March 30, 2012

Ms. Karel Detterman
Alameda County Environmental Health
1131 Harbor Bay Parkway, Suite 250
Alameda, California 94502

**Subject:** **Perjury Statement and Report Transmittal**

1600 – 1630 Park Street
Alameda, California 94501
AEI Project No. 298931
ACEH RO#0000008

Dear Ms. Detterman:

I declare under penalty of perjury, that the information and/or recommendations contained in the attached report for the above-referenced site are true and correct to the best of my knowledge.

If you have any questions or need additional information, please do not hesitate to call me at (510) 523-1925 or Mr. Peter McIntyre at AEI Consultants, (925) 746-6004.

Sincerely,

John Buestad
President

JB/pm

Attachment

cc: Mr. Peter McIntyre, AEI Consultants, 2500 Camino Diablo, Walnut Creek, CA 94597

March 30, 2012

# SUBSURFACE INVESTIGATION & WELL INSTALLATION REPORT

**Property Identification:**
1630 Park Street
Alameda, California

AEI Project No. 298931
ACEHD Fuel Leak Case No. RO0000008

**Prepared for:**
Foley Street Investments
Attn: Mr. John Buestad
2533 Clement Avenue
Alameda, CA 94501

**Prepared by:**
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Walnut Creek, CA 94597
(925) 746-6000

# TABLE OF CONTENTS



**FIGURES**

**TABLES**



**APPENDICES**

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March 30, 2012

Alameda County Environmental Health Department
Attn: Ms. Karel Detterman
1131 Harbor Bay Parkway, Suite 250
Alameda, CA 94502

**Subject:** **Subsurface Investigation & Well Installation Report**
1630 Park Street
Alameda, California
AEI Project No. 298931
ACEHD Fuel Leak Case No. RO0000008

Dear Ms. Detterman:

AEI Consultants (AEI) has prepared this *Additional Subsurface Investigation and Well Installation Report* on behalf of Foley Street Investments, developer of the subject site (See Figure 1 and Figure 2). The subject of this report is the leaking underground storage tank (LUST) case located at the property 1630 Park Street, known as the Good Chevrolet site. The Alameda County Environmental Health Department (ACEHD) is the agency with regulatory oversight of the LUST case. This report has been prepared to document the recent (November 2011 through March 2012) activities that have been performed at the site.

The completed activities which are discussed in this report include:

- Permitting and installing dual phase extraction (DPE) wells DPE-1 through DPE-6 and DPE-8 through DPE-11;
- Permitting and installation air sparge (AS) well AS-1;
- Permitting and advancing borings DPE-7 and AEI-20 to AEI-28;
- Permitting and installing vapor monitoring probes VP-1 to VP-3;
- Performing a conduit study for the site;
- Developing, surveying, and sampling the newly installed remediation wells;
- Performing groundwater monitoring and sampling activities; and
- Update of the ongoing high vacuum dual phase extraction (HVDPE) activities.

# 1.0 Property Overview

## 1.1 Property Description

The development site consisting of 1600 to 1630 Park Street is an irregularly shaped property totaling approximately 1.46 acres, of which the northern portion is the 1630 Park Street site. The site is bound by Park Street to the northwest, 1650 Park Street to the northeast, Foley Street to the Southeast, and Tilden Way to the southwest in a mixed commercial and residential area of Alameda, California. Hereinafter, unless otherwise stated, the "site" will refer to the 1630 Park Street property.

The site is currently improved with a two-story showroom and office building totaling approximately 11,264 square feet and parking lot which was until approximately 2008 occupied by Good Chevrolet. Good Chevrolet also occupied the 1600 to 1618 property to the south, which is also vacant. Refer to Figure 2 for the property layout and major site features.

## 1.2 Planned Development Project

Foley Street Investments plans to demolish the existing buildings and construct two commercial buildings. The northern building is planned for the area of the existing Good Chevrolet building along Park Street. The remainder of the development site will be improved with paved parking areas and landscaping. Construction of the new building is scheduled to begin in June 2012.

# 2.0 Site History

Based on historical research performed during a *Phase I Environmental Site Assessment* (ESA) conducted in June 2011, the current building at the site was constructed in the 1940s for use as an auto garage and showroom. Good Chevrolet occupied the site from the early 1960s through 2008.

## 2.1 Prior Environmental Work

According to records on file with the ACEHD, one 300-gallon waste-oil underground storage tank (UST) and one 500-gallong gasoline UST were removed from adjacent to the northern side of the building in 1986 at which time a release of petroleum hydrocarbons, primarily gasoline, was discovered. Due to the discovery of a release, a case was opened with the ACEHD. Following is a summary of investigation activities that followed.

- In 1987, Groundwater Technologies installed three groundwater monitoring wells (MW-1 to MW-3) and drilled two soil borings (SB-4 and SB-5) to investigate soil and groundwater conditions around the former UST hold.
- In October 1993, Geoplexus collected and analyzed soil and groundwater samples from seven soil borings (EB1 to SB7) drilled around the UST hold along with up-gradient and down-gradient of the release. It should be noted that documents indicate that two other borings (HP-1 and HP-2) were drilled up-gradient of the release area in April 1993, however details are not available. Geoplexus installed monitoring wells MW-4 and MW-5 in April 1994 in Park Street to investigate the down-gradient extent of the hydrocarbon plume.

- In January 1997, Geoplexus drilled an additional eight soil borings (EB8 to EB12 and P1 to P3) onsite around and down-gradient of the former UST hold. Soil samples were analyzed from EB8 to EB12 and groundwater samples were analyzed for all eight borings.
- In November 1998, Geoplexus collected three soil gas samples from three borings (AGP-1 to AGP-3) in the release are and within the adjacent building. Geoplexus presented an argument for "low risk" closure however case closure was not granted.
- In April 2008, Blymer Engineers collected soil and groundwater samples from 24 soil borings (GP1 to GP24) on and offsite to characterize the extent of soil and groundwater pollution. It should be noted that AEI was not able to locate a formal report of these activities, only tables of soil and groundwater data and figures have been located.
- In June 2011, a Phase I ESA was conducted for the subject property as detailed in a report dated July 5, 2011 (AEI 2011a).
- In July 2011, a subsurface investigation was conducted at the property relating to potential environmental issues aside from the Good Chevrolet LUST case. The areas of concern investigated include five former and five existing underground hydraulic lifts, several floor drains, three existing USTs (1 550-gallon waste-oil UST, 1 10,000 gallon and 1 4,000 gallon gasoline UST), and a former gasoline station identified on the southern end of the development site at the intersection of Park Street and Tilden Way. A total of 19 soil borings (AEI-1 to AEI-19) were drilled for soil and groundwater sampling. Results of the investigation are summarized in the August 16, 2011 *Phase II Subsurface Investigation Report* (AEI 2011b) prepared by AEI.
- An *Interim Corrective Action Plan* (ICAP) dated September 28, 2011 (AEI 2011c) was submitted and followed by an *ICAP Comment Letter Response and Pilot Test Workplan Details* dated November 14, 2011 (AEI 2011d). Both documents proposed the performance a HVDPE event at the site. A review of multiple remedial options for the site was discussed in these documents and a HVDPE event was considered the most feasible option for the site given the site conditions.
- In November 2011, wells DPE-1 to DPE-3 and AS well AS-1 were installed. In early December, three vacuum monitoring points VP-1 to VP-3 were installed and pilot testing began. Results of the HVDPE event were preliminarily provided in the *Investigation and Remedial Action Workplan* dated January 12, 2012 (AEI 2012e). The work plan also proposed the advancement of additional borings and the installation of extraction wells. In January 2012, borings AEI-20 through AEI-28 were advanced and wells DPE-4 through DPE-6, and DPE-8 through DPE-11 were installed. In addition, DPE-7 was advanced as a boring instead of being completed as a well. The data was used to help define the extent of impacted soil and groundwater and identify target areas for ongoing remedial action. Details of these investigation activities are documented in this report.
- A *Corrective Action Plan* (CAP) dated February 3, 2012 (AEI 2012f) was submitted to the ACEHD. The CAP documented the December 2011 to January 2012 HVDPE event and based on the results, recommended HVDPE as the remedial option for the site.
- Groundwater monitoring and sampling was conducted approximately quarterly from 1992 through 1995, then sporadically through 2003, once in 2008, twice in 2011 and once in 2012. Information from groundwater monitoring and sampling events in December 6, 2011 and January 24, 2012 is included in this report.

Site features are presented on Figure 3, and results of the historical activities are included in Tables 1 through 9.

## 3.0 Geology and Hydrogeology

The site is located on Alameda Island. The near surface sediments of the area are mapped as Holocene and Pleistocene Merritt Sands (Qms) deposits (Helley, et al 1997). Depth to bedrock is estimated at 300 to 800 feet below ground surface [(bgs) Norfleet Consultants 1998]. According to information obtained from the U.S Geological Survey (USGS), the site is located at between 20 and 25 feet above mean sea level (amsl) with the local topography sloping gently to the northeast. The nearest surface water is a tidal canal connected to the San Francisco Bay located approximately 1,800 feet to the northeast of the site.

Based on previous investigations at the site, groundwater is first observed in the temporary direct push borings at depths of approximately 9 to 11 feet bgs and stabilizes at between approximately 7.5 to 8.5 feet bgs. The depth to water in the groundwater monitoring wells has generally ranged from approximately 7.5 to 9.5 feet bgs. Based on the groundwater monitoring conducted at the site, groundwater flows fairly consistently in a northwesterly direction at an approximate hydraulic gradient of $1x10^{-2}$ to $2x10^{-2}$ ft/ft and exists as an unconfined aquifer.

During the December 6, 2011 and January 24, 2012 sampling events which includes data from several of the new DPE wells, but not wells MW-4 and MW-5, groundwater was measured at a depth ranging from 7.92 feet bgs to 9.29 feet bgs in December and 7.97 feet bgs and 9.11 feet bgs in January. Based on this data, the groundwater flow direction was towards the west/northwest in December and northwest in January both with a hydraulic gradient of approximately 0.01 ft/ft, which is relatively consistent with historical data. Refer to Figures 4 and 5 and Table 8 for groundwater elevation maps and data for the December 2011 and January 2012 monitoring events.

Based on the previous and recent drilling logs, sediments across the site are fairly consistent; consisting primarily of poorly graded fine to medium sand with varying clay and silt content. The November 2011 and January 2012 drilling activities confirmed these results. Grain size distribution analyses for two aquifer material samples identified the sediments and silty sand. Refer to the boring logs in Appendix A for specific details regarding the soil encountered during these recent investigations.

## 4.0 Remediation Well Installation

As discussed in AEI's ICAP dated September 28, 2011, HVDPE was chosen for pilot testing and as an appropriate interim remedial measure. To implement these activities, a 30 day pilot test was to be performed which would utilize three DPE wells and one AS well.

### 4.1 Installation of Remediation Wells: November 2011

On November 14, 2011 and November 15, 2011, AEI mobilized to the site in order to complete the well installation activities for AS-1 and DPE-1 through DPE-3. The borings were installed in the locations proposed in the ICAP and shown on Figure 3. Prior to initiating drilling activities, a drilling permit was obtained for the wells (permit number W2011-0645) from the Alameda County Public Works Agency (ACPWA). A copy of the well permit is included in Appendix B. Following permit approval, drilling activities were scheduled and Underground Service Alert (USA) North was notified to locate possible underground utilities in the area. In addition, a private utility locate was performed to identify onsite utilities and clear boring locations.

The boreholes were initially drilled with a combo drilling rig, capable of running 10-inch diameter hollow stem augers operated by Resonant Sonic International (RSI Drilling) (CA C57 License # 802334). Soil samples were continuously collected with 1" diameter acrylic liners using a dual walled, direct push Geoprobe technique. Soil samples were examined and logged using the USCS and screened in the field using a PID. At a minimum, every 5 feet, AEI personnel cut a soil sample from the liner, sealed it with Teflon tape and plastic caps, and placed it in a cooler filled with water ice. The samples were transported under appropriate chain-of-custody documentation for potential analysis to McCampbell Analytical Inc., (McCampbell) DOHS Certification Number 1644] of Pittsburg, California. Field observations and screening data is presented on the borings logs in Appendix A.

Following soil sampling activities, the boreholes were overdrilled by advancing 10-inch diameter hollow stem augers to a depth of 14 feet bgs (DPE-3), 15 feet bgs (DPE-1 and DPE-2), and 8-inch diameter augers to a depth of 25 feet bgs (AS-1) in order to install the DPE and AS wells. The remediation wells were constructed by placing a 4" diameter (DPE wells) or 2" diameter (AS-1) schedule 40 PVC casing with 7 feet to 8 feet of factory slotted 0.010-inch well screen (DPE wells) or 5 feet of factory slotted 0.020-inch well screen (AS-1) through the augers. An annular sand pack, consisting of clean either #2/12 Monterey Sand (DPE wells) or #3 Monterey Sand (AS-1) was installed through the augers to approximately ½ foot above the screened interval. A 1 foot bentonite seal was placed above the sand and hydrated with water and the remainder of each boring was sealed with neat cement grout. A flush mounted traffic rated well box was installed over the casing, and an expanding, locking inner cap was placed on the casing top. The drilling and well installation work was performed under the ACPWA permit guidelines. DWR well registration forms have been completed for each of the wells and have been forwarded to the DWR and ACPWA.

### 4.2 Installation of Soil Vapor Probes: December 2011

On December 6, 2011, AEI installed three (3) permanent soil vapor probes (VP-1 to VP-3) at the subject site as outlined in the November 14, 2011 *ICAP Comment Letter Response and Pilot Test Workplan Details*. The vapor probes were installed primarily to collect vacuum data during the HVDPE event to assist in determining the effective radius of influence (ROI). The borings were advanced with an electric rotary hammer drill equipped with 1.25-inch diameter chromoly steel probe rods and constructed using the open-borehole method. First, a 4-inch diameter

hole was cored through the asphalt. Next, the probe rods were assembled with solid drive point at the end and driven to a depth of approximately 6 feet bgs. Upon reaching the target depth, the probe rods were removed and the open borehole was checked for collapse. Then a soil gas probe was constructed inside the open borehole. The soil gas probe was constructed out of a 6-inch long stainless steel implant with 0.0057-inch pore diameter threaded onto an expendable 1.5-inch anchor point, a precut section of 0.25-inch outside diameter kynar tubing, and a 0.25-inch Swagelok® plug valve. First, a layer of clean #30 mesh Monterey sand was poured into the bottom of the boring to a depth of 5.6 feet bgs. Next, the soil gas probe was lowered into the borehole to the top of the sand layer. Then #30 mesh Monterey sand was poured around the soil gas probe to approximately 4 to 6-inches above the top of the screen, which was at approximately 5.1 feet bgs. Hydrated granular bentonite was then place in 0.5 foot lifts approximately 2 feet above the sand filter pack to a depth of approximately 2.7-feet bgs. The remainder of the borehole was filled with neat cement grout. A 0.25-inch Swagelok® plug valve was installed on the top of each soil gas probe to prevent the infiltration of water and/or ambient air, diffusion and advection of hydrocarbon vapor from the vadose zone, and to facilitate vacuum measurements and/or soil gas sampling. The wellheads were completed flush to grade with 4-inch diameter nylon traffic-rated well boxes. A typical soil gas probe construction detail is shown on Figure 6. The locations of the soil gas probes are shown on Figure 3.

### 4.3 Installation of Remediation Wells: January 2012

As described in AEI's *Investigation and Remedial Action Work Plan* dated January 12, 2012, based on the early success of initial removal action, AEI was retained to install additional extraction wells. The installation and subsequent HVDPE on the additional wells was performed to remove hydrocarbons from areas outside the original DPE wells ROI.

On January 19, 2012 and January 20, 2012, AEI mobilized to the site in order to complete the well installation activities for DPE-4 through DPE-11. The borings were installed in the approximate locations proposed in AEI's work plan and shown on Figure 3. Prior to initiating drilling activities, a drilling permit was obtained for the wells (permit number W2012-0055) from the ACPWA. A copy of the well permit is included in Appendix B. Following permit approval, drilling activities were scheduled and USA North was notified to locate possible underground utilities in the area. In addition, a private utility locate was performed to identify onsite utilities and clear boring locations.

The boreholes were initially drilled with a combo drilling rig, capable of running 10-inch diameter hollow stem augers operated by Gregg Drilling (CA C57 License #485165). Prior to installing the wells, in DPE-4 through DPE-7, soil samples were continuously collected as described in Section 4.1. Soil samples were not collected from wells DPE-8 through DPE-11 due to their proximity to recently logged soil borings. Field observations and screening data is presented on the borings logs in Appendix A.

Following soil sampling activities, the boreholes were overdrilled by advancing 10-inch diameter hollow stem augers to a depth of 17 feet bgs (DPE-4 and DPE-10) or 18 feet bgs (DPE-5, DPE-6, DPE-8, DPE-9, and DPE-11) in order to install the DPE wells. Boring DPE-7 was not completed as a DPE well due to the fact that at the time of well casing installation into the

borehole, a void was found. At the time, it was unknown if an utility, vault, or natural cavity had been encountered; therefore, the well casing was removed and the borehole was left open. A subsequent camera investigation by a private utility locator identified that a void was present in the subsurface rather than a broken utility. Therefore, on March 9, 2012, AEI mobilized to the site with Gregg Drilling to fill in the borehole/void with neat cement grout as instructed by the ACPWA.

The remediation wells were installed by placing a 4" diameter, schedule 40 PVC casing with 9' to 10 ' of factory slotted 0.010-inch well screen through the augers. An annular sand pack (consisting of clean #2/12 Monterey Sand) was installed through the augers to approximately ½ foot above the screened interval. A 1 foot bentonite seal was placed above the sand and hydrated with water and the remainder of each boring was sealed with neat cement grout. A flush mounted traffic rated well box was installed over the casing, and an expanding, locking inner cap was placed on the casing top. The drilling and well installation work was performed under the ACPWA permit guidelines. DWR well registration forms have been completed for each of the wells and have been forwarded to the DWR and ACPWA.

### 4.4 Soil Analytical Results

One soil sample was analyzed from wells DPE-1 through DPE-3, and two soils samples were analyzed from wells DPE-5 through DPE-7. The soil samples were analyzed for total petroleum hydrocarbons as gasoline (TPHg) using EPA Method 8015B and benzene, toluene, ethylbenzene, and xylenes (commonly referred to as BTEX) and methyl tert-butyl ether (MTBE) using EPA Method SW8021. In addition, samples from DPE-1 through DPE-3 were additionally analyzed for TPH as motor oil (TPHmo) and TPH as diesel (TPHd) using EPA Method 8015B with silica gel cleanup. The soil samples were reported to contain the following:

- TPHmo was detected in each of the samples from DPE-1 through DPE-3 at a concentration of 46 milligrams per kilogram [(mg/kg) DPE-1], 58 (DPE-3), and 140 mg/kg (DPE-2).
- TPHd was detected in each of the samples from DPE-1 through DPE-3 at a concentration of 280 mg/kg (DPE-2), 330 (DPE-1), and 1,000 mg/kg (DPE-3).
- TPHg was reported in each of the samples, with the exception of DPE-6 at 14 feet bgs, at concentrations ranging from 1.1 mg/kg (DPE-5 at 14 feet bgs) to 2,300 mg/kg (DPE-5 at 11 feet bgs).
- BTEX were present in several of the soil samples with maximum concentrations of benzene detected at 15 mg/kg, toluene detected at 99 mg/kg, ethylbenzene detected at 47 mg/kg, and xylenes at 240 mg/kg.
- MTBE was not detected at or above the laboratory detection limits in any of the soil samples analyzed.

Soil analytical data is displayed on Table 1. A copy of the laboratory analytical reports is included in Appendix C.

### 4.5 Waste Disposal

Soil cuttings and other investigation derived waste generated during the well installation activities, were stored on-site in sealed, labeled, Department of Transportation approved, 55-gallon drums. The soil drums were removed on December 16, 2011 by A&S Environmental Services and properly disposed of (Appendix D). Decontamination and purge water was pumped from the drums and treated onsite utilizing the Cal Clean remediation system prior to being discharged to the sewer under permit.

## 5.0 Soil Boring Investigation (January 2012)

As described in AEI's *Investigation and Remedial Action Work Plan* dated January 12, 2012, prior soil and groundwater investigations have defined the extent of the release to the west, north, east, and southeast of the release area adequately. However, in the southeasterly to southwesterly directions, the extent has not been defined. Therefore, AEI proposed to advance several soil borings in order to further delineate the extent of the hydrocarbons in soil and groundwater. The goal of this work was to quickly and cost effectively identify additional extraction well locations. In addition, one boring (AEI-27) was advanced in the area of the former paint booth as requested by the ACEHD.

Prior to initiating drilling activities, a drilling permit was obtained for the soil borings (permit number W2012-0024) from the ACPWA. A copy of the permit is included in Appendix B. Following permit approval, drilling activities were scheduled and USA North was notified to locate possible underground utilities in the area. In addition, a private utility locate was performed to identify onsite utilities and clear boring locations.

### 5.1 Soil Sampling

On January 17, 2012, nine soil borings (AEI-20 through AEI-28) were advanced with a limited access, direct-push drilling rig operated by Environmental Control Associates (CA C57 License # 695970). The soil borings were advanced to a depth ranging from approximately 14 feet bgs to 16 feet bgs. Soil samples were continuously collected as described in Section 4.1. Field observations and screening data is presented on the borings logs in Appendix A.

### 5.2 Groundwater Sampling

Upon encountering saturated sediments and reaching the desired maximum depth (14 to 16 feet bgs), a temporary ¾" diameter factory-slotted poly-vinyl chloride (PVC) casing was inserted into each of the borings to facilitate the collection of groundwater samples. New materials were used in each boring to avoid possible cross-contamination. The groundwater samples were collected using a peristaltic pump with dedicated, disposable tubing into 40-ml volatile organic analysis (VOA) vials and 1 Liter ambers. The samples were capped so that there was no head space or visible air bubbles within the vials and labeled with a unique identifier and immediately placed in a cooler with wet ice and delivered to the designated laboratory.

### 5.3 Laboratory Analysis

The samples were transported under appropriate chain-of-custody documentation for potential analysis to McCampbell. Select soil and groundwater samples were analyzed for TPHg using EPA method 8015 Modified and BTEX/MTBE using EPA Method 8021B. In addition select soil and groundwater samples from AEI-23 through AEI-28 were additionally sampled for TPHmo and TPHd using EPA Method 8015 with silica gel cleanup. The soil and groundwater sample from AEI-27 was also analyzed for volatile organic compounds (VOCs) by EPA method 8260B, and the soil sample only from AEI-27 was analyzed for CAM 17 metals using EPA method 3050B.

### 5.4 Soil Analytical Results

Three soil samples were analyzed from each boring with the exception of AEI-27 in which only one soil sample was analyzed. Soil samples were reported to contain the following constituents:

- TPHg was detected in five of the nine borings at concentrations ranging from 3.3 mg/kg in AEI-20-15 to 12,000 mg/kg in AEI-28-11. TPHg was not detected at or above the laboratory detection limit in the soil samples analyzed from AEI-24 through AEI-27.
- TPHd was detected in three of the six borings at concentrations ranging from 2.0 mg/kg in AEI-28-13 to 2,100 mg/kg in AEI-28-11. TPHd was not detected at or above the laboratory detection limit in the soil samples analyzed from AEI-24 through AEI-26.
- TPHmo was detected in three of the six borings at concentrations ranging from 7.9 mg/kg in AEI-27-3 to 270 mg/kg in AEI-23-12.5. TPHmo was not detected at or above the laboratory detection limit in the soil samples analyzed from AEI-24 through AEI-26.
- Benzene was detected in four of the nine borings at concentrations ranging from 0.0071 mg/kg in AEI-20-7.5 to 21 mg/kg in AEI-28-11. Benzene was not detected at or above the laboratory detection limit in the soil samples analyzed from AEI-23 through AEI-27.
- MTBE was not detected at or above the laboratory detection limit in any of the samples analyzed.
- VOCs were not detected at or above the laboratory detection limit in the soil sample analyzed from AEI-27-3.
- Several metals were detected in the soil sample analyzed from AEI-27-3. Each of the metal concentrations was below the respective environmental screening level (ESL) with the exception of arsenic. Arsenic was detected at a concentration of 4.0 mg/kg, above the ESL of 1.6 mg/kg; however, a concentration of 4.0 mg/kg is considered typical of background concentrations for the area.

Soil analytical data is displayed on Table 1, 2, and 5 and a copy of the laboratory analytical reports is included in Appendix C.

### 5.5 Groundwater Analytical Results

Groundwater from borings AEI-20 to AEI-28 were reported to contain the following constituents:

- TPHg was reported in five of the nine borings at concentrations ranging from 9,000 micrograms per liter (µg/L) in AEI-23 to 130,000 µg/L in AEI-20. TPHg was not detected at or above the laboratory detection limit in borings AEI-24 to AEI-27.
- TPHd was reported in two of the six borings at a concentration of 8,400 µg/L in AEI-23 to 4,500 µg/L in AEI-28. TPHd was not detected at or above the laboratory detection limit in borings AEI-24 to AEI-27.
- TPHmo was reported in one of the six borings at a concentration of 1,500 µg/L in AEI-23. TPHmo was not detected at or above the laboratory detection limit in borings AEI-24 to AEI-28.
- Benzene was reported in four of the nine borings at concentrations ranging from 160 µg/L in AEI-21 and AEI-28 to 1,200 µg/L in AEI-20. Benzene was not detected at or above the laboratory detection limit in borings AEI-23 to AEI-27.
- MTBE was not detected at or above the laboratory detection limit in any of the groundwater samples analyzed.
- VOCs were not detected at or above the laboratory detection limit in the groundwater sample analyzed from AEI-27.

A complete list of detected analytical results is displayed on Tables 3 and 4, with select analytes on Figure 7, and a copy of the complete laboratory analytical report is included in Appendix C.

### 5.6 Boring Destruction

Upon completion of sampling activities, all sampling equipment was removed from the boreholes. Each boring was backfilled with neat cement grout to the existing grade as required by the ACPWA permit.

### 5.7 Waste Disposal

Soil cuttings and other investigation derived waste generated during the drilling and well installation activities, were stored on-site in sealed, labeled, Department of Transportation approved, 55-gallon drums. The soil drums were removed on February 24, 2012 by A&S Environmental Services and properly disposed of (Appendix D). Decontamination and purge water was pumped from the drums and treated onsite utilizing the Cal Clean remediation system prior to being discharged to the sewer under permit.

## 6.0 Well Development and Sampling

Wells DPE-1 to DPE-3 and AS well AS-1 were developed on December 6, 2011 and wells DPE-4 to DPE-6 and DPE-8 to DPE-11 were developed on January 23, 2012. The wells were developed by surging, bailing, and purging the wells to remove accumulated fines from the casing and stabilize the sand pack. The wells were developed in an attempt to purge each well until water had cleared and measurements of pH, conductivity, and temperature had stabilized. Wells DPE-1 to DPE-3 went dry during development after approximately 10 gallons of purging and well AS-1 went dry after approximately 5 gallons of purging. Wells DPE-4 to DPE-6 and

DPE-8 to DPE-11 went dry after 21 to 31 gallons of purging. Copies of the well development logs are included in Appendix E.

AEI measured the depth to groundwater and performed groundwater sampling activities in wells MW-1 to MW-3 and DPE-1 to DPE-3 on December 6, 2011. The groundwater monitoring event was performed in order to assess groundwater conditions in the onsite monitoring wells and newly installed DPE wells prior to commencing the interim HVDPE remedial action at the site. Additionally, AEI measured the depth to groundwater and performed groundwater sampling activities on wells MW-1 to MW-3, DPE-1 to DPE-4, DPE-6, and DPE-9 on January 24, 2012.

During each sampling event, prior to sampling, the well cap was removed from each well and the well was allowed to equilibrate with the atmosphere. The depth to water from the top of the well casing was then measured with an electric water level indicator. The wells were then purged of three well volumes, provided sufficient water was present, using standard purging techniques. The following parameters were measured during purging: temperature, pH, specific conductivity, dissolved oxygen (DO), and oxygen reduction potential (ORP). A visual estimate of turbidity was noted during the purging of each well. Groundwater samples were then collected using a new, disposable plastic bailer. Field forms of the groundwater sampling event are included in Appendix E.

The groundwater samples were collected into 40 ml VOA vials which were capped so that neither headspace nor air bubbles were visible within the sample containers. Samples were transported on ice under proper chain of custody protocol to McCampbell and were analyzed for TPHg by EPA method 8015 Modified and BTEX/MTBE using EPA Method 8260B. Groundwater samples collected on December 6, 2011 were additionally analyzed for tertiary amyl methyl ether (TAME), tertiary butyl alcohol (TBA), diisopropyl ether (DIPE), and ethyl tertiary butyl ether (ETBE) using EPA Method 8260B.

### 6.1 Monitoring Well Sample Results

During the December 2011 sampling event (prior to the initial HVDPE event) and January 2012 sampling event (following the initial HVDPE event), groundwater samples from the wells were reported to contain the following constituents:

- In December 2011, well MW-1 was reported to contain TPHg and benzene at a concentration of 900 µg/L and 160 µg/L, respectively. In January 2012, TPHg and benzene were reported at a concentration of 190 µg/L and 25 µg/L, respectively.
- In December 2011, well MW-2 was reported to contain TPHg and benzene at a concentration of 4,800 µg/L and 1,600 µg/L, respectively. In January 2012, TPHg and benzene were reported at a concentration of 2,500 µg/L and 100 µg/L, respectively.
- In December 2011, well MW-3 was reported to contain TPHg and benzene at a concentration of 1,800 µg/L and 620 µg/L, respectively. In January 2012, TPHg and benzene were reported at a concentration of 3,700 µg/L and 1,200 µg/L, respectively.
- In December 2011, well DPE-1 was reported to contain TPHg and benzene at a concentration of 9,200 µg/L and 1,800 µg/L, respectively. In January 2012, TPHg and benzene were reported at a concentration of 3,200 µg/L and 170 µg/L, respectively.

- In December 2011, well DPE-2 was reported to contain TPHg and benzene at a concentration of 22,000 µg/L and 2,100 µg/L, respectively. In January 2012, TPHg and benzene were reported at a concentration of 1,100 µg/L and 44 µg/L, respectively.
- In December 2011, well DPE-3 was reported to contain TPHg and benzene at a concentration of 6,400 µg/L and 550 µg/L, respectively. In January 2012, TPHg and benzene were reported at a concentration of 5,500 µg/L and 290 µg/L, respectively.
- In January 2012, the initial sampling event for the well, DPE-4 was reported to contain TPHg and benzene at a concentration of 730 µg/L and 66 µg/L, respectively.
- In January 2012, the initial sampling event for the well, DPE-6 was reported to contain TPHg at a concentration of 64 µg/L. TPHd and benzene were not reported at or above the laboratory detection limit.
- In January 2012, the initial sampling event for the well, DPE-9 was reported to contain TPHg and benzene at a concentration of 4,400 µg/L and 160 µg/L, respectively.

A complete list of detected analytical results is displayed on Table 9, with select analytes on Figure 7. A copy of the complete laboratory analytical report is included in Appendix C.

## 7.0 Site Survey

On February 21, 2012, the well box and well casing elevations were surveyed by Morrow Surveying, West Sacramento, California; a California Registered Land Surveyor (LS No. LS 4650). Data from the survey was uploaded to the state Geotracker database as required by Assembly Bill 592 and Senate Bill 1189. A copy of the well survey is included in Appendix F.

## 8.0 Conduit Study

A conduit study was conducted for the major underground utilities near the site. A previous study of the underground utilities near the site is provided in a correspondence dated June 6, 2008 from Blymar Engineers, Inc. (Blymar). Information regarding the utilities was obtained from multiple sources. The underground utility lines are shown in Figure 8. The following is a summary of the information obtained for the utilities in the vicinity of the site:

- Storm Water Lines: Information about the storm water lines was provided by the City of Alameda Public Works Department (APWD). The maps provided by the APWD indicate that there are no storm water lines within the vicinity of the site. Storm water runoff flows along Park Street towards the northeast. Shallow culverts allow the storm water to run across the street such as at the intersection of Park Street and Buena Vista Avenue.

- Sanitary Sewer Lines: Information about the sanitary sewer lines was provided by the APWD. The maps provided by the APWD indicate that a 10-inch sanitary sewer line runs along the middle of Park Street and that the line is between 10.3 and 11.3 feet deep.

- Water Lines: Information about the water lines was provided by the East Bay Municipal Utility District (EBMUD). The maps provided by the EBMUD indicate that a 12-inch steel water line runs along the northwest side of Park Street. A specific depth of the line was not provided on the maps from the EBMUD, however, according to the EBMUD, these lines are typically located at a depth of 3 feet.

- Gas Lines: Information about the gas lines was requested from the Pacific Gas and Electric Company (PG&E). PG&E indicated that they would not provide maps of the gas lines in the vicinity of the site. Information regarding the locations of the gas lines was provided in the correspondence by Blymar. According to the PG&E Electric Gas Service Requirements dated April 2011, the depths of these lines are between approximately 3 and 4 feet.

- Electric Lines: Information about the electric lines was provided by Alameda Municipal Power (AMP). The maps provided by AMP indicate that an underground electric line runs to the southwest and then runs to the southeast along the building to the north of the property building. A specific depth of the line was not provided on the maps from AMP; however, according to AMP, these lines are typically located at a depth of 3 feet.

Based on previous investigations at the site, groundwater is first observed in the temporary direct push borings at depths of approximately 9 to 11 feet bgs and stabilizes at between approximately 7.5 to 8.5 feet bgs. The depth to water in the groundwater monitoring wells has generally ranged from approximately 7.5 to 9.5 feet bgs.

As such, it appears that only the 10-inch sanitary sewer line which runs along the middle of Park Street may intersect groundwater at the site. Wells MW-4 and MW-5 are located between the site release area and the sanitary sewer line. The most recent groundwater monitoring in June 2011 indicated 53 µg/L TPH-g and 2.7 µg/L benzene in well MW-4 and 82 µg/L TPH-g and 5.1 µg/L benzene in well MW-5. This suggests that significant petroleum mass (i.e. free phase product) has not intersected the sewer line. Although low dissolved phase concentrations may have intersected the line, with minor plume deflection resulting, the low concentrations detected in MW-4 and MW-5 suggests that any such deflection would not be materially significant. Concentrations in these wells are expected to decrease as the result of source removal activities; monitoring of MW-4 and MW-5 would confirm these conclusions.

## 9.0 DWR Well Search Update

On January 30, 2012, the results of a 2,000-foot radius well search were received from the Department of Water Resources (DWR). The information received includes well logs for wells within the township, range, and sections within the search radius. The results of the well search were reviewed and wells which appeared to be associated with monitoring or remediation at other sites or soil borings were excluded from the review. Wells which were unidentifiable were also excluded from this review. Due to the confidentiality of DWR well logs, additional information regarding the wells including their locations is not provided in this report.

According to the results of the well search, two (2) wells are located within 2,000 feet of the property. Based on the dissolved-phase and groundwater sampling from the soil borings, it appears that the length of the plume at the site is no more than approximately 200 feet in length. None of the wells noted in this well search are located within the expected plume length for this site. As such, none of the listed wells are expected to be impacted by the hydrocarbons at the site.

It should be noted that a previous well search with information provided by the Alameda County Department of Public Works was provided in the Corrective Action Plan which did not identify any possibly active production wells at a distance of approximately 1000 feet of the site.

## 10.0 DPE Remediation Update

A HVDPE interim remedial event was conducted on between December 5, 2011 and January 9, 2012. The HVDPE event was performed to remove source hydrocarbons from beneath the site and to evaluate the feasibility of DPE as a remedial alternative at the site. Details of the HVDPE are reported in AEI's *CAP* dated February 3, 2012. As proposed in AEI's *Investigation and Remedial Action Workplan* dated January 12, 2012, HVDPE equipment was remobilized on January 24, 2012 and continues as of the date of this report. The extraction efforts commencing in late January have been managed to maximize hydrocarbon removal rates throughout the impacted area, with focused extraction from wells MW-2, DPE-1 to DPE-6, and DPE-8 to DPE-11. Typically, sets of three to five wells have been online for periods of several days to a week or more. As recovery rates have declined on well(s), one or more wells have been cycled off-line and others added to maximum hydrocarbon recovery rates. As of March 30, 2012, approximately 14,177.48 pounds (9,919.55 pounds since January 24, 2012) of hydrocarbons are estimated to have been removed according to CalClean field measurements and calculations since commencement of the initial HVDPE event. HVDPE is planned to continue for at least several more weeks. During extraction activities, AEI regularly reviews data from CalClean to evaluate well performance and optimize removal rates.

## 11.0 Summary

On November 14, 2011 and November 15, 2011, AEI installed DPE-1 to DPE-3 and AS-1, and on December 6, 2011 three soil vapor probes (VP-1 to VP-3) were installed. The remediation wells and vapor probes were installed to complete interim HVDPE activities. On December 6, 2011, AEI developed the newly installed remediation wells and completed a groundwater sampling event to determine baseline groundwater conditions prior to the HVDPE event.

On January 17, 2012, AEI advanced soil borings AEI-20 to AEI-28 to further delineate the extent of impacted soil and groundwater and to select additional extraction well locations. Based on the results of this investigation, the dissolved phase plume has been defined towards the south (AEI-24 to AEI-26), however less well defined towards the southwest (AEI-21 and AEI-23). Monitoring results from well DPE-4 however showed significantly lower dissolved phase concentrations than borings AEI-21 and AEI-22 and, due to the common occurrence of matrix interference in soil boring "grab" groundwater samples, the data from DPE-4 is more likely representative of dissolved phase conditions. This indicates that the dissolved phase

plume is limited in extent to the west. This conclusion is consistent with the GP-9 groundwater sample data from 2008.

Gasoline impacted soil is centered on the former UST hold and extends laterally in each direction. To the east, south, and west, impacted soil extends approximately 20 to 40 feet from the former UST hold and is reasonably defined. To the northwest, impacted soil extended into and along park street up to 50 feet from the site and is reasonably defined by GP12. The vertical extent of impacted soil has been generally well defined by past investigations as the top of the impacted zone is at approximately 7 to 8 feet bgs and ends between approximately 12 to 14 feet bgs. The impacted thickness of the approximately 4 to 8 feet corresponds to just above the water table (capillary fringe) to several feet below the average water table. At distance from the release area, the thickness of impacted soil generally decreases to approximately 2 to 4 feet, as observed in recent borings AEI-22, AEI- 23, and AEI-28.

On January 19, 2012 and January 20, 2012, AEI installed seven additional DPE wells (DPE-4 to DPE-6 and DPE-8 to DPE-11). DPE-7 could not be completed due to a void in the subsurface discovered during well installation; therefore this well was not completed. The void was later confirmed not to be a utility or other structure and was filled with neat cement grout on March 9, 2012.

On January 23, 2012 AEI developed each of the newly installed DPE wells and on January 24, 2012 completed a groundwater monitoring event on wells MW-1 to MW-3, DPE-1 to DPE-4, DPE-6, and DPE-9. The sampling event was performed to assess groundwater conditions following the initial HVDPE event and prior to commencing a second HVDPE event. The second HVDPE event commenced operation on January 24, 2012 and is continuing as of the date of this report. HVDPE is planned to continue for at least several more weeks. During extraction activities, AEI regularly reviews data from CalClean and uses it to evaluate which well performance and optimize removal rates.

## 12.0 References

Alameda County Environmental Health Department (ACEHD), November 4, 2011. Request for Pilot Test Workplan

ACEHD, November 23, 2011. Conditional Approval of Pilot Test Workplan

AEI Consultants (AEI) 2011a. Phase I Environmental Site Assessment, 1600 – 1650 Park Street, 1600 – 1606 Foley Street, 2329 Pacific Avenue, Alameda, California. July 5, 2011.

AEI Consultants (AEI) 2011b. Phase II Subsurface Investigation, 1600 to 1630 Park Street, Alameda, California. August 16, 2011.

AEI Consultants (AEI) 2011c. Interim Corrective Action Plan, 1630 Park Street, Alameda, California. September 2011.

AEI Consultants (AEI) 2011d. ICAP Comment Letter Response and Pilot Test Workplan Details, 1630 Park Street, Alameda, California. November 2011.

AEI Consultants (AEI) 2012e. Investigation and Remedial Action Workplan, 1630 Park Street, Alameda, California. January 12, 2012.

AEI Consultants (AEI) 2012f. Corrective Action Plan, 1630 Park Street, Alameda, California. February 3, 2012.

GeoPlexus Incorporated, October 28, 1993. Supplemental Site Characterization, Good Chevrolet 1630 Park Street, Alameda, CA

GeoPlexus Incorporated, April 30, 1997. Phase II Remedial Investigation Report, Good Chevrolet 1630 Park Street, Alameda, CA

GeoPlexus Incorporated, December 18, 1998. Preliminary Remedial Risk Assessment for Good Chevrolet 1630 Park Street, Alameda, CA

Groundwater Technology, Inc. April 29, 1987. Report Subsurface investigation Good Chevrolet 1630 Park Street, Alameda, CA

Helley, E.J. and R.W. Graymer, 1997. Quaternary Geology of Alameda County and Surrounding Areas, California: Derived from the Digital Database Open-File 97-97, 1997

Norfleet Consultants, 1998. Groundwater Study and Water Supply History of the East Bay Plain, Alameda and Contra Costa Counties, California. Prepared for the Friends of the San Francisco Estuary, P.O. Box 791, Oakland, California, and dated June 15, 1998.

## 13.0 Report Limitations and Signatures

This report has been prepared by AEI Consultants relating to the environmental release at the property located at 1630 Park Street, in the City of Alameda, Alameda County, California. Material samples have been collected and analyzed, and where appropriate conclusions drawn and recommendations made based on these analyses and other observations. This report may not reflect subsurface variations that may exist between sampling points. These variations cannot be fully anticipated, nor could they be entirely accounted for, in spite of exhaustive additional testing. This document should not be regarded as a guarantee that no further contamination, beyond that which could have been detected within the scope of past investigations is present beneath the property or that all contamination present at the site will be identified, treated, or removed. Undocumented, unauthorized releases of hazardous material(s) and petroleum products, the remains of which are not readily identifiable by visual inspection and/or are of different chemical constituents, are difficult and often impossible to detect within the scope of a chemical specific investigation and may or may not become apparent at a later time. All specified work has been performed in accordance with generally accepted practices in environmental engineering, geology, and hydrogeology and performed under the direction of appropriate California registered professionals.

Please contact the undersigned at (925) 746-6000 if you have any questions or need any additional information.

Sincerely,

***AEI Consultants***

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Senior Project Manager

Peter McIntyre, PG, REA
Vice President, Principal Geologist

REGISTERED GEOLOGIST
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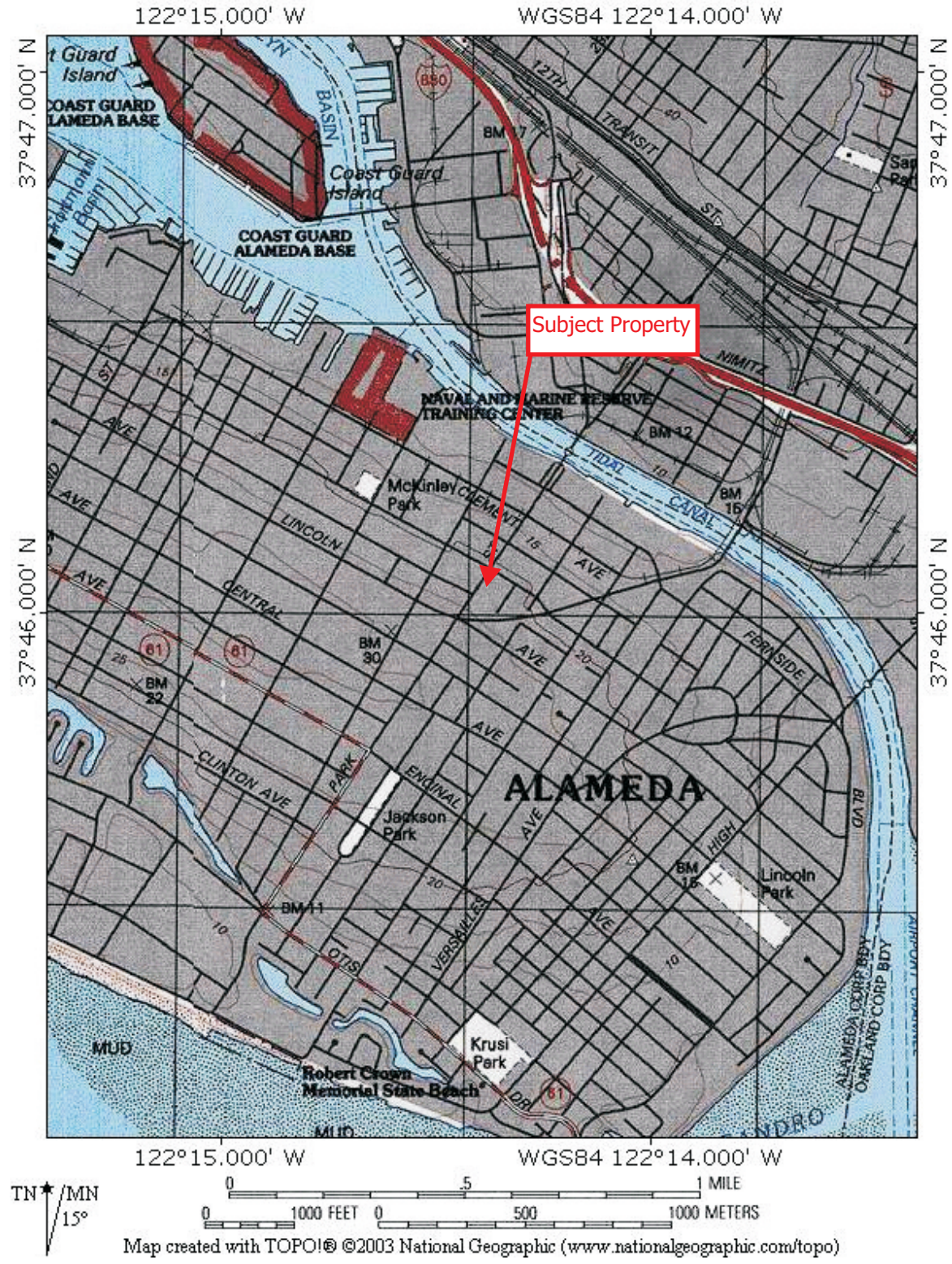
Bryan Campbell, PG
Senior Project Geologist

**Distribution:**
John Buestad, Foley Street Investments
Karel Detterman, Alameda County Environmental Health Department (FTP Upload)
GeoTracker (Upload)

# FIGURES




WELL

# SITE LOCATION MAP

1630 Park Street, Alameda, California **FIGURE 1**

Project Number: 298931

AEI Consultants


## LEGEND

N

- SUBJECT PROPERTY BOUNDARY
- GEOPHYSICAL SURVEY PERIMETER
- AEI SOIL BORING (7/11)
- SOIL BORING (4/08)

0' 110'

APPROX. SCALE: 1 in = ~110 ft

# SITE LAYOUT MAP

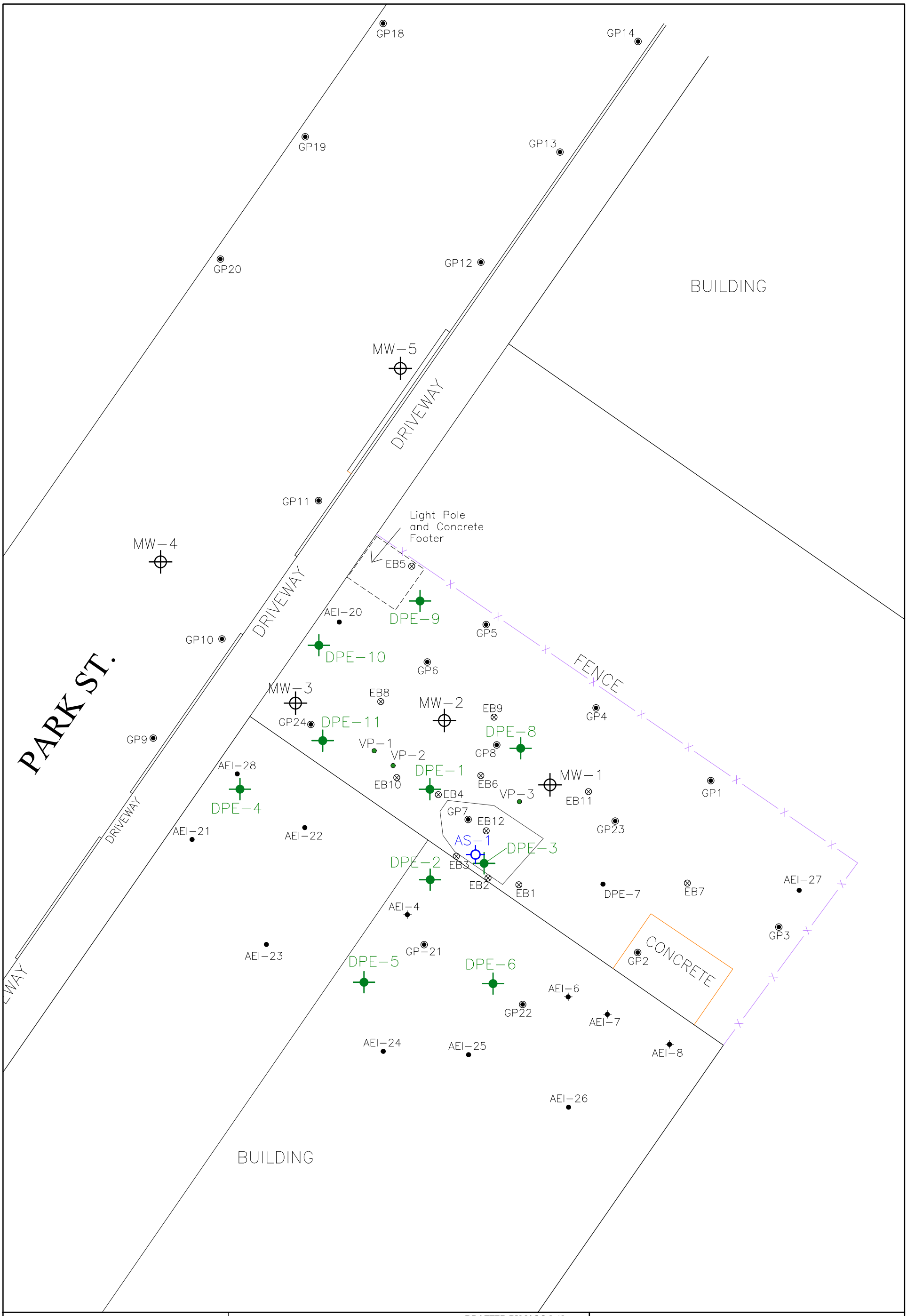
1630 PARK STREET

ALAMEDA, CALIFORNIA

**FIGURE 2**

JOB NO: 298931

AEI Consultants




## LEGEND

DRAFTED BY JAS 3-2-12
REVISED BY JAS 3-15-12

- Remediation Well (12/11 and 1/12)
- AEI Soil Boring (1/12)
- Vapor Probe (12/11)
- AEI Soil Boring (7/11)
- Soil Boring (4/08)
- Soil Boring (1/97)
- Groundwater Monitoring Well
- Air Sparge Well

# AEI CONSULTANTS

2500 CAMINO DIABLO, WALNUT CREEK

## SITE PLAN

1630 PARK STREET
ALAMEDA, CALIFORNIA

**FIGURE 3**
PROJECT NO. 298931

BUILDING

MW-5

DRIVEWAY

MW-4

DRIVEWAY

DPE-9

DPE-10

FENCE

PARK ST.

MW-3 (16.92)

MW-2

DPE-11

(17.11)

DPE-8

DPE-1

(17.07)

MW-1
(17.40)

DPE-4

AS-1

DPE-3
(17.35)

DPE-2
(16.93*)

CONCRETE

DPE-5

DPE-6

BUILDING

17

17.1

17.2

17.3

Groundwater Flow Direction
December 6, 2011; Groundwater
Gradient = 0.01 ft/ft

Contours plotted using Surfer Version 7.00

N

W E

S

0 10 20

Scale: 1" = 20'

## LEGEND

DRAFTED BY JAS 3-9-12
REVISED BY JAS 3-15-12

- Remediation Well (12/11 and 1/12)
- Groundwater Monitoring Well
- (306.70) Groundwater Elevation
- * = Anomalous elevation not used for contouring.

# AEI CONSULTANTS

2500 CAMINO DIABLO, WALNUT CREEK

# GROUNDWATER ELEVATION MAP - 12/2011

1630 PARK STREET
ALAMEDA, CALIFORNIA

**FIGURE 4**
PROJECT NO. 298931

BUILDING

MW–5

DRIVEWAY

MW–4

DRIVEWAY

PARK ST.

DRIVEWAY

DRIVEWAY

DPE–9
(16.97)

DPE–10

FENCE

MW–3
(16.88)

DPE–11

MW–2
(17.05)

DPE–8

DPE–1
(17.10)

MW–1
(17.29)

DPE–4
(16.95)

AS–

DPE–3
(16.29*)

DPE–2
(18.25*)

CONCRETE

DPE–5

DPE–6
(17.55)

17

17.1

17.2

17.3

17.4

BUILDING

Groundwater Flow Direction
January 24, 2012; Groundwater
Gradient = 0.01 ft/ft

Contours plotted using Surfer Version 7.00

N

W E

S

0 10 20

Scale: 1" = 20'

## LEGEND

DRAFTED BY JAS 3-9-12
REVISED BY JAS 3-15-12

Remediation Well (12/11 and 1/12)

Groundwater Monitoring Well

(306.70) Groundwater Elevation

* = Anomalous elevation not used for contouring.

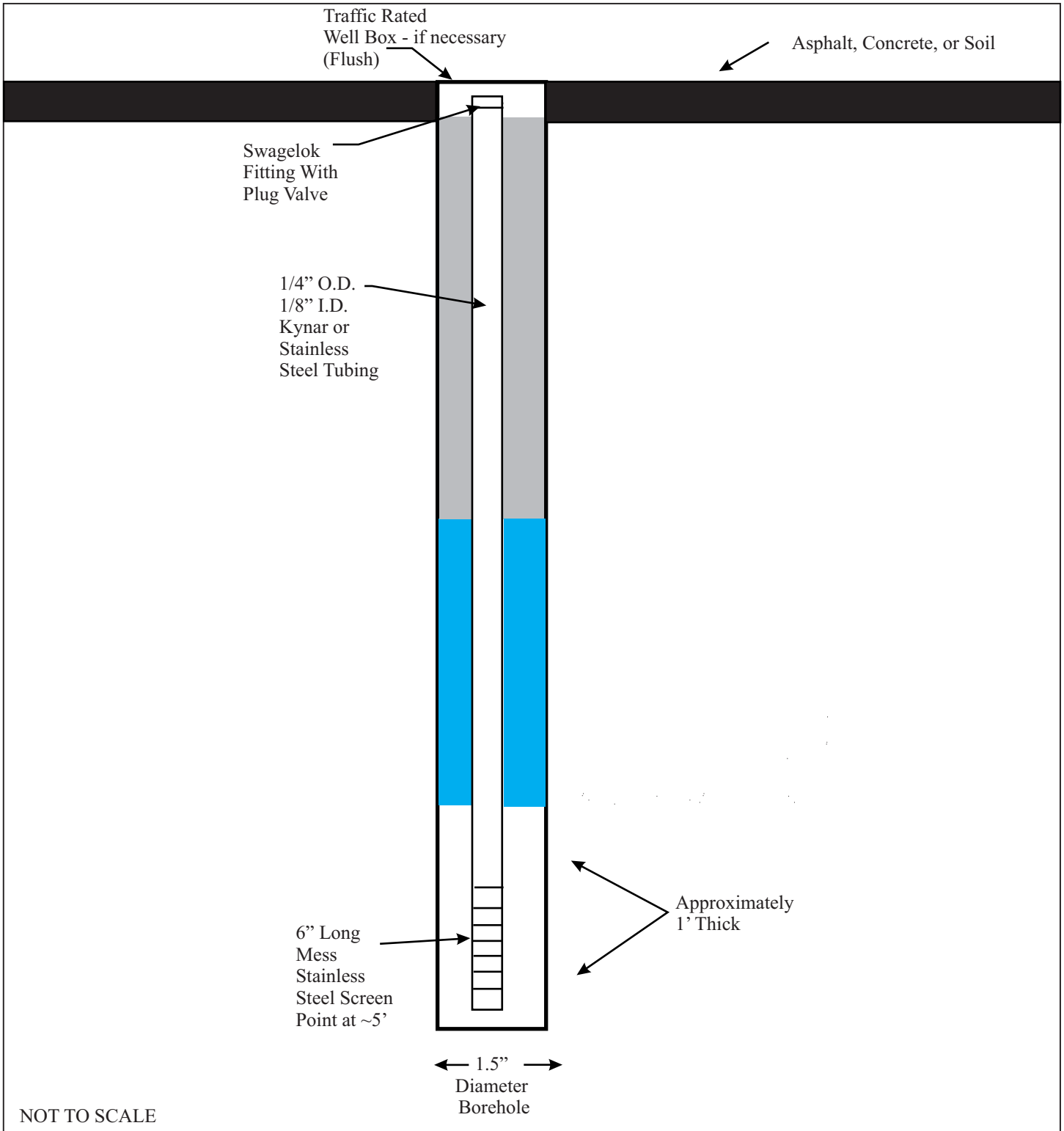
# AEI CONSULTANTS

2500 CAMINO DIABLO, WALNUT CREEK

# GROUNDWATER ELEVATION MAP - 1/2012

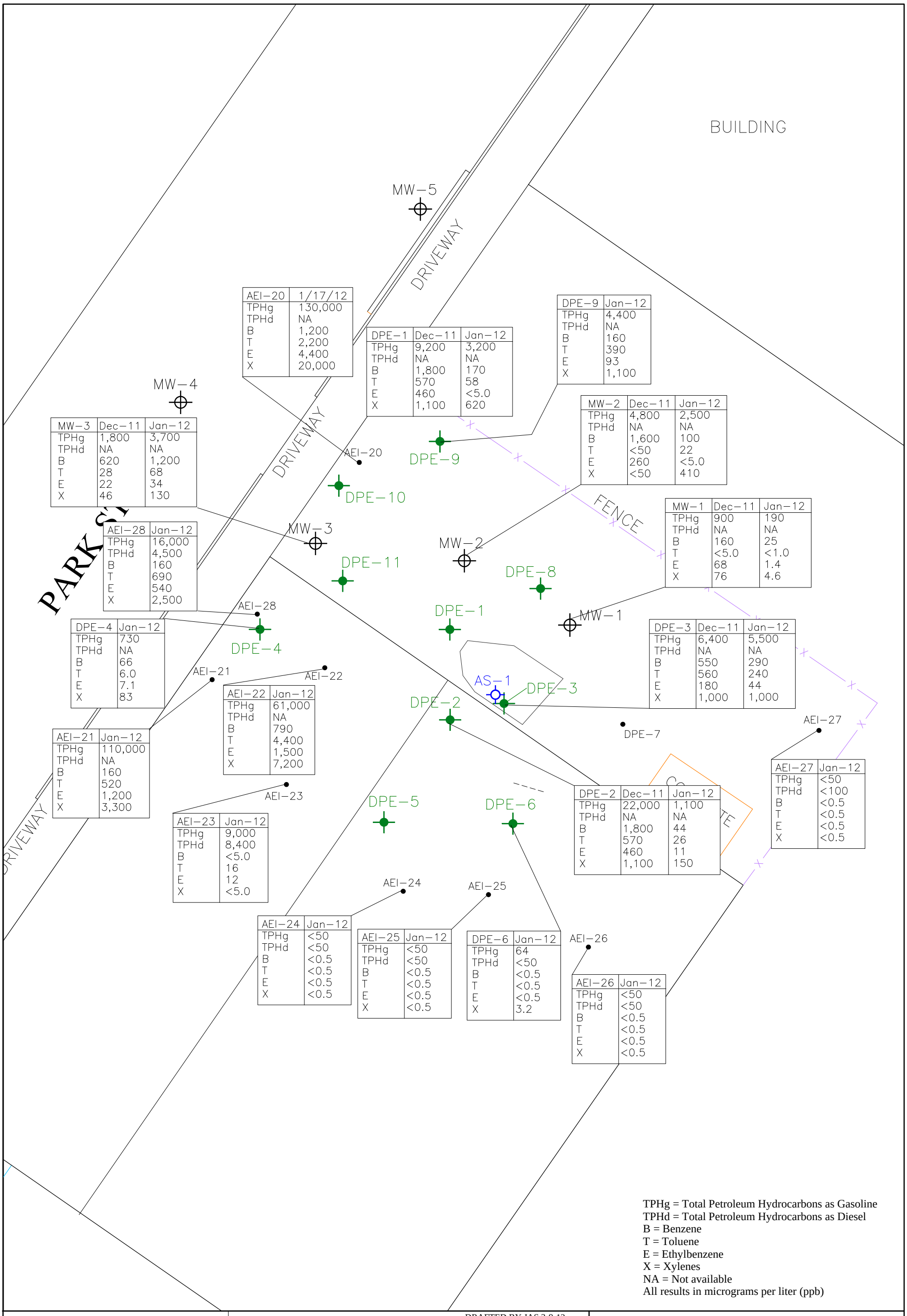
1630 PARK STREET
ALAMEDA, CALIFORNIA

**FIGURE 5**
PROJECT NO. 298931




AEI CONSULTANTS
2500 CAMINO DIABLO, WALNUT CREEK, CA

**FIGURE 6:**
**TYPICAL VAPOR**
**PROBE SCHEMATIC**




TPHg = Total Petroleum Hydrocarbons as Gasoline
TPHd = Total Petroleum Hydrocarbons as Diesel
B = Benzene
T = Toluene
E = Ethylbenzene
X = Xylenes
NA = Not available
All results in micrograms per liter (ppb)

N
W E
S

0 10 20
Scale: 1" = 20'

LEGEND

Remediation Well (12/11 and 1/12)

Groundwater Monitoring Well

AEI Soil Boring (1/12)

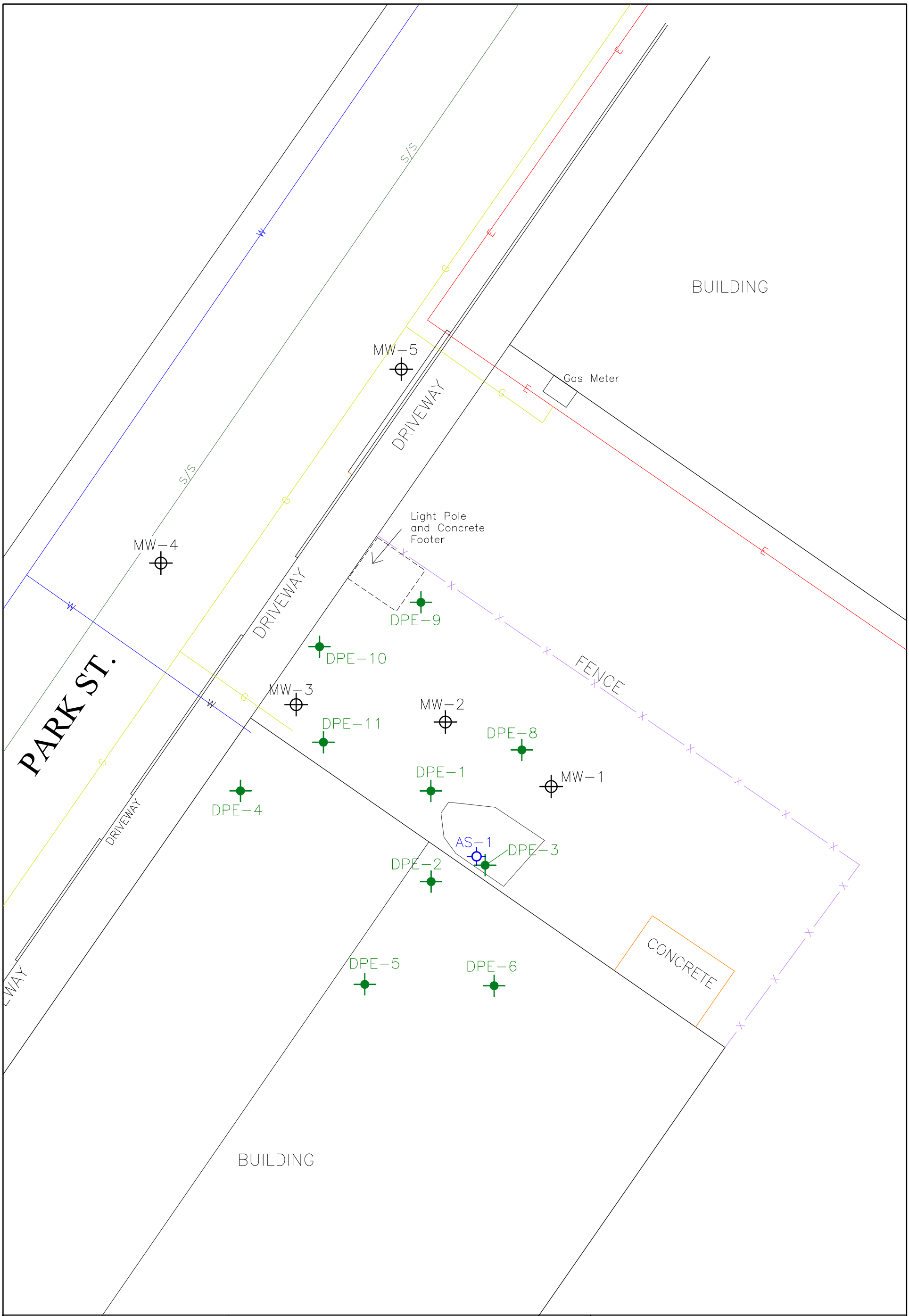
DRAFTED BY JAS 3-9-12
REVISED BY JAS 3-15-12

**AEI CONSULTANTS**
2500 CAMINO DIABLO, WALNUT CREEK

# GROUNDWATER ANALYTICAL MAP

1630 PARK STREET
ALAMEDA, CALIFORNIA

**FIGURE 7**
PROJECT NO. 298931




N

W E

S

0 10 20

Scale: 1" = 20'

## LEGEND

DRAFTED BY JAS 3-2-12
REVISED BY JAS 3-15-12

- Remediation Well (12/11 and 1/12)
- Groundwater Monitoring Well
- Air Sparge Well
- Underground Natural Gas Line (3 to 4 feet bgs)
- Underground Water Line (3 feet bgs)
- Underground Electric Line (3 feet bgs)
- Underground Sanitrary Sewer Line (10.3 to 11.3 feet bgs)

**AEI CONSULTANTS**
2500 CAMINO DIABLO, WALNUT CREEK

# UTILITY MAP

1630 PARK STREET
ALAMEDA, CALIFORNIA

**FIGURE 8**
PROJECT NO. 298931

# TABLES

**Table 1**
**Soil Sample Analytical Data**
**TPH, MBTEX and POG**
**AEI Project No. 298931, 1630 Park Street, Alameda, California**

| Sample ID | Date Collected | Approx. Depth (feet) | TPH-g (mg/kg) | TPH-d* (mg/kg) | TPH-mo* (mg/kg) | MTBE (mg/kg) | Benzene (mg/kg) | Toluene (mg/kg) | Ethylbenzene (mg/kg) | Xylenes (mg/kg) | POG (mg/kg) |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | EPA Method SW8021B/8015B/m | | | | | EPA Method SM5520E/F |
| MW-1-10 | 1/15/1987 | 10 | 24 | - | - | - | 2.9 | 3.6 | - | 1.8 | - |
| MW-1-15 | 1/15/1987 | 15 | <1.0 | - | - | - | <0.1 | <0.1 | - | <0.1 | - |
| MW-2-5 | 1/15/1987 | 5 | <1.0 | - | - | - | <0.1 | <0.1 | - | <0.1 | - |
| MW-2-10 | 1/15/1987 | 10 | 350 | - | - | - | 14 | 22 | - | 23 | - |
| MW-3-10 | 1/15/1987 | 10 | 200 | - | - | - | 9.8 | 16 | - | 16 | - |
| MW-3-15 | 1/15/1987 | 15 | <1.0 | - | - | - | <0.1 | <0.1 | - | <0.1 | - |
| SB-5-10 | 1/15/1987 | 10 | 6.5 | - | - | - | <0.1 | 0.22 | - | <0.1 | - |
| EB1-S2 | 10/15/1993 | 8.5 | 510 | - | - | - | 0.89 | 10 | 5.8 | 41 | - |
| EB1-S3 | 10/15/1993 | 11 | 2,300 | - | - | - | 22 | 190 | 57 | 280 | - |
| EB2-2S | 10/15/1993 | 10 | 15,000 | - | - | - | 84 | 710 | 260 | 1,400 | - |
| EB2-S3 | 10/15/1993 | 11.5 | 200 | - | - | - | 4.3 | 15 | 3.9 | 20 | - |
| EB3-S2 | 10/15/1993 | 10 | 2,200 | - | - | - | 9.4 | 71 | 42 | 200 | - |
| EB3-S3 | 10/15/1993 | 12.5 | 610 | - | - | - | 1.2 | 3.2 | 4.5 | 2.9 | - |
| EB4-S2 | 10/15/1993 | 8 | 4,900 | - | - | - | 32 | 230 | 84 | 440 | - |
| EB4-S3 | 10/15/1993 | 10.5 | 7,600 | - | - | - | 60 | 390 | 130 | 630 | - |
| EB5-S2 | 10/15/1993 | 9 | 1,800 | - | - | - | <2.5 | 22 | 27 | 140 | - |
| EB5-S3 | 10/15/1993 | 11.5 | 14 | - | - | - | 0.021 | 1.5 | 0.49 | 2.5 | - |
| EB6-S2 | 10/15/1993 | 8.5 | 6,800 | - | - | - | 20 | 230 | 100 | 590 | - |
| EB7-S2 | 10/15/1993 | 6.5 | <50 | - | - | - | <0.5 | <0.5 | <0.5 | <0.5 | - |
| EB7-S3 | 10/15/1993 | 8.5 | 1,000 | - | - | - | 3.8 | 45 | 21 | 110 | - |
| MW4-S1 | 4/20/1994 | 4.5 | <50 | - | - | - | <0.5 | <0.5 | <0.5 | 0.013 | - |
| MW4-S2 | 4/20/1994 | 9 | 9.7 | - | - | - | 1.1 | 0.82 | 0.42 | 1.3 | - |
| MW4-S3 | 4/20/1994 | 14 | <50 | - | - | - | <0.5 | 0.008 | <0.5 | 0.022 | - |
| MW5-S1 | 4/20/1994 | 4.5 | <50 | - | - | - | <0.5 | <0.5 | <0.5 | <0.5 | - |
| MW5-S2 | 4/20/1994 | 9 | 1,100 | - | - | - | 12 | 43 | 20 | 93 | - |
| MW5-S3 | 4/20/1994 | 14 | 1.1 | - | - | - | 0.033 | 0.17 | 0.044 | 0.22 | - |
| EB8-S2 | 1/21/1997 | 9.5 | 2,000 | - | - | <4 | 8.4 | 83 | 44 | 210 | - |
| EB8-S3 | 1/21/1997 | 13.5 | 18 | - | - | 0.10 | 3.2 | 1.2 | 0.47 | 1.7 | - |
| EB9-S1 | 1/21/1997 | 6.5 | 1.8 | - | - | <5 | 0.071 | 0.052 | 0.026 | 0.074 | - |
| EB9-S2 | 1/21/1997 | 9.5 | 1,300 | - | - | <4 | 7.1 | 54 | 29 | 130 | - |
| EB10-S1 | 1/21/1997 | 8.5 | 2,300 | - | - | 9.3 | 9.1 | 100 | 50 | 190 | - |

**Table 1**
**Soil Sample Analytical Data**
**TPH, MBTEX and POG**
**AEI Project No. 298931, 1630 Park Street, Alameda, California**

| Sample ID | Date Collected | Approx. Depth (feet) | TPH-g (mg/kg) | TPH-d* (mg/kg) | TPH-mo* (mg/kg) | MTBE (mg/kg) | Benzene (mg/kg) | Toluene (mg/kg) | Ethylbenzene (mg/kg) | Xylenes (mg/kg) | POG (mg/kg) |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | EPA Method SW8021B/8015B/m | | | | | EPA Method SM5520E/F |
| EB11-S1 | 1/21/1997 | 9.5 | 3,800 | - | - | <9 | 8.8 | 190 | 97 | 510 | - |
| EB11-S2 | 1/21/1997 | 12 | 13 | - | - | <0.1 | 1.1 | 1.6 | 0.47 | 1.4 | - |
| EB12-S1 | 1/21/1997 | 9.5 | 300 | - | - | <0.6 | 0.95 | 0.59 | 3.5 | 18 | - |
| EB12-S2 | 1/21/1997 | 12 | 1,300 | - | - | 6.2 | 9.4 | 23 | 35 | 130 | - |
| GP1-11.5 | 4/29/2008 | 11.5 | 130 | - | - | <0.005 | <0.10 | 0.29 | <0.10 | 0.42 | - |
| GP1-15 | 4/29/2008 | 15 | <1.0 | - | - | <0.005 | <0.005 | 0.0081 | 0.0065 | 0.028 | - |
| GP2-11 | 4/29/2008 | 11 | 120 | - | - | <0.010 | <0.050 | 0.87 | 0.43 | 1.2 | - |
| GP2-13.5 | 4/29/2008 | 13.5 | <1.0 | - | - | <0.005 | <0.005 | <0.005 | <0.005 | <0.005 | - |
| GP3-6.75 | 4/29/2008 | 6.75 | <1.0 | - | - | <0.005 | <0.005 | <0.005 | <0.005 | <0.005 | - |
| GP3-11.5 | 4/29/2008 | 11.5 | <1.0 | - | - | <0.005 | <0.005 | <0.005 | <0.005 | <0.005 | - |
| GP4-11.5 | 4/29/2008 | 11.5 | 2.7 | - | - | <0.005 | 0.14 | 0.052 | 0.072 | 0.17 | - |
| GP4-14.5 | 4/29/2008 | 14.5 | 99 | - | - | <0.020 | 0.48 | 1.4 | 1.0 | 4.5 | - |
| GP5-11.5 | 4/29/2008 | 11.5 | 4.6 | - | - | <0.005 | 0.12 | 0.078 | 0.14 | 0.48 | - |
| GP5-19 | 4/29/2008 | 19 | 1.5 | - | - | <0.005 | <0.005 | 0.022 | 0.0069 | 0.032 | - |
| GP6-11 | 4/29/2008 | 11 | 130 | - | - | <0.10 | 0.11 | 1.0 | 1.1 | 5.4 | - |
| GP7-8 | 4/30/2008 | 8 | 390 | - | - | <0.050 | 0.84 | 2.2 | 4.3 | 18 | - |
| GP7-19.5 | 4/30/2008 | 19.5 | <1.0 | - | - | <0.005 | <0.005 | <0.005 | <0.005 | <0.005 | - |
| GP8-8.5 | 5/1/2008 | 8.5 | 1,100 | - | - | <0.050 | <0.10 | 3.2 | 7.3 | 45 | - |
| GP8-19.5 | 5/1/2008 | 19.5 | 5.8 | - | - | <0.005 | 0.0091 | 0.067 | 0.048 | 0.21 | - |
| GP9-7.5 | 5/1/2008 | 7.5 | <1.0 | - | - | <0.005 | <0.005 | <0.005 | <0.005 | <0.005 | - |
| GP9-11.25 | 5/1/2008 | 11.25 | <1.0 | - | - | <0.005 | <0.005 | <0.005 | <0.005 | <0.005 | - |
| GP10-7.5 | 4/30/2008 | 7.5 | <1.0 | - | - | <0.005 | <0.005 | <0.005 | <0.005 | <0.005 | - |
| GP10-19.5 | 4/30/2008 | 19.5 | <1.0 | - | - | <0.005 | <0.005 | <0.005 | <0.005 | <0.005 | - |
| GP11-6 | 4/30/2008 | 6 | <1.0 | - | - | <0.005 | <0.005 | 0.011 | 0.0053 | 0.026 | - |
| GP11-15.5 | 4/30/2008 | 15.5 | 2,100 | - | - | <0.10 | 5.7 | 71 | 38 | 180 | - |
| GP11-18 | 4/30/2008 | 18 | 87 | - | - | <0.020 | 0.059 | 0.93 | 0.67 | 4.2 | - |
| GP12-7.5 | 4/30/2008 | 7.5 | <1.0 | - | - | <0.005 | <0.005 | <0.005 | <0.005 | <0.005 | - |
| GP12-11 | 4/30/2008 | 11 | 4.7 | - | - | <0.005 | 0.015 | 0.21 | 0.067 | 0.32 | - |
| GP12-15.5 | 4/30/2008 | 15.5 | <1.0 | - | - | <0.005 | <0.005 | 0.0071 | 0.0051 | 0.025 | - |
| GP13-7.25 | 4/30/2008 | 7.25 | <1.0 | - | - | <0.005 | <0.005 | <0.005 | <0.005 | <0.005 | - |
| GP13-11 | 4/30/2008 | 11 | <1.0 | - | - | <0.005 | <0.005 | <0.005 | <0.005 | <0.005 | - |
| GP13-14 | 4/30/2008 | 14 | <1.0 | - | - | <0.005 | <0.005 | <0.005 | <0.005 | <0.005 | - |
| GP14-7.5 | 4/30/2008 | 7.5 | <1.0 | - | - | <0.005 | <0.005 | <0.005 | <0.005 | <0.005 | - |

**Table 1**
**Soil Sample Analytical Data**
**TPH, MBTEX and POG**
**AEI Project No. 298931, 1630 Park Street, Alameda, California**

| Sample ID | Date Collected | Approx. Depth (feet) | TPH-g (mg/kg) | TPH-d* (mg/kg) | TPH-mo* (mg/kg) | MTBE (mg/kg) | Benzene (mg/kg) | Toluene (mg/kg) | Ethylbenzene (mg/kg) | Xylenes (mg/kg) | POG (mg/kg) |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | EPA Method SW8021B/8015B/m | | | | | EPA Method SM5520E/F |
| GP14-11 | 4/30/2008 | 11 | <1.0 | - | - | <0.005 | <0.005 | <0.005 | <0.005 | <0.005 | - |
| GP15-7.5 | 4/30/2008 | 7.5 | <1.0 | - | - | <0.005 | <0.005 | <0.005 | <0.005 | <0.005 | - |
| GP16-7.5 | 5/1/2008 | 7.5 | <1.0 | - | - | <0.005 | <0.005 | <0.005 | <0.005 | <0.005 | - |
| GP16-10.5 | 5/1/2008 | 10.5 | <1.0 | - | - | <0.005 | <0.005 | <0.005 | <0.005 | <0.005 | - |
| GP17-7.5 | 5/1/2008 | 7.5 | <1.0 | - | - | <0.005 | <0.005 | <0.005 | <0.005 | <0.005 | - |
| GP17-11.5 | 5/1/2008 | 11.5 | <1.0 | - | - | <0.005 | <0.005 | <0.005 | <0.005 | <0.005 | - |
| GP18-7.5 | 5/1/2008 | 7.5 | <1.0 | - | - | <0.005 | <0.005 | <0.005 | <0.005 | <0.005 | - |
| GP18-10 | 5/1/2008 | 10 | <1.0 | - | - | <0.005 | <0.005 | <0.005 | <0.005 | <0.005 | - |
| GP19-7 | 5/1/2008 | 7 | <1.0 | - | - | <0.005 | <0.005 | <0.005 | <0.005 | <0.005 | - |
| GP20-8 | 5/1/2008 | 8 | <1.0 | - | - | <0.005 | <0.005 | <0.005 | <0.005 | <0.005 | - |
| GP21-7.5 | 5/2/2008 | 7.5 | 2.1 | - | - | <0.005 | 0.006 | 0.028 | 0.012 | 0.065 | - |
| GP21-15.5 | 5/2/2008 | 15.5 | <1.0 | - | - | <0.005 | 0.0064 | 0.022 | 0.0057 | 0.027 | - |
| GP21-19.5 | 5/2/2008 | 19.5 | <1.0 | - | - | <0.005 | <0.005 | 0.0092 | <0.005 | 0.023 | - |
| GP22-10.5 | 5/2/2008 | 10.5 | 1,100 | - | - | <0.20 | 0.67 | 13 | 15 | 70 | - |
| GP22-15.5 | 5/2/2008 | 15.5 | <1.0 | - | - | <0.005 | <0.005 | <0.005 | <0.005 | <0.005 | - |
| GP23-7.5 | 5/2/2008 | 7.5 | 53 | - | - | <0.005 | <0.050 | 0.13 | <0.050 | 0.37 | - |
| GP23-11.5 | 5/2/2008 | 11.5 | 1.9 | - | - | <0.005 | 0.062 | 0.041 | 0.043 | 0.18 | - |
| GP23-16 | 5/2/2008 | 16 | 2 | - | - | <0.005 | <0.005 | 0.027 | 0.018 | 0.099 | - |
| GP24-8.5 | 5/2/2008 | 8.5 | 3,600 | - | - | <1.0 | 1.2 | 32 | 62 | 410 | - |
| GP24-19.5 | 5/2/2008 | 19.5 | <1.0 | - | - | <0.005 | <0.005 | <0.005 | <0.005 | <0.005 | - |
| AEI-3-7' | 7/25/2011 | 7 | 1,200 | 1,700 | 4,000 | <10 | 2.6 | 25 | 10 | 48 | - |
| AEI-3-15' | 7/25/2011 | 15 | <1.0 | 1.6 | <5.0 | <10 | <0.005 | <0.005 | <0.005 | <0.005 | - |
| AEI-4-7' | 7/25/2011 | 7 | 5,100 | 2,100 | 710 | <50 | 6.2 | 83.0 | 54.0 | 280.0 | - |
| AEI-4-15' | 7/25/2011 | 15 | 1.2 | 1.3 | <5.0 | <0.05 | 0.029 | 0.071 | 0.031 | 0.17 | - |
| AEI-6-7' | 7/25/2011 | 7 | 470 | 10,000 | 24,000 | <5.0 | <0.50 | <0.50 | <0.50 | <0.50 | - |
| AEI-6-14' | 7/25/2011 | 14 | <1.0 | 1.4 | <5.0 | <5.0 | <0.50 | <0.50 | <0.50 | <0.50 | - |
| AEI-7-7' | 7/25/2011 | 7 | 100 | 6,300 | 14,000 | - | - | - | - | - | - |
| AEI-7-13' | 7/25/2011 | 13 | <1.0 | 3.7 | 7.4 | <5.0 | <0.50 | <0.50 | <0.50 | <0.50 | - |
| AEI-8-7' | 7/25/2011 | 7 | <1.0 | 720 | 2,900 | - | - | - | - | - | - |
| AEI-8-14' | 7/25/2011 | 14 | <1.0 | <1.0 | <5.0 | <5.0 | <0.50 | <0.50 | <0.50 | <0.50 | - |
| AEI-10-8' | 7/26/2011 | 8 | <1.0 | 1.2 | <5.0 | <5.0 | <0.50 | <0.50 | <0.50 | <0.50 | - |

**Table 1**
**Soil Sample Analytical Data**
**TPH, MBTEX and POG**
**AEI Project No. 298931, 1630 Park Street, Alameda, California**

| Sample ID | Date Collected | Approx. Depth (feet) | TPH-g (mg/kg) | TPH-d* (mg/kg) | TPH-mo* (mg/kg) | MTBE (mg/kg) | Benzene (mg/kg) | Toluene (mg/kg) | Ethylbenzene (mg/kg) | Xylenes (mg/kg) | POG (mg/kg) |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | EPA Method SW8021B/8015B/m | | | | | EPA Method SM5520E/F |
| AEI-11-3' | 7/26/2011 | 3 | <1.0 | 2.2 | 8.5 | - | - | - | - | - | - |
| AEI-12-3' | 7/26/2011 | 3 | <1.0 | 2.6 | <5.0 | - | - | - | - | - | - |
| AEI-13-3' | 7/26/2011 | 3 | <1.0 | 4.2 | <5.0 | - | - | - | - | - | - |
| AEI-14-7' | 7/26/2011 | 7 | <1.0 | - | - | <0.05 | <0.005 | <0.005 | <0.005 | <0.005 | - |
| AEI-15-7' | 7/26/2011 | 7 | <1.0 | - | - | <0.05 | <0.005 | <0.005 | <0.005 | <0.005 | - |
| AEI-16-7' | 7/26/2011 | 7 | <1.0 | 1.4 | <5.0 | - | | | | - | <50 |
| AEI-17-8' | 7/26/2011 | 8 | <1.0 | 1.1 | <5.0 | <0.05 | <0.005 | <0.005 | <0.005 | <0.005 | - |
| AEI-18-8' | 7/26/2011 | 8 | <1.0 | <1.0 | <5.0 | <0.05 | <0.005 | <0.005 | <0.005 | <0.005 | - |
| AEI-19-8' | 7/26/2011 | 8 | <1.0 | <1.0 | <5.0 | <0.05 | <0.005 | <0.005 | <0.005 | <0.005 | - |
| **AEI-20-7.5'** | **1/17/2012** | **7.5** | **8.4** | **-** | **-** | **<0.05** | **0.0071** | **0.084** | **0.069** | **0.38** | **-** |
| **AEI-20-11'** | **1/17/2012** | **11** | **600** | **-** | **-** | **<0.50** | **0.89** | **2.9** | **10** | **39** | **-** |
| **AEI-20-15'** | **1/17/2012** | **15** | **3.3** | **-** | **-** | **<0.05** | **<0.005** | **0.028** | **<0.005** | **0.017** | **-** |
| **AEI-21-7'** | **1/17/2012** | **7** | **<1.0** | **-** | **-** | **<0.05** | **<0.005** | **<0.005** | **<0.005** | **<0.005** | **-** |
| **AEI-21-11'** | **1/17/2012** | **11** | **46** | **-** | **-** | **<0.05** | **0.020** | **0.42** | **0.27** | **0.60** | **-** |
| **AEI-21-14'** | **1/17/2012** | **14** | **<1.0** | **-** | **-** | **<0.05** | **<0.005** | **<0.005** | **<0.005** | **<0.005** | **-** |
| **AEI-22-9'** | **1/17/2012** | **9** | **3,100** | **-** | **-** | **<0.05** | **3.2** | **46** | **62** | **400** | **-** |
| **AEI-22-11'** | **1/17/2012** | **11** | **8.6** | **-** | **-** | **<0.10** | **0.71** | **0.77** | **0.31** | **1.3** | **-** |
| **AEI-22-14'** | **1/17/2012** | **14** | **3,300** | **-** | **-** | **<0.05** | **8.3** | **84** | **61** | **370** | **-** |
| **AEI-23-6'** | **1/17/2012** | **6** | **<1.0** | **<1.0** | **<5.0** | **<0.05** | **<0.005** | **<0.005** | **<0.005** | **<0.005** | **-** |
| **AEI-23-9.5'** | **1/17/2012** | **9.5** | **7.5** | **100** | **180** | **<0.05** | **<0.005** | **0.027** | **<0.005** | **0.0055** | **-** |
| **AEI-23-12.5'** | **1/17/2012** | **12.5** | **460** | **360** | **270** | **<5.0** | **<0.50** | **1.4** | **<0.50** | **0.80** | **-** |
| **AEI-24-7'** | **1/17/2012** | **7** | **<1.0** | **<1.0** | **<5.0** | **<0.05** | **<0.005** | **<0.005** | **<0.005** | **<0.005** | **-** |
| **AEI-24-10.5'** | **1/17/2012** | **10.5** | **<1.0** | **<1.0** | **<5.0** | **<0.05** | **<0.005** | **<0.005** | **<0.005** | **<0.005** | **-** |
| **AEI-24-13'** | **1/17/2012** | **13** | **<1.0** | **<1.0** | **<5.0** | **<0.05** | **<0.005** | **<0.005** | **<0.005** | **<0.005** | **-** |
| **AEI-25-7.5'** | **1/17/2012** | **7.5** | **<1.0** | **<1.0** | **<5.0** | **<0.05** | **<0.005** | **<0.005** | **<0.005** | **<0.005** | **-** |
| **AEI-25-10'** | **1/17/2012** | **10** | **<1.0** | **<1.0** | **<5.0** | **<0.05** | **<0.005** | **<0.005** | **<0.005** | **<0.005** | **-** |
| **AEI-25-14'** | **1/17/2012** | **14** | **<1.0** | **<1.0** | **<5.0** | **<0.05** | **<0.005** | **<0.005** | **<0.005** | **<0.005** | **-** |
| **AEI-26-7.5'** | **1/17/2012** | **7.5** | **<1.0** | **<1.0** | **<5.0** | **<0.05** | **<0.005** | **<0.005** | **<0.005** | **<0.005** | **-** |
| **AEI-26-10.5'** | **1/17/2012** | **10.5** | **<1.0** | **<1.0** | **<5.0** | **<0.05** | **<0.005** | **<0.005** | **<0.005** | **<0.005** | **-** |
| **AEI-26-14'** | **1/17/2012** | **14** | **<1.0** | **<1.0** | **<5.0** | **<0.05** | **<0.005** | **<0.005** | **<0.005** | **<0.005** | **-** |
| **AEI-27-3'** | **1/17/2012** | **3** | **<1.0** | **3.2** | **7.9** | **<0.05** | **<0.005** | **<0.005** | **<0.005** | **0.013** | **-** |

**Table 1**
**Soil Sample Analytical Data**
**TPH, MBTEX and POG**
**AEI Project No. 298931, 1630 Park Street, Alameda, California**

| Sample ID | Date Collected | Approx. Depth (feet) | TPH-g (mg/kg) | TPH-d* (mg/kg) | TPH-mo* (mg/kg) | MTBE (mg/kg) | Benzene (mg/kg) | Toluene (mg/kg) | Ethylbenzene (mg/kg) | Xylenes (mg/kg) | POG (mg/kg) |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | EPA Method SW8021B/8015B/m | | | | | EPA Method SM5520E/F |
| AEI-28-7' | 1/17/2012 | 7 | <1.0 | <1.0 | <5.0 | <0.05 | <0.005 | <0.005 | <0.005 | <0.005 | - |
| AEI-28-11' | 1/17/2012 | 11 | 12,000 | 2,100 | 44 | <10 | 21 | 210 | 210 | 1,000 | - |
| AEI-28-13' | 1/17/2012 | 13 | 7.8 | 2.0 | <5.0 | <0.05 | 0.050 | 0.29 | 0.31 | 1.4 | - |
| DPE-1, 7-7.5' | 11/15/2011 | 7 | 1,800 | 330 | 46 | <50 | 9.7 | 64 | 29 | 150 | - |
| DPE-2, 8-8.5' | 11/15/2011 | 8 | 2,200 | 280 | 140 | <15 | 7.6 | 57 | 34 | 170 | - |
| DPE-3, 8-8.5' | 11/14/2011 | 8 | 2,000 | 1,000 | 58 | <50 | 6.7 | 48 | 47 | 240 | - |
| DPE-5, 11' | 1/20/2012 | 11 | 2,300 | - | - | <10 | 15 | 99 | 33 | 140 | - |
| DPE-5, 14' | 1/20/2012 | 14 | 1.1 | - | - | <0.05 | <0.005 | 0.17 | <0.005 | 0.016 | - |
| DPE-6, 10' | 1/20/2012 | 10 | 510 | - | - | <1.0 | <0.10 | 0.14 | 0.47 | 0.96 | - |
| DPE-6, 14' | 1/20/2012 | 14 | <1.0 | - | - | <0.05 | <0.005 | <0.005 | <0.005 | <0.005 | - |
| DPE-7, 10' | 1/19/2012 | 10 | 2,200 | - | - | <5.0 | <5.0 | 16 | 47 | 240 | - |
| DPE-7, 14.5' | 1/19/2012 | 14.5 | 610 | - | - | <5.0 | <5.0 | 3.9 | 9.5 | 55 | - |

mg/kg = milligrams per kilogram (equivalent to parts per million)
MDL = method detection limit
POG = petroleum oil and grease
TPH = total petroleum hydrocarbons
MTBE = methyl butyl tertiary ethyl
TPH-g = TPH as gasoline
"<" = less than
TPH-d = TPH as diesel
"*" = with silica gel cleanup
TPH-mo = TPH as motor oil
"-" = not available

**Table 2**
**Soil Sample Analytical Data**
**VOCs, Fuel Oxygenates, SVOCs, and PCBs**
**AEI Project No. 298931, 1630 Park Street, Alameda, California**

| Sample ID | Date Collected | Approx. Depth (feet) | 1,4-Dioxane (mg/kg) EPA Method SW8260 | All target VOCs (mg/kg) EPA Method SW8260 | Fuel Oxygenates^ (mg/kg) EPA Method SW8260B | All target SVOCs (mg/kg) EPA Method 8270 | All other target PCBs (mg/kg) EPA Method SW8082 |
|---|---|---|---|---|---|---|---|
| GP1-11.5 | 4/29/2008 | 11.5 | - | - | <MDL | - | - |
| GP1-15 | 4/29/2008 | 15 | - | - | <MDL | - | - |
| GP2-11 | 4/29/2008 | 11 | - | - | <MDL | - | - |
| GP2-13.5 | 4/29/2008 | 13.5 | - | - | <MDL | - | - |
| GP3-6.75 | 4/29/2008 | 6.75 | - | - | <MDL | - | - |
| GP3-11.5 | 4/29/2008 | 11.5 | - | - | <MDL | - | - |
| GP4-11.5 | 4/29/2008 | 11.5 | - | - | <MDL | - | - |
| GP4-14.5 | 4/29/2008 | 14.5 | - | - | <MDL | - | - |
| GP5-11.5 | 4/29/2008 | 11.5 | - | - | <MDL | - | - |
| GP5-19 | 4/29/2008 | 19 | - | - | <MDL | - | - |
| GP6-11 | 4/29/2008 | 11 | - | - | <MDL | - | - |
| GP7-8 | 4/30/2008 | 8 | - | - | <MDL | - | - |
| GP7-19.5 | 4/30/2008 | 19.5 | - | - | <MDL | - | - |
| GP8-8.5 | 5/1/2008 | 8.5 | - | - | <MDL | - | - |
| GP8-19.5 | 5/1/2008 | 19.5 | - | - | <MDL | - | - |
| GP9-7.5 | 5/1/2008 | 7.5 | - | - | <MDL | - | - |
| GP9-11.25 | 5/1/2008 | 11.25 | - | - | <MDL | - | - |
| GP10-7.5 | 4/30/2008 | 7.5 | - | - | <MDL | - | - |
| GP10-19.5 | 4/30/2008 | 19.5 | - | - | <MDL | - | - |
| GP11-6 | 4/30/2008 | 6 | - | - | <MDL | - | - |
| GP11-15.5 | 4/30/2008 | 15.5 | - | - | <MDL | - | - |
| GP11-18 | 4/30/2008 | 18 | - | - | <MDL | - | - |
| GP12-7.5 | 4/30/2008 | 7.5 | - | - | <MDL | - | - |
| GP12-11 | 4/30/2008 | 11 | - | - | <MDL | - | - |
| GP12-15.5 | 4/30/2008 | 15.5 | - | - | <MDL | - | - |
| GP13-7.25 | 4/30/2008 | 7.25 | - | - | <MDL | - | - |
| GP13-11 | 4/30/2008 | 11 | - | - | <MDL | - | - |
| GP13-14 | 4/30/2008 | 14 | - | - | <MDL | - | - |
| GP14-7.5 | 4/30/2008 | 7.5 | - | - | <MDL | - | - |
| GP14-11 | 4/30/2008 | 11 | - | - | <MDL | - | - |
| GP15-7.5 | 4/30/2008 | 7.5 | - | - | <MDL | - | - |
| GP16-7.5 | 5/1/2008 | 7.5 | - | - | <MDL | - | - |
| GP16-10.5 | 5/1/2008 | 10.5 | - | - | <MDL | - | - |
| GP17-7.5 | 5/1/2008 | 7.5 | - | - | <MDL | - | - |
| GP17-11.5 | 5/1/2008 | 11.5 | - | - | <MDL | - | - |

**Table 2**
**Soil Sample Analytical Data**
**VOCs, Fuel Oxygenates, SVOCs, and PCBs**
**AEI Project No. 298931, 1630 Park Street, Alameda, California**

| Sample ID | Date Collected | Approx. Depth (feet) | 1,4-Dioxane (mg/kg) EPA Method SW8260 | All target VOCs (mg/kg) EPA Method SW8260 | Fuel Oxygenates^ (mg/kg) EPA Method SW8260B | All target SVOCs (mg/kg) EPA Method 8270 | All other target PCBs (mg/kg) EPA Method SW8082 |
|---|---|---|---|---|---|---|---|
| GP18-7.5 | 5/1/2008 | 7.5 | - | - | <MDL | - | - |
| GP18-10 | 5/1/2008 | 10 | - | - | <MDL | - | - |
| GP19-7 | 5/1/2008 | 7 | - | - | <MDL | - | - |
| GP20-8 | 5/1/2008 | 8 | - | - | <MDL | - | - |
| GP21-7.5 | 5/2/2008 | 7.5 | - | - | <MDL | - | - |
| GP21-15.5 | 5/2/2008 | 15.5 | - | - | <MDL | - | - |
| GP21-19.5 | 5/2/2008 | 19.5 | - | - | <MDL | - | - |
| GP22-10.5 | 5/2/2008 | 10.5 | - | - | <MDL | - | - |
| GP22-15.5 | 5/2/2008 | 15.5 | - | - | <MDL | - | - |
| GP23-7.5 | 5/2/2008 | 7.5 | - | - | <MDL | - | - |
| GP23-11.5 | 5/2/2008 | 11.5 | - | - | <MDL | - | - |
| GP23-16 | 5/2/2008 | 16 | - | - | <MDL | - | - |
| GP24-8.5 | 5/2/2008 | 8.5 | - | - | <MDL | - | - |
| GP24-19.5 | 5/2/2008 | 19.5 | - | - | <MDL | - | - |
| AEI-3-10' | 7/25/2011 | 10 | - | - | - | - | <1.0 |
| AEI-4-10' | 7/25/2011 | 10 | - | - | - | - | <0.25 |
| AEI-6-10' | 7/25/2011 | 10 | - | - | - | - | <0.05 |
| AEI-7-11' | 7/25/2011 | 11 | - | - | - | - | <0.50 |
| AEI-8-11' | 7/25/2011 | 11 | - | - | - | - | <0.05 |
| AEI-11-3' | 7/26/2011 | 3 | - | <MDL | - | - | - |
| AEI-12-3' | 7/26/2011 | 3 | - | <MDL | - | - | - |
| AEI-13-3' | 7/26/2011 | 3 | - | <MDL | - | - | - |
| AEI-14-7' | 7/26/2011 | 7 | - | - | <MDL | - | - |
| AEI-15-7' | 7/26/2011 | 7 | - | - | <MDL | - | - |
| AEI-16-7' | 7/26/2011 | 7 | <0.02 | <MDL | <MDL | <MDL | <0.05 |
| **AEI-27-3'** | **1/17/2012** | **3** | **-** | **<MDL** | **-** | **-** | **-** |

mg/kg = milligrams per kilogram (equivalent to parts per million)
MDL = method detection limit
VOCs = volatile organic compounds
SVOCs = semi-volatile organic compounds
PCBs = polychlorinated biphenyls
"<" = less than
"-" = not available
"^" = fuel oxygenates tert-amyl methyl ether (TAME), t-butyl alcohol (TBA), 1,2-dibromomethane (EDB), 1,2-dichloroethane (1,2-DCA), diisopropyl ether (DIPE), methanol, ethanol, ethyl tert-butyl ether (ETBE), methyl tert-butyl ether (MTBE), and 1,2-Dichloroethane (EDC)

**Table 3**
**Groundwater Sample Analytical Data**
**TPH, MBTEX and TRPH**
**AEI Project No. 298931, 1630 Park Street, Alameda, California**

| Sample ID | Date Collected | TPH-g (µg/L) | TPH-d* (µg/L) | TPH-mo* (µg/L) | MTBE (µg/L) | Benzene (µg/L) | Toluene (µg/L) | Ethylbenzene (µg/L) | Xylenes (µg/L) | TRPH (µg/L) |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | EPA Method SW8021B/8015Bm | | | | | EPA Method E418.1 |
| HP-1 | 4/23/1993 | <50 | - | - | - | <0.5 | <0.5 | <0.5 | <0.5 | - |
| HP-2 | 4/23/1993 | <50 | - | - | - | <0.5 | <0.5 | <0.5 | <0.5 | - |
| EB3-WSIA | 10/15/1993 | 120,000 | - | - | - | 9,600 | 20,000 | 3,400 | 14,000 | - |
| EB5-WSIA | 10/15/1993 | 83,000 | - | - | - | 3,900 | 15,000 | 3,100 | 13,000 | - |
| EB8-WS1 | 1/21/1997 | 25,000 | - | - | <80 | 2,600 | 3,200 | 780 | 3,600 | - |
| EB10-WS1 | 1/21/1997 | 81,000 | - | - | <370 | 13,000 | 12,000 | 3,300 | 8,000 | - |
| EB11-WS1 | 1/21/1997 | 49,000 | - | - | <180 | 6,900 | 6,000 | 2,100 | 4,600 | - |
| EB12-WS1 | 1/21/1997 | 38,000 | - | - | 110 | 1,400 | 1,400 | 1,800 | 7,400 | - |
| P1-WS1 | 1/21/1997 | 74,000 | - | - | <78 | 1,100 | 5,800 | 3,800 | 18,000 | - |
| P2-WS1 | 1/21/1997 | 6,800 | - | - | <10 | 2,200 | 290 | 310 | 560 | - |
| P3-WS1 | 1/21/1997 | 220 | - | - | <5.0 | 1.9 | 17 | 10 | 49 | - |
| GP1W | 4/29/2008 | 70,000 | - | - | <500 | 6,800 | 6,600 | 2,300 | 12,000 | - |
| GP2W | 4/29/2008 | 910 | - | - | <5.0 | 0.69 | 2.9 | 30 | 64 | - |
| GP3W | 4/29/2008 | <50 | - | - | <5.0 | <0.5 | <0.5 | <0.5 | <0.5 | - |
| GP4W | 4/29/2008 | 46,000 | - | - | <500 | 570 | 3,200 | 1,500 | 7,500 | - |
| GP5W | 4/29/2008 | 12,000 | - | - | <60 | 140 | 480 | 270 | 1,100 | - |
| GP6W | 4/29/2008 | 22,000 | - | - | <170 | 920 | 1,600 | 900 | 3,500 | - |
| GP7W | 4/30/2008 | 22,000 | - | - | <180 | 2,600 | 320 | 810 | 2,600 | - |
| GP8W | 5/1/2008 | 140,000 | - | - | <650 | 9,000 | 20,000 | 4,300 | 21,000 | - |
| GP9W | 5/1/2008 | 550 | - | - | <5.0 | 53 | 0.52 | 2.1 | 25 | - |
| GP10W | 4/30/2008 | 11,000 | - | - | <100 | 1,900 | 490 | 480 | 770 | - |
| GP11W | 4/30/2008 | 42,000 | - | - | <452 | 1,900 | 4,200 | 1,700 | 7,600 | - |

**Table 3**
**Groundwater Sample Analytical Data**
**TPH, MBTEX and TRPH**
**AEI Project No. 298931, 1630 Park Street, Alameda, California**

| Sample ID | Date Collected | TPH-g (µg/L) | TPH-d* (µg/L) | TPH-mo* (µg/L) | MTBE (µg/L) | Benzene (µg/L) | Toluene (µg/L) | Ethylbenzene (µg/L) | Xylenes (µg/L) | TRPH (µg/L) |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | EPA Method SW8021B/8015Bm | | | | | EPA Method E418.1 |
| GP12W | 4/30/2008 | 61,000 | - | - | <500 | 4,500 | 11,000 | 1,700 | 7,700 | - |
| GP13W | 4/30/2008 | 6,200 | - | - | <10 | 220 | 53 | 150 | 440 | - |
| GP14W | 4/30/2008 | 300 | - | - | <5.0 | 46 | 1.9 | 19 | 11 | - |
| GP15W | 4/30/2008 | <50 | - | - | <5.0 | <0.5 | 0.69 | <0.5 | 1.1 | - |
| GP16W | 5/1/2008 | <50 | - | - | <5.0 | <0.5 | <0.5 | <0.5 | <0.5 | - |
| GP17W | 5/1/2008 | <50 | - | - | <5.0 | <0.5 | 1.7 | <0.5 | 2 | - |
| GP18W | 5/1/2008 | <50 | - | - | <5.0 | <0.5 | 2.1 | 0.79 | 4 | - |
| GP19W | 5/1/2008 | 85 | - | - | <5.0 | <0.5 | 0.80 | <0.5 | <0.5 | - |
| GP20W | 5/1/2008 | <50 | - | - | <5.0 | <0.5 | <0.5 | <0.5 | <0.5 | - |
| GP21W | 5/2/2008 | 9,400 | - | - | <50 | 560 | 1,400 | 260 | 1,300 | - |
| GP22W | 5/2/2008 | 3,900 | - | - | <25 | 36 | 160 | 120 | 610 | - |
| GP23W | 5/2/2008 | 16,000 | - | - | <90 | 830 | 1,900 | 540 | 2,600 | - |
| GP24W | 5/2/2008 | 110,000 | - | - | <450 | 6,500 | 4,200 | 3,100 | 13,000 | - |
| AEI-1-W | 7/25/2011 | <50 | <50 | <250 | - | | | | - | - |
| AEI-2-W | 7/25/2011 | <50 | <50 | <250 | - | | | | - | - |
| AEI-3-W | 7/25/2011 | 11,000 | 12,000 | 29,000 | <50 | 1,100 | 1,900 | 210 | 860 | - |
| AEI-4-W | 7/25/2011 | 200,000 | 25,000 | 19,000 | <500 | 21,000 | 30,000 | 3,600 | 16,000 | - |
| AEI-5-W | 7/25/2011 | <50 | <50 | <250 | - | - | - | - | - | - |
| AEI-6-W | 7/25/2011 | 18,000 | 120,000 | 300,000 | <50 | <5.0 | 7.7 | <5.0 | 28 | - |
| AEI-7-W | 7/25/2011 | 280 | 11,000 | 28,000 | - | - | - | - | - | - |
| AEI-8-W | 7/25/2011 | <50 | 1,600 | 3,800 | - | - | - | - | - | - |
| AEI-9-W | 7/25/2011 | <50 | <50 | <250 | - | - | - | - | - | - |

**Table 3**
**Groundwater Sample Analytical Data**
**TPH, MBTEX and TRPH**
**AEI Project No. 298931, 1630 Park Street, Alameda, California**

| Sample ID | Date Collected | TPH-g (µg/L) | TPH-d* (µg/L) | TPH-mo* (µg/L) | MTBE (µg/L) | Benzene (µg/L) | Toluene (µg/L) | Ethylbenzene (µg/L) | Xylenes (µg/L) | TRPH (µg/L) |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | EPA Method SW8021B/8015Bm | | | | | EPA Method E418.1 |
| AEI-10-W | 7/26/2011 | <50 | <50 | 400 | - | - | - | - | - | - |
| AEI-14-W | 7/26/2011 | <50 | - | - | <5.0 | <0.5 | <0.5 | <0.5 | <0.5 | - |
| AEI-15-W | 7/26/2011 | <50 | - | - | <5.0 | <0.5 | <0.5 | <0.5 | <0.5 | - |
| AEI-16-W | 7/26/2011 | <50 | <50 | <250 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <1.0 |
| AEI-17-W | 7/26/2011 | <50 | 89 | 590 | <5.0 | <0.5 | <0.5 | <0.5 | <0.5 | - |
| AEI-18-W | 7/26/2011 | <50 | <100 | <500 | <5.0 | <0.5 | <0.5 | <0.5 | <0.5 | - |
| AEI-19-W | 7/26/2011 | <50 | <100 | <500 | <5.0 | <0.5 | <0.5 | <0.5 | <0.5 | - |
| **AEI-20** | **1/17/2012** | **130,000** | **-** | **-** | **<500** | **1,200** | **2,200** | **4,400** | **20,000** | |
| **AEI-21** | **1/17/2012** | **110,000** | **-** | **-** | **<500** | **160** | **520** | **1,200** | **3,300** | |
| **AEI-22** | **1/17/2012** | **61,000** | **-** | **-** | **<500** | **790** | **4,400** | **1,500** | **7,200** | |
| **AEI-23** | **1/17/2012** | **9,000** | **8,400** | **1,500** | **<50** | **<5.0** | **16** | **12** | **<5.0** | |
| **AEI-24** | **1/17/2012** | **<50** | **<50** | **<250** | **<0.5** | **<0.5** | **<0.5** | **<0.5** | **<0.5** | |
| **AEI-25** | **1/17/2012** | **<50** | **<50** | **<250** | **<0.5** | **<0.5** | **<0.5** | **<0.5** | **<0.5** | |
| **AEI-26** | **1/17/2012** | **<50** | **<50** | **<250** | **<0.5** | **<0.5** | **<0.5** | **<0.5** | **<0.5** | |
| **AEI-27** | **1/17/2012** | **<50** | **<100** | **<500** | **<5.0** | **<0.5** | **<0.5** | **<0.5** | **<0.5** | |
| **AEI-28** | **1/17/2012** | **16,000** | **4,500** | **<250** | **<100** | **160** | **690** | **540** | **2,500** | |

µg/L = micrograms per liter
TPH = total petroleum hydrocarbons
TPH-g = TPH as gasoline
TPH-d = TPH as diesel
TPH-mo = TPH as motor oil
MTBE = methyl tertiary butyl ether
"*" = with silica gel cleanup
"-" = not available
"<" = less than
MDL = method detection limit
TRPH = total recoverable petroleum hydrocarbons
MTBE and BTEX analysis for AEI-16-W performed by EPA Method SW8260B

**Table 4**
**Groundwater Sample Analytical Data**
**VOCs, Fuel Oxygenates, SVOCs, and PCBs**
**AEI Project No. 298931, 1630 Park Street, Alameda, California**

| Sample ID | Date Collected | 1,4-Dioxane (µg/L) | TBA (µg/L) | EDB (µg/L) | EDC (µg/L) | MTBE (µg/L) | Fuel Oxygenates^ (µg/L) | All Target VOCs (µg/L) | All Target SVOCs (µg/L) | All Target PCBs (µg/L) |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | EPA Method SW8260B | | | | EPA Method 8270 | EPA Method SW8082 |
| GP1W | 4/29/2008 | - | <20 | <5.0 | <5.0 | <5.0 | <MDL | - | - | - |
| GP2W | 4/29/2008 | - | <2.0 | <0.5 | <0.5 | <0.5 | <MDL | - | - | - |
| GP3W | 4/29/2008 | - | <2.0 | <0.5 | <0.5 | <0.5 | <MDL | - | - | - |
| GP4W | 4/29/2008 | - | <20 | <5.0 | <5.0 | <5.0 | <MDL | - | - | - |
| GP5W | 4/29/2008 | - | <2.0 | <0.5 | <0.5 | <0.5 | <MDL | - | - | - |
| GP6W | 4/29/2008 | - | 24 | <5.0 | <5.0 | <5.0 | <MDL | - | - | - |
| GP7W | 4/30/2008 | - | <20 | <5.0 | <5.0 | <5.0 | <MDL | - | - | - |
| GP8W | 5/1/2008 | - | <20 | <5.0 | <5.0 | <5.0 | <MDL | - | - | - |
| GP9W | 5/1/2008 | - | 7.7 | <0.5 | 1.1 | 1.2 | <MDL | - | - | - |
| GP10W | 4/30/2008 | - | <20 | <5.0 | <5.0 | <5.0 | <MDL | - | - | - |
| GP11W | 4/30/2008 | - | <20 | <5.0 | <5.0 | <5.0 | <MDL | - | - | - |
| GP12W | 4/30/2008 | - | <20 | <5.0 | <5.0 | <5.0 | <MDL | - | - | - |
| GP13W | 4/30/2008 | - | 8.9 | <0.5 | <0.5 | <0.5 | <MDL | - | - | - |
| GP14W | 4/30/2008 | - | <2.0 | <0.5 | <0.5 | <0.5 | <MDL | - | - | - |
| GP15W | 4/30/2008 | - | <2.0 | <0.5 | <0.5 | <0.5 | <MDL | - | - | - |
| GP16W | 5/1/2008 | - | <2.0 | <0.5 | <0.5 | <0.5 | <MDL | - | - | - |
| GP17W | 5/1/2008 | - | <2.0 | <0.5 | <0.5 | <0.5 | <MDL | - | - | - |
| GP18W | 5/1/2008 | - | <2.0 | <0.5 | <0.5 | <0.5 | <MDL | - | - | - |
| GP19W | 5/1/2008 | - | <2.0 | <0.5 | <0.5 | <0.5 | <MDL | - | - | - |
| GP20W | 5/1/2008 | - | <2.0 | <0.5 | <0.5 | <0.5 | <MDL | - | - | - |
| GP21W | 5/2/2008 | - | <2.0 | 0.65 | <0.5 | <0.5 | <MDL | - | - | - |

**Table 4**
**Groundwater Sample Analytical Data**
**VOCs, Fuel Oxygenates, SVOCs, and PCBs**
**AEI Project No. 298931, 1630 Park Street, Alameda, California**

| Sample ID | Date Collected | 1,4-Dioxane (µg/L) | TBA (µg/L) | EDB (µg/L) | EDC (µg/L) | MTBE (µg/L) | Fuel Oxygenates^ (µg/L) | All Target VOCs (µg/L) | All Target SVOCs (µg/L) | All Target PCBs (µg/L) |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | EPA Method SW8260B | | | | EPA Method 8270 | EPA Method SW8082 |
| GP22W | 5/2/2008 | - | <2.0 | <0.5 | <0.5 | <0.5 | <MDL | - | - | - |
| GP23W | 5/2/2008 | - | <20 | <5.0 | <5.0 | <5.0 | <MDL | - | - | - |
| GP24W | 5/2/2008 | - | 75 | <5.0 | <5.0 | <5.0 | <MDL | - | - | - |
| **AEI-14-W** | **7/26/2011** | **-** | **<2.0** | **<0.5** | **<0.5** | **<0.5** | **<MDL** | **-** | **-** | **-** |
| **AEI-15-W** | **7/26/2011** | **-** | **<2.0** | **<0.5** | **<0.5** | **<0.5** | **<MDL** | **-** | **-** | **-** |
| **AEI-16-W** | **7/26/2011** | **<2.0** | **<2.0** | **<0.5** | **<0.5** | **<0.5** | **<MDL** | **<MDL** | **<MDL** | **<0.5** |
| **AEI-27** | **1/17/2012** | **-** | **-** | **-** | **-** | **-** | **-** | **<MDL** | **-** | **-** |

mg/kg = milligrams per kilogram (equivalent to parts per million)
MDL = method detection limit
VOCs = volatile organic compounds
SVOCs = semi-volatile organic compounds
PCBs = polychlorinated biphenyls
TBA = t-butyl alcohol
EDB = 1,2-dibromomethane
EDC = 1,2-dichloroethane
MTBE = methyl tert-butyl ether
"-" = not available
"<" = less than
"^" = fuel oxygenates tert-amyl methyl ether (TAME),
1,2-dichloroethane (1,2-DCA), diisopropyl ether (DIPE), methanol,
ethanol, and ethyl tert-butyl ether (ETBE)

**Table 5**
**Soil Sample Analytical Data**
**Metals**
**AEI Project No. 298931, 1630 Park Street, Alameda, California**

| Sample ID | Date Collected | Approx. Depth (feet) | Cd | Cr (total)* | Pb | Ni | Zn |
|---|---|---|---|---|---|---|---|
| | | | mg/kg | mg/kg | mg/kg<br>EPA Method SW6010B | mg/kg | mg/kg |
| AEI-11-3' | 7/26/2011 | 3 | <1.5 | 60 | <5.0 | 24 | 16 |
| AEI-12-3' | 7/26/2011 | 3 | <1.5 | 31 | <5.0 | 15 | 10 |
| AEI-13-3' | 7/26/2011 | 3 | <1.5 | 29 | <5.0 | 14 | 9.7 |
| AEI-14-7' | 7/26/2011 | 7 | - | - | <5.0 | - | - |
| AEI-15-7' | 7/26/2011 | 7 | - | - | <5.0 | - | - |
| AEI-16-7' | 7/26/2011 | 7 | <1.5 | 54 | <5.0 | 48 | 27 |
| AEI-17-8' | 7/26/2011 | 8 | - | - | <5.0 | - | - |
| AEI-18-8' | 7/26/2011 | 8 | - | - | <5.0 | - | - |
| AEI-19-8' | 7/26/2011 | 8 | - | - | <5.0 | - | - |
| ***AEI-27-3'** | **1/17/2012** | **3** | **<0.25** | **38** | **140** | **17** | **140** |

**Notes:**
mg/kg = milligrams per kilogram
"-" = not available
Cd = Cadmium
Cr = Chromium
Pb = Lead
Ni = Nickel
Zn = Zinc
*AEI-27-3' = Antimony - 1.2 mg/kg, Arsenic - 4.0 mg/kg, Barium - 130 mg/kg, Cobalt - 3.7 mg/kg, Copper - 18 mg/kg, Mercury - 0.32 mg/kg and Vanadium - 28 mg/kg by CAM 17 EPA Method SW3050B.

# Table 6
# Groundwater Sample Analytical Data
# Metals
# AEI Project No. 298931, 1630 Park Street, Alameda, California

| Sample ID | Date Collected | Cd µg/L | Cr (total) µg/L | Pb µg/L EPA Method E200.8 | Ni µg/L | Zn µg/L |
|---|---|---|---|---|---|---|
| AEI-14-W* | 7/26/2011 | - | - | 21 | - | - |
| AEI-15-W* | 7/26/2011 | - | - | 66 | - | - |
| AEI-16-W** | 7/26/2011 | <0.25 | <0.5 | <0.5 | 8.7 | <5.0 |

**Notes:**
µg/L = micrograms per liter
"*" = total
"**" = dissolved
Cd = Cadmium
Cr = Chromium
Pb =Lead
Ni = Nickel
Zn = Zinc

**Table 7**
**Well Construction Details**
**AEI Project No. 298931, 1630 Park Street, Alameda, California**

| Well ID Number | Well Installation Date | Elevation TOC (feet) | Casing Material | Total Depth (feet) | Well Depth (feet) | Borehole Diameter (inches) | Casing Diameter (inches) | Screened Interval (feet) | Slot Size (inches) | Filter Pack Interval (feet) | Filter Pack Material |
|---|---|---|---|---|---|---|---|---|---|---|---|
| AS-1 | 11/14/2011 | - | PVC | 25 | 25 | 8 | 2 | 20 - 25 | 0.020 | 20 - 25 | #3 Sand |
| DPE-1 | 11/15/2011 | - | PVC | 16 | 15 | 10 | 4 | 7 - 15 | 0.010 | 6.5 - 16 | #2/12 Sand |
| DPE-2 | 11/15/2011 | - | PVC | 16 | 15 | 10 | 4 | 7 - 15 | 0.010 | 6.5 - 16 | #2/12 Sand |
| DPE-3 | 11/14/2011 | - | PVC | 16 | 14 | 10 | 4 | 7 - 14 | 0.010 | 6.5 - 16 | #2/12 Sand |
| DPE-4 | 1/19/2012 | - | PVC | 17 | 17 | 10 | 4 | 8 - 17 | 0.010 | 7.5 - 17 | #2/12 Sand |
| DPE-5 | 1/20/2012 | - | PVC | 18 | 18 | 10 | 4 | 8 - 18 | 0.010 | 7.5 - 18 | #2/12 Sand |
| DPE-6 | 1/20/2012 | - | PVC | 18 | 18 | 10 | 4 | 8 - 18 | 0.010 | 7.5 - 18 | #2/12 Sand |
| DPE-8 | 1/20/2012 | - | PVC | 18 | 18 | 10 | 4 | 8 - 18 | 0.010 | 7.5 - 18 | #2/12 Sand |
| DPE-9 | 1/20/2012 | - | PVC | 18 | 18 | 10 | 4 | 8 - 18 | 0.010 | 7.5 - 18 | #2/12 Sand |
| DPE-10 | 1/20/2012 | - | PVC | 17 | 17 | 10 | 4 | 8 - 17 | 0.010 | 7.5 - 17 | #2/12 Sand |
| DPE-11 | 1/20/2012 | - | PVC | 18 | 18 | 10 | 4 | 8 - 18 | 0.010 | 7.5 - 18 | #2/12 Sand |
| MW-1 | 1/15/1987 | - | PVC | - | 20 | 8 | 2 | 5 - 20 | - | - | - |
| MW-2 | 1/15/1987 | - | PVC | - | 20 | 8 | 2 | 5 - 20 | - | - | - |
| MW-3 | 1/15/1987 | - | PVC | - | 20 | 8 | 2 | 5 - 20 | - | - | - |
| MW-4 | 4/20/1994 | - | PVC | - | 23 | 8 | 2 | 8 - 23 | - | - | - |
| MW-5 | 4/20/1994 | - | PVC | - | 22 | 8 | 2 | 7 - 22 | - | - | - |
| VP-1 | 12/6/2011 | - | Stainless Steel | 6 | 6 | 1.25 | 1/4 | 5.1 - 5.6 | Mesh | 4.7 - 6 | #30 Mesh Sand |
| VP-2 | 12/6/2011 | - | Stainless Steel | 5.9 | 5.9 | 1.25 | 1/4 | 5.1-5.6 | Mesh | 4.7-5.9 | #30 Mesh Sand |
| VP-3 | 12/6/2011 | - | Stainless Steel | 5.75 | 5.75 | 1.25 | 1/4 | 5.1-5.6 | Mesh | 4.7-5.75 | #30 Mesh Sand |

PVC = polyvinyl chloride
TOC = top of casing
"-" = not available

**Table 8**
**Groundwater Elevation Data**
AEI Project No. 298931, 1600-1630 Park Street, Alameda, CA

| Well ID (Screen Interval) | Date Collected | Well Elevation *(ft amsl)* | Depth to Water *(ft)* | Groundwater Elevation *(ft amsl)* |
|---|---|---|---|---|
| MW-1 (5 - 20 feet bgs) | Jul-89 | 104.76 | 8.93 | 95.83 |
| | Apr-91 | | 7.59 | 97.17 |
| | Jul-92 | | 8.72 | 96.04 |
| | Aug-92 | | 9.09 | 95.67 |
| | Sep-92 | | 9.25 | 95.51 |
| | Oct-92 | | 9.34 | 95.42 |
| | Nov-92 | | 9.21 | 95.55 |
| | Dec-92 | | 9.26 | 95.50 |
| | Jan-93 | | 7.81 | 96.95 |
| | Feb-93 | | 7.32 | 97.44 |
| | Mar-93 | | 7.20 | 97.56 |
| | Apr-93 | | 7.31 | 97.45 |
| | May-93 | | 8.29 | 96.47 |
| | Jul-93 | | 8.30 | 96.46 |
| | Oct-93 | | 9.38 | 95.38 |
| | Jan-94 | | 8.80 | 95.96 |
| | Apr-94 | | 8.15 | 96.61 |
| | Jul-94 | | 8.70 | 96.06 |
| | Oct-94 | | 9.37 | 95.39 |
| | Jan-94 | | 7.18 | 97.58 |
| | Apr-95 | | 6.76 | 98.00 |
| | Jan-97 | | 7.03 | 97.73 |
| | Nov-98 | | 8.10 | 96.66 |
| | Jan-01 | | 7.70 | 97.06 |
| | Jun-02 | | 7.30 | 97.46 |
| | Nov-02 | | 8.14 | 96.62 |
| | Feb-03 | | 6.87 | 97.89 |
| | Jun-03 | | 7.05 | 97.71 |
| | Apr-08 | 25.42 | 7.13 | 18.29 |
| | Jun-11 | 25.42 | 7.54 | 17.88 |
| | **Dec-11** | **25.37** | **8.02** | **17.35** |
| | **Jan-12** | **25.37** | **8.08** | **17.29** |
| MW-2 (5 - 20 feet bgs) | Jul-89 | 104.86 | 9.24 | 95.62 |
| | Apr-91 | | 8.01 | 96.85 |
| | Jul-92 | | 9.03 | 95.83 |
| | Aug-92 | | 9.34 | 95.52 |
| | Sep-92 | | 9.46 | 95.40 |
| | Oct-92 | | 9.52 | 95.34 |
| | Nov-92 | | 9.42 | 95.44 |
| | Dec-92 | | 9.47 | 95.39 |
| | Jan-93 | | 8.25 | 96.61 |
| | Feb-93 | | 7.85 | 97.01 |
| | Mar-93 | | 7.77 | 97.09 |
| | Apr-93 | | 7.86 | 97.00 |
| | May-93 | | 8.20 | 96.66 |
| | Jul-93 | | 8.72 | 96.14 |
| | Oct-93 | | 9.64 | 95.22 |
| | Jan-94 | | 9.12 | 95.74 |
| | Apr-94 | | 8.56 | 96.30 |
| | Jul-94 | | 9.02 | 95.84 |
| | Oct-94 | | 9.59 | 95.27 |
| | Jan-94 | | 7.71 | 97.15 |
| | Apr-95 | | 7.40 | 97.46 |

**Table 8**
**Groundwater Elevation Data**
AEI Project No. 298931, 1600-1630 Park Street, Alameda, CA

| Well ID (Screen Interval) | Date Collected | Well Elevation *(ft amsl)* | Depth to Water *(ft)* | Groundwater Elevation *(ft amsl)* |
|---|---|---|---|---|
| MW-2 (continued) | Jan-97 | | 7.55 | 97.31 |
| | Nov-98 | | 8.49 | 96.37 |
| | Jan-01 | | 8.08 | 96.78 |
| | Jun-02 | | 7.77 | 97.09 |
| | Nov-02 | | 8.50 | 96.36 |
| | Feb-03 | | 7.38 | 97.48 |
| | Jun-03 | | 7.57 | 97.29 |
| | Apr-08 | 25.52 | 7.67 | 17.85 |
| | Jun-11 | 25.52 | 7.35 | 18.17 |
| | **Dec-11** | **25.48** | **8.41** | **17.07** |
| | **Jan-12** | **25.48** | **8.43** | **17.05** |
| MW-3 (5 - 20 feet bgs) | Jul-89 | 104.52 | 9.00 | 95.52 |
| | Apr-91 | | 8.06 | 96.46 |
| | Jul-92 | | 8.82 | 95.70 |
| | Aug-92 | | 9.05 | 95.47 |
| | Sep-92 | | 9.09 | 95.43 |
| | Oct-92 | | 9.15 | 95.37 |
| | Nov-92 | | 9.05 | 95.47 |
| | Dec-92 | | 9.12 | 95.40 |
| | Jan-93 | | 8.18 | 96.34 |
| | Feb-93 | | 7.98 | 96.54 |
| | Mar-93 | | 7.94 | 96.58 |
| | Apr-93 | | 8.02 | 96.50 |
| | May-93 | | 7.69 | 96.83 |
| | Jul-93 | | 8.65 | 95.87 |
| | Oct-93 | | 9.32 | NC |
| | Jan-94 | | 8.93 | NC |
| | Apr-94 | | 8.52 | 96.00 |
| | Jul-94 | | 8.86 | 95.66 |
| | Oct-94 | | 9.25 | 95.27 |
| | Jan-94 | | 7.85 | 96.67 |
| | Apr-95 | | 7.64 | 96.88 |
| | Jan-97 | | 7.75 | 96.77 |
| | Nov-98 | | 8.38 | 96.14 |
| | Jan-01 | | 8.00 | 96.52 |
| | Jun-02 | | 7.81 | 96.71 |
| | Nov-02 | | 8.37 | 96.15 |
| | Feb-03 | | 7.48 | 97.04 |
| | Jun-03 | | 7.67 | 96.85 |
| | Apr-08 | 25.17 | 7.74 | 17.43 |
| | Jun-11 | 25.17 | 7.50 | 17.67 |
| | **Dec-11** | **25.13** | **8.25** | **16.88** |
| | **Jan-12** | **25.13** | **8.25** | **16.88** |
| MW-4 (8 - 23 feet bgs) | Apr-94 | 104.86 | 9.29 | 95.57 |
| | Jul-94 | | 9.55 | 95.31 |
| | Oct-94 | | 9.83 | 95.03 |
| | Jan-94 | | 8.88 | 95.98 |
| | Apr-95 | | 8.80 | 96.06 |
| | Jan-97 | | - | - |
| | Nov-98 | | - | - |
| | Jan-01 | | - | - |
| | Jun-02 | | - | - |
| | Nov-02 | | - | - |

**Table 8**
**Groundwater Elevation Data**
AEI Project No. 298931, 1600-1630 Park Street, Alameda, CA

| Well ID (Screen Interval) | Date Collected | Well Elevation *(ft amsl)* | Depth to Water *(ft)* | Groundwater Elevation *(ft amsl)* |
|---|---|---|---|---|
| MW-4 (continued) | Feb-03 | | - | - |
| | Jun-03 | | - | - |
| | Apr-08 | 25.53 | 8.73 | 16.80 |
| | Jun-11 | 25.53 | 8.52 | 17.01 |
| | **Dec-11** | **25.58** | - | - |
| | **Jan-12** | **25.58** | - | - |
| MW-5 (7 - 22 feet bgs) | Apr-94 | 103.62 | 8.27 | 95.35 |
| | Jul-94 | | 8.50 | 95.12 |
| | Oct-94 | | 8.92 | 94.70 |
| | Jan-94 | | 7.61 | 96.01 |
| | Apr-95 | | 8.48 | 95.14 |
| | Jan-97 | | 6.79 | 96.83 |
| | Nov-98 | | 8.12 | 95.50 |
| | Jan-01 | | 7.67 | 95.95 |
| | Jun-02 | | 7.61 | 96.01 |
| | Nov-02 | | 8.01 | 95.61 |
| | Feb-03 | | 7.22 | 96.40 |
| | Jun-03 | | 7.43 | 96.19 |
| | Apr-08 | 24.31 | 7.36 | 16.95 |
| | Jun-11 | 24.31 | 7.43 | 16.88 |
| | **Dec-11** | **24.32** | - | - |
| | **Jan-12** | **24.32** | - | - |
| DPE-1 (7 - 15 feet bgs) | **Dec-11** | **25.88** | **8.81** | **17.07** |
| | **Jan-12** | **25.88** | **8.78** | **17.10** |
| DPE-2 (7 - 15 feet bgs) | **Dec-11** | **26.22** | **9.29** | **16.93** |
| | **Jan-12** | **26.22** | **7.97** | **18.25** |
| DPE-3 (7 - 15 feet bgs) | **Dec-11** | **25.27** | **7.92** | **17.35** |
| | **Jan-12** | **25.27** | **8.98** | **16.29** |
| DPE-4 (8-17 feet bgs) | **Jan-12** | **26.06** | **9.11** | **16.95** |
| DPE-5 (8-18 feet bgs) | **Jan-12** | **26.25** | - | - |
| DPE-6 (8-18 feet bgs) | **Jan-12** | **26.13** | **8.58** | **17.55** |
| DPE-8 (8-18 feet bgs) | **Jan-12** | **25.36** | - | - |
| DPE-9 (8-18 feet bgs) | **Jan-12** | **25.09** | **8.12** | **16.97** |
| DPE-10 (8-17 feet bgs) | **Jan-12** | **25.14** | - | - |
| DPE-11 (8-18 feet bgs) | **Jan-12** | **25.57** | - | - |

ft amsl = feet above mean sea level
All water level depths are measured from the top of casing
"-" = not measured
bgs = below ground surface

**Table 9**
**Groundwater Monitoring Analytical Data**
AEI Project No. 298931, 1600-1630 Park Street, Alameda, CA

| Sample ID | Date | TPH-g | | Benzene | Toluene | Ethylbenzene | Xylenes | MTBE | MTBE | TAME | TBA | EDB | 1,2-DCA | DIPE | Ethanol | ETBE | Methanol | Lead |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | EPA Methods 8020, 8021B, or 8260B | | | | | EPA Method 8260B | | | | | | | | | |
| | | (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) | (µg/L) | (µg/L) |
| MW-1 | 1/21/1987 | 21,020 | | 1,148 | 8,627 | 1,792 | 6,012 | - | - | - | - | - | - | - | - | - | - | - |
| | 1/11/1989 | 1,400 | | 74 | 10 | 13 | 5 | - | - | - | - | - | - | - | - | - | - | - |
| | 7/12/1989 | 1,200 | | 470 | 49 | 45 | 33 | - | - | - | - | - | - | - | - | - | - | - |
| | 4/9/1991 | 850 | | 260 | 10 | 15 | 12 | - | - | - | - | - | - | - | - | - | - | - |
| | 7/14/1992 | 13,000 | | 2,300 | 1,200 | 1,200 | 1,200 | - | - | - | - | - | - | - | - | - | - | - |
| | 10/7/1992 | 3,600 | | 1,600 | 80 | 120 | 120 | - | - | - | - | - | - | - | - | - | - | - |
| | 1/11/1993 | 1,200 | | 410 | 16 | 23 | 19 | - | - | - | - | - | - | - | - | - | - | - |
| | 4/23/1993 | 2,200 | a | 720 | 180 | 82 | 150 | - | - | - | - | - | - | - | - | - | - | - |
| | 7/8/1993 | 3,200 | a | 1,200 | 110 | 97 | 100 | - | - | - | - | - | - | - | - | - | - | - |
| | 10/15/1993 | 3,700 | a | 1,400 | 43 | 94 | 36 | - | - | - | - | - | - | - | - | - | - | - |
| | 1/25/1994 | 1,600 | a | 680 | 16 | 41 | 35 | - | - | - | - | - | - | - | - | - | - | - |
| | 4/28/1994 | 6,100 | a | 1,900 | 380 | 250 | 340 | - | - | - | - | - | - | - | - | - | - | - |
| | 7/27/1994 | 6,000 | a | 1,800 | 510 | 220 | 450 | - | - | - | - | - | - | - | - | - | - | - |
| | 10/27/1994 | 3,000 | a | 1,100 | 79 | 82 | 87 | - | - | - | - | - | - | - | - | - | - | - |
| | 1/26/1995 | 1,600 | a | 660 | 100 | 82 | 87 | - | - | - | - | - | - | - | - | - | - | - |
| | 4/13/1995 | 3,800 | a | 1,200 | 270 | 120 | 260 | - | - | - | - | - | - | - | - | - | - | - |
| | 7/21/1995 | 5,200 | a | 1,500 | 450 | 190 | 400 | - | - | - | - | - | - | - | - | - | - | - |
| | 10/25/1995 | 5,900 | a | 1,800 | 450 | 210 | 400 | - | - | - | - | - | - | - | - | - | - | - |
| | 1/21/1997 | 3,100 | a | 1,100 | 87 | 160 | 180 | <7.3 | - | - | - | - | - | - | - | - | - | - |
| | 11/12/1998 | 1,000 | a | 280 | 3 | 3.3 | 7.9 | <30 | - | - | - | - | - | - | - | - | - | - |
| | 1/16/2001 | 4,700 | a | 1,20 | 18 | 150 | 49 | - | <5 | <5.0 | <25 | <5.0 | <5.0 | <5.0 | - | <5.0 | - | - |
| | 6/27/2002 | 5,900 | a | 230 | 7.7 | <5 | 1,500 | - | <5 | <5.0 | <50 | <5.0 | <5.0 | <5.0 | - | <5.0 | - | - |
| | 11/18/2002 | 3,100 | a | 890 | 12 | 310 | 28 | - | <2.5 | - | - | <2.5 | <2.5 | - | - | - | - | - |
| | 2/20/2003 | 260 | d | 100 | 0.72 | <0.5 | <0.5 | - | <0.5 | - | - | <0.5 | <0.5 | - | - | - | - | - |
| | 6/11/2003 | 3,100 | a | 480 | 6.7 | 220 | 420 | - | <2.5 | - | - | <2.5 | <2.5 | - | - | - | - | - |
| | 4/3/2008 | 2,700 | a | 280 | 21 | 130 | 230 | <25 | <1.0 | <1.0 | <4.0 | <1.0 | <1.0 | <1.0 | <100 | <1.0 | <1,000 | <0.5 |
| | 6/23/2011 | 610 | a | 100 | 6.2 | 46 | 77 | - | <2.5 | <2.5 | <10 | - | - | <2.5 | - | <2.5 | - | - |
| | **12/6/2011** | **900** | **a** | **160** | **<5.0** | **68** | **76** | **-** | **<5.0** | **<5.0** | **<20** | **-** | **-** | **<5.0** | **-** | **<5.0** | **-** | **-** |
| | **1/24/2012** | **190** | **a** | **25** | **<1.0** | **1.4** | **4.6** | **<1.0** | **-** | **-** | **-** | **-** | **-** | **-** | **-** | **-** | **-** | **-** |
| MW-2 | 1/21/1987 | 5,018 | | 386 | 1,981 | 285 | 1,432 | - | - | - | - | - | - | - | - | - | - | - |
| | 1/11/1989 | 10,000 | | 3,000 | 410 | 240 | 190 | - | - | - | - | - | - | - | - | - | - | - |
| | 7/12/1989 | 7,600 | | 2,700 | 540 | 250 | 320 | - | - | - | - | - | - | - | - | - | - | - |
| | 4/9/1991 | 4,900 | | 910 | 210 | 130 | 200 | - | - | - | - | - | - | - | - | - | - | - |
| | 7/14/1992 | 13,000 | | 4,400 | 1,500 | 610 | 1,100 | - | - | - | - | - | - | - | - | - | - | - |
| | 10/7/1992 | 11,000 | | 5,200 | 1,500 | 500 | 1,200 | - | - | - | - | - | - | - | - | - | - | - |
| | 1/11/1993 | 17,000 | | 940 | 1,100 | 480 | 930 | - | - | - | - | - | - | - | - | - | - | - |
| | 4/23/1993 | 52,000 | a | 13,000 | 8,400 | 1,700 | 5,300 | - | - | - | - | - | - | - | - | - | - | - |
| | 7/8/1993 | 6,400 | a | 2,500 | 470 | 280 | 530 | - | - | - | - | - | - | - | - | - | - | - |
| | 10/15/1993 | 17,000 | a | 3,900 | 870 | 500 | 940 | - | - | - | - | - | - | - | - | - | - | - |
| | 1/25/1994 | 16,000 | a | 5,400 | 1,140 | 640 | 1,500 | - | - | - | - | - | - | - | - | - | - | - |
| | 4/28/1994 | 15,000 | a | 4,00 | 910 | 480 | 1,200 | - | - | - | - | - | - | - | - | - | - | - |
| | 7/27/1994 | 18,000 | a | 6,000 | 760 | 630 | 1,600 | - | - | - | - | - | - | - | - | - | - | - |

**Table 9**
**Groundwater Monitoring Analytical Data**
AEI Project No. 298931, 1600-1630 Park Street, Alameda, CA

| Sample ID | Date | TPH-g | | Benzene | Toluene | Ethylbenzene | Xylenes | MTBE | MTBE | TAME | TBA | EDB | 1,2-DCA | DIPE | Ethanol | ETBE | Methanol | Lead |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | EPA Methods 8020, 8021B, or 8260B | | | | | EPA Method 8260B | | | | | | | | | |
| | | (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) | (µg/L) | (µg/L) |
| | 10/27/1994 | 9,500 | a | 2,700 | 230 | 320 | 640 | - | - | - | - | - | - | - | - | - | - | - |
| | 1/26/1995 | 5,900 | a | 1,900 | 290 | 230 | 500 | - | - | - | - | - | - | - | - | - | - | - |
| | 4/13/1995 | 10,000 | a | 3,300 | 620 | 360 | 930 | - | - | - | - | - | - | - | - | - | - | - |
| | 7/21/1995 | 9,900 | a | 3,300 | 320 | 390 | 830 | - | - | - | - | - | - | - | - | - | - | - |
| | 10/25/1995 | 13,000 | a | 4,900 | 400 | 580 | 990 | - | - | - | - | - | - | - | - | - | - | - |
| | 1/21/1997 | 7,600 | a | 2,600 | 310 | 330 | 660 | <20 | - | - | - | - | - | - | - | - | - | - |
| | 11/12/1998 | 31,000 | a | 11,000 | 750 | 1,500 | 2,300 | <900 | - | - | - | - | - | - | - | - | - | - |
| | 1/16/2001 | 23,000 | a | 8,200 | 260 | 1,000 | 820 | <30 | - | <30 | <150 | <30 | <30 | <30 | - | <30 | - | - |
| | 6/27/2002 | 39,000 | a | 7,000 | 1,800 | 690 | 4,000 | - | <5 | <5.0 | <5.0 | <5.0 | 6.1 | <5.0 | - | <5.0 | - | - |
| | 11/18/2002 | 15,000 | a | 5,700 | 76 | 1,000 | 150 | - | <12 | - | - | <12 | <12 | - | - | - | - | - |
| | 2/20/2003 | 26,000 | a | 6,300 | 1,100 | 1,300 | 1,900 | - | <5.0 | - | - | <5.0 | <5.0 | - | - | - | - | - |
| | 6/11/2003 | 37,000 | a | 7,100 | 2,300 | 2,000 | 3,600 | - | <25 | - | - | <25 | <25 | - | - | - | - | - |
| | 4/3/2008 | 4,100 | a | 760 | 96 | 250 | 130 | <50 | <2.5 | <2.5 | <10 | <2.5 | <2.5 | <2.5 | <250 | <2.5 | <2,500 | <0.5 |
| | 6/23/2011 | 6,500 | a | 2,100 | 210.0 | 560 | 310 | - | <50 | <50 | <200 | - | - | <50 | - | <50 | - | - |
| | **12/6/2011** | **4,800** | **a** | **1,600** | **<50** | **260** | **<50** | **-** | **<50** | **<50** | **<200** | **-** | **-** | **<50** | **-** | **<50** | **-** | **-** |
| | **1/24/2012** | **2,500** | **a** | **100** | **22.0** | **<5.0** | **410** | **<5.0** | **-** | **-** | **-** | **-** | **-** | **-** | **-** | **-** | **-** | **-** |
| MW-3 | 1/21/1987 | 10,287 | | 1,428 | 3,281 | 610 | 2,761 | - | - | - | - | - | - | - | - | - | - | - |
| | 1/11/1989 | 5,300 | | 1,800 | 340 | 150 | 160 | - | - | - | - | - | - | - | - | - | - | - |
| | 7/12/1989 | 7,800 | | 3,100 | 900 | 300 | 480 | - | - | - | - | - | - | - | - | - | - | - |
| | 4/9/1991 | 9,400 | | 1,400 | 730 | 200 | 510 | - | - | - | - | - | - | - | - | - | - | - |
| | 7/14/1992 | 17,000 | | 3,500 | 390 | 390 | 260 | - | - | - | - | - | - | - | - | - | - | - |
| | 10/7/1992 | 9,200 | | 4,300 | 470 | 390 | 610 | - | - | - | - | - | - | - | - | - | - | - |
| | 1/11/1993 | 2,000 | | 740 | 29 | 58 | 28 | - | - | - | - | - | - | - | - | - | - | - |
| | 4/23/1993 | 6,500 | a | 2,600 | 280 | 260 | 190 | - | - | - | - | - | - | - | - | - | - | - |
| | 7/8/1993 | 5,200 | a | 2,100 | 260 | 250 | 180 | - | - | - | - | - | - | - | - | - | - | - |
| | 10/15/1993 | 11,000 | a | 3,500 | 580 | 430 | 370 | - | - | - | - | - | - | - | - | - | - | - |
| | 1/25/1994 | 6,200 | a | 2,500 | 270 | 160 | 28 | - | - | - | - | - | - | - | - | - | - | - |
| | 4/28/1994 | 5,300 | a | 1,700 | 190 | 210 | 180 | - | - | - | - | - | - | - | - | - | - | - |
| | 7/27/1994 | 5,900 | a | 2,000 | 360 | 260 | 330 | - | - | - | - | - | - | - | - | - | - | - |
| | 10/27/1994 | 8,000 | a | 2,200 | 580 | 260 | 170 | - | - | - | - | - | - | - | - | - | - | - |
| | 1/26/1995 | 3,700 | a | 1,200 | 150 | 150 | 190 | - | - | - | - | - | - | - | - | - | - | - |
| | 4/13/1995 | 4,000 | a | 1,400 | 200 | 180 | 210 | - | - | - | - | - | - | - | - | - | - | - |
| | 7/21/1995 | 5,700 | a | 2,000 | 280 | 270 | 280 | - | - | - | - | - | - | - | - | - | - | - |
| | 10/25/1995 | 11,000 | a | 3,500 | 1,100 | 460 | 680 | - | - | - | - | - | - | - | - | - | - | - |
| | 1/21/1997 | 2,200 | a | 860 | 63 | 71 | 80 | <5 | - | - | - | - | - | - | - | - | - | - |
| | 11/12/1998 | 180 | d | 44 | 0.51 | <0.5 | 0.92 | <20 | - | - | - | - | - | - | - | - | - | - |
| | 1/16/2001 | 64 | a | 11 | 0.77 | <0.5 | <0.5 | - | <5 | <1.0 | <5.0 | <1.0 | 1.4 | <1.0 | - | <1.0 | - | - |
| | 6/27/2002 | <50 | | <0.5 | <0.5 | <0.5 | <0.5 | - | <0.5 | <0.5 | <5.0 | <0.5 | <0.5 | <0.5 | - | <0.5 | - | - |
| | 11/18/2002 | 110 | a | 21 | 1 | <0.5 | <0.5 | - | <0.5 | - | - | <0.5 | <0.5 | - | - | - | - | - |
| | 2/20/2003 | <50 | | 2.5 | <0.5 | <0.5 | <0.5 | - | <0.5 | - | - | <0.5 | <0.5 | - | - | - | - | - |
| | 6/11/2003 | <50 | | <0.5 | <0.5 | <0.5 | <0.5 | - | <0.5 | - | - | <0.5 | <0.5 | - | - | - | - | - |
| | 4/3/2008 | 7,600 | a | 2,400 | 58 | 250 | 170 | <100 | <5.0 | <5.0 | <20 | <5.0 | <5.0 | <5.0 | <500 | <5.0 | <5,000 | <0.5 |
| | 6/23/2011 | 1,300 | a | 560 | 21 | 86 | 150 | - | <12 | <12 | <50 | - | - | <12 | - | <12 | - | - |
| | **12/6/2011** | **1,800** | **a** | **620** | **28** | **22** | **46** | **-** | **<17** | **<17** | **<67** | **-** | **-** | **<17** | **-** | **<17** | **-** | **-** |
| | **1/24/2012** | **3,700** | **a** | **1,200** | **68** | **34** | **130** | **<25** | **-** | **-** | **-** | **-** | **-** | **-** | **-** | **-** | **-** | **-** |

**Table 9**
**Groundwater Monitoring Analytical Data**
AEI Project No. 298931, 1600-1630 Park Street, Alameda, CA

| Sample ID | Date | TPH-g | | Benzene | Toluene | Ethylbenzene | Xylenes | MTBE | MTBE | TAME | TBA | EDB | 1,2-DCA | DIPE | Ethanol | ETBE | Methanol | Lead |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | EPA Methods 8020, 8021B, or 8260B | | | | | EPA Method 8260B | | | | | | | | | |
| | | (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) | (µg/L) | (µg/L) |
| MW-4 | 4/28/1994 | 190 | b,c | 3.8 | 2.9 | 2.1 | 3.1 | - | - | - | - | - | - | - | - | - | - | - |
| | 7/27/1994 | 180 | a | 15 | 9.2 | 7.6 | 28 | - | - | - | - | - | - | - | - | - | - | - |
| | 10/27/1994 | 130 | a | 8.6 | 6.6 | 4.5 | 17 | - | - | - | - | - | - | - | - | - | - | - |
| | 1/26/1995 | 110 | | 6.5 | 1.2 | 1.8 | 11 | - | - | - | - | - | - | - | - | - | - | - |
| | 4/13/1995 | 82 | | 3.9 | <0.5 | <0.5 | 2.5 | - | - | - | - | - | - | - | - | - | - | - |
| | 7/21/1995 | 130 | | 8.8 | 1.3 | 4.5 | 7.6 | - | - | - | - | - | - | - | - | - | - | - |
| | 10/25/1995 | 95 | | 6.6 | 1.7 | 4.3 | 7 | - | - | - | - | - | - | - | - | - | - | - |
| | 1/21/1997 | - | | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| | 11/12/1998 | - | | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| | 1/16/2001 | - | | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| | 6/27/2002 | - | | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| | 11/18/2002 | - | | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| | 2/20/2003 | - | | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| | 6/11/2003 | - | | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| | 4/3/2008 | 130 | | 1.6 | <0.5 | 0.89 | 0.85 | <5.0 | <0.5 | <0.5 | <2.0 | <0.5 | <0.5 | <0.5 | <50 | <0.5 | <500 | <0.5 |
| | 6/23/2011 | 53 | a | 2.7 | <0.5 | 1.0 | 1.7 | - | <0.5 | <0.5 | <2.0 | - | - | <0.5 | - | <0.5 | - | - |
| | **12/6/2011** | - | | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| | **1/24/2012** | - | | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| MW-5 | 4/28/1994 | 30,000 | a | 4,000 | 3,000 | 810 | 3,500 | - | - | - | - | - | - | - | - | - | - | - |
| | 7/27/1994 | 9,300 | a | 2,000 | 800 | 290 | 940 | - | - | - | - | - | - | - | - | - | - | - |
| | 10/27/1994 | 15,000 | a | 2,700 | 1,300 | 420 | 1,100 | - | - | - | - | - | - | - | - | - | - | - |
| | 1/26/1995 | 7,900 | a | 2,100 | 680 | 240 | 860 | - | - | - | - | - | - | - | - | - | - | - |
| | 4/13/1995 | 7,900 | a | 2,400 | 580 | 340 | 630 | - | - | - | - | - | - | - | - | - | - | - |
| | 7/21/1995 | 11,000 | a | 3,400 | 760 | 610 | 1,200 | - | - | - | - | - | - | - | - | - | - | - |
| | 10/25/1995 | 13,000 | a | 2,900 | 830 | 570 | 1,100 | - | - | - | - | - | - | - | - | - | - | - |
| | 1/21/1997 | 2,600 | a | 750 | 65 | 1,860 | 280 | <5 | - | - | - | - | - | - | - | - | - | - |
| | 11/12/1998 | <50 | | <0.5 | <0.5 | <0.5 | <0.5 | <5 | - | - | - | - | - | - | - | - | - | - |
| | 1/16/2001 | <50 | | 11 | <0.5 | <0.5 | 0.82 | - | <5 | <1.0 | <5.0 | <1.0 | <1.0 | <1.0 | - | <1.0 | - | - |
| | 6/27/2002 | <50 | | <0.5 | <0.5 | <0.5 | <0.5 | - | <0.5 | <0.5 | <5.0 | <0.5 | <0.5 | <0.5 | - | <0.5 | - | - |
| | 11/18/2002 | 130 | a | 17 | 3.8 | 2.1 | 16 | - | <0.5 | - | - | <0.5 | <0.5 | - | - | - | - | - |
| | 2/20/2003 | <50 | | 5.6 | 0.51 | <0.5 | 0.68 | - | <0.5 | - | - | <0.5 | <0.5 | - | - | - | - | - |
| | 6/11/2003 | 170 | a | 48 | <0.5 | <0.5 | 1.4 | - | <0.5 | - | - | <0.5 | <0.5 | - | - | - | - | - |
| | 4/3/2008 | 31,000 | a | 490 | 3,400 | 1,600 | 5,300 | <250 | <10 | <10 | <40 | <10 | <10 | <10 | <1,000 | <10 | <10,000 | <0.5 |
| | 6/23/2011 | 82 | a | 5.1 | <0.5 | 12.0 | 8.4 | - | <0.5 | <0.5 | <2.0 | - | - | <0.5 | - | <0.5 | - | - |
| | **12/6/2011** | - | | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| | **1/24/2012** | - | | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |

**Table 9**
**Groundwater Monitoring Analytical Data**
AEI Project No. 298931, 1600-1630 Park Street, Alameda, CA

| Sample ID | Date | TPH-g | | Benzene | Toluene | Ethylbenzene | Xylenes | MTBE | MTBE | TAME | TBA | EDB | 1,2-DCA | DIPE | Ethanol | ETBE | Methanol | Lead |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | EPA Methods 8020, 8021B, or 8260B | | | | | EPA Method 8260B | | | | | | | | | |
| | | (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) | (µg/L) | (µg/L) |
| DPE-1 | **12/6/2011** | **9,200** | **a** | **1,800** | **570** | **460** | **1,100** | **-** | **<50** | **<50** | **<200** | **-** | **-** | **<50** | **-** | **<50** | **-** | **-** |
| | **1/24/2012** | **3,200** | **a** | **170** | **58** | **<5.0** | **620** | **<5.0** | **-** | **-** | **-** | **-** | **-** | **-** | **-** | **-** | **-** | **-** |
| DPE-2 | **12/6/2011** | **22,000** | **a** | **2,100** | **3,300** | **650** | **3,300** | **-** | **<100** | **<100** | **<400** | **-** | **-** | **<100** | **-** | **<100** | **-** | **-** |
| | **1/24/2012** | **1,100** | **a** | **44** | **26** | **11** | **150** | **<2.5** | **-** | **-** | **-** | **-** | **-** | **-** | **-** | **-** | **-** | **-** |
| DPE-3 | **12/6/2011** | **6,400** | **a** | **550** | **560** | **180** | **1,000** | **-** | **<17** | **<17** | **<67** | **-** | **-** | **<17** | **-** | **<17** | **-** | **-** |
| | **1/24/2012** | **5,500** | **a** | **290** | **240** | **44** | **1,000** | **<5.0** | **-** | **-** | **-** | **-** | **-** | **-** | **-** | **-** | **-** | **-** |
| DPE-4 | **1/24/2012** | **730** | **a** | **66** | **6.0** | **7.1** | **83** | **2.5** | **-** | **-** | **-** | **-** | **-** | **-** | **-** | **-** | **-** | **-** |
| DPE-5 | **1/24/2012** | **-** | | **-** | **-** | **-** | **-** | **-** | **-** | **-** | **-** | **-** | **-** | **-** | **-** | **-** | **-** | **-** |
| DPE-6 | **1/24/2012** | **64*** | **a** | **<0.5** | **<0.5** | **<0.5** | **3.2** | **<0.5** | **-** | **-** | **-** | **-** | **-** | **-** | **-** | **-** | **-** | **-** |
| DPE-8 | **1/24/2012** | **-** | | **-** | **-** | **-** | **-** | **-** | **-** | **-** | **-** | **-** | **-** | **-** | **-** | **-** | **-** | **-** |
| DPE-9 | **1/24/2012** | **4,400** | **a** | **160** | **390** | **93** | **1,100** | **<5.0** | **-** | **-** | **-** | **-** | **-** | **-** | **-** | **-** | **-** | **-** |
| DPE-10 | **1/24/2012** | **-** | | **-** | **-** | **-** | **-** | **-** | **-** | **-** | **-** | **-** | **-** | **-** | **-** | **-** | **-** | **-** |
| DPE-11 | **1/24/2012** | **-** | | **-** | **-** | **-** | **-** | **-** | **-** | **-** | **-** | **-** | **-** | **-** | **-** | **-** | **-** | **-** |

TPH-g= total petroleum hydrocarbons as gasoline
MTBE = Methyl tertiary butyl ether
TAME = Tertiary amyl methyl ether
TBA = Tertiary butyl alcohol
EDB = 1,2-Dibromoethane
1,2-DCA = 1,2-Dichloroethane
DIPE = Diisopropyl ether
ETBE = Ethyl tertiary butyl ether

µg/L = micrograms per liter (ppb)

a = Laboratory note indicates the unmodified or weakly modified gasoline is significant.
b = Laboratory note indicates heavier gasoline range compounds are significant (aged gas?).
c = Laboratory note indicates gasoline range compounds are significant with no recognizable pattern.
d = Laboratory note indicates that lighter gasoline range coounds (the most mobile fraction) are significant.
e = Laboratory note indicates that one to a few isloated non-targed peaks are present.

* Total petroleum hydrocarbons as diesel = <50; Total petroleum hydrocarbons as motor oil = <250

# APPENDIX A

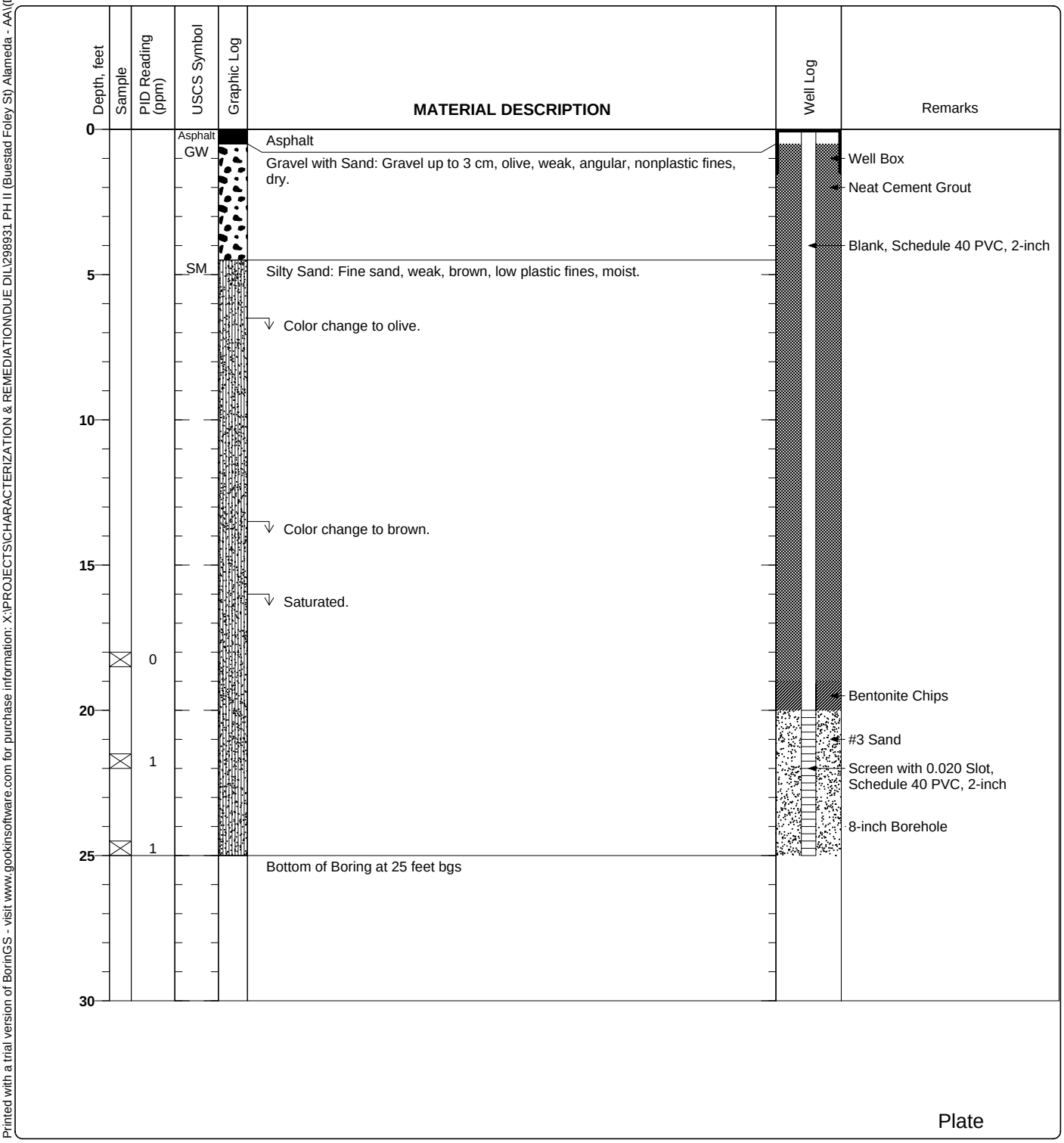
# BORING LOGS

**Project: Alameda, California**
**Project Location: 1630 Park Street, Alameda, California**
**Project Number: 298931**

# Log of Boring AS-1

Sheet 1 of 1

| | | |
|---|---|---|
| Date(s) Drilled **11/14/11** | Logged By **Bryan Campbell** | Checked By **Bryan Campbell** |
| Drilling Method **Hollow Stem Auger** | Drill Bit Size/Type **10 inch** | Total Depth of Borehole **25 feet bgs** |
| Drill Rig Type **Geoprobe 6620D** | Drilling Contractor **RSI Drilling** | Surface Elevation |
| Groundwater Level and Date Measured | Sampling Method(s) **Direct-Push Sampler** | Hammer Data |
| Borehole Backfill **Well Completion** | Location **1630 Park Street, Alameda, California** | |



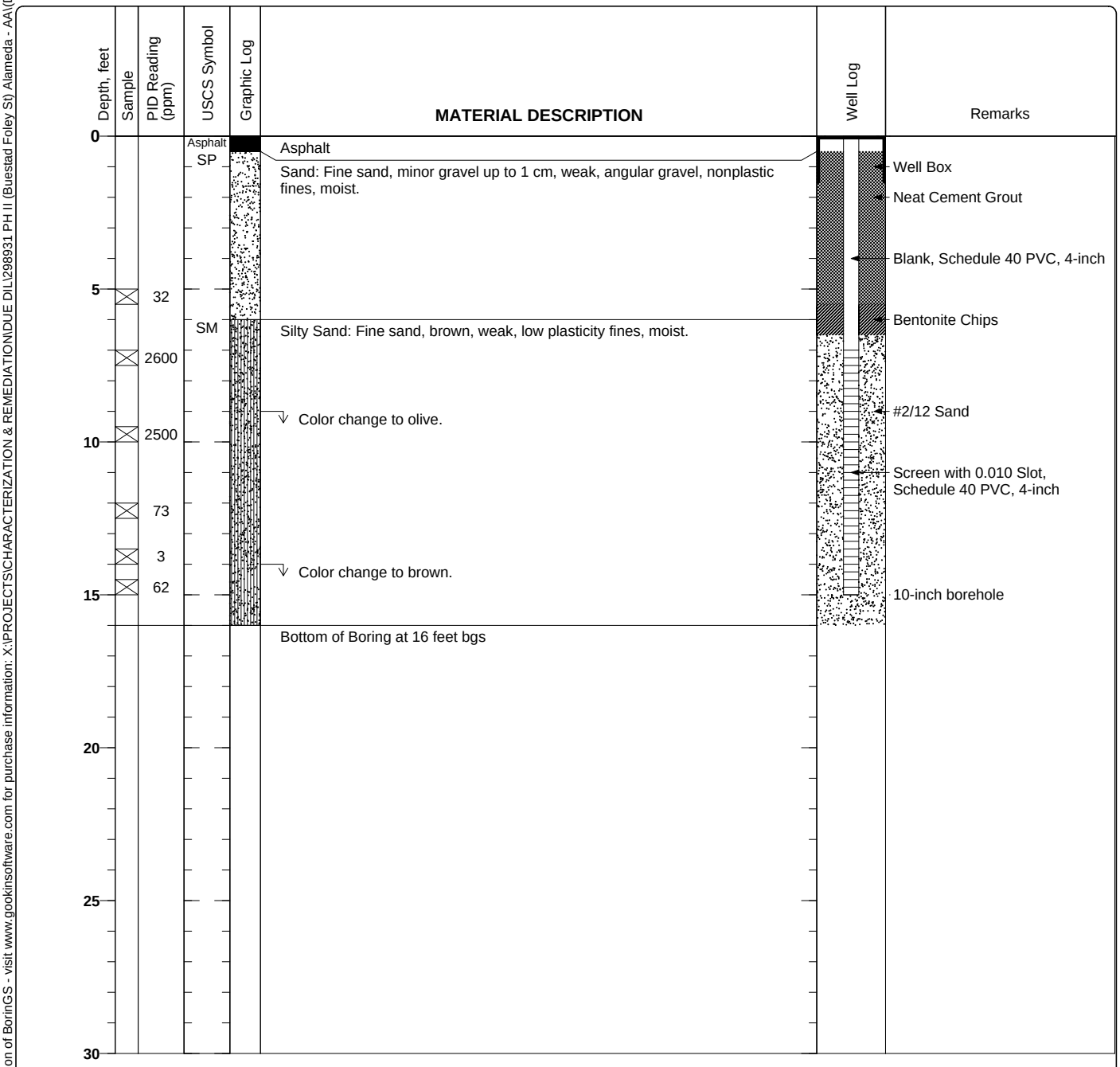

Plate

**Project: Alameda, California**
**Project Location: 1630 Park Street, Alameda, California**
**Project Number: 298931**

# Log of Boring DPE-1

Sheet 1 of 1

| | | |
|---|---|---|
| Date(s) Drilled **11/15/11** | Logged By **Bryan Campbell** | Checked By **Bryan Campbell** |
| Drilling Method **Hollow Stem Auger** | Drill Bit Size/Type **10 inch** | Total Depth of Borehole **16 feet bgs** |
| Drill Rig Type **Geoprobe 6620D** | Drilling Contractor **RSI Drilling** | Surface Elevation |
| Groundwater Level and Date Measured | Sampling Method(s) **Direct-Push Sampler** | Hammer Data |
| Borehole Backfill **Well Completion** | Location **1630 Park Street, Alameda, California** | |



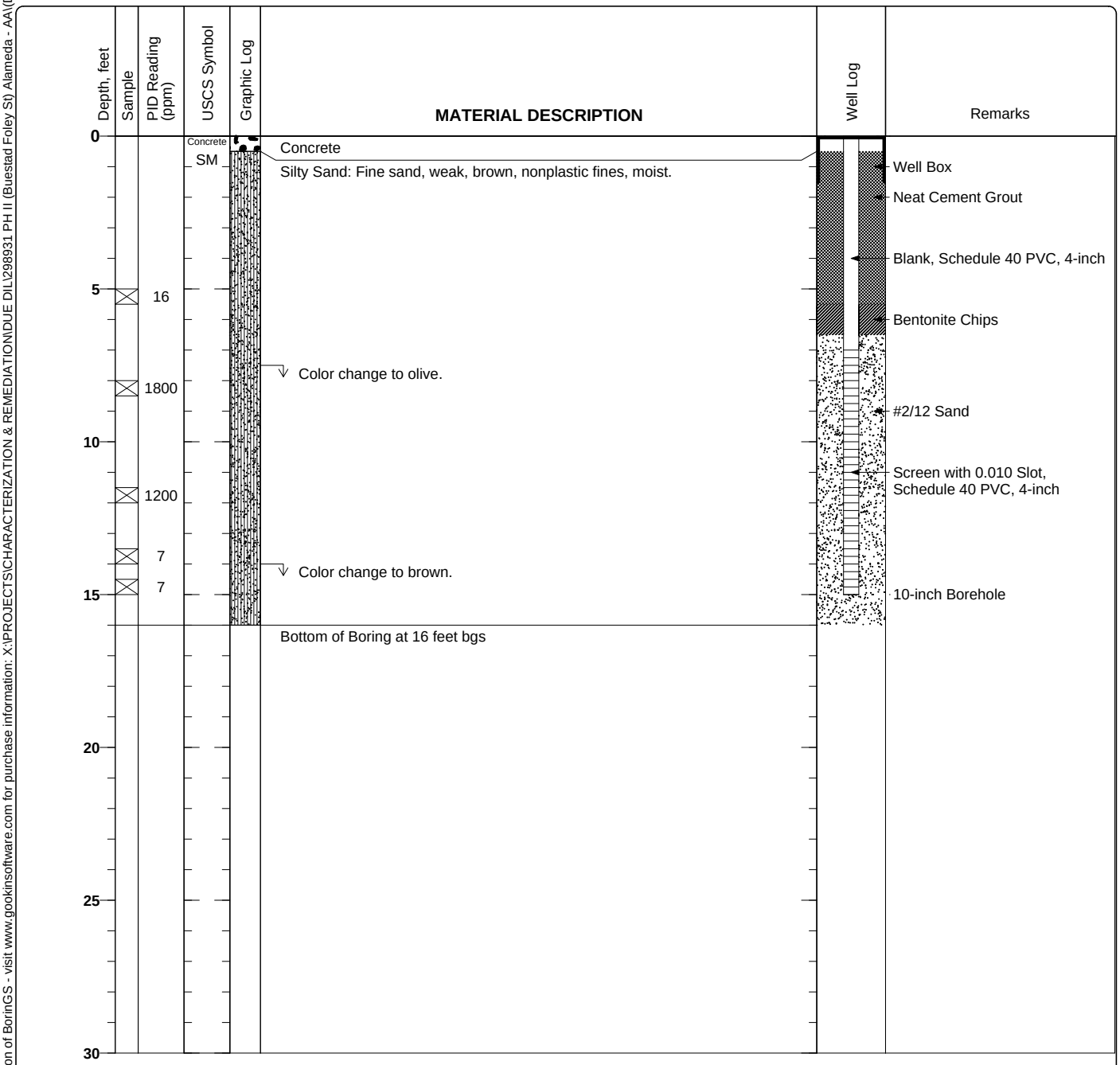

Plate

**Project: Alameda, California**
**Project Location: 1630 Park Street, Alameda, California**
**Project Number: 298931**

# Log of Boring DPE-2

Sheet 1 of 1

| | | |
|---|---|---|
| Date(s) Drilled **11/15/11** | Logged By **Bryan Campbell** | Checked By **Bryan Campbell** |
| Drilling Method **Hollow Stem Auger** | Drill Bit Size/Type **10 inch** | Total Depth of Borehole **16 feet bgs** |
| Drill Rig Type **Geoprobe 6620D** | Drilling Contractor **RSI Drilling** | Surface Elevation |
| Groundwater Level and Date Measured | Sampling Method(s) **Direct-Push Sampler** | Hammer Data |
| Borehole Backfill **Well Completion** | Location **1630 Park Street, Alameda, California** | |



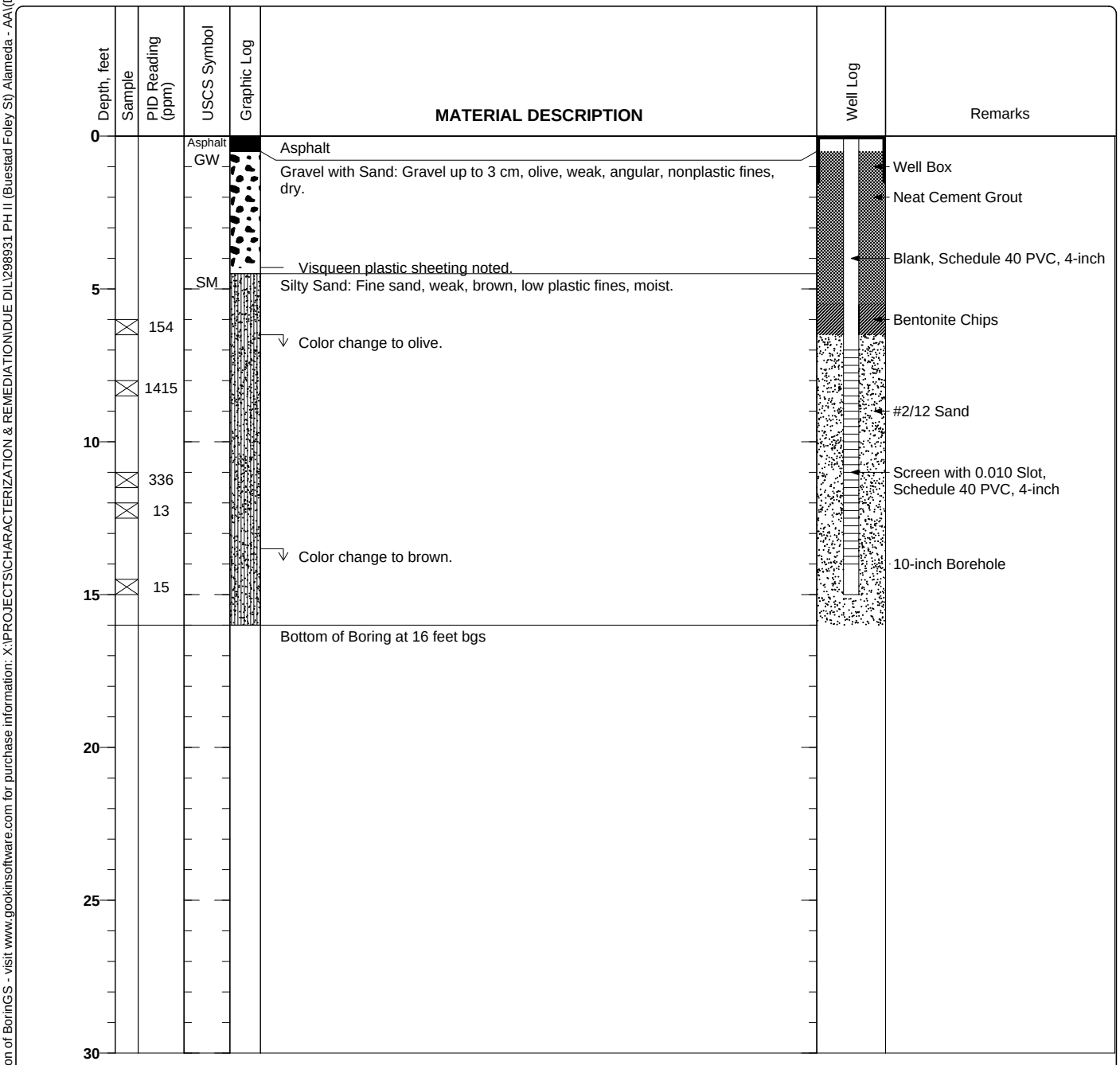

Plate

**Project: Alameda, California**
**Project Location: 1630 Park Street, Alameda, California**
**Project Number: 298931**

# Log of Boring DPE-3

Sheet 1 of 1

| | | |
|---|---|---|
| Date(s) Drilled **11/14/11** | Logged By **Bryan Campbell** | Checked By **Bryan Campbell** |
| Drilling Method **Hollow Stem Auger** | Drill Bit Size/Type **10 inch** | Total Depth of Borehole **16 feet bgs** |
| Drill Rig Type **Geoprobe 6620D** | Drilling Contractor **RSI Drilling** | Surface Elevation |
| Groundwater Level and Date Measured | Sampling Method(s) **Direct-Push Sampler** | Hammer Data |
| Borehole Backfill **Well Completion** | Location **1630 Park Street, Alameda, California** | |



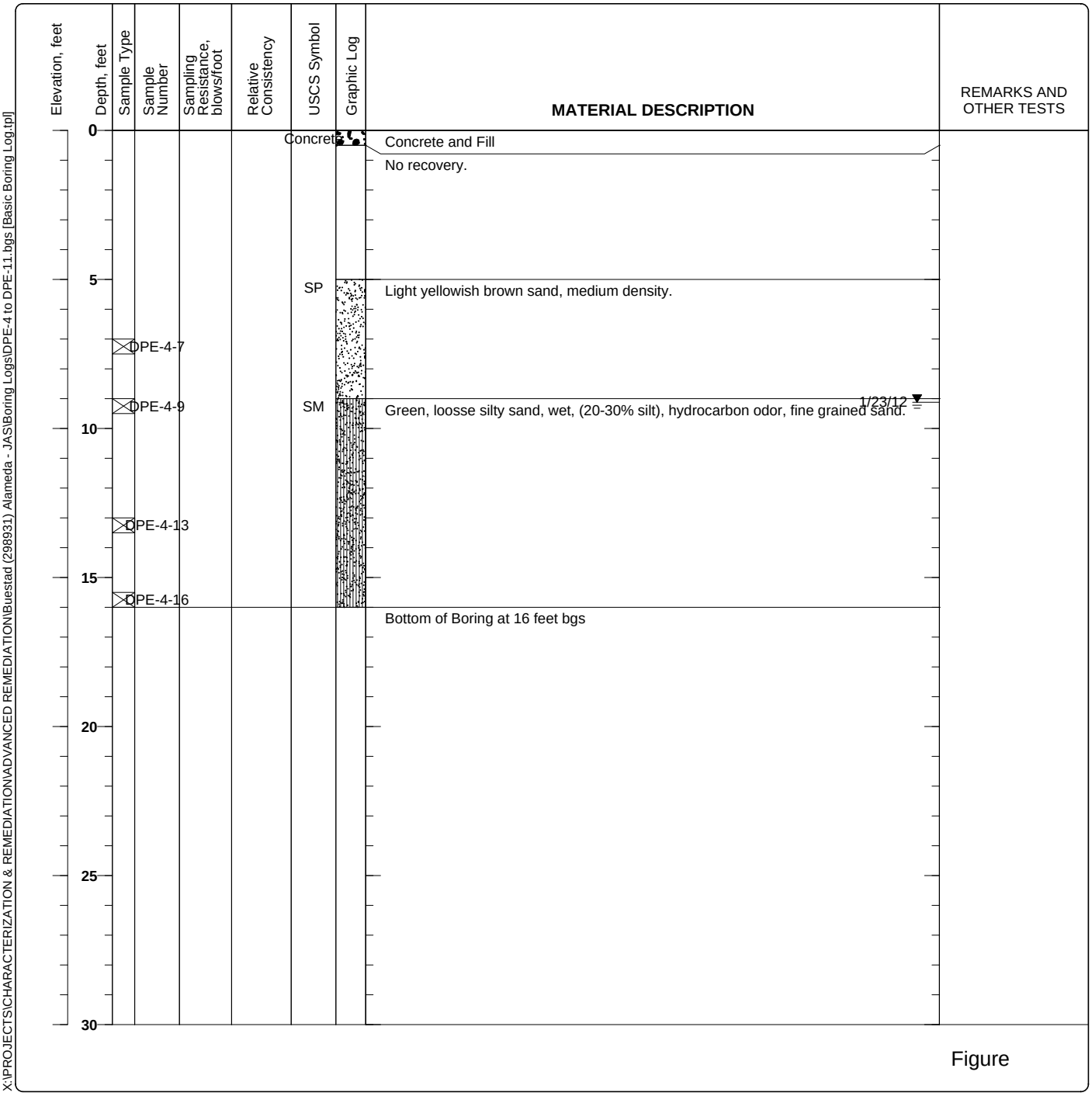

Plate

**Project: Alameda, California**
**Project Location: 1630 Park Street, Alameda, California**
**Project Number: 298931**

# Log of Boring DPE-4

Sheet 1 of 1

| | | |
|---|---|---|
| Date(s) Drilled **January 19, 2012** | Logged By **Harmony Tomsun** | Checked By **Bryan Campbell** |
| Drilling Method **Hollow Stem Auger** | Drill Bit Size/Type **10 inch** | Total Depth of Borehole **17 feet bgs** |
| Drill Rig Type **MARL 5T** | Drilling Contractor **Gregg Drilling** | Approximate Surface Elevation |
| Groundwater Level and Date Measured **9.12 feet measured on 1/23/12** | Sampling Method(s) **Direct-Push Sampler** | Hammer Data **W2012-0055** |
| Borehole Backfill **Well Completion** | Location **1630 Park Street, Alameda, California** | |




Figure

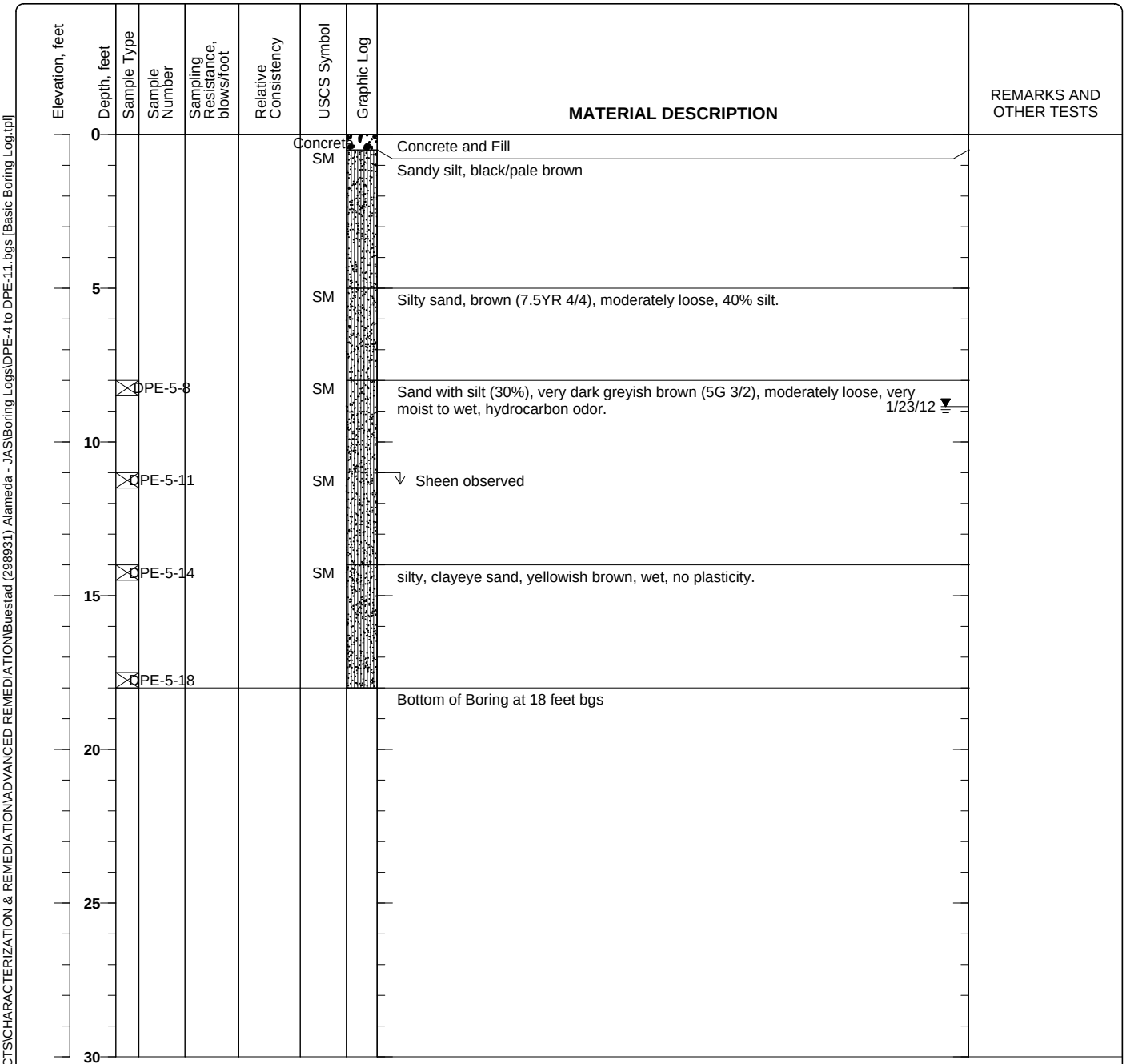
X:\PROJECTS\CHARACTERIZATION & REMEDIATION\ADVANCED REMEDIATION\Buestad (298931) Alameda - JAS\Boring Logs\DPE-4 to DPE-11.bgs [Basic Boring Log.tpl]

**Project: Alameda, California**
**Project Location: 1630 Park Street, Alameda, California**
**Project Number: 298931**

# Log of Boring DPE-5

Sheet 1 of 1

| | | |
|---|---|---|
| Date(s) Drilled **January 20, 2012** | Logged By **Harmony Tomsun** | Checked By **Bryan Campbell** |
| Drilling Method **Hollow Stem Auger** | Drill Bit Size/Type **10 inch** | Total Depth of Borehole **18 feet bgs** |
| Drill Rig Type **MARL 5T** | Drilling Contractor **Gregg Drilling** | Approximate Surface Elevation |
| Groundwater Level and Date Measured **8.85 feet measured on 1/23/12** | Sampling Method(s) **Direct-Push Sampler** | Hammer Data **W2012-0055** |
| Borehole Backfill **Well Completion** | Location **1630 Park Street, Alameda, California** | |




Figure

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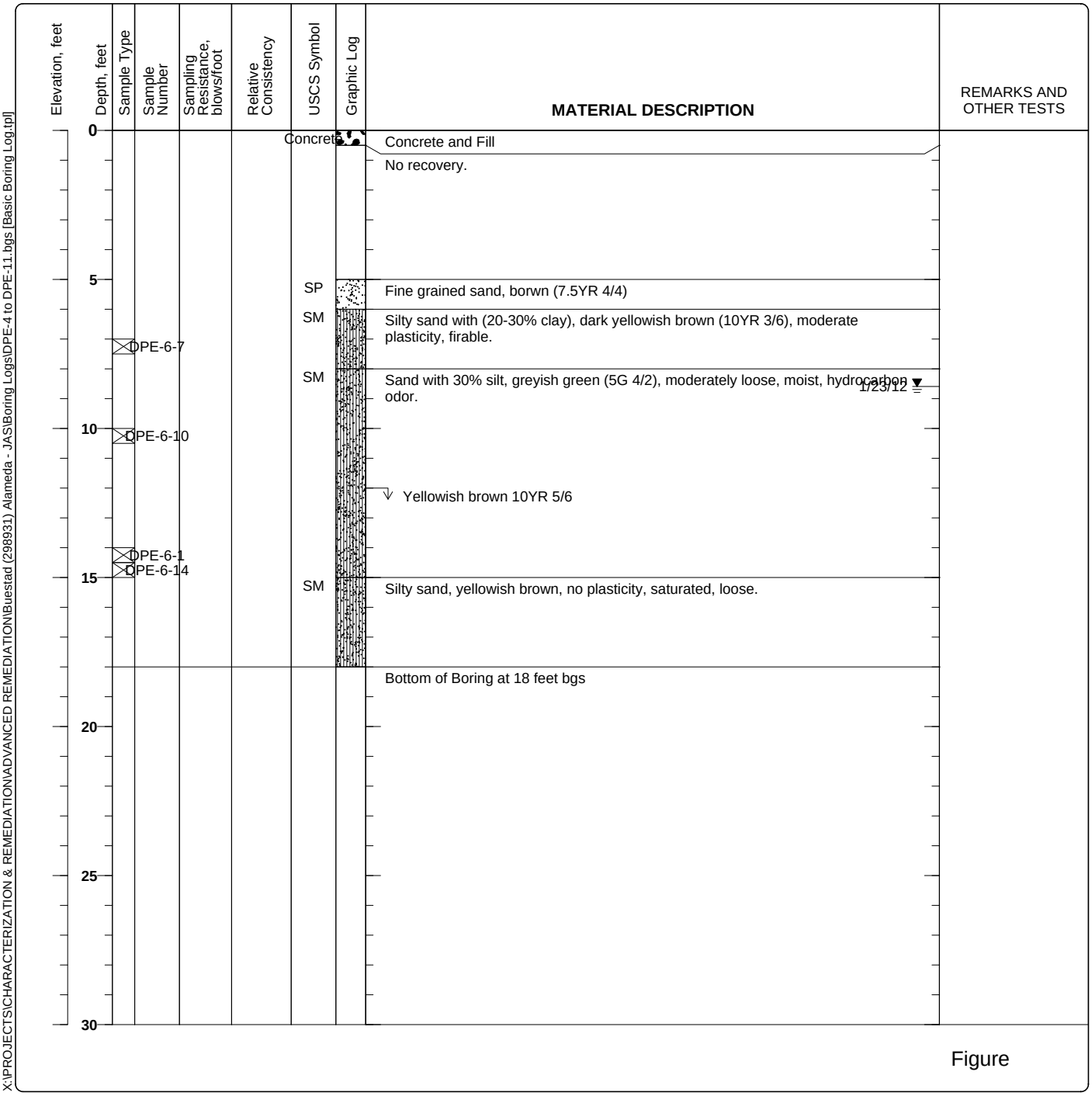
**Project: Alameda, California**
**Project Location: 1630 Park Street, Alameda, California**
**Project Number: 298931**

# Log of Boring DPE-6

Sheet 1 of 1

| | | |
|---|---|---|
| Date(s) Drilled **January 19, 2012** | Logged By **Harmony Tomsun** | Checked By **Bryan Campbell** |
| Drilling Method **Hollow Stem Auger** | Drill Bit Size/Type **10 inch** | Total Depth of Borehole **18 feet bgs** |
| Drill Rig Type **MARL 5T** | Drilling Contractor **Gregg Drilling** | Approximate Surface Elevation |
| Groundwater Level and Date Measured **8.59 feet measured on 1/23/12** | Sampling Method(s) **Direct-Push Sampler** | Hammer Data **W2012-0055** |
| Borehole Backfill **Well Completion** | Location **1630 Park Street, Alameda, California** | |




Figure

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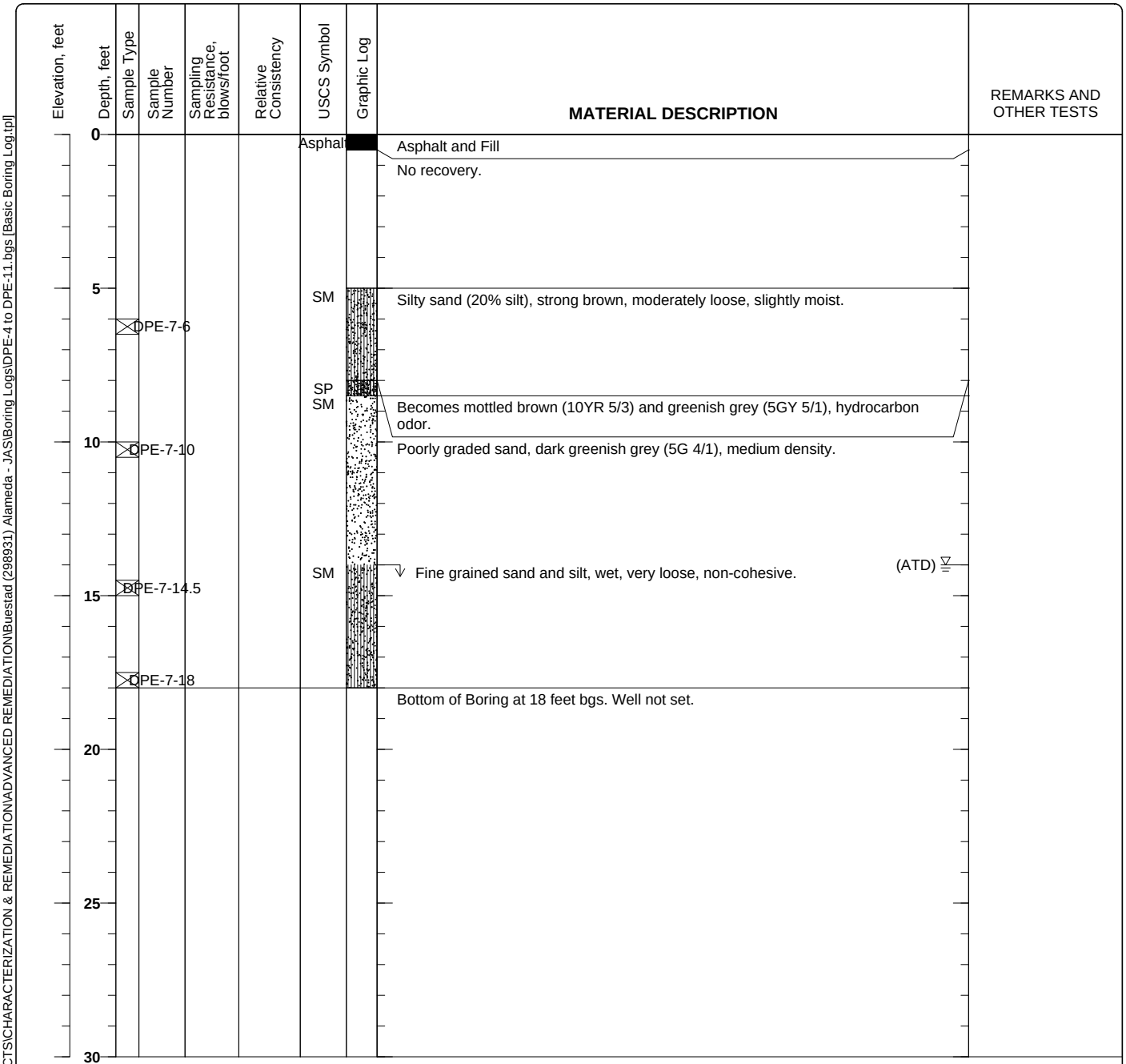
**Project: Alameda, California**
**Project Location: 1630 Park Street, Alameda, California**
**Project Number: 298931**

# Log of Boring DPE-7

Sheet 1 of 1

| | | |
|---|---|---|
| Date(s) Drilled **January 19, 2012** | Logged By **Harmony Tomsun** | Checked By **Bryan Campbell** |
| Drilling Method **Hollow Stem Auger** | Drill Bit Size/Type **10 inch** | Total Depth of Borehole **18 feet bgs** |
| Drill Rig Type **MARL 5T** | Drilling Contractor **Gregg Drilling** | Approximate Surface Elevation |
| Groundwater Level and Date Measured **14 feet ATD** | Sampling Method(s) **Direct-Push Sampler** | Hammer Data **W2012-0055** |
| Borehole Backfill **Well Completion** | Location **1630 Park Street, Alameda, California** | |




Figure

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**Project: Alameda, California**
**Project Location: 1630 Park Street, Alameda, California**
**Project Number: 298931**

# Log of Boring DPE-8

Sheet 1 of 1

| | | |
|---|---|---|
| Date(s) Drilled **January 20, 2012** | Logged By **Harmony Tomsun** | Checked By **Bryan Campbell** |
| Drilling Method **Hollow Stem Auger** | Drill Bit Size/Type **10 inch** | Total Depth of Borehole **18 feet bgs** |
| Drill Rig Type **MARL 10T** | Drilling Contractor **Gregg Drilling** | Approximate Surface Elevation |
| Groundwater Level and Date Measured **8.21 feet measured on 1/23/12** | Sampling Method(s) | Hammer Data **W2012-0055** |
| Borehole Backfill **Well Completion** | Location **1630 Park Street, Alameda, California** | |

| Elevation, feet | Depth, feet | Sample Type | Sample Number | Sampling Resistance, blows/foot | Relative Consistency | USCS Symbol | Graphic Log | MATERIAL DESCRIPTION | REMARKS AND OTHER TESTS |
|---|---|---|---|---|---|---|---|---|---|
| | 0 | | | | | Asphalt | | Asphalt and Fill | |
| | | | | | | | | Well Not Logged. | |
| | 5 | | | | | | | | |
| | | | | | | | | 1/23/12 ▼ | |
| | 10 | | | | | | | | |
| | 15 | | | | | | | | |
| | | | | | | | | Bottom of Boring at 18 feet bgs | |
| | 20 | | | | | | | | |
| | 25 | | | | | | | | |
| | 30 | | | | | | | | |

Figure

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**Project: Alameda, California**
**Project Location: 1630 Park Street, Alameda, California**
**Project Number: 298931**

# Log of Boring DPE-9

Sheet 1 of 1

| | | |
|---|---|---|
| Date(s) Drilled **January 20, 2012** | Logged By **Harmony Tomsun** | Checked By **Bryan Campbell** |
| Drilling Method **Hollow Stem Auger** | Drill Bit Size/Type **10 inch** | Total Depth of Borehole **18 feet bgs** |
| Drill Rig Type **MARL 10T** | Drilling Contractor **Gregg Drilling** | Approximate Surface Elevation |
| Groundwater Level and Date Measured **8.16 feet measured on 1/23/12** | Sampling Method(s) | Hammer Data **W2012-0055** |
| Borehole Backfill **Well Completion** | Location **1630 Park Street, Alameda, California** | |

| Elevation, feet | Depth, feet | Sample Type | Sample Number | Sampling Resistance, blows/foot | Relative Consistency | USCS Symbol | Graphic Log | MATERIAL DESCRIPTION | REMARKS AND OTHER TESTS |
|---|---|---|---|---|---|---|---|---|---|
| | 0 | | | | | Asphalt | | Asphalt and Fill | |
| | | | | | | | | Well Not Logged. | |
| | 5 | | | | | | | 1/23/12 ▼ | |
| | 10 | | | | | | | | |
| | 15 | | | | | | | | |
| | | | | | | | | Bottom of Boring at 18 feet bgs | |
| | 20 | | | | | | | | |
| | 25 | | | | | | | | |
| | 30 | | | | | | | | |

Figure

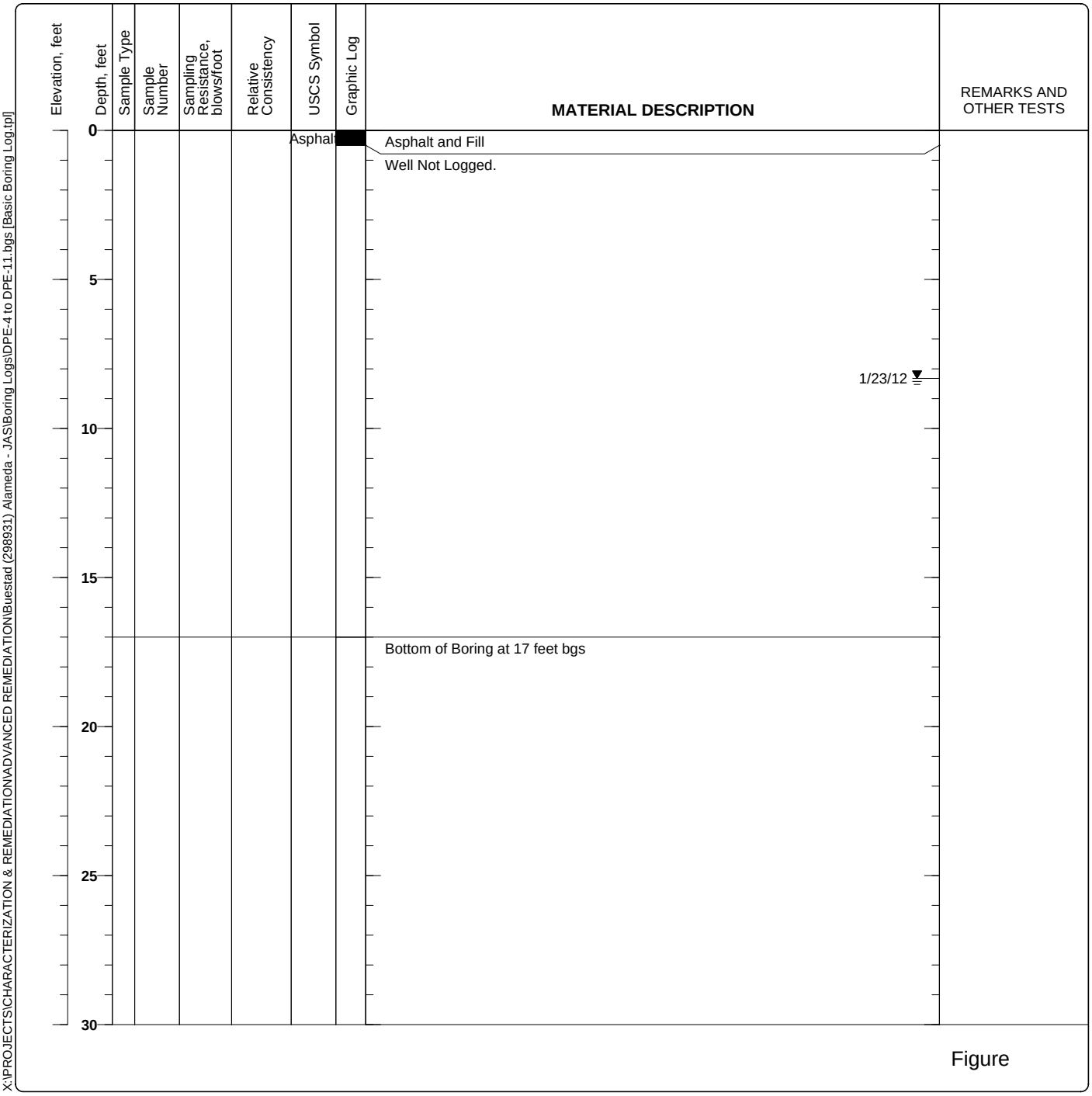
X:\PROJECTS\CHARACTERIZATION & REMEDIATION\ADVANCED REMEDIATION\Buestad (298931) Alameda - JAS\Boring Logs\DPE-4 to DPE-11.bgs [Basic Boring Log.tpl]

**Project: Alameda, California**
**Project Location: 1630 Park Street, Alameda, California**
**Project Number: 298931**

# Log of Boring DPE-10

Sheet 1 of 1

| | | |
|---|---|---|
| Date(s) Drilled **January 20, 2012** | Logged By **Harmony Tomsun** | Checked By **Bryan Campbell** |
| Drilling Method **Hollow Stem Auger** | Drill Bit Size/Type **10 inch** | Total Depth of Borehole **17 feet bgs** |
| Drill Rig Type **MARL 10T** | Drilling Contractor **Gregg Drilling** | Approximate Surface Elevation |
| Groundwater Level and Date Measured **8.32 feet measured on 1/23/12** | Sampling Method(s) | Hammer Data **W2012-0055** |
| Borehole Backfill **Well Completion** | Location **1630 Park Street, Alameda, California** | |




Figure

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**Project: Alameda, California**
**Project Location: 1630 Park Street, Alameda, California**
**Project Number: 298931**

# Log of Boring DPE-11

Sheet 1 of 1

| | | |
|---|---|---|
| Date(s) Drilled **January 20, 2012** | Logged By **Harmony Tomsun** | Checked By **Bryan Campbell** |
| Drilling Method **Hollow Stem Auger** | Drill Bit Size/Type **10 inch** | Total Depth of Borehole **18 feet bgs** |
| Drill Rig Type **MARL 10T** | Drilling Contractor **Gregg Drilling** | Approximate Surface Elevation |
| Groundwater Level and Date Measured **8.79 feet measured on 1/23/12** | Sampling Method(s) | Hammer Data **W2012-0055** |
| Borehole Backfill **Well Completion** | Location **1630 Park Street, Alameda, California** | |

| Elevation, feet | Depth, feet | Sample Type | Sample Number | Sampling Resistance, blows/foot | Relative Consistency | USCS Symbol | Graphic Log | MATERIAL DESCRIPTION | REMARKS AND OTHER TESTS |
|---|---|---|---|---|---|---|---|---|---|
| | 0 | | | | | Asphalt | | Asphalt and Fill | |
| | | | | | | | | Well Not Logged. | |
| | 5 | | | | | | | | |
| | | | | | | | | 1/23/12 ▼ | |
| | 10 | | | | | | | | |
| | 15 | | | | | | | | |
| | | | | | | | | Bottom of Boring at 18 feet bgs | |
| | 20 | | | | | | | | |
| | 25 | | | | | | | | |
| | 30 | | | | | | | | |

Figure

X:\PROJECTS\CHARACTERIZATION & REMEDIATION\ADVANCED REMEDIATION\Buestad (298931) Alameda - JAS\Boring Logs\DPE-4 to DPE-11.bgs [Basic Boring Log.tpl]

**Project: Alameda, California**
**Project Location: 1630 Park Street, Alameda, California**
**Project Number: 298931**

# Log of Boring AEI-20

Sheet 1 of 1

| | | |
|---|---|---|
| Date(s) Drilled **January 17, 2012** | Logged By **Harmony Tomsun** | Checked By **Bryan Campbell** |
| Drilling Method **Direct Push** | Drill Bit Size/Type **2 inch** | Total Depth of Borehole **15 feet bgs** |
| Drill Rig Type **Limited Access** | Drilling Contractor **ECA** | Approximate Surface Elevation |
| Groundwater Level and Date Measured **11.3 feet ATD** | Sampling Method(s) **Direct-Push Sampler** | Well Permit. **W2012-0024** |
| Borehole Backfill **Neat Cement** | Location **1630 Park Street, Alameda, California** | |

| Elevation, feet | Depth, feet | Sample Type | Sample Number | USCS Symbol | Graphic Log | MATERIAL DESCRIPTION | PID Reading, ppm | REMARKS AND OTHER TESTS |
|---|---|---|---|---|---|---|---|---|
| | 0 | | | Asphalt | | Conrete and Fill | | |
| | | | | SM | | Silty sand, mottled reddish brown, coarse grained, brittle. | | |
| | | | AEI-20-3.5 | SP | | Poorly graded, fine grained sand, light brown, moderately loose. | <1 | |
| | 5 | | | SW | | Medium to coarse grained sand, yellowish red, moderately loose. | | |
| | | | AEI-20-7.5 | SM | | Silty sand, (20% silt), mottled greenish grey and light grey, moderately soft and loose, hydrocarbon odors. | 78.1 | |
| | 10 | | AEI-20-11 | | | (ATD) ▽ | 104.3 | |
| | | | | SP | | Fine grained sand, yellowish brown, moist to wet, compact. | | |
| | | | AEI-20-15 | | | | 26.7 | |
| | 15 | | | | | Bottom of Boring at 15 feet bgs. Groundwater sample collected. | | |
| | 20 | | | | | | | |

Figure

X:\PROJECTS\CHARACTERIZATION & REMEDIATION\ADVANCED REMEDIATION\Buestad (298931) Alameda - JAS\Boring Logs\AEI-20 to AEI-28.bgs [AEI geoprobe 20.tpl]

**Project: Alameda, California**
**Project Location: 1630 Park Street, Alameda, California**
**Project Number: 298931**

# Log of Boring AEI-21

Sheet 1 of 1

| | | |
|---|---|---|
| Date(s) Drilled **January 17, 2012** | Logged By **Harmony Tomsun** | Checked By **Bryan Campbell** |
| Drilling Method **Direct Push** | Drill Bit Size/Type **2 inch** | Total Depth of Borehole **14 feet bgs** |
| Drill Rig Type **Limited Access** | Drilling Contractor **ECA** | Approximate Surface Elevation |
| Groundwater Level and Date Measured **10.7 feet ATD** | Sampling Method(s) **Direct-Push Sampler** | Well Permit. **W2012-0024** |
| Borehole Backfill **Neat Cement** | Location **1630 Park Street, Alameda, California** | |

| Elevation, feet | Depth, feet | Sample Type | Sample Number | USCS Symbol | Graphic Log | MATERIAL DESCRIPTION | PID Reading, ppm | REMARKS AND OTHER TESTS |
|---|---|---|---|---|---|---|---|---|
| | 0 | | | Asphalt | | Conrete and Fill | | |
| | | | | SM | | Silty sand, dark brown and mottled red, hard. | | |
| | | | | SM | | Becomes yellowish brown, fine grained, cohesive, friable. | | |
| | | X | AEI-21-3 | | | | <1 | |
| | | | | SM | | Becomes fine to medium grained sand. | | |
| | 5 | X | AEI-21-7 | | | | <1 | |
| | | X | AEI-21-9 | SM | | Silty sand (20% silt), greyish green, non-plastic. | 32.9 | |
| | 10 | | | | | (ATD) ▽ | | |
| | | X | AEI-21-11 | | | | 61.5 | |
| | | | | SP | | Sand, yellowish brown, wet, hard, friable, cohesive. | | |
| | | X | AEI-21-14 | | | | 17.9 | |
| | | | | | | Bottom of Boring at 14 feet bgs. Groundwater Sample Collected. | | |
| | 15 | | | | | | | |
| | 20 | | | | | | | |

Figure

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**Project: Alameda, California**
**Project Location: 1630 Park Street, Alameda, California**
**Project Number: 298931**

# Log of Boring AEI-22

Sheet 1 of 1

| | | |
|---|---|---|
| Date(s) Drilled **January 17, 2012** | Logged By **Harmony Tomsun** | Checked By **Bryan Campbell** |
| Drilling Method **Direct Push** | Drill Bit Size/Type **2 inch** | Total Depth of Borehole **15 feet bgs** |
| Drill Rig Type **Limited Access** | Drilling Contractor **ECA** | Approximate Surface Elevation |
| Groundwater Level and Date Measured **10.9 feet ATD** | Sampling Method(s) **Direct-Push Sampler** | Well Permit. **W2012-0024** |
| Borehole Backfill **Neat Cement** | Location **1630 Park Street, Alameda, California** | |

| Elevation, feet | Depth, feet | Sample Type | Sample Number | USCS Symbol | Graphic Log | MATERIAL DESCRIPTION | PID Reading, ppm | REMARKS AND OTHER TESTS |
|---|---|---|---|---|---|---|---|---|
| | 0 | | | Asphalt | | Conrete and Fill | | |
| | | | | SM | | Silty sand, dark brown and mottled reddish brown, hard, slightly friable. | | |
| | | | | SM | | Silty sand, dark yellowish brown, fine to medium grained, moist, loose, friable. | | |
| | | X | AEI-22-4 | | | | <1 | |
| | 5 | | | | | | | |
| | | X | AEI-22-7 | | | | <1 | |
| | | | | SM | | Silty sand, yellowish red, fine grained sand, moderately loose. | | |
| | | | | SM | | Silty sand (20% silt), greenish grey, fine grained sand, non-plastic, wet. | | |
| | | X | AEI-22-9 | | | | 9.4 | |
| | 10 | | | | | (ATD) ▽ | | |
| | | X | AEI-22-11 | | | | 13.8 | |
| | | | | SM | | Silty sand, light yellowish brown, non-plastic. | | |
| | | X | AEI-22-14 | | | | 5.4 | |
| | 15 | | | | | Bottom of Boring at 15 feet bgs. Groundwater Sample Collected. | | |
| | 20 | | | | | | | |

Figure

X:\PROJECTS\CHARACTERIZATION & REMEDIATION\ADVANCED REMEDIATION\Buestad (298931) Alameda - JAS\Boring Logs\AEI-20 to AEI-28.bgs [AEI geoprobe 20.tpl]

**Project: Alameda, California**
**Project Location: 1630 Park Street, Alameda, California**
**Project Number: 298931**

# Log of Boring AEI-23

Sheet 1 of 1

| | | |
|---|---|---|
| Date(s) Drilled **January 17, 2012** | Logged By **Harmony Tomsun** | Checked By **Bryan Campbell** |
| Drilling Method **Direct Push** | Drill Bit Size/Type **2 inch** | Total Depth of Borehole **14.5 feet bgs** |
| Drill Rig Type **Limited Access** | Drilling Contractor **ECA** | Approximate Surface Elevation |
| Groundwater Level and Date Measured **10.09 feet ATD** | Sampling Method(s) **Direct-Push Sampler** | Well Permit. **W2012-0024** |
| Borehole Backfill **Neat Cement** | Location **1630 Park Street, Alameda, California** | |

| Elevation, feet | Depth, feet | Sample Type | Sample Number | USCS Symbol | Graphic Log | MATERIAL DESCRIPTION | PID Reading, ppm | REMARKS AND OTHER TESTS |
|---|---|---|---|---|---|---|---|---|
| | 0 | | | Asphalt | | Conrete and Fill | | |
| | | | | SM | | Sandy silt, black and mottled orange. | | |
| | | ☒ | AEI-23-3 | | | | <1 | |
| | | | | SM | | Light yellowish brown sand, increasing compactness with depth. | | |
| | 5 | | | | | | | |
| | | ☒ | AEI-23-6 | | | | 1.7 | |
| | | | | SW | | Sand, greenish grey, fine to medium grained, moist to wet. | | |
| | | ☒ | AEI-23-9.5 | | | (ATD) ▽ | 39.8 | |
| | 10 | | | | | | | |
| | | ☒ | AEI-23-12.5 | | | | 75.1 | |
| | | | | SP | | Fine grained sand, yellowish brown, wet. | | |
| | | ☒ | AEI-23-14.5 | | | | 11.2 | |
| | 15 | | | | | Bottom of Boring at 14.5 feet bgs. Groundwater Sample Collected. | | |
| | 20 | | | | | | | |

Figure

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**Project: Alameda, California**
**Project Location: 1630 Park Street, Alameda, California**
**Project Number: 298931**

# Log of Boring AEI-24

Sheet 1 of 1

| | | |
|---|---|---|
| Date(s) Drilled **January 17, 2012** | Logged By **Harmony Tomsun** | Checked By **Bryan Campbell** |
| Drilling Method **Direct Push** | Drill Bit Size/Type **2 inch** | Total Depth of Borehole **16 feet bgs** |
| Drill Rig Type **Limited Access** | Drilling Contractor **ECA** | Approximate Surface Elevation |
| Groundwater Level and Date Measured **11.4 feet ATD** | Sampling Method(s) **Direct-Push Sampler** | Well Permit. **W2012-0024** |
| Borehole Backfill **Neat Cement** | Location **1630 Park Street, Alameda, California** | |

| Elevation, feet | Depth, feet | Sample Type | Sample Number | USCS Symbol | Graphic Log | MATERIAL DESCRIPTION | PID Reading, ppm | REMARKS AND OTHER TESTS |
|---|---|---|---|---|---|---|---|---|
| | 0 | | | Asphalt | | Conrete and Fill | | |
| | | | | SM | | Sandy silt, black, friable, dry, trace subangular fine gravel. Non-plastic. | | |
| | | ☒ | AEI-24-3.5 | | | | <1 | |
| | | | | SM | | Silty sand, reddish yellowish brown, non-plastic, moist, slightly friable. | | |
| | 5 | | | | | | | |
| | | ☒ | AEI-24-7 | | | | 9.8 | |
| | | | | SM | | Silty sand, light olive brown, moist, moderately loose. | | |
| | 10 | | | | | | | |
| | | ☒ | AEI-24-10.5 | | | | 19.4 | |
| | | | | | | (ATD) ▽ | | |
| | | | | SW | | Sand with trace gravel, reddish, yellowish brown, fine to medium grained, wet. | | |
| | | ☒ | AEI-24-13 | | | | <1 | |
| | 15 | | | | | | | |
| | | | | | | Bottom of Boring at 16 feet bgs. Groundwater Sample Collected. | | |
| | 20 | | | | | | | |

Figure

X:\PROJECTS\CHARACTERIZATION & REMEDIATION\ADVANCED REMEDIATION\Buestad (298931) Alameda - JAS\Boring Logs\AEI-20 to AEI-28.bgs [AEI geoprobe 20.tpl]

**Project: Alameda, California**
**Project Location: 1630 Park Street, Alameda, California**
**Project Number: 298931**

# Log of Boring AEI-25

Sheet 1 of 1

| | | |
|---|---|---|
| Date(s) Drilled **January 17, 2012** | Logged By **Harmony Tomsun** | Checked By **Bryan Campbell** |
| Drilling Method **Direct Push** | Drill Bit Size/Type **2 inch** | Total Depth of Borehole **15 feet bgs** |
| Drill Rig Type **Limited Access** | Drilling Contractor **ECA** | Approximate Surface Elevation |
| Groundwater Level and Date Measured **10.8 feet ATD** | Sampling Method(s) **Direct-Push Sampler** | Well Permit. **W2012-0024** |
| Borehole Backfill **Neat Cement** | Location **1630 Park Street, Alameda, California** | |

| Elevation, feet | Depth, feet | Sample Type | Sample Number | USCS Symbol | Graphic Log | MATERIAL DESCRIPTION | PID Reading, ppm | REMARKS AND OTHER TESTS |
|---|---|---|---|---|---|---|---|---|
| | 0 | | | Asphalt | | Conrete and Fill | | |
| | | | | SM | | Sandy silt, black mottled with red/orange, slightly friable, dry, cohesive. | | |
| | | | AEI-25-4 | SM | | Silty sand, reddish yellowish brown, moist | <1 | |
| | 5 | | AEI-25-7.5 | | | | <1 | |
| | | | | SP | | Fine to medium grained sand, yellowish brown, moist, wet at 12 feet. | | |
| | 10 | | AEI-25-10 | | | (ATD) ▽ | 23.2 | |
| | | | | SM | | Silty sand, reddish yellow, fine to medium grained, non-plastic, wet, expansive. | | |
| | | | AEI-25-14 | | | | <1 | |
| | 15 | | | | | Bottom of Boring at 15 feet bgs. Groundwater Sample Collected. | | |
| | 20 | | | | | | | |

Figure

X:\PROJECTS\CHARACTERIZATION & REMEDIATION\ADVANCED REMEDIATION\Buestad (298931) Alameda - JAS\Boring Logs\AEI-20 to AEI-28.bgs [AEI geoprobe 20.tpl]

**Project: Alameda, California**
**Project Location: 1630 Park Street, Alameda, California**
**Project Number: 298931**

# Log of Boring AEI-26

Sheet 1 of 1

| | | |
|---|---|---|
| Date(s) Drilled **January 17, 2012** | Logged By **Harmony Tomsun** | Checked By **Bryan Campbell** |
| Drilling Method **Direct Push** | Drill Bit Size/Type **2 inch** | Total Depth of Borehole **14 feet bgs** |
| Drill Rig Type **Limited Access** | Drilling Contractor **ECA** | Approximate Surface Elevation |
| Groundwater Level and Date Measured **11.8 feet ATD** | Sampling Method(s) **Direct-Push Sampler** | Well Permit. **W2012-0024** |
| Borehole Backfill **Neat Cement** | Location **1630 Park Street, Alameda, California** | |

| Elevation, feet | Depth, feet | Sample Type | Sample Number | USCS Symbol | Graphic Log | MATERIAL DESCRIPTION | PID Reading, ppm | REMARKS AND OTHER TESTS |
|---|---|---|---|---|---|---|---|---|
| | 0 | | | Asphalt | | Conrete and Fill | | |
| | | | | SM | | Silty sand, dark brown mottled with red/orange, hard, friable. | | |
| | | | | SM | | Silty sand, yellowish brown mottled reddish yellow, cohesive, friable, moist. | | |
| | | | AEI-26-4 | | | | <1 | |
| | 5 | | | | | | | |
| | | | AEI-26-7.5 | | | | <1 | |
| | 10 | | | | | | | |
| | | | AEI-26-10.5 | SP | | Silty sand, dark brown, non-plastic, wet. | 6.3 | |
| | | | | | | (ATD) ▽ | | |
| | | | AEI-26-14 | | | | <1 | |
| | | | | | | Bottom of Boring at 14 feet bgs. Groundwater Sample Collected. | | |
| | 15 | | | | | | | |
| | 20 | | | | | | | |

Figure

X:\PROJECTS\CHARACTERIZATION & REMEDIATION\ADVANCED REMEDIATION\Buestad (298931) Alameda - JAS\Boring Logs\AEI-20 to AEI-28.bgs [AEI geoprobe 20.tpl]

**Project: Alameda, California**
**Project Location: 1630 Park Street, Alameda, California**
**Project Number: 298931**

# Log of Boring AEI-27

Sheet 1 of 1

| | | |
|---|---|---|
| Date(s) Drilled **January 17, 2012** | Logged By **Harmony Tomsun** | Checked By **Bryan Campbell** |
| Drilling Method **Direct Push** | Drill Bit Size/Type **2 inch** | Total Depth of Borehole **15 feet bgs** |
| Drill Rig Type **Limited Access** | Drilling Contractor **ECA** | Approximate Surface Elevation |
| Groundwater Level and Date Measured **9.7 feet ATD** | Sampling Method(s) **Direct-Push Sampler** | Well Permit. **W2012-0024** |
| Borehole Backfill **Neat Cement** | Location **1630 Park Street, Alameda, California** | |

| 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 | | |
| | | | | SM | | Sandy silt, black and mottled red, hard, friable. | | |
| | | X | AEI-27-3 | SM | | Silty sand, reddish yellowish brown, moist. | <1 | |
| | 5 | X | AEI-27-8 | | | | <1 | |
| | | | | SM | | Sand with silt, yellowish brown. (ATD) ▽ | | |
| | 10 | X | AEI-27-10.5 | | | | <1 | |
| | | | | SM | | Silty sand, dark yellowish brown, non-plastic, wet, fine grained sand. | | |
| | | X | AEI-27-14 | | | | <1 | |
| | 15 | | | | | Bottom of Boring at 15 feet bgs. Groundwater sample collected. | | |
| | 20 | | | | | | | |

Figure

X:\PROJECTS\CHARACTERIZATION & REMEDIATION\ADVANCED REMEDIATION\Buestad (298931) Alameda - JAS\Boring Logs\AEI-20 to AEI-28.bgs [AEI geoprobe 20.tpl]

**Project: Alameda, California**
**Project Location: 1630 Park Street, Alameda, California**
**Project Number: 298931**

# Log of Boring AEI-28

Sheet 1 of 1

| | | |
|---|---|---|
| Date(s) Drilled **January 17, 2012** | Logged By **Harmony Tomsun** | Checked By **Bryan Campbell** |
| Drilling Method **Direct Push** | Drill Bit Size/Type **2 inch** | Total Depth of Borehole **16 feet bgs** |
| Drill Rig Type **Limited Access** | Drilling Contractor **ECA** | Approximate Surface Elevation |
| Groundwater Level and Date Measured **10.61 feet ATD** | Sampling Method(s) **Direct-Push Sampler** | Well Permit. **W2012-0024** |
| Borehole Backfill **Neat Cement** | Location **1630 Park Street, Alameda, California** | |

| Elevation, feet | Depth, feet | Sample Type | Sample Number | USCS Symbol | Graphic Log | MATERIAL DESCRIPTION | PID Reading, ppm | REMARKS AND OTHER TESTS |
|---|---|---|---|---|---|---|---|---|
| | 0 | | | Asphalt | | Concrete and Fill | | |
| | | | | SM | | Sandy silt, black/dark brown and mottled red/orange. | | |
| | | | AEI-28-3 | SM | | Silty sand, light yellowish brown, (20% silt), increasing grain size with depth. | <1 | |
| | 5 | | AEI-28-6 | | | | <1 | |
| | 10 | | AEI-28-10.5 | SM | | Silty sand, greenish grey, wet, moderately loose (20% silt). (ATD) ▽ | 32.8 | |
| | | | AEI-28-13.5 | SM | | Silty sand, light yellowish brown, non-plastic, wet, loose. | 1.4 | |
| | 15 | | | | | Bottom of Boring at 16 feet bgs. Groundwater sample collected. | | |
| | 20 | | | | | | | |

Figure

X:\PROJECTS\CHARACTERIZATION & REMEDIATION\ADVANCED REMEDIATION\Buestad (298931) Alameda - JAS\Boring Logs\AEI-20 to AEI-28.bgs [AEI geoprobe 20.tpl]

# APPENDIX B

# PERMITS

# Alameda County Public Works Agency - Water Resources Well Permit

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

**Application Approved on: 10/14/2011 By jamesy**

**Permit Numbers: W2011-0645**
**Permits Valid from 10/25/2011 to 10/28/2011**

**Application Id:** 1318617380568
**City of Project Site:** Alameda
**Site Location:** 1630 Park Street
**Project Start Date:** 10/25/2011
**Completion Date:** 10/28/2011
**Assigned Inspector:** Contact Vicky Hamlin at (510) 670-5443 or vickyh@acpwa.org

**Applicant:** AEI Consultants - Peter McIntyre
2500 Camino Diablo, Walnut Creek, CA 94597
**Phone:** 925-746-6004

**Property Owner:** John Buestad
2533 Clement Avenue, Alameda, CA 94501
**Phone:** 510-523-1925

**Client:** ** same as Property Owner **

**Contact:** Peter McIntyre
**Phone:** --
**Cell:** --

**Total Due:** $265.00
**Receipt Number: WR2011-0303** **Total Amount Paid:** $265.00
**Payer Name : Peter J McIntyre** Paid By: VISA **PAID IN FULL**

**Works Requesting Permits:**

Remediation Well Construction-Extraction - 4 Wells
Driller: Penecore Drilling - Lic #: 906899 - Method: hstem **Work Total: $265.00**

**Specifications**

| Permit # | Issued Date | Expire Date | Owner Well Id | Hole Diam. | Casing Diam. | Seal Depth | Max. Depth |
|---|---|---|---|---|---|---|---|
| W2011-0645 | 10/14/2011 | 01/23/2012 | AS-1 | 8.50 in. | 2.00 in. | 15.00 ft | 25.00 ft |
| W2011-0645 | 10/14/2011 | 01/23/2012 | DPE-1 | 10.25 in. | 4.00 in. | 6.00 ft | 15.00 ft |
| W2011-0645 | 10/14/2011 | 01/23/2012 | DPE-2 | 10.25 in. | 4.00 in. | 6.00 ft | 15.00 ft |
| W2011-0645 | 10/14/2011 | 01/23/2012 | DPE-3 | 10.25 in. | 4.00 in. | 6.00 ft | 15.00 ft |

**Specific Work Permit Conditions**

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

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

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

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

5. Applicant shall contact 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.

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

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

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

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

# Alameda County Public Works Agency - Water Resources Well Permit

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

**Application Approved on: 01/17/2012 By jamesy**

**Permit Numbers: W2012-0055**
**Permits Valid from 01/19/2012 to 01/20/2012**

**Application Id:** 1326407523588
**City of Project Site:** Alameda
**Site Location:** 1600-1630 Park Street
**Project Start Date:** 01/19/2012
**Completion Date:** 01/20/2012
**Assigned Inspector:** Contact Vicky Hamlin at (510) 670-5443 or vickyh@acpwa.org

**Applicant:** Harmony - Harmony Tomsun
2500 Camino Diablo, Walnut Creek, CA 94597
**Phone:** 925-746-6000 x141

**Property Owner:** John Buono
1630 Park Street, Alameda, CA 94501
**Phone:** --

**Client:** ** same as Property Owner **

**Total Due:** $265.00
**Receipt Number: WR2012-0017** **Total Amount Paid:** $265.00
**Payer Name : Harmony Tomsun** Paid By: VISA **PAID IN FULL**

**Works Requesting Permits:**

Remediation Well Construction-Extraction - 8 Wells
Driller: Gregg Drilling and Testing, Inc. - Lic #: 485165 - Method: hstem **Work Total: $265.00**

**Specifications**

| Permit # | Issued Date | Expire Date | Owner Well Id | Hole Diam. | Casing Diam. | Seal Depth | Max. Depth |
|---|---|---|---|---|---|---|---|
| W2012-0055 | 01/17/2012 | 04/18/2012 | VPE-10 | 10.00 in. | 4.00 in. | 6.00 ft | 18.00 ft |
| W2012-0055 | 01/17/2012 | 04/18/2012 | VPE-11 | 10.00 in. | 4.00 in. | 6.00 ft | 18.00 ft |
| W2012-0055 | 01/17/2012 | 04/18/2012 | VPE-4 | 10.00 in. | 4.00 in. | 6.00 ft | 18.00 ft |
| W2012-0055 | 01/17/2012 | 04/18/2012 | VPE-5 | 10.00 in. | 4.00 in. | 6.00 ft | 18.00 ft |
| W2012-0055 | 01/17/2012 | 04/18/2012 | VPE-6 | 10.00 in. | 4.00 in. | 6.00 ft | 18.00 ft |
| W2012-0055 | 01/17/2012 | 04/18/2012 | VPE-7 | 10.00 in. | 4.00 in. | 6.00 ft | 18.00 ft |
| W2012-0055 | 01/17/2012 | 04/18/2012 | VPE-8 | 10.00 in. | 4.00 in. | 6.00 ft | 18.00 ft |
| W2012-0055 | 01/17/2012 | 04/18/2012 | VPE-9 | 10.00 in. | 4.00 in. | 6.00 ft | 18.00 ft |

**Specific Work Permit Conditions**

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

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

3. Compliance with the well-sealing specifications shall not exempt the well-sealing contractor from complying with appropriate State reporting-requirements related to well construction or destruction (Sections 13750 through 13755 (Division 7, Chapter 10, Article 3) of the California Water Code). Contractor must complete State DWR Form 188 and mail original to the Alameda County Public Works Agency, Water Resources Section, within 60 days. Include 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 (5) working days prior to starting, once the permit has been approved. Confirm the scheduled date(s) at least 24 hours prior to drilling.

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

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

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

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

# Alameda County Public Works Agency - Water Resources Well Permit

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

**Application Approved on: 01/09/2012 By jamesy**

**Permit Numbers: W2012-0024**
**Permits Valid from 01/17/2012 to 01/17/2012**

**Application Id:** 1326137781054 **City of Project Site:** Alameda
**Site Location:** 1600-1630 Park Street
**Project Start Date:** 01/17/2012 **Completion Date:** 01/17/2012
**Assigned Inspector:** Contact Vicky Hamlin at (510) 670-5443 or vickyh@acpwa.org

**Applicant:** AEI Consultants - Harmony TomSun **Phone:** 925-746-6000 x141
2500 Camino Diablo, Walnut Creek, CA 94597
**Property Owner:** John Buono **Phone:** 510-523-5260
1630 Park Street, Alameda, CA 94501
**Client:** ** same as Property Owner **

**Total Due:** $265.00
**Receipt Number: WR2012-0011** **Total Amount Paid:** $265.00
**Payer Name : Harmony Tomsun** Paid By: VISA **PAID IN FULL**

**Works Requesting Permits:**

Borehole(s) for Investigation-Environmental/Monitorinig Study - 10 Boreholes
Driller: Environmental Control Associates - Lic #: 695970 - Method: DP **Work Total: $265.00**

**Specifications**

| Permit Number | Issued Dt | Expire Dt | # Boreholes | Hole Diam | Max Depth |
|---|---|---|---|---|---|
| W2012-0024 | 01/09/2012 | 04/16/2012 | 10 | 2.00 in. | 20.00 ft |

**Specific Work Permit Conditions**

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

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

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

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

6. Prior to any drilling activities onto any public right-of-ways, it shall be the applicants responsibilities to contact and

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

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

# APPENDIX C

# LABORATORY ANALYTICAL DATA

McCampbell Analytical, Inc.
*"When Quality Counts"*

1534 Willow Pass Road, Pittsburg, CA 94565-1701
Toll Free Telephone: (877) 252-9262 / Fax: (925) 252-9269
http://www.mccampbell.com / E-mail: main@mccampbell.com

# Analytical Report

| | | |
|---|---|---|
| AEI Consultants | Client Project ID: #298931; Buestad | Date Sampled: 11/14/11-11/15/11 |
| | | Date Received: 11/16/11 |
| 2500 Camino Diablo, Ste. #200 | Client Contact: Bryan Campbell | Date Reported: 11/22/11 |
| Walnut Creek, CA 94597 | Client P.O.: #WC083348 | Date Completed: 11/22/11 |

**WorkOrder: 1111541**

November 22, 2011

Dear Bryan:

Enclosed within are:

1) The results of the **3** analyzed samples from your project: **#298931; Buestad,**
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.

***The analytical results relate only to the items tested.***

# McCAMPBELL ANALYTICAL, INC.

1534 WILLOW PASS ROAD
PITTSBURG, CA 94565-1701
Website: www.mccampbell.com Email: main@mccampbell.com
Telephone: (877) 252-9262 Fax: (925) 252-9269

111541

# CHAIN OF CUSTODY RECORD

TURN AROUND TIME ☐ RUSH ☐ 24 HR ☐ 48 HR ☐ 72 HR ■ 5 DAY

GeoTracker EDF ☐ PDF ■ Excel ☐ Write On (DW) ☐

☐ Check if sample is effluent and "J" flag is required

Report To: Bryan Campbell Bill To:

Company: AEI Consultants, 2500 Camino Diablo, Walnut Creek, CA 94597

PO#: W083348

Global ID: E-Mail: bcampbell@aeiconsultants.com

Tele: ( 925) 746-6044 Fax: (925) 746-6099

Project #: 298931 Project Name: Buestad

Project Location: 1630 Park Street, Alameda, California

Sampler Signature:

| SAMPLE ID | LOCATION/ Field Point Name | SAMPLING Date | SAMPLING Time | # Containers | Type Containers | MATRIX Water | MATRIX Soil | MATRIX Air | MATRIX Sludge | MATRIX Other | METHOD PRESERVED ICE | METHOD PRESERVED HCL | METHOD PRESERVED $HNO_3$ | METHOD PRESERVED Other | Analysis Request: TPH as gasoline, diesel and mo by EPA 8015M | Analysis Request: MTBE and BTEX by EPA 8021 | Analysis Request: HOLD | Other | Comments |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| DPE-1, 5-5.5 | | 11/15/11 | 911 | 1 | Tube | | X | | | | X | | | | | | X | | |
| DPE-1, 7-7.5 | | | 912 | 1 | | | X | | | | X | | | | X | X | | | |
| DPE-1, 9.5-10 | | | 915 | 1 | | | X | | | | X | | | | | | X | | |
| DPE-1, 12-12.5 | | | 917 | 1 | | | X | | | | X | | | | | | X | | |
| DPE-1, 13.5-14 | | | 920 | 1 | | | X | | | | X | | | | | | X | | |
| DPE-1, 15.5-16 | | | 921 | 1 | | | X | | | | X | | | | | | X | | |
| DPE-2, 5-5.5 | | | 1321 | | | | X | | | | X | | | | | | X | | |
| DPE-2, 8-8.5 | | | 1322 | | | | X | | | | X | | | | X | X | | | |
| DPE-2, 11.5-12 | | | 1323 | | | | X | | | | X | | | | | | X | | |
| DPE-2, 13.5-14 | | | 1324 | | | | X | | | | X | | | | | | X | | |
| DPE-2, 15.5-16 | | | 1325 | | | | X | | | | X | | | | | | X | | |

**MAI clients MUST disclose any dangerous chemicals known to be present in their submitted samples in concentrations that may cause immediate harm or serious future health endangerment as a result of brief, gloved, open air, sample handling by MAI staff. Non-disclosure incurs an immediate $250 surcharge and the client is subject to full legal liability for harm suffered. Thank you for your understanding and for allowing us to work safely.

* With silica gel Cleanup.

| Relinquished By: | Date: | Time: | Received By: |
|---|---|---|---|
| | 11/16/11 | 1300 | Derek Carter |
| Derek Carter | 11/16/11 | 1530 | |
| | | | |

ICE/t° Good
GOOD CONDITION ✓
HEAD SPACE ABSENT
DECHLORINATED IN LAB
APPROPRIATE CONTAINERS ✓
PRESERVED IN LAB

COMMENTS:

| | VOAS | O&G | METALS | OTHER |
|---|---|---|---|---|
| PRESERVATION | | | pH<2 | |

# McCAMPBELL ANALYTICAL, INC.

1534 WILLOW PASS ROAD
PITTSBURG, CA 94565-1701
Website: www.mccampbell.com Email: main@mccampbell.com
Telephone: (877) 252-9262 Fax: (925) 252-9269

# CHAIN OF CUSTODY RECORD

**TURN AROUND TIME** ☐ RUSH ☐ 24 HR ☐ 48 HR ☐ 72 HR ■ 5 DAY

**GeoTracker EDF** ☐ **PDF** ■ **Excel** ☐ **Write On (DW)** ☐

☐ Check if sample is effluent and "J" flag is required

| | |
|---|---|
| **Report To:** Bryan Campbell | **Bill To:** |
| **Company:** AEI Consultants, 2500 Camino Diablo, Walnut Creek, CA 94597 | |
| **PO#:** W083348 | |
| **Global ID:** | **E-Mail:** bcampbell@aeiconsultants.com |
| **Tele:** ( 925) 746-6044 | **Fax:** (925) 746-6099 |
| **Project #:** 298931 | **Project Name:** Buestad |
| **Project Location:** 1630 Park Street, Alameda, California | |
| **Sampler Signature:** | |

| SAMPLE ID | LOCATION/ Field Point Name | SAMPLING Date | SAMPLING Time | # Containers | Type Containers | MATRIX Water | MATRIX Soil | MATRIX Air | MATRIX Sludge | MATRIX Other | METHOD PRESERVED ICE | METHOD PRESERVED HCL | METHOD PRESERVED $HNO_3$ | METHOD PRESERVED Other | Analysis Request: TPH as gasoline, diesel and mo by EPA 8015M | Analysis Request: MTBE and BTEX by EPA 8021 | Analysis Request: HOLD | Other | Comments |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| DPE-3, 6-6.5 | | 11/14/11 | 1042 | 1 | Tube | | X | | | | X | | | | | | X | | |
| DPE-3, 8-8.5 | | | 1048 | 1 | | | X | | | | X | | | | X | X | | | |
| DPE-3, 11-11.5 | | | 1052 | 1 | | | X | | | | X | | | | | | X | | |
| DPE-3, 12-12.5 | | | 1053 | 1 | | | X | | | | X | | | | | | X | | |
| DPE-3, 15.5-16 | | | 1055 | 1 | | | X | | | | X | | | | | | X | | |
| AS-1, 18-18.5 | | | 1425 | 1 | | | X | | | | X | | | | | | X | | |
| AS-1 21.5-22 | | | 1432 | 1 | | | X | | | | X | | | | | | X | | |
| AS-1, 24.5-25 | | | 1456 | 1 | | | X | | | | X | | | | | | X | | |

**Indicate here if these samples are potentially dangerous to handle:

**MAI clients MUST disclose any dangerous chemicals known to be present in their submitted samples in concentrations that may cause immediate harm or serious future health endangerment as a result of brief, gloved, open air, sample handling by MAI staff. Non-disclosure incurs an immediate $250 surcharge and the client is subject to full legal liability for harm suffered. Thank you for your understanding and for allowing us to work safely.

# with silica gel cleanup

| Relinquished By: | Date: | Time: | Received By: |
|---|---|---|---|
| | 11/14/11 | 1300 | |
| Relinquished By: | Date: | Time: | Received By: |
| | 11/16/11 | 153 | |
| Relinquished By: | Date: | Time: | Received By: |
| | | | |

ICE/t°_____ COMMENTS:
GOOD CONDITION_____
HEAD SPACE ABSENT_____
DECHLORINATED IN LAB_____
APPROPRIATE CONTAINERS_____
PRESERVED IN LAB_____

| | VOAS | O&G | METALS | OTHER |
|---|---|---|---|---|
| PRESERVATION | | | pH<2 | |

**McCampbell Analytical, Inc.**
1534 Willow Pass Rd
Pittsburg, CA 94565-1701
(925) 252-9262

# CHAIN-OF-CUSTODY RECORD



**WorkOrder: 1111541** **ClientCode: AEL**

☐ WaterTrax ☐ WriteOn ☐ EDF ☐ Excel ☐ Fax ☑ Email ☐ HardCopy ☐ ThirdParty ☐ J-flag

**Report to:**
Bryan Campbell
AEI Consultants
2500 Camino Diablo, Ste. #200
Walnut Creek, CA 94597
(408) 559-7600 FAX: (408) 559-7601

Email: bcampbell@aeiconsultants.com
cc:
PO: #WC083348
ProjectNo: #298931; Buestad

**Bill to:**
Sara Guerin
AEI Consultants
2500 Camino Diablo, Ste. #200
Walnut Creek, CA 94597
sguerin@aeiconsultants.com

**Requested TAT:** 5 days

***Date Received:*** **11/16/2011**
***Date Printed:*** **11/16/2011**

| Lab ID | Client ID | Matrix | Collection Date | Hold | Requested Tests (See legend below) | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 |
| 1111541-002 | DPE-1, 7-7.5 | Soil | 11/15/2011 9:12 | ☐ | A | A | | | | | | | | | | |
| 1111541-008 | DPE-2, 8-8.5 | Soil | 11/15/2011 13:22 | ☐ | A | A | | | | | | | | | | |
| 1111541-013 | DPE-3, 8-8.5 | Soil | 11/14/2011 10:48 | ☐ | A | A | | | | | | | | | | |

**Test Legend:**

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| 1 | G-MBTEX_S | 2 | TPH(DMO)WSG_S | 3 | | 4 | | 5 | |
| 6 | | 7 | | 8 | | 9 | | 10 | |
| 11 | | 12 | | | | | | | |

**Prepared by: Melissa Valles**

**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 Quality Counts"*

1534 Willow Pass Road, Pittsburg, CA 94565-1701
Toll Free Telephone: (877) 252-9262 / Fax: (925) 252-9269
http://www.mccampbell.com / E-mail: main@mccampbell.com

# Sample Receipt Checklist

Client Name: **AEI Consultants**

Date and Time Received: **11/16/2011 3:47:01 PM**

Project Name: **#298931; Buestad**

Checklist completed and reviewed by: Melissa Valles

WorkOrder N°: **1111541** Matrix: Soil

Carrier: Derik Cartan (MAI Courier)

## 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 Preservation and Hold Time (HT) Information

| | | | |
|---|---|---|---|
| All samples received within holding time? | Yes ☑ | No ☐ | |
| Container/Temp Blank temperature | Cooler Temp: 6°C | | NA ☐ |
| Water - VOA vials have zero headspace / no bubbles? | Yes ☐ | No ☐ | No VOA vials submitted ☑ |
| Sample labels checked for correct preservation? | Yes ☑ | No ☐ | |
| Metal - pH acceptable upon receipt (pH<2)? | Yes ☐ | No ☐ | NA ☑ |
| Samples Received on Ice? | Yes ☑ | No ☐ | |

(Ice Type: WET ICE )

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

Client contacted: Date contacted: Contacted by:

Comments:

McCampbell Analytical, Inc.
*"When Quality Counts"*

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Toll Free Telephone: (877) 252-9262 / Fax: (925) 252-9269
http://www.mccampbell.com / E-mail: main@mccampbell.com

| | | |
|---|---|---|
| AEI Consultants | Client Project ID: #298931; Buestad | Date Sampled: 11/14/11-11/15/11 |
| | | Date Received: 11/16/11 |
| 2500 Camino Diablo, Ste. #200 | Client Contact: Bryan Campbell | Date Extracted: 11/16/11 |
| Walnut Creek, CA 94597 | Client P.O.: #WC083348 | Date Analyzed: 11/17/11-11/18/11 |

**Gasoline Range (C6-C12) Volatile Hydrocarbons as Gasoline with BTEX and MTBE***

Extraction method: SW5030B Analytical methods: SW8021B/8015Bm Work Order: 1111541

| Lab ID | Client ID | Matrix | TPH(g) | MTBE | Benzene | Toluene | Ethylbenzene | Xylenes | DF | % SS | Comments |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 002A | DPE-1, 7-7.5 | S | 1800 | ND<50 | 9.7 | 64 | 29 | 150 | 1000 | 106 | d1 |
| 008A | DPE-2, 8-8.5 | S | 2200 | ND<15 | 7.6 | 57 | 34 | 170 | 200 | ---# | d1 |
| 013A | DPE-3, 8-8.5 | S | 2000 | ND<50 | 6.7 | 48 | 47 | 240 | 1000 | ---# | d1 |

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| Reporting Limit for DF =1; ND means not detected at or above the reporting limit | W | 50 | 5.0 | 0.5 | 0.5 | 0.5 | 0.5 | ug/L |
| | S | 1.0 | 0.05 | 0.005 | 0.005 | 0.005 | 0.005 | mg/Kg |

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

# cluttered chromatogram; sample peak coelutes w/surrogate peak; low surrogate recovery due to matrix interference; %SS = Percent Recovery of Surrogate Standard; DF = Dilution Factor

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

DHS ELAP Certification 1644

Angela Rydelius, Lab Manager

McCampbell Analytical, Inc.
*"When Quality Counts"*

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Toll Free Telephone: (877) 252-9262 / Fax: (925) 252-9269
http://www.mccampbell.com / E-mail: main@mccampbell.com

| | | |
|---|---|---|
| AEI Consultants | Client Project ID: #298931; Buestad | Date Sampled: 11/14/11-11/15/11 |
| | | Date Received: 11/16/11 |
| 2500 Camino Diablo, Ste. #200 | Client Contact: Bryan Campbell | Date Extracted: 11/16/11 |
| Walnut Creek, CA 94597 | Client P.O.: #WC083348 | Date Analyzed: 11/19/11-11/22/11 |

**Total Extractable Petroleum Hydrocarbons with Silica Gel Clean-Up***

Extraction method: SW3550B/3630C Analytical methods: SW8015B Work Order: 1111541

| Lab ID | Client ID | Matrix | TPH-Diesel (C10-C23) | TPH-Motor Oil (C18-C36) | DF | % SS | Comments |
|---|---|---|---|---|---|---|---|
| 1111541-002A | DPE-1, 7-7.5 | S | 330 | 46 | 1 | 123 | e4,e2 |
| 1111541-008A | DPE-2, 8-8.5 | S | 280 | 140 | 10 | 109 | e4,e7,e2 |
| 1111541-013A | DPE-3, 8-8.5 | S | 1000 | 58 | 1 | ---# | e4,e2,c2 |
| | | | | | | | |
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| | | | | |
|---|---|---|---|---|
| Reporting Limit for DF =1; ND means not detected at or above the reporting limit | W | NA | NA | ug/L |
| | S | 1.0 | 5.0 | mg/Kg |

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

# cluttered chromatogram resulting in coeluted surrogate and sample peaks, or; surrogate peak is on elevated baseline, or; surrogate has been diminished by dilution of original extract.

%SS = Percent Recovery of Surrogate Standard. DF = Dilution Factor

The following descriptions of the TPH chromatogram are cursory in nature and McCampbell Analytical is not responsible for their interpretation:
c2) estimated value due to low surrogate recovery, caused by matrix interference.
e2) diesel range compounds are significant; no recognizable pattern
e4) gasoline range compounds are significant.
e7) oil range compounds are significant

DHS ELAP Certification 1644

Angela Rydelius, Lab Manager

McCampbell Analytical, Inc.
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Toll Free Telephone: (877) 252-9262 / Fax: (925) 252-9269
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# QC SUMMARY REPORT FOR SW8021B/8015Bm

W.O. Sample Matrix: Soil | QC Matrix: Soil | BatchID: 62742 | WorkOrder: 1111541

**EPA Method: SW8021B/8015Bm** **Extraction: SW5030B** **Spiked Sample ID: 1111449-002A**

| Analyte | Sample | Spiked | MS | MSD | MS-MSD | LCS | LCSD | LCS-LCSD | Acceptance Criteria (%) | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | mg/Kg | mg/Kg | % Rec. | % Rec. | % RPD | % Rec. | % Rec. | % RPD | MS / MSD | RPD | LCS/LCSD | RPD |
| TPH(btex)£ | ND | 0.60 | 108 | 114 | 5.87 | 120 | 114 | 5.16 | 70 - 130 | 20 | 70 - 130 | 20 |
| MTBE | ND | 0.10 | 86.1 | 84.1 | 2.41 | 91.6 | 86.1 | 6.17 | 70 - 130 | 20 | 70 - 130 | 20 |
| Benzene | ND | 0.10 | 107 | 108 | 0.472 | 113 | 106 | 6.42 | 70 - 130 | 20 | 70 - 130 | 20 |
| Toluene | ND | 0.10 | 107 | 108 | 0.667 | 113 | 107 | 6.05 | 70 - 130 | 20 | 70 - 130 | 20 |
| Ethylbenzene | ND | 0.10 | 107 | 108 | 0.609 | 112 | 104 | 8.15 | 70 - 130 | 20 | 70 - 130 | 20 |
| Xylenes | ND | 0.30 | 109 | 110 | 0.884 | 116 | 107 | 8.73 | 70 - 130 | 20 | 70 - 130 | 20 |
| %SS: | 112 | 0.10 | 97 | 91 | 6.18 | 93 | 86 | 7.89 | 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 62742 SUMMARY

| Lab ID | Date Sampled | Date Extracted | Date Analyzed | Lab ID | Date Sampled | Date Extracted | Date Analyzed |
|---|---|---|---|---|---|---|---|
| 1111541-002A | 11/15/11 9:12 AM | 11/16/11 | 11/17/11 5:46 PM | 1111541-008A | 11/15/11 1:22 PM | 11/16/11 | 11/18/11 11:57 PM |
| 1111541-013A | 11/14/11 10:48 AM | 11/16/11 | 11/17/11 4:19 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.

DHS ELAP Certification 1644

QA/QC Officer

McCampbell Analytical, Inc.
*"When Quality Counts"*

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Toll Free Telephone: (877) 252-9262 / Fax: (925) 252-9269
http://www.mccampbell.com / E-mail: main@mccampbell.com

# QC SUMMARY REPORT FOR SW8015B

W.O. Sample Matrix: Soil | QC Matrix: Soil | BatchID: 62820 | WorkOrder: 1111541

**EPA Method: SW8015B** | **Extraction: SW3550B/3630C** | **Spiked Sample ID: 1111541-013A**

| Analyte | Sample | Spiked | MS | MSD | MS-MSD | LCS | LCSD | LCS-LCSD | Acceptance Criteria (%) | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | mg/Kg | mg/Kg | % Rec. | % Rec. | % RPD | % Rec. | % Rec. | % RPD | MS / MSD | RPD | LCS/LCSD | RPD |
| TPH-Diesel (C10-C23) | 1000 | 40 | NR | NR | NR | 102 | 99.5 | 2.20 | 70 - 130 | 30 | 70 - 130 | 30 |
| %SS: | ---# | 25 | ---# | ---# | ---# | 100 | 99 | 1.09 | 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 62820 SUMMARY

| Lab ID | Date Sampled | Date Extracted | Date Analyzed | Lab ID | Date Sampled | Date Extracted | Date Analyzed |
|---|---|---|---|---|---|---|---|
| 1111541-002A | 11/15/11 9:12 AM | 11/16/11 | 11/22/11 1:48 AM | 1111541-008A | 11/15/11 1:22 PM | 11/16/11 | 11/19/11 12:12 AM |
| 1111541-013A | 11/14/11 10:48 AM | 11/16/11 | 11/19/11 6:30 PM | 1111541-013A | 11/14/11 10:48 AM | 11/16/11 | 11/21/11 10:31 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.

DHS ELAP Certification 1644

QA/QC Officer

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Toll Free Telephone: (877) 252-9262 / Fax: (925) 252-9269
http://www.mccampbell.com / E-mail: main@mccampbell.com

# Analytical Report

| | | |
|---|---|---|
| AEI Consultants | Client Project ID: #298931; Buestad | Date Sampled: 01/19/12-01/20/12 |
| | | Date Received: 01/20/12 |
| 2500 Camino Diablo, Ste. #200 | Client Contact: Bryan Campbell | Date Reported: 01/30/12 |
| Walnut Creek, CA 94597 | Client P.O.: #WC083432 | Date Completed: 01/30/12 |

**WorkOrder: 1201642**

January 30, 2012

Dear Bryan:

Enclosed within are:

1) The results of the **9** analyzed samples from your project: **#298931; Buestad,**
2) QC data for the above samples, and
3) A copy of the chain of custody.

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.

***The analytical results relate only to the items tested.***

# McCAMPBELL ANALYTICAL, INC.

1534 WILLOW PASS ROAD
PITTSBURG, CA 94565-1701
Website: www.mccampbell.com Email: main@mccampbell.com
Telephone: (877) 252-9262 Fax: (925) 252-9269

1201642

# CHAIN OF CUSTODY RECORD

TURN AROUND TIME ☐ RUSH ■ 24 HR ☐ 48 HR ☐ 72 HR ☒ 5 DAY

GeoTracker EDF ☐ PDF ■ Excel ☐ Write On (DW) ☐

☐ Check if sample is effluent and "J" flag is required

Bryan Campbell

Report To: ~~Harmony TomSun~~ Bill To: AEI

Company: AEI Consultants, 2500 Camino Diablo, Walnut Creek, CA 94597

PO#: ~~WC083424~~ WC083432

Global ID: E-Mail: ~~htomsun~~@aeiconsultants.com

Tele: (925) 746-6000 Fax: (925) 746-6099

Project #: 298931 Project Name: Buestad

Project Location: 1630 Park Street, Alameda, California

Sampler Signature: Harmony Tom

| SAMPLE ID | LOCATION/ Field Point Name | SAMPLING Date | SAMPLING Time | # Containers | Type Containers | MATRIX Water | MATRIX Soil | MATRIX Air | MATRIX Sludge | MATRIX Other | METHOD PRESERVED ICE | METHOD PRESERVED HCL | METHOD PRESERVED $HNO_3$ | METHOD PRESERVED Other | TPH as gasoline, diesel and mo by EPA 8015M | MTBE and BTEX by EPA 8021 | VOCs by EPA Method 8260 | CAM 17 Metals | TPH-gasoline by EPA 8015m | Grain Size Distribution | Other: Hold | Comments |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| DPE-4-7' | DPE-4 | 1/19 | 2:15 | 1 | Liner | | X | | | | X | | | | | | | | | | X | |
| DPE-4-9' | | | 2:30 | | | | | | | | | | | | | | | | | X | | |
| DPE-4-13' | | | 2:45 | | | | | | | | | | | | | | | | | X | | |
| DPE-4-16' | | | 3:00 | | | | | | | | | | | | | | | | | X | | |
| DPE-5-8' | DPE-5 | 1/20 | 10:25 | | | | | | | | | | | | | | | | | | | |
| DPE-5-11' | | | 10:32 | | | | | | | | | | | | | X | | | X | | | |
| DPE-5-14' | | | 10:45 | | | | | | | | | | | | | X | | | X | | | |
| DPE-5-18' | | | 11:05 | | | | | | | | | | | | | | | | | | | |
| DPE-6-7' | DPE-6 | 1/20 | 9:07 | | | | | | | | | | | | | | | | | | | |
| DPE-6-10' | | | 9:20 | | | | | | | | | | | | | X | | | X | | | |
| DPE-6-14' | | | 9:30 | | | | | | | | | | | | | X | | | X | | | |

**MAI clients MUST disclose any dangerous chemicals known to be present in their submitted samples in concentrations that may cause immediate harm or serious future health endangerment as a result of brief, gloved, open air, sample handling by MAI staff. Non-disclosure incurs an immediate $250 surcharge and the client is subject to full legal liability for harm suffered. Thank you for your understanding and for allowing us to work safely.

| Relinquished By: | Date: | Time: | Received By: |
|---|---|---|---|
| | 1/20 | 1:45 | |
| Relinquished By: | Date: | Time: | Received By: |
| | 1/20 | 1805 | |
| Relinquished By: | Date: | Time: | Received By: |
| | | | |

ICE/t° 1-8 Wetice

GOOD CONDITION ✓

HEAD SPACE ABSENT

DECHLORINATED IN LAB

APPROPRIATE CONTAINERS ✓

PRESERVED IN LAB

| | VOAS | O&G | METALS | OTHER |
|---|---|---|---|---|
| PRESERVATION | | | pH<2 | |

COMMENTS: off hold 1/24/12 per fax

# McCAMPBELL ANALYTICAL, INC.

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Telephone: (877) 252-9262 Fax: (925) 252-9269

# CHAIN OF CUSTODY RECORD

TURN AROUND TIME ☐ RUSH ☑ 24 HR ☐ 48 HR ☐ 72 HR ☒ 5 DAY

GeoTracker EDF ☐ PDF ■ Excel ☐ Write On (DW) ☐

☐ Check if sample is effluent and "J" flag is required

Report To: ~~Harmony TomSun~~ Bryen Campbell Bill To: AEI

Company: AEI Consultants, 2500 Camino Diablo, Walnut Creek, CA 94597

PO#: ~~WC083428~~ WC083432

Global ID: E-Mail: ~~htomsun~~@aeiconsultants.com

Tele: (925) 746-6000 Fax: (925) 746-6099

Project #: 298931 Project Name: Buestad

Project Location: 1630 Park Street, Alameda, California

Sampler Signature: Harmony Tom

| SAMPLE ID | LOCATION/ Field Point Name | SAMPLING Date | SAMPLING Time | # Containers | Type Containers | MATRIX Water | MATRIX Soil | MATRIX Air | MATRIX Sludge | MATRIX Other | METHOD PRESERVED ICE | METHOD PRESERVED HCL | METHOD PRESERVED $HNO_3$ | METHOD PRESERVED Other | TPH as gasoline, diesel and mo by EPA 8015M | MTBE and BTEX by EPA 8021 | VOCs by EPA Method 8260 | CAM 17 Metals | TPH-gasoline by EPA 8015m | Other: Hold | Comments |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| DPE-7-6' | DPE-7 | 1/19 | 9:00 | 1 | liner | | X | | | | X | | | | | | | | | X | |
| DPE-7-10' | " | " | 9:10 | " | " | | " | | | | " | | | | | X | | | X | " | |
| DPE-7-14.5' | " | " | 9:25 | " | " | | " | | | | " | | | | | X | | | X | " | |
| DPE-7-18' | " | " | | " | " | | " | | | | " | | | | | | | | | " | |

**Indicate here if these samples are potentially dangerous to handle:

**MAI clients MUST disclose any dangerous chemicals known to be present in their submitted samples in concentrations that may cause immediate harm or serious future health endangerment as a result of brief, gloved, open air, sample handling by MAI staff. Non-disclosure incurs an immediate $250 surcharge and the client is subject to full legal liability for harm suffered. Thank you for your understanding and for allowing us to work safely.

| Relinquished By: | Date: | Time: | Received By: |
|---|---|---|---|
| | 1/20 | 1:45 | |
| Relinquished By: | Date: | Time: | Received By: |
| | 1/20/19 | 1805 | |
| Relinquished By: | Date: | Time: | Received By: |
| | | | |

ICE/t°_____ COMMENTS:
GOOD CONDITION_____
HEAD SPACE ABSENT_____
DECHLORINATED IN LAB_____
APPROPRIATE CONTAINERS_____
PRESERVED IN LAB_____

VOAS O&G METALS OTHER
PRESERVATION_____ pH<2

**McCampbell Analytical, Inc.**
1534 Willow Pass Rd
Pittsburg, CA 94565-1701
(925) 252-9262

# CHAIN-OF-CUSTODY RECORD



**WorkOrder: 1201642** **ClientCode: AEL**

☐ WaterTrax ☐ WriteOn ☐ EDF ☐ Excel ☐ Fax ☑ Email ☐ HardCopy ☐ ThirdParty ☐ J-flag

**Report to:**
Bryan Campbell
AEI Consultants
2500 Camino Diablo, Ste. #200
Walnut Creek, CA 94597
(925) 746-6000 FAX: (925) 746-6099

Email: bcampbell@aeiconsultants.com
cc:
PO: #WC083432
ProjectNo: #298931; Buestad

**Bill to:**
Sara Guerin
AEI Consultants
2500 Camino Diablo, Ste. #200
Walnut Creek, CA 94597
AccountsPayable@AEIConsultants.c

**Requested TAT:** 5 days

***Date Received:*** **01/20/2012**
***Date Printed:*** **01/24/2012**

| Lab ID | Client ID | Matrix | Collection Date | Hold | Requested Tests (See legend below) | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 |
| 1201642-002 | DPE-4-9' | Soil | 1/19/2012 14:30 | ☐ | | A | | | | | | | | | | |
| 1201642-003 | DPE-4-13' | Soil | 1/19/2012 14:45 | ☐ | | A | | | | | | | | | | |
| 1201642-004 | DPE-4-16' | Soil | 1/19/2012 15:00 | ☐ | | A | | | | | | | | | | |
| 1201642-006 | DPE-5-11' | Soil | 1/20/2012 10:32 | ☐ | A | | | | | | | | | | | |
| 1201642-007 | DPE-5-14' | Soil | 1/20/2012 10:45 | ☐ | A | | | | | | | | | | | |
| 1201642-010 | DPE-6-10' | Soil | 1/20/2012 9:20 | ☐ | A | | | | | | | | | | | |
| 1201642-011 | DPE-6-14' | Soil | 1/20/2012 9:30 | ☐ | A | | | | | | | | | | | |
| 1201642-013 | DPE-7-10' | Soil | 1/19/2012 9:10 | ☐ | A | | | | | | | | | | | |
| 1201642-014 | DPE-7-14.5' | Soil | 1/19/2012 9:25 | ☐ | A | | | | | | | | | | | |

**Test Legend:**

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| 1 | G-MBTEX_S | 2 | GRAINSIZE | 3 | | 4 | | 5 | |
| 6 | | 7 | | 8 | | 9 | | 10 | |
| 11 | | 12 | | | | | | | |

**Prepared by: Melissa Valles**

**Comments:** Entire sample subbed out for 002, 003, and 004

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.

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# Sample Receipt Checklist

Client Name: **AEI Consultants**

Date and Time Received: **1/20/2012 6:05:00 PM**

Project Name: **#298931; Buestad**

Checklist completed and reviewed by: Melissa Valles

WorkOrder N°: **1201642** Matrix: Soil

Carrier: Benjamin Yslas (MAI Courier)

## 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 Preservation and Hold Time (HT) Information

| | | | |
|---|---|---|---|
| All samples received within holding time? | Yes ☑ | No ☐ | |
| Container/Temp Blank temperature | Cooler Temp: 7.8°C | | NA ☐ |
| Water - VOA vials have zero headspace / no bubbles? | Yes ☐ | No ☐ | No VOA vials submitted ☑ |
| Sample labels checked for correct preservation? | Yes ☑ | No ☐ | |
| Metal - pH acceptable upon receipt (pH<2)? | Yes ☐ | No ☐ | NA ☑ |
| Samples Received on Ice? | Yes ☑ | No ☐ | |

(Ice Type: WET ICE )

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

Comments:

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http://www.mccampbell.com / E-mail: main@mccampbell.com

| | | |
|---|---|---|
| AEI Consultants | Client Project ID: #298931; Buestad | Date Sampled: 01/19/12-01/20/12 |
| | | Date Received: 01/20/12 |
| 2500 Camino Diablo, Ste. #200 | Client Contact: Bryan Campbell | Date Extracted: 01/24/12 |
| Walnut Creek, CA 94597 | Client P.O.: #WC083432 | Date Analyzed: 01/25/12-01/27/12 |

## Gasoline Range (C6-C12) Volatile Hydrocarbons as Gasoline with BTEX and MTBE*

Extraction method: SW5030B Analytical methods: SW8021B/8015Bm Work Order: 1201642

| Lab ID | Client ID | Matrix | TPH(g) | MTBE | Benzene | Toluene | Ethylbenzene | Xylenes | DF | % SS | Comments |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 006A | DPE-5-11' | S | 2300 | ND<10 | 15 | 99 | 33 | 140 | 50 | ---# | d7,d9 |
| 007A | DPE-5-14' | S | 1.1 | ND | ND | 0.017 | ND | 0.016 | 1 | 108 | d7 |
| 010A | DPE-6-10' | S | 510 | ND<1.0 | ND<0.10 | 0.14 | 0.47 | 0.96 | 20 | 115 | d7 |
| 011A | DPE-6-14' | S | ND | ND | ND | ND | ND | ND | 1 | 111 | |
| 013A | DPE-7-10' | S | 2200 | ND<5.0 | ND<0.50 | 16 | 47 | 240 | 100 | ---# | d2,d9 |
| 014A | DPE-7-14.5' | S | 610 | ND<5.0 | ND<0.50 | 3.9 | 9.5 | 55 | 100 | ---# | d2 |
| | | | | | | | | | | | |
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| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| Reporting Limit for DF =1; ND means not detected at or above the reporting limit | W | 50 | 5.0 | 0.5 | 0.5 | 0.5 | 0.5 | ug/L |
| | S | 1.0 | 0.05 | 0.005 | 0.005 | 0.005 | 0.005 | mg/Kg |

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

# cluttered chromatogram; sample peak coelutes w/surrogate peak; low surrogate recovery due to matrix interference; %SS = Percent Recovery of Surrogate Standard; DF = Dilution Factor

The following descriptions of the TPH chromatogram are cursory in nature and McCampbell Analytical is not responsible for their interpretation:
d2) heavier gasoline range compounds are significant (aged gasoline?)
d7) strongly aged gasoline or diesel range compounds are significant in the TPH(g) chromatogram
d9) no recognizable pattern

DHS ELAP Certification 1644

Angela Rydelius, Lab Manager

McCampbell Analytical, Inc.
*"When Quality Counts"*

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http://www.mccampbell.com / E-mail: main@mccampbell.com

# QC SUMMARY REPORT FOR SW8021B/8015Bm

W.O. Sample Matrix: Soil | QC Matrix: Soil | BatchID: 64185 | WorkOrder: 1201642

**EPA Method: SW8021B/8015Bm** **Extraction: SW5030B** **Spiked Sample ID: 1201470-010A**

| Analyte | Sample | Spiked | MS | MSD | MS-MSD | LCS | Acceptance Criteria (%) | | |
|---|---|---|---|---|---|---|---|---|---|
| | mg/Kg | mg/Kg | % Rec. | % Rec. | % RPD | % Rec. | MS / MSD | RPD | LCS |
| TPH(btex)£ | ND | 0.60 | 82.5 | 81.1 | 1.77 | 81.9 | 70 - 130 | 20 | 70 - 130 |
| MTBE | ND | 0.10 | 118 | 113 | 4.26 | 116 | 70 - 130 | 20 | 70 - 130 |
| Benzene | ND | 0.10 | 104 | 102 | 1.62 | 102 | 70 - 130 | 20 | 70 - 130 |
| Toluene | ND | 0.10 | 107 | 105 | 1.63 | 105 | 70 - 130 | 20 | 70 - 130 |
| Ethylbenzene | ND | 0.10 | 112 | 110 | 2.01 | 109 | 70 - 130 | 20 | 70 - 130 |
| Xylenes | ND | 0.30 | 111 | 110 | 1.26 | 110 | 70 - 130 | 20 | 70 - 130 |
| %SS: | 112 | 0.10 | 109 | 111 | 1.76 | 112 | 70 - 130 | 20 | 70 - 130 |

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

BATCH 64185 SUMMARY

| Lab ID | Date Sampled | Date Extracted | Date Analyzed | Lab ID | Date Sampled | Date Extracted | Date Analyzed |
|---|---|---|---|---|---|---|---|
| 1201642-006A | 01/20/12 10:32 AM | 01/24/12 | 01/25/12 3:21 PM | 1201642-007A | 01/20/12 10:45 AM | 01/24/12 | 01/27/12 5:43 AM |
| 1201642-010A | 01/20/12 9:20 AM | 01/24/12 | 01/25/12 4:21 PM | 1201642-011A | 01/20/12 9:30 AM | 01/24/12 | 01/25/12 2:50 PM |
| 1201642-013A | 01/19/12 9:10 AM | 01/24/12 | 01/25/12 6:52 PM | 1201642-014A | 01/19/12 9:25 AM | 01/24/12 | 01/26/12 12:54 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.

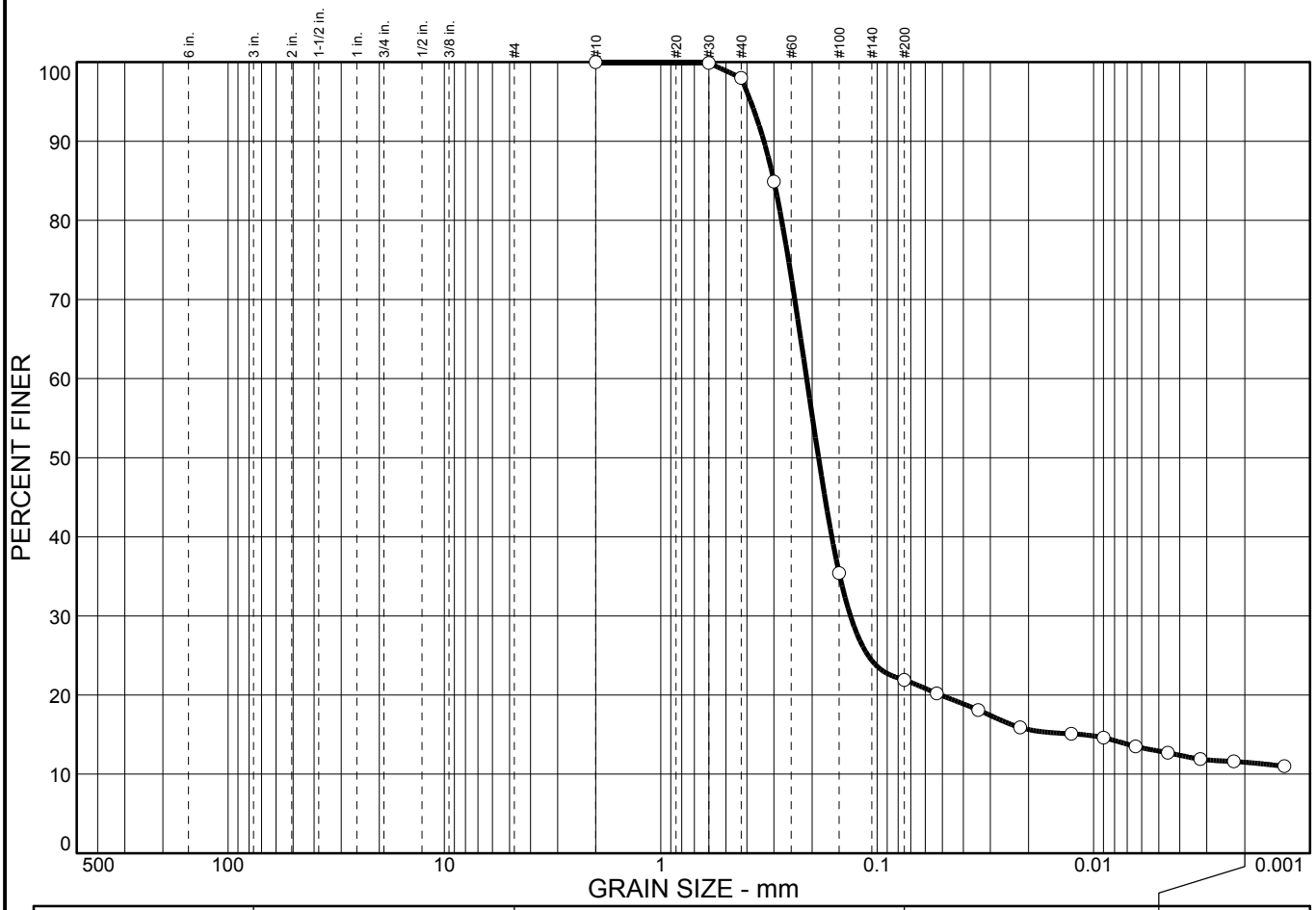
N/A = not enough sample to perform matrix spike and matrix spike duplicate.

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.

DHS ELAP Certification 1644

QA/QC Officer

# Particle Size Distribution Report




| % COBBLES | % GRAVEL | % SAND | % SILT | % CLAY |
|---|---|---|---|---|
| 0.0 | 0.0 | 78.1 | 10.4 | 11.5 |

| SIEVE SIZE | PERCENT FINER | SPEC.* PERCENT | PASS? (X=NO) |
|---|---|---|---|
| #10 | 100.0 | | |
| #30 | 99.9 | | |
| #40 | 98.0 | | |
| #50 | 84.9 | | |
| #100 | 35.4 | | |
| #200 | 21.9 | | |
| #270 | 20.2 | | |
| 0.0341 mm. | 18.1 | | |
| 0.0218 mm. | 15.9 | | |
| 0.0127 mm. | 15.1 | | |
| 0.0090 mm. | 14.6 | | |
| 0.0064 mm. | 13.5 | | |
| 0.0045 mm. | 12.7 | | |
| 0.0032 mm. | 11.9 | | |
| 0.0022 mm. | 11.6 | | |
| 0.0013 mm. | 11.0 | | |

* (no specification provided)

**Soil Description**

Greenish Gray & Strong Brown Silty SAND (slightly plastic)

**Atterberg Limits**

PL= LL= PI=

**Coefficients**

$D_{85}$= 0.301 $D_{60}$= 0.212 $D_{50}$= 0.187
$D_{30}$= 0.133 $D_{15}$= 0.0113 $D_{10}$=
$C_u$= $C_c$=

**Classification**

USCS= AASHTO=

**Remarks**

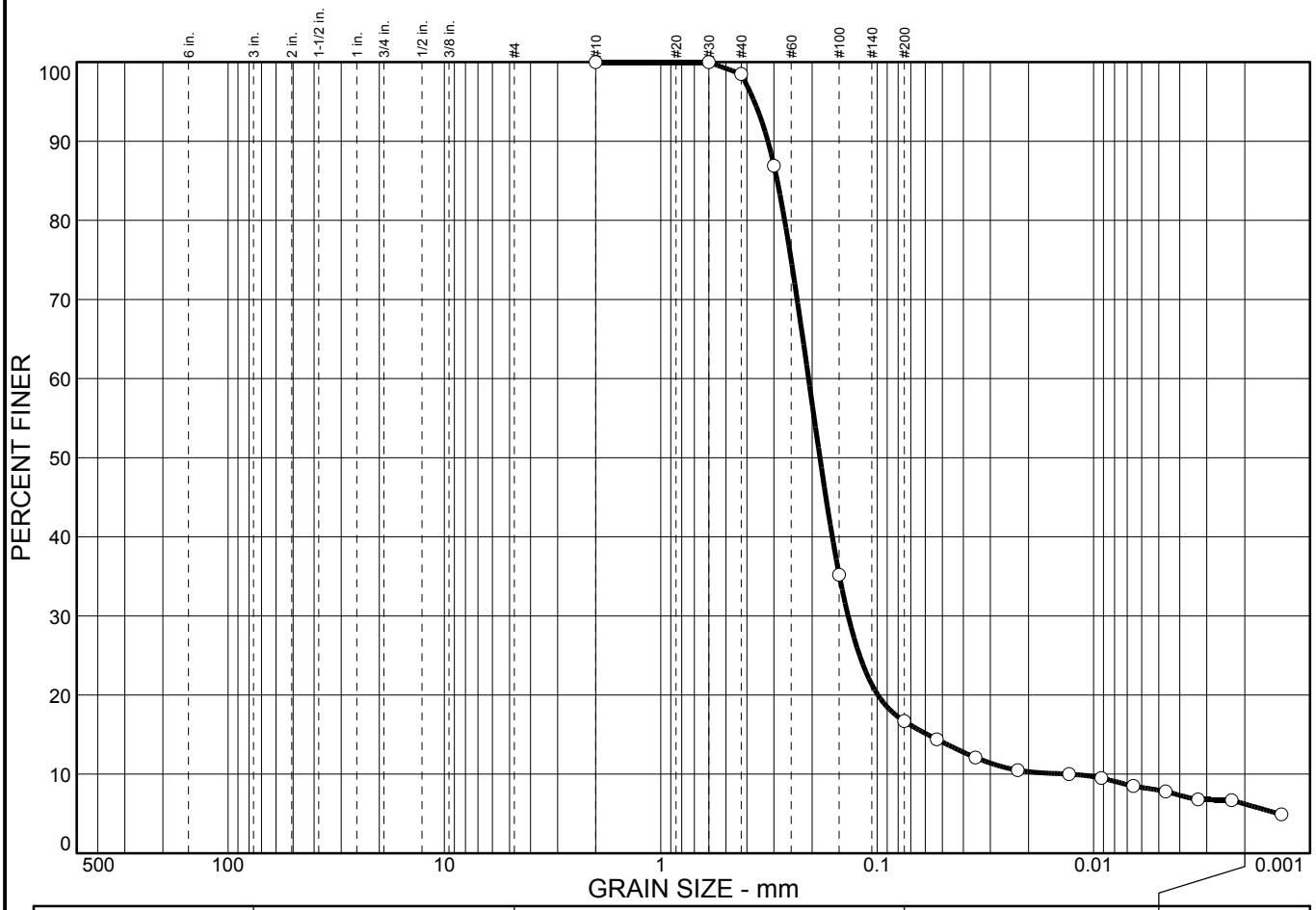
**Sample No.:** DPE-4-9 **Source of Sample:** 1201642-002A **Date:** 2/7/12
**Location:** **Elev./Depth:**

**COOPER TESTING LABORATORY**

**Client:** McCampbell Analytical, Inc.
**Project:** Buestad - #298931

**Project No:** 385-067 **Figure**

# Particle Size Distribution Report




| % COBBLES | % GRAVEL | % SAND | % SILT | % CLAY |
|---|---|---|---|---|
| 0.0 | 0.0 | 83.3 | 10.5 | 6.2 |

| SIEVE SIZE | PERCENT FINER | SPEC.* PERCENT | PASS? (X=NO) |
|---|---|---|---|
| #10 | 100.0 | | |
| #30 | 100.0 | | |
| #40 | 98.5 | | |
| #50 | 86.9 | | |
| #100 | 35.2 | | |
| #200 | 16.7 | | |
| #270 | 14.4 | | |
| 0.0351 mm. | 12.1 | | |
| 0.0224 mm. | 10.5 | | |
| 0.0130 mm. | 10.0 | | |
| 0.0092 mm. | 9.5 | | |
| 0.0065 mm. | 8.5 | | |
| 0.0046 mm. | 7.8 | | |
| 0.0033 mm. | 6.8 | | |
| 0.0023 mm. | 6.7 | | |
| 0.0014 mm. | 4.9 | | |

* (no specification provided)

**Soil Description**

Greenish Gray & Strong Brown Silty SAND (Petrol odor)

**Atterberg Limits**

PL= LL= PI=

**Coefficients**

$D_{85}$= 0.290 $D_{60}$= 0.208 $D_{50}$= 0.184
$D_{30}$= 0.136 $D_{15}$= 0.0585 $D_{10}$= 0.0130
$C_u$= 16.00 $C_c$= 6.89

**Classification**

USCS= AASHTO=

**Remarks**

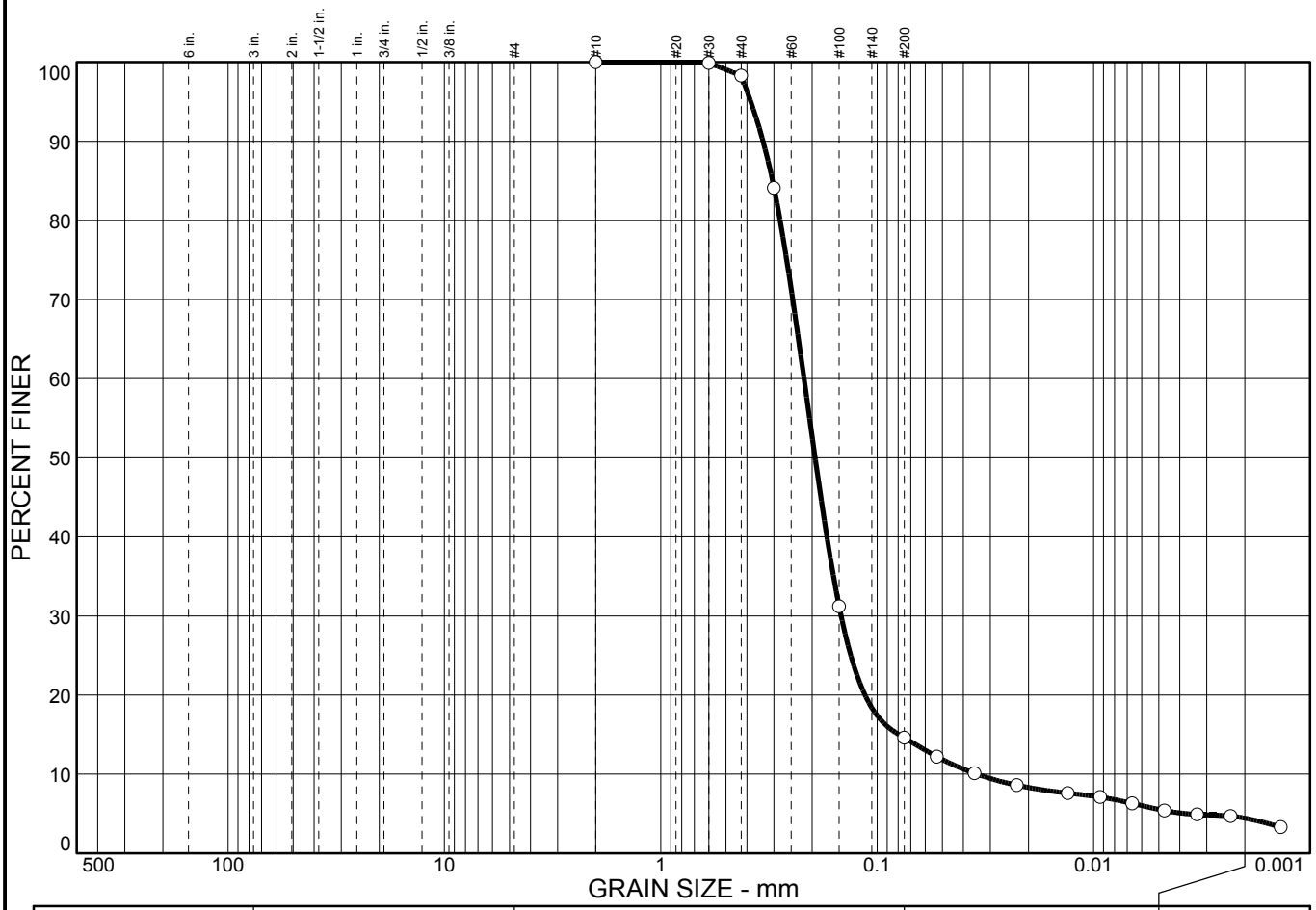
**Sample No.:** DPE-4-13 **Source of Sample:** 1201642-003A **Date:** 2/7/12
**Location:** **Elev./Depth:**

**COOPER TESTING LABORATORY**

**Client:** McCampbell Analytical, Inc.
**Project:** Buestad - #298931

**Project No:** 385-067 **Figure**

# Particle Size Distribution Report




| % COBBLES | % GRAVEL | % SAND | % SILT | % CLAY |
|---|---|---|---|---|
| 0.0 | 0.0 | 85.4 | 10.2 | 4.4 |

| SIEVE SIZE | PERCENT FINER | SPEC.* PERCENT | PASS? (X=NO) |
|---|---|---|---|
| #10 | 100.0 | | |
| #30 | 99.9 | | |
| #40 | 98.3 | | |
| #50 | 84.1 | | |
| #100 | 31.2 | | |
| #200 | 14.6 | | |
| #270 | 12.2 | | |
| 0.0355 mm. | 10.1 | | |
| 0.0226 mm. | 8.6 | | |
| 0.0131 mm. | 7.6 | | |
| 0.0093 mm. | 7.1 | | |
| 0.0066 mm. | 6.3 | | |
| 0.0047 mm. | 5.4 | | |
| 0.0033 mm. | 4.9 | | |
| 0.0023 mm. | 4.7 | | |
| 0.0014 mm. | 3.3 | | |

* (no specification provided)

**Soil Description**

Brown Silty SAND

**Atterberg Limits**

PL= LL= PI=

**Coefficients**

$D_{85}$= 0.305 $D_{60}$= 0.218 $D_{50}$= 0.194
$D_{30}$= 0.147 $D_{15}$= 0.0794 $D_{10}$= 0.0347
$C_u$= 6.29 $C_c$= 2.86

**Classification**

USCS= AASHTO=

**Remarks**

**Sample No.:** DPE-4-16 **Source of Sample:** 1201642-004A **Date:** 2/7/12
**Location:** **Elev./Depth:**

**COOPER TESTING LABORATORY**

**Client:** McCampbell Analytical, Inc.
**Project:** Buestad - #298931

**Project No:** 385-067 **Figure**

McCampbell Analytical, Inc.
*"When Quality Counts"*

1534 Willow Pass Road, Pittsburg, CA 94565-1701
Toll Free Telephone: (877) 252-9262 / Fax: (925) 252-9269
http://www.mccampbell.com / E-mail: main@mccampbell.com

# Analytical Report

| | | |
|---|---|---|
| AEI Consultants | Client Project ID: #298931; Buestad | Date Sampled: 01/17/12 |
| | | Date Received: 01/17/12 |
| 2500 Camino Diablo, Ste. #200 | Client Contact: Harmony TomSun | Date Reported: 01/18/12 |
| Walnut Creek, CA 94597 | Client P.O.: #WC083424 | Date Completed: 01/18/12 |

**WorkOrder: 1201381**

January 18, 2012

Dear Harmony:

Enclosed within are:

1) The results of the **16** analyzed samples from your project: **#298931; Buestad,**
2) QC data for the above samples, and
3) A copy of the chain of custody.

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.

***The analytical results relate only to the items tested.***

# McCAMPBELL ANALYTICAL, INC.

1534 WILLOW PASS ROAD
PITTSBURG, CA 94565-1701
Website: www.mccampbell.com Email: main@mccampbell.com
Telephone: (877) 252-9262 Fax: (925) 252-9269

RUSH

# CHAIN OF CUSTODY RECORD

TURN AROUND TIME ☐ RUSH ■ 24 HR ☐ 48 HR ☐ 72 HR ☐ 5 DAY

GeoTracker EDF ☐ PDF ■ Excel ☐ Write On (DW) ☐

☐ Check if sample is effluent and "J" flag is required

| | |
|---|---|
| Report To: Harmony TomSun | Bill To: AEI |
| Company: AEI Consultants, 2500 Camino Diablo, Walnut Creek, CA 94597 | |
| PO#: WC083424 | |
| Global ID: | E-Mail: htomsun@aeiconsultants.com |
| Tele: ( 925) 746-6000 | Fax: (925) 746-6099 |
| Project #: 298931 | Project Name: Buestad |
| Project Location: 1630 Park Street, Alameda, California | |
| Sampler Signature: | |

| SAMPLE ID | LOCATION/ Field Point Name | SAMPLING Date | SAMPLING Time | # Containers | Type Containers | MATRIX Water | MATRIX Soil | MATRIX Air | MATRIX Sludge | MATRIX Other | METHOD PRESERVED ICE | METHOD PRESERVED HCL | METHOD PRESERVED $HNO_3$ | METHOD PRESERVED Other | Analysis Request: TPH as gasoline, diesel and mo by EPA 8015M | Analysis Request: MTBE and BTEX by EPA 8021 | Analysis Request: VOCs by EPA Method 8260 | Analysis Request: CAM 17 Metals | Analysis Request: TPH -g EPA Method 8015M | Other: Hold | Comments |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| AEI-20-11' | AEI-20 | 1/17 | 9:30 | 1 | liner | | X | | | | X | | | | | X | | | X | | |
| AEI-20 | AEI-20 | 1/17 | 1:35 | 4 | VOA AMB | X | | | | | X | | | | | X | | | X | | |
| AEI-21 | AEI-21 | 1/17 | 1:00 | 11 | " | X | | | | | X | | | | | X | | | X | | |
| AEI-21-11' | AEI-21 | 1/17 | 11:25 | 1 | liner | | X | | | | X | | | | | X | | | X | | |
| AEI-21-14' | " | " | 11:30 | 1 | liner | | X | | | | X | | | | | X | | | X | | |
| AEI-22-11' | AEI-22 | " | 2',25 | 1 | liner | | X | | | | X | | | | | X | | | X | | |
| AEI-22 | AEI-22 | " | 2:05 | 4 | VOA AMB | X | | | | | X | | | | | X | | | X | | |
| AEI-23 | AEI-23 | " | 1:15 | 4 | VOA AMB | X | | | | | X | | | | X | X | | | | | |
| AEI-23-9.5' | " | " | 2:00 | 1 | liner | | X | | | | X | | | | X | X | | | | | |
| AEI-24 | AEI-24 | " | 8:45 | 6 | VOA AMB | X | | | | | X | | | | X | X | | | | | |
| AEI-24-7' | " | " | 8:15 | 1 | liner | | X | | | | X | | | | X | X | | | | | |

**MAI clients MUST disclose any dangerous chemicals known to be present in their submitted samples in concentrations that may cause immediate harm or serious future health endangerment as a result of brief, gloved, open air, sample handling by MAI staff. Non-disclosure incurs an immediate $250 surcharge and the client is subject to full legal liability for harm suffered. Thank you for your understanding and for allowing us to work safely.

| Relinquished By: | Date: | Time: | Received By: |
|---|---|---|---|
| | 1/17 | 4:38 | |
| Relinquished By: | Date: | Time: | Received By: |
| | 1/17 | 1805 | |
| Relinquished By: | Date: | Time: | Received By: |
| | | | |

ICE/t° 2 4

GOOD CONDITION_____

HEAD SPACE ABSENT_____

DECHLORINATED IN LAB_____

APPROPRIATE CONTAINERS_____

PRESERVED IN LAB_____

VOAS O&G METALS OTHER

PRESERVATION_____ pH<2_____

COMMENTS:

# McCAMPBELL ANALYTICAL, INC.

1534 WILLOW PASS ROAD
PITTSBURG, CA 94565-1701
Website: www.mccampbell.com Email: main@mccampbell.com
Telephone: (877) 252-9262 Fax: (925) 252-9269

# CHAIN OF CUSTODY RECORD

TURN AROUND TIME ☐ RUSH ■ 24 HR ☐ 48 HR ☐ 72 HR ☐ 5 DAY

GeoTracker EDF ☐ PDF ■ Excel ☐ Write On (DW) ☐

☐ Check if sample is effluent and "J" flag is required

Report To: Harmony TomSun Bill To: AEI

Company: AEI Consultants, 2500 Camino Diablo, Walnut Creek, CA 94597

PO#: WC083424

Global ID: E-Mail: htomsun@aeiconsultants.com

Tele: ( 925) 746-6000 Fax: (925) 746-6099

Project #: 298931 Project Name: Buestad

Project Location: 1630 Park Street, Alameda, California

Sampler Signature

| SAMPLE ID | LOCATION/ Field Point Name | SAMPLING Date | SAMPLING Time | # Containers | Type Containers | MATRIX Water | MATRIX Soil | MATRIX Air | MATRIX Sludge | MATRIX Other | METHOD PRESERVED ICE | METHOD PRESERVED HCL | METHOD PRESERVED $HNO_3$ | METHOD PRESERVED Other | Analysis Request: TPH as gasoline, diesel and mo by EPA 8015M | Analysis Request: MTBE and BTEX by EPA 8021 | Analysis Request: VOCs by EPA Method 8260 | Analysis Request: CAM 17 Metals | Other: Hold | Comments |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| AEI-24-13' | AEI-24 | 1/17 | 8:30 | 1 | liner | | X | | | | X | | | | X | X | | | | |
| AEI-25-10' | AEI-25 | 1/17 | 9:00 | 1 | " | | X | | | | X | | | | X | X | | | | |
| AEI-25 | " | " | 9:30 | 10 | VOA's | X | | | | | X | | | | X | X | | | | |
| AEI-26-10.5 | AEI-26 | " | 10:45 | 1 | liner | | X | | | | X | | | | X | X | | | | |
| AEI-28-11' | AEI-28 | " | 3:50 | 1 | liner | | X | | | | | | | | X | X | | | | |

**MAI clients MUST disclose any dangerous chemicals known to be present in their submitted samples in concentrations that may cause immediate harm or serious future health endangerment as a result of brief, gloved, open air, sample handling by MAI staff. Non-disclosure incurs an immediate $250 surcharge and the client is subject to full legal liability for harm suffered. Thank you for your understanding and for allowing us to work safely.

| Relinquished By: | Date: | Time: | Received By: |
|---|---|---|---|
| | 1/17 | 4:38 | |
| Relinquished By: | Date: | Time: | Received By: |
| | 1/17 | 1805 | |
| Relinquished By: | Date: | Time: | Received By: |
| | | | |

ICE/t°_____ COMMENTS:
GOOD CONDITION_____
HEAD SPACE ABSENT_____
DECHLORINATED IN LAB_____
APPROPRIATE CONTAINERS_____
PRESERVED IN LAB_____

VOAS O&G METALS OTHER
PRESERVATION_____ pH<2_____

**McCampbell Analytical, Inc.**
1534 Willow Pass Rd
Pittsburg, CA 94565-1701
(925) 252-9262

# CHAIN-OF-CUSTODY RECORD



**WorkOrder: 1201381** **ClientCode: AEL**

☐ WaterTrax ☐ WriteOn ☐ EDF ☐ Excel ☐ Fax ☑ Email ☐ HardCopy ☐ ThirdParty ☐ J-flag

**Report to:**
Harmony TomSun
AEI Consultants
2500 Camino Diablo, Ste. #200
Walnut Creek, CA 94597
(925) 944-2899 FAX: (925) 944-2895

Email: htomsun@aeiconsultants.com
cc:
PO: #WC083424
ProjectNo: #298931; Buestad

**Bill to:**
Sara Guerin
AEI Consultants
2500 Camino Diablo, Ste. #200
Walnut Creek, CA 94597
AccountsPayable@AEIConsultants.co

**Requested TAT:** 1 day

***Date Received:*** **01/17/2012**
***Date Printed:*** **01/17/2012**

| Lab ID | Client ID | Matrix | Collection Date | Hold | Requested Tests (See legend below) | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 |
| 1201381-001 | AEI-20-11' | Soil | 1/17/2012 12:30 | ☐ | A | | | | | | | | | | | |
| 1201381-002 | AEI-20 | Water | 1/17/2012 13:35 | ☐ | | A | | | | | | | | | | |
| 1201381-003 | AEI-21 | Water | 1/17/2012 13:00 | ☐ | | A | | | | | | | | | | |
| 1201381-004 | AEI-21-11' | Soil | 1/17/2012 11:25 | ☐ | A | | | | | | | | | | | |
| 1201381-005 | AEI-21-14' | Soil | 1/17/2012 11:30 | ☐ | A | | | | | | | | | | | |
| 1201381-006 | AEI-22-11' | Soil | 1/17/2012 14:25 | ☐ | A | | | | | | | | | | | |
| 1201381-007 | AEI-22 | Water | 1/17/2012 14:05 | ☐ | | A | | | | | | | | | | |
| 1201381-008 | AEI-23 | Water | 1/17/2012 13:15 | ☐ | | A | | B | | | | | | | | |
| 1201381-009 | AEI-23-9.5' | Soil | 1/17/2012 14:00 | ☐ | A | | A | | | | | | | | | |
| 1201381-010 | AEI-24 | Water | 1/17/2012 8:45 | ☐ | | A | | B | | | | | | | | |
| 1201381-011 | AEI-24-7' | Soil | 1/17/2012 8:15 | ☐ | A | | A | | | | | | | | | |
| 1201381-012 | AEI-24-13' | Soil | 1/17/2012 8:30 | ☐ | A | | A | | | | | | | | | |
| 1201381-013 | AEI-25-10' | Soil | 1/17/2012 9:00 | ☐ | A | | A | | | | | | | | | |
| 1201381-014 | AEI-25 | Water | 1/17/2012 9:30 | ☐ | | A | | B | | | | | | | | |

**Test Legend:**

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| 1 | G-MBTEX_S | 2 | G-MBTEX_W | 3 | TPH(DMO)_S | 4 | TPH(DMO)_W | 5 | |
| 6 | | 7 | | 8 | | 9 | | 10 | |
| 11 | | 12 | | | | | | | |

**Prepared by: Zoraida Cortez**

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

# CHAIN-OF-CUSTODY RECORD



**WorkOrder: 1201381** **ClientCode: AEL**

☐ WaterTrax ☐ WriteOn ☐ EDF ☐ Excel ☐ Fax ☑ Email ☐ HardCopy ☐ ThirdParty ☐ J-flag

**Report to:**
Harmony TomSun
AEI Consultants
2500 Camino Diablo, Ste. #200
Walnut Creek, CA 94597
(925) 944-2899 FAX: (925) 944-2895

Email: htomsun@aeiconsultants.com
cc:
PO: #WC083424
ProjectNo: #298931; Buestad

**Bill to:**
Sara Guerin
AEI Consultants
2500 Camino Diablo, Ste. #200
Walnut Creek, CA 94597
AccountsPayable@AEIConsultants.co

**Requested TAT:** 1 day

***Date Received:*** **01/17/2012**
***Date Printed:*** **01/17/2012**

| Lab ID | Client ID | Matrix | Collection Date | Hold | Requested Tests (See legend below) | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 |
| 1201381-015 | AEI-26-10.5' | Soil | 1/17/2012 10:45 | ☐ | A | | A | | | | | | | | | |
| 1201381-016 | AEI-28-11' | Soil | 1/17/2012 15:00 | ☐ | A | | A | | | | | | | | | |

**Test Legend:**

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| 1 | G-MBTEX_S | 2 | G-MBTEX_W | 3 | TPH(DMO)_S | 4 | TPH(DMO)_W | 5 | |
| 6 | | 7 | | 8 | | 9 | | 10 | |
| 11 | | 12 | | | | | | | |

**Prepared by: Zoraida Cortez**

**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.

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http://www.mccampbell.com / E-mail: main@mccampbell.com

# Sample Receipt Checklist

Client Name: **AEI Consultants**

Date and Time Received: **1/17/2012 6:39:42 PM**

Project Name: **#298931; Buestad**

Checklist completed and reviewed by: Zoraida Cortez

WorkOrder N°: **1201381** Matrix: Soil/Water

Carrier: Benjamin Yslas (MAI Courier)

## 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 Preservation and Hold Time (HT) Information

| | | | |
|---|---|---|---|
| All samples received within holding time? | Yes ☑ | No ☐ | |
| Container/Temp Blank temperature | Cooler Temp: 2.4°C | | NA ☐ |
| Water - VOA vials have zero headspace / no bubbles? | Yes ☑ | No ☐ | No VOA vials submitted ☐ |
| Sample labels checked for correct preservation? | Yes ☑ | No ☐ | |
| Metal - pH acceptable upon receipt (pH<2)? | Yes ☐ | No ☐ | NA ☑ |
| Samples Received on Ice? | Yes ☑ | No ☐ | |

(Ice Type: WET ICE )

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

Comments:

McCampbell Analytical, Inc.
*"When Quality Counts"*

1534 Willow Pass Road, Pittsburg, CA 94565-1701
Toll Free Telephone: (877) 252-9262 / Fax: (925) 252-9269
http://www.mccampbell.com / E-mail: main@mccampbell.com

| | | |
|---|---|---|
| AEI Consultants | Client Project ID: #298931; Buestad | Date Sampled: 01/17/12 |
| | | Date Received: 01/17/12 |
| 2500 Camino Diablo, Ste. #200 | Client Contact: Harmony TomSun | Date Extracted: 01/17/12-01/18/12 |
| Walnut Creek, CA 94597 | Client P.O.: #WC083424 | Date Analyzed: 01/18/12 |

**Gasoline Range (C6-C12) Volatile Hydrocarbons as Gasoline with BTEX and MTBE***

Extraction method: SW5030B Analytical methods: SW8021B/8015Bm Work Order: 1201381

| Lab ID | Client ID | Matrix | TPH(g) | MTBE | Benzene | Toluene | Ethylbenzene | Xylenes | DF | % SS | Comments |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 001A | AEI-20-11' | S | 600 | ND<0.50 | 0.89 | 2.9 | 10 | 39 | 10 | ---# | d1 |
| 002A | AEI-20 | W | 130,000 | ND<500 | 1200 | 2200 | 4400 | 20,000 | 100 | 107 | d1,b6 |
| 003A | AEI-21 | W | 110,000 | ND<500 | 160 | 520 | 1200 | 3300 | 100 | 105 | d2,d9,b6,b1 |
| 004A | AEI-21-11' | S | 46 | ND | 0.020 | 0.42 | 0.27 | 0.60 | 1 | 121 | d1 |
| 005A | AEI-21-14' | S | ND | ND | ND | ND | ND | ND | 1 | 112 | |
| 006A | AEI-22-11' | S | 8.6 | ND<0.10 | 0.71 | 0.77 | 0.31 | 1.3 | 1 | 117 | d1 |
| 007A | AEI-22 | W | 61,000 | ND<500 | 790 | 4400 | 1500 | 7200 | 100 | 112 | d1,b6,b1 |
| 008A | AEI-23 | W | 9000 | ND<50 | ND<5.0 | 16 | 12 | ND<5.0 | 10 | 105 | d7,b6,b1 |
| 009A | AEI-23-9.5' | S | 7.5 | ND | ND | 0.027 | ND | 0.0055 | 1 | 115 | d7 |
| 010A | AEI-24 | W | ND | ND | ND | ND | ND | ND | 1 | 109 | b1 |
| 011A | AEI-24-7' | S | ND | ND | ND | ND | ND | ND | 1 | 120 | |
| 012A | AEI-24-13' | S | ND | ND | ND | ND | ND | ND | 1 | 111 | |
| 013A | AEI-25-10' | S | ND | ND | ND | ND | ND | ND | 1 | 107 | |
| 014A | AEI-25 | W | ND | ND | ND | ND | ND | ND | 1 | 112 | b1 |
| 015A | AEI-26-10.5' | S | ND | ND | ND | ND | ND | ND | 1 | 102 | |
| 016A | AEI-28-11' | S | 12,000 | ND<10 | 21 | 210 | 210 | 1000 | 200 | ---# | d1 |

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| Reporting Limit for DF =1; ND means not detected at or above the reporting limit | W | 50 | 5.0 | 0.5 | 0.5 | 0.5 | 0.5 | µg/L |
| | S | 1.0 | 0.05 | 0.005 | 0.005 | 0.005 | 0.005 | mg/Kg |

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

# cluttered chromatogram; sample peak coelutes w/surrogate peak; low surrogate recovery due to matrix interference; %SS = Percent Recovery of Surrogate Standard; DF = Dilution Factor

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?)
d7) strongly aged gasoline or diesel range compounds are significant in the TPH(g) chromatogram
d9) no recognizable pattern

DHS ELAP Certification 1644

Angela Rydelius, Lab Manager

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| | | |
|---|---|---|
| AEI Consultants | Client Project ID: #298931; Buestad | Date Sampled: 01/17/12 |
| | | Date Received: 01/17/12 |
| 2500 Camino Diablo, Ste. #200 | Client Contact: Harmony TomSun | Date Extracted: 01/17/12 |
| Walnut Creek, CA 94597 | Client P.O.: #WC083424 | Date Analyzed: 01/18/12 |

**Total Extractable Petroleum Hydrocarbons***

Extraction method: SW3510C/SW3550B Analytical methods: SW8015B Work Order: 1201381

| Lab ID | Client ID | Matrix | TPH-Diesel (C10-C23) | TPH-Motor Oil (C18-C36) | DF | % SS | Comments |
|---|---|---|---|---|---|---|---|
| 1201381-008B | AEI-23 | W | 8400 | 1500 | 1 | 89 | e4,e7,e2,b6,b1 |
| 1201381-009A | AEI-23-9.5' | S | 100 | 180 | 1 | 109 | e7,e2 |
| 1201381-010B | AEI-24 | W | ND | ND | 1 | 88 | b1 |
| 1201381-011A | AEI-24-7' | S | 1.1 | ND | 1 | 98 | e2 |
| 1201381-012A | AEI-24-13' | S | ND | ND | 1 | 98 | |
| 1201381-013A | AEI-25-10' | S | 1.3 | ND | 1 | 98 | e2 |
| 1201381-014B | AEI-25 | W | ND | ND | 1 | 87 | b1 |
| 1201381-015A | AEI-26-10.5' | S | ND | ND | 1 | 97 | |
| 1201381-016A | AEI-28-11' | S | 2100 | 44 | 5 | 114 | e4,e2 |
| | | | | | | | |
| | | | | | | | |
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| | | | | |
|---|---|---|---|---|
| Reporting Limit for DF =1; ND means not detected at or above the reporting limit | W | 50 | 250 | µg/L |
| | S | 1.0 | 5.0 | mg/Kg |

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

# cluttered chromatogram resulting in coeluted surrogate and sample peaks, or; surrogate peak is on elevated baseline, or; surrogate has been diminished by dilution of original extract; %SS = Percent Recovery of Surrogate Standard; DF = Dilution Factor

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
e2) diesel range compounds are significant; no recognizable pattern
e4) gasoline range compounds are significant.
e7) oil range compounds are significant

DHS ELAP Certification 1644

Angela Rydelius, Lab Manager

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# QC SUMMARY REPORT FOR SW8015B

W.O. Sample Matrix: Water | QC Matrix: Water | BatchID: 63960 | WorkOrder: 1201381

**EPA Method: SW8015B** **Extraction: SW3510C** **Spiked Sample ID: N/A**

| Analyte | Sample | Spiked | MS | MSD | MS-MSD | LCS | Acceptance Criteria (%) | | |
|---|---|---|---|---|---|---|---|---|---|
| | µg/L | µg/L | % Rec. | % Rec. | % RPD | % Rec. | MS / MSD | RPD | LCS |
| TPH-Diesel (C10-C23) | N/A | 1000 | N/A | N/A | N/A | 125 | N/A | N/A | 70 - 130 |
| %SS: | N/A | 625 | N/A | N/A | N/A | 96 | N/A | N/A | 70 - 130 |

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

BATCH 63960 SUMMARY

| Lab ID | Date Sampled | Date Extracted | Date Analyzed | Lab ID | Date Sampled | Date Extracted | Date Analyzed |
|---|---|---|---|---|---|---|---|
| 1201381-008B | 01/17/12 1:15 PM | 01/17/12 | 01/18/12 12:07 AM | 1201381-010B | 01/17/12 8:45 AM | 01/17/12 | 01/18/12 2:20 AM |
| 1201381-014B | 01/17/12 9:30 AM | 01/17/12 | 01/18/12 1:13 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.

DHS ELAP Certification 1644

QA/QC Officer

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# QC SUMMARY REPORT FOR SW8021B/8015Bm

W.O. Sample Matrix: Water | QC Matrix: Water | BatchID: 64085 | WorkOrder: 1201381

**EPA Method: SW8021B/8015Bm** **Extraction: SW5030B** **Spiked Sample ID: 1201381-014A**

| Analyte | Sample | Spiked | MS | MSD | MS-MSD | LCS | Acceptance Criteria (%) | | |
|---|---|---|---|---|---|---|---|---|---|
| | µg/L | µg/L | % Rec. | % Rec. | % RPD | % Rec. | MS / MSD | RPD | LCS |
| TPH(btex)£ | ND | 60 | 119 | 121 | 1.23 | 94.6 | 70 - 130 | 20 | 70 - 130 |
| MTBE | ND | 10 | 101 | 105 | 3.74 | 108 | 70 - 130 | 20 | 70 - 130 |
| Benzene | ND | 10 | 104 | 104 | 0 | 102 | 70 - 130 | 20 | 70 - 130 |
| Toluene | ND | 10 | 101 | 101 | 0 | 91.6 | 70 - 130 | 20 | 70 - 130 |
| Ethylbenzene | ND | 10 | 100 | 102 | 1.36 | 93.2 | 70 - 130 | 20 | 70 - 130 |
| Xylenes | ND | 30 | 103 | 103 | 0 | 110 | 70 - 130 | 20 | 70 - 130 |
| %SS: | 112 | 10 | 101 | 106 | 5.09 | 93 | 70 - 130 | 20 | 70 - 130 |

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

BATCH 64085 SUMMARY

| Lab ID | Date Sampled | Date Extracted | Date Analyzed | Lab ID | Date Sampled | Date Extracted | Date Analyzed |
|---|---|---|---|---|---|---|---|
| 1201381-002A | 01/17/12 1:35 PM | 01/18/12 | 01/18/12 2:03 AM | 1201381-003A | 01/17/12 1:00 PM | 01/18/12 | 01/18/12 2:32 AM |
| 1201381-007A | 01/17/12 2:05 PM | 01/18/12 | 01/18/12 3:59 AM | 1201381-008A | 01/17/12 1:15 PM | 01/18/12 | 01/18/12 12:36 PM |
| 1201381-010A | 01/17/12 8:45 AM | 01/18/12 | 01/18/12 3:01 AM | 1201381-014A | 01/17/12 9:30 AM | 01/18/12 | 01/18/12 3:30 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.

DHS ELAP Certification 1644

QA/QC Officer

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# QC SUMMARY REPORT FOR SW8021B/8015Bm

W.O. Sample Matrix: Soil | QC Matrix: Soil | BatchID: 64086 | WorkOrder: 1201381

**EPA Method: SW8021B/8015Bm** **Extraction: SW5030B** **Spiked Sample ID: 1201381-012A**

| Analyte | Sample | Spiked | MS | MSD | MS-MSD | LCS | Acceptance Criteria (%) | | |
|---|---|---|---|---|---|---|---|---|---|
| | mg/Kg | mg/Kg | % Rec. | % Rec. | % RPD | % Rec. | MS / MSD | RPD | LCS |
| TPH(btex)£ | ND | 0.60 | 129 | 121 | 6.22 | 123 | 70 - 130 | 20 | 70 - 130 |
| MTBE | ND | 0.10 | 92.8 | 87.9 | 5.51 | 101 | 70 - 130 | 20 | 70 - 130 |
| Benzene | ND | 0.10 | 108 | 108 | 0 | 113 | 70 - 130 | 20 | 70 - 130 |
| Toluene | ND | 0.10 | 107 | 108 | 0.826 | 111 | 70 - 130 | 20 | 70 - 130 |
| Ethylbenzene | ND | 0.10 | 108 | 104 | 4.40 | 112 | 70 - 130 | 20 | 70 - 130 |
| Xylenes | ND | 0.30 | 112 | 107 | 4.29 | 115 | 70 - 130 | 20 | 70 - 130 |
| %SS: | 111 | 0.10 | 113 | 109 | 3.57 | 120 | 70 - 130 | 20 | 70 - 130 |

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

BATCH 64086 SUMMARY

| Lab ID | Date Sampled | Date Extracted | Date Analyzed | Lab ID | Date Sampled | Date Extracted | Date Analyzed |
|---|---|---|---|---|---|---|---|
| 1201381-001A | 01/17/12 12:30 PM | 01/17/12 | 01/18/12 4:30 AM | 1201381-004A | 01/17/12 11:25 AM | 01/17/12 | 01/18/12 5:00 AM |
| 1201381-005A | 01/17/12 11:30 AM | 01/17/12 | 01/18/12 12:06 PM | 1201381-006A | 01/17/12 2:25 PM | 01/17/12 | 01/18/12 5:59 AM |
| 1201381-009A | 01/17/12 2:00 PM | 01/17/12 | 01/18/12 6:28 AM | 1201381-011A | 01/17/12 8:15 AM | 01/17/12 | 01/18/12 6:58 AM |
| 1201381-012A | 01/17/12 8:30 AM | 01/17/12 | 01/18/12 11:36 AM | 1201381-013A | 01/17/12 9:00 AM | 01/17/12 | 01/18/12 3:37 PM |
| 1201381-015A | 01/17/12 10:45 AM | 01/17/12 | 01/18/12 12:57 PM | 1201381-016A | 01/17/12 3:00 PM | 01/17/12 | 01/18/12 1:26 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 SW8015B

W.O. Sample Matrix: Soil | QC Matrix: Soil | BatchID: 64049 | WorkOrder: 1201381

**EPA Method: SW8015B** **Extraction: SW3550B** **Spiked Sample ID: 1201340-038A**

| Analyte | Sample | Spiked | MS | MSD | MS-MSD | LCS | Acceptance Criteria (%) | | |
|---|---|---|---|---|---|---|---|---|---|
| | mg/Kg | mg/Kg | % Rec. | % Rec. | % RPD | % Rec. | MS / MSD | RPD | LCS |
| TPH-Diesel (C10-C23) | 1.5 | 40 | 127 | 126 | 0.538 | 107 | 70 - 130 | 30 | 70 - 130 |
| %SS: | 108 | 25 | 110 | 111 | 1.04 | 86 | 70 - 130 | 30 | 70 - 130 |

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

BATCH 64049 SUMMARY

| Lab ID | Date Sampled | Date Extracted | Date Analyzed | Lab ID | Date Sampled | Date Extracted | Date Analyzed |
|---|---|---|---|---|---|---|---|
| 1201381-009A | 01/17/12 2:00 PM | 01/17/12 | 01/18/12 12:07 AM | 1201381-011A | 01/17/12 8:15 AM | 01/17/12 | 01/18/12 12:41 PM |
| 1201381-012A | 01/17/12 8:30 AM | 01/17/12 | 01/18/12 7:50 AM | 1201381-013A | 01/17/12 9:00 AM | 01/17/12 | 01/18/12 11:58 AM |
| 1201381-015A | 01/17/12 10:45 AM | 01/17/12 | 01/18/12 6:38 AM | 1201381-016A | 01/17/12 3:00 PM | 01/17/12 | 01/18/12 12:55 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.

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# Analytical Report

| | | |
|---|---|---|
| AEI Consultants | Client Project ID: #298931; Buestad | Date Sampled: 01/17/12 |
| | | Date Received: 01/17/12 |
| 2500 Camino Diablo, Ste. #200 | Client Contact: Harmony TomSun | Date Reported: 01/24/12 |
| Walnut Creek, CA 94597 | Client P.O.: #WC083425 | Date Completed: 01/24/12 |

**WorkOrder: 1201389**

January 24, 2012

Dear Harmony:

Enclosed within are:

1) The results of the **16** analyzed samples from your project: **#298931; Buestad,**
2) QC data for the above samples, and
3) A copy of the chain of custody.

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.

***The analytical results relate only to the items tested.***

12 01389

# McCAMPBELL ANALYTICAL, INC.

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Telephone: (877) 252-9262 Fax: (925) 252-9269

# CHAIN OF CUSTODY RECORD

TURN AROUND TIME ☐ RUSH ☐ 24 HR ☐ 48 HR ☐ 72 HR ■ 5 DAY

GeoTracker EDF ☐ PDF ■ Excel ☐ Write On (DW) ☐

☐ Check if sample is effluent and "J" flag is required

Report To: Harmony TomSun Bill To: AEI

Company: AEI Consultants, 2500 Camino Diablo, Walnut Creek, CA 94597

PO#: WC083425

Global ID: E-Mail: htomsun@aeiconsultants.com

Tele: ( 925) 746-6000 Fax: (925) 746-6099

Project #: 298931 Project Name: Buestad

Project Location: 1630 Park Street, Alameda, California

Sampler Signature:

| SAMPLE ID | LOCATION/ Field Point Name | SAMPLING Date | SAMPLING Time | # Containers | Type Containers | MATRIX Water | MATRIX Soil | MATRIX Air | MATRIX Sludge | MATRIX Other | METHOD PRESERVED ICE | METHOD PRESERVED HCL | METHOD PRESERVED $HNO_3$ | METHOD PRESERVED Other | TPH as gasoline, diesel and mo by EPA 8015M | MTBE and BTEX by EPA 8021 | VOCs by EPA Method 8260 | CAM 17 Metals | TPH-g by EPA Method 8015M | Other: Hold | Comments |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| AEI-20-3.5' | AEI-20 | 1/14 | 12:15 | 1 | Liner | | X | | | | X | | | | | | | | | X | |
| AEI-20-7.5' | " | " | 12:20 | " | " | | " | | | | " | | | | | X | | | X | | |
| AEI-20-15' | " | " | 12:40 | " | " | | " | | | | " | | | | | X | | | X | | |
| AEI-21-3' | AEI-21 | " | 11:15 | " | " | | " | | | | " | | | | | | | | | X | |
| AEI-21-7' | " | " | 11:20 | " | " | | " | | | | " | | | | | X | | | X | | |
| AEI-21-9' | " | " | 11:23 | " | " | | " | | | | " | | | | | | | | | X | |
| AEI-22-4' | AEI-22 | " | 2:10 | " | " | | " | | | | " | | | | | [illegible] | | | | X | |
| AEI-22-7' | " | " | 2:15 | " | " | | " | | | | " | | | | | [illegible] | | | [illegible] | X | |
| AEI-22-9' | " | " | 2:20 | " | " | | " | | | | " | | | | | X | | | X | | |
| AEI-22-14' | " | " | 2:40 | " | " | | " | | | | " | | | | | X | | | X | | |
| AEI-23-3' | AEI-23 | " | 1:45 | " | " | | " | | | | " | | | | | | | | | X | |

**MAI clients MUST disclose any dangerous chemicals known to be present in their submitted samples in concentrations that may cause immediate harm or serious future health endangerment as a result of brief, gloved, open air, sample handling by MAI staff. Non-disclosure incurs an immediate $250 surcharge and the client is subject to full legal liability for harm suffered. Thank you for your understanding and for allowing us to work safely.

| Relinquished By: | Date: | Time: | Received By: |
|---|---|---|---|
| | 1/17 | 4:30 | |
| Relinquished By: | Date: | Time: | Received By: |
| | 1/17 | 1805 | |
| Relinquished By: | Date: | Time: | Received By: |
| | | | |

ICE/t° 10.2
GOOD CONDITION
HEAD SPACE ABSENT
DECHLORINATED IN LAB
APPROPRIATE CONTAINERS
PRESERVED IN LAB

COMMENTS:

VOAS O&G METALS OTHER
PRESERVATION pH<2

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# CHAIN OF CUSTODY RECORD

TURN AROUND TIME ☐ RUSH ☐ 24 HR ☐ 48 HR ☐ 72 HR ■ 5 DAY

GeoTracker EDF ☐ PDF ■ Excel ☐ Write On (DW) ☐

☐ Check if sample is effluent and "J" flag is required

Report To: Harmony TomSun Bill To: AEI

Company: AEI Consultants, 2500 Camino Diablo, Walnut Creek, CA 94597

PO#: WC083425

Global ID: E-Mail: htomsun@aeiconsultants.com

Tele: (925) 746-6000 Fax: (925) 746-6099

Project #: 298931 Project Name: Buestad

Project Location: 1630 Park Street, Alameda, California

Sampler Signature:

| SAMPLE ID | LOCATION/ Field Point Name | SAMPLING Date | SAMPLING Time | # Containers | Type Containers | MATRIX Water | MATRIX Soil | MATRIX Air | MATRIX Sludge | MATRIX Other | METHOD PRESERVED ICE | METHOD PRESERVED HCL | METHOD PRESERVED $HNO_3$ | METHOD PRESERVED Other | Analysis Request: TPH as gasoline, diesel and mo by EPA 8015M | Analysis Request: MTBE and BTEX by EPA 8021 | Analysis Request: VOCs by EPA Method 8260 | Analysis Request: CAM 17 Metals | Other: Hold | Comments |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| AEI-23-6' | AEI-23 | 1/17 | 1:50 | 1 | liner | | X | | | | X | | | | X | X | | | | |
| AEI-23-12.5' | " | " | 2:05 | " | " | | | | | | | | | | X | X | | | | |
| AEI-23-14.5' | " | " | 2:10 | " | " | | | | | | | | | | | | | | X | |
| AEI-24-3.5' | AEI-24 | " | 8:00 | " | " | | | | | | | | | | | | | | X | |
| AEI-24-~~12~~ 10.5' | " | " | 8:~~30~~ 25 | " | " | | | | | | | | | | X | X | | | | |
| AEI-25-4' | AEI-25 | " | 8:50 | " | " | | | | | | | | | | | | | | X | |
| AEI-25-7.5' | " | " | 8:55 | " | " | | X | | | | X | | | | X | X | | | | |
| AEI-25-14' | " | " | 9:15 | " | " | | | | | | | | | | X | X | | | | |
| AEI-26-4' | AEI-26 | " | 10:35 | " | " | | | | | | | | | | | | | | X | |
| AEI-26-7.5' | " | " | 10:40 | " | " | | | | | | | | | | X | X | | | | |
| AEI-26-14' | " | " | 10:50 | " | " | | | | | | | | | | X | X | | | | |

**MAI clients MUST disclose any dangerous chemicals known to be present in their submitted samples in concentrations that may cause immediate harm or serious future health endangerment as a result of brief, gloved, open air, sample handling by MAI staff. Non-disclosure incurs an immediate $250 surcharge and the client is subject to full legal liability for harm suffered. Thank you for your understanding and for allowing us to work safely.

| Relinquished By: | Date: | Time: | Received By: |
|---|---|---|---|
| | 1/17 | 4:38 | |
| Relinquished By: | Date: | Time: | Received By: |
| | 1/17 | 1805 | |
| Relinquished By: | Date: | Time: | Received By: |
| | | | |

ICE/t°_____ COMMENTS:

GOOD CONDITION_____

HEAD SPACE ABSENT_____

DECHLORINATED IN LAB_____

APPROPRIATE CONTAINERS_____

PRESERVED IN LAB_____

VOAS O&G METALS OTHER

PRESERVATION_____ pH<2_____

★ Sample I.D Reads AEI-24-10.50N Hold PER H.T. 1/18/12
I.D changed

# McCAMPBELL ANALYTICAL, INC.

1534 WILLOW PASS ROAD
PITTSBURG, CA 94565-1701
Website: www.mccampbell.com Email: main@mccampbell.com
Telephone: (877) 252-9262 Fax: (925) 252-9269

# CHAIN OF CUSTODY RECORD

TURN AROUND TIME ☐ RUSH ☐ 24 HR ☐ 48 HR ☐ 72 HR ■ 5 DAY

GeoTracker EDF ☐ PDF ■ Excel ☐ Write On (DW) ☐

☐ Check if sample is effluent and "J" flag is required

Report To: Harmony TomSun Bill To: AEI

Company: AEI Consultants, 2500 Camino Diablo, Walnut Creek, CA 94597

PO#: WC083425

Global ID: E-Mail: htomsun@aeiconsultants.com

Tele: ( 925) 746-6000 Fax: (925) 746-6099

Project #: 298931 Project Name: Buestad

Project Location: 1630 Park Street, Alameda, California

Sampler Signature:

| SAMPLE ID | LOCATION/ Field Point Name | SAMPLING Date | SAMPLING Time | # Containers | Type Containers | MATRIX Water | MATRIX Soil | MATRIX Air | MATRIX Sludge | MATRIX Other | METHOD PRESERVED ICE | METHOD PRESERVED HCL | METHOD PRESERVED $HNO_3$ | METHOD PRESERVED Other | Analysis Request: TPH as gasoline, diesel and mo by EPA 8015M | Analysis Request: MTBE and BTEX by EPA 8021 | Analysis Request: VOCs by EPA Method 8260 | Analysis Request: CAM 17 Metals | Other: Hold |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| AEI-26 | AEI-26 | 1/17 | 10:20 | 6 | AMBS | X | | | | | X | | | | X | X | | | |
| AEI-27 | AEI-27 | 1/17 | 11:10 | 4 | AMBS | X | | | | | X | | | | X | X | X | X | |
| AEI-27-3' | " | 1/17 | 11:33 | 1 | liner | | X | | | | X | | | | X | | X | X | |
| AEI-27-8' | " | " | 11:37 | 1 | liner | | X | | | | X | | | | | | | | X |
| AEI-27-11' | " | " | 11:42 | 1 | " | | | | | | | | | | | | | | X |
| AEI-27-14' | " | " | 11:45 | 1 | " | | | | | | | | | | | | | | X |
| AEI-28-3' | AEI-28 | " | 2:50 | 1 | " | | | | | | | | | | | | | | X |
| AEI-28-7' | " | " | 2:55 | 1 | " | | | | | | | | | | X | X | | | |
| AEI-28-13' | " | " | 3:05 | 1 | " | | | | | | | | | | X | X | | | |
| AEI-28 | | " | | | | X | | | | | | | | | X | X | | | X |
| | | | | | | | | | | | | | | | | | | | |

Comments: **Indicate here if these samples are potentially dangerous to handle:

**MAI clients MUST disclose any dangerous chemicals known to be present in their submitted samples in concentrations that may cause immediate harm or serious future health endangerment as a result of brief, gloved, open air, sample handling by MAI staff. Non-disclosure incurs an immediate $250 surcharge and the client is subject to full legal liability for harm suffered. Thank you for your understanding and for allowing us to work safely.

| Relinquished By: | Date: | Time: | Received By: |
|---|---|---|---|
| | 1/17 | 4:38 | |
| Relinquished By: | Date: | Time: | Received By: |
| | 1/17 | 1805 | |
| Relinquished By: | Date: | Time: | Received By: |
| | | | |

ICE/t°_____ COMMENTS:
GOOD CONDITION_____
HEAD SPACE ABSENT_____
DECHLORINATED IN LAB_____
APPROPRIATE CONTAINERS_____
PRESERVED IN LAB_____

VOAS O&G METALS OTHER
PRESERVATION_____ pH<2_____

(1) placed on Hold 1/18/12 per H.T off Hold per HT

**McCampbell Analytical, Inc.**
1534 Willow Pass Rd
Pittsburg, CA 94565-1701
(925) 252-9262

# CHAIN-OF-CUSTODY RECORD



**WorkOrder: 1201389** **ClientCode: AEL**

☐ WaterTrax ☐ WriteOn ☐ EDF ☐ Excel ☐ Fax ☑ Email ☐ HardCopy ☐ ThirdParty ☐ J-flag

**Report to:**
Harmony TomSun
AEI Consultants
2500 Camino Diablo, Ste. #200
Walnut Creek, CA 94597
(925) 283-6000 FAX: (925) 944-2895

Email: htomsun@aeiconsultants.com
cc:
PO: #WC083425
ProjectNo: #298931; Buestad

**Bill to:**
Sara Guerin
AEI Consultants
2500 Camino Diablo, Ste. #200
Walnut Creek, CA 94597
AccountsPayable@AEIConsultants.co

**Requested TAT:** 5 days

***Date Received:*** **01/17/2012**
***Date Printed:*** **01/18/2012**

| Lab ID | Client ID | Matrix | Collection Date | Hold | Requested Tests (See legend below) 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1201389-002 | AEI-20-7.5' | Soil | 1/17/2012 12:20 | ☐ | | | | A | | | | | | | | |
| 1201389-003 | AEI-20-15' | Soil | 1/17/2012 12:40 | ☐ | | | | A | | | | | | | | |
| 1201389-005 | AEI-21-7' | Soil | 1/17/2012 11:20 | ☐ | | | | A | | | | | | | | |
| 1201389-009 | AEI-22-9' | Soil | 1/17/2012 14:20 | ☐ | | | | A | | | | | | | | |
| 1201389-010 | AEI-22-14' | Soil | 1/17/2012 14:40 | ☐ | | | | A | | | | | | | | |
| 1201389-012 | AEI-23-6' | Soil | 1/17/2012 13:50 | ☐ | | | | A | | A | | | | | | |
| 1201389-013 | AEI-23-12.5' | Soil | 1/17/2012 14:05 | ☐ | | | | A | | A | | | | | | |
| 1201389-016 | AEI-24-10.5' | Soil | 1/17/2012 8:25 | ☐ | | | | A | | A | | | | | | |
| 1201389-018 | AEI-25-7.5' | Soil | 1/17/2012 8:55 | ☐ | | | | A | | A | | | | | | |
| 1201389-019 | AEI-25-14' | Soil | 1/17/2012 9:15 | ☐ | | | | A | | A | | | | | | |
| 1201389-021 | AEI-26-7.5' | Soil | 1/17/2012 10:40 | ☐ | | | | A | | A | | | | | | |
| 1201389-022 | AEI-26-14' | Soil | 1/17/2012 10:50 | ☐ | | | | A | | A | | | | | | |
| 1201389-023 | AEI-26 | Water | 1/17/2012 10:20 | ☐ | | | | | B | | A | | | | | |
| 1201389-024 | AEI-27 | Water | 1/17/2012 11:10 | ☐ | | B | | | A | | | | | | | |

**Test Legend:**

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| 1 | 8260B_S | 2 | 8260B_W | 3 | CAM17MS_S | 4 | G-MBTEX_S | 5 | G-MBTEX_W |
| 6 | TPH(DMO)_S | 7 | TPH(DMO)_W | 8 | | 9 | | 10 | |
| 11 | | 12 | | | | | | | |

The following SampIDs: 024A, 025A contain testgroup.

**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.

**McCampbell Analytical, Inc.**
1534 Willow Pass Rd
Pittsburg, CA 94565-1701
(925) 252-9262

# CHAIN-OF-CUSTODY RECORD



**WorkOrder: 1201389** **ClientCode: AEL**

☐ WaterTrax ☐ WriteOn ☐ EDF ☐ Excel ☐ Fax ☑ Email ☐ HardCopy ☐ ThirdParty ☐ J-flag

**Report to:**
Harmony TomSun
AEI Consultants
2500 Camino Diablo, Ste. #200
Walnut Creek, CA 94597
(925) 283-6000 FAX: (925) 944-2895

Email: htomsun@aeiconsultants.com
cc:
PO: #WC083425
ProjectNo: #298931; Buestad

**Bill to:**
Sara Guerin
AEI Consultants
2500 Camino Diablo, Ste. #200
Walnut Creek, CA 94597
AccountsPayable@AEIConsultants.co

**Requested TAT:** 5 days

***Date Received:*** **01/17/2012**
***Date Printed:*** **01/18/2012**

| Lab ID | Client ID | Matrix | Collection Date | Hold | Requested Tests (See legend below) | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 |
| 1201389-025 | AEI-27-3' | Soil | 1/17/2012 11:33 | ☐ | A | | A | A | | | | | | | | |
| 1201389-032 | AEI-28 | Water | 1/17/2012 | ☐ | | | | | B | | A | | | | | |

**Test Legend:**

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| 1 | 8260B_S | 2 | 8260B_W | 3 | CAM17MS_S | 4 | G-MBTEX_S | 5 | G-MBTEX_W |
| 6 | TPH(DMO)_S | 7 | TPH(DMO)_W | 8 | | 9 | | 10 | |
| 11 | | 12 | | | | | | | |

The following SampIDs: 024A, 025A contain testgroup.

**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.

McCampbell Analytical, Inc.
*"When Quality Counts"*

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Toll Free Telephone: (877) 252-9262 / Fax: (925) 252-9269
http://www.mccampbell.com / E-mail: main@mccampbell.com

# Sample Receipt Checklist

Client Name: **AEI Consultants**
Date and Time Received: **1/17/2012 8:33:39 PM**

Project Name: **#298931; Buestad**
Checklist completed and reviewed by: Ana Venegas

WorkOrder N°: **1201389** Matrix: Soil/Water
Carrier: Benjamin Yslas (MAI Courier)

## 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 Preservation and Hold Time (HT) Information

| | | | |
|---|---|---|---|
| All samples received within holding time? | Yes ☑ | No ☐ | |
| Container/Temp Blank temperature | Cooler Temp: | | NA ☑ |
| Water - VOA vials have zero headspace / no bubbles? | Yes ☑ | No ☐ | No VOA vials submitted ☐ |
| Sample labels checked for correct preservation? | Yes ☑ | No ☐ | |
| Metal - pH acceptable upon receipt (pH<2)? | Yes ☐ | No ☐ | NA ☑ |
| Samples Received on Ice? | Yes ☑ | No ☐ | |

(Ice Type: WET ICE )

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

Comments:

McCampbell Analytical, Inc.
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Toll Free Telephone: (877) 252-9262 / Fax: (925) 252-9269
http://www.mccampbell.com / E-mail: main@mccampbell.com

| | | |
|---|---|---|
| AEI Consultants | Client Project ID: #298931; Buestad | Date Sampled: 01/17/12 |
| | | Date Received: 01/17/12 |
| 2500 Camino Diablo, Ste. #200 | Client Contact: Harmony TomSun | Date Extracted: 01/19/12 |
| Walnut Creek, CA 94597 | Client P.O.: #WC083425 | Date Analyzed: 01/19/12 |

## Volatile Organics by P&T and GC/MS (Basic Target List)*

Extraction Method: SW5030B | Analytical Method: SW8260B | Work Order: 1201389

| | |
|---|---|
| Lab ID | 1201389-024B |
| Client ID | AEI-27 |
| Matrix | Water |

| Compound | Concentration * | DF | Reporting Limit | Compound | Concentration * | DF | Reporting Limit |
|---|---|---|---|---|---|---|---|
| Acetone | 13 | 1.0 | 10 | tert-Amyl methyl ether (TAME) | ND | 1.0 | 0.5 |
| Benzene | ND | 1.0 | 0.5 | Bromobenzene | ND | 1.0 | 0.5 |
| Bromochloromethane | ND | 1.0 | 0.5 | Bromodichloromethane | ND | 1.0 | 0.5 |
| Bromoform | ND | 1.0 | 0.5 | Bromomethane | ND | 1.0 | 0.5 |
| 2-Butanone (MEK) | ND | 1.0 | 2.0 | t-Butyl alcohol (TBA) | ND | 1.0 | 2.0 |
| n-Butyl benzene | ND | 1.0 | 0.5 | sec-Butyl benzene | ND | 1.0 | 0.5 |
| tert-Butyl benzene | ND | 1.0 | 0.5 | Carbon Disulfide | ND | 1.0 | 0.5 |
| Carbon Tetrachloride | ND | 1.0 | 0.5 | Chlorobenzene | ND | 1.0 | 0.5 |
| Chloroethane | ND | 1.0 | 0.5 | Chloroform | ND | 1.0 | 0.5 |
| Chloromethane | ND | 1.0 | 0.5 | 2-Chlorotoluene | ND | 1.0 | 0.5 |
| 4-Chlorotoluene | ND | 1.0 | 0.5 | Dibromochloromethane | ND | 1.0 | 0.5 |
| 1,2-Dibromo-3-chloropropane | ND | 1.0 | 0.2 | 1,2-Dibromoethane (EDB) | ND | 1.0 | 0.5 |
| Dibromomethane | ND | 1.0 | 0.5 | 1,2-Dichlorobenzene | ND | 1.0 | 0.5 |
| 1,3-Dichlorobenzene | ND | 1.0 | 0.5 | 1,4-Dichlorobenzene | ND | 1.0 | 0.5 |
| Dichlorodifluoromethane | ND | 1.0 | 0.5 | 1,1-Dichloroethane | ND | 1.0 | 0.5 |
| 1,2-Dichloroethane (1,2-DCA) | ND | 1.0 | 0.5 | 1,1-Dichloroethene | ND | 1.0 | 0.5 |
| cis-1,2-Dichloroethene | ND | 1.0 | 0.5 | trans-1,2-Dichloroethene | ND | 1.0 | 0.5 |
| 1,2-Dichloropropane | ND | 1.0 | 0.5 | 1,3-Dichloropropane | ND | 1.0 | 0.5 |
| 2,2-Dichloropropane | ND | 1.0 | 0.5 | 1,1-Dichloropropene | ND | 1.0 | 0.5 |
| cis-1,3-Dichloropropene | ND | 1.0 | 0.5 | trans-1,3-Dichloropropene | ND | 1.0 | 0.5 |
| Diisopropyl ether (DIPE) | ND | 1.0 | 0.5 | Ethylbenzene | ND | 1.0 | 0.5 |
| Ethyl tert-butyl ether (ETBE) | ND | 1.0 | 0.5 | Freon 113 | ND | 1.0 | 10 |
| Hexachlorobutadiene | ND | 1.0 | 0.5 | Hexachloroethane | ND | 1.0 | 0.5 |
| 2-Hexanone | ND | 1.0 | 0.5 | Isopropylbenzene | ND | 1.0 | 0.5 |
| 4-Isopropyl toluene | ND | 1.0 | 0.5 | Methyl-t-butyl ether (MTBE) | ND | 1.0 | 0.5 |
| Methylene chloride | ND | 1.0 | 0.5 | 4-Methyl-2-pentanone (MIBK) | ND | 1.0 | 0.5 |
| Naphthalene | ND | 1.0 | 0.5 | n-Propyl benzene | ND | 1.0 | 0.5 |
| Styrene | ND | 1.0 | 0.5 | 1,1,1,2-Tetrachloroethane | ND | 1.0 | 0.5 |
| 1,1,2,2-Tetrachloroethane | ND | 1.0 | 0.5 | Tetrachloroethene | ND | 1.0 | 0.5 |
| Toluene | ND | 1.0 | 0.5 | 1,2,3-Trichlorobenzene | ND | 1.0 | 0.5 |
| 1,2,4-Trichlorobenzene | ND | 1.0 | 0.5 | 1,1,1-Trichloroethane | ND | 1.0 | 0.5 |
| 1,1,2-Trichloroethane | ND | 1.0 | 0.5 | Trichloroethene | ND | 1.0 | 0.5 |
| Trichlorofluoromethane | ND | 1.0 | 0.5 | 1,2,3-Trichloropropane | ND | 1.0 | 0.5 |
| 1,2,4-Trimethylbenzene | ND | 1.0 | 0.5 | 1,3,5-Trimethylbenzene | ND | 1.0 | 0.5 |
| Vinyl Chloride | ND | 1.0 | 0.5 | Xylenes, Total | ND | 1.0 | 0.5 |

**Surrogate Recoveries (%)**

| | | | |
|---|---|---|---|
| %SS1: | 107 | %SS2: | 99 |
| %SS3: | 99 | | |

Comments: 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/method detection limit; N/A means analyte not applicable to this analysis; %SS = Percent Recovery of Surrogate Standard; DF = Dilution Factor

# 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. % sediment

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Toll Free Telephone: (877) 252-9262 / Fax: (925) 252-9269
http://www.mccampbell.com / E-mail: main@mccampbell.com

| | | |
|---|---|---|
| AEI Consultants | Client Project ID: #298931; Buestad | Date Sampled: 01/17/12 |
| | | Date Received: 01/17/12 |
| 2500 Camino Diablo, Ste. #200 | Client Contact: Harmony TomSun | Date Extracted: 01/17/12 |
| Walnut Creek, CA 94597 | Client P.O.: #WC083425 | Date Analyzed: 01/18/12 |

## Volatile Organics by P&T and GC/MS (Basic Target List)*

Extraction Method: SW5030B | Analytical Method: SW8260B | Work Order: 1201389

| | |
|---|---|
| Lab ID | 1201389-025A |
| Client ID | AEI-27-3' |
| Matrix | Soil |

| Compound | Concentration * | DF | Reporting Limit | Compound | Concentration * | DF | Reporting Limit |
|---|---|---|---|---|---|---|---|
| Acetone | ND | 1.0 | 0.05 | tert-Amyl methyl ether (TAME) | ND | 1.0 | 0.005 |
| Benzene | ND | 1.0 | 0.005 | Bromobenzene | ND | 1.0 | 0.005 |
| Bromochloromethane | ND | 1.0 | 0.005 | Bromodichloromethane | ND | 1.0 | 0.005 |
| Bromoform | ND | 1.0 | 0.005 | Bromomethane | ND | 1.0 | 0.005 |
| 2-Butanone (MEK) | ND | 1.0 | 0.02 | t-Butyl alcohol (TBA) | ND | 1.0 | 0.05 |
| n-Butyl benzene | ND | 1.0 | 0.005 | sec-Butyl benzene | ND | 1.0 | 0.005 |
| tert-Butyl benzene | ND | 1.0 | 0.005 | Carbon Disulfide | ND | 1.0 | 0.005 |
| Carbon Tetrachloride | ND | 1.0 | 0.005 | Chlorobenzene | ND | 1.0 | 0.005 |
| Chloroethane | ND | 1.0 | 0.005 | Chloroform | ND | 1.0 | 0.005 |
| Chloromethane | ND | 1.0 | 0.005 | 2-Chlorotoluene | ND | 1.0 | 0.005 |
| 4-Chlorotoluene | ND | 1.0 | 0.005 | Dibromochloromethane | ND | 1.0 | 0.005 |
| 1,2-Dibromo-3-chloropropane | ND | 1.0 | 0.004 | 1,2-Dibromoethane (EDB) | ND | 1.0 | 0.004 |
| Dibromomethane | ND | 1.0 | 0.005 | 1,2-Dichlorobenzene | ND | 1.0 | 0.005 |
| 1,3-Dichlorobenzene | ND | 1.0 | 0.005 | 1,4-Dichlorobenzene | ND | 1.0 | 0.005 |
| Dichlorodifluoromethane | ND | 1.0 | 0.005 | 1,1-Dichloroethane | ND | 1.0 | 0.005 |
| 1,2-Dichloroethane (1,2-DCA) | ND | 1.0 | 0.004 | 1,1-Dichloroethene | ND | 1.0 | 0.005 |
| cis-1,2-Dichloroethene | ND | 1.0 | 0.005 | trans-1,2-Dichloroethene | ND | 1.0 | 0.005 |
| 1,2-Dichloropropane | ND | 1.0 | 0.005 | 1,3-Dichloropropane | ND | 1.0 | 0.005 |
| 2,2-Dichloropropane | ND | 1.0 | 0.005 | 1,1-Dichloropropene | ND | 1.0 | 0.005 |
| cis-1,3-Dichloropropene | ND | 1.0 | 0.005 | trans-1,3-Dichloropropene | ND | 1.0 | 0.005 |
| Diisopropyl ether (DIPE) | ND | 1.0 | 0.005 | Ethylbenzene | ND | 1.0 | 0.005 |
| Ethyl tert-butyl ether (ETBE) | ND | 1.0 | 0.005 | Freon 113 | ND | 1.0 | 0.1 |
| Hexachlorobutadiene | ND | 1.0 | 0.005 | Hexachloroethane | ND | 1.0 | 0.005 |
| 2-Hexanone | ND | 1.0 | 0.005 | Isopropylbenzene | ND | 1.0 | 0.005 |
| 4-Isopropyl toluene | ND | 1.0 | 0.005 | Methyl-t-butyl ether (MTBE) | ND | 1.0 | 0.005 |
| Methylene chloride | ND | 1.0 | 0.005 | 4-Methyl-2-pentanone (MIBK) | ND | 1.0 | 0.005 |
| Naphthalene | ND | 1.0 | 0.005 | n-Propyl benzene | ND | 1.0 | 0.005 |
| Styrene | ND | 1.0 | 0.005 | 1,1,1,2-Tetrachloroethane | ND | 1.0 | 0.005 |
| 1,1,2,2-Tetrachloroethane | ND | 1.0 | 0.005 | Tetrachloroethene | ND | 1.0 | 0.005 |
| Toluene | ND | 1.0 | 0.005 | 1,2,3-Trichlorobenzene | ND | 1.0 | 0.005 |
| 1,2,4-Trichlorobenzene | ND | 1.0 | 0.005 | 1,1,1-Trichloroethane | ND | 1.0 | 0.005 |
| 1,1,2-Trichloroethane | ND | 1.0 | 0.005 | Trichloroethene | ND | 1.0 | 0.005 |
| Trichlorofluoromethane | ND | 1.0 | 0.005 | 1,2,3-Trichloropropane | ND | 1.0 | 0.005 |
| 1,2,4-Trimethylbenzene | ND | 1.0 | 0.005 | 1,3,5-Trimethylbenzene | ND | 1.0 | 0.005 |
| Vinyl Chloride | ND | 1.0 | 0.005 | Xylenes, Total | ND | 1.0 | 0.005 |

**Surrogate Recoveries (%)**

| | | | |
|---|---|---|---|
| %SS1: | 106 | %SS2: | 103 |
| %SS3: | 100 | | |

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 & SPLP extracts are reported in mg/L, wipe samples in µg/wipe.

ND means not detected above the reporting limit/method detection limit; N/A means analyte not applicable to this analysis; %SS = Percent Recovery of Surrogate Standard; DF = Dilution Factor

# 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. % sediment

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| | | |
|---|---|---|
| AEI Consultants | Client Project ID: #298931; Buestad | Date Sampled: 01/17/12 |
| | | Date Received 01/17/12 |
| 2500 Camino Diablo, Ste. #200 | Client Contact: Harmony TomSun | Date Extracted 01/17/12 |
| Walnut Creek, CA 94597 | Client P.O.: #WC083425 | Date Analyzed 01/18/12-01/24/12 |

**CAM / CCR 17 Metals***

| | | | | | Reporting Limit for DF =1; ND means not detected above the reporting limit | |
|---|---|---|---|---|---|---|
| Lab ID | 1201389-025A | | | | | |
| Client ID | AEI-27-3' | | | | | |
| Matrix | S | | | | S | W |
| Extraction Type | TOTAL | | | | mg/Kg | mg/L |

**ICP Metals, Concentration***

Analytical Method: SW6020 Extraction Method: SW3050B Work Order: 1201389

| Dilution Factor | 1 | | | | 1 | 1 |
|---|---|---|---|---|---|---|
| Antimony | 1.2 | | | | 0.5 | NA |
| Arsenic | 4.0 | | | | 0.5 | NA |
| Barium | 130 | | | | 5.0 | NA |
| Beryllium | ND | | | | 0.5 | NA |
| Cadmium | ND | | | | 0.25 | NA |
| Chromium | 38 | | | | 0.5 | NA |
| Cobalt | 3.7 | | | | 0.5 | NA |
| Copper | 18 | | | | 0.5 | NA |
| Lead | 140 | | | | 0.5 | NA |
| Mercury | 0.32 | | | | 0.05 | NA |
| Molybdenum | ND | | | | 0.5 | NA |
| Nickel | 17 | | | | 0.5 | NA |
| Selenium | ND | | | | 0.5 | NA |
| Silver | ND | | | | 0.5 | NA |
| Thallium | ND | | | | 0.5 | NA |
| Vanadium | 28 | | | | 0.5 | NA |
| Zinc | 140 | | | | 5.0 | NA |
| %SS: | 116 | | | | | |

**Comments**

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

# means surrogate diluted out of range; ND means not detected above the reporting limit/method detection limit; N/A means not applicable to this sample or instrument.

TOTAL = Hot acid digestion of a representative sample aliquot.
TRM = Total recoverable metals is the "direct analysis" of a sample aliquot taken from its acid-preserved container.
DISS = Dissolved metals by direct analysis of 0.45 µm filtered and acidified sample.
%SS = Percent Recovery of Surrogate Standard
DF = Dilution Factor

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http://www.mccampbell.com / E-mail: main@mccampbell.com

| | | |
|---|---|---|
| AEI Consultants | Client Project ID: #298931; Buestad | Date Sampled: 01/17/12 |
| | | Date Received: 01/17/12 |
| 2500 Camino Diablo, Ste. #200 | Client Contact: Harmony TomSun | Date Extracted: 01/17/12-01/23/12 |
| Walnut Creek, CA 94597 | Client P.O.: #WC083425 | Date Analyzed: 01/18/12-01/23/12 |

**Gasoline Range (C6-C12) Volatile Hydrocarbons as Gasoline with BTEX and MTBE***

Extraction method: SW5030B Analytical methods: SW8021B/8015Bm Work Order: 1201389

| Lab ID | Client ID | Matrix | TPH(g) | MTBE | Benzene | Toluene | Ethylbenzene | Xylenes | DF | % SS | Comments |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 002A | AEI-20-7.5' | S | 8.4 | ND | 0.0071 | 0.084 | 0.069 | 0.38 | 1 | 117 | d1 |
| 003A | AEI-20-15' | S | 3.3 | ND | ND | 0.028 | ND | 0.017 | 1 | 104 | d1 |
| 005A | AEI-21-7' | S | ND | ND | ND | ND | ND | ND | 1 | 116 | |
| 009A | AEI-22-9' | S | 3100 | ND<5.0 | 3.2 | 46 | 62 | 400 | 100 | ---# | d2,d9 |
| 010A | AEI-22-14' | S | 3300 | ND<5.0 | 8.3 | 84 | 61 | 370 | 100 | ---# | d2,d9 |
| 012A | AEI-23-6' | S | ND | ND | ND | ND | ND | ND | 1 | 115 | |
| 013A | AEI-23-12.5' | S | 460 | ND<5.0 | ND<0.50 | 1.4 | ND<0.50 | 0.80 | 100 | 115 | d7 |
| 016A | AEI-24-10.5' | S | ND | ND | ND | ND | ND | ND | 1 | 105 | |
| 018A | AEI-25-7.5' | S | ND | ND | ND | ND | ND | ND | 1 | 115 | |
| 019A | AEI-25-14' | S | ND | ND | ND | ND | ND | ND | 1 | 108 | |
| 021A | AEI-26-7.5' | S | ND | ND | ND | ND | ND | ND | 1 | 111 | |
| 022A | AEI-26-14' | S | ND | ND | ND | ND | ND | ND | 1 | 112 | |
| 023B | AEI-26 | W | ND | ND | ND | ND | ND | ND | 1 | 117 | b1 |
| 024A | AEI-27 | W | ND | ND | ND | ND | ND | ND | 1 | 108 | b1 |
| 025A | AEI-27-3' | S | ND | ND | ND | ND | ND | 0.013 | 1 | 117 | |
| 032B | AEI-28 | W | 16,000 | ND<100 | 160 | 690 | 540 | 2500 | 20 | 110 | d1,b1 |

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| Reporting Limit for DF =1; ND means not detected at or above the reporting limit | W | 50 | 5.0 | 0.5 | 0.5 | 0.5 | 0.5 | µg/L |
| | S | 1.0 | 0.05 | 0.005 | 0.005 | 0.005 | 0.005 | mg/Kg |

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

# cluttered chromatogram; sample peak coelutes w/surrogate peak; low surrogate recovery due to matrix interference; %SS = Percent Recovery of Surrogate Standard; DF = Dilution Factor

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
d2) heavier gasoline range compounds are significant (aged gasoline?)
d7) strongly aged gasoline or diesel range compounds are significant in the TPH(g) chromatogram
d9) no recognizable pattern

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| | | |
|---|---|---|
| AEI Consultants | Client Project ID: #298931; Buestad | Date Sampled: 01/17/12 |
| | | Date Received: 01/17/12 |
| 2500 Camino Diablo, Ste. #200 | Client Contact: Harmony TomSun | Date Extracted: 01/17/12-01/18/12 |
| Walnut Creek, CA 94597 | Client P.O.: #WC083425 | Date Analyzed: 01/18/12-01/19/12 |

**Total Extractable Petroleum Hydrocarbons***

Extraction method: SW3510C/SW3550B Analytical methods: SW8015B Work Order: 1201389

| Lab ID | Client ID | Matrix | TPH-Diesel (C10-C23) | TPH-Motor Oil (C18-C36) | DF | % SS | Comments |
|---|---|---|---|---|---|---|---|
| 1201389-012A | AEI-23-6' | S | ND | ND | 1 | 98 | |
| 1201389-013A | AEI-23-12.5' | S | 360 | 270 | 20 | 101 | e11,e7,e2 |
| 1201389-016A | AEI-24-10.5' | S | ND | ND | 1 | 99 | |
| 1201389-018A | AEI-25-7.5' | S | 1.6 | ND | 1 | 94 | e2 |
| 1201389-019A | AEI-25-14' | S | ND | ND | 1 | 99 | |
| 1201389-021A | AEI-26-7.5' | S | ND | ND | 1 | 98 | |
| 1201389-022A | AEI-26-14' | S | ND | ND | 1 | 100 | |
| 1201389-023A | AEI-26 | W | ND | ND | 1 | 90 | b1 |
| 1201389-024A | AEI-27 | W | ND<100 | ND<500 | 2 | ---# | a1,c2,b1 |
| 1201389-025A | AEI-27-3' | S | 3.2 | 7.9 | 1 | 104 | e7,e2 |
| 1201389-032A | AEI-28 | W | 4500 | ND | 1 | 99 | e4,e2,b1 |
| | | | | | | | |
| | | | | | | | |
| | | | | | | | |
| | | | | | | | |

| | | | | |
|---|---|---|---|---|
| Reporting Limit for DF =1; ND means not detected at or above the reporting limit | W | 50 | 250 | µg/L |
| | S | 1.0 | 5.0 | mg/Kg |

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

# cluttered chromatogram resulting in coeluted surrogate and sample peaks, or; surrogate peak is on elevated baseline, or; surrogate has been diminished by dilution of original extract; %SS = Percent Recovery of Surrogate Standard; DF = Dilution Factor

The following descriptions of the TPH chromatogram are cursory in nature and McCampbell Analytical is not responsible for their interpretation:
a1) sample diluted due to matrix interference
b1) aqueous sample that contains greater than ~1 vol. % sediment
c2) estimated value due to low surrogate recovery, caused by matrix interference.
e2) diesel range compounds are significant; no recognizable pattern
e4) gasoline range compounds are significant.
e7) oil range compounds are significant
e11) stoddard solvent/mineral spirit (?)

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# QC SUMMARY REPORT FOR SW8015B

W.O. Sample Matrix: Water | QC Matrix: Water | BatchID: 63960 | WorkOrder: 1201389

**EPA Method: SW8015B** **Extraction: SW3510C** **Spiked Sample ID: N/A**

| Analyte | Sample | Spiked | MS | MSD | MS-MSD | LCS | Acceptance Criteria (%) | | |
|---|---|---|---|---|---|---|---|---|---|
| | µg/L | µg/L | % Rec. | % Rec. | % RPD | % Rec. | MS / MSD | RPD | LCS |
| TPH-Diesel (C10-C23) | N/A | 1000 | N/A | N/A | N/A | 125 | N/A | N/A | 70 - 130 |
| %SS: | N/A | 625 | N/A | N/A | N/A | 96 | N/A | N/A | 70 - 130 |

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

BATCH 63960 SUMMARY

| Lab ID | Date Sampled | Date Extracted | Date Analyzed | Lab ID | Date Sampled | Date Extracted | Date Analyzed |
|---|---|---|---|---|---|---|---|
| 1201389-023A | 01/17/12 10:20 AM | 01/17/12 | 01/19/12 1:22 AM | 1201389-024A | 01/17/12 11:10 AM | 01/17/12 | 01/19/12 2:31 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.

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# QC SUMMARY REPORT FOR SW8260B

W.O. Sample Matrix: Soil | QC Matrix: Soil | BatchID: 64013 | WorkOrder: 1201389

**EPA Method: SW8260B** **Extraction: SW5030B** **Spiked Sample ID: 1201267-003A**

| Analyte | Sample | Spiked | MS | MSD | MS-MSD | LCS | Acceptance Criteria (%) | | |
|---|---|---|---|---|---|---|---|---|---|
| | mg/Kg | mg/Kg | % Rec. | % Rec. | % RPD | % Rec. | MS / MSD | RPD | LCS |
| tert-Amyl methyl ether (TAME) | ND | 0.050 | 77.4 | 79 | 2.03 | 91.1 | 70 - 130 | 30 | 70 - 130 |
| Benzene | ND | 0.050 | 88 | 87.2 | 0.975 | 105 | 70 - 130 | 30 | 70 - 130 |
| t-Butyl alcohol (TBA) | ND | 0.20 | 83.9 | 88.2 | 5.04 | 107 | 70 - 130 | 30 | 70 - 130 |
| Chlorobenzene | ND | 0.050 | 87.5 | 92.5 | 5.56 | 104 | 70 - 130 | 30 | 70 - 130 |
| 1,2-Dibromoethane (EDB) | ND | 0.050 | 79 | 87.1 | 9.80 | 105 | 70 - 130 | 30 | 70 - 130 |
| 1,2-Dichloroethane (1,2-DCA) | ND | 0.050 | 89.1 | 81.1 | 9.51 | 101 | 70 - 130 | 30 | 70 - 130 |
| 1,1-Dichloroethene | ND | 0.050 | 76.5 | 76.6 | 0.0650 | 106 | 70 - 130 | 30 | 70 - 130 |
| Diisopropyl ether (DIPE) | ND | 0.050 | 83.7 | 79.5 | 5.22 | 97.8 | 70 - 130 | 30 | 70 - 130 |
| Ethyl tert-butyl ether (ETBE) | ND | 0.050 | 83 | 79.6 | 4.24 | 95.9 | 70 - 130 | 30 | 70 - 130 |
| Methyl-t-butyl ether (MTBE) | ND | 0.050 | 81.8 | 81 | 0.967 | 94.6 | 70 - 130 | 30 | 70 - 130 |
| Toluene | ND | 0.050 | 89.9 | 93.4 | 3.81 | 112 | 70 - 130 | 30 | 70 - 130 |
| Trichloroethene | ND | 0.050 | 88.1 | 92 | 4.35 | 109 | 70 - 130 | 30 | 70 - 130 |
| %SS1: | 101 | 0.12 | 106 | 108 | 1.72 | 102 | 70 - 130 | 30 | 70 - 130 |
| %SS2: | 110 | 0.12 | 102 | 103 | 0.918 | 111 | 70 - 130 | 30 | 70 - 130 |
| %SS3: | 112 | 0.012 | 103 | 110 | 6.12 | 110 | 70 - 130 | 30 | 70 - 130 |

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

BATCH 64013 SUMMARY

| Lab ID | Date Sampled | Date Extracted | Date Analyzed | Lab ID | Date Sampled | Date Extracted | Date Analyzed |
|---|---|---|---|---|---|---|---|
| 1201389-025A | 01/17/12 11:33 AM | 01/17/12 | 01/18/12 8:27 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.

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# QC SUMMARY REPORT FOR SW8015B

W.O. Sample Matrix: Soil | QC Matrix: Soil | BatchID: 64049 | WorkOrder: 1201389

**EPA Method: SW8015B** **Extraction: SW3550B** **Spiked Sample ID: 1201340-038A**

| Analyte | Sample | Spiked | MS | MSD | MS-MSD | LCS | Acceptance Criteria (%) | | |
|---|---|---|---|---|---|---|---|---|---|
| | mg/Kg | mg/Kg | % Rec. | % Rec. | % RPD | % Rec. | MS / MSD | RPD | LCS |
| TPH-Diesel (C10-C23) | 1.5 | 40 | 127 | 126 | 0.538 | 107 | 70 - 130 | 30 | 70 - 130 |
| %SS: | 108 | 25 | 110 | 111 | 1.04 | 86 | 70 - 130 | 30 | 70 - 130 |

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

BATCH 64049 SUMMARY

| Lab ID | Date Sampled | Date Extracted | Date Analyzed | Lab ID | Date Sampled | Date Extracted | Date Analyzed |
|---|---|---|---|---|---|---|---|
| 1201389-012A | 01/17/12 1:50 PM | 01/17/12 | 01/19/12 4:17 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.

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# QC SUMMARY REPORT FOR SW8015B

W.O. Sample Matrix: Water | QC Matrix: Water | BatchID: 64068 | WorkOrder: 1201389

**EPA Method: SW8015B** **Extraction: SW3510C** **Spiked Sample ID: N/A**

| Analyte | Sample | Spiked | MS | MSD | MS-MSD | LCS | Acceptance Criteria (%) | | |
|---|---|---|---|---|---|---|---|---|---|
| | µg/L | µg/L | % Rec. | % Rec. | % RPD | % Rec. | MS / MSD | RPD | LCS |
| TPH-Diesel (C10-C23) | N/A | 1000 | N/A | N/A | N/A | 120 | N/A | N/A | 70 - 130 |
| %SS: | N/A | 625 | N/A | N/A | N/A | 89 | N/A | N/A | 70 - 130 |

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

BATCH 64068 SUMMARY

| Lab ID | Date Sampled | Date Extracted | Date Analyzed | Lab ID | Date Sampled | Date Extracted | Date Analyzed |
|---|---|---|---|---|---|---|---|
| 1201389-032A | 01/17/12 | 01/18/12 | 01/18/12 9:53 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.

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# QC SUMMARY REPORT FOR SW8015B

W.O. Sample Matrix: Soil | QC Matrix: Soil | BatchID: 64089 | WorkOrder: 1201389

**EPA Method: SW8015B** **Extraction: SW3550B** **Spiked Sample ID: 1201389-025A**

| Analyte | Sample | Spiked | MS | MSD | MS-MSD | LCS | Acceptance Criteria (%) | | |
|---|---|---|---|---|---|---|---|---|---|
| | mg/Kg | mg/Kg | % Rec. | % Rec. | % RPD | % Rec. | MS / MSD | RPD | LCS |
| TPH-Diesel (C10-C23) | 3.2 | 40 | 126 | 126 | 0 | 116 | 70 - 130 | 30 | 70 - 130 |
| %SS: | 104 | 25 | 105 | 104 | 0.818 | 97 | 70 - 130 | 30 | 70 - 130 |

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

BATCH 64089 SUMMARY

| Lab ID | Date Sampled | Date Extracted | Date Analyzed | Lab ID | Date Sampled | Date Extracted | Date Analyzed |
|---|---|---|---|---|---|---|---|
| 1201389-013A | 01/17/12 2:05 PM | 01/17/12 | 01/19/12 1:52 AM | 1201389-016A | 01/17/12 8:25 AM | 01/18/12 | 01/19/12 3:04 AM |
| 1201389-018A | 01/17/12 8:55 AM | 01/17/12 | 01/19/12 7:56 AM | 1201389-019A | 01/17/12 9:15 AM | 01/17/12 | 01/19/12 6:43 AM |
| 1201389-021A | 01/17/12 10:40 AM | 01/17/12 | 01/19/12 10:25 AM | 1201389-022A | 01/17/12 10:50 AM | 01/17/12 | 01/19/12 9:11 AM |
| 1201389-025A | 01/17/12 11:33 AM | 01/17/12 | 01/19/12 7:56 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.

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# QC SUMMARY REPORT FOR SW8260B

W.O. Sample Matrix: Water | QC Matrix: Water | BatchID: 64129 | WorkOrder: 1201389

**EPA Method: SW8260B** **Extraction: SW5030B** **Spiked Sample ID: 1201368-001A**

| Analyte | Sample | Spiked | MS | MSD | MS-MSD | LCS | Acceptance Criteria (%) | | |
|---|---|---|---|---|---|---|---|---|---|
| | µg/L | µg/L | % Rec. | % Rec. | % RPD | % Rec. | MS / MSD | RPD | LCS |
| tert-Amyl methyl ether (TAME) | ND | 10 | 95.2 | 99.8 | 4.74 | 98.9 | 70 - 130 | 20 | 70 - 130 |
| Benzene | ND | 10 | 83.7 | 93 | 10.5 | 100 | 70 - 130 | 20 | 70 - 130 |
| t-Butyl alcohol (TBA) | ND | 40 | 100 | 102 | 1.49 | 89.8 | 70 - 130 | 20 | 70 - 130 |
| Chlorobenzene | ND | 10 | 81.6 | 90.2 | 9.97 | 99.5 | 70 - 130 | 20 | 70 - 130 |
| 1,2-Dibromoethane (EDB) | ND | 10 | 94.6 | 102 | 7.18 | 101 | 70 - 130 | 20 | 70 - 130 |
| 1,2-Dichloroethane (1,2-DCA) | ND | 10 | 93.9 | 101 | 7.39 | 101 | 70 - 130 | 20 | 70 - 130 |
| 1,1-Dichloroethene | ND | 10 | 89.9 | 104 | 15.0 | 110 | 70 - 130 | 20 | 70 - 130 |
| Diisopropyl ether (DIPE) | ND | 10 | 87.8 | 92.2 | 4.82 | 97.1 | 70 - 130 | 20 | 70 - 130 |
| Ethyl tert-butyl ether (ETBE) | ND | 10 | 92.6 | 96.5 | 4.17 | 98.4 | 70 - 130 | 20 | 70 - 130 |
| Methyl-t-butyl ether (MTBE) | 3.5 | 10 | 99.7 | 103 | 2.79 | 96.3 | 70 - 130 | 20 | 70 - 130 |
| Toluene | ND | 10 | 80.6 | 88.9 | 9.87 | 99.7 | 70 - 130 | 20 | 70 - 130 |
| Trichloroethene | ND | 10 | 89.1 | 98.7 | 10.2 | 107 | 70 - 130 | 20 | 70 - 130 |
| %SS1: | 103 | 25 | 108 | 107 | 1.19 | 102 | 70 - 130 | 20 | 70 - 130 |
| %SS2: | 100 | 25 | 98 | 99 | 0.690 | 101 | 70 - 130 | 20 | 70 - 130 |
| %SS3: | 99 | 2.5 | 98 | 100 | 1.86 | 101 | 70 - 130 | 20 | 70 - 130 |

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

BATCH 64129 SUMMARY

| Lab ID | Date Sampled | Date Extracted | Date Analyzed | Lab ID | Date Sampled | Date Extracted | Date Analyzed |
|---|---|---|---|---|---|---|---|
| 1201389-024B | 01/17/12 11:10 AM | 01/19/12 | 01/19/12 5:58 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.

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

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

DHS ELAP Certification 1644

QA/QC Officer

McCampbell Analytical, Inc.
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# QC SUMMARY REPORT FOR SW8021B/8015Bm

W.O. Sample Matrix: Water | QC Matrix: Water | BatchID: 64066 | WorkOrder: 1201389

**EPA Method: SW8021B/8015Bm** **Extraction: SW5030B** **Spiked Sample ID: 1201361-005A**

| Analyte | Sample | Spiked | MS | MSD | MS-MSD | LCS | Acceptance Criteria (%) | | |
|---|---|---|---|---|---|---|---|---|---|
| | µg/L | µg/L | % Rec. | % Rec. | % RPD | % Rec. | MS / MSD | RPD | LCS |
| TPH(btex)£ | ND | 60 | 83.5 | 82 | 1.88 | 83.6 | 70 - 130 | 20 | 70 - 130 |
| MTBE | ND | 10 | 106 | 108 | 1.82 | 107 | 70 - 130 | 20 | 70 - 130 |
| Benzene | ND | 10 | 98.9 | 102 | 3.01 | 100 | 70 - 130 | 20 | 70 - 130 |
| Toluene | ND | 10 | 102 | 104 | 2.57 | 102 | 70 - 130 | 20 | 70 - 130 |
| Ethylbenzene | ND | 10 | 107 | 111 | 2.98 | 108 | 70 - 130 | 20 | 70 - 130 |
| Xylenes | ND | 30 | 106 | 109 | 2.38 | 107 | 70 - 130 | 20 | 70 - 130 |
| %SS: | 103 | 10 | 91 | 91 | 0 | 93 | 70 - 130 | 20 | 70 - 130 |

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

BATCH 64066 SUMMARY

| Lab ID | Date Sampled | Date Extracted | Date Analyzed | Lab ID | Date Sampled | Date Extracted | Date Analyzed |
|---|---|---|---|---|---|---|---|
| 1201389-023B | 01/17/12 10:20 AM | 01/20/12 | 01/20/12 6:06 AM | 1201389-024A | 01/17/12 11:10 AM | 01/20/12 | 01/20/12 6:35 AM |
| 1201389-032B | 01/17/12 | 01/23/12 | 01/23/12 8:53 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.

DHS ELAP Certification 1644

QA/QC Officer

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# QC SUMMARY REPORT FOR SW6020

W.O. Sample Matrix: Soil | QC Matrix: Soil | BatchID: 64079 | WorkOrder: 1201389

**EPA Method: SW6020** **Extraction: SW3050B** **Spiked Sample ID: 1201389-025A**

| Analyte | Sample | Spiked | MS | MSD | MS-MSD | LCS | Acceptance Criteria (%) | | |
|---|---|---|---|---|---|---|---|---|---|
| | mg/Kg | mg/Kg | % Rec. | % Rec. | % RPD | % Rec. | MS / MSD | RPD | LCS |
| Antimony | 1.2 | 50 | 96.1 | 95.4 | 0.754 | 89.1 | 75 - 125 | 20 | 75 - 125 |
| Arsenic | 4.0 | 50 | 94.5 | 92.7 | 1.77 | 99.5 | 75 - 125 | 20 | 75 - 125 |
| Barium | 130 | 500 | 98.1 | 97.6 | 0.419 | 97.8 | 75 - 125 | 20 | 75 - 125 |
| Beryllium | ND | 50 | 103 | 102 | 0.813 | 97.6 | 75 - 125 | 20 | 75 - 125 |
| Cadmium | ND | 50 | 97.8 | 96.7 | 1.13 | 90.2 | 75 - 125 | 20 | 75 - 125 |
| Chromium | 38 | 50 | 82.3 | 82.7 | 0.254 | 95.3 | 75 - 125 | 20 | 75 - 125 |
| Cobalt | 3.7 | 50 | 94.5 | 93.5 | 1.03 | 101 | 75 - 125 | 20 | 75 - 125 |
| Copper | 18 | 50 | 89.3 | 90 | 0.571 | 99.4 | 75 - 125 | 20 | 75 - 125 |
| Lead | 140 | 50 | 118 | 115 | 0.717 | 97.5 | 75 - 125 | 20 | 75 - 125 |
| Mercury | 0.32 | 1.25 | 96.8 | 94.5 | 1.91 | 106 | 75 - 125 | 20 | 75 - 125 |
| Molybdenum | ND | 50 | 94.6 | 93.9 | 0.758 | 94.1 | 75 - 125 | 20 | 75 - 125 |
| Nickel | 17 | 50 | 88.4 | 89 | 0.506 | 98.1 | 75 - 125 | 20 | 75 - 125 |
| Selenium | ND | 50 | 104 | 99.3 | 4.44 | 91.5 | 75 - 125 | 20 | 75 - 125 |
| Silver | ND | 50 | 98.7 | 98.1 | 0.546 | 99.2 | 75 - 125 | 20 | 75 - 125 |
| Thallium | ND | 50 | 95.3 | 94 | 1.41 | 101 | 75 - 125 | 20 | 75 - 125 |
| Vanadium | 28 | 50 | 84.2 | 85.9 | 1.18 | 97.8 | 75 - 125 | 20 | 75 - 125 |
| Zinc | 140 | 500 | 87.9 | 88.1 | 0.155 | 92.8 | 75 - 125 | 20 | 75 - 125 |
| %SS: | 116 | 500 | 102 | 103 | 1.15 | 99 | 70 - 130 | 20 | 70 - 130 |

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

BATCH 64079 SUMMARY

| Lab ID | Date Sampled | Date Extracted | Date Analyzed | Lab ID | Date Sampled | Date Extracted | Date Analyzed |
|---|---|---|---|---|---|---|---|
| 1201389-025A | 01/17/12 11:33 AM | 01/17/12 | 01/18/12 4:26 PM | 1201389-025A | 01/17/12 11:33 AM | 01/17/12 | 01/24/12 2:21 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

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# QC SUMMARY REPORT FOR SW8021B/8015Bm

W.O. Sample Matrix: Soil | QC Matrix: Soil | BatchID: 64047 | WorkOrder: 1201389

**EPA Method: SW8021B/8015Bm** **Extraction: SW5030B** **Spiked Sample ID: 1201389-012A**

| Analyte | Sample | Spiked | MS | MSD | MS-MSD | LCS | Acceptance Criteria (%) | | |
|---|---|---|---|---|---|---|---|---|---|
| | mg/Kg | mg/Kg | % Rec. | % Rec. | % RPD | % Rec. | MS / MSD | RPD | LCS |
| TPH(btex)£ | ND | 0.60 | 80.2 | 79.7 | 0.718 | 127 | 70 - 130 | 20 | 70 - 130 |
| MTBE | ND | 0.10 | 110 | 108 | 2.16 | 92.5 | 70 - 130 | 20 | 70 - 130 |
| Benzene | ND | 0.10 | 104 | 105 | 1.19 | 111 | 70 - 130 | 20 | 70 - 130 |
| Toluene | ND | 0.10 | 106 | 108 | 1.08 | 111 | 70 - 130 | 20 | 70 - 130 |
| Ethylbenzene | ND | 0.10 | 112 | 112 | 0 | 111 | 70 - 130 | 20 | 70 - 130 |
| Xylenes | ND | 0.30 | 109 | 110 | 0.680 | 114 | 70 - 130 | 20 | 70 - 130 |
| %SS: | 115 | 0.10 | 110 | 109 | 0.635 | 109 | 70 - 130 | 20 | 70 - 130 |

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

BATCH 64047 SUMMARY

| Lab ID | Date Sampled | Date Extracted | Date Analyzed | Lab ID | Date Sampled | Date Extracted | Date Analyzed |
|---|---|---|---|---|---|---|---|
| 1201389-002A | 01/17/12 12:20 PM | 01/17/12 | 01/19/12 6:12 PM | 1201389-003A | 01/17/12 12:40 PM | 01/17/12 | 01/21/12 2:47 AM |
| 1201389-005A | 01/17/12 11:20 AM | 01/17/12 | 01/18/12 5:08 PM | 1201389-009A | 01/17/12 2:20 PM | 01/17/12 | 01/18/12 2:06 PM |
| 1201389-010A | 01/17/12 2:40 PM | 01/17/12 | 01/18/12 1:06 PM | 1201389-012A | 01/17/12 1:50 PM | 01/17/12 | 01/21/12 3:47 AM |
| 1201389-013A | 01/17/12 2:05 PM | 01/17/12 | 01/18/12 6:20 PM | 1201389-018A | 01/17/12 8:55 AM | 01/17/12 | 01/18/12 8:38 PM |
| 1201389-019A | 01/17/12 9:15 AM | 01/17/12 | 01/18/12 9:08 PM | 1201389-021A | 01/17/12 10:40 AM | 01/17/12 | 01/18/12 10:08 PM |
| 1201389-022A | 01/17/12 10:50 AM | 01/17/12 | 01/18/12 11:08 PM | 1201389-025A | 01/17/12 11:33 AM | 01/17/12 | 01/18/12 11:38 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 = 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.

DHS ELAP Certification 1644

QA/QC Officer

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# QC SUMMARY REPORT FOR SW8021B/8015Bm

W.O. Sample Matrix: Soil | QC Matrix: Soil | BatchID: 64086 | WorkOrder: 1201389

**EPA Method: SW8021B/8015Bm** **Extraction: SW5030B** **Spiked Sample ID: 1201381-012A**

| Analyte | Sample | Spiked | MS | MSD | MS-MSD | LCS | Acceptance Criteria (%) | | |
|---|---|---|---|---|---|---|---|---|---|
| | mg/Kg | mg/Kg | % Rec. | % Rec. | % RPD | % Rec. | MS / MSD | RPD | LCS |
| TPH(btex)£ | ND | 0.60 | 129 | 121 | 6.22 | 123 | 70 - 130 | 20 | 70 - 130 |
| MTBE | ND | 0.10 | 92.8 | 87.9 | 5.51 | 101 | 70 - 130 | 20 | 70 - 130 |
| Benzene | ND | 0.10 | 108 | 108 | 0 | 113 | 70 - 130 | 20 | 70 - 130 |
| Toluene | ND | 0.10 | 107 | 108 | 0.826 | 111 | 70 - 130 | 20 | 70 - 130 |
| Ethylbenzene | ND | 0.10 | 108 | 104 | 4.40 | 112 | 70 - 130 | 20 | 70 - 130 |
| Xylenes | ND | 0.30 | 112 | 107 | 4.29 | 115 | 70 - 130 | 20 | 70 - 130 |
| %SS: | 111 | 0.10 | 113 | 109 | 3.57 | 120 | 70 - 130 | 20 | 70 - 130 |

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

BATCH 64086 SUMMARY

| Lab ID | Date Sampled | Date Extracted | Date Analyzed | Lab ID | Date Sampled | Date Extracted | Date Analyzed |
|---|---|---|---|---|---|---|---|
| 1201389-016A | 01/17/12 8:25 AM | 01/18/12 | 01/18/12 8:08 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.

DHS ELAP Certification 1644

QA/QC Officer

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# Analytical Report

| | | |
|---|---|---|
| AEI Consultants | Client Project ID: #298931; Buestad | Date Sampled: 01/17/12 |
| | | Date Received: 01/17/12 |
| 2500 Camino Diablo, Ste. #200 | Client Contact: Harmony TomSun | Date Reported: 01/24/12 |
| Walnut Creek, CA 94597 | Client P.O.: | Date Completed: 01/30/12 |

**WorkOrder: 1201389 A**

January 30, 2012

Dear Harmony:

Enclosed within are:

1) The results of the **2** analyzed samples from your project: **#298931; Buestad,**
2) QC data for the above samples, and
3) A copy of the chain of custody.

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.

***The analytical results relate only to the items tested.***

120139?


# McCAMPBELL ANALYTICAL, INC.
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# CHAIN OF CUSTODY RECORD

**TURN AROUND TIME** ☐ RUSH ☐ 24 HR ☐ 48 HR ☐ 72 HR ■ 5 DAY

**GeoTracker EDF** ☐ **PDF** ■ **Excel** ☐ **Write On (DW)** ☐

☐ Check if sample is effluent and "J" flag is required

| | |
|---|---|
| **Report To:** Harmony TomSun | **Bill To:** AEI |
| **Company:** AEI Consultants, 2500 Camino Diablo, Walnut Creek, CA 94597 | |
| **PO#:** WC083425 | |
| **Global ID:** | **E-Mail:** htomsun@aeiconsultants.com |
| **Tele:** ( 925) 746-6000 | **Fax:** (925) 746-6099 |
| **Project #:** 298931 | **Project Name:** Buestad |
| **Project Location:** 1630 Park Street, Alameda, California | |
| **Sampler Signature:** | |

| SAMPLE ID | LOCATION/ Field Point Name | SAMPLING Date | SAMPLING Time | # Containers | Type Containers | MATRIX: Water | Soil | Air | Sludge | Other | METHOD PRESERVED: ICE | HCL | $HNO_3$ | Other | TPH as gasoline, diesel and mo by EPA 8015M | MTBE and BTEX by EPA 8021 | VOCs by EPA Method 8260 | CAM 17 Metals | TPH-5 by EPA Method (8)15M | Hold | Comments |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| AEI-20-35' | AEI-20 | 1/14 | 12:15 | 1 | liner | | X | | | | X | | | | | | | | | X | |
| AEI-20-7.5' | " | " | 12:20 | " | " | | " | | | | " | | | | | X | | | X | | |
| AEI-20-15' | " | " | 12:40 | " | " | | " | | | | " | | | | | X | | | X | | |
| AEI-21-3' | AEI-21 | " | 11:15 | " | " | | " | | | | " | | | | | | | | | X | |
| AEI-21-7' | " | " | 11:20 | " | " | | " | | | | " | | | | | X | | | X | | |
| AEI-21-9' | " | " | 11:23 | " | " | | " | | | | " | | | | | | | | | X | |
| AEI-22-4' | AEI-22 | " | 2:10 | " | " | | " | | | | " | | | | | X | | | X | X | |
| AEI-22-7' | " | " | 2:15 | " | " | | " | | | | " | | | | | X | | | X | X | |
| AEI-22-9' | " | " | 2:20 | " | " | | " | | | | " | | | | | X | | | X | | |
| AEI-22-14' | " | " | 2:40 | " | " | | " | | | | " | | | | | X | | | X | | |
| AEI-23-3' | AEI-23 | " | 1:45 | " | " | | " | | | | " | | | | | | | | | X | |

**MAI clients MUST disclose any dangerous chemicals known to be present in their submitted samples in concentrations that may cause immediate harm or serious future health endangerment as a result of brief, gloved, open air, sample handling by MAI staff. Non-disclosure incurs an immediate $250 surcharge and the client is subject to full legal liability for harm suffered. Thank you for your understanding and for allowing us to work safely.

| Relinquished By: | Date: | Time: | Received By: |
|---|---|---|---|
| | 1/17 | 4:30 | |
| Relinquished By: | Date: | Time: | Received By: |
| | 1/17 | 1805 | |
| Relinquished By: | Date: | Time: | Received By: |
| | | | |

ICE/t° 0.2 COMMENTS:
GOOD CONDITION_____
HEAD SPACE ABSENT_____
DECHLORINATED IN LAB_____
APPROPRIATE CONTAINERS_____
PRESERVED IN LAB_____

VOAS O&G METALS OTHER
PRESERVATION_____ pH<2_____

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# CHAIN OF CUSTODY RECORD

TURN AROUND TIME ☐ RUSH ☐ 24 HR ☐ 48 HR ☐ 72 HR ■ 5 DAY

GeoTracker EDF ☐ PDF ■ Excel ☐ Write On (DW) ☐

☐ Check if sample is effluent and "J" flag is required

Report To: Harmony TomSun Bill To: AEI

Company: AEI Consultants, 2500 Camino Diablo, Walnut Creek, CA 94597

PO#: WC083425

Global ID: E-Mail: htomsun@aeiconsultants.com

Tele: (925) 746-6000 Fax: (925) 746-6099

Project #: 298931 Project Name: Buestad

Project Location: 1630 Park Street, Alameda, California

Sampler Signature:

| SAMPLE ID | LOCATION/ Field Point Name | SAMPLING Date | SAMPLING Time | # Containers | Type Containers | MATRIX Water | MATRIX Soil | MATRIX Air | MATRIX Sludge | MATRIX Other | METHOD PRESERVED ICE | METHOD PRESERVED HCL | METHOD PRESERVED $HNO_3$ | METHOD PRESERVED Other | Analysis Request: TPH as gasoline, diesel and mo by EPA 8015M | Analysis Request: MTBE and BTEX by EPA 8021 | Analysis Request: VOCs by EPA Method 8260 | Analysis Request: CAM 17 Metals | Other: Hold | Comments |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| AEI-23-6' | AEI-23 | 1/17 | 1:50 | 1 | liner | | X | | | | X | | | | X | X | | | | |
| AEI-23-12.5' | " | " | 2:05 | " | " | | | | | | | | | | X | X | | | | |
| AEI-23-14.5' | " | " | 2:10 | " | " | | | | | | | | | | | | | | X | |
| AEI-24-3.5' | AEI-24 | " | 8:00 | " | " | | | | | | | | | | | | | | X | |
| AEI-24-~~12~~ 10.5' | " | " | 8:~~35~~ 25 | " | " | | | | | | | | | | X | X | | | | |
| AEI-25-4' | AEI-25 | " | 8:50 | " | " | | | | | | | | | | | | | | X | |
| AEI-25-7.5' | " | " | 8:55 | " | " | | X | | | | X | | | | X | X | | | | |
| AEI-25-14' | " | " | 9:15 | " | " | | | | | | | | | | X | X | | | | |
| AEI-26-4' | AEI-26 | " | 10:35 | " | " | | | | | | | | | | | | | | X | |
| AEI-26-7.5' | " | " | 10:40 | " | " | | | | | | | | | | X | X | | | | |
| AEI-26-14' | " | " | 10:50 | " | " | | | | | | | | | | X | X | | | | |

**Indicate here if these samples are potentially dangerous to handle:

**MAI clients MUST disclose any dangerous chemicals known to be present in their submitted samples in concentrations that may cause immediate harm or serious future health endangerment as a result of brief, gloved, open air, sample handling by MAI staff. Non-disclosure incurs an immediate $250 surcharge and the client is subject to full legal liability for harm suffered. Thank you for your understanding and for allowing us to work safely.

| Relinquished By: | Date: | Time: | Received By: |
|---|---|---|---|
| | 1/17 | 1:38 | |
| Relinquished By: | Date: | Time: | Received By: |
| | 1/17 | 1805 | |
| Relinquished By: | Date: | Time: | Received By: |
| | | | |

ICE/t°_____ COMMENTS:
GOOD CONDITION_____
HEAD SPACE ABSENT_____
DECHLORINATED IN LAB_____
APPROPRIATE CONTAINERS_____
PRESERVED IN LAB_____

VOAS O&G METALS OTHER
PRESERVATION_____ pH<2_____

★ Sample I.D Reads AEI-24-10.5ON Hold per H.T. 1/18/12
I.D changed

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Telephone: (877) 252-9262 Fax: (925) 252-9269


# CHAIN OF CUSTODY RECORD

TURN AROUND TIME ☐ RUSH ☐ 24 HR ☐ 48 HR ☐ 72 HR ■ 5 DAY

GeoTracker EDF ☐ PDF ■ Excel ☐ Write On (DW) ☐

☐ Check if sample is effluent and "J" flag is required

Report To: Harmony TomSun Bill To: AEI

Company: AEI Consultants, 2500 Camino Diablo, Walnut Creek, CA 94597

PO#: WC083425

Global ID: E-Mail: htomsun@aeiconsultants.com

Tele: (925) 746-6000 Fax: (925) 746-6099

Project #: 298931 Project Name: Buestad

Project Location: 1630 Park Street, Alameda, California

Sampler Signature:

| SAMPLE ID | LOCATION/ Field Point Name | SAMPLING Date | SAMPLING Time | # Containers | Type Containers | MATRIX Water | MATRIX Soil | MATRIX Air | MATRIX Sludge | MATRIX Other | METHOD PRESERVED ICE | METHOD PRESERVED HCL | METHOD PRESERVED $HNO_3$ | METHOD PRESERVED Other | Analysis Request: TPH as gasoline, diesel and mo by EPA 8015M | Analysis Request: MTBE and BTEX by EPA 8021 | Analysis Request: VOCs by EPA Method 8260 | Analysis Request: CAM 17 Metals | Other: Hold | Comments |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| AEI-26 | AEI-26 | 1/17 | 10:20 | 6 | AMBS | X | | | | | X | | | | X | X | | | | |
| AEI-27 | AEI-27 | 1/17 | 11:10 | 4 | AMBS | X | | | | | X | | | | X | X | X | X | | |
| AEI-27-3' | " | 1/17 | 11:33 | 1 | liner | | X | | | | X | | | | X | | X | X | | |
| AEI-27-8' | " | " | 11:37 | 1 | liner | | X | | | | X | | | | | | | | X | |
| AEI-27-11' | " | " | 11:42 | 1 | " | | | | | | | | | | | | | | X | |
| AEI-27-14' | " | " | 11:45 | 1 | " | | | | | | | | | | | | | | X | |
| AEI-28-3' | AEI-28 | " | 2:50 | 1 | " | | | | | | | | | | | | | | X | |
| AEI-28-7' | " | " | 2:55 | 1 | " | | | | | | | | | | X | X | | | | Set up 1/27/12 RUSH TAT 5 day Charge. |
| AEI-28-13' | " | " | 3:05 | 1 | " | | | | | | | | | | X | X | | | | |
| AEI-28 | | " | | | | X | | | | | | | | | X | X | | | X | |
| | | | | | | | | | | | | | | | | | | | | |

**MAI clients MUST disclose any dangerous chemicals known to be present in their submitted samples in concentrations that may cause immediate harm or serious future health endangerment as a result of brief, gloved, open air, sample handling by MAI staff. Non-disclosure incurs an immediate $250 surcharge and the client is subject to full legal liability for harm suffered. Thank you for your understanding and for allowing us to work safely.

| Relinquished By: | Date: | Time: | Received By: |
|---|---|---|---|
| | 1/17 | 4:38 | |
| Relinquished By: | Date: | Time: | Received By: |
| | 1/17 | 1805 | |
| Relinquished By: | Date: | Time: | Received By: |
| | | | |

ICE/t°_____ COMMENTS:
GOOD CONDITION_____
HEAD SPACE ABSENT_____
DECHLORINATED IN LAB_____
APPROPRIATE CONTAINERS_____
PRESERVED IN LAB_____

| | VOAS | O&G | METALS | OTHER |
|---|---|---|---|---|
| PRESERVATION | | | pH<2 | |

(1) placed on Hold 1/18/12 per H.T OFF Hold per HT

**McCampbell Analytical, Inc.**
1534 Willow Pass Rd
Pittsburg, CA 94565-1701
(925) 252-9262

# CHAIN-OF-CUSTODY RECORD



**WorkOrder: 1201389 A** **ClientCode: AEL**

☐ WaterTrax ☐ WriteOn ☐ EDF ☐ Excel ☐ Fax ☑ Email ☐ HardCopy ☐ ThirdParty ☐ J-flag

**Report to:**
Harmony TomSun
AEI Consultants
2500 Camino Diablo, Ste. #200
Walnut Creek, CA 94597
(408) 559-7600 FAX: (408) 559-7601

Email: htomsun@aeiconsultants.com
cc:
PO:
ProjectNo: #298931; Buestad

**Bill to:**
Sara Guerin
AEI Consultants
2500 Camino Diablo, Ste. #200
Walnut Creek, CA 94597
AccountsPayable@AEIConsultants.co

**Requested TAT:** 5 days
***Date Received:*** 01/17/2012
***Date Add-On:*** 01/27/2012
***Date Printed:*** 01/27/2012

| Lab ID | Client ID | Matrix | Collection Date | Hold | Requested Tests (See legend below) | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 |
| 1201389-030 | AEI-28-7' | Soil | 1/17/2012 14:55 | ☐ | A | A | | | | | | | | | | |
| 1201389-031 | AEI-28-13' | Soil | 1/17/2012 15:05 | ☐ | A | A | | | | | | | | | | |

**Test Legend:**

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| 1 | G-MBTEX_S | 2 | TPH(DMO)_S | 3 | | 4 | | 5 | |
| 6 | | 7 | | 8 | | 9 | | 10 | |
| 11 | | 12 | | | | | | | |

**Prepared by: Ana Venegas**

**Comments:** TPH DMO GMBTEX added on 1/27/12 rush tat

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.
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http://www.mccampbell.com / E-mail: main@mccampbell.com

| | | |
|---|---|---|
| AEI Consultants | Client Project ID: #298931; Buestad | Date Sampled: 01/17/12 |
| | | Date Received: 01/17/12 |
| 2500 Camino Diablo, Ste. #200 | Client Contact: Harmony TomSun | Date Extracted: 01/27/12 |
| Walnut Creek, CA 94597 | Client P.O.: | Date Analyzed: 01/27/12 |

**Gasoline Range (C6-C12) Volatile Hydrocarbons as Gasoline with BTEX and MTBE***

Extraction method: SW5030B Analytical methods: SW8021B/8015Bm Work Order: 1201389

| Lab ID | Client ID | Matrix | TPH(g) | MTBE | Benzene | Toluene | Ethylbenzene | Xylenes | DF | % SS | Comments |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 030A | AEI-28-7' | S | ND | ND | ND | ND | ND | ND | 1 | 124 | |
| 031A | AEI-28-13' | S | 7.8 | ND | 0.050 | 0.29 | 0.31 | 1.4 | 1 | 114 | d1 |

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| Reporting Limit for DF =1; ND means not detected at or above the reporting limit | W | 50 | 5.0 | 0.5 | 0.5 | 0.5 | 0.5 | ug/L |
| | S | 1.0 | 0.05 | 0.005 | 0.005 | 0.005 | 0.005 | mg/Kg |

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

# cluttered chromatogram; sample peak coelutes w/surrogate peak; low surrogate recovery due to matrix interference; %SS = Percent Recovery of Surrogate Standard; DF = Dilution Factor

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

DHS ELAP Certification 1644

Angela Rydelius, Lab Manager

McCampbell Analytical, Inc.
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http://www.mccampbell.com / E-mail: main@mccampbell.com

| | | |
|---|---|---|
| AEI Consultants | Client Project ID: #298931; Buestad | Date Sampled: 01/17/12 |
| | | Date Received: 01/17/12 |
| 2500 Camino Diablo, Ste. #200 | Client Contact: Harmony TomSun | Date Extracted: 01/27/12 |
| Walnut Creek, CA 94597 | Client P.O.: | Date Analyzed: 01/27/12 |

**Total Extractable Petroleum Hydrocarbons***

Extraction method: SW3550B Analytical methods: SW8015B Work Order: 1201389

| Lab ID | Client ID | Matrix | TPH-Diesel (C10-C23) | TPH-Motor Oil (C18-C36) | DF | % SS | Comments |
|---|---|---|---|---|---|---|---|
| 1201389-030A | AEI-28-7' | S | ND | ND | 1 | 108 | |
| 1201389-031A | AEI-28-13' | S | 2.0 | ND | 1 | 109 | e2 |
| | | | | | | | |
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|---|---|---|---|---|
| Reporting Limit for DF =1; ND means not detected at or above the reporting limit | W | NA | NA | ug/L |
| | S | 1.0 | 5.0 | mg/Kg |

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

# cluttered chromatogram resulting in coeluted surrogate and sample peaks, or; surrogate peak is on elevated baseline, or; surrogate has been diminished by dilution of original extract; %SS = Percent Recovery of Surrogate Standard; DF = Dilution Factor

The following descriptions of the TPH chromatogram are cursory in nature and McCampbell Analytical is not responsible for their interpretation:
e2) diesel range compounds are significant; no recognizable pattern

DHS ELAP Certification 1644

Angela Rydelius, Lab Manager

McCampbell Analytical, Inc.
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# QC SUMMARY REPORT FOR SW8015B

W.O. Sample Matrix: Soil | QC Matrix: Soil | BatchID: 64309 | WorkOrder: 1201389

**EPA Method: SW8015B** **Extraction: SW3550B** **Spiked Sample ID: 1201701-002A**

| Analyte | Sample | Spiked | MS | MSD | MS-MSD | LCS | Acceptance Criteria (%) | | |
|---|---|---|---|---|---|---|---|---|---|
| | mg/Kg | mg/Kg | % Rec. | % Rec. | % RPD | % Rec. | MS / MSD | RPD | LCS |
| TPH-Diesel (C10-C23) | 2.4 | 40 | 125 | 127 | 1.31 | 117 | 70 - 130 | 30 | 70 - 130 |
| %SS: | 107 | 25 | 108 | 107 | 0.557 | 98 | 70 - 130 | 30 | 70 - 130 |

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

BATCH 64309 SUMMARY

| Lab ID | Date Sampled | Date Extracted | Date Analyzed | Lab ID | Date Sampled | Date Extracted | Date Analyzed |
|---|---|---|---|---|---|---|---|
| 1201389-030A | 01/17/12 2:55 PM | 01/27/12 | 01/27/12 3:05 PM | 1201389-031A | 01/17/12 3:05 PM | 01/27/12 | 01/27/12 6:47 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.

DHS ELAP Certification 1644

QA/QC Officer

McCampbell Analytical, Inc.
*"When Quality Counts"*

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# QC SUMMARY REPORT FOR SW8021B/8015Bm

W.O. Sample Matrix: Soil | QC Matrix: Soil | BatchID: 64426 | WorkOrder: 1201389

**EPA Method: SW8021B/8015Bm** **Extraction: SW5030B** **Spiked Sample ID: 1201389-030A**

| Analyte | Sample | Spiked | MS | MSD | MS-MSD | LCS | Acceptance Criteria (%) | | |
|---|---|---|---|---|---|---|---|---|---|
| | mg/Kg | mg/Kg | % Rec. | % Rec. | % RPD | % Rec. | MS / MSD | RPD | LCS |
| TPH(btex)£ | ND | 0.60 | 120 | 121 | 0.676 | 123 | 70 - 130 | 20 | 70 - 130 |
| MTBE | ND | 0.10 | 98.9 | 94.8 | 4.28 | 110 | 70 - 130 | 20 | 70 - 130 |
| Benzene | ND | 0.10 | 112 | 110 | 2.05 | 119 | 70 - 130 | 20 | 70 - 130 |
| Toluene | ND | 0.10 | 111 | 109 | 1.63 | 119 | 70 - 130 | 20 | 70 - 130 |
| Ethylbenzene | ND | 0.10 | 111 | 110 | 0.145 | 120 | 70 - 130 | 20 | 70 - 130 |
| Xylenes | ND | 0.30 | 112 | 113 | 1.07 | 121 | 70 - 130 | 20 | 70 - 130 |
| %SS: | 124 | 0.10 | 101 | 105 | 4.06 | 115 | 70 - 130 | 20 | 70 - 130 |

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

BATCH 64426 SUMMARY

| Lab ID | Date Sampled | Date Extracted | Date Analyzed | Lab ID | Date Sampled | Date Extracted | Date Analyzed |
|---|---|---|---|---|---|---|---|
| 1201389-030A | 01/17/12 2:55 PM | 01/27/12 | 01/27/12 10:00 PM | 1201389-031A | 01/17/12 3:05 PM | 01/27/12 | 01/27/12 10:30 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.

DHS ELAP Certification 1644

QA/QC Officer

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http://www.mccampbell.com / E-mail: main@mccampbell.com

# Analytical Report

| | | |
|---|---|---|
| AEI Consultants | Client Project ID: #298931; Buestad | Date Sampled: 12/06/11 |
| | | Date Received: 12/06/11 |
| 2500 Camino Diablo, Ste. #200 | Client Contact: Bryan Campbell | Date Reported: 12/12/11 |
| Walnut Creek, CA 94597 | Client P.O.: #WC083369 | Date Completed: 12/12/11 |

**WorkOrder: 1112136**

December 12, 2011

Dear Bryan:

Enclosed within are:

1) The results of the **6** analyzed samples from your project: **#298931; Buestad,**
2) QC data for the above samples, and
3) A copy of the chain of custody.

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.

***The analytical results relate only to the items tested.***

# McCAMPBELL ANALYTICAL, INC.

1534 WILLOW PASS ROAD
PITTSBURG, CA 94565-1701
Website: www.mccampbell.com Email: main@mccampbell.com
Telephone: (877) 252-9262 Fax: (925) 252-9269

1112136

# CHAIN OF CUSTODY RECORD

**TURN AROUND TIME** ☐ RUSH ☐ 24 HR ☐ 48 HR ☐ 72 HR ■ 5 DAY

**GeoTracker EDF** ☐ **PDF** ■ **Excel** ☐ **Write On (DW)** ☐

☐ Check if sample is effluent and "J" flag is required

| | |
|---|---|
| **Report To:** Bryan Campbell | **Bill To:** |
| **Company:** AEI Consultants, 2500 Camino Diablo, Walnut Creek, CA 94597 | |
| **PO#:** WC083369 | |
| **Global ID:** T0600100655 | **E-Mail:** bcampbell@aeiconsultants.com |
| **Tele:** ( 925) 746-6044 | **Fax:** (925) 746-6099 |
| **Project #:** 298931 | **Project Name:** Buestad |
| **Project Location:** 1630 Park Street, Alameda, California | |
| **Sampler Signature:** John Sigg | |

| SAMPLE ID | LOCATION/ Field Point Name | SAMPLING Date | SAMPLING Time | # Containers | Type Containers | MATRIX: Water | Soil | Air | Sludge | Other | METHOD PRESERVED: ICE | HCL | $HNO_3$ | Other | TPH as Gasoline (8015) | MTBE, BTEX, and Fuel Oxygenates (8260) | Other | Comments |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| MW-1 | MW-1 | 12-6-11 | 0845 | 6 | VOA | X | | | | | X | X | | | X | X | | |
| MW-2 | MW-2 | | 0823 | 6 | VOA | X | | | | | X | X | | | X | X | | |
| MW-3 | MW-3 | | 0755 | 6 | VOA | X | | | | | X | X | | | X | X | | |
| DPE-1 | DPE-1 | | 0930 | 6 | VOA | X | | | | | X | X | | | X | X | | |
| DPE-2 | DPE-2 | | 1025 | 6 | VOA | X | | | | | X | X | | | X | X | | |
| DPE-3 | DPE-3 | | 0955 | 6 | VOA | X | | | | | X | X | | | X | X | | |
| | | | | | | | | | | | | | | | | | | |
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**Analysis Request** | **Other** | **Comments**

**Indicate here if these samples are potentially dangerous to handle:

**MAI clients MUST disclose any dangerous chemicals known to be present in their submitted samples in concentrations that may cause immediate harm or serious future health endangerment as a result of brief, gloved, open air, sample handling by MAI staff. Non-disclosure incurs an immediate $250 surcharge and the client is subject to full legal liability for harm suffered. Thank you for your understanding and for allowing us to work safely.

| Relinquished By: | Date: | Time: | Received By: |
|---|---|---|---|
| John Sigg | 12-6-11 | 1352 | |
| Relinquished By: | Date: | Time: | Received By: |
| Relinquished By: | Date: | Time: | Received By: |

ICE/t° 5.2

COMMENTS:

GOOD CONDITION_____
HEAD SPACE ABSENT_____
DECHLORINATED IN LAB_____
APPROPRIATE CONTAINERS_____
PRESERVED IN LAB_____

| | VOAS | O&G | METALS | OTHER |
|---|---|---|---|---|
| PRESERVATION | | | pH<2 | |

**McCampbell Analytical, Inc.**
1534 Willow Pass Rd
Pittsburg, CA 94565-1701
(925) 252-9262

# CHAIN-OF-CUSTODY RECORD



**WorkOrder: 1112136** **ClientCode: AEL**

☐ WaterTrax ☐ WriteOn ☑ EDF ☐ Excel ☐ Fax ☑ Email ☐ HardCopy ☐ ThirdParty ☐ J-flag

**Report to:**
Bryan Campbell
AEI Consultants
2500 Camino Diablo, Ste. #200
Walnut Creek, CA 94597
(510) 420-3355 FAX: (408) 559-7601

Email: bcampbell@aeiconsultants.com
cc:
PO: #WC083369
ProjectNo: #298931; Buestad

**Bill to:**
Sara Guerin
AEI Consultants
2500 Camino Diablo, Ste. #200
Walnut Creek, CA 94597
sguerin@aeiconsultants.com

**Requested TAT:** 5 days

***Date Received:*** **12/06/2011**
***Date Printed:*** **12/06/2011**

| Lab ID | Client ID | Matrix | Collection Date | Hold | Requested Tests (See legend below) | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 |
| 1112136-001 | MW-1 | Water | 12/6/2011 8:45 | ☐ | A | B | A | | | | | | | | | |
| 1112136-002 | MW-2 | Water | 12/6/2011 8:23 | ☐ | A | B | | | | | | | | | | |
| 1112136-003 | MW-3 | Water | 12/6/2011 7:55 | ☐ | A | B | | | | | | | | | | |
| 1112136-004 | DPE-1 | Water | 12/6/2011 9:30 | ☐ | A | B | | | | | | | | | | |
| 1112136-005 | DPE-2 | Water | 12/6/2011 10:25 | ☐ | A | B | | | | | | | | | | |
| 1112136-006 | DPE-3 | Water | 12/6/2011 9:55 | ☐ | A | B | | | | | | | | | | |

**Test Legend:**

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| 1 | G-MBTEX_W | 2 | MBTEXOXY-8260B_W | 3 | PREDF REPORT | 4 | | 5 | |
| 6 | | 7 | | 8 | | 9 | | 10 | |
| 11 | | 12 | | | | | | | |

**Prepared by: Zoraida Cortez**

**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.

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# Sample Receipt Checklist

Client Name: **AEI Consultants**

Date and Time Received: **12/6/2011 2:32:54 PM**

Project Name: **#298931; Buestad**

Checklist completed and reviewed by: Zoraida Cortez

WorkOrder N°: **1112136** Matrix: Water

Carrier: Client Drop-In

## 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 Preservation and Hold Time (HT) Information

| | | | |
|---|---|---|---|
| All samples received within holding time? | Yes ☑ | No ☐ | |
| Container/Temp Blank temperature | Cooler Temp: 5.2°C | | NA ☐ |
| Water - VOA vials have zero headspace / no bubbles? | Yes ☑ | No ☐ | No VOA vials submitted ☐ |
| Sample labels checked for correct preservation? | Yes ☑ | No ☐ | |
| Metal - pH acceptable upon receipt (pH<2)? | Yes ☐ | No ☐ | NA ☑ |
| Samples Received on Ice? | Yes ☑ | No ☐ | |

(Ice Type: WET ICE )

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

Client contacted: Date contacted: Contacted by:

Comments:

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| | | |
|---|---|---|
| AEI Consultants | Client Project ID: #298931; Buestad | Date Sampled: 12/06/11 |
| | | Date Received: 12/06/11 |
| 2500 Camino Diablo, Ste. #200 | Client Contact: Bryan Campbell | Date Extracted 12/07/11-12/09/11 |
| Walnut Creek, CA 94597 | Client P.O.: #WC083369 | Date Analyzed 12/07/11-12/09/11 |

**Gasoline Range (C6-C12) Volatile Hydrocarbons as Gasoline***

Extraction method: SW5030B Analytical methods: SW8015Bm Work Order: 1112136

| Lab ID | Client ID | Matrix | TPH(g) | DF | % SS | Comments |
|---|---|---|---|---|---|---|
| 001A | MW-1 | W | 900 | 1 | 94 | d1 |
| 002A | MW-2 | W | 4800 | 10 | 115 | d1 |
| 003A | MW-3 | W | 1800 | 1 | 102 | d1 |
| 004A | DPE-1 | W | 9200 | 10 | 106 | d1 |
| 005A | DPE-2 | W | 22,000 | 10 | 117 | d1 |
| 006A | DPE-3 | W | 6400 | 10 | 115 | d1 |
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|---|---|---|---|
| Reporting Limit for DF =1; ND means not detected at or above the reporting limit | W | 50 | µg/L |
| | S | NA | NA |

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

# cluttered chromatogram; sample peak coelutes w/surrogate peak; low surrogate recovery due to matrix interference. %SS = Percent Recovery of Surrogate Standard; DF = Dilution Factor

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

DHS ELAP Certification 1644

Angela Rydelius, Lab Manager

McCampbell Analytical, Inc.
*"When Quality Counts"*

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Toll Free Telephone: (877) 252-9262 / Fax: (925) 252-9269
http://www.mccampbell.com / E-mail: main@mccampbell.com

| | | |
|---|---|---|
| AEI Consultants | Client Project ID: #298931; Buestad | Date Sampled: 12/06/11 |
| | | Date Received: 12/06/11 |
| 2500 Camino Diablo, Ste. #200 | Client Contact: Bryan Campbell | Date Extracted: 12/09/11-12/10/11 |
| Walnut Creek, CA 94597 | Client P.O.: #WC083369 | Date Analyzed: 12/09/11-12/10/11 |

**Oxygenates and BTEX by GC/MS***

Extraction Method: SW5030B | Analytical Method: SW8260B | Work Order: 1112136

| Lab ID | 1112136-001B | 1112136-002B | 1112136-003B | 1112136-004B | Reporting Limit for DF =1 | |
|---|---|---|---|---|---|---|
| Client ID | MW-1 | MW-2 | MW-3 | DPE-1 | | |
| Matrix | W | W | W | W | | |
| DF | 10 | 100 | 33 | 100 | S | W |
| **Compound** | **Concentration** | | | | ug/kg | µg/L |
| tert-Amyl methyl ether (TAME) | ND<5.0 | ND<50 | ND<17 | ND<50 | NA | 0.5 |
| Benzene | 160 | 1600 | 620 | 1800 | NA | 0.5 |
| t-Butyl alcohol (TBA) | ND<20 | ND<200 | ND<67 | ND<200 | NA | 2.0 |
| Diisopropyl ether (DIPE) | ND<5.0 | ND<50 | ND<17 | ND<50 | NA | 0.5 |
| Ethylbenzene | 68 | 260 | 22 | 460 | NA | 0.5 |
| Ethyl tert-butyl ether (ETBE) | ND<5.0 | ND<50 | ND<17 | ND<50 | NA | 0.5 |
| Methyl-t-butyl ether (MTBE) | ND<5.0 | ND<50 | ND<17 | ND<50 | NA | 0.5 |
| Toluene | ND<5.0 | ND<50 | 28 | 570 | NA | 0.5 |
| Xylenes, Total | 76 | ND<50 | 46 | 1100 | NA | 0.5 |
| **Surrogate Recoveries (%)** | | | | | | |
| %SS1: | 118 | 111 | 111 | 109 | | |
| %SS2: | 119 | 104 | 104 | 105 | | |
| **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 & SPLP extracts are reported in mg/L, wipe samples in µg/wipe.

ND means not detected above the reporting limit/method detection 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.

%SS = Percent Recovery of Surrogate Standard
DF = Dilution Factor

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Angela Rydelius, Lab Manager

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http://www.mccampbell.com / E-mail: main@mccampbell.com

| | | |
|---|---|---|
| AEI Consultants | Client Project ID: #298931; Buestad | Date Sampled: 12/06/11 |
| | | Date Received: 12/06/11 |
| 2500 Camino Diablo, Ste. #200 | Client Contact: Bryan Campbell | Date Extracted: 12/09/11-12/10/11 |
| Walnut Creek, CA 94597 | Client P.O.: #WC083369 | Date Analyzed: 12/09/11-12/10/11 |

**Oxygenates and BTEX by GC/MS***

Extraction Method: SW5030B | Analytical Method: SW8260B | Work Order: 1112136

| Lab ID | 1112136-005B | 1112136-006B | | | Reporting Limit for DF =1 | |
|---|---|---|---|---|---|---|
| Client ID | DPE-2 | DPE-3 | | | | |
| Matrix | W | W | | | | |
| DF | 200 | 33 | | | S | W |
| **Compound** | **Concentration** | | | | ug/kg | µg/L |
| tert-Amyl methyl ether (TAME) | ND<100 | ND<17 | | | NA | 0.5 |
| Benzene | 2100 | 550 | | | NA | 0.5 |
| t-Butyl alcohol (TBA) | ND<400 | ND<67 | | | NA | 2.0 |
| Diisopropyl ether (DIPE) | ND<100 | ND<17 | | | NA | 0.5 |
| Ethylbenzene | 650 | 180 | | | NA | 0.5 |
| Ethyl tert-butyl ether (ETBE) | ND<100 | ND<17 | | | NA | 0.5 |
| Methyl-t-butyl ether (MTBE) | ND<100 | ND<17 | | | NA | 0.5 |
| Toluene | 3300 | 560 | | | NA | 0.5 |
| Xylenes, Total | 3300 | 1000 | | | NA | 0.5 |
| **Surrogate Recoveries (%)** | | | | | | |
| %SS1: | 110 | 111 | | | | |
| %SS2: | 104 | 105 | | | | |
| **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 & SPLP extracts are reported in mg/L, wipe samples in µg/wipe.

ND means not detected above the reporting limit/method detection 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.

%SS = Percent Recovery of Surrogate Standard
DF = Dilution Factor

DHS ELAP Certification 1644

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# QC SUMMARY REPORT FOR SW8021B/8015Bm

W.O. Sample Matrix: Water | QC Matrix: Water | BatchID: 63168 | WorkOrder: 1112136

**EPA Method: SW8015Bm** **Extraction: SW5030B** **Spiked Sample ID: 1112083-004A**

| Analyte | Sample | Spiked | MS | MSD | MS-MSD | LCS | LCSD | LCS-LCSD | Acceptance Criteria (%) | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | µg/L | µg/L | % Rec. | % Rec. | % RPD | % Rec. | % Rec. | % RPD | MS / MSD | RPD | LCS/LCSD | RPD |
| TPH(btex)£ | ND | 60 | 102 | 102 | 0 | 101 | 98.6 | 2.50 | 70 - 130 | 20 | 70 - 130 | 20 |
| MTBE | ND | 10 | 106 | 108 | 1.88 | 100 | 105 | 5.12 | 70 - 130 | 20 | 70 - 130 | 20 |
| Benzene | ND | 10 | 96.4 | 97 | 0.609 | 96.2 | 96.5 | 0.404 | 70 - 130 | 20 | 70 - 130 | 20 |
| Toluene | ND | 10 | 99 | 99.6 | 0.605 | 98.4 | 99.4 | 0.966 | 70 - 130 | 20 | 70 - 130 | 20 |
| Ethylbenzene | ND | 10 | 104 | 104 | 0 | 103 | 106 | 3.00 | 70 - 130 | 20 | 70 - 130 | 20 |
| Xylenes | ND | 30 | 107 | 107 | 0 | 106 | 108 | 2.11 | 70 - 130 | 20 | 70 - 130 | 20 |
| %SS: | 107 | 10 | 90 | 91 | 0.858 | 92 | 91 | 1.52 | 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 63168 SUMMARY

| Lab ID | Date Sampled | Date Extracted | Date Analyzed | Lab ID | Date Sampled | Date Extracted | Date Analyzed |
|---|---|---|---|---|---|---|---|
| 1112136-001A | 12/06/11 8:45 AM | 12/07/11 | 12/07/11 1:38 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 = 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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QA/QC Officer

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# QC SUMMARY REPORT FOR SW8021B/8015Bm

W.O. Sample Matrix: Water | QC Matrix: Water | BatchID: 63221 | WorkOrder: 1112136

**EPA Method: SW8015Bm** **Extraction: SW5030B** **Spiked Sample ID: 1112139-006A**

| Analyte | Sample | Spiked | MS | MSD | MS-MSD | LCS | LCSD | LCS-LCSD | Acceptance Criteria (%) | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | µg/L | µg/L | % Rec. | % Rec. | % RPD | % Rec. | % Rec. | % RPD | MS / MSD | RPD | LCS/LCSD | RPD |
| TPH(btex)£ | ND | 60 | 98.5 | 102 | 3.19 | 102 | 101 | 1.19 | 70 - 130 | 20 | 70 - 130 | 20 |
| MTBE | ND | 10 | 108 | 114 | 5.33 | 109 | 109 | 0 | 70 - 130 | 20 | 70 - 130 | 20 |
| Benzene | ND | 10 | 97.3 | 101 | 3.65 | 97.1 | 96.6 | 0.528 | 70 - 130 | 20 | 70 - 130 | 20 |
| Toluene | ND | 10 | 99.8 | 103 | 3.18 | 99.5 | 99.1 | 0.373 | 70 - 130 | 20 | 70 - 130 | 20 |
| Ethylbenzene | ND | 10 | 104 | 108 | 3.57 | 104 | 104 | 0 | 70 - 130 | 20 | 70 - 130 | 20 |
| Xylenes | ND | 30 | 108 | 111 | 2.62 | 107 | 107 | 0 | 70 - 130 | 20 | 70 - 130 | 20 |
| %SS: | 101 | 10 | 90 | 89 | 1.33 | 90 | 89 | 0.813 | 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 63221 SUMMARY

| Lab ID | Date Sampled | Date Extracted | Date Analyzed | Lab ID | Date Sampled | Date Extracted | Date Analyzed |
|---|---|---|---|---|---|---|---|
| 1112136-002A | 12/06/11 8:23 AM | 12/08/11 | 12/08/11 12:09 AM | 1112136-003A | 12/06/11 7:55 AM | 12/08/11 | 12/08/11 1:09 AM |
| 1112136-003A | 12/06/11 7:55 AM | 12/09/11 | 12/09/11 4:51 AM | 1112136-004A | 12/06/11 9:30 AM | 12/08/11 | 12/08/11 3:08 AM |
| 1112136-005A | 12/06/11 10:25 AM | 12/08/11 | 12/08/11 5:07 AM | 1112136-006A | 12/06/11 9:55 AM | 12/08/11 | 12/08/11 6:07 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.

£ 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.

DHS ELAP Certification 1644

QA/QC Officer

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# QC SUMMARY REPORT FOR SW8260B

W.O. Sample Matrix: Water | QC Matrix: Water | BatchID: 63179 | WorkOrder: 1112136

**EPA Method: SW8260B** **Extraction: SW5030B** **Spiked Sample ID: 1112089-006B**

| Analyte | Sample | Spiked | MS | MSD | MS-MSD | LCS | Acceptance Criteria (%) | | |
|---|---|---|---|---|---|---|---|---|---|
| | µg/L | µg/L | % Rec. | % Rec. | % RPD | % Rec. | MS / MSD | RPD | LCS |
| tert-Amyl methyl ether (TAME) | ND | 10 | 110 | 98.5 | 11.3 | 98.2 | 70 - 130 | 30 | 70 - 130 |
| Benzene | ND | 10 | 93.8 | 87.6 | 6.81 | 93.1 | 70 - 130 | 30 | 70 - 130 |
| t-Butyl alcohol (TBA) | 6.9 | 40 | 97.1 | 94.9 | 1.90 | 96.2 | 70 - 130 | 30 | 70 - 130 |
| 1,2-Dibromoethane (EDB) | ND | 10 | 100 | 98.8 | 1.50 | 99.6 | 70 - 130 | 30 | 70 - 130 |
| 1,2-Dichloroethane (1,2-DCA) | ND | 10 | 97.7 | 93.1 | 4.76 | 97.5 | 70 - 130 | 30 | 70 - 130 |
| Diisopropyl ether (DIPE) | ND | 10 | 89.8 | 86 | 4.31 | 89.2 | 70 - 130 | 30 | 70 - 130 |
| Ethyl tert-butyl ether (ETBE) | ND | 10 | 93.1 | 89.4 | 4.06 | 93.1 | 70 - 130 | 30 | 70 - 130 |
| Methyl-t-butyl ether (MTBE) | 1.8 | 10 | 95.2 | 92.4 | 2.53 | 96.8 | 70 - 130 | 30 | 70 - 130 |
| Toluene | ND | 10 | 91.8 | 86 | 6.45 | 90.9 | 70 - 130 | 30 | 70 - 130 |
| %SS1: | 102 | 25 | 111 | 112 | 0.418 | 112 | 70 - 130 | 30 | 70 - 130 |
| %SS2: | 104 | 25 | 98 | 100 | 1.25 | 99 | 70 - 130 | 30 | 70 - 130 |

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

BATCH 63179 SUMMARY

| Lab ID | Date Sampled | Date Extracted | Date Analyzed | Lab ID | Date Sampled | Date Extracted | Date Analyzed |
|---|---|---|---|---|---|---|---|
| 1112136-001B | 12/06/11 8:45 AM | 12/09/11 | 12/09/11 10:51 PM | 1112136-002B | 12/06/11 8:23 AM | 12/09/11 | 12/09/11 10:45 PM |
| 1112136-003B | 12/06/11 7:55 AM | 12/09/11 | 12/09/11 11:26 PM | 1112136-004B | 12/06/11 9:30 AM | 12/10/11 | 12/10/11 12:07 AM |
| 1112136-005B | 12/06/11 10:25 AM | 12/10/11 | 12/10/11 12:47 AM | 1112136-006B | 12/06/11 9:55 AM | 12/10/11 | 12/10/11 1:29 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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QA/QC Officer

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# Analytical Report

| | | |
|---|---|---|
| AEI Consultants | Client Project ID: #298931; Buestad | Date Sampled: 01/24/12 |
| | | Date Received: 01/24/12 |
| 2500 Camino Diablo, Ste. #200 | Client Contact: Bryan Campbell | Date Reported: 01/31/12 |
| Walnut Creek, CA 94597 | Client P.O.: #WC083440 | Date Completed: 01/30/12 |

**WorkOrder: 1201629**

January 31, 2012

Dear Bryan:

Enclosed within are:

1) The results of the **9** analyzed samples from your project: **#298931; Buestad,**
2) QC data for the above samples, and
3) A copy of the chain of custody.

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.

***The analytical results relate only to the items tested.***

# McCAMPBELL ANALYTICAL, INC.

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PITTSBURG, CA 94565-1701
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Telephone: (877) 252-9262 Fax: (925) 252-9269

120629

# CHAIN OF CUSTODY RECORD

TURN AROUND TIME ☐ RUSH ☐ 24 HR ☐ 48 HR ☐ 72 HR ■ 5 DAY

GeoTracker EDF ☐ PDF ■ Excel ☐ Write On (DW) ☐

☐ Check if sample is effluent and "J" flag is required

Report To: Bryan Campbell Bill To:

Company: AEI Consultants, 2500 Camino Diablo, Walnut Creek, CA 94597

PO#: WC083440

Global ID: T0600100655 E-Mail: bcampbell@aeiconsultants.com

Tele: ( 925) 746-6044 Fax: (925) 746-6099

Project #: 298931 Project Name: Buestad

Project Location: 1630 Park Street, Alameda, California

Sampler Signature: John Sagg

| SAMPLE ID | LOCATION/ Field Point Name | SAMPLING Date | SAMPLING Time | # Containers | Type Containers | MATRIX Water | MATRIX Soil | MATRIX Air | MATRIX Sludge | MATRIX Other | METHOD PRESERVED ICE | METHOD PRESERVED HCL | METHOD PRESERVED $HNO_3$ | METHOD PRESERVED Other | Analysis Request: TPH as Gasoline (8015) | Analysis Request: MTBE and BTEX (8260) | Analysis Request: TPH as Diesel and Motor Oil (8015) | Other | Comments |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| MW-1 | MW-1 | 1-24-12 | 1135 | 6 | VOA | X | | | | | X | X | | | X | X | | | |
| MW-2 | MW-2 | " | 1105 | 6 | VOA | X | | | | | X | X | | | X | X | | | |
| MW-3 | MW-3 | " | 1037 | 6 | VOA | X | | | | | X | X | | | X | X | | | |
| DPE-1 | DPE-1 | " | 1105 | 6 | VOA | X | | | | | X | X | | | X | X | | | |
| DPE-2 | DPE-2 | " | 1121 | 6 | VOA | X | | | | | X | X | | | X | X | | | |
| DPE-3 | DPE-3 | " | 0938 | 6 | VOA | X | | | | | X | X | | | X | X | | | |
| DPE-4 | DPE-4 | " | 0810 | 6 | VOA | X | | | | | X | X | | | X | X | | | |
| DPE-6 | DPE-6 | " | 0900 | 6 | VOA | X | | | | | X | X | | | X | X | X | | |
| DPE-9 | DPE-9 | " | 1015 | 6 | VOA | X | | | | | X | X | | | X | X | | | |
| | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | |

**MAI clients MUST disclose any dangerous chemicals known to be present in their submitted samples in concentrations that may cause immediate harm or serious future health endangerment as a result of brief, gloved, open air, sample handling by MAI staff. Non-disclosure incurs an immediate $250 surcharge and the client is subject to full legal liability for harm suffered. Thank you for your understanding and for allowing us to work safely.

| Relinquished By: | Date: | Time: | Received By: |
|---|---|---|---|
| John Sagg | 1-24-12 | 1337 | Mike Vall |
| Relinquished By: | Date: | Time: | Received By: |
| Relinquished By: | Date: | Time: | Received By: |

ICE/t° 18° ✓
GOOD CONDITION ✓
HEAD SPACE ABSENT ✓
DECHLORINATED IN LAB
APPROPRIATE CONTAINERS ✓
PRESERVED IN LAB

| | VOAS | O&G | METALS | OTHER |
|---|---|---|---|---|
| PRESERVATION | ✓ | | pH<2 | |

COMMENTS:

**McCampbell Analytical, Inc.**
1534 Willow Pass Rd
Pittsburg, CA 94565-1701
(925) 252-9262

# CHAIN-OF-CUSTODY RECORD



**WorkOrder: 1201629** **ClientCode: AEL**

☐ WaterTrax ☐ WriteOn ☐ EDF ☐ Excel ☐ Fax ☑ Email ☐ HardCopy ☐ ThirdParty ☐ J-flag

**Report to:**
Bryan Campbell
AEI Consultants
2500 Camino Diablo, Ste. #200
Walnut Creek, CA 94597
(925) 746-6000 FAX: (925) 746-6099

Email: bcampbell@aeiconsultants.com
cc:
PO: #WC083440
ProjectNo: #298931; Buestad

**Bill to:**
Sara Guerin
AEI Consultants
2500 Camino Diablo, Ste. #200
Walnut Creek, CA 94597
AccountsPayable@AEIConsultants.c

**Requested TAT:** 5 days

***Date Received:*** **01/24/2012**
***Date Printed:*** **01/24/2012**

| Lab ID | Client ID | Matrix | Collection Date | Hold | Requested Tests (See legend below) | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 |
| 1201629-001 | MW-1 | Water | 1/24/2012 11:35 | ☐ | A | B | | | | | | | | | | |
| 1201629-002 | MW-2 | Water | 1/24/2012 11:05 | ☐ | A | B | | | | | | | | | | |
| 1201629-003 | MW-3 | Water | 1/24/2012 10:37 | ☐ | A | B | | | | | | | | | | |
| 1201629-004 | DPE-1 | Water | 1/24/2012 11:05 | ☐ | A | B | | | | | | | | | | |
| 1201629-005 | DPE-2 | Water | 1/24/2012 11:21 | ☐ | A | B | | | | | | | | | | |
| 1201629-006 | DPE-3 | Water | 1/24/2012 9:38 | ☐ | A | B | | | | | | | | | | |
| 1201629-007 | DPE-4 | Water | 1/24/2012 8:10 | ☐ | A | B | | | | | | | | | | |
| 1201629-008 | DPE-6 | Water | 1/24/2012 9:00 | ☐ | A | B | C | | | | | | | | | |
| 1201629-009 | DPE-9 | Water | 1/24/2012 10:15 | ☐ | A | B | | | | | | | | | | |

**Test Legend:**

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| 1 | G-MBTEX_W | 2 | MBTEX-8260B_W | 3 | TPH(DMO)_W | 4 | | 5 | |
| 6 | | 7 | | 8 | | 9 | | 10 | |
| 11 | | 12 | | | | | | | |

**Prepared by: Melissa Valles**

**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.

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# Sample Receipt Checklist

Client Name: **AEI Consultants**

Date and Time Received: **1/24/2012 2:16:02 PM**

Project Name: **#298931; Buestad**

Checklist completed and reviewed by: Melissa Valles

WorkOrder N°: **1201629** Matrix: Water

Carrier: Client Drop-In

## 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 Preservation and Hold Time (HT) Information

| | | | |
|---|---|---|---|
| All samples received within holding time? | Yes ☑ | No ☐ | |
| Container/Temp Blank temperature | Cooler Temp: 1.8°C | | NA ☐ |
| Water - VOA vials have zero headspace / no bubbles? | Yes ☑ | No ☐ | No VOA vials submitted ☐ |
| Sample labels checked for correct preservation? | Yes ☑ | No ☐ | |
| Metal - pH acceptable upon receipt (pH<2)? | Yes ☐ | No ☐ | NA ☑ |
| Samples Received on Ice? | Yes ☑ | No ☐ | |

(Ice Type: WET ICE )

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

Comments:

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| | | |
|---|---|---|
| AEI Consultants | Client Project ID: #298931; Buestad | Date Sampled: 01/24/12 |
| | | Date Received: 01/24/12 |
| 2500 Camino Diablo, Ste. #200 | Client Contact: Bryan Campbell | Date Extracted 01/26/12-01/28/12 |
| Walnut Creek, CA 94597 | Client P.O.: #WC083440 | Date Analyzed 01/26/12-01/28/12 |

## Gasoline Range (C6-C12) Volatile Hydrocarbons as Gasoline*

Extraction method: SW5030B | Analytical methods: SW8015Bm | Work Order: 1201629

| Lab ID | Client ID | Matrix | TPH(g) | DF | % SS | Comments |
|---|---|---|---|---|---|---|
| 001A | MW-1 | W | 190 | 1 | 123 | d1 |
| 002A | MW-2 | W | 2500 | 2 | 95 | d1 |
| 003A | MW-3 | W | 3700 | 10 | 93 | d1 |
| 004A | DPE-1 | W | 3200 | 2 | 118 | d1 |
| 005A | DPE-2 | W | 1100 | 2 | 124 | d1 |
| 006A | DPE-3 | W | 5500 | 5 | 122 | d1 |
| 007A | DPE-4 | W | 730 | 1 | 125 | d1 |
| 008A | DPE-6 | W | 64 | 1 | 101 | d1 |
| 009A | DPE-9 | W | 4400 | 5 | 122 | d1 |
| | | | | | | |
| | | | | | | |
| | | | | | | |
| | | | | | | |
| | | | | | | |
| | | | | | | |
| | | | | | | |

| | | | |
|---|---|---|---|
| Reporting Limit for DF =1; ND means not detected at or above the reporting limit | W | 50 | µg/L |
| | S | NA | NA |

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

# cluttered chromatogram; sample peak coelutes w/surrogate peak; low surrogate recovery due to matrix interference. %SS = Percent Recovery of Surrogate Standard; DF = Dilution Factor

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

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http://www.mccampbell.com / E-mail: main@mccampbell.com

| | | |
|---|---|---|
| AEI Consultants | Client Project ID: #298931; Buestad | Date Sampled: 01/24/12 |
| | | Date Received: 01/24/12 |
| 2500 Camino Diablo, Ste. #200 | Client Contact: Bryan Campbell | Date Extracted: 01/25/12-01/27/12 |
| Walnut Creek, CA 94597 | Client P.O.: #WC083440 | Date Analyzed: 01/25/12-01/27/12 |

## MTBE and BTEX by GC/MS*

Extraction Method: SW5030B | Analytical Method: SW8260B | Work Order: 1201629

| Lab ID | 1201629-001B | 1201629-002B | 1201629-003B | 1201629-004B | Reporting Limit for DF =1 | |
|---|---|---|---|---|---|---|
| Client ID | MW-1 | MW-2 | MW-3 | DPE-1 | | |
| Matrix | W | W | W | W | | |
| DF | 2 | 10 | 50 | 10 | S | W |
| **Compound** | **Concentration** | | | | ug/kg | µg/L |
| Benzene | 25 | 100 | 1200 | 170 | NA | 0.5 |
| Ethylbenzene | 1.4 | ND<5.0 | 34 | ND<5.0 | NA | 0.5 |
| Methyl-t-butyl ether (MTBE) | ND<1.0 | ND<5.0 | ND<25 | ND<5.0 | NA | 0.5 |
| Toluene | ND<1.0 | 22 | 68 | 58 | NA | 0.5 |
| Xylenes, Total | 4.6 | 410 | 130 | 620 | NA | 0.5 |
| **Surrogate Recoveries (%)** | | | | | | |
| %SS1: | 111 | 108 | 108 | 109 | | |
| %SS2: | 97 | 97 | 96 | 96 | | |
| **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 & SPLP extracts are reported in mg/L, wipe samples in µg/wipe.

ND means not detected above the reporting limit/method detection 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.

%SS = Percent Recovery of Surrogate Standard
DF = Dilution Factor

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http://www.mccampbell.com / E-mail: main@mccampbell.com

| | | |
|---|---|---|
| AEI Consultants | Client Project ID: #298931; Buestad | Date Sampled: 01/24/12 |
| | | Date Received: 01/24/12 |
| 2500 Camino Diablo, Ste. #200 | Client Contact: Bryan Campbell | Date Extracted: 01/25/12-01/27/12 |
| Walnut Creek, CA 94597 | Client P.O.: #WC083440 | Date Analyzed: 01/25/12-01/27/12 |

## MTBE and BTEX by GC/MS*

Extraction Method: SW5030B | Analytical Method: SW8260B | Work Order: 1201629

| Lab ID | 1201629-005B | 1201629-006B | 1201629-007B | 1201629-008B | Reporting Limit for DF =1 | |
|---|---|---|---|---|---|---|
| Client ID | DPE-2 | DPE-3 | DPE-4 | DPE-6 | | |
| Matrix | W | W | W | W | | |
| DF | 5 | 10 | 5 | 1 | S | W |
| **Compound** | **Concentration** | | | | ug/kg | µg/L |
| Benzene | 44 | 290 | 66 | ND | NA | 0.5 |
| Ethylbenzene | 11 | 44 | 7.1 | ND | NA | 0.5 |
| Methyl-t-butyl ether (MTBE) | ND<2.5 | ND<5.0 | ND<2.5 | ND | NA | 0.5 |
| Toluene | 26 | 240 | 6.0 | ND | NA | 0.5 |
| Xylenes, Total | 150 | 1000 | 83 | 3.2 | NA | 0.5 |
| **Surrogate Recoveries (%)** | | | | | | |
| %SS1: | 108 | 110 | 107 | 108 | | |
| %SS2: | 99 | 97 | 99 | 100 | | |
| **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 & SPLP extracts are reported in mg/L, wipe samples in µg/wipe.

ND means not detected above the reporting limit/method detection 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.

%SS = Percent Recovery of Surrogate Standard
DF = Dilution Factor

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| | | |
|---|---|---|
| AEI Consultants | Client Project ID: #298931; Buestad | Date Sampled: 01/24/12 |
| | | Date Received: 01/24/12 |
| 2500 Camino Diablo, Ste. #200 | Client Contact: Bryan Campbell | Date Extracted: 01/25/12-01/27/12 |
| Walnut Creek, CA 94597 | Client P.O.: #WC083440 | Date Analyzed: 01/25/12-01/27/12 |

## MTBE and BTEX by GC/MS*

Extraction Method: SW5030B | Analytical Method: SW8260B | Work Order: 1201629

| | | | | | Reporting Limit for DF =1 | |
|---|---|---|---|---|---|---|
| Lab ID | 1201629-009B | | | | | |
| Client ID | DPE-9 | | | | | |
| Matrix | W | | | | | |
| DF | 10 | | | | S | W |
| **Compound** | **Concentration** | | | | ug/kg | µg/L |
| Benzene | 160 | | | | NA | 0.5 |
| Ethylbenzene | 93 | | | | NA | 0.5 |
| Methyl-t-butyl ether (MTBE) | ND<5.0 | | | | NA | 0.5 |
| Toluene | 390 | | | | NA | 0.5 |
| Xylenes, Total | 1100 | | | | NA | 0.5 |
| **Surrogate Recoveries (%)** | | | | | | |
| %SS1: | 109 | | | | | |
| %SS2: | 99 | | | | | |
| **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 & SPLP extracts are reported in mg/L, wipe samples in µg/wipe.

ND means not detected above the reporting limit/method detection 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.

%SS = Percent Recovery of Surrogate Standard
DF = Dilution Factor

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| | | |
|---|---|---|
| AEI Consultants | Client Project ID: #298931; Buestad | Date Sampled: 01/24/12 |
| | | Date Received: 01/24/12 |
| 2500 Camino Diablo, Ste. #200 | Client Contact: Bryan Campbell | Date Extracted: 01/24/12 |
| Walnut Creek, CA 94597 | Client P.O.: #WC083440 | Date Analyzed: 01/25/12 |

**Total Extractable Petroleum Hydrocarbons***

Extraction method: SW3510C Analytical methods: SW8015B Work Order: 1201629

| Lab ID | Client ID | Matrix | TPH-Diesel (C10-C23) | TPH-Motor Oil (C18-C36) | DF | % SS | Comments |
|---|---|---|---|---|---|---|---|
| 1201629-008C | DPE-6 | W | ND | ND | 1 | 87 | |

| | | | | | |
|---|---|---|---|---|---|
| Reporting Limit for DF =1; ND means not detected at or above the reporting limit | W | 50 | 250 | µg/L |
| | S | NA | NA | mg/Kg |

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

# cluttered chromatogram resulting in coeluted surrogate and sample peaks, or; surrogate peak is on elevated baseline, or; surrogate has been diminished by dilution of original extract; %SS = Percent Recovery of Surrogate Standard; DF = Dilution Factor

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

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# QC SUMMARY REPORT FOR SW8021B/8015Bm

W.O. Sample Matrix: Water | QC Matrix: Water | BatchID: 64315 | WorkOrder: 1201629

**EPA Method: SW8015Bm** **Extraction: SW5030B** **Spiked Sample ID: 1201654-002C**

| Analyte | Sample | Spiked | MS | MSD | MS-MSD | LCS | Acceptance Criteria (%) | | |
|---|---|---|---|---|---|---|---|---|---|
| | µg/L | µg/L | % Rec. | % Rec. | % RPD | % Rec. | MS / MSD | RPD | LCS |
| TPH(btex)£ | ND | 60 | 121 | 114 | 5.47 | 119 | 70 - 130 | 20 | 70 - 130 |
| MTBE | ND | 10 | 104 | 92.3 | 11.6 | 104 | 70 - 130 | 20 | 70 - 130 |
| Benzene | ND | 10 | 106 | 100 | 5.63 | 105 | 70 - 130 | 20 | 70 - 130 |
| Toluene | ND | 10 | 105 | 101 | 4.38 | 103 | 70 - 130 | 20 | 70 - 130 |
| Ethylbenzene | ND | 10 | 106 | 103 | 3.33 | 104 | 70 - 130 | 20 | 70 - 130 |
| Xylenes | ND | 30 | 108 | 106 | 1.69 | 107 | 70 - 130 | 20 | 70 - 130 |
| %SS: | 106 | 10 | 94 | 94 | 0 | 95 | 70 - 130 | 20 | 70 - 130 |

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

BATCH 64315 SUMMARY

| Lab ID | Date Sampled | Date Extracted | Date Analyzed | Lab ID | Date Sampled | Date Extracted | Date Analyzed |
|---|---|---|---|---|---|---|---|
| 1201629-001A | 01/24/12 11:35 AM | 01/27/12 | 01/27/12 5:08 AM | 1201629-002A | 01/24/12 11:05 AM | 01/27/12 | 01/27/12 2:14 AM |
| 1201629-003A | 01/24/12 10:37 AM | 01/26/12 | 01/26/12 5:30 AM | 1201629-004A | 01/24/12 11:05 AM | 01/26/12 | 01/26/12 5:57 AM |
| 1201629-004A | 01/24/12 11:05 AM | 01/26/12 | 01/26/12 6:14 PM | 1201629-005A | 01/24/12 11:21 AM | 01/27/12 | 01/27/12 6:42 PM |
| 1201629-006A | 01/24/12 9:38 AM | 01/27/12 | 01/27/12 5:37 AM | 1201629-007A | 01/24/12 8:10 AM | 01/28/12 | 01/28/12 3:00 AM |
| 1201629-008A | 01/24/12 9:00 AM | 01/28/12 | 01/28/12 3:29 AM | 1201629-009A | 01/24/12 10:15 AM | 01/27/12 | 01/27/12 6:06 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.

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QA/QC Officer

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# QC SUMMARY REPORT FOR SW8260B

W.O. Sample Matrix: Water | QC Matrix: Water | BatchID: 64367 | WorkOrder: 1201629

**EPA Method: SW8260B** **Extraction: SW5030B** **Spiked Sample ID: 1201629-001B**

| Analyte | Sample | Spiked | MS | MSD | MS-MSD | LCS | Acceptance Criteria (%) | | |
|---|---|---|---|---|---|---|---|---|---|
| | µg/L | µg/L | % Rec. | % Rec. | % RPD | % Rec. | MS / MSD | RPD | LCS |
| Benzene | 25 | 10 | NR | NR | NR | 99 | N/A | N/A | 70 - 130 |
| Methyl-t-butyl ether (MTBE) | ND<1.0 | 10 | 105 | 97.3 | 7.50 | 88.5 | 70 - 130 | 20 | 70 - 130 |
| Toluene | ND<1.0 | 10 | 108 | 93.2 | 14.0 | 95.7 | 70 - 130 | 20 | 70 - 130 |
| %SS1: | 111 | 25 | 110 | 109 | 1.02 | 107 | 70 - 130 | 20 | 70 - 130 |
| %SS2: | 97 | 25 | 99 | 97 | 1.75 | 100 | 70 - 130 | 20 | 70 - 130 |

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

BATCH 64367 SUMMARY

| Lab ID | Date Sampled | Date Extracted | Date Analyzed | Lab ID | Date Sampled | Date Extracted | Date Analyzed |
|---|---|---|---|---|---|---|---|
| 1201629-001B | 01/24/12 11:35 AM | 01/26/12 | 01/26/12 1:41 AM | 1201629-002B | 01/24/12 11:05 AM | 01/25/12 | 01/25/12 4:09 PM |
| 1201629-003B | 01/24/12 10:37 AM | 01/26/12 | 01/26/12 2:19 AM | 1201629-004B | 01/24/12 11:05 AM | 01/26/12 | 01/26/12 2:57 AM |
| 1201629-006B | 01/24/12 9:38 AM | 01/26/12 | 01/26/12 4:13 AM | 1201629-009B | 01/24/12 10:15 AM | 01/26/12 | 01/26/12 6:08 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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QA/QC Officer

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# QC SUMMARY REPORT FOR SW8260B

W.O. Sample Matrix: Water | QC Matrix: Water | BatchID: 64416 | WorkOrder: 1201629

**EPA Method: SW8260B** **Extraction: SW5030B** **Spiked Sample ID: 1201679-001A**

| Analyte | Sample | Spiked | MS | MSD | MS-MSD | LCS | Acceptance Criteria (%) | | |
|---|---|---|---|---|---|---|---|---|---|
| | µg/L | µg/L | % Rec. | % Rec. | % RPD | % Rec. | MS / MSD | RPD | LCS |
| Benzene | ND | 10 | 98.6 | 96.7 | 1.93 | 99.5 | 70 - 130 | 20 | 70 - 130 |
| Methyl-t-butyl ether (MTBE) | ND | 10 | 95.4 | 95.2 | 0.279 | 88 | 70 - 130 | 20 | 70 - 130 |
| Toluene | ND | 10 | 93.5 | 92.4 | 1.21 | 96.3 | 70 - 130 | 20 | 70 - 130 |
| %SS1: | 109 | 25 | 109 | 109 | 0 | 106 | 70 - 130 | 20 | 70 - 130 |
| %SS2: | 96 | 25 | 98 | 99 | 0.205 | 101 | 70 - 130 | 20 | 70 - 130 |

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

BATCH 64416 SUMMARY

| Lab ID | Date Sampled | Date Extracted | Date Analyzed | Lab ID | Date Sampled | Date Extracted | Date Analyzed |
|---|---|---|---|---|---|---|---|
| 1201629-005B | 01/24/12 11:21 AM | 01/27/12 | 01/27/12 2:54 AM | 1201629-007B | 01/24/12 8:10 AM | 01/27/12 | 01/27/12 3:31 AM |
| 1201629-008B | 01/24/12 9:00 AM | 01/27/12 | 01/27/12 4:09 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.

DHS ELAP Certification 1644

QA/QC Officer

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# QC SUMMARY REPORT FOR SW8015B

W.O. Sample Matrix: Water | QC Matrix: Water | BatchID: 64271 | WorkOrder: 1201629

**EPA Method: SW8015B** **Extraction: SW3510C** **Spiked Sample ID: N/A**

| Analyte | Sample | Spiked | MS | MSD | MS-MSD | LCS | Acceptance Criteria (%) | | |
|---|---|---|---|---|---|---|---|---|---|
| | µg/L | µg/L | % Rec. | % Rec. | % RPD | % Rec. | MS / MSD | RPD | LCS |
| TPH-Diesel (C10-C23) | N/A | 1000 | N/A | N/A | N/A | 111 | N/A | N/A | 70 - 130 |
| %SS: | N/A | 625 | N/A | N/A | N/A | 97 | N/A | N/A | 70 - 130 |

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

BATCH 64271 SUMMARY

| Lab ID | Date Sampled | Date Extracted | Date Analyzed | Lab ID | Date Sampled | Date Extracted | Date Analyzed |
|---|---|---|---|---|---|---|---|
| 1201629-008C | 01/24/12 9:00 AM | 01/24/12 | 01/25/12 4:52 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.

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QA/QC Officer

# APPENDIX D

# WASTE MANIFESTS

A&S Environmental Services
P.O. Box 186
LaGrange, CA 95329
(209) 538-0886 / Fax (209) 538-2498
EPA# CAR000176537

**For Service**
**800-760-0019**

**Bill of Lading/Invoice**
17310 WA

Date 12-16-11

| JOB LOCATION | BILLING INFORMATION | |
|---|---|---|
| NAME A & S | NAME | CASH ☐ CHECK ☐ # |
| ADDRESS [illegible] | ADDRESS | CONTACT NAME |
| CITY LaGrange STATE ZIP CO | CITY STATE ZIP CO | PO# |
| PHONE NO. 209 761-6860 | PHONE NO. ( ) PROFILE NO. | CUSTOMER EPA ID NO. |

| PRODUCT | WASTE CODE | MANIFEST NUMBER | QUANTITY | UNITS | PRICE (For Time Of Service Only) | AMOUNT |
|---|---|---|---|---|---|---|
| Used oil, Non-RCRA Hazardous Waste, Liquid | CA 221 | | | Gal | | |
| Used Automotive Antifreeze, Non-RCRA Hazardous Waste, Liquid | CA 134 | | | Gal | | |
| Non-RCRA Hazardous Waste Liquid Used Oil & Water | CA 221 | $1,200 COA: 71350 JOB: 298931 DEC 30 2011 DEPT: used oil.con SK MO: 12 BY: | | Gal | | |
| Oil & Water, Non-RCRA Hazardous Waste Liquid | CA 223 | | | Gal | | |
| Empty Drum Delivery | | | | Drum | | |
| Empty Drum Pick Up | | | | Drum | | |
| Drained Used Oil Filters | | | | Drum | | |
| Labor | | | | Hours | | |
| Waste Flammable Liquid Gas | CA 133 | | | Gal | | |
| Non-RCRA Hazardous Waste Solid | CA 352 | | | | | |
| Waste Tires | | | | Each | | |
| Waste Flammable Liquid Paint | CA 331 | | | Gal | | |
| Other: Non Haz Solid | | | 2 | | 600 ea | 1200 ea |
| Other: | | | | | | |
| Other: | | | | | | |
| Other: | | | | | | |
| Other: | | | | | | |
| Tax | | | | | | |

TEST PASS ☐ FAIL ☐ PPM Test

☐ Collection Station ☐ Agriculture Source
☐ Government Source ☐ Industrial Source
☐ Marine Source

A&S Environmental Services as the transporter of your Hazardous waste may use another licensed transporter to haul your waste to a designated facility.

TOTAL CHARGES 1200 ea

DESIGNATED TSDF:
☐ EVERGREEN ENVIRONMENTAL • 80 Smith Avenue • Newmark, CA • CAD982413262 • (800) 972-5284
☐ RAMOS ENVIRONMENTAL • 151S. River Road • W. Sacramento, CA 95691 • CAD044003556 • (916) 371-5747
☐ RIVERBANK OIL TRANSFER • 5300 Claus Road • Riverbank, CA 95367 • CAL000190816 • (209) 863-8181
☐ BEST ENVIRONMENTAL • 2430 Almond Drive • Silver Springs, NV 89429 • NVD982358483 • (775) 577-9001
☐ ALTERNATE FACILITY _____
☐ ALTERNATE FACILITY _____

This is to certify that the above named articles are properly classified, described, packaged, marked and labeled, and are in proper condition for transportation, according to the applicable regulations of the Department of Transportation.

A service charge of 1 1/2% per month shall be charged on all past due accounts. Collections costs, including attorney's fees, will be added to past due accounts placed for collections. I HEREBY CERTIFY THAT I HAVE NOT MIXED THIS WASTE WITH ANY OTHER WASTE, THAT THE TOTAL HALIDES ARE LESS THAN 1000 P.P.M.; AND THAT THE WASTE DOES NOT CONTAIN ANY PCB'S.

DRIVER SIGNATURE

GENERATOR'S SIGNATURE

AMOUNT DUE IN 30 DAYS

A&S Environmental Services
P.O. Box 186
LaGrange, CA 95329
(209) 538-0886 / Fax (209) 538-2498
EPA# CAR000176537

Attn: Jeremy.

**For Service**
**800-760-0019**

**Bill of Lading/Invoice**
17967

Date 2/24/12

| JOB LOCATION | | | | BILLING INFORMATION | | | | |
|---|---|---|---|---|---|---|---|---|
| NAME | | | | NAME A.E.I. | | | | CASH ☐ CHECK ☐ # |
| ADDRESS 1630 Park st | | | | ADDRESS | | | | CONTACT NAME |
| CITY Alameda | STATE CA | ZIP | CO | CITY | STATE | ZIP | CO | PO# WC083477 |
| PHONE NO. ( ) | | | | PHONE NO. ( ) | PROFILE NO. | | | CUSTOMER EPA ID NO. |

| PRODUCT | WASTE CODE | MANIFEST NUMBER | QUANTITY | UNITS | PRICE (For Time Of Service Only) | AMOUNT |
|---|---|---|---|---|---|---|
| Used oil, Non-RCRA Hazardous Waste, Liquid | CA 221 | | | Gal | | |
| Used Automotive Antifreeze, Non-RCRA Hazardous Waste, Liquid | CA 134 | | | Gal | | |
| Non-RCRA Hazardous Waste Liquid Used Oil & Water | CA 221 | | | Gal | | |
| Oil & Water, Non-RCRA Hazardous Waste Liquid | CA 223 | | | Gal | | |
| Empty Drum Delivery | | | | Drum | | |
| Empty Drum Pick Up | | | | Drum | | |
| Drained Used Oil Filters | | | | Drum | | |
| Labor | | | | Hours | | |
| Waste Flammable Liquid Gas | CA 133 | | | Gal | | |
| Non-RCRA Hazardous Waste Solid | CA 352 | | | | | |
| Waste Tires | | | | Each | | |
| Waste Flammable Liquid Paint | CA 331 | | | Gal | | |
| Other: New Haz Dist | | | 16 | pm | 150.00 | 2400.00 |
| Other: | | | | | | |
| Other: | | | | | | |
| Other: | | | | | | |
| Other: | | | | | | |
| Tax | | | | | | |
| TEST PASS ☐ | FAIL ☐ | PPM | | Test | | |

☐ Collection Station ☐ Agriculture Source
☐ Government Source ☐ Industrial Source
☐ Marine Source

A&S Environmental Services as the transporter of your Hazardous waste may use another licensed transporter to haul your waste to a designated facility.

TOTAL CHARGES 2400.00

DESIGNATED TSDF:
☐ **EVERGREEN ENVIRONMENTAL** • 80 Smith Avenue • Newmark, CA • CAD982413262 • (800) 972-5284
☐ **RAMOS ENVIRONMENTAL** • 151S. River Road • W. Sacramento, CA 95691 • CAD044003556 • (916) 371-5747
☐ **RIVERBANK OIL TRANSFER** • 5300 Claus Road • Riverbank, CA 95367 • CAL000190816 • (209) 863-8181
☐ **BEST ENVIRONMENTAL** • 2430 Almond Drive • Silver Springs, NV 89429 • NVD982358483 • (775) 577-9001
☐ **ALTERNATE FACILITY** _____
☐ **ALTERNATE FACILITY** _____

This is to certify that the above named articles are properly classified, described, packaged, marked and labeled, and are in proper condition for transportation, according to the applicable regulations of the Department of Transportation.

DRIVER SIGNATURE

A service charge of 1 1/2% per month shall be charged on all past due accounts. Collections costs, including attorney's fees, will be added to past due accounts placed for collections.
I HEREBY CERTIFY THAT I HAVE NOT MIXED THIS WASTE WITH ANY OTHER WASTE, THAT THE TOTAL HALIDES ARE LESS THAN 1000 P.P.M.; AND THAT THE WASTE DOES NOT CONTAIN ANY PCB'S.

S.N.A
GENERATOR'S SIGNATURE

AMOUNT DUE IN 30 DAYS

# APPENDIX E

# FIELD FORMS

**AEI CONSULTANTS**

GROUNDWATER MONITORING WELL FIELD SAMPLING FORM

**Monitoring Well Number: MW-1**

| | | | |
|---|---|---|---|
| Project Name: | Buestad | Date of Sampling: | 12-6-11 |
| Job Number: | 298931 | Name of Sampler: | J Sigg |
| Project Address: | 1630 Park Street | | |

## MONITORING WELL DATA

| | | | |
|---|---|---|---|
| Well Casing Diameter (2"/4"/6") | 2 | | |
| Wellhead Condition | OK | | |
| Elevation of Top of Casing (feet above msl) | | | |
| Depth of Well | 20.00 | | |
| Depth to Water (from top of casing) | 8.02 | | |
| Water Elevation (feet above msl) | | | |
| Well Volumes Purged | 3 | | |
| Gallons Purged: formula valid only for casing sizes of 2" (0.16 gal/ft), 4" (0.65 gal/ft), and 6" (1.44 gal/ft) | 5.75 | | |
| Actual Volume Purged (liters) | ~~5.756~~ | | |
| Appearance of Purge Water | Clear | | |
| Free Product Present? | No | Thickness (ft): | |

## GROUNDWATER SAMPLES

Number of Samples/Container Size

| Time | Vol Removed (liters) | Temperature (deg C) | pH | Conductivity (µ S/cm) | DO (mg/L) | ORP (meV) | Comments |
|---|---|---|---|---|---|---|---|
| 0836 | 1 | 19.48 | 7.38 | 549 | 0.92 | -182.1 | Clear |
| | 2 | 19.71 | 7.36 | 545 | 0.72 | -218.3 | " |
| | 3 | 20.01 | 7.36 | 566 | 0.48 | -235.7 | " |
| | 4 | 20.15 | 7.36 | 579 | 0.39 | 242.7 | " |
| | 5 | 20.20 | 7.35 | 582 | 0.36 | -230.3 | " |
| 0845 | 6 | 20.25 | 7.34 | 585 | 0.34 | -218.9 | " |
| | | | | | | | |
| | | | | | | | |
| | | | | | | | |
| | | | | | | | |

## COMMENTS (i.e., sample odor, well recharge time & percent, etc.)

**AEI CONSULTANTS**

GROUNDWATER MONITORING WELL FIELD SAMPLING FORM

**Monitoring Well Number: MW-2**

| | | | |
|---|---|---|---|
| Project Name: | Buestad | Date of Sampling: | 12-6-11 |
| Job Number: | 298931 | Name of Sampler: | J. SIGG |
| Project Address: | 1630 Park Street | | |

## MONITORING WELL DATA

| | | | |
|---|---|---|---|
| Well Casing Diameter (2"/4"/6") | 2 | | |
| Wellhead Condition | OK | | |
| Elevation of Top of Casing (feet above msl) | | | |
| Depth of Well | 20.00 | | |
| Depth to Water (from top of casing) | 8.41 | | |
| Water Elevation (feet above msl) | | | |
| Well Volumes Purged | 3 | | |
| Gallons Purged: formula valid only for casing sizes of 2" (0.16 gal/ft), 4" (0.65 gal/ft), and 6" (1.44 gal/ft) | 5.56 | | |
| Actual Volume Purged (liters) | 6 | | |
| Appearance of Purge Water | clear | | |
| Free Product Present? | no | Thickness (ft): | |

## GROUNDWATER SAMPLES

Number of Samples/Container Size

| Time | Vol Removed (liters) | Temperature (deg C) | pH | Conductivity (µ S/cm) | DO (mg/L) | ORP (meV) | Comments |
|---|---|---|---|---|---|---|---|
| 0816 | 1 | 19.32 | 7.33 | 694 | 1.70 | -313.8 | cloudy |
| | 2 | 19.46 | 7.31 | 688 | 1.03 | -308.5 | clear |
| | 3 | 19.66 | 7.28 | 686 | 0.95 | -310.7 | " |
| | 4 | 20.08 | 7.28 | 713 | 0.72 | -311.1 | " |
| | 5 | 20.12 | 7.28 | 715 | 0.71 | -307.3 | " |
| 0823 | 6 | 20.22 | 7.28 | 694 | 0.80 | -283.2 | " |
| | | | | | | | |
| | | | | | | | |
| | | | | | | | |
| | | | | | | | |

## COMMENTS (i.e., sample odor, well recharge time & percent, etc.)

**AEI CONSULTANTS**

GROUNDWATER MONITORING WELL FIELD SAMPLING FORM

**Monitoring Well Number: MW-3**

| | | | |
|---|---|---|---|
| Project Name: | Buestad | Date of Sampling: | 12-6-11 |
| Job Number: | 298931 | Name of Sampler: | J. Sigg |
| Project Address: | 1630 Park Street | | |

## MONITORING WELL DATA

| | | | |
|---|---|---|---|
| Well Casing Diameter (2"/4"/6") | 2 | | |
| Wellhead Condition | OK | | |
| Elevation of Top of Casing (feet above msl) | | | |
| Depth of Well | 20.00 | | |
| Depth to Water (from top of casing) | 8.25 | | |
| Water Elevation (feet above msl) | | | |
| Well Volumes Purged | 3 | | |
| Gallons Purged: formula valid only for casing sizes of 2" (0.16 gal/ft), 4" (0.65 gal/ft), and 6" (1.44 gal/ft) | 5.64 | | |
| Actual Volume Purged (liters) | 6 | | |
| Appearance of Purge Water | Light Brown Sample | | |
| Free Product Present? | No | Thickness (ft): | |

## GROUNDWATER SAMPLES

Number of Samples/Container Size

| Time | Vol Removed (liters) | Temperature (deg C) | pH | Conductivity (µ S/cm) | DO (mg/L) | ORP (meV) | Comments |
|---|---|---|---|---|---|---|---|
| 0750 | 1 | 18.88 | 7.32 | 631 | 2.77 | -212.0 | Cloudy |
| | 2 | 19.17 | 7.33 | 675 | 1.85 | -258.0 | Clear |
| | 3 | 19.33 | 7.32 | 734 | 3.42 | -262.1 | " |
| | 4 | 19.58 | 7.30 | 708 | 4.78 | -283.7 | " |
| | 5 | 19.60 | 7.30 | 701 | 5.23 | -290.5 | LT Brown |
| 0755 | 6 | Dry | | | | | |

## COMMENTS (i.e., sample odor, well recharge time & percent, etc.)

DATE: 12-6-11

**AEI CONSULTANTS**
MONITORING WELL DEVELOPMENT LOG

PAGE: 1 OF: 1

Project Name: Buestad
Location: 1630 Park Street, Alameda, CA
Project No.: 298931
Start Time:
End Time:

Technician: J. Sagg
Project Manager: Bryan Campbell
Conditions: Clear / Cool
Development Method: Surging and pumping with a submersible pump

## MONITORING WELL DATA

| | | | |
|---|---|---|---|
| **Well ID:** | **DPE-1** | Well Volumes Purged: | 5 |
| Well Diameter: | 4 inches | Calculated Gallons Purged: 2" (0.16 gal/ft) <or> 4" (0.65 gal/ft) | |
| Constructed Depth of Well: | 16 | Actual Volume Purged (gallons): | 19 |
| Screened Interval: | 7 - 15 feet | Free Product Present? | no |
| Slot Size: | 0.010 | Free Product Thickness (feet): | |
| Filter Pack Material/Size: | | Well Depth Before Development: | 14.48 |
| Depth of Well (feet): | 14.48 | Well Depth After Development: | 14.51 |
| Depth to Water (feet): | 8.81 | | |

## FIELD PARAMETERS MEASURED

| Time | Volume Removed (gallons) | Temp (deg C) | pH | Conductivity (µS/cm) | DO (mg/L) | ORP (meV) | Appearance of Purge Water |
|---|---|---|---|---|---|---|---|
| 0600 | 5 | | Surging | | | | Brown |
| 0610 | 10 | | Surging | | | | Lt Brown |
| | DRY | | | | | | |
| 0920 | 1 | 18.55 | 7.53 | 781 | 5.79 | -122.4 | Cloudy |
| | 2 | 18.88 | 7.53 | 858 | 5.82 | -117.9 | " |
| | 3 | 19.01 | 7.51 | 908 | 5.97 | -116.9 | " |
| | 4 | 19.12 | 7.49 | 947 | 5.93 | -116.7 | " |
| | 5 | 19.17 | 7.49 | 963 | 5.82 | -117.1 | " |
| | 6 | 19.22 | 7.49 | 903 | 5.80 | -118.9 | " |
| | 7 | 19.28 | 7.51 | 826 | 5.69 | -121.2 | " |
| | 8 | 19.33 | 7.52 | 772 | 5.17 | -124.9 | " |
| 0930 | 9 | 19.29 | 7.53 | 778 | 6.49 | -122.9 | " |
| | | DRY | | | | | |
| | | | | | | | |
| | | | | | | | |

## COMMENTS (i.e., pumped dry, sample odor, well recharge time & percent, etc.)

Dry @ 10 gal

DATE: 12-6-11

**AEI CONSULTANTS**
MONITORING WELL DEVELOPMENT LOG

PAGE: 1 OF: 1

Project Name: Buestad
Location: 1630 Park Street, Alameda, CA
Project No.: 298931
Start Time:
End Time:

Technician: J. Sigg
Project Manager: Bryan Campbell
Conditions: Clear / Cool
Development Method: Surging and pumping with a submersible pump

## MONITORING WELL DATA

| | | | |
|---|---|---|---|
| **Well ID:** | DPE-2 | Well Volumes Purged: | 6 |
| Well Diameter: | 4 inches | Calculated Gallons Purged: 2" (0.16 gal/ft) <or> 4" (0.65 gal/ft) | |
| Constructed Depth of Well: | 16 | Actual Volume Purged (gallons): | 20 |
| Screened Interval: | 7 - 15 feet | Free Product Present? | no |
| Slot Size: | 0.010 | Free Product Thickness (feet): | ~~NA~~ |
| Filter Pack Material/Size: | | Well Depth Before Development: | 14.32 |
| Depth of Well (feet): | 14.32 | Well Depth After Development: | 14.34 |
| Depth to Water (feet): | 9.29 | | |

## FIELD PARAMETERS MEASURED

| Time | Volume Removed (gallons) | Temp (deg C) | pH | Conductivity (µS/cm) | DO (mg/L) | ORP (meV) | Appearance of Purge Water |
|---|---|---|---|---|---|---|---|
| 0940 | 5 | | Surging | | | | LT BROWN |
| 0950 | 10 | | Surging | | | | 〃 |
| | | DRY | @ | 10 gal | | | |
| 1015 | 1 | 18.64 | 7.03 | 787 | 3.35 | -70.7 | LT BROWN |
| | 2 | 18.92 | 7.06 | 801 | 1.92 | -77.2 | Cloudy |
| | 3 | 18.98 | 7.08 | 812 | 1.93 | -79.6 | 〃 |
| | 4 | 19.01 | 7.11 | 825 | 2.90 | -80.4 | 〃 |
| | 5 | 19.02 | 7.13 | 849 | 3.64 | -81.1 | 〃 |
| | 6 | 19.02 | 7.15 | 882 | 4.10 | -83.2 | 〃 |
| | 7 | 19.05 | 7.18 | 900 | 3.10 | -91.4 | 〃 |
| | 8 | 19.05 | 7.18 | 885 | 2.65 | -94.1 | 〃 |
| | 9 | 19.05 | 7.18 | 876 | 2.47 | -95.4 | 〃 |
| 1025 | 10 | 19.05 | 7.19 | 867 | 2.37 | -96.1 | 〃 |
| | | | | | | | |
| | | | | | | | |

## COMMENTS (i.e., pumped dry, sample odor, well recharge time & percent, etc.)

DRY @ ± 10 gal

DATE: 12-6-11

**AEI CONSULTANTS**
MONITORING WELL DEVELOPMENT LOG

PAGE: 1 OF: 1

Project Name: Buestad
Location: 1630 Park Street, Alameda, CA
Project No.: 298931
Start Time:
End Time:

Technician: J. Sigg
Project Manager: Bryan Campbell
Conditions: Clear / Cool
Development Method: Surging and pumping with a submersible pump

## MONITORING WELL DATA

**Well ID:** DPE-3
Well Diameter: 4 inches
Constructed Depth of Well: 14
Screened Interval: 7 - 14 feet
Slot Size: 0.010
Filter Pack Material/Size:
Depth of Well (feet): 14
Depth to Water (feet): 7.92

Well Volumes Purged: 5
Calculated Gallons Purged:
2" (0.16 gal/ft) <or> 4" (0.65 gal/ft)
Actual Volume Purged (gallons): 19
Free Product Present?
Free Product Thickness (feet):
Well Depth Before Development: 13.42
Well Depth After Development: 13.45

## FIELD PARAMETERS MEASURED

| Time | Volume Removed (gallons) | Temp (deg C) | pH | Conductivity (µS/cm) | DO (mg/L) | ORP (meV) | Appearance of Purge Water |
|---|---|---|---|---|---|---|---|
| 0630 | | | | | | | Brown |
| 0640 | | | | | | | LT Brown |
| | | DRY | | | | | |
| 0945 | 1 | 18.97 | 7.38 | 672 | 3.53 | -95.8 | LT Brown |
| | 2 | 19.03 | 7.40 | 686 | 3.43 | -100.5 | Cloudy |
| | 3 | 19.09 | 7.51 | 683 | 4.63 | -100.8 | " |
| | 4 | 19.13 | 7.49 | 692 | 4.96 | -99.3 | " |
| | 5 | 19.20 | 7.47 | 710 | 4.97 | -88.9 | " |
| | 6 | 1922 | 7.46 | 703 | 4.93 | -99.8 | " |
| | 7 | 1917 | 7.45 | 671 | 6.94 | -94.7 | LT Brown |
| | 8 | 19.17 | 7.46 | 669 | 8.69 | -92.5 | " |
| 0955 | 9 | 19.20 | 7.46 | 665 | 9.48 | -91.2 | " |
| | | DRY | | | | | |

## COMMENTS (i.e., pumped dry, sample odor, well recharge time & percent, etc.)

Well DRY AFTER 10 GAL

DATE: 12-6-11

**AEI CONSULTANTS**
MONITORING WELL DEVELOPMENT LOG

PAGE: 1 OF: 1

Project Name: Buestad
Location: 1630 Park Street, Alameda, CA
Project No.: 298931
Start Time:
End Time:

Technician: J. Sigg
Project Manager: Bryan Campbell
Conditions: Clear / cool
Development Method: Surging and pumping with a submersible pump

## MONITORING WELL DATA

**Well ID:** AS-1
Well Diameter: 2 inches
Constructed Depth of Well: 25 feet
Screened Interval: 20 - 25 feet
Slot Size: 0.020
Filter Pack Material/Size:
Depth of Well (feet): 23.32
Depth to Water (feet): 8.43

Well Volumes Purged: 2
Calculated Gallons Purged:
2" (0.16 gal/ft) <or> 4" (0.65 gal/ft)
Actual Volume Purged (gallons): 5
Free Product Present?
Free Product Thickness (feet):
Well Depth Before Development: 23.32
Well Depth After Development: 23.34

## FIELD PARAMETERS MEASURED

| Time | Volume Removed (gallons) | Temp (deg C) | pH | Conductivity (µS/cm) | DO (mg/L) | ORP (meV) | Appearance of Purge Water |
|---|---|---|---|---|---|---|---|
| 0650 | 5 | | Surging | | | | BROWN |
| 0655 | | DRY | | | | | |

## COMMENTS (i.e., pumped dry, sample odor, well recharge time & percent, etc.)

WELL DRY AFTER 5 gal

DATE: ~~10/17/11~~ 1-23-12

**AEI CONSULTANTS**
MONITORING WELL DEVELOPMENT LOG

PAGE: ____ OF: ____

Project Name: Buestad
Location: 1600 Park Street, Alameda, CA
Project No.: 298931
Start Time: 0830 End Time: 0915

Technician: J. Sigg
Project Manager:
Conditions:
Development Method: Surge block w/ submersible pump

## MONITORING WELL DATA

**Well ID:** DPE-4
Well Diameter:
Constructed Depth of Well:
Screened Interval:
Slot Size:
Filter Pack Material/Size:
Depth to Water: 9.12
Height of Water Column:

Calculated Gallons Purged: ACTUAL 30
2" (0.16 gal/ft) <or> 4" (0.65 gal/ft)

Actual Well Volumes Removed:
Surge Start Time 0840 Surge Stop Time 0850
Free Product Present?
Well Depth Before Development: 16.72
Well Depth After Development: 16.75

## FIELD PARAMETERS MEASURED

| Time | Volume Removed (gallons) | Temp (deg C) | pH | Conductivity (µsec/cm) | DO (mg/L) | ORP (meV) | Appearance of Purge Water |
|---|---|---|---|---|---|---|---|
| 0855 | 10 | 18.15 | 8.01 | 1791 | 3.82 | 194.2 | LT BRN |
| | 15 | 18.55 | 7.32 | 1403 | .90 | 192.5 | " |
| | 20 | 18.63 | 7.16 | 1011 | .91 | 184.3 | " |
| | 25 | 18.64 | 7.13 | 885 | 1.12 | 180.6 | CLOUDY |
| 0915 | 30 | 18.64 | 7.14 | 862 | .95 | 180.1 | " |
| | | Dry @ | | 31 gal | | | |

## COMMENTS (i.e., pumped dry, sample odor, well recharge time & percent, etc.)

1) Take Total Well Depth and DTW Measurements 2) Remove any sediment from bottom with Heavy plastic bailer
3) Surge well along well screen for 10 minutes
4)Remove water from well with Pump until dry / clear/ 10 well volumes
5) Collect TWD measurement after purging

DATE: ~~10/17/11~~ 1-23-12

**AEI CONSULTANTS**
MONITORING WELL DEVELOPMENT LOG

PAGE: ____ OF: ____

Project Name: Buestad
Location: 1600 Park Street, Alameda, CA
Project No.: 298931
Start Time: 0930 End Time: 1010

Technician: J. Sigg
Project Manager:
Conditions:
Development Method: Surge block w/ submersible pump

## MONITORING WELL DATA

**Well ID:** DPE-5
Well Diameter:
Constructed Depth of Well:
Screened Interval:
Slot Size:
Filter Pack Material/Size:
Depth to Water: 8.85
Height of Water Column:

Calculated Gallons Purged: ACTUAL
2" (0.16 gal/ft) <or> 4" (0.65 gal/ft): 21

Actual Well Volumes Removed:
Surge Start Time 0940 Surge Stop Time 0950
Free Product Present?
Well Depth Before Development: 17.65
Well Depth After Development: 17.68

## FIELD PARAMETERS MEASURED

| Time | Volume Removed (gallons) | Temp (deg C) | pH | Conductivity (µsec/cm) | DO (mg/L) | ORP (meV) | Appearance of Purge Water |
|---|---|---|---|---|---|---|---|
| 0955 | 10 | 18.97 | 7.51 | 1728 | 3.82 | 175.5 | LT BROWN |
| | 15 | 19.21 | 7.35 | 1340 | 6.24 | 178.5 | 4 |
| | 20 | 19.17 | 7.24 | 1252 | 5.60 | 181.6 | 11 |
| 1010 | 25 | DRY @ | | 21 | gal | | CLOUDY |
| | 30 | | | | | | |
| | 35 | | | | | | |
| | 40 | | | | | | |
| | 45 | | | | | | |
| | 50 | | | | | | |
| | 55 | | | | | | |
| | | | | | | | |
| | | | | | | | |
| | | | | | | | |
| | | | | | | | |
| | | | | | | | |

## COMMENTS (i.e., pumped dry, sample odor, well recharge time & percent, etc.)

1) Take Total Well Depth and DTW Measurements 2) Remove any sediment from bottom with Heavy plastic bailer
3) Surge well along well screen for 10 minutes
4)Remove water from well with Pump until dry / clear/ 10 well volumes
5) Collect TWD measurement after purging

DATE: 10/17/11 | **AEI CONSULTANTS** | PAGE: ____ OF: ____

MONITORING WELL DEVELOPMENT LOG

Project Name: Buestad | Technician: J. Sigg

Location: 1600 Park Street, Alameda, CA | Project Manager:

Project No.: 298931 | Conditions:

Start Time: 1030 | End Time: 1115 | Development Method: Surge block w/ submersible pump

## MONITORING WELL DATA

**Well ID:** DPE-6

Well Diameter:

Constructed Depth of Well:

Screened Interval:

Slot Size:

Filter Pack Material/Size:

Depth to Water: 8.59

Height of Water Column:

Calculated Gallons Purged: ACTUAL
2" (0.16 gal/ft) <or> 4" (0.65 gal/ft) 25

Actual Well Volumes Removed:

Surge Start Time 1040 | Surge Stop Time 1050

Free Product Present?

Well Depth Before Development: 17.63

Well Depth After Development:

## FIELD PARAMETERS MEASURED

| Time | Volume Removed (gallons) | Temp (deg C) | pH | Conductivity (µsec/cm) | DO (mg/L) | ORP (meV) | Appearance of Purge Water |
|---|---|---|---|---|---|---|---|
| 1055 | 10 | 18.50 | 7.54 | 1508 | 2.04 | 178.3 | LT Brn |
| | 15 | 18.54 | 7.42 | 1753 | 1.75 | 173.2 | " |
| | 20 | 18.83 | 7.31 | 1310 | .76 | 154.2 | " |
| | 25 | 18.85 | 7.17 | 1035 | .86 | 150.9 | cloudy |
| 1115 | 28 | DRY | | | | | " |
| | | | | | | | |
| | | | | | | | |
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## COMMENTS (i.e., pumped dry, sample odor, well recharge time & percent, etc.)

1) Take Total Well Depth and DTW Measurements 2) Remove any sediment from bottom with Heavy plastic bailer

3) Surge well along well screen for 10 minutes

4)Remove water from well with Pump until dry / clear/ 10 well volumes

5) Collect TWD measurement after purging

DATE: ~~10/17/11~~ 1-23-12

**AEI CONSULTANTS**
MONITORING WELL DEVELOPMENT LOG

PAGE: _____ OF: _____

Project Name: Buestad
Location: 1600 Park Street, Alameda, CA
Project No.: 298931
Start Time: 1130 End Time: 1210

Technician: J. Sigg
Project Manager:
Conditions:
Development Method: Surge block w/ submersible pump

## MONITORING WELL DATA

Well ID: DPE-8
Well Diameter:
Constructed Depth of Well:
Screened Interval:
Slot Size:
Filter Pack Material/Size:
Depth to Water: 8.21
Height of Water Column:

Calculated Gallons Purged: ACTUAL
2" (0.16 gal/ft) <or> 4" (0.65 gal/ft) 27

Actual Well Volumes Removed:
Surge Start Time 1140 Surge Stop Time 1150
Free Product Present?
Well Depth Before Development: 17.74
Well Depth After Development: ~~17.77~~

## FIELD PARAMETERS MEASURED

| Time | Volume Removed (gallons) | Temp (deg C) | pH | Conductivity (µsec/cm) | DO (mg/L) | ORP (meV) | Appearance of Purge Water |
|---|---|---|---|---|---|---|---|
| 1155 | 10 | 18.94 | 8.62 | 1738 | 6.68 | 175.9 | LT BRN |
| | 15 | 18.49 | 8.31 | 1788 | 4.69 | 175.3 | Cloudy |
| | 20 | 18.81 | 7.98 | 1780 | 2.56 | 174.8 | " |
| 1210 | 25 | 19.05 | 7.84 | 1726 | 2.18 | 172.3 | " |
| | | Dry | @ | 27 | gal | | |

## COMMENTS (i.e., pumped dry, sample odor, well recharge time & percent, etc.)

1) Take Total Well Depth and DTW Measurements 2) Remove any sediment from bottom with Heavy plastic bailer
3) Surge well along well screen for 10 minutes
4)Remove water from well with Pump until dry / clear/ 10 well volumes
5) Collect TWD measurement after purging

DATE: ~~10/17/11~~ 1-23-12

**AEI CONSULTANTS**
MONITORING WELL DEVELOPMENT LOG

PAGE: _____ OF: _____

Project Name: Buestad
Location: 1600 Park Street, Alameda, CA
Project No.: 298931
Start Time: 1230 End Time: 1310

Technician: J. Sigg
Project Manager:
Conditions:
Development Method: Surge block w/ submersible pump

## MONITORING WELL DATA

Well ID: DPE-9
Well Diameter:
Constructed Depth of Well:
Screened Interval:
Slot Size:
Filter Pack Material/Size:
Depth to Water: 8.16
Height of Water Column:

Calculated Gallons Purged: Actual
2" (0.16 gal/ft) <or> 4" (0.65 gal/ft) 27

Actual Well Volumes Removed:
Surge Start Time 1240 Surge Stop Time 1250
Free Product Present?
Well Depth Before Development: 17.41
Well Depth After Development: 17.44

## FIELD PARAMETERS MEASURED

| Time | Volume Removed (gallons) | Temp (deg C) | pH | Conductivity (µsec/cm) | DO (mg/L) | ORP (meV) | Appearance of Purge Water |
|---|---|---|---|---|---|---|---|
| 12.55 | 10 | 19.00 | 8.46 | 1664 | 5.96 | 184.8 | LT BRN |
| | 15 | 18.88 | 8.40 | 1658 | 5.50 | 184.4 | " |
| | 20 | 18.84 | 8.20 | 1691 | 4.30 | 184.9 | Cloudy |
| | 25 | 18.92 | 7.93 | 17.08 | 1.65 | 175.4 | " |
| 1310 | 28 | Dry @ 27 gal | | | | | |

## COMMENTS (i.e., pumped dry, sample odor, well recharge time & percent, etc.)

1) Take Total Well Depth and DTW Measurements 2) Remove any sediment from bottom with Heavy plastic bailer
3) Surge well along well screen for 10 minutes
4)Remove water from well with Pump until dry / clear/ 10 well volumes
5) Collect TWD measurement after purging

DATE: ~~10/17/11~~ 1-23-12

**AEI CONSULTANTS**
MONITORING WELL DEVELOPMENT LOG

PAGE: _____ OF: _____

Project Name: Buestad
Location: 1600 Park Street, Alameda, CA
Project No.: 298931
Start Time: 1330 End Time: 1410

Technician: J. Sigg
Project Manager:
Conditions:
Development Method: Surge block w/ submersible pump

## MONITORING WELL DATA

Well ID: DPE-10
Well Diameter:
Constructed Depth of Well:
Screened Interval:
Slot Size:
Filter Pack Material/Size:
Depth to Water: 8.32
Height of Water Column:

Calculated Gallons Purged: Actual 26
2" (0.16 gal/ft) <or> 4" (0.65 gal/ft)

Actual Well Volumes Removed:
Surge Start Time 1340 Surge Stop Time 1350
Free Product Present?
Well Depth Before Development: 16.48
Well Depth After Development:

## FIELD PARAMETERS MEASURED

| Time | Volume Removed (gallons) | Temp (deg C) | pH | Conductivity (µsec/cm) | DO (mg/L) | ORP (meV) | Appearance of Purge Water |
|---|---|---|---|---|---|---|---|
| 1355 | 10 | 18.54 | 8.14 | 1764 | 3.36 | 183.5 | Cloudy |
| | 15 | 18.92 | 8.30 | 1660 | 4.55 | 1648 | " |
| 1410 | 20 | 18.93 | 8.28 | 1531 | 4.27 | 1521 | " |
| | 25 | DRY @ 26 gal | | | | | |

## COMMENTS (i.e., pumped dry, sample odor, well recharge time & percent, etc.)

1) Take Total Well Depth and DTW Measurements 2) Remove any sediment from bottom with Heavy plastic bailer
3) Surge well along well screen for 10 minutes
4)Remove water from well with Pump until dry / clear/ 10 well volumes
5) Collect TWD measurement after purging

DATE: ~~10/17/11~~ 1-23-12

**AEI CONSULTANTS**
MONITORING WELL DEVELOPMENT LOG

PAGE: ____ OF: ____

Project Name: Buestad
Location: 1600 Park Street, Alameda, CA
Project No.: 298931
Start Time: 1430 End Time: 1510

Technician: J. Sigg
Project Manager:
Conditions:
Development Method: Surge block w/ submersible pump

## MONITORING WELL DATA

**Well ID:** DPE-11
Well Diameter:
Constructed Depth of Well:
Screened Interval:
Slot Size:
Filter Pack Material/Size:
Depth to Water: 8.79
Height of Water Column:

Calculated Gallons Purged:
2" (0.16 gal/ft) <or> 4" (0.65 gal/ft) Actual 27.

Actual Well Volumes Removed:
Surge Start Time 1440 Surge Stop Time 1450
Free Product Present?
Well Depth Before Development: 17.72
Well Depth After Development:

## FIELD PARAMETERS MEASURED

| Time | Volume Removed (gallons) | Temp (deg C) | pH | Conductivity (µsec/cm) | DO (mg/L) | ORP (meV) | Appearance of Purge Water |
|---|---|---|---|---|---|---|---|
| 1455 | 10 | 18.26 | 8.20 | 1607 | 4.05 | 195.4 | LT BRN |
| | 15 | 18.07 | 8.03 | 1718 | 2.69 | 190.9 | " |
| | 20 | 18.44 | 8.04 | 1868 | 2.72 | 183.5 | CLOUDY |
| 1510 | 25 | 18.70 | 8.21 | 1611 | 4.85 | 178.3 | " |
| | | Dry @ | | 27 | gal | | |

## COMMENTS (i.e., pumped dry, sample odor, well recharge time & percent, etc.)

1) Take Total Well Depth and DTW Measurements 2) Remove any sediment from bottom with Heavy plastic bailer
3) Surge well along well screen for 10 minutes
4)Remove water from well with Pump until dry / clear/ 10 well volumes
5) Collect TWD measurement after purging

**AEI CONSULTANTS**

GROUNDWATER MONITORING WELL FIELD SAMPLING FORM

MW1

**Monitoring Well Number:** ~~MW-3~~ 1

| | | | |
|---|---|---|---|
| Project Name: | Buestad | Date of Sampling: | 1-24-12 |
| Job Number: | 298931 | Name of Sampler: | J. Rigg |
| Project Address: | 1630 Park Street | | |

## MONITORING WELL DATA

| | | | |
|---|---|---|---|
| Well Casing Diameter (2"/4"/6") | 2 | | |
| Wellhead Condition | | | |
| Elevation of Top of Casing (feet above msl) | | | |
| Depth of Well | 20.00 | | |
| Depth to Water (from top of casing) | ~~8.25~~ 8.08 | | |
| Water Elevation (feet above msl) | | | |
| Well Volumes Purged | | | |
| Gallons Purged: formula valid only for casing sizes of 2" (0.16 gal/ft), 4" (0.65 gal/ft), and 6" (1.44 gal/ft) | 5.64 | | |
| Actual Volume Purged (~~liters~~) GAL | 6 | | |
| Appearance of Purge Water | | | |
| Free Product Present? | | Thickness (ft): | |

## GROUNDWATER SAMPLES

Number of Samples/Container Size

| Time | Vol Removed (~~liters~~) GAL | Temperature (deg C) | pH | Conductivity (µ S/cm) | DO (mg/L) | ORP (meV) | Comments |
|---|---|---|---|---|---|---|---|
| 1130 | 1 | 18.29 | 8.22 | 105 | 2.26 | 24.5 | LT Brn |
| | 2 | 18.28 | 7.64 | 122 | 1.88 | 33.6 | Cloudy |
| | 3 | 18.08 | 7.45 | 140 | 1.28 | 42.1 | Clear |
| | 4 | 18.12 | 7.18 | 164 | 0.82 | 48.2 | " |
| | 5 | 18.45 | 7.11 | 237 | 0.73 | 50.4 | " |
| 1135 | 6 | 18.60 | 7.11 | 286 | 0.91 | 53.1 | " |
| | | | | | | | |
| | | | | | | | |
| | | | | | | | |
| | | | | | | | |

**COMMENTS (i.e., sample odor, well recharge time & percent, etc.)**

**AEI CONSULTANTS**

GROUNDWATER MONITORING WELL FIELD SAMPLING FORM

**Monitoring Well Number: MW-2**

| | | | |
|---|---|---|---|
| Project Name: | Buestad | Date of Sampling: | 1-24-12 |
| Job Number: | 298931 | Name of Sampler: | J. Sigg |
| Project Address: | 1630 Park Street | | |

## MONITORING WELL DATA

| | | | |
|---|---|---|---|
| Well Casing Diameter (2"/4"/6") | 2 | | |
| Wellhead Condition | | | |
| Elevation of Top of Casing (feet above msl) | | | |
| Depth of Well | 20.00 | | |
| Depth to Water (from top of casing) | 8.43 | | |
| Water Elevation (feet above msl) | | | |
| Well Volumes Purged | | | |
| Gallons Purged: formula valid only for casing sizes of 2" (0.16 gal/ft), 4" (0.65 gal/ft), and 6" (1.44 gal/ft) | 5.5 | | |
| Actual Volume Purged (~~liters~~) GAL | 6 | | |
| Appearance of Purge Water | | | |
| Free Product Present? | | Thickness (ft): | |

## GROUNDWATER SAMPLES

Number of Samples/Container Size

| Time | Vol Removed (~~liters~~) GAL | Temperature (deg C) | pH | Conductivity (µ S/cm) | DO (mg/L) | ORP (meV) | Comments |
|---|---|---|---|---|---|---|---|
| 1100 | 1 | 18.60 | 7.34 | 729 | 1.92 | -24.7 | clear |
| | 2 | 18.33 | 7.30 | 721 | 1.08 | -30.4 | |
| | 3 | 18.12 | 7.18 | 715 | 0.85 | -26.7 | |
| | 4 | 18.14 | 7.13 | 728 | 0.70 | -28.4 | |
| | 5 | 18.30 | 7.19 | 750 | 0.66 | -32.4 | |
| 1105 | 6 | 18.48 | 7.23 | 753 | 0.63 | -32.7 | |
| | | | | | | | |
| | | | | | | | |
| | | | | | | | |
| | | | | | | | |

## COMMENTS (i.e., sample odor, well recharge time & percent, etc.)

**AEI CONSULTANTS**

GROUNDWATER MONITORING WELL FIELD SAMPLING FORM

MW3

**Monitoring Well Number:** ~~MW-1~~

| | | | |
|---|---|---|---|
| Project Name: | Buestad | Date of Sampling: | 1-24-12 |
| Job Number: | 298931 | Name of Sampler: | J. Sligh |
| Project Address: | 1630 Park Street | | |

## MONITORING WELL DATA

| | | | |
|---|---|---|---|
| Well Casing Diameter (2"/4"/6") | 2 | | |
| Wellhead Condition | | | |
| Elevation of Top of Casing (feet above msl) | | | |
| Depth of Well | 20.00 | | |
| Depth to Water (from top of casing) | ~~8.08~~ 8.25 | | |
| Water Elevation (feet above msl) | | | |
| Well Volumes Purged | | | |
| Gallons Purged: formula valid only for casing sizes of 2" (0.16 gal/ft), 4" (0.65 gal/ft), and 6" (1.44 gal/ft) | 5.72 | | |
| Actual Volume Purged (~~liters~~) GAL | 6 | | |
| Appearance of Purge Water | | | |
| Free Product Present? | | Thickness (ft): | |

## GROUNDWATER SAMPLES

Number of Samples/Container Size

| Time | Vol Removed (~~liters~~) GAL | Temperature (deg C) | pH | Conductivity (µ S/cm) | DO (mg/L) | ORP (meV) | Comments |
|---|---|---|---|---|---|---|---|
| 1030 | 1 | 17.97 | 6.99 | 601 | 1.18 | 117.3 | Clear |
| | 2 | 17.77 | 6.76 | 610 | 0.82 | 117.9 | " |
| | 3 | 17.90 | 6.76 | 627 | 0.63 | 113.1 | " |
| | 4 | 18.14 | 6.88 | 638 | 0.59 | 110.6 | " |
| | 5 | 18.25 | 6.92 | 647 | 0.57 | 103.3 | " |
| 1037 | 6 | 18.34 | 6.92 | 660 | 0.58 | 93.4 | " |
| | | | | | | | |
| | | | | | | | |
| | | | | | | | |
| | | | | | | | |

**COMMENTS (i.e., sample odor, well recharge time & percent, etc.)**

Slight odor

**AEI CONSULTANTS**

GROUNDWATER MONITORING WELL FIELD SAMPLING FORM

**Monitoring Well Number: DPE-1**

| | | | |
|---|---|---|---|
| Project Name: | Buestad | Date of Sampling: | 1-24-12 |
| Job Number: | 298931 | Name of Sampler: | J-Sigg |
| Project Address: | 1630 Park Street | | |

## MONITORING WELL DATA

| | | | |
|---|---|---|---|
| Well Casing Diameter (2"/4"/6") | 4 | | |
| Wellhead Condition | | | |
| Elevation of Top of Casing (feet above msl) | | | |
| Depth of Well | 15.00 | | |
| Depth to Water (from top of casing) | 8.78 | | |
| Water Elevation (feet above msl) | | | |
| Well Volumes Purged | | | |
| Gallons Purged: formula valid only for casing sizes of 2" (0.16 gal/ft), 4" (0.65 gal/ft), and 6" (1.44 gal/ft) | 12.12 | | |
| Actual Volume Purged ~~(liters)~~ GAL | 12 | | |
| Appearance of Purge Water | | | |
| Free Product Present? | | Thickness (ft): | |

## GROUNDWATER SAMPLES

Number of Samples/Container Size

| Time | Vol Removed ~~(liters)~~ GAL | Temperature (deg C) | pH | Conductivity (µ S/cm) | DO (mg/L) | ORP (meV) | Comments |
|---|---|---|---|---|---|---|---|
| 1055 | 2 | 17.64 | 7.49 | 796 | 1.77 | -83.8 | Clear |
| | 4 | 17.60 | 7.54 | 795 | 0.83 | -95.6 | " |
| | 6 | 17.59 | 7.54 | 792 | 0.70 | -97.4 | " |
| | 8 | 17.56 | 7.53 | 786 | 0.62 | -98.5 | " |
| | 10 | 17.54 | 7.51 | 780 | 0.57 | -98.4 | " |
| 1105 | 12 | 17.52 | 7.49 | 775 | 0.53 | -99.3 | " |
| | | | | | | | |
| | | | | | | | |
| | | | | | | | |
| | | | | | | | |

**COMMENTS (i.e., sample odor, well recharge time & percent, etc.)**

Slight Smell

**AEI CONSULTANTS**

GROUNDWATER MONITORING WELL FIELD SAMPLING FORM

**Monitoring Well Number: DPE-2**

| | | | |
|---|---|---|---|
| Project Name: | Buestad | Date of Sampling: | 1-24-12 |
| Job Number: | 298931 | Name of Sampler: | J. Sigg |
| Project Address: | 1630 Park Street | | |

## MONITORING WELL DATA

| | | | |
|---|---|---|---|
| Well Casing Diameter (2"/4"/6") | 4 | | |
| Wellhead Condition | | | |
| Elevation of Top of Casing (feet above msl) | | | |
| Depth of Well | 15.00 | | |
| Depth to Water (from top of casing) | 7.97 | | |
| Water Elevation (feet above msl) | | | |
| Well Volumes Purged | | | |
| Gallons Purged: formula valid only for casing sizes of 2" (0.16 gal/ft), 4" (0.65 gal/ft), and 6" (1.44 gal/ft) | 13.7 | | |
| Actual Volume Purged (~~liters~~) GAL | 14 | | |
| Appearance of Purge Water | | | |
| Free Product Present? | | Thickness (ft): | |

## GROUNDWATER SAMPLES

Number of Samples/Container Size

| Time | Vol Removed (~~liters~~) GAL | Temperature (deg C) | pH | Conductivity (µ S/cm) | DO (mg/L) | ORP (meV) | Comments |
|---|---|---|---|---|---|---|---|
| 1115 | 2 | 17.59 | 7.54 | 524 | 0.98 | 3.5 | Cloudy |
| | 4 | 17.61 | 7.47 | 521 | 0.58 | 8.5 | Clear |
| | 6 | 17.63 | 7.44 | 520 | 0.53 | 11.4 | " |
| | 8 | 17.62 | 7.43 | 525 | 0.49 | 13.3 | " |
| | 10 | 17.60 | 7.46 | 534 | 0.46 | 13.4 | " |
| | 12 | 17.61 | 7.48 | 536 | 0.45 | 13.8 | " |
| 1121 | 14 | 17.65 | 7.48 | 536 | 0.43 | 14.6 | " |
| | | | | | | | |
| | | | | | | | |
| | | | | | | | |

**COMMENTS (i.e., sample odor, well recharge time & percent, etc.)**

Smelly

**AEI CONSULTANTS**

GROUNDWATER MONITORING WELL FIELD SAMPLING FORM

**Monitoring Well Number: DPE-3**

| | | | |
|---|---|---|---|
| Project Name: | Buestad | Date of Sampling: | 1-24-12 |
| Job Number: | 298931 | Name of Sampler: | J. Sigg |
| Project Address: | 1630 Park Street | | |

## MONITORING WELL DATA

| | | | |
|---|---|---|---|
| Well Casing Diameter (2"/4"/6") | 4 | | |
| Wellhead Condition | | | |
| Elevation of Top of Casing (feet above msl) | | | |
| Depth of Well | 14.00 | | |
| Depth to Water (from top of casing) | 8.98 | | |
| Water Elevation (feet above msl) | | | |
| Well Volumes Purged | | | |
| Gallons Purged: formula valid only for casing sizes of 2" (0.16 gal/ft), 4" (0.65 gal/ft), and 6" (1.44 gal/ft) | 9.78 | | |
| Actual Volume Purged (~~liters~~) Gal | 10 | | |
| Appearance of Purge Water | | | |
| Free Product Present? | | Thickness (ft): | |

## GROUNDWATER SAMPLES

Number of Samples/Container Size

| Time | Vol Removed (~~liters~~) Gal | Temperature (deg C) | pH | Conductivity (µ S/cm) | DO (mg/L) | ORP (meV) | Comments |
|---|---|---|---|---|---|---|---|
| 0930 | 2 | 17.76 | 7.28 | 654 | 1.20 | 152.2 | Cloudy |
| | 4 | 17.73 | 7.28 | 674 | 0.78 | 104.7 | " |
| | 6 | 17.75 | 7.22 | 728 | 0.70 | -37.8 | Clear |
| | 8 | 17.82 | 7.20 | 765 | 0.94 | -43.7 | " |
| 0938 | 10 | 17.91 | 7.26 | 779 | 0.98 | -57.2 | " |
| | | | | | | | |
| | | | | | | | |
| | | | | | | | |
| | | | | | | | |
| | | | | | | | |

**COMMENTS (i.e., sample odor, well recharge time & percent, etc.)**

Smelly

**AEI CONSULTANTS**

GROUNDWATER MONITORING WELL FIELD SAMPLING FORM

**Monitoring Well Number: DPE-4**

| | | | |
|---|---|---|---|
| Project Name: | Buestad | Date of Sampling: | 1-24-12 |
| Job Number: | 298931 | Name of Sampler: | J-Sagg |
| Project Address: | 1630 Park Street | | |

## MONITORING WELL DATA

| | | | |
|---|---|---|---|
| Well Casing Diameter (2"/4"/6") | 4 | | |
| Wellhead Condition | | | |
| Elevation of Top of Casing (feet above msl) | | | |
| Depth of Well | 17.00 | | |
| Depth to Water (from top of casing) | 9.11 | | |
| Water Elevation (feet above msl) | | | |
| Well Volumes Purged | | | |
| Gallons Purged: formula valid only for casing sizes of 2" (0.16 gal/ft), 4" (0.65 gal/ft), and 6" (1.44 gal/ft) | 15.38 | | |
| Actual Volume Purged ~~(liters)~~ GAL | 15 | | |
| Appearance of Purge Water | | | |
| Free Product Present? | | Thickness (ft): | |

## GROUNDWATER SAMPLES

Number of Samples/Container Size

| Time | Vol Removed ~~(liters)~~ GAL | Temperature (deg C) | pH | Conductivity (µ S/cm) | DO (mg/L) | ORP (meV) | Comments |
|---|---|---|---|---|---|---|---|
| 0800 | 2 | 18.32 | 7.18 | 708 | 3.38 | 183.2 | Slightly Cloudy |
| | 4 | 18.42 | 7.21 | 753 | 3.38 | 184.2 | Clear |
| | 6 | 18.44 | 7.23 | 787 | 3.55 | 184.9 | " |
| | 8 | 18.47 | 7.24 | 821 | 3.70 | 185.4 | Slightly Cloudy |
| | 10 | 18.48 | 7.25 | 851 | 3.77 | 186.0 | " |
| | 12 | 18.51 | 7.24 | 858 | 3.75 | 186.3 | " |
| 0810 | 15 | 18.53 | 7.23 | 855 | 3.72 | 186.6 | " |
| | | | | | | | |
| | | | | | | | |
| | | | | | | | |

**COMMENTS (i.e., sample odor, well recharge time & percent, etc.)**

**AEI CONSULTANTS**

GROUNDWATER MONITORING WELL FIELD SAMPLING FORM

**Monitoring Well Number: DPE-6**

| | | | |
|---|---|---|---|
| Project Name: | Buestad | Date of Sampling: | 1-24-12 |
| Job Number: | 298931 | Name of Sampler: | J. Sigg |
| Project Address: | 1630 Park Street | | |

## MONITORING WELL DATA

| | | | |
|---|---|---|---|
| Well Casing Diameter (2"/4"/6") | 4 | | |
| Wellhead Condition | | | |
| Elevation of Top of Casing (feet above msl) | | | |
| Depth of Well | 18.00 | | |
| Depth to Water (from top of casing) | 8.58 | | |
| Water Elevation (feet above msl) | | | |
| Well Volumes Purged | | | |
| Gallons Purged: formula valid only for casing sizes of 2" (0.16 gal/ft), 4" (0.65 gal/ft), and 6" (1.44 gal/ft) | 18.3 | | |
| Actual Volume Purged ~~(liters)~~ GAL | 18 | | |
| Appearance of Purge Water | | | |
| Free Product Present? | | Thickness (ft): | |

## GROUNDWATER SAMPLES

Number of Samples/Container Size

| Time | Vol Removed ~~(liters)~~ GAL | Temperature (deg C) | pH | Conductivity (µ S/cm) | DO (mg/L) | ORP (meV) | Comments |
|---|---|---|---|---|---|---|---|
| 0845 | 2 | 18.42 | 7.32 | 752 | 4.58 | 182.7 | Clear |
| | 4 | 18.50 | 7.27 | 754 | 4.28 | 182.7 | " |
| | 6 | 18.49 | 7.29 | 766 | 4.27 | 182.2 | " |
| | 8 | 18.49 | 7.34 | 798 | 4.52 | 181.3 | " |
| | 10 | 18.53 | 7.35 | 826 | 4.67 | 180.7 | " |
| | 12 | 18.57 | 7.34 | 845 | 4.70 | 180.4 | " |
| | 14 | 18.59 | 7.33 | 854 | 4.62 | 180.3 | " |
| | 16 | 18.61 | 7.31 | 858 | 4.48 | 180.3 | " |
| 0900 | 18 | 18.64 | 7.29 | 857 | 4.27 | 180.0 | " |
| | | | | | | | |

**COMMENTS (i.e., sample odor, well recharge time & percent, etc.)**

**AEI CONSULTANTS**

GROUNDWATER MONITORING WELL FIELD SAMPLING FORM

**Monitoring Well Number: DPE-9**

| | | | |
|---|---|---|---|
| Project Name: | Buestad | Date of Sampling: | 1-24-12 |
| Job Number: | 298931 | Name of Sampler: | J. Sigg |
| Project Address: | 1630 Park Street | | |

## MONITORING WELL DATA

| | | | |
|---|---|---|---|
| Well Casing Diameter (2"/4"/6") | 4 | | |
| Wellhead Condition | | | |
| Elevation of Top of Casing (feet above msl) | | | |
| Depth of Well | 18.00 | | |
| Depth to Water (from top of casing) | 8.12 | | |
| Water Elevation (feet above msl) | | | |
| Well Volumes Purged | | | |
| Gallons Purged: formula valid only for casing sizes of 2" (0.16 gal/ft), 4" (0.65 gal/ft), and 6" (1.44 gal/ft) | 19.2 | | |
| Actual Volume Purged (~~liters~~) gall | 19. | | |
| Appearance of Purge Water | | | |
| Free Product Present? | | Thickness (ft): | |

## GROUNDWATER SAMPLES

Number of Samples/Container Size

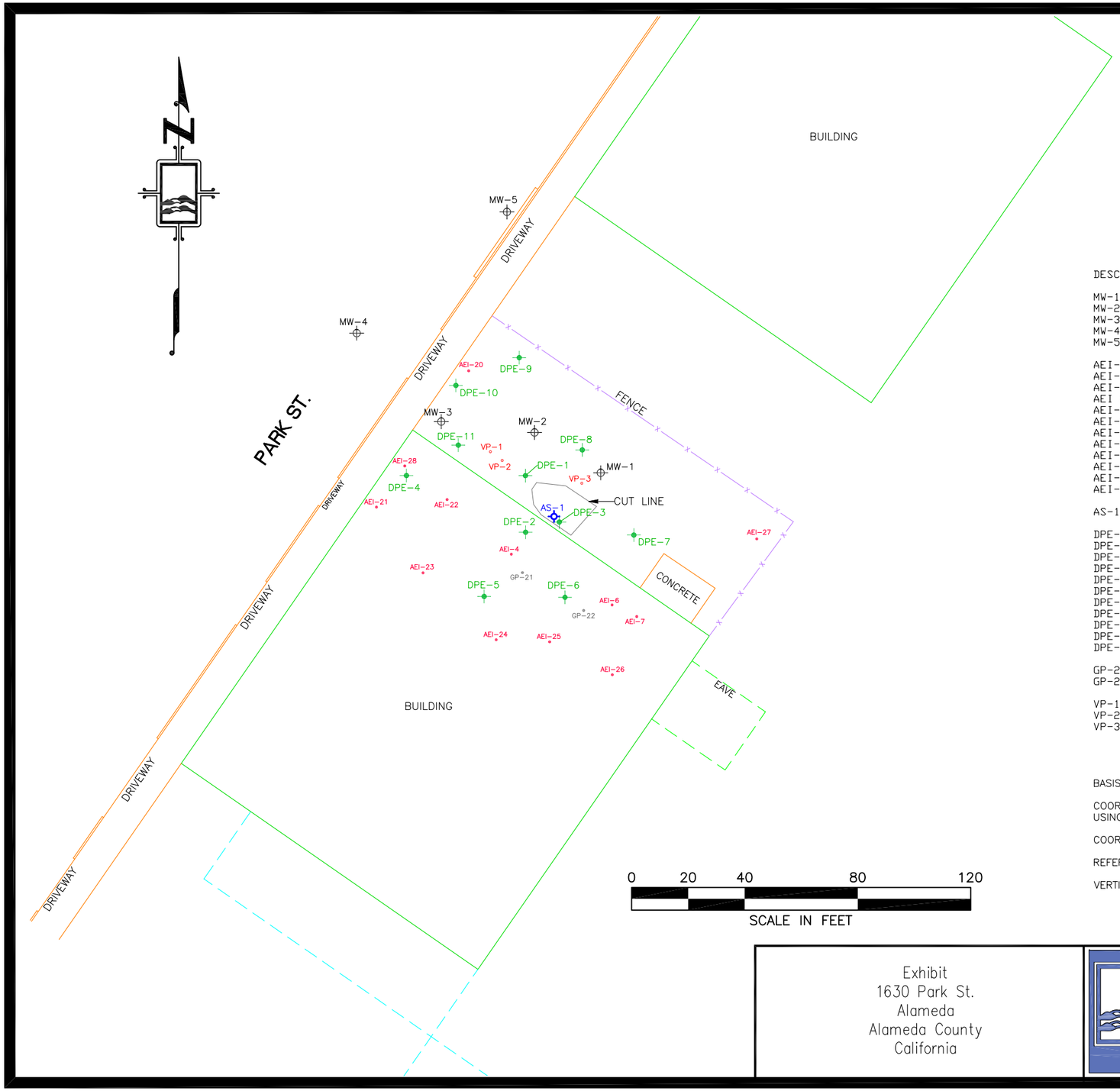
| Time | Vol Removed (~~liters~~) gal | Temperature (deg C) | pH | Conductivity (µ S/cm) | DO (mg/L) | ORP (meV) | Comments |
|---|---|---|---|---|---|---|---|
| 1000 | 2 | 18.73 | 7.65 | 966 | 2.13 | 77.8 | Clear |
| | 4 | 18.90 | 7.55 | 997 | 2.41 | 80.9 | " |
| | 6 | 18.92 | 7.61 | 1078 | 3.49 | 89.6 | " |
| | 8 | 18.94 | 7.60 | 1089 | 3.82 | 93.2 | " |
| | 10 | 18.99 | 7.59 | 1077 | 3.96 | 95.3 | " |
| | 12 | 19.10 | 7.54 | 1031 | 4.06 | 99.1 | " |
| | 14 | 19.22 | 7.49 | 957 | 3.95 | 102.4 | " |
| | 16 | 19.30 | 7.47 | 928 | 3.93 | 104.2 | " |
| 1015 | 19 | 19.37 | 7.47 | 907 | 3.87 | 105.5 | " |
| | | | | | | | |

**COMMENTS (i.e., sample odor, well recharge time & percent, etc.)**

Slight odor

# APPENDIX F

# SURVEY DATA




# Monitoring Well Exhibit

**Prepared For:**

## AEI Consultants

| DESC. | NORTHING | EASTING | LATITUDE | LONGITUDE | EL. PVC | EL. RIM | EL. GND |
|---|---|---|---|---|---|---|---|
| MW-1 | 2106560.8 | 6058826.3 | 37.7673924 | -122.2397249 | 25.37 | 25.80 | |
| MW-2 | 2106575.1 | 6058802.9 | 37.7674304 | -122.2398068 | 25.48 | 25.82 | |
| MW-3 | 2106579.0 | 6058769.9 | 37.7674393 | -122.2399212 | 25.13 | 26.01 | |
| MW-4 | 2106610.3 | 6058740.0 | 37.7675237 | -122.2400267 | 25.58 | 25.92 | |
| MW-5 | 2106653.1 | 6058793.2 | 37.7676441 | -122.2398456 | 24.32 | 24.55 | |
| AEI-4 | 2106532.1 | 6058794.7 | 37.7673118 | -122.2398325 | | | 26.4 |
| AEI-6 | 2106514.1 | 6058830.4 | 37.7672643 | -122.2397080 | | | 26.4 |
| AEI-7 | 2106510.0 | 6058839.1 | 37.7672535 | -122.2396775 | | | 26.4 |
| AEI 20 | 2106596.9 | 6058779.6 | 37.7674891 | -122.2398888 | | | 25.6 |
| AEI-21 | 2106548.7 | 6058747.0 | 37.7673551 | -122.2399986 | | | 26.4 |
| AEI-22 | 2106551.4 | 6058772.0 | 37.7673636 | -122.2399123 | | | 26.4 |
| AEI-23 | 2106525.5 | 6058763.5 | 37.7672921 | -122.2399401 | | | 26.4 |
| AEI-24 | 2106501.8 | 6058789.4 | 37.7672284 | -122.2398490 | | | 26.4 |
| AEI-25 | 2106501.0 | 6058808.3 | 37.7672273 | -122.2397835 | | | 26.4 |
| AEI-26 | 2106489.4 | 6058830.5 | 37.7671965 | -122.2397061 | | | 26.4 |
| AEI-27 | 2106537.5 | 6058881.6 | 37.7673311 | -122.2395324 | | | 26.3 |
| AEI-28 | 2106563.3 | 6058757.0 | 37.7673955 | -122.2399649 | | | 26.4 |
| AS-1 | 2106545.4 | 6058809.8 | 37.7673492 | -122.2397811 | 25.76 | 26.14 | |
| DPE-1 | 2106559.9 | 6058799.7 | 37.7673884 | -122.2398169 | 25.88 | 26.11 | |
| DPE-2 | 2106539.8 | 6058799.8 | 37.7673333 | -122.2398155 | 26.22 | 26.40 | |
| DPE-3 | 2106543.4 | 6058811.7 | 37.7673439 | -122.2397744 | 25.27 | 26.17 | |
| DPE-4 | 2106559.9 | 6058757.6 | 37.7673863 | -122.2399626 | 26.06 | 26.42 | |
| DPE-5 | 2106517.1 | 6058785.1 | 37.7672702 | -122.2398647 | 26.25 | 26.45 | |
| DPE-6 | 2106516.8 | 6058813.7 | 37.7672708 | -122.2397658 | 26.13 | 26.38 | |
| DPE-7 | 2106538.8 | 6058838.1 | 37.7673326 | -122.2396829 | BARRELL | | |
| DPE-8 | 2106568.9 | 6058819.8 | 37.7674143 | -122.2397479 | 25.36 | 25.76 | |
| DPE-9 | 2106601.6 | 6058797.5 | 37.7675028 | -122.2398272 | 25.09 | 25.55 | |
| DPE-10 | 2106591.8 | 6058775.1 | 37.7674747 | -122.2399041 | 25.14 | 25.63 | |
| DPE-11 | 2106570.6 | 6058776.0 | 37.7674168 | -122.2398998 | 25.57 | 26.08 | |
| GP-21 | 2106525.6 | 6058798.7 | 37.7672941 | -122.2398184 | | | 26.4 |
| GP-22 | 2106512.2 | 6058820.3 | 37.7672584 | -122.2397426 | | | 26.4 |
| VP-1 | 2106568.3 | 6058787.3 | 37.7674110 | -122.2398603 | | 25.99 | |
| VP-2 | 2106565.2 | 6058791.5 | 37.7674027 | -122.2398457 | | 25.99 | |
| VP-3 | 2106557.2 | 6058819.7 | 37.7673819 | -122.2397478 | | 25.92 | |

BASIS OF COORDINATES AND ELEVATIONS:

COORDINATES ARE CALIFORNIA STATE PLANE ZONE 3 COORDINATES FROM GPS OBSERVATIONS USING CSDS VIRTUAL SURVEY NETWORK.

COORDINATE DATUM IS NAD 83.

REFERENCE GEOID IS GEOID03.

VERTICAL DATUM IS NAVD 88 FROM GPS OBSERVATIONS.

Exhibit
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Alameda
Alameda County
California

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Date: February, 2012
Field: 2-21-12
Scale: 1"=40'
Revised:
Field Book: MW-54
Dwg. No. 0116-062 MAM