outside analytical laboratory (Calscience Environmental Labs, Garden Grove, CA) for chemical testing. The following analytical testing was performed:

- VOCs and Oxygenates by EPA 8260B
- TPH as Gasoline by EPA 8015M
- Hexavalent Chromium by EPA 7199
- Sulfate by EPA 300.0
- Ferrous Iron by SM 3500
- Ferric Iron, Manganese, and Total Chromium by EPA 6010B

3.5 Water Quality Measurements

Measurements of ORP, dissolved oxygen, pH, conductivity, and temperature were taken using a YSI Model 556 instrument in each reactor vessel at six intervals during the bench test: 0 hrs, 1 hr, 4 hrs, 24 hrs, 2 days, 4 days, 7 days, 14 days, and 28 days. These measurements are important to confirm that oxidizing conditions were achieved during the bench test.

4.0 Evaluation of Results

Immediately following completion of the treatability testing, the groundwater and soil samples were shipped to Calscience Environmental Laboratories (Garden Grove, CA) for analysis of VOCs, TPH as gas, hexavalent chromium, total chromium, sulfate, ferrous iron, ferric iron, and manganese.

4.1 Observations During Bench Testing

Test A. Sodium persulfate is a strong oxidant and was observed to produce some mild bubbling of the samples when initially added to the reactor bottles. A very small amount of oxygen is typically given off by the persulfate reaction (not enough to cause a pressure buildup in the reactor bottle). No excess heat was given off by the persulfate reaction. The reacted samples changed from a light yellow color with a strong hydrocarbon odor at the beginning of the test to a faint yellow color and a faint hydrocarbon odor after the 28 day test.

Test B. The stabilized hydrogen peroxide is also a strong oxidant and was observed to produce moderate bubbling shortly after addition to the reactor bottle. Moderate to large quantities of oxygen are given off by the Fenton's reaction. The reactor vessels were loosely covered, to allow the excess oxygen to vent and not cause a pressure buildup in the reactor bottle. The reacted samples changed from a light yellow color with a strong hydrocarbon odor at the beginning of the test to a light yellow color and a faint odor over the 28 day test.

4.2 Soil Buffering Test

The soil buffering test was performed over a 24 hour period to determine the amount of sodium hydroxide to maintain the pH above 10.5 pH units. A total of 6.1 ml of sodium hydroxide was required to maintain the pH above 10.5 units for 2 hours, while 9.1 ml of hydroxide was required to maintain that pH for 24 hours. This indicates the soils at the Site have a moderate (average) buffering capacity (2.90 g NaOH/kg soil).

4.3 VOC and TPH gas Reductions – High pH Activation(Test A)

In the groundwater samples, moderate reductions in TPH as gasoline were observed, decreasing from 780 µg/l in the Control sample to 640 µg/l in the Medium Dose with Medium caustic and to 540 µg/L in the High Dose with High Caustic. More significant reductions of benzene were observed, decreasing from 150 µg/l to non-detectable (<2.5

µg/L) in both the Medium and High Dose samples. A summary of the contaminant levels after the high pH Activation test is provided in Table 4 below. Excellent reductions were also observed in toluene, ethylbenzene, total xylenes, and MTBE, with the contaminants being completely destroyed in both medium and high doses. Moderate levels of TBA and acetone, normal breakdown products of petroleum hydrocarbons, were measured during the test. These by-products are temporary in nature and are commonly observed during short-term Treatability Tests.

Table 4. Contaminant Levels After High pH Activation Test (Test A)

Test	TPH as Gasoline	Benzene	Toluene	Ethyl-benzene	Total Xylenes	MTBE	TBA	1,2,4-Trimethyl-benzene	1,3,5-Trimethyl-benzene	Total VOCs
Groundwater (µg/L)										
Control Time = 0	780	150	34	5.2	80	45	120	8.1	5.9	1,228
1. Control A	290	<0.5	3.2	<1.0	1.1	1.9	150	<1.0	5.4	452
2. Med Persulfate with Med Caustic	640	<2.5	<5	<5	<5	<5	130	<5	<5	770
3. High Persulfate with High Caustic	540	<2.5	<5	<5	<5	<5	130	<5	<5	670
Soil (µg/kg)										
Control Time = 0	800,000	<2,500	4,300	20,000	119,000	<2500	<25,000	89,000	31,000	1,063,300
1. Control A	250,000	<500	510	2,300	17,900	<500	<5,000	17,000	4,900	292,610
2. Med Persulfate with Med Caustic	440,000	<1000	<1000	2,100	17,000	<1,000	<10,000	38,000	10,000	507,100
3. High Persulfate with High Caustic	280,000	<500	<500	610	4,700	<500	<5,000	17,000	4,400	306,710

An unusual observation during the test was the contaminant levels in the 28 day control sample (Control A) were much lower than the Time=0 Control sample. The 28 day control sample exhibited all the normal physical attributes expected in a control sample, as evidenced by the lack of change in pH, ORP, dissolved oxygen, conductivity, and temperature as measured during the test (see Section 4.9 below). According to PTS Labs, no unusual conditions occurred during the test that would account for the difference in the control results.

In the soil samples, TPH gas, toluene, ethylbenzene, total xylenes, 1,2,4-trimethylbenzene, and 1,3,5-trimethylbenzene all showed very good reductions in contaminant levels. Note that the contaminant levels were much higher in the soil than the groundwater (as much as 10 times higher). The high persulfate dose consistently attained better destruction of contaminant levels than the medium dose for all constituents.

To calculate the percent reductions in Test A, the contaminant levels measured in the control sample (Time=0) were compared to the reacted samples. Percentage-wise, in the groundwater the benzene (98%), toluene (85%), xylenes (94%), and MTBE (89%) showed excellent contaminant reductions. TPH gas showed moderate reductions of 18% to 31%, but these reductions may have influenced due to the much higher levels of TPH gas in the soil, which were 10 times higher than the groundwater levels. A summary of the percent reductions during Test A is provided in Table 6.

For the soil testing, toluene (77%), ethylbenzene (90%), and xylenes (86%) showed good to excellent contaminant reductions. TPH gas showed reductions of 45% to 65%.

Table 5. Percent Reduction for High pH Activation Test (Test A)

Test	TPH as Gasoline	Benzene	Toluene	Ethyl-benzene	Total Xylenes	MTBE	TBA	1,2,4-Trimethyl-benzene	1,3,5-Trimethyl-benzene	Total VOCs
Groundwater (µg/L)										
2. Med Persulfate with Med Caustic	18%	98%	85%	NA	94%	89%	-8%	38%	15%	37%
3. High Persulfate with High Caustic	31%	98%	85%	NA	94%	89%	-8%	38%	15%	45%
Soil (µg/kg)										
2. Med Persulfate with Med Caustic	45%	NA	77%	90%	86%	NA	NA	57%	68%	52%
3. High Persulfate with High Caustic	65%	NA	88%	97%	96%	NA	NA	81%	86%	71%

* Percent reduction is calculated relative to Control results.

4.4 VOC and TPH gas Reductions –Peroxide Activation Test (Test B)

In the Test B groundwater samples, benzene, MTBE, and TBA all showed good reductions in concentrations. However, little or no reductions in TPH gas, toluene, ethylbenzene, or xylenes were observed. A summary of the contaminant levels after the Peroxide Activation Test is provided in Table 6 below.

In the Test B soil samples, TPH gas, toluene, ethylbenzene, xylenes, 1,2,4-trimethylbenzene, and 1,3,5-trimethylbenzene showed significant reductions in contaminant levels. The High Peroxide Dose achieved slightly better reductions than the medium dose.

Table 6. Contaminant Levels After Hydrogen Peroxide Activation Test (Test B)

Test	TPH as Gasoline	Benzene	Toluene	Ethyl-benzene	Total Xylenes	MTBE	TBA	1,2,4-Trimethyl-benzene	1,3,5-Trimethyl-benzene	Total VOCs
Groundwater (µg/L)										
Control Time = 0	780	150	34	5.2	80	45	120	8.1	5.9	1,228
4. Control B	910	<0.5	6.1	<1	14.2	1.7	150	<1	70	1,152
5. Med Dose + Med Peroxide	970	0.66	27	13	91	<1	13	24	3.9	1,143
6. Med Dose + High Peroxide	2,000	<2.5	28	23	155	<5	<50	48	8.2	2,262
Soil (µg/kg)										
Control Time = 0	800,000	<2,500	4,300	20,000	119,000	<2500	<25,000	89,000	31,000	1,063,300
4. Control B	200,000	<500	<500	1,700	11,900	<500	<5,000	13,000	4,100	230,700
5. Med Dose + Med Peroxide	230,000	<500	<500	1,500	10,500	<500	<5,000	12,000	3,600	257,600
6. Med Dose + High Peroxide	220,000	<500	<500	1,300	9,200	<500	<5,000	12,000	3,200	245,700

Percentage-wise, the Test B groundwater testing showed excellent contaminant reductions for benzene (100%), MTBE (98%), and TBA (89%). A summary of the percent reductions during Test B is provided in Table 7.

The soil testing showed good to excellent reductions in TPH gas (71%), toluene (88%), ethylbenezene (93%), xylenes (91%), 1,2,4-trimethylbenzene (87%), 1,3,5-trimethylbenzene (88%), and total VOCs (76%).

Table 7. Percent Reductions for Hydrogen Peroxide Activation Test (Test B)

Test	TPH as Gasoline	Benzene	Toluene	Ethyl-benzene	Total Xylenes	MTBE	TBA	1,2,4-Trimethyl-benzene	1,3,5-Trimethyl-benzene	Total VOCs
Groundwater (µg/L)										
5. Med Dose + Med Peroxide	-24%	100%	21%	-150%	-14%	98%	89%	-196%	34%	7%
6. Med Dose + High Peroxide	-156%	100%	18%	-342%	-94%	89%	89%	-493%	-39%	-84%
Soil (µg/kg)										
5. Med Dose + Med Peroxide	71%	NA	88%	93%	91%	NA	NA	87%	88%	76%
6. Med Dose + High Peroxide	73%	NA	88%	94%	92%	NA	NA	87%	90%	77%

4.5 Mass Balance Determination

A mass balance was determined for the treatability test and is summarized below in Table 8. In both Tests A and B, the mass destruction of contaminants in the soil was over 1,000 times higher than the destruction of VOCs in the groundwater. Although the high pH test destroyed slightly more mass in the groundwater than Test B, the most overall mass was destroyed by the peroxide activation test due to it high degree of soil mass destruction.

Table 8. Mass Balance for VOCs and TPH as Gas

Test	Mass of VOCs in Groundwater (µg)	Mass of VOCs in Soil (µg)	Mass in Groundwater Destroyed (µg)	Mass in Soil Destroyed (µg)	Overall Mass Destroyed (µg)
1.Control T=0	1,719	1,488,620			
2. Med Persulfate with Med Caustic	1,078	709,940	641	778,680	779,321
3. High Persulfate with High Caustic	938	429,394	781	1,059,226	1,060,007
5. Med Persulfate with Med Peroxide	1,600	360,640	119	1,127,980	1,128,099
6. Med Persulfate with High Peroxide	3,167	343,980	-1,448	1,144,640	1,143,192

4.6 TOD Determination and Residual Oxidant Test

TOD testing determined that the TOD level was somewhat lower for the High Dose sample (4.34 g/kg) than the Medium Dose sample (6.69 g/kg). This was an unexpected finding, as the TOD level is usually higher at higher doses, due in large part to increased auto-decomposition of persulfate. The TOD levels in the Medium Dose and High Dose are both considered moderate levels and either dose of persulfate (5 or 7.5 g/L) will react efficiently in the field. Another significant finding was that 49% of the persulfate was still present after 28 days in the Medium Dose and 73% was still present in the High Dose. This indicates that significant oxidation will still occur after 28 days. Table 9 below provides a summary of the TOD values determined from this test.

Table 9. TOD Determination

Test	Persulfate (g/L) at Start of Test	Residual Persulfate (g/L) After 48 Hours	Residual Persulfate (g/L) After 14 Days	Residual Persulfate (g/L) After 28 Days	Total Oxidant Demand at 48 Hrs (g/kg)
2. Med Persulfate with Med Caustic	5.0	3.65	3.06	2.46	6.69
3. High Persulfate with High Caustic	7.5	6.63	6.63	5.44	4.34

The residual hydrogen peroxide testing showed that after two days, 40% of the peroxide (2,000 ppm) was still present in the Medium Dose and 27% was present in the High

Dose. After 7 days, <1% of the peroxide was still present in the Medium Dose and none was present in the High Dose. This indicates that the stabilized peroxide can persist up to approximately 7 days. Table 10 below provides a summary of the residual peroxide levels from Test B.

Table 10. Residual Hydrogen Peroxide Levels

Test	Peroxide Level at Start of Test (ppm)	Peroxide Level at 2 Days (ppm)	Peroxide Level at 7 Days (ppm)	Peroxide Level at 14 Days (ppm)	Peroxide Level at 28 Days (ppm)
5. Med Persulfate with Med Peroxide	5,000	2,000	1	0	0
6. Med Persulfate with High Peroxide	7,500	2,000	0	0	0

4.7 Hexavalent Chromium and Other Inorganic Constituents

Table 11 below provides a summary of the total and hexavalent chromium, manganese, and ferric and ferrous iron analytical results.

Hexavalent chromium was formed during the high pH activation test in the Medium Dose (17 µg/L) and the High Dose (32 µg/L). The total chromium level for the Medium Dose was 20.4 µg/L, which indicates that all of the total chromium was comprised of hexavalent chromium. It is known that trivalent chromium is easily oxidized to hexavalent chromium under oxidizing conditions. Thus, during ISCO treatment, a portion of the trivalent chromium may be converted into hexavalent chromium. This conversion is a typically a temporary phenomenon. After 45-60 days following an ISCO application, the hexavalent chromium normally returns to trivalent chromium as the oxidizing conditions attenuate over time.

Table 11. Hexavalent Chromium and Other Inorganic Constituents

Sample	Total Chromium (µg/L)	Hexavalent Chromium (µg/L)	Manganese (mg/L)	Ferric Iron +3 (mg/L)	Ferrous Iron +2 (mg/L)
2. Med Persulfate with Med Caustic	20.4	17.0	0.0148	1.4	<0.10
3. High Persulfate with High Caustic	41.0	32.0	0.0121	0.22	<0.10
5. Med Persulfate with Med Peroxide	82.9	<2.0	43.4	33	22
6. Med Persulfate with High Peroxide	102	<2.0	34.1	29	32

Hexavalent chromium was not formed in the peroxide activation test (Test B), which may be due to the low pH environment of the peroxide test.

Manganese was detected at low levels in the High pH activation test, while manganese was found at relatively high levels in the peroxide activation test. It is possible the manganese is released from the soil matrix into a dissolved phase by the peroxide oxidation.

Similar to the manganese, ferric iron and ferrous iron were detected at low levels in the high pH activation test and at relatively high levels in the peroxide activation test. The ferric and ferrous iron may be released from the soil matrix into a dissolved phase by the peroxide oxidation.

4.8 Physical Water Quality Measurements

Physical water quality measurements were collected periodically during each of the bench tests. Measurements of pH, dissolved oxygen, ORP, conductivity, and temperature were taken in each reactor vessel at initial conditions (Time = 0), 1 hour, 4 hours, 24 hours, 48 hours (2 days), 168 hours (7 days), 336 hours (14 days), and 672 hours (28 days). A summary of the water quality measurements for the High pH Activation Test are provided in Table 12 below.

Table 12. Water Quality Measurements During High pH Activation (Test A)

Sample	Hours	Temperature °C	pH (units)	ORP (mVolts)	DO (mg/L)	Conductivity (µS/cm)
Control	0	16.40	6.04	154	6.09	394
	1	18.21	6.94	140	7.28	405
	4	21.07	7.21	199	7.21	433
	24	22.87	7.28	133	1.92	450
	48	23.42	7.41	141	2.51	457
	96	22.74	7.52	153	3.73	456
	168	22.71	7.62	154	3.59	449
	336	22.07	7.57	138	1.49	436
	672	21.59	8.14	171	3.17	424
Med Persulfate with	0	16.40	6.04	154	6.09	394
Medium Caustic	1	18.62	9.86	161	5.07	4,299
	4	21.21	10.06	96	4.47	4,726
	24	22.88	9.61	182	3.69	4,982
	48	23.38	9.28	135	3.69	4,924
	96	22.73	7.97	217	4.38	4,936
	168	22.71	7.33	253	4.81	4,912
	336	22.04	7.26	244	5.21	5,025
	672	21.55	7.71	276	5.67	5,188

Sample	Hours	Temperature °C	pH (units)	ORP (mVolts)	DO (mg/L)	Conductivity (µS/cm)
High Persulfate with	0	16.40	6.04	154	6.09	394
High Caustic	1	18.81	10.29	169	5.04	6,070
	4	21.21	10.04	123	3.87	6,634
	24	22.81	9.53	200	2.76	7,085
	48	23.33	9.54	144	2.61	7,301
	96	22.79	8.01	254	3.92	7,327
	168	22.72	7.13	289	4.34	7,285
	336	22.04	7.05	302	5.11	7,365
	672	21.57	7.54	308	5.51	7,517

The pH levels increased immediately upon the addition of sodium hydroxide. At 1 hour, the pH in the samples increased from a baseline pH level of approximately 6.04 to over 10 pH units in both reacted samples. The pH levels stayed elevated (generally over 10.0 units) for approximately 24 hours and then decreased gradually over the remaining days until reaching background levels by Day 7 (7 pH range). A graph of the pH levels during the treatability test is provided in Figure 2. The increase in pH levels was an expected observation.

The DO levels declined slightly for 24 hours and then increased slightly during the remainder of the test. This was an unexpected observation, as DO levels usually increase slightly. A graph of the DO levels during the treatability test is provided in Figure 3.

The ORP levels increased gradually throughout the test, rising from an initial level of 154 mV to 308 mV by Day 28. A graph of the ORP levels during the treatability test is provided in Figure 4. The slight increase in ORP levels was an expected observation.

Incremental increases in conductivity levels were measured in the samples in relation to the increasing dosage of persulfate added. The High Dose sample increased the most, with levels over 7,000 microSiemens/cm (µS/cm) extending throughout the test. The Medium Dose samples increased to levels over 4,000 µS/cm) throughout the remainder of the test. A graph of the conductivity levels during the test is provided in Figure 5. An increase in conductivity would normally be expected, as the sodium persulfate contributes to an increase in dissolved solids (i.e., sodium and sulfate) for a short-term duration.

Temperatures increased in all samples slowly throughout the test. The temperatures increased from a Baseline condition around 16 degrees Celsius (C) to over 22 degrees C at Day 7 and stayed near temperature for the reminder of the test. The persulfate reaction is a mildly exothermic reaction, and this may explain the slight temperature increases. Another explanation is the groundwater warmed up after being taken from the refrigerator and then placed in the laboratory environment (since the Control sample exhibited the same temperature fluctuations). A graph of the temperature levels during the test is provided in Figure 6.

A summary of the water quality measurements for the Peroxide Activation Test (Test B) are provided in Table 13 below.

Table 13. Water Quality Measurements During Peroxide Activation (Test B)

Sample	Hours	Temperature °C	pH (units)	ORP (mVolts)	DO (mg/L)	Conductivity (µS/cm)
Control	**0**	18.41	7.36	142	9.40	406
	1	19.75	7.23	167	9.39	420
	4	21.37	7.42	191	8.89	438
	24	22.86	7.33	84	2.07	457
	48	23.45	7.57	124	2.07	457
	96	22.86	7.56	196	3.79	448
	168	22.85	7.75	142	4.79	445
	336	22.08	7.47	126	1.37	437
	672	21.65	8.04	184	2.92	417
Med Persulfate with	**0**	18.41	7.36	142	9.40	406
Medium Peroxide	**1**	20.77	5.39	309	118	4,854
	4	22.06	4.59	336	88	5,243
	24	22.84	2.98	411	47	6,014
	48	23.41	2.63	426	27	6,452
	96	22.81	2.16	394	31	8,143
	168	22.69	2.21	313	14.3	7,593
	336	21.92	2.52	280	5.49	6,986
	672	21.50	4.14	238	2.82	6,384
Med Persulfate with	**0**	18.41	7.36	142	9.40	406
High Peroxide	**1**	21.05	5.64	291	174	5,245
	4	22.25	4.89	321	128	5,657
	24	22.73	3.18	395	60	6,573
	48	23.31	2.67	412	28	7,105
	96	22.59	2.62	272	26	7,254
	168	22.53	2.74	232	14.2	7,011

Sample	Hours	Temperature °C	pH (units)	ORP (mVolts)	DO (mg/L)	Conductivity (µS/cm)
	336	21.80	3.12	207	5.19	6,765
	672	21.41	4.77	181	4.39	6,493

The pH levels declined immediately in Test B due to the addition of hydrogen peroxide (acidic) and stayed in the pH range of 2 to 3 units for most of the test. A graph of the pH levels during the peroxide activation test is provided in Figure 7.

Dissolved oxygen levels increased dramatically during the peroxide activation test, due to the release of oxygen from the decomposition of peroxide. DO levels increased from a Baseline level of 9.40 mg/L to over 100 mg/L in both reacted samples. The DO levels stayed elevated throughout the entire test. A graph of the DO levels during the peroxide test is provided in Figure 8.

The ORP levels increased from a Baseline level of 142 mV to over 400 mV at 24 hours. The ORP levels stayed elevated (over 300 mV) for most of the test. A graph of the ORP levels during the peroxide test is provided in Figure 9.

The conductivity levels increased immediately during the peroxide activation test. The conductivity increased from an initial level of 406 µS/cm to over 6,000 µS/cm at 24 hours and stayed at that level throughout the test. A graph of the conductivity levels during the peroxide test is provided in Figure 10.

Similar to Test A, the temperatures in Test B increased in all samples slowly throughout the test, probably due to the samples warming up after being taken from the refrigerator and then placed in the laboratory environment. A graph of the temperature levels during the test is provided in Figure 11.

4.11 Selection of Optimal Dosage Rate

Based on the results of this bench test, either high pH activation or stabilized hydrogen peroxide could be used effectively in the field. If high pH activation is selected, the High Dose of persulfate (7.5 g/L) along with a High Dose of Caustic is recommended as the best dosage rate for field injection. If peroxide activated persulfate is selected for field use, the Medium Dose of persulfate (5 g/L) and High Dose of Peroxide is recommended as the best dosage rate.

5.0 Conclusions

The specific conclusions with respect to the treatability test objectives are presented below.

- Contaminant Reductions – High pH Activation (Test A). Excellent groundwater reductions were measured in benzene (98%), toluene (85%), xylenes (94%), and MTBE (89%). TPH gas showed moderate reductions of 18% to 31%. For the soil testing, toluene (77%), ethylbenzene (90%), and xylenes (86%) showed good to excellent contaminant reductions. TPH gas showed reductions of 45% to 65%.

- Contaminant Reductions – Peroxide Activation (Test B). Excellent groundwater reductions were measured in benzene (100%), MTBE (98%), and TBA (89%). The soil testing showed good to excellent reductions in TPH gas (71%), toluene (88%), ethylbenezene (93%), xylenes (91%), 1,2,4-trimethylbenzene (87%), and 1,3,5-trimethylbenzene (88%), and total VOCs (76%).

- Control Sample Anomoly. An unexplained observation during the test was the contaminant levels in the 28 day control sample (Control A) were much lower than the Time=0 Control sample. The 28 day control sample exhibited all the normal physical attributes expected in a control sample, as evidenced by the lack of change in pH, ORP, dissolved oxygen, conductivity, and temperature as measured during the test.

- Mass Balance. In both tests, the mass destruction of contaminants in the soil was over 1,000 times higher than the destruction of VOCs in groundwater. Although the high pH test destroyed slightly more mass in the groundwater than Test B, the most overall mass was destroyed by the peroxide activation test due to it high degree of soil mass destruction.

- TOD Determination. The TOD level was somewhat lower for the High Dose sample (4.34 g/kg) than the Medium Dose sample (6.69 g/kg). The TOD levels in the Medium Dose and High Dose are both considered moderate levels and either dose of persulfate (5 or 7.5 g/L) will react efficiently in the field. Another significant finding was that 49% of the persulfate was still present at the end of

the test in the Medium Dose and 73% was still present in the High Dose, indicating that significant oxidation will still occur after 28 days.

- Residual Peroxide. The residual hydrogen peroxide testing showed that after two days, 40% of the peroxide (2,000 ppm) was still present in the Medium Dose and 27% was present in the High Dose. After 7 days, <1% of the peroxide was still present in the Medium Dose and none was present in the High Dose. This indicates that the stabilized peroxide can persist up to approximately 7 days.

- Hexavalent Chromium. Hexavalent chromium was formed during the high pH activation test in the Medium Dose (17 µg/L) and the High Dose (32 µg/L). It is known that trivalent chromium is easily oxidized to hexavalent chromium under oxidizing conditions. Thus, during ISCO treatment, a portion of the trivalent chromium may be converted into hexavalent chromium. This conversion is a typically a temporary phenomenon. After 45-60 days following an ISCO application, the hexavalent chromium normally returns to trivalent chromium as the oxidizing conditions attenuate over time. Hexavalent chromium was not formed in the peroxide activation test (Test B), which may be due to the low pH environment of the peroxide test.

- Water Quality Parameters. The dissolved oxygen, ORP, conductivity, and temperature levels all generally increased during both tests. The pH declined during the peroxide activation tests, while the pH levels increased during the high pH activation tests. During the field injections, all these water quality parameters are expected to return to near normal levels in about 30 to 60 days following injection.

- Activator Use. Based on the results of this bench test, either high pH activation or stabilized hydrogen peroxide could be used effectively in the field.

- Optimal Dosage Rate. If high pH activation is selected, the High Dose of persulfate (7.5 g/L) along with a High Dose of Caustic is recommended as the best dose for field injection. If peroxide activated persulfate is selected for field use, the Medium Dose of persulfate (5 g/L) along with a High Dose of Peroxide is recommended.

6.0 Engineering Design Parameters

The sorbed and dissolved contaminants at the Site consist primarily of petroleum hydrocarbons, BTEX, MTBE, and TBA, all of which are amenable to the proposed treatment using high pH activated persulfate or stabilized hydrogen peroxide activated persulfate. Only small quantities of measurable free product (LNAPL) are believed to exist at the Site. Engineering design parameters for performance of the field injection pilot test are as follows:

- Either High pH or stabilized hydrogen peroxide as the activator can be used effectively at this site.
- Based on the prevailing soil types at the site (silts and silty sands) and ISCO experience at other sites, a radius of influence (ROI) of 10 feet would be expected for direct push injection, while a 15 foot ROI would be expected if using injection wells.
- The pilot test treatment area of 80 feet by 50 feet (4,000 square feet) will require the use of 14 direct push wells or six injection wells. The wells should be screened from 15 feet to 30 feet bgs. The proposed layout of the injection wells are provided in Figure 1.
- Based on the High Dose of persulfate 7.5 g/L, a total of 10,400 pounds of sodium persulfate will be required for field injection.
- If High pH activation is used, a High Dose quantity of 7,800 gallons of sodium hydroxide solution (25% concentration) will be required for field injection to raise the pH above 10.5 and ensure that the persulfate is fully activated.
- If hydrogen peroxide activation is used, a total of 12,900 gallons of hydrogen peroxide (at 10%) would be required. A total of 4,100 pounds of sodium citrate should be used as the hydrogen peroxide stabilizer.
- The field time required to inject the chemicals is estimated to be 5 days if using dedicated injection wells and approximately 10 days if using direct push injection. One day for mobilization of equipment and one day for demobilization will also be required for each injection method.

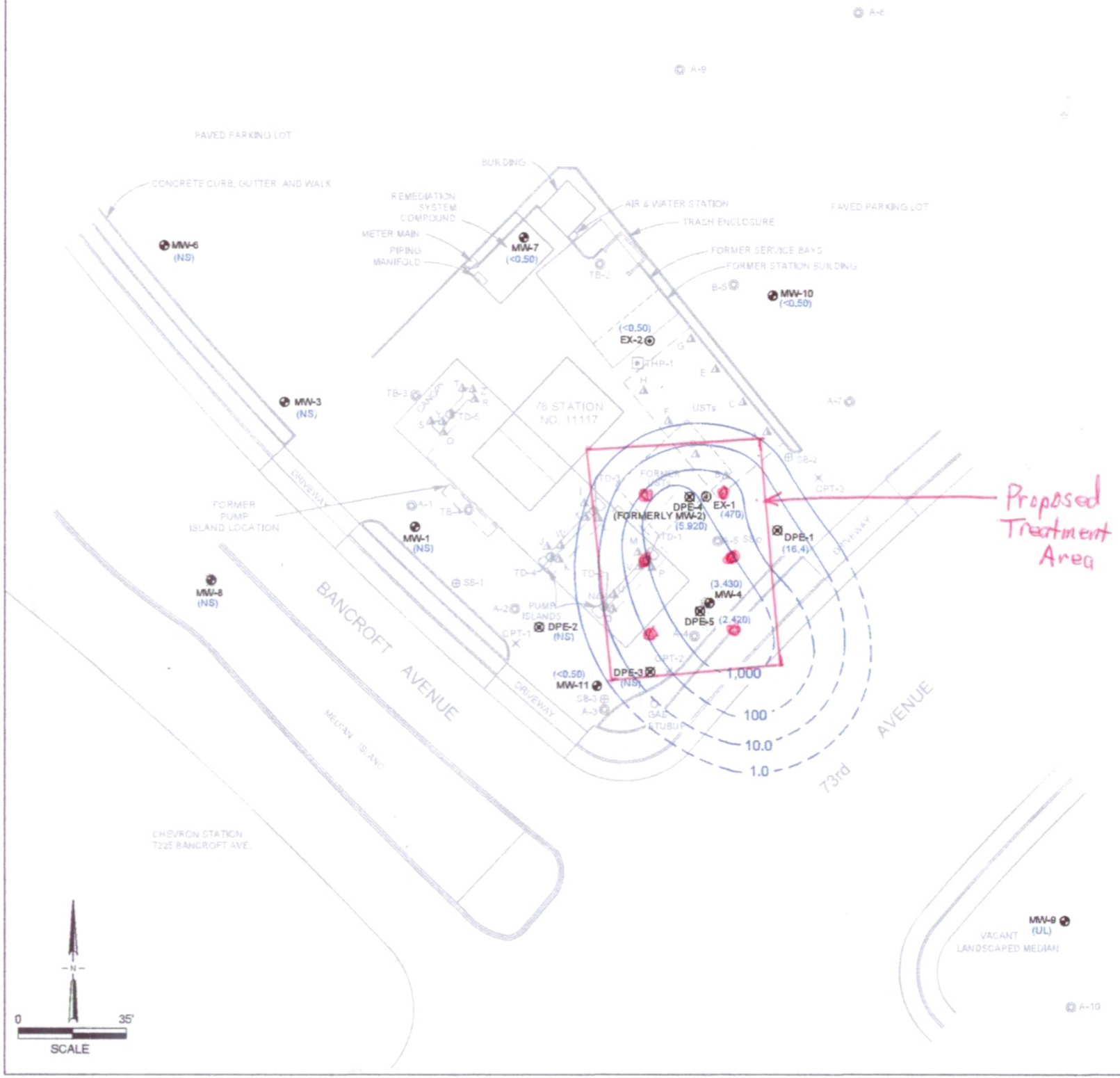
- There is a possibility that a second injection event could be needed after a period of 6 months if contaminant levels do not decrease to less than 100 µg/l range or if levels rebound above this level. Rebound of dissolved contaminant levels typically occurs when the absorbed mass is not adequately treated during the first injection event.

The above engineering design parameters should be reviewed periodically during and after the injection event. The design parameters may need to be modified slightly in order to optimize operation of the injection.

A groundwater monitoring program consisting of 4 to 6 monitoring wells should be established for monthly sampling of groundwater to track the reduction in VOC levels over time. Typically, the RWQCB requires one monitoring well to be established up-gradient, one well down-gradient, and 2-4 monitoring wells within or surrounding the zone of treatment (depending on the size of the area). Use of existing monitoring wells is recommended for this site and additional monitoring wells may be installed, as necessary. In addition to analyses of VOCs and TPH as gas, periodic analyses should be performed for hexavalent chromium, sodium, sulfate, ferrous iron, and other constituents as required by the RWQCB.

A General Waste Discharge Requirements (WDR) permit from the RWQCB may be required prior to the performance of the Pilot Test. The ISCO chemicals proposed for use at this site are listed in the RWQCB's approved list of chemicals.

During the ISCO injections, physical water quality parameters of dissolved oxygen, ORP, conductivity, pH, and temperature should be measured on a daily basis in the nearby monitoring wells as a means of confirming that oxidative conditions are established and maintained in the zone of treatment. Water quality monitoring should be performed on a monthly basis thereafter.



EXPLANATION

- MW-7 — GROUNDWATER MONITORING WELL LOCATION
- EX-1 — SOIL VAPOR EXTRACTION WELL LOCATION
- DPE-2 — GROUNDWATER EXTRACTION WELL LOCATION
- SS — SEWER CLEANOUT LOCATION
- SB-2 — FUTURE USE STUB-OUT LOCATION
- PRODUCT LINES
- SEWER CLEANOUT LOCATION
- SB-2 — FUTURE USE STUB-OUT LOCATION
- A-1/TB-2 — SOIL BORING LOCATION
  A BORINGS (URS, NOVEMBER 2005)
  B BORING (HEDI, 1992)
  T BORINGS (EMCON, 1994)
- TD-1 — DISPENSER GRAB SAMPLE LOCATION (EMCON, SEPTEMBER 1994)
- THP-1 — HYDROPUNCH BORING LOCATION (EMCON, SEPTEMBER 1994)
- A — SOIL SAMPLES COLLECTED DURING ERI UST, PRODUCT LINE, AND DISPENSER REMOVAL (NOVEMBER, 1998)
- CPT-1 — CONE PENETROMETER TEST BORINGS BROADBENT & ASSOCIATES, INC. (JUNE, 2007)
- PRODUCT LINES
- µg/L — MICROGRAMS PER LITER
- 100 — DISSOLVED-PHASE BENZENE CONCENTRATION CONTOUR (µg/L); DASHED WHERE INFERRED
- (3,430) — DISSOLVED-PHASE BENZENE CONCENTRATION (µg/L)
- (NS) — NOT SAMPLED
- (UL) — UNABLE TO LOCATE
- <0.50 — CONSTITUENT NOT DETECTED ABOVE INDICATED REPORTING LIMIT

FIGURE 5
DISSOLVED-PHASE BENZENE ISOCONCENTRATION MAP - AUGUST 15, 2011
76 (FORMER BP) STATION NO 11117
7210 BANCROFT AVENUE
OAKLAND, CALIFORNIA

PROJECT NO.	PREPARED BY	DRAWN BY
M2611117	SM	JH
DATE	REVIEWED BY	FILE NAME
10/7/11	DU	11117-SM1

anteagroup

Figure 2. pH Levels During High pH Activation Test

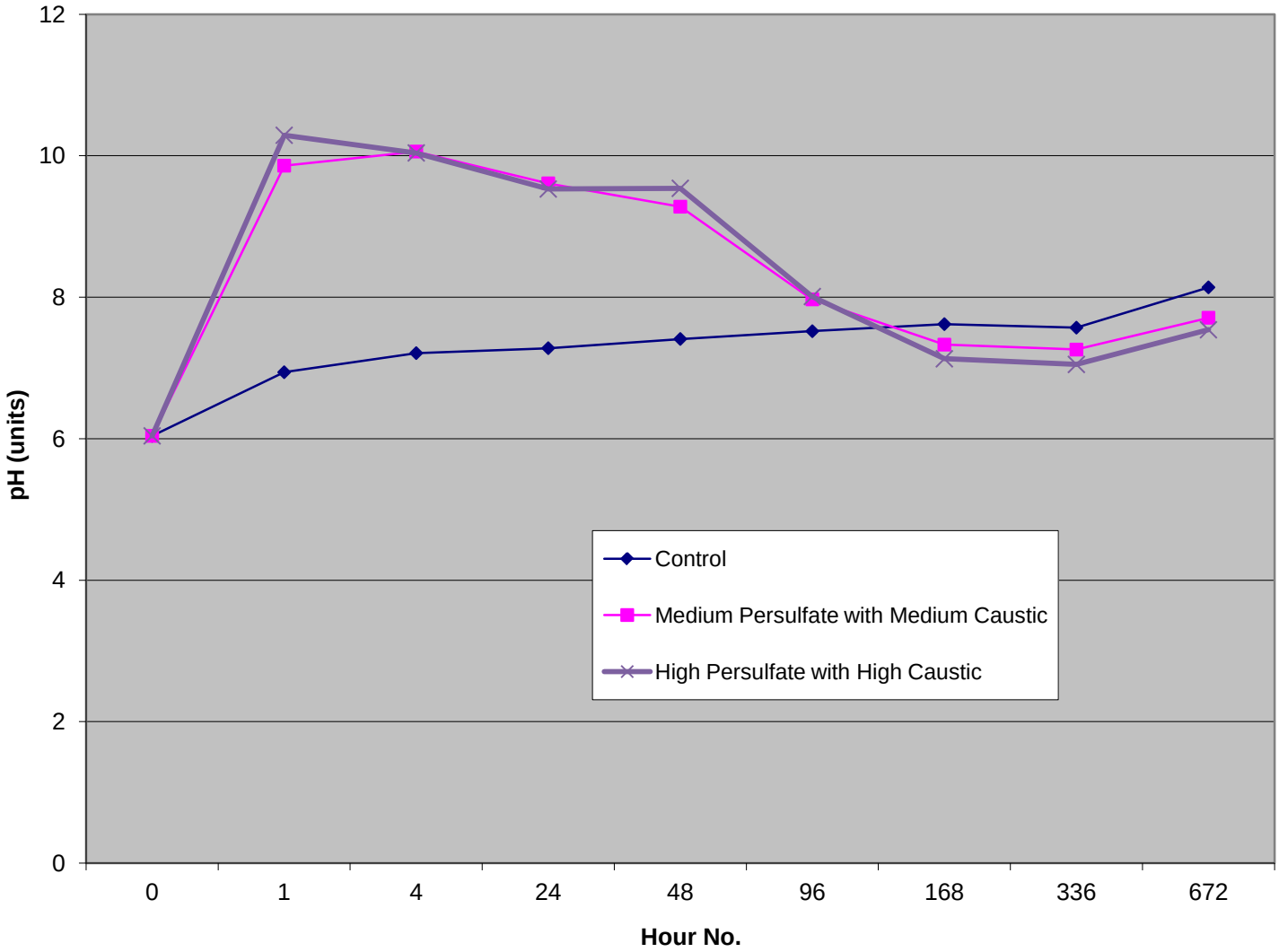


Figure 3. Dissolved Oxygen Levels During High pH Activation Test

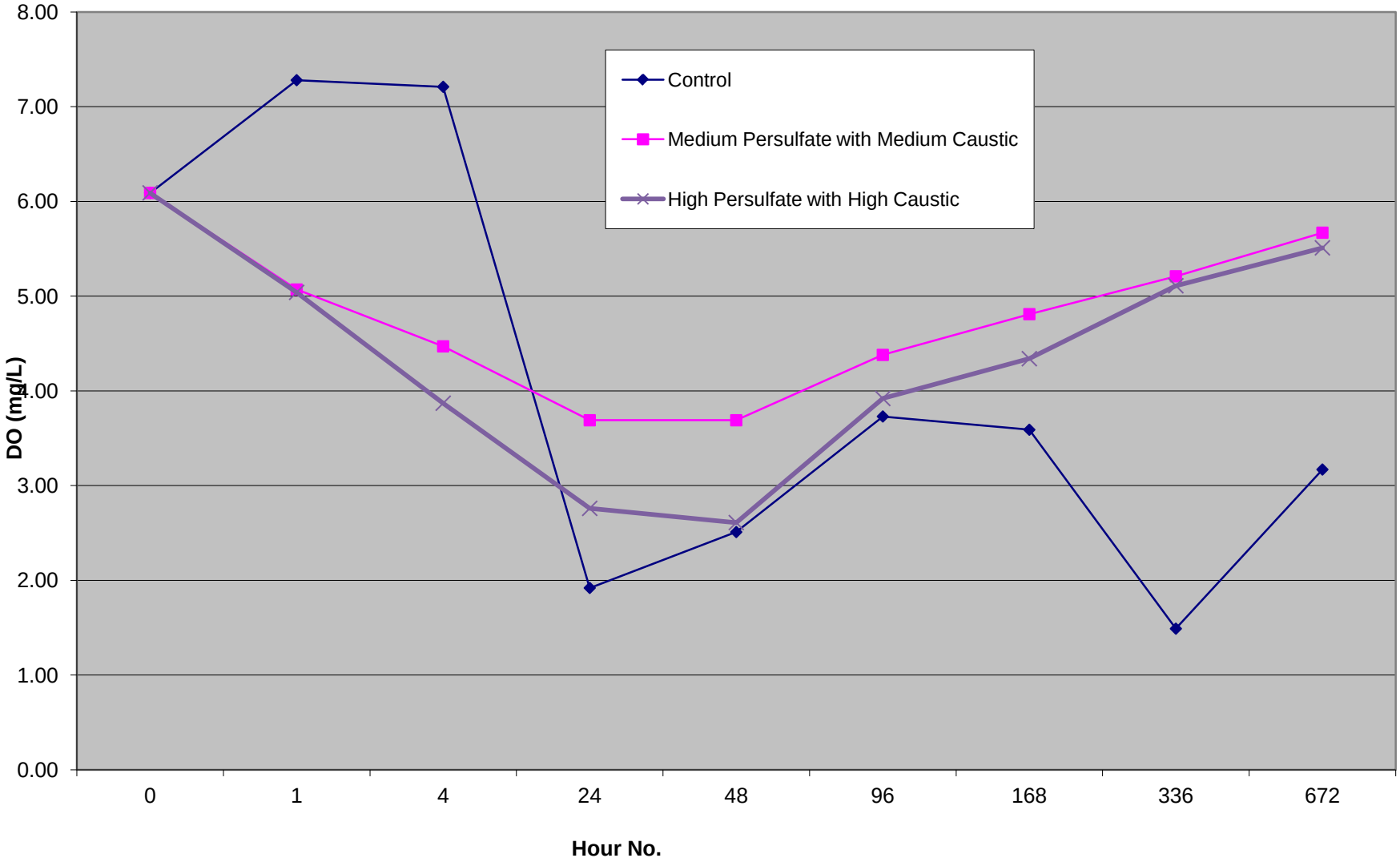


Figure 4. ORP Levels During High pH Activation Test

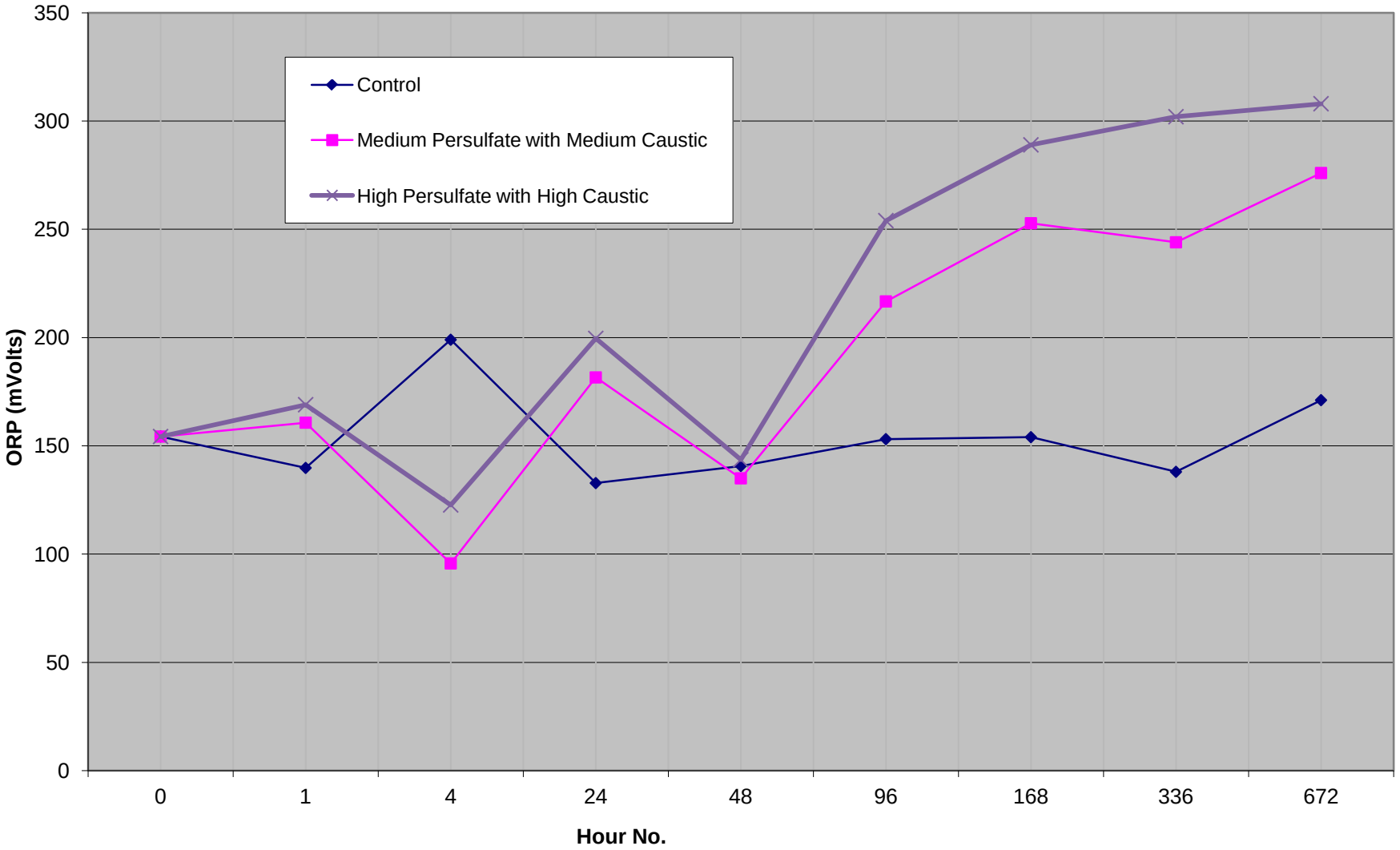


Figure 5. Conductivity Levels During High pH Activation Test

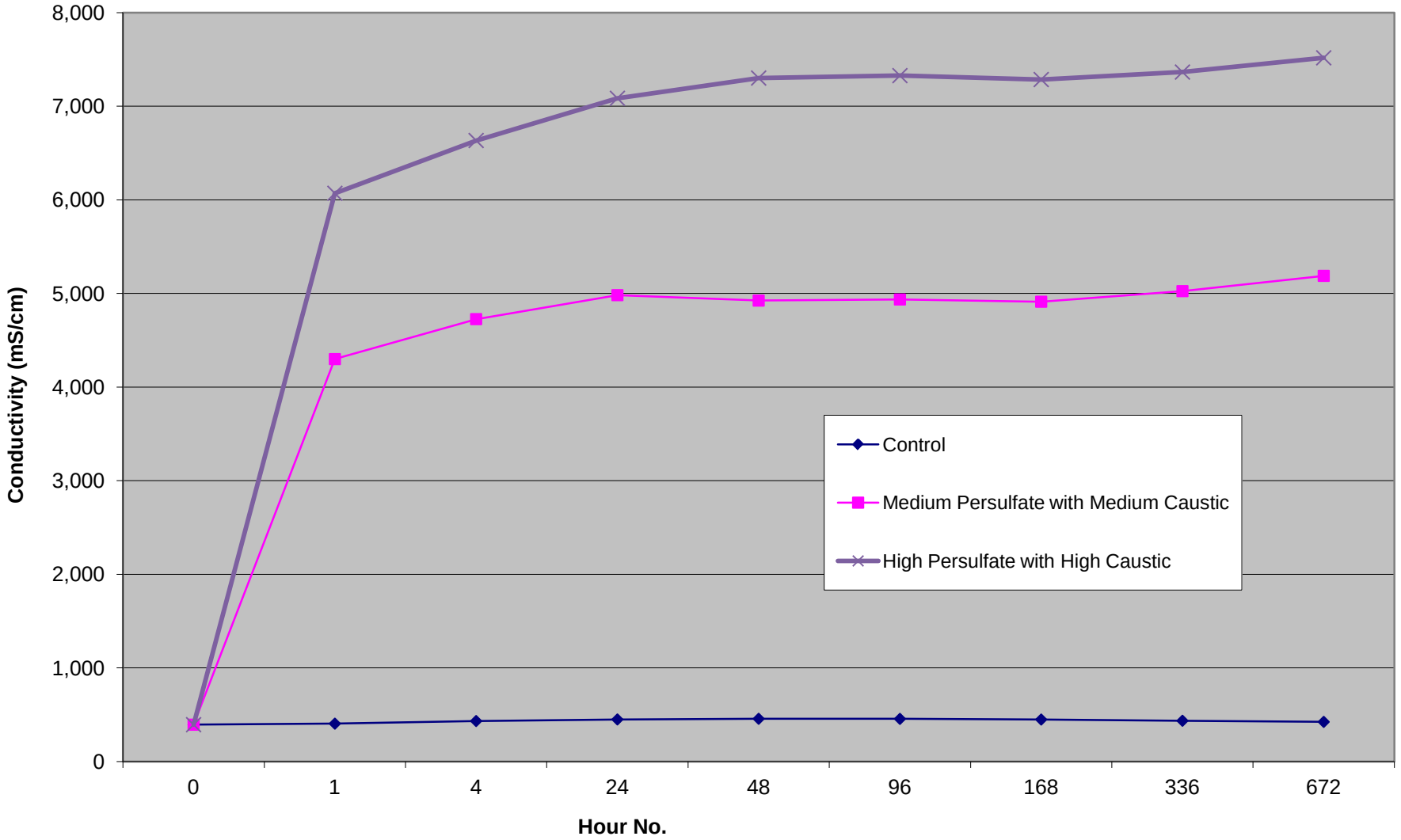


Figure 6. Temperature Changes During High pH Activation Test

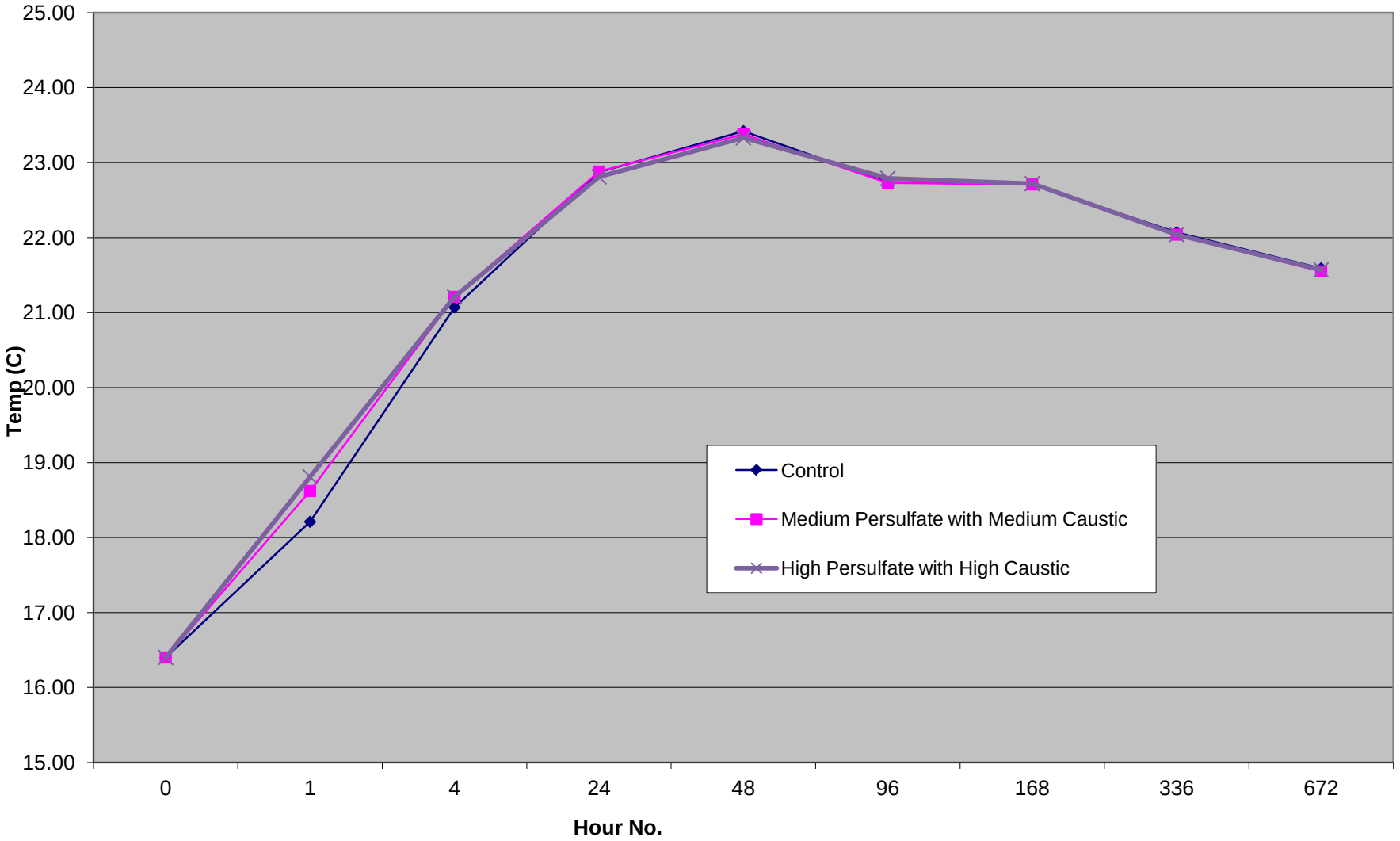


Figure 7. pH Levels During Peroxide Activation Test

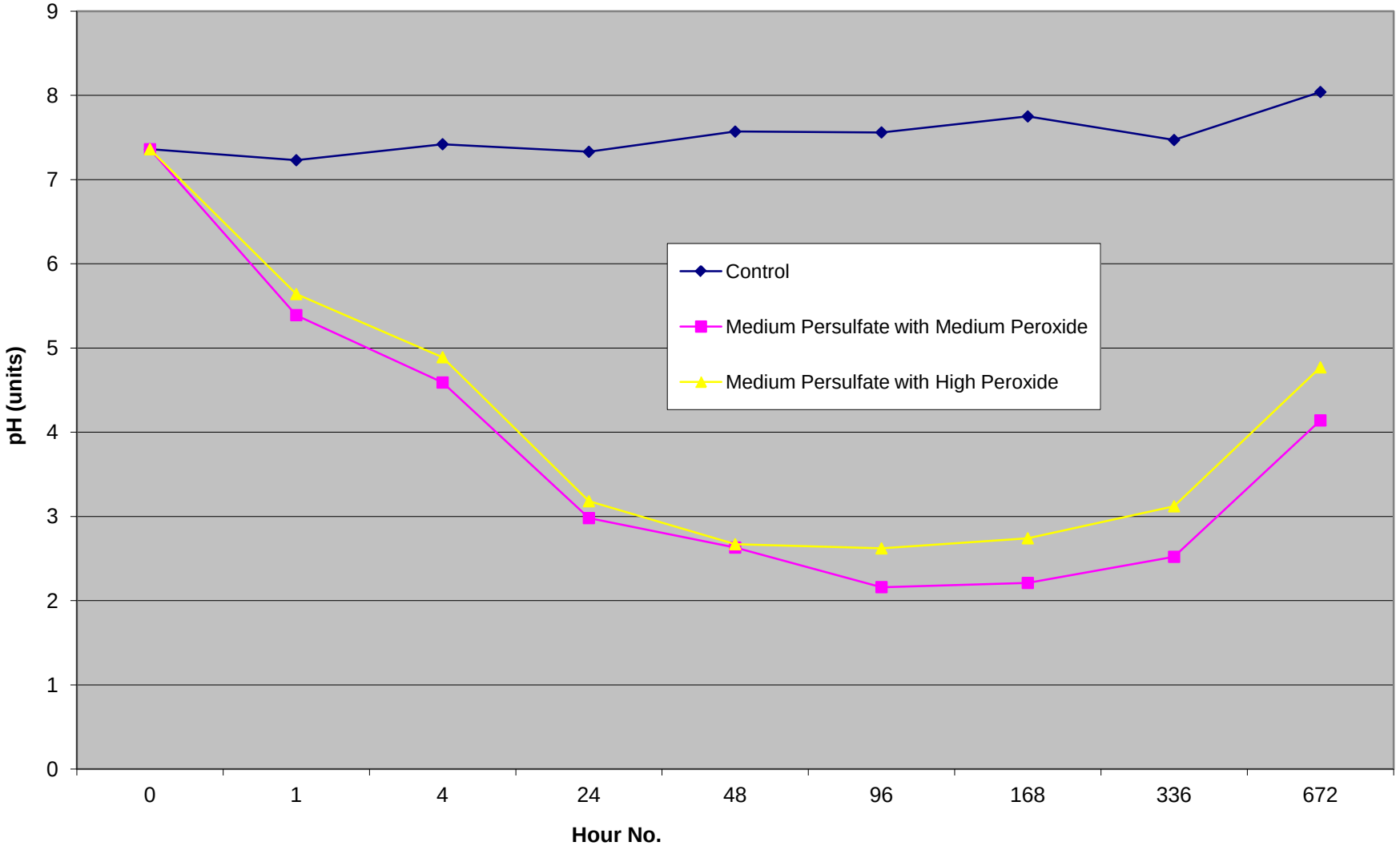


Figure 8. Dissolved Oxygen Levels During Peroxide Activation Test

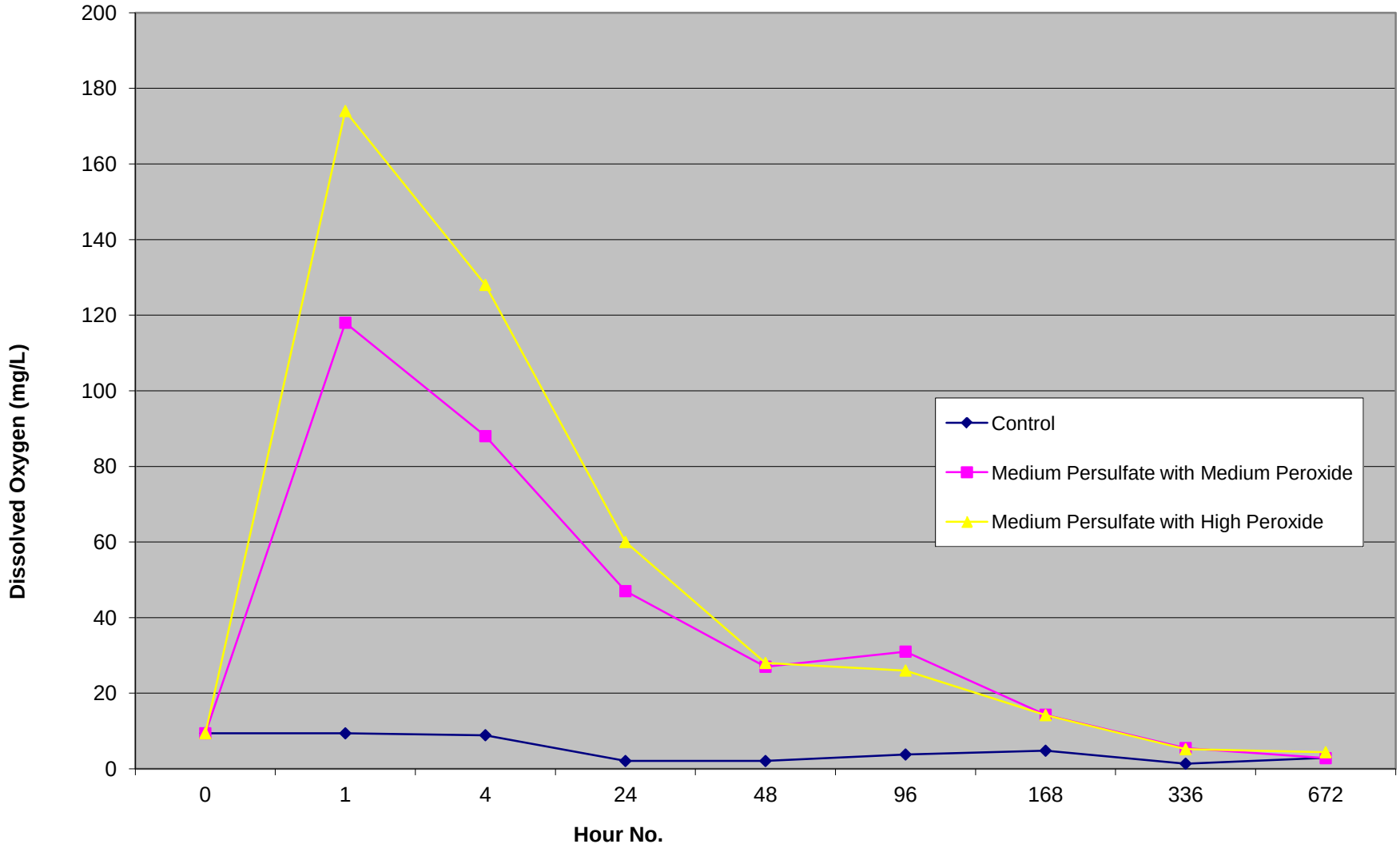


Figure 9. ORP Levels During Peroxide Activation Test

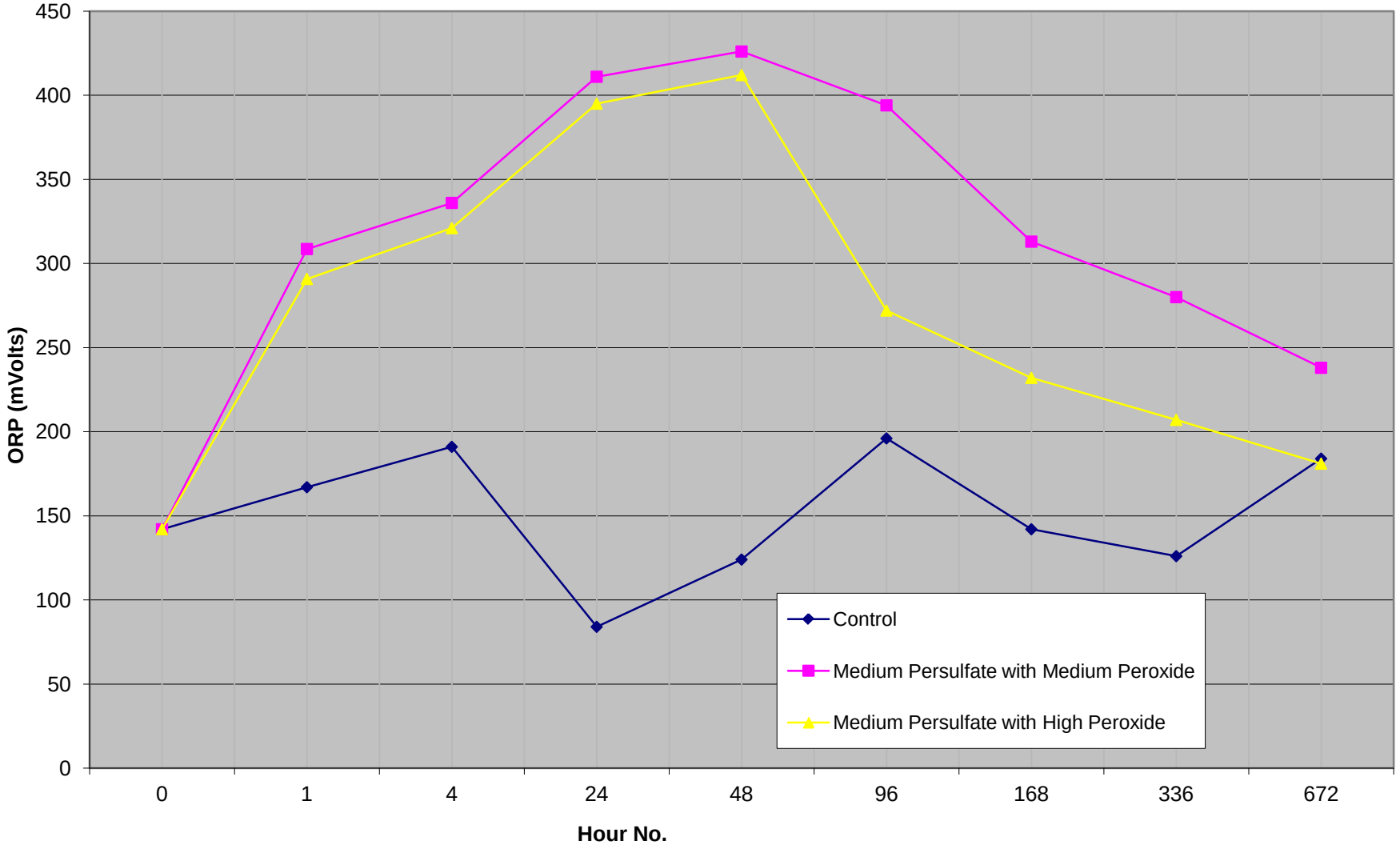


Figure 10. Conductivity Levels During Peroxide Activation Test

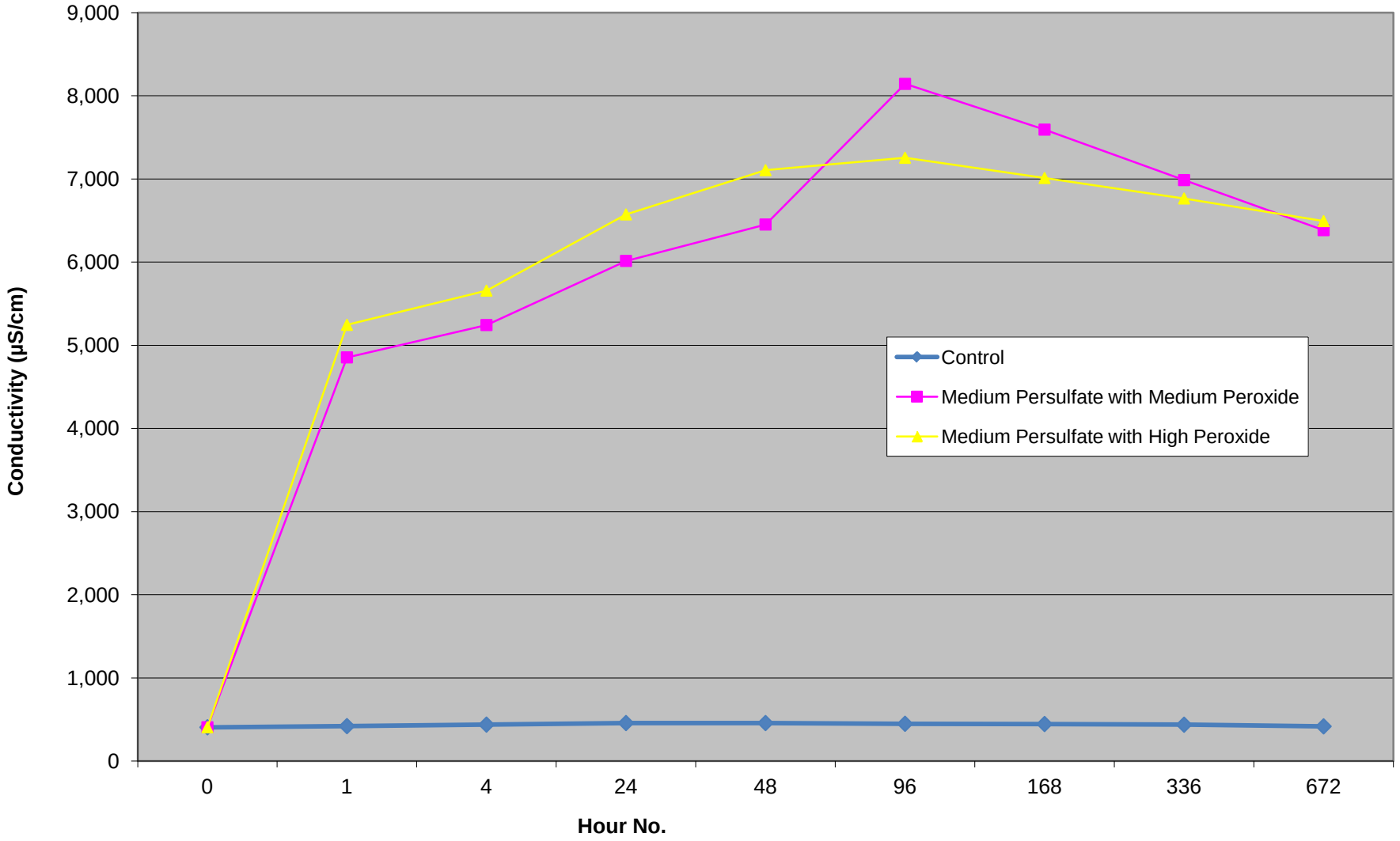
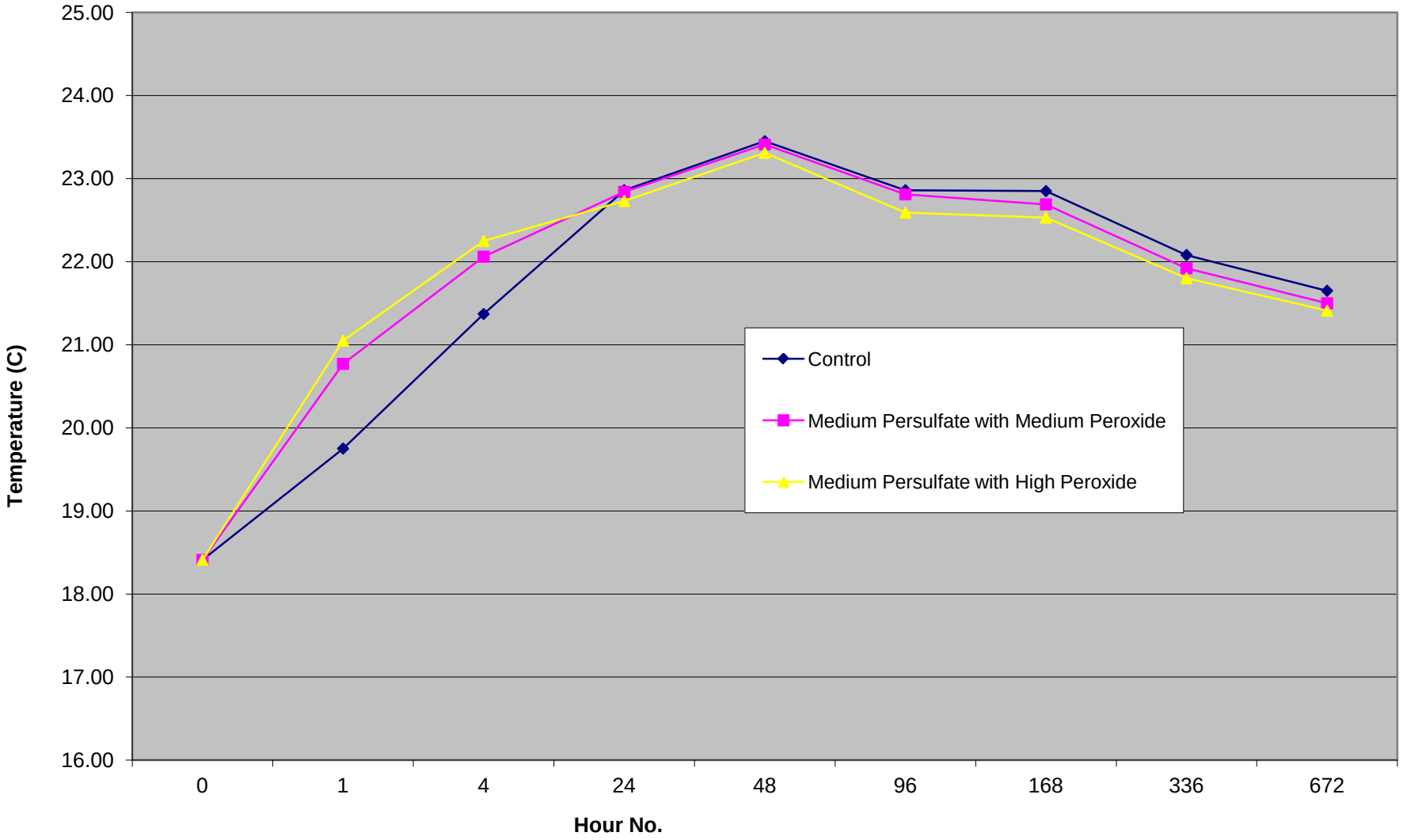


Figure 11. Temperature Changes During Peroxide Activation Test



Appendix A
Laboratory Analytical Reports

Calscience Environmental Laboratories, Inc.

CALSCIENCE

WORK ORDER NUMBER: 11-11-0939

The difference is service



AIR | SOIL | WATER | MARINE CHEMISTRY

Analytical Report For

Client: JAG Consulting Group, Inc.

Client Project Name: 76 Station, Oakland CA / PTS:41714

Attention: Gary Cronk
3340 S. Crawford Glen
Santa Ana, CA 92704-7160

Approved for release on 11/21/2011 by:
Stephen Nowak
Project Manager

ResultLink

Email your PM

Calscience Environmental Laboratories certifies that the test results provided in this report meet all NELAC requirements for parameters for which accreditation is required or available. Any exceptions to NELAC requirements are noted in the case narrative. The original report of subcontracted analyses, if any, is provided herein, and follows the standard Calscience data package. The results in this analytical report are limited to the samples tested and any reproduction thereof must be made in its entirety. Note that the Chain-of-Custody Record and Sample Receipt Form are integral parts of this report.

Calscience Environmental Laboratories, Inc.

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Work Order Number: 11-11-0939

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Calscience Environmental Laboratories, Inc.

Client:	JAG Consulting Group, Inc. 3340 S. Crawford Glen Santa Ana, CA 92704-7160	Work Order:	11-11-0939
		Project name:	76 Station, Oakland CA / PTS:41714
		Received:	11/10/11 16:30
Attn:	Gary Cronk		

DETECTIONS SUMMARY

Client Sample ID Analyte	Result	Qualifiers	Reporting Limit	Units	Method	Extraction
Control						
TPH as Gasoline	**290**	HD	100	ug/L	EPA 8015B (M)	EPA 5030C
Chloroform	**3.1**		1.0	ug/L	EPA 8260B	EPA 5030C
Toluene	**3.2**		1.0	ug/L	EPA 8260B	EPA 5030C
1,3,5-Trimethylbenzene	**5.4**		1.0	ug/L	EPA 8260B	EPA 5030C
o-Xylene	**1.1**		1.0	ug/L	EPA 8260B	EPA 5030C
Methyl-t-Butyl Ether (MTBE)	**1.9**		1.0	ug/L	EPA 8260B	EPA 5030C
Tert-Butyl Alcohol (TBA)	**150**		10	ug/L	EPA 8260B	EPA 5030C
Medium Persulfate with Medium Caustic						
Chromium	**0.0204**		0.0100	mg/L	EPA 6010B	EPA 3010A Total
Iron	**1.44**		0.100	mg/L	EPA 6010B	EPA 3010A Total
Manganese	**0.0437**		0.00500	mg/L	EPA 6010B	EPA 3010A Total
Manganese	**0.0148**		0.00500	mg/L	EPA 6010B	EPA 3005A Filt.
Chromium, Hexavalent	**17**		2.0	ug/L	EPA 7199	N/A
TPH as Gasoline	**640**	HD	100	ug/L	EPA 8015B (M)	EPA 5030C
Ferric Iron	**1.4**		0.10	mg/L	Ferric Iron by Calc	N/A
Acetone	**350**		100	ug/L	EPA 8260B	EPA 5030C
Tert-Butyl Alcohol (TBA)	**130**		50	ug/L	EPA 8260B	EPA 5030C
High Persulfate with High Caustic						
Chromium	**0.0410**		0.0100	mg/L	EPA 6010B	EPA 3010A Total
Iron	**0.244**		0.100	mg/L	EPA 6010B	EPA 3010A Total
Manganese	**0.0157**		0.00500	mg/L	EPA 6010B	EPA 3010A Total
Manganese	**0.0121**		0.00500	mg/L	EPA 6010B	EPA 3005A Filt.
Chromium, Hexavalent	**32**		2.0	ug/L	EPA 7199	N/A
TPH as Gasoline	**540**	HD	100	ug/L	EPA 8015B (M)	EPA 5030C
Ferric Iron	**0.22**		0.10	mg/L	Ferric Iron by Calc	N/A
Acetone	**430**		100	ug/L	EPA 8260B	EPA 5030C
2-Butanone	**56**		50	ug/L	EPA 8260B	EPA 5030C
Tert-Butyl Alcohol (TBA)	**130**		50	ug/L	EPA 8260B	EPA 5030C

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*MDL is shown.

Calscience Environmental Laboratories, Inc.

Client:	JAG Consulting Group, Inc. 3340 S. Crawford Glen Santa Ana, CA 92704-7160	Work Order:	11-11-0939
		Project name:	76 Station, Oakland CA / PTS:41714
		Received:	11/10/11 16:30
Attn:	Gary Cronk		

DETECTIONS SUMMARY

Client Sample ID Analyte	Result	Qualifiers	Reporting Limit	Units	Method	Extraction
Control						
TPH as Gasoline	**910**	HD	100	ug/L	EPA 8015B (M)	EPA 5030C
Acetone	**23**		20	ug/L	EPA 8260B	EPA 5030C
Chloroform	**3.0**		1.0	ug/L	EPA 8260B	EPA 5030C
Naphthalene	**15**		10	ug/L	EPA 8260B	EPA 5030C
Toluene	**6.1**		1.0	ug/L	EPA 8260B	EPA 5030C
1,3,5-Trimethylbenzene	**70**		1.0	ug/L	EPA 8260B	EPA 5030C
p/m-Xylene	**8.4**		1.0	ug/L	EPA 8260B	EPA 5030C
o-Xylene	**5.8**		1.0	ug/L	EPA 8260B	EPA 5030C
Methyl-t-Butyl Ether (MTBE)	**1.7**		1.0	ug/L	EPA 8260B	EPA 5030C
Tert-Butyl Alcohol (TBA)	**150**		10	ug/L	EPA 8260B	EPA 5030C
Medium Persulfatte with Medium Peroxide a						
Chromium	**0.0829**		0.0100	mg/L	EPA 6010B	EPA 3010A Total
Iron	**54.9**		0.100	mg/L	EPA 6010B	EPA 3010A Total
Manganese	**35.7**		0.00500	mg/L	EPA 6010B	EPA 3010A Total
Manganese	**43.4**		0.00500	mg/L	EPA 6010B	EPA 3005A Filt.
Iron (II)	**22**		0.50	mg/L	SM 3500-FeB	N/A
TPH as Gasoline	**970**		100	ug/L	EPA 8015B (M)	EPA 5030C
Ferric Iron	**33**		0.10	mg/L	Ferric Iron by Calc	N/A
Acetone	**18000**		5000	ug/L	EPA 8260B	EPA 5030C
Benzene	**0.66**		0.50	ug/L	EPA 8260B	EPA 5030C
2-Butanone	**51**		10	ug/L	EPA 8260B	EPA 5030C
Chloroform	**2.8**		1.0	ug/L	EPA 8260B	EPA 5030C
Ethylbenzene	**13**		1.0	ug/L	EPA 8260B	EPA 5030C
Naphthalene	**25**		10	ug/L	EPA 8260B	EPA 5030C
n-Propylbenzene	**1.7**		1.0	ug/L	EPA 8260B	EPA 5030C
Toluene	**27**		1.0	ug/L	EPA 8260B	EPA 5030C
1,2,4-Trimethylbenzene	**24**		1.0	ug/L	EPA 8260B	EPA 5030C
1,3,5-Trimethylbenzene	**3.9**		1.0	ug/L	EPA 8260B	EPA 5030C
p/m-Xylene	**63**		1.0	ug/L	EPA 8260B	EPA 5030C
o-Xylene	**28**		1.0	ug/L	EPA 8260B	EPA 5030C
Tert-Butyl Alcohol (TBA)	**13**		10	ug/L	EPA 8260B	EPA 5030C
Ethanol	**210**		100	ug/L	EPA 8260B	EPA 5030C

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*MDL is shown.

Calscience Environmental Laboratories, Inc.

Client:	JAG Consulting Group, Inc. 3340 S. Crawford Glen Santa Ana, CA 92704-7160	Work Order:	11-11-0939
		Project name:	76 Station, Oakland CA / PTS:41714
		Received:	11/10/11 16:30
Attn:	Gary Cronk		

DETECTIONS SUMMARY

Client Sample ID Analyte	Result	Qualifiers	Reporting Limit	Units	Method	Extraction
Medium Persulfate with High Peroxide and C						
Chromium	**0.102**		0.0100	mg/L	EPA 6010B	EPA 3010A Total
Iron	**60.9**		0.100	mg/L	EPA 6010B	EPA 3010A Total
Manganese	**33.1**		0.00500	mg/L	EPA 6010B	EPA 3010A Total
Manganese	**34.1**		0.00500	mg/L	EPA 6010B	EPA 3005A Filt.
Iron (II)	**32**		0.50	mg/L	SM 3500-FeB	N/A
TPH as Gasoline	**2000**		100	ug/L	EPA 8015B (M)	EPA 5030C
Ferric Iron	**29**		0.10	mg/L	Ferric Iron by Calc	N/A
Acetone	**42000**		10000	ug/L	EPA 8260B	EPA 5030C
2-Butanone	**61**		50	ug/L	EPA 8260B	EPA 5030C
Ethylbenzene	**23**		5.0	ug/L	EPA 8260B	EPA 5030C
Toluene	**28**		5.0	ug/L	EPA 8260B	EPA 5030C
1,2,4-Trimethylbenzene	**48**		5.0	ug/L	EPA 8260B	EPA 5030C
1,3,5-Trimethylbenzene	**8.2**		5.0	ug/L	EPA 8260B	EPA 5030C
p/m-Xylene	**110**		5.0	ug/L	EPA 8260B	EPA 5030C
o-Xylene	**45**		5.0	ug/L	EPA 8260B	EPA 5030C
Control						
TPH as Gasoline	**250**		5.0	mg/kg	EPA 8015B (M)	EPA 5030C
n-Butylbenzene	**2100**		500	ug/kg	EPA 8260B	EPA 5030C
Ethylbenzene	**2300**		500	ug/kg	EPA 8260B	EPA 5030C
n-Propylbenzene	**1600**		500	ug/kg	EPA 8260B	EPA 5030C
Toluene	**510**		500	ug/kg	EPA 8260B	EPA 5030C
1,2,4-Trimethylbenzene	**17000**		500	ug/kg	EPA 8260B	EPA 5030C
1,3,5-Trimethylbenzene	**4900**		500	ug/kg	EPA 8260B	EPA 5030C
p/m-Xylene	**13000**		500	ug/kg	EPA 8260B	EPA 5030C
o-Xylene	**4900**		500	ug/kg	EPA 8260B	EPA 5030C
Medium Persulfate with Medium Caustic						
TPH as Gasoline	**440**		100	mg/kg	EPA 8015B (M)	EPA 5030C
n-Butylbenzene	**5200**		1000	ug/kg	EPA 8260B	EPA 5030C
Ethylbenzene	**2100**		1000	ug/kg	EPA 8260B	EPA 5030C
n-Propylbenzene	**3900**		1000	ug/kg	EPA 8260B	EPA 5030C
1,2,4-Trimethylbenzene	**38000**		1000	ug/kg	EPA 8260B	EPA 5030C
1,3,5-Trimethylbenzene	**10000**		1000	ug/kg	EPA 8260B	EPA 5030C
p/m-Xylene	**13000**		1000	ug/kg	EPA 8260B	EPA 5030C
o-Xylene	**4000**		1000	ug/kg	EPA 8260B	EPA 5030C

*MDL is shown.

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Calscience Environmental Laboratories, Inc.

Client:	JAG Consulting Group, Inc. 3340 S. Crawford Glen Santa Ana, CA 92704-7160	Work Order:	11-11-0939
		Project name:	76 Station, Oakland CA / PTS:41714
		Received:	11/10/11 16:30
Attn:	Gary Cronk		

DETECTIONS SUMMARY

Client Sample ID Analyte	Result	Qualifiers	Reporting Limit	Units	Method	Extraction
High Persulfate with High Caustic						
TPH as Gasoline	**280**		4.0	mg/kg	EPA 8015B (M)	EPA 5030C
n-Butylbenzene	**2800**		500	ug/kg	EPA 8260B	EPA 5030C
Ethylbenzene	**610**		500	ug/kg	EPA 8260B	EPA 5030C
n-Propylbenzene	**1800**		500	ug/kg	EPA 8260B	EPA 5030C
1,2,4-Trimethylbenzene	**17000**		500	ug/kg	EPA 8260B	EPA 5030C
1,3,5-Trimethylbenzene	**4400**		500	ug/kg	EPA 8260B	EPA 5030C
p/m-Xylene	**3600**		500	ug/kg	EPA 8260B	EPA 5030C
o-Xylene	**1100**		500	ug/kg	EPA 8260B	EPA 5030C
Control						
TPH as Gasoline	**200**		10	mg/kg	EPA 8015B (M)	EPA 5030C
n-Butylbenzene	**1600**		500	ug/kg	EPA 8260B	EPA 5030C
Ethylbenzene	**1700**		500	ug/kg	EPA 8260B	EPA 5030C
n-Propylbenzene	**1500**		500	ug/kg	EPA 8260B	EPA 5030C
1,2,4-Trimethylbenzene	**13000**		500	ug/kg	EPA 8260B	EPA 5030C
1,3,5-Trimethylbenzene	**4100**		500	ug/kg	EPA 8260B	EPA 5030C
p/m-Xylene	**8700**		500	ug/kg	EPA 8260B	EPA 5030C
o-Xylene	**3200**		500	ug/kg	EPA 8260B	EPA 5030C
Medium Persulfatte with Medium Peroxide a						
TPH as Gasoline	**230**		5.0	mg/kg	EPA 8015B (M)	EPA 5030C
n-Butylbenzene	**1500**		500	ug/kg	EPA 8260B	EPA 5030C
Ethylbenzene	**1500**		500	ug/kg	EPA 8260B	EPA 5030C
n-Propylbenzene	**1500**		500	ug/kg	EPA 8260B	EPA 5030C
1,2,4-Trimethylbenzene	**12000**		500	ug/kg	EPA 8260B	EPA 5030C
1,3,5-Trimethylbenzene	**3600**		500	ug/kg	EPA 8260B	EPA 5030C
p/m-Xylene	**7900**		500	ug/kg	EPA 8260B	EPA 5030C
o-Xylene	**2600**		500	ug/kg	EPA 8260B	EPA 5030C
Medium Persulfate with High Peroxide and C						
TPH as Gasoline	**220**		5.0	mg/kg	EPA 8015B (M)	EPA 5030C
n-Butylbenzene	**1500**		500	ug/kg	EPA 8260B	EPA 5030C
Ethylbenzene	**1300**		500	ug/kg	EPA 8260B	EPA 5030C
n-Propylbenzene	**1300**		500	ug/kg	EPA 8260B	EPA 5030C
1,2,4-Trimethylbenzene	**12000**		500	ug/kg	EPA 8260B	EPA 5030C
1,3,5-Trimethylbenzene	**3200**		500	ug/kg	EPA 8260B	EPA 5030C
p/m-Xylene	**6800**		500	ug/kg	EPA 8260B	EPA 5030C
o-Xylene	**2400**		500	ug/kg	EPA 8260B	EPA 5030C

*MDL is shown.

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Client:	JAG Consulting Group, Inc. 3340 S. Crawford Glen Santa Ana, CA 92704-7160	Work Order:	11-11-0939
		Project name:	76 Station, Oakland CA / PTS:41714
		Received:	11/10/11 16:30
Attn:	Gary Cronk		

DETECTIONS SUMMARY

Client Sample ID Analyte	Result	Qualifiers	Reporting Limit	Units	Method	Extraction

Subcontracted analyses, if any, are not included in this summary.

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Calscience Environmental Laboratories, Inc.

Analytical Report

JAG Consulting Group, Inc.
3340 S. Crawford Glen
Santa Ana, CA 92704-7160

Date Received: 11/10/11
Work Order No: 11-11-0939
Preparation: EPA 5030C
Method: EPA 8015B (M)

Project: 76 Station, Oakland CA / PTS:41714

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
Control	**11-11-0939-7-B**	**11/10/11 10:44**	**Solid**	**GC 22**	**11/11/11**	**11/12/11 03:34**	**111111B02**

Parameter	Result	RL	DF	Qual	Units
TPH as Gasoline	250	5.0	10		mg/kg

Surrogates:	REC (%)	Control Limits	Qual
1,4-Bromofluorobenzene - FID	103	42-126	

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
Medium Persulfate with Medium Caustic	**11-11-0939-8-B**	**11/10/11 11:31**	**Solid**	**GC 22**	**11/11/11**	**11/12/11 01:56**	**111111B02**

Parameter	Result	RL	DF	Qual	Units
TPH as Gasoline	440	100	200		mg/kg

Surrogates:	REC (%)	Control Limits	Qual
1,4-Bromofluorobenzene - FID	79	42-126	

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
High Persulfate with High Caustic	**11-11-0939-9-B**	**11/10/11 11:34**	**Solid**	**GC 22**	**11/11/11**	**11/12/11 04:06**	**111111B02**

Parameter	Result	RL	DF	Qual	Units
TPH as Gasoline	280	4.0	8		mg/kg

Surrogates:	REC (%)	Control Limits	Qual
1,4-Bromofluorobenzene - FID	113	42-126	

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
Control	**11-11-0939-10-B**	**11/10/11 10:45**	**Solid**	**GC 22**	**11/11/11**	**11/12/11 01:24**	**111111B02**

Parameter	Result	RL	DF	Qual	Units
TPH as Gasoline	200	10	20		mg/kg

Surrogates:	REC (%)	Control Limits	Qual
1,4-Bromofluorobenzene - FID	87	42-126	

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RL - Reporting Limit , DF - Dilution Factor , Qual - Qualifiers

Calscience Environmental Laboratories, Inc.

Analytical Report

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JAG Consulting Group, Inc.
3340 S. Crawford Glen
Santa Ana, CA 92704-7160

Date Received: 11/10/11
Work Order No: 11-11-0939
Preparation: EPA 5030C
Method: EPA 8015B (M)

Project: 76 Station, Oakland CA / PTS:41714

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
Medium Persulfatte with Medium Peroxide and Ci	**11-11-0939-11-B**	**11/10/11 13:05**	**Solid**	**GC 22**	**11/11/11**	**11/12/11 02:29**	**111111B02**

Parameter	Result	RL	DF	Qual	Units
TPH as Gasoline	230	5.0	10		mg/kg

Surrogates:	REC (%)	Control Limits	Qual
1,4-Bromofluorobenzene - FID	103	42-126	

Medium Persulfate with High Peroxide and Citrate S	**11-11-0939-12-B**	**11/10/11 13:06**	**Solid**	**GC 22**	**11/11/11**	**11/12/11 03:01**	**111111B02**

Parameter	Result	RL	DF	Qual	Units
TPH as Gasoline	220	5.0	10		mg/kg

Surrogates:	REC (%)	Control Limits	Qual
1,4-Bromofluorobenzene - FID	101	42-126	

Method Blank	**099-14-571-57**	**N/A**	**Solid**	**GC 22**	**11/11/11**	**11/11/11 14:38**	**111111B02**

Parameter	Result	RL	DF	Qual	Units
TPH as Gasoline	ND	4.0	8		mg/kg

Surrogates:	REC (%)	Control Limits	Qual
1,4-Bromofluorobenzene - FID	73	42-126	

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RL - Reporting Limit , DF - Dilution Factor , Qual - Qualifiers

Calscience Environmental Laboratories, Inc.

Analytical Report

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JAG Consulting Group, Inc.
3340 S. Crawford Glen
Santa Ana, CA 92704-7160

Date Received: 11/10/11
Work Order No: 11-11-0939
Preparation: EPA 5030C
Method: EPA 8015B (M)

Project: 76 Station, Oakland CA / PTS:41714

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
Control	**11-11-0939-1-E**	**11/10/11 10:07**	**Aqueous**	**GC 25**	**11/12/11**	**11/13/11 01:38**	**111112B01**

Parameter	Result	RL	DF	Qual	Units
TPH as Gasoline	290	100	1	HD	ug/L

Surrogates:	REC (%)	Control Limits	Qual
1,4-Bromofluorobenzene	82	38-134	

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
Medium Persulfate with Medium Caustic	**11-11-0939-2-E**	**11/10/11 10:32**	**Aqueous**	**GC 25**	**11/12/11**	**11/13/11 02:12**	**111112B01**

Parameter	Result	RL	DF	Qual	Units
TPH as Gasoline	640	100	1	HD	ug/L

Surrogates:	REC (%)	Control Limits	Qual
1,4-Bromofluorobenzene	88	38-134	

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
High Persulfate with High Caustic	**11-11-0939-3-E**	**11/10/11 10:50**	**Aqueous**	**GC 25**	**11/12/11**	**11/13/11 02:46**	**111112B01**

Parameter	Result	RL	DF	Qual	Units
TPH as Gasoline	540	100	1	HD	ug/L

Surrogates:	REC (%)	Control Limits	Qual
1,4-Bromofluorobenzene	86	38-134	

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
Control	**11-11-0939-4-E**	**11/10/11 10:10**	**Aqueous**	**GC 25**	**11/12/11**	**11/13/11 03:19**	**111112B01**

Parameter	Result	RL	DF	Qual	Units
TPH as Gasoline	910	100	1	HD	ug/L

Surrogates:	REC (%)	Control Limits	Qual
1,4-Bromofluorobenzene	84	38-134	

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RL - Reporting Limit , DF - Dilution Factor , Qual - Qualifiers

Calscience Environmental Laboratories, Inc.

Analytical Report

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JAG Consulting Group, Inc.
3340 S. Crawford Glen
Santa Ana, CA 92704-7160

Date Received: 11/10/11
Work Order No: 11-11-0939
Preparation: EPA 5030C
Method: EPA 8015B (M)

Project: 76 Station, Oakland CA / PTS:41714

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
Medium Persulfatte with Medium Peroxide and Ci	**11-11-0939-5-E**	**11/10/11 11:05**	**Aqueous**	**GC 25**	**11/12/11**	**11/13/11 03:53**	**111112B01**

Parameter	Result	RL	DF	Qual	Units
TPH as Gasoline	970	100	1		ug/L

Surrogates:	REC (%)	Control Limits	Qual
1,4-Bromofluorobenzene	87	38-134	

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
Medium Persulfate with High Peroxide and Citrate S	**11-11-0939-6-E**	**11/10/11 11:20**	**Aqueous**	**GC 25**	**11/12/11**	**11/13/11 04:27**	**111112B01**

Parameter	Result	RL	DF	Qual	Units
TPH as Gasoline	2000	100	1		ug/L

Surrogates:	REC (%)	Control Limits	Qual
1,4-Bromofluorobenzene	90	38-134	

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
Method Blank	**099-12-247-5,522**	**N/A**	**Aqueous**	**GC 25**	**11/12/11**	**11/12/11 15:30**	**111112B01**

Parameter	Result	RL	DF	Qual	Units
TPH as Gasoline	ND	100	1		ug/L

Surrogates:	REC (%)	Control Limits	Qual
1,4-Bromofluorobenzene	80	38-134	

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RL - Reporting Limit , DF - Dilution Factor , Qual - Qualifiers

Calscience Environmental Laboratories, Inc.

Analytical Report

ACCREDITED IN ACCORDANCE WITH nelac

JAG Consulting Group, Inc.		Date Received:	11/10/11
3340 S. Crawford Glen		Work Order No:	11-11-0939
Santa Ana, CA 92704-7160		Preparation:	EPA 5030C
		Method:	EPA 8260B
		Units:	ug/kg

Project: 76 Station, Oakland CA / PTS:41714

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
Control	**11-11-0939-7-B**	**11/10/11 10:44**	**Solid**	**GC/MS UU**	**11/10/11**	**11/15/11 03:23**	**111114L04**

Parameter	Result	RL	DF	Qual	Parameter	Result	RL	DF	Qual
Acetone	ND	12000	100		c-1,3-Dichloropropene	ND	500	100	
Benzene	ND	500	100		t-1,3-Dichloropropene	ND	500	100	
Bromobenzene	ND	500	100		Ethylbenzene	2300	500	100	
Bromochloromethane	ND	500	100		2-Hexanone	ND	5000	100	
Bromodichloromethane	ND	500	100		Isopropylbenzene	ND	500	100	
Bromoform	ND	500	100		p-Isopropyltoluene	ND	500	100	
Bromomethane	ND	2500	100		Methylene Chloride	ND	5000	100	
2-Butanone	ND	5000	100		4-Methyl-2-Pentanone	ND	5000	100	
n-Butylbenzene	2100	500	100		Naphthalene	ND	5000	100	
sec-Butylbenzene	ND	500	100		n-Propylbenzene	1600	500	100	
tert-Butylbenzene	ND	500	100		Styrene	ND	500	100	
Carbon Disulfide	ND	5000	100		1,1,1,2-Tetrachloroethane	ND	500	100	
Carbon Tetrachloride	ND	500	100		1,1,2,2-Tetrachloroethane	ND	500	100	
Chlorobenzene	ND	500	100		Tetrachloroethene	ND	500	100	
Chloroethane	ND	500	100		Toluene	510	500	100	
Chloroform	ND	500	100		1,2,3-Trichlorobenzene	ND	1000	100	
Chloromethane	ND	2500	100		1,2,4-Trichlorobenzene	ND	500	100	
2-Chlorotoluene	ND	500	100		1,1,1-Trichloroethane	ND	500	100	
4-Chlorotoluene	ND	500	100		1,1,2-Trichloroethane	ND	500	100	
Dibromochloromethane	ND	500	100		1,1,2-Trichloro-1,2,2-Trifluoroethane	ND	5000	100	
1,2-Dibromo-3-Chloropropane	ND	1000	100		Trichloroethene	ND	500	100	
1,2-Dibromoethane	ND	500	100		1,2,3-Trichloropropane	ND	500	100	
Dibromomethane	ND	500	100		1,2,4-Trimethylbenzene	17000	500	100	
1,2-Dichlorobenzene	ND	500	100		Trichlorofluoromethane	ND	5000	100	
1,3-Dichlorobenzene	ND	500	100		1,3,5-Trimethylbenzene	4900	500	100	
1,4-Dichlorobenzene	ND	500	100		Vinyl Acetate	ND	5000	100	
Dichlorodifluoromethane	ND	500	100		Vinyl Chloride	ND	500	100	
1,1-Dichloroethane	ND	500	100		p/m-Xylene	13000	500	100	
1,2-Dichloroethane	ND	500	100		o-Xylene	4900	500	100	
1,1-Dichloroethene	ND	500	100		Methyl-t-Butyl Ether (MTBE)	ND	500	100	
c-1,2-Dichloroethene	ND	500	100		Tert-Butyl Alcohol (TBA)	ND	5000	100	
t-1,2-Dichloroethene	ND	500	100		Diisopropyl Ether (DIPE)	ND	1000	100	
1,2-Dichloropropane	ND	500	100		Ethyl-t-Butyl Ether (ETBE)	ND	1000	100	
1,3-Dichloropropane	ND	500	100		Tert-Amyl-Methyl Ether (TAME)	ND	1000	100	
2,2-Dichloropropane	ND	500	100		Ethanol	ND	25000	100	
1,1-Dichloropropene	ND	500	100						

Surrogates:	REC (%)	Control Limits	Qual	Surrogates:	REC (%)	Control Limits	Qual
1,4-Bromofluorobenzene	107	60-132		Dibromofluoromethane	89	63-141	
1,2-Dichloroethane-d4	99	62-146		Toluene-d8	108	80-120	

RL - Reporting Limit , DF - Dilution Factor , Qual - Qualifiers

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Calscience Environmental Laboratories, Inc.

Analytical Report

ACCREDITED IN ACCORDANCE WITH nelac

JAG Consulting Group, Inc.	Date Received:	11/10/11
3340 S. Crawford Glen	Work Order No:	11-11-0939
Santa Ana, CA 92704-7160	Preparation:	EPA 5030C
	Method:	EPA 8260B
	Units:	ug/kg

Project: 76 Station, Oakland CA / PTS:41714

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
Medium Persulfate with Medium Caustic	**11-11-0939-8-B**	**11/10/11 11:31**	**Solid**	**GC/MS UU**	**11/10/11**	**11/15/11 03:51**	**111114L04**

Parameter	Result	RL	DF	Qual	Parameter	Result	RL	DF	Qual
Acetone	ND	25000	200		c-1,3-Dichloropropene	ND	1000	200	
Benzene	ND	1000	200		t-1,3-Dichloropropene	ND	1000	200	
Bromobenzene	ND	1000	200		Ethylbenzene	2100	1000	200	
Bromochloromethane	ND	1000	200		2-Hexanone	ND	10000	200	
Bromodichloromethane	ND	1000	200		Isopropylbenzene	ND	1000	200	
Bromoform	ND	1000	200		p-Isopropyltoluene	ND	1000	200	
Bromomethane	ND	5000	200		Methylene Chloride	ND	10000	200	
2-Butanone	ND	10000	200		4-Methyl-2-Pentanone	ND	10000	200	
n-Butylbenzene	5200	1000	200		Naphthalene	ND	10000	200	
sec-Butylbenzene	ND	1000	200		n-Propylbenzene	3900	1000	200	
tert-Butylbenzene	ND	1000	200		Styrene	ND	1000	200	
Carbon Disulfide	ND	10000	200		1,1,1,2-Tetrachloroethane	ND	1000	200	
Carbon Tetrachloride	ND	1000	200		1,1,2,2-Tetrachloroethane	ND	1000	200	
Chlorobenzene	ND	1000	200		Tetrachloroethene	ND	1000	200	
Chloroethane	ND	1000	200		Toluene	ND	1000	200	
Chloroform	ND	1000	200		1,2,3-Trichlorobenzene	ND	2000	200	
Chloromethane	ND	5000	200		1,2,4-Trichlorobenzene	ND	1000	200	
2-Chlorotoluene	ND	1000	200		1,1,1-Trichloroethane	ND	1000	200	
4-Chlorotoluene	ND	1000	200		1,1,2-Trichloroethane	ND	1000	200	
Dibromochloromethane	ND	1000	200		1,1,2-Trichloro-1,2,2-Trifluoroethane	ND	10000	200	
1,2-Dibromo-3-Chloropropane	ND	2000	200		Trichloroethene	ND	1000	200	
1,2-Dibromoethane	ND	1000	200		1,2,3-Trichloropropane	ND	1000	200	
Dibromomethane	ND	1000	200		1,2,4-Trimethylbenzene	38000	1000	200	
1,2-Dichlorobenzene	ND	1000	200		Trichlorofluoromethane	ND	10000	200	
1,3-Dichlorobenzene	ND	1000	200		1,3,5-Trimethylbenzene	10000	1000	200	
1,4-Dichlorobenzene	ND	1000	200		Vinyl Acetate	ND	10000	200	
Dichlorodifluoromethane	ND	1000	200		Vinyl Chloride	ND	1000	200	
1,1-Dichloroethane	ND	1000	200		p/m-Xylene	13000	1000	200	
1,2-Dichloroethane	ND	1000	200		o-Xylene	4000	1000	200	
1,1-Dichloroethene	ND	1000	200		Methyl-t-Butyl Ether (MTBE)	ND	1000	200	
c-1,2-Dichloroethene	ND	1000	200		Tert-Butyl Alcohol (TBA)	ND	10000	200	
t-1,2-Dichloroethene	ND	1000	200		Diisopropyl Ether (DIPE)	ND	2000	200	
1,2-Dichloropropane	ND	1000	200		Ethyl-t-Butyl Ether (ETBE)	ND	2000	200	
1,3-Dichloropropane	ND	1000	200		Tert-Amyl-Methyl Ether (TAME)	ND	2000	200	
2,2-Dichloropropane	ND	1000	200		Ethanol	ND	50000	200	
1,1-Dichloropropene	ND	1000	200						

Surrogates:	REC (%)	Control Limits	Qual	Surrogates:	REC (%)	Control Limits	Qual
1,4-Bromofluorobenzene	104	60-132		Dibromofluoromethane	96	63-141	
1,2-Dichloroethane-d4	109	62-146		Toluene-d8	106	80-120	

RL - Reporting Limit , DF - Dilution Factor , Qual - Qualifiers

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Calscience Environmental Laboratories, Inc.

Analytical Report

ACCREDITED IN ACCORDANCE WITH nelac

JAG Consulting Group, Inc.		Date Received:	11/10/11
3340 S. Crawford Glen		Work Order No:	11-11-0939
Santa Ana, CA 92704-7160		Preparation:	EPA 5030C
		Method:	EPA 8260B
		Units:	ug/kg

Project: 76 Station, Oakland CA / PTS:41714

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
High Persulfate with High Caustic	**11-11-0939-9-B**	**11/10/11 11:34**	**Solid**	**GC/MS UU**	**11/10/11**	**11/15/11 04:18**	**111114L04**

Parameter	Result	RL	DF	Qual	Parameter	Result	RL	DF	Qual
Acetone	ND	12000	100		c-1,3-Dichloropropene	ND	500	100	
Benzene	ND	500	100		t-1,3-Dichloropropene	ND	500	100	
Bromobenzene	ND	500	100		Ethylbenzene	610	500	100	
Bromochloromethane	ND	500	100		2-Hexanone	ND	5000	100	
Bromodichloromethane	ND	500	100		Isopropylbenzene	ND	500	100	
Bromoform	ND	500	100		p-Isopropyltoluene	ND	500	100	
Bromomethane	ND	2500	100		Methylene Chloride	ND	5000	100	
2-Butanone	ND	5000	100		4-Methyl-2-Pentanone	ND	5000	100	
n-Butylbenzene	2800	500	100		Naphthalene	ND	5000	100	
sec-Butylbenzene	ND	500	100		n-Propylbenzene	1800	500	100	
tert-Butylbenzene	ND	500	100		Styrene	ND	500	100	
Carbon Disulfide	ND	5000	100		1,1,1,2-Tetrachloroethane	ND	500	100	
Carbon Tetrachloride	ND	500	100		1,1,2,2-Tetrachloroethane	ND	500	100	
Chlorobenzene	ND	500	100		Tetrachloroethene	ND	500	100	
Chloroethane	ND	500	100		Toluene	ND	500	100	
Chloroform	ND	500	100		1,2,3-Trichlorobenzene	ND	1000	100	
Chloromethane	ND	2500	100		1,2,4-Trichlorobenzene	ND	500	100	
2-Chlorotoluene	ND	500	100		1,1,1-Trichloroethane	ND	500	100	
4-Chlorotoluene	ND	500	100		1,1,2-Trichloroethane	ND	500	100	
Dibromochloromethane	ND	500	100		1,1,2-Trichloro-1,2,2-Trifluoroethane	ND	5000	100	
1,2-Dibromo-3-Chloropropane	ND	1000	100		Trichloroethene	ND	500	100	
1,2-Dibromoethane	ND	500	100		1,2,3-Trichloropropane	ND	500	100	
Dibromomethane	ND	500	100		1,2,4-Trimethylbenzene	17000	500	100	
1,2-Dichlorobenzene	ND	500	100		Trichlorofluoromethane	ND	5000	100	
1,3-Dichlorobenzene	ND	500	100		1,3,5-Trimethylbenzene	4400	500	100	
1,4-Dichlorobenzene	ND	500	100		Vinyl Acetate	ND	5000	100	
Dichlorodifluoromethane	ND	500	100		Vinyl Chloride	ND	500	100	
1,1-Dichloroethane	ND	500	100		p/m-Xylene	3600	500	100	
1,2-Dichloroethane	ND	500	100		o-Xylene	1100	500	100	
1,1-Dichloroethene	ND	500	100		Methyl-t-Butyl Ether (MTBE)	ND	500	100	
c-1,2-Dichloroethene	ND	500	100		Tert-Butyl Alcohol (TBA)	ND	5000	100	
t-1,2-Dichloroethene	ND	500	100		Diisopropyl Ether (DIPE)	ND	1000	100	
1,2-Dichloropropane	ND	500	100		Ethyl-t-Butyl Ether (ETBE)	ND	1000	100	
1,3-Dichloropropane	ND	500	100		Tert-Amyl-Methyl Ether (TAME)	ND	1000	100	
2,2-Dichloropropane	ND	500	100		Ethanol	ND	25000	100	
1,1-Dichloropropene	ND	500	100						

Surrogates:	REC (%)	Control Limits	Qual	Surrogates:	REC (%)	Control Limits	Qual
1,4-Bromofluorobenzene	102	60-132		Dibromofluoromethane	92	63-141	
1,2-Dichloroethane-d4	104	62-146		Toluene-d8	103	80-120	

RL - Reporting Limit , DF - Dilution Factor , Qual - Qualifiers

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Calscience Environmental Laboratories, Inc.

Analytical Report

ACCREDITED IN ACCORDANCE WITH nelac

JAG Consulting Group, Inc.
3340 S. Crawford Glen
Santa Ana, CA 92704-7160

Date Received: 11/10/11
Work Order No: 11-11-0939
Preparation: EPA 5030C
Method: EPA 8260B
Units: ug/kg

Project: 76 Station, Oakland CA / PTS:41714

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
Control	**11-11-0939-10-B**	**11/10/11 10:45**	**Solid**	**GC/MS UU**	**11/10/11**	**11/15/11 04:46**	**111114L04**

Parameter	Result	RL	DF	Qual	Parameter	Result	RL	DF	Qual
Acetone	ND	12000	100		c-1,3-Dichloropropene	ND	500	100	
Benzene	ND	500	100		t-1,3-Dichloropropene	ND	500	100	
Bromobenzene	ND	500	100		Ethylbenzene	1700	500	100	
Bromochloromethane	ND	500	100		2-Hexanone	ND	5000	100	
Bromodichloromethane	ND	500	100		Isopropylbenzene	ND	500	100	
Bromoform	ND	500	100		p-Isopropyltoluene	ND	500	100	
Bromomethane	ND	2500	100		Methylene Chloride	ND	5000	100	
2-Butanone	ND	5000	100		4-Methyl-2-Pentanone	ND	5000	100	
n-Butylbenzene	1600	500	100		Naphthalene	ND	5000	100	
sec-Butylbenzene	ND	500	100		n-Propylbenzene	1500	500	100	
tert-Butylbenzene	ND	500	100		Styrene	ND	500	100	
Carbon Disulfide	ND	5000	100		1,1,1,2-Tetrachloroethane	ND	500	100	
Carbon Tetrachloride	ND	500	100		1,1,2,2-Tetrachloroethane	ND	500	100	
Chlorobenzene	ND	500	100		Tetrachloroethene	ND	500	100	
Chloroethane	ND	500	100		Toluene	ND	500	100	
Chloroform	ND	500	100		1,2,3-Trichlorobenzene	ND	1000	100	
Chloromethane	ND	2500	100		1,2,4-Trichlorobenzene	ND	500	100	
2-Chlorotoluene	ND	500	100		1,1,1-Trichloroethane	ND	500	100	
4-Chlorotoluene	ND	500	100		1,1,2-Trichloroethane	ND	500	100	
Dibromochloromethane	ND	500	100		1,1,2-Trichloro-1,2,2-Trifluoroethane	ND	5000	100	
1,2-Dibromo-3-Chloropropane	ND	1000	100		Trichloroethene	ND	500	100	
1,2-Dibromoethane	ND	500	100		1,2,3-Trichloropropane	ND	500	100	
Dibromomethane	ND	500	100		1,2,4-Trimethylbenzene	13000	500	100	
1,2-Dichlorobenzene	ND	500	100		Trichlorofluoromethane	ND	5000	100	
1,3-Dichlorobenzene	ND	500	100		1,3,5-Trimethylbenzene	4100	500	100	
1,4-Dichlorobenzene	ND	500	100		Vinyl Acetate	ND	5000	100	
Dichlorodifluoromethane	ND	500	100		Vinyl Chloride	ND	500	100	
1,1-Dichloroethane	ND	500	100		p/m-Xylene	8700	500	100	
1,2-Dichloroethane	ND	500	100		o-Xylene	3200	500	100	
1,1-Dichloroethene	ND	500	100		Methyl-t-Butyl Ether (MTBE)	ND	500	100	
c-1,2-Dichloroethene	ND	500	100		Tert-Butyl Alcohol (TBA)	ND	5000	100	
t-1,2-Dichloroethene	ND	500	100		Diisopropyl Ether (DIPE)	ND	1000	100	
1,2-Dichloropropane	ND	500	100		Ethyl-t-Butyl Ether (ETBE)	ND	1000	100	
1,3-Dichloropropane	ND	500	100		Tert-Amyl-Methyl Ether (TAME)	ND	1000	100	
2,2-Dichloropropane	ND	500	100		Ethanol	ND	25000	100	
1,1-Dichloropropene	ND	500	100						

Surrogates:	REC (%)	Control Limits	Qual	Surrogates:	REC (%)	Control Limits	Qual
1,4-Bromofluorobenzene	103	60-132		Dibromofluoromethane	90	63-141	
1,2-Dichloroethane-d4	98	62-146		Toluene-d8	105	80-120	

RL - Reporting Limit , DF - Dilution Factor , Qual - Qualifiers

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Calscience Environmental Laboratories, Inc.

Analytical Report

ACCREDITED IN ACCORDANCE WITH nelac

JAG Consulting Group, Inc.		Date Received:	11/10/11
3340 S. Crawford Glen		Work Order No:	11-11-0939
Santa Ana, CA 92704-7160		Preparation:	EPA 5030C
		Method:	EPA 8260B
		Units:	ug/kg

Project: 76 Station, Oakland CA / PTS:41714 — Page 5 of 7

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
Medium Persulfatte with Medium Peroxide and Citrat	**11-11-0939-11-B**	**11/10/11 13:05**	**Solid**	**GC/MS UU**	**11/10/11**	**11/15/11 05:13**	**111114L04**

Parameter	Result	RL	DF	Qual	Parameter	Result	RL	DF	Qual
Acetone	ND	12000	100		c-1,3-Dichloropropene	ND	500	100	
Benzene	ND	500	100		t-1,3-Dichloropropene	ND	500	100	
Bromobenzene	ND	500	100		Ethylbenzene	1500	500	100	
Bromochloromethane	ND	500	100		2-Hexanone	ND	5000	100	
Bromodichloromethane	ND	500	100		Isopropylbenzene	ND	500	100	
Bromoform	ND	500	100		p-Isopropyltoluene	ND	500	100	
Bromomethane	ND	2500	100		Methylene Chloride	ND	5000	100	
2-Butanone	ND	5000	100		4-Methyl-2-Pentanone	ND	5000	100	
n-Butylbenzene	1500	500	100		Naphthalene	ND	5000	100	
sec-Butylbenzene	ND	500	100		n-Propylbenzene	1500	500	100	
tert-Butylbenzene	ND	500	100		Styrene	ND	500	100	
Carbon Disulfide	ND	5000	100		1,1,1,2-Tetrachloroethane	ND	500	100	
Carbon Tetrachloride	ND	500	100		1,1,2,2-Tetrachloroethane	ND	500	100	
Chlorobenzene	ND	500	100		Tetrachloroethene	ND	500	100	
Chloroethane	ND	500	100		Toluene	ND	500	100	
Chloroform	ND	500	100		1,2,3-Trichlorobenzene	ND	1000	100	
Chloromethane	ND	2500	100		1,2,4-Trichlorobenzene	ND	500	100	
2-Chlorotoluene	ND	500	100		1,1,1-Trichloroethane	ND	500	100	
4-Chlorotoluene	ND	500	100		1,1,2-Trichloroethane	ND	500	100	
Dibromochloromethane	ND	500	100		1,1,2-Trichloro-1,2,2-Trifluoroethane	ND	5000	100	
1,2-Dibromo-3-Chloropropane	ND	1000	100		Trichloroethene	ND	500	100	
1,2-Dibromoethane	ND	500	100		1,2,3-Trichloropropane	ND	500	100	
Dibromomethane	ND	500	100		1,2,4-Trimethylbenzene	12000	500	100	
1,2-Dichlorobenzene	ND	500	100		Trichlorofluoromethane	ND	5000	100	
1,3-Dichlorobenzene	ND	500	100		1,3,5-Trimethylbenzene	3600	500	100	
1,4-Dichlorobenzene	ND	500	100		Vinyl Acetate	ND	5000	100	
Dichlorodifluoromethane	ND	500	100		Vinyl Chloride	ND	500	100	
1,1-Dichloroethane	ND	500	100		p/m-Xylene	7900	500	100	
1,2-Dichloroethane	ND	500	100		o-Xylene	2600	500	100	
1,1-Dichloroethene	ND	500	100		Methyl-t-Butyl Ether (MTBE)	ND	500	100	
c-1,2-Dichloroethene	ND	500	100		Tert-Butyl Alcohol (TBA)	ND	5000	100	
t-1,2-Dichloroethene	ND	500	100		Diisopropyl Ether (DIPE)	ND	1000	100	
1,2-Dichloropropane	ND	500	100		Ethyl-t-Butyl Ether (ETBE)	ND	1000	100	
1,3-Dichloropropane	ND	500	100		Tert-Amyl-Methyl Ether (TAME)	ND	1000	100	
2,2-Dichloropropane	ND	500	100		Ethanol	ND	25000	100	
1,1-Dichloropropene	ND	500	100						

Surrogates:	REC (%)	Control Limits	Qual	Surrogates:	REC (%)	Control Limits	Qual
1,4-Bromofluorobenzene	108	60-132		Dibromofluoromethane	88	63-141	
1,2-Dichloroethane-d4	99	62-146		Toluene-d8	101	80-120	

RL - Reporting Limit , DF - Dilution Factor , Qual - Qualifiers

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Calscience Environmental Laboratories, Inc.

Analytical Report

ACCREDITED IN ACCORDANCE WITH nelac

JAG Consulting Group, Inc.
3340 S. Crawford Glen
Santa Ana, CA 92704-7160

Date Received: 11/10/11
Work Order No: 11-11-0939
Preparation: EPA 5030C
Method: EPA 8260B
Units: ug/kg

Project: 76 Station, Oakland CA / PTS:41714

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
Medium Persulfate with High Peroxide and Citrate S	**11-11-0939-12-B**	**11/10/11 13:06**	**Solid**	**GC/MS UU**	**11/10/11**	**11/15/11 05:40**	**111114L04**

Parameter	Result	RL	DF	Qual	Parameter	Result	RL	DF	Qual
Acetone	ND	12000	100		c-1,3-Dichloropropene	ND	500	100	
Benzene	ND	500	100		t-1,3-Dichloropropene	ND	500	100	
Bromobenzene	ND	500	100		Ethylbenzene	1300	500	100	
Bromochloromethane	ND	500	100		2-Hexanone	ND	5000	100	
Bromodichloromethane	ND	500	100		Isopropylbenzene	ND	500	100	
Bromoform	ND	500	100		p-Isopropyltoluene	ND	500	100	
Bromomethane	ND	2500	100		Methylene Chloride	ND	5000	100	
2-Butanone	ND	5000	100		4-Methyl-2-Pentanone	ND	5000	100	
n-Butylbenzene	1500	500	100		Naphthalene	ND	5000	100	
sec-Butylbenzene	ND	500	100		n-Propylbenzene	1300	500	100	
tert-Butylbenzene	ND	500	100		Styrene	ND	500	100	
Carbon Disulfide	ND	5000	100		1,1,1,2-Tetrachloroethane	ND	500	100	
Carbon Tetrachloride	ND	500	100		1,1,2,2-Tetrachloroethane	ND	500	100	
Chlorobenzene	ND	500	100		Tetrachloroethene	ND	500	100	
Chloroethane	ND	500	100		Toluene	ND	500	100	
Chloroform	ND	500	100		1,2,3-Trichlorobenzene	ND	1000	100	
Chloromethane	ND	2500	100		1,2,4-Trichlorobenzene	ND	500	100	
2-Chlorotoluene	ND	500	100		1,1,1-Trichloroethane	ND	500	100	
4-Chlorotoluene	ND	500	100		1,1,2-Trichloroethane	ND	500	100	
Dibromochloromethane	ND	500	100		1,1,2-Trichloro-1,2,2-Trifluoroethane	ND	5000	100	
1,2-Dibromo-3-Chloropropane	ND	1000	100		Trichloroethene	ND	500	100	
1,2-Dibromoethane	ND	500	100		1,2,3-Trichloropropane	ND	500	100	
Dibromomethane	ND	500	100		1,2,4-Trimethylbenzene	12000	500	100	
1,2-Dichlorobenzene	ND	500	100		Trichlorofluoromethane	ND	5000	100	
1,3-Dichlorobenzene	ND	500	100		1,3,5-Trimethylbenzene	3200	500	100	
1,4-Dichlorobenzene	ND	500	100		Vinyl Acetate	ND	5000	100	
Dichlorodifluoromethane	ND	500	100		Vinyl Chloride	ND	500	100	
1,1-Dichloroethane	ND	500	100		p/m-Xylene	6800	500	100	
1,2-Dichloroethane	ND	500	100		o-Xylene	2400	500	100	
1,1-Dichloroethene	ND	500	100		Methyl-t-Butyl Ether (MTBE)	ND	500	100	
c-1,2-Dichloroethene	ND	500	100		Tert-Butyl Alcohol (TBA)	ND	5000	100	
t-1,2-Dichloroethene	ND	500	100		Diisopropyl Ether (DIPE)	ND	1000	100	
1,2-Dichloropropane	ND	500	100		Ethyl-t-Butyl Ether (ETBE)	ND	1000	100	
1,3-Dichloropropane	ND	500	100		Tert-Amyl-Methyl Ether (TAME)	ND	1000	100	
2,2-Dichloropropane	ND	500	100		Ethanol	ND	25000	100	
1,1-Dichloropropene	ND	500	100						

Surrogates:	REC (%)	Control Limits	Qual	Surrogates:	REC (%)	Control Limits	Qual
1,4-Bromofluorobenzene	105	60-132		Dibromofluoromethane	89	63-141	
1,2-Dichloroethane-d4	97	62-146		Toluene-d8	105	80-120	

RL - Reporting Limit , DF - Dilution Factor , Qual - Qualifiers

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Calscience Environmental Laboratories, Inc.

Analytical Report

ACCREDITED IN ACCORDANCE WITH nelac

JAG Consulting Group, Inc.		Date Received:	11/10/11
3340 S. Crawford Glen		Work Order No:	11-11-0939
Santa Ana, CA 92704-7160		Preparation:	EPA 5030C
		Method:	EPA 8260B
		Units:	ug/kg

Project: 76 Station, Oakland CA / PTS:41714

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
Method Blank	**099-12-796-5,455**	**N/A**	**Solid**	**GC/MS UU**	**11/14/11**	**11/15/11 00:12**	**111114L04**

Parameter	Result	RL	DF	Qual	Parameter	Result	RL	DF	Qual
Acetone	ND	12000	100		c-1,3-Dichloropropene	ND	500	100	
Benzene	ND	500	100		t-1,3-Dichloropropene	ND	500	100	
Bromobenzene	ND	500	100		Ethylbenzene	ND	500	100	
Bromochloromethane	ND	500	100		2-Hexanone	ND	5000	100	
Bromodichloromethane	ND	500	100		Isopropylbenzene	ND	500	100	
Bromoform	ND	500	100		p-Isopropyltoluene	ND	500	100	
Bromomethane	ND	2500	100		Methylene Chloride	ND	5000	100	
2-Butanone	ND	5000	100		4-Methyl-2-Pentanone	ND	5000	100	
n-Butylbenzene	ND	500	100		Naphthalene	ND	5000	100	
sec-Butylbenzene	ND	500	100		n-Propylbenzene	ND	500	100	
tert-Butylbenzene	ND	500	100		Styrene	ND	500	100	
Carbon Disulfide	ND	5000	100		1,1,1,2-Tetrachloroethane	ND	500	100	
Carbon Tetrachloride	ND	500	100		1,1,2,2-Tetrachloroethane	ND	500	100	
Chlorobenzene	ND	500	100		Tetrachloroethene	ND	500	100	
Chloroethane	ND	500	100		Toluene	ND	500	100	
Chloroform	ND	500	100		1,2,3-Trichlorobenzene	ND	1000	100	
Chloromethane	ND	2500	100		1,2,4-Trichlorobenzene	ND	500	100	
2-Chlorotoluene	ND	500	100		1,1,1-Trichloroethane	ND	500	100	
4-Chlorotoluene	ND	500	100		1,1,2-Trichloroethane	ND	500	100	
Dibromochloromethane	ND	500	100		1,1,2-Trichloro-1,2,2-Trifluoroethane	ND	5000	100	
1,2-Dibromo-3-Chloropropane	ND	1000	100		Trichloroethene	ND	500	100	
1,2-Dibromoethane	ND	500	100		1,2,3-Trichloropropane	ND	500	100	
Dibromomethane	ND	500	100		1,2,4-Trimethylbenzene	ND	500	100	
1,2-Dichlorobenzene	ND	500	100		Trichlorofluoromethane	ND	5000	100	
1,3-Dichlorobenzene	ND	500	100		1,3,5-Trimethylbenzene	ND	500	100	
1,4-Dichlorobenzene	ND	500	100		Vinyl Acetate	ND	5000	100	
Dichlorodifluoromethane	ND	500	100		Vinyl Chloride	ND	500	100	
1,1-Dichloroethane	ND	500	100		p/m-Xylene	ND	500	100	
1,2-Dichloroethane	ND	500	100		o-Xylene	ND	500	100	
1,1-Dichloroethene	ND	500	100		Methyl-t-Butyl Ether (MTBE)	ND	500	100	
c-1,2-Dichloroethene	ND	500	100		Tert-Butyl Alcohol (TBA)	ND	5000	100	
t-1,2-Dichloroethene	ND	500	100		Diisopropyl Ether (DIPE)	ND	1000	100	
1,2-Dichloropropane	ND	500	100		Ethyl-t-Butyl Ether (ETBE)	ND	1000	100	
1,3-Dichloropropane	ND	500	100		Tert-Amyl-Methyl Ether (TAME)	ND	1000	100	
2,2-Dichloropropane	ND	500	100		Ethanol	ND	25000	100	
1,1-Dichloropropene	ND	500	100						

Surrogates:	REC (%)	Control Limits	Qual	Surrogates:	REC (%)	Control Limits	Qual
1,4-Bromofluorobenzene	84	60-132		Dibromofluoromethane	107	63-141	
1,2-Dichloroethane-d4	120	62-146		Toluene-d8	101	80-120	

RL - Reporting Limit , DF - Dilution Factor , Qual - Qualifiers

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Calscience Environmental Laboratories, Inc.

Analytical Report

ACCREDITED IN ACCORDANCE WITH nelac

JAG Consulting Group, Inc.
3340 S. Crawford Glen
Santa Ana, CA 92704-7160

Date Received: 11/10/11
Work Order No: 11-11-0939
Preparation: EPA 5030C
Method: EPA 8260B
Units: ug/L

Project: 76 Station, Oakland CA / PTS:41714

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
Control	**11-11-0939-1-B**	**11/10/11 10:07**	**Aqueous**	**GC/MS QQ**	**11/14/11**	**11/15/11 08:25**	**111114L02**

Parameter	Result	RL	DF	Qual	Parameter	Result	RL	DF	Qual
Acetone	ND	20	1		c-1,3-Dichloropropene	ND	0.50	1	
Benzene	ND	0.50	1		t-1,3-Dichloropropene	ND	0.50	1	
Bromobenzene	ND	1.0	1		Ethylbenzene	ND	1.0	1	
Bromochloromethane	ND	1.0	1		2-Hexanone	ND	10	1	
Bromodichloromethane	ND	1.0	1		Isopropylbenzene	ND	1.0	1	
Bromoform	ND	1.0	1		p-Isopropyltoluene	ND	1.0	1	
Bromomethane	ND	10	1		Methylene Chloride	ND	10	1	
2-Butanone	ND	10	1		4-Methyl-2-Pentanone	ND	10	1	
n-Butylbenzene	ND	1.0	1		Naphthalene	ND	10	1	
sec-Butylbenzene	ND	1.0	1		n-Propylbenzene	ND	1.0	1	
tert-Butylbenzene	ND	1.0	1		Styrene	ND	1.0	1	
Carbon Disulfide	ND	10	1		1,1,1,2-Tetrachloroethane	ND	1.0	1	
Carbon Tetrachloride	ND	0.50	1		1,1,2,2-Tetrachloroethane	ND	1.0	1	
Chlorobenzene	ND	1.0	1		Tetrachloroethene	ND	1.0	1	
Chloroethane	ND	5.0	1		Toluene	3.2	1.0	1	
Chloroform	3.1	1.0	1		1,2,3-Trichlorobenzene	ND	1.0	1	
Chloromethane	ND	10	1		1,2,4-Trichlorobenzene	ND	1.0	1	
2-Chlorotoluene	ND	1.0	1		1,1,1-Trichloroethane	ND	1.0	1	
4-Chlorotoluene	ND	1.0	1		1,1,2-Trichloro-1,2,2-Trifluoroethane	ND	10	1	
Dibromochloromethane	ND	1.0	1		1,1,2-Trichloroethane	ND	1.0	1	
1,2-Dibromo-3-Chloropropane	ND	5.0	1		Trichloroethene	ND	1.0	1	
1,2-Dibromoethane	ND	1.0	1		Trichlorofluoromethane	ND	10	1	
Dibromomethane	ND	1.0	1		1,2,3-Trichloropropane	ND	5.0	1	
1,2-Dichlorobenzene	ND	1.0	1		1,2,4-Trimethylbenzene	ND	1.0	1	
1,3-Dichlorobenzene	ND	1.0	1		1,3,5-Trimethylbenzene	5.4	1.0	1	
1,4-Dichlorobenzene	ND	1.0	1		Vinyl Acetate	ND	10	1	
Dichlorodifluoromethane	ND	1.0	1		Vinyl Chloride	ND	0.50	1	
1,1-Dichloroethane	ND	1.0	1		p/m-Xylene	ND	1.0	1	
1,2-Dichloroethane	ND	0.50	1		o-Xylene	1.1	1.0	1	
1,1-Dichloroethene	ND	1.0	1		Methyl-t-Butyl Ether (MTBE)	1.9	1.0	1	
c-1,2-Dichloroethene	ND	1.0	1		Tert-Butyl Alcohol (TBA)	150	10	1	
t-1,2-Dichloroethene	ND	1.0	1		Diisopropyl Ether (DIPE)	ND	2.0	1	
1,2-Dichloropropane	ND	1.0	1		Ethyl-t-Butyl Ether (ETBE)	ND	2.0	1	
1,3-Dichloropropane	ND	1.0	1		Tert-Amyl-Methyl Ether (TAME)	ND	2.0	1	
2,2-Dichloropropane	ND	1.0	1		Ethanol	ND	100	1	
1,1-Dichloropropene	ND	1.0	1						

Surrogates:	REC (%)	Control Limits	Qual	Surrogates:	REC (%)	Control Limits	Qual
1,4-Bromofluorobenzene	99	80-120		Dibromofluoromethane	99	80-126	
1,2-Dichloroethane-d4	97	80-134		Toluene-d8	101	80-120	

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RL - Reporting Limit , DF - Dilution Factor , Qual - Qualifiers

Calscience Environmental Laboratories, Inc.

Analytical Report

ACCREDITED IN ACCORDANCE WITH nelac

JAG Consulting Group, Inc.		Date Received:	11/10/11
3340 S. Crawford Glen		Work Order No:	11-11-0939
Santa Ana, CA 92704-7160		Preparation:	EPA 5030C
		Method:	EPA 8260B
		Units:	ug/L

Project: 76 Station, Oakland CA / PTS:41714

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
Medium Persulfate with Medium Caustic	**11-11-0939-2-A**	**11/10/11 10:32**	**Aqueous**	**GC/MS QQ**	**11/12/11**	**11/13/11 00:25**	**111112L02**

Parameter	Result	RL	DF	Qual	Parameter	Result	RL	DF	Qual
Acetone	350	100	5		c-1,3-Dichloropropene	ND	2.5	5	
Benzene	ND	2.5	5		t-1,3-Dichloropropene	ND	2.5	5	
Bromobenzene	ND	5.0	5		Ethylbenzene	ND	5.0	5	
Bromochloromethane	ND	5.0	5		2-Hexanone	ND	50	5	
Bromodichloromethane	ND	5.0	5		Isopropylbenzene	ND	5.0	5	
Bromoform	ND	5.0	5		p-Isopropyltoluene	ND	5.0	5	
Bromomethane	ND	50	5		Methylene Chloride	ND	50	5	
2-Butanone	ND	50	5		4-Methyl-2-Pentanone	ND	50	5	
n-Butylbenzene	ND	5.0	5		Naphthalene	ND	50	5	
sec-Butylbenzene	ND	5.0	5		n-Propylbenzene	ND	5.0	5	
tert-Butylbenzene	ND	5.0	5		Styrene	ND	5.0	5	
Carbon Disulfide	ND	50	5		1,1,1,2-Tetrachloroethane	ND	5.0	5	
Carbon Tetrachloride	ND	2.5	5		1,1,2,2-Tetrachloroethane	ND	5.0	5	
Chlorobenzene	ND	5.0	5		Tetrachloroethene	ND	5.0	5	
Chloroethane	ND	25	5		Toluene	ND	5.0	5	
Chloroform	ND	5.0	5		1,2,3-Trichlorobenzene	ND	5.0	5	
Chloromethane	ND	50	5		1,2,4-Trichlorobenzene	ND	5.0	5	
2-Chlorotoluene	ND	5.0	5		1,1,1-Trichloroethane	ND	5.0	5	
4-Chlorotoluene	ND	5.0	5		1,1,2-Trichloro-1,2,2-Trifluoroethane	ND	50	5	
Dibromochloromethane	ND	5.0	5		1,1,2-Trichloroethane	ND	5.0	5	
1,2-Dibromo-3-Chloropropane	ND	25	5		Trichloroethene	ND	5.0	5	
1,2-Dibromoethane	ND	5.0	5		Trichlorofluoromethane	ND	50	5	
Dibromomethane	ND	5.0	5		1,2,3-Trichloropropane	ND	25	5	
1,2-Dichlorobenzene	ND	5.0	5		1,2,4-Trimethylbenzene	ND	5.0	5	
1,3-Dichlorobenzene	ND	5.0	5		1,3,5-Trimethylbenzene	ND	5.0	5	
1,4-Dichlorobenzene	ND	5.0	5		Vinyl Acetate	ND	50	5	
Dichlorodifluoromethane	ND	5.0	5		Vinyl Chloride	ND	2.5	5	
1,1-Dichloroethane	ND	5.0	5		p/m-Xylene	ND	5.0	5	
1,2-Dichloroethane	ND	2.5	5		o-Xylene	ND	5.0	5	
1,1-Dichloroethene	ND	5.0	5		Methyl-t-Butyl Ether (MTBE)	ND	5.0	5	
c-1,2-Dichloroethene	ND	5.0	5		Tert-Butyl Alcohol (TBA)	130	50	5	
t-1,2-Dichloroethene	ND	5.0	5		Diisopropyl Ether (DIPE)	ND	10	5	
1,2-Dichloropropane	ND	5.0	5		Ethyl-t-Butyl Ether (ETBE)	ND	10	5	
1,3-Dichloropropane	ND	5.0	5		Tert-Amyl-Methyl Ether (TAME)	ND	10	5	
2,2-Dichloropropane	ND	5.0	5		Ethanol	ND	500	5	
1,1-Dichloropropene	ND	5.0	5						
Surrogates:	REC (%)	Control Limits		Qual	Surrogates:	REC (%)	Control Limits		Qual
1,4-Bromofluorobenzene	99	80-120			Dibromofluoromethane	97	80-126		
1,2-Dichloroethane-d4	96	80-134			Toluene-d8	99	80-120		

RL - Reporting Limit , DF - Dilution Factor , Qual - Qualifiers

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Calscience Environmental Laboratories, Inc.

Analytical Report

ACCREDITED IN ACCORDANCE WITH nelac

JAG Consulting Group, Inc.
3340 S. Crawford Glen
Santa Ana, CA 92704-7160

Date Received: 11/10/11
Work Order No: 11-11-0939
Preparation: EPA 5030C
Method: EPA 8260B
Units: ug/L

Project: 76 Station, Oakland CA / PTS:41714

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
High Persulfate with High Caustic	**11-11-0939-3-A**	**11/10/11 10:50**	**Aqueous**	**GC/MS QQ**	**11/12/11**	**11/13/11 00:53**	**111112L02**

Parameter	Result	RL	DF	Qual	Parameter	Result	RL	DF	Qual
Acetone	430	100	5		c-1,3-Dichloropropene	ND	2.5	5	
Benzene	ND	2.5	5		t-1,3-Dichloropropene	ND	2.5	5	
Bromobenzene	ND	5.0	5		Ethylbenzene	ND	5.0	5	
Bromochloromethane	ND	5.0	5		2-Hexanone	ND	50	5	
Bromodichloromethane	ND	5.0	5		Isopropylbenzene	ND	5.0	5	
Bromoform	ND	5.0	5		p-Isopropyltoluene	ND	5.0	5	
Bromomethane	ND	50	5		Methylene Chloride	ND	50	5	
2-Butanone	56	50	5		4-Methyl-2-Pentanone	ND	50	5	
n-Butylbenzene	ND	5.0	5		Naphthalene	ND	50	5	
sec-Butylbenzene	ND	5.0	5		n-Propylbenzene	ND	5.0	5	
tert-Butylbenzene	ND	5.0	5		Styrene	ND	5.0	5	
Carbon Disulfide	ND	50	5		1,1,1,2-Tetrachloroethane	ND	5.0	5	
Carbon Tetrachloride	ND	2.5	5		1,1,2,2-Tetrachloroethane	ND	5.0	5	
Chlorobenzene	ND	5.0	5		Tetrachloroethene	ND	5.0	5	
Chloroethane	ND	25	5		Toluene	ND	5.0	5	
Chloroform	ND	5.0	5		1,2,3-Trichlorobenzene	ND	5.0	5	
Chloromethane	ND	50	5		1,2,4-Trichlorobenzene	ND	5.0	5	
2-Chlorotoluene	ND	5.0	5		1,1,1-Trichloroethane	ND	5.0	5	
4-Chlorotoluene	ND	5.0	5		1,1,2-Trichloro-1,2,2-Trifluoroethane	ND	50	5	
Dibromochloromethane	ND	5.0	5		1,1,2-Trichloroethane	ND	5.0	5	
1,2-Dibromo-3-Chloropropane	ND	25	5		Trichloroethene	ND	5.0	5	
1,2-Dibromoethane	ND	5.0	5		Trichlorofluoromethane	ND	50	5	
Dibromomethane	ND	5.0	5		1,2,3-Trichloropropane	ND	25	5	
1,2-Dichlorobenzene	ND	5.0	5		1,2,4-Trimethylbenzene	ND	5.0	5	
1,3-Dichlorobenzene	ND	5.0	5		1,3,5-Trimethylbenzene	ND	5.0	5	
1,4-Dichlorobenzene	ND	5.0	5		Vinyl Acetate	ND	50	5	
Dichlorodifluoromethane	ND	5.0	5		Vinyl Chloride	ND	2.5	5	
1,1-Dichloroethane	ND	5.0	5		p/m-Xylene	ND	5.0	5	
1,2-Dichloroethane	ND	2.5	5		o-Xylene	ND	5.0	5	
1,1-Dichloroethene	ND	5.0	5		Methyl-t-Butyl Ether (MTBE)	ND	5.0	5	
c-1,2-Dichloroethene	ND	5.0	5		Tert-Butyl Alcohol (TBA)	130	50	5	
t-1,2-Dichloroethene	ND	5.0	5		Diisopropyl Ether (DIPE)	ND	10	5	
1,2-Dichloropropane	ND	5.0	5		Ethyl-t-Butyl Ether (ETBE)	ND	10	5	
1,3-Dichloropropane	ND	5.0	5		Tert-Amyl-Methyl Ether (TAME)	ND	10	5	
2,2-Dichloropropane	ND	5.0	5		Ethanol	ND	500	5	
1,1-Dichloropropene	ND	5.0	5						

Surrogates:	REC (%)	Control Limits	Qual	Surrogates:	REC (%)	Control Limits	Qual
1,4-Bromofluorobenzene	99	80-120		Dibromofluoromethane	97	80-126	
1,2-Dichloroethane-d4	98	80-134		Toluene-d8	99	80-120	

RL - Reporting Limit , DF - Dilution Factor , Qual - Qualifiers

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Calscience Environmental Laboratories, Inc.

Analytical Report

ACCREDITED IN ACCORDANCE WITH nelac

JAG Consulting Group, Inc.
3340 S. Crawford Glen
Santa Ana, CA 92704-7160

Date Received: 11/10/11
Work Order No: 11-11-0939
Preparation: EPA 5030C
Method: EPA 8260B
Units: ug/L

Project: 76 Station, Oakland CA / PTS:41714

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
Control	**11-11-0939-4-B**	**11/10/11 10:10**	**Aqueous**	**GC/MS QQ**	**11/14/11**	**11/15/11 08:53**	**111114L02**

Parameter	Result	RL	DF	Qual	Parameter	Result	RL	DF	Qual
Acetone	23	20	1		c-1,3-Dichloropropene	ND	0.50	1	
Benzene	ND	0.50	1		t-1,3-Dichloropropene	ND	0.50	1	
Bromobenzene	ND	1.0	1		Ethylbenzene	ND	1.0	1	
Bromochloromethane	ND	1.0	1		2-Hexanone	ND	10	1	
Bromodichloromethane	ND	1.0	1		Isopropylbenzene	ND	1.0	1	
Bromoform	ND	1.0	1		p-Isopropyltoluene	ND	1.0	1	
Bromomethane	ND	10	1		Methylene Chloride	ND	10	1	
2-Butanone	ND	10	1		4-Methyl-2-Pentanone	ND	10	1	
n-Butylbenzene	ND	1.0	1		Naphthalene	15	10	1	
sec-Butylbenzene	ND	1.0	1		n-Propylbenzene	ND	1.0	1	
tert-Butylbenzene	ND	1.0	1		Styrene	ND	1.0	1	
Carbon Disulfide	ND	10	1		1,1,1,2-Tetrachloroethane	ND	1.0	1	
Carbon Tetrachloride	ND	0.50	1		1,1,2,2-Tetrachloroethane	ND	1.0	1	
Chlorobenzene	ND	1.0	1		Tetrachloroethene	ND	1.0	1	
Chloroethane	ND	5.0	1		Toluene	6.1	1.0	1	
Chloroform	3.0	1.0	1		1,2,3-Trichlorobenzene	ND	1.0	1	
Chloromethane	ND	10	1		1,2,4-Trichlorobenzene	ND	1.0	1	
2-Chlorotoluene	ND	1.0	1		1,1,1-Trichloroethane	ND	1.0	1	
4-Chlorotoluene	ND	1.0	1		1,1,2-Trichloro-1,2,2-Trifluoroethane	ND	10	1	
Dibromochloromethane	ND	1.0	1		1,1,2-Trichloroethane	ND	1.0	1	
1,2-Dibromo-3-Chloropropane	ND	5.0	1		Trichloroethene	ND	1.0	1	
1,2-Dibromoethane	ND	1.0	1		Trichlorofluoromethane	ND	10	1	
Dibromomethane	ND	1.0	1		1,2,3-Trichloropropane	ND	5.0	1	
1,2-Dichlorobenzene	ND	1.0	1		1,2,4-Trimethylbenzene	ND	1.0	1	
1,3-Dichlorobenzene	ND	1.0	1		1,3,5-Trimethylbenzene	70	1.0	1	
1,4-Dichlorobenzene	ND	1.0	1		Vinyl Acetate	ND	10	1	
Dichlorodifluoromethane	ND	1.0	1		Vinyl Chloride	ND	0.50	1	
1,1-Dichloroethane	ND	1.0	1		p/m-Xylene	8.4	1.0	1	
1,2-Dichloroethane	ND	0.50	1		o-Xylene	5.8	1.0	1	
1,1-Dichloroethene	ND	1.0	1		Methyl-t-Butyl Ether (MTBE)	1.7	1.0	1	
c-1,2-Dichloroethene	ND	1.0	1		Tert-Butyl Alcohol (TBA)	150	10	1	
t-1,2-Dichloroethene	ND	1.0	1		Diisopropyl Ether (DIPE)	ND	2.0	1	
1,2-Dichloropropane	ND	1.0	1		Ethyl-t-Butyl Ether (ETBE)	ND	2.0	1	
1,3-Dichloropropane	ND	1.0	1		Tert-Amyl-Methyl Ether (TAME)	ND	2.0	1	
2,2-Dichloropropane	ND	1.0	1		Ethanol	ND	100	1	
1,1-Dichloropropene	ND	1.0	1						

Surrogates:	REC (%)	Control Limits	Qual	Surrogates:	REC (%)	Control Limits	Qual
1,4-Bromofluorobenzene	102	80-120		Dibromofluoromethane	96	80-126	
1,2-Dichloroethane-d4	95	80-134		Toluene-d8	102	80-120	

RL - Reporting Limit , DF - Dilution Factor , Qual - Qualifiers

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Calscience Environmental Laboratories, Inc.

Analytical Report

ACCREDITED IN ACCORDANCE WITH nelac

JAG Consulting Group, Inc.
3340 S. Crawford Glen
Santa Ana, CA 92704-7160

Date Received: 11/10/11
Work Order No: 11-11-0939
Preparation: EPA 5030C
Method: EPA 8260B
Units: ug/L

Project: 76 Station, Oakland CA / PTS:41714

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
Medium Persulfatte with Medium Peroxide and Citrat	**11-11-0939-5-A**	**11/10/11 11:05**	**Aqueous**	**GC/MS QQ**	**11/12/11**	**11/13/11 01:47**	**111112L02**

Parameter	Result	RL	DF	Qual	Parameter	Result	RL	DF	Qual
Acetone	18000	5000	250		c-1,3-Dichloropropene	ND	0.50	1	
Benzene	0.66	0.50	1		t-1,3-Dichloropropene	ND	0.50	1	
Bromobenzene	ND	1.0	1		Ethylbenzene	13	1.0	1	
Bromochloromethane	ND	1.0	1		2-Hexanone	ND	10	1	
Bromodichloromethane	ND	1.0	1		Isopropylbenzene	ND	1.0	1	
Bromoform	ND	1.0	1		p-Isopropyltoluene	ND	1.0	1	
Bromomethane	ND	10	1		Methylene Chloride	ND	10	1	
2-Butanone	51	10	1		4-Methyl-2-Pentanone	ND	10	1	
n-Butylbenzene	ND	1.0	1		Naphthalene	25	10	1	
sec-Butylbenzene	ND	1.0	1		n-Propylbenzene	1.7	1.0	1	
tert-Butylbenzene	ND	1.0	1		Styrene	ND	1.0	1	
Carbon Disulfide	ND	10	1		1,1,1,2-Tetrachloroethane	ND	1.0	1	
Carbon Tetrachloride	ND	0.50	1		1,1,2,2-Tetrachloroethane	ND	1.0	1	
Chlorobenzene	ND	1.0	1		Tetrachloroethene	ND	1.0	1	
Chloroethane	ND	5.0	1		Toluene	27	1.0	1	
Chloroform	2.8	1.0	1		1,2,3-Trichlorobenzene	ND	1.0	1	
Chloromethane	ND	10	1		1,2,4-Trichlorobenzene	ND	1.0	1	
2-Chlorotoluene	ND	1.0	1		1,1,1-Trichloroethane	ND	1.0	1	
4-Chlorotoluene	ND	1.0	1		1,1,2-Trichloro-1,2,2-Trifluoroethane	ND	10	1	
Dibromochloromethane	ND	1.0	1		1,1,2-Trichloroethane	ND	1.0	1	
1,2-Dibromo-3-Chloropropane	ND	5.0	1		Trichloroethene	ND	1.0	1	
1,2-Dibromoethane	ND	1.0	1		Trichlorofluoromethane	ND	10	1	
Dibromomethane	ND	1.0	1		1,2,3-Trichloropropane	ND	5.0	1	
1,2-Dichlorobenzene	ND	1.0	1		1,2,4-Trimethylbenzene	24	1.0	1	
1,3-Dichlorobenzene	ND	1.0	1		1,3,5-Trimethylbenzene	3.9	1.0	1	
1,4-Dichlorobenzene	ND	1.0	1		Vinyl Acetate	ND	10	1	
Dichlorodifluoromethane	ND	1.0	1		Vinyl Chloride	ND	0.50	1	
1,1-Dichloroethane	ND	1.0	1		p/m-Xylene	63	1.0	1	
1,2-Dichloroethane	ND	0.50	1		o-Xylene	28	1.0	1	
1,1-Dichloroethene	ND	1.0	1		Methyl-t-Butyl Ether (MTBE)	ND	1.0	1	
c-1,2-Dichloroethene	ND	1.0	1		Tert-Butyl Alcohol (TBA)	13	10	1	
t-1,2-Dichloroethene	ND	1.0	1		Diisopropyl Ether (DIPE)	ND	2.0	1	
1,2-Dichloropropane	ND	1.0	1		Ethyl-t-Butyl Ether (ETBE)	ND	2.0	1	
1,3-Dichloropropane	ND	1.0	1		Tert-Amyl-Methyl Ether (TAME)	ND	2.0	1	
2,2-Dichloropropane	ND	1.0	1		Ethanol	210	100	1	
1,1-Dichloropropene	ND	1.0	1						

Surrogates:	REC (%)	Control Limits	Qual	Surrogates:	REC (%)	Control Limits	Qual
1,4-Bromofluorobenzene	102	80-120		Dibromofluoromethane	97	80-126	
1,2-Dichloroethane-d4	97	80-134		Toluene-d8	100	80-120	

RL - Reporting Limit , DF - Dilution Factor , Qual - Qualifiers

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Calscience Environmental Laboratories, Inc.

Analytical Report

ACCREDITED IN ACCORDANCE WITH nelac

JAG Consulting Group, Inc.
3340 S. Crawford Glen
Santa Ana, CA 92704-7160

Date Received: 11/10/11
Work Order No: 11-11-0939
Preparation: EPA 5030C
Method: EPA 8260B
Units: ug/L

Project: 76 Station, Oakland CA / PTS:41714

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
Medium Persulfate with High Peroxide and Citrate S	**11-11-0939-6-A**	**11/10/11 11:20**	**Aqueous**	**GC/MS QQ**	**11/12/11**	**11/13/11 02:14**	**111112L02**

Parameter	Result	RL	DF	Qual	Parameter	Result	RL	DF	Qual
Acetone	42000	10000	500		c-1,3-Dichloropropene	ND	2.5	5	
Benzene	ND	2.5	5		t-1,3-Dichloropropene	ND	2.5	5	
Bromobenzene	ND	5.0	5		Ethylbenzene	23	5.0	5	
Bromochloromethane	ND	5.0	5		2-Hexanone	ND	50	5	
Bromodichloromethane	ND	5.0	5		Isopropylbenzene	ND	5.0	5	
Bromoform	ND	5.0	5		p-Isopropyltoluene	ND	5.0	5	
Bromomethane	ND	50	5		Methylene Chloride	ND	50	5	
2-Butanone	61	50	5		4-Methyl-2-Pentanone	ND	50	5	
n-Butylbenzene	ND	5.0	5		Naphthalene	ND	50	5	
sec-Butylbenzene	ND	5.0	5		n-Propylbenzene	ND	5.0	5	
tert-Butylbenzene	ND	5.0	5		Styrene	ND	5.0	5	
Carbon Disulfide	ND	50	5		1,1,1,2-Tetrachloroethane	ND	5.0	5	
Carbon Tetrachloride	ND	2.5	5		1,1,2,2-Tetrachloroethane	ND	5.0	5	
Chlorobenzene	ND	5.0	5		Tetrachloroethene	ND	5.0	5	
Chloroethane	ND	25	5		Toluene	28	5.0	5	
Chloroform	ND	5.0	5		1,2,3-Trichlorobenzene	ND	5.0	5	
Chloromethane	ND	50	5		1,2,4-Trichlorobenzene	ND	5.0	5	
2-Chlorotoluene	ND	5.0	5		1,1,1-Trichloroethane	ND	5.0	5	
4-Chlorotoluene	ND	5.0	5		1,1,2-Trichloro-1,2,2-Trifluoroethane	ND	50	5	
Dibromochloromethane	ND	5.0	5		1,1,2-Trichloroethane	ND	5.0	5	
1,2-Dibromo-3-Chloropropane	ND	25	5		Trichloroethene	ND	5.0	5	
1,2-Dibromoethane	ND	5.0	5		Trichlorofluoromethane	ND	50	5	
Dibromomethane	ND	5.0	5		1,2,3-Trichloropropane	ND	25	5	
1,2-Dichlorobenzene	ND	5.0	5		1,2,4-Trimethylbenzene	48	5.0	5	
1,3-Dichlorobenzene	ND	5.0	5		1,3,5-Trimethylbenzene	8.2	5.0	5	
1,4-Dichlorobenzene	ND	5.0	5		Vinyl Acetate	ND	50	5	
Dichlorodifluoromethane	ND	5.0	5		Vinyl Chloride	ND	2.5	5	
1,1-Dichloroethane	ND	5.0	5		p/m-Xylene	110	5.0	5	
1,2-Dichloroethane	ND	2.5	5		o-Xylene	45	5.0	5	
1,1-Dichloroethene	ND	5.0	5		Methyl-t-Butyl Ether (MTBE)	ND	5.0	5	
c-1,2-Dichloroethene	ND	5.0	5		Tert-Butyl Alcohol (TBA)	ND	50	5	
t-1,2-Dichloroethene	ND	5.0	5		Diisopropyl Ether (DIPE)	ND	10	5	
1,2-Dichloropropane	ND	5.0	5		Ethyl-t-Butyl Ether (ETBE)	ND	10	5	
1,3-Dichloropropane	ND	5.0	5		Tert-Amyl-Methyl Ether (TAME)	ND	10	5	
2,2-Dichloropropane	ND	5.0	5		Ethanol	ND	500	5	
1,1-Dichloropropene	ND	5.0	5						

Surrogates:	REC (%)	Control Limits	Qual	Surrogates:	REC (%)	Control Limits	Qual
1,4-Bromofluorobenzene	102	80-120		Dibromofluoromethane	96	80-126	
1,2-Dichloroethane-d4	95	80-134		Toluene-d8	100	80-120	

RL - Reporting Limit , DF - Dilution Factor , Qual - Qualifiers

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Calscience Environmental Laboratories, Inc.

Analytical Report

ACCREDITED IN ACCORDANCE WITH nelac

JAG Consulting Group, Inc.	Date Received:	11/10/11
3340 S. Crawford Glen	Work Order No:	11-11-0939
Santa Ana, CA 92704-7160	Preparation:	EPA 5030C
	Method:	EPA 8260B
	Units:	ug/L

Project: 76 Station, Oakland CA / PTS:41714 — Page 7 of 8

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
Method Blank	**099-14-001-6,262**	**N/A**	**Aqueous**	**GC/MS QQ**	**11/12/11**	**11/12/11 23:30**	**111112L02**

Parameter	Result	RL	DF	Qual	Parameter	Result	RL	DF	Qual
Acetone	ND	20	1		c-1,3-Dichloropropene	ND	0.50	1	
Benzene	ND	0.50	1		t-1,3-Dichloropropene	ND	0.50	1	
Bromobenzene	ND	1.0	1		Ethylbenzene	ND	1.0	1	
Bromochloromethane	ND	1.0	1		2-Hexanone	ND	10	1	
Bromodichloromethane	ND	1.0	1		Isopropylbenzene	ND	1.0	1	
Bromoform	ND	1.0	1		p-Isopropyltoluene	ND	1.0	1	
Bromomethane	ND	10	1		Methylene Chloride	ND	10	1	
2-Butanone	ND	10	1		4-Methyl-2-Pentanone	ND	10	1	
n-Butylbenzene	ND	1.0	1		Naphthalene	ND	10	1	
sec-Butylbenzene	ND	1.0	1		n-Propylbenzene	ND	1.0	1	
tert-Butylbenzene	ND	1.0	1		Styrene	ND	1.0	1	
Carbon Disulfide	ND	10	1		1,1,1,2-Tetrachloroethane	ND	1.0	1	
Carbon Tetrachloride	ND	0.50	1		1,1,2,2-Tetrachloroethane	ND	1.0	1	
Chlorobenzene	ND	1.0	1		Tetrachloroethene	ND	1.0	1	
Chloroethane	ND	5.0	1		Toluene	ND	1.0	1	
Chloroform	ND	1.0	1		1,2,3-Trichlorobenzene	ND	1.0	1	
Chloromethane	ND	10	1		1,2,4-Trichlorobenzene	ND	1.0	1	
2-Chlorotoluene	ND	1.0	1		1,1,1-Trichloroethane	ND	1.0	1	
4-Chlorotoluene	ND	1.0	1		1,1,2-Trichloro-1,2,2-Trifluoroethane	ND	10	1	
Dibromochloromethane	ND	1.0	1		1,1,2-Trichloroethane	ND	1.0	1	
1,2-Dibromo-3-Chloropropane	ND	5.0	1		Trichloroethene	ND	1.0	1	
1,2-Dibromoethane	ND	1.0	1		Trichlorofluoromethane	ND	10	1	
Dibromomethane	ND	1.0	1		1,2,3-Trichloropropane	ND	5.0	1	
1,2-Dichlorobenzene	ND	1.0	1		1,2,4-Trimethylbenzene	ND	1.0	1	
1,3-Dichlorobenzene	ND	1.0	1		1,3,5-Trimethylbenzene	ND	1.0	1	
1,4-Dichlorobenzene	ND	1.0	1		Vinyl Acetate	ND	10	1	
Dichlorodifluoromethane	ND	1.0	1		Vinyl Chloride	ND	0.50	1	
1,1-Dichloroethane	ND	1.0	1		p/m-Xylene	ND	1.0	1	
1,2-Dichloroethane	ND	0.50	1		o-Xylene	ND	1.0	1	
1,1-Dichloroethene	ND	1.0	1		Methyl-t-Butyl Ether (MTBE)	ND	1.0	1	
c-1,2-Dichloroethene	ND	1.0	1		Tert-Butyl Alcohol (TBA)	ND	10	1	
t-1,2-Dichloroethene	ND	1.0	1		Diisopropyl Ether (DIPE)	ND	2.0	1	
1,2-Dichloropropane	ND	1.0	1		Ethyl-t-Butyl Ether (ETBE)	ND	2.0	1	
1,3-Dichloropropane	ND	1.0	1		Tert-Amyl-Methyl Ether (TAME)	ND	2.0	1	
2,2-Dichloropropane	ND	1.0	1		Ethanol	ND	100	1	
1,1-Dichloropropene	ND	1.0	1						

Surrogates:	REC (%)	Control Limits	Qual	Surrogates:	REC (%)	Control Limits	Qual
1,4-Bromofluorobenzene	100	80-120		Dibromofluoromethane	97	80-126	
1,2-Dichloroethane-d4	98	80-134		Toluene-d8	100	80-120	

RL - Reporting Limit , DF - Dilution Factor , Qual - Qualifiers

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Calscience Environmental Laboratories, Inc.

Analytical Report

ACCREDITED IN ACCORDANCE WITH nelac

JAG Consulting Group, Inc.
3340 S. Crawford Glen
Santa Ana, CA 92704-7160

Date Received: 11/10/11
Work Order No: 11-11-0939
Preparation: EPA 5030C
Method: EPA 8260B
Units: ug/L

Project: 76 Station, Oakland CA / PTS:41714

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
Method Blank	**099-14-001-6,279**	**N/A**	**Aqueous**	**GC/MS QQ**	**11/14/11**	**11/15/11 04:18**	**111114L02**

Parameter	Result	RL	DF	Qual	Parameter	Result	RL	DF	Qual
Acetone	ND	20	1		c-1,3-Dichloropropene	ND	0.50	1	
Benzene	ND	0.50	1		t-1,3-Dichloropropene	ND	0.50	1	
Bromobenzene	ND	1.0	1		Ethylbenzene	ND	1.0	1	
Bromochloromethane	ND	1.0	1		2-Hexanone	ND	10	1	
Bromodichloromethane	ND	1.0	1		Isopropylbenzene	ND	1.0	1	
Bromoform	ND	1.0	1		p-Isopropyltoluene	ND	1.0	1	
Bromomethane	ND	10	1		Methylene Chloride	ND	10	1	
2-Butanone	ND	10	1		4-Methyl-2-Pentanone	ND	10	1	
n-Butylbenzene	ND	1.0	1		Naphthalene	ND	10	1	
sec-Butylbenzene	ND	1.0	1		n-Propylbenzene	ND	1.0	1	
tert-Butylbenzene	ND	1.0	1		Styrene	ND	1.0	1	
Carbon Disulfide	ND	10	1		1,1,1,2-Tetrachloroethane	ND	1.0	1	
Carbon Tetrachloride	ND	0.50	1		1,1,2,2-Tetrachloroethane	ND	1.0	1	
Chlorobenzene	ND	1.0	1		Tetrachloroethene	ND	1.0	1	
Chloroethane	ND	5.0	1		Toluene	ND	1.0	1	
Chloroform	ND	1.0	1		1,2,3-Trichlorobenzene	ND	1.0	1	
Chloromethane	ND	10	1		1,2,4-Trichlorobenzene	ND	1.0	1	
2-Chlorotoluene	ND	1.0	1		1,1,1-Trichloroethane	ND	1.0	1	
4-Chlorotoluene	ND	1.0	1		1,1,2-Trichloro-1,2,2-Trifluoroethane	ND	10	1	
Dibromochloromethane	ND	1.0	1		1,1,2-Trichloroethane	ND	1.0	1	
1,2-Dibromo-3-Chloropropane	ND	5.0	1		Trichloroethene	ND	1.0	1	
1,2-Dibromoethane	ND	1.0	1		Trichlorofluoromethane	ND	10	1	
Dibromomethane	ND	1.0	1		1,2,3-Trichloropropane	ND	5.0	1	
1,2-Dichlorobenzene	ND	1.0	1		1,2,4-Trimethylbenzene	ND	1.0	1	
1,3-Dichlorobenzene	ND	1.0	1		1,3,5-Trimethylbenzene	ND	1.0	1	
1,4-Dichlorobenzene	ND	1.0	1		Vinyl Acetate	ND	10	1	
Dichlorodifluoromethane	ND	1.0	1		Vinyl Chloride	ND	0.50	1	
1,1-Dichloroethane	ND	1.0	1		p/m-Xylene	ND	1.0	1	
1,2-Dichloroethane	ND	0.50	1		o-Xylene	ND	1.0	1	
1,1-Dichloroethene	ND	1.0	1		Methyl-t-Butyl Ether (MTBE)	ND	1.0	1	
c-1,2-Dichloroethene	ND	1.0	1		Tert-Butyl Alcohol (TBA)	ND	10	1	
t-1,2-Dichloroethene	ND	1.0	1		Diisopropyl Ether (DIPE)	ND	2.0	1	
1,2-Dichloropropane	ND	1.0	1		Ethyl-t-Butyl Ether (ETBE)	ND	2.0	1	
1,3-Dichloropropane	ND	1.0	1		Tert-Amyl-Methyl Ether (TAME)	ND	2.0	1	
2,2-Dichloropropane	ND	1.0	1		Ethanol	ND	100	1	
1,1-Dichloropropene	ND	1.0	1						

Surrogates:	REC (%)	Control Limits	Qual	Surrogates:	REC (%)	Control Limits	Qual
1,4-Bromofluorobenzene	97	80-120		Dibromofluoromethane	97	80-126	
1,2-Dichloroethane-d4	99	80-134		Toluene-d8	99	80-120	

RL - Reporting Limit , DF - Dilution Factor , Qual - Qualifiers

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Calscience Environmental Laboratories, Inc.

Analytical Report

ACCREDITED IN ACCORDANCE WITH nelac

JAG Consulting Group, Inc.
3340 S. Crawford Glen
Santa Ana, CA 92704-7160

Date Received: 11/10/11
Work Order No: 11-11-0939
Preparation: EPA 3005A Filt.
Method: EPA 6010B
Units: mg/L

Project: 76 Station, Oakland CA / PTS:41714

Client Sample Number	Lab Sample Number	Date /Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
Medium Persulfate with Medium Caustic	**11-11-0939-2-H**	**11/10/11 10:32**	**Aqueous**	**ICP 5300**	**11/11/11**	**11/11/11 18:27**	**111111LA3F**

Parameter	Result	RL	DF	Qual
Manganese	0.0148	0.00500	1	

High Persulfate with High Caustic	**11-11-0939-3-H**	**11/10/11 10:50**	**Aqueous**	**ICP 5300**	**11/11/11**	**11/11/11 18:29**	**111111LA3F**

Parameter	Result	RL	DF	Qual
Manganese	0.0121	0.00500	1	

Medium Persulfatte with Medium Peroxide and Citrat	**11-11-0939-5-H**	**11/10/11 11:05**	**Aqueous**	**ICP 5300**	**11/11/11**	**11/11/11 18:31**	**111111LA3F**

Parameter	Result	RL	DF	Qual
Manganese	43.4	0.00500	1	

Medium Persulfate with High Peroxide and Citrate S	**11-11-0939-6-H**	**11/10/11 11:20**	**Aqueous**	**ICP 5300**	**11/11/11**	**11/11/11 18:32**	**111111LA3F**

Parameter	Result	RL	DF	Qual
Manganese	34.1	0.00500	1	

Method Blank	**097-01-003-12,137**	**N/A**	**Aqueous**	**ICP 5300**	**11/11/11**	**11/11/11 18:10**	**111111LA3F**

Parameter	Result	RL	DF	Qual	Parameter	Result	RL	DF	Qual
Chromium	ND	0.0100	1		Manganese	ND	0.00500	1	
Iron	ND	0.100	1						

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RL - Reporting Limit , DF - Dilution Factor , Qual - Qualifiers

Calscience Environmental Laboratories, Inc.

Analytical Report

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JAG Consulting Group, Inc.
3340 S. Crawford Glen
Santa Ana, CA 92704-7160

Date Received: 11/10/11
Work Order No: 11-11-0939
Preparation: EPA 3010A Total
Method: EPA 6010B
Units: mg/L

Project: 76 Station, Oakland CA / PTS:41714

Client Sample Number	Lab Sample Number	Date /Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
Medium Persulfate with Medium Caustic	**11-11-0939-2-J**	**11/10/11 10:32**	**Aqueous**	**ICP 5300**	**11/11/11**	**11/11/11 18:16**	**111111LA3**

Parameter	Result	RL	DF	Qual	Parameter	Result	RL	DF	Qual
Chromium	0.0204	0.0100	1		Manganese	0.0437	0.00500	1	
Iron	1.44	0.100	1						

Client Sample Number	Lab Sample Number	Date /Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
High Persulfate with High Caustic	**11-11-0939-3-J**	**11/10/11 10:50**	**Aqueous**	**ICP 5300**	**11/11/11**	**11/11/11 18:34**	**111111LA3**

Parameter	Result	RL	DF	Qual	Parameter	Result	RL	DF	Qual
Chromium	0.0410	0.0100	1		Manganese	0.0157	0.00500	1	
Iron	0.244	0.100	1						

Client Sample Number	Lab Sample Number	Date /Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
Medium Persulfatte with Medium Peroxide and Citrat	**11-11-0939-5-J**	**11/10/11 11:05**	**Aqueous**	**ICP 5300**	**11/11/11**	**11/11/11 18:35**	**111111LA3**

Parameter	Result	RL	DF	Qual	Parameter	Result	RL	DF	Qual
Chromium	0.0829	0.0100	1		Manganese	35.7	0.00500	1	
Iron	54.9	0.100	1						

Client Sample Number	Lab Sample Number	Date /Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
Medium Persulfate with High Peroxide and Citrate S	**11-11-0939-6-J**	**11/10/11 11:20**	**Aqueous**	**ICP 5300**	**11/11/11**	**11/11/11 18:37**	**111111LA3**

Parameter	Result	RL	DF	Qual	Parameter	Result	RL	DF	Qual
Chromium	0.102	0.0100	1		Manganese	33.1	0.00500	1	
Iron	60.9	0.100	1						

Client Sample Number	Lab Sample Number	Date /Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
Method Blank	**097-01-003-12,136**	**N/A**	**Aqueous**	**ICP 5300**	**11/11/11**	**11/11/11 18:11**	**111111LA3**

Parameter	Result	RL	DF	Qual	Parameter	Result	RL	DF	Qual
Chromium	ND	0.0100	1		Manganese	ND	0.00500	1	
Iron	ND	0.100	1						

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RL - Reporting Limit , DF - Dilution Factor , Qual - Qualifiers

Calscience Environmental Laboratories, Inc.

Analytical Report

ACCREDITED IN ACCORDANCE WITH nelac

JAG Consulting Group, Inc.
3340 S. Crawford Glen
Santa Ana, CA 92704-7160

Date Received: 11/10/11
Work Order No: 11-11-0939
Preparation: N/A
Method: Ferric Iron by Calc

Project: 76 Station, Oakland CA / PTS:41714

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
Medium Persulfate with Medium Caustic	**11-11-0939-2-J**	**11/10/11 10:32**	**Aqueous**	**N/A**	**N/A**	**11/17/11 08:32**	

Parameter	Result	RL	DF	Qual	Units
Ferric Iron	1.4	0.10	1		mg/L

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
High Persulfate with High Caustic	**11-11-0939-3-J**	**11/10/11 10:50**	**Aqueous**	**N/A**	**N/A**	**11/17/11 08:32**	

Parameter	Result	RL	DF	Qual	Units
Ferric Iron	0.22	0.10	1		mg/L

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
Medium Persulfatte with Medium Peroxide and Ci	**11-11-0939-5-J**	**11/10/11 11:05**	**Aqueous**	**N/A**	**N/A**	**11/17/11 08:32**	

Parameter	Result	RL	DF	Qual	Units
Ferric Iron	33	0.10	1		mg/L

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
Medium Persulfate with High Peroxide and Citrate S	**11-11-0939-6-J**	**11/10/11 11:20**	**Aqueous**	**N/A**	**N/A**	**11/17/11 08:32**	

Parameter	Result	RL	DF	Qual	Units
Ferric Iron	29	0.10	1		mg/L

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RL - Reporting Limit , DF - Dilution Factor , Qual - Qualifiers

Calscience Environmental Laboratories, Inc.

Analytical Report

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JAG Consulting Group, Inc.
3340 S. Crawford Glen
Santa Ana, CA 92704-7160

Date Received: 11/10/11
Work Order No: 11-11-0939

Project: 76 Station, Oakland CA / PTS:41714

Client Sample Number	Lab Sample Number	Date Collected	Matrix
Medium Persulfate with Medium Caustic	**11-11-0939-2**	**11/10/11**	**Aqueous**

Parameter	Results	RL	DF	Qual	Units	Date Prepared	Date Analyzed	Method
Chromium, Hexavalent	17	2.0	2		ug/L	N/A	11/10/11	EPA 7199
Iron (II)	ND	0.10	1		mg/L	11/10/11	11/10/11	SM 3500-FeB

Client Sample Number	Lab Sample Number	Date Collected	Matrix
High Persulfate with High Caustic	**11-11-0939-3**	**11/10/11**	**Aqueous**

Parameter	Results	RL	DF	Qual	Units	Date Prepared	Date Analyzed	Method
Chromium, Hexavalent	32	2.0	2		ug/L	N/A	11/10/11	EPA 7199
Iron (II)	ND	0.10	1		mg/L	11/10/11	11/10/11	SM 3500-FeB

Client Sample Number	Lab Sample Number	Date Collected	Matrix
Medium Persulfatte with Medium Peroxide and Citrat	**11-11-0939-5**	**11/10/11**	**Aqueous**

Comment(s): (3) -The reporting limit is elevated resulting from matrix interference

Parameter	Results	RL	DF	Qual	Units	Date Prepared	Date Analyzed	Method
Chromium, Hexavalent (3)	ND	2.0	2		ug/L	N/A	11/10/11	EPA 7199
Iron (II)	22	0.50	5		mg/L	11/10/11	11/10/11	SM 3500-FeB

Client Sample Number	Lab Sample Number	Date Collected	Matrix
Medium Persulfate with High Peroxide and Citrate S	**11-11-0939-6**	**11/10/11**	**Aqueous**

Comment(s): (3) -The reporting limit is elevated resulting from matrix interference

Parameter	Results	RL	DF	Qual	Units	Date Prepared	Date Analyzed	Method
Chromium, Hexavalent (3)	ND	2.0	2		ug/L	N/A	11/10/11	EPA 7199
Iron (II)	32	0.50	5		mg/L	11/10/11	11/10/11	SM 3500-FeB

Client Sample Number	Lab Sample Number	Date Collected	Matrix
Method Blank		**N/A**	**Aqueous**

Parameter	Results	RL	DF	Qual	Units	Date Prepared	Date Analyzed	Method
Chromium, Hexavalent	ND	1.0	1		ug/L	N/A	11/10/11	EPA 7199
Iron (II)	ND	0.10	1		mg/L	11/10/11	11/10/11	SM 3500-FeB

RL - Reporting Limit , DF - Dilution Factor , Qual - Qualifiers

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Calscience Environmental Laboratories, Inc.

Quality Control - Spike/Spike Duplicate

ACCREDITED IN ACCORDANCE WITH nelac

JAG Consulting Group, Inc.
3340 S. Crawford Glen
Santa Ana, CA 92704-7160

Date Received: 11/10/11
Work Order No: 11-11-0939
Preparation: EPA 3010A Total
Method: EPA 6010B

Project 76 Station, Oakland CA / PTS:41714

Quality Control Sample ID	Matrix	Instrument	Date Prepared	Date Analyzed	MS/MSD Batch Number
Medium Persulfate with Medium Caustic	**Aqueous**	**ICP 5300**	**11/11/11**	**11/11/11**	**111111SA3**

Parameter	SPIKE ADDED	MS %REC	MSD %REC	%REC CL	RPD	RPD CL	Qualifiers
Chromium	0.5000	99	98	86-122	2	0-8	
Iron	0.5000	101	70	65-149	8	0-21	
Manganese	0.5000	103	101	86-116	2	0-7	

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RPD - Relative Percent Difference , CL - Control Limit

Calscience Environmental Laboratories, Inc.

Quality Control - PDS / PDSD

ACCREDITED IN ACCORDANCE WITH nelac

JAG Consulting Group, Inc.
3340 S. Crawford Glen
Santa Ana, CA 92704-7160

Date Received: 11/10/11
Work Order No: 11-11-0939
Preparation: EPA 3010A Total
Method: EPA 6010B

Project: 76 Station, Oakland CA / PTS:41714

Quality Control Sample ID	Matrix	Instrument	Date Prepared	Date Analyzed	PDS / PDSD Batch Number
Medium Persulfate with Medium Caustic	**Aqueous**	**ICP 5300**	**11/11/11**	**11/11/11**	**111111SA3**

Parameter	SPIKE ADDED	PDS %REC	PDSD %REC	%REC CL	RPD	RPD CL	Qualifiers
Chromium	0.5000	93	94	75-125	0	0-8	
Iron	0.5000	95	94	75-125	0	0-21	
Manganese	0.5000	95	96	75-125	1	0-7	

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RPD - Relative Percent Difference , CL - Control Limit

Calscience Environmental Laboratories, Inc.

Quality Control - Spike/Spike Duplicate

ACCREDITED IN ACCORDANCE WITH nelac

JAG Consulting Group, Inc.
3340 S. Crawford Glen
Santa Ana, CA 92704-7160

Date Received: 11/10/11
Work Order No: 11-11-0939
Preparation: EPA 5030C
Method: EPA 8015B (M)

Project 76 Station, Oakland CA / PTS:41714

Quality Control Sample ID	Matrix	Instrument	Date Prepared	Date Analyzed	MS/MSD Batch Number
11-11-0980-1	**Aqueous**	**GC 25**	**11/12/11**	**11/12/11**	**111112S01**

Parameter	SPIKE ADDED	MS %REC	MSD %REC	%REC CL	RPD	RPD CL	Qualifiers
TPH as Gasoline	2000	91	94	68-122	3	0-18	

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RPD - Relative Percent Difference , CL - Control Limit

Calscience Environmental Laboratories, Inc.

Quality Control - Spike/Spike Duplicate

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JAG Consulting Group, Inc.
3340 S. Crawford Glen
Santa Ana, CA 92704-7160

Date Received: 11/10/11
Work Order No: 11-11-0939
Preparation: EPA 5030C
Method: EPA 8260B

Project 76 Station, Oakland CA / PTS:41714

Quality Control Sample ID	Matrix	Instrument	Date Prepared	Date Analyzed	MS/MSD Batch Number
11-11-0784-1	**Aqueous**	**GC/MS QQ**	**11/12/11**	**11/12/11**	**111112S01**

Parameter	SPIKE ADDED	MS %REC	MSD %REC	%REC CL	RPD	RPD CL	Qualifiers
Benzene	50.00	95	90	78-120	5	0-20	
Carbon Tetrachloride	50.00	102	95	67-139	7	0-20	
Chlorobenzene	50.00	99	95	80-120	5	0-20	
1,2-Dibromoethane	50.00	97	95	80-123	2	0-20	
1,2-Dichlorobenzene	50.00	94	90	76-120	4	0-20	
1,2-Dichloroethane	50.00	104	101	76-130	3	0-20	
1,1-Dichloroethene	50.00	98	94	70-130	4	0-27	
Ethylbenzene	50.00	99	94	73-127	6	0-20	
Toluene	50.00	99	93	72-126	6	0-20	
Trichloroethene	50.00	102	96	74-122	6	0-20	
Vinyl Chloride	50.00	88	85	65-131	3	0-24	
Methyl-t-Butyl Ether (MTBE)	50.00	91	91	69-123	1	0-20	
Tert-Butyl Alcohol (TBA)	250.0	94	92	65-131	3	0-22	
Diisopropyl Ether (DIPE)	50.00	78	76	68-128	3	0-22	
Ethyl-t-Butyl Ether (ETBE)	50.00	84	83	69-123	1	0-21	
Tert-Amyl-Methyl Ether (TAME)	50.00	98	96	70-124	2	0-20	
Ethanol	500.0	95	95	41-155	0	0-35	

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RPD - Relative Percent Difference , CL - Control Limit

Calscience Environmental Laboratories, Inc.

Quality Control - Spike/Spike Duplicate

JAG Consulting Group, Inc.
3340 S. Crawford Glen
Santa Ana, CA 92704-7160

Date Received: 11/10/11
Work Order No: 11-11-0939
Preparation: EPA 5030C
Method: EPA 8260B

Project 76 Station, Oakland CA / PTS:41714

Quality Control Sample ID	Matrix	Instrument	Date Prepared	Date Analyzed	MS/MSD Batch Number
11-11-0725-2	**Aqueous**	**GC/MS QQ**	**11/14/11**	**11/15/11**	**111114S02**

Parameter	SPIKE ADDED	MS %REC	MSD %REC	%REC CL	RPD	RPD CL	Qualifiers
Benzene	50.00	94	93	78-120	1	0-20	
Carbon Tetrachloride	50.00	94	98	67-139	4	0-20	
Chlorobenzene	50.00	96	96	80-120	0	0-20	
1,2-Dibromoethane	50.00	96	98	80-123	2	0-20	
1,2-Dichlorobenzene	50.00	90	90	76-120	0	0-20	
1,2-Dichloroethane	50.00	105	103	76-130	1	0-20	
1,1-Dichloroethene	50.00	98	101	70-130	3	0-27	
Ethylbenzene	50.00	94	95	73-127	1	0-20	
Toluene	50.00	96	95	72-126	1	0-20	
Trichloroethene	50.00	98	97	74-122	1	0-20	
Vinyl Chloride	50.00	95	98	65-131	3	0-24	
Methyl-t-Butyl Ether (MTBE)	50.00	73	91	69-123	23	0-20	4
Tert-Butyl Alcohol (TBA)	250.0	95	99	65-131	4	0-22	
Diisopropyl Ether (DIPE)	50.00	75	74	68-128	1	0-22	
Ethyl-t-Butyl Ether (ETBE)	50.00	83	84	69-123	1	0-21	
Tert-Amyl-Methyl Ether (TAME)	50.00	101	100	70-124	1	0-20	
Ethanol	500.0	129	104	41-155	21	0-35	

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RPD - Relative Percent Difference , CL - Control Limit

Calscience Environmental Laboratories, Inc.

Quality Control - Spike/Spike Duplicate

ACCREDITED IN ACCORDANCE WITH nelac

JAG Consulting Group, Inc.
3340 S. Crawford Glen
Santa Ana, CA 92704-7160

Date Received: 11/10/11
Work Order No: 11-11-0939
Preparation: EPA 5030C
Method: EPA 8260B

Project 76 Station, Oakland CA / PTS:41714

Quality Control Sample ID	Matrix	Instrument	Date Prepared	Date Analyzed	MS/MSD Batch Number
11-11-0835-17	**Solid**	**GC/MS UU**	**11/10/11**	**11/15/11**	**111114S02**

Parameter	SPIKE ADDED	MS %REC	MSD %REC	%REC CL	RPD	RPD CL	Qualifiers
Benzene	50.00	94	84	61-127	12	0-20	
Carbon Tetrachloride	50.00	102	95	51-135	8	0-29	
Chlorobenzene	50.00	90	87	57-123	4	0-20	
1,2-Dibromoethane	50.00	90	92	64-124	2	0-20	
1,2-Dichlorobenzene	50.00	85	76	35-131	12	0-25	
1,2-Dichloroethane	50.00	99	90	80-120	9	0-20	
1,1-Dichloroethene	50.00	92	86	47-143	6	0-25	
Ethylbenzene	50.00	96	92	57-129	5	0-22	
Toluene	50.00	96	82	63-123	16	0-20	
Trichloroethene	50.00	94	86	44-158	9	0-20	
Vinyl Chloride	50.00	97	93	49-139	4	0-47	
Methyl-t-Butyl Ether (MTBE)	50.00	90	90	57-123	0	0-21	
Tert-Butyl Alcohol (TBA)	250.0	84	84	30-168	0	0-34	
Diisopropyl Ether (DIPE)	50.00	97	95	57-129	2	0-20	
Ethyl-t-Butyl Ether (ETBE)	50.00	88	91	55-127	4	0-20	
Tert-Amyl-Methyl Ether (TAME)	50.00	88	85	58-124	4	0-20	
Ethanol	500.0	105	88	17-167	17	0-47	

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RPD - Relative Percent Difference , CL - Control Limit

Calscience Environmental Laboratories, Inc.

Quality Control - Spike/Spike Duplicate

ACCREDITED IN ACCORDANCE WITH nelac

JAG Consulting Group, Inc.
3340 S. Crawford Glen
Santa Ana, CA 92704-7160

Date Received: N/A
Work Order No: 11-11-0939

Project: 76 Station, Oakland CA / PTS:41714

Matrix: Aqueous or Solid

Parameter	Method	Quality Control Sample ID	Date Analyzed	Date Extracted	MS% REC	MSD % REC	%REC CL	RPD	RPD CL	Qualifiers
Chromium, Hexavalent	EPA 7199	Medium Persulfate with Medium Caustic	11/10/11	N/A	103	94	70-130	8	0-25	
Iron (II)	SM 3500-FeB	11-11-0893-2	11/10/11	11/10/11	95	96	70-130	0	0-25	

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RPD - Relative Percent Difference , CL - Control Limit

Calscience Environmental Laboratories, Inc.

Quality Control - LCS/LCS Duplicate

ACCREDITED IN ACCORDANCE WITH nelac

JAG Consulting Group, Inc.		Date Received:	N/A
3340 S. Crawford Glen		Work Order No:	11-11-0939
Santa Ana, CA 92704-7160		Preparation:	EPA 3010A Total
		Method:	EPA 6010B

Project: 76 Station, Oakland CA / PTS:41714

Quality Control Sample ID	Matrix	Instrument	Date Prepared	Date Analyzed	LCS/LCSD Batch Number
097-01-003-12,136	**Aqueous**	**ICP 5300**	**11/11/11**	**11/11/11**	**111111LA3**

Parameter	SPIKE ADDED	LCS %REC	LCSD %REC	%REC CL	RPD	RPD CL	Qualifiers
Chromium	0.5000	98	99	80-120	1	0-20	
Iron	0.5000	103	104	80-120	1	0-20	
Manganese	0.5000	103	104	80-120	0	0-20	

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RPD - Relative Percent Difference , CL - Control Limit

Calscience Environmental Laboratories, Inc.

Quality Control - LCS/LCS Duplicate

ACCREDITED IN ACCORDANCE WITH nelac

JAG Consulting Group, Inc.		Date Received:	N/A
3340 S. Crawford Glen		Work Order No:	11-11-0939
Santa Ana, CA 92704-7160		Preparation:	EPA 3005A Filt.
		Method:	EPA 6010B

Project: 76 Station, Oakland CA / PTS:41714

Quality Control Sample ID	Matrix	Instrument	Date Prepared	Date Analyzed	LCS/LCSD Batch Number
097-01-003-12,137	**Aqueous**	**ICP 5300**	**11/11/11**	**11/11/11**	**111111LA3F**

Parameter	SPIKE ADDED	LCS %REC	LCSD %REC	%REC CL	RPD	RPD CL	Qualifiers
Chromium	0.5000	98	99	80-120	1	0-20	
Iron	0.5000	103	104	80-120	1	0-20	
Manganese	0.5000	103	104	80-120	0	0-20	

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RPD - Relative Percent Difference , CL - Control Limit

Calscience Environmental Laboratories, Inc.

Quality Control - LCS/LCS Duplicate

ACCREDITED IN ACCORDANCE WITH nelac

JAG Consulting Group, Inc.		Date Received:	N/A
3340 S. Crawford Glen		Work Order No:	11-11-0939
Santa Ana, CA 92704-7160		Preparation:	EPA 5030C
		Method:	EPA 8015B (M)

Project: 76 Station, Oakland CA / PTS:41714

Quality Control Sample ID	Matrix	Instrument	Date Prepared	Date Analyzed	LCS/LCSD Batch Number
099-12-247-5,522	**Aqueous**	**GC 25**	**11/12/11**	**11/12/11**	**111112B01**

Parameter	SPIKE ADDED	LCS %REC	LCSD %REC	%REC CL	RPD	RPD CL	Qualifiers
TPH as Gasoline	2000	95	96	78-120	2	0-10	

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RPD - Relative Percent Difference , CL - Control Limit

Calscience Environmental Laboratories, Inc.

Quality Control - LCS/LCS Duplicate

ACCREDITED IN ACCORDANCE WITH nelac

JAG Consulting Group, Inc.		Date Received:	N/A
3340 S. Crawford Glen		Work Order No:	11-11-0939
Santa Ana, CA 92704-7160		Preparation:	EPA 5030C
		Method:	EPA 8015B (M)

Project: 76 Station, Oakland CA / PTS:41714

Quality Control Sample ID	Matrix	Instrument	Date Prepared	Date Analyzed	LCS/LCSD Batch Number
099-14-571-57	**Solid**	**GC 22**	**11/11/11**	**11/11/11**	**111111B02**

Parameter	SPIKE ADDED	LCS %REC	LCSD %REC	%REC CL	RPD	RPD CL	Qualifiers
TPH as Gasoline	10.00	99	96	70-124	3	0-18	

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RPD - Relative Percent Difference , CL - Control Limit

Calscience Environmental Laboratories, Inc.

Quality Control - LCS/LCS Duplicate

ACCREDITED IN ACCORDANCE WITH nelac

JAG Consulting Group, Inc.		Date Received:	N/A
3340 S. Crawford Glen		Work Order No:	11-11-0939
Santa Ana, CA 92704-7160		Preparation:	EPA 5030C
		Method:	EPA 8260B

Project: 76 Station, Oakland CA / PTS:41714

Quality Control Sample ID	Matrix	Instrument	Date Prepared	Date Analyzed	LCS/LCSD Batch Number
099-14-001-6,279	**Aqueous**	**GC/MS QQ**	**11/14/11**	**11/15/11**	**111114L02**

Parameter	SPIKE ADDED	LCS %REC	LCSD %REC	%REC CL	ME_CL	RPD	RPD CL	Qualifiers
Benzene	50.00	94	93	80-120	73-127	1	0-20	
Carbon Tetrachloride	50.00	99	100	66-138	54-150	1	0-20	
Chlorobenzene	50.00	98	97	80-120	73-127	1	0-20	
1,2-Dibromoethane	50.00	100	98	80-120	73-127	2	0-20	
1,2-Dichlorobenzene	50.00	91	94	80-120	73-127	4	0-20	
1,2-Dichloroethane	50.00	104	104	80-129	72-137	0	0-20	
1,1-Dichloroethene	50.00	97	99	71-131	61-141	1	0-20	
Ethylbenzene	50.00	97	98	80-123	73-130	1	0-20	
Toluene	50.00	97	97	79-121	72-128	0	0-20	
Trichloroethene	50.00	99	98	80-120	73-127	1	0-20	
Vinyl Chloride	50.00	91	92	70-136	59-147	1	0-20	
Methyl-t-Butyl Ether (MTBE)	50.00	92	92	72-126	63-135	1	0-22	
Tert-Butyl Alcohol (TBA)	250.0	94	94	71-125	62-134	1	0-25	
Diisopropyl Ether (DIPE)	50.00	75	76	69-129	59-139	1	0-20	
Ethyl-t-Butyl Ether (ETBE)	50.00	84	84	69-129	59-139	0	0-20	
Tert-Amyl-Methyl Ether (TAME)	50.00	100	100	67-133	56-144	0	0-20	
Ethanol	500.0	105	101	47-155	29-173	4	0-36	

Total number of LCS compounds : 17
Total number of ME compounds : 0
Total number of ME compounds allowed : 1
LCS ME CL validation result : Pass

Return to Contents

RPD - Relative Percent Difference , CL - Control Limit

Calscience Environmental Laboratories, Inc.

Quality Control - LCS/LCS Duplicate

ACCREDITED IN ACCORDANCE WITH nelac

JAG Consulting Group, Inc.
3340 S. Crawford Glen
Santa Ana, CA 92704-7160

Date Received: N/A
Work Order No: 11-11-0939
Preparation: EPA 5030C
Method: EPA 8260B

Project: 76 Station, Oakland CA / PTS:41714

Quality Control Sample ID	Matrix	Instrument	Date Prepared	Date Analyzed	LCS/LCSD Batch Number
099-14-001-6,262	**Aqueous**	**GC/MS QQ**	**11/12/11**	**11/12/11**	**111112L02**

Parameter	SPIKE ADDED	LCS %REC	LCSD %REC	%REC CL	ME_CL	RPD	RPD CL	Qualifiers
Benzene	50.00	95	94	80-120	73-127	1	0-20	
Carbon Tetrachloride	50.00	100	101	66-138	54-150	2	0-20	
Chlorobenzene	50.00	98	97	80-120	73-127	1	0-20	
1,2-Dibromoethane	50.00	98	99	80-120	73-127	1	0-20	
1,2-Dichlorobenzene	50.00	93	91	80-120	73-127	3	0-20	
1,2-Dichloroethane	50.00	104	104	80-129	72-137	0	0-20	
1,1-Dichloroethene	50.00	101	98	71-131	61-141	4	0-20	
Ethylbenzene	50.00	98	97	80-123	73-130	0	0-20	
Toluene	50.00	98	97	79-121	72-128	1	0-20	
Trichloroethene	50.00	98	98	80-120	73-127	0	0-20	
Vinyl Chloride	50.00	95	91	70-136	59-147	4	0-20	
Methyl-t-Butyl Ether (MTBE)	50.00	93	94	72-126	63-135	1	0-22	
Tert-Butyl Alcohol (TBA)	250.0	95	94	71-125	62-134	1	0-25	
Diisopropyl Ether (DIPE)	50.00	78	79	69-129	59-139	1	0-20	
Ethyl-t-Butyl Ether (ETBE)	50.00	85	86	69-129	59-139	1	0-20	
Tert-Amyl-Methyl Ether (TAME)	50.00	100	101	67-133	56-144	1	0-20	
Ethanol	500.0	108	92	47-155	29-173	16	0-36	

Total number of LCS compounds : 17
Total number of ME compounds : 0
Total number of ME compounds allowed : 1
LCS ME CL validation result : Pass

Return to Contents

RPD - Relative Percent Difference , CL - Control Limit

Calscience Environmental Laboratories, Inc.

Quality Control - LCS/LCS Duplicate

ACCREDITED IN ACCORDANCE WITH nelac

JAG Consulting Group, Inc.
3340 S. Crawford Glen
Santa Ana, CA 92704-7160

Date Received: N/A
Work Order No: 11-11-0939
Preparation: EPA 5030C
Method: EPA 8260B

Project: 76 Station, Oakland CA / PTS:41714

Quality Control Sample ID	Matrix	Instrument	Date Prepared	Date Analyzed	LCS/LCSD Batch Number
099-12-796-5,455	**Solid**	**GC/MS UU**	**11/14/11**	**11/14/11**	**111114L04**

Parameter	SPIKE ADDED	LCS %REC	LCSD %REC	%REC CL	ME_CL	RPD	RPD CL	Qualifiers
Benzene	50.00	98	99	78-120	71-127	1	0-20	
Carbon Tetrachloride	50.00	105	106	49-139	34-154	0	0-20	
Chlorobenzene	50.00	100	98	79-120	72-127	2	0-20	
1,2-Dibromoethane	50.00	105	106	80-120	73-127	1	0-20	
1,2-Dichlorobenzene	50.00	102	101	75-120	68-128	1	0-20	
1,2-Dichloroethane	50.00	109	108	80-120	73-127	1	0-20	
1,1-Dichloroethene	50.00	95	97	74-122	66-130	2	0-20	
Ethylbenzene	50.00	104	105	76-120	69-127	1	0-20	
Toluene	50.00	105	106	77-120	70-127	1	0-20	
Trichloroethene	50.00	98	98	80-120	73-127	0	0-20	
Vinyl Chloride	50.00	93	104	68-122	59-131	12	0-20	
Methyl-t-Butyl Ether (MTBE)	50.00	107	107	77-120	70-127	0	0-20	
Tert-Butyl Alcohol (TBA)	250.0	96	93	68-122	59-131	4	0-20	
Diisopropyl Ether (DIPE)	50.00	108	120	78-120	71-127	11	0-20	
Ethyl-t-Butyl Ether (ETBE)	50.00	101	114	78-120	71-127	12	0-20	
Tert-Amyl-Methyl Ether (TAME)	50.00	102	101	75-120	68-128	2	0-20	
Ethanol	500.0	97	103	56-140	42-154	6	0-20	

Total number of LCS compounds : 17
Total number of ME compounds : 0
Total number of ME compounds allowed : 1
LCS ME CL validation result : Pass

Return to Contents

RPD - Relative Percent Difference , CL - Control Limit

Calscience Environmental Laboratories, Inc.

Quality Control - LCS/LCS Duplicate

ACCREDITED IN ACCORDANCE WITH nelac

JAG Consulting Group, Inc.
3340 S. Crawford Glen
Santa Ana, CA 92704-7160

Date Received: N/A
Work Order No: 11-11-0939

Project: 76 Station, Oakland CA / PTS:41714

Matrix: Aqueous or Solid

Parameter	Method	Quality Control Sample ID	Date Extracted	Date Analyzed	LCS % REC	LCSD % REC	%REC CL	RPD	RPD CL	Qual
Chromium, Hexavalent	EPA 7199	099-05-123-3,020	N/A	11/10/11	107	108	80-120	1	0-20	
Iron (II)	SM 3500-FeB	099-05-111-4,207	11/10/11	11/10/11	96	97	80-120	1	0-20	

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RPD - Relative Percent Difference , CL - Control Limit

Calscience Environmental Laboratories, Inc.

Glossary of Terms and Qualifiers

Work Order Number: 11-11-0939

Qualifier	Definition
*	See applicable analysis comment.
<	Less than the indicated value.
>	Greater than the indicated value.
1	Surrogate compound recovery was out of control due to a required sample dilution. Therefore, the sample data was reported without further clarification.
2	Surrogate compound recovery was out of control due to matrix interference. The associated method blank surrogate spike compound was in control and, therefore, the sample data was reported without further clarification.
3	Recovery of the Matrix Spike (MS) or Matrix Spike Duplicate (MSD) compound was out of control due to matrix interference. The associated LCS and/or LCSD was in control and, therefore, the sample data was reported without further clarification.
4	The MS/MSD RPD was out of control due to matrix interference. The LCS/LCSD RPD was in control and, therefore, the sample data was reported without further clarification.
5	The PDS/PDSD or PES/PESD associated with this batch of samples was out of control due to a matrix interference effect. The associated batch LCS/LCSD was in control and, hence, the associated sample data was reported without further clarification.
6	Surrogate recovery below the acceptance limit.
7	Surrogate recovery above the acceptance limit.
B	Analyte was present in the associated method blank.
BU	Sample analyzed after holding time expired.
E	Concentration exceeds the calibration range.
ET	Sample was extracted past end of recommended max. holding time.
HD	The chromatographic pattern was inconsistent with the profile of the reference fuel standard.
HDH	The sample chromatographic pattern for TPH matches the chromatographic pattern of the specified standard but heavier hydrocarbons were also present (or detected).
HDL	The sample chromatographic pattern for TPH matches the chromatographic pattern of the specified standard but lighter hydrocarbons were also present (or detected).
J	Analyte was detected at a concentration below the reporting limit and above the laboratory method detection limit. Reported value is estimated.
ME	LCS/LCSD Recovery Percentage is within Marginal Exceedance (ME) Control Limit range.
ND	Parameter not detected at the indicated reporting limit.
Q	Spike recovery and RPD control limits do not apply resulting from the parameter concentration in the sample exceeding the spike concentration by a factor of four or greater.
SG	The sample extract was subjected to Silica Gel treatment prior to analysis.
X	% Recovery and/or RPD out-of-range.
Z	Analyte presence was not confirmed by second column or GC/MS analysis.

Solid - Unless otherwise indicated, solid sample data is reported on a wet weight basis, not corrected for % moisture. All QC results are reported on a wet weight basis.

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Calscience Environmental Laboratories, Inc.
7440 LINCOLN WAY
GARDEN GROVE, CA 92841-1427
TEL: (714) 895-5494 . FAX: (714) 894-7501

CHAIN OF CUSTODY RECORD

DATE: 11/10/11

PAGE: 1 OF 8

LABORATORY CLIENT: PTS Laboratories, Inc.

ADDRESS: 8100 Secura Way

CITY: Santa Fe Springs STATE: CA ZIP: 90670

TEL: (562) 347-2500 FAX: (562) 907-3610 E-MAIL: mmbrady@ptslabs.com

CLIENT PROJECT NAME / NUMBER: 76 Station, Oakland CA 142611117; PTS Job # 41714

P.O. NO.:

PROJECT CONTACT: Gary Cronk (714) 241-7722 gary@jagconsultinggroup.com

LAB CONTACT OR QUOTE NO.:

SAMPLER(S): (SIGNATURE) JL /LL

LAB USE ONLY 11-11-0939

TURNAROUND TIME:

☐ SAME DAY ☐ 24 HR ☐ 48 HR ☐ 72 HR ☐ 5 DAYS ☐ 10 DAYS

SPECIAL REQUIREMENTS (ADDITIONAL COSTS MAY APPLY)

☐ RWQCB REPORTING ☐ ARCHIVE SAMPLES UNTIL ____/____/____

SPECIAL INSTRUCTIONS:

Invoice to JAG Consulting Group, Inc.

For Dissolved Manganese by EPA 6010B, filter and preserve

REQUESTED ANALYSIS

LAB USE ONLY	SAMPLE ID	LOCATION / DESCRIPTION	SAMPLING DATE	SAMPLING TIME	MATRIX	NO. OF CONT.	VOC Compounds and Oxygenates by EPA Method 8260B (soil and water)	TPH as gasoline by CA LUFT (soil and water)	Hexavalent Chromium by EPA 7199	Ferrous Iron by SM 3500 (water only)	Ferric Iron, Total Manganese, and Total Chromium by EPA 6010B (water only)	Dissolved Manganese by EPA 6010B (water only)
1	1. Control		11/10/2011	1007	Water	3	X					
2	2. Medium Persulfate with Medium Caustic		11/10/2011	1032	Water	3	X					
3	3. High Persulfate with High Caustic		11/10/2011	1050	Water	3	X					
4	4. Control		11/10/2011	1010	Water	3	X					
5	5. Medium Persulfate with Medium Peroxide and Citrate Stabilizer		11/10/2011	1105	Water	3	X					
6	6. Medium Persulfate with High Peroxide and Citrate Stabilizer		11/10/2011	1120	Water	3	X					

Please list tests required

Bill to: JAG Consulting

Relinquished by: (Signature) Joe JL PTS	11/10/11 1515	Received by: (Signature) Jemen Yang	Date: 11/10/11 Time: 1515
Relinquished by: (Signature) Jemen Yang		Received by: (Signature)	Date: 11/10/11 Time: 1630
Relinquished by: (Signature)		Received by: (Signature)	Date: Time:

02/24/10 Revision

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7	1. Control		11/10/2011	1044	Soil	1	X					
8	2. Medium Persulfate with Medium Caustic		11/10/2011	1131	Soil	1	X					
9	3. High Persulfate with High Caustic		11/10/2011	1134	Soil	1	X					
10	4. Control		11/10/2011	1045	Soil	1	X					
11	5. Medium Persulfate with Medium Peroxide and Citrate Stabilizer		11/10/2011	1305	Soil	1	X					
12	6. Medium Persulfate with High Peroxide and Citrate Stabilizer		11/10/2011	1306	Soil	1	X					

Please list tests required

Bill to: JAG Consulting

Relinquished by: (Signature) PTS 11/10/11 1515	Received by: (Signature) Jensen Ying	Date: 11/10/11	Time: 1515
Relinquished by: (Signature) Jensen Ying	Received by: (Signature)	Date: 11/10/11	Time: 1630
Relinquished by: (Signature)	Received by: (Signature)	Date:	Time:

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Bill to: JAG Consulting

Relinquished by: (Signature) PTS 11/10/11 1515	Received by: (Signature)	Date: 11/10/11	Time: 1515
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☐ SAME DAY ☐ 24 HR ☐ 48 HR ☐ 72 HR ☐ 5 DAYS ☐ 10 DAYS

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12	6. Medium Persulfate with High Peroxide and Citrate Stabilizer		11/10/2011	1306	Soil	1			X				

Bill to: JAG Consulting

Relinquished by: (Signature) PTS 11/10/11 1515	Received by: (Signature) Jensen Ing	Date: 11/10/11	Time: 15:15
Relinquished by: (Signature) Jensen Ing	Received by: (Signature)	Date: 11/10/11	Time: 1630
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P.O. NO.:

PROJECT CONTACT: Gary Cronk (714) 241-7722 gary@jagconsultinggroup.com

LAB CONTACT OR QUOTE NO.:

SAMPLER(S): (SIGNATURE) JL /LL

LAB USE ONLY 11-0953

TURNAROUND TIME:

☐ SAME DAY ☐ 24 HR ☐ 48 HR ☐ 72 HR ☐ 5 DAYS ☐ 10 DAYS

SPECIAL REQUIREMENTS (ADDITIONAL COSTS MAY APPLY)

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6	6. Medium Persulfate with High Peroxide and Citrate Stabilizer		11/10/2011	1120	water	1			X			
	Bill to: JAG Consulting											

Relinquished by: (Signature)	Received by: (Signature)	Date:	Time:
Jol JL PTS 11/10/11 1515	Tamen Jung	11/10/11	1515
Relinquished by: (Signature) Tamen Jung	Received by: (Signature)	Date: 11/10/11	Time: 1630
Relinquished by: (Signature)	Received by: (Signature)	Date:	Time:

02/24/10 Revision

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PAGE: 6 OF 8

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TEL: (562) 347-2500 FAX: (562) 907-3610 E-MAIL: mmbrady@ptslabs.com

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PROJECT CONTACT: Gary Cronk (714) 241-7722 gary@jagconsultinggroup.com

LAB CONTACT OR QUOTE NO.:

SAMPLER(S): (SIGNATURE) JL /LL

LAB USE ONLY 11-0939

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Please list tests required

Bill to: JAG Consulting

Relinquished by: (Signature) Tod R PTS 11/10/11 1515	Received by: (Signature) Jensen Jang	Date: 11/10/11	Time: 1515
Relinquished by: (Signature) Jensen Jang	Received by: (Signature)	Date: 11/10/11	Time: 1630
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Calscience Environmental Laboratories, Inc.

WORK ORDER #: 11-11-0939

SAMPLE RECEIPT FORM

Cooler 1 of 1

CLIENT: PTS DATE: 11/10/11

TEMPERATURE: Thermometer ID: SC1 (Criteria: 0.0 °C – 6.0 °C, not frozen)

Temperature 2.1 °C + 0.5 °C (CF) = 2.6 °C ☑ Blank ☐ Sample

☐ Sample(s) outside temperature criteria (PM/APM contacted by: _____).

☐ Sample(s) outside temperature criteria but received on ice/chilled on same day of sampling.

☐ **Received at ambient temperature, placed on ice for transport by Courier.**

Ambient Temperature: ☐ Air ☐ Filter Initial: FY

CUSTODY SEALS INTACT:

☐ Cooler ☐_____ ☐ No (Not Intact) ☑ Not Present ☐ N/A Initial: FY

☐ Sample ☐_____ ☐ No (Not Intact) ☑ Not Present Initial: KR

SAMPLE CONDITION:	Yes	No	N/A
Chain-Of-Custody (COC) document(s) received with samples	☑	☐	☐
COC document(s) received complete	☑	☐	☐
☐ Collection date/time, matrix, and/or # of containers logged in based on sample labels.			
☐ No analysis requested. ☐ Not relinquished. ☐ No date/time relinquished.			
Sampler's name indicated on COC	☑	☐	☐
Sample container label(s) consistent with COC	☑	☐	☐
Sample container(s) intact and good condition	☑	☐	☐
Proper containers and sufficient volume for analyses requested	☑	☐	☐
Analyses received within holding time	☑	☐	☐
pH / Res. Chlorine / Diss. Sulfide / Diss. Oxygen received within 24 hours	☐	☐	☑
Proper preservation noted on COC or sample container	☑	☐	☐
☐ Unpreserved vials received for Volatiles analysis			
Volatile analysis container(s) free of headspace	☒ KR 11/10/11	☑	☐
Tedlar bag(s) free of condensation	☐	☐	☑

CONTAINER TYPE:

Solid: ☐4ozCGJ ☑8ozCGJ (2) ☐16ozCGJ ☐Sleeve (_____) ☐EnCores® ☐TerraCores® ☐_____

Water: ☐VOA ☑VOAh (6) ☐VOA**na$_2$** ☐125AGB ☐125AGB**h** ☐125AGB**p** ☐1AGB ☐1AGB**na$_2$** ☐1AGB**s**

☐500AGB ☐500AGJ ☐500AGJ**s** ☑250AGB ☐250CGB ☐250CGB**s** ☐1PB ☐1PB**na** ☐500PB

☑250PB (2) ☑250PB**n** ☐125PB ☐125PB**znna** ☐100PJ ☐100PJ**na$_2$** ☐_____ ☐_____ ☐_____

Air: ☐Tedlar® ☐Summa® **Other:** ☐_____ **Trip Blank Lot#:**_____ **Labeled/Checked by:** KR

Container: **C:** Clear **A:** Amber **P:** Plastic **G:** Glass **J:** Jar **B:** Bottle **Z:** Ziploc/Resealable Bag **E:** Envelope **Reviewed by:** YL

Preservative: **h:** HCL **n:** HNO_3 **na$_2$:**$Na_2S_2O_3$ **na:** NaOH **p:** H_3PO_4 **s:** H_2SO_4 **u:** Ultra-pure **znna:** $ZnAc_2$+NaOH **f:** Filtered **Scanned by:** YL

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Calscience Environmental Laboratories, Inc.

WORK ORDER #: 11-11-0939

SAMPLE ANOMALY FORM

SAMPLES - CONTAINERS & LABELS:

Comments:

- ☐ **Sample(s) NOT RECEIVED but listed on COC**
- ☐ **Sample(s) received but NOT LISTED on COC**
- ☐ **Holding time expired** – list sample ID(s) and test
- ☐ **Insufficient quantities for analysis** – list test
- ☐ **Improper container(s) used** – list test
- ☐ **Improper preservative used** – list test
- ☐ **No preservative noted on COC or label** – list test & notify lab
- ☐ **Sample labels illegible** – note test/container type
- ☐ **Sample label(s) do not match COC** – Note in comments
  - ☐ **Sample ID**
  - ☐ **Date and/or Time Collected**
  - ☐ **Project Information**
  - ☐ **# of Container(s)**
  - ☐ **Analysis**
- ☐ **Sample container(s) compromised** – Note in comments
  - ☐ **Water present in sample container**
  - ☐ **Broken**
- ☐ **Sample container(s) not labeled**
- ☐ **Air sample container(s) compromised** – Note in comments
  - ☐ **Flat**
  - ☐ **Very low in volume**
  - ☐ **Leaking (Not transferred - duplicate bag submitted)**
  - ☐ **Leaking (transferred into Calscience Tedlar® Bag*)**
  - ☐ **Leaking (transferred into Client's Tedlar® Bag*)**
- ☐ **Other:** _____

HEADSPACE – Containers with Bubble > 6mm or ¼ inch:

Sample #	Container ID(s)	# of Vials Received	Sample #	Container ID(s)	# of Vials Received	Sample #	Container ID(s)	# of Cont. received	Analysis
						2	G	1	Ferrous Iron
						3	G	1	Ferrous Iron
						5	G	1	Ferrous Iron

Comments: _____

*Transferred at Client's request.

Initial / Date: KR 11/10/11

Return to Contents

Appendix B
PTS Laboratories
Treatability Laboratory Report

PTS Laboratories, Inc.

8100 Secura Way • Santa Fe Springs, CA 90670
Telephone (562) 347-2500 • Fax (562) 907-3610

November 22, 2011

Gary Cronk
JAG Consulting Group, Inc.
3340 S. Crawford Glen
Santa Ana, CA 92704

Re: PTS File No: 41714
ISCO Bench Scale Data Klozur; Soil Buffering, TOD, Residual Peroxide
76 Station, Oakland CA

Dear Mr. Cronk:

Please find enclosed report for ISCO Bench Scale analyses conducted upon soil and water samples received from your 76 Station, Oakland CA project. All analyses were performed by applicable ASTM, EPA, or API methodologies in conjunction with the ISCO Bench Scale protocol provided by JAG Consulting. An electronic version of the data has previously been sent to your attention via the internet. Any remnant sample material is in storage and will be retained for thirty days past completion of testing at no charge. Please note that the samples will be disposed of at that time. You may contact me regarding storage, disposal, or return of the samples.

PTS Laboratories appreciates the opportunity to be of service. If you have any questions or require additional information, please give me a call at (562) 347-2502.

Sincerely,
PTS Laboratories

Michael Mark Brady, P.G.
District Manager

Encl.

PTS Laboratories

Project Name: 76 Station, Oakland CA
Project Number: 142611117

PTS File No: 41714
Client: JAG Consulting/Antea Group

BENCH SCALE TREATABILITY TEST PROGRAM - 20111012

CORE ID	Depth ft.	Core Recovery ft.	Sampling Date	Sampling Time	ISCO Bench Test Protocols*	Soil Buffering Tests	Determine Residual Peroxide	Determine TOD Tests	Notes
Date Received: 20111007									
SOIL-AS-1 @ 5'	5	0.54	20111004	1035					HOLD
SOIL-AS-1 @ 7.5'	7.5	0.63	20111004	1040					HOLD
SOIL-AS-1 @ 9'	9	0.71	20111004	1042					HOLD
SOIL-AS-1 @ 10.5'	10.5	0.54	20111004	1053					HOLD
SOIL-AS-1 @ 13'	13	0.63	20111004	1055					HOLD
SOIL-AS-1 @ 15'	15	0.54	20111004	1117					HOLD
SOIL-AS-1 @ 16.5'	16.5	0.54	20111004	1120					HOLD
SOIL-AS-1 @ 18.5'	18.5	0.54	20111004	1122					HOLD
SOIL-AS-1 @ 20'	20	0.54	20111004	1128					HOLD
SOIL-AS-1 @ 22.5'	22.5	0.46	20111004	1136					HOLD
SOIL-AS-1 @ 24'	24	0.50	20111004	1039					HOLD
SOIL-AS-1 @ 25'	25	0.75	20111004	1045					HOLD
SOIL-AS-1 @ 26.5'	26.5	0.67	20111004	1050					HOLD
SOIL-AS-1 @ 29.0'	29	0.58	20111004	1052					Use for composite (HC odor)
SOIL-AS-1 @ 30.0'	30	0.71	20111004	1100					Use for composite (HC odor)
SOIL-AS-1 @ 33'	33	0.54	20111004	1110					HOLD
SVE-1 @ 5'	5	0.54	20111006	1152					HOLD
SVE-1 @ 10'	10	0.50	20111006	1157					HOLD
SVE-1 @ 15'	15	0.54	20111006	1208					Use for composite
SVE-1 @ 20'	20	0.54	20111006	1214					Use for composite
SVE-1 @ 23'	23	0.54	20111006	1216					Use for composite
EX-1	N/A	N/A	20111006	1200					Water Samples (25)
TOTALS:	21 cores 25 bottles	12.1			6	2	8	6	0

Laboratory Test Program Notes

*Test Program based on Lab Instructions for Treatability Testing 76 Station, Oakland, CA October 4, 2011 received from G. Cronk/JAG Consulting Group.
Per G. Cronk/JAG Consulting 10/12/2011: Use only soils at depths greater than 15 feet. Use "SVE" samples first. If more soil is needed, use "AS" samples only as needed. DO NOT composite more of the "AS" samples than needed = target soil mass is 5kg.
Analyze for metals on Day 28 per Lab Instructions not per COC per G. Cronk/JAG Consulting 10/12/2011.

Consulting Group, Inc.

Lab Instructions for Treatability Testing
76 Station, Oakland, CA
October 4, 2011

Treatability Testing.

Two individual chemical oxidation treatability tests will be performed to evaluate the destruction of TPH gas, BTEX constituents, and oxygenates. The two chemox tests to be performed are: high pH activated sodium persulfate and stabilized hydrogen peroxide activated sodium persulfate. The tests will be performed utilizing groundwater and soil samples collected by Antea Group from the 76 Station in Oakland, CA. Each treatability test will be performed using varying concentrations of oxidant (and activator) to determine the optimal dosage rate to achieve the best reduction of contaminant levels. The treatability testing will run for a duration of **28 days**. The following sacrificial time samples will be collected and forwarded to an analytical lab for chemical analyses:

- Time = 0 (Baseline Control)
- Time = 28 Days

1. **Part A** of the treatability test will performed using high pH activated sodium persulfate. Two reactor vessels will be set up; one using a Medium Dose of sodium persulfate (5 g/L) and one using a high dose of persulfate (7.5 g/L). The high dose of persulfate will be used along with a high dose of activator (sodium hydroxide). A soil buffering test will be performed to determine the amount of sodium hydroxide required. Two doses of hydroxide will be used, one for maintaining the pH above 10.5 units for 2 hours (medium dose) and another dose which maintains the pH above 10.5 for 24 hours (high dose). The reagent quantities to be tested for Part A are summarized below.

Test	Soil (grams)	Ground-water (ml)	Sodium Persulfate (g/L)	Sodium Hydroxide (ml)	Duration
Control (28 Day)	700	1,400	0	0	28 Days
Medium Persulfate w/ Medium Caustic	700	1,400	5.0	Maintain pH for 2 Hours*	28 Days
High Persulfate w/ High Caustic	700	1,400	7.5	Maintain pH for 24 hours*	28 Days

*The sodium hydroxide quantity should be determined by titration to maintain the pH level above 10.5.

The pH of all reactor vessels should be measured initially (before addition of chemicals) and again at 1 hour, 2 hours, 4 hours, and 24 hours. A record of the incremental amounts of sodium hydroxide added into each reactor vessel should be kept over the 24 hour period and reported.

2. **Part B** of the treatability test will be stabilized hydrogen peroxide activated sodium persulfate. Two reactor vessels will be set up; one using a Medium Dose of sodium persulfate along with a medium dose of peroxide and sodium citrate (medium dose); and the other reactor will have a Medium Dose of persulfate along with a high dose of peroxide and sodium citrate (high dose).

   The medium dose of hydrogen peroxide should be calculated as 5 moles of peroxide to one mole of persulfate (medium dose) and the high dose of peroxide as a 7.5 to 1 molar ratio. The peroxide should be added to the reactor vessel at a 10% concentration. The reagent quantities to be tested for the Part B Test are summarized below.

Test	Soil (grams)	Ground -water (ml)	Sodium Persulfate (g/L)	10% Hydrogen Peroxide (molar ratio)	Sodium Citrate (mM)	Duration
Control	700	1,400	0	0	0	28 Days
Medium Persulfate w/ Medium Peroxide and Citrate Stabilizer	700	1,400	5.0	5:1	5 mM	28 Days
Medium Persulfate w/ High Peroxide and Citrate Stabilizer	700	1,400	5.0	7.5:1	10 mM	28 Days

Use Caution: The hydrogen peroxide should be added last and should be added very slowly to the reactor vessel, as it may create a vigorous reaction. Several small additions of the peroxide may need to be performed over several minutes to keep the reactor from over-flowing.

Water quality measurements of pH, ORP, dissolved oxygen, conductivity, and temperature should be measured in each reactor vessel at the following intervals: 0 hrs, 1 hr, 4 hrs, 24 hrs, 2 days, 4 days, 7 days, 14 days, and 28 days. These data will be useful in confirming oxidative conditions in the reactor vessels.

Analytical Testing

Tests A and B will each run for a duration of 28 days. The groundwater (aqueous phase) will be separated from the soil at the end of the test (28 days) and shipped to an analytical lab for analysis. The soil samples should be centrifuged if necessary to remove as much water as possible before shipping the samples to the analytical lab. The control sample and the two reacted samples for both soil and groundwater will be analyzed for Parts A and B. A total of six samples (three groundwater and three soil samples) will be generated as a result of each of the two Treatability Tests (12 analyses plus two analyses at Time = 0). Analytical testing will include VOCs and Oxygenates by EPA Method 8260B and TPH as Gasoline by EPA Method 8015M. A selected number of analyses (4 each) will also be performed for hexavalent chromium, sulfate, ferrous iron, ferric iron, manganese, and total chromium.

The following chemical analyses will be performed by the laboratory:

Analytical Method	Estimated Number of Samples	Volume of Sample Required	Analysis Performed By
VOC Compounds and Oxygenates by EPA Method 8260B (soil and water)	14	3 40-ml VOAs w/ HCL	Calscience Labs
TPH as Gasoline by CA LUFT (soil and water)	14	3 40-ml VOAs w/ HCL	Calscience Labs
Hexavalent Chromium by EPA 7199 and Sulfate by EPA 300.0 (water only)	4	250 ml poly unpreserved	Calscience Labs
Ferrous Iron by SM 3500 (water only)	4	250 ml glass, unpreserved	Calscience Labs
Ferric Iron, Total Manganese, and Total Chromium by EPA 6010B (water only)	4	250 ml poly, w/ HNO3	Calscience Labs
Dissolved Manganese by EPA 6010B (water only)	4	250 ml poly, unpreserved (instruct lab to filter and preserve)	Calscience Labs

Please indicate on the chain of custody that JAG Consulting should be billed for the analyses.

Residual Oxidant Testing

Residual sodium persulfate remaining in the reactors will be measured at three intervals: 2 days, 14 days, and 28 days of testing. This measurement will be made on

the two doses of persulfate activated by the high pH (6 tests). The residual persulfate will be measured by using standard back titration (via permanganate). A Total Oxidant Demand (TOD) determination (calculation) will be made on the 2 day sample results (see last paragraph below).

Residual hydrogen peroxide will be measured at four intervals: 2 days, 7 days, 14 days, and 28 days of testing on the two doses of peroxide activated persulfate (8 tests). The residual peroxide will be measured by use of peroxide test strips. Note that residual persulfate cannot be measured in these samples, because peroxide interferes with the persulfate titration method.

The residual oxidant tests should be performed using similar persulfate doses as in the Treatability Test. Four reactor vessels should be set up using 250 ml amber jars. Initially add 40 grams of soil to each vessel. Add 200 ml persulfate solution at 5 g/L (medium dose) to vessel 1 along with a medium dose of sodium hydroxide activator (maintain pH above 10.5 for 2 hrs). For vessel 2, add persulfate at 7.5 g/L (high dose) along with a high dose of sodium hydroxide activator (maintain pH above 10.5 for 24 hrs~~). For vessel 3, add persulfate at 5 g/L (medium dose) along with a medium dose of peroxide and sodium citrate (medium dose). For vessel 4, add persulfate at 5 g/L (medium dose) along with a high dose of peroxide and sodium citrate (high dose)~~ Delete previous sentence per G. Cronk/JAG Consulting 10/11/11. Place the vessels on a shaker table and rotate at low velocity (50-100 rpm) **for 28 days**.

Residual Oxidant Testing	Soil (grams)	Ground-water (ml)	Sodium Persulfate (g/L)	Sodium Hydroxide (ml)	Hydrogen Peroxide (ml)	Sodium Citrate
1. Medium Persulfate w/ Medium Caustic	40	200	5	Maintain pH for 2 Hours	0	0
2. High Persulfate w/ High Caustic	40	200	7.5	Maintain pH for 24 hours	0	0
~~3. Medium Persulfate w/ Medium Peroxide and Citrate Stabilizer~~	~~40~~	~~200~~	~~5~~	~~0~~	~~5:1 Molar Ratio~~	~~5 mM~~
~~4. Medium Persulfate w/ High Peroxide and Citrate Stabilizer~~	~~40~~	~~200~~	~~5~~	~~0~~	~~7.5:1 Molar Ratio~~	~~10 mM~~

Delete tests 3. and 4. per G. Cronk/JAG Consulting 10/11/11

A Total Oxidant Demand (TOD) calculation should be performed by measurement of the residual persulfate remaining after **48 hours**. The persulfate concentration in the

aqueous portion can be measured either by standard back titration (via permanganate or cerium sulfate) or via spectrometer at 450 nm. This data is then used to determine the Total Oxidant Demand (TOD) by use of the following equation:

$$\textbf{TOD (g/kg)} = (C_o - C_f) * V / M$$

Where
C_o = initial concentration of persulfate (g) at time 0
C_f = concentration of persulfate (g) at completion of test
V = volume of groundwater used in sample (L)
M = mass of soil used in sample field injections (kg)

Eff. 10/11/2011

Client: JAG Consulting/Antea Group
Client Project ID: 76 Station, Oakland CA

PTS File No: 41714
Oct 11, 2011

Peroxide Activation of Sodium Persulfate
(Based on JAG Consulting Group procedure)

Based on 700 grams of soil and 1400 ml of groundwater; hydrogen peroxide (H_2O_2) is to be added to the solution at a molar concentration of 5:1 hydrogen peroxide:sodium persulfate. The calculations are as follows:

Persulfate concentration (g/L)	Volume (L)	mol H_2O_2 : mol Persulfate	Molar Mass H2O2 (g/mol)	concentration of H_2O_2 solution (mL/g)	H_2O_2 required (mL)	Concentration of H_2O_2 (g/L)	Sodium Citrate (mM)	Sodium Citrate Required (g)
0	1.4	0	34.01	10	0	0	0	0
5	1.4	5	34.01	10	50.0	3.6	5	2.0587
5	1.4	7.5	34.01	10	75.0	5.4	10	4.1174

Sample Calculation:
Molecular Mass H_2O_2: 34.01 g/mol
Molecular Mass $Na_2O_8S_2$: 238.03 g/mol

$$10\%H_2O_2\,w/w:\left(\frac{10gH_2O_2}{100gsol'n}\right)\times\left(\frac{1gsol'n}{1mlsol'n}\right)=\frac{0.1gH_2O_2}{1mlsol'n}$$

Volume of 10% H_2O_2 required for Medium Dose test:

$$1.4L\left(\frac{5gNa_2O_8S_2}{1L}\right)\left(\frac{1molNa_2O_8S_2}{238.03gNa_2O_8S_2}\right)\left(\frac{5molH_2O_2}{1molNa_2O_8S_2}\right)\left(\frac{34.01gH_2O_2}{1molH_2O_2}\right)\left(\frac{1mlH_2O_2}{0.1gH_2O_2}\right)=50.0ml$$

Resulting concentration of H_2O_2 in sample:

$$\left(\frac{5gNa_2O_8S_2}{L}\right)\times\left(\frac{1molNa_2O_8S_2}{238.03gNa_2O_8S_2}\right)\times\left(\frac{5molH_2O_2}{1molNa_2O_8S_2}\right)\times\left(\frac{34.01gH_2O_2}{1molH_2O_2}\right)=3.6gH_2O_2/L$$

Sample Calculation for amount of Citrate:

$$5mM=0.005\,M=\frac{0.005\,mol}{L}$$

$$\frac{0.005\,mol}{L}\times 1.4L=0.007\,mol$$

$$0.007\,mol\ citrate\times\frac{294.10\,g\ citrate}{mol\ citrate}=2.0587\ g\ citrate$$

8100 Secura Way – Santa Fe Springs, CA 90670
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PTS Laboratories

Project Name: 76 Station, Oakland CA
Project Number: 142611117

PTS File No: 41714
Client: JAG Consulting/Antea Group

TEST PROGRAM - MONITORING MATRIX 20111004

REACTOR VESSEL No.	REACTOR VESSEL NAME	REACTOR TREATMENT TYPE	Monitoring Event #1 Time = 0	Monitoring Event #2 Time = 1 hr	Monitoring Event #3 Time = 2 hrs	Monitoring Event #4 Time = 4 hrs	Monitoring Event #5 Time = 1 day	Monitoring Event #6 Time = 2 days	Monitoring Event #7 Time = 4 days	Monitoring Event #8 Time = 7 days	Monitoring Event #9 Time = 14 days	Monitoring Event #10 Time = 28 days	Notes
0	Baseline	0-day Persulfate at 0 g/L	Out for Chem Analytical	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	0-day initial condition composite
1	Control	28-days Persulfate at 0 g/L	YSI Meter Only	YSI Meter only	N/A	YSI Meter only	YSI Meter only	YSI Meter only	YSI Meter only	YSI Meter only	YSI Meter only	YSI Meter then out for Chem. Analytical	Control 28-days persulfate treatment
2	Medium Persulfate with Medium Caustic	28-days Persulfate at 5.0 g/L	YSI Meter + pH buffering	YSI Meter + pH buffering	pH buffering only	YSI Meter only	YSI Meter only	YSI Meter only	YSI Meter only	YSI Meter only	YSI Meter only	YSI Meter then out for Chem. Analytical	28-days persulfate treatment
3	High Persulfate with High Caustic	28-days Persulfate at 7.5 g/L	YSI Meter + pH buffering	YSI Meter + pH buffering	pH buffering only	YSI Meter + pH buffering	YSI Meter + pH buffering	YSI Meter only	YSI Meter only	YSI Meter only	YSI Meter only	YSI Meter then out for Chem. Analytical	28-days persulfate treatment
4	Control	28-days Persulfate at 0 g/L	YSI Meter only	YSI Meter only	N/A	YSI Meter only	YSI Meter only	YSI Meter only	YSI Meter only	YSI Meter only	YSI Meter only	YSI Meter then out for Chem. Analytical	Control 28-days persulfate and peroxide treatment
5	Medium Persulfate with Medium Peroxide and Citrate Stabilizer	28-days Persulfate at 5.0 g/L 5:1 peroxide:persulfate Sodium Citrate at 5 mM	YSI Meter only	YSI Meter only	N/A	YSI Meter only	YSI Meter only	YSI Meter + Peroxide Test Strips	YSI Meter only	YSI Meter + Peroxide Test Strips	YSI Meter + Peroxide Test Strips	YSI Meter + Peroxide Test Strips then out for Chemical Analytical	28-days persulfate and peroxide treatment
6	Medium Persulfate with High Peroxide and Citrate Stabilizer	28-days Persulfate at 5.0 g/L 7.5:1 peroxide:persulfate Sodium Citrate at 10 mM	YSI Meter only	YSI Meter only	N/A	YSI Meter only	YSI Meter only	YSI Meter + Peroxide Test Strips	YSI Meter only	YSI Meter + Peroxide Test Strips	YSI Meter + Peroxide Test Strips	YSI Meter + Peroxide Test Strips then out for Chemical Analytical	28-days persulfate and peroxide treatment

Laboratory Test Program Notes

pH buffering - pH adjusted only if needed to maintain a pH > 10.5 for tests 2 and 3
Klozur is the reagent to be used for this study per G. Cronk/JAG Consulting 10/4/11.
Control sample only to be monitored with YSI Meter, no pH buffering.
Conduct TOD tests on the two high pH activated sodium persulfate reactors at 2 day, 14 days, and 28 days of testing.

PTS Laboratories

Project Name: 76 Station, Oakland CA
Project Number: 142611117

PTS File No: 41714
Client: JAG Consulting/Antea Group

TEST PROGRAM - Reagent Dosages Based on 1400 ml of Groundwater 20111004

REACTOR VESSEL No.	REACTOR VESSEL NAME	REACTOR TREATMENT TYPE	SOIL, grams	GROUNDWATER ml	TIME = 0
0	Baseline	0-day Persulfate at 0 g/L	Composite for Chem. Analytical	Composite for Chem. Analytical	Persulfate = 0 g/L
1	Control	28-days Persulfate at 0 g/L	700	1400	Persulfate = 0 g/L
2	Medium Persulfate with Medium Caustic	28-days Persulfate at 5.0 g/L	700	1400	Persulfate = 5.0 g/L = 7.0g/1400mL
3	High Persulfate with High Caustic	28-days Persulfate at 7.5 g/L	700	1400	Persulfate = 7.5 g/L = 10.5g/1400mL
4	Control	28-days Persulfate at 0 g/L	700	1400	Persulfate = 0 g/L Peroxide = 0 g/L Citrate = 0 mM
5	Medium Persulfate with Medium Peroxide and Citrate Stabilizer	28-days Persulfate at 5.0 g/L 5:1 peroxide:persulfate Sodium Citrate at 5 mM	700	1400	Persulfate = 5.0 g/L = 7.0g/1400mL Peroxide = 3.6 g/L = 50.0mL/1400mL Citrate = 5 mM = 2.0587g/1400mL
6	Medium Persulfate with High Peroxide and Citrate Stabilizer	28-days Persulfate at 5.0 g/L 7.5:1 peroxide:persulfate Sodium Citrate at 10 mM	700	1400	Persulfate = 5.0 g/L = 7.0g/1400mL Peroxide = 5.4 g/L = 75.0mL/1400mL Citrate = 10 mM = 4.1174g/1400mL

Laboratory Test Program Notes

Klozur is the reagent to be used for this study per G. Cronk/JAG Consulting 10/11/11.

Reactor Vessels should have a small amount of headspace when filled to accommodate to oxygen gas production per G. Cronk/JAG Consulting Group, therefore lids should not be tight.

PTS File No: 41714
Client: JAG Consulting/Antea Group

PTS Laboratories

ISCO BENCH SCALE ANALYSIS SETUP

(METHOD: JAG Consulting Group, Inc.)

PROJECT NAME: 76 Station, Oakland CA
PROJECT NO: 142611117

SAMPLE ID.	VOLUME GROUNDWATER, mL	REQUIRED MASS OF PERSULFATE, g	ACTUAL MASS OF PERSULFATE, g	REQUIRED SOIL MASS, g	ACTUAL SOIL MASS, g
1. Control	1400	0.0	0	700	700.03
2. Medium Persulfate with Medium Caustic	1400	7.0	7.0035	700	700.24
3. High Persulfate with High Caustic	1400	10.5	10.5042	700	700.05

Technician: LL

Date/Time: 10/13/11, 1225

PTS Laboratories

PTS File No: 41714
Client: JAG Consulting/Antea Group

Project Name: 76 Station, Oakland CA
Project No. 142611117

YSI 556 MULTI-PARAMETER DATA SHEET T = 0 Hour

Sample ID	TECH. INITIALS	DATE	MATRIX	WATER TEMP. °C	CONDUCTIVITY mS/cm	DISSOLVED OXYGEN (DO) mg/l	pH	ORP mV	COLOR	ODOR
1. Control	LL	10/13/11	Water	16.40	0.394	6.09	6.04	154.3	light yellow	strong HC
2. Medium Persulfate with Medium Caustic	LL	10/13/11	Water	16.84	4.126	9.14	7.00	342.4	light yellow	strong HC
3. High Persulfate with High Caustic	LL	10/13/11	Water	16.90	5.911	7.99	6.98	363.8	milky light yellow	strong HC

Observations or deviations from method: _____

METER CALIBRATION

SAMPLE ID	TECH. INITIALS	ANALYSIS DATE	AMBIENT TEMP. °C	MATRIX	pH READINGS		CONDUCTIVITY READING	
Meter Calibration	LL	10/13/11	23.03	Water	pH Buffer Standard 4.00	4.00	Auto Cal Standard 4.49 mS/cm	4.490
Altitude Input Value	738mm		DO READING		pH Buffer Standard 7.00	7.00		
Salinity Input Value	N/A; Satd. Air cal.		%	mg/L	pH Buffer Standard 10.00	10.05		
Meter Model/Type	YSI 556		97.1	8.51				

Lab Supervisor/PM: MMB 11/14/2011
Initial/Date

PTS Laboratories

PTS File No: 41714
Client: JAG Consulting/Antea Group

Project Name: 76 Station, Oakland CA
Project No. 142611117

YSI 556 MULTI-PARAMETER DATA SHEET T = 1 Hour

Sample ID	TECH. INITIALS	DATE	MATRIX	WATER TEMP. °C	CONDUCTIVITY mS/cm	DISSOLVED OXYGEN (DO) mg/l	pH	ORP mV	COLOR	ODOR
1. Control	SS	10/13/11	Water	18.21	0.405	7.28	6.94	139.8	v. light yellow	strong HC
2. Medium Persulfate with Medium Caustic	SS	10/13/11	Water	18.62	4.299	5.07	9.86	160.7	v. light yellow	strong HC
3. High Persulfate with High Caustic	SS	10/13/11	Water	18.81	6.070	5.04	10.29	169.3	v. light yellow	strong HC

Observations or deviations from method: _____

METER CALIBRATION

SAMPLE ID	TECH. INITIALS	ANALYSIS DATE	AMBIENT TEMP. °C	MATRIX	pH READINGS		CONDUCTIVITY READING	
Meter Calibration	LL	10/13/11	23.03	Water	pH Buffer Standard 4.00	4.00	Auto Cal Standard 4.49 mS/cm	4.490
Altitude Input Value	738mm		DO READING		pH Buffer Standard 7.00	7.00		
Salinity Input Value	N/A; Satd. Air cal.		%	mg/L	pH Buffer Standard 10.00	10.05		
Meter Model/Type	YSI 556		97.1	8.51				

Lab Supervisor/PM: MMB 11/14/2011
Initial/Date

PTS Laboratories

PTS File No: 41714
Client: JAG Consulting/Antea Group

Project Name: 76 Station, Oakland CA
Project No. 142611117

YSI 556 MULTI-PARAMETER DATA SHEET T = 4 Hours

Sample ID	TECH. INITIALS	DATE	MATRIX	WATER TEMP. °C	CONDUCTIVITY mS/cm	DISSOLVED OXYGEN (DO) mg/l	pH	ORP mV	COLOR	ODOR
1. Control	LL	10/13/11	Water	21.07	0.433	9.61	7.21	199.4	pale yellow	strong HC
2. Medium Persulfate with Medium Caustic	LL	10/13/11	Water	21.21	4.726	4.47	10.06	95.7	pale yellow	strong HC
3. High Persulfate with High Caustic	LL	10/13/11	Water	21.21	6.634	3.87	10.04	122.7	pale yellow	strong HC

Observations or deviations from method:

METER CALIBRATION

SAMPLE ID	TECH. INITIALS	ANALYSIS DATE	AMBIENT TEMP. °C	MATRIX
Meter Calibration	LL	10/13/11	23.03	Water
Altitude Input Value	738mm		DO READING	
Salinity Input Value	N/A; Satd. Air cal.		%	mg/L
Meter Model/Type	YSI 556		97.1	8.51

pH READINGS	
pH Buffer Standard 4.00	4.00
pH Buffer Standard 7.00	7.00
pH Buffer Standard 10.00	10.05

CONDUCTIVITY READING	
Auto Cal Standard 4.49 mS/cm	4.490

Lab Supervisor/PM: MMB 11/14/2011
Initial/Date

PTS Laboratories

PTS File No: 41714
Client: JAG Consulting/Antea Group

Project Name: 76 Station, Oakland CA
Project No. 142611117

YSI 556 MULTI-PARAMETER DATA SHEET T = 1 Day

Sample ID	TECH. INITIALS	DATE	MATRIX	WATER TEMP. °C	CONDUCTIVITY mS/cm	DISSOLVED OXYGEN (DO) mg/l	pH	ORP mV	COLOR	ODOR
1. Control	LL	10/14/11	Water	22.87	0.450	1.92	7.28	132.8	pale yellow	medium HC
2. Medium Persulfate with Medium Caustic	LL	10/14/11	Water	22.88	4.982	3.69	9.61	181.6	pale yellow	medium sweet HC
3. High Persulfate with High Caustic	LL	10/14/11	Water	22.81	7.085	2.76	9.53	199.6	pale yellow	strong sweet HC

Observations or deviations from method: _____

METER CALIBRATION

SAMPLE ID	TECH. INITIALS	ANALYSIS DATE	AMBIENT TEMP. °C	MATRIX	pH READINGS		CONDUCTIVITY READING	
Meter Calibration	LL	10/14/11	22.81	Water	pH Buffer Standard 4.00	4.00	Auto Cal Standard 4.49 mS/cm	4.490
Altitude Input Value	738mm		DO READING		pH Buffer Standard 7.00	7.00		
Salinity Input Value	N/A; Satd. Air cal.		%	mg/L	pH Buffer Standard 10.00	10.05		
Meter Model/Type	YSI 556		97.1	8.46				

Lab Supervisor/PM: MMB 11/14/2011
Initial/Date

PTS File No: 41714
Client: JAG Consulting/Antea Group

PTS Laboratories

Project Name: 76 Station, Oakland CA
Project No. 142611117

YSI 556 MULTI-PARAMETER DATA SHEET T = 2 Days

Sample ID	TECH. INITIALS	DATE	MATRIX	WATER TEMP. °C	CONDUCTIVITY mS/cm	DISSOLVED OXYGEN (DO) mg/l	pH	ORP mV	COLOR	ODOR
1. Control	LL	10/15/11	Water	23.42	0.457	2.51	7.41	140.7	pale yellow	medium HC
2. Medium Persulfate with Medium Caustic	LL	10/15/11	Water	23.38	4.924	3.69	9.28	135.2	pale yellow	faint sweet HC
3. High Persulfate with High Caustic	LL	10/15/11	Water	23.33	7.301	2.61	9.54	143.6	pale yellow	strong sweet HC

Observations or deviations from method: _____

METER CALIBRATION

SAMPLE ID	TECH. INITIALS	ANALYSIS DATE	AMBIENT TEMP. °C	MATRIX	pH READINGS		CONDUCTIVITY READING	
Meter Calibration	LL	10/15/11	23.64	Water	pH Buffer Standard 4.00	4.00	Auto Cal Standard 4.49 mS/cm	4.490
Altitude Input Value	738mm		DO READING		pH Buffer Standard 7.00	7.00		
Salinity Input Value	N/A; Satd. Air cal.		%	mg/L	pH Buffer Standard 10.00	10.03		
Meter Model/Type	YSI 556		97.1	8.34				

Lab Supervisor/PM: MMB 11/14/2011
Initial/Date

PTS File No: 41714
Client: JAG Consulting/Antea Group

PTS Laboratories

Project Name: 76 Station, Oakland CA
Project No. 142611117

YSI 556 MULTI-PARAMETER DATA SHEET T = 4 Days

Sample ID	TECH. INITIALS	DATE	MATRIX	WATER TEMP. °C	CONDUCTIVITY mS/cm	DISSOLVED OXYGEN (DO) mg/l	pH	ORP mV	COLOR	ODOR
1. Control	LL	10/17/11	Water	22.74	0.456	3.73	7.52	153.1	pale yellow	medium HC
2. Medium Persulfate with Medium Caustic	LL	10/17/11	Water	22.73	4.936	4.38	7.97	216.7	pale yellow	medium sweet HC
3. High Persulfate with High Caustic	LL	10/17/11	Water	22.79	7.327	3.92	8.01	253.6	pale yellow	medium sweet HC

Observations or deviations from method: _____

METER CALIBRATION

SAMPLE ID	TECH. INITIALS	ANALYSIS DATE	AMBIENT TEMP. °C	MATRIX
Meter Calibration	LL	10/17/11	22.89	Water
Altitude Input Value	738mm		**DO READING**	
Salinity Input Value	N/A; Satd. Air cal.		%	mg/L
Meter Model/Type	YSI 556		97.1	8.54

pH READINGS	
pH Buffer Standard 4.00	4.00
pH Buffer Standard 7.00	7.00
pH Buffer Standard 10.00	10.02

CONDUCTIVITY READING	
Auto Cal Standard 4.49 mS/cm	4.490

Lab Supervisor/PM: MMB 11/14/2011
Initial/Date

PTS Laboratories

PTS File No: 41714
Client: JAG Consulting/Antea Group

Project Name: 76 Station, Oakland CA
Project No. 142611117

YSI 556 MULTI-PARAMETER DATA SHEET T = 7 Days

Sample ID	TECH. INITIALS	DATE	MATRIX	WATER TEMP. °C	CONDUCTIVITY mS/cm	DISSOLVED OXYGEN (DO) mg/l	pH	ORP mV	COLOR	ODOR
1. Control	LL	10/20/11	Water	22.71	0.449	3.59	7.62	154.1	v. pale yellow	medium HC
2. Medium Persulfate with Medium Caustic	LL	10/20/11	Water	22.71	4.912	4.81	7.33	252.8	v. pale yellow	strong sweet HC
3. High Persulfate with High Caustic	LL	10/20/11	Water	22.72	7.285	4.34	7.13	288.8	v. pale yellow	strong sweet HC

Observations or deviations from method: _____

METER CALIBRATION

SAMPLE ID	TECH. INITIALS	ANALYSIS DATE	AMBIENT TEMP. °C	MATRIX
Meter Calibration	LL	10/20/11	22.73	Water
Altitude Input Value	738mm		**DO READING**	
Salinity Input Value	N/A; Satd. Air cal.		%	mg/L
Meter Model/Type	YSI 556		97.1	8.50

pH READINGS	
pH Buffer Standard 4.00	4.00
pH Buffer Standard 7.00	7.00
pH Buffer Standard 10.00	10.03

CONDUCTIVITY READING	
Auto Cal Standard 4.49 mS/cm	4.490

Lab Supervisor/PM: MMB 11/14/2011
Initial/Date

PTS File No: 41714
Client: JAG Consulting/Antea Group

PTS Laboratories

Project Name: 76 Station, Oakland CA
Project No. 142611117

YSI 556 MULTI-PARAMETER DATA SHEET T = 14 Days

Sample ID	TECH. INITIALS	DATE	MATRIX	WATER TEMP. °C	CONDUCTIVITY mS/cm	DISSOLVED OXYGEN (DO) mg/l	pH	ORP mV	COLOR	ODOR
1. Control	LL	10/27/11	Water	22.07	0.436	1.49	7.57	137.6	v. pale yellow	faint HC
2. Medium Persulfate with Medium Caustic	LL	10/27/11	Water	22.04	5.025	5.21	7.26	243.9	v. pale yellow	strong sweet HC
3. High Persulfate with High Caustic	LL	10/27/11	Water	22.04	7.365	5.11	7.05	302.3	v. pale yellow	strong sweet HC

Observations or deviations from method:

METER CALIBRATION

SAMPLE ID	TECH. INITIALS	ANALYSIS DATE	AMBIENT TEMP. °C	MATRIX	pH READINGS		CONDUCTIVITY READING	
Meter Calibration	LL	10/27/2011	21.98	Water	pH Buffer Standard 4.00	4.00	Auto Cal Standard 4.49 mS/cm	4.490
Altitude Input Value	738mm		DO READING		pH Buffer Standard 7.00	7.00		
Salinity Input Value	N/A; Satd. Air cal.		%	mg/L	pH Buffer Standard 10.00	10.02		
Meter Model/Type	YSI 556		97.1	8.48				

Lab Supervisor/PM: MMB 11/14/2011
Initial/Date

PTS Laboratories

PTS File No: 41714
Client: JAG Consulting/Antea Group

Project Name: 76 Station, Oakland CA
Project No. 142611117

YSI 556 MULTI-PARAMETER DATA SHEET T = 28 Days

Sample ID	TECH. INITIALS	DATE	MATRIX	WATER TEMP. °C	CONDUCTIVITY mS/cm	DISSOLVED OXYGEN (DO) mg/l	pH	ORP mV	COLOR	ODOR
1. Control	LL	11/10/11	Water	21.59	0.424	3.17	8.14	171.1	light yellow	v. faint HC
2. Medium Persulfate with Medium Caustic	LL	11/10/11	Water	21.55	5.188	5.67	7.71	275.5	faint yellow	medium sweet HC
3. High Persulfate with High Caustic	LL	11/10/11	Water	21.57	7.517	5.51	7.54	308.4	faint yellow	strong sweet HC

Observations or deviations from method: _____

METER CALIBRATION

SAMPLE ID	TECH. INITIALS	ANALYSIS DATE	AMBIENT TEMP. °C	MATRIX	pH READINGS		CONDUCTIVITY READING	
Meter Calibration	LL	11/10/2011	21.71	Water	pH Buffer Standard 4.00	3.99	Auto Cal Standard 4.49 mS/cm	4.490
Altitude Input Value	738mm		DO READING		pH Buffer Standard 7.00	7.00		
Salinity Input Value	N/A; Satd. Air cal.		%	mg/L	pH Buffer Standard 10.00	10.05		
Meter Model/Type	YSI 556		97.1	8.54				

Lab Supervisor/PM: MMB 11/14/2011
Initial/Date

PTS File No: 41714
Client: JAG Consulting/Antea Group

PTS Laboratories

SOIL BUFFERING TEST at T = 0 Hour

(METHOD: JAG Consulting Group, Inc.)

PROJECT NAME: 76 Station, Oakland CA
PROJECT NO: 142611117

LABORATORY PROCEDURE

Solution titrated with a 6N NaOH solution until pH rises above 10.5

SAMPLE ID.	TECHNICIAN INITIALS	DATE/TIME	TEMP., °C	INITIAL pH	INITIAL VOLUME, mL	FINAL VOLUME, mL	FINAL pH	TOTAL VOL. NaOH ADDED, mL	NaOH ADDED, mmoles
2. Medium Persulfate with Medium Caustic	LL	10/13/11, 1254	23.0	6.89	0.00	4.40	10.56	4.40	26.40
3. High Persulfate with High Caustic	LL	10/13/11, 1255	23.0	6.97	4.40	10.50	10.79	6.10	36.60

Meter Model/Type: Corning pH meter 240

METER CALIBRATION

Date					
pH Buffer Standard 4.00	10/13/11, 925	22.2	4.00		
pH Buffer Standard 7.00	10/13/11, 925	22.2	7.00		
pH Buffer Standard 10.00	10/13/11, 1315	23.1	10.01		

Lab Supervisor/PM: MMB 11/14/2011
Initial/Date

PTS File No: 41714
Client: JAG Consulting/Antea Group

PTS Laboratories

SOIL BUFFERING TEST at T = 1 Hour

(METHOD: JAG Consulting Group, Inc.)

PROJECT NAME: 76 Station, Oakland CA
PROJECT NO: 142611117

LABORATORY PROCEDURE

Solution titrated with a 6N NaOH solution until pH rises above 10.5

SAMPLE ID.	TECHNICIAN INITIALS	DATE/TIME	TEMP., °C	INITIAL pH	INITIAL VOLUME, mL	FINAL VOLUME, mL	FINAL pH	TOTAL VOL. NaOH ADDED, mL	NaOH ADDED, mmoles
2. Medium Persulfate with Medium Caustic	LL	10/13/11, 1410	23.0	10.14	10.50	12.20	10.86	1.70	10.20
3. High Persulfate with High Caustic	LL	10/13/11, 1417	23.0	10.46	12.20	13.20	10.81	1.00	6.00

Meter Model/Type: Corning pH meter 240

METER CALIBRATION

Date					
pH Buffer Standard 4.00	10/13/11, 925	22.2	4.00		
pH Buffer Standard 7.00	10/13/11, 925	22.2	7.00		
pH Buffer Standard 10.00	10/13/11, 1315	23.1	10.01		

Lab Supervisor/PM: MMB 11/14/2011
Initial/Date

PTS File No: 41714
Client: JAG Consulting/Antea Group

PTS Laboratories

SOIL BUFFERING TEST at T = 2 Hours

(METHOD: JAG Consulting Group, Inc.)

PROJECT NAME: 76 Station, Oakland CA
PROJECT NO: 142611117

LABORATORY PROCEDURE

Solution titrated with a 6N NaOH solution until pH rises above 10.5

SAMPLE ID.	TECHNICIAN INITIALS	DATE/TIME	TEMP., °C	INITIAL pH	INITIAL VOLUME, mL	FINAL VOLUME, mL	FINAL pH	TOTAL VOL. NaOH ADDED, mL	NaOH ADDED, mmoles
2. Medium Persulfate with Medium Caustic	LL	10/13/11, 1455	23.4	10.53	N/A	N/A	N/A	N/A	N/A
3. High Persulfate with High Caustic	LL	10/13/11, 1500	23.4	10.54	N/A	N/A	N/A	N/A	N/A

Meter Model/Type: Corning pH meter 240

METER CALIBRATION

Date					
pH Buffer Standard 4.00	10/13/11, 925	22.2	4.00		
pH Buffer Standard 7.00	10/13/11, 925	22.2	7.00		
pH Buffer Standard 10.00	10/13/11, 1315	23.1	10.01		

Lab Supervisor/PM: MMB 11/14/2011
Initial/Date

PTS File No: 41714
Client: JAG Consulting/Antea Group

PTS Laboratories

SOIL BUFFERING TEST at T = 4 Hours

(METHOD: JAG Consulting Group, Inc.)

PROJECT NAME: 76 Station, Oakland CA
PROJECT NO: 142611117

LABORATORY PROCEDURE

Solution titrated with a 6N NaOH solution until pH rises above 10.5

SAMPLE ID.	TECHNICIAN INITIALS	DATE/TIME	TEMP., °C	INITIAL pH	INITIAL VOLUME, mL	FINAL VOLUME, mL	FINAL pH	TOTAL VOL. NaOH ADDED, mL	NaOH ADDED, mmoles
2. Medium Persulfate with Medium Caustic	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
3. High Persulfate with High Caustic	LL	10/13/11, 1647	23.5	10.37	13.20	14.00	10.76	0.80	4.80

Meter Model/Type: Corning pH meter 240

METER CALIBRATION

Date					
pH Buffer Standard 4.00	10/13/11, 925	22.2	4.00		
pH Buffer Standard 7.00	10/13/11, 925	22.2	7.00		
pH Buffer Standard 10.00	10/13/11, 1315	23.1	10.01		

Lab Supervisor/PM: MMB 11/14/2011
Initial/Date

PTS File No: 41714
Client: JAG Consulting/Antea Group

PTS Laboratories

SOIL BUFFERING TEST at T = 1 Day

(METHOD: JAG Consulting Group, Inc.)

PROJECT NAME: 76 Station, Oakland CA
PROJECT NO: 142611117

LABORATORY PROCEDURE

Solution titrated with a 6N NaOH solution until pH rises above 10.5

SAMPLE ID.	TECHNICIAN INITIALS	DATE/TIME	TEMP., °C	INITIAL pH	INITIAL VOLUME, mL	FINAL VOLUME, mL	FINAL pH	TOTAL VOL. NaOH ADDED, mL	NaOH ADDED, mmoles
2. Medium Persulfate with Medium Caustic	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
3. High Persulfate with High Caustic	LL	10/14/11, 1342	23.1	9.68	7.00	8.20	10.52	1.20	7.20

Meter Model/Type: Corning pH meter 240

METER CALIBRATION

Date					
pH Buffer Standard 4.00					
pH Buffer Standard 7.00	10/14/11, 1132	23.2	7.00		
pH Buffer Standard 10.00	10/14/11, 1133	23.2	10.01		

Lab Supervisor/PM: MMB 11/14/2011
Initial/Date

PTS File No: 41714
Client: JAG Consulting/Antea Group

PTS Laboratories

TOD BENCH SCALE ANALYSIS SETUP

(METHOD: JAG Consulting Group, Inc.)

PROJECT NAME: 76 Station, Oakland CA
PROJECT NO: 142611117

SAMPLE ID.	VOLUME GROUNDWATER, mL	REQUIRED MASS OF PERSULFATE, g	ACTUAL MASS OF PERSULFATE, g	REQUIRED VOL. 6N NaOH, mL	ACTUAL VOL. 6N NaOH, mL	MASS SOIL, g	ACTUAL SOIL, g
1. Medium Persulfate with Medium Caustic	200	1.0	1.0375	0.9	0.9	40	40.23
2. High Persulfate with High Caustic	200	1.5	1.5036	1.3	1.3	40	40.18

Technician: LL

Date/Time: 10/17/11, 1715

PTS Laboratories

PTS File No: 41714

Client: JAG Consulting/Antea Group

Project Name: 76 Station, Oakland CA

Project No. 142611117

TOTAL OXIDANT DEMAND KLOZUR TEST T = 48 Hours

(METHOD: JAG Consulting Group, Inc.)

LABORATORY PROCEDURE

6.0N H_2SO_4 was reacted with Ferrous Ammonium Sulfate and the filtered groundwater.
Solution titrated with a $KMnO_4$ solution until color remained pink
Final persulfate concentration determined from Klozur persulfate graph
TOD determined using equation: TOD(g/kg)= (Co - Cf) * V / M

Sample ID	TECH. INITIALS	DATE/ TIME	INITIAL VOLUME, mL	FINAL VOLUME, mL	TOTAL VOLUME KMnO4 ADDED, mL	FINAL PERSULFATE g/L	INITIAL PERSULFATE g/L	VOLUME OF GROUNDWATER, L	MASS OF SOIL, g	TOD, g/Kg
1. Medium Persulfate with Medium Caustic	LL	10/19/11, 1710	4.0	11.8	7.8	3.65	5.0	0.2	40.23	6.6952
2. High Persulfate with High Caustic	LL	10/19/11, 1720	4.0	11.3	7.3	6.63	7.5	0.2	40.18	4.3434

Observations or deviations from method: _____

Lab Supervisor/PM: MMB 11/14/2011
Initial/Date

PTS File No: 41714
Client: JAG Consulting/Antea Group

Project Name: 76 Station, Oakland CA
Project No. 142611117

TOTAL OXIDANT DEMAND KLOZUR TEST T = 14 Days

(METHOD: JAG Consulting Group, Inc.)

LABORATORY PROCEDURE

6.0N H_2SO_4 was reacted with Ferrous Ammonium Sulfate and the filtered groundwater.
Solution titrated with a $KMnO_4$ solution until color remained pink
Final persulfate concentration determined from Klozur persulfate graph
TOD determined using equation: TOD(g/kg)= (Co - Cf) * V / M

Sample ID	TECH. INITIALS	DATE/ TIME	INITIAL VOLUME, mL	FINAL VOLUME, mL	TOTAL VOLUME KMnO4 ADDED, mL	FINAL PERSULFATE g/L	INITIAL PERSULFATE g/L	VOLUME OF GROUNDWATER, L	MASS OF SOIL, g	TOD, g/Kg
1. Medium Persulfate with Medium Caustic	SS	10/31/11, 1600	4.0	11.9	7.9	3.06	5.0	0.2	40.23	9.6523
2. High Persulfate with High Caustic	SS	10/31/11, 1600	4.0	11.3	7.3	6.63	7.5	0.2	40.18	4.3434

Observations or deviations from method: _____

Lab Supervisor/PM: MMB 11/14/2011
Initial/Date

PTS Laboratories

PTS File No: 41714

Client: JAG Consulting/Antea Group

Project Name: 76 Station, Oakland CA

Project No. 142611117

TOTAL OXIDANT DEMAND KLOZUR TEST T = 28 Days

(METHOD: JAG Consulting Group, Inc.)

LABORATORY PROCEDURE

6.0N H_2SO_4 was reacted with Ferrous Ammonium Sulfate and the filtered groundwater.
Solution titrated with a $KMnO_4$ solution until color remained pink
Final persulfate concentration determined from Klozur persulfate graph
TOD determined using equation: TOD(g/kg)= (Co - Cf) * V / M

Sample ID	TECH. INITIALS	DATE/ TIME	INITIAL VOLUME, mL	FINAL VOLUME, mL	TOTAL VOLUME KMnO4 ADDED, mL	FINAL PERSULFATE g/L	INITIAL PERSULFATE g/L	VOLUME OF GROUNDWATER, L	MASS OF SOIL, g	TOD, g/Kg
1. Medium Persulfate with Medium Caustic	LL	11/14/11, 0845	4.0	12.0	8.0	2.46	5.0	0.2	40.23	12.6095
2. High Persulfate with High Caustic	LL	11/14/11, 0856	4.0	11.5	7.5	5.44	7.5	0.2	40.18	10.2651

Observations or deviations from method: _____

Lab Supervisor/PM: MMB 11/14/2011
Initial/Date

PTS File No: 41714
Client: JAG Consulting/Antea Group

PTS Laboratories

ISCO BENCH SCALE ANALYSIS SETUP

(METHOD: JAG Consulting Group, Inc.)

PROJECT NAME: 76 Station, Oakland CA
PROJECT NO: 142611117

SAMPLE ID.	VOLUME GROUNDWATER, mL	REQUIRED MASS OF PERSULFATE, g	ACTUAL MASS OF PERSULFATE, g	REQUIRED VOLUME OF 10% PEROXIDE mL	ACTUAL VOLUME OF 10% PEROXIDE mL	REQUIRED MASS OF CITRATE g	ACTUAL MASS OF CITRATE g	REQUIRED SOIL MASS, g	ACTUAL SOIL MASS, g
4. Control	1400	0.0	0	0	0	0	0	700	699.61
5. Medium Persulfate with Medium Peroxide and Citrate Stabilizer	1400	7.0	7.0101	50.0	50.0	2.0587	2.0626	700	699.20
6. Medium Persulfate with High Peroxide and Citrate Stabilizer	1400	7.0	7.0043	75.0	75.0	4.1174	4.1218	700	699.35

Technician: LL

Date/Time: 10/13/11, 1400

PTS Laboratories

PTS File No: 41714
Client: JAG Consulting/Antea Group

Project Name: 76 Station, Oakland CA
Project No. 142611117

YSI 556 MULTI-PARAMETER DATA SHEET T = 0 Hour

Sample ID	TECH. INITIALS	DATE	MATRIX	WATER TEMP. °C	CONDUCTIVITY mS/cm	DISSOLVED OXYGEN (DO) mg/l	pH	ORP mV	COLOR	ODOR
4. Control	SS	10/13/11	Water	18.41	0.406	9.40	7.36	142.1	light yellow	strong HC
5. Medium Persulfate with Medium Peroxide and Citrate Stabilizer	SS	10/13/11	Water	19.57	4.495	110.74	6.86	264.1	grey brown	strong HC
6. Medium Persulfate with High Peroxide and Citrate Stabilizer	SS	10/13/11	Water	19.50	4.848	167.78	7.04	246.2	grey brown	strong HC

Observations or deviations from method: Jars 5 and 6: Many small bubbles every second. SS 10/13/11

METER CALIBRATION

SAMPLE ID	TECH. INITIALS	ANALYSIS DATE	AMBIENT TEMP. °C	MATRIX	pH READINGS		CONDUCTIVITY READING	
Meter Calibration	LL	10/13/11	23.03	Water	pH Buffer Standard 4.00	4.00	Auto Cal Standard 4.49 mS/cm	4.490
Altitude Input Value	738mm		DO READING		pH Buffer Standard 7.00	7.00		
Salinity Input Value	N/A; Satd. Air cal.		%	mg/L	pH Buffer Standard 10.00	10.05		
Meter Model/Type	YSI 556		97.1	8.51				

Lab Supervisor/PM: MMB 11/14/2011
Initial/Date

PTS Laboratories

PTS File No: 41714
Client: JAG Consulting/Antea Group

Project Name: 76 Station, Oakland CA
Project No. 142611117

YSI 556 MULTI-PARAMETER DATA SHEET T = 1 Hour

Sample ID	TECH. INITIALS	DATE	MATRIX	WATER TEMP. °C	CONDUCTIVITY mS/cm	DISSOLVED OXYGEN (DO) mg/l	pH	ORP mV	COLOR	ODOR
4. Control	LL	10/13/11	Water	19.75	0.420	9.39	7.23	167.2	pale yellow	strong HC
5. Medium Persulfate with Medium Peroxide and Citrate Stabilizer	LL	10/13/11	Water	20.77	4.854	117.61	5.39	308.6	grey brown	strong HC
6. Medium Persulfate with High Peroxide and Citrate Stabilizer	LL	10/13/11	Water	21.05	5.245	173.97	5.64	290.8	grey brown	strong HC

Observations or deviations from method: #5, #6: Many bubbles every second. LL 10/13/2011

METER CALIBRATION

SAMPLE ID	TECH. INITIALS	ANALYSIS DATE	AMBIENT TEMP. °C	MATRIX	pH READINGS		CONDUCTIVITY READING	
Meter Calibration	LL	10/13/11	23.03	Water	pH Buffer Standard 4.00	4.00	Auto Cal Standard 4.49 mS/cm	4.490
Altitude Input Value	738mm		DO READING		pH Buffer Standard 7.00	7.00		
Salinity Input Value	N/A; Satd. Air cal.		%	mg/L	pH Buffer Standard 10.00	10.05		
Meter Model/Type	YSI 556		97.1	8.51				

Lab Supervisor/PM: MMB 11/14/2011
Initial/Date

PTS File No: 41714
Client: JAG Consulting/Antea Group

Project Name: 76 Station, Oakland CA
Project No. 142611117

YSI 556 MULTI-PARAMETER DATA SHEET T = 4 Hours

Sample ID	TECH. INITIALS	DATE	MATRIX	WATER TEMP. °C	CONDUCTIVITY mS/cm	DISSOLVED OXYGEN (DO) mg/l	pH	ORP mV	COLOR	ODOR
4. Control	LL	10/13/11	Water	21.37	0.438	8.89	7.42	190.8	pale yellow	strong HC
5. Medium Persulfate with Medium Peroxide and Citrate Stabilizer	LL	10/13/11	Water	22.06	5.243	88.44	4.59	336.4	milky yellow	strong HC
6. Medium Persulfate with High Peroxide and Citrate Stabilizer	LL	10/13/11	Water	22.25	5.657	127.68	4.89	320.7	milky light yellow	strong HC

Observations or deviations from method: #5. #6: Many bubbles every second. LL 10/13/2011

METER CALIBRATION

SAMPLE ID	TECH. INITIALS	ANALYSIS DATE	AMBIENT TEMP. °C	MATRIX	pH READINGS		CONDUCTIVITY READING	
Meter Calibration	LL	10/13/11	23.03	Water	pH Buffer Standard 4.00	4.00	Auto Cal Standard 4.49 mS/cm	4.490
Altitude Input Value	738mm		DO READING		pH Buffer Standard 7.00	7.00		
Salinity Input Value	N/A; Satd. Air cal.		%	mg/L	pH Buffer Standard 10.00	10.05		
Meter Model/Type	YSI 556		97.1	8.51				

Lab Supervisor/PM: MMB 11/14/2011
Initial/Date

PTS File No: 41714
Client: JAG Consulting/Antea Group

Project Name: 76 Station, Oakland CA
Project No. 142611117

YSI 556 MULTI-PARAMETER DATA SHEET T = 1 Day

Sample ID	TECH. INITIALS	DATE	MATRIX	WATER TEMP. °C	CONDUCTIVITY mS/cm	DISSOLVED OXYGEN (DO) mg/l	pH	ORP mV	COLOR	ODOR
4. Control	LL	10/14/11	Water	22.86	0.457	2.07	7.33	84.3	pale yellow	medium HC
5. Medium Persulfate with Medium Peroxide and Citrate Stabilizer	LL	10/14/11	Water	22.84	6.014	46.79	2.98	411.2	yellowish green	medium HC
6. Medium Persulfate with High Peroxide and Citrate Stabilizer	LL	10/14/11	Water	22.73	6.573	60.08	3.18	394.9	yellowish green	medium HC

Observations or deviations from method: #5, #6: 3-4 bubbles/second. LL 10/14/2011

METER CALIBRATION

SAMPLE ID	TECH. INITIALS	ANALYSIS DATE	AMBIENT TEMP. °C	MATRIX	pH READINGS		CONDUCTIVITY READING	
Meter Calibration	LL	10/14/11	22.81	Water	pH Buffer Standard 4.00	4.00	Auto Cal Standard 4.49 mS/cm	4.490
Altitude Input Value	738mm		DO READING		pH Buffer Standard 7.00	7.00		
Salinity Input Value	N/A; Satd. Air cal.		%	mg/L	pH Buffer Standard 10.00	10.05		
Meter Model/Type	YSI 556		97.1	8.46				

Lab Supervisor/PM: MMB 11/14/2011
Initial/Date

PTS File No: 41714
Client: JAG Consulting/Antea Group

Project Name: 76 Station, Oakland CA
Project No. 142611117

YSI 556 MULTI-PARAMETER DATA SHEET T = 2 Days

Sample ID	TECH. INITIALS	DATE	MATRIX	WATER TEMP. °C	CONDUCTIVITY mS/cm	DISSOLVED OXYGEN (DO) mg/l	pH	ORP mV	COLOR	ODOR
4. Control	LL	10/15/11	Water	23.45	0.457	2.07	7.57	123.6	pale yellow	medium HC
5. Medium Persulfate with Medium Peroxide and Citrate Stabilizer	LL	10/15/11	Water	23.41	6.452	26.62	2.63	426.1	yellowish green	medium sweet HC
6. Medium Persulfate with High Peroxide and Citrate Stabilizer	LL	10/15/11	Water	23.31	7.105	28.42	2.67	412.0	yellowish green	medium sour HC

Observations or deviations from method:

METER CALIBRATION

SAMPLE ID	TECH. INITIALS	ANALYSIS DATE	AMBIENT TEMP. °C	MATRIX	pH READINGS		CONDUCTIVITY READING	
Meter Calibration	LL	10/15/11	23.64	Water	pH Buffer Standard 4.00	4.00	Auto Cal Standard 4.49 mS/cm	4.490
Altitude Input Value	738mm		DO READING		pH Buffer Standard 7.00	7.00		
Salinity Input Value	N/A; Satd. Air cal.		%	mg/L	pH Buffer Standard 10.00	10.03		
Meter Model/Type	YSI 556		97.1	8.34				

Lab Supervisor/PM: MMB 11/14/2011
Initial/Date

PTS File No: 41714
Client: JAG Consulting/Antea Group

Project Name: 76 Station, Oakland CA
Project No. 142611117

YSI 556 MULTI-PARAMETER DATA SHEET T = 4 Days

Sample ID	TECH. INITIALS	DATE	MATRIX	WATER TEMP. °C	CONDUCTIVITY mS/cm	DISSOLVED OXYGEN (DO) mg/l	pH	ORP mV	COLOR	ODOR
4. Control	LL	10/15/11	Water	22.86	0.448	3.79	7.56	195.9	pale yellow	medium HC
5. Medium Persulfate with Medium Peroxide and Citrate Stabilizer	LL	10/15/11	Water	22.81	8.143	30.57	2.16	393.7	yellow	strong sour HC
6. Medium Persulfate with High Peroxide and Citrate Stabilizer	LL	10/15/11	Water	22.59	7.254	25.83	2.62	272.2	yellow	strong sour HC

Observations or deviations from method:

METER CALIBRATION

SAMPLE ID	TECH. INITIALS	ANALYSIS DATE	AMBIENT TEMP. °C	MATRIX	pH READINGS		CONDUCTIVITY READING	
Meter Calibration	LL	10/17/11	22.89	Water	pH Buffer Standard 4.00	4.00	Auto Cal Standard 4.49 mS/cm	4.490
Altitude Input Value	738mm		DO READING		pH Buffer Standard 7.00	7.00		
Salinity Input Value	N/A; Satd. Air cal.		%	mg/L	pH Buffer Standard 10.00	10.02		
Meter Model/Type	YSI 556		97.1	8.54				

Lab Supervisor/PM: MMB 11/14/2011
Initial/Date

PTS File No: 41714
Client: JAG Consulting/Antea Group

Project Name: 76 Station, Oakland CA
Project No. 142611117

YSI 556 MULTI-PARAMETER DATA SHEET T = 7 Days

Sample ID	TECH. INITIALS	DATE	MATRIX	WATER TEMP. °C	CONDUCTIVITY mS/cm	DISSOLVED OXYGEN (DO) mg/l	pH	ORP mV	COLOR	ODOR
4. Control	LL	10/20/11	Water	22.85	0.445	4.79	7.75	141.6	v. pale yellow	medium HC
5. Medium Persulfate with Medium Peroxide and Citrate Stabilizer	LL	10/20/11	Water	22.69	7.593	14.34	2.21	313.0	light yellow	medium sour HC
6. Medium Persulfate with High Peroxide and Citrate Stabilizer	LL	10/20/11	Water	22.53	7.011	14.24	2.74	231.5	light yellow	medium sour HC

Observations or deviations from method:

METER CALIBRATION

SAMPLE ID	TECH. INITIALS	ANALYSIS DATE	AMBIENT TEMP. °C	MATRIX	pH READINGS		CONDUCTIVITY READING	
Meter Calibration	LL	10/20/11	22.73	Water	pH Buffer Standard 4.00	4.00	Auto Cal Standard 4.49 mS/cm	4.490
Altitude Input Value	738mm		DO READING		pH Buffer Standard 7.00	7.00		
Salinity Input Value	N/A; Satd. Air cal.		%	mg/L	pH Buffer Standard 10.00	10.03		
Meter Model/Type	YSI 556		97.1	8.50				

Lab Supervisor/PM: MMB 11/14/2011
Initial/Date

PTS File No: 41714
Client: JAG Consulting/Antea Group

Project Name: 76 Station, Oakland CA
Project No. 142611117

YSI 556 MULTI-PARAMETER DATA SHEET T = 14 Days

Sample ID	TECH. INITIALS	DATE	MATRIX	WATER TEMP. °C	CONDUCTIVITY mS/cm	DISSOLVED OXYGEN (DO) mg/l	pH	ORP mV	COLOR	ODOR
4. Control	LL	10/27/11	Water	22.08	0.437	1.37	7.47	126.1	v. pale yellow	faint HC
5. Medium Persulfate with Medium Peroxide and Citrate Stabilizer	LL	10/27/11	Water	21.92	6.986	5.49	2.52	279.8	light yellow	medium sour HC
6. Medium Persulfate with High Peroxide and Citrate Stabilizer	LL	10/27/11	Water	21.80	6.765	5.19	3.12	207.3	light yellow	medium sour HC

Observations or deviations from method:

METER CALIBRATION

SAMPLE ID	TECH. INITIALS	ANALYSIS DATE	AMBIENT TEMP. °C	MATRIX	pH READINGS		CONDUCTIVITY READING	
Meter Calibration	LL	10/27/2011	21.98	Water	pH Buffer Standard 4.00	4.00	Auto Cal Standard 4.49 mS/cm	4.490
Altitude Input Value	738mm		DO READING		pH Buffer Standard 7.00	7.00		
Salinity Input Value	N/A; Satd. Air cal.		%	mg/L	pH Buffer Standard 10.00	10.02		
Meter Model/Type	YSI 556		97.1	8.48				

Lab Supervisor/PM: MMB 11/14/2011
Initial/Date

PTS File No: 41714
Client: JAG Consulting/Antea Group

Project Name: 76 Station, Oakland CA
Project No. 142611117

YSI 556 MULTI-PARAMETER DATA SHEET T = 28 Days

Sample ID	TECH. INITIALS	DATE	MATRIX	WATER TEMP. °C	CONDUCTIVITY mS/cm	DISSOLVED OXYGEN (DO) mg/l	pH	ORP mV	COLOR	ODOR
4. Control	LL	11/10/11	Water	21.65	0.417	2.92	8.04	184.2	light yellow	v. faint HC
5. Medium Persulfate with Medium Peroxide and Citrate Stabilizer	LL	11/10/11	Water	21.50	6.384	2.82	4.14	237.7	light yellow	strong sour HC
6. Medium Persulfate with High Peroxide and Citrate Stabilizer	LL	11/10/11	Water	21.41	6.493	4.39	4.77	181.2	light yellow	strong sour HC

Observations or deviations from method:

METER CALIBRATION

SAMPLE ID	TECH. INITIALS	ANALYSIS DATE	AMBIENT TEMP. °C	MATRIX	pH READINGS		CONDUCTIVITY READING	
Meter Calibration	LL	11/10/2011	21.71	Water	pH Buffer Standard 4.00	3.99	Auto Cal Standard 4.49 mS/cm	4.490
Altitude Input Value	738mm		DO READING		pH Buffer Standard 7.00	7.00		
Salinity Input Value	N/A; Satd. Air cal.		%	mg/L	pH Buffer Standard 10.00	10.05		
Meter Model/Type	YSI 556		97.1	8.54				

Lab Supervisor/PM: MMB 11/14/2011
Initial/Date

PTS File No: 41714
Client: JAG Consulting/Antea Group

Project Name: 76 Station, Oakland CA
Project No. 142611117

RESIDUAL PEROXIDE TEST T = 2 Days

LABORATORY PROCEDURE

Dip the 0-400 peroxide test strip into a 10 ml aliquot of the sample liquid for 1 second and shake off excess liquid
After 30 seconds, compare the color of the test strip to the color chart provided by the manufacturer
If concentration of residual peroxide is below 100 ppm, use the 0-100ppm hydrogen peroxide test strips
Dip the 0-100 peroxide test strip into a fresh 10 ml aliquot of the sample liquid for 1 second and shake off excess liquid
After 10 seconds, compare the color of the test strip to the color chart provided by the manufacturer

Sample ID	TECH. INITIALS	DATE	TIME	0-400 ppm PEROXIDE TEST STRIP COLOR	PEROXIDE CONCENTRATION, ppm	0-100 ppm PEROXIDE TEST STRIP COLOR	PEROXIDE CONCENTRATION, ppm
5. Medium Persulfate with Medium Peroxide and Citrate Stabilizer	LL	10/15/11	1152	diluted 1:9 (sample:water) purple	2000	N/A	N/A
6. Medium Persulfate with High Peroxide and Citrate Stabilizer	LL	10/15/11	1153	diluted 1:9 (sample:water) purple	2000	N/A	N/A

Observations or deviations from method: #5, #6: diluted 1:9 (sample:water) LL 10/15/11

PTS File No: 41714
Client: JAG Consulting/Antea Group

Project Name: 76 Station, Oakland CA
Project No. 142611117

RESIDUAL PEROXIDE TEST T = 7 Days

LABORATORY PROCEDURE

Dip the 0-400 peroxide test strip into a 10 ml aliquot of the sample liquid for 1 second and shake off excess liquid
After 30 seconds, compare the color of the test strip to the color chart provided by the manufacturer
If concentration of residual peroxide is below 100 ppm, use the 0-100ppm hydrogen peroxide test strips
Dip the 0-100 peroxide test strip into a fresh 10 ml aliquot of the sample liquid for 1 second and shake off excess liquid
After 10 seconds, compare the color of the test strip to the color chart provided by the manufacturer

Sample ID	TECH. INITIALS	DATE	TIME	0-400 ppm PEROXIDE TEST STRIP COLOR	PEROXIDE CONCENTRATION, ppm	0-100 ppm PEROXIDE TEST STRIP COLOR	PEROXIDE CONCENTRATION, ppm
5. Medium Persulfate with Medium Peroxide and Citrate Stabilizer	LL	10/20/11	1400	N/A	N/A	pale green	1
6. Medium Persulfate with High Peroxide and Citrate Stabilizer	LL	10/20/11	1410	N/A	N/A	ivory	0

Observations or deviations from method: _____

PTS File No: 41714
Client: JAG Consulting/Antea Group

Project Name: 76 Station, Oakland CA
Project No. 142611117

RESIDUAL PEROXIDE TEST T = 14 Days

LABORATORY PROCEDURE

Dip the 0-400 peroxide test strip into a 10 ml aliquot of the sample liquid for 1 second and shake off excess liquid
After 30 seconds, compare the color of the test strip to the color chart provided by the manufacturer
If concentration of residual peroxide is below 100 ppm, use the 0-100ppm hydrogen peroxide test strips
Dip the 0-100 peroxide test strip into a fresh 10 ml aliquot of the sample liquid for 1 second and shake off excess liquid
After 10 seconds, compare the color of the test strip to the color chart provided by the manufacturer

Sample ID	TECH. INITIALS	DATE	TIME	0-400 ppm PEROXIDE TEST STRIP COLOR	PEROXIDE CONCENTRATION, ppm	0-100 ppm PEROXIDE TEST STRIP COLOR	PEROXIDE CONCENTRATION, ppm
5. Medium Persulfate with Medium Peroxide and Citrate Stabilizer	LL	10/27/11	1156	N/A	N/A	ivory	0
6. Medium Persulfate with High Peroxide and Citrate Stabilizer	LL	10/27/11	1159	N/A	N/A	ivory	0

Observations or deviations from method:

PTS File No: 41714
Client: JAG Consulting/Antea Group

Project Name: 76 Station, Oakland CA
Project No. 142611117

RESIDUAL PEROXIDE TEST T = 28 Days

LABORATORY PROCEDURE

Dip the 0-400 peroxide test strip into a 10 ml aliquot of the sample liquid for 1 second and shake off excess liquid
After 30 seconds, compare the color of the test strip to the color chart provided by the manufacturer
If concentration of residual peroxide is below 100 ppm, use the 0-100ppm hydrogen peroxide test strips
Dip the 0-100 peroxide test strip into a fresh 10 ml aliquot of the sample liquid for 1 second and shake off excess liquid
After 10 seconds, compare the color of the test strip to the color chart provided by the manufacturer

Sample ID	TECH. INITIALS	DATE	TIME	0-400 ppm PEROXIDE TEST STRIP COLOR	PEROXIDE CONCENTRATION, ppm	0-100 ppm PEROXIDE TEST STRIP COLOR	PEROXIDE CONCENTRATION, ppm
5. Medium Persulfate with Medium Peroxide and Citrate Stabilizer	LL	11/10/11	932	N/A	N/A	ivory	0
6. Medium Persulfate with High Peroxide and Citrate Stabilizer	LL	11/10/11	937	N/A	N/A	ivory	0

Observations or deviations from method:

JAG/PTS Labs

41714

CHAIN-OF-CUSTODY / Analytical Request Document

The Chain-of-Custody is a LEGAL DOCUMENT. All relevant fields must be completed accurately.

Page : 1 Of 0

Section A Required Client Information:	Section B Required Project Information:	Section C Invoice Information:
Company: Antea Group	Report To: Doug.umland@anteagroup.com	Attention: Douglas Umland
Address: 312 Piercy Road	Copy To: steve.moringer@anteagroup.com	Company Name: Antea Group
San Jose, CA 95138		Address: 312 Piercy Rd, San Jose, CA
Email To: doug.umland@anteagroup.com	Purchase Order No.: 142611117	Pace Profile #:
Phone: (408) 826-1874 Fax:	Client Project ID: 142611117	Pace Project Manager:
Requested Due Date/TAT: 10 Day (Default)	Container Order Number:	State Profile #:

Regulatory Agency

State / Location

ITEM#	SAMPLE ID (One Character per box. (A-Z, 0-9 / , -) Sample Ids must be unique)	MATRIX CODE	MATRIX CODE (see valid codes to left)	SAMPLE TYPE (G=GRAB C=COMP)	COLLECTED START DATE	COLLECTED START TIME	COLLECTED END DATE	COLLECTED END TIME	SAMPLE TEMP AT COLLECTION	# OF CONTAINERS	Preservatives: Unpreserved	H2SO4	HNO3	HCl	NaOH	Na2S2O3	Methanol	Other	Requested Analysis Filtered (Y/N) Y/N	Analyses Test: GRO (CA-LUFT)	BENZEN, MTBE,1	TBA (8260B)	Metals(Fe2+Fe3+)	chromium(hexavalent)	trivalent) selenium,	arsenic, barium,	cadmium, copper	and lead	TOD	Residual Chlorine (Y/N)	
	SAMPLE ID	FIELD POINT NAME																												
1	SOIL-AS-1@5'	AS-1	SL	G	10/4/11		10/4/11	10:35			X									X	X	X	X	X	X	X	X			PID 3.3 ppm
2	SOIL-AS-1@7.5'	AS-1						10:40			X									X	X	X	X	X	X	X	X			1.3 ppm
3	SOIL-AS-1@9'	AS-1						10:42			X									X	X	X	X	X	X	X	X			52.5 ppm
4	SOIL-AS-1@10.5'	AS-1						10:53			X									X	X	X	X	X	X	X	X			68 ppm
5	SOIL-AS1@13'	AS-1						10:55			X									X	X	X	X	X	X	X	X			30.5 ppm
6	SOIL-AS1@15'	AS-1						11:17			X									X	X	X	X	X	X	X	X			5.2 ppm
7	SOIL-AS1@16.5'	AS-1						11:20			X									X	X	X	X	X	X	X	X			237 ppm
8	SOIL-AS1@18.5'	AS-1						11:22			X									X	X	X	X	X	X	X	X			3.4 ppm
9	SOIL-AS-1@20'	AS-1						11:28			X									X	X	X	X	X	X	X	X			73.0 ppm
10	SOIL-AS-1@22.5'	AS-1						11:30			X									X	X	X	X	X	X	X	X			4.6 ppm
11	SOIL-AS-1@24'	AS-1						10:39			X									X	X	X	X	X	X	X	X			NA
12	SOIL-AS-1@25'	AS-1						10:45			X									X	X	X	X	X	X	X	X			779 ppm

ADDITIONAL COMMENTS	RELINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME	SAMPLE CONDITIONS			
				Andy / PTS Laboratories	10/7/11	11:15	32°F	Y	NA	Y
							TEMP in C	Received on Ice (Y/N)	Custody Sealed Cooler (Y/N)	Samples Intact (Y/N)

SAMPLER NAME AND SIGNATURE

PRINT Name of SAMPLER: Sara Sichley

SIGNATURE of SAMPLER: Sara Sichley

DATE Signed: 10/6/11

JAG/PTS Labs

41714

CHAIN-OF-CUSTODY / Analytical Request Document

The Chain-of-Custody is a LEGAL DOCUMENT. All relevant fields must be completed accurately.

Page : 1 Of 2

Section A Required Client Information:		Section B Required Project Information:		Section C Invoice Information:	
Company:	Antea Group	Report To:	Doug.Umland@anteagroup.com	Attention:	Douglas Umland
Address:	312 Piercy Road	Copy To:	Steve.merringer@anteagroup.com	Company Name:	Antea group
	San Jose, CA 95138	Purchase Order No.	14261111-7	Address:	312 Piercy Rd, San Jose, CA
Email To:	doug.umland@anteagroup.com	Client Project ID:	14261111-7	Pace Quote Reference:	
Phone:	(408) 526-1874 Fax:	Container Order Number:		Pace Project Manager:	
Requested Due Date/TAT:	10 Day (Default)			Pace Profile #:	

Regulatory Agency

State / Location

Requested Analysis Filtered (Y/N)

ITEM#	SAMPLE ID (One Character per box. (A-Z, 0-9 / , -) Sample Ids must be unique)	FIELD POINT NAME	MATRIX CODE (see valid codes to left)	SAMPLE TYPE (G=GRAB C=COMP)	COLLECTED START DATE	COLLECTED START TIME	COLLECTED END DATE	COLLECTED END TIME	SAMPLE TEMP AT COLLECTION	# OF CONTAINERS	Preservatives: Unpreserved	H2SO4	HNO3	HCl	NaOH	Na2S2O3	Methanol	Other	Y/N	Analyses Test: 8260 (CA-LUFT)	Benzene, MTBE + BTEX (8260B)	Metals (Fe, Fe 2+, Fe 3+, Chromium (hexavalent), Selenium, Arsenic, Barium, Cadmium, Copper, and Lead TDD)	Residual Chlorine (Y/N)	PID
1	SOIL-AS-1@26.5'	AS-1	SL	G	10/4		10/4	10:50		X										X	X	X	X	X	27.9 ppm
2	SOIL-AS-1@29.0'	AS-1						10:57		X										X	X	X	X	X	57.1 ppm
3	SOIL-AS-1@30.0'	AS-1						11:00		X										X	X	X	X	X	45.9 ppm
4	SOIL-AS-1@33'	AS-1						11:10		X										X	X	X	X	X	1.8 ppm
5																									
6	SVE-1@ 5'	SVE-1	SV	G	10/6		10/6	11:52		X										X	X	X	X	X	1.2 ppm
7	SVE-1@ 10'	SVE-1						11:57		X										X	X	X	X	X	1.0 ppm
8	SVE-1@ 15'	SVE-1						12:08		X										X	X	X	X	X	4.3 ppm
9	SVE-1@ 20'	SVE-1						12:14		X										X	X	X	X	X	2495 ppm
10	SVE-1@ 23'	SVE-1						12:16		X										X	X	X	X	X	3097 ppm
11																									
12	EX-1	EX-1	WT	30	10/6		10/6	1200		X										X	X	X	X	X	

ADDITIONAL COMMENTS	RELINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME	SAMPLE CONDITIONS			
Use SVE Samples first; then if more soil is needed, use AS samples as needed				for PTS Labs Inc	10/7/11	11:15	32°F	Y	N/A	X

SAMPLER NAME AND SIGNATURE			TEMP in C	Received on Ice (Y/N)	Custody Sealed Cooler (Y/N)	Samples Intact (Y/N)
PRINT Name of SAMPLER:	Sara Sichler					
SIGNATURE of SAMPLER:	Sara Sichler	DATE Signed: 10/6/11				

Calscience Environmental Laboratories, Inc.
7440 LINCOLN WAY
GARDEN GROVE, CA 92841-1427
TEL: (714) 895-5494 . FAX: (714) 894-7501

CHAIN OF CUSTODY RECORD

DATE: 10/13/11

PAGE: 1 OF 2

LABORATORY CLIENT: PTS Laboratories, Inc.

ADDRESS: 8100 Secura Way

CITY: Santa Fe Springs STATE: CA ZIP: 90670

TEL: (562) 347-2500 FAX: (562) 907-3610 E-MAIL: mmbrady@ptslabs.com

CLIENT PROJECT NAME / NUMBER: 76 Station, Oakland CA/ PTS: 41714

P.O. NO.:

PROJECT CONTACT: Gary Cronk (714) 241-7722 gary@jagconsultinggroup.com

LAB CONTACT OR QUOTE NO.:

SAMPLER(S): (SIGNATURE) JL

LAB USE ONLY

TURNAROUND TIME:
☐ SAME DAY ☐ 24 HR ☐ 48 HR ☐ 72 HR ☐ 5 DAYS ☐ 10 DAYS

SPECIAL REQUIREMENTS (ADDITIONAL COSTS MAY APPLY)
☐ RWQCB REPORTING ☐ ARCHIVE SAMPLES UNTIL ___ / ___ / ___

SPECIAL INSTRUCTIONS:
Invoice to JAG Consulting Group, Inc.

REQUESTED ANALYSIS

LAB USE ONLY	SAMPLE ID	LOCATION / DESCRIPTION	SAMPLING DATE	SAMPLING TIME	MATRIX	NO. OF CONT.	Please list tests required	VOC Compounds and Oxygenates by EPA Method 8260B (soil and water)	TPH as gasoline by CA LUFT (soil and water)
	0. Baseline		10/13/2011	1310	Water	3		x	
	0. Baseline		10/13/2011	1305	Soil	1		x	

Relinquished by: (Signature) PTS Labs Inc 10/13/11 1520	Received by: (Signature) OEL	Date: 10/13/11	Time: 1520
Relinquished by: (Signature)	Received by: (Signature)	Date:	Time:
Relinquished by: (Signature)	Received by: (Signature)	Date:	Time:

02/24/10 Revision

Calscience Environmental Laboratories, Inc.
7440 LINCOLN WAY
GARDEN GROVE, CA 92841-1427
TEL: (714) 895-5494 . FAX: (714) 894-7501

CHAIN OF CUSTODY RECORD

DATE: 10/13/11

PAGE: 2 OF 2

LABORATORY CLIENT: PTS Laboratories, Inc.

ADDRESS: 8100 Secura Way

CITY: Santa Fe Springs STATE: CA ZIP: 90670

TEL: (562) 347-2500 FAX: (562) 907-3610 E-MAIL: mmbrady@ptslabs.com

CLIENT PROJECT NAME / NUMBER: 76 Station, Oakland CA/ PTS: 41714

P.O. NO.:

PROJECT CONTACT: Gary Cronk (714) 241-7722 gary@jagconsultinggroup.com

LAB CONTACT OR QUOTE NO.:

SAMPLER(S): (SIGNATURE) JL

LAB USE ONLY

TURNAROUND TIME:
☐ SAME DAY ☐ 24 HR ☐ 48 HR ☐ 72 HR ☐ 5 DAYS ☐ 10 DAYS

SPECIAL REQUIREMENTS (ADDITIONAL COSTS MAY APPLY)
☐ RWQCB REPORTING ☐ ARCHIVE SAMPLES UNTIL ___ / ___ / ___

SPECIAL INSTRUCTIONS:
Invoice to JAG Consulting Group, Inc.

REQUESTED ANALYSIS

LAB USE ONLY	SAMPLE ID	LOCATION / DESCRIPTION	SAMPLING DATE	SAMPLING TIME	MATRIX	NO. OF CONT.	Please list tests required	VOC Compounds and Oxygen ates by EPA Method 8260B (soil and water)	TPH as gasoline by CA LUFT (soil and water)
	0. Baseline		10/13/2011	1310	Water	3			x
	0. Baseline		10/13/2011	1305	Soil	1			x

Relinquished by: (Signature) PTS Labs Inc	10/13/11 1520	Received by: (Signature) CEL	Date: 10/13/11 Time: 1520
Relinquished by: (Signature)		Received by: (Signature)	Date: Time:
Relinquished by: (Signature)		Received by: (Signature)	Date: Time:

Calscience Environmental Laboratories, Inc.
7440 LINCOLN WAY
GARDEN GROVE, CA 92841-1427
TEL: (714) 895-5494 . FAX: (714) 894-7501

CHAIN OF CUSTODY RECORD

DATE: 11/10/11

PAGE: 1 OF 8

LABORATORY CLIENT: PTS Laboratories, Inc.

ADDRESS: 8100 Secura Way

CITY: Santa Fe Springs STATE: CA ZIP: 90670

TEL: (562) 347-2500 FAX: (562) 907-3610 E-MAIL: mmbrady@ptslabs.com

CLIENT PROJECT NAME / NUMBER: 76 Station, Oakland CA 142611117; PTS Job # 41714

P.O. NO.:

PROJECT CONTACT: Gary Cronk (714) 241-7722 gary@jagconsultinggroup.com

LAB CONTACT OR QUOTE NO.:

SAMPLER(S): (SIGNATURE) JL /LL

LAB USE ONLY

TURNAROUND TIME:
☐ SAME DAY ☐ 24 HR ☐ 48 HR ☐ 72 HR ☐ 5 DAYS ☐ 10 DAYS

SPECIAL REQUIREMENTS (ADDITIONAL COSTS MAY APPLY)
☐ RWQCB REPORTING ☐ ARCHIVE SAMPLES UNTIL ___/___/___

SPECIAL INSTRUCTIONS:
Invoice to JAG Consulting Group, Inc.

For Dissolved Manganese by EPA 6010B, filter and preserve

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	1. Control		11/10/2011	1007	Water	3		X					
	2. Medium Persulfate with Medium Caustic		11/10/2011	1032	Water	3		X					
	3. High Persulfate with High Caustic		11/10/2011	1050	Water	3		X					
	4. Control		11/10/2011	1010	Water	3		X					
	5. Medium Persulfate with Medium Peroxide and Citrate Stabilizer		11/10/2011	1105	Water	3		X					
	6. Medium Persulfate with High Peroxide and Citrate Stabilizer		11/10/2011	1120	Water	3		X					

Bill to: JAG Consulting

Relinquished by: (Signature)	Received by: (Signature)	Date:	Time:
JL /LL PTS 11/10/11 1515		11/10/11	1515
Relinquished by: (Signature)	Received by: (Signature)	Date:	Time:
Relinquished by: (Signature)	Received by: (Signature)	Date:	Time:

02/24/10 Revision

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	1. Control		11/10/2011	1044	Soil	1		X					
	2. Medium Persulfate with Medium Caustic		11/10/2011	1131	Soil	1		X					
	3. High Persulfate with High Caustic		11/10/2011	1134	Soil	1		X					
	4. Control		11/10/2011	1045	Soil	1		X					
	5. Medium Persulfate with Medium Peroxide and Citrate Stabilizer		11/10/2011	1305	Soil	1		X					
	6. Medium Persulfate with High Peroxide and Citrate Stabilizer		11/10/2011	1306	Soil	1		X					

Bill to: JAG Consulting

Relinquished by: (Signature) PTS 11/10/11 1515	Received by: (Signature)	Date: 11/10/11	Time: 1515
Relinquished by: (Signature)	Received by: (Signature)	Date:	Time:
Relinquished by: (Signature)	Received by: (Signature)	Date:	Time:

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SAMPLER(S): (SIGNATURE) JL /LL

LAB USE ONLY:

TURNAROUND TIME:

☐ SAME DAY ☐ 24 HR ☐ 48 HR ☐ 72 HR ☐ 5 DAYS ☐ 10 DAYS

SPECIAL REQUIREMENTS (ADDITIONAL COSTS MAY APPLY)

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SPECIAL INSTRUCTIONS:

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	2. Medium Persulfate with Medium Caustic		11/10/2011	1032	Water	3			X				
	3. High Persulfate with High Caustic		11/10/2011	1050	Water	3			X				
	4. Control		11/10/2011	1010	Water	3			X				
	5. Medium Persulfate with Medium Peroxide and Citrate Stabilizer		11/10/2011	1105	Water	3			X				
	6. Medium Persulfate with High Peroxide and Citrate Stabilizer		11/10/2011	1120	Water	3			X				

Bill to: JAG Consulting

Relinquished by: (Signature)	Received by: (Signature)	Date:	Time:
Jon JL PTS 11/10/11 1515	Terran	11/10/11	1515
Relinquished by: (Signature)	Received by: (Signature)	Date:	Time:
Relinquished by: (Signature)	Received by: (Signature)	Date:	Time:

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	1. Control		11/10/2011	1044	Soil	1			X				
	2. Medium Persulfate with Medium Caustic		11/10/2011	1131	Soil	1			X				
	3. High Persulfate with High Caustic		11/10/2011	1134	Soil	1			X				
	4. Control		11/10/2011	1045	Soil	1			X				
	5. Medium Persulfate with Medium Peroxide and Citrate Stabilizer		11/10/2011	1305	Soil	1			X				
	6. Medium Persulfate with High Peroxide and Citrate Stabilizer		11/10/2011	1306	Soil	1			X				

Bill to: JAG Consulting

Relinquished by: (Signature) PTS 11/10/11 1515	Received by: (Signature)	Date: 11/10/11	Time: 15:15
Relinquished by: (Signature)	Received by: (Signature)	Date:	Time:
Relinquished by: (Signature)	Received by: (Signature)	Date:	Time:

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LAB CONTACT OR QUOTE NO.:

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	2. Medium Persulfate with Medium Caustic		11/10/2011	1032	water	1				X			
	3. High Persulfate with High Caustic		11/10/2011	1050	water	1				X			
	5. Medium Persulfate with Medium Peroxide and Citrate Stabilizer		11/10/2011	1105	water	1				X			
	6. Medium Persulfate with High Peroxide and Citrate Stabilizer		11/10/2011	1120	water	1				X			

Bill to: JAG Consulting

Relinquished by: (Signature) JL PTS 11/10/11 1515	Received by: (Signature)	Date: 11/10/11	Time: 1515
Relinquished by: (Signature)	Received by: (Signature)	Date:	Time:
Relinquished by: (Signature)	Received by: (Signature)	Date:	Time:

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	3. High Persulfate with High Caustic		11/10/2011	1050	water	1					X		
	5. Medium Persulfate with Medium Peroxide and Citrate Stabilizer		11/10/2011	1105	water	1					X		
	6. Medium Persulfate with High Peroxide and Citrate Stabilizer		11/10/2011	1120	water	1					X		
	Bill to: JAG Consulting												

Relinquished by: (Signature) Andy PTS 11/10/11 1515	Received by: (Signature) James Yang	Date: 11/10/11	Time: 1515
Relinquished by: (Signature)	Received by: (Signature)	Date:	Time:
Relinquished by: (Signature)	Received by: (Signature)	Date:	Time:

02/24/10 Revision

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	6. Medium Persulfate with High Peroxide and Citrate Stabilizer		11/10/2011	1120	water	1					X	
	Bill to: JAG Consulting											

Relinquished by: (Signature)	Received by: (Signature)	Date:	Time:
Andy R PTS 11/10/11 1515	Trevor Jones	11/10/11	1515
Relinquished by: (Signature)	Received by: (Signature)	Date:	Time:
Relinquished by: (Signature)	Received by: (Signature)	Date:	Time:

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	3. High Persulfate with High Caustic		11/10/2011	1050	water	1							X
	5. Medium Persulfate with Medium Peroxide and Citrate Stabilizer		11/10/2011	1105	water	1							X
	6. Medium Persulfate with High Peroxide and Citrate Stabilizer		11/10/2011	1120	water	1							X

Bill to: JAG Consulting

Relinquished by: (Signature)		Received by: (Signature)		Date:	Time:
[signature] PTS	11/10/11 1515	[signature]		11/10/11	1515
Relinquished by: (Signature)		Received by: (Signature)		Date:	Time:
Relinquished by: (Signature)		Received by: (Signature)		Date:	Time:

02/24/10 Revision

Appendix H

Non-Hazardous Waste Manifests

Manifest

SOIL SAFE OF CA – TPST
Non-Hazardous Soils

↓ Manifest # ↓

Date of Shipment:	Responsible for Payment:	Transport Truck #:	Facility #:	Approval Number:	Load #
/ /		394/732	A07	38287	001

Generator and/or Consultant

Generator's Name and Billing Address:	Generator's Phone #: / Person to Contact: / FAX#:	Customer Account Number
POWER QUALITY AND ELECTRICAL SYSTEMS, INC. 7210 BANCROFT AVENUE OAKLAND, CA 94605	510-553-0109	

Consultant's Name and Billing Address:	Consultant's Phone #: / Person to Contact: / FAX#:	Customer Account Number

Generation Site (Transport from): *(name & address)*	Site Phone #: / Person to Contact: / FAX#:
76 STATION NO. 2811117 7210 BANCROFT AVENUE OAKLAND, CA 94605	

Designated Facility (Transport to): *(name & address)*	Facility Phone #: / Person to Contact: / FAX#:
SOIL SAFE 12328 HIBISCUS AVENUE ADELANTO, CA 92301	(800) 662-8001 DELLENA JEFFREY (760) 246-8004

Transporter Name and Mailing Address:	Transporter's Phone #: / Person to Contact: / FAX#:	Customer Account Number
BELSHIRE 25971 TOWNE CENTRE DRIVE FOOTHILL RANCH, CA 92610 BESI: 198732	949-460-5200 LARRY MOOTHART 949-460-5210	CAR000183913 450647

Description of Soil	Moisture Content	Contaminated by:	Approx. Qty:	Description of Delivery	Gross Weight	Tare Weight	Net Weight
Sand ☐ Organic ☐ Clay ☐ Other ☐	0 - 10% ☐ 10 - 20% ☐ 20% - over ☐	Gas ☐ Diesel ☐ Other ☐	6 dms		40520	37000	3520
Sand ☐ Organic ☐ Clay ☐ Other ☐	0 - 10% ☐ 10 - 20% ☐ 20% - over ☐	Gas ☐ Diesel ☐ Other ☐					1:76

List any exception to items listed above: Scale Ticket # 71575

Generator's and/or consultant's certification: I/We certify that the soil referenced herein is taken entirely from those soils descried in the Soil Data Sheet completed and certified by me/us for the Generation Site shown above and nothing has been added or done to such soil that would alter it in any way.

Print or Type Name: Generator ☐ Consultant ☑	Signature and date:	Month	Day	Year
Sara Sichley for Antea Group		11	10	11

Transporter

Transporter's certification: I/We acknowledge receipt of the soil referenced above and certify that such soil is being delivered in exactly the same condition as when received. I/We further certify that the soil is being directly transported from the Generation Site to the Designated Facility without off-loading, adding to, subtracting from or in any way delaying delivery to such site.

Print or Type Name:	Signature and date:	Month	Day	Year
Kevin Dunleop		11	22	11

Recycling Facility

Discrepancies:
26/1117
70415

Recycling Facility certifies the receipt of the soil covered by this manifest except as noted above:

Print or Type Name:	Signature and date:
D. JEFFREY/J. PROVANSAL	12/12/11

Please print or type.

TRANSPORTER COPY

NO. 696092 27

NON-HAZARDOUS WASTE DATA FORM

BEST # 198732

GENERATOR

Generator's Name and Mailing Address
POWER QUALITY AND ELECTRICAL SYSTEMS, INC.
7210 BANCROFT AVENUE
OAKLAND, CA 94605

Generator's Site Address (if different than mailing address)
76 STATION NO. 2611117
7210 BANCROFT AVENUE
OAKLAND, CA 94605

Generator's Phone: 510-553-0109

Container type removed from site: ☒ Drums ☐ Vacuum Truck ☐ Roll-off Truck ☐ Dump Truck ☐ Other

Quantity 2

Container type transported to receiving facility: ☐ Drums ☒ Vacuum Truck ☐ Roll-off Truck ☐ Dump Truck ☐ Other

Quantity 1 Volume 110 gallons

WASTE DESCRIPTION NON-HAZARDOUS WATER

GENERATING PROCESS WELL PURGING / DECON WATER

COMPONENTS OF WASTE	PPM	%	COMPONENTS OF WASTE	PPM	%
1. WATER		99-100%	3.		
2. TPH		<1%	4.		

Waste Profile _____ PROPERTIES: pH 7-10 ☐ SOLID ☒ LIQUID ☐ SLUDGE ☐ SLURRY ☐ OTHER _____

HANDLING INSTRUCTIONS: _____

Generator Printed/Typed Name: Sara Sichley for Antea Group
Signature: Sara Sichley
Month 11 Day 10 Year 11

The Generator certifies that the waste as described is 100% non-hazardous

TRANSPORTER

Transporter 1 Company Name: BELSHIRE
Phone#: 949-460-5200

Transporter 1 Printed/Typed Name: Larry Mothart
Signature:
Month 11 Day 22 Year 11

Transporter Acknowledgment of Receipt of Materials

Transporter 2 Company Name: NIETO & SONS TRUCKING, INC.
Phone#: 714-990-6855

Transporter 2 Printed/Typed Name: Jeff Wyatt
Signature:
Month 12 Day 7 Year 11

Transporter Acknowledgment of Receipt of Materials

RECEIVING FACILITY

Designated Facility Name and Site Address
DEMENNO KERDOON
2000 N. ALAMEDA ST.
COMPTON, CA 90222
2611117
704824

Phone#: 310-537-7100

Printed/Typed Name:
Signature:
Month 12 Day 07 Year 11

Designated Facility Owner or Operator: Certification of receipt of materials covered by this data form.

Appendix I

Vironex's Hydraulic Profiling Tool Boring Logs (March 13, 2012)

VIRONEX
1641 Challenge DR
Concord, CA 94520
P:(925) 849-6970
F:(925) 849-6973
www.vironex.com

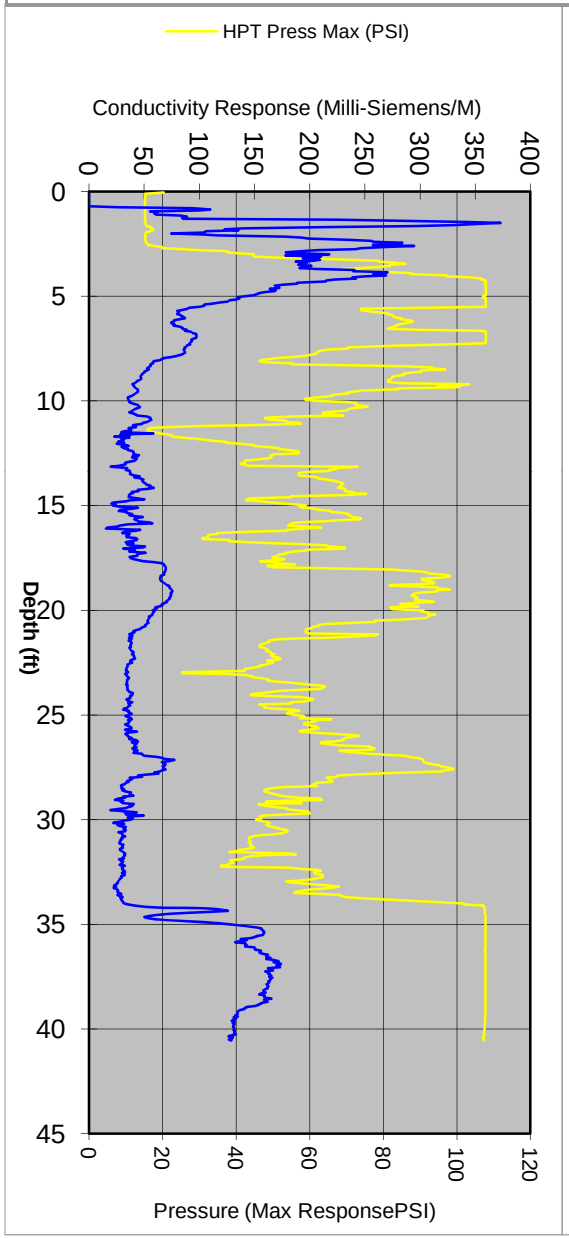
Boring Name: HPT-1

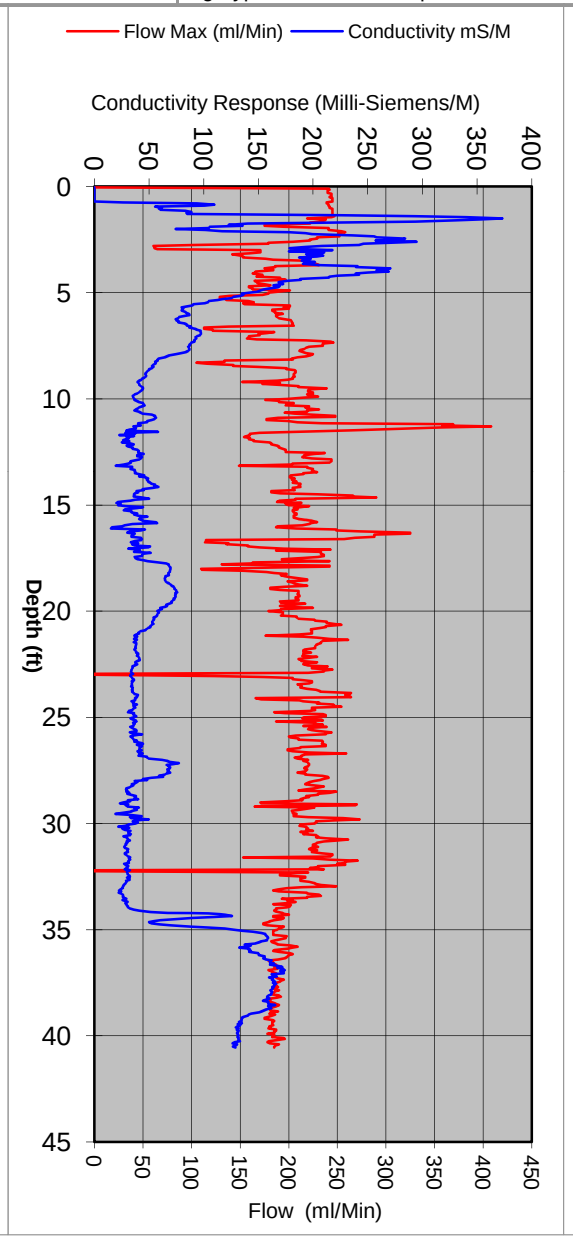
Total Depth (ft): 40.55

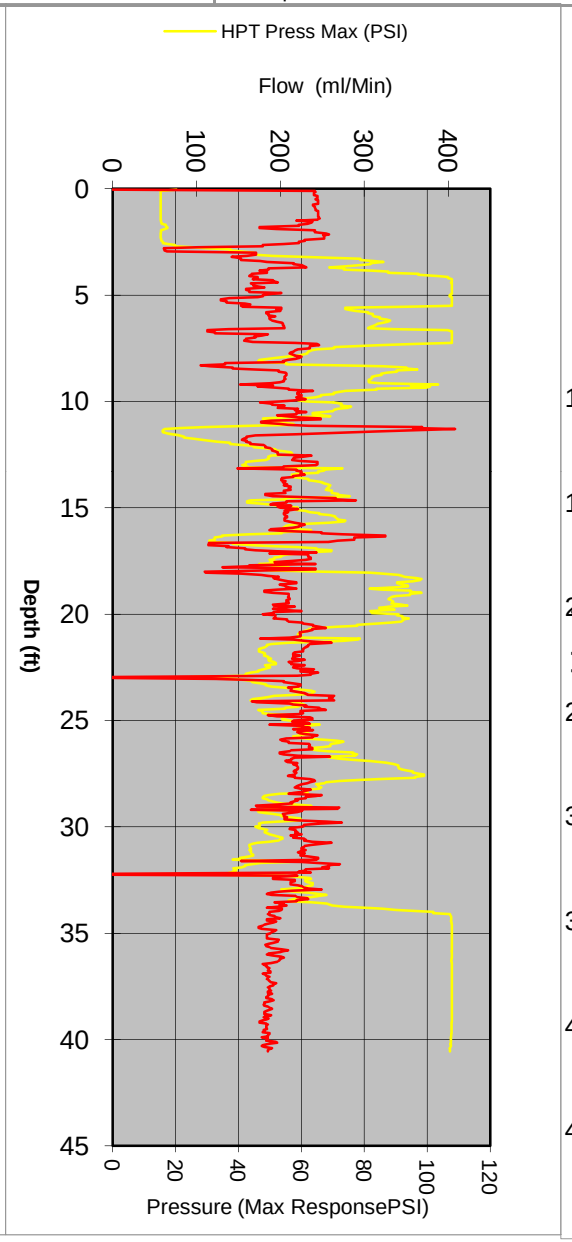
Notes: Hand auger to 5 feet bgs.

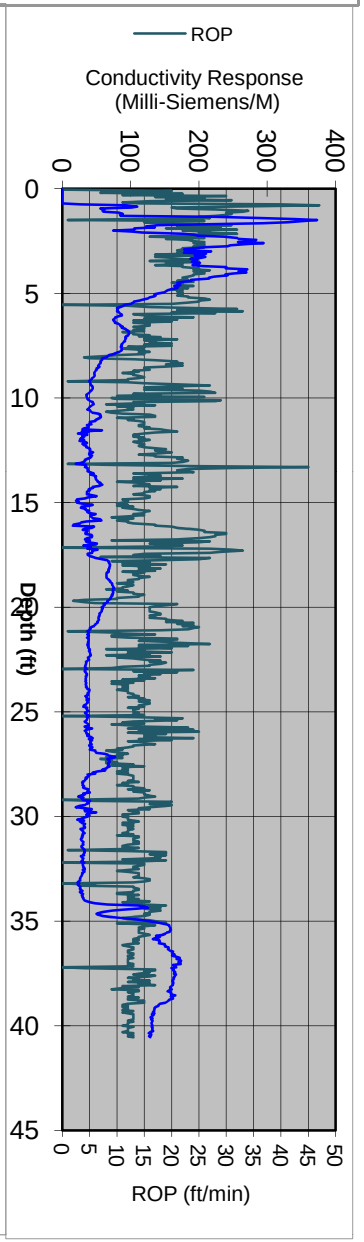
GW Depth (ft): 0
Depth of GW Provided by Client

Job Information		MIP Sampling Information			
Client Company:	???	Trunkline Length:	150	Start Boring Time:	Tue Mar 13 2012 08:42
Project Name:	ANTEA 76 Station	Probe Type:	0	End Boring Time:	Tue Mar 13 2012 10:19
Site Address:	Bancroft RD, Oakland	Rig Type:	Geoprobe 6600	HPT Specialist:	Jeff Paul









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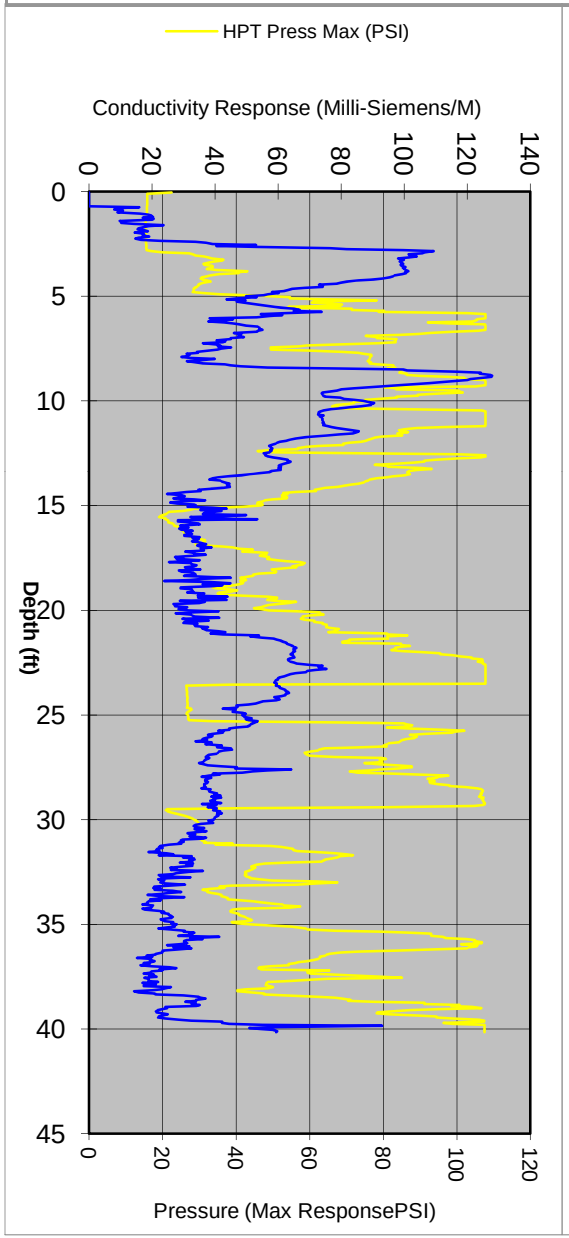
Boring Name: HPT-2

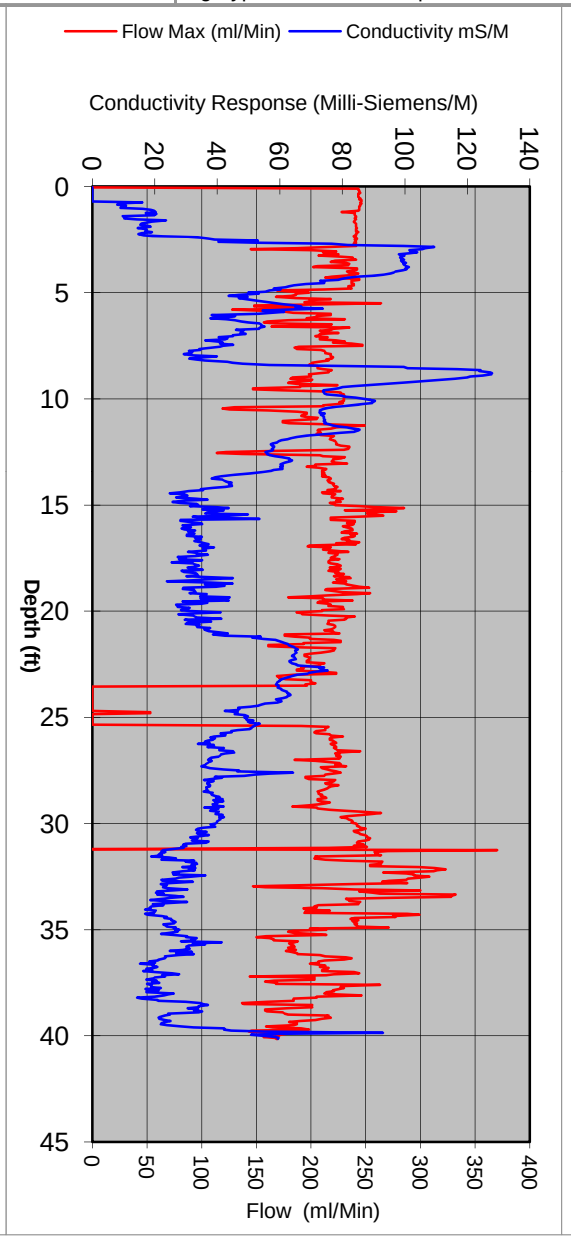
Total Depth (ft): 40.15

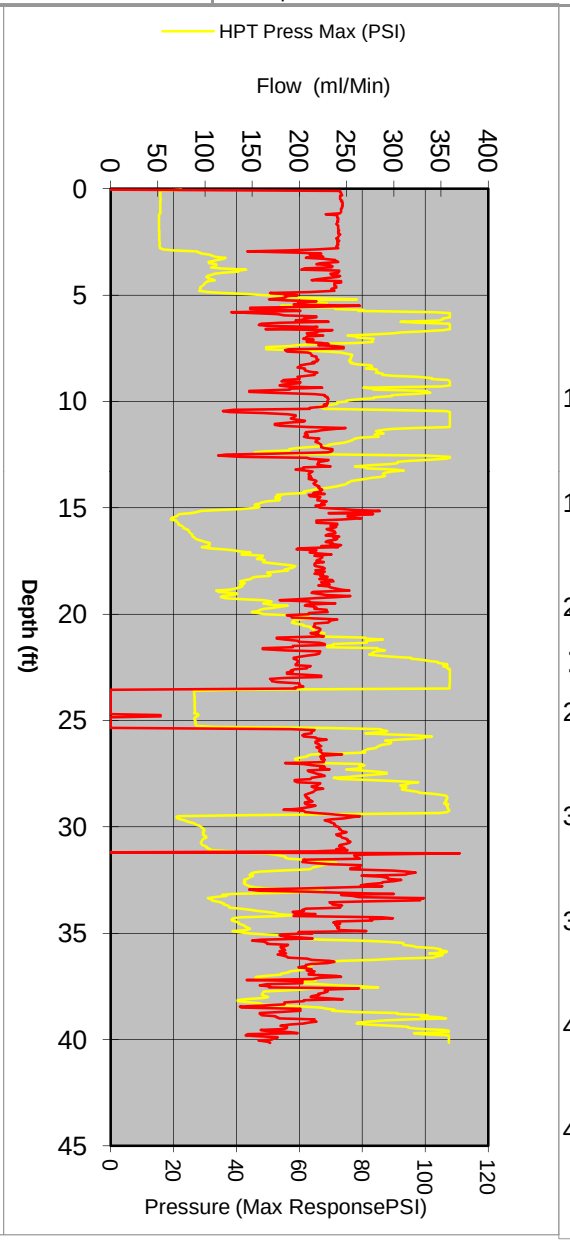
Notes: Hand auger to 5 feet bgs.

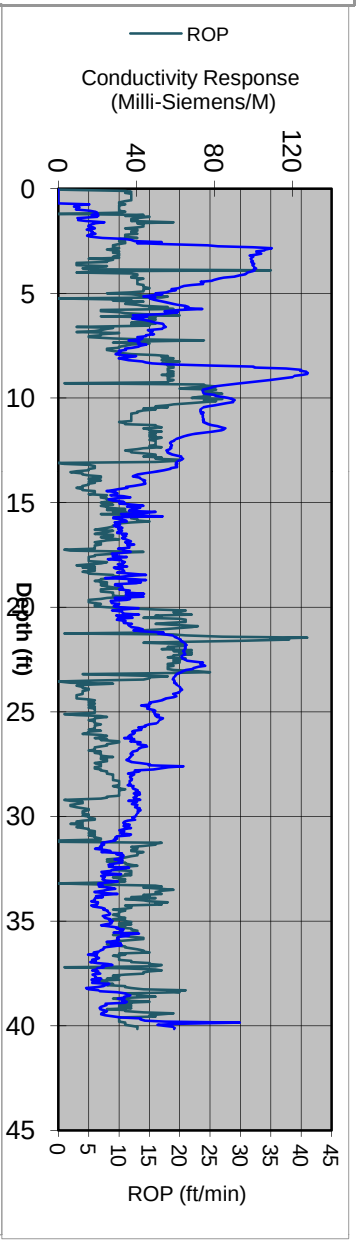
GW Depth (ft): 0
Depth of GW Provided by Client

Job Information		MIP Sampling Information			
Client Company:	???	Trunkline Length:	150	Start Boring Time:	Tue Mar 13 2012 10:23
Project Name:	ANTEA 76 Station	Probe Type:	0	End Boring Time:	Tue Mar 13 2012 11:52
Site Address:	Bancroft RD, Oakland	Rig Type:	Geoprobe 6600	HPT Specialist:	Jeff Paul









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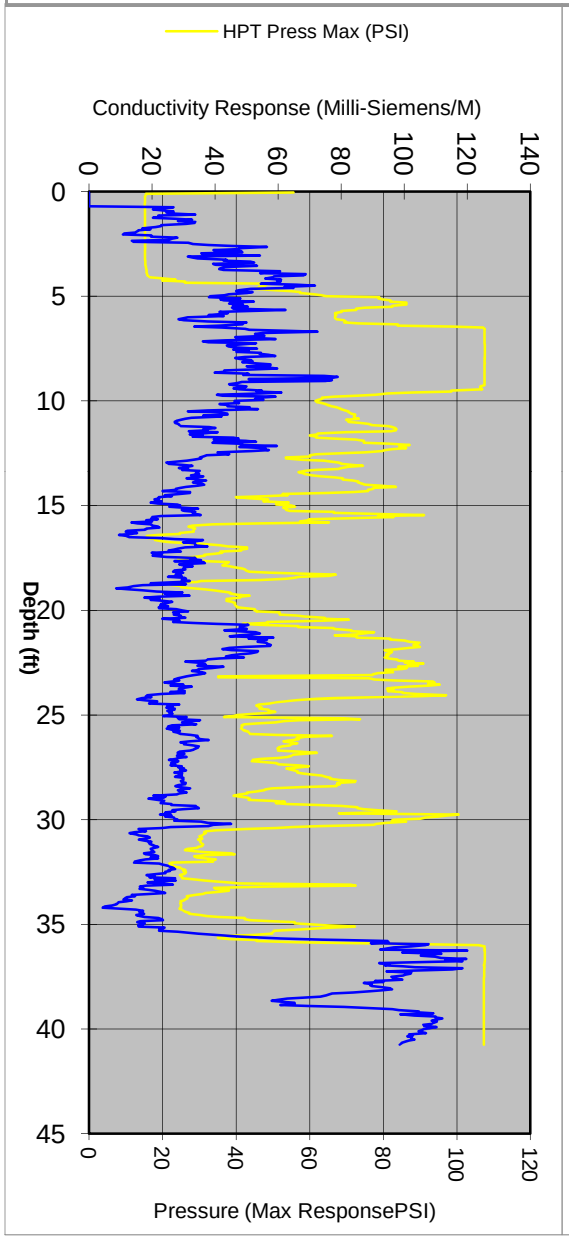
Boring Name: HPT-3

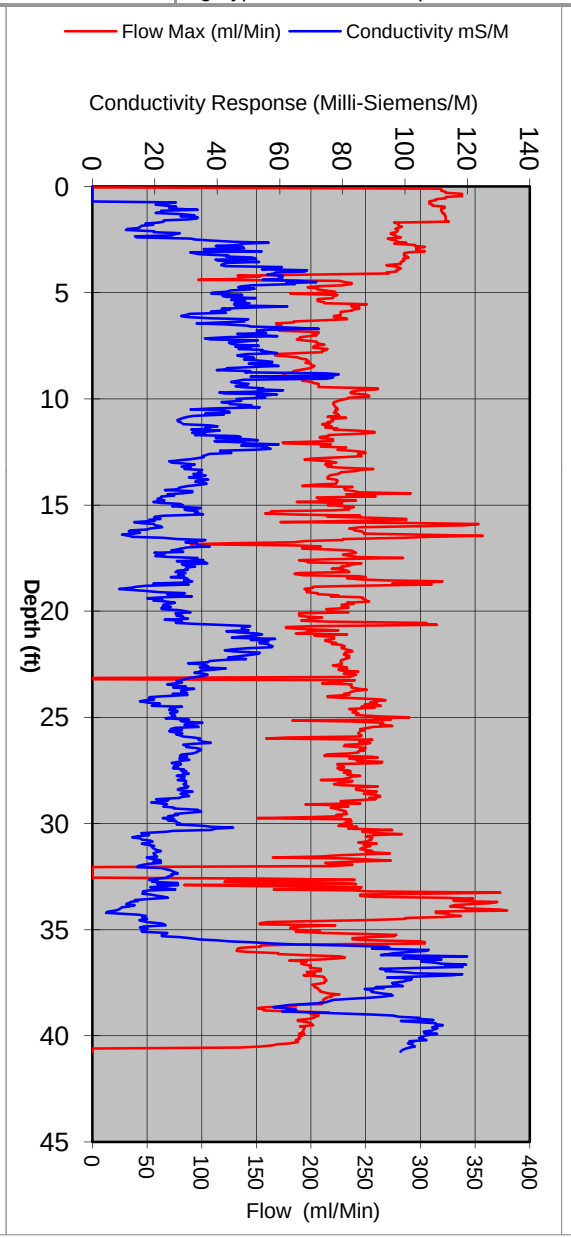
Total Depth (ft): 40.75

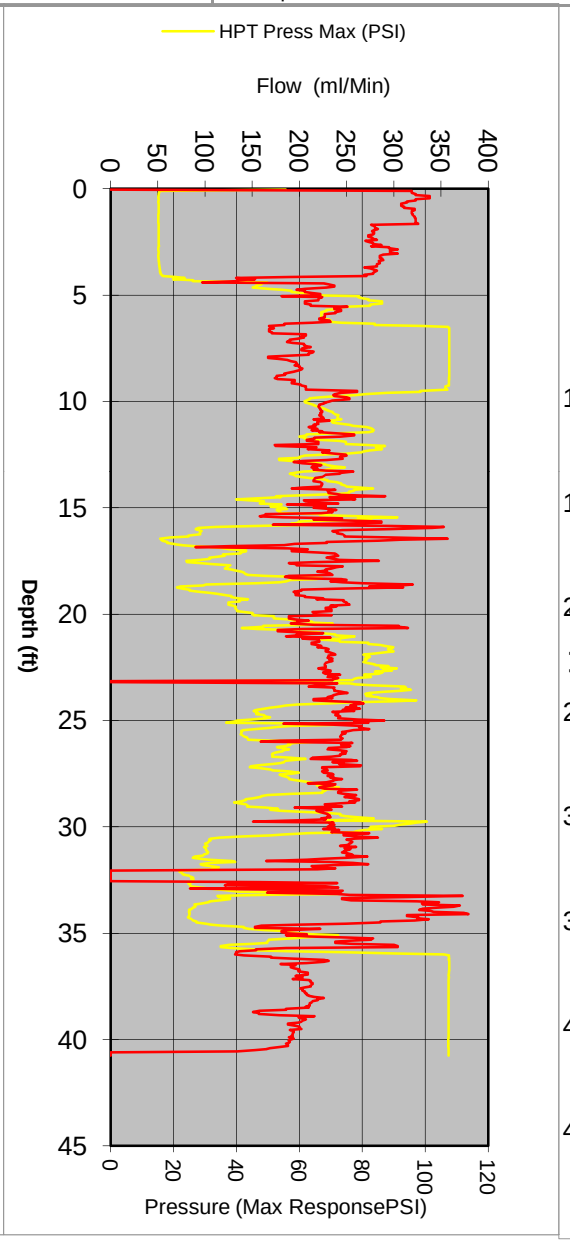
Notes: Hand auger to 5 feet bgs.

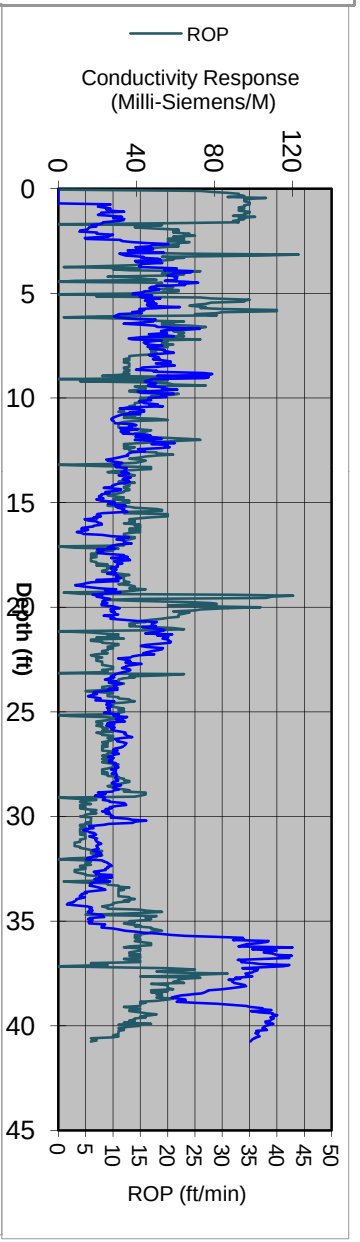
GW Depth (ft): 0
Depth of GW Provided by Client

Job Information		MIP Sampling Information			
Client Company:	???	Trunkline Length:	150	Start Boring Time:	Tue Mar 13 2012 13:28
Project Name:	ANTEA 76 Station	Probe Type:	0	End Boring Time:	
Site Address:	Bancroft RD, Oakland	Rig Type:	Geoprobe 6600	HPT Specialist:	Jeff Paul









Appendix J

Vironex's Injections Services Report (March 26 to 30, 2012)

Injection Services Report

76 Station Injection Pilot

7210 Bancroft Road,

Oakland, CA

March 26 through March 30, 2012

Prepared for:

Regenesis

Prepared by:

VIRONEX

1641 Challenge Drive

Concord, CA 94520

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Project Summary

Project Name: Regenesis- 76 Station Injection Pilot

Project Start Date: March 26, 2012

Project End Date: March 30, 2012

Vironex Crew: Scott Plachta (Crew Chief), Joel Garcia, Brett Baatraup

Equipment: Vironex Truck Mounted Injection Rig with Hydra cell D-10

Injection Method: Top-Down

Compound: Plume Stop

Water Source: Hydrant (Vironex transported water in a support vehicle with a 500 gallon poly-tank as the hydrant was >1,000 feet from the injection area and across several active drive ways in the shopping complex.)

Proposed SOW: Advance nine (9) injection points to 40 feet, targeting between 15 and 40 feet bgs, injecting 461 gallons of Plume Stop.

Project Adjustments: Based on HPT data the target injection zone was changed from 15 to 40 feet bags to 17 to 41 feet bgs. After completing the first location targeting the injection zone with a one (1) foot screen, it was requested that Vironex switch to a four (4) foot injection screen for the remaining 8 locations. (See attached injection logs for detail.)

Injection Summary

	Date	Injection Locations	Total Gallons Injected	Total Gals Reagent Injected
Monday	3/26/12	1	461	105
Tuesday	3/27/12	2	922	177
Wednesday	3/28/12	2	922	177
Thursday	3/29/12	2	922	177
Friday	3/30/12	2	959	177
	WEEKLY TOTAL	9	4186	813

Project Photographs



Site set up: Vironex Injection Rig, 3-Phase generator, and Support Truck.



500 Gallon Poly-Tank for Water Transportation to the Injection Area.



Vironex Assists in Recirculation of Plume Stop Prior to Mixing.



Plume Stop Delivered in 55 Gallon Drums Daily by Vironex Crew.

Appendix A – Injection Logs

Project Name:	Regenesis-Plume Stop-Oakland-CA
Inj Rig Operator:	Scott Plachta
Original Injection Scope of work:	Inject 461 gallons of Plume Stop from 17 to 41 feet bgs.

VIRONEX

INJECTION FIELD LOG

Boring ID	Date	Start Time	End Time	Injection Interval	Starting Pressure (PSI)	Sustained Pressure (PSI)	Average Flow Rate (GPM)	Volume Per Interval	Total Gallons Injected	Field Notes
CC-2	3/26/2012	11:34 AM	11:41 AM	17 to 18	110	40	2.1	19.2	19.2	11:05 line pressure test (1 foot injection screen, top-down)
		11:41 AM	11:52 AM	18 to 19	80	40	1.8	19.2	38.4	Continue to inject as tooling is being advanced.
		11:52 AM	12:05 PM	19 to 20	80	40	1.2	19.2	57.6	
		12:05 PM	12:14 PM	20 to 21	80	30	2.3	19.2	76.8	
		12:14 PM	12:19 PM	21 to 22	60	40	2.9	19.2	96.3	
		12:19 PM	12:26 PM	22 to 23	70	40	2.2	19.2	115.5	
		12:26 PM	12:37 PM	23 to 24	70	55	2.6	19.2	134.7	
		12:37 PM	12:46 PM	24 to 25	60	50	2.4	19.2	153.9	
		12:46 PM	12:54 PM	25 to 26	100	65	2.2	19.2	173.1	
		12:54 PM	1:05 PM	26 to 27	140	110	2.4	19.2	192.3	
		1:05 PM	1:12 PM	27 to 28	140	80	2.1	19.2	211.5	
		1:12 PM	1:19 PM	28 to 29	140	70	2.8	19.2	230.7	
		1:19 PM	1:26 PM	29 to 30	100	80	2.7	19.2	249.9	
		1:26 PM	1:34 PM	30 to 31	150	100	2.2	19.2	269.1	High pressure noted.
		1:34 PM	1:42 PM	31 to 32	155	110	1.4	19.2	288.3	
		1:43 PM	1:54 PM	32 to 33	150	90	1.7	19.2	307.5	
		1:54 PM	2:05 PM	33 to 34	110	80	1.9	19.2	326.7	
		2:05 PM	2:17 PM	34 to 35	110	80	1.8	19.2	345.9	
		2:17 PM	2:27 PM	35 to 36	120	85	2.6	19.2	365.1	
		2:27 PM	2:33 PM	36 to 37	110	70	2.8	19.2	384.3	
		2:33 PM	2:42 PM	37 to 38	90	60	1.9	19.2	403.0	
		2:42 PM	2:54 PM	38 to 39	80	60	1.9	19.2	422.7	
		2:54 PM	3:03 PM	39 to 40	80	60	2.1	19.2	441.9	
		3:04 PM	3:18 PM	40 to 41	80	50	1.8	19.2	461.1	no surfacing noted
							Total Volume Injected	**461**		

Project Name:	Regenesis-Plume Stop-Oakland-CA
Inj Rig Operator:	Scott Plachta
Original Injection Scope of work:	Inject 461 gallons of Plume Stop from 17 to 41 feet bgs.

VIRONEX

INJECTION FIELD LOG

Boring ID	Date	Start Time	End Time	Injection Interval	Starting Pressure (PSI)	Sustained Pressure (PSI)	Average Flow Rate (GPM)	Volume Per Interval	Total Gallons Injected	Field Notes
CC-5	3/27/2012	11:34 AM	11:41 AM	17 to 21	10	10	2.1	84	84	2.25" tooling with 4 foot screen, top-down. Volumes per 4 foot zone as directed by Regenesis personnel.
		11:41 AM	11:52 AM	21 to 25	60	20	1.8	84	168	Continue to inject as tooling is being advanced.
		11:52 AM	12:05 PM	25 to 29	60	25	1.2	68	236	2 simultaneous points. 17 gallons per foot in this zone
		12:05 PM	12:14 PM	29 to 33	80	50	2.3	68	304	2 simultaneous points. 17 gallons per foot in this zone
		12:14 PM	12:19 PM	33 to 37	100	70	2.9	84	388	wait for mixing
		12:19 PM	12:26 PM	37 to 41	90	50	2.2	73	461	boring complete.
							Total Volume Injected	**461**		

Project Name:	Regenesis-Plume Stop-Oakland-CA
Inj Rig Operator:	Scott Plachta
Original Injection Scope of work:	Inject 461 gallons of Plume Stop from 17 to 41 feet bgs.

VIRONEX

INJECTION FIELD LOG

Boring ID	Date	Start Time	End Time	Injection Interval	Starting Pressure (PSI)	Sustained Pressure (PSI)	Average Flow Rate (GPM)	Volume Per Interval	Total Gallons Injected	Field Notes
CC-9	3/27/2012	10:56 AM	11:31 AM	17 to 21	70	50	2.9	84	84	2.25" tooling with 4 foot screen, top-down. Volumes per 4 foot zone as directed by Regenesis personnel. 2 Simultaneous points.
		11:32 AM	12:26 PM	21 to 25	110	40	2.8	84	168	
		12:28 PM	1:35 PM	25 to 29	100	40	3.4	68	236	wait for mixing
		1:40 PM	2:15 PM	29 to 33	120	90	1.7	68	304	
		2:20 PM	2:52 PM	33 to 37	110	60	2.4	84	388	
		2:57 PM	3:25 PM	37 to 41	120	90	3.2	73	461	boring complete. Upon retracting injection tooling it was noted that the screen came off down hole. Attempted to fish the tooling out, unsuccessful. Grout in place.
							Total Volume Injected	**461**		

Project Name:	Regenesis-Plume Stop-Oakland-CA
Inj Rig Operator:	Scott Plachta
Original Injection Scope of work:	Inject 461 gallons of Plume Stop from 17 to 41 feet bgs.

VIRONEX

INJECTION FIELD LOG

Boring ID	Date	Start Time	End Time	Injection Interval	Starting Pressure (PSI)	Sustained Pressure (PSI)	Average Flow Rate (GPM)	Volume Per Interval	Total Gallons Injected	Field Notes
CC-6	3/28/2012	9:12 AM	10:08 AM	17 to 21	50	40	2.6	84	84	2 simultaneous points one with 2.25" tooling with 4 foot screen with an internal screen and one 1.25" injection tool with no internal screen, top-down. Volumes per 4 foot zone as directed by Regenesis personnel.
		10:16 AM	10:48 AM	21 to 25	50	40	2.1	84	168	
		10:50 AM	11:28 AM	25 to 29	140	45	2.1	68	236	
		11:32 AM	12:06 PM	29 to 33	90	55	2.2	68	304	
		12:10 PM	12:51 PM	33 to 37	80	50	2.5	84	388	
		12:57 PM	1:34 PM	37 to 41	80	55	2.3	73	461	boring complete.
							Total Volume Injected	**461**		

Project Name:	Regenesis-Plume Stop-Oakland-CA
Inj Rig Operator:	Scott Plachta
Original Injection Scope of work:	Inject 461 gallons of Plume Stop from 17 to 41 feet bgs.

VIRONEX

INJECTION FIELD LOG

Boring ID	Date	Start Time	End Time	Injection Interval	Starting Pressure (PSI)	Sustained Pressure (PSI)	Average Flow Rate (GPM)	Volume Per Interval	Total Gallons Injected	Field Notes
CC-1	3/28/2012	9:12 AM	10:08 AM	**17 to 21**	50	40	2.6	84	84	2 simultaneous points one with 2.25" tooling with 4 foot screen with an internal screen and one 1.25" injection tool with no internal screen, top-down. Volumes per 4 foot zone as directed by Regenesis personnel.
		10:12 AM	11:01 AM	**21 to 25**	50	40	2.1	84	168	
		11:06 AM	11:44 AM	**25 to 29**	100	45	2.1	68	236	
		11:50 AM	12:15 PM	**29 to 33**	50	30	2.2	68	304	
		12:19 PM	1:00 PM	**33 to 37**	80	60	2.5	84	388	
		1:05 PM	1:34 PM	**37 to 41**	90	55	2.3	73	461	boring complete.
							Total Volume Injected	**461**		

Project Name:	Regenesis-Plume Stop-Oakland-CA
Inj Rig Operator:	Scott Plachta
Original Injection Scope of work:	Inject 461 gallons of Plume Stop from 17 to 41 feet bgs.

VIRONEX

INJECTION FIELD LOG

Boring ID	Date	Start Time	End Time	Injection Interval	Starting Pressure (PSI)	Sustained Pressure (PSI)	Average Flow Rate (GPM)	Volume Per Interval	Total Gallons Injected	Field Notes
CC-3	3/29/2012	9:08 AM	9:45 AM	17 to 21	65	40	2.2	84	84	2 simultaneous points using 2.25" tooling with 4 foot screen with an internal screen , top-down. Volumes per 4 foot zone as directed by Regenesis personnel.
		9:51 AM	10:32 AM	21 to 25	80	40	2.3	84	168	
		10:36 AM	11:05 AM	25 to 29	90	50	2.2	68	236	
		12:13 PM	12:42 PM	29 to 33	100	60	2.2	68	304	11:14 AM product noted coming up through the inside of the 2.25" rods. Pulled tooling to address issue, found a small hole in the inner injection hose ~ 2" above the drive head. Cut out the bad section of hose, reconnect to the drive head and reset the tooling. Injections continued with out incident.
		12:49 PM	1:34 PM	33 to 37	140	60	2	84	388	
		1:45 PM	2:16 PM	37 to 41	110	60	2.6	73	461	boring complete.
						Total Volume Injected		**461**		

Project Name:	Regenesis-Plume Stop-Oakland-CA
Inj Rig Operator:	Scott Plachta
Original Injection Scope of work:	Inject 461 gallons of Plume Stop from 17 to 41 feet bgs.

VIRONEX

INJECTION FIELD LOG

Boring ID	Date	Start Time	End Time	Injection Interval	Starting Pressure (PSI)	Sustained Pressure (PSI)	Average Flow Rate (GPM)	Volume Per Interval	Total Gallons Injected	Field Notes
CC-7	3/29/2012	9:08 AM	9:45 AM	17 to 21	70	40	2.3	84	84	2 simultaneous points using 2.25" tooling with 4 foot screen with an internal screen top-down. Volumes per 4 foot zone as directed by Regenesis personnel.
		9:56 AM	10:24 AM	21 to 25	90	40	2.3	84	168	
		10:29 AM	11:05 AM	25 to 29	120	50	2.3	68	236	Stopped injections to fix CC-3.
		12:13 PM	12:40 PM	29 to 33	120	60	2.1	68	304	
		12:45 PM	1:34 PM	33 to 37	110	60	2.3	84	388	
		1:45 PM	2:24 PM	37 to 41	110	60	2.4	73	461	boring complete.
							Total Volume Injected	**461**		

Project Name:	Regenesis-Plume Stop-Oakland-CA
Inj Rig Operator:	Scott Plachta
Original Injection Scope of work:	Inject 461 gallons of Plume Stop from 17 to 41 feet bgs.

VIRONEX

INJECTION FIELD LOG

Boring ID	Date	Start Time	End Time	Injection Interval	Starting Pressure (PSI)	Sustained Pressure (PSI)	Average Flow Rate (GPM)	Volume Per Interval	Total Gallons Injected	Field Notes
CC-8	3/30/2012	9:23 AM	9:59 AM	**17 to 21**	50	30	2.3	84	84	2 simultaneous points using 2.25" tooling with 4 foot screen with an internal screen top-down. Volumes per 4 foot zone as directed by Regenesis personnel.
		10:03 AM	11:08 AM	**21 to 25**	60	40	2.5	84	168	
		11:14 AM	11:47 AM	**25 to 29**	80	40	2.4	68	236	Batch 3 got 20 extra gallons of water
		11:55 AM	12:29 PM	**29 to 33**	120	60	2.2	68	304	
		12:36 PM	1:21 PM	**33 to 37**	110	60	2.5	84	388	
		1:30 PM	2:15 PM	**37 to 41**	110	60	2.5	85	473	Plus 12 remaining gallons to clear out the tanks. Boring and project complete.
							Total Volume Injected	**473**		

Project Name:	Regenesis-Plume Stop-Oakland-CA
Inj Rig Operator:	Scott Plachta
Original Injection Scope of work:	Inject 461 gallons of Plume Stop from 17 to 41 feet bgs.

VIRONEX

INJECTION FIELD LOG

Boring ID	Date	Start Time	End Time	Injection Interval	Starting Pressure (PSI)	Sustained Pressure (PSI)	Average Flow Rate (GPM)	Volume Per Interval	Total Gallons Injected	Field Notes
CC-4	3/30/2012	9:24 AM	10:06 AM	**17 to 21**	50	30	2.3	84	84	2 simultaneous points using 2.25" tooling with 4 foot screen with an internal screen top-down. Volumes per 4 foot zone as directed by Regenesis personnel.
		10:11 AM	11:14 AM	**21 to 25**	70	40	2.5	84	168	10:16 wait for mixer, resume injections at 10:50
		11:21 AM	12:00 PM	**25 to 29**	100	50	2.5	68	236	Batch 3 got 20 extra gallons of water
		12:06 PM	12:37 PM	**29 to 33**	90	50	2.5	68	304	
		12:46 PM	1:12 PM	**33 to 37**	90	50	2.3	84	388	
		1:30 PM	2:15 PM	**37 to 41**	190	90	1.7	98	486	High PSI to gain flow. Plus 25 remaining gallons to clear out the tanks. Boring and project complete.
						Total Volume Injected		**486**		

Appendix K

Blaine Tech Services Inc., Sampling Field Notes

Well-Head Inspection & Well Gauging Form

Antea Group Project No: 261117 **Site Address:** 7210 Bancroft Ave Oakland

Field Technician: Ben Parell Blaine Tech Services **Date:** 3-7-12 **Weather:** clear/sunny

(Print Full Name & Company)*

Sample Order	Field Point	Well Condition: Bolts	Seal	Lid Secure	Lock	Expanding Cap	Water in Well Box	Well Casing Dia.	Time Gauged	Depth to Water (Feet)	Depth to Bottom (Feet)	Depth to LNAPL (Feet)	LNAPL Thickness (Feet)	Comments
	MW-4	G	P	G	P	P	N	2	0815	17.75	39.20	—	—	vapor housing no caps or lock vault

Notes: Removed vapor casing before gauging allowed 15 minutes for water to equilibrate.

** All well caps opened at least 15 minutes or longer before gauging wells:

CIRCLE ONE: (YES) or NO**

anteagroup

*Form provided by Antea Group

Note: Use G=good and P=poor for well condition

Groundwater Sampling Form

Site Address:	7210 Bancroft Ave Oakland		
Project No:	261117	Field Technician:	BP
Field Point:	MW-4	Date:	3-7-12
Depth to Water (DTW) (ft bgs):	17.75	Well Diameter (in):	(2) 4 6 8 ___
Depth to LNAPL (ft bgs):	—	Thickness of LNAPL (ft):	—
Total Depth of Well (ft bgs):	39.20	Water Column Height (ft):	21.45

Purging Info and Calculations:

Purge Method: (Low-Flow) / 3 casing volumes / Other:

Purge Equipment: Disposable Bailer / (Electric Submersible) / Peristaltic Pump / Bladder Pump / Other:

Sample Collection Method: Disposable Bailer / Extraction Port / Dedicated Tubing / (Disposable Tubing) / Other:

Water Column Height (ft): 21.45 X Conversion Factor (gal/ft): 0.17 = Casing Volume (gal): 3.6

Casing Volume (gal): 3.6 X Specified Volumes: 3 = Calculated Purge (gal): 10.8

Conversion Factors (gal/ft): 2" = 0.17 4" = 0.66 6" = 1.5 8" = 2.6 Other = radius^2 * 0.163

Purge: Start Time: 0833 Stop Time: 0906

Time	Temp (°C)	pH	Conductivity (µS/cm)	ORP (mV)	Turbidity (NTU)	D.O. (mg/L)	Volume Purged (gal)	Water Level (for Low-Flow only)
Pre-Purge				—		—		
0839	16.28	6.61	1211	4.1	79	2.40	750	17.76
0842	18.01	6.62	1100	-17.9	49	2.18	1500	17.76
0845	18.59	6.62	1083	-20.2	45	2.69	2250	17.76
0848	18.96	6.63	1073	-31.1	48	2.73	3000	17.76
0851	19.40	6.62	1065	-29.2	37	2.72	3750	17.76
0854	19.83	6.64	1058	-32.5	35	2.66	4500	17.76
Post-Purge								

Did Well dewater? Yes (No) Total Purge volume (gal): mL 4500 mL

Other Comments: purge rate: 250 mL/min

start @ Pump depth @ 30'

Sample Info:

Sample ID:	MW-4	Sample Date and Time:	3/7/12 0900
Selected Analysis:	SEE COC		

This form was provided by Antea Group and completed by: (Print Full Name) Brian Panelli, an employee of Blaine Tech Services, Inc.

Signature: [signature] Date: 3/7/12

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LNAPL= light non-aqueous phase liquids
bgs = below ground surface
ORP = Oxidation-Reduction Potential
D.O.= dissolved oxygen

gal = gallon/s
temp = temperature
NTU = Nephelometric Turbidity Units
mV = millivolts

TEST EQUIPMENT CALIBRATION LOG

PROJECT NAME	COP Antea 7210 Bancroft Ave Oakland	PROJECT NUMBER	120307-BP2 2011117

EQUIPMENT NAME	EQUIPMENT NUMBER	DATE/TIME OF TEST	STANDARDS USED	EQUIPMENT READING	CALIBRATED TO: OR WITHIN 10%:	TEMP. °C	INITIALS
YSI 556	06F7302A2	3/7/12 @ 0630	pH 7.00 10.00 4.00	7.00 10.00 3.98	YES	15.94	BP
			cond 3900us	3901 us	YES	15.56	BP
			ORP 243mV	243mV	YES	15.26	BP
			DO 100%	101.2%	YES	13.78°	BP

Well-Head Inspection & Well Gauging Form

Antea Group Project No: 2011117 Site Address: 7210 Bancroft Ave Oakland

Field Technician: Ben Powell/ Blaine Tech Date: 4-27-12 Weather: clear

(Print Full Name & Company*)

Sample Order	Field Point	Well Condition: Bolts	Seal	Lid Secure	Lock	Expanding Cap	Water in Well Box	Well Casing Dia.	Time Gauged	Depth to Water (Feet)	Depth to Bottom (Feet)	Depth to LNAPL (Feet)	LNAPL Thickness (Feet)	Comments
1	MW-4	G	P	G	N/A	N/A	N	2	0810	13.52	39.20	—	—	vapor hose in well

Notes: could not gauge MW-4 w/ vapor hose in well, pulled hose waited 15 min for water to stabilize

** All well caps opened at least 15 minutes or longer before gauging wells:

CIRCLE ONE: YES or NO**

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*Form provided by Antea Group

Note: Use G=good and P=poor for well condition

Groundwater Sampling Form

Site Address:	7210 Bancroft Ave Oakland CA		
Project No:	261111 7	Field Technician:	Ben Parell
Field Point:	MW-4	Date:	4-27-12
Depth to Water (DTW) (ft bgs):	13.52	Well Diameter (in):	(2) 4 6 8 ___
Depth to LNAPL (ft bgs):	—	Thickness of LNAPL (ft):	—
Total Depth of Well (ft bgs):	39.20	Water Column Height (ft):	25.68

Purging Info and Calculations:

Purge Method:
(Low-Flow)
3 casing volumes
Other:_____

Purge Equipment:
Disposable Bailer
(Electric Submersible)
Peristaltic Pump
Bladder Pump
Other:_____

Sample Collection Method:
Disposable Bailer
Extraction Port
Dedicated Tubing
Disposable Tubing
Other: New tubing

Water Column Height (ft):— X Conversion Factor (gal/ft):— = Casing Volume (gal):—

Casing Volume (gal):— X Specified Volumes:— = Calculated Purge (gal):—

Conversion Factors (gal/ft): 2" = 0.17 4" = 0.66 6" = 1.5 8" = 2.6 Other = radius^2 * 0.163

Purge: Start Time: 1184 Stop Time: 0950

Time	Temp (°C)	pH	Conductivity (µS/cm)	ORP (mV)	Turbidity (NTU)	D.O. (mg/L)	Volume Purged (gal)	Water Level (for Low-Flow only)
Pre-Purge				—		—		
0823	16.74	6.22	1546	-187.0	418	3.88	1200	13.62
0826	18.45	6.24	1557	-177.6	823	2.01	2100	13.62
0829	19.54	6.27	1551	-212.6	547	1.58	3000	13.62
0832	19.89	6.31	1528	-220.9	314	1.42	3900	13.63
0835	20.43	6.36	1493	-211.6	192	1.26	4800	13.63
0838	20.95	6.39	1453	-209.0	149	1.18	5700	13.63
0841	21.12	6.42	1418	-203.0	116	1.14	6600	13.63
0844	21.24	6.44	1400	-209.1	110	1.07	7500	
Post-Purge				—		—		

Did Well dewater? Yes (No) Total Purge volume (gal): 27.3 L

Other Comments:
* pump placed @ 34'
* purging @ 300mL/min
* vault, vapor hosing in well.
* WATER HAS STRONG ODOR

Sample Info:

Sample ID:	MW-4_20120427	Sample Date and Time:	4/27/12 @ 0900
Selected Analysis:	SEE COC		

This form was provided by Antea Group and completed by: (Print Full Name) Ben Parell, an employee of Blaine Tech Services, Inc.

Signature: _____ Date: 4/27/12

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LNAPL= light non-aqueous phase liquids
bgs = below ground surface
ORP = Oxidation-Reduction Potential
D.O.= dissolved oxygen

gal = gallon/s
temp = temperature
NTU = Nephelometric Turbidity Units
mV = millivolts

Groundwater Sampling Form

Site Address:	7210 Bancroft Ave Oakland CA		
Project No:	261117	Field Technician:	Ben Parnell
Field Point:	MW-4	Date:	4-27-12
Depth to Water (DTW) (ft bgs):	13.52	Well Diameter (in):	(2) 4 6 8 ___
Depth to LNAPL (ft bgs):	—	Thickness of LNAPL (ft):	—
Total Depth of Well (ft bgs):	39.20	Water Column Height (ft):	25.68

Purging Info and Calculations:

Purge Method:
(Low-Flow) ~~3 casing volumes~~
Other:_____

Purge Equipment:
Disposable Bailer
Electric Submersible
Peristaltic Pump
Bladder Pump
Other:_____

Sample Collection Method:
Disposable Bailer
Extraction Port
Dedicated Tubing
Disposable Tubing
Other:_____

Water Column Height (ft):— X Conversion Factor (gal/ft):— = Casing Volume (gal):—

Casing Volume (gal):— X Specified Volumes:— = Calculated Purge (gal):—

Conversion Factors (gal/ft): 2" = 0.17 4" = 0.66 6" = 1.5 8" = 2.6 Other = radius^2 * 0.163

Purge: **Start Time:** 0819 **Stop Time:** 0950

Time	Temp (°C)	pH	Conductivity (µS/cm)	ORP (mV)	Turbidity (NTU)	D.O. (mg/L)	Volume Purged (gal)	Water Level (for Low-Flow only)
Pre-Purge				—		—		
0847	21.34	6.47	1370	-215.1	99	0.99	8400	13.63
0850	21.51	6.48	1356	-224.1	87	0.90	9300	13.63
0920	21.99	6.53	1269	-234.1	56	0.85	18.3 Liters	13.66
0930	22.11	6.54	1260	-237.1	22	0.66	21.3 L	13.66
0940	22.19	6.54	1253	-243.7	19	0.62	24.3 L	13.67
0950	22.17	6.55	1242	-244.3	17	0.56	27.3L	13.67
Post-Purge				—		—		

Did Well dewater? Yes (No) Total Purge volume (gal): 27.3L

Other Comments: * Bottle order not present during sampling, collected 3 HCL VOAs, 2 250 HDPE polys, 1 L NP Amber @ 0900, * 1 250 Glass H_2SO_4, 1 250 poly HNO_3, 1 NaOH 125 poly collected @ 0950

Sample Info:

Sample ID:	MW-4_20120427	Sample Date and Time:	4/27/12 @ 0900
Selected Analysis:	SEE COC		4/27/12 @ 0958

This form was provided by Antea Group and completed by: (Print Full Name) Ben Parnell, an employee of Blaine Tech Services, Inc.

Signature: _____ Date: 4/27/12

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LNAPL= light non-aqueous phase liquids
bgs = below ground surface
ORP = Oxidation-Reduction Potential
D.O.= dissolved oxygen

gal = gallon/s
temp = temperature
NTU = Nephelometric Turbidity Units
mV = millivolts

TEST EQUIPMENT CALIBRATION LOG

PROJECT NAME Antea COP 7210 Bancroft Oakland				PROJECT NUMBER 120427-BP1 (261111-7)			
EQUIPMENT NAME	EQUIPMENT NUMBER	DATE/TIME OF TEST	STANDARDS USED	EQUIPMENT READING	CALIBRATED TO: OR WITHIN 10%:	TEMP. °C	INITIALS
YSI 556		4/27/12 @ 0615	PH 7.00 10.00 4.00	7.00 10.00 3.99	yes	20.39	BP
			cond 3900 µs	3901 µs	yes	20.77	BP
			ORP 236 mV	236.1 mV	yes	20.70	BP
			DO 100%	101.1%	yes	19.61	BP
Hach Turbidimeter	060600017 121	9/27/12 @ 0630	0.1, 20, 100 800 NTUs	0, 25, 106 809 NTUs	yes	—	BP

Well-Head Inspection & Well Gauging Form

Antea Group Project No: 261117 Site Address: 7210 Bancroft Ave., Oakland, CA

Field Technician: Gregory Roberts, Blaine Tech (Print Full Name & Company*) Date: 5/29/2012 Weather: overcast

Sample Order	Field Point	Well Condition: Bolts	Seal	Lid Secure	Lock	Expanding Cap	Water in Well Box	Well Casing Dia.	Time Gauged	Depth to Water (Feet)	Depth to Bottom (Feet)	Depth to LNAPL (Feet)	LNAPL Thickness (Feet)	Comments
1	MW-4	G	G	G	NL	NC	N	2	0925	15.29	38.88			

Notes:

** All well caps opened at least 15 minutes or longer before gauging wells:
CIRCLE ONE: YES or (NO)**

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*Form provided by Antea Group

Note: Use G=good and P=poor for well condition

Groundwater Sampling Form

Site Address:	7210 Bankroft Ave., Oakland, CA		
Project No:	261117	Field Technician:	Greg Roberts
Field Point:	MW-4	Date:	5/29/2012
Depth to Water (DTW) (ft bgs):	15.29	Well Diameter (in):	(2) 4 6 8 ___
Depth to LNAPL (ft bgs):	—	Thickness of LNAPL (ft):	—
Total Depth of Well (ft bgs):	38.88	Water Column Height (ft):	23.59

Purging Info and Calculations:

Purge Method:
(Low-Flow)
3 casing volumes
Other:_____

Purge Equipment:
Disposable Bailer
(Electric Submersible)
Peristaltic Pump
Bladder Pump
Other:_____

Sample Collection Method:
Disposable Bailer
Extraction Port
Dedicated Tubing
(Disposable Tubing)
Other:_____

Water Column Height (ft):_____ X Conversion Factor (gal/ft):_____ = Casing Volume (gal):_____

Casing Volume (gal):_____ X Specified Volumes:_____ = Calculated Purge (gal):_____

Conversion Factors (gal/ft): 2" = 0.17 4" = 0.66 6" = 1.5 8" = 2.6 Other = radius^2 * 0.163

Purge: **Start Time:** 0832 **Stop Time:** 0844

Time	Temp (°C)	pH	Conductivity (µS/cm)	ORP (mV)	Turbidity (NTU)	D.O. (mg/L)	Volume Purged (gal)	Water Level (for Low-Flow only)
Pre-Purge				—		—		
0835	18.57	6.49	1411	-89.8	352	2.00	900	15.31
0838	19.24	6.59	1403	-102.2	536	1.77	1800	15.32
0841	20.13	6.54	1381	-110.0	337	1.78	2700	15.32
0844	20.52	6.55	1351	-113.8	218	1.76	3600	15.33
Post-Purge				—		—		

Did Well dewater? Yes (No) Total Purge volume (gal): 3600 ml

Other Comments: Pump depth @ : 30' * purged through flow cell
Flow rate @ : 300 ml/min

Sample Info:

Sample ID:	MW-4_20120531	Sample Date and Time:	5/29/2012 @ 0854
Selected Analysis:	see COC		

This form was provided by Antea Group and completed by: (Print Full Name) Gregory Roberts, an employee of Blaine Tech Services, Inc.

Signature: _____ Date: 5/29/2012

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LNAPL= light non-aqueous phase liquids
bgs = below ground surface
ORP = Oxidation-Reduction Potential
D.O.= dissolved oxygen
gal = gallon/s
temp = temperature
NTU = Nephelometric Turbidity Units
mV = millivolts

TEST EQUIPMENT CALIBRATION LOG

PROJECT NAME 261117				PROJECT NUMBER 120529-GR1			
EQUIPMENT NAME	EQUIPMENT NUMBER	DATE/TIME OF TEST	STANDARDS USED	EQUIPMENT READING	CALIBRATED TO: OR WITHIN 10%:	TEMP.	INITIALS
YSI 556	06F1362AT	5/29/12 @ 0700	3900 µs Cond	3901	yes	19.83	GR
			7.0 10.0 4.0 pH	7.00 @ 14.63 10.00 @ 19.72 3.99 @ 19.27	yes		GR
			238 @ 19.7 ORP	238	yes	19.76	GR
			DO	100.5	yes	18.44	GR

Appendix L

Time-Series Graph for Well MW-4

WELL MW-4
GRO, BENZENE, MTBE, TBA CONCENTRATIONS, AND GROUNDWATER ELEVATION VERSUS TIME

76 (Former BP) Service Station No. 11117
7210 Bancroft Ave
Oakland, CA

