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2:51 pm, Jan 12, 2009

Alameda County Environmental Health

SUBSURFACE INVESTIGATION, REPORT

6211 San Pablo Avenue Oakland, California

AEI Project No. 280346

Prepared For

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1.0 INTRODUCTION

AEI Consultants (AEI) has prepared this Subsurface Investigation Report on behalf of Mr. Pritpaul Sappal (client) for the property located at 6211 San Pablo Avenue in the City of Oakland, Alameda County, California. AEI has been retained by the client to provide environmental engineering and consulting services for the subject property due to a release of petroleum hydrocarbons which has impacted soil and groundwater at the site.

This investigation has been performed in an attempt to characterize the extent of the known hydrocarbon contamination. The investigation was originally proposed in multiple reports from the previous consultant, Herschy Environmental Inc. (Herschy), particularly Herschy's *Additional Investigation Work Plan* dated May 27, 2008. The final scope of work was proposed in AEI's *Revised Site Conceptual Model and Work Plan* dated October 8, 2008 and approved by the Alameda County Health Care Services Agency (ACHCSA) in a letter dated October 16, 2008.

2.0 SITE DESCRIPTION AND HISTORY

The subject property is located at 6211 San Pablo Avenue, northwest of the intersection of San Pablo Avenue and 62nd Street in a mixed residential and light commercial area of Oakland, California (Figure 1 and 2). The site currently consists of a retail gasoline station with three underground storage tanks (USTs) dispensing gasoline fuel through six dual-sided fuel dispensing islands. Site features are included in Figure 3.

In April 1999, three borings B-1 through B-3 were advanced at the site by Herschy. Significant concentrations of hydrocarbons were present in the soil and groundwater samples collected during the investigation. Subsequently, in June 1999, five additional soil borings were advanced (B-4 through B-8) at the site. Based on the data collected during the investigation, it was determined that additional assessment was necessary as the lateral extent of the contamination had not been determined. Therefore, in October 1999 monitoring wells MW-1 through MW-3 were installed and a groundwater monitoring program was initiated.

In November 2001, monitoring wells MW-4 through MW-6 were installed and borings B-9 through B-14 were advanced on the property. Based on the data obtained it was determined that additional wells were necessary offsite and interim remedial action was required, therefore a workplan was prepared for the implementation of both. To date, the offsite monitoring wells have not been installed due to difficulty obtaining an encroachment permit with the City of Oakland.

In an effort to remediate hydrocarbons at the site, five air sparge wells (AS-1 through AS-5), thirteen vapor extraction wells (VE-1 through VE-13), and one groundwater extraction well (EX-1) were installed in January 2004. In addition, well MW-1R was installed to replace well MW-1. In February 2004, three 10,000 gallon USTs and associated product piping were removed and replaced (with the current UST system) at the site. During construction activities, approximately 1,100 tons of soil and 40,000 to 60,000 gallons of groundwater was removed from the site and properly disposed of.

A soil vapor extraction system was installed and was operational from August 31, 2006 through November 19, 2007. The system is currently not operating at the site as the equipment was removed by the prior consultant in August and September 2008. In August 2007 borings DP-1 and DP-3 were installed at and in the vicinity of the site. Several offsite borings were expected to be completed, however, they were not performed for a variety of reasons. In September 2008, consulting responsibilities were transferred to AEI Consultants. Subsequently, AEI submitted the requested revised Site Conceptual Model (SCM) dated October 8, 2008 which updates a proposed scope of work to complete additional offsite characterization for the site. Approval for the completion of the work was issued in a letter from the ACHCSA dated October 16, 2008.

The location of all former and current site features, including previous boring locations, are included on Figures 2 and 3.

3.0 GEOLOGY AND HYDROLOGY

Sediments encountered during the recent investigation were generally classified as fine grained sediments (a combination of silt and clay) just below the asphalt surface to depths ranging from approximately 5 to 11 feet below ground surface (bgs). Grain size distribution analysis of select sediments encountered from this zone indicated approximately 7% to 21% sand, approximately 40% silt, and approximately 37% to 53% clay. The fine grained silty clay was underlain by a sandy, gravelly silt/clay with varying amounts of fine to coarse grained sand and minor gravel to depths ranging from approximately 11 feet bgs to 17 feet bgs (the terminus of several of the shallow borings). Grain size distribution analysis of select sediments encountered from this zone indicated approximately 4% to 26% gravel, 44% to 58% sand, and 29% to 36% fine grained silt and clay. Deep borings advanced at the site indicated interbedded layers of silt and well graded sand and gravel to the maximum depth explored, 40 feet bgs.

Shallow groundwater was encountered at varying depths ranging generally from 11 to 14 feet bgs, and stabilizing from 5 feet to 10 feet bgs. In deep borings DDP-2 through DDP-4, deep groundwater (past 20 feet bgs) was not collected. Several potential water producing zones were identified during drilling, however the zones may be described as slow producing and upon setting screens in these borings at varying depths from 25 to 40 feet bgs, measurable groundwater was not present after approximately 1 hour. In boring DDP-1, a hydropunch screen was open from 32 to 40 feet bgs, however was initially dry. After approximately 3 hours, groundwater was measured at 28 feet bgs.

Groundwater during the 3rd Quarter 2008 quarterly monitoring episode ranged from 5.46 to 9.36 feet below the top of casing or 26.85 to 28.18 feet above mean sea level (amsl). The direction of the groundwater flow during the September 10, 2008 sampling event was towards the southwest with an estimated overall hydraulic gradient of 0.015 feet/foot, consistent with historical data. A detailed description of the soil lithology and PID data is included on the boring logs in Appendix A, with the physical properties included on Table 5. Historical subsurface conditions as

historically encountered by Herschy are reported in cross sections and boring logs contained in Herschy's *Site Conceptual Model* dated May 27, 2008.

4.0 SOIL BORINGS/SOIL VAPOR PROBES

4.1 Soil Borings

Prior to initiating drilling activities, a soil boring permit (permit number W2008-0840) and soil vapor well permit (permt number W2008-0841 to W20080843) was obtained from the Alameda County Public Works (ACPW). In addition, an encroachment/excavation permit was obtained from the State of California (permit number 0408-6SV 1861) and the city of Oakland (permit number X0802228 to X0802231). A copy of the permits is included in Appendix B. Following permit approval, drilling activities were scheduled and Underground Utility Services (USA North) was notified to locate possible underground utilities in the area. In addition, all necessary parties were given advance notice of the drilling schedule in accordance with the permits.

On November 24 to November 26, 2008, AEI advanced ten shallow soil borings (DP-4, SB-5, and SB-7 to SB-14) in the vicinity of the subject property and four deep soil borings (DDP-1 to DDP-4) at the subject property. The borings were advanced with a direct-push drilling rig operated by Environmental Control Associates (CA C57 License # 695-970). Shallow borings used standard truck mounted drilling rig equipment, and deep borings used double wall, direct push drilling equipment.

The shallow borings were advanced to depths ranging from approximately 8 to 17 feet bgs and the deep borings were advanced to depths ranging from 26 to 40 feet bgs. The soil cores were continuously collected in either 1" or 2" diameter acrylic liner and logged by the onsite AEI scientist. Soil samples were described by AEI personnel and logged using the unified soil classification system and screened in the field using a photo ionization detector (PID). Field observations and screening data is presented on the borings logs in Appendix A. Sampling equipment, including sampling barrels and other equipment used to sample, were decontaminated between samples using a triple rinse system containing Alconox[™] or similar detergent.

A six inch sample at select depths was cut from the acrylic liner and sealed with Teflon tape and plastic caps, labeled with a unique identifier, placed in a cooler filled with water ice, and transported under appropriate chain-of-custody documentation for analysis to McCampell Analytical Inc., (DOHS Certification Number 1644) of Pittsburg, California. Select soil samples were analyzed for TPHg by EPA method 8015 Modified, benzene, toluene, ethylbenzene, and xylenes (collectively referred to as BTEX), and methyl tertiary butyl ether (MTBE) by EPA method 8021B, and fuel oxygenates MTBE, t-Butyl alcohol (TBA), tert-amyl methyl ether (TAME), diisopropl ether (DIPE), ethyl tert-butyl ether (ETBE), 1,2-dibromoethane (EDB), and 1,2-Dichloroethane (1,2-DCA) by EPA method 8260B. Soil cuttings generated during the drilling activities were stored on-site in a sealed, labeled, 55-gallon drum pending disposal.

4.2 Groundwater Sample Collection

Shallow Soil Borings

In the shallow soil borings, upon encountering saturated sediments, a temporary ³/₄" diameter factory-slotted poly-vinyl chloride (PVC) casing was inserted into the borings to facilitate the collection of groundwater samples. Groundwater samples were collected with a drop tube and check valve into 40-ml volatile organic analysis (VOA) vials. The groundwater samples were capped so that there was no head space or visible air bubbles within the vials, labeled with a unique identifier, placed in a cooler filled with ice, and transported to an offsite laboratory and analyzed for TPHg using EPA Method 8015, BTEX and MTBE using EPA Method 8021B, and fuel oxygenates MTBE, TBA, TAME, DIPE, ETBE, EDB, and 1,2-DCA by EPA method 8260B.

<u>Deep Soil Borings</u>

An attempt to collect groundwater samples was made in the deep borings, however was not successful in borings DDP-2 through DDP-4 due to the lack of sufficient groundwater recharge in the deep groundwater zone. Boring DDP-1 was advanced to a depth of 26 feet bgs, and a groundwater sample was collected from the boring as water was initially measured at 13 feet bgs. In boring DDP-1, an additional attempt was made to grab a groundwater sample from deep groundwater not hydrologically connected to the shallow zone. Therefore, a hydropunch tool was advanced to approximately 40 feet bgs, and the hydropunch sample was retracted approximately 8 feet, exposing the screen from approximately 3 hours, groundwater was present at approximately 28 feet bgs, and a groundwater sample was collected.

4.3 Soil Vapor Monitoring Probe Installation

On November 25, 2008, AEI advanced three soil borings (SG-1 through SG-3) at the subject property, and converted each of the borings into nested soil gas sampling points. The borings were advanced with hand drilling equipment, creating a $1\frac{1}{2}$ inch diameter borehole for the installation of the monitoring probes. The borings were advanced to a depth of 6 feet bgs. Each of the boreholes was converted into nested soil gas monitoring points by first adding approximately 2 inches of clean #30 Mesh Sand followed by the soil gas monitoring probe, consisting of a 6 inch long, $\frac{1}{4}$ inch diameter stainless steel vapor screen attached to $\frac{1}{4}$ inch diameter kynar tubing, to the depth of approximately 6 feet bgs. An annular sand pack (consisting of clean #30 Mesh Sand) was installed $\frac{1}{2}$ foot above the vapor screen (5 feet bgs). The borehole was then backfilled with a hydrated bentonite seal to approximately 2 inches below the second vapor screen (approximately 38 inches bgs). Clean sand as then placed on top of the bentonite, a second vapor screen was installed, and backfilled with clean sand to approximately 24 inches bgs. The borehole was subsequently backfilled with hydrated bentonite to approximately 12 inches bgs, and the remainder of

each boring was sealed with cement grout. A flush mounted traffic rated well box was installed over the borehole and tubing. A soil gas probe schematic is shown on Figure 4.

5.0 SAMPLE ANALYTICAL RESULTS

5.1 Soil Analytical Results – Shallow Borings

Select soil samples were analyzed from each of the shallow borings, typically, at a minimum, from the perceived capillary fringe. Petroleum hydrocarbons were detected in the soil as follows:

- Soil boring DP-4 at 3.5 feet bgs was reported to contain concentrations of TPHg, toluene, xylenes, and TBA at 16 mg/kg, 0.037 mg/kg, 0.041 mg/kg, and 0.15 mg/kg, respectively. At 7.5 feet bgs, DP-4 was reported to contain concentrations of TPHg, toluene, ethylbenzene, and xylenes at 16 mg/kg, 0.12 mg/kg, 0.016 mg/kg, and 0.032 mg/kg, respectively. At 15 feet bgs, DP-4 was reported to contain MTBE and TAME at a concentration of 1.3 mg/kg and 0.12 mg/kg, respectively. The remaining constituents were not reported at or above the laboratory detection limit.
- Soil boring SB-8 at 3.5 feet bgs was reported to contain TPHg, toluene, and MTBE at concentrations of 1.5 mg/kg, 0.024 mg/kg, and 0.055 mg/kg, respectively. At 6 feet bgs, SB-8 was reported to contain concentrations of TPHg, BTEX, MTBE, and TBA at concentrations of 14 mg/kg, 0.024 mg/kg, 0.12 mg/kg, 0.45 mg/kg, 0.087 mg/kg, 0.092 mg/kg, and 0.090 mg/kg, respectively. At 11.5 feet bgs, SB-8 was reported to contain TPHg, ethylbenzene, xylenes, MTBE, TAME, and TBA at concentrations of 1.4 mg/kg, 0.061 mg/kg, and 2.7 mg/kg, respectively. The remaining constituents were not reported at or above the laboratory detection limit.
- Soil boring SB-11 at 7.5 feet bgs was reported to contain concentrations of TPHg, toluene, ethylbenzene, and xylenes at 200 mg/kg, 0.96 mg/kg, 1.4 mg/kg, and 3.9 mg/kg, respectively. At 15.5 feet bgs, SB-11 was reported to contain MTBE at a concentration of 0.023 mg/kg. The remaining constituents were not reported at or above the laboratory detection limit.
- Soil boring SB-12 at 3.5 feet bgs was reported to contain MTBE at a concentration of 0.0083 mg/kg. At 6.5 feet bgs, SB-12 was reported to contain TPHg, BTEX, MTBE and TBA at a concentration of 4.2 mg/kg, 0.023 mg/kg, 0.034 mg/kg, 0.036 mg/kg, 0.0088 mg/kg, 0.26 mg/kg, and 0.17 mg/kg, respectively. At 11.5 feet bgs, SB-12 was reported to contain TBA at a concentration of 2.1 mg/kg. The remaining constituents were not reported at or above the laboratory detection limit.
- Soil boring SB-13 at 7.5 feet bgs was reported to contain concentrations of TPHg, BTEX, and TBA at concentrations of 26 mg/kg, 0.010 mg/kg, 0.20 mg/kg, 0.18 mg/kg, 0.64 mg/kg, and 0.12 mg/kg, respectively. The remaining constituents were not reported at or above the laboratory detection limit.
- Soil boring SB-14 at 3.5 feet bgs was reported to contain concentrations of TPHg and toluene at 3.0 mg/kg and 0.014 mg/kg, respectively. At 7.5 feet bgs, SB-14 was reported to contain TPHg, toluene, ethylbenzene, and xylenes at concentrations of 120

mg/kg, 0.75 mg/kg, 2.3 mg/kg, and 6.2 mg/kg, respectively. At 11.5 feet bgs, SB-14 was reported to contain MTBE at a concentration of 0.15 mg/kg. The remaining constituents were not reported at or above the laboratory detection limit.

• The soil sample from borings SB-5 (7.5 feet bgs), SB-7 (3.5 feet bgs and 10.5 feet bgs), SB-9 (10 feet bgs), SB-10 (6 feet bgs), and SB-11 (3.5 feet bgs) did not contain TPHg, BTEX, or fuel oxygenates at or above the laboratory detection limit.

Soil analytical data is displayed on Table 1 and Figure 5, and a copy of the laboratory analytical reports is included in Appendix C.

5.2 Soil Analytical Results – Deep Borings

Multiple soil samples were analyzed from each of the deep borings, with the intent of obtaining vertical delineation at the site. Select petroleum hydrocarbons were detected in the soil samples as follows:

- Soil samples were analyzed from boring DDP-1 at 5 feet, 8 feet, 11.5 feet, and 19.5 feet bgs. TPHg was detected at concentrations of 4.5 mg/kg, 96 mg/kg, and 11 mg/kg, respectively. At 19.5 feet bgs, TPHg was not detected at or above the laboratory detection limit. Benzene was detected at 5 feet and 11.5 feet bgs at a concentration of 0.096 mg/kg and 0.0077 mg/kg, respectively, however not detected at or above the laboratory detection limit at 8 feet or 19.5 feet bgs. MTBE was detected in each of the soil samples at concentrations of 7.9 mg/kg, 0.32 mg/kg, 1.0 mg/kg, and 4.0 mg/kg, respectively.
- Soil samples were analyzed from boring DDP-2 at 5 feet, 7.5 feet, 10.5 feet, 20.5 feet, 26.5, and 35.5 feet bgs. At 5 feet, 7.5 feet, and 10.5 feet bgs, TPHg was detected at concentrations of 5.8 mg/kg, 850 mg/kg, and 14 mg/kg and benzene was detected at a concentration of 0.010 mg/kg, 0.78 mg/kg, and 0.045 mg/kg, respectively. TPHg and benzene were not detected at or above the laboratory detection limit at the remaining depths. MTBE was detected at concentrations of 3.4 mg/kg, 7.9 mg/kg, 8.0 mg/kg, 0.86 mg/kg, 0.14 mg/kg, and 0.039 mg/kg, respectively.
- Soil samples were analyzed from boring DDP-3 at 5 feet, 7.5 feet, 12.5 feet, 20.5 feet, 26 feet, and 35.5 feet bgs. At 5 feet and 7.5 feet bgs, TPHg was detected at concentrations of 170 mg/kg and 930 mg/kg, respectively. The remaining soil samples did not contain TPHg at or above the laboratory detection limit. Benzene was detected at 7.5 feet bgs at a concentration of 1.7 mg/kg, however not detected at or above the laboratory detection limit in the remaining soil samples. MTBE was detected in each of the soil samples at concentrations of 6.3 mg/kg, 11 mg/kg, 0.78 mg/kg, 0.18 mg/kg, 0.022 mg/kg, and 0.020 mg/kg, respectively.
- Soil samples were analyzed from boring DDP-4 at 3.5 feet, 7.5 feet, 10.5 feet, 20.5 feet, and 29.5 feet bgs. In the soil sample collected at 7.5 feet bgs, TPHg and benzene were detected at a concentration of 180 mg/kg and 0.040 mg/kg, respectively. The remaining soil samples did not contain TPHg or benzene at or above the laboratory detection limit. MTBE was detected in soil samples from 3.5 feet, 7.5 feet, and 10.5 feet bgs at

concentrations of 0.055 mg/kg, 0.11 mg/kg, and 0.0093 mg/kg, respectively, however MTBE was not detected in the remaining soil samples analyzed.

Soil analytical data is displayed on Table 1 and Figure 5, and a copy of the laboratory analytical report is included in Appendix C.

5.3 Groundwater Analytical Results

Petroleum hydrocarbons were detected in the groundwater samples obtained from the soil borings as follows:

- TPHg was detected in nine of the borings at concentrations ranging from 130 μ g/L (DDP-1D) to 47,000 μ g/L (SB-8). TPHg was not detected at or above the laboratory detection limit in the groundwater sample analyzed from borings SB-7, SB-10, and DDP-1.
- Benzene was detected in seven of the borings at concentrations ranging from 1.3 μ g/L (SB-12) to 530 μ g/L (SB-8). Benzene was not detected at or above the laboratory detection limit in the groundwater samples analyzed from borings SB-5, SB-7, SB-10, SB-13, and DDP-1.
- Toluene was detected in seven of the borings at concentrations ranging from 0.59 μ g/L (SB-11) to 200 μ g/L (SB-8). Toluene was not detected at or above the laboratory detection limit in the groundwater samples analyzed from borings SB-5, SB-7, SB-10, SB-13, and DDP-1.
- Ethylbenzene was detected in seven of the borings at concentrations ranging from 5.4 μg/L (DDP-1D) to 3,100 μg/L (SB-8). Ethylbenzene was not detected at or above the laboratory detection limit in the groundwater samples analyzed from borings SB-5, SB-7, SB-10, SB-13, and DDP-1.
- Xylenes were detected in eight of the borings at concentrations ranging from 5.3 μ g/L (DP-4) to 4,100 μ g/L (SB-8). Xylenes were not detected at or above the laboratory detection limit in the groundwater samples analyzed from borings SB-5, SB-7, SB-10, and DDP-1.
- MTBE was detected in each of the borings with the exception of SB-7. MTBE was present at concentrations ranging from $18 \ \mu g/L$ (SB-10) to $18,000 \ \mu g/L$ (SB-13).
- TAME was detected in seven of the borings at concentrations ranging from 2.7 µg/L (DDP-1D) to 800 µg/L (DP-4). TAME was not detected at or above the laboratory detection limit in the groundwater samples analyzed from borings SB-7, SB-8, SB-10, and SB-12.
- TBA was detected in each of the borings with the exception of SB-5 and SB-7. TBA was present at concentrations ranging from 2.5 μ g/L (SB-10) to 30,000 μ g/L (SB-8).

DIPE, ETBE, 1,2-DCA, and EDB were not detected at or above the laboratory detection limit in any of the groundwater samples analyzed. Groundwater analytical results are displayed on Table 2 and Figure 6, and a copy of the laboratory analytical report is included in Appendix C.

6.0 SOIL VAPOR SAMPLING

On December 3, 2008, soil gas samples were collected from nested gas probes SG-1 through SG-3 which were screened at two depths, 3 feet bgs and 6 feet bgs. Prior to sample collection, the soil gas probes were purged of three (3) volumes of dead air using a 30 to 60 milliliter (mL) syringe connected via an on-off valve. This helped to ensure that a sufficient volume of ambient air was removed from the sampling point and that samples collected were representative of subsurface conditions. The purged volume was calculated by summing the volume of the sample tubing and annular space around the probe tip. One purge volume for the 3 and 6-foot probes are approximately 12 and 29 milliliters (mL), respectively. Three default purge volumes for the 3 and 6-foot probes are 35 and 58 mL, respectively.

After the probes were adequately purged of three well volumes, soil gas samples were collected into laboratory–evacuated 1-L Summa[™] canisters. A sampling manifold with a critical orifice flow controllers designed and provided by McCampbell Analytical Inc. was placed inline between the soil gas probe and Summa[™] canister to ensure that it was filled at a constant rate of between 100 to 200 milliliters per minute (mL/min) as recommended by the ASGI. A new laboratory-certified clean sampling manifold was used at each sampling point.

During sampling, an open container of isopropyl alcohol (leak check compound), was placed inside a plastic Tupperware box designed to encompass the well box where the soil gas tubing and the grout seal meet, the sampling manifold, and the Summa canister. Weather stripping was attached to the bottom of the Tupperware box to help seal the box to the pavement. A small access hole was drilled into the box which was used as an access port for PID measurements during sampling. To avoid possible cross contamination, the isopropyl alcohol leak check compound was stored separately from other sampling tools in a zipper locking bag.

A total of nine (7) soil gas samples, which included one field duplicate (SG-3-6-Dup) were transported under proper chain of custody protocol to McCampbell Analytical, Inc. of Pittsburg, California (Department of Health Services Certification #1644). Samples were analyzed for TPH-g by EPA Method Modified TO-3, and BTEX and MTBE by EPA Method Modified TO-15, when possible. If hydrocarbon concentrations were too high, sample analysis was run by EPA Method 8015 and 8021B, respectively. In addition, the samples were analyzed for isopropyl alcohol, the leak check compound, as detect or non detect. Laboratory procedures included appropriate quality assurance and quality control analyses, including method blanks and use of surrogates during sample analyses. According to McCampbell Analytical, the analytical equipment was calibrated in conformance with the most current ASGI and the modified EPA Analytical Methods. In addition, the leak compound was not detected at or above the requested detection limit, indicating that a significant leak was not present during sampling.

6.1 Soil Vapor Analytical Results

Petroleum hydrocarbons were detected in the soil vapor samples obtained from the shallow vapor probes as follows:

- TPHg was detected in each of the three shallow probes at concentrations of 20,000 micrograms per cubic meter (μg/m³) (SG-1-3), 18,000 μg/m³ (SG-2-3), and 470,000 μg/m³ (SG-3-3).
- Benzene was not detected in the shallow soil vapor probes at or above the laboratory detection limit.
- Toluene was detected in two of the three shallow probes at concentrations of 25 μ g/m³ (SG-1-3) and 10,000 μ g/m³ (SG-3-3).
- Ethylbenzene was detected in one of the three shallow probes at a concentration of 10 μ g/m³ (SG-1-3).
- Xylenes were detected in two of the three shallow probes at concentrations of 39 μ g/m³ (SG-1-3) and 750 μ g/m³ (SG-3-3).
- MTBE was detected in one of the three shallow probes at a concentration of 470 μ g/m³ (SG-2-3).

Petroleum hydrocarbons were detected in the soil vapor samples obtained from the deep vapor probes as follows:

- TPHg was detected in each of the three deep probes at concentrations of 43,000,000 μ g/m³ (SG-1-6), 38,000,000 μ g/m³ (SG-2-6), and 1,200,000 μ g/m³ (SG-3-6).
- Benzene was detected in each of the three deep probes at concentrations of 12,000 μ g/m³ (SG-1-6), 41,000 μ g/m³ (SG-2-6), and 890 μ g/m³ (SG-3-6).
- Toluene was detected in each of the three deep probes at concentrations of 480,000 μ g/m³ (SG-1-6), 370,000 μ g/m³ (SG-2-6), and 26,000 μ g/m³ (SG-3-6).
- Xylenes were detected in two of the three deep probes at concentrations of 21,000 μg/m³ (SG-1-6) and 2,300 μg/m³ (SG-3-6).

Ethylbenzene and MTBE were not detected at or above the laboratory detection limit in Soil vapor analytical results are displayed on Table 4 and Figure 7, and a copy of the laboratory analytical report is included in Appendix C.

7.0 SUMMARY AND CONCLUSIONS

On November 24 through November 26, 2008 AEI advanced ten shallow soil borings (DP-4, SB-5, SB-7 to SB-14) in the vicinity of the subject property and four deep soil borings (DDP-1 to DDP-4) at the subject property. In addition, three nested soil vapor probes (SG-1 through SG-3) were installed at the site. The work was performed in order to further delineate vertical and lateral hydrocarbon contamination beneath the site and obtain baseline information regarding soil vapor beneath the site.

7.1 Vertical Soil Delineation

Soil borings DDP-1 through DDP-4 were advanced for the purpose of obtaining vertical soil delineation. Based on the results obtained, it appears that the majority of the

hydrocarbon contaminated soil is present between 5 and 10 feet bgs. By 20 feet bgs, TPHg and benzene concentrations drop to below laboratory detection limits. MTBE decreases with depth in the soil borings and is below the respective Environmental Screening Level (ESL) by 10 feet bgs in DDP-4 and 26 feet bgs in DDP-3. In DDP-2, MTBE is present at a concentration of 0.039 mg/kg at 35.5 feet bgs which is slightly above the ESL of 0.023 mg/kg, however MTBE exhibited a decreasing trend with depth in this boring beginning at 10 feet bgs. Based on the results of the soil samples, it appears that hydrocarbons adequately decrease with depth in the borings.

7.2 Lateral Groundwater Delineation

Soil borings DP-4, SB-5, and SB-7 to SB-14 were advanced for the purpose of obtaining lateral groundwater delineation. Hydrocarbons were not detected in boring SB-7, therefore the groundwater appears delineated to the south/southeast. Based on data obtained from the remaining borings, it is apparent that the dissolved hydrocarbon plume extends in a westerly and southwesterly direction from the site. The furthest downgradient boring (SB-14) contained elevated concentrations of hydrocarbons, and it appears that further delineation/monitoring is necessary to determine the extent of the dissolved hydrocarbon plume.

7.3 Soil Vapor Data

Soil vapor probes SG-1 through SG-3 were installed for the purpose of obtaining baseline soil vapor data at the site. Soil vapor samples collected at 6 feet bgs contained relatively high concentrations of TPHg, benzene, and toluene. However, these concentrations significantly attenuate by the 3 foot bgs sample. At 3 feet bgs, only TPHg in SG-3-3 exceeded its respective ESL. AEI recommends another round of samples be collected from the soil vapor probes to further evaluate the soil vapor concentrations beneath the site.

8.0 PROPOSED ADDITIONAL CHARACTERIZATION

Data obtained during this investigation further validates the known need for offsite monitoring wells in the vicinity of the site. Previous attempts by Herschy to obtain encroachment permits with the City of Oakland have been unsuccessful, therefore the offsite wells have not been installed. AEI has since been able to obtain the necessary encroachment permits with the City of Oakland and is ready to complete the longstanding goal of offsite well installation activities. Following the installation and sampling of the offsite monitoring wells, a better understanding of the dissolved hydrocarbon plume will be available and AEI will be prepared to move forward with a remedial strategy for the site. The remedial strategy will include necessary pilot testing activities to determine the most efficient and cost effective approach for cleanup at the site, and may incorporate the onsite sparge wells, extraction wells, and sparge system (the extraction system was removed by the previous consultant). During the recent investigation, additional analytical parameters, including grain size analysis, moisture content, density, and inorganic and organic carbon content were obtained to help assist in remedial strategy and planning.

The goal of the proposed additional characterization is to further define the extent of dissolved phase hydrocarbons (and LNAPL if present) by providing monitoring well locations to assess the stability of the dissolved phase plume and groundwater movement. Proposed wells are shown on Figure 8 and a summary is presented below:

порозей тоти	
Well ID	Location / Purpose
MW-7	South of the subject site to monitor groundwater flow and hydrocarbon distribution.
MW-8	Southwest of the subject site to monitor observed free product in SB-8.
MW-9	Southwest of the subject site between SB-8 and SB-9 to monitor groundwater flow and hydrocarbon distribution.
MW-10	Southwest of the subject site near SB-11 to monitor groundwater flow and extent of hydrocarbon distribution, particularly MTBE.
MW-11	West of the subject site, near SB-12 and SB-13 to monitor groundwater flow and extent of hydrocarbon distribution.
MW-12	Southwest of the subject site near SB-14 to monitor groundwater flow and extent hydrocarbon distribution, particularly MTBE.
MW-13	Southwest of the subject site near SB-14 to monitor groundwater flow and extent of hydrocarbon distribution, particularly MTBE.
MW-14	Southwest of the subject site beyond SB-14 to monitor groundwater flow and further delineate the extent of MTBE past SB-14.

Proposed Monitoring Wells

The scope of work and standard operating procedures to accomplish the investigation is discussed below in more detail. Upon review and comment by the ACHCSA and involved parties, the project will be scheduled.

8.1 Permitting and Setup Activities

The necessary encroachment permits with the City of Oakland have been obtained by AEI, therefore permitting delays are not expected. Upon approval, the appropriate well permits from ACPW and final excavation permits from the City of Oakland will be obtained; utility clearances and mark-out performed; and notification give to involved parties and agencies. All drilling work will be performed by a California C57 licensed drilling contractor working under the direction of AEI professional staff. AEI will prepare a site specific Health and Safety Plan conforming to Part 1910.120 (i) (2) of 29 CFR. The HSP will outline specific worker protection and health and safety measures, be reviewed prior to start of field work, and be available at all times onsite.

8.2 Soil Borings and Sampling

All soil borings will be advanced with hollow stem auger drilling equipment. Soil samples will be collected as deemed necessary by an AEI geologist. Based on the proximity of the borings to existing borings, soil samples may or may not be collected. Soil borings will be advanced to an approximate depth of 15 feet bgs for observations and appropriate sample collection, as deemed necessary.

Soil samples will be collected in 2 inch diameter brass liners within the sampling barrel from which a 6 inch sample will be taken as needed for possible analyses. A PID will be used to screen soil samples in the field, and PID readings for each sample will be included on boring logs. Samples will be sealed with Teflon tape and plastic end caps.

8.3 Well Construction

Each boring will be converted to a monitoring well by overdrilling the boring with 8¼ inch diameter hollow stem augers. The boreholes will be advanced to approximately 15 feet bgs, however the exact depth will be determined based on field observations. The wells will be constructed with 2 inch diameter well casing, with 10 feet of factory slotted 0.020-inch well screen. Depths may be adjusted slightly based on field conditions but screen intervals are planned to be above anticipated high water level.

The well casings will be installed through the augers. The casing will be flush threaded PVC fitted with a threaded bottom cap. An annular sand pack (consisting of clean #3 Monterey Sand) will be installed through the augers to approximately 0.5 feet above the screened interval. During placement of the sand pack, the augers will be lifted from the borehole in 1-foot lifts. Given the shallow depth of the wells, a minimum bentonite seal (no more than 1 foot) will be placed above the sand and hydrated. The remainder of the well will be sealed with cement grout annular seal. Each will be equipped with a locking, expandable inner cap and finished with a flush mount traffic rated well box. The wells will be developed no sooner than 3 days after setting the well seals by surging, bailing, and purging to stabilize the formation and remove accumulated fines from the casing and sand pack.

Each well will be surveyed relative to each other, existing wells, and site features, and to mean sea level by a California licensed land surveyor, and the data will be uploaded to the state Geotracker database as required. DWR well registration forms (DWR Form 188) will be completed for each of the wells upon installation.

8.4 Sample Storage and Analyses

All samples will be labeled with at a minimum, a unique sample identification, sample date and time, and project number. The samples will be sealed in plastic bags and immediately placed in a pre-chilled cooler over water ice. Samples will be entered onto a chain of custody prior to leaving the site. Samples will be delivered on the day of collection to a California Department of Health Services (DHS) certified analytical laboratory. It is anticipated soil samples may or may not be analyzed from each soil boring, depending on the proximity of nearby borings. The following analyses are proposed:

- TPH-g, by EPA method 8015 Modified.
- BTEX and MTBE by EPA method 8021B.
- Fuel oxygenates MTBE, DIPE, ETBE, TAME, TBA by EPA Method 8260B.

8.5 Equipment Decontamination

Sampling equipment, including sampling barrels, augers, and other equipment used to sample, will be decontaminated between samples using a triple rinse system containing $Alconox^{TM}$ or similar detergent. Rinse water will be contained in sealed labeled DOT approved 55-gallon drums in a secure location on-site pending proper disposal.

8.6 Quarterly Monitoring Activities

Monitoring and sampling of the resulting network of wells will occur on a quarterly basis with the first event to no sooner than 3 days after well development. The existing schedule may be adjusted to coordinate sampling of the newly installed wells. During each monitoring event, water levels will be measured and LNAPL checked with an oil-water interface probe. Wells not containing measurable LNAPL will be purged of at least 3 well volumes, or until reasonably clear, prior to sample collection. During purging the following water quality measurements will be collected: temperature, pH, specific conductivity, and dissolved oxygen (DO). Groundwater samples will be collected with new, unused disposable bailers into appropriate laboratory-supplied containers. Following the first event, a monitoring program will be proposed with the report.

8.7 Waste Handling

All investigation-derived waste (IDW) will be stored on-site in sealed, labeled 55-gallon drums. IDW will include soil cuttings, plastic sample liners, and other sampling disposables. Equipment rinse water and well purge water will also be stored onsite. Waste will be profiled for disposal to an appropriate facility and transported under manifest from the site in a timely manner.

8.8 Reporting

AEI will prepare and issue a final report following receipt of all necessary data. The report will include logs of borings, cumulative data tables, figures of sampling locations and results, and copies of laboratory analytical and survey reports. A written discussion of the methods, findings, and recommendations will be included. The report and subsequent quarterly monitoring reports will include a summary of results and recommendations as necessary. The report (updated Site Conceptual Model) will be followed by a corrective action plan which will include a pilot test / feasibility study work plan for mitigation at the site. Site data and electronic report copies will be uploaded into the GeoTracker database, as necessary. The project will be overseen and the reports signed by AEI California registered professionals.

8.9 Estimated Schedule

AEI anticipates receiving the drilling permits from the ACPW and City of Oakland within two to three weeks from the approval of this Work Plan. Upon receipt of the permit from the ACPW and City of Oakland, AEI anticipates that field activities will commence within two weeks. Laboratory analytical results will be obtained within approximately one week of sample collection. A final report will be prepared and submitted to the client and ACHCSA shortly thereafter. This report and the results of the investigation have been uploaded to Geotracker as required by Assembly Bill 592 and Senate Bill 1189.

9.0 **REPORT LIMITATIONS AND SIGNATURES**

This report presents a summary of work completed by AEI, including observations and descriptions of site conditions. Where appropriate, it includes analytical results for samples taken during the course of the work. The number and location of samples are chosen to provide required information, but it cannot be assumed that they are entirely representative of all areas not sampled. All conclusions and recommendations are based on these analyses, observations, and the governing regulations. Conclusions beyond those stated and reported herein should not be inferred from this document.

These services were performed in accordance with generally accepted practices in the environmental engineering and construction field that existed at the time and location of the work. AEI requests comment and concurrence with this plan. If you have any questions regarding this report, we can be reached at (925) 944-2899.

Sincerely, AEI Consultants

Jeremy Smith

Senior Project Manager

Report Distribution:

Péter J. McIntvre

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FIGURES











LEGEND

O MONITORING WELL

• SOIL BORING

All results in milligrams per kilogram (mg/kg) TPHg = Total Petroleum Hydrocarbons as gasoline MTBE = methyl tert butyl ether Refer to Table 1 for complete analytical data.





- X PROPOSED MONITORING WELL
- SOIL BORING

LEGEND

O MONITORING WELL



TABLES

Table 1, 6211 San Pablo Avenue, Oakland, CA - AEI Project # 280346

Soil Analytical Data

Sample ID	Data	Depth	TPHg	Benzene	Toluene	Ethylbenzene	Xylenes	MTBE	DIPE	ETBE	TAME	TBA	1,2-DCA	EDB
Sample ID	Date	(feet bgs)	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
DP-4														
DP-4-3.5	11/24/2008	3.5	16	ND<0.005	0.037	ND<0.005	0.041	ND<0.005	ND<0.005	ND<0.005	ND<0.005	0.15	ND<0.004	ND<0.004
DP-4-7.5	11/24/2008	7.5	16	ND<0.005	0.12	0.016	0.032	ND<0.005	ND<0.005	ND<0.005	ND<0.005	ND<0.05	ND<0.004	ND<0.004
DP-4-15	11/24/2008	15	ND<1.0	ND<0.005	ND<0.005	ND<0.005	ND<0.005	1.3	ND<0.10	ND<0.10	0.12	ND<1.0	ND<0.080	ND<0.080
SB-5														
SB-5-7.5	11/25/2008	7.5	ND<1.0	ND<0.005	ND<0.005	ND<0.005	ND<0.005	ND<0.005	ND<0.005	ND<0.005	ND<0.005	ND<0.05	ND<0.004	ND<0.004
SD 7														
SB-7-3.5	11/25/2008	3.5	ND<1.0	ND<0.005	ND-0.005	ND<0.005	ND~0.005	ND~0.005	ND<0.005	ND-0.005	ND~0.005	ND-0.05	ND<0.004	ND-0.004
SB-7-10 5	11/25/2008	10.5	ND<1.0	ND<0.005	ND<0.005	ND<0.005	ND<0.005	ND<0.005	ND<0.005	ND<0.005	ND<0.005	ND<0.05	ND<0.004	ND<0.004
50-7-10.5	11/25/2000	10.5	ND<1.0	ND<0.005	ND<0.005	112<0.005	ND<0.005	ND<0.005	ND<0.005	ND<0.005	ND<0.005	ND<0.05	ND<0.004	ND<0.004
SB-8														
SB-8-3.5	11/24/2008	3.5	1.5	ND<0.005	0.024	ND<0.005	ND<0.005	0.055	ND<0.005	ND<0.005	ND<0.005	ND<0.05	ND<0.004	ND<0.004
SB-8-6	11/24/2008	6	14	0.024	0.12	0.45	0.087	0.092	ND<0.005	ND<0.005	ND<0.005	0.090	ND<0.004	ND<0.004
SB-8-11.5	11/24/2008	11.5	1.4	ND<0.005	ND<0.005	0.034	0.049	1.4	ND<0.050	ND<0.050	0.061	2.7	ND<0.040	ND<0.040
SB-9														
SB-9-10	11/24/2008	10	ND<1.0	ND<0.005	ND<0.005	ND<0.005	ND<0.005	ND<0.005	ND<0.005	ND<0.005	ND<0.005	ND<0.05	ND<0.004	ND<0.004
SB-10														
SB-10-6	11/24/2008	6	ND<1.0	ND<0.005	ND<0.005	ND<0.005	ND<0.005	ND<0.005	ND<0.005	ND<0.005	ND<0.005	ND<0.05	ND<0.004	ND<0.004
SB-11														
SB-11-3.5	11/24/2008	3.5	ND<1.0	ND<0.005	ND<0.005	ND<0.005	ND<0.005	ND<0.005	ND<0.005	ND<0.005	ND<0.005	ND<0.05	ND<0.004	ND<0.004
SB-11-7.5	11/24/2008	7.5	200	ND<0.10	0.96	1.4	3.9	ND<0.005	ND<0.005	ND<0.005	ND<0.005	ND<0.05	ND<0.004	ND<0.004
SB-11-15.5	11/24/2008	15.5	ND<1.0	ND<0.005	ND<0.005	ND<0.005	ND<0.005	0.023	ND<0.005	ND<0.005	ND<0.005	ND<0.05	ND<0.004	ND<0.004
SB-12														
SB-12-3.5	11/25/2008	3.5	ND<1.0	ND<0.005	ND<0.005	ND<0.005	ND<0.005	0.0083	ND<0.005	ND<0.005	ND<0.005	ND<0.05	ND<0.004	ND<0.004
SB-12-6.5	11/25/2008	6.5	4.2	0.023	0.034	0.036	0.0088	0.26	ND<0.010	ND<0.010	ND<0.010	0.17	ND<0.0080	ND<0.0080
SB-12-11.5	11/25/2008	11.5	ND<1.0	ND<0.005	ND<0.005	ND<0.005	ND<0.005	ND<0.050	ND<0.050	ND<0.050	ND<0.050	2.1	ND<0.040	ND<0.040
SR-13														
SB-13-7 5	11/25/2008	7.5	26	0.010	0.20	0.18	0.64	ND<0.010	ND<0.010	ND<0.010	ND<0.010	0.12	ND<0.0080	ND<0.0080
50 15 1.5	11/25/2000	1.5	20	0.010	0.20	0.10	0.04	110 <0.010	112 (0.010	112 (0.010	112 (0.010	0.12	112 (0.0000	11D <0.0000
SB-14														
SB-14-3.5	11/24/2008	3.5	3.0	ND<0.050	0.014	ND<0.050	ND<0.050	ND<0.005	ND<0.005	ND<0.005	ND<0.005	ND<0.05	ND<0.004	ND<0.004
SB-14-7.5	11/24/2008	7.5	120	ND<0.050	0.75	2.3	6.2	ND<0.10	ND<0.10	ND<0.10	ND<0.10	ND<1.0	ND<0.080	ND<0.080
SB-14-11.5	11/24/2008	11.5	ND<1.0	ND<0.050	ND<0.050	ND<0.050	ND<0.050	0.15	ND<0.005	ND<0.005	ND<0.005	ND<0.05	ND<0.004	ND<0.004

Table 1, 6211 San Pablo Avenue, Oakland, CA - AEI Project # 280346

Soil Analytical Data

Samula ID	Data	Depth	TPHg	Benzene	Toluene	Ethylbenzene	Xylenes	MTBE	DIPE	ETBE	TAME	TBA	1,2-DCA	EDB
Sample ID	Date	(feet bgs)	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
DDP-1														
DDP-1-5	11/25/2008	5	4.5	0.096	0.044	0.017	0.021	7.9	ND<0.25	ND<0.25	0.28	12	ND<0.20	ND<0.20
DDP-1-8	11/25/2008	8	96	ND<0.050	0.93	0.19	0.13	0.32	ND<0.020	ND<0.020	ND<0.020	1.3	ND<0.016	ND<0.016
DDP-1-11.5	11/25/2008	11.5	11	0.0077	0.099	0.016	0.057	1.0	ND<0.033	ND<0.033	0.17	4.4	ND<0.027	ND<0.027
DDP-1-19.5	11/25/2008	19.5	ND<1.0	ND<0.005	ND<0.005	ND<0.005	ND<0.005	4.0	ND<0.20	ND<0.20	0.26	7.1	ND<0.16	ND<0.16
DDP-2														
DDP-2-5	11/26/2008	5	5.8	0.010	0.054	0.0063	0.057	3.4	ND<0.10	ND<0.10	0.23	2.3	ND<0.080	ND<0.080
DDP-2-7.5	11/26/2008	7.5	850	0.78	4.0	6.8	63	7.9	ND<0.20	ND<0.20	0.58	3.4	ND<0.16	ND<0.16
DDP-2-10.5	11/26/2008	10.5	14	0.045	0.13	0.040	0.14	8.0	ND<0.50	ND<0.50	ND<0.50	12	ND<0.40	ND<0.40
DDP-2-20.5	11/26/2008	20.5	ND<1.0	ND<0.005	ND<0.005	ND<0.005	ND<0.005	0.86	ND<0.050	ND<0.050	ND<0.050	ND<0.50	ND<0.040	ND<0.040
DDP-2-26.5	11/26/2008	26.5	ND<1.0	ND<0.005	ND<0.005	ND<0.005	ND<0.005	0.14	ND<0.005	ND<0.005	ND<0.005	ND<0.05	ND<0.004	ND<0.004
DDP-2-35.5	11/26/2008	35.5	ND<1.0	ND<0.005	ND<0.005	ND<0.005	ND<0.005	0.039	ND<0.005	ND<0.005	ND<0.005	ND<0.05	ND<0.004	ND<0.004
DDP-3														
DDP-3-5	11/26/2008	5	170	ND<0.10	1.6	0.81	20	6.3	ND<0.25	ND<0.25	0.38	6.6	ND<0.20	ND<0.20
DDP-3-7.5	11/26/2008	7.5	930	1.7	23	11	73	11	ND<0.50	ND<0.50	1.1	ND<5.0	ND<0.40	ND<0.40
DDP-3-12.5	11/26/2008	12.5	ND<1.0	ND<0.005	0.0075	ND<0.005	0.013	0.78	ND<0.10	ND<0.10	ND<0.10	12	ND<0.080	ND<0.080
DDP-3-20.5	11/26/2008	20.5	ND<1.0	ND<0.005	ND<0.005	ND<0.005	ND<0.005	0.18	ND<0.010	ND<0.010	ND<0.010	ND<0.10	ND<0.0080	ND<0.0080
DDP-3-26	11/26/2008	26	ND<1.0	ND<0.005	ND<0.005	ND<0.005	ND<0.005	0.022	ND<0.005	ND<0.005	ND<0.005	ND<0.05	ND<0.004	ND<0.004
DDP-3-35.5	11/26/2008	35.5	ND<1.0	ND<0.005	ND<0.005	ND<0.005	ND<0.005	0.020	ND<0.005	ND<0.005	ND<0.005	ND<0.05	ND<0.004	ND<0.004
DDP-4														
DDP-4-3.5	11/26/2008	3.5	ND<1.0	ND<0.005	ND<0.005	ND<0.005	ND<0.005	0.055	ND<0.005	ND<0.005	ND<0.005	ND<0.05	ND<0.004	ND<0.004
DDP-4-7.5	11/26/2008	7.5	180	0.040	0.84	0.26	2.5	0.11	ND<0.020	ND<0.020	ND<0.020	ND<0.20	ND<0.016	ND<0.016
DDP-4-10.5	11/26/2008	10.5	ND<1.0	ND<0.005	ND<0.005	ND<0.005	ND<0.005	0.0093	ND<0.005	ND<0.005	ND<0.005	ND<0.05	ND<0.004	ND<0.004
DDP-4-20.5	11/26/2008	20.5	ND<1.0	ND<0.005	ND<0.005	ND<0.005	ND<0.005	ND<0.005	ND<0.005	ND<0.005	ND<0.005	ND<0.05	ND<0.004	ND<0.004
DDP-4-29.5	11/26/2008	29.5	ND<1.0	ND<0.005	ND<0.005	ND<0.005	ND<0.005	ND<0.005	ND<0.005	ND<0.005	ND<0.005	ND<0.05	ND<0.004	ND<0.004

Notes:

TPHg = total petroleum hydrocarbons as gasoline using EPA Method 8015 Benzene, toluene, ethylbenzene, and xylenes using EPA Method 8021B MTBE = methyl-tertiary butyl ether using EPA Method 8260B TBA = tert-butyl alcohol using EPA Method 8260B TAME = tert-amyl methyl ether using EPA Method 8260B DIPE = diisopropyl ether using EPA Method 8260B ETBE = ethyl tert-butyl ether using EPA Method 8260B 1,2-DCA = 1,2-dichloroethane using EPA Method 8260B EDB = Ethylene dibromide using EPA Method 8260B mg/kg = milligrams per kilogram ND = non detect at respective reporting limit

Sample ID	Data	TPHg	Benzene	Toluene	Ethylbenzene	Xylenes	MTBE	DIPE	ETBE	TAME	TBA	1,2-DCA	EDB
Sample ID	Date	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L
DP-4	11/24/2008	1,700	17	5.6	22	5.3	9,700	ND<250	ND<250	800	10,000	ND<250	ND<250
SB-5	11/25/2008	430	ND<1.7	ND<1.7	ND<1.7	ND<1.7	4,600	ND<100	ND<100	460	ND<400	ND<100	ND<100
SB-7	11/25/2008	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<2.0	ND<0.5	ND<0.5
SB-8	11/24/2008	47,000	530	200	3,100	4,100	1,900	ND<170	ND<170	ND<170	30,000	ND<170	ND<170
SB-9	11/24/2008	1,300	8.6	3.9	55	200	180	ND<5.0	ND<5.0	12	25	ND<5.0	ND<5.0
SB-10	11/24/2008	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	18	ND<0.5	ND<0.5	ND<0.5	2.5	ND<0.5	ND<0.5
SB-11	11/24/2008	1,200	5.6	0.59	38	220	160	ND<5.0	ND<5.0	5.4	37	ND<5.0	ND<5.0
SB-12	11/25/2008	390	1.3	0.93	18	56	3,900	ND<120	ND<120	ND<120	29,000	ND<120	ND<120
SB-13	11/25/2008	1,100	ND<5.0	ND<5.0	ND<5.0	14	18,000	ND<250	ND<250	720	5,400	ND<250	ND<250
SB-14	11/24/2008	1,300	20	6.9	61	170	1,900	ND<50	ND<50	52	350	ND<50	ND<50
DDP-1	11/25/2008	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	47	ND<1.0	ND<1.0	2.8	100	ND<1.0	ND<1.0
DDP-1D	11/25/2008	130	5.7	6.6	5.4	21	21	ND<2.5	ND<2.5	2.7	500	ND<2.5	ND<2.5

Table 2, 6211 San Pablo Avenue, Oakland, CA - AEI Project # 280346

Groundwater Analytical Data - Soil Borings

Notes:

TPHg = total petroleum hydrocarbons as gasoline using EPA Method 8015

Benzene, toluene, ethylbenzene, and xylenes using EPA Method 8021B

MTBE = methyl-tertiary butyl ether using EPA Method 8260B

TBA = tert-butyl alcohol using EPA Method 8260B

TAME = tert-amyl methyl ether using EPA Method 8260B

DIPE = diisopropyl ether using EPA Method 8260B

ETBE = ethyl tert-butyl ether using EPA Method 8260B

1,2-DCA = 1,2-dichloroethane using EPA Method 8260B

EDB = Ethylene dibromide using EPA Method 8260B

µg/L= micrograms per liter

ND = non detect at respective reporting limit

Table 3 6211 San Pable Aver	we Ookland CA	A FI Project # 280346
Table 5, 0211 San Pablo Aven	iue, Oakialiu, CA -	ALI Project # 200540

Groundwater Analytical Data

G 1 ID		TPHg	Benzene	Toluene	Ethylbenzene	Xylenes	MTBE	DIPE	ETBE	TAME	TBA	1,2-DCA	EDB	Methanol	Ethanol
Sample ID	Date	μg/Ľ	μg/L	μg/L	μg/L	μg/L	μg/L	μg/L	μg/L	μg/L	μg/L	µg/L	μg/L	μg/L	μg/L
MW-1	11/7/1999	5,700	170	59	22	85	20,000	NA	NA	NA	NA	NA	NA	NA	NA
	3/8/2001	17,000	480	150	52	170	38,000	NA	NA	NA	NA	NA	NA	NA	NA
	11/17/2001	10,000	230	210	60	250	22,000	NA	NA	NA	NA	NA	NA	NA	NA
	3/31/2002	12,000	61	ND	ND	29	35,000	NA	NA	NA	NA	NA	NA	NA	NA
	11/9/2003	19,000	ND	ND	ND	ND	50,000	NA	NA	NA	NA	NA	NA	NA	NA
	12/9/2003	22,000	150	ND	ND	ND	66,000	NA	NA	NA	NA	NA	NA	NA	NA
MW-1R	11/17/2001	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	3/31/2002	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	9/9/2003	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	12/9/2003	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	2/19/2004	1,800	95	130	44	200	220	NA	NA	NA	NA	NA	NA	NA	NA
	5/24/2004	210	12	10	5.4	23	79	ND	ND	2.1	37	ND	ND	ND	ND
	9/3/2004	300	1.5	7.1	9.4	42	81	ND	ND	1.6	ND	ND	ND	ND	ND
	11/2/2004	290	14	30	9.5	45	45	ND	ND	1.1	ND	NA	NA	ND	ND
	2/17/2005	530	3.4	ND	ND	2.6	1,000	ND	ND	100	ND	NA	NA	ND	ND
	5/24/2005	NA	NA	NA	NA	NA	NA	ND	ND	610	ND	ND	ND	NA	NA
	8/15/2005	2,500	64	240	61	210	2,300	ND	ND	210	ND	ND	ND	NA	NA
	11/17/2005	2,500	66	290	75	290	1,300	ND	ND	110	1,600	ND	ND	NA	NA
	2/8/2006	3,300	100	310	86	470	1,400	ND	ND	130	1,400	ND	ND	NA	NA
	5/5/2006	3,400	170	350	97	550	1,100	ND	ND	100	2,400	ND	ND	NA	NA
	8/18/2006	5,800	190	1,000	230	1,000	490	ND	ND	36	2,900	ND	ND	NA	NA
	12/1/2006	410	1.7	6.3	1.2	47	100	ND	ND	4.7	100	ND	ND	NA	NA
	2/23/2007	ND	ND	0.51	ND	1.4	3	ND	ND	ND	ND	ND	ND	NA	NA
	5/10/2007	ND	ND	ND	ND	2.0	5.9	ND	ND	ND	ND	ND	ND	NA	NA
	8/16/2007	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NA	NA
	11/8/2007	1,300	11	82	54	270	1.4	ND	ND	ND	ND	ND	ND	NA	NA
	2/14/2008	800	7.6	31	23	150	1.7	ND	ND	ND	ND	ND	ND	NA	NA
	5/15/2008	3,200	20	200	110	550	4.2	ND<0.50	ND<0.50	1.0	ND<20	ND<0.50	ND<0.50	NA	NA
	9/10/2008	1,000	6.5	22	19	120	2.3	ND<0.50	ND<0.50	ND<0.50	4.0	ND<0.50	ND<0.50	NA	NA
MW-2	11/7/1999	6,000	1,300	92	50	400	6,800	NA	NA	NA	NA	NA	NA	NA	NA
	3/8/2001	41,000	8,100	870	2,000	4,100	26,000	NA	NA	NA	NA	NA	NA	NA	NA
	11/17/2001	18,000	3,700	180	610	640	16,000	NA	NA	NA	NA	NA	NA	NA	NA
	3/31/2002	32,000	6,500	270	1,700	2,700	19,000	NA	NA	NA	NA	NA	NA	NA	NA
	9/9/2003	24,000	4,600	ND	1,200	440	19,000	NA	NA	NA	NA	NA	NA	NA	NA
	12/9/2003	31,000	6,200	170	1,600	2,700	19,000	NA	NA	NA	NA	NA	NA	NA	NA
	2/19/2004	21,000	4,600	120	970	2,000	15,000	NA	NA	NA	NA	NA	NA	NA	NA
	5/24/2004	1,200	120	3	63	67	1,900	ND	ND	ND	ND	ND	ND	ND	ND
	9/3/2004	2,300	120	ND	51	70	1,700	ND	ND	26	ND	ND	ND	ND	ND
	11/2/2004	530	35	ND	17	30	520	ND	ND	28	100	NA	NA	ND	ND

Table 3, 6211 San Pablo Avenue, Oakland, CA - AEI Project # 280346

Groundwater Analytical Data

Comple ID	Dete	TPHg	Benzene	Toluene	Ethylbenzene	Xylenes	MTBE	DIPE	ETBE	TAME	TBA	1,2-DCA	EDB	Methanol	Ethanol
Sample ID	Date	μg/L	μg/L	μg/L	µg/L	μg/L	µg/L	μg/L	µg/L	µg/L	μg/L	μg/L	μg/L	μg/L	µg/L
MW-2	2/17/2005	18,000	2,100	31	800	680	20,000	ND	ND	1,000	ND	NA	NA	ND	ND
(cont.)	5/24/2005	22,000	3,200	52	1,400	1,700	16,000	ND	ND	NS	NS	ND	ND	NS	NS
	8/15/2005	2,000	66	ND	46	47	2,400	ND	ND	95	880	ND	ND	NA	NA
	11/17/2005	760	19	0.64	15	13	1,000	ND	ND	26	810	ND	ND	NA	NA
	2/8/2006	10,000	1,500	8	660	380	4,300	ND	ND	120	2,800	ND	ND	NA	NA
	5/5/2006	15,000	1,800	ND	1,200	1,200	5,800	ND	ND	150	4,300	ND	ND	NA	NA
	8/18/2006	360	11	ND	13	9.7	160	ND	ND	4.6	600	ND	ND	NA	NA
	12/1/2006	11,000	1,000	ND	990	910	2,100	ND	ND	87	2,000	ND	ND	NA	NA
	2/23/2007	3,200	210	ND	270	85	900	ND	ND	33	1,400	ND	ND	NA	NA
	5/10/2007	590	31	ND	39	22	200	ND	ND	5.9	250	ND	ND	NA	NA
	8/16/2007	650	49	ND	71	49	100	ND	ND	3.5	82	ND	ND	NA	NA
	11/8/2007	110	1.6	ND	1.9	1.6	23	ND	ND	0.64	48	ND	ND	NA	NA
	2/14/2008	350	24	ND	12	5.9	190	ND	ND	7.7	320	ND	ND	NA	NA
	5/15/2008	81	0.59	ND<0.50	0.71	0.66	38	ND<0.50	ND<0.50	1.4	54	ND<0.50	ND<0.50	NA	NA
	9/10/2008	150	6.4	ND<0.50	8.4	5.1	14	ND<0.50	ND<0.50	0.55	38	ND<0.50	ND<0.50	NA	NA
		10.000	0.10	-											
MW-3	11///1999	43,000	860	70	ND	65	120,000	NA	NA	NA	NA	NA	NA	NA	NA
	3/8/2001	90,000	1,800	ND	ND	ND	210,000	NA	NA	NA	NA	NA	NA	NA	NA
	11/1//2001	110,000	1,600	ND	ND	ND	300,000	NA	NA	NA	NA	NA	NA	NA	NA
	3/31/2002	130,000	2,400	670	300	390	300,000	NA	NA	NA	NA	NA	NA	NA	NA
	9/9/2003	190,000	1,600	ND	ND	ND	420,000	NA	NA	NA	NA	NA	NA	NA	NA
	12/9/2003	170,000	2,000	ND	ND	ND	4,500,000	NA	NA	NA	NA	NA	NA	NA	NA
	2/19/2004	86,000	1,800	630	ND	ND	160,000	NA	NA	NA	NA	NA	NA	NA	NA
	5/24/2004	120,000	2,200	ND	180	220	400,000	ND	ND	15,000	ND	ND	ND	ND	ND
	9/3/2004	180,000	2,000	ND	ND	ND	510,000	ND	ND	14,000	ND	ND	ND	ND	ND
	11/2/2004	150,000	1,700	ND 120	ND	ND 720	350,000	ND	ND	31,000	140,000	NA	NA	ND	ND
	2/17/2005	130,000	2,100	420 NG	210	/30	290,000	ND	ND	11,000	ND	NA	NA	ND	ND
	5/24/2005	INS 110.000	INS 1.500	INS ND	INS NID	ND	NS 200.000	ND	INS NID	NS 21.000	NS 25.000	INS ND	ND ND	INS NA	INS
	8/15/2005	200,000	1,500	ND	ND	ND	200,000	ND	ND	21,000	25,000	ND	ND	NA	NA
	2/8/2006	200,000	2,400	ND	ND	ND 700	400,000	ND	ND	24,000	49,000	ND	ND	NA	NA
	2/8/2000	470,000	3,800	ND	ND	790 ND	490,000 500,000	ND	ND	20,000	49,000	ND	ND	NA	NA
	3/3/2000 8/18/2006	210,000	3,300	ND	ND	ND	440,000	ND	ND	21,000	70,000	ND	ND	NA	NA
	8/18/2000 12/1/2006	270,000	1,800 ND	ND	ND	ND	200,000	ND	ND	25,000	79,000	ND	ND	NA	NA
	2/22/2007	270,000	ND	ND	ND	ND	290,000	ND	ND	11,000	90,000	ND	ND	NA	NA
	5/10/2007	140,000	ND	ND	ND	ND	200,000	ND	ND	7 100	33,000 80,000		ND	INA NA	INA NA
	3/10/2007 8/16/2007	140,000 60.000			ND	ND	85 000			3 400	180,000			INA NA	INA NA
	0/10/2007 11/8/2007	34 000			ND	ND	38,000			3,400 1 400	140,000			INA NA	INA NA
	2/14/2007	41 000			ND	ND	44 000			1,400	140,000			NA	NA NA
	5/15/2008	41,000	ND<100		ND<100	ND<100	44,000 62,000	ND~100	ND<100	1,900	200.000	ND<100	ND<100	NA	NA
	9/10/2008	45,000	14	ND<100 86	77	23	21 000	ND<100	ND<100	ND-1 000	200,000 290 000	ND<100	ND<100	NA	NA
	9/10/2008	1,000	14	0.0	1.1	23	21,000	14D<1,000	11D<1,000	14D<1,000	290,000	14D<1,000	ND<1,000	INA	INA

Table 3, 6211 San Pablo Avenue, Oakland, CA - AEI Project # 280346

Groundwater Analytical Data

Samuela ID	Data	TPHg	Benzene	Toluene	Ethylbenzene	Xylenes	MTBE	DIPE	ETBE	TAME	TBA	1,2-DCA	EDB	Methanol	Ethanol
Sample ID	Date	µg/L	μg/L	μg/L	µg/L	µg/L	μg/L	μg/L	μg/L	μg/L	μg/L	μg/L	μg/L	μg/L	µg/L
MW-4	11/17/2001	64,000	960	1,400	360	1,600	140,000	NA	NA	NA	NA	NA	NA	NA	NA
	3/31/2002	78,000	4,400	4,700	690	2,700	150,000	NA	NA	NA	NA	NA	NA	NA	NA
	9/6/2007	49,000	710	840	ND	10,000	3,600	ND	ND	510	32,000	ND	ND	NA	NA
	11/8/2007	64,000	1,300	2,600	1,000	8,500	1,500	ND	ND	360	14,000	ND	ND	NA	NA
	2/14/2008	60,000	390	460	230	2,000	52,000	ND	ND	2,000	58,000	ND	ND	NA	NA
	5/15/2008	22,000	670	130	740	2,700	3,300	ND<5.0	ND<5.0	340	35,000	ND<5.0	ND<5.0	NA	NA
	9/10/2008	16,000	500	150	730	2,500	2,000	ND<250	ND<250	ND<250	65,000	ND<250	ND<250	NA	NA
MW-5	11/17/2001	210	15	12	11	23	4.8	NA	NA	NA	NA	NA	NA	NA	NA
	3/31/2002	120	11	7.4	6.1	16	4.2	NA	NA	NA	NA	NA	NA	NA	NA
	9/9/2003	ND	1.5	ND	ND	ND	1.7	NA	NA	NA	NA	NA	NA	NA	NA
	12/9/2003	130	32	ND	2.6	0.57	5	NA	NA	NA	NA	NA	NA	NA	NA
	2/19/2004	ND	ND	ND	ND	ND	1.5	NA	NA	NA	NA	NA	NA	NA	NA
	5/24/2004	ND	ND	ND	ND	ND	0.55	ND	ND	ND	ND	ND	ND	ND	ND
	9/3/2004	100	6.4	ND	ND	0.79	4.2	ND	ND	ND	ND	ND	ND	ND	ND
	11/2/2004	ND	2.6	ND	1.7	0.87	1	ND	ND	ND	ND	ND	ND	ND	ND
	2/17/2005	51	0.74	ND	0.94	ND	1.5	ND	ND	ND	ND	ND	ND	ND	ND
	5/24/2005	ND	ND	ND	ND	ND	1	ND	ND	ND	ND	ND	ND	NA	NA
	8/15/2005	ND	ND	ND	ND	ND	0.88	ND	ND	ND	ND	ND	ND	NA	NA
	11/17/2005	71	0.81	ND	1.1	ND	1.4	ND	ND	ND	ND	ND	ND	NA	NA
	2/8/2006	50	ND	ND	ND	ND	1	ND	ND	ND	ND	ND	ND	NA	NA
	5/5/2006	ND	ND	ND	ND	ND	0.93	ND	ND	ND	ND	ND	ND	NA	NA
	8/18/2006	ND	ND	ND	ND	ND	1	ND	ND	ND	ND	ND	ND	NA	NA
	12/1/2006	ND	0.69	ND	ND	0.52	0.97	ND	ND	ND	ND	ND	ND	NA	NA
	2/23/2007	73	ND	ND	ND	ND	1.7	ND	ND	ND	ND	ND	ND	NA	NA
	5/10/2007	ND	ND	ND	ND	ND	1.5	ND	ND	ND	ND	ND	ND	NA	NA
	8/16/2007	ND	ND	ND	ND	ND	1.3	ND	ND	ND	ND	ND	ND	NA	NA
	11/8/2007	ND	ND	ND	ND	ND	1.5	ND	ND	ND	ND	ND	ND	NA	NA
	2/14/2008	ND	ND	ND	ND	ND	1.3	ND	ND	ND	ND	ND	ND	NA	NA
	5/15/2008	ND<50	ND<0.50	ND<0.50	ND<0.50	ND<0.50	1.7	ND<0.50	ND<0.50	ND<0.50	ND<20	ND<0.50	ND<0.50	NA	NA
	9/10/2008	480	17	1.8	2.7	0.59	12	ND<0.50	ND<0.50	ND<0.50	4.4	ND<0.50	ND<0.50	NA	NA
MW-6	11/17/2001	3,500	160	260	95	420	1,500	NA	NA	NA	NA	NA	NA	NA	NA
	3/31/2002	3,200	410	170	82	280	3,000	NA	NA	NA	NA	NA	NA	NA	NA
	9/9/2003	800	49	ND	7.4	ND	1,700	NA	NA	NA	NA	NA	NA	NA	NA
	12/9/2003	970	150	9.9	31	83	1,200	NA	NA	NA	NA	NA	NA	NA	NA
	2/19/2004	1,900	280	58	17	160	2,700	NA	NA	NA	NA	NA	NA	NA	NA
	9/3/2004	1,100	27	ND	14	27	2,200	ND	ND	85	ND	ND	ND	ND	ND
	11/2/2004	1,800	32	ND	5	11	4,100	ND	ND	170	270	ND	ND	ND	ND
	2/17/2005	5,600	190	34	41	110	10,000	ND	ND	780	2,000	ND	ND	ND	ND
	8/15/2005	1,800	27	ND	6	23	3,800	ND	ND	300	3,500	ND	ND	NA	NA
	11/17/2005	1,100	30	ND	4	9	2,400	ND	ND	190	9,500	ND	ND	NA	NA
	2/8/2006	3,600	220	43	66	160	2,700	ND	ND	180	7,800	ND	ND	NA	NA

Table 3, 6211 San Pablo Avenue, Oakland, CA - AEI Project # 280346

Groundwater Analytical Data

Sample ID	Date	TPHg	Benzene	Toluene	Ethylbenzene	Xylenes	MTBE	DIPE	ETBE	TAME	TBA	1,2-DCA	EDB	Methanol	Ethanol
		µg/L	µg/L	μg/L	µg/L	µg/L	µg/L	μg/L	μg/L	μg/L	μg/L	μg/L	µg/L	µg/L	µg/L
MW-6	5/5/2006	1,600	130	21	37	65	1,400	ND	ND	53	3,100	ND	ND	NA	NA
(cont.)	8/18/2006	270	27	ND	3	4	240	ND	ND	11	2,400	ND	ND	NA	NA
	12/1/2006	1,700	ND	ND	ND	ND	1,700	ND	ND	92	800	ND	ND	NA	NA
	2/23/2007	ND	ND	ND	ND	ND	15	ND	ND	ND	ND	ND	ND	NA	NA
	5/10/2007	ND	3.0	ND	ND	1.9	26	ND	ND	2	48	ND	ND	NA	NA
	8/16/2007	ND	ND	ND	ND	ND	1.4	ND	ND	ND	ND	ND	ND	NA	NA
	11/8/2007	ND	ND	ND	ND	ND	5.3	ND	ND	ND	ND	ND	ND	NA	NA
	2/14/2008	ND	ND	ND	ND	ND	11	ND	ND	0.94	220	ND	ND	NA	NA
	5/15/2008	ND<50	ND<0.50	ND<0.50	ND<0.50	ND<0.50	13	ND<0.50	ND<0.50	1.0	130	ND<0.50	ND<0.50	NA	NA
	9/10/2008	78	1.4	0.60	0.94	1.3	71	ND<1.0	ND<1.0	6.2	160	ND<1.0	ND<1.0	NA	NA
EX-1	2/19/2004	120,000	9,500	4,300	840	3,900	150,000	NA	NA	NA	NA	NA	NA	NA	NA
	2/14/2008	84,000	2,300	4,900	1,800	14,000	3,900	ND	ND	610	10,000	ND	ND	NA	NA
	5/15/2008	24,000	2,100	750	640	2,100	1,800	ND<0.50	ND<0.50	380	11,000	ND<0.50	ND<0.50	NA	NA
	9/10/2008	9,200	1,000	160	300	1,000	780	ND<100	ND<100	180	22,000	ND<100	ND<100	NA	NA

Notes:

TPHg = total petroleum hydrocarbons as gasoline using EPA Method 8015

Benzene, toluene, ethylbenzene, and xylenes using EPA Method 8021B

MTBE = methyl-tertiary butyl ether using EPA Method 8021B; EPA Method 8260B Beginning in May 2008

TBA = tert-butyl alcohol using EPA Method 8260B

TAME = tert-amyl methyl ether using EPA Method 8260B

DIPE = diisopropyl ether using EPA Method 8260B

ETBE = ethyl tert-butyl ether using EPA Method 8260B

1,2-DCA = 1,2-dichloroethane using EPA Method 8260B

EDB = Ethylene dibromide using EPA Method 8260B

Methanol and Ethanol using EPA Method 8260B

µg/L= micrograms per liter

ND = non detect at respective reporting limit

NA - not analyzed

	Table 4	4, 6211 San Pa	ablo Avenue,	Oakland, CA	- AEI Project	# 280346						
Soil Vapor Analytical Data												
Sample ID	Date	TPHg ug/m ³	Benzene ug/m ³	Toluene ug/m ³	Ethylbenzene ug/m ³	Xylenes ug/m ³	MTBE ug/m ³					
Shallow Probes												
SG-1-3	12/3/2008	20,000	ND<6.5	25	10	39	ND<7.3					
SG-2-3	12/3/2008	18,000	ND<26	ND<31	ND<35	ND<110	470					
SG-3-3	12/3/2008*	470,000	ND<140	10,000	ND<120	750	ND<1,200					
Deep Probes												
SG-1-6	12/3/2008*	43,000,000	12,000	480,000	ND<7,600	21,000	ND<110,000					
SG-2-6	12/3/2008*	38,000,000	41,000	370,000	ND<5,400	ND<8,000	ND<290,000					
SG-3-6	12/3/2008*	1,200,000	890	26,000	ND<1.5	2,300	ND<15,000					
SG-3-6-DUP	12/3/2008*	440,000	570	8,800	ND<390	1,100	ND<17,000					
ESL - Residentia ESL - Commerci	l al	10,000 29,000	84 280	63,000 180,000	980 3,300	21,000 58,000	9,400 31,000					

Notes:

TPHg = total petroleum hydrocarbons as gasoline using TO3 or EPA Method 8015*

Benzene, toluene, ethylbenzene, and xylenes using Method TO15 or EPA Method 8021B*

MTBE = methyl-tertiary butyl ether using Method TO15 or EPA Method 8021B*

 $\mu g/m^3 = micrograms per cubic meter$

ND = non detect at respective reporting limit

ESL = Environmental Screening Level for shallow soil vapor as determined by the Regional Water Quality Control Board -San Francisco Bay Region.

Sample ID	Date	Depth (feat here)	*Moisture Content	Wet Bulk Density	Dry Bulk Density	Wet Bulk Density	Dry Bulk Density	Porosity (Est.)	TIC	TOC	TC	Grain Size Distribution as %		Soil		
		(leet bgs)	(wet wt %)	(g/cm^3)	(g/cm^3)	(pcf)	(pcf)	n	(mg/kg)	(mg/kg)	(mg/kg)	Gravel	Sand	Silt	Clay	Description
SB-12 SB-12-11.5	11/25/08	11.5	17.4%	2.0	1.7	124.7	106.3	0.36	390	660	1,050	4.4	58.5	26.9	10.2	Gray Clayey SAND
DDP-1 DDP-1-6	11/25/08	6	19.6%	1.9	1.6	118.5	99.1	0.40	1,200	5,200	6,400	0	7.3	39.6	53.1	Gray CLAY
DDP-1-10	11/25/08	10	13.3%	2.1	1.9	131.0	115.6	0.30	ND<200	1,000	1,100	18.5	45.6	21.1	14.8	Olive Gray Clayey SAND w/ Gravel
DDP-3																
DDP-3-5.5	11/26/08	5.5	13.1%	1.9	1.7	118.5	104.8	0.37	6,700	10,000	16,700	0	21.1	41.5	37.4	Gray CLAY w/ Sand & Calcium Carbonate
DDP-3-10	11/26/08	10	14.8%	1.9	1.7	118.5	103.2	0.38	ND<200	900	1,000	26.3	44.9	21.8	7.0	Mottled Olive Clayey SAND w/ Gravel

Table 5, 6211 San Pablo Avenue, Oakland, CA - AEI Project # 280346Additional Soil Analytical Data

Notes:

feet bgs = feet below ground surface g/cm^A3 = grams per cubic centimeter pcf = pounds per cubic foot wet wt = wet weight TIC = Total Inorganic Carbon TOC = Total Organic Carbon TC = TIC + TOC = Total Carbon Bulk Density by SSSA #5 Moisture Content by ASTM D2216 TIC by SM5310B TOC by SM5310B Grain size / particle distribution by ASTM D422 Porosity = 1 - (Dry Bulk Density / Soil Specific Gravity) Soil Specific Gravity = 2.65 (estimated value for sand) 1 pound = 454 grams 1 ft^3 = 28,317 cm^3 g/cm^3 * 62.37 = pcf

*A 2% by weight was the lowest soil moisture content measured at a successful U.S. Air Force Bioventing Initiative site in San Bernardino County, California (Hinchee & Leeson, 1997)
APPENDIX A

BORING LOGS

Log of Boring DDP-1

Date(s) Drilled November 25, 2008	Logged By Jeremy Smith	Checked By Peter McIntyre
Drilling	Drill Bit	Total Depth
Method Double walled direct push	Size/Type 2 inch	of Borehole 26 feet bgs
Drill Rig	Drilling	Approximate
Type Truck-Mounted	Contractor ECA	Surface Elevation
Groundwater Level 24 feet ATD, 13 feet after	Sampling	Well
and Date Measured 10 minutes	Method(s) Tube	Permit.
Borehole Backfill Neat Cement	Location	

Elevation, feet	Depth, feet	Sample Type	Sample Number	USCS Symbol	Graphic Log	MATERIAL DESCRIPTION	PID Reading, ppm	REMARKS AND OTHER TESTS
	•			Asphalt		Asphalt and fill material		
-		\times		CL		Silty clay, black, (0,10,90), moist, plastic.	66	
-	-		DDP-1-5	CL		Becomes brown (10YR 5/3), trace fine gravel, (5,5,90)	81	
- 1			DDP-1-8	ČĽ		Becomes greenish, increase in sand content, (10,20,70), fine to coarse grained sand, moist.		
_	_	\times	DDP-1-11.5	SM		Increase in sand and gravel, Increase in silt with depth, (15,30,55) - very moist at 11 to 12 feet bgs. -	2,357	
-	_			SM- ML		Sandy silt, (0,20,80), greenish grey (10G/5), fine grained sand - (after 10 minutes) ≚		
- 1:	-			CL-		Transitions to brown, clayey silt, (0,10,90)	14	
		\times	DDP-1-19.5	IVIL			21	
	-							Figure

Log of Boring DDP-1

Sheet 2 of 2

	Elevation, feet	Depth, feet	Sample Type	Sample Number	USCS Symbol	Graphic Log	MATERIAL DESCRIPTION	PID Reading, ppm	REMARKS AND OTHER TESTS
JBE 40'.tpl]	_	20			CL- ML		Brown, silty clay/silty sand, pockets of increased sand.	25	
EI GEOPRO	_	-			SM		Increased sand, fine to coarse grained (0,40,60) (ATD) ⊻		-
rigns.bgs [A		25—	\ge		SW		Well graded sand, wet.	1.4	
Nov 08\Soil Bo	_	-				·····	Drilling refusal (double walled) at 26 feet bgs. Set screen from 20 to 25 feet bgs; groundwater initially at 13 feet bgs, sample collected. Then hydropunched to 40 feet bgs, screened from 36 to 40 feet bgs,		-
Investigation	_	-	-				 initially dry, pulled screen up to 32 feet bgs, initially dry. Let set for 3 hours. Groundwater at approximately 28 feet bgs, collect sample. 		
(JAS)\Offsite		30-	-					-	
line - Oakland	_	-	-						
Alaska Gaso	_	-	_					-	
TION/280346	_	35-						-	
ARACTERIZA	_	-					- ·	-	
DIATION/CH/	_	40	-					-	
ION & REME	_	-					- ·	_	
<u>HARACTERIZA1</u>	=	-	-						
<:/PROJECTS/CF		45							Figure

Log of Boring DDP-2

Sheet 1 of 2

Date(s) Drilled November 26, 2008	Logged By Jeremy Smith	Checked By Peter McIntyre
Drilling	Drill Bit	Total Depth
Method Double walled direct push	Size/Type 2 inch	of Borehole 38 feet bgs
Drill Rig	Drilling	Approximate
Type Truck-Mounted	Contractor ECA	Surface Elevation
Groundwater Level	Sampling	Well
and Date Measured Not Encountered ATD	Method(s) Tube	Permit.
Borehole Backfill Neat Cement	Location	

Elevation, feet	Depth, feet	Sample Type	Sample Number	USCS Symbol	Graphic Log	MATERIAL DESCRIPTION	PID Reading, ppm	REMARKS AND OTHER TESTS
	U			Asphalt		Asphalt and fill material		
-	-	-		CL		Silty clay, black, moist, plastic (0,10,90)		
-	_					- · ·	35	
	5		DDP-2-5				104	
-	-	\times	DDP-2-7.5			Becomes greenish grey, gravelly clay (20,20,60)	1,624	
-	-	-		SC		Sandy, gravelly clay, very moist to wet.		
-		\times	DDP-2-10.5	ML		Sandy silt, (0,20,80) very moist, transitions to brown @ 12', end coarse grained sand.	217	
-	-			ML		Sandy silt, (0,35,65), fine grained sand, soft, very moist.		
_	15						260	
-	-	-		ML		Stiff		
_				SW- SM		Well graded wet sand, fine to coarse grained.		
	20							Figure

X: PROJECTS/CHARACTERIZATION & REMEDIATION/CHARACTERIZATION/280346 Alaska Gasoline - Oakland (JAS)/Offsite Investigation Nov 08/Soil Borigns. bgs [AEI GEOPROBE 40: tp]]

Log of Boring DDP-2

Sheet 2 of 2

USCS Symbol Elevation, feet Reading, Sample Type Graphic Log Depth, feet Sample Number PID MATERIAL DESCRIPTION REMARKS AND OTHER TESTS 20 ML Stiff silt, moist XDDP-2-20.5 13.4 ML x: PROJECTS/CHARACTERIZATION & REMEDIATION/CHARACTERIZATION/280346 Alaska Gasoline - Oakland (JAS)/Offsite Investigation Nov 08/Soil Borigns.bgs [AEI GEOPROBE 40: jpl] Increase in sand throughout (10,30,60), soft, very moist SW Well graded hard sand (10,60,30) 12.3 ML Sandy silt, (0,20,80) turning light olive grey (5Y 6/2) at 25 feet., soft and becoming stiff at 26.5 feet. 25 (DDP-2-26.5 1.9 CL-ML Stiff, silty clay, (0,10,90), some coarse grained sand. 2.3 SC Gravelly, sandy clay (20,20,60) 30 SC-CL Silty clay with interbedded lenses of gravelly sandy clay, very moist to wet. 0.9 SM-ML Clayey silt with interbedded gravel adn sand, some very moist to wet. 35 DDP-2-35.5 1.1 ML Stiff, clayey silt, moist, (0,10,90) 1.6 Boring terminated at 38 feet bgs, PVC screen from 33 to 38 feet bgs. Initially dry. Dry after 1 hour, no groundwater sample collected. 40 45 Figure

Log of Boring DDP-3

Date(s) Drilled November 26, 2008	Logged By Jeremy Smith	Checked By Peter McIntyre
Drilling	Drill Bit	Total Depth
Method Double walled direct push	Size/Type 2 inch	of Borehole 40 feet bgs
Drill Rig	Drilling	Approximate
Type Truck-Mounted	Contractor ECA	Surface Elevation
Groundwater Level	Sampling	Well
and Date Measured Not Encountered ATD	Method(s) Tube	Permit.
Borehole Backfill Neat Cement	Location	

Elevation, feet	Depth, feet	Sample Type	Sample Number	USCS Symbol	Granhic Lod	MATERIAL DESCRIPTION	PID Reading, ppm	REMARKS AND OTHER TESTS
	0			Asphalt		Asphalt and fill material.		
-	-	X		SC- CL		Gravelly, sandy clay, greenish grey, (0,15,85), plastic	29	
-	5	×	DDP-3-5				4,247	
_	_	X	DDP-3-7.5	SC		Sandy clay, (15,30,55) fine to coarse grained sand, fine gravel, moist	1,306	
	 10 -			SC		Increase in sand and gravel (20,30,50)		
-	_	X	DDP-3-12.5	ML		Brown, sandy silt, (0,20,80), wet	34	
	15— _ _			ML		Soft silt, brown (0,20,80), fine grained sand, very moist to wet.		
-	-			ML		Wet	109	
	20							Figure

Log of Boring DDP-3

Sheet 2 of 2



Log of Boring DDP-4

Date(s) Drilled November 26, 2008	Logged By Jeremy Smith	Checked By Peter McIntyre
Drilling	Drill Bit	Total Depth
Method Double walled direct push	Size/Type 2 inch	of Borehole 30 feet bgs
Drill Rig	Drilling	Approximate
Type Truck-Mounted	Contractor ECA	Surface Elevation
Groundwater Level	Sampling	Well
and Date Measured Not Encountered ATD	Method(s) Tube	Permit.
Borehole Backfill Neat Cement	Location	

Elevation, feet	Depth, feet	Sample Type	Sample Number	USCS Symbol	Graphic Log	MATERIAL DESCRIPTION	PID Reading, ppm	REMARKS AND OTHER TESTS
	0			Asphalt		Asphalt and fill material.		
-	-			CL		Silty clay, very dark brown/black, moist, plastic, (0,10,90) 	-	
_	-	X	DDP-4-3.5			_	4.0	
-	5			SC		Sandy, gravelly, clay, greenish grey and brown (10,30,60), moist.	-	
-	-	X	DDP-4-7.5			-	_ 130 _	
_	10	X	DDP-4-10.5	CL		Brown, silty clay	2.6	
-	-	X		SM		Silty sand, sandy silt with gravel (10,40,50), brown, wet in spots throughout.	0.6 -	
-	15— -			ML	<u>8 - 74 - 8 6 7</u>	Sandy silt, very moist, decrease in sand (0,30,70)	1.1 -	
-	- - 20	X		SM		Increase in sand and gravel (20,40,40)	1.1	
								Figure

Log of Boring DDP-4

Sheet 2 of 2

levation, feet	lepth, feet	ample Type	ample umber	ISCS Symbol	traphic Log		ID Reading, pm	
	 20–	s	νz	⊃ ML		Silt, soft and very moist.	6.0	REMARKS AND OTHER TESTS
	-	\mid	DDP-4-20.5			-	0.8	
-	-			SW		Well graded silty sand (20,50,30) fine to coarse grained sand, brown, very moist to wet.	+	-
	-					-		
	25				ानगरम			-
-	-			3111		Soft, sandy silt, pockets of wet, some gravel (15,35,50)	- 1.0	
-	-			ML		Olive brown, some sand (0,20,80), stiff.	+	-
_	-					_	-	
-	-			SM		Sandy silt, brown, (20,30,50), fine to coarse grained sand, very moist to wet.	+ 1 1	-
	30—		201 1 2010		19-616-5174	Boring terminated at 30 feet bgs. Temporary PVC screen from 25 to 30 feet bgs. Initially dry. Dry after 45 minutes, no groundwater sample		-
	_					- collected.		
-	-					-	_	
_	-					_	-	
_	35—						-	
-	-					-	-	
	-					-	-	
	-					-		
	40						_	
-	-					-	-	
-	-					-	-	
-	=					-	-	
	_ 					-		
		_	_	_				Figure

Log of Boring DP-4

Date(s) Drilled November 24, 2008	Logged By Jeremy Smith	Checked By Peter McIntyre
Drilling	Drill Bit	Total Depth
Method Direct Push	Size/Type 2 inch	of Borehole 16 feet bgs
Drill Rig	Drilling	Approximate
Type Truck-Mounted	Contractor ECA	Surface Elevation
Groundwater Level	Sampling	Well
and Date Measured 14.4 feet after 10 Minutes	Method(s) Tube	Permit.
Borehole Backfill Neat Cement	Location	

Elevation, feet	Depth, feet	Sample Type	Sample Number	USCS Symbol	Graphic Log	MATERIAL DESCRIPTION	PID Reading, ppm	REMARKS AND OTHER TESTS
	0			Asphalt		Asphalt and fill material		
-	-			CL		Silty clay, black (10YR 2/1) (0,10,90), trace fine grained sand, moist, plastic, soft.	-	
_	-						21	
	5			CL		At 5' bgs becomes greenish grey (10G,5)	-	
-	-	\times	DP-4-7.5	CL		Increase in sand content (0,20,80)	1,476	
	- 10			CL		Mottled brown, black, grey, with some fine gravel (10,20,70)		
_	-	\times		SC/SM		Very moist, silty, sandy clay (0,35,65)	24	
-	-			SM		Sandy silt, light brownish grey (10YR 6/2) and yellowish brown (10YR 5/6), (0,35,65) very soft, very moist.		
_	15	\ge	DP-4-15				6.6	
-	-					Boring terminated at 16 feet bgs, temporary PVC casing set and groundwater initially at 14.4' bgs.		
-	-						-	
	20							Figuro
								Figure

Log of Boring SB-5

Date(s) Drilled November 25, 2008	Logged By Jeremy Smith	Checked By Peter McIntyre
Drilling	Drill Bit	Total Depth
Method Direct Push	Size/Type 2 inch	of Borehole 17 feet bgs
Drill Rig	Drilling	Approximate
Type Truck-Mounted	Contractor ECA	Surface Elevation
Groundwater Level	Sampling	Well
and Date Measured 14.5 feet ATD	Method(s) Tube	Permit.
Borehole Backfill Neat Cement	Location	

	Elevation, feet	Jepth, feet	Sample Type	Sample Number	JSCS Symbol	Braphic Log		oID Reading,	REMARKS AND OTHER TESTS
El geop]	0		~~~	Asphalt		Asphalt and fill material		
bgs [Ał	-	-			CL		Silty clay, black (0.5.95) moist plastic		-
origns.	_	_			_				
\Soil B									
Nov 08		-						1 1	
gation	-	-	\square				-		
Investi		5			CL		Becomes grey, light brown mottled (5,20,75) fine to coarse grained sand.		
Offsite	-	-						-	
(JAS)	_	-							
Jakland		_	\boxtimes	SB-5-7.5				1.3	-
line - C					ML-		Sandy clayey silt, (0,10,90) moist		
a Gaso		-							
3 Alask	-	10	\boxtimes					3.2	
\28034	-	-	$\left \right $		SM		Fine grained silty sand, (10, 50, 40), moist		-
ATION	-	-					-	2.2	
ACTERIZ	-	-						_	
CHAR	-	-	$\left \right $		SM-		Sandy silt, wet at 14.5		-
ATION	_	15			IVIL		(A1D) ≚—	18	
EMEDI	4	_	\square		SM				-
ON & R		_					very dense, sandy silt, (10,50,40) tine to coarse grained sand.		
IZATIC							Boring terminated at 17 feet bgs, temporary PVC casing set and groundwater sample collected.		
ACTER		-						1	
CHAR	+	-						-	
JECTS		20							
(:\PRO									Figure
\sim									

Log of Boring SB-7

Date(s) Drilled November 25, 2008	Logged By Jeremy Smith	Checked By Peter McIntyre
Drilling	Drill Bit	Total Depth
Method Direct Push	Size/Type 2 inch	of Borehole 16 feet bgs
Drill Rig	Drilling	Approximate
Type Truck-Mounted	Contractor ECA	Surface Elevation
Groundwater Level	Sampling	Well
and Date Measured 13 feet ATD	Method(s) Tube	Permit.
Borehole Backfill Neat Cement	Location	

Elevation, feet	Depth, feet	Sample Type	Sample Number	USCS Symbol	Graphic Log	MATERIAL DESCRIPTION	PID Reading, ppm	REMARKS AND OTHER TESTS
	0			Asphalt		Asphalt and fill material		
-	-			CL		Silty clay, black, stiff, plastic, moist, (0,15,85)	-	
-	-						-	
-	-	X	SB-7-3.5	CL		Becomes light olive brown (2.5Y 5/3), sandy clay (0,25,75), fine to coarse	1.1	-
_	5—					grained sand, moist.	-	
_	_			CL		decrease in sand (0,10,90)	-	
							1.4	
_	-			SM		Gravelly, sandy silt, (15,25,60)	-	
	10						-	-
-	_	X	SB-7-10.5	SM		_ Silt and fine grained sand (0,50,50)	1.0	
_	_			SM		_ Gravelly sandy silt, (15,25,60)	-	
-	-			SM		Saturated, soft, sandy silt (0,30,70) (ATD) ≚		
-				CL		Dense, sandy, silty clay		
_	15—	X					0.9	
_	_					Boring terminated at 16 feet bgs, temporary PVC casing set, groundwater sample collected.	-	
_	_						-	
-	_						-	
	20							
								Figure

Log of Boring SB-8

Date(s) Drilled November 24, 2008	Logged By Jeremy Smith	Checked By Peter McIntyre
Drilling	Drill Bit	Total Depth
Method Direct Push	Size/Type 2 inch	of Borehole 12 feet bgs
Drill Rig	Drilling	Approximate
Type Truck-Mounted	Contractor ECA	Surface Elevation
Groundwater Level 9 feet ATD, 4.7 feet after 10	Sampling	Well
and Date Measured minutes	Method(s) Tube	Permit.
Borehole Backfill Neat Cement	Location	

Elevation, feet	Depth, feet	Sample Type	Sample Number	USCS Symbol	Graphic Log	MATERIAL DESCRIPTION	PID Reading, ppm	REMARKS AND OTHER TESTS
	0			Asphalt		Asphalt and fill material		
_	-			CL		Silty clay, black, (10YR 2/1) (0,5,95) moist, plastic		
_	-	\times					27	
	5—	+		SC-		Sandy clay, greenish grey, increased sand with depth (0,20,80), fine to		
_	-	\times	SB-8-6			coarse grained sand	4,045	
-	-			SC		(10,30,60)		
_	-			SC		Saturated with LNAPL present (ATD) =		
	10	-						
	-	X		CL		Sandy, silty clay.	28	
	-	-			97777777	Boring terminated at 12 feet bgs, temporary PVC set and groundwater collected.		
_	-	-						
	15							
_	_	-						
	_	-						
	-							
	20							Figure

Log of Boring SB-9

Date(s) Drilled November 24, 2008	Logged By Jeremy Smith	Checked By Peter McIntyre
Drilling Method Direct Push	Drill Bit Size/Type 2 inch	Total Depth of Borehole 16 feet bgs
Drill Rig Type Truck-Mounted	Drilling Contractor ECA	Approximate Surface Elevation
Groundwater Level 11.5 feet ATD, 5.5 feet after and Date Measured 10 minutes	Sampling Method(s) Tube	Well Permit.
Borehole Backfill Neat Cement	Location	

Elevation, feet	Depth, feet	Sample Type	Sample Number	USCS Symbol	Graphic Log	MATERIAL DESCRIPTION	PID Reading, ppm	REMARKS AND OTHER TESTS
	0			Asphalt		Asphalt and fill material		
_	_	_		CL		Silty clay, black		
-	-			CL		Becoming grey silty clay (0,10,90) trace fine grained sand, moist, plastic.		
-	-	\square					23	
-	5	-						
_	-	-						
. –	-							
-	-	X		SC		Sandy clay (10,30,60) fine to coarse grained sand,	189	
-	-	-						
-	10—	-						
-	-	X	SB-9-10.5	SC		Becomes brown clayey sand, 10,50,40)	393	
-	-			-sc		(ATD) ≟— — Decreasing sand, wet		
	-	-						
-	-	-						
	15					Silt	26	
-	_	\square					2.0	
	_	-				groundwater sample collected.		
_	_	-						
	_							
	20							
	20	_			_			Figure

Log of Boring SB-10

Date(s) Drilled November 24, 2008	Logged By Jeremy Smith	Checked By Peter McIntyre
Drilling	Drill Bit	Total Depth
Method Direct Push	Size/Type 2 inch	of Borehole 8 feet bgs
Drill Rig	Drilling	Approximate
Type Truck-Mounted	Contractor ECA	Surface Elevation
Groundwater Level 7 feet ATD, 4 feet after 10	Sampling	Well
and Date Measured minutes	Method(s) Tube	Permit.
Borehole Backfill Neat Cement	Location	

oprobe 20.tpl]	Elevation, reet	Depth, feet	Sample Type	Sample Number	USCS Symbol	Graphic Log	MATERIAL DESCRIPTION	PID Reading, ppm	REMARKS AND OTHER TESTS
AEI ge		0			Asphalt		Asphalt and fill material		
/] sbds [/	-	_			CL		Silty clay, light olive brown (2.5Y 5/4) (0,10,90), moist, plastic		
sorigns	_	_							
NSoil E									
Nov 08								14	
gation	1	_			SC		Clayey sand (20,60,20) fine to coarse grained sand, loose, very moist to wet at 7'		
Investi	-	5							
Offsite	-	_		SB-10-6				1.8	
(SAL)		_							
akland									
0 - O							Boring terminated at 8 feet bgs, temporary PVC set and groundwater sample collected.		
Gasoli	1	_							
Alaska	- 1	0							
30346	-	_							
ION/2		_							
RIZAT									
RACTE							-		
V/CHA	-	-							
DIATIO!	- 1	5							
REMEC	-	-							
ON & F		-							
RIZATI									
ACTEI		-					-		
CHAR	1	-							
OJECTS	_ 2	20							Figuro
X:/PR									Figure

Log of Boring SB-11

Sheet 1 of 1

Date(s) Drilled November 24, 2008	Logged By Jeremy Smith	Checked By Peter McIntyre
Drilling	Drill Bit	Total Depth
Method Direct Push	Size/Type 2 inch	of Borehole 16 feet bgs
Drill Rig	Drilling	Approximate
Type Truck-Mounted	Contractor ECA	Surface Elevation
Groundwater Level	Sampling	Well
and Date Measured 10.8 feet after 10 minutes	Method(s) Tube	Permit.
Borehole Backfill Neat Cement	Location	

Elevation, feet	Depth, feet	Sample Type	Sample Number	USCS Symbol	Graphic Log	MATERIAL DESCRIPTION	PID Reading, ppm	REMARKS AND OTHER TESTS
	0			Asphalt		Asphalt and fill material.		
	-			CL		Silty clay, olive brown (2.5Y 4/3) trace sand (0,20,80) fine to coarse grained, mosit, plastic.		
-	_							
	5			SC- CL		Incrase in gravel and sand with depth (10,25,65)		
_	_				<u> </u>	Becomes greenish grey (10G/5) (15,25,60)		-
-	-	\times	SB-11-7.5				369	
	4.0			SM-		Becomes brown (10YR 5/2) sandy silt, fine grained sand (0,20,80)		
-	10— - -			ML	ان از این از این از این می ماند. در از این از این از این می ماند کردانی از این این این این این این این این این این این این این این می ماند این	(after 10 minutes) ¥	8.9	
	15	X					22.3	
	-					Boring terminated at 16 feet bgs, temporary PVC set and groundwater sample collected.		
-	-							
	20	1			I			Figure

X: PROJECTS/CHARACTERIZATION & REMEDIATION/CHARACTERIZATION:280346 Alaska Gasoline - Oakland (JAS)/Offsite Investigation Nov 08/Soil Borigns.bgs [AEI geoprobe 20: bi]

Log of Boring SB-12

Date(s) Drilled November 25, 2008	Logged By Jeremy Smith	Checked By Peter McIntyre
Drilling	Drill Bit	Total Depth
Method Direct Push	Size/Type 2 inch	of Borehole 17 feet bgs
Drill Rig	Drilling	Approximate
Type Truck-Mounted	Contractor ECA	Surface Elevation
Groundwater Level	Sampling	Well
and Date Measured 13 feet ATD	Method(s) Tube	Permit.
Borehole Backfill Neat Cement	Location	

Elevation, feet	Depth, feet	Sample Type	Sample Number	USCS Symbol	Graphic Log	MATERIAL DESCRIPTION	PID Reading, ppm	REMARKS AND OTHER TESTS
	0			Asphalt		Asphalt and fill material		
_	-	-		CL		Silty clay, black	-	
_	_	\times	SB-12-3.5	CL		Transitions to light olive brown (2.5Y 5/3), moist, (5,10,85) plastic	1.6	
	5	-		CL		Becomes greenish grey, increasing sand and gravel with depth, very moist.	-	
-	_	X	SB-12-6.5	SM				
-	_			- <u>M</u>				
_	- 10	-			** ** <u>*</u> ***		-	
_	-		SB-12-11.5	SM		Silty sand and gravel, (15,30,55), fine to coarse grained sand, very moist.	3	
-	-			SP		Wet, poorly graded fine/medium grained sand (0,70,30) (ATD) ≚		
-	-			SM		Brown, silty sand, (20,40,40)	55	-
-	15			CL		Very stiff, silty clay, brown, moist.		
-	-					Boring terminated at 17 feet bgs, temporary PVC set and groundwater sample collected.	-	
	20—							
								Figure

Log of Boring SB-13

Date(s) Drilled November 25, 2008	Logged By Jeremy Smith	Checked By Peter McIntyre
Drilling	Drill Bit	Total Depth
Method Direct Push	Size/Type 2 inch	of Borehole 16 feet bgs
Drill Rig	Drilling	Approximate
Type Truck-Mounted	Contractor ECA	Surface Elevation
Groundwater Level	Sampling	Well
and Date Measured	Method(s) Tube	Permit.
Borehole Backfill Neat Cement	Location	

Elevation, feet	Depth, feet	Sample Type	Sample Number	USCS Symbol	Graphic Log	MATERIAL DESCRIPTION	PID Reading, ppm	REMARKS AND OTHER TESTS
	0			Asphalt		Asphalt and fill material		
_	_			CL		Silty clay, black, plastic, moist.		
				CL		Light brownish grey (2.5Y 6/2), some fine to coarse grained sand (10,15,75)		
_	_	\times				-	1.7	
	5			SM		Silty sand (20,50,30), brown, fine to corase grained sand, fine gravel.		
_	_	\times	SB-13-7.5	SM		Becomes greenish grey.	1,406	-
-	-			SM- ML		Mostly silt, (10,10,80)	-	
- 1	10	\ge		SM		Brown / grey mottled (10,25,65), very moist with pockets of wet throughout.	4.0	
_				ML		Silt, (20,10,70)		
_	_			SM		Silty sand, (20,40,40) fine to coarse grained sand.		
- 1	15	\boxtimes					2.2	
_	-			SW		Well graded sand and gravel. Boring terminated at 16 feet bgs. Temporary PVC set and groundwater sample collected.		_
_	_					~	-	
2	20—							Figure

Log of Boring SB-14

Date(s) Drilled November 24, 2008	Logged By Jeremy Smith	Checked By Peter McIntyre
Drilling	Drill Bit	Total Depth
Method Direct Push	Size/Type 2 inch	of Borehole 12 feet bgs
Drill Rig	Drilling	Approximate
Type Truck-Mounted	Contractor ECA	Surface Elevation
Groundwater Level 8 feet ATD, 5.4 feet after 10	Sampling	Well
and Date Measured minutes	Method(s) Tube	Permit.
Borehole Backfill Neat Cement	Location	

probe 20.tpl] Elevation, feet	Depth, feet	Sample Type	Sample Number	USCS Symbol	Graphic Log	MATERIAL DESCRIPTION	PID Reading, ppm	REMARKS AND OTHER TESTS
	0-			Asphalt		Asphalt and fill material		
Soil Borigns.bgs [/				CL		Silty clay, black, (0,5,95)		
stigation Nov 08/		X		CL		Becomes greyish green. (10,20,70) fine to coarse grained sand, mosit.	13	
t6 Alaska Gasoline - Oakland (JAS))Offsite Inve	- 5		<u>SB-14-7.5</u>	SM		Sandy silt, (10,30,60) fine to coarse grained sand, fine (gravel on findiutes) stiff	356	
ECTS/CHARACTERIZATION & REMEDIATION/CHARACTERIZATION/28034	15			SM		Becomes brown, less visible contamination. Boring terminated at 12 feet bgs, tempoary PVC casing set, and groundwater sample collected.	154	
X:/PROJI								Figure

APPENDIX B

PERMITS

STATE OF CALIFORNIA • DEPARTMENT OF TRA	NSPORTATION			
ENCROACHMENT PERMIT		Permit No.		
TR-0120				
		Dist/Co/Rte/PM		
In compliance with (Check one):		04-ALA-123-1.39		
		Date		
Your application of October 29, 2008	·	November 13, 2008		
· · · · · · · · · · · · · · · · · · ·	÷	Fee Paid	Deposit	
Utility Notice No.	of	\$ 328.00	\$328.00	
· · · · · ·	^	Performance Bond Amount (1)	Payment Bond Amount (2)	
Agreement No.	of			
P/W Contract No	of	Bond Company		
		Bond Number (1)	Bond Number (2)	
TO: AEI Consultants 2500 Camino Diablo Walnut Creek, CA-94597		1	<u>I</u>	
Attn: Jeremy Smith Phone: (925) 944-2899		, PERMITTEE		

and subject to the following, **PERMISSION IS HEREBY GRANTED** to:

Advance one twenty foot deep soil boring for soil and groundwater analysis. Boring will be completed in the sidewalk area, on State Highway 04-ALA-123, Post Mile1.39, at 6211 San Pablo Avenue in the City of Oakland.

A minimum of one week prior to the start of work under this permit, notice shall be given to, and approval of construction details, operations, public safety, and traffic control shall be obtained from State Representative Sunny Mantravadi, 600 Lewelling Boulevard, San Leandro, CA-94579, (510) 614-5951, weekdays, between 6:30 A.M. and 3:00 P.M.

All permitted work requires the permittee to apply for and obtain a work authorization number prior to the start of work. See the attached "Encroachment Permit Project Work Scheduling Procedures" and the attached "Permit Project Work Scheduling Request Form". Additional time beyond the minimum seven days advanced notice required in the above paragraph may be required for obtaining approval for the traffic control.

The followi	ing attachme	nts are also included as part of this permit (<i>Check applicable</i>): General Provisions Utility Maintenance Provisions Storm Water Special Provisions A Cal-OSHA permit required prior to beginning work: #	In addition to fee, the permittee will be billed actual costs for: Yes No Review Yes No Inspection Yes Field Work (If any Caltrans effort expended)					
🗌 Yes	🛛 No	The information in the environmental documentation has been re	viewed and considered prior to approval of this permit.					
This permit is void unless the work is completed before June 30, 2009								
This permit is to be strictly construed and no other work other than specifically mentioned is hereby authorized. No project work shall be commenced until all other necessary permits and environmental clearances have been obtained.								

No project work shall be commenced until all other necessary permits and environmental clearances have been obtained.					
BW	APPROVED;				
CC MM, SM, DTM-Phyllis Chan TMC-J.Richardson	BIJAN SARTIPI, District Director BY: By:				
	LOY M.D. CONDIE, District Permit Engineer				







CITY OF OAKLAND • Community and Economic Development Agency

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

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



CITY OF OAKLAND • Community and Economic Development Agency 250 Frank H. Ogawa Plaza, 2nd Floor, Oakland, CA 94612 • Phone (510) 238-3443 • Fax (510) 238-2263 Applications for which no permit is issued within 180 days shall expire by limitation. No refund after 180 days when expired. App1# OB080919 Job Site 6211 SAN PABLO AV Parcel# 016 -1455-020-00 Block traffic lane & reserv parking for soil boring. See Permit Issued 11/06/08 site plan. On Marshall St and on 62nd St. One location at one time. Allow six (6) monitoring wells Nbr of days: 1 Linear feet: 525 Effective: 11/24/08 Expiration: 11/24/08 SHORT TERM NON-METERED Applcnt Phone# Lic# --License Classes--Owner SAPPAL KANWALJIT K Contractor ALL ENVIRONMENTAL INC х (925)283-6000 654919 A Arch/Engr Agent AEI CONSULTANTS/ (925) 944-2899 Applic Addr 2500 CAMINO DIABLO, WALNUT CREEK, CA, 94597 \$467.60 TOTAL FEES PAID AT ISSUANCE \$66.00 Applic \$341.50 Permit \$.00 Process \$38.71 Rec Mgmt \$.00 Gen Plan \$.00 Invstg \$.00 Other \$21.39 Tech Enh JOB SITE DIST TCP needs to be approved by Transportation Services every 30 days or whenever deviated from the previously approved plan. Applicant: Issued by:

Alameda County Public Works Agency - Water Resources Well Permit

PUBLIC	399 Elmhurst Street Hayward, CA 94544-139 Telephone: (510)670-6633 Fax:(5	95 10)782-1939			
Application Approved	on: 11/10/2008 By jamesy	Permit Numbers: W2008 Permits Valid from 11/	8-0840 to W2008-0843 24/2008 to 11/26/2008		
Application Id:	1226008107165	City of Project Site:O	akland		
Site Location: Project Start Date: Requested Inspection Scheduled Inspection	6211 San Pablo Avenue 11/24/2008 :11/24/2008 :11/24/2008 at 2:00 PM (Contact your inspector,	Completion Date: 11/26/2008 Ispector, Vicky Hamlin at (510) 670-5443, to confirm.)			
Applicant:	AEI Consultants - Jeremy Smith	Phone: 92	25-746-6028		
Property Owner:	2500 Camino Diablo, Walnut Creek, CA 94597 Pritpaul Sappal 2718 Washburn Court Valleio CA 94591	Phone: 7	07-557-0999		
Client: Contact:	** same as Property Owner ** Jeremy Smith	Phone: Cell:			
	Receipt Number: WR2008-0402 Payer Name : Jeremy Smith	Total Due: Total Amount Paid: Paid By: VISA	\$1265.00 <u>\$1265.00</u> PAID IN FULL		

Works Requesting Permits:

Borehole(s) for Geo Probes-Sampling 24 to 72 hours only - 14 Boreholes Driller: ECA - Lic #: 695970 - Method: DP

Work Total: \$230.00

Specifications

Permit	Issued Dt	Expire Dt	#	Hole Diam	Max Depth
Number			Boreholes		
W2008-	11/10/2008	02/22/2009	14	2.00 in.	45.00 ft
0840					

Specific Work Permit Conditions

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

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

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

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

5. Permitte, 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,

Alameda County Public Works Agency - Water Resources Well Permit

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

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

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

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

Well Construction-Vapor Monitoring Well-Vapor Monitoring Well - 3 Wells Driller: ECA - Lic #: 695970 - Method: DP

Work Total: \$1035.00

Specifications

Permit #	Issued Date	Expire Date	Owner Well Id	Hole Diam.	Casing Diam.	Seal Depth	Max. Depth
W2008- 0841	11/10/2008	02/22/2009	SG-1	2.00 in.	0.50 in.	4.00 ft	6.00 ft
W2008- 0842	11/10/2008	02/22/2009	SG-2	2.00 in.	0.50 in.	4.00 ft	6.00 ft
W2008- 0843	11/10/2008	02/22/2009	SG-3	2.00 in.	0.50 in.	4.00 ft	6.00 ft

Specific Work Permit Conditions

1. Drilling Permit(s) can be voided/ cancelled only in writing. It is the applicant's responsibility to notify Alameda County Public Works Agency, Water Resources Section in writing for an extension or to cancel the drilling permit application. No drilling permit application(s) shall be extended beyond ninety (90) days from the original start date. Applicants may not cancel a drilling permit application after the completion date of the permit issued has passed.

2. Permitte, 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 Vicky Hamlin for an inspection time at 510-670-5443 or email to vickyh@acpwa.org at least five

Alameda County Public Works Agency - Water Resources Well Permit

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

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

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

9. 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.

APPENDIX C

LABORATORY ANALYTICAL REPORT

McCampbell An "When Ouality"	nalytical, Inc.	1534 Will Web: www.mc Telepho	ow Pass Road, Pittsburg, campbell.com E-mail: m one: 877-252-9262 Fax:	CA 94565-1701 ain@mccampbell.com 925-252-9269		
AEI Consultants	Client Project ID: #28034	6; Alaska Gas	Date Sampled:	11/24/08		
2500 Camino Diablo, Ste. #200			Date Received:	11/24/08		
Walnut Creek, CA 94597	Client Contact: Jeremy Su	nith	Date Reported:	12/03/08		
	Client P.O.:		Date Completed: 12/02/08			

WorkOrder: 0811757

December 03, 2008

Dear Jeremy:

Enclosed within are:

- 1) The results of the 13 analyzed samples from your project: #280346; Alaska Gas,
- 2) A QC report for the above samples,
- 3) A copy of the chain of custody, and
- 4) An invoice for analytical services.

All analyses were completed satisfactorily and all QC samples were found to be within our control limits.

If you have any questions or concerns, please feel free to give me a call. Thank you for choosing

McCampbell Analytical Laboratories for your analytical needs.

Best regards,

Angela Rydelius Laboratory Manager McCampbell Analytical, Inc.

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McCampbell Analytical, Inc.

1534 Willow Pass Rd

CHAIN-OF-CUSTODY RECORD

Page 1 of 1

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11	12

3	G-MBTEX_S	
8		

4	G-MBTEX_W
9	

5	PREDF REPORT
10	

Prepared by: Samantha Arbuckle

Comments:

NOTE: Soil samples are discarded 60 days after results are reported unless other arrangements are made (Water samples are 30 days). Hazardous samples will be returned to client or disposed of at client expense.



McCampbell Analytical, Inc.

"When Ouality Counts"

Sample Receipt Checklist

Client Name:	AEI Consultants					Date	and Time Received	d: 11/24/08 8	:09:23 PM
Project Name:	#280346; Alaska	Gas				Chec	klist completed ar	d reviewed by:	Samantha Arbuckle
WorkOrder N°:	0811757	Matrix	Soil/Water			Carrie	er: <u>EnviroTech</u>		
			<u>Chain</u>	of Cu	stody (C	OC) Inform	ation		
Chain of custody	present?			Yes	\checkmark	No 🗆			
Chain of custody	signed when relinqui	shed and	received?	Yes	\checkmark	No 🗆			
Chain of custody	agrees with sample I	abels?		Yes	✓	No 🗌			
Sample IDs noted	by Client on COC?			Yes	\checkmark	No 🗆			
Date and Time of	collection noted by Cli	ient on CC	C?	Yes	\checkmark	No 🗆			
Sampler's name r	noted on COC?			Yes	\checkmark	No 🗆			
			<u>s</u>	ample	Receipt	Informatio	<u>n</u>		
Custody seals int	tact on shipping conta	iner/coole	ər?	Yes		No 🗆		NA 🔽	
Shipping containe	er/cooler in good cond	lition?		Yes	\checkmark	No 🗆			
Samples in prope	er containers/bottles?			Yes	✓	No 🗆			
Sample containe	rs intact?			Yes	\checkmark	No 🗆			
Sufficient sample	volume for indicated	test?		Yes	✓	No 🗌			
		<u>Sar</u>	nple Prese	rvatior	n and Ho	old Time (HT	<u>) Information</u>		
All samples recei	ved within holding tim	e?		Yes	<	No 🗌			
Container/Temp E	Blank temperature			Coole	r Temp:	4.2°C		NA 🗆	
Water - VOA vial	ls have zero headspa	ce / no bu	ubbles?	Yes	✓	No 🗆	No VOA vials su	bmitted	
Sample labels ch	necked for correct pres	servation	?	Yes	\checkmark	No 🗌			
TTLC Metal - pH	acceptable upon recei	ipt (pH<2)	?	Yes		No 🗆		NA 🗹	
Samples Receive	ed on Ice?			Yes	\checkmark	No 🗆			
			(Ісе Тур	e: WE	TICE)			
* NOTE: If the "N	lo" box is checked, se	ee comme	ents below.						

Client contacted:

Date contacted:

Contacted by:

Comments:

McCampbell An "When Ouality	alyti _{Counts"}	<u>cal, In</u>	<u>c.</u>	1534 Willow Pass Road, Pittsburg, CA 94565-1701 Web: www.mccampbell.com E-mail: main@mccampbell.com Telephone: 877-252-9262 Fax: 925-252-9269								
AEI Consultants		Client Pr	oject ID:	#28034	6; Alaska Gas	Date Sampled:	11/24/08					
2500 Comino Diablo Sta #200						Date Received:	11/24/08					
2500 Camino Diabio, Ste. #200		Client C	ontact: Je	remy Sr	nith	Date Extracted:	11/24/08					
Walnut Creek, CA 94597		Client P.	0.:			Date Analyzed	11/27/08					
Oxygenate	ed Vola	tile Orgaı	nics + EDF									
Extraction Method: SW5030B		Anal	lytical Method	l: SW826	0B	1	Work Order:	0811757				
Lab ID	08117	57-002A	0811757	-006A	0811757-008A	0811757-012A						
Client ID	SI	3-8-6	DP-4-	7.5	DP-4-15	SB-9-10	Reporting Limit fo DF =1					
Matrix		S	S		S	S						
DF		1 1			20	1	S	W				
Compound				Conce	entration		mg/kg	ug/L				
tert-Amyl methyl ether (TAME)]	ND	ND		0.12	ND	0.005	NA				
t-Butyl alcohol (TBA)	0.090		ND		ND<1.0	ND	0.05	NA				
1,2-Dibromoethane (EDB)]	ND	ND		ND<0.080	ND	0.004	NA				
1,2-Dichloroethane (1,2-DCA)]	ND	ND	1	ND<0.080	ND	0.004	NA				
Diisopropyl ether (DIPE)]	ND	ND	1	ND<0.10	ND	0.005	NA				
Ethyl tert-butyl ether (ETBE)]	ND	ND	1	ND<0.10	ND	0.005	NA				
Methyl-t-butyl ether (MTBE)	0	.092	ND	1	1.3	ND	0.005	NA				
		Surr	ogate Rec	overies	s (%)							
%SS1:		93	94		100	96						
Comments												
* water and vapor samples are reported in extracts are reported in mg/L, wipe sample	μg/L, so es in μg/	oil/sludge/so wipe.	olid samples	in mg/k	g, product/oil/non-a	queous liquid sample	es and all TC	LP & SPLP				
ND means not detected above the reporting	ng limit;	N/A mean	s analyte no	ot applica	able to this analysis	i.						
# surrogate diluted out of range or coelute	es with a	nother peal	k; &) low sı	irrogate	due to matrix interf	erence.						

a3) sample diluted due to high organic content / matrix interference.

Angela Rydelius, Lab Manager
McCampbell An "When Ouality	alyti _{Counts"}	<u>cal, In</u>	<u>c.</u>		1534 Willow P Web: www.mccamp Telephone: 8	ass Road, Pittsburg, CA bell.com E-mail: main 77-252-9262 Fax: 92:	94565-1701 @mccampbell.c 5-252-9269	om
AEI Consultants		Client Pr	oject ID: 🕴	#28034	6; Alaska Gas	Date Sampled:	11/24/08	
2500 Comino Diablo Sta #200						Date Received:	11/24/08	
2500 Camino Diabio, Ste. #200		Client C	ontact: Jei	remy Sr	nith	Date Extracted:	11/24/08	
Walnut Creek, CA 94597		Client P.	0.:			Date Analyzed	11/27/08	
Oxygenate	ed Vola	tile Orgar	nics + EDB	and 1,	2-DCA by P&T	and GC/MS*		
Extraction Method: SW5030B		Anal	ytical Method	: SW826	0B	1	Work Order:	0811757
Lab ID	08117	57-015A	0811757-	-018A	0811757-023A			
Client IDSB-10-6SB-11-7.5SB-14-7.5MatrixSSS						Reporting Limit for DF =1		
Matrix		S	S		S			
DF		1	1		20		S	W
Compound				Conce	entration		mg/kg	ug/L
tert-Amyl methyl ether (TAME)	1	ND	ND		ND<0.10		0.005	NA
t-Butyl alcohol (TBA)	1	ND	ND		ND<1.0		0.05	NA
1,2-Dibromoethane (EDB)	1	ND	ND		ND<0.080		0.004	NA
1,2-Dichloroethane (1,2-DCA)	1	ND	ND		ND<0.080		0.004	NA
Diisopropyl ether (DIPE)	1	ND	ND		ND<0.10		0.005	NA
Ethyl tert-butyl ether (ETBE)	1	ND	ND		ND<0.10		0.005	NA
Methyl-t-butyl ether (MTBE)	1	ND	ND		ND<0.10		0.005	NA
		Surr	ogate Rec	overies	s (%)			
%SS1:		97	103	1	93			
Comments					a3			
* water and vapor samples are reported in extracts are reported in mg/L, wipe sample	μg/L, so es in μg/	il/sludge/sc wipe.	olid samples	in mg/kg	g, product/oil/non-a	queous liquid sample	es and all TC	LP & SPLP
ND means not detected above the reporting	ng limit;	N/A mean	s analyte no	t applica	able to this analysis	S.		
# surrogate diluted out of range or coelutes with another peak; &) low surrogate due to matrix interference.								

a3) sample diluted due to high organic content / matrix interference.

McCampbell An	alyti	cal, In	<u>c.</u>		1534 Willow F Web: www.mccamp Telephone: 8	ass Road, Pittsburg, CA bell.com E-mail: main 77-252-9262 Fax: 92	94565-1701 @mccampbell.c	com		
AEI Consultants	counts	Client Pro	oject ID:	#28034	6; Alaska Gas	Date Sampled:	11/24/08			
2500 Charles D'111 - 64 - #200						Date Received:	11/24/08			
2500 Camino Diabio, Ste. #200		Client Co	ontact: Je	remy Sı	nith	Date Extracted:	11/26/08-1	1/27/08		
Walnut Creek, CA 94597		Client P.0	D.:			Date Analyzed	11/26/08-1	1/27/08		
Oxygenate	ed Vola	tile Organ	nics + EDE	B and 1,	2-DCA by P&T	and GC/MS*				
Extraction Method: SW5030B		Anal	ytical Method	l: SW826	0B		Work Order:	0811757		
Lab ID	08117	57-004B	0811757	-009B	0811757-013B	0811757-016B				
Client ID	S	B-8	DP-	P-4 SB-9 SB-10 Reporting Limit to DF =1						
Matrix		W	W		W	W				
DF	3	330	500)	10	1	S	W		
Compound				Conce	entration		ug/kg	µg/L		
tert-Amyl methyl ether (TAME)	ND	0<170	800)	12	ND	NA	0.5		
t-Butyl alcohol (TBA)	30	,000	10,00	00	25	2.5	NA	2.0		
1,2-Dibromoethane (EDB)	ND	0<170	ND<2	250	ND<5.0	ND	NA	0.5		
1,2-Dichloroethane (1,2-DCA)	ND	0<170	ND<2	250	ND<5.0	ND	NA	0.5		
Diisopropyl ether (DIPE)	ND	0<170	ND<2	250	ND<5.0	ND	NA	0.5		
Ethyl tert-butyl ether (ETBE)	ND	0<170	ND<2	250	ND<5.0	ND	NA	0.5		
Methyl-t-butyl ether (MTBE)	1	900	970	0	180	18	NA	0.5		
		Surre	ogate Rec	overies	s (%)					
%SS1:		91	90		94	93				
Comments	b	5,b1	b1		b1	b1				
 * water and vapor samples are reported in µg/L, soil/sludge/solid samples in mg/kg, product/oil/non-aqueous liquid samples and all TCLP & SPLP extracts are reported in mg/L, wipe samples in µg/wipe. ND means not detected above the reporting limit; N/A means analyte not applicable to this analysis. 										

surrogate diluted out of range or coelutes with another peak; &) low surrogate due to matrix interference.

b1) aqueous sample that contains greater than ~1 vol. % sedimentb6) lighter than water immiscible sheen/product is present

McCampbell An "When Ouality	alyti	cal, In	<u>c.</u>		1534 Willow P Web: www.mccamp Telephone: 8	ass Road, Pittsburg, CA bell.com E-mail: main 77-252-9262 Fax: 92:	Road, Pittsburg, CA 94565-1701 .com E-mail: main@mccampbell.com 252-9262 Fax: 925-252-9269 Date Sampled: 11/24/08 Date Received: 11/24/08 Date Extracted: 11/26/08-11/27 Date Analyzed NA NA NA Image: State Analyzed NA Ima	
AEI Consultants		Client Pr	oject ID:	#28034	6; Alaska Gas	Date Sampled:	11/24/08	
2500 Comino Diablo Sta #200						Date Received:		
2500 Camino Diaolo, Stc. #200		Client C	ontact: Je	remy Sr	nith	Date Extracted:	11/26/08-1	1/27/08
Walnut Creek, CA 94597		Client P.	0.:			Date Analyzed	11/26/08-1	1/27/08
Oxygenate	ed Vola	tile Organ	nics + EDF	B and 1,	2-DCA by P&T	and GC/MS*		
Extraction Method: SW5030B		Anal	ytical Method	l: SW826	0B	1	Work Order:	0811757
Lab ID	08117	57-021B	0811757	-025B				
Client ID	S	B-11	SB-1	4			Reporting DF	Limit for =1
Matrix		W	W					
DF		10	100)			S	W
Compound			-	Conce	entration		ug/kg	µg/L
tert-Amyl methyl ether (TAME)		5.4	52				NA	0.5
t-Butyl alcohol (TBA)		37	350				NA	2.0
1,2-Dibromoethane (EDB)	NI	D<5.0	ND<	50			NA	0.5
1,2-Dichloroethane (1,2-DCA)	NI	D<5.0	ND<	50			NA	0.5
Diisopropyl ether (DIPE)	NI	D<5.0	ND<	50			NA	0.5
Ethyl tert-butyl ether (ETBE)	NI	D<5.0	ND<	50			NA	0.5
Methyl-t-butyl ether (MTBE)		160	190	0			NA	0.5
		Surr	ogate Rec	overies	s (%)			
%SS1:		93	93					
Comments		b1	b1					
* water and vapor samples are reported in extracts are reported in mg/L, wipe sampl	μg/L, so es in μg/	oil/sludge/so /wipe.	olid samples	in mg/k	g, product/oil/non-a	queous liquid sample	es and all TC	LP & SPLP
ND means not detected above the reporti	ng limit	; N/A mean	s analyte no	ot applica	able to this analysis	s.		
# surrogate diluted out of range or coelut	es with a	mother peal	k; &) low sı	irrogate	due to matrix inter	ference.		

b1) aqueous sample that contains greater than ~1 vol. % sediment b6) lighter than water immiscible sheen/product is present

	McCampbe	ell An en Ouality	alyti _{Counts"}	<u>cal, Inc.</u>		1534 Willow Pass Road, Pittsburg, CA 94565-1701 Web: www.mccampbell.com E-mail: main@mccampbell.com Telephone: 877-252-9262 Fax: 925-252-9269								
AEI C	Consultants			Client Project II	D: #280346	; Alaska Gas	Date Sa	ampled: 11/2	24/08					
2500 0	Camino Diablo, Ste. #2	200					Date R	eceived: 11/2	24/08					
	,		Ī	Client Contact:	Jeremy Sm	ith	Date E	xtracted: 11/2	24/08-12/02/	08				
Walnu	it Creek, CA 94597			Client P.O.:			Date A	nalyzed 11/2	25/08-12/02	-12/02/08				
Extraction	Gas	oline Ra	ange (Co	5-C12) Volatile I Analy	Hydrocarbor	ns as Gasolin W8021B/8015Cn	ne with BTH	EX and MTBI	E * Work Ord	ler: 081	1757			
Lab ID	Client ID	Matrix		TPH(g)	MTBE	Benzene	Toluene	Ethylbenzene	Xylenes	DF	% SS			
002A	SB-8-6	S		14,d2	ND<0.17	0.024	0.12	0.45	0.087	3.3	88			
004A	SB-8	w	47,0	000,d1,b6,b1	2400	530	200	3100	4100	10	100			
006A	DP-4-7.5	S		16,d2,d9	ND	ND	0.12	0.016	0.032	1	91			
008A	DP-4-15	S		ND	0.97	ND	ND	ND	ND	1	92			
009A	DP-4	w	1	.700,d1,b1	7800	17	5.6	22	5.3	10	104			
012A	SB-9-10	S		ND	ND	ND	ND	ND	ND	1	95			
013A	SB-9	W	1	.300,d1,b1	160	8.6	3.9	55	200	3.3	103			
015A	SB-10-6	S		ND	ND	ND	ND	ND	ND	1	91			
016A	SB-10	W		ND,b1	17	ND	ND	ND	ND	1	105			
018A	SB-11-7.5	S	2	200,d2,d9	ND<1.0	ND<0.10	0.96	1.4	3.9	20	85			
021A	SB-11	W	1	200,d2,b1	140	5.6	0.59	38	220	1	93			
023A	SB-14-7.5	S		120,d2,d9	ND<0.50	ND<0.050	0.75	2.3	6.2	10	114			
025A	SB-14	w	1	.300,d1,b1	2000	20	6.9	61	170	10	111			
Repor	rting Limit for DF =1;	W		50	5	0.5	0.5	0.5	0.5	μ	g/L			
abov	we the reporting limit	S		1	0.05	0.005	0.005	0.005	0.005	mg	g/Kg			

* water and vapor samples and all TCLP & SPLP extracts are reported in ug/L, soil/sludge/solid samples in mg/kg, wipe samples in µg/wipe, product/oil/non-aqueous liquid samples in mg/L.

cluttered chromatogram; sample peak coelutes with surrogate peak.

+The following descriptions of the TPH chromatogram are cursory in nature and McCampbell Analytical is not responsible for their interpretation:

b1) aqueous sample that contains greater than ~1 vol. % sediment

b6) lighter than water immiscible sheen/product is present

d1) weakly modified or unmodified gasoline is significant

d2) heavier gasoline range compounds are significant (aged gasoline?)

d9) no recognizable pattern





"When Ouality Counts"

QC SUMMARY REPORT FOR SW8260B

W.O. Sample Matrix: Soil			QC Matri	x: Soil			Batch	ID: 39826		WorkC	Drder 08117	57
EPA Method SW8260B	Extra	ction SW	5030B					5	Spiked San	nple ID	: 0811670-0	03A
Analyte	Sample	Spiked	MS	MSD	MS-MSD	LCS	LCSD	LCS-LCSD	Acce	eptance	e Criteria (%)	
, individ	mg/Kg	mg/Kg mg/Kg % Rec. % Rec. % RPD % Re				% Rec.	% Rec.	% RPD	MS / MSD	RPD	LCS/LCSD	RPD
tert-Amyl methyl ether (TAME)	ND	0.050	81.4	81.2	0.236	98.5	97.7	0.772	60 - 130	30	60 - 130	30
t-Butyl alcohol (TBA)	ND	0.25	92.1	90.4	1.83	97.9	97	0.883	60 - 130	30	60 - 130	30
1,2-Dibromoethane (EDB)	ND	0.050	101	96.9	3.69	104	101	3.29	60 - 130	30	60 - 130	30
1,2-Dichloroethane (1,2-DCA)	ND	0.050	99.6	98.4	1.21	120	119	0.758	60 - 130	30	60 - 130	30
Diisopropyl ether (DIPE)	ND	0.050	91.8	90.9	0.995	108	107	1.29	60 - 130	30	60 - 130	30
Ethyl tert-butyl ether (ETBE)	ND	0.050	95.3	94.9	0.426	115	115	0	60 - 130	30	60 - 130	30
Methyl-t-butyl ether (MTBE)	ND	0.050	82.3	81.4	1.18	96.3	94.7	1.73	60 - 130	30	60 - 130	30
%SS1:	103	0.12	87	87	0	95	95	0	70 - 130	30	70 - 130	30
All target compounds in the Method E NONE	Blank of this	extraction	batch we	re ND les	s than the	method R	L with th	e following	exceptions:			

BATCH 39826 SUMMARY

Lab ID	Date Sampled	Date Extracted	Date Analyzed	Lab ID	Date Sampled	Date Extracted	Date Analyzed
0811757-002A	11/24/08 9:45 AM	11/24/08	11/27/08 6:01 AM	0811757-006A	11/24/08 8:05 AM	11/24/08	11/27/08 6:44 AM
0811757-008A	11/24/08 8:20 AM	11/24/08	11/27/08 7:27 AM	0811757-012A	11/24/08 11:30 AM	11/24/08	11/27/08 8:09 AM
0811757-015A	11/24/08 1:15 PM	11/24/08	11/27/08 8:52 AM	0811757-018A	11/24/08 2:25 PM	11/24/08	11/27/08 9:34 AM
0811757-023A	11/24/08 10:30 AM	11/24/08	11/27/08 10:17 AM				

MS = Matrix Spike; MSD = Matrix Spike Duplicate; LCS = Laboratory Control Sample; LCSD = Laboratory Control Sample Duplicate; RPD = Relative Percent Deviation.

% Recovery = 100 * (MS-Sample) / (Amount Spiked); RPD = 100 * (MS - MSD) / ((MS + MSD) / 2).

MS / MSD spike recoveries and / or %RPD may fall outside of laboratory acceptance criteria due to one or more of the following reasons: a) the sample is inhomogenous AND contains significant concentrations of analyte relative to the amount spiked, or b) the spiked sample's matrix interferes with the spike recovery.

N/A = not enough sample to perform matrix spike and matrix spike duplicate.

NR = analyte concentration in sample exceeds spike amount for soil matrix or exceeds 2x spike amount for water matrix or sample diluted due to high matrix or analyte content.

Laboratory extraction solvents such as methylene chloride and acetone may occasionally appear in the method blank at low levels.



"When Ouality Counts"

QC SUMMARY REPORT FOR SW8021B/8015Cm

W.O. Sample Matrix: Soil			QC Matriz	k: Soil			Batch	ID: 39879		WorkC	Order 08117	57
EPA Method SW8021B/8015Cm	Extra	ction SW	5030B					5	Spiked San	nple ID	: 0811750-0	01A
Analyte	Sample	Spiked	MS	MSD	MS-MSD	LCS	LCSD	LCS-LCSD	Acce	eptance	Criteria (%)	
, in all to	mg/Kg	mg/Kg	% Rec.	% Rec.	% RPD	% Rec.	% Rec.	% RPD	MS / MSD	RPD	LCS/LCSD	RPD
TPH(btex ^f	ND	0.60	109	109	0	81	93.8	14.7	70 - 130	20	70 - 130	20
MTBE	ND	0.10	90	91	1.05	85.2	92.4	8.07	70 - 130	20	70 - 130	20
Benzene	ND	0.10	83.2	88.8	6.40	85.9	94.3	9.38	70 - 130	20	70 - 130	20
Toluene	ND	0.10	98.9	96	3.03	78.3	86.7	10.2	70 - 130	20	70 - 130	20
Ethylbenzene	ND	0.10	107	98.7	7.93	88.9	98.5	10.2	70 - 130	20	70 - 130	20
Xylenes	ND	0.30	123	114	7.56	87	95.9	9.78	70 - 130	20	70 - 130	20
%SS:	91	0.10	121	114	6.39	83	92	10.4	70 - 130	20	70 - 130	20
All target compounds in the Method B NONE	lank of this	extraction	batch we	re ND les	s than the	method R	L with th	e following	exceptions:			

BATCH 39879 SUMMARY										
Lab ID	Date Sampled	Date Extracted	Date Analyzed	Lab ID	Date Sampled	Date Extracted	Date Analyzed			
0811757-002A	11/24/08 9:45 AM	11/24/08	11/27/08 12:50 AM	0811757-006A	11/24/08 8:05 AM	11/24/08	12/02/08 2:21 AM			
0811757-008A	11/24/08 8:20 AM	11/24/08	11/26/08 9:20 PM	0811757-012A	11/24/08 11:30 AM	11/24/08	12/01/08 4:35 PM			
0811757-015A	11/24/08 1:15 PM	11/24/08	11/25/08 4:06 PM	0811757-018A	11/24/08 2:25 PM	11/24/08	11/26/08 9:51 PM			
0811757-023A	11/24/08 10:30 AM	11/24/08	12/02/08 3:22 AM							

MS = Matrix Spike; MSD = Matrix Spike Duplicate; LCS = Laboratory Control Sample; LCSD = Laboratory Control Sample Duplicate; RPD = Relative Percent Deviation.

% Recovery = 100 * (MS-Sample) / (Amount Spiked); RPD = 100 * (MS - MSD) / ((MS + MSD) / 2).

MS / MSD spike recoveries and / or %RPD may fall outside of laboratory acceptance criteria due to one or more of the following reasons: a) the sample is inhomogenous AND contains significant concentrations of analyte relative to the amount spiked, or b) the spiked sample's matrix interferes with the spike recovery.

 \pounds TPH(btex) = sum of BTEX areas from the FID.

cluttered chromatogram; sample peak coelutes with surrogate peak.

N/A = not enough sample to perform matrix spike and matrix spike duplicate.

NR = matrix interference and/or analyte concentration in sample exceeds spike amount for soil matrix or exceeds 2x spike amount for water matrix or sample diluted due to high matrix or analyte content.





"When Ouality Counts"

QC SUMMARY REPORT FOR SW8260B

W.O. Sample Matrix: Water	QC Matrix: Water					BatchID: 39880 WorkOrder 0811757				57		
EPA Method SW8260B	Extra	Extraction SW5030B				5	Spiked Sar	nple ID	: 0811752-0	006A		
Analyte	Sample	Spiked	MS	MSD	MS-MSD	LCS	LCSD	LCS-LCSD	Acc	eptance	e Criteria (%)	
, indigite	µg/L	µg/L	% Rec.	% Rec.	% RPD	% Rec.	% Rec.	% RPD	MS / MSD	RPD	LCS/LCSD	RPD
tert-Amyl methyl ether (TAME)	ND	10	93.4	97	3.83	125	125	0	70 - 130	30	70 - 130	30
t-Butyl alcohol (TBA)	ND	50	93.4	96	2.74	111	112	0.956	70 - 130	30	70 - 130	30
1,2-Dibromoethane (EDB)	ND	10	108	112	3.43	122	122	0	70 - 130	30	70 - 130	30
1,2-Dichloroethane (1,2-DCA)	ND	10	99.7	104	4.62	125	125	0	70 - 130	30	70 - 130	30
Diisopropyl ether (DIPE)	ND	10	91.5	95.7	4.44	111	113	1.08	70 - 130	30	70 - 130	30
Ethyl tert-butyl ether (ETBE)	ND	10	107	112	4.82	119	120	0.364	70 - 130	30	70 - 130	30
Methyl-t-butyl ether (MTBE)	ND	10	92.3	95.4	3.26	117	118	0.242	70 - 130	30	70 - 130	30
%SS1:	89	25	85	87	1.96	97	98	1.57	70 - 130	30	70 - 130	30
All target compounds in the Method NONE	Blank of this	extraction	batch we	re ND les	s than the	method R	L with th	e following	exceptions:			

BATCH 39880 SUMMARY

Lab ID	Date Sampled	Date Extracted	Date Analyzed	Lab ID	Date Sampled	Date Extracted	Date Analyzed
0811757-004B	11/24/08 9:45 AM	11/27/08	11/27/08 8:10 AM	0811757-009B	11/24/08 8:30 AM	11/26/08	11/26/08 7:54 PM
0811757-013B	11/24/08 11:45 AM	11/27/08	11/27/08 6:42 AM	0811757-016B	11/24/08 1:25 PM	11/27/08	11/27/08 7:25 AM
0811757-021B	11/24/08 2:45 PM	11/27/08	11/27/08 8:08 AM	0811757-025B	11/24/08 10:45 AM	11/27/08	11/27/08 8:51 AM

MS = Matrix Spike; MSD = Matrix Spike Duplicate; LCS = Laboratory Control Sample; LCSD = Laboratory Control Sample Duplicate; RPD = Relative Percent Deviation.

% Recovery = 100 * (MS-Sample) / (Amount Spiked); RPD = 100 * (MS - MSD) / ((MS + MSD) / 2).

MS / MSD spike recoveries and / or %RPD may fall outside of laboratory acceptance criteria due to one or more of the following reasons: a) the sample is inhomogenous AND contains significant concentrations of analyte relative to the amount spiked, or b) the spiked sample's matrix interferes with the spike recovery.

N/A = not enough sample to perform matrix spike and matrix spike duplicate.

NR = analyte concentration in sample exceeds spike amount for soil matrix or exceeds 2x spike amount for water matrix or sample diluted due to high matrix or analyte content.

Laboratory extraction solvents such as methylene chloride and acetone may occasionally appear in the method blank at low levels.





"When Ouality Counts"

QC SUMMARY REPORT FOR SW8021B/8015Cm

W.O. Sample Matrix: Water		QC Matrix: Water				BatchID: 39882 WorkOrder 081				Drder 08117	57	
EPA Method SW8021B/8015Cm	Extra	ction SW	5030B					5	Spiked San	nple ID	: 0811760-0)03A
Analyte	Sample	Spiked	MS	MSD	MS-MSD	LCS	LCSD	LCS-LCSD	Acce	eptance	e Criteria (%)	1
, indigite	µg/L	µg/L	% Rec.	% Rec.	% RPD	% Rec.	% Rec.	% RPD	MS / MSD	RPD	LCS/LCSD	RPD
TPH(btex ^f	ND	60	94.7	92.1	2.73	84.7	94.2	10.6	70 - 130	20	70 - 130	20
MTBE	ND	10	97	95.8	1.27	87.7	89	1.54	70 - 130	20	70 - 130	20
Benzene	ND	10	93	93.5	0.495	91.6	103	11.3	70 - 130	20	70 - 130	20
Toluene	ND	10	92.1	93.2	1.21	101	115	12.3	70 - 130	20	70 - 130	20
Ethylbenzene	ND	10	96.2	96.8	0.681	100	113	11.9	70 - 130	20	70 - 130	20
Xylenes	ND	30	106	106	0	109	123	12.6	70 - 130	20	70 - 130	20
%SS:	102	10	94	94	0	107	105	1.86	70 - 130	20	70 - 130	20
All target compounds in the Method B NONE	lank of this	extraction	batch we	re ND les	s than the	method R	L with th	e following	exceptions:			

	BATCH 39882 SUMMARY											
Lab ID	Date Sampled	Date Extracted	Date Analyzed	Lab ID	Date Sampled	Date Extracted	Date Analyzed					
0811757-004A	11/24/08 9:45 AM	12/02/08	12/02/08 4:22 AM	0811757-009A	11/24/08 8:30 AM	11/26/08	11/26/08 3:36 AM					
0811757-009A	11/24/08 8:30 AM	11/26/08	11/26/08 10:51 PM	0811757-013A	11/24/08 11:45 AM	11/27/08	11/27/08 1:53 AM					
0811757-016A	11/24/08 1:25 PM	11/25/08	11/25/08 8:37 PM	0811757-021A	11/24/08 2:45 PM	11/27/08	11/27/08 12:13 AM					
0811757-025A	11/24/08 10:45 AM	11/26/08	11/26/08 4:41 AM									

MS = Matrix Spike; MSD = Matrix Spike Duplicate; LCS = Laboratory Control Sample; LCSD = Laboratory Control Sample Duplicate; RPD = Relative Percent Deviation.

% Recovery = 100 * (MS-Sample) / (Amount Spiked); RPD = 100 * (MS - MSD) / ((MS + MSD) / 2).

MS / MSD spike recoveries and / or %RPD may fall outside of laboratory acceptance criteria due to one or more of the following reasons: a) the sample is inhomogenous AND contains significant concentrations of analyte relative to the amount spiked, or b) the spiked sample's matrix interferes with the spike recovery.

£ TPH(btex) = sum of BTEX areas from the FID.

cluttered chromatogram; sample peak coelutes with surrogate peak.

N/A = not enough sample to perform matrix spike and matrix spike duplicate.

NR = matrix interference and/or analyte concentration in sample exceeds spike amount for soil matrix or exceeds 2x spike amount for water matrix or sample diluted due to high matrix or analyte content, or inconsistency in sample containers.



McCampbell An "When Ouality	nalytical, Inc.	1534 Will Web: www.mc Telepho	ow Pass Road, Pittsburg, campbell.com E-mail: m one: 877-252-9262 Fax:	CA 94565-1701 ain@mccampbell.com 925-252-9269
AEI Consultants	Client Project ID: #28034	6; Alaska Gas	Date Sampled:	11/24/08
2500 Camino Diablo, Ste. #200			Date Received:	11/24/08
Walnut Creek, CA 94597	Client Contact: Jeremy Su	nith	Date Reported:	12/03/08
	Client P.O.:		Date Completed:	12/12/08

WorkOrder: 0811757

December 12, 2008

Dear Jeremy:

Enclosed within are:

- 1) The results of the 7 analyzed samples from your project: **#280346; Alaska Gas,**
- 2) A QC report for the above samples,
- 3) A copy of the chain of custody, and
- 4) An invoice for analytical services.

All analyses were completed satisfactorily and all QC samples were found to be within our control limits.

If you have any questions or concerns, please feel free to give me a call. Thank you for choosing

McCampbell Analytical Laboratories for your analytical needs.

Best regards,

Angela Rydelius Laboratory Manager McCampbell Analytical, Inc.

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	Report To: Jeremy	y Smith		B	ill To	: sam	e		P.O.	# V	VC08	8104	10			_		A,	naly	sis F	Requ	est		-		_		Oth	er	C	ommen	its
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[Sampler Signature	: We	nt	-					_							B	TBE	A.E	L.	No.		270	A 62		r. pt	(8.0						
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1534 Willow Pass Rd

CHAIN-OF-CUSTODY RECORD

Page 1 of 1

Pittsburg (925) 25	g, CA 94565-1701 52-9262				V	WorkO	rder:	08117	5 A		Client	Code: A	AEL				
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Report to:							Bill to:						Rec	questec	TAT:	5	days
Jeremy Smit AEI Consulta 2500 Camin Walnut Cree (925) 944-289	h ants o Diablo, Ste. #200 k, CA 94597 9 FAX (925) 944-2895	Email: cc: PO: ProjectNo	jasmith@aeid #280346; Ala	consultants.com ska Gas			De AE 25 Wa dr	enise M El Cons 00 Can alnut Ci nockel @	ockel ultants nino Dia reek, C/ 2 aeicor	ablo, St A 94597 nsultan	e. #200 7 ts.com)	Dai Dai Dai	te Reco te Add te Prin	eived: -On: nted:	11/24 12/08 12/08	/2008 /2008 /2008
									Req	uested	Tests	(See le	gend b	elow)			
Lab ID	Client ID		Matrix	Collection Date	Hold	1	2	3	4	5	6	7	8	9	10	11	12
0811757-001	SB-8-3.5		Soil	11/24/2008 9:15		Α	А										
0811757-003	SB-8-11.5		Soil	11/24/2008 9:50		Α	А										
0811757-005	DP-4-3.5		Soil	11/24/2008 8:00		Α	А										
0811757-017	SB-11-3.5		Soil	11/24/2008 14:20		Α	А										
0811757-020	SB-11-15.5		Soil	11/24/2008 14:40		Α	А										
0811757-022	SB-14-3.5		Soil	11/24/2008 10:20		А	А										
0811757-024	SB-14-11.5		Soil	11/24/2008 10:40		Α	А										

Test Legend:

1	9-OXYS_S
6	
11	

2	G-MBTEX_S
7	
12	

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10		

Prepared by: Samantha Arbuckle

Comments: Gmbtex and 90xys added on 12/08/08 on a std tat per J.S/Fax

NOTE: Soil samples are discarded 60 days after results are reported unless other arrangements are made (Water samples are 30 days). Hazardous samples will be returned to client or disposed of at client expense.

McCampbell Ana "When Ouality Co	alytical, In	<u>c.</u>	1534 Willow P Web: www.mccamp Telephone: 8	ass Road, Pittsburg, CA bell.com E-mail: main 77-252-9262 Fax: 925	94565-1701 @mccampbell.c 5-252-9269	om
AEI Consultants	Client Pro	oject ID: #28034	l6; Alaska Gas	Date Sampled:	11/24/08	
2500 Camino Diablo Ste #200				Date Received:	11/24/08	
2500 Cullino Diablo, 500 #200	Client Co	ontact: Jeremy S	mith	Date Extracted:	12/08/08	
Walnut Creek, CA 94597	Client P.0	D.:		Date Analyzed	12/08/08-1	2/09/08
Oxygenated	l Volatile Organ	iics + EDB and 1	,2-DCA by P&T	and GC/MS*		
Extraction Method: SW5030B	Anal	ytical Method: SW82	50B	1	Work Order:	0811757
Lab ID	0811757-001A	0811757-003A	0811757-005A	0811757-017A		
Client ID	SB-8-3.5	SB-8-11.5	DP-4-3.5	SB-11-3.5	Reporting DF	Limit for =1
Matrix	S	S	S	S		
DF	1	10	1	S	W	
Compound		Conc	entration		mg/kg	ug/L
tert-Amyl methyl ether (TAME)	ND	0.061	ND	ND	0.005	NA
t-Butyl alcohol (TBA)	ND	2.7	0.15	ND	0.05	NA
1,2-Dibromoethane (EDB)	ND	ND<0.040	ND	ND	0.004	NA
1,2-Dichloroethane (1,2-DCA)	ND	ND<0.040	ND	ND	0.004	NA
Diisopropyl ether (DIPE)	ND	ND<0.050	ND	ND	0.005	NA
Ethanol	ND	ND<5.0	ND	ND	0.5	NA
Ethyl tert-butyl ether (ETBE)	ND	ND<0.050	ND	ND	0.005	NA
Methanol	ND	ND<50	ND	ND	5.0	NA
Methyl-t-butyl ether (MTBE)	0.055	1.4	ND	ND	0.005	NA
	Surro	ogate Recoverie	s (%)			
%SS1:	82	94	88	92		
Comments						
* water and vapor samples are reported in μ extracts are reported in mg/L, wipe samples	g/L, soil/sludge/so s in µg/wipe.	lid samples in mg/l	kg, product/oil/non-a	queous liquid sample	s and all TC	LP & SPLP
ND means not detected above the reporting	S.					

McCampbell An "When Quality"	nalyti Counts"	cal, In	<u>c.</u>		1534 Willow P Web: www.mccamp Telephone: 8	ass Road, Pittsburg, CA bell.com E-mail: main 77-252-9262 Fax: 92:	94565-1701 @mccampbell.c 5-252-9269	om
AEI Consultants		Client Pr	oject ID:	#28034	6; Alaska Gas	Date Sampled:	11/24/08	
2500 Camino Diablo, Ste. #200						Date Received:	11/24/08	
2500 Culturio Dialio, 50. #200	-	Client C	ontact: Je	remy Sr	nith	Date Extracted:	12/08/08	
Walnut Creek, CA 94597	-	Client P.	0.:			Date Analyzed	12/08/08-1	2/09/08
Oxygenat	ted Volat	tile Orgar	nics + EDE	B and 1,	2-DCA by P&T	and GC/MS*		
Extraction Method: SW5030B		Anal	ytical Method	l: SW826	0B	1	Work Order:	0811757
Lab ID	081175	57-020A	0811757-	-022A	0811757-024A			
Client ID	SB-1	1-15.5	SB-14-	-3.5	SB-14-11.5		Reporting DF	Limit for =1
Matrix		S	S		S			
DF		1	1		S	W		
Compound				Conce	entration		mg/kg	ug/L
tert-Amyl methyl ether (TAME)	١	۱D	ND		ND		0.005	NA
t-Butyl alcohol (TBA)	١	١D	ND		ND		0.05	NA
1,2-Dibromoethane (EDB)	١	ND	ND		ND		0.004	NA
1,2-Dichloroethane (1,2-DCA)	١	ND	ND		ND		0.004	NA
Diisopropyl ether (DIPE)	١	ND	ND		ND		0.005	NA
Ethanol	١	ND	ND		ND		0.5	NA
Ethyl tert-butyl ether (ETBE)	١	ND	ND		ND		0.005	NA
Methanol	١	ND	ND		ND		5.0	NA
Methyl-t-butyl ether (MTBE)	0.	023	ND		0.15		0.005	NA
	-	Surr	ogate Rec	overies	s (%)			
%SS1:		90	91		91			
Comments								
* water and vapor samples are reported in extracts are reported in mg/L, wipe samp ND means not detected above the report	n μg/L, so les in μg/γ ing limit;	il/sludge/sc wipe. N/A mean	olid samples s analyte no	in mg/kg	g, product/oil/non-a	queous liquid sample	es and all TC	LP & SPLP
# surrogate diluted out of range or coelu	tes with a	nother peal	c; &) low su	irrogate	due to matrix interl	erence.		

	McCampbe	ell An en Oualitv	alytical, Inc. Counts"		1534 Willo Web: www.mcca Telephon	w Pass Road, F ampbell.com ae: 877-252-926	Pittsburg, CA 9456 E-mail: main@mcc 52 Fax: 925-252	55-1701 campbell.com -9269						
AEI C	Consultants		Client Project ID	: #280346	; Alaska Gas	Date Sa	ampled: 11/2	24/08						
2500 (Camino Diablo, Ste. #2	200				Date R	eceived: 11/2	24/08						
			Client Contact:	Jeremy Sm	ith	Date E	xtracted: 12/0	08/08						
Walnu	at Creek, CA 94597		Client P.O.:	ent P.O.: Date Analyzed 12/09/08-12/11/0										
Extraction	Gas	oline Ra	ange (C6-C12) Volatile H	ydrocarboi	ns as Gasolin W8021B/8015Cn	e with BTH	EX and MTBI	E * Work Ord	er: 081	1757				
Lab ID	Client ID	Matrix	TPH(g)	MTBE	Benzene	Toluene	Ethylbenzene	Xylenes	DF	% SS				
001A	SB-8-3.5	s	1.5,d1	0.081	ND	0.024	ND	ND	1	107				
003A	SB-8-11.5	s	1.4,d1	1.1	ND	ND	0.034	0.049	1	111				
005A	DP-4-3.5	s	16,d7,d9	ND	ND	0.037	ND	0.041	1	91				
017A	SB-11-3.5	S	ND	ND	ND	ND	ND	ND	1	80				
020A	SB-11-15.5	S	ND	0.075	ND	ND	ND	ND	1	93				
022A	SB-14-3.5	S	3.0,d1	ND	ND	0.014	ND	ND	1	81				
024A	SB-14-11.5	S	ND	0.21	ND	ND	ND	ND	1	106				
Repor	rting Limit for DF = $\overline{1}$;	W	50	5.0	0.5	0.5	0.5	0.5	uş	g/L				
abov	ve the reporting limit	S	1	0.05	0.005	0.005	0.005	0.005	mg/Kg					

* water and vapor samples and all TCLP & SPLP extracts are reported in µg/L, soil/sludge/solid samples in mg/kg, wipe samples in µg/wipe, product/oil/non-aqueous liquid samples in mg/L.

cluttered chromatogram; sample peak coelutes w/surrogate peak; low surrogate recovery due to matrix interference.

+The following descriptions of the TPH chromatogram are cursory in nature and McCampbell Analytical is not responsible for their interpretation:

d1) weakly modified or unmodified gasoline is significant

d7) strongly aged gasoline or diesel range compounds are significant in the TPH(g) chromatogram

d9) no recognizable pattern



"When Ouality Counts"

QC SUMMARY REPORT FOR SW8260B

W.O. Sample Matrix: Soil			QC Matri	x: Soil			Batch	ID: 40126		Work	Drder 08117	57
EPA Method SW8260B	Extra	ction SW	5030B					5	Spiked San	nple ID	: 0812203-0)01A
Analyte	Sample	Spiked	MS	MSD	MS-MSD	LCS	LCSD	LCS-LCSD	Acce	eptance	e Criteria (%))
, individ	mg/Kg	mg/Kg	% Rec.	% Rec.	% RPD	% Rec.	% Rec.	% RPD	MS / MSD	RPD	LCS/LCSD	RPD
tert-Amyl methyl ether (TAME)	ND	0.050	85.3	83.5	2.09	88.6	89.6	1.07	60 - 130	30	60 - 130	30
t-Butyl alcohol (TBA)	ND	0.25	85.3	84.1	1.49	93.1	89.9	3.46	60 - 130	30	60 - 130	30
1,2-Dibromoethane (EDB)	ND	0.050	87.5	84.6	3.35	91.4	92.5	1.17	60 - 130	30	60 - 130	30
1,2-Dichloroethane (1,2-DCA)	ND	0.050	93.9	92.7	1.30	98.9	97.2	1.78	60 - 130	30	60 - 130	30
Diisopropyl ether (DIPE)	ND	0.050	114	114	0	118	118	0	60 - 130	30	60 - 130	30
Ethyl tert-butyl ether (ETBE)	ND	0.050	101	99	1.48	105	104	0.331	60 - 130	30	60 - 130	30
Methyl-t-butyl ether (MTBE)	ND	0.050	86.4	85.3	1.27	90.3	89	1.48	60 - 130	30	60 - 130	30
%SS1:	84	0.12	91	90	0.787	90	90	0	70 - 130	30	70 - 130	30
All target compounds in the Method I NONE	Blank of this	extraction	batch we	re ND les	s than the	method R	L with th	e following	exceptions:			

BATCH 40126 SUMMARY

Lab ID	Date Sampled	Date Extracted	Date Analyzed	Lab ID	Date Sampled	Date Extracted	Date Analyzed
0811757-001A	11/24/08 9:15 AM	12/08/08	12/08/08 8:15 PM	0811757-003A	11/24/08 9:50 AM	12/08/08	12/09/08 8:51 PM
0811757-005A	11/24/08 8:00 AM	12/08/08	12/08/08 9:17 PM	0811757-017A	11/24/08 2:20 PM	12/08/08	12/09/08 12:12 AM
0811757-020A	11/24/08 2:40 PM	12/08/08	12/09/08 1:37 AM	0811757-022A	11/24/08 10:20 AM	12/08/08	12/09/08 3:02 AM
0811757-024A	11/24/08 10:40 AM	12/08/08	12/09/08 3:44 AM				

MS = Matrix Spike; MSD = Matrix Spike Duplicate; LCS = Laboratory Control Sample; LCSD = Laboratory Control Sample Duplicate; RPD = Relative Percent Deviation.

% Recovery = 100 * (MS-Sample) / (Amount Spiked); RPD = 100 * (MS - MSD) / ((MS + MSD) / 2).

MS / MSD spike recoveries and / or %RPD may fall outside of laboratory acceptance criteria due to one or more of the following reasons: a) the sample is inhomogenous AND contains significant concentrations of analyte relative to the amount spiked, or b) the spiked sample's matrix interferes with the spike recovery.

N/A = not enough sample to perform matrix spike and matrix spike duplicate.

NR = analyte concentration in sample exceeds spike amount for soil matrix or exceeds 2x spike amount for water matrix or sample diluted due to high matrix or analyte content.

Laboratory extraction solvents such as methylene chloride and acetone may occasionally appear in the method blank at low levels.



"When Ouality Counts"

QC SUMMARY REPORT FOR SW8021B/8015Cm

W.O. Sample Matrix: Soil		(QC Matrix	c: Soil			Batch	ID: 40140		WorkC	Order: 08117	57
EPA Method SW8021B/8015Cm	Extrac	tion SW	5030B					5	Spiked San	nple ID	: 0812281-0	001A
Analyte	Sample	Spiked	MS	MSD	MS-MSD	LCS	LCSD	LCS-LCSD	Acce	eptance	Criteria (%)	1
, mary to	mg/Kg	mg/Kg	% Rec.	% Rec.	% RPD	% Rec.	% Rec.	% RPD	MS / MSD	RPD	LCS/LCSD	RPD
TPH(btex ^f	ND	0.60	97.2	96.5	0.803	118	99.9	16.2	70 - 130	20	70 - 130	20
MTBE	ND	0.10	102	96.5	5.14	104	116	11.2	70 - 130	20	70 - 130	20
Benzene	ND	0.10	86.2	89	3.09	94	103	8.89	70 - 130	20	70 - 130	20
Toluene	ND	0.10	78.4	80.3	2.31	84.4	91.9	8.52	70 - 130	20	70 - 130	20
Ethylbenzene	ND	0.10	92.5	95.7	3.47	97.8	104	6.38	70 - 130	20	70 - 130	20
Xylenes	ND	0.30	91.2	94.5	3.52	97	102	5.40	70 - 130	20	70 - 130	20
%SS:	89	0.10	93	102	9.30	96	96	0	70 - 130	20	70 - 130	20
All target compounds in the Method B NONE	lank of this	extraction	batch we	re ND les	s than the	method R	L with th	e following	exceptions:			

BATCH 40140 SUMMARY

Lab ID	Date Sampled	Date Extracted	Date Analyzed	Lab ID	Date Sampled	Date Extracted	Date Analyzed
0811757-001A	11/24/08 9:15 AM	12/08/08	12/11/08 12:10 AM	0811757-003A	11/24/08 9:50 AM	12/08/08	12/10/08 2:10 PM
0811757-005A	11/24/08 8:00 AM	12/08/08	12/09/08 9:57 AM	0811757-017A	11/24/08 2:20 PM	12/08/08	12/10/08 4:15 AM
0811757-020A	11/24/08 2:40 PM	12/08/08	12/10/08 2:40 PM	0811757-022A	11/24/08 10:20 AM	12/08/08	12/10/08 5:22 AM
0811757-024A	11/24/08 10:40 AM	12/08/08	12/10/08 4:11 PM				

MS = Matrix Spike; MSD = Matrix Spike Duplicate; LCS = Laboratory Control Sample; LCSD = Laboratory Control Sample Duplicate; RPD = Relative Percent Deviation.

% Recovery = 100 * (MS-Sample) / (Amount Spiked); RPD = 100 * (MS - MSD) / ((MS + MSD) / 2).

MS / MSD spike recoveries and / or %RPD may fall outside of laboratory acceptance criteria due to one or more of the following reasons: a) the sample is inhomogenous AND contains significant concentrations of analyte relative to the amount spiked, or b) the spiked sample's matrix interferes with the spike recovery.

£ TPH(btex) = sum of BTEX areas from the FID.

cluttered chromatogram; sample peak coelutes with surrogate peak.

N/A = not enough sample to perform matrix spike and matrix spike duplicate.

NR = matrix interference and/or analyte concentration in sample exceeds spike amount for soil matrix or exceeds 2x spike amount for water matrix or sample diluted due to high matrix or analyte content.



McCampbell An	nalytical, Inc.	1534 Will Web: www.mc Telepho	low Pass Road, Pittsburg, campbell.com E-mail: m one: 877-252-9262 Fax:	CA 94565-1701 aain@mccampbell.com 925-252-9269
AEI Consultants	Client Project ID: #28034	6; Alaska Gas,	Date Sampled:	11/25/08
2500 Camino Diablo, Ste. #200	6211 San Pablo Avenue		Date Received:	11/25/08
Walnut Creek, CA 94597	Client Contact: Jeremy Sr	nith	Date Reported:	12/04/08
	Client P.O.: WC081040		Date Completed:	12/04/08

WorkOrder: 0811807

December 04, 2008

Dear Jeremy:

Enclosed within are:

- 1) The results of the 15 analyzed samples from your project: #280346; Alaska Gas, 6211 San Pab
- 2) A QC report for the above samples,
- 3) A copy of the chain of custody, and
- 4) An invoice for analytical services.

All analyses were completed satisfactorily and all QC samples were found to be within our control limits.

If you have any questions or concerns, please feel free to give me a call. Thank you for choosing

McCampbell Analytical Laboratories for your analytical needs.

Best regards,

Angela Rydelius Laboratory Manager McCampbell Analytical, Inc.

08110807 PG 10FZ

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- 1534 Willow Pass Rd

CHAIN-OF-CUSTODY RECORD

Page 1 of 1

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Jeremy Smitl AEI Consulta 2500 Camino Walnut Cree	h ants o Diablo, Ste. #200 k, CA 94597	Email: cc: PO: ProjectNo:	jasmith@aeic WC081040 #280346; Ala Avenue	onsultants.com ska Gas, 6211 Sa	n Pat	olo	De AE 250 Wa	nise Mo I Consu 00 Cami alnut Cre	ckel Itants no Dia eek, CA	blo, St 94597	e. #20 7	0	Dat Dat	e Rece e Print	ived: ted:	11/25/ 11/26/	2008 2008
(925) 283-600	0 FAX (925) 944-2895						dm	ockel@	aeicor	sultan	ts.com						
									Req	uested	Tests	(See le	gend b	elow)			
Lab ID	Client ID		Matrix	Collection Date	Hold	1	2	3	4	5	6	7	8	9	10	11	12
0811807-001	SB-7-3.5		Soil	11/25/2008 14:30		A			A				-	A			
0811807-003	SB-7-10.5		Soil	11/25/2008 14:45		A			A				-				
0811807-005	SB-7		Water	11/25/2008 14:55			В			A			-				
0811807-006	DDP-1-5		Soil	11/25/2008 8:40		A			А								
0811807-007	DDP-1-6		Soil	11/25/2008 8:45				A			A	Α	A		Α	Α	
0811807-009	DDP-1-10		Soil	11/25/2008 8:55				A			Α	Α	Α		Α	Α	
0811807-013	DDP-1		Water	11/25/2008 9:20			В			Α							
0811807-014	DDP-1D		Water	11/25/2008 12:55			В			Α							
0811807-016	SB-5-7.5		Soil	11/25/2008 11:20		Α			А								
0811807-018	SB-5		Water	11/25/2008 11:40			В			А							
0811807-020	SB-12-6.5		Soil	11/25/2008 10:25		Α			А								
0811807-023	SB-12		Water	11/25/2008 13:25			В			А							
0811807-025	SB-13-7.5		Soil	11/25/2008 13:50		А			А								
0811807-027	SB-13		Water	11/25/2008 14:05			В			А							

Test Legend:

1	9-OXYS_S		2	9-OXYS_W
6	Hydrometer]	7	IC(C)_S
11	TOC_S		12	

4	G-MBTEX_S
9	PREDF REPORT

5	G-MBTEX_W
10	Sieve Analysis

Prepared by: Ana Venegas

Comments:

NOTE: Soil samples are discarded 60 days after results are reported unless other arrangements are made (Water samples are 30 days). Hazardous samples will be returned to client or disposed of at client expense.



"When Ouality Counts"

Sample Receipt Checklist

Client Name: AEI Consultants		Date a	Date and Time Received: 11/25/08 8:32:47 PM						
Project Name: #280346; Alaska Gas, 6211 San Pa	ablo Aver	nue Check	Checklist completed and reviewed by: Ana Venegas						
WorkOrder N°: 0811807 Matrix Soil/Water		Carrie	r: <u>EnviroTech</u>						
Chain of Custody (COC) Information									
Chain of custody present?	Yes 🗸	No 🗆							
Chain of custody signed when relinquished and received?	Yes 🔽	No 🗆							
Chain of custody agrees with sample labels?	Yes 🗸	No 🗌							
Sample IDs noted by Client on COC?	Yes 🔽	No 🗆							
Date and Time of collection noted by Client on COC?	Yes 🗸	No 🗆							
Sampler's name noted on COC?	Yes 🗸	No 🗆							
Sample Receipt Information									
Custody seals intact on shipping container/cooler?	Yes 🗌	No 🗆	NA						
Shipping container/cooler in good condition?	Yes 🗸	No 🗆							
Samples in proper containers/bottles?	Yes 🗸	No 🗆							
Sample containers intact?	Yes 🖌	No 🗆							
Sufficient sample volume for indicated test?	Yes 🗸	No 🗌							
Sample Prese	rvation an	d Hold Time (HT) Information						
All samples received within holding time?	Yes 🗸	No 🗌							
Container/Temp Blank temperature	Cooler Te	mp: 3.8°C	NA	ч П					
Water - VOA vials have zero headspace / no bubbles?	Yes 🔽	No 🗆	No VOA vials submitte	d 🗆					
Sample labels checked for correct preservation?	Yes 🗸	No 🗌							
TTLC Metal - pH acceptable upon receipt (pH<2)?	Yes 🗌	No 🗆	NA						
Samples Received on Ice?	Yes 🔽	No 🗆							
(Ісе Тур	e: WET ICI	Ξ)							
* NOTE: If the "No" box is checked, see comments below.									

Client contacted:

Date contacted:

Contacted by:

Comments:

McCampbell An "When Ouality	When Ouality Counts"						1534 Willow Pass Road, Pittsburg, CA 94565-1701 Web: www.mccampbell.com E-mail: main@mccampbell.com Telephone: 877-252-9262 Fax: 925-252-9269				
AEI Consultants		Client Pr	oject ID:	#280346; Alaska Gas, Date Sampled:			11/25/08				
2500 Camino Diablo Ste #200		6211 San Pablo Avenue			Date Received: 11/25/08						
2500 Camilio Diablo, Stc. #200		Client C	ontact: Je	remy Sı	nith	Date Extracted:	11/25/08				
Walnut Creek, CA 94597		Client P.	O.: WC08	1040		Date Analyzed	12/01/08-1	2/02/08			
Oxygenated Volatile Organics + EDB and 1,2-DCA by P&T and GC/MS* Extraction Method: SW5030B Analytical Method: SW8260B Work Order: 0811807											
Lab ID 0811807-001A 0811807				-003A	0811807-006A	0811807-016A					
Client ID	SB	-7-3.5	SB-7-1	0.5	DDP-1-5	SB-5-7.5	Reporting DF	Limit for =1			
Matrix		S			S	S					
DF		1	1		50	1	S	W			
Compound				Conce	entration		mg/kg	ug/L			
tert-Amyl methyl ether (TAME)		ND	ND		0.28	ND	0.005	NA			
t-Butyl alcohol (TBA)		ND	ND		12	ND	0.05	NA			
1,2-Dibromoethane (EDB)		ND	ND		ND<0.20	ND	0.004	NA			
1,2-Dichloroethane (1,2-DCA)		ND	ND		ND<0.20	ND	0.004	NA			
Diisopropyl ether (DIPE)		ND	ND		ND<0.25	ND	0.005	NA			
Ethyl tert-butyl ether (ETBE)		ND	ND		ND<0.25	ND	0.005	NA			
Methyl-t-butyl ether (MTBE)		ND	ND		7.9	ND	0.005	NA			
		Surr	ogate Rec	overies	s (%)						
%SS1:		95	96		98	95					
Comments											
* water and vapor samples are reported in extracts are reported in mg/L, wipe sampl	μg/L, so es in μg/	oil/sludge/sc /wipe.	olid samples	in mg/k	g, product/oil/non-a	queous liquid sample	es and all TC	LP & SPLP			

ND means not detected above the reporting limit; N/A means analyte not applicable to this analysis.

surrogate diluted out of range or coelutes with another peak; &) low surrogate due to matrix interference.

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AEI Consultants		Client Pr	oject ID:	#28034	6; Alaska Gas,	Date Sampled:	11/25/08	
		6211 San Pablo Avenue			Date Received: 11/25/08			
2500 Camino Diablo, Ste. #200		Client Co	ontact: Jei	remy Si	nith	Date Extracted:	11/25/08	
Walnut Creek, CA 94597		Client P	$0 \cdot WC08$	1040		Date Analyzed	12/01/08-1	2/02/08
Ourgenete		Pond 1	2 DCA by D&T	and CC/MS*				
Extraction Method: SW5030B	u voia	Anal	ytical Method	: SW826	0B	and GC/IVIS.	Work Order:	0811807
Lab ID	0811807-020A 0811807-025A							
Client ID	SB-	12-6.5	SB-13-	7.5			Reporting DF	Limit for
Matrix	S S							
DF		2	2				S	W
Compound				Conce	entration		mg/kg	ug/L
tert-Amyl methyl ether (TAME)	ND<0.010 ND<0.		010			0.005	NA	
t-Butyl alcohol (TBA)	0	.17	0.12	2			0.05	NA
1,2-Dibromoethane (EDB)	ND<	0.0080	ND<0.0	080			0.004	NA
1,2-Dichloroethane (1,2-DCA)	ND<	0.0080	ND<0.0	080			0.004	NA
Diisopropyl ether (DIPE)	ND<	<0.010	ND<0.	010			0.005	NA
Ethyl tert-butyl ether (ETBE)	ND<	<0.010	ND<0.	010			0.005	NA
Methyl-t-butyl ether (MTBE)	0	.26	ND<0.	010			0.005	NA
		Surr	ogate Rec	overies	s (%)			
%SS1:		96	98					
Comments			•					
* water and vapor samples are reported in extracts are reported in mg/L, wipe sample	μg/L, so es in μg/	il/sludge/so wipe.	lid samples	in mg/k	g, product/oil/non-a	queous liquid sampl	es and all TC	LP & SPLP

surrogate diluted out of range or coelutes with another peak; &) low surrogate due to matrix interference.

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AEI Consultants		Client Pr	oject ID:	#28034	6; Alaska Gas,	Date Sampled:	11/25/08	
2500 Carrier D'11, Sta #200		6211 Sar	n Pablo Av	renue		Date Received:	11/25/08	
2500 Camino Diabio, Ste. #200	Client C	ontact: Je	remy Sı	nith	Date Extracted:	12/02/08		
Walnut Creek, CA 94597		Client P.	O.: WC08	1040		Date Analyzed	12/02/08	
Oxygenated Volatile Organics + EDB and 1,2-DCA by P&T and GC/MS*								
Extraction Method: SW5030B Analytical Method: SW8260B Work Order: 0811807								
Lab ID	08118	07-005B	0811807-	-013B	0811807-014B	0811807-018B		
Client ID	5	SB-7	DDP	-1	DDP-1D	SB-5	Reporting DF	Limit for
Matrix		W	W		W	W		
DF		1	2		5	200	S	W
Compound		Concentration						µg/L
tert-Amyl methyl ether (TAME)		ND			2.7	460	NA	0.5
t-Butyl alcohol (TBA)		ND		I	500	ND<400	NA	2.0
1,2-Dibromoethane (EDB)		ND	ND<1	.0	ND<2.5	ND<100	NA	0.5
1,2-Dichloroethane (1,2-DCA)		ND	ND<1	.0	ND<2.5	ND<100	NA	0.5
Diisopropyl ether (DIPE)		ND	ND<1	.0	ND<2.5	ND<100	NA	0.5
Ethyl tert-butyl ether (ETBE)		ND	ND<1	.0	ND<2.5	ND<100	NA	0.5
Methyl-t-butyl ether (MTBE)		ND	47		21	4600	NA	0.5
		Surr	ogate Rec	overies	s (%)			
%SS1:		99	86		87	89		
Comments		b1	b1		b1	b1		
* water and vapor samples are reported in extracts are reported in mg/L, wipe sampl	μg/L, so es in μg/ ng limit	oil/sludge/so /wipe.	olid samples	in mg/k	g, product/oil/non-a	queous liquid sample	es and all TC	LP & SPLP
# surrogate diluted out of range or coelut	es with a	nother peal	s analyte fic s; &) low su	irrogate	due to matrix inter	ference.		

b1) aqueous sample that contains greater than ~1 vol. % sediment

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AEI Consultants		Client Pr	oject ID:	#28034	80346; Alaska Gas, Date Sampled:			
2500 Camino Diablo Ste #200		6211 San Pablo Avenue			Date Received:	11/25/08		
2500 Camino Diabio, Stc. #200	Client Co	ontact: Je	remy Sı	nith	Date Extracted:	12/02/08		
Walnut Creek, CA 94597		Client P.	O.: WC08	31040		Date Analyzed	12/02/08	
Oxygenated Volatile Organics + EDB and 1,2-DCA by P&T and GC/MS*								
Extraction Method: SW5030B Analytical Method: SW8260B Work Order: 0811807								
Lab ID	08118	07-023B	0811807	-027B				
Client ID	S	B-12	SB-1	3			Reporting DF	Limit for $T = 1$
Matrix		W W						
DF	2	250	500)			S	W
Compound	Concentration					ug/kg	µg/L	
tert-Amyl methyl ether (TAME)	NE	0<120	720)			NA	0.5
t-Butyl alcohol (TBA)	29,000		540	0			NA	2.0
1,2-Dibromoethane (EDB)	NE	0<120	ND<2	250			NA	0.5
1,2-Dichloroethane (1,2-DCA)	NE	0<120	ND<2	250			NA	0.5
Diisopropyl ether (DIPE)	NE	0<120	ND<2	250			NA	0.5
Ethyl tert-butyl ether (ETBE)	NE	0<120	ND<2	250			NA	0.5
Methyl-t-butyl ether (MTBE)	3	900	18,00	00			NA	0.5
		Surr	ogate Rec	overies	s (%)			
%SS1:		88	85					
Comments		b1	b1					
* water and vapor samples are reported in extracts are reported in mg/L, wipe sample	μg/L, sc es in μg/	il/sludge/so wipe.	olid samples	in mg/k	g, product/oil/non-a	queous liquid sample	es and all TC	LP & SPLP
ND means not detected above the reportin	ng limit;	N/A mean	s analyte no	ot applica	able to this analysis	S.		
# surrogate diluted out of range or coelute	es with a	nother peal	s; &) low su	ırrogate	due to matrix inter	ference.		

b1) aqueous sample that contains greater than ~1 vol. % sediment

Angela Rydelius, Lab Manager

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AEI Consultants	Client Project ID: 6211 San Pablo Av	#280346; Alaska Gas, venue	Date Sampled: 11/25/08 Date Received: 11/25/08		
2500 Camino Diablo, Ste. #200	Client Contact: Jer	remy Smith	Date Extracted: 12/01/08		
Walnut Creek, CA 94597	Client P.O.: WC08	31040	Date Analyzed 12/01/08		
Analytical Method: SSSA #5	Bulk D	Density	Work Order: 0	811807	
Lab ID Client ID	Matrix	ζ	Bulk Density	DF	
0811807-007A DDP-1-6	S		1.9	1	
0811807-009A DDP-1-10	S		2.1	1	
0811807-021A SB-12-11.5	S		2.0	1	

Method Accuracy and Reporting Units	W S	NA ±0.1 g/ml	

J.	McCampbe	ell An	alytical, Inc. Counts"		1534 Willow Web: www.mccar Telephone	v Pass Road, F mpbell.com :: 877-252-926	Pittsburg, CA 9456 E-mail: main@mcc 52 Fax: 925-252-	55-1701 ampbell.com 9269		
AEI C	onsultants		Client Project ID:	#280346	#280346; Alaska Gas, Date Sampled: 11/25/08					
2500 Camino Diablo, Ste. #200					Date Received: 11/25/08					
Client Contact: J					ith	Date E	xtracted: 11/2	25/08-12/03/	08	
Walnut Creek, CA 94597Client P.O.: WC08						Date A	nalyzed 11/2	26/08-12/03/	08	
Extractior	Gas	oline Ra	nge (C6-C12) Volatile Hy Analytica	drocarbo	ns as Gasolin W8021B/8015Cm	e with BTH	EX and MTBI	∃* Work Ord	ler: 081	1807
Lab ID	Client ID	Matrix	TPH(g)	MTBE	Benzene	Toluene	Ethylbenzene	Xylenes	DF	% SS
001A	SB-7-3.5	S	ND	ND	ND	ND	ND	ND	1	88
003A	SB-7-10.5	S	ND	ND	ND	ND	ND	ND	1	85
005A	SB-7	w	ND,b1	ND	ND	ND	ND	ND	1	100
006A	DDP-1-5	S	4.5,d1	7.1	0.096	0.044	0.017	0.021	1	88
013A	DDP-1	w	ND,b1	27	ND	ND	ND	ND	1	102
014A	DDP-1D	w	130,d1,b1	38	5.7	6.6	5.4	21	1	111
016A	SB-5-7.5	S	ND	ND	ND	ND	ND	ND	1	90
018A	SB-5	W	430,d6,b1	4200	ND<1.7	ND<1.7	ND<1.7	ND<1.7	3.3	99
020A	SB-12-6.5	S	4.2,d1	0.34	0.023	0.034	0.036	0.0088	1	93
023A	SB-12	W	390,d1,b1	4000	1.3	0.93	18	56	1	103
025A	SB-13-7.5	S	26,d1	ND	0.010	0.20	0.18	0.64	1	98
027A	SB-13	w	1100,d6,b1	16,000	ND<5.0	ND<5.0	ND<5.0	14	10	99
Repor	ting Limit for DF =1;	W	50	5	0.5	0.5	0.5	0.5	μ	g/L
abov	ve the reporting limit	S	1	0.05	0.005	0.005	0.005	0.005	mg	y/Kg

* water and vapor samples and all TCLP & SPLP extracts are reported in ug/L, soil/sludge/solid samples in mg/kg, wipe samples in µg/wipe, product/oil/non-aqueous liquid samples in mg/L.

cluttered chromatogram; sample peak coelutes with surrogate peak.

+The following descriptions of the TPH chromatogram are cursory in nature and McCampbell Analytical is not responsible for their interpretation:

b1) aqueous sample that contains greater than ~1 vol. % sediment

d1) weakly modified or unmodified gasoline is significant

d6) one to a few isolated non-target peaks present in the TPH(g) chromatogram



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AEI Consultants		Client Project ID: 6211 San Pablo A	#280346; Alaska Gas, Date Sampled: 11/25/08 Avenue				
2500 Camino Dia	blo, Ste. #200		Date Received: 11/25/08				
Client Contact: J				y Smith	Date Extracted: 11/26/08-12	/03/08	
Walnut Creek, CA 94597Client P.O.: WC0				0	Date Analyzed 11/26/08-12	/03/08	
Analytical Method: S	M5310B	Inorganic Ca	rbon	as Carbon*	Work Order: 0	0811807	
Lab ID	Client ID	Matr	rix		IC as C	DF	
0811807-007A	DDP-1-6	S			1200	1	
0811807-009A	DDP-1-10	S			ND	1	
0811807-021A	SB-12-11.5	S			390	1	

Reporting Limit for DF = 1; ND means not detected at	W	NA	
or above the reporting limit	S	200 mg/Kg	

* water samples are reported in mg/L, soil/sludge/solid samples in mg/kg.

* Non-Purgeable Organic Carbon=NPOC; TOC=Total Organic Carbon; DOC=Dissolved Organic Carbon; POC=Purgeable Organic Cabon; IC=Inorganic Carbon.

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AEI Consultants		Client Project ID: 6211 San Pablo Av	#280346; Alaska Gas, venue Date Sampled: 11/25/08			
2500 Camino Dia	ablo, Ste. #200	Client Contact: Je	remy Smith	Date Extracted: 12/02/08		
Walnut Creek, C	A 94597	Client P.O. WC08	31040	Date Analyzed 12/03/08		
		Percent	Moisture			
Analytical Method: A	STMD2216-92			Work Order: 0	811807	
Lab ID	Client ID	Matrix	x	% Moisture	DF	
0811807-007A	DDP-1-6	S		19.6	1	
0811807-009A	DDP-1-10	S		13.3	1	
0811807-021A	SB-12-11.5	S		17.4	1	
L	1	I			1	

Method Accuracy and Reporting Units	W	NA	
memore meaning, and reporting of ma	S	±0.1, wet wt%	

<u> </u>	Campbell Analyti "When Ouality Counts"	ical, Inc.	1534 Willow Pass Road, Pittsburg, CA 94565-1701 Web: www.mccampbell.com E-mail: main@mccampbell.com Telephone: 877-252-9262 Fax: 925-252-9269							
AEI Consultants		Client Project ID 6211 San Pablo	: #28 Avent	80346; Alaska Gas, ie	Date Sampled: 11/25/08					
2500 Camino Dia	ablo, Ste. #200									
		Client Contact:	Jerem	y Smith	Date Extracted: 11/26/08-12/03/08					
Walnut Creek, C.	A 94597	Client P.O.: WC	Date Analyzed 11/26/08-12	/03/08						
Analytical Method: S	M5310B	Total Organi	c Car	bon (TOC)*	Work Order: (811807				
Lab ID	Client ID	Mat	rix		TOC	DF				
0811807-007A	DDP-1-6	S			5200	1				
0811807-009A	DDP-1-10	S			1000	1				
0811807-021A	SB-12-11.5	s			660	1				
<u> </u>	1	I		1		1				

Reporting Limit for DF = 1; ND means not detected at	W	NA	
or above the reporting limit	S	200 mg/Kg	

* water samples are reported in mg/L, soil/sludge/solid samples in mg/kg.

* Non-Purgeable Organic Carbon=NPOC; TOC=Total Organic Carbon; DOC=Dissolved Organic Carbon; POC=Purgeable Organic Cabon; IC=Inorganic Carbon.



"When Ouality Counts"

QC SUMMARY REPORT FOR SW8260B

W.O. Sample Matrix: Soil		QC Matrix: Soil						BatchID: 39918			WorkOrder 0811807		
EPA Method SW8260B	Extra	traction SW5030B						Spiked Sample ID: 0811800-001A					
Analyte	Sample	Spiked	MS	MSD	MS-MSD	LCS	LCSD	LCS-LCSD	Acce	eptance	e Criteria (%))	
Analyte	mg/Kg	mg/Kg	% Rec.	% Rec.	% RPD	% Rec.	% Rec.	% RPD	MS / MSD	RPD	LCS/LCSD	RPD	
tert-Amyl methyl ether (TAME)	ND	0.050	76.8	78.1	1.65	76.5	79.7	4.07	60 - 130	30	60 - 130	30	
t-Butyl alcohol (TBA)	ND	0.25	88.2	95.3	7.73	83.1	85	2.27	60 - 130	30	60 - 130	30	
1,2-Dibromoethane (EDB)	ND	0.050	97	99.7	2.83	85.9	89.6	4.22	60 - 130	30	60 - 130	30	
1,2-Dichloroethane (1,2-DCA)	ND	0.050	99.3	101	2.17	98.3	98.6	0.238	60 - 130	30	60 - 130	30	
Diisopropyl ether (DIPE)	ND	0.050	101	103	2.18	96.5	99.8	3.30	60 - 130	30	60 - 130	30	
Ethyl tert-butyl ether (ETBE)	ND	0.050	101	104	2.19	99.6	102	2.26	60 - 130	30	60 - 130	30	
Methyl-t-butyl ether (MTBE)	ND	0.050	92.5	94.5	2.14	88.7	89.9	1.34	60 - 130	30	60 - 130	30	
%SS1:	92	0.12	88	88	0	95	95	0	70 - 130	30	70 - 130	30	
All target compounds in the Method NONE	All target compounds in the Method Blank of this extraction batch were ND less than the method RL with the following exceptions: NONE												

BATCH 39918 SUMMARY

Lab ID	Date Sampled	Date Extracted	Date Analyzed	Lab ID	Date Sampled	Date Extracted	Date Analyzed
0811807-001A	11/25/08 2:30 PM	11/25/08	12/01/08 11:34 PM	0811807-003A	11/25/08 2:45 PM	11/25/08	12/02/08 12:17 AM
0811807-006A	11/25/08 8:40 AM	11/25/08	12/02/08 12:59 AM	0811807-016A	11/25/08 11:20 AM	11/25/08	12/02/08 1:42 AM
0811807-020A	11/25/08 10:25 AM	11/25/08	12/02/08 2:24 AM	0811807-025A	11/25/08 1:50 PM	11/25/08	12/02/08 3:07 AM

MS = Matrix Spike; MSD = Matrix Spike Duplicate; LCS = Laboratory Control Sample; LCSD = Laboratory Control Sample Duplicate; RPD = Relative Percent Deviation.

% Recovery = 100 * (MS-Sample) / (Amount Spiked); RPD = 100 * (MS - MSD) / ((MS + MSD) / 2).

MS / MSD spike recoveries and / or %RPD may fall outside of laboratory acceptance criteria due to one or more of the following reasons: a) the sample is inhomogenous AND contains significant concentrations of analyte relative to the amount spiked, or b) the spiked sample's matrix interferes with the spike recovery.

N/A = not enough sample to perform matrix spike and matrix spike duplicate.

NR = analyte concentration in sample exceeds spike amount for soil matrix or exceeds 2x spike amount for water matrix or sample diluted due to high matrix or analyte content.

Laboratory extraction solvents such as methylene chloride and acetone may occasionally appear in the method blank at low levels.





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QC SUMMARY REPORT FOR SM5310B

W.O. Sample Matrix: Soil QC Matrix: Soil						BatchID: 39840			WorkOrder 0811807						
EPA Method SM5310B Extraction SM5310B								5	Spiked Sample ID: 0811698-004A						
Analyte	Sample	Spiked	MS	MSD	MS-MSD	LCS	LCSD	LCS-LCSD	Acceptance Criteria (%)						
, indigite	mg/Kg	mg/Kg	% Rec.	% Rec.	% RPD	% Rec.	% Rec.	% RPD	MS / MSD	RPD	LCS/LCSD	RPD			
ТОС	230	8200	103	104	1.22	101	99.8	1.55	70 - 130	20	80 - 120	20			
All target compounds in the Method Blank of this extraction batch were ND less than the method RL with the following exceptions: NONE															

TCH 39840 SUMMARY

Lab ID	Date Sampled	Date Extracted	Date Analyzed	Lab ID	Date Sampled	Date Extracted	Date Analyzed
0811807-007A	11/25/08 8:45 AM	11/26/08	11/26/08 8:28 PM	0811807-007A	11/25/08 8:45 AM	11/26/08	11/26/08 9:29 PM
0811807-009A	11/25/08 8:55 AM	11/26/08	11/26/08 8:41 PM	0811807-009A	11/25/08 8:55 AM	11/26/08	11/26/08 9:43 PM

MS = Matrix Spike; MSD = Matrix Spike Duplicate; LCS = Laboratory Control Sample; LCSD = Laboratory Control Sample Duplicate; RPD = Relative Percent Deviation.

% Recovery = 100 * (MS-Sample) / (Amount Spiked); RPD = 100 * (MS - MSD) / ((MS + MSD) / 2).

MS / MSD spike recoveries and / or %RPD may fall outside of laboratory acceptance criteria due to one or more of the following reasons: a) the sample is inhomogenous AND contains significant concentrations of analyte relative to the amount spiked, or b) the spiked sample's matrix interferes with the spike recovery.

N/A = not applicable to this method.

NR = analyte concentration in sample exceeds spike amount for soil matrix or exceeds 2x spike amount for water matrix or sample diluted due to high matrix or analyte content.

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A QA/QC Officer



"When Ouality Counts"

QC SUMMARY REPORT FOR SW8260B

W.O. Sample Matrix: Water		QC Matrix: Water						BatchID: 39934			WorkOrder 0811807			
EPA Method SW8260B	Extra	Extraction SW5030B							Spiked Sample ID: 0811819-003B					
Analyte	Sample	le Spiked MS MSD MS-MSD LCS					LCSD	LCS-LCSD	Acceptance Criteria (%)					
, include	µg/L	µg/L	% Rec.	% Rec.	% RPD	% Rec.	% Rec.	% RPD	MS / MSD	RPD	LCS/LCSD	RPD		
tert-Amyl methyl ether (TAME)	ND	10	93.5	98.5	5.23	112	115	2.84	70 - 130	30	70 - 130	30		
t-Butyl alcohol (TBA)	ND	50	88.6	104	16.4	89.6	94.3	5.14	70 - 130	30	70 - 130	30		
1,2-Dibromoethane (EDB)	ND	10	111	115	3.87	117	119	1.29	70 - 130	30	70 - 130	30		
1,2-Dichloroethane (1,2-DCA)	ND	10	103	110	5.96	112	116	4.08	70 - 130	30	70 - 130	30		
Diisopropyl ether (DIPE)	ND	10	106	112	5.39	108	110	2.21	70 - 130	30	70 - 130	30		
Ethyl tert-butyl ether (ETBE)	ND	10	119	126	5.63	122	123	0.809	70 - 130	30	70 - 130	30		
Methyl-t-butyl ether (MTBE)	ND	10	102	113	9.77	106	108	1.54	70 - 130	30	70 - 130	30		
%SS1:	93	25	84	87	3.94	97	96	0.781	70 - 130	30	70 - 130	30		
All target compounds in the Method NONE	Blank of this	extraction	batch we	re ND les	s than the	method R	L with th	e following	exceptions:					

BATCH 39934 SUMMARY

Lab ID	Date Sampled	Date Extracted	Date Analyzed	Lab ID	Date Sampled	Date Extracted	Date Analyzed
0811807-005B	11/25/08 2:55 PM	12/02/08	12/02/08 3:49 AM	0811807-013B	11/25/08 9:20 AM	12/02/08	12/02/08 5:04 PM
0811807-014B	11/25/08 12:55 PM	12/02/08	12/02/08 5:43 PM	0811807-018B	11/25/08 11:40 AM	12/02/08	12/02/08 2:58 AM
0811807-023B	11/25/08 1:25 PM	12/02/08	12/02/08 6:22 PM	0811807-027B	11/25/08 2:05 PM	12/02/08	12/02/08 7:01 PM

MS = Matrix Spike; MSD = Matrix Spike Duplicate; LCS = Laboratory Control Sample; LCSD = Laboratory Control Sample Duplicate; RPD = Relative Percent Deviation.

% Recovery = 100 * (MS-Sample) / (Amount Spiked); RPD = 100 * (MS - MSD) / ((MS + MSD) / 2).

MS / MSD spike recoveries and / or %RPD may fall outside of laboratory acceptance criteria due to one or more of the following reasons: a) the sample is inhomogenous AND contains significant concentrations of analyte relative to the amount spiked, or b) the spiked sample's matrix interferes with the spike recovery.

N/A = not enough sample to perform matrix spike and matrix spike duplicate.

NR = analyte concentration in sample exceeds spike amount for soil matrix or exceeds 2x spike amount for water matrix or sample diluted due to high matrix or analyte content.

Laboratory extraction solvents such as methylene chloride and acetone may occasionally appear in the method blank at low levels.

A QA/QC Officer



"When Ouality Counts"

QC SUMMARY REPORT FOR WET CHEMISTRY TESTS

Test Method:	Bulk De	ensity		Mat	trix: S	WorkOrder: 0811807					
Method Nar	ne: SSS/	A #5		U	nits ± g/ml			BatchID: 40034			
Lab ID		Sample	DF	Dup /	/ Ser. Dil.	DF	% RPD	Acceptance Criteria (%)			
0811807-007A		1.9	1		1.9	1	0	<20			
0811807-009A		2.1	1 2.0			1	1.78	<20			
0811807-021A		2.0	1 2.0 1				0.989 <20				
Lab ID 0811807-007A 0811807-021A	Date 11/25	Sampled Date Extr 3/08 8:45 AM 12/01 08 10:30 AM 12/01	BAT acted Date An 1/08 12/01/08 3 1/08 12/01/08 3	CH 40034 alyzed 3:00 PM 3:40 PM	4 SUMMARY Lab ID 0811807-00	Date 09A 11/25/	Sampled Date E	Extracted Date Analyzed 2/01/08 12/01/08 3:10 PM			
Test Method: Percent Moisture Matrix: S WorkOrder: 0811807											
Method Name: ASTMD2216-92 Units ±, wet wt% BatchID: 39905											
Lab ID		Sample	DF	Dup /	/ Ser. Dil.	DF	% RPD	Acceptance Criteria (%)			
0811807-007A		19.6	1		19.5	1	0.693	<15			
0811807-009A		13.3	1		13.3	1	0.539	<15			
Lab ID	Date	Sampled Date Extr	<u>BAT</u> acted Date An	<u>CH 39908</u> alyzed	<u>5 SUMMARY</u> Lab ID	Date	Sampled Date B	Extracted Date Analyzed			
0811807-007A	11/25	5/08 8:45 AM 12/02	2/08 12/03/08 1	:50 PM	0811807-0	09A 11/25/	08 8:55 AM 12	2/02/08 12/03/08 2:00 PM			
Test Method:	Percen	t Moisture		Mat	trix: S			WorkOrder: 0811807			
Method Nar	ne: ASTN	MD2216-92		U	nits ±, wet	wt%		BatchID: 40010			
Lab ID		Sample	DF Dup / Ser. Dil. DF % RPD Acceptance Cr								
0811807-021A		17.4	1		17.2	1	0.751	<15			
Lab ID	Date	e Sampled Date Extr 08 10:30 AM 12/02	<u>BAT</u> acted Date An 2/08 12/03/08 2	CH 4001(alyzed 2:10 PM) SUMMARY Lab ID	Date	Sampled Date E	Extracted Date Analyzed			

Dup = Duplicate; Ser. Dil. = Serial Dilution; MS = Matrix Spike; RD = Relative Difference; RPD = Relative Percent Deviation.

Precision = Absolute Value (Sample - Duplicate)

RPD = 100 * (Sample - Duplicate) / [(Sample + Duplicate) / 2]

%RPD is calculated using results of up to 10 significant figures, however the reported results are rounded to 2 or 3 significant figures. Therefore there may be a slight discrepancy between the %RPD displayed above and %RPD calculated using the reported results. MAI considers %RPD based upon more significant figures to be more accurate.

QC SUMMARY REPORT FOR SW8021B/8015Cm

W.O. Sample Matrix: Soil		QC Matrix: Soil						BatchID: 39879			WorkOrder 0811807		
EPA Method SW8021B/8015Cm	Extra	Extraction SW5030B					Spiked Sample ID: 0811750-001A						
Analyte	Sample	Spiked MS MSD MS-MSD					LCSD	LCS-LCSD	LCS-LCSD Acceptance Criteria (%)				
, maryte	mg/Kg	mg/Kg	% Rec.	% Rec.	% RPD	% Rec.	% Rec.	% RPD	MS / MSD	RPD	LCS/LCSD	RPD	
TPH(btex ^f	ND	0.60	109	109	0	81	93.8	14.7	70 - 130	20	70 - 130	20	
MTBE	ND	0.10	90	91	1.05	85.2	92.4	8.07	70 - 130	20	70 - 130	20	
Benzene	ND	0.10	83.2	88.8	6.40	85.9	94.3	9.38	70 - 130	20	70 - 130	20	
Toluene	ND	0.10	98.9	96	3.03	78.3	86.7	10.2	70 - 130	20	70 - 130	20	
Ethylbenzene	ND	0.10	107	98.7	7.93	88.9	98.5	10.2	70 - 130	20	70 - 130	20	
Xylenes	ND	0.30	123	114	7.56	87	95.9	9.78	70 - 130	20	70 - 130	20	
%SS:	91	0.10	121	114	6.39	83	92	10.4	70 - 130	20	70 - 130	20	
All target compounds in the Method B NONE	lank of this	extraction	batch we	re ND les	s than the	method R	L with th	e following o	exceptions:				

			<u>BATCH 39879 SL</u>	JMMARY			
Lab ID	Date Sampled	Date Extracted	Date Analyzed	Lab ID	Date Sampled	Date Extracted	Date Analyzed
0811807-001A	11/25/08 2:30 PM	11/25/08	11/26/08 5:32 PM	0811807-003A	11/25/08 2:45 PM	11/25/08	11/26/08 6:40 PM
0811807-006A	11/25/08 8:40 AM	11/25/08	11/26/08 8:21 PM	0811807-006A	11/25/08 8:40 AM	11/25/08	12/01/08 7:50 PM
0811807-016A	11/25/08 11:20 AM	11/25/08	12/03/08 8:22 AM	0811807-020A	11/25/08 10:25 AM	11/25/08	11/26/08 6:06 PM

MS = Matrix Spike; MSD = Matrix Spike Duplicate; LCS = Laboratory Control Sample; LCSD = Laboratory Control Sample Duplicate; RPD = Relative Percent Deviation.

% Recovery = 100 * (MS-Sample) / (Amount Spiked); RPD = 100 * (MS - MSD) / ((MS + MSD) / 2).

MS / MSD spike recoveries and / or %RPD may fall outside of laboratory acceptance criteria due to one or more of the following reasons: a) the sample is inhomogenous AND contains significant concentrations of analyte relative to the amount spiked, or b) the spiked sample's matrix interferes with the spike recovery.

£ TPH(btex) = sum of BTEX areas from the FID.

cluttered chromatogram; sample peak coelutes with surrogate peak.

N/A = not enough sample to perform matrix spike and matrix spike duplicate.

NR = matrix interference and/or analyte concentration in sample exceeds spike amount for soil matrix or exceeds 2x spike amount for water matrix or sample diluted due to high matrix or analyte content.




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QC SUMMARY REPORT FOR SW8021B/8015Cm

W.O. Sample Matrix: Water			QC Matri	x: Water			Batch	ID: 39899		WorkC	Drder 08118	07
EPA Method SW8021B/8015Cm	Extra	ction SW	5030B					5	Spiked San	nple ID	: 0811803-0	01A
Analyte	Sample	Spiked	MS	MSD	MS-MSD	LCS	LCSD	LCS-LCSD	Acce	eptance	e Criteria (%)	
, mary to	µg/L	µg/L	% Rec.	% Rec.	% RPD	% Rec.	% Rec.	% RPD	MS / MSD	RPD	LCS/LCSD	RPD
TPH(btex ^f	ND	60	94.5	97.5	3.11	103	87.7	15.9	70 - 130	20	70 - 130	20
MTBE	ND	10	99.4	102	2.47	111	104	6.74	70 - 130	20	70 - 130	20
Benzene	ND	10	97.8	95	2.87	100	98.8	1.47	70 - 130	20	70 - 130	20
Toluene	ND	10	97.6	94.8	2.84	92.1	88.9	3.60	70 - 130	20	70 - 130	20
Ethylbenzene	ND	10	102	99.1	3.30	97	99	2.05	70 - 130	20	70 - 130	20
Xylenes	ND	30	111	108	2.84	93.4	91.2	2.38	70 - 130	20	70 - 130	20
%SS:	113	10	97	94	3.07	101	101	0	70 - 130	20	70 - 130	20
All target compounds in the Method B NONE	lank of this	extraction	batch we	re ND les	s than the	method R	L with th	e following	exceptions:			

			BATCH 39899 SL	<u>JMMARY</u>			
Lab ID	Date Sampled	Date Extracted	Date Analyzed	Lab ID	Date Sampled	Date Extracted	Date Analyzed
0811807-005A	11/25/08 2:55 PM	11/26/08	11/26/08 6:55 PM	0811807-013A	11/25/08 9:20 AM	11/26/08	11/26/08 7:25 PM
0811807-014A	11/25/08 12:55 PM	11/26/08	11/26/08 7:55 PM	0811807-018A	11/25/08 11:40 AM	11/26/08	11/26/08 4:57 PM
0811807-018A	11/25/08 11:40 AM	12/01/08	12/01/08 5:03 PM	0811807-023A	11/25/08 1:25 PM	11/26/08	11/26/08 8:55 PM
0811807-023A	11/25/08 1:25 PM	12/02/08	12/02/08 6:52 AM	0811807-027A	11/25/08 2:05 PM	11/26/08	11/26/08 5:31 PM
0811807-027A	11/25/08 2:05 PM	[12/01/08	12/01/08 10:36 PM				

MS = Matrix Spike; MSD = Matrix Spike Duplicate; LCS = Laboratory Control Sample; LCSD = Laboratory Control Sample Duplicate; RPD = Relative Percent Deviation.

% Recovery = 100 * (MS-Sample) / (Amount Spiked); RPD = 100 * (MS - MSD) / ((MS + MSD) / 2).

MS / MSD spike recoveries and / or %RPD may fall outside of laboratory acceptance criteria due to one or more of the following reasons: a) the sample is inhomogenous AND contains significant concentrations of analyte relative to the amount spiked, or b) the spiked sample's matrix interferes with the spike recovery.

£ TPH(btex) = sum of BTEX areas from the FID.

cluttered chromatogram; sample peak coelutes with surrogate peak.

N/A = not enough sample to perform matrix spike and matrix spike duplicate.

NR = matrix interference and/or analyte concentration in sample exceeds spike amount for soil matrix or exceeds 2x spike amount for water matrix or sample diluted due to high matrix or analyte content, or inconsistency in sample containers.



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"When Ouality Counts"

QC SUMMARY REPORT FOR SW8021B/8015Cm

W.O. Sample Matrix: Soil			QC Matri	x: Soil			Batch	ID: 39933		WorkC	Order 08118	07
EPA Method SW8021B/8015Cm	Extra	ction SW	5030B					5	Spiked San	nple ID	: 0811829-0	01A
Analyte	Sample	Spiked	MS	MSD	MS-MSD	LCS	LCSD	LCS-LCSD	Acce	eptance	Criteria (%)	
	mg/Kg	mg/Kg	% Rec.	% Rec.	% RPD	% Rec.	% Rec.	% RPD	MS / MSD	RPD	LCS/LCSD	RPD
TPH(btex ^f	ND	0.60	101	98.8	2.47	95.1	110	14.7	70 - 130	20	70 - 130	20
MTBE	ND	0.10	88	87.4	0.658	84.1	87.4	3.80	70 - 130	20	70 - 130	20
Benzene	ND	0.10	91.1	83.4	8.91	84.1	87.3	3.77	70 - 130	20	70 - 130	20
Toluene	ND	0.10	94.5	87.4	7.80	92	92	0	70 - 130	20	70 - 130	20
Ethylbenzene	ND	0.10	101	94.1	7.37	99.7	97.9	1.88	70 - 130	20	70 - 130	20
Xylenes	ND	0.30	116	106	8.46	115	112	2.75	70 - 130	20	70 - 130	20
%SS:	86	0.10	115	107	6.92	115	110	4.00	70 - 130	20	70 - 130	20
All target compounds in the Method B NONE	lank of this	extraction	batch we	re ND les	s than the	method R	L with th	e following	exceptions:			

			<u>BATCH 39933 SL</u>	JMMARY			
Lab ID	Date Sampled	Date Extracted	Date Analyzed	Lab ID	Date Sampled	Date Extracted	Date Analyzed
0811807-025A	11/25/08 1:50 PM	I 11/25/08	11/26/08 2:43 PM				

MS = Matrix Spike; MSD = Matrix Spike Duplicate; LCS = Laboratory Control Sample; LCSD = Laboratory Control Sample Duplicate; RPD = Relative Percent Deviation.

% Recovery = 100 * (MS-Sample) / (Amount Spiked); RPD = 100 * (MS - MSD) / ((MS + MSD) / 2).

MS / MSD spike recoveries and / or %RPD may fall outside of laboratory acceptance criteria due to one or more of the following reasons: a) the sample is inhomogenous AND contains significant concentrations of analyte relative to the amount spiked, or b) the spiked sample's matrix interferes with the spike recovery.

 \pounds TPH(btex) = sum of BTEX areas from the FID.

cluttered chromatogram; sample peak coelutes with surrogate peak.

N/A = not enough sample to perform matrix spike and matrix spike duplicate.

NR = matrix interference and/or analyte concentration in sample exceeds spike amount for soil matrix or exceeds 2x spike amount for water matrix or sample diluted due to high matrix or analyte content.





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QC SUMMARY REPORT FOR SM5310B

W.O. Sample Matrix: Soil			QC Matri	x: Soil			Batch	ID: 39840		WorkC)rder 08118	07
EPA Method SM5310B	Extra	ction SM	5310B					5	Spiked San	nple ID	: 0811698-0	04A
Analyte	Sample	Spiked	MS	MSD	MS-MSD	LCS	LCSD	LCS-LCSD	Acce	eptance	Criteria (%)	
, indigite	mg/Kg	mg/Kg	% Rec.	% Rec.	% RPD	% Rec.	% Rec.	% RPD	MS / MSD	RPD	LCS/LCSD	RPD
ТОС	230	8200	103	104	1.22	101	99.8	1.55	70 - 130	20	80 - 120	20
All target compounds in the Method E NONE	lank of this	extraction	batch we	re ND les	s than the	method R	L with th	e following	exceptions:			

TCH 39840 SUMMARY

Lab ID	Date Sampled	Date Extracted	Date Analyzed	Lab ID	Date Sampled	Date Extracted	Date Analyzed
0811807-007A	11/25/08 8:45 AM	11/26/08	11/26/08 8:28 PM	0811807-007A	11/25/08 8:45 AM	11/26/08	11/26/08 9:29 PM
0811807-009A	11/25/08 8:55 AM	11/26/08	11/26/08 8:41 PM	0811807-009A	11/25/08 8:55 AM	11/26/08	11/26/08 9:43 PM

MS = Matrix Spike; MSD = Matrix Spike Duplicate; LCS = Laboratory Control Sample; LCSD = Laboratory Control Sample Duplicate; RPD = Relative Percent Deviation.

% Recovery = 100 * (MS-Sample) / (Amount Spiked); RPD = 100 * (MS - MSD) / ((MS + MSD) / 2).

MS / MSD spike recoveries and / or %RPD may fall outside of laboratory acceptance criteria due to one or more of the following reasons: a) the sample is inhomogenous AND contains significant concentrations of analyte relative to the amount spiked, or b) the spiked sample's matrix interferes with the spike recovery.

N/A = not applicable to this method.

NR = analyte concentration in sample exceeds spike amount for soil matrix or exceeds 2x spike amount for water matrix or sample diluted due to high matrix or analyte content.

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A QA/QC Officer



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QC SUMMARY REPORT FOR SM5310B

W.O. Sample Matrix: Soil			QC Matri	x: Soil			Batch	ID: 40012		WorkC	0rder 08118	07
EPA Method SM5310B	Extra	ction SM	5310B					s	Spiked San	nple ID	: 0811807-0)21A
Analyte	Sample	Spiked	MS	MSD	MS-MSD	LCS	LCSD	LCS-LCSD	Acce	eptance	Criteria (%)	1
	mg/Kg	mg/Kg	% Rec.	% Rec.	% RPD	% Rec.	% Rec.	% RPD	MS / MSD	RPD	LCS/LCSD	RPD
ТОС	ND	8200	109	115	5.15	101	99.6	1.20	70 - 130	20	80 - 120	20
All target compounds in the Method B NONE	lank of this	extraction	batch we	re ND les	s than the	method R	L with th	e following o	exceptions:			

BATCH 40012 SUMMARY

Lab ID	Date Sampled	Date Extracted	Date Analyzed	Lab ID	Date Sampled	Date Extracted	Date Analyzed
0811807-021A	11/25/08 10:30 AM	12/03/08	12/03/08 7:55 PM	0811807-021A	11/25/08 10:30 AM	12/03/08	12/03/08 9:17 PM

MS = Matrix Spike; MSD = Matrix Spike Duplicate; LCS = Laboratory Control Sample; LCSD = Laboratory Control Sample Duplicate; RPD = Relative Percent Deviation.

% Recovery = 100 * (MS-Sample) / (Amount Spiked); RPD = 100 * (MS - MSD) / ((MS + MSD) / 2).

MS / MSD spike recoveries and / or %RPD may fall outside of laboratory acceptance criteria due to one or more of the following reasons: a) the sample is inhomogenous AND contains significant concentrations of analyte relative to the amount spiked, or b) the spiked sample's matrix interferes with the spike recovery.

N/A = not applicable to this method.

NR = analyte concentration in sample exceeds spike amount for soil matrix or exceeds 2x spike amount for water matrix or sample diluted due to high matrix or analyte content.

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QA/QC Officer

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AEI Consultants	Client Project ID: #28034	6; Alaska Gas,	Date Sampled:	11/25/08
2500 Camino Diablo, Ste. #200	6211 San Pablo Avenue		Date Received:	11/25/08
Walnut Creek, CA 94597	Client Contact: Jeremy Sr	nith	Date Reported:	12/04/08
	Client P.O.: WC081040		Date Completed:	12/10/08

WorkOrder: 0811807

December 12, 2008

Dear Jeremy:

Enclosed within are:

- 1) The results of the 5 analyzed samples from your project: **#280346; Alaska Gas, 6211 San Pab**
- 2) A QC report for the above samples,
- 3) A copy of the chain of custody, and
- 4) An invoice for analytical services.

All analyses were completed satisfactorily and all QC samples were found to be within our control limits.

If you have any questions or concerns, please feel free to give me a call. Thank you for choosing

McCampbell Analytical Laboratories for your analytical needs.

Best regards,

Angela Rydelius Laboratory Manager McCampbell Analytical, Inc.

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	Telepho	McCAN	APBELI 1534 V Pitts 52-9262	L ANAI Villow Pass burg, CA 9	LYT Road 4565	ICA F	L II 'ax:	NC.) 252	-926	i9			I	TUI	RN	Al	RO	CI		IN	0] [E	FC		ST SH	2		r R	EC [48		R	D [72] HR	5 DAY
	Deport To: Jaram	v Smith		B	SII T	. con	10		PO	# 1	WCI	1810	40	E	DF	Req	luir	ed?	An	alve	is R	eau	est	_	NO	-	-	_		Otl	her		Con	ments
	Company: AELC	onsultants		L	1111	J. 541	ie		1.0		inci	010	40	\vdash			-		CALL.	arys	15 1	cqu	Lot							N		r.	Con	ments
	2500 (Camino Dia	blo											1		lica			10							-				52	à	195		
	Waln	ut Creek, C	A 94597		E-M	ail: ja	smit	h@ae	icons	ultan	ts.co	m		1		v/Sil		ய்	000					10		100			4 e	Êq	F			
	Tele: (925) 944-2	.899		∩ F	ax: ((925)	944	-289	5					1		.I.) v	8.1)	ETB	Z					/ 83		: (60				4	AS			
	Project #: 280346	i	1 /	/ P	rojec	t Nar	ne: /	Alask	a Ga	as						(413	(41)	PE,	0					\$270		,zin(4	7	- 18	8	
	Project Location:	6211 San P	ablo Aven	ue, Oakl	and,	Calif	orni	a				_				ase	pons	DB	ES-		ALY			52/8		P.Ni				LOW	4.5	R	310	
	Sampler Signatur	e: //a	Ne	-			_			_						Gre	ocarl	TBE	198	$\mathcal{L}_{\mathcal{L}}$	SO		220	A 62		F, P	0.8)			2	à	J.	5	
		-/	SAMP	LING	LS I	iners		MAT	RIX		MI	SERV	OD VED	\$021B	(8015)	m Oil &	m Hydro	60) - M	3 CC YS		0 PCB		PAHs) 8	s by EP	lls	s (Cd, C	ered 200			+ +	4	SW		
	SAMPLE ID (Field Point Name)	LOCATION	Date	Time	# Containe	Type Contai	Water	Soil	Sludge	Other	Ice	HCI HNO,	Other	BTEX / /MTBE	TPH - gasoline (Total Petroleur	Total Petroleur	Fuel Oxys (82 TAME TBA	SUS BIELS	Nitrate/Nitrite	EPA 608 / 808	VOCs 8260	SVOCs (with	PAH's/PNA'	CAM-17 Meta	LUFT 5 Metal	Lead (field filt	RCI	HOLD	Sieve	MOISTUR	TOC-TIC		
	58-7-3.5		11/25/08	230	1	Linu		X			X			X	X			X																
	58-2-75		1	740	1	11		x			î		-																X					
	52-7-105			245		+		X	-		+	+			V			V																
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	D00-1-10			755	++	+		+	-		+	+		X	V			V	1		-	-	-	-	-				N	4	4	1	OFF -	cio
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	DDF-1-1813			705	\vdash	++		+	-		+	-	-	V	1	-	-		1	-	-	-	+	-	-	-	_		1	-	-		OFF A	elo
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+1	DDP-1			920	3	VoA	X	_	_		17	C	-	X	X			X		-		_		_	-	-	_		\vdash	-	_			
XV	DDP-10		-	1255	3	VOA	x				LX			X	X	1		X																
	Relinquished By: Relinquished By: Enviro-Te Relinquished By:	ech ^{SR} .	Date: 11/23/08 Date: 11/25 Date: 11-25	Time: 530 Time: 2000 Time: 3'20	Rece	ived B	y: y: y: -{ y:	on Jal	t <u>e</u> V		8	7.	L		ICE/ GOC HEA DEC	T DD (D S THL	3. CON SPA OR	NDIT CE A INA	TION ABSI TED	ENT IN	LAB		Pl A C	RES PPF ON PE	SER' ROP TAII RSE	VA' RIA NEI RV	FIO TE RS_ ED	vo N IN I	AS	0&	G	ME	TALS	OTHER
	Relinquished By:	,	Date: 11-25	Time: 3¦20].	Rece	J	¥:	h	Y	-	z				DEC	HL	OR	INA	TED	IN	LAE			PE	RSE	RV	ED	IN L	AB		_	-	_	

	McCAN	IPBEL	L ANA	LYT	ICA	LI	NC											С	HA	IN	0	F	CU	IST	ГO	DY	/ F	E	CO	RD	1		_
		1534 V Pitts	Willow Pas burg, CA 9	s Road 94565										Г	UI	RN	AR	OUN	D'	ГĮЛ	1E		Ę					Ę	ב			DA V	
Telepho	ne: (925) 25	2-9262	,		F	ax:	(925	5) 25	52-9	269				El	DF	Req	uiree	1?	A	Yes				JSH No	2	24 H	R	48	3 HR		72 HR	5 D/	43
Report To: Jerem	y Smith		ŀ	Bill To	o: san	ıe		P	0.	# W	C08	8104	10					A	aly	sis F	Requ	iest						1	Oth	er	C	mment	ts
Company: AEI C	onsultants												_			-		20											0 8	0			
2500 (Camino Dial	blo						_								illica		301							Ó				- Ito	18			
Waln	ut Creek, C	A 94597		E-M	ail: ja	smit	h@a	ieico	nsul	tants	.con	1	_			W/S	a la	108					310		010					12			
Tele: (925) 944-2	899	/		ax: ((925)	944	-289	95	~		-		_			3.1)	18.1 ET	212					0/8		1C (6			1		200			
Project #: 280346	(211 6 /		1	rojec	et Nar	ne:	Alas	ska	Gas				_			: (41	IS (4	00	Ĩ	~			827		li,zii				3 2	10			
Project Location:	6211 San Pa	ablo Aver	rue, Oak	land,	Calif	orni	a						_			case	rbon	EDB		NL			25 /		d, do	_			Buff	So			
Sampler Signatur	e: pair		2	-	-					-	MET	THO	D			5	roca		-	's O		827	PA (G.	00.8	-		51	67			
		SAMP	LING		ers		MA	TR	IX	Р	RES	ERV	ED	021E	015)	Oil	Hyd	2-D	1	PCB		(SHV)	by E		Cd	ed 2(No and	DE			
SAMPLE ID				lers	tain									E	e (8)	cum	mna	1.1	2	080		h P/	A's l	ctals	tals (ilter			2 XC	118	5		
(Field Point Name)	LOCATION	D	T	tair	On									MITE	solin	strole	strolo	E E	Nitri	8/8	260	(wit	Nd	7 MG	Mc	eld f		A	fot	109	a		
		Date	Time	Con	be	ater	=		gpi	Ler .		NO.	her	X	- 89	al Pe	al Po	ME.	rate/	A 60	Cs 8	S	H's/	I-W	FT 5	d (fi	_	10	10.0	E Y	8		
				#	L,	3	So	Ai.	2 2	5 3	Ĭ	H	ŏ	BTI	HdJ	Tot	Tot	TA	Nit	EP	2	SV	PA	CA	E	Lea	RC	T	225	28	IYI		
5B-5-3.5		11 25 06	1115	1	Line		X			Y	(W.	Ye.	•	2	R.										X					
58-5-7.5		· i	1120				X			1				X	X		×	<											ð.				
58-5-10			1125	1	+		X																					X					
SB-5			1140	3	VOA	Х				T	X			X	X			X										1					
5B-12-3.5			1020	1	Liver		X			T	-			X	X				(Mo	2		CFF	Holo El	81
SB-12-6.5			1025	1	1		X			T				X	X			X										1	-		1 24	- 3-3	
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5015			205	-	VVA	^	-	-	+	1	1~		-	~	~			X	-										_	_	-		
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Envico-To	ech or.	11/25	2000	10	1 les		the	16						0	GOO IF A	DOC	OND	TTIO	ENT	-		A	PPF ON'	TAU	RIA	TE							
Relinguished By		Date:	Time:	Rece	ived B	1:	~	V	4	0	-		-	D	DEC	HLO	DRIN	ATE	DIN	LAI	3	C	PEI	RSE	RVI	EDI	NL	AB					
Rell. dal	1	11-25	8:207	Mr 1	1l	-	4	A	1	7																							

DDP-1-19.5

SB-12-3.5

SB-12-11.5

1534 Willow Pass Rd Pittsburg, CA 94565-1701 (925) 252-9262

CHAIN-OF-CUSTODY RECORD

Page 1 of 1

(925) 25	g, CA 94565-1701 52-9262				1	WorkO	rder: (081180	B	(ClientC	Code: A	EL				
			Write	On 🖌 EDF	Ľ	Excel	Γ	Fax	I	🖌 Email		Hard	Сору	Thir	dParty	□ J-	flag
Report to:						I	Bill to:						Req	uested	TAT:	5	days
Jeremy Smit AEI Consult 2500 Camin Walnut Cree	th ants io Diablo, Ste. #200 ek, CA 94597	Email: cc: PO: ProjectNo:	jasmith@aeic WC081040 #280346; Alas Avenue	onsultants.com ska Gas, 6211 Sa	ın Pal	olo	Der AE 250 Wa	nise Mo I Consu 00 Cam Ilnut Cro	ockel Iltants Iino Dia eek, CA	iblo, Ste \ 94597	e. #200	I	Dat Dat Dat	e Rece e Add- e Prin	eived: On: ted:	11/25 12/08 12/08	5/2008 5/2008 5/2008
(925) 944-289	99 FAX (925) 944-2895						dm	ockel@	aeicor	sultant	s.com						
									Req	uested [·]	Tests (See leg	jend be	elow)			
Lab ID	Client ID		Matrix	Collection Date	Hold	1	2	3	4	5	6	7	8	9	10	11	12
0811807-008	DDP-1-8		Soil	11/25/2008 8:50	$\downarrow \sqcup$	A	A										
0811807-010	DPP-1-11.5		Soil	11/25/2008 9:00		Α	Α										

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А

Test Legend:

0811807-012

0811807-019

0811807-021

1	9-OXYS_S
6	
11	

2	G-MBTEX_S	
7		
12		

Soil

Soil

Soil

11/25/2008 9:10

11/25/2008 10:20

11/25/2008 10:30

3	
8	

4	
9	

5		
10		

Prepared by: Ana Venegas

Comments: Sample #21 Taken Off hold on 12/01/08, TOC,IC(C) Moisture, Density added on a std tat per J.S/Fax. Gmbtex And 9 oxys added on 12/08/08 on a std tat per J.S/Fax

NOTE: Soil samples are discarded 60 days after results are reported unless other arrangements are made (Water samples are 30 days). Hazardous samples will be returned to client or disposed of at client expense.

McCampbell Ana "When Ouality C	alytical, Inc	2.	1534 Willow Pass Road, Pittsburg, CA 94565-1701 Web: www.mccampbell.com E-mail: main@mccampbell.com Telephone: 877-252-9262 Fax: 925-252-9269								
AEI Consultants	Client Pro	oject ID: #28034	6; Alaska Gas,	Date Sampled:	11/25/08						
2500 Camino Diablo. Ste. #200	6211 San	Pablo Avenue		Date Received: 11/25/08							
	Client Co	ntact: Jeremy Si	mith	Date Extracted: 12/08/08							
Walnut Creek, CA 94597	Client P.C	Client P.O.: WC081040 Date Analyzed									
Oxygenated Extraction Method: SW5030B	d Volatile Organi Analy	anics + EDB and 1,2-DCA by P&T and GC/MS*									
Lab ID	0811807-008A	0811807-010A	0811807-012A	0811807-019A							
Client ID	DDP-1-8	DPP-1-11.5	DDP-1-19.5	SB-12-3.5	Reporting DF	Limit for =1					
Matrix	S	S	S	S		r					
DF	4	6.7	40	1	S	W					
Compound		Conce	entration		mg/kg	ug/L					
tert-Amyl methyl ether (TAME)	ND<0.020	0.17	0.26	ND	0.005	NA					
t-Butyl alcohol (TBA)	1.3	4.4	7.1	ND	0.05	NA					
1,2-Dibromoethane (EDB)	ND<0.016	ND<0.027	ND<0.16	ND	0.004	NA					
1,2-Dichloroethane (1,2-DCA)	ND<0.016	ND<0.027	ND<0.16	ND	0.004	NA					
Diisopropyl ether (DIPE)	ND<0.020	ND<0.033	ND<0.20	ND	0.005	NA					
Ethanol	ND<2.0	ND<3.3	ND<20	ND	0.5	NA					
Ethyl tert-butyl ether (ETBE)	ND<0.020	ND<0.033	ND<0.20	ND	0.005	NA					
Methanol	ND<20	ND<33	ND<200	ND	5.0	NA					
Methyl-t-butyl ether (MTBE)	0.32	1.0	4.0	0.0083	0.005	NA					
	Surro	gate Recoveries	s (%)								
%SS1:	85	90	95	89							
Comments											
* water and vapor samples are reported in µ extracts are reported in mg/L, wipe samples	ιg/L, soil/sludge/sol s in μg/wipe.	id samples in mg/k	g, product/oil/non-a	queous liquid sample	s and all TC	LP & SPLP					
ND means not detected above the reporting limit; N/A means analyte not applicable to this analysis. # surrogate diluted out of range or coelutes with another peak; &) low surrogate due to matrix interference.											

McCampbell An "When Quality	nalytic _{Counts"}	cal, Inc.		1534 Willow Pass Road, Pittsburg, CA 94565-1701 Web: www.mccampbell.com E-mail: main@mccampbell.com Telephone: 877-252-9262 Fax: 925-252-9269								
AEI Consultants		Client Project	rt ID: #2	28034	6; Alaska Gas,	Date Sampled:	11/25/08					
2500 Camino Diablo, Ste. #200		6211 San Pat	blo Aver	nue		Date Received: 11/25/08						
		Client Conta	act: Jeren	Date Extracted:	12/08/08							
Walnut Creek, CA 94597		Client P.O.:	WC0810	040		Date Analyzed	1 12/09/08					
Oxygenate Extraction Method: SW5030B	ed Volat	tile Organics + EDB and 1,2-DCA by P&T and GC/MS*										
Lab ID	081180	7-021A										
Client ID	SB-12	2-11.5					Reporting DF	Limit for =1				
Matrix		s					-					
DF	1	0					S	W				
Compound			(Conce	ntration		mg/kg	ug/L				
tert-Amyl methyl ether (TAME)	ND<	0.050					0.005	NA				
t-Butyl alcohol (TBA)	2	.1					0.05	NA				
1,2-Dibromoethane (EDB)	ND<	0.040					0.004	NA				
1,2-Dichloroethane (1,2-DCA)	ND<	0.040					0.004	NA				
Diisopropyl ether (DIPE)	ND<	0.050					0.005	NA				
Ethanol	ND	<5.0					0.5	NA				
Ethyl tert-butyl ether (ETBE)	ND<	0.050					0.005	NA				
Methanol	ND	<50					5.0	NA				
Methyl-t-butyl ether (MTBE)	ND<	0.050					0.005	NA				
		Surrogat	te Recov	veries	(%)							
%SS1:	ç	93										
Comments												
* water and vapor samples are reported in µg/L, soil/sludge/solid samples in mg/kg, product/oil/non-aqueous liquid samples and all TCLP extracts are reported in mg/L, wipe samples in µg/wipe.												
ND means not detected above the reporti	ng limit;	N/A means ana	alyte not a	applica	ble to this analysi	s.						
# surrogate diluted out of range or coelute	es with ar	nother peak; &)) low surr	ogate o	lue to matrix inter	ference.						

	McCampbo	ell An	alytical, Inc. Counts"			1534 Willo Web: www.mcca Telephon	w Pass Road, P ampbell.com e: 877-252-926	tittsburg, CA 9456 E-mail: main@mcc i2 Fax: 925-252-	55-1701 ampbell.com 9269						
AEI C	Consultants		Client Project 6211 San Pat	ID: i	#280346; enue	; Alaska Gas	, Date Sa	Date Sampled: 11/25/08							
2500	Camino Diablo, Ste. #2	200					Date R	Date Received: 11/25/08							
			Client Contac	Client Contact: Jeremy Smith					Date Extracted: 12/08/08						
Walnu	ut Creek, CA 94597		Client P.O.:	WC08	1040		Date A	nalyzed 12/0	09/08						
Extractio	Gas	soline Ra	ange (C6-C12) Volatil	e Hydi	rocarbon	is as Gasolin V8021B/8015Cn	e with BTF	EX and MTBI	∃ * Work Ord	ler: 081	1807				
Lab ID	Client ID	Matrix	TPH(g)		ATBE	Benzene	Toluene	Ethylbenzene	Xylenes	Xylenes DF 9					
008A	DDP-1-8	S	96,d7,d9	N	D<1.0	ND<0.050	0.93	0.19	0.13	10	118				
010A	DPP-1-11.5	S	11,d1		0.65	0.0077	0.099	0.016	0.057	1	93				
012A	DDP-1-19.5	S	ND	4.2		ND	ND	ND	ND	1	95				
019A	SB-12-3.5	S	ND		ND	ND	ND	ND	ND	1	93				
021A	SB-12-11.5	s	ND		ND	ND	ND	ND	ND	1	102				
Repo	rting Limit for DF =1;	W	50		5.0	0.5	0.5	0.5	0.5	ug	g/L				
abo	ve the reporting limit	S	1		0.05	0.005	0.005	0.005	0.005	mg	/Kg				

* water and vapor samples and all TCLP & SPLP extracts are reported in µg/L, soil/sludge/solid samples in mg/kg, wipe samples in µg/wipe, product/oil/non-aqueous liquid samples in mg/L.

cluttered chromatogram; sample peak coelutes w/surrogate peak; low surrogate recovery due to matrix interference.

+The following descriptions of the TPH chromatogram are cursory in nature and McCampbell Analytical is not responsible for their interpretation:

Angela Rydelius, Lab Manager

d1) weakly modified or unmodified gasoline is significant

d7) strongly aged gasoline or diesel range compounds are significant in the TPH(g) chromatogram

d9) no recognizable pattern



"When Ouality Counts"

QC SUMMARY REPORT FOR SW8260B

W.O. Sample Matrix: Soil			QC Matri	x: Soil			BatchID: 40126				WorkOrder 0811807		
EPA Method SW8260B	Extra	ction SW	/5030B			Spiked Sample ID: 0812203-001A							
Analyte	Sample	Spiked	MS	MSD	MS-MSD	LCS	LCSD	LCS-LCSD	Acce	eptance	e Criteria (%)		
Analyte	mg/Kg	mg/Kg	% Rec.	% Rec.	% RPD	% Rec.	% Rec.	% RPD	MS / MSD	RPD	LCS/LCSD	RPD	
tert-Amyl methyl ether (TAME)	ND	0.050	85.3	83.5	2.09	88.6	89.6	1.07	60 - 130	30	60 - 130	30	
t-Butyl alcohol (TBA)	ND	0.25	85.3	84.1	1.49	93.1	89.9	3.46	60 - 130	30	60 - 130	30	
1,2-Dibromoethane (EDB)	ND	0.050	87.5	84.6	3.35	91.4	92.5	1.17	60 - 130	30	60 - 130	30	
1,2-Dichloroethane (1,2-DCA)	ND	0.050	93.9	92.7	1.30	98.9	97.2	1.78	60 - 130	30	60 - 130	30	
Diisopropyl ether (DIPE)	ND	0.050	114	114	0	118	118	0	60 - 130	30	60 - 130	30	
Ethyl tert-butyl ether (ETBE)	ND	0.050	101	99	1.48	105	104	0.331	60 - 130	30	60 - 130	30	
Methyl-t-butyl ether (MTBE)	ND	0.050	86.4	85.3	1.27	90.3	89	1.48	60 - 130	30	60 - 130	30	
%SS1:	84	0.12	91	90	0.787	90	90	0	70 - 130	30	70 - 130	30	
All target compounds in the Method I NONE	Blank of this	extraction	batch we	re ND les	s than the	method R	L with th	e following	exceptions:				

BATCH 40126 SUMMARY

Lab ID	Date Sampled	Date Extracted	Date Analyzed	Lab ID	Date Sampled	Date Extracted	Date Analyzed
0811807-008A	11/25/08 8:50 AM	12/08/08	12/09/08 9:33 PM	0811807-010A	11/25/08 9:00 AM	12/08/08	12/09/08 10:26 PM
0811807-012A	11/25/08 9:10 AM	12/08/08	12/09/08 11:09 PM	0811807-019A	11/25/08 10:20 AM	12/08/08	12/09/08 12:54 AM
0811807-021A	11/25/08 10:30 AM	12/08/08	12/09/08 11:51 PM				

MS = Matrix Spike; MSD = Matrix Spike Duplicate; LCS = Laboratory Control Sample; LCSD = Laboratory Control Sample Duplicate; RPD = Relative Percent Deviation.

% Recovery = 100 * (MS-Sample) / (Amount Spiked); RPD = 100 * (MS - MSD) / ((MS + MSD) / 2).

MS / MSD spike recoveries and / or %RPD may fall outside of laboratory acceptance criteria due to one or more of the following reasons: a) the sample is inhomogenous AND contains significant concentrations of analyte relative to the amount spiked, or b) the spiked sample's matrix interferes with the spike recovery.

N/A = not enough sample to perform matrix spike and matrix spike duplicate.

NR = analyte concentration in sample exceeds spike amount for soil matrix or exceeds 2x spike amount for water matrix or sample diluted due to high matrix or analyte content.

Laboratory extraction solvents such as methylene chloride and acetone may occasionally appear in the method blank at low levels.



1534 Willow Pass Road, Pittsburg, CA 94565-1701 Web: www.mccampbell.com E-mail: main@mccampbell.com Telephone: 877-252-9262 Fax: 925-252-9269

"When Ouality Counts"

QC SUMMARY REPORT FOR SW8021B/8015Cm

W.O. Sample Matrix: Soil	QC Matrix	k: Soil		ID: 40140	40 WorkOrder: 0811807							
EPA Method SW8021B/8015Cm			5	Spiked San	nple ID	: 0812281-0	001A					
Analyte	Sample	Spiked	MS	MSD	MS-MSD	LCS	LCSD	LCS-LCSD	Acce	eptance	e Criteria (%)	1
, mayte	mg/Kg	mg/Kg	% Rec.	% Rec.	% RPD	% Rec.	% Rec.	% RPD	MS / MSD	RPD	LCS/LCSD	RPD
TPH(btex ^f	ND	0.60	97.2	96.5	0.803	118	99.9	16.2	70 - 130	20	70 - 130	20
MTBE	ND	0.10	102	96.5	5.14	104	116	11.2	70 - 130	20	70 - 130	20
Benzene	ND	0.10	86.2	89	3.09	94	103	8.89	70 - 130	20	70 - 130	20
Toluene	ND	0.10	78.4	80.3	2.31	84.4	91.9	8.52	70 - 130	20	70 - 130	20
Ethylbenzene	ND	0.10	92.5	95.7	3.47	97.8	104	6.38	70 - 130	20	70 - 130	20
Xylenes	ND	0.30	91.2	94.5	3.52	97	102	5.40	70 - 130	20	70 - 130	20
%SS:	89	0.10	93	102	9.30	96	96	0	70 - 130	20	70 - 130	20
All target compounds in the Method B NONE	lank of this	extraction	batch we	re ND les	s than the	method R	L with th	e following	exceptions:			

BATCH 40140 SUMMARY

Lab ID	Date Sampled	Date Extracted	Date Analyzed	Lab ID	Date Sampled	Date Extracted	Date Analyzed
0811807-008A	11/25/08 8:50 AM	12/08/08	12/09/08 5:35 PM	0811807-010A	11/25/08 9:00 AM	12/08/08	12/09/08 12:36 AM
0811807-012A	11/25/08 9:10 AM	12/08/08	12/09/08 1:07 AM	0811807-019A	11/25/08 10:20 AM	12/08/08	12/09/08 2:08 AM
0811807-021A	11/25/08 10:30 AM	12/08/08	12/09/08 10:43 AM				

MS = Matrix Spike; MSD = Matrix Spike Duplicate; LCS = Laboratory Control Sample; LCSD = Laboratory Control Sample Duplicate; RPD = Relative Percent Deviation.

% Recovery = 100 * (MS-Sample) / (Amount Spiked); RPD = 100 * (MS - MSD) / ((MS + MSD) / 2).

MS / MSD spike recoveries and / or %RPD may fall outside of laboratory acceptance criteria due to one or more of the following reasons: a) the sample is inhomogenous AND contains significant concentrations of analyte relative to the amount spiked, or b) the spiked sample's matrix interferes with the spike recovery.

£ TPH(btex) = sum of BTEX areas from the FID.

cluttered chromatogram; sample peak coelutes with surrogate peak.

N/A = not enough sample to perform matrix spike and matrix spike duplicate.

NR = matrix interference and/or analyte concentration in sample exceeds spike amount for soil matrix or exceeds 2x spike amount for water matrix or sample diluted due to high matrix or analyte content.



McCampbell An "When Ouality	nalytical, Inc.	1534 Will Web: www.mc Telepho	low Pass Road, Pittsburg, campbell.com E-mail: m one: 877-252-9262 Fax:	CA 94565-1701 ain@mccampbell.com 925-252-9269
AEI Consultants	Client Project ID: #28034	6; Alaska Gas	Date Sampled:	11/26/08
2500 Camino Diablo, Ste. #200			Date Received:	11/26/08
Walnut Creek, CA 94597	Client Contact: Jeremy Sr	nith	Date Reported:	12/05/08
	Client P.O.: WC081040		Date Completed:	12/05/08

WorkOrder: 0811887

December 05, 2008

Dear Jeremy:

Enclosed within are:

- 1) The results of the 13 analyzed samples from your project: #280346; Alaska Gas,
- 2) A QC report for the above samples,
- 3) A copy of the chain of custody, and
- 4) An invoice for analytical services.

All analyses were completed satisfactorily and all QC samples were found to be within our control limits.

If you have any questions or concerns, please feel free to give me a call. Thank you for choosing

McCampbell Analytical Laboratories for your analytical needs.

Best regards,

Angela Rydelius Laboratory Manager McCampbell Analytical, Inc.

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McCAN Telephone: (925) 25	IPBELI 1534 W Pittsl 2-9262	ANAI Villow Pass ourg, CA 9	LYT s Road 94565	ICA F	LI	NC (92	5) 2	.52-	.926	59				TU EDI	JR FR	N A	AR	OU d?				F		ST SH	O		R R			R	D [72) HR	5 D	AY
Report To: Jeremy Smith		B	Bill To	: sam	ie		F	P.O.	. # `	WC	081	040	Ť					A	naly	sis	Req	uest	-		-				Otl	her		Co	nmen	ts
Company: AEI Consultants							-						T						T										2	34				
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Project #: 280346	1	/ P	rojec	t Nan	ne:	Alas	ska	Ga	IS				_			(413	41	£					\$270		,zin				1	f.	5			
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Sampler Signature:	my	n	-		_		_		_				4.			Gre	ocarl	A, E		No s		\$270	A 62		r, pł	0.8)			5	7	₹			
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SAMPLE ID (Field Point Name)	Date	Time	# Containers	Type Contain	Water	Soil	Air	Sludge	Other	Ice	HCI	HNO ₃	DURT ACTOR &	BIEA//MIBE 0	PH - gasoline (80	Total Petroleum	Total Petroleum	Fuel Oxys (8260 TAME, TBA, 1,	Nitrate/Nitrite	EPA 608 / 8080	VOCs 8260	SVOCs (with PA	PAH's / PNA's	CAM-17 Metals	LUFT 5 Metals (Lead (field filter	RCI	HOUP	Sieve + 1	Moistin 41	POC TIL	_		
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SAMPLE ID (Field Point Name)	LOCATION	Date	Time	# Containers	Type Containe	Water	Soil	Air	Sludge	Other	Ice	HCI	HNO ₃	Other	BTEX / MTBE 80	PHI - gasoline (80	Total Petroleum (Total Petroleum I	TAME, TBA, 1,2	Mitcata Mitcita	FPA 608 / 8080 F	VOCs 8260	SVOCs (with PA	PAH's / PNA's b	CAM-17 Metals	LUFT 5 Metals (0	Lead (field filtere	RCI	HOLD					
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1534 Willow Pass Rd Pittsburg CA 94565 1701

CHAIN-OF-CUSTODY RECORD

Page 1 of 1

(925) 25	52-9262					Work	Order:	08118	887	(ClientC	ode: A	EL				
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Jeremy Smit AEI Consult 2500 Camin Walnut Cree (925) 283-600	th ants no Diablo, Ste. #200 ek, CA 94597 00 FAX (925) 944-2895	Email: cc: PO: ProjectNo:	jasmith@aeic WC081040 #280346; Alas	consultants.com ska Gas			De AE 250 Wa dm	nise Mo I Consu 00 Cam alnut Cr nockel@	ockel ultants nino Dia eek, CA aeicor	ablo, St A 94597 nsultan	e. #200 7 ts.com	D	Dat Dat	e Rece e Prin	ived: ted:	11/26/: 11/28/:	2008 2008
									Req	uested	Tests	(See le	gend b	elow)			
Lab ID	Client ID		Matrix	Collection Date	Hold	1	2	3	4	5	6	7	8	9	10	11	12
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0811887-002	DDP-2-7.5		Soil	11/26/2008 7:45		А		А									
0811887-005	DDP-2-20.5		Soil	11/26/2008 8:05		А		А									
0811887-009	DDP-2-35.5		Soil	11/26/2008 8:30		А		А									
0811887-010	DDP-3-5		Soil	11/26/2008 10:10		А		А									
0811887-011	DDP-3-5.5		Soil	11/26/2008 10:30			Α		Α	А	Α		А	Α			
0811887-013	DDP-3-10		Soil	11/26/2008 11:15			Α		Α	А	Α		А	Α			
0811887-019	DDP-3-26		Soil	11/26/2008 12:10		А		А									
0811887-022	DDP-3-35.5		Soil	11/26/2008 12:40		А		А									
0811887-025	DDP-4-7.5		Soil	11/26/2008 14:00		А		А									
0811887-026	DDP-4-10.5		Soil	11/26/2008 14:05		А		А									
0811887-029	DDP-4-20.5		Soil	11/26/2008 14:30		А		А									
0811887-032	DDP-4-29.5		Soil	11/26/2008		А		А									

Test Legend:

1	9-OXYS_S]	2	Density_S
6	Moisture_S		7	PREDF REPORT
11		1	12	

3	G-MBTEX_S]
8	Sieve Analysis	1

4	Hydrometer
9	TOC_S

5	IC(C)_S
10	

Prepared by: Rosa Venegas

Comments:

NOTE: Soil samples are discarded 60 days after results are reported unless other arrangements are made (Water samples are 30 days). Hazardous samples will be returned to client or disposed of at client expense.



"When Ouality Counts"

Sample Receipt Checklist

Client Name: AEI Consultants			Date a	and Time Received:	11/26/08	
Project Name: #280346; Alaska Gas			Check	klist completed and r	eviewed by:	Rosa Venegas
WorkOrder N°: 0811887 Matrix Soil			Carrie	r: <u>EnviroTech</u>		
<u>Chai</u>	n of Cu	stody (C	OC) Informa	ation		
Chain of custody present?	Yes	✓	No 🗆			
Chain of custody signed when relinquished and received?	Yes	✓	No 🗆			
Chain of custody agrees with sample labels?	Yes	✓	No 🗌			
Sample IDs noted by Client on COC?	Yes	✓	No 🗆			
Date and Time of collection noted by Client on COC?	Yes	\checkmark	No 🗆			
Sampler's name noted on COC?	Yes	\checkmark	No 🗆			
S	Sample	Receipt	Information	<u>1</u>		
Custody seals intact on shipping container/cooler?	Yes		No 🗆		NA 🔽	
Shipping container/cooler in good condition?	Yes	✓	No 🗆			
Samples in proper containers/bottles?	Yes	✓	No 🗆			
Sample containers intact?	Yes	✓	No 🗆			
Sufficient sample volume for indicated test?	Yes		No 🗌			
Sample Prese	ervatior	n and Ho	old Time (HT) Information		
All samples received within holding time?	Yes	✓	No 🗌			
Container/Temp Blank temperature	Coole	r Temp:	2.6°C		NA 🗆	
Water - VOA vials have zero headspace / no bubbles?	Yes		No 🗆	No VOA vials subm	itted 🗹	
Sample labels checked for correct preservation?	Yes	✓	No 🗌			
TTLC Metal - pH acceptable upon receipt (pH<2)?	Yes		No 🗆		NA 🗹	
Samples Received on Ice?	Yes	✓	No 🗆			
(Ice Ty	be: WE	TICE)			
* NOTE: If the "No" box is checked, see comments below.						

Client contacted:

Date contacted:

Contacted by:

Comments:

McCampbell Ar	nalytical, In	<u>ic.</u>	1534 W Web: www.1 Telep	Villow Pass Road, Pittsburg, Ca mccampbell.com E-mail: mai phone: 877-252-9262 Fax: 92	A 94565-1701 n@mccampbell.c 25-252-9269	com
AEI Consultants	Client P	roject ID: #28	30346; Alaska C	Gas Date Sampled:	11/26/08	
2500 Camino Diablo Sta #200				Date Received:	11/26/08	
2500 Camino Diabio, Ste. #200	Client C	Contact: Jeren	ny Smith	Date Extracted:	11/28/08	
Walnut Creek, CA 94597	Client P	.O.: WC0810	40	Date Analyzed	12/02/08-1	2/04/08
Oxygenat	ed Volatile Orga	nics + EDB an	nd 1,2-DCA by	P&T and GC/MS*	Work Order:	0811887
Lab ID	0811887-001A	0811887-00	2A 0811887-0	005A 0811887-009A	work order.	0011007
Client ID	DDP-2-5	DDP-2-7.	5 DDP-2-2	20.5 DDP-2-35.5	– Reporting DF	Limit for $r = 1$
Matrix	S	S	S	S		
DF	20	40	10	1	S	W
Compound		C	oncentration		mg/kg	ug/L
tert-Amyl methyl ether (TAME)	0.23	0.58	ND<0.0	950 ND	0.005	NA
t-Butyl alcohol (TBA)	2.3	3.4	ND<0.5	50 ND	0.05	NA
1,2-Dibromoethane (EDB)	ND<0.080	ND<0.16	ND<0.0	040 ND	0.004	NA
1,2-Dichloroethane (1,2-DCA)	ND<0.080	ND<0.16	ND<0.0	040 ND	0.004	NA
Diisopropyl ether (DIPE)	ND<0.10	ND<0.20	ND<0.0	950 ND	0.005	NA
Ethanol	ND<10	ND<20	ND<5.	0 ND	0.5	NA
Ethyl tert-butyl ether (ETBE)	ND<0.10	ND<0.20	ND<0.0	950 ND	0.005	NA
Methanol	ND<100	ND<200	ND<5	0 ND	5.0	NA
Methyl-t-butyl ether (MTBE)	3.4	7.9	0.86	0.039	0.005	NA
	Suri	ogate Recov	eries (%)			
%SS1:	94	91	91	92		
Comments						
* water and vapor samples are reported in extracts are reported in mg/L, wipe sample	μg/L, soil/sludge/s es in μg/wipe.	olid samples in	mg/kg, product/oi	l/non-aqueous liquid samp	les and all TC	LP & SPLP
ND means not detected above the reporti	ng limit; N/A mean	ns analyte not a	pplicable to this a	nalysis.		
# surrogate diluted out of range or coelut	es with another pea	ık; &) low surre	gate due to matrix	x interference.		

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AEI Consultants	Client Pro	oject ID: #28	#280346; Alaska Gas Date Sampled: 11/26/08					
2500 Camino Diablo Ste #200				Date Received:	Date Received: 11/26/08			
2500 Camilio Diaolo, Stc. #200	Client Co	ontact: Jerem	y Smith	Date Extracted:	11/28/08			
Walnut Creek, CA 94597	Client P.C	D.: WC08104	40	Date Analyzed	12/02/08-1	2/04/08		
Oxygenated	I Volatile Organ	iics + EDB an	ad 1,2-DCA by P& W8260B	T and GC/MS*	Work Order:	0811887		
Lab ID	0811887-010A	0811887-019	9A 0811887-022	A 0811887-025A				
Client ID	DDP-3-5	DDP-3-26	DDP-3-35.5	DDP-4-7.5	- Reporting DF	Limit for $r = 1$		
Matrix	S	S	S	S	<u> </u>	1		
DF	50	1	1	4	S	W		
Compound			oncentration		mg/kg	ug/L		
tert-Amyl methyl ether (TAME)	0.38	ND	ND	ND<0.020	0.005	NA		
t-Butyl alcohol (TBA)	6.6	ND	ND	ND<0.20	0.05	NA		
1,2-Dibromoethane (EDB)	ND<0.20	ND	ND	ND<0.016	0.004	NA		
1,2-Dichloroethane (1,2-DCA)	ND<0.20	ND	ND	ND<0.016	0.004 NA			
Diisopropyl ether (DIPE)	ND<0.25	ND	ND	ND<0.020	0.005	NA		
Ethanol	ND<25	ND	ND	ND<2.0	0.5	NA		
Ethyl tert-butyl ether (ETBE)	ND<0.25	ND	ND	ND<0.020	0.005	NA		
Methanol	ND<250	ND	ND	ND<20	5.0	NA		
Methyl-t-butyl ether (MTBE)	6.3	0.022	0.020	0.11	0.005	NA		
	Surro	ogate Recove	eries (%)					
%SS1:	92	95	95	97				
Comments								
* water and vapor samples are reported in μ extracts are reported in mg/L, wipe samples ND means not detected above the reporting	g/L, soil/sludge/so s in μg/wipe. g limit; N/A means	lid samples in 1 s analyte not ap	ng/kg, product/oil/no pplicable to this anal	n-aqueous liquid sampl ysis.	es and all TC	LP & SPLP		
# surrogate diluted out of range or coelutes	with another peak	; &) low surro	gate due to matrix in	terference.				

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AEI Consultants	Client Project ID:				6; Alaska Gas	11/26/08				
2500 Camina Diabla Sta #200				Date Received:	11/26/08					
2500 Culturio Diablo, 500. #200		Client C	ontact: Je	remy Sı	nith	Date Extracted:	11/28/08			
Walnut Creek, CA 94597		Client P.	O.: WC08	31040		Date Analyzed	12/02/08-1	2/04/08		
Oxygenat	ed Vola	tile Organ	nics + EDF	B and 1,	2-DCA by P&T	and GC/MS*		0011005		
Extraction Method: SW5030B	Anal 87-026A	0811887	1: SW826	08 0811887-032A		Work Order:	0811887			
Client ID	DDP	-4-10.5	DDP-4-	20.5	DDP-4-29.5		Reporting	Limit for		
Matrix		S	S		s		DF	=1		
DF		1	1		1		s	W		
Compound				Conce	entration		mg/kg	ug/L		
tert-Amyl methyl ether (TAME)		ND		ND			0.005	NA		
t-Butyl alcohol (TBA)		ND		1	ND		0.05	NA		
1,2-Dibromoethane (EDB)		ND			ND		0.004	NA		
1,2-Dichloroethane (1,2-DCA)		ND	ND		ND 0.004		0.004	NA		
Diisopropyl ether (DIPE)		ND	ND		ND		0.005	NA		
Ethanol		ND	ND		ND		0.5	NA		
Ethyl tert-butyl ether (ETBE)		ND	ND		ND		0.005	NA		
Methanol		ND	ND		ND		5.0	NA		
Methyl-t-butyl ether (MTBE)	0.	0093	ND		ND		0.005	NA		
		Surr	ogate Rec	overies	s (%)	1				
%SS1:		95	95		96					
Comments										
* water and vapor samples are reported in extracts are reported in mg/L, wipe samp ND means not detected above the report	i μg/L, so les in μg/ ing limit	oil/sludge/so /wipe. ; N/A mean	olid samples s analyte no	in mg/k	g, product/oil/non-a	queous liquid sample	s and all TC	LP & SPLP		
# surrogate diluted out of range or coelut	tes with a	nother peal	k; &) low sı	irrogate	due to matrix inter	ference.				

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AEI Consultants	3	Client Project ID:	#280346; Alaska Gas Date Sampled: 11/26/08					
2500 C : D:	2500 Coming Dichle Sta #200			Date Received: 11/26/08				
2500 Camino Dia	ablo, Ste. #200	Client Contact: Jo	eremy Smith	Date Extracted: 12/01/08				
Walnut Creek, C	A 94597	Client P.O.: WC0	81040	Date Analyzed 12/01/08				
		nsity	1					
Analytical Method: A	APIRP40_BD modified	Mater		Work Order: 0	811887 DE			
Lab ID		Mauri		Density	Dr			
0811887-011A	DDP-3-5.5	S		1.9	1			
0811887-013A	DDP-3-10	S		1.9	1			
L					1			

Method Accuracy and Reporting Units	W S	NA ±0.01 g/ml	
		·	

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AEI Consultants Client Project ID:					#280346; Alaska Gas Date Sampled: 11/26/08							
2500 (Camino Diablo Ste #2			Date Received: 11/26/08								
2300		200	Client Contact: J	eremy Sm	ith	Date E	xtracted: 11/2	28/08				
Walnu	tt Creek, CA 94597		Client P.O.: WCC	081040		Date A	nalyzed 12/0	02/08-12/05/	08			
Gasoline Range (C6-C12) Volatile Hydrocarbons as Gasoline with BTEX and MTBE*									ler: 081	1887		
Lab ID	Client ID	Matrix	TPH(g)	MTBE	Benzene	Toluene	Ethylbenzene	Xylenes	DF	% SS		
001A	DDP-2-5	S	5.8,d1	8.5	0.010	0.054	0.0063	0.057	1	93		
002A	DDP-2-7.5	S	850,d2	14	0.78	4.0	6.8	63	33	#		
005A	DDP-2-20.5	S	ND	1.1	ND	ND	ND	ND	1	83		
009A	DDP-2-35.5	S	ND	0.11	ND	ND	ND	ND	1	111		
010A	DDP-3-5	S	170,d2	9.7	ND<0.10	1.6	0.81	20	20	117		
019A	DDP-3-26	S	ND	0.093	ND	ND	ND	ND	1	107		
022A	DDP-3-35.5	S	ND	0.12	ND	ND	ND	ND	1	101		
025A	DDP-4-7.5	S	180,d2,d9	ND<0.25	0.040	0.84	0.26	2.5	5	#		
026A	DDP-4-10.5	S	ND	ND	ND	ND	ND	ND	1	97		
029A	DDP-4-20.5	S	ND	ND	ND	ND	ND	ND	1	93		
032A	DDP-4-29.5	s	ND	ND	ND	ND	ND	ND	1	80		
Repor	rting Limit for DF =1;	W	50	5.0	0.5	0.5	0.5	0.5	uş	g/L		
abov	<i>i</i> the reporting limit	S	1	0.05	0.005	0.005	0.005	0.005	mg	g/Kg		

* water and vapor samples and all TCLP & SPLP extracts are reported in µg/L, soil/sludge/solid samples in mg/kg, wipe samples in µg/wipe, product/oil/non-aqueous liquid samples in mg/L.

cluttered chromatogram; sample peak coelutes w/surrogate peak; low surrogate recovery due to matrix interference.

+The following descriptions of the TPH chromatogram are cursory in nature and McCampbell Analytical is not responsible for their interpretation:

d1) weakly modified or unmodified gasoline is significant

d2) heavier gasoline range compounds are significant (aged gasoline?)

d9) no recognizable pattern



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AEI Consultants		Client Project ID:	#280346; Alaska Gas Date Sampled: 11/26/08					
2500 Camino Dia	blo Ste #200			Date Received: 11/26/08				
2500 Camino Dia	1010, Stc. #200	Client Contact: Je	eremy Smith	Date Extracted: 12/03/08				
Walnut Creek, CA	A 94597	Client P.O.: WC0	81040	Date Analyzed 12/03/08				
Analytical Method: Sl	M5310B	Inorganic Car	bon as Carbon*	Work Order: 0	811887			
Lab ID	Client ID	Matri	x	IC as C	DF			
0811887-011A	DDP-3-5.5	S		6700	1			
0811887-013A	DDP-3-10	S		ND	1			

Reporting Limit for DF = 1; ND means not detected at	W	NA	
or above the reporting limit	S	200 mg/Kg	

* water samples are reported in mg/L, soil/sludge/solid samples in mg/kg.

* Non-Purgeable Organic Carbon=NPOC; TOC=Total Organic Carbon; DOC=Dissolved Organic Carbon; POC=Purgeable Organic Cabon; IC=Inorganic Carbon.

	Campbell Analyti	cal, Inc.	1534 Willow I Web: www.mccamp Telephone	Pass Road, Pittsburg, CA 94565-1701 bbell.com E-mail: main@mccampbell.com	m		
AEI Consultants	when Outanty Counts	Client Project ID:	#280346; Alaska Gas Date Sampled: 11/26/08				
				Date Received: 11/26/08			
2500 Camino Dia	ıblo, Ste. #200	Client Contact: Je	eremy Smith	Date Extracted: 12/02/08			
Walnut Creek, C	A 94597	Client P.O.: WC08	81040	Date Analyzed 12/03/08			
		Dorcont	Moisturo				
Analytical Method: A	STMD2216-92	rercent	Wolsture	Work Order: 0)811887		
Lab ID	Client ID	Matri	x	% Moisture	DF		
0811887-011A	DDP-3-5.5	S		13.1	1		
0811887-013A	DDP-3-10	S		14.8	1		

Method Accuracy and Reporting Units	W S	NA ±0.1, wet wt%	

AEI Consultants Client Project ID: #280346; Alaska Gas Date Sampled: 11/26/08 2500 Camino Diablo, Ste. #200 Client Contact: Jeremy Smith Date Extracted: 12/03/08 Walnut Creek, CA 94597 Client P.O.: WC081040 Date Analyzed 12/03/08 Total Organic Carbon (TOC)* Analytical Method: SM5310B Work Order: 08118 Lab ID Client ID Matrix TOC 0811887-011A DDP-3-5.5 S 10,000	
2500 Camino Diablo, Ste. #200 Walnut Creek, CA 94597 Client Contact: Jeremy Smith Client P.O.: WC081040 Date Extracted: 12/03/08 Client P.O.: WC081040 Date Analyzed 12/03/08 Total Organic Carbon (TOC)* Analytical Method: SM5310B Vork Order: 08118 Nork Order: 08118 0811887-011A DDP-3-5.5 S 10,000 0011002 DDP-3-10 DDP-3	
2500 Camino Diablo, Ste. #200 Client Contact: Jeremy Smith Date Extracted: 12/03/08 Walnut Creek, CA 94597 Client P.O.: WC081040 Date Analyzed 12/03/08 Total Organic Carbon (TOC)* Analytical Method: SM5310B Work Order: 08118 Lab ID Client ID Matrix 0811887-011A DDP-3-5.5 S 10,000 081102_0124 DDP 2.10 Color Color	
Walnut Creek, CA 94597 Client P.O.: WC081040 Date Analyzed 12/03/08 Total Organic Carbon (TOC)* Analytical Method: SM5310B Work Order: 08118 Lab ID Client ID Matrix TOC 0811887-011A DDP-3-5.5 S 10,000 000	
Total Organic Carbon (TOC)* Analytical Method: SM5310B Work Order: 08118 Lab ID Client ID Matrix TOC 0811887-011A DDP-3-5.5 S 10,000 0011007	
Analytical Method: SM5310B Work Order: 08118 Lab ID Client ID Matrix TOC Order: 08118 0811887-011A DDP-3-5.5 S 10,000 Image: Client ID Cl	
Lab ID Client ID Matrix TOC 0811887-011A DDP-3-5.5 S 10,000	37
0811887-011A DDP-3-5.5 S 10,000)F
0011007_0124	1
U811887-013A DDP-3-10 S 900	1

Reporting Limit for DF = 1; ND means not detected at	W	NA	
or above the reporting limit	S	200 mg/Kg	

* water samples are reported in mg/L, soil/sludge/solid samples in mg/kg.

* Non-Purgeable Organic Carbon=NPOC; TOC=Total Organic Carbon; DOC=Dissolved Organic Carbon; POC=Purgeable Organic Cabon; IC=Inorganic Carbon.



"When Ouality Counts"

QC SUMMARY REPORT FOR SW8260B

W.O. Sample Matrix: Soil		QC Matrix: Soil						BatchID: 39918 WorkOrder 0811887				87
EPA Method SW8260B	Extraction SW5030B Spiked Sample ID: 0811							: 0811800-0)01A			
Analyte	Sample	Spiked	MS	MSD	MS-MSD	LCS	LCSD	LCS-LCSD	Acc	eptance	e Criteria (%))
Analyte	mg/Kg	mg/Kg	% Rec.	% Rec.	% RPD	% Rec.	% Rec.	% RPD	MS / MSD	RPD	LCS/LCSD	RPD
tert-Amyl methyl ether (TAME)	ND	0.050	76.8	78.1	1.65	76.5	79.7	4.07	60 - 130	30	60 - 130	30
t-Butyl alcohol (TBA)	ND	0.25	88.2	95.3	7.73	83.1	85	2.27	60 - 130	30	60 - 130	30
1,2-Dibromoethane (EDB)	ND	0.050	97	99.7	2.83	85.9	89.6	4.22	60 - 130	30	60 - 130	30
1,2-Dichloroethane (1,2-DCA)	ND	0.050	99.3	101	2.17	98.3	98.6	0.238	60 - 130	30	60 - 130	30
Diisopropyl ether (DIPE)	ND	0.050	101	103	2.18	96.5	99.8	3.30	60 - 130	30	60 - 130	30
Ethyl tert-butyl ether (ETBE)	ND	0.050	101	104	2.19	99.6	102	2.26	60 - 130	30	60 - 130	30
Methyl-t-butyl ether (MTBE)	ND	0.050	92.5	94.5	2.14	88.7	89.9	1.34	60 - 130	30	60 - 130	30
%SS1:	92	0.12	88	88	0	95	95	0	70 - 130	30	70 - 130	30
All target compounds in the Method Blank of this extraction batch were ND less than the method RL with the following exceptions: NONE												

BATCH 39918 SUMMARY

Lab ID	Date Sampled	Date Extracted	Date Analyzed	Lab ID	Date Sampled	Date Extracted	Date Analyzed
0811887-001A	11/26/08	11/28/08	12/02/08 5:33 PM	0811887-002A	11/26/08 7:45 AM	11/28/08	12/03/08 11:39 PM
0811887-005A	11/26/08 8:05 AM	11/28/08	12/04/08 6:07 PM	0811887-009A	11/26/08 8:30 AM	11/28/08	12/02/08 6:58 PM
0811887-010A	11/26/08 10:10 AM	11/28/08	12/04/08 6:50 PM	0811887-019A	11/26/08 12:10 PM	11/28/08	12/02/08 9:49 PM

MS = Matrix Spike; MSD = Matrix Spike Duplicate; LCS = Laboratory Control Sample; LCSD = Laboratory Control Sample Duplicate; RPD = Relative Percent Deviation.

% Recovery = 100 * (MS-Sample) / (Amount Spiked); RPD = 100 * (MS - MSD) / ((MS + MSD) / 2).

MS / MSD spike recoveries and / or %RPD may fall outside of laboratory acceptance criteria due to one or more of the following reasons: a) the sample is inhomogenous AND contains significant concentrations of analyte relative to the amount spiked, or b) the spiked sample's matrix interferes with the spike recovery.

N/A = not enough sample to perform matrix spike and matrix spike duplicate.

NR = analyte concentration in sample exceeds spike amount for soil matrix or exceeds 2x spike amount for water matrix or sample diluted due to high matrix or analyte content.

Laboratory extraction solvents such as methylene chloride and acetone may occasionally appear in the method blank at low levels.





"When Ouality Counts"

QC SUMMARY REPORT FOR SW8260B

W.O. Sample Matrix: Soil			QC Matri	x: Soil			Batch	ID: 39981		Work	Order 08118	87
EPA Method SW8260B	Extra	ction SW	5030B					5	Spiked Sar	nple ID	: 0812001-0)03A
Analyte	Sample	Spiked	MS	MSD	MS-MSD	LCS	LCSD	LCS-LCSD	Acc	eptance	e Criteria (%))
, individ	mg/Kg	mg/Kg	% Rec.	% Rec.	% RPD	% Rec.	% Rec.	% RPD	MS / MSD	RPD	LCS/LCSD	RPD
tert-Amyl methyl ether (TAME)	ND	0.050	82.1	78.9	4.05	81.8	82.9	1.29	60 - 130	30	60 - 130	30
t-Butyl alcohol (TBA)	ND	0.25	81.4	76.9	5.61	78.9	81.3	2.99	60 - 130	30	60 - 130	30
1,2-Dibromoethane (EDB)	ND	0.050	84.6	82.7	2.17	87.7	84.6	3.59	60 - 130	30	60 - 130	30
1,2-Dichloroethane (1,2-DCA)	ND	0.050	88	85.9	2.38	88.2	88.8	0.718	60 - 130	30	60 - 130	30
Diisopropyl ether (DIPE)	ND	0.050	104	103	0.994	104	105	1.37	60 - 130	30	60 - 130	30
Ethyl tert-butyl ether (ETBE)	ND	0.050	94	92.6	1.57	95.6	97.1	1.63	60 - 130	30	60 - 130	30
Methyl-t-butyl ether (MTBE)	ND	0.050	82.2	80.3	2.39	82.9	82.6	0.349	60 - 130	30	60 - 130	30
%SS1:	83	0.12	95	96	0.321	97	97	0	70 - 130	30	70 - 130	30
All target compounds in the Method NONE	Blank of this	extraction	batch we	re ND les	s than the	method R	L with th	e following	exceptions:			

BATCH 39981 SUMMARY

Lab ID	Date Sampled	Date Extracted	Date Analyzed	Lab ID	Date Sampled	Date Extracted	Date Analyzed
0811887-022A	11/26/08 12:40 PM	11/28/08	12/03/08 2:08 AM	0811887-025A	11/26/08 2:00 PM	11/28/08	12/02/08 11:17 PM
0811887-026A	11/26/08 2:05 PM	11/28/08	12/03/08	0811887-029A	11/26/08 2:30 PM	11/28/08	12/03/08 12:43 AM
0811887-032A	11/26/08	11/28/08	12/03/08 1:25 AM				

MS = Matrix Spike; MSD = Matrix Spike Duplicate; LCS = Laboratory Control Sample; LCSD = Laboratory Control Sample Duplicate; RPD = Relative Percent Deviation.

% Recovery = 100 * (MS-Sample) / (Amount Spiked); RPD = 100 * (MS - MSD) / ((MS + MSD) / 2).

MS / MSD spike recoveries and / or %RPD may fall outside of laboratory acceptance criteria due to one or more of the following reasons: a) the sample is inhomogenous AND contains significant concentrations of analyte relative to the amount spiked, or b) the spiked sample's matrix interferes with the spike recovery.

N/A = not enough sample to perform matrix spike and matrix spike duplicate.

NR = analyte concentration in sample exceeds spike amount for soil matrix or exceeds 2x spike amount for water matrix or sample diluted due to high matrix or analyte content.

Laboratory extraction solvents such as methylene chloride and acetone may occasionally appear in the method blank at low levels.





"When Ouality Counts"

QC SUMMARY REPORT FOR WET CHEMISTRY TESTS

Test Method: D	ensity of Soil		Matrix: S			WorkOrder: 0811887
Method Name:	APIRP40_BD modified		Units ± g/ml			BatchID: 39935
Lab ID	Sample	DF	Dup / Ser. Dil.	DF	% RPD	Acceptance Criteria (%)
0811887-011A	1.9	1	1.9	1	0	<20
0811887-013A	1.9	1	1.9	1	0	<20
Lab ID 0811887-011A Test Method: P	Date Sampled Date Ext 1/26/08 10:30 AM 12/0 ercent Moisture	BAT tracted Date An 01/08 12/01/08 3	CH 39935 SUMMARY alyzed Lab ID 3:20 PM 0811887-0 Matrix: S	Date	Sampled Date	Extracted Date Analyzed 12/01/08 12/01/08 3:30 PM WorkOrder: 0811887
Method Name:	ASTMD2216-92		Units ±, wet	wt%		BatchID: 39905
Lab ID	Sample	DF	Dup / Ser. Dil.	DF	% RPD	Acceptance Criteria (%)
0811887-011A	13.1	1	13.7	1	4.76	<15
0811887-013A	14.8	1	15.2	1	2.89	<15

Dup = Duplicate; Ser. Dil. = Serial Dilution; MS = Matrix Spike; RD = Relative Difference; RPD = Relative Percent Deviation.

Precision = Absolute Value (Sample - Duplicate)

RPD = 100 * (Sample - Duplicate) / [(Sample + Duplicate) / 2]

%RPD is calculated using results of up to 10 significant figures, however the reported results are rounded to 2 or 3 significant figures. Therefore there may be a slight discrepancy between the %RPD displayed above and %RPD calculated using the reported results. MAI considers %RPD based upon more significant figures to be more accurate.

1534 Willow Pass Road, Pittsburg, CA 94565-1701 Web: www.mccampbell.com E-mail: main@mccampbell.com Telephone: 877-252-9262 Fax: 925-252-9269

"When Ouality Counts"

QC SUMMARY REPORT FOR SW8021B/8015Cm

W.O. Sample Matrix: Soil			QC Matriz	x: Soil			Batch	D: 39933		WorkC	Order 08118	87
EPA Method SW8021B/8015Cm	Extra	ction SW	5030B					s	Spiked San	nple ID	: 0811829-0	01A
Analyte	Sample	Spiked	MS	MSD	MS-MSD	LCS	LCSD	LCS-LCSD	Acce	eptance	Criteria (%)	
	mg/Kg	mg/Kg	% Rec.	% Rec.	% RPD	% Rec.	% Rec.	% RPD	MS / MSD	RPD	LCS/LCSD	RPD
TPH(btex ^f	ND	0.60	101	98.8	2.47	95.1	110	14.7	70 - 130	20	70 - 130	20
MTBE	ND	0.10	88	87.4	0.658	84.1	87.4	3.80	70 - 130	20	70 - 130	20
Benzene	ND	0.10	91.1	83.4	8.91	84.1	87.3	3.77	70 - 130	20	70 - 130	20
Toluene	ND	0.10	94.5	87.4	7.80	92	92	0	70 - 130	20	70 - 130	20
Ethylbenzene	ND	0.10	101	94.1	7.37	99.7	97.9	1.88	70 - 130	20	70 - 130	20
Xylenes	ND	0.30	116	106	8.46	115	112	2.75	70 - 130	20	70 - 130	20
%SS:	86	0.10	115	107	6.92	115	110	4.00	70 - 130	20	70 - 130	20
All target compounds in the Method B NONE	lank of this	extraction	batch we	re ND les	s than the	method R	L with th	e following o	exceptions:			

			BATCH 39933 SU	<u>JMMARY</u>			
Lab ID	Date Sampled	Date Extracted	Date Analyzed	Lab ID	Date Sampled	Date Extracted	Date Analyzed
0811887-001A	11/26/08	11/28/08	12/02/08 3:11 AM	0811887-001A	11/26/08	11/28/08	12/03/08 5:38 AM
0811887-002A	11/26/08 7:45 AM	11/28/08	12/03/08 7:38 PM	0811887-005A	11/26/08 8:05 AM	11/28/08	12/03/08 8:45 PM
0811887-009A	11/26/08 8:30 AM	11/28/08	12/02/08 5:52 AM	0811887-010A	11/26/08 10:10 AM	11/28/08	12/03/08 6:59 AM
0811887-019A	11/26/08 12:10 PM	11/28/08	12/02/08 6:22 AM	0811887-022A	11/26/08 12:40 PM	11/28/08	12/02/08 5:22 AM
0811887-025A	11/26/08 2:00 PM	11/28/08	12/03/08 7:49 AM	0811887-026A	11/26/08 2:05 PM	11/28/08	12/04/08 11:54 PM
0811887-029A	11/26/08 2:30 PM	11/28/08	12/02/08 9:53 AM	0811887-032A	11/26/08	11/28/08	12/05/08 5:47 AM

MS = Matrix Spike; MSD = Matrix Spike Duplicate; LCS = Laboratory Control Sample; LCSD = Laboratory Control Sample Duplicate; RPD = Relative Percent Deviation.

% Recovery = 100 * (MS-Sample) / (Amount Spiked); RPD = 100 * (MS - MSD) / ((MS + MSD) / 2).

MS / MSD spike recoveries and / or %RPD may fall outside of laboratory acceptance criteria due to one or more of the following reasons: a) the sample is inhomogenous AND contains significant concentrations of analyte relative to the amount spiked, or b) the spiked sample's matrix interferes with the spike recovery.

£ TPH(btex) = sum of BTEX areas from the FID.

cluttered chromatogram; sample peak coelutes with surrogate peak.

N/A = not enough sample to perform matrix spike and matrix spike duplicate.

NR = matrix interference and/or analyte concentration in sample exceeds spike amount for soil matrix or exceeds 2x spike amount for water matrix or sample diluted due to high matrix or analyte content.





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"When Ouality Counts"

QC SUMMARY REPORT FOR SM5310B

W.O. Sample Matrix: Soil			QC Matri	k: Soil			Batch	ID: 39840		WorkC	Order 08118	87
EPA Method SM5310B	Extra	ction SM	5310B					s	Spiked San	nple ID	: 0811698-0	04A
Analyte	Sample	Spiked	MS	MSD	MS-MSD	LCS	LCSD	LCS-LCSD	Acce	eptance	Criteria (%)	
, in all to	mg/Kg	mg/Kg	% Rec.	% Rec.	% RPD	% Rec.	% Rec.	% RPD	MS / MSD	RPD	LCS/LCSD	RPD
ТОС	230	8200	103	104	1.22	101	99.8	1.55	70 - 130	20	80 - 120	20
All target compounds in the Method B NONE	lank of this	extraction	batch we	re ND les	s than the	method R	L with th	e following o	exceptions:			

BATCH 39840 SUMMARY

Lab ID	Date Sampled	Date Extracted	Date Analyzed	Lab ID	Date Sampled	Date Extracted	Date Analyzed
0811887-011A	11/26/08 10:30 AM	12/03/08	12/03/08 8:47 PM	0811887-011A	11/26/08 10:30 AM	12/03/08	12/03/08 9:40 PM
0811887-013A	11/26/08 11:15 AM	12/03/08	12/03/08 9:01 PM	0811887-013A	11/26/08 11:15 AM	12/03/08	12/03/08 9:56 PM

MS = Matrix Spike; MSD = Matrix Spike Duplicate; LCS = Laboratory Control Sample; LCSD = Laboratory Control Sample Duplicate; RPD = Relative Percent Deviation.

% Recovery = 100 * (MS-Sample) / (Amount Spiked); RPD = 100 * (MS - MSD) / ((MS + MSD) / 2).

MS / MSD spike recoveries and / or %RPD may fall outside of laboratory acceptance criteria due to one or more of the following reasons: a) the sample is inhomogenous AND contains significant concentrations of analyte relative to the amount spiked, or b) the spiked sample's matrix interferes with the spike recovery.

N/A = not applicable to this method.

NR = analyte concentration in sample exceeds spike amount for soil matrix or exceeds 2x spike amount for water matrix or sample diluted due to high matrix or analyte content.

DHS ELAP Certification 1644

QA/QC Officer

McCampbell An "When Ouality	nalytical, Inc.	1534 Will Web: www.mc Telepho	low Pass Road, Pittsburg, campbell.com E-mail: m one: 877-252-9262 Fax:	CA 94565-1701 ain@mccampbell.com 925-252-9269
AEI Consultants	Client Project ID: #28034	6; Alaska Gas	Date Sampled:	11/26/08
2500 Camino Diablo, Ste. #200			Date Received:	11/26/08
Walnut Creek, CA 94597	Client Contact: Jeremy Sr	nith	Date Reported:	12/05/08
Wallat Creek, Cri 9 1897	Client P.O.: WC081040		Date Completed:	12/15/08

WorkOrder: 0811887

December 15, 2008

Dear Jeremy:

Enclosed within are:

- 1) The results of the 6 analyzed samples from your project: **#280346; Alaska Gas**,
- 2) A QC report for the above samples,
- 3) A copy of the chain of custody, and
- 4) An invoice for analytical services.

All analyses were completed satisfactorily and all QC samples were found to be within our control limits.

If you have any questions or concerns, please feel free to give me a call. Thank you for choosing

McCampbell Analytical Laboratories for your analytical needs.

Best regards,

Angela Rydelius Laboratory Manager McCampbell Analytical, Inc.

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1534 Willow Pass Rd

CHAIN-OF-CUSTODY RECORD

Page 1 of 1

Pittsburg, C2 (925) 252-92	A 94565-1701 262				V	WorkO	order:	081188	A A		Client(Code: A	AEL				
			Write	eOn 🔽 EDF	Ľ	Excel	[Fax		🖌 Email	l	Hard	Сору	🗌 Thir	rdParty	J-	flag
Report to:							Bill to:						Rec	quested	TAT:	5	days
Jeremy SmithEmail:jasmirAEI Consultantscc:2500 Camino Diablo, Ste. #200PO:WC08Walnut Creek, CA 94597ProjectNo:#2803(925) 944-2899FAX(925) 944-2895			jasmith@aei WC081040 #280346; Ala	consultants.com ska Gas			De AE 250 Wa dm	nise Mo I Consu 00 Carr alnut Cr nockel@	ockel ultants hino Dia eek, C. 2aeico	ablo, St A 94597 nsultant	e. #200 7 ts.com	Date Received: 11/2 #200 Date Add-On: 12/0 Date Printed: 12/0 com					
									Req	uested	Tests	(See le	gend b	elow)			
Lab ID	Client ID		Matrix	Collection Date	Hold	1	2	3	4	5	6	7	8	9	10	11	12
0811887-003	DDP-2-10.5		Soil	11/26/2008 7:50		Α	А										
0811887-007	DDP-2-26.5		Soil	11/26/2008 8:10		Α	А										
0811887-012	DDP-3-7.5		Soil	11/26/2008 11:10		Α	А										
0811887-015	DDP-3-12.5		Soil	11/26/2008 11:30		Α	А										
0811887-017	DDP-3-20.5		Soil	11/26/2008 11:50		А	А										
0811887-024	DDP-4-3.5		Soil	11/26/2008 13:55		Α	А										

Test Legend:

1	9-OXYS_S
6	
11	

2	G-MBTEX_S	
7		
12		

3	
8	

4		
9		

5	
10	

Prepared by: Rosa Venegas

Comments: Gmbtex and 9 oxys added on 12/08/08 on a std tat per J.S/ Fax

NOTE: Soil samples are discarded 60 days after results are reported unless other arrangements are made (Water samples are 30 days). Hazardous samples will be returned to client or disposed of at client expense.

McCampbell An "When Quality	nalyti Counts"	cal, In	<u>c.</u>	1534 Willow Pass Road, Pittsburg, CA 94565-1701 Web: www.mccampbell.com E-mail: main@mccampbell.com Telephone: 877-252-9262 Fax: 925-252-9269								
AEI Consultants		Client Pr	oject ID:	#28034	6; Alaska Gas	Date Sampled:	11/26/08					
2500 Camino Diablo Ste #200						Date Received:	11/26/08					
2500 Culturio Dialoto, 500. #200		Client Co	ontact: Je	Date Extracted:	12/08/08							
Walnut Creek, CA 94597		Client P.0	D.: WC08	12/10/08-12/13/08								
Oxygenat	ed Vola	tile Organ	nics + EDB	B and 1,2-DCA by P&T and GC/MS*								
Extraction Method: SW5030B		Anal	ytical Method	: SW826	0B		Work Order:	0811887				
Lab ID	87-003A	0811887-	-007A	0811887-012A	0811887-015A	-						
Client ID	2-2-10.5	DDP-2-	26.5	DDP-3-7.5	DDP-3-12.5	Reporting DF	Limit for					
Matrix	S	S		S	S							
DF		100	1		100	20	S	W				
Compound			Conce	entration		mg/kg	ug/L					
tert-Amyl methyl ether (TAME)	NE	0<0.50	ND		1.1	ND<0.10	0.005	NA				
t-Butyl alcohol (TBA)		12	2 ND		ND<5.0	12	0.05	NA				
1,2-Dibromoethane (EDB)	2-Dibromoethane (EDB) NE				ND<0.40	ND<0.080	0.004	NA				
1,2-Dichloroethane (1,2-DCA)	NE	0<0.40	40 ND		ND<0.40	ND<0.080	0.004	NA				
Diisopropyl ether (DIPE)	NE	ND<0.50			ND<0.50	ND<0.10	0.005	NA				
Ethanol	N	D<50	ND		ND<50	ND<10	0.5	NA				
Ethyl tert-butyl ether (ETBE)	NE	0<0.50	ND		ND<0.50	ND<0.10	0.005	NA				
Methanol	NI	D<500	ND		ND<500	ND<100	5.0	NA				
Methyl-t-butyl ether (MTBE)		8.0	0.14	ļ	11	0.78	0.005	NA				
	-	Surr	ogate Rec	overie	s (%)							
%SS1:		105	103		103	87						
Comments												
* water and vapor samples are reported in extracts are reported in mg/L, wipe samp ND means not detected above the report	n μg/L, so les in μg/ ing limit	oil/sludge/so wipe. ; N/A mean	olid samples s analyte no	in mg/k t applic	g, product/oil/non-a able to this analysis	queous liquid sample	es and all TC	LP & SPLP				
# surrogate diluted out of range or coelu	tes with a	nother peal	k; &) low su	rrogate	due to matrix interf	erence.						

McCampbell An "When Quality"	nalyti Counts"	cal, In	<u>c.</u>	1534 Willow Pass Road, Pittsburg, CA 94565-1701 Web: www.mccampbell.com E-mail: main@mccampbell.com Telephone: 877-252-9262 Fax: 925-252-9269							
AEI Consultants	Client Pr	oject ID:	#28034	6; Alaska Gas	Date Sampled:	11/26/08					
2500 Camino Diablo Ste #200				11/26/08							
2500 Camino Diaolo, Stc. #200		Client Co	ontact: Je	12/08/08							
Walnut Creek, CA 94597		Client P.0	12/10/08-12	2/13/08							
Oxygenat Extraction Method: SW5030B	ed Vola	t ile Orgar Anal	nics + EDE ytical Method	and 1, : SW826	2-DCA by P&T ^{0B}	and GC/MS*	Work Order:	0811887			
Lab ID	87-017A	0811887	-024A								
Client ID	Client ID DDP		DDP-4	-3.5			Reporting DF	Limit for =1			
Matrix	S	S					r				
DF	2	1				S	W				
Compound		Conce	entration		mg/kg	ug/L					
tert-Amyl methyl ether (TAME)	ND	ND<0.010					0.005	NA			
t-Butyl alcohol (TBA)	NE	0<0.10	ND				0.05	NA			
1,2-Dibromoethane (EDB)	ND<	<0.0080	ND				0.004	NA			
1,2-Dichloroethane (1,2-DCA)	ND<	<0.0080	ND				0.004	NA			
Diisopropyl ether (DIPE)	ND	< 0.010	ND				0.005	NA			
Ethanol	NI	D<1.0	ND				0.5	NA			
Ethyl tert-butyl ether (ETBE)	ND	< 0.010	ND				0.005	NA			
Methanol	N	D<10	ND				5.0	NA			
Methyl-t-butyl ether (MTBE)	().18	0.05	5			0.005	NA			
		Surr	ogate Rec	overies	s (%)						
%SS1:		108	106	i							
Comments											
* water and vapor samples are reported in extracts are reported in mg/L, wipe sample ND means not detected above the report	μg/L, so les in μg/ ing limit	oil/sludge/so /wipe. ; N/A mean	olid samples s analyte no	in mg/k; t applica	g, product/oil/non-a able to this analysi	iqueous liquid sample	s and all TC	LP & SPLP			
# surrogate diluted out of range or coelu	es with a	another peal	s; &) low su	rrogate	due to matrix inter	ference.					

When Ouality Counts"						1534 Willow Pass Road, Pittsburg, CA 94565-1701 Web: www.mccampbell.com E-mail: main@mccampbell.com Telephone: 877-252-9262 Fax: 925-252-9269									
AEI C	Consultants		Client Projec	Client Project ID: #280346; Alaska Gas					Date Sampled: 11/26/08						
2500 ([•] amino Diablo Ste #	200					Date R	Date Received: 11/26/08							
2500		200	Client Conta	Client Contact: Jeremy Smith					Date Extracted: 12/08/08						
Walnı	ut Creek, CA 94597		Client P.O.:	WC081	1040		Date A	nalyzed 12/0	09/08-12/12/	08					
	Ga	soline Ra	ange (C6-C12) Volati	le Hydi	rocarbor	ıs as Gasolir	ne with BTH	EX and MTBI	E*						
Extraction	Client ID	Matrix	Ar TPH(g)	alytical m	ATBE	Benzene	n Toluene	Ethylbenzene	Work Ord Xylenes	DF	% SS				
003A	DDP-2-10.5	S	14,d1		20	0.045	0.13	0.040	0.14	1	104				
007A	DDP-2-26.5	S	ND		0.14	ND	ND	ND	ND	1	97				
012A	DDP-3-7.5	S	930,d1	N	ID<15	1.7	23	11	73	50	#				
015A	DDP-3-12.5	S	ND		1.8	ND	0.0075	ND	0.013	1	91				
017A	DDP-3-20.5	S	ND		0.26	ND	ND	ND	ND	1	77				
024A	DDP-4-3.5	S	ND	ND (ND	ND	ND	ND	1	97				
				_											
				_											
				_											
Repo	rting Limit for DF =1;	W	50		5.0	0.5	0.5 0.5		0.5 ug/		g/L				
abo	ve the reporting limit	S	1		0.05	0.005	0.005	0.005	0.005	mg	/Kg				

* water and vapor samples and all TCLP & SPLP extracts are reported in µg/L, soil/sludge/solid samples in mg/kg, wipe samples in µg/wipe, product/oil/non-aqueous liquid samples in mg/L.

cluttered chromatogram; sample peak coelutes w/surrogate peak; low surrogate recovery due to matrix interference.

+The following descriptions of the TPH chromatogram are cursory in nature and McCampbell Analytical is not responsible for their interpretation:

d1) weakly modified or unmodified gasoline is significant





"When Ouality Counts"

QC SUMMARY REPORT FOR SW8260B

W.O. Sample Matrix: Soil	QC Matrix: Soil					BatchID: 40126				WorkOrder 0811887		
EPA Method SW8260B	Extra	ction SW	5030B					ę	Spiked Sar	nple ID	: 0812203-0)01A
Analyte	Sample	Spiked	MS	MSD	MS-MSD	LCS	LCSD	LCS-LCSD	Acc	eptance	e Criteria (%))
, mary to	mg/Kg	mg/Kg	% Rec.	% Rec.	% RPD	% Rec.	% Rec.	% RPD	MS / MSD	RPD	LCS/LCSD	RPD
tert-Amyl methyl ether (TAME)	ND	0.050	85.3	83.5	2.09	88.6	89.6	1.07	60 - 130	30	60 - 130	30
t-Butyl alcohol (TBA)	ND	0.25	85.3	84.1	1.49	93.1	89.9	3.46	60 - 130	30	60 - 130	30
1,2-Dibromoethane (EDB)	ND	0.050	87.5	84.6	3.35	91.4	92.5	1.17	60 - 130	30	60 - 130	30
1,2-Dichloroethane (1,2-DCA)	ND	0.050	93.9	92.7	1.30	98.9	97.2	1.78	60 - 130	30	60 - 130	30
Diisopropyl ether (DIPE)	ND	0.050	114	114	0	118	118	0	60 - 130	30	60 - 130	30
Ethyl tert-butyl ether (ETBE)	ND	0.050	101	99	1.48	105	104	0.331	60 - 130	30	60 - 130	30
Methyl-t-butyl ether (MTBE)	ND	0.050	86.4	85.3	1.27	90.3	89	1.48	60 - 130	30	60 - 130	30
%SS1:	84	0.12	91	90	0.787	90	90	0	70 - 130	30	70 - 130	30
All target compounds in the Method NONE	Blank of this	extraction	batch we	re ND les	s than the	method R	L with th	e following	exceptions:			

BATCH 40126 SUMMARY

Lab ID	Date Sampled	Date Extracted Date Analyzed		Lab ID	Date Sampled	Date Extracted	Date Analyzed
0811887-003A	11/26/08 7:50 AM	12/08/08	12/13/08 2:53 PM	0811887-007A	11/26/08 8:10 AM	12/08/08	12/12/08 11:16 PM
0811887-012A	11/26/08 11:10 AM	12/08/08	12/13/08 3:36 PM	0811887-015A	11/26/08 11:30 AM	12/08/08	12/10/08 1:43 AM
0811887-017A	11/26/08 11:50 AM	12/08/08	12/13/08 12:42 AM	0811887-024A	11/26/08 1:55 PM	12/08/08	12/13/08 1:25 AM

MS = Matrix Spike; MSD = Matrix Spike Duplicate; LCS = Laboratory Control Sample; LCSD = Laboratory Control Sample Duplicate; RPD = Relative Percent Deviation.

% Recovery = 100 * (MS-Sample) / (Amount Spiked); RPD = 100 * (MS - MSD) / ((MS + MSD) / 2).

MS / MSD spike recoveries and / or %RPD may fall outside of laboratory acceptance criteria due to one or more of the following reasons: a) the sample is inhomogenous AND contains significant concentrations of analyte relative to the amount spiked, or b) the spiked sample's matrix interferes with the spike recovery.

N/A = not enough sample to perform matrix spike and matrix spike duplicate.

NR = analyte concentration in sample exceeds spike amount for soil matrix or exceeds 2x spike amount for water matrix or sample diluted due to high matrix or analyte content.

Laboratory extraction solvents such as methylene chloride and acetone may occasionally appear in the method blank at low levels.



"When Ouality Counts"

QC SUMMARY REPORT FOR SW8021B/8015Cm

W.O. Sample Matrix: Soil	(QC Matrix: Soil					ID: 40140	WorkOrder: 0811887					
EPA Method SW8021B/8015Cm Extraction SW5030B								5	Spiked San	nple ID	: 0812281-0	001A	
Analyte	Sample	Sample Spiked MS MSD MS-MSD					LCSD	LCS-LCSD	D Acceptance Criteria (%)				
Analyte	mg/Kg	mg/Kg	% Rec.	% Rec.	% RPD	% Rec.	% Rec.	% RPD	MS / MSD	RPD	LCS/LCSD	RPD	
TPH(btex ^f	ND	0.60	97.2	96.5	0.803	118	99.9	16.2	70 - 130	20	70 - 130	20	
MTBE	ND	0.10	102	96.5	5.14	104	116	11.2	70 - 130	20	70 - 130	20	
Benzene	ND	0.10	86.2	89	3.09	94	103	8.89	70 - 130	20	70 - 130	20	
Toluene	ND	0.10	78.4	80.3	2.31	84.4	91.9	8.52	70 - 130	20	70 - 130	20	
Ethylbenzene	ND	0.10	92.5	95.7	3.47	97.8	104	6.38	70 - 130	20	70 - 130	20	
Xylenes	ND	0.30	91.2	94.5	3.52	97	102	5.40	70 - 130	20	70 - 130	20	
%SS:	89	0.10	93	102	9.30	96	96	0	70 - 130	20	70 - 130	20	
All target compounds in the Method B NONE	lank of this	extraction	batch we	re ND les	s than the	method R	L with th	e following	exceptions:				

Lab ID	Date Sampled	Date Extracted	Date Analyzed	Lab ID	Date Sampled	Date Extracted	Date Analyzed
0811887-003A	11/26/08 7:50 AM	12/08/08	12/10/08 11:53 PM	0811887-003A	11/26/08 7:50 AM	12/08/08	12/12/08 10:03 AM
0811887-007A	11/26/08 8:10 AM	12/08/08	12/11/08 8:38 PM	0811887-012A	11/26/08 11:10 AM	12/08/08	12/09/08 11:39 AM
0811887-015A	11/26/08 11:30 AM	12/08/08	12/11/08 6:30 PM	0811887-017A	11/26/08 11:50 AM	12/08/08	12/12/08 9:30 AM
0811887-024A	11/26/08 1:55 PM	12/08/08	12/11/08 9:08 PM				

MS = Matrix Spike; MSD = Matrix Spike Duplicate; LCS = Laboratory Control Sample; LCSD = Laboratory Control Sample Duplicate; RPD = Relative Percent Deviation.

% Recovery = 100 * (MS-Sample) / (Amount Spiked); RPD = 100 * (MS - MSD) / ((MS + MSD) / 2).

MS / MSD spike recoveries and / or %RPD may fall outside of laboratory acceptance criteria due to one or more of the following reasons: a) the sample is inhomogenous AND contains significant concentrations of analyte relative to the amount spiked, or b) the spiked sample's matrix interferes with the spike recovery.

£ TPH(btex) = sum of BTEX areas from the FID.

cluttered chromatogram; sample peak coelutes with surrogate peak.

N/A = not enough sample to perform matrix spike and matrix spike duplicate.

NR = matrix interference and/or analyte concentration in sample exceeds spike amount for soil matrix or exceeds 2x spike amount for water matrix or sample diluted due to high matrix or analyte content.













McCampbell An "When Ouality	nalytical, Inc.	1534 Will Web: www.mc Telepho	ow Pass Road, Pittsburg, campbell.com E-mail: m one: 877-252-9262 Fax:	CA 94565-1701 ain@mccampbell.com 925-252-9269
AEI Consultants	Client Project ID: #28034	6; Alaska Gasoline	Date Sampled:	12/03/08
2500 Camino Diablo, Ste. #200			Date Received:	12/03/08
Walnut Creek, CA 94597	Client Contact: Jeremy Su	nith	Date Reported:	12/12/08
	Client P.O.: #WC081083		Date Completed:	12/12/08

WorkOrder: 0812127

December 12, 2008

Dear Jeremy:

Enclosed within are:

- 1) The results of the 7 analyzed samples from your project: **#280346; Alaska Gasoline,**
- 2) A QC report for the above samples,
- 3) A copy of the chain of custody, and
- 4) An invoice for analytical services.

All analyses were completed satisfactorily and all QC samples were found to be within our control limits.

If you have any questions or concerns, please feel free to give me a call. Thank you for choosing

McCampbell Analytical Laboratories for your analytical needs.

Best regards,

Angela Rydelius Laboratory Manager McCampbell Analytical, Inc.

McCAMPBELL ANALYTICAL INC. 1534 Willow Pass Road Pittsburg, CA 94565-1701 www.main@mccampbell.com Telephone: (925) 252-9262 Fax: (925) 252-9269					TURN AF	CHA ROUND T ed? Coelt (I	AIN OF IME Normal)	CUST	ODY R	ECOR	D	DAY
Report To: Jeremy Smith Bill To: P.O. No. WC081083					All and the second	C.C.		Lab Use	Only			
Company: AEI Consultant	s				Contra Carrier				Second	Pr	essurizati	on Gas
2500 Camino D	iablo				Р	ressurized	By		Date			
Walnut Creek,	CA		E-Mail: jasmith@a	eiconsultants.com						1	N2	He
Tele: (925) 746-6028	11		Fax: (925)944	-2895		and the second			State State			1.57.64
Project #: 280346			Project Name: A	laska Gasoline	and the second second							
Project Location: 6211 San	Pabló A	venue, C	Dakland, CA								1000 100 100	
Sampler Signature:		212			Notes: Ison	ronyl Alco	hol as Lea	k Checl	Compou	nd - ren	art as dete	cted or
Field Sample ID	Coll	ection)	Samplar Vit SN#	not detected	l at 10 ug/I	,		. compou)
(Location)		-	Canister SN#	Sampler Kit Siv#	Analysis Requested Indoor			Soil	Ca	nister Pres	essure/Vacuum	
	Date	Time				Air	Gas	Initial	Final	Receipt	Final (nsi)	
56-1-3	12/3	6837	5803	MAN316-715	TO3 (TPH4)	TOIS BTEX		X				(p31)
SG-1-6	1	0859	5800	MAN 316-722	1	(his						
SG-2-3		1011	5801	MAN316-717								
SG-2-6		1037	5809	MAN 316 - 721								
SG-3-3		1130	5806	MAN 316 -720								
SG-3-6		146	5802	MAN316-725								
SG-3-6-DUP	-10	1200	5804	MAN316-714	V							
Relinquished By	Date:	Time:	Received By: K. Blur 108	/	Temp (°C): N/A Work Order #: 0812127 Condition: 67000 Custody Seals Intact?: Yes No None							
Relinquished By:	Date:	Time:	Received By:									
Relinquished By:	Date:	Time:	Received By:		Shipped Via:		PIH	DE	sp-1			

1534 Willow Pass Rd **C5 1701**

CHAIN-OF-CUSTODY RECORD

Page 1 of 1

(925) 252-92	262					Work	Order	: 0812	127	(Client	Code: A	EL				
			WriteOr	EDF		Excel	ļ	Fax		🖌 Email		Hard	lCopy	Third	dParty	J.	flag
Report to:							Bill to:						Req	uested	TAT:	5	days
Jeremy Smith		Email:	jasmith@aeio	onsultants.com			De	nise M	ockel								-
AEI Consultants 2500 Camino Dia Walnut Creek, Ca (925) 944-2899	ablo, Ste. #200 A 94597 FAX (925) 944-2895	cc: PO: ProjectNo	#WC081083 b: #280346; Ala	ska Gasoline	AEI Consultants 2500 Camino Diablo, Ste. #20 Walnut Creek, CA 94597 dmockel@aeiconsultants.com				e. #20 7 ts.com	00 Date Received: 1 Date Printed: 1 n			12/03/ 12/08/	/2008 /2008			
					Γ				Req	uested	Tests	(See leg	gend b	elow)			
Lab ID	Client ID		Matrix	Collection Date	Hold	1	2	3	4	5	6	7	8	9	10	11	12
0812127-001	SG-1-3		Soil Vapor	12/3/2008 8:37		А		Α									
0812127-002	SG-1-6		Soil Vapor	12/3/2008 8:59			А										
0812127-003	SG-2-3		Soil Vapor	12/3/2008 10:11			А										
0812127-004	SG-2-6		Soil Vapor	12/3/2008 10:37			А										
0812127-005	SG-3-3		Soil Vapor	12/3/2008 11:30			А	1									
0812127-006	SG-3-6		Soil Vapor	12/3/2008 11:46			А										

Test Legend:

0812127-007

1	PREDF REPORT	2	TO15-GMBTE
6		7	
11		12	

X_SOILGAS	3	٦
	8	

Soil Vapor

12/3/2008 12:00

TO3_SOILGAS	

А

4	
9	

5	
10	

The following SampIDs: 001A, 002A, 003A, 004A, 005A, 006A, 007A contain testgroup.

SG-3-6-Dup

Comments:

NOTE: Soil samples are discarded 60 days after results are reported unless other arrangements are made (Water samples are 30 days). Hazardous samples will be returned to client or disposed of at client expense.

Prepared by: Samantha Arbuckle



"When Ouality Counts"

Sample Receipt Checklist

Client Name:	AEI Consultants					Date a	and T	ime Received:	12/3/08 10	:28:16 PM
Project Name:	#280346; Alaska	Gasoli	ne			Check	klist c	completed and re	eviewed by:	Samantha Arbuckle
WorkOrder N°:	0812127	Matrix	<u>Soil Vapor</u>			Carrie	ər:	Client Drop-In		
			<u>Chair</u>	of Cu	stody (CO	C) Informa	ation	<u>1</u>		
Chain of custody	/ present?			Yes	\checkmark	No 🗆				
Chain of custody	v signed when relinqui	shed and	d received?	Yes	\checkmark	No 🗆				
Chain of custody	agrees with sample I	abels?		Yes	✓	No 🗌				
Sample IDs noted	d by Client on COC?			Yes	\checkmark	No 🗆				
Date and Time of	f collection noted by Cli	ent on C	OC?	Yes	\checkmark	No 🗆				
Sampler's name	noted on COC?			Yes	\checkmark	No 🗆				
			<u>s</u>	ample	Receipt In	formatior	<u>1</u>			
Custody seals in	tact on shipping conta	iner/cool	ler?	Yes		No 🗆			NA 🔽	
Shipping contain	er/cooler in good cond	ition?		Yes	\checkmark	No 🗆				
Samples in prop	er containers/bottles?			Yes	\checkmark	No 🗆				
Sample containe	ers intact?			Yes	\checkmark	No 🗆				
Sufficient sample	e volume for indicated	test?		Yes	\checkmark	No 🗌				
		<u>Sa</u>	mple Prese	rvatio	n and Hold	<u>Time (HT</u>	') Info	ormation		
All samples rece	ived within holding tim	e?		Yes	✓	No 🗌				
Container/Temp	Blank temperature			Coole	er Temp:				NA 🗹	
Water - VOA via	Is have zero headspa	ce / no b	ubbles?	Yes		No 🗆	No	VOA vials submi	tted 🗹	
Sample labels ch	necked for correct pres	servation	ו?	Yes	✓	No 🗌				
TTLC Metal - pH	acceptable upon recei	pt (pH<2	2)?	Yes		No 🗆			NA 🗹	
Samples Receive	ed on Ice?			Yes		No 🗹				

* NOTE: If the "No" box is checked, see comments below.

Client contacted:

Date contacted:

Contacted by:

Comments:

McCampbell An "When Ouality	nalytical, Inc.	1534 Will Web: www.mc Telepho	low Pass Road, Pittsburg, campbell.com E-mail: n one: 877-252-9262 Fax:	CA 94565-1701 nain@mccampbell.com 925-252-9269
AEI Consultants	Client Project ID: #280340	6; Alaska Gasoline	Date Sampled:	12/03/08
2500 Camino Diablo, Ste. #200			Date Received:	12/03/08
Walnut Creek, CA 94597	Client Contact: Jeremy Sn	nith	Date Reported:	12/12/08
	Client P.O.: #WC081083		Date Completed:	12/16/08

Work Order: 0812127

December 17, 2008

RE: Leak Check Compound (Isopropyl Alcohol) for MAI Lab ID# 0812127-002A and -004A.

These two samples have a huge gas pattern that interfered with Isopropyl Alcohol's quantitation therefore, IPA was reported as an estimated..



McCampbell An	nalyti _{Counts"}	cal, In	<u>c.</u>		1534 Willow F Web: www.mccamp Telephone: 8	Pass Road, Pittsburg, CA bell.com E-mail: main 277-252-9262 Fax: 92:	94565-1701 @mccampbell.c 5-252-9269	om
AEI Consultants		Client Pr	oject ID:	#28034	6; Alaska	Date Sampled:	12/03/08	
		Gasoline				Date Received:	12/03/08	
2500 Camino Diablo, Ste. #200		Client Co	ontact: Ie	remy Si	mith	Date Extracted:	12/08/08-1	2/09/08
Walnut Creek CA 94597		Client D(001002		Data Analyzad	12/02/02 1	2/00/08
			J #WC(1005	~ * *		12/06/06-1	2/09/08
Gasoline Range	(C6-C1	2) Volatile	e Hydroca	1. SW802	as Gasoline with	BTEX and MTB	Work Order	0812127
Lab ID	08121	27-002A	0812127	-004A	0812127-005A	0812127-006A		0012127
Client ID	S	G-1-6	SG-2	2-6	SG-3-3	SG-3-6	-	
					0.111	0.111	- Reporting	Limit for
Matrix	Soil	Vapor	Soil Va	apor	Soil Vapor	Soil Vapor	DF and Press	=1 ure Ratio
Initial Pressure (psia)	1	11.38 11.5		5	12.86	11.8	(Final/In	itial) = 2
Final Pressure (psia)	2	22.7	23		25.7	23.58		
DF		20 20			1	1	Soil Vapor	W
Compound				Conce	entration		µg/m³	ug/L
TPH(g)	43	3,000,000	38,0	00,000	470,000	1,200,000	50000	NA
MTBE	ND<	110,000	ND<290	0,000	ND<1200	ND<15,000	5000	NA
Benzene		12,000	41	,000	ND<140	890	500	NA
Toluene		480,000	370	0,000	10,000	26,000	500	NA
Ethylbenzene	ND	<7600	ND<5	400	ND<120	ND<1.5	500	NA
Xylenes		21,000	ND<8	000	750	2300	500	NA
		Surro	ogate Rec	coveries	s (%)			
%SS:		94	119	Ð	102	123		
Comments		a3	a3		a3	a3		
*vapor samples in µg/m ³ .								
# cluttered chromatogram; sample peak c	oelutes	with surroga	ite peak.					
+The following descriptions of the TPH of interpretation:	chromato	ogram are cu	ursory in na	ature and	McCampbell Ana	ytical is not respons	ible for their	

a3) sample diluted due to high organic content / matrix interference.

Angela Rydelius, Lab Manager

McCampbell An "When Ouality	AEL Consultants				Pass Road, Pittsburg, CA bell.com E-mail: main 377-252-9262 Fax: 92	94565-1701 @mccampbell.c 5-252-9269	om	
AEI Consultants		Client Project ID:	#28034	6; Alaska	Date Sampled:	12/03/08		
2500 Comine Dickle Sta #200		Gasoline			Date Received:	12/03/08		
2300 Camino Diabio, Ste. #200		Client Contact: Je	remy S	mith	Date Extracted:	12/08/08-12	2/09/08	
Walnut Creek, CA 94597		Client P.O.: #WC	081083		Date Analyzed 12/08/08-12/09/08			
Gasoline Range	(C6-C1	2) Volatile Hydroca	rbons a	s Gasoline with	BTEX and MTBI	<u>]</u> *		
Extraction Method: SW5030B		Analytical Metho	d: SW802	1B/8015Cm		Work Order:	0812127	
Lab ID	08121	27-007A						
Client ID	SG-3	3-6-Dup						
Matrix	Soil	Vapor				Reporting DF	Limit for =1	
Initial Pressure (psia)	1	1.45				and Press (Final/In	ure Ratio itial) = 2	
Final Pressure (psia)	2	22.8						
DF		1				Soil Vapor	W	
Compound			Conce	entration		μg/m ³	ug/L	
TPH(g)		440,000				50000	NA	
MTBE	ND<	:17,000				5000	NA	
Benzene		570				500	NA	
Toluene		8800				500	NA	
Ethylbenzene	NE	0<390				500	NA	
Xylenes		1100				500	NA	
		Surrogate Rec	overie	s (%)				
%SS:		104						
Comments		a3						
*vapor samples in µg/m ³ .		•		<u>.</u>	•			
# cluttered chromatogram; sample peak c	oelutes v	vith surrogate peak.						
+The following descriptions of the TPH chromatogram are cursory in nature and McCampbell Analytical is not responsible for their interpretation:								

McCampbell An "When Ouality	alytica _{Counts"}	al, Inc	2		1534 Willow P Web: www.mccamp Telephone: 8	ass Road, Pittsburg, CA bell.com E-mail: main 77-252-9262 Fax: 92:	94565-1701 @mccampbell.c 5-252-9269	om	
AEI Consultants	С	lient Pro	ject ID: #	ŧ28034	6; Alaska	Date Sampled:	12/03/08		
2500 Camino Diablo Sta #200	G	asoline				Date Received:	12/03/08		
2500 Camino Diaolo, Ste. #200	C	lient Co	ntact: Jer	emy Sı	nith	Date Extracted:	12/08/08-12	2/09/08	
Walnut Creek, CA 94597	С	lient P.O	0.: #WC08	81083		Date Analyzed	12/08/08-12	2/09/08	
Gasoline Range	(C6-C12)	Volatile	Hvdrocar	bons a	s Gasoline with]	BTEX and MTBE]*		
Extraction Method: SW5030B	(====)	Analy	tical Method:	SW802	1B/8015Cm		Work Order:	0812127	
Lab ID	0812127-	-002A	0812127-0	004A	0812127-005A	0812127-006A			
Client ID	SG-1-	-6	SG-2-	6	SG-3-3	SG-3-6			
Matrix	Soil Va	apor	Soil Vaj	por	Soil Vapor	Soil Vapor	Reporting Limit for DF =1 and Pressure Ratio (Final/Initial) = 2		
Initial Pressure (psia)	11.38	8	11.5		12.86	11.8 (Final/Ini		itial) = 2	
Final Pressure (psia)	22.7	7	23		25.7	23.58			
DF	DF 20 20				1	1	Soil Vapor	W	
Compound				Conce	entration		nL/L	ug/L	
TPH(g)	12,00	00,000	11,00	0,000	130,000	340,000	14000	NA	
МТВЕ	ND<29,	,000	ND<77,0	000	ND<330	ND<4200	1400	NA	
Benzene	36	600	13,	000	ND<44	270	160	NA	
Toluene	130	0,000	97,	000	2700	6800	130	NA	
Ethylbenzene	ND<1,8	800	ND<12	00	ND<29	ND<0.36	120	NA	
Xylenes	47	700	ND<19	00	170	520	120	NA	
		Surro	gate Reco	overies	s (%)				
%SS:	94		119		102	123			
Comments	a3		a3		a3	a3			
vapor samples in nL/L. # cluttered chromatogram; sample peak co	[] vapor samples in nL/L. # cluttered chromatogram; sample peak coelutes with surrogate peak.								

+The following descriptions of the TPH chromatogram are cursory in nature and McCampbell Analytical is not responsible for their interpretation:

a3) sample diluted due to high organic content / matrix interference.

Angela Rydelius, Lab Manager

McCampbell An "When Ouality	alyti _{Counts"}	cal, Inc.		1534 Willow F Web: www.mccamp Telephone: 8	Pass Road, Pittsburg, CA bell.com E-mail: main 377-252-9262 Fax: 92	. 94565-1701 @mccampbell.c 5-252-9269	om	
AEI Consultants		Client Project ID:	#28034	6; Alaska	Date Sampled:	12/03/08 12/03/08 12/08/08-12/09/08 12/08/08-12/09/08 E* Work Order: 0812127 Reporting Limit for DF =1 and Pressure Ratio (Final/Initial) = 2 Soil Vapor W nL/L ug/L 14000 NA 160 NA		
2500 Camino Diablo Ste #200		Gasoline			Date Received:	12/03/08		
2500 Cumilo Diablo, Sic. #200		Client Contact: Je	remy S	mith	Date Extracted:	12/08/08-12	2/09/08	
Walnut Creek, CA 94597		Client P.O.: #WC0	081083		Date Analyzed	12/08/08-12	2/09/08	
Gasoline Range	(C6-C1	2) Volatile Hydroca	rbons a	s Gasoline with	BTEX and MTBI]*		
Extraction Method: SW5030B		Analytical Method	1: SW802	1B/8015Cm		Work Order:	0812127	
Lab ID	08121	27-007A						
Client ID	SG-3	SG-3-6-Dup						
Matrix	Soil	Vapor				Reporting DF	=1	
Initial Pressure (psia)	1	1.45				and Press (Final/In	ure Ratio itial) = 2	
Final Pressure (psia)	2	22.8				-		
DF		1				Soil Vapor	W	
Compound			Conce	entration		nL/L	ug/L	
TPH(g)		120,000				14000	NA	
МТВЕ	ND	<4400				1400	NA	
Benzene		170				160	NA	
Toluene		2300				130	NA	
Ethylbenzene	N	D<89				120	NA	
Xylenes		240				120	NA	
		Surrogate Rec	overie	s (%)				
%SS:		104						
Comments		a3						
*vapor samples in nL/L. # cluttered chromatogram; sample peak coelutes with surrogate peak. +The following descriptions of the TPH chromatogram are cursory in nature and McCampbell Analytical is not responsible for their interpretation:								

a3) sample diluted due to high organic content / matrix interference.

	McCampbell Analy "When Ouality Coun	z tical, I	<u>nc.</u>	15 Web: w	34 Willow I ww.mccamp Telephone: 8	Pass Road, Pittsburg, CA 945 obell.com E-mail: main@mc 377-252-9262 Fax: 925-252	65-1701 ccampbell.com 2-9269	
AEI C	Consultants	Client	Project ID: #	280346; Alasl	ka	Date Sampled: 12/	/03/08	
2500	Camino Diablo. Ste. #200	Gasolii	ne			Date Received: 12/	/03/08	
		Client	Contact: Jere	emy Smith		Date Extracted: 12/	04/08-12/1	2/08
Walnu	at Creek, CA 94597	Client	P.O.: #WC08	1083		Date Analyzed 12/	/04/08-12/1	2/08
]	Leak Check C	Compound*			101 00	
Extraction	n method: TO15	Motein	Analytical met	Final Pressure		Wor	rk Order: 08	0 55
		Iviatrix	Initial Pressure	Filial Plessure		Теоргоруї Атеоної	DF	% 55
001A	SG-1-3	Soil Vapor	12.56	25.1		ND	1	N/A
002A	SG-1-6	Soil Vapor	11.38	22.7		ND,j1	1	N/A
003A	SG-2-3	Soil Vapor	10.44	20.88		ND	4	N/A
004A	SG-2-6	Soil Vapor	11.5	23		ND,j1	1	N/A
005A	SG-3-3	Soil Vapor	12.86	25.7		ND	1	N/A
006A	SG-3-6	Soil Vapor	11.8	23.58		ND	1	N/A
007A	SG-3-6-Dup	Soil Vapor	11.45	22.8		ND	1	N/A
	Reporting Limit for DF =1;	W	psia	psia		NA	N	IA
	ND means not detected at or above the reporting limit	Soil Vapor	psia	psia		10	μ	g/L

* leak check compound is reported in µg/L.

ND means not detected above the reporting limit; N/A means analyte not applicable to this analysis.

The IPA reference is:

DTSC, Advisory-Active Soil Gas Investigations, January 28, 2003, page 10, section 2.4.2:

"Tracer compounds, such as ...isopropanol..., may be used as leak check compounds, if a detection limit of 10 ug/L or less can be achieved." This implies that 10 μ g/L is the cut off definition for a leak, which equals 10,000 μ g/m³.

The other low IPA hits may be due to extremely small leaks or may be naturally occuring in soil gas, particularly at biologically active sites.

j1) see attached narrative



McCampbell An "When Ouality	alyti	cal, In	<u>c.</u>		1534 Willow F Web: www.mccamp Telephone: 8	Pass Road, Pittsburg, CA bell.com E-mail: mair 377-252-9262 Fax: 92	94565-1701 @mccampbell.c 5-252-9269	om									
AEI Consultants		Client Pro	oject ID:	#28034	6; Alaska	Date Sampled:	12/03/08										
2500 Carrier D'11, St. #200		Gasoline				Date Received:	12/03/08										
2500 Camino Diabio, Ste. #200		Client Co	ontact: Je	remy Sı	nith	Date Extracted:	12/04/08-1	2/12/08									
Walnut Creek, CA 94597		Client P.0	D.: #WC0)81083		Date Analyzed	12/04/08-1	2/12/08									
		Volatile O	rganic Co	mpour	nds in ug/m ^{3*}												
Extraction Method: TO15		Anal	ytical Method	1: TO15	на» III р.g, III		Work Order:	0812127									
Lab ID	08121	27-001A	0812127	-003A													
Client ID	S	G-1-3	SG-2	2-3			-										
Matrix	Soil	Vapor	Soil V	apor			- Reporting DF	Limit for =1									
Initial Pressure (psia)	1	2.56	10.4	4			and Press	ure Ratio									
Einel Decement (poin)		25.1 20.88					-	1111) – 2									
Final Pressure (psia)		.5.1	20.8	.8			-										
DF	DF 1 4					Soil Vapor	W										
Compound				Conce	entration		μg/m³	ug/L									
Benzene		ND	ND<	26			6.5	NA									
Ethylbenzene		10	ND<	35			8.8	NA									
Methyl-t-butyl ether (MTBE)		ND	4	70			7.3	NA									
Toluene		25	ND<	31			7.7	NA									
Xylenes		39	ND<1	.10			27	NA									
		Surro	ogate Rec	overies	s (%)												
%SS1:		77	94														
%SS2:		70	97														
%SS3:		76	96				-										
Comments																	
*vapor samples are reported in $\mu g/m^3$.																	
ND means not detected above the reporting limit; N/A means analyte not applicable to this analysis.																	
# surrogate diluted out of range or surrog	ate coelu	ites with and	other peak.					# surrogate diluted out of range or surrogate coelutes with another peak.									

McCampbell An "When Ouality	alyti	cal, In	<u>c.</u>		1534 Willow I Web: www.mccamp Telephone: 8	Pass Road, Pittsburg, CA bell.com E-mail: mair 377-252-9262 Fax: 92	 94565-1701 a@mccampbell.c 5-252-9269 	om	
AEI Consultants		Client Pro	oject ID:	#28034	6; Alaska	Date Sampled:	12/03/08		
2500 G		Gasoline				Date Received:	12/03/08		
2500 Camino Diablo, Ste. #200		Client Co	ontact: Je	remy Sı	nith	Date Extracted:	12/04/08-1	2/12/08	
Walnut Creek, CA 94597		Client P (D · #WC()81083		Date Analyzed	12/04/08-1	2/12/08	
		Volotilo	mannia C		da in nI /I *	2 400 1 1141 j 200	12/01/00 1		
Extraction Method: TO15		Anal	ytical Method	3111 2011 1: TO15	IUS III IIL/L [*]		Work Order:	0812127	
Lab ID	08121	27-001A	0812127	-003A					
Client ID	S	G-1-3	SG-2	2-3			-		
Matrix	Soil	Vapor	Soil V	apor			- Reporting	Limit for	
Initial Pressure (nois)	1	2 56	10 /	И			and Press	ure Ratio	
	1	25.1 20.88		-+ 			(Final/In	(1111) = 2	
Final Pressure (psia)	2	25.1	20.8	.8					
DF	DF 1 4		4				Soil Vapor	W	
Compound				Conce	entration		nL/L	ug/L	
Benzene		ND	ND<	8.0			2.0	NA	
Ethylbenzene		2.4	ND<	3.0			2.0	NA	
Methyl-t-butyl ether (MTBE)		ND	1	30			2.0	NA	
Toluene		6.6	ND<	3.0			2.0	NA	
Xylenes		8.8	ND<	24			6.0	NA	
		Surro	ogate Rec	overies	s (%)				
%SS1:		77	94						
%SS2:		70	97						
%SS3:		76	96						
Comments									
*vapor samples are reported in nL/L.									
ND means not detected above the reporting	ND means not detected above the reporting limit; N/A means analyte not applicable to this analysis.								
# surrogate diluted out of range or surrog	ate coelu	ites with and	other peak.						

AEI Consultants Client Project ID: #280346; Alaska Date Sampled: $12/03/08$ 2500 Camino Diablo, Ste. #200 Client Contact: Jeremy Smith Date Received: $12/03/08$ Walnut Creek, CA 94597 Client Contact: Jeremy Smith Date Analyzed $12/10/08-12/11/08$ Contact: Jeremy Smith Date Analyzed $12/10/08-12/11/08$ Client Project ID: #WC081083 Date Analyzed $12/10/08-12/11/08$ Client ID Matrix Initial Pressure Final Pressure TPH(g) DF % SS 001A SG-1-3 Soil Vapor 12.56 25.1 20,000 1 N/A 003A SG-2-3 Soil Vapor 10.44 20.88 18,000 1 N/A 01 Interemotion </th <th colspan="3">McCampbell Analytical, Inc. "When Ouality Counts"</th> <th colspan="8">1534 Willow Pass Road, Pittsburg, CA 94565-1701 Web: www.mccampbell.com E-mail: main@mccampbell.com Telephone: 877-252-9262 Fax: 925-252-9269</th>	McCampbell Analytical, Inc. "When Ouality Counts"			1534 Willow Pass Road, Pittsburg, CA 94565-1701 Web: www.mccampbell.com E-mail: main@mccampbell.com Telephone: 877-252-9262 Fax: 925-252-9269							
$\begin{array}{ c c c c c c c c c c c c c c c c c c c$	AEI Consultants	Client I	Project ID:	#280346; Alask	a	Date Sampled: 12/0)3/08				
Loss Chamber Dataset, Sci. 1250 Client Contact: Jeremy Smith Date Extracted: 12/10/08-12/11/08 Walnut Creek, CA 94597 Client P.O.: #WC081083 Date Analyzed 12/10/08-12/11/08 Gasoline Range (C6-C12) Volatile Hydrocarbons as Gasoline in µg/m³* Straction method TO3 Work Order: 0812127 Client ID Matrix Initial Pressure TPH(g) DF % SS 001A SG-1-3 Soil Vapor 12.56 25.1 20,000 1 N/A 003A SG-2-3 Soil Vapor 10.44 20.88 18,000 1 N/A 001A SG-2-3 Soil Vapor 10.44 20.88 18,000 1 N/A 003A SG-2-3 Soil Vapor 10.44 20.88 18,000 1 N/A 001A SG-2-3 Soil Vapor 10.44 20.88 18,000 1 N/A 003 SG-2-3 Soil Vapor 10.44 20.88 18,000 1 N/A 001 Interpressure Inte	2500 Camino Diablo Ste #200	Gasolir	ne		·	Date Received: 12/0)3/08				
Walnut Creek, CA 94597 Client P.O.: #WC081083 Date Analyzed 12/10/08-12/11/08 Gasoline Range (C6-C12) Volatile Hydrocarbons as Gasoline in µg/m ^{3*} Straction method TO3 Work Order: 0812127 Lab ID Client ID Matrix Initial Pressure TPH(g) DF % SS 001A SG-1-3 Soil Vapor 12.56 25.1 20,000 1 N/A 003A SG-2-3 Soil Vapor 10.44 20.88 18,000 1 N/A 01 Imatrix Imat		Client	Contact: Jer	remy Smith		Date Extracted: 12/1	0/08-12/1	1/08			
Gasoline Gasoline Cyber Cybertie Hytrogenbouste Gasoline in up/m ³⁴ Not construction of the con	Walnut Creek, CA 94597	Client l	P.O.: #WC0	81083		Date Analyzed 12/1	0/08-12/1	11/08			
Client ID Matrix Initial Pressure Final Pressure TPH(g) DF % SS 001A SG-1-3 Soil Vapor 12.56 25.1 20,000 1 N/A 003A SG-2-3 Soil Vapor 10.44 20.88 18,000 1 N/A 01 Initial Pressure Final Pressure Initial Pressure 1 N/A 003A SG-2-3 Soil Vapor 10.44 20.88 18,000 1 N/A Initial Pressure Initial Pressu	Gasoline Range	e (C6-C12	2) Volatile H	Iydrocarbons a	as Gasoli	ne in µg/m ^{3*}	0.1	12127			
Carlot D Marix Initial result Iringy Dir A 33 001A SG-1-3 Soil Vapor 12.56 25.1 20,000 1 N/A 003A SG-2-3 Soil Vapor 10.44 20.88 18,000 1 N/A Image: SG-2-3 Soil Vapor 10.44 20.88 18,000 1 N/A Image: SG-2-3 Soil Vapor 10.44 20.88 18,000 1 N/A Image: SG-2-3 Soil Vapor 10.44 20.88 18,000 1 N/A Image: SG-2-3 Soil Vapor 10.44 20.88 18,000 1 N/A Image: SG-2-3 Soil Vapor 10.44 20.88 18,000 1 N/A Image: SG-2-3 Soil Vapor Image: SG-2-3 Image: SG-2	Lab ID Client ID	Matrix	Analytical m	re Final Pressure				DF % SS			
001A SG-1-3 Soil Vapor 12.56 25.1 20,000 1 N/A 003A SG-2-3 Soil Vapor 10.44 20.88 18,000 1 N/A		Iviauix	linuar i ressu	te l'illar l'lessure		1111(g)		70 33			
003A SG-2-3 Soil Vapor 10.44 20.88 18,000 1 N/A	001A SG-1-3 S	oil Vapor	12.56	25.1 20,000		1	N/A				
Image: state of the state	003A SG-2-3 S	oil Vapor	10.44	20.88		18,000	1	N/A			
Image: second											
Image: Section of the section of th											
Image: state of the state											
Image: state of the state											
							_				
							_				
Reporting Limit for DF =1; W psia psia NA	Reporting Limit for DF =1;	W	psia	psia		NA	N	JA			
ND means not detected at or above the reporting limit Soil Vapor psia psia 1800 µg/m ³	ND means not detected at or above the reporting limit	oil Vapor	psia	psia		1800	με	g/m³			
soil vapor samples are reported in µg/m ³ .	*soil vapor samples are reported in µg/m ³ .										
ND means not detected above the reporting limit; N/A means analyte not applicable to this analysis.	ND means not detected above the reporting limit	t; N/A mea	ans analyte no	t applicable to thi	is analysis						
<i>t</i> surrogate diluted out of range or surrogate coelutes with another peak.	# surrogate diluted out of range or surrogate coel	lutes with a	another peak.								

Angela Rydelius, Lab Manager

	AEL Consultants			1534 Web: ww Te	4 Willow Pass Road, Pittsburg, CA 94565- w.mccampbell.com E-mail: main@mccar elephone: 877-252-9262 Fax: 925-252-92	1701 npbell.com 269		
AEI C	Consultants	Client	Project ID:	#280346; Alaska	a Date Sampled: 12/03	/08		
2500	Camino Diablo, Ste. #200	Gasolii	ne		Date Received: 12/03	/08		
	, ,	Client	Contact: Jer	remy Smith	Date Extracted: 12/10	/08-12/1	1/08	
Walnu	ıt Creek, CA 94597	Client	P.O.: #WC0	81083	Date Analyzed 12/10	/08-12/1	1/08	
Extraction	Gasoline Ra	ange (C6-C1	2) Volatile H	Iydrocarbons a	s Gasoline in nL/L*)rder: 08	12127	
Lab ID	Client ID	Matrix	Initial Pressu	re Final Pressure	TPH(g)	DF % SS		
001A	SG-1-3	Soil Vapor	12.56	25.1	5500	1	N/A	
003A	SG-2-3	Soil Vapor	10.44	20.88 4900		1	N/A	
						-		
						-	<u> </u>	
·	Reporting Limit for DF =1;	w	psia	psia	NA	N	JA	
	ND means not detected at or above the reporting limit	Soil Vapor	psia	psia	500	nl	L/L	
*soil va	por samples are reported in nL/L.					<u> </u>		
ND mea	ins not detected above the reporting l	limit; N/A mea	ans analyte no	t applicable to this	s analysis.			
# surrog	ate diluted out of range or surrogate	coelutes with	another peak.					

Angela Rydelius, Lab Manager



<u>McCampbell Analytical, Inc.</u>

"When Ouality Counts"

QC SUMMARY REPORT FOR SW8021B/8015Cm

W.O. Sample Matrix: Soil Vapor QC Matrix: Water BatchID: 40135 WorkOrder 0812127 EPA Method SW8021B/8015Cm Extraction SW5030B Spiked Sample ID: 0812226-001A MS-MSD LCS LCSD LCS-LCSD MSD Sample Spiked MS Acceptance Criteria (%) Analyte MS / MSD LCS/LCSD RPD µg/L µg/L % Rec. % Rec. % RPD % Rec. % Rec. % RPD RPD MTBE 10 103 8.55 0.687 70 - 130 70 - 130 ND 112 114 113 20 20 97.2 ND 10 104 6.77 101 100 0.385 70 - 130 2.0 70 - 130 20 Benzene Toluene ND 10 108 115 6.10 111 111 0 70 - 130 20 70 - 130 20 Ethylbenzene ND 10 105 111 5.13 109 109 0 70 - 130 2.0 70 - 130 20 Xylenes ND 30 116 122 4.83 120 120 0 70 - 130 20 70 - 130 20 %SS: 94 10 95 97 2.47 100 96 4.31 70 - 130 20 70 - 130 20 All target compounds in the Method Blank of this extraction batch were ND less than the method RL with the following exceptions: NONE

BATCH 40135 SUMMARY

Lab ID	Date Sampled	Date Extracted	Date Analyzed	Lab ID	Date Sampled	Date Extracted	Date Analyzed
0812127-002A	12/03/08 8:59 AM	12/08/08	12/08/08 6:45 PM	0812127-004A	12/03/08 10:37 AM	12/08/08	12/08/08 7:53 PM
0812127-005A	12/03/08 11:30 AM	12/09/08	12/09/08 7:49 PM	0812127-006A	12/03/08 11:46 AM	12/09/08	12/09/08 8:23 PM
0812127-007A	12/03/08 12:00 PM	12/09/08	12/09/08 10:38 PM				

MS = Matrix Spike; MSD = Matrix Spike Duplicate; LCS = Laboratory Control Sample; LCSD = Laboratory Control Sample Duplicate; RPD = Relative Percent Deviation.

% Recovery = 100 * (MS-Sample) / (Amount Spiked); RPD = 100 * (MS - MSD) / ((MS + MSD) / 2).

MS / MSD spike recoveries and / or %RPD may fall outside of laboratory acceptance criteria due to one or more of the following reasons: a) the sample is inhomogenous AND contains significant concentrations of analyte relative to the amount spiked, or b) the spiked sample's matrix interferes with the spike recovery.

£ TPH(btex) = sum of BTEX areas from the FID.

cluttered chromatogram; sample peak coelutes with surrogate peak.

N/A = not enough sample to perform matrix spike and matrix spike duplicate.

NR = analyte concentration in sample exceeds spike amount for soil matrix or exceeds 2x spike amount for water matrix or sample diluted due to high matrix or analyte content.





"When Ouality Counts"

QC SUMMARY REPORT FOR TO15

W.O. Sample Matrix: Soil Vapor QC Matrix: Soil Vapor BatchID: 40081 WorkOrder 0812127 **EPA Method TO15 Extraction TO15** Spiked Sample ID: N/A LCS-LCSD MSD MS-MSD LCS LCSD Spiked MS Sample Acceptance Criteria (%) Analyte MS / MSD RPD I CS/I CSD RPD nL/L nL/L % Rec. % Rec. % RPD % Rec. % Rec. % RPD 25 90.2 4.32 70 - 130 Acrylonitrile N/A N/A N/A N/A 86.4 N/A N/A 30 30 25 N/A N/A N/A 95.1 110 14.2 N/A N/A 70 - 130tert-Amyl methyl ether (TAME) N/A N/A 25 N/A N/A N/A 98.2 112 12.8 N/A N/A 70 - 130 30 Benzene Benzyl chloride N/A 25 N/A N/A N/A 94 6 110 15.4 N/A N/A 70 - 13030 Bromodichloromethane N/A 25 N/A N/A N/A 102 120 16.0 N/A N/A 70 - 130 30 Bromoform N/A 25 N/A N/A N/A 93.3 98.2 5.11 N/A N/A 70 - 13030 1,3-Butadiene N/A 25 N/A N/A N/A 112 99.5 11.6 N/A N/A 70 - 130 30 14.1 N/A t-Butyl alcohol (TBA) N/A 2.5 N/A N/A N/A 70.5 81.1 N/A 70 - 13030 Carbon Disulfide N/A 25 N/A N/A N/A 88.4 97.4 9.60 N/A N/A 70 - 13030 Carbon Tetrachloride N/A 25 N/A N/A N/A 84.6 97.5 14.3 N/A N/A 70 - 130 30 Chlorobenzene N/A 25 N/A N/A N/A 96.6 105 8.23 N/A N/A 70 - 130 30 Chloroform N/A 25 N/A N/A N/A 91.8 101 9.60 N/A N/A 70 - 130 30 Chloromethane N/A 25 N/A N/A N/A 92.1 90 2.36 N/A N/A 70 - 130 30 Dibromochloromethane N/A 25 N/A N/A N/A 79.9 88.1 9.83 N/A N/A 70 - 130 30 1,2-Dibromo-3-chloropropane N/A 25 N/A N/A N/A 85.2 94.1 9.84 N/A N/A 70 - 130 30 70 - 130 1,2-Dibromoethane (EDB) 25 N/A N/A 92.7 106 N/A N/A 30 N/A N/A 13.2 25 N/A 8.90 N/A 1,2-Dichlorobenzene N/A N/A N/A 89.7 98.1 N/A 70 - 130 30 25 N/A N/A N/A 94 101 7.40 N/A N/A 70 - 130 30 1.3-Dichlorobenzene N/A 25 7.77 1.4-Dichlorobenzene N/A N/A N/A N/A 95.5 103 N/A N/A 70 - 13030 Dichlorodifluoromethane 25 N/A N/A 92.9 105 12.2 N/A 70 - 13030 N/A N/A N/A 1,1-Dichloroethane N/A 25 N/A N/A N/A 92.1 98.6 6.83 N/A N/A 70 - 130 30 1,2-Dichloroethane (1,2-DCA) N/A 25 N/A N/A N/A 96.7 10.8 N/A N/A 70 - 130 30 86.8 25 N/A 89.9 N/A 1.1-Dichloroethene N/A N/A N/A 98.8 9.45 N/A 70 - 130 30 cis-1.2-Dichloroethene N/A 25 N/A N/A N/A 98.4 104 5.29 N/A N/A 70 - 130 30 trans-1,2-Dichloroethene N/A 25 N/A N/A N/A 101 110 8.97 N/A N/A 70 - 130 30 1,2-Dichloropropane N/A 25 N/A N/A N/A 85.9 99.5 14.7 N/A N/A 70 - 130 30 cis-1,3-Dichloropropene 25 N/A N/A N/A 90.3 104 13.7 N/A N/A 70 - 13030 N/A trans-1,3-Dichloropropene N/A 25 N/A N/A 104 10.3 N/A 70 - 130 N/A 94 N/A 30 25 1,2-Dichloro-1,1,2,2-tetrafluoroetha N/A N/A N/A 101 108 6.72 N/A N/A 70 - 13030 N/A Diisopropyl ether (DIPE) N/A 103 94.1 8.60 N/A 70 - 130 N/A 25 N/A N/A N/A 30 25 1,4-Dioxane N/A N/A N/A N/A 74.2 86.7 15.5 N/A N/A 70 - 13030

MS = Matrix Spike; MSD = Matrix Spike Duplicate; LCS = Laboratory Control Sample; LCSD = Laboratory Control Sample Duplicate; RPD = Relative Percent Deviation.

% Recovery = 100 * (MS-Sample) / (Amount Spiked); RPD = 100 * (MS - MSD) / ((MS + MSD) / 2).

* MS and / or MSD spike recoveries may not be near 100% or the RPDs near 0% if: a) the sample is inhomogenous AND contains significant concentrations of analyte relative to the amount spiked, or b) if that specific sample matrix interferes with spike recovery.

N/A = not enough sample to perform matrix spike and matrix spike duplicate.

NR = analyte concentration in sample exceeds spike amount for soil matrix or exceeds 2x spike amount for water matrix or sample diluted due to high matrix or analyte content.

Laboratory extraction solvents such as methylene chloride and acetone may occasionally appear in the method blank at low levels.





"When Ouality Counts"

QC SUMMARY REPORT FOR TO15

W.O. Sample Matrix: Soil Vapor QC Matrix: Soil Vapor BatchID: 40081 WorkOrder 0812127 **EPA Method TO15 Extraction TO15** Spiked Sample ID: N/A MSD MS-MSD LCS LCSD LCS-LCSD Spiked MS Sample Acceptance Criteria (%) Analyte % RPD MS / MSD RPD LCS/LCSD RPD nL/L nL/L % Rec. % Rec. % RPD % Rec. % Rec. 25 4.55 70 - 130 Ethyl acetate N/A N/A N/A N/A 105 100 N/A N/A 30 N/A 95.4 70 - 130 30 25 N/A N/A 98.6 3.34 N/A N/A Ethyl tert-butyl ether (ETBE) N/A Ethylbenzene N/A 25 N/A N/A N/A 102 113 9.95 N/A N/A 70 - 130 30 4-Ethyltoluene N/A 25 N/A N/A N/A 109 113 3.61 N/A N/A 70 - 13030 Freon 113 N/A 25 N/A N/A N/A 103 107 4.01 N/A N/A 70 - 130 30 Hexachlorobutadiene N/A 25 N/A N/A N/A 87.9 103 15.8 N/A N/A 70 - 13030 4-Methyl-2-pentanone (MIBK) N/A 25 N/A N/A N/A 95.3 94.3 1.12 N/A N/A 70 - 130 30 8.97 N/A Methyl-t-butyl ether (MTBE) N/A 2.5 N/A N/A N/A 97.8 107 N/A 70 - 130 30 Methylene chloride N/A 25 N/A N/A N/A 78.4 85.2 8.20 N/A N/A 70 - 13030 Naphthalene N/A 25 N/A N/A N/A 95.4 106 10.7 N/A N/A 70 - 130 30 Styrene N/A 25 N/A N/A N/A 90 96.4 6.90 N/A N/A 70 - 130 30 1,1,1,2-Tetrachloroethane N/A 25 N/A N/A N/A 102 110 7.90 N/A N/A 70 - 130 30 1,1,2,2-Tetrachloroethane N/A 25 N/A N/A N/A 90.4 100 10.1 N/A N/A 70 - 130 30 Tetrachloroethene N/A 25 N/A N/A N/A 98.9 106 7.27 N/A N/A 70 - 130 30 Tetrahydrofuran 25 N/A N/A N/A 77 92.5 18.3 N/A N/A 70 - 130 30 N/A 70 - 130 Toluene 25 N/A N/A N/A 92.7 103 10.4N/A N/A 30 N/A 25 N/A 1,2,4-Trichlorobenzene N/A N/A N/A N/A 80.3 90.4 11.8 N/A 70 - 130 30 25 N/A N/A N/A 98.1 114 14.8 N/A N/A 70 - 130 30 1.1.1-Trichloroethane N/A 25 11.8 1,1,2-Trichloroethane N/A N/A N/A N/A 89.1 100 N/A N/A 70 - 13030 10.1 25 N/A N/A 99.5 110 N/A 70 - 13030 Trichloroethene N/A N/A N/A Trichlorofluoromethane N/A 25 N/A N/A N/A 93.7 99.7 6.19 N/A N/A 70 - 130 30 1,2,4-Trimethylbenzene 25 N/A N/A 98.9 109 9.74 N/A 70 - 130 30 N/A N/A N/A 25 N/A 1,3,5-Trimethylbenzene N/AN/A N/A N/A 97.7 110 11.8 N/A 70 - 130 30 Vinyl Chloride N/A 25 N/A N/A N/A 111 117 5.28 N/A N/A 70 - 130 30 Xylenes N/A 75 N/A N/A N/A 103 110 6.33 N/A N/A 70 - 130 30 500 %SS1: N/A N/A N/A N/A 75 83 10.3 N/A N/A 70 - 130 30 %SS2: 500 N/A N/A N/A 78 85 9.09 N/A N/A 70 - 13030 N/A 500 N/A N/A N/A 70 - 130 30 %SS3: N/A N/A 73 84 14.7N/A

All target compounds in the Method Blank of this extraction batch were ND less than the method RL with the following exceptions: NONE

MS = Matrix Spike; MSD = Matrix Spike Duplicate; LCS = Laboratory Control Sample; LCSD = Laboratory Control Sample Duplicate; RPD = Relative Percent Deviation.

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Laboratory extraction solvents such as methylene chloride and acetone may occasionally appear in the method blank at low levels.





"When Ouality Counts"

BatchID: 40081

QC SUMMARY REPORT FOR TO15

W.O. Sample Matrix: Soil Vapor

QC Matrix: Soil Vapor

WorkOrder 0812127

EPA Method TO15	Extra	ction TO	15					\$	Spiked San	nple ID	: N/A	
Analyte	Sample	Spiked	MS	MSD	MS-MSD	LCS	LCSD	LCS-LCSD	Acceptance Criteria (%)			1
	nL/L	nL/L	% Rec.	% Rec.	% RPD	% Rec.	% Rec.	% RPD	MS / MSD	RPD	LCS/LCSD	RPD

BATCH 40081 SUMMARY

Lab ID	Date Sampled	Date Extracted	Date Analyzed	Lab ID	Date Sampled	Date Extracted	Date Analyzed
0812127-001A	12/03/08 8:37 AM	I 12/04/08	12/04/08 6:40 PM	0812127-003A	12/03/08 10:11 AM	12/12/08	12/12/08 11:38 AM

MS = Matrix Spike; MSD = Matrix Spike Duplicate; LCS = Laboratory Control Sample; LCSD = Laboratory Control Sample Duplicate; RPD = Relative Percent Deviation.

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A _ QA/QC Officer