TETRA TECH

February 3, 2015

Ms. Gail Payne
Transportation Coordinator
City of Alameda
Public Works Department
950 West Mall Square, Room 110
Alameda, CA 94501

**Subject:** **Phase II Environmental Site Assessment Report for the Cross Alameda Trail, Alameda, California**

Dear Ms. Payne:

As requested by the City of Alameda Public Works Department, Tetra Tech is pleased to provide this letter report describing a Phase II Environmental Site Assessment (ESA) for property owned by the City of Alameda (Assessor's Parcel Numbers [APN] 74-905-20-3 and 74-905-20-2). The work consisted of a subsurface soil investigation conducted at a former railroad corridor between Webster Street and Main Street, along the south side of Ralph Appezzato Memorial Parkway (hereinafter referred to as the site), in Alameda, California (Figure 1). The objective of this Phase II ESA was to establish whether elevated concentrations of certain chemicals of potential concern (COPC) relating to past uses are present at the site.

## BACKGROUND

The Phase II ESA investigation addressed recognized environmental conditions (RECs) identified at the site in a Phase I ESA conducted by Belinda P. Blackie, dated March 8, 2010. The Phase I ESA was done for the Alameda Belt Line Parcels (nine non-contiguous parcels comprising 38.81 acres of land including the site), which at the time of the ESA were mostly undeveloped. The site includes approximately 13 acres of former railroad right-of-way and is approximately 4,200 feet in length (Figure 2) (Blackie, 2010).

The Phase I ESA identified the following RECs for the site:

- Historical railroad tracks;
- Fill, imported soil, and;
- Marsh crust (Blackie, 2010).

Evidence of railroad tracks are visible in a 1939 aerial photograph but the railroad was also likely present as early as the mid- to late-1910s. The railroad tracks were removed from the parcels in the mid- to late-1950s (Blackie, 2010). The Phase I ESA also noted that the site has been filled and is located adjacent to the marsh crust area. Based on observations made on December 29 and 30, 2014 during the Tetra Tech's Phase II ESA field work, the site is primarily undeveloped and covered with low vegetation, mulch, and some pavement. The westernmost portion of the site is partially covered by a parking lot for an adjacent business.

## OBJECTIVES AND SCOPE OF WORK

The objective of the Phase II ESA subsurface investigation was to determine whether elevated concentrations of selected COPC are present at the site. The areas where the focused Phase II ESA investigation occurred are shown on Figure 2. The activities described in this report were conducted according to the scope of work presented in Tetra Tech's *Work Plan, Cost Estimate, and Schedule for Phase II Environmental Site Assessment on the Cross Alameda Trail Project, Alameda, California* (Tetra Tech 2014).

Tetra Tech based the selection of COPCs for the Phase II ESA on the RECs identified for the site in the Phase I ESA (Blackie, 2010). Chlorinated herbicides were selected because products containing these chemicals are known to have been used for weed control along railroad tracks; arsenic and lead were selected because fill material and imported fill is likely present at the site and similar materials in Alameda are known to contain these chemicals (Blackie, 2010); and petroleum hydrocarbons and polycyclic aromatic hydrocarbons (PAH) were selected because the material known as the Marsh Crust is known to contain these chemicals. The site is possibly within the limit of filling where marsh crust material was disposed, and the original shoreline was approximately within the site or near the southern border of the site with the upland occurring to the south. The marsh crust material was disposed on tidal marshland between 1900 and 1940 to extend dry land from the existing shoreline (City of Alameda, 2015).

## INVESTIGATION FIELD METHODOLOGY

Tetra Tech conducted the Phase II ESA field investigation on December 29 and 30, 2014. The boring locations were selected to be in approximate alignment with the former railroad tracks, as identified on a USGS topographic map from 1959 (Blackie, 2010). The investigation activities are described below.

### Pre-Field Investigation Activities

Tetra Tech obtained Drilling Permit No. W2014-1180 from the Alameda County Public Works Agency on December 22, 2014. Mr. Steve Miller with the Alameda County Public Works Agency conducted grout inspections on December 29 and 30, 2014.

Tetra Tech prepared a site-specific health and safety plan specifying safe work practices and emergency protocol to mitigate the hazards associated with the field work part of the investigation. Health and safety tailgate meetings attended by all Tetra Tech and drilling subcontractor staff were conducted at the beginning of each work day.

### Utility Location and Clearance

On December 23, 2014 Tetra Tech marked the boring locations with white paint and notified Underground Service Alert (USA) of the drilling investigation. USA members cleared underground utilities under USA Ticket No. 0533298. As an additional precaution, underground utility clearance was done at each borehole on December 29, 2014 by the private subcontractor Subtronic Corporation.

### Drilling and Sampling Methodology

Under the supervision of a Tetra Tech field geologist, Tetra Tech's subcontractor Vironex advanced boreholes CAT-B-1 through CAT-B-10 using direct-push drilling technology on December 29 and 30, 2014. The subsurface soil was continuously sampled during drilling and the soil cores were logged by a Tetra Tech geologist using the Unified Soil Classification System. Copies of the soil boring logs are provided as Attachment A.

Drilling equipment was decontaminated using clean water and Liquinox soap after each soil borehole was completed to avoid cross contamination between drilling locations.

### Soil Sampling

Soil samples were collected from boreholes CAT-B-1 through CAT-B-10 (Figure 2). The soil boreholes were advanced to depths ranging from 8 to 9 feet below ground surface (bgs). Soil samples were collected at two depth intervals from each of the 10 soil boreholes. Shallow soil samples were collected at depths ranging from 0 to 2 feet bgs. Deeper soil samples were collected at depths ranging from 4 to 8 feet bgs. The last numeral of the soil identification nomenclature (e.g., CAT-B-1-4) indicates the approximate depth at which the soil sample was collected.

Soil cores were collected in driller-supplied acetate liners at approximately 4-foot depth intervals for lithologic description and retention for possible laboratory analysis. Soil cores were logged for lithology, including the preparation of borehole logs under the supervision of a professional geologist licensed in the State of California.

Soil samples were collected using laboratory-provided glass jars; labeled with date, sample identification, and time, entered into a chain-of-custody form, and placed on ice in a cooler for shipment to the laboratory. Samples were delivered via FedEx to Accutest Laboratories (Accutest) in San Jose, California under chain-of-custody.

## LABORATORY ANALYSIS

A total of 20 primary soil samples were collected from boreholes CAT-B-1 through CAT-B-10 (two soil samples were collected from each borehole). One duplicate sample (CAT-B) was collected with primary soil sample CAT-B-10-2. The soil samples were analyzed by Accutest in San Jose, California. Accutest is a certified State of California, Environmental Laboratory Accreditation Program (ELAP) laboratory. The soil samples were analyzed using the following United States Environmental Protection Agency (USEPA) methods:

- Total Extractable Petroleum Hydrocarbons (TEPH) by USEPA Method 8015M;
- Polycyclic Aromatic Hydrocarbons (PAH) by USEPA Method 8270C;
- Chlorinated herbicides by USEPA Method 8151; and
- Lead and arsenic by USEPA Method 6020.

## INVESTIGATION RESULTS

Tetra Tech compared the analytical results for the soil samples to the California Environmental Protection Agency (Cal/EPA), California Human Health Screening Levels (CHHSLs) (OEHHA, 2010), and the San Francisco Bay Regional Water Quality Control Board, Environmental Screening Levels (RWQCB, 2013). Although the future land use for the site is to be recreational, screening levels were selected based on residential criteria as a first step in identifying whether contamination exists at the site. The analytical data is summarized and compared with regulatory screening levels in Tables 1 and 2. The data presented in Tables 1 and 2 has in some cases been converted from micrograms per kilogram (µg/kg) to milligrams per kilogram (mg/kg) to allow for a direct comparison to applicable regulatory screening levels. The laboratory analytical reports are provided in Attachment B.

### Petroleum Hydrocarbons

TEPH as diesel was detected in 15 of 21 soil samples analyzed for the compound. The concentrations detected range from 5.74 mg/kg to 188 mg/kg. TEPH as motor oil was detected in 18 of 21 soil samples analyzed for the compound. The concentrations detected range from 5.74 mg/kg to 1,160 mg/kg (Table 1).

### Polycyclic Aromatic Hydrocarbons

Soil sample results indicate that PAH compounds were detected above the laboratory method detection limit in soil samples from 19 of 21 boreholes. The PAH compounds detected at the site include the following: acenapthene, acenaphthylene, anthracene, benzo(a)anthracene, benzo(a)pyrene, benzo(b)fluoranthene, benzo(g,h,i)perylene, benzo(k)fluoranthene, chrysene, dibenz(ah)anthracene, fluoranthene, fluorene, indeno(1,2,3-cd)pyrene, phenanthrene, and pyrene.

PAH compounds were not detected above the laboratory method detection limit in soil samples collected from boreholes CAT-B-1-2 and CAT-B-10-5. Benzo(a)pyrene was the only PAH compound that was detected above one or more of the human health screening levels presented in Table 1. As shown on Figure 2, benzo(a)pyrene was detected above at least one human health screening level in soil samples collected from boreholes CAT-B-1, and CAT-B-4 through CAT-B-10.

### Lead

Lead was detected in all 21 soil samples analyzed for the compound. The concentrations detected range from 2.6 mg/kg to 185 mg/kg (Table 2). Lead concentrations in soil exceeded one or more of the human health screening levels presented in Table 2 for boreholes CAT-B-6, CAT-B-7, and CAT-B-10, as shown on Figure 2.

**Arsenic**

Arsenic was detected in all 21 soil samples analyzed for the compound. The concentrations detected range from 1.4 mg/kg to 29.7 mg/kg (Table 2). Arsenic concentrations in soil exceeded one or more of the human health screening levels presented in Table 2 for all 21 boreholes, as shown on Figure 2.

Regional estimates of background arsenic concentrations in urbanized parts of the San Francisco Bay Area have recently been published with SF RWQCB endorsement (Duverge, 2011). The study proposes an upper estimate of 11.00 mg/kg for background arsenic ($99^{th}$ percentile) within the undifferentiated flatland soils of the study area. The findings of the study are significant because the estimate for background arsenic is considerably lower than other estimates commonly cited as sources in the literature (Duverge, 2011).

**Chlorinated Herbicides**

Pentachlorophenol was detected in 7 of 21 soil samples analyzed for the compound, and was the only chlorinated herbicide detected above the laboratory method detection limit. The concentrations of pentachlorophenol detected range from 0.00094 mg/kg to 0.0052 mg/kg (Table 2). Pentachlorophenol was not detected in soil from the site above any of the human health screening levels presented in Table 2.

## CONCLUSIONS AND RECCOMENDATIONS

As stated earlier, the objective of this investigation was to determine whether elevated concentrations of selected COPCs are present at the site. Based on the results of the soil sampling, elevated concentrations of COPCs do exist in the soil at the site. Even though the concentrations of the COPCs exceed residential screening criteria, the results are not extremely high considering the urban setting and site history. In order to assess potential environmental risks, some additional sampling and analysis will be necessary.

Although TEPH as diesel and motor oil were not detected above human health screening levels (Table 1), it is important to recognize that the results do not define the extent of the contamination. The TEPH concentrations detected in soil samples from boreholes CAT-B-1 and CAT-B-10 may be indicative of nearby petroleum release that requires further delineation in both soil and groundwater.

PAH compounds were detected in soil samples from 19 of 21 boreholes. Benzo(a)pyrene was the only PAH compound that was detected above one or more of the human health screening levels. As shown on Table 1, benzo(a)pyrene was detected at concentrations above at least one human health screening level in soil samples collected from boreholes CAT-B-1, and CAT-B-4 through CAT-B-10. The presence of PAH compounds from most of the borings is consistent with impacts from the marsh crust. The elevated PAH compounds were present in soil samples from near the surface (at 1 feet below ground) to a depth of 5 feet. The City of Alameda has developed requirements for excavation within the marsh crust area, which should be applied to this site (City of Alameda, 2015).

Detections of arsenic in soil at the site indicate that the some of the concentrations are high enough to warrant further evaluation. In particular, concentrations above 10 mg/kg were detected in soil samples from boreholes CAT-B-1 and CAT-B-2 at both the shallow and deeper sample intervals. The concentrations of arsenic detected in boreholes CAT-B-1 and CAT-B-2 are higher than typical background concentrations (11.00 mg/kg) for the undifferentiated flatlands in urbanized parts of the San Francisco Bay Area (Duverge, 2011). The arsenic concentrations in boreholes CAT-B-1 and CAT-B-2 also correlate with elevated detections of TEPH as motor oil and/or TEPH as diesel in those boreholes. This correlation is important because TEPH concentrations in soil can mobilize arsenic making it more likely that arsenic in soil migrates to groundwater and dissolves (Brown et al, 2010).

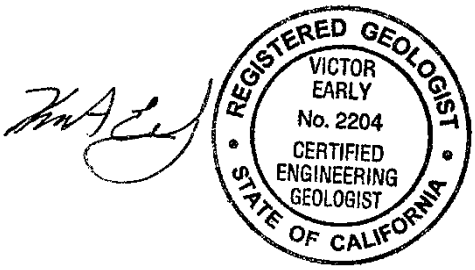
Lead concentrations in soil exceed human health screening levels at boreholes CAT-B-6, CAT-B-7, and CAT-B-10, and concentrations detected in soil from borehole CAT-B-2 are just below the lowest human health screening level (80 mg/kg) presented in Table 2. Even though lead is common in fill material in the Bay Area, Tetra Tech recommends that lead concentrations in soil at the site be further evaluated to better understand the magnitude and extent of lead in soil at the site.

Pentachlorophenol was detected in 7 of 21 soil samples analyzed for the compound, and was the only chlorinated herbicide detected above the laboratory method detection limit. The concentrations of pentachlorophenol detected range from 0.00094 mg/kg to 0.0052 mg/kg (Table 2). The maximum concentration of pentachlorophenol is many orders of magnitude below the residential direct exposure screening level for the protection of human health (Table K-1; RWQCB 2013). For this reason, and the lack of other chlorinated herbicides at the site, Tetra Tech does not recommend further investigation for this COPC at the site.

If you have any questions or require additional information, please feel free to contact Victor Early at 510-302-6332.

Sincerely,

**Tetra Tech, Inc.**




Victor Early, P.G, C.E.G
Project Manager

Mark Duffy, REPA
Project Geologist

List of Attachments:

Figure 1 – Site Location
Figure 2 – Site Plan Showing Soil Borehole Locations
Table 1 – Summary of Chemical Analyses of Soil Samples for TEPH and PAH
Table 2 – Summary of Chemical Analyses of Soil Samples for Metals and Chlorinated Herbicides
Attachment A –Soil Borehole Logs
Attachment B – Lab Reports and COC Records
Attachment C – Permits

**REFERENCES**


Blackie, 2010. Belinda P. Blackie, Phase I Environmental Site Assessment, ABL Parcels, Alameda, California. March 8, 2010.

Brown et al, 2010. Attenuation of Naturally Occurring Arsenic at Petroleum Hydrocarbon-Impacted Sites, Seventh International Conference on Remediation of Chlorinated and Recalcitrant Compounds (Monterey, California. May 2010.

City of Alameda, 2015. March Crust. http://alamedaca.gov/community-development/building/marsh-crust. Website accessed on January 27, 2015.

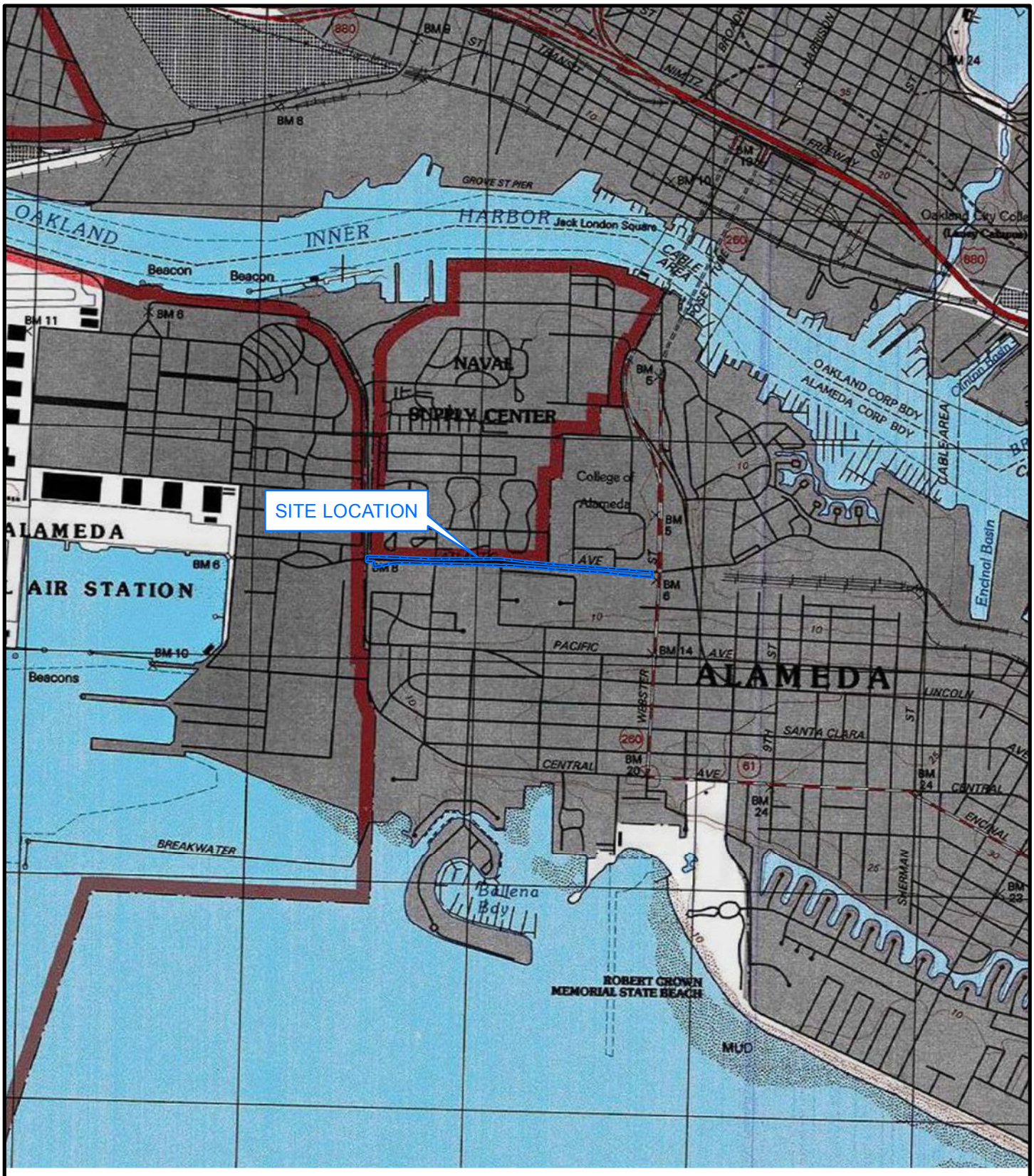
Duverge, 2011. Establishing Background Arsenic in Soil of the Urbanized San Francisco Bay Region, by Dylan Jacques Duverge, San Francisco State University. December 2011.

Office of Environmental Health Hazard Assessment (OEHHA), 2010. California Human Health Screening Levels (CHHSLs), Table 1 Soil and Soil-Gas Screening Numbers (mg/kg) for Nonvolatile Chemicals Based on Total Exposure to Contaminated Soil: Inhalation, Ingestion and Dermal Absorption. September 23, 2010.

San Francisco Bay Regional Water Quality Control Board (RWQCB), 2013. Environmental Screening Levels for Specific Concerns. December 2013.

Tetra Tech, 2014. Work Plan, Cost Estimate, and Schedule for Phase II Environmental Site Assessment on the Cross Alameda Trail Project, Alameda, California. December 5, 2014.

# Figures




Property Boundary

N
W E
S

0 1,000 2,000
Feet

SOURCE: MODIFIED 2013 FROM NATIONAL GEOGRAPHIC SOCIETY, I-CUBED QUADRANGLES INCLUDE: OAKLAND, WEST

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**Cross Alameda Trail, Phase II ESA**
**Alameda, California**

# FIGURE 1
# SITE LOCATION

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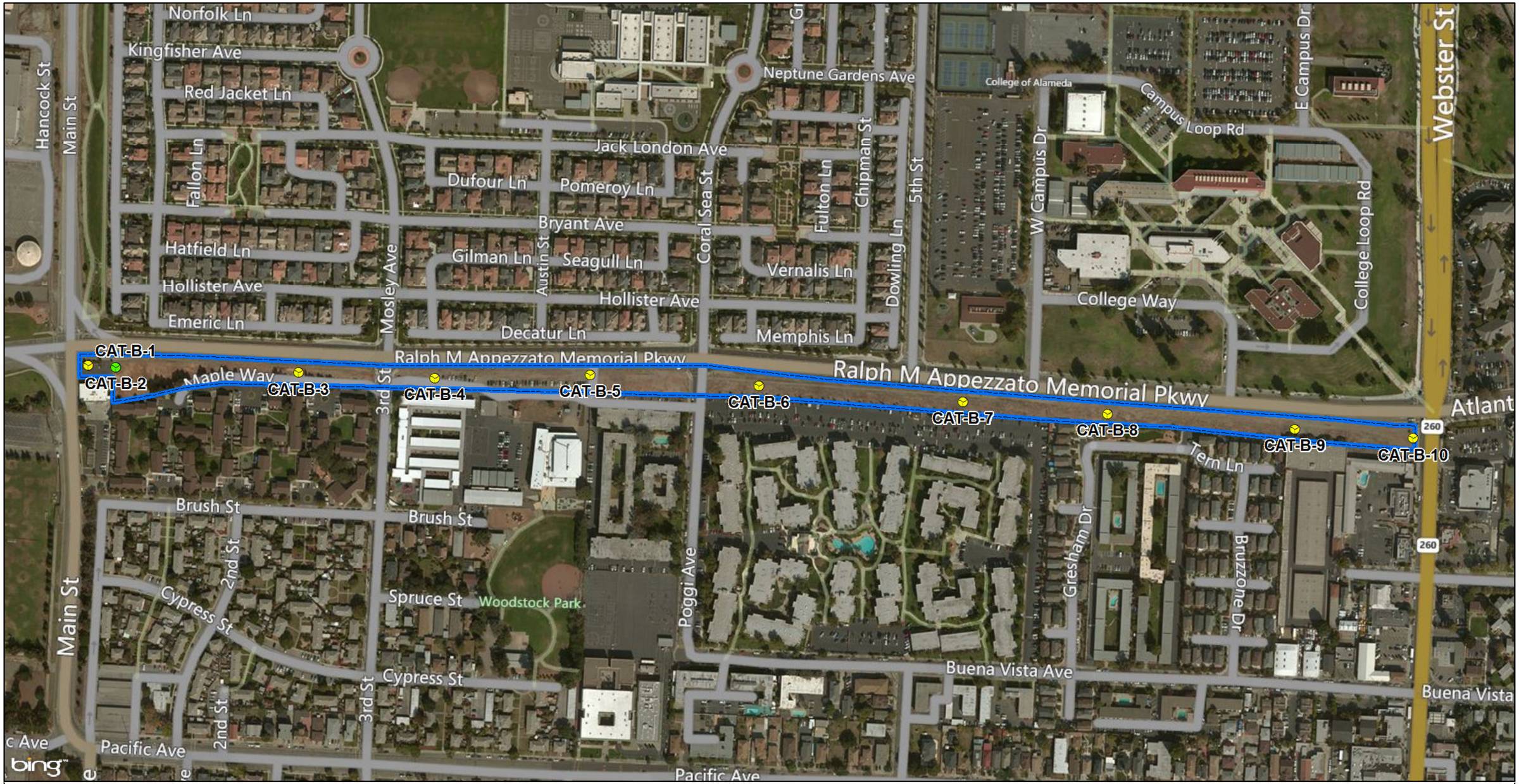


Property Boundary

**Soil Borings (Sampled for Lead, Arsenic, PAH, TPH, & Herbicides)**

- No detection at or above one or more of the RWQCB ESL values (soil)
- Detection at or above one or more of the RWQCB ESL values (soil)

N
W E
S

300 150 0 300

Feet

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**Cross Alameda Trail, Phase II ESA**
**Alameda, California**

# FIGURE 2
# BORING LOCATIONS

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# Tables

**TABLE 1**
**SUMMARY OF CHEMICAL ANALYSES OF SOIL SAMPLES FOR TPPH AND PAH**
City of Alameda, Cross Alameda Trail Pase II Environmental Site Assessment
Alameda, California

| Soil Borhole/SampleID | Sample Date | TEPH (mg/kg) | TEPH (mg/kg) | PAH (mg/kg) | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | Diesel | Motor Oil | Acenapthene | Acenaphthylene | Anthracene | Benzo(a)anthracene | Benzo(a)pyrene | Benzo(b)fluoranthene | Benzo(g,h,i)perylene | Benzo(k)fluoranthene | Chrysene | Dibenz(ah)anthracene | Fluoranthene | Fluorene | Indeno(1,2,3-cd)pyrene | Phenanthrene | Pyrene |
| CAT-B-1-2 | 12/29/2014 | 132 | 1,160 | < 0.35 | < 0.35 | < 0.35 | < 0.17 | < 0.12 | < 0.14 | < 0.15 | < 0.16 | < 0.14 | < 0.19 | < 0.35 | < 0.35 | < 0.17 | < 0.35 | < 0.35 |
| CAT-B-1-4 | 12/29/2014 | 14.5 | 106 | < 0.0089 | < 0.0089 | < 0.0089 | 0.0364 | 0.0459 | 0.033 | 0.0378 | 0.0285 | 0.0403 | 0.0079 | 0.078 | < 0.0089 | 0.0373 | 0.0272 | 0.0792 |
| CAT-B-2-2 | 12/29/2014 | < 9.1 | 236 | < 0.0091 | < 0.0091 | < 0.0091 | 0.0095 | 0.0144 | 0.019 | 0.0188 | 0.0065 | 0.0129 | < 0.0051 | 0.0176 | < 0.0091 | 0.0166 | < 0.0091 | 0.0231 |
| CAT-B-2-5 | 12/29/2014 | < 10 | 178 | < 0.010 | < 0.010 | < 0.010 | 0.0188 | 0.0306 | 0.0333 | 0.0429 | 0.0217 | 0.0296 | 0.0066 | 0.0465 | < 0.010 | 0.0422 | 0.0184 | 0.049 |
| CAT-B-3-1 | 12/29/2014 | 42.7 | 78.2 | < 0.0024 | < 0.0024 | 0.0034 | 0.0235 | 0.0354 | 0.0367 | 0.0431 | 0.0193 | 0.0362 | < 0.0014 | 0.0625 | < 0.0024 | 0.0402 | 0.0211 | 0.0601 |
| CAT-B-3-4 | 12/29/2014 | < 4.1 | 15.3 | < 0.0042 | < 0.0042 | < 0.0042 | < 0.0021 | < 0.0014 | < 0.0017 | < 0.0019 | < 0.0019 | < 0.0017 | < 0.0024 | < 0.0042 | < 0.0042 | < 0.0021 | < 0.0042 | < 0.0042 |
| CAT-B-4-2 | 12/29/2014 | 8.76 | 28.2 | < 0.0021 | 0.0076 | 0.0076 | 0.0996 | 0.219 | 0.22 | 0.293 | 0.114 | 0.163 | 0.0284 | 0.285 | < 0.0021 | 0.320 | 0.060 | 0.295 |
| CAT-B-4-5 | 12/29/2014 | 11.7 | 26.6 | 0.0068 | 0.0159 | 0.0325 | 0.156 | 0.264 | 0.239 | 0.286 | 0.118 | 0.204 | 0.0302 | 0.515 | 0.0126 | 0.300 | 0.242 | 0.495 |
| CAT-B-5-1 | 12/29/2014 | 6.17 | 22.7 | < 0.0021 | 0.0047 | 0.0052 | 0.0619 | 0.123 | 0.110 | 0.176 | 0.062 | 0.084 | 0.0141 | 0.162 | < 0.0021 | 0.179 | 0.0286 | 0.191 |
| CAT-B-5-5 | 12/29/2014 | < 1.8 | < 3.6 | < 0.0018 | < 0.0018 | < 0.0018 | 0.0078 | 0.0147 | 0.0142 | 0.0185 | 0.0074 | 0.0102 | 0.0019 | 0.0177 | < 0.0018 | 0.0188 | < 0.0018 | 0.0212 |
| CAT-B-6-1 | 12/29/2014 | 8.22 | 36.5 | < 0.0021 | 0.0044 | 0.00029 | 0.0226 | 0.0476 | 0.0493 | 0.0576 | 0.0304 | 0.0415 | 0.0084 | 0.0576 | < 0.0021 | 0.0630 | 0.0261 | 0.0693 |
| CAT-B-6-4 | 12/29/2014 | 5.74 | 9.43 | < 0.0024 | < 0.0024 | < 0.0024 | 0.0056 | 0.0074 | 0.0083 | 0.0086 | 0.0043 | 0.0078 | < 0.0014 | 0.0108 | < 0.0024 | 0.0087 | 0.0031 | 0.010 |
| CAT-B-7-1 | 12/30/2014 | 6.52 | 16.0 | < 0.0021 | 0.0024 | 0.0027 | 0.0492 | 0.119 | 0.105 | 0.146 | 0.0558 | 0.0694 | 0.0116 | 0.133 | < 0.0021 | 0.123 | 0.025 | 0.192 |
| CAT-B-7-4 | 12/30/2014 | 8.49 | 19.9 | < 0.0019 | < 0.0019 | < 0.0019 | 0.0059 | 0.0098 | 0.0091 | 0.0115 | 0.0058 | 0.0085 | 0.0017 | 0.0129 | < 0.0019 | 0.0097 | 0.0049 | 0.0189 |
| CAT-B-8-2 | 12/30/2014 | 7.35 | 31.8 | < 0.010 | < 0.010 | < 0.010 | 0.0364 | 0.0816 | 0.0794 | 0.105 | 0.0426 | 0.0549 | 0.0123 | 0.0896 | < 0.010 | 0.100 | 0.0203 | 0.113 |
| CAT-B-8-8 | 12/30/2014 | < 2.2 | < 4.3 | < 0.0022 | < 0.0022 | < 0.0022 | 0.0020 | 0.0020 | 0.0050 | 0.0050 | 0.0049 | 0.0028 | < 0.0012 | < 0.0022 | < 0.0022 | 0.0037 | < 0.0022 | 0.0023 |
| CAT-B-9-1 | 12/30/2014 | 6.39 | 30.3 | < 0.0086 | < 0.0086 | < 0.0086 | 0.0593 | 0.121 | 0.123 | 0.145 | 0.0543 | 0.0862 | 0.0160 | 0.163 | < 0.0086 | 0.153 | 0.0399 | 0.181 |
| CAT-B-9-6 | 12/30/2014 | < 2.1 | < 4.1 | < 0.0020 | < 0.0020 | < 0.0020 | 0.0014 | 0.0013 | 0.0012 | 0.00095 | < 0.00094 | 0.0012 | < 0.0011 | < 0.0020 | < 0.0020 | 0.0013 | < 0.0020 | < 0.0020 |
| CAT-B-10-2 | 12/30/2014 | 129 | 609 | < 0.055 | < 0.055 | < 0.055 | 0.0526 | 0.0657 | 0.0571 | 0.0977 | 0.0459 | 0.0618 | < 0.031 | 0.0887 | < 0.055 | 0.0668 | 0.0843 | 0.0858 |
| CAT-B (Duplicate) | 12/30/2014 | 188 | 922 | < 0.020 | < 0.020 | < 0.020 | < 0.010 | 0.0104 | 0.0105 | 0.0148 | < 0.0094 | 0.0107 | < 0.011 | < 0.020 | < 0.020 | 0.012 | < 0.020 | < 0.020 |
| CAT-B-10-5 | 12/30/2014 | 88.2 | 164 | < 0.0021 | < 0.0021 | < 0.0021 | < 0.0010 | < 0.00070 | < 0.00083 | < 0.00091 | < 0.00095 | < 0.00083 | < 0.0012 | < 0.0021 | < 0.0021 | < 0.0010 | < 0.0021 | < 0.0021 |
| *RWQCB ESL (Table K-1)* [1] | | *240* | *10,000* | *3,400* | *NE* | *23,000* | *0.38* | *0.038* | *0.38* | *NE* | *0.38* | *3.8* | *0.11* | *2,300* | *3,100* | *0.38* | *NE* | *3,400* |
| *RWQCB ESL (Table K-3)* [2] | | *900* | *28,000* | *8,600* | *NE* | *43,000* | *3.8* | *0.38* | *3.8* | *NE* | *8.3* | *83* | *2.4* | *5,700* | *5,700* | *8.3* | *NE* | *8,600* |
| *Cal/EPA CHHSL (Table 1)* [3] | | *NE* | *NE* | *NE* | *NE* | *NE* | *NE* | *0.038* | *NE* | *NE* | *NE* | *NE* | *NE* | *NE* | *NE* | *NE* | *NE* | *NE* |

**Notes:**

Light grey shading indicates a detection at or above one or more of the RWQCB ESL values presented

TEPH Total extractable petroleum hydrocarbons as diesel analyzed using EPA Method 8015M.

PAH Polyaromatic hydrocarbons analyzed using EPA Method 8260B.

NE Not established

-- Not analyzed.

mg/kg Milligrams per kilogram

< detection is less than the laboratory method detection limit

1 California Regional Water Quality Control Board, Environmental Screening Levels for Soil (RWQCB ESL), residenital direct exposure to soil scenario (Table K-1; RWQCB 2013).

2 California Regional Water Quality Control Board, Environmental Screening Levels for Soil (RWQCB ESL), construction/trench worker direct exposure to soil scenario (Table K-3; RWQCB 2013).

3 California Human Health Screening Levels (CHHSL), Soil Screening Numbers for Nonvolatile Chemicals, Residential Scenario (Table 1; Updated 2010)

**TABLE 2**

**SUMMARY OF CHEMICAL ANALYSES OF SOIL SAMPLES FOR METALS AND CHLORINATED**

City of Alameda, Cross Alameda Trail Pase II Environmental Site Assessment

Alameda, California

| Well/Sample ID | Sample Date | Metals (mg/kg) | | Chlorinated Herbicides (mg/kg) |
|---|---|---|---|---|
| | | Arsenic | Lead | Pentachlorophenol |
| CAT-B-1-2 | 12/29/2014 | 15.4 | 40.4 | 0.00094 |
| CAT-B-1-4 | 12/29/2014 | 27.2 | 35.7 | 0.0025 |
| CAT-B-2-2 | 12/29/2014 | 29.7 | 61.3 | < 0.0027 |
| CAT-B-2-5 | 12/29/2014 | 12.3 | 79.7 | < 0.00061 |
| CAT-B-3-1 | 12/29/2014 | 8.0 | 24.0 | < 0.00075 |
| CAT-B-3-4 | 12/29/2014 | 7.2 | 2.6 | < 0.00066 |
| CAT-B-4-2 | 12/29/2014 | 6.8 | 37 | 0.0026 |
| CAT-B-4-5 | 12/29/2014 | 6.3 | 36.6 | < 0.00069 |
| CAT-B-5-1 | 12/29/2014 | 6.2 | 68.4 | < 0.00065 |
| CAT-B-5-5 | 12/29/2014 | 1.7 | 3 | 0.0026 |
| CAT-B-6-1 | 12/29/2014 | 5.3 | 26.2 | < 0.00063 |
| CAT-B-6-4 | 12/29/2014 | 3.9 | 185 | 0.0014 |
| CAT-B-7-1 | 12/30/2014 | 4.3 | 22 | < 0.00062 |
| CAT-B-7-4 | 12/30/2014 | 5.1 | 92.9 | < 0.00058 |
| CAT-B-8-2 | 12/30/2014 | 6.5 | 40.5 | < 0.00062 |
| CAT-B-8-8 | 12/30/2014 | 2.7 | 16.9 | 0.0052 |
| CAT-B-9-1 | 12/30/2014 | 7.8 | 54.6 | < 0.00065 |
| CAT-B-9-6 | 12/30/2014 | 4.9 | 6.9 | < 0.00062 |
| CAT-B-10-2 | 12/30/2014 | 6.2 | 126 | < 0.00057 |
| CAT-B (Duplicate) | 12/30/2014 | 4.9 | 170 | 0.0011 |
| CAT-B-10-5 | 12/30/2014 | 1.4 | 26 | < 0.0032 |
| *RWQCB ESL (Table K-1)* [1] | | *0.39* | *80* | *3.0* |
| *RWQCB ESL (Table K-3)* [2] | | *10* | *320* | *56* |
| *Cal/EPA CHHSL (Table 1)* [3] | | *0.070* | *80* | *4.4* |

**Notes:**

Light grey shading indicates a detection at or above one or more of the RWQCB ESL values presented

NE Not established

< detection is less than the laboratory method detection limit

mg/kg Milligrams per kilogram

< detection is less than the laboratory reporting limit.

1 California Regional Water Quality Control Board, Environmental Screening Levels for Soil (RWQCB ESL), residenital direct exposure to soil scenario (Table K-1; RWQCB 2013).

2 California Regional Water Quality Control Board, Environmental Screening Levels for Soil (RWQCB ESL), construction/trench worker direct exposure to soil scenario (Table K-3; RWQCB 2013).

3 California Environmental Protection Agency (Cal/EPA), California Human Health Screening Levels (CHHSL), Soil Screening Numbers for Nonvolatile Chemicals, Residential Scenario (Table 1; Updated 2010)

# ATTACHMENT A

## Soil Boring Logs

TETRA TECH

# BORING LOG
# CAT-B-1

| | | | | | |
|---|---|---|---|---|---|
| Project: | Cross-Alameda Trail Phase II | Borehole Depth: | 8 feet | Sampling Method: Macro-Core | |
| Location: | Alameda, CA | Borehole Diameter: | 2.25 inches | |  |
| Project No.: | 103S3536 | Reviewed By: Victor Early | | Latitude: | |
| Logged By: | Mark Duffy | | | Longitude: | |
| Date Boring Started: | 12/29/2014 | Drilling Contractor: Vironex | | Ground Surface Elevation (feet NGVD of 1929): | |
| Date Boring Completed: | 12/29/2014 | Drilling Method: Direct Push Technology | | Depth to groundwater (feet bgs): NA | |

| Depth (feet bgs) | Recovered Interval | Time | Soil Sample ID | USCS | Graphic Log | Interval and Lithologic Description | Breathing PID (ppm) |
|---|---|---|---|---|---|---|---|
| 0 | | | | | | | |
| | 48" | | | | | Asphalt/fill | |
| 1 | | | | SM | | Silty sand, light olive brown (2.5Y 5/4), approximatley 3 inch black (2.5Y 2.5/1), loose, mostly fine sand, trace gravel, slighlty moist. | |
| | | | | | | | |
| 2 | | 1115 | CAT-B-1-2 | | | | 0.0 |
| | | | | | | | |
| 3 | | | | | | | |
| | | | | | | | |
| 4 | | 1130 | CAT-B-1-4 | | | | |
| | 48" | | | SM | | Silty sand, black (2.5Y 2.5/1), soft, loose to very low plasticity, mostly fine sand, very moist to wet. | |
| 5 | | | | | | | |
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| 6 | | | | | | | |
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TETRA TECH

# BORING LOG
# CAT-B-2

| | | | | | |
|---|---|---|---|---|---|
| Project: | Cross-Alameda Trail Phase II | Borehole Depth: | 8 feet | Sampling Method: Macro-Core | |
| Location: | Alameda, CA | Borehole Diameter: | 2.25 inches | | |
| Project No.: | 103S3536 | Reviewed By: Victor Early | | Latitude: | |
| Logged By: | Mark Duffy | | | Longitude: | |
| Date Boring Started: | 12/29/2014 | Drilling Contractor: Vironex | | Ground Surface Elevation (feet NGVD of 1929): | |
| Date Boring Completed: | 12/29/2014 | Drilling Method: Direct Push Technology | | Depth to groundwater (feet bgs): NA | |



| Depth (feet bgs) | Recovered Interval | Time | Soil Sample ID | USCS | Graphic Log | Interval and Lithologic Description | Breathing Zone PID (ppm) |
|---|---|---|---|---|---|---|---|
| 0 | | | | | | Mulch | |
| 1 | | | | Ml | | Sandy silt, light olive brown (2.5Y 5/4), low plasticity, soft, some fine sand, trace gravel, moist. | |
| 2 | 48" | 1215 | CAT-B-2-2 | | | | 0.0 |
| 3 | | | | | | | |
| 4 | | | | CL | | Silty clay, very dark grey (2.5Y 3/1), medium stiffness, medium plasticity, moist. | |
| 5 | 48" | 1230 | CAT-B-2-5 | | | | |
| 6 | | | | NA | NA | No recovery from 5 to 8 feet bgs. | |
| 7 | | | | | | | |
| 8 | | | | | | | |
| 9 | | | | | | | |
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TETRA TECH

# BORING LOG
# CAT-B-3

| | | | | | |
|---|---|---|---|---|---|
| Project: | Cross-Alameda Trail Phase II | Borehole Depth: | 8 feet | Sampling Method: Macro-Core | |
| Location: | Alameda, CA | Borehole Diameter: | 2.25 inches | | |
| Project No.: | 103S3536 | Reviewed By: Victor Early | | Latitude: | |
| Logged By: | Mark Duffy | | | Longitude: | |
| Date Boring Started: | 12/29/2014 | Drilling Contractor: Vironex | | Ground Surface Elevation (feet NGVD of 1929): | |
| Date Boring Completed: | 12/29/2014 | Drilling Method: Direct Push Technology | | Depth to groundwater (feet bgs): NA | |



| Depth (feet bgs) | Recovered Interval | Time | Soil Sample ID | USCS | Graphic Log | Interval and Lithologic Description | Breathing Zone PID (ppm) |
|---|---|---|---|---|---|---|---|
| 0 | 48" | | | CL | | Mulch | |
| | | | | | | Silty clay, light olive brown (2.5Y 5/4, medium stiffness, medium plasticity, trace gravel, moist. | |
| 1 | | 1305 | CAT-B-3-1 | | | | |
| 2 | | | | | | | 0.0 |
| 3 | | | | | | | |
| 4 | | 1315 | CAT-B-3-4 | | | Silty sand, very dark grey (2.5Y 3/1), poorly graded, mostly fine sand, soft, wet. | |
| 5 | | | | | | | |
| 6 | 48" | | | SM | | | |
| 7 | | | | | | | |
| 8 | | | | | | | |
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TETRA TECH

# BORING LOG
# CAT-B-4



| | | | | | |
|---|---|---|---|---|---|
| Project: | Cross-Alameda Trail Phase II | Borehole Depth: | 8 feet | Sampling Method: Macro-Core | |
| Location: | Alameda, CA | Borehole Diameter: | 2.25 inches | | |
| Project No.: | 103S3536 | Reviewed By: Victor Early | | Latitude: | |
| Logged By: | Mark Duffy | | | Longitude: | |
| Date Boring Started: | 12/29/2014 | Drilling Contractor: Vironex | | Ground Surface Elevation (feet NGVD of 1929): | |
| Date Boring Completed: | 12/29/2014 | Drilling Method: Direct Push Technology | | Depth to groundwater (feet bgs): NA | |

| Depth (feet bgs) | Recovered Interval | Time | Soil Sample ID | USCS | Graphic Log | Interval and Lithologic Description | Breathing Zone PID (ppm) |
|---|---|---|---|---|---|---|---|
| 0 | | | | | | | |
| | 48" | | | CL | | Silty clay, olive brown (2.5Y 4/4), medium stiffness, medium plasticity, moist. | |
| 1 | | | | | | | |
| | | | | | | | |
| 2 | | 1415 | CAT-B-4-2 | | | | 0.0 |
| | | | | | | | |
| 3 | | | | | | | |
| | | | | | | | |
| 4 | | | | | | | |
| | 48" | | | | | | |
| 5 | | 1425 | CAT-B-4-5 | | | | |
| | | | | SM | | Silty sand, very dark grey (2.5Y 3/1), loose, soft, mostly fine sand, wet. | |
| 6 | | | | | | | |
| | | | | | | | |
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TETRA TECH

# BORING LOG
# CAT-B-5

| | | | | | |
|---|---|---|---|---|---|
| Project: | Cross-Alameda Trail Phase II | Borehole Depth: | 8 feet | Sampling Method: Macro-Core | |
| Location: | Alameda, CA | Borehole Diameter: | 2.25 inches | | |
| Project No.: | 103S3536 | Reviewed By: Victor Early | | Latitude: | |
| Logged By: | Mark Duffy | | | Longitude: | |
| Date Boring Started: | 12/29/2014 | Drilling Contractor: Vironex | | Ground Surface Elevation (feet NGVD of 1929): | |
| Date Boring Completed: | 12/29/2014 | Drilling Method: Direct Push Technology | | Depth to groundwater (feet bgs): NA | |



| Depth (feet bgs) | Recovered Interval | Time | Soil Sample ID | USCS | Graphic Log | Interval and Lithologic Description | Breathing Zone PID (ppm) |
|---|---|---|---|---|---|---|---|
| 0 | | | | | | | |
| | 48" | | | SM | | Silty sand, light olive brown (2.5Y 5/4) and black (2.5Y 2.5/1), loose, trace gravel, brick fragment at 1-foot bgs, moist | |
| 1 | | 1450 | CAT-B-5-1 | | | | 0.0 |
| | | | | | | | |
| 2 | | | | | | Silty sand, dark brown (10YR 3/3), dark grey (2.5Y 4/1) starting at 5 feet bgs, loose to very low plasticity, soft, very moist to wet. | |
| | | | | | | | |
| 3 | | | | | | | |
| | | | | | | | |
| 4 | 48" | | | | | | |
| | | 1500 | CAT-B-5-5 | | | | |
| 5 | | | | SM | | | |
| | | | | | | | |
| 6 | | | | | | | |
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TETRA TECH

# BORING LOG
# CAT-B-6

| | | | | | |
|---|---|---|---|---|---|
| Project: | Cross-Alameda Trail Phase II | Borehole Depth: | 8 feet | Sampling Method: Macro-Core | |
| Location: | Alameda, CA | Borehole Diameter: | 2.25 inches | | |
| Project No.: | 103S3536 | Reviewed By: Victor Early | | Latitude: | |
| Logged By: | Mark Duffy | | | Longitude: | |
| Date Boring Started: | 12/29/2014 | Drilling Contractor: Vironex | | Ground Surface Elevation (feet NGVD of 1929): | |
| Date Boring Completed: | 12/29/2014 | Drilling Method: Direct Push Technology | | Depth to groundwater (feet bgs): NA | |



| Depth (feet bgs) | Recovered Interval | Time | Soil Sample ID | USCS | Graphic Log | Interval and Lithologic Description | Breathing Zone PID (ppm) |
|---|---|---|---|---|---|---|---|
| 0 | 48" | | | CL | | Silty clay, dark grey (2.5Y 4/1), medium stiffness, medium plasticity, moist. | |
| | | 1535 | CAT-B-6-1 | | | | |
| 1 | | | | | | | 0.0 |
| 2 | | | | | | | |
| | | | | | | | |
| 3 | | | | | | Marsh crust/unknown material, white (2.5Y 8/1) with yellowish red (5YR 5/6)staining, chalky, very moist | |
| | | 1530 | CAT-B-6-4 | NA | NA | | |
| 4 | 48" | | | | | | |
| 5 | | | | SM | | Silty sand, very dark grey (2.5Y 3/1), soft, loose to very low plasticity, very moist. | |
| 6 | | | | | | | |
| 7 | | | | | | | |
| 8 | | | | | | | |
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TETRA TECH

# BORING LOG
# CAT-B-7

| | | | | | |
|---|---|---|---|---|---|
| Project: | Cross-Alameda Trail Phase II | Borehole Depth: | 8 feet | Sampling Method: Macro-Core | |
| Location: | Alameda, CA | Borehole Diameter: | 2.25 inches | | |
| Project No.: | 103S3536 | Reviewed By: Victor Early | | Latitude: | |
| Logged By: | Mark Duffy | | | Longitude: | |
| Date Boring Started: | 12/30/2014 | Drilling Contractor: Vironex | | Ground Surface Elevation (feet NGVD of 1929): | |
| Date Boring Completed: | 12/30/2014 | Drilling Method: Direct Push Technology | | Depth to groundwater (feet bgs): NA | |



| Depth (feet bgs) | Recovered Interval | Time | Soil Sample ID | USCS | Graphic Log | Interval and Lithologic Description | Breathing Zone PID (ppm) |
|---|---|---|---|---|---|---|---|
| 0 | | | | | | | |
| | 48" | | | CL | | Silty clay, olive brown (2.5Y 4/4). Medoium stiffness, medium plasticity, moist. | |
| 1 | | | | | | | |
| | | 835 | CAT-B-7-1 | | | | 0.0 |
| 2 | | | | | | | |
| | | | | | | | |
| 3 | | | | | | | |
| | | | | NA | NA | Marsh crust/unknown material, black (2.5Y 2.5/1), olive brown (2.5Y 4/4), white (2.5Y 8/1), loose to slightly stiff, moist. | |
| 4 | | 840 | CAT-B-7-4 | | | | |
| | 48" | | | | | | |
| 5 | | | | | | | |
| | | | | SM | | Silty sand, very dark grey (2.5Y 3/1), soft, loose to very low plasticity, very moist. | |
| 6 | | | | | | | |
| | | | | | | | |
| 7 | | | | | | | |
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TETRA TECH

# BORING LOG
# CAT-B-8



| | | | | | |
|---|---|---|---|---|---|
| Project: | Cross-Alameda Trail Phase II | Borehole Depth: | 9 feet | Sampling Method: Macro-Core | |
| Location: | Alameda, CA | Borehole Diameter: | 2.25 inches | | |
| Project No.: | 103S3536 | Reviewed By: Victor Early | | Latitude: | |
| Logged By: | Mark Duffy | | | Longitude: | |
| Date Boring Started: | 12/30/2014 | Drilling Contractor: Vironex | | Ground Surface Elevation (feet NGVD of 1929): | |
| Date Boring Completed: | 12/30/2014 | Drilling Method: Direct Push Technology | | Depth to groundwater (feet bgs): NA | |

| Depth (feet bgs) | Recovered Interval | Time | Soil Sample ID | USCS | Graphic Log | Interval and Lithologic Description | Breathing Zone PID (ppm) |
|---|---|---|---|---|---|---|---|
| 0 | | | | | | | |
| | | | | NA | | Mulch | |
| 1 | | | | | | | |
| | | | | | | Silty clay, olive brown (2.5Y 4/4), medium stiffness, high plasticity, moist. | 0.0 |
| 2 | | 1125 | CAT-B-8-2 | | | | |
| | 60" | | | | | | |
| 3 | | | | CL | | | |
| | | | | | | | |
| 4 | | | | | | | |
| | | | | | | | |
| 5 | | | | | | | |
| | | | | | | Sandy silt, very dark grey (2.5Y 3/1) to black (2.5Y 2.5/1) at 8 feet bgs, sticky, soft, low plasticity, very moist, glass fragment at 8 feet bgs, | |
| 6 | | | | | | | |
| | | | | | | | |
| 7 | 48" | | | ML | | | |
| | | | | | | | |
| 8 | | 1120 | CAT-B-8-8 | | | | |
| | | | | | | | |
| 9 | | | | | | | |
| 10 | | | | | | | |
| 11 | | | | | | | |
| 12 | | | | | | | |
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TETRA TECH

# BORING LOG
# CAT-B-9



| | | | | |
|---|---|---|---|---|
| Project: | Cross-Alameda Trail Phase II | Borehole Depth: | 9 feet | Sampling Method: Macro-Core |
| Location: | Alameda, CA | Borehole Diameter: | 2.25 inches | |
| Project No.: | 103S3536 | Reviewed By: Victor Early | | Latitude: |
| Logged By: | Mark Duffy | | | Longitude: |
| Date Boring Started: | 12/30/2014 | Drilling Contractor: Vironex | | Ground Surface Elevation (feet NGVD of 1929): |
| Date Boring Completed: | 12/30/2014 | Drilling Method: Direct Push Technology | | Depth to groundwater (feet bgs): NA |

| Depth (feet bgs) | Recovered Interval | Time | Soil Sample ID | USCS | Graphic Log | Interval and Lithologic Description | Breathing Zone PID (ppm) |
|---|---|---|---|---|---|---|---|
| ---- 0 ---- | | | | | | | |
| | | | | NA | | Mulch | |
| | | | | | | Silty clay, olive brown (2.5Y 4/4), medium stiffness, medium plasticity, moist. | |
| ---- 1 ---- | | | CAT-B-9-1 | | | | 0.0 |
| | | | | | | | |
| ---- 2 ---- | | | | | | | |
| | 60" | | | | | | |
| ---- 3 ---- | | | | CL | | | |
| | | | | | | | |
| ---- 4 ---- | | | | | | | |
| | | | | | | | |
| ---- 5 ---- | | | | | | | |
| | | | | | | Sandy silt, black (2.5Y 2.5/1), sticky, soft, low plasticity, very moist | |
| ---- 6 ---- | | | CAT-B-9-6 | | | | |
| | | | | | | | |
| ---- 7 ---- | 48" | | | ML | | | |
| | | | | | | | |
| ---- 8 ---- | | | | | | | |
| | | | | | | | |
| ---- 9 ---- | | | | | | | |
| ---- 10 ---- | | | | | | | |
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| ---- 18 ---- | | | | | | | |
| ---- 19 ---- | | | | | | | |
| ---- 20 ---- | | | | | | | |

TETRA TECH

# BORING LOG
# CAT-B-10

| | | | | | |
|---|---|---|---|---|---|
| Project: | Cross-Alameda Trail Phase II | Borehole Depth: | 9 feet | Sampling Method: Macro-Core | |
| Location: | Alameda, CA | Borehole Diameter: | 2.25 inches | | |
| Project No.: | 103S3536 | Reviewed By: Victor Early | | Latitude: | |
| Logged By: | Mark Duffy | | | Longitude: | |
| Date Boring Started: | 12/30/2014 | Drilling Contractor: Vironex | | Ground Surface Elevation (feet NGVD of 1929): | |
| Date Boring Completed: | 12/30/2014 | Drilling Method: Direct Push Technology | | Depth to groundwater (feet bgs): NA | |



| Depth (feet bgs) | Recovered Interval | Time | Soil Sample ID | USCS | Graphic Log | Interval and Lithologic Description | Breathing Zone PID (ppm) |
|---|---|---|---|---|---|---|---|
| 0 | | | | | | | |
| | | | | NA | | Gravel fill | |
| 1 | | | | CL | | Silty clay, olive brown (2.5Y 4/4), medium stiffness, medium plasticity, moist. | |
| | | | | | | | 0.0 |
| 2 | | 1310 | CAT-B-10-2 | | | | |
| | 60" | 1320 | CAT-B (duplicate) | | | | |
| 3 | | | | | | | |
| | | | | | | | |
| 4 | | | | ML | | Sandy silt, black (2.5Y 2.5/1), sticky, soft, low plasticity, very moist. | |
| | | 1305 | CAT-B-10-5 | | | | |
| 5 | | | | SM | | Silty sand, grey (2.5Y 5/1), soft, loose, very moist. | |
| 6 | 48" | | | | | | |
| 7 | | | | | | | |
| 8 | | | | | | | |
| 9 | | | | | | | |
| 10 | | | | | | | |
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| 19 | | | | | | | |
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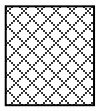
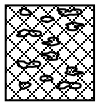
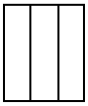
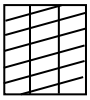
**Geologic Borehole Log Legend**

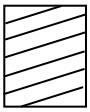
| | |
|---|---|
| bgs | below ground surface |
| ppm | parts per million |
| PID | photoionization detector |
| USCS | Unified Soil Classification System |
| NGVD | National Geodetic Vertical Datum |
| NA | not applicable |

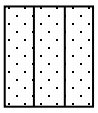

Asphalt

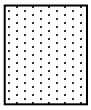

Gravel Fill

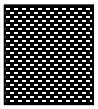

Sandy Silt (ML)


Clayey Silt (ML)


Silty Clay (CL)


Silty Sand (SM)


Sand (SP)


Mulch


approximate depth to groundwater

# ATTACHMENT B

# Lab Reports and COC Records

Northern California ACCUTEST LABORATORIES

01/13/15

Technical Report for

Tetra Tech EMI

Alameda Cross Trail Phase II

ALAMEDA CROSS TRAIL PHASE II

Accutest Job Number: C37833

Sampling Date: 12/29/14

Report to:

Tetra Tech
1999 Harrison St. Suite 500
Oakland, CA 94612
mark.duffy@tetratech.com; victor.early@tetratech.com

ATTN: Mark Duffy

Total number of pages in report: **99**

NELAP ACCREDITED TNI LABORATORY

Test results contained within this data package meet the requirements of the National Environmental Laboratory Accreditation Program and/or state specific certification programs as applicable.

James J. Rhudy
Lab Director

Client Service contact: Nutan Kabir 408-588-0200

Certifications: CA (ELAP 2910) AK (UST-092) AZ (AZ0762) NV (CA00150) OR (CA300006) WA (C925) DoD ELAP (L-A-B L2242)

Sections: 1 2 3 4 5 6 7 8 9

# Table of Contents

Accutest Laboratories

# Sample Summary

Tetra Tech EMI

**Job No:** C37833

Alameda Cross Trail Phase II
Project No: ALAMEDA CROSS TRAIL PHASE II

| Sample Number | Collected Date | Time | By | Received | Matrix Code | Type | Client Sample ID |
|---|---|---|---|---|---|---|---|
| C37833-1 | 12/29/14 | 11:15 | MD | 12/31/14 | SO | Soil | CAT-B-1-2 |
| C37833-2 | 12/29/14 | 11:30 | MD | 12/31/14 | SO | Soil | CAT-B-1-4 |
| C37833-3 | 12/29/14 | 12:15 | MD | 12/31/14 | SO | Soil | CAT-B-2-2 |
| C37833-4 | 12/29/14 | 12:30 | MD | 12/31/14 | SO | Soil | CAT-B-2-5 |
| C37833-5 | 12/29/14 | 13:15 | MD | 12/31/14 | SO | Soil | CAT-B-3-4 |
| C37833-6 | 12/29/14 | 13:05 | MD | 12/31/14 | SO | Soil | CAT-B-3-1 |
| C37833-7 | 12/29/14 | 14:50 | MD | 12/31/14 | SO | Soil | CAT-B-5-1 |
| C37833-8 | 12/29/14 | 14:25 | MD | 12/31/14 | SO | Soil | CAT-B-4-5 |
| C37833-9 | 12/29/14 | 14:15 | MD | 12/31/14 | SO | Soil | CAT-B-4-2 |
| C37833-10 | 12/29/14 | 15:00 | MD | 12/31/14 | SO | Soil | CAT-B-5-5 |
| C37833-11 | 12/29/14 | 15:30 | MD | 12/31/14 | SO | Soil | CAT-B-6-4 |
| C37833-12 | 12/29/14 | 15:35 | MD | 12/31/14 | SO | Soil | CAT-B-6-1 |

Soil samples reported on a dry weight basis unless otherwise indicated on result page.

# Summary of Hits

**Job Number:** C37833
**Account:** Tetra Tech EMI
**Project:** Alameda Cross Trail Phase II
**Collected:** 12/29/14

| Lab Sample ID / Analyte | Client Sample ID | Result/ Qual | RL | MDL | Units | Method |
|---|---|---|---|---|---|---|
| **C37833-1** | **CAT-B-1-2** | | | | | |
| TPH (Diesel) [a] | | 132 | 110 | 53 | mg/kg | SW846 8015B M |
| TPH (Motor Oil) | | 1160 | 210 | 110 | mg/kg | SW846 8015B M |
| Pentachlorophenol [b] | | 0.94 J | 3.5 | 0.53 | ug/kg | SW846 8151A |
| Arsenic | | 15.4 | 0.22 | | mg/kg | SW846 6020 |
| Lead | | 40.4 | 0.22 | | mg/kg | SW846 6020 |
| **C37833-2** | **CAT-B-1-4** | | | | | |
| Benzo(a)anthracene [c] | | 36.4 | 18 | 4.5 | ug/kg | SW846 8270C BY SIM |
| Benzo(a)pyrene [c] | | 45.9 | 18 | 3.0 | ug/kg | SW846 8270C BY SIM |
| Benzo(b)fluoranthene [c] | | 33.0 | 18 | 3.6 | ug/kg | SW846 8270C BY SIM |
| Benzo(g,h,i)perylene [c] | | 37.8 | 18 | 3.9 | ug/kg | SW846 8270C BY SIM |
| Benzo(k)fluoranthene [c] | | 28.5 | 18 | 4.1 | ug/kg | SW846 8270C BY SIM |
| Chrysene [c] | | 40.3 | 18 | 3.6 | ug/kg | SW846 8270C BY SIM |
| Dibenzo(a,h)anthracene [c] | | 7.9 J | 18 | 5.0 | ug/kg | SW846 8270C BY SIM |
| Fluoranthene [c] | | 78.0 J | 89 | 8.9 | ug/kg | SW846 8270C BY SIM |
| Indeno(1,2,3-cd)pyrene [c] | | 37.3 | 18 | 4.5 | ug/kg | SW846 8270C BY SIM |
| Phenanthrene [c] | | 27.2 J | 89 | 8.9 | ug/kg | SW846 8270C BY SIM |
| Pyrene [c] | | 79.2 J | 89 | 8.9 | ug/kg | SW846 8270C BY SIM |
| TPH (Diesel) [a] | | 14.5 | 11 | 5.4 | mg/kg | SW846 8015B M |
| TPH (Motor Oil) | | 106 | 21 | 11 | mg/kg | SW846 8015B M |
| Pentachlorophenol [b] | | 2.5 J | 3.6 | 0.55 | ug/kg | SW846 8151A |
| Arsenic | | 27.2 | 0.23 | | mg/kg | SW846 6020 |
| Lead | | 35.7 | 0.23 | | mg/kg | SW846 6020 |
| **C37833-3** | **CAT-B-2-2** | | | | | |
| Benzo(a)anthracene [c] | | 9.5 J | 18 | 4.5 | ug/kg | SW846 8270C BY SIM |
| Benzo(a)pyrene [c] | | 14.4 J | 18 | 3.1 | ug/kg | SW846 8270C BY SIM |
| Benzo(b)fluoranthene [c] | | 19.0 | 18 | 3.6 | ug/kg | SW846 8270C BY SIM |
| Benzo(g,h,i)perylene [c] | | 18.8 | 18 | 4.0 | ug/kg | SW846 8270C BY SIM |
| Benzo(k)fluoranthene [c] | | 6.5 J | 18 | 4.2 | ug/kg | SW846 8270C BY SIM |
| Chrysene [c] | | 12.9 J | 18 | 3.6 | ug/kg | SW846 8270C BY SIM |
| Fluoranthene [c] | | 17.6 J | 91 | 9.1 | ug/kg | SW846 8270C BY SIM |
| Indeno(1,2,3-cd)pyrene [c] | | 16.6 J | 18 | 4.5 | ug/kg | SW846 8270C BY SIM |
| Pyrene [c] | | 23.1 J | 91 | 9.1 | ug/kg | SW846 8270C BY SIM |
| TPH (Motor Oil) | | 236 | 37 | 18 | mg/kg | SW846 8015B M |
| Arsenic | | 29.7 | 0.24 | | mg/kg | SW846 6020 |
| Lead | | 61.3 | 0.24 | | mg/kg | SW846 6020 |
| **C37833-4** | **CAT-B-2-5** | | | | | |
| Benzo(a)anthracene [c] | | 18.8 J | 20 | 5.1 | ug/kg | SW846 8270C BY SIM |

# Summary of Hits

**Job Number:** C37833
**Account:** Tetra Tech EMI
**Project:** Alameda Cross Trail Phase II
**Collected:** 12/29/14

| Lab Sample ID / Analyte | Client Sample ID | Result/ Qual | RL | MDL | Units | Method |
|---|---|---|---|---|---|---|
| Benzo(a)pyrene [c] | | 30.6 | 20 | 3.4 | ug/kg | SW846 8270C BY SIM |
| Benzo(b)fluoranthene [c] | | 33.3 | 20 | 4.0 | ug/kg | SW846 8270C BY SIM |
| Benzo(g,h,i)perylene [c] | | 42.9 | 20 | 4.4 | ug/kg | SW846 8270C BY SIM |
| Benzo(k)fluoranthene [c] | | 21.7 | 20 | 4.7 | ug/kg | SW846 8270C BY SIM |
| Chrysene [c] | | 29.6 | 20 | 4.0 | ug/kg | SW846 8270C BY SIM |
| Dibenzo(a,h)anthracene [c] | | 6.6 J | 20 | 5.7 | ug/kg | SW846 8270C BY SIM |
| Fluoranthene [c] | | 46.5 J | 100 | 10 | ug/kg | SW846 8270C BY SIM |
| Indeno(1,2,3-cd)pyrene [c] | | 42.2 | 20 | 5.1 | ug/kg | SW846 8270C BY SIM |
| Phenanthrene [c] | | 18.4 J | 100 | 10 | ug/kg | SW846 8270C BY SIM |
| Pyrene [c] | | 49.0 J | 100 | 10 | ug/kg | SW846 8270C BY SIM |
| TPH (Motor Oil) | | 178 | 41 | 20 | mg/kg | SW846 8015B M |
| Arsenic | | 12.3 | 0.26 | | mg/kg | SW846 6020 |
| Lead | | 79.7 | 0.26 | | mg/kg | SW846 6020 |
| **C37833-5** | **CAT-B-3-4** | | | | | |
| TPH (Motor Oil) | | 15.3 J | 17 | 8.3 | mg/kg | SW846 8015B M |
| Arsenic [d] | | 7.2 | 0.56 | | mg/kg | SW846 6020 |
| Lead | | 2.6 | 0.28 | | mg/kg | SW846 6020 |
| **C37833-6** | **CAT-B-3-1** | | | | | |
| Anthracene | | 3.4 J | 24 | 2.4 | ug/kg | SW846 8270C BY SIM |
| Benzo(a)anthracene | | 23.5 | 4.9 | 1.2 | ug/kg | SW846 8270C BY SIM |
| Benzo(a)pyrene | | 35.4 | 4.9 | 0.83 | ug/kg | SW846 8270C BY SIM |
| Benzo(b)fluoranthene | | 36.7 | 4.9 | 0.97 | ug/kg | SW846 8270C BY SIM |
| Benzo(g,h,i)perylene | | 43.1 | 4.9 | 1.1 | ug/kg | SW846 8270C BY SIM |
| Benzo(k)fluoranthene | | 19.3 | 4.9 | 1.1 | ug/kg | SW846 8270C BY SIM |
| Chrysene | | 36.2 | 4.9 | 0.97 | ug/kg | SW846 8270C BY SIM |
| Fluoranthene | | 62.5 | 24 | 2.4 | ug/kg | SW846 8270C BY SIM |
| Indeno(1,2,3-cd)pyrene | | 40.2 | 4.9 | 1.2 | ug/kg | SW846 8270C BY SIM |
| Phenanthrene | | 21.1 J | 24 | 2.4 | ug/kg | SW846 8270C BY SIM |
| Pyrene | | 60.1 | 24 | 2.4 | ug/kg | SW846 8270C BY SIM |
| TPH (Diesel) [e] | | 42.7 | 4.9 | 2.5 | mg/kg | SW846 8015B M |
| TPH (Motor Oil) [f] | | 78.2 | 9.8 | 4.9 | mg/kg | SW846 8015B M |
| Arsenic | | 8.0 | 0.31 | | mg/kg | SW846 6020 |
| Lead | | 24.0 | 0.31 | | mg/kg | SW846 6020 |
| **C37833-7** | **CAT-B-5-1** | | | | | |
| Acenaphthylene | | 4.7 J | 21 | 2.1 | ug/kg | SW846 8270C BY SIM |
| Anthracene | | 5.2 J | 21 | 2.1 | ug/kg | SW846 8270C BY SIM |
| Benzo(a)anthracene | | 61.9 | 4.3 | 1.1 | ug/kg | SW846 8270C BY SIM |
| Benzo(a)pyrene | | 123 | 4.3 | 0.73 | ug/kg | SW846 8270C BY SIM |
| Benzo(b)fluoranthene | | 110 | 4.3 | 0.86 | ug/kg | SW846 8270C BY SIM |

# Summary of Hits

**Job Number:** C37833
**Account:** Tetra Tech EMI
**Project:** Alameda Cross Trail Phase II
**Collected:** 12/29/14

| Lab Sample ID / Analyte | Client Sample ID | Result/ Qual | RL | MDL | Units | Method |
|---|---|---|---|---|---|---|
| Benzo(g,h,i)perylene | | 176 | 4.3 | 0.94 | ug/kg | SW846 8270C BY SIM |
| Benzo(k)fluoranthene | | 62.0 | 4.3 | 0.99 | ug/kg | SW846 8270C BY SIM |
| Chrysene | | 84.0 | 4.3 | 0.86 | ug/kg | SW846 8270C BY SIM |
| Dibenzo(a,h)anthracene | | 14.1 | 4.3 | 1.2 | ug/kg | SW846 8270C BY SIM |
| Fluoranthene | | 162 | 21 | 2.1 | ug/kg | SW846 8270C BY SIM |
| Indeno(1,2,3-cd)pyrene | | 179 | 4.3 | 1.1 | ug/kg | SW846 8270C BY SIM |
| Phenanthrene | | 28.6 | 21 | 2.1 | ug/kg | SW846 8270C BY SIM |
| Pyrene | | 191 | 21 | 2.1 | ug/kg | SW846 8270C BY SIM |
| TPH (Diesel) [e] | | 6.17 | 4.3 | 2.1 | mg/kg | SW846 8015B M |
| TPH (Motor Oil) [g] | | 22.7 | 8.6 | 4.3 | mg/kg | SW846 8015B M |
| Arsenic | | 6.2 | 0.28 | | mg/kg | SW846 6020 |
| Lead | | 68.4 | 0.28 | | mg/kg | SW846 6020 |
| **C37833-8** | **CAT-B-4-5** | | | | | |
| Acenaphthene | | 6.8 J | 23 | 2.3 | ug/kg | SW846 8270C BY SIM |
| Acenaphthylene | | 15.9 J | 23 | 2.3 | ug/kg | SW846 8270C BY SIM |
| Anthracene | | 32.5 | 23 | 2.3 | ug/kg | SW846 8270C BY SIM |
| Benzo(a)anthracene | | 156 | 4.5 | 1.1 | ug/kg | SW846 8270C BY SIM |
| Benzo(a)pyrene | | 264 | 4.5 | 0.77 | ug/kg | SW846 8270C BY SIM |
| Benzo(b)fluoranthene | | 239 | 4.5 | 0.91 | ug/kg | SW846 8270C BY SIM |
| Benzo(g,h,i)perylene | | 286 | 4.5 | 1.0 | ug/kg | SW846 8270C BY SIM |
| Benzo(k)fluoranthene | | 118 | 4.5 | 1.0 | ug/kg | SW846 8270C BY SIM |
| Chrysene | | 204 | 4.5 | 0.91 | ug/kg | SW846 8270C BY SIM |
| Dibenzo(a,h)anthracene | | 30.2 | 4.5 | 1.3 | ug/kg | SW846 8270C BY SIM |
| Fluoranthene | | 515 | 23 | 2.3 | ug/kg | SW846 8270C BY SIM |
| Fluorene | | 12.6 J | 23 | 2.3 | ug/kg | SW846 8270C BY SIM |
| Indeno(1,2,3-cd)pyrene | | 300 | 4.5 | 1.1 | ug/kg | SW846 8270C BY SIM |
| Phenanthrene | | 242 | 23 | 2.3 | ug/kg | SW846 8270C BY SIM |
| Pyrene | | 495 | 23 | 2.3 | ug/kg | SW846 8270C BY SIM |
| TPH (Diesel) [e] | | 11.7 | 4.6 | 2.3 | mg/kg | SW846 8015B M |
| TPH (Motor Oil) | | 26.6 | 9.1 | 4.6 | mg/kg | SW846 8015B M |
| Arsenic | | 6.3 | 0.29 | | mg/kg | SW846 6020 |
| Lead | | 36.6 | 0.29 | | mg/kg | SW846 6020 |
| **C37833-9** | **CAT-B-4-2** | | | | | |
| Acenaphthylene | | 7.6 J | 21 | 2.1 | ug/kg | SW846 8270C BY SIM |
| Anthracene | | 7.6 J | 21 | 2.1 | ug/kg | SW846 8270C BY SIM |
| Benzo(a)anthracene | | 99.6 | 4.2 | 1.0 | ug/kg | SW846 8270C BY SIM |
| Benzo(a)pyrene | | 219 | 4.2 | 0.71 | ug/kg | SW846 8270C BY SIM |
| Benzo(b)fluoranthene | | 220 | 4.2 | 0.83 | ug/kg | SW846 8270C BY SIM |
| Benzo(g,h,i)perylene | | 293 | 4.2 | 0.92 | ug/kg | SW846 8270C BY SIM |
| Benzo(k)fluoranthene | | 114 | 4.2 | 0.96 | ug/kg | SW846 8270C BY SIM |
| Chrysene | | 163 | 4.2 | 0.83 | ug/kg | SW846 8270C BY SIM |

# Summary of Hits

**Job Number:** C37833
**Account:** Tetra Tech EMI
**Project:** Alameda Cross Trail Phase II
**Collected:** 12/29/14

| Lab Sample ID / Analyte | Client Sample ID | Result/ Qual | RL | MDL | Units | Method |
|---|---|---|---|---|---|---|
| Dibenzo(a,h)anthracene | | 28.4 | 4.2 | 1.2 | ug/kg | SW846 8270C BY SIM |
| Fluoranthene | | 285 | 21 | 2.1 | ug/kg | SW846 8270C BY SIM |
| Indeno(1,2,3-cd)pyrene | | 320 | 4.2 | 1.0 | ug/kg | SW846 8270C BY SIM |
| Phenanthrene | | 60.0 | 21 | 2.1 | ug/kg | SW846 8270C BY SIM |
| Pyrene | | 295 | 21 | 2.1 | ug/kg | SW846 8270C BY SIM |
| TPH (Diesel) [e] | | 8.76 | 4.2 | 2.1 | mg/kg | SW846 8015B M |
| TPH (Motor Oil) | | 28.2 | 8.4 | 4.2 | mg/kg | SW846 8015B M |
| Pentachlorophenol [b] | | 2.6 J | 4.1 | 0.62 | ug/kg | SW846 8151A |
| Arsenic | | 6.8 | 0.27 | | mg/kg | SW846 6020 |
| Lead | | 37.0 | 0.27 | | mg/kg | SW846 6020 |
| **C37833-10** | **CAT-B-5-5** | | | | | |
| Benzo(a)anthracene | | 7.8 | 3.6 | 0.89 | ug/kg | SW846 8270C BY SIM |
| Benzo(a)pyrene | | 14.7 | 3.6 | 0.61 | ug/kg | SW846 8270C BY SIM |
| Benzo(b)fluoranthene | | 14.2 | 3.6 | 0.71 | ug/kg | SW846 8270C BY SIM |
| Benzo(g,h,i)perylene | | 18.5 | 3.6 | 0.79 | ug/kg | SW846 8270C BY SIM |
| Benzo(k)fluoranthene | | 7.4 | 3.6 | 0.82 | ug/kg | SW846 8270C BY SIM |
| Chrysene | | 10.2 | 3.6 | 0.71 | ug/kg | SW846 8270C BY SIM |
| Dibenzo(a,h)anthracene | | 1.9 J | 3.6 | 1.0 | ug/kg | SW846 8270C BY SIM |
| Fluoranthene | | 17.7 J | 18 | 1.8 | ug/kg | SW846 8270C BY SIM |
| Indeno(1,2,3-cd)pyrene | | 18.8 | 3.6 | 0.89 | ug/kg | SW846 8270C BY SIM |
| Pyrene | | 21.2 | 18 | 1.8 | ug/kg | SW846 8270C BY SIM |
| Pentachlorophenol [b] | | 2.9 J | 3.5 | 0.54 | ug/kg | SW846 8151A |
| Arsenic [d] | | 1.7 | 0.52 | | mg/kg | SW846 6020 |
| Lead | | 3.3 | 0.23 | | mg/kg | SW846 6020 |
| **C37833-11** | **CAT-B-6-4** | | | | | |
| Benzo(a)anthracene | | 5.6 | 4.9 | 1.2 | ug/kg | SW846 8270C BY SIM |
| Benzo(a)pyrene | | 7.4 | 4.9 | 0.83 | ug/kg | SW846 8270C BY SIM |
| Benzo(b)fluoranthene | | 8.3 | 4.9 | 0.97 | ug/kg | SW846 8270C BY SIM |
| Benzo(g,h,i)perylene | | 8.6 | 4.9 | 1.1 | ug/kg | SW846 8270C BY SIM |
| Benzo(k)fluoranthene | | 4.3 J | 4.9 | 1.1 | ug/kg | SW846 8270C BY SIM |
| Chrysene | | 7.8 | 4.9 | 0.97 | ug/kg | SW846 8270C BY SIM |
| Fluoranthene | | 10.8 J | 24 | 2.4 | ug/kg | SW846 8270C BY SIM |
| Indeno(1,2,3-cd)pyrene | | 8.7 | 4.9 | 1.2 | ug/kg | SW846 8270C BY SIM |
| Phenanthrene | | 3.1 J | 24 | 2.4 | ug/kg | SW846 8270C BY SIM |
| Pyrene | | 10 J | 24 | 2.4 | ug/kg | SW846 8270C BY SIM |
| TPH (Diesel) [h] | | 5.74 | 4.9 | 2.4 | mg/kg | SW846 8015B M |
| TPH (Motor Oil) [f] | | 9.43 J | 9.8 | 4.9 | mg/kg | SW846 8015B M |
| Pentachlorophenol [b] | | 1.4 J | 4.9 | 0.75 | ug/kg | SW846 8151A |
| Arsenic [d] | | 3.9 | 0.68 | | mg/kg | SW846 6020 |
| Lead | | 185 | 0.31 | | mg/kg | SW846 6020 |

# Summary of Hits

**Job Number:** C37833
**Account:** Tetra Tech EMI
**Project:** Alameda Cross Trail Phase II
**Collected:** 12/29/14

| Lab Sample ID / Analyte | Client Sample ID | Result/ Qual | RL | MDL | Units | Method |
|---|---|---|---|---|---|---|
| **C37833-12** | **CAT-B-6-1** | | | | | |
| Acenaphthylene | | 4.4 J | 21 | 2.1 | ug/kg | SW846 8270C BY SIM |
| Anthracene | | 2.9 J | 21 | 2.1 | ug/kg | SW846 8270C BY SIM |
| Benzo(a)anthracene | | 22.6 | 4.1 | 1.0 | ug/kg | SW846 8270C BY SIM |
| Benzo(a)pyrene | | 47.6 | 4.1 | 0.71 | ug/kg | SW846 8270C BY SIM |
| Benzo(b)fluoranthene | | 49.3 | 4.1 | 0.83 | ug/kg | SW846 8270C BY SIM |
| Benzo(g,h,i)perylene | | 57.6 | 4.1 | 0.91 | ug/kg | SW846 8270C BY SIM |
| Benzo(k)fluoranthene | | 30.4 | 4.1 | 0.95 | ug/kg | SW846 8270C BY SIM |
| Chrysene | | 41.5 | 4.1 | 0.83 | ug/kg | SW846 8270C BY SIM |
| Dibenzo(a,h)anthracene | | 8.4 | 4.1 | 1.2 | ug/kg | SW846 8270C BY SIM |
| Fluoranthene | | 57.6 | 21 | 2.1 | ug/kg | SW846 8270C BY SIM |
| Indeno(1,2,3-cd)pyrene | | 63.0 | 4.1 | 1.0 | ug/kg | SW846 8270C BY SIM |
| Phenanthrene | | 26.1 | 21 | 2.1 | ug/kg | SW846 8270C BY SIM |
| Pyrene | | 69.3 | 21 | 2.1 | ug/kg | SW846 8270C BY SIM |
| TPH (Diesel) [h] | | 8.22 | 4.3 | 2.1 | mg/kg | SW846 8015B M |
| TPH (Motor Oil) [f] | | 36.5 | 8.5 | 4.3 | mg/kg | SW846 8015B M |
| Arsenic | | 5.3 | 0.27 | | mg/kg | SW846 6020 |
| Lead | | 26.2 | 0.27 | | mg/kg | SW846 6020 |

(a) Atypical Diesel pattern (C10-C28); heavier hydrocarbons contributing to quantitation.
(b) All hits confirmed by dual column analysis. Analysis performed at Accutest Laboratories, Orlando FL.
(c) Dilution required due to matrix interference (dark and viscous extract; high concentration of non-target hydrocarbons).
(d) Elevated RL/MDL due to positive bias of Method Blank.
(e) Atypical Diesel pattern (C12-C28); value due on discrete peaks and heavier hydrocarbons contributing to quantitation.
(f) Estimated value due to the presence of interfering peaks in the Motor Oil range.
(g) Estimated value due to the presence of interfering peaks.
(h) Atypical Diesel pattern (C12-C28); heavier hydrocarbons contributing to quantitation.

Northern California ACCUTEST LABORATORIES



## Sample Results

Report of Analysis

# Report of Analysis





| | | | |
|---|---|---|---|
| **Client Sample ID:** | CAT-B-1-2 | | |
| **Lab Sample ID:** | C37833-1 | **Date Sampled:** | 12/29/14 |
| **Matrix:** | SO - Soil | **Date Received:** | 12/31/14 |
| **Method:** | SW846 8270C BY SIM SW846 3550B | **Percent Solids:** | 94.7 |
| **Project:** | Alameda Cross Trail Phase II | | |

| | File ID | DF | Analyzed | By | Prep Date | Prep Batch | Analytical Batch |
|---|---|---|---|---|---|---|---|
| Run #1 [a] | T17361.D | 40 | 01/03/15 | MT | 01/02/15 | OP11467 | ET768 |
| Run #2 | | | | | | | |

| | Initial Weight | Final Volume |
|---|---|---|
| Run #1 | 30.6 g | 5.0 ml |
| Run #2 | | |

**BN PAH List**

| CAS No. | Compound | Result | RL | MDL | Units | Q |
|---|---|---|---|---|---|---|
| 83-32-9 | Acenaphthene | ND | 3500 | 350 | ug/kg | |
| 208-96-8 | Acenaphthylene | ND | 3500 | 350 | ug/kg | |
| 120-12-7 | Anthracene | ND | 3500 | 350 | ug/kg | |
| 56-55-3 | Benzo(a)anthracene | ND | 690 | 170 | ug/kg | |
| 50-32-8 | Benzo(a)pyrene | ND | 690 | 120 | ug/kg | |
| 205-99-2 | Benzo(b)fluoranthene | ND | 690 | 140 | ug/kg | |
| 191-24-2 | Benzo(g,h,i)perylene | ND | 690 | 150 | ug/kg | |
| 207-08-9 | Benzo(k)fluoranthene | ND | 690 | 160 | ug/kg | |
| 218-01-9 | Chrysene | ND | 690 | 140 | ug/kg | |
| 53-70-3 | Dibenzo(a,h)anthracene | ND | 690 | 190 | ug/kg | |
| 206-44-0 | Fluoranthene | ND | 3500 | 350 | ug/kg | |
| 86-73-7 | Fluorene | ND | 3500 | 350 | ug/kg | |
| 193-39-5 | Indeno(1,2,3-cd)pyrene | ND | 690 | 170 | ug/kg | |
| 90-12-0 | 1-Methylnaphthalene | ND | 3500 | 690 | ug/kg | |
| 91-57-6 | 2-Methylnaphthalene | ND | 3500 | 690 | ug/kg | |
| 91-20-3 | Naphthalene | ND | 3500 | 690 | ug/kg | |
| 85-01-8 | Phenanthrene | ND | 3500 | 350 | ug/kg | |
| 129-00-0 | Pyrene | ND | 3500 | 350 | ug/kg | |

| CAS No. | Surrogate Recoveries | Run# 1 | Run# 2 | Limits |
|---|---|---|---|---|
| 4165-60-0 | Nitrobenzene-d5 | 69% | | 32-128% |
| 321-60-8 | 2-Fluorobiphenyl | 117% | | 48-122% |
| 1718-51-0 | Terphenyl-d14 | 116% | | 48-148% |

(a) Dilution required due to matrix interference. Extract would not concentrate (dark and viscous); and high concentration of non-target hydrocarbons.

ND = Not detected MDL = Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

# Report of Analysis





**Client Sample ID:** CAT-B-1-2
**Lab Sample ID:** C37833-1
**Matrix:** SO - Soil
**Method:** SW846 8151A SW846 3546
**Project:** Alameda Cross Trail Phase II

**Date Sampled:** 12/29/14
**Date Received:** 12/31/14
**Percent Solids:** 94.7

| | File ID | DF | Analyzed | By | Prep Date | Prep Batch | Analytical Batch |
|---|---|---|---|---|---|---|---|
| Run #1 [a] | CC046845.D | 1 | 01/08/15 | AFL | 01/05/15 | F:OP54497 | F:GCC779 |
| Run #2 | | | | | | | |

| | Initial Weight | Final Volume |
|---|---|---|
| Run #1 | 15.2 g | 5.0 ml |
| Run #2 | | |

| CAS No. | Compound | Result | RL | MDL | Units | Q |
|---|---|---|---|---|---|---|
| 94-75-7 | 2,4-D | ND | 35 | 5.9 | ug/kg | |
| 93-72-1 | 2,4,5-TP (Silvex) | ND | 3.5 | 0.94 | ug/kg | |
| 93-76-5 | 2,4,5-T | ND | 3.5 | 0.70 | ug/kg | |
| 1918-00-9 | Dicamba | ND | 3.5 | 1.2 | ug/kg | |
| 88-85-7 | Dinoseb | ND | 87 | 17 | ug/kg | |
| 75-99-0 | Dalapon | ND | 170 | 35 | ug/kg | |
| 120-36-5 | Dichloroprop | ND | 35 | 13 | ug/kg | |
| 94-82-6 | 2,4-DB | ND | 35 | 13 | ug/kg | |
| 93-65-2 | MCPP | ND | 3500 | 920 | ug/kg | |
| 94-74-6 | MCPA | ND | 3500 | 830 | ug/kg | |
| 87-86-5 | Pentachlorophenol | 0.94 | 3.5 | 0.53 | ug/kg | J |

| CAS No. | Surrogate Recoveries | Run# 1 | Run# 2 | Limits |
|---|---|---|---|---|
| 19719-28-9 | 2,4-DCAA | 70% [b] | | 31-132% |

(a) All hits confirmed by dual column analysis. Analysis performed at Accutest Laboratories, Orlando FL.
(b) Surrogate recoveries corrected for actual spike amount.

ND = Not detected MDL = Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

# Report of Analysis





| | | | |
|---|---|---|---|
| **Client Sample ID:** | CAT-B-1-2 | | |
| **Lab Sample ID:** | C37833-1 | **Date Sampled:** | 12/29/14 |
| **Matrix:** | SO - Soil | **Date Received:** | 12/31/14 |
| **Method:** | SW846 8015B M SW846 3550B | **Percent Solids:** | 94.7 |
| **Project:** | Alameda Cross Trail Phase II | | |

| | File ID | DF | Analyzed | By | Prep Date | Prep Batch | Analytical Batch |
|---|---|---|---|---|---|---|---|
| Run #1 | HH319851.D | 20 | 01/05/15 | AG | 01/02/15 | OP11469 | GHH1431 |
| Run #2 | | | | | | | |

| | Initial Weight | Final Volume |
|---|---|---|
| Run #1 | 30.1 g | 1.5 ml |
| Run #2 | | |

**TPH Extractable w/ Silica Gel Cleanup**

| CAS No. | Compound | Result | RL | MDL | Units | Q |
|---|---|---|---|---|---|---|
| | TPH (Diesel) [a] | 132 | 110 | 53 | mg/kg | |
| | TPH (Motor Oil) | 1160 | 210 | 110 | mg/kg | |
| | TPH (Mineral Spirits) | ND | 110 | 53 | mg/kg | |
| | TPH (Kerosene) | ND | 110 | 53 | mg/kg | |

| CAS No. | Surrogate Recoveries | Run# 1 | Run# 2 | Limits |
|---|---|---|---|---|
| 630-01-3 | Hexacosane | 72% | | 37-122% |

(a) Atypical Diesel pattern (C10-C28); heavier hydrocarbons contributing to quantitation.

ND = Not detected MDL = Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

# Report of Analysis





**Client Sample ID:** CAT-B-1-2
**Lab Sample ID:** C37833-1
**Matrix:** SO - Soil
**Project:** Alameda Cross Trail Phase II

**Date Sampled:** 12/29/14
**Date Received:** 12/31/14
**Percent Solids:** 94.7

**Metals Analysis**

| Analyte | Result | RL | Units | DF | Prep | Analyzed | By | Method | Prep Method |
|---|---|---|---|---|---|---|---|---|---|
| Arsenic | 15.4 | 0.22 | mg/kg | 5 | 01/06/15 | 01/08/15 | RS | SW846 6020 [1] | SW846 3050B [2] |
| Lead | 40.4 | 0.22 | mg/kg | 5 | 01/06/15 | 01/08/15 | RS | SW846 6020 [1] | SW846 3050B [2] |

(1) Instrument QC Batch: MA4523
(2) Prep QC Batch: MP8938

RL = Reporting Limit

# Report of Analysis





| | | | |
|---|---|---|---|
| **Client Sample ID:** | CAT-B-1-2 | | |
| **Lab Sample ID:** | C37833-1 | **Date Sampled:** | 12/29/14 |
| **Matrix:** | SO - Soil | **Date Received:** | 12/31/14 |
| | | **Percent Solids:** | 94.7 |
| **Project:** | Alameda Cross Trail Phase II | | |

**General Chemistry**

| Analyte | Result | RL | Units | DF | Analyzed | By | Method |
|---|---|---|---|---|---|---|---|
| Moisture, Percent | 5.3 | | % | 1 | 01/02/15 13:00 | TN | SM2540MOD G-97 |

RL = Reporting Limit

# Report of Analysis





**Client Sample ID:** CAT-B-1-4
**Lab Sample ID:** C37833-2
**Matrix:** SO - Soil
**Method:** SW846 8270C BY SIM SW846 3550B
**Project:** Alameda Cross Trail Phase II

**Date Sampled:** 12/29/14
**Date Received:** 12/31/14
**Percent Solids:** 93.0

| | File ID | DF | Analyzed | By | Prep Date | Prep Batch | Analytical Batch |
|---|---|---|---|---|---|---|---|
| Run #1 [a] | T17362.D | 5 | 01/03/15 | MT | 01/02/15 | OP11467 | ET768 |
| Run #2 | | | | | | | |

| | Initial Weight | Final Volume |
|---|---|---|
| Run #1 | 30.2 g | 1.0 ml |
| Run #2 | | |

**BN PAH List**

| CAS No. | Compound | Result | RL | MDL | Units | Q |
|---|---|---|---|---|---|---|
| 83-32-9 | Acenaphthene | ND | 89 | 8.9 | ug/kg | |
| 208-96-8 | Acenaphthylene | ND | 89 | 8.9 | ug/kg | |
| 120-12-7 | Anthracene | ND | 89 | 8.9 | ug/kg | |
| 56-55-3 | Benzo(a)anthracene | 36.4 | 18 | 4.5 | ug/kg | |
| 50-32-8 | Benzo(a)pyrene | 45.9 | 18 | 3.0 | ug/kg | |
| 205-99-2 | Benzo(b)fluoranthene | 33.0 | 18 | 3.6 | ug/kg | |
| 191-24-2 | Benzo(g,h,i)perylene | 37.8 | 18 | 3.9 | ug/kg | |
| 207-08-9 | Benzo(k)fluoranthene | 28.5 | 18 | 4.1 | ug/kg | |
| 218-01-9 | Chrysene | 40.3 | 18 | 3.6 | ug/kg | |
| 53-70-3 | Dibenzo(a,h)anthracene | 7.9 | 18 | 5.0 | ug/kg | J |
| 206-44-0 | Fluoranthene | 78.0 | 89 | 8.9 | ug/kg | J |
| 86-73-7 | Fluorene | ND | 89 | 8.9 | ug/kg | |
| 193-39-5 | Indeno(1,2,3-cd)pyrene | 37.3 | 18 | 4.5 | ug/kg | |
| 90-12-0 | 1-Methylnaphthalene | ND | 89 | 18 | ug/kg | |
| 91-57-6 | 2-Methylnaphthalene | ND | 89 | 18 | ug/kg | |
| 91-20-3 | Naphthalene | ND | 89 | 18 | ug/kg | |
| 85-01-8 | Phenanthrene | 27.2 | 89 | 8.9 | ug/kg | J |
| 129-00-0 | Pyrene | 79.2 | 89 | 8.9 | ug/kg | J |

| CAS No. | Surrogate Recoveries | Run# 1 | Run# 2 | Limits |
|---|---|---|---|---|
| 4165-60-0 | Nitrobenzene-d5 | 98% | | 32-128% |
| 321-60-8 | 2-Fluorobiphenyl | 94% | | 48-122% |
| 1718-51-0 | Terphenyl-d14 | 91% | | 48-148% |

(a) Dilution required due to matrix interference (dark and viscous extract; high concentration of non-target hydrocarbons).

ND = Not detected MDL = Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

# Report of Analysis





**Client Sample ID:** CAT-B-1-4
**Lab Sample ID:** C37833-2
**Matrix:** SO - Soil
**Method:** SW846 8151A SW846 3546
**Project:** Alameda Cross Trail Phase II

**Date Sampled:** 12/29/14
**Date Received:** 12/31/14
**Percent Solids:** 93.0

| | File ID | DF | Analyzed | By | Prep Date | Prep Batch | Analytical Batch |
|---|---|---|---|---|---|---|---|
| Run #1 [a] | CC046771.D | 1 | 01/06/15 | AFL | 01/05/15 | F:OP54497 | F:GCC777 |
| Run #2 | | | | | | | |

| | Initial Weight | Final Volume |
|---|---|---|
| Run #1 | 15.0 g | 5.0 ml |
| Run #2 | | |

| CAS No. | Compound | Result | RL | MDL | Units | Q |
|---|---|---|---|---|---|---|
| 94-75-7 | 2,4-D | ND | 36 | 6.1 | ug/kg | |
| 93-72-1 | 2,4,5-TP (Silvex) | ND | 3.6 | 0.97 | ug/kg | |
| 93-76-5 | 2,4,5-T | ND | 3.6 | 0.72 | ug/kg | |
| 1918-00-9 | Dicamba | ND | 3.6 | 1.2 | ug/kg | |
| 88-85-7 | Dinoseb | ND | 90 | 18 | ug/kg | |
| 75-99-0 | Dalapon | ND | 180 | 36 | ug/kg | |
| 120-36-5 | Dichloroprop | ND | 36 | 13 | ug/kg | |
| 94-82-6 | 2,4-DB | ND | 36 | 13 | ug/kg | |
| 93-65-2 | MCPP | ND | 3600 | 950 | ug/kg | |
| 94-74-6 | MCPA | ND | 3600 | 860 | ug/kg | |
| 87-86-5 | Pentachlorophenol | 2.5 | 3.6 | 0.55 | ug/kg | J |

| CAS No. | Surrogate Recoveries | Run# 1 | Run# 2 | Limits |
|---|---|---|---|---|
| 19719-28-9 | 2,4-DCAA | 70% [b] | | 31-132% |

(a) All hits confirmed by dual column analysis. Analysis performed at Accutest Laboratories, Orlando FL.
(b) Surrogate recoveries corrected for actual spike amount.

ND = Not detected MDL = Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

# Report of Analysis





| | | | |
|---|---|---|---|
| **Client Sample ID:** | CAT-B-1-4 | | |
| **Lab Sample ID:** | C37833-2 | **Date Sampled:** | 12/29/14 |
| **Matrix:** | SO - Soil | **Date Received:** | 12/31/14 |
| **Method:** | SW846 8015B M SW846 3550B | **Percent Solids:** | 93.0 |
| **Project:** | Alameda Cross Trail Phase II | | |

| | File ID | DF | Analyzed | By | Prep Date | Prep Batch | Analytical Batch |
|---|---|---|---|---|---|---|---|
| Run #1 | HH319852.D | 3 | 01/05/15 | AG | 01/02/15 | OP11469 | GHH1431 |
| Run #2 | | | | | | | |

| | Initial Weight | Final Volume |
|---|---|---|
| Run #1 | 30.1 g | 1.0 ml |
| Run #2 | | |

**TPH Extractable w/ Silica Gel Cleanup**

| CAS No. | Compound | Result | RL | MDL | Units | Q |
|---|---|---|---|---|---|---|
| | TPH (Diesel) [a] | 14.5 | 11 | 5.4 | mg/kg | |
| | TPH (Motor Oil) | 106 | 21 | 11 | mg/kg | |
| | TPH (Mineral Spirits) | ND | 11 | 5.4 | mg/kg | |
| | TPH (Kerosene) | ND | 11 | 5.4 | mg/kg | |

| CAS No. | Surrogate Recoveries | Run# 1 | Run# 2 | Limits |
|---|---|---|---|---|
| 630-01-3 | Hexacosane | 88% | | 37-122% |

(a) Atypical Diesel pattern (C10-C28); heavier hydrocarbons contributing to quantitation.

ND = Not detected MDL = Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range

J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

# Report of Analysis





| | | | |
|---|---|---|---|
| **Client Sample ID:** | CAT-B-1-4 | | |
| **Lab Sample ID:** | C37833-2 | **Date Sampled:** | 12/29/14 |
| **Matrix:** | SO - Soil | **Date Received:** | 12/31/14 |
| | | **Percent Solids:** | 93.0 |
| **Project:** | Alameda Cross Trail Phase II | | |

**Metals Analysis**

| Analyte | Result | RL | Units | DF | Prep | Analyzed | By | Method | Prep Method |
|---|---|---|---|---|---|---|---|---|---|
| Arsenic | 27.2 | 0.23 | mg/kg | 5 | 01/06/15 | 01/07/15 | RS | SW846 6020 [1] | SW846 3050B [2] |
| Lead | 35.7 | 0.23 | mg/kg | 5 | 01/06/15 | 01/07/15 | RS | SW846 6020 [1] | SW846 3050B [2] |

(1) Instrument QC Batch: MA4523
(2) Prep QC Batch: MP8938

RL = Reporting Limit

# Report of Analysis





| | | | |
|---|---|---|---|
| **Client Sample ID:** | CAT-B-1-4 | | |
| **Lab Sample ID:** | C37833-2 | **Date Sampled:** | 12/29/14 |
| **Matrix:** | SO - Soil | **Date Received:** | 12/31/14 |
| | | **Percent Solids:** | 93.0 |
| **Project:** | Alameda Cross Trail Phase II | | |

**General Chemistry**

| Analyte | Result | RL | Units | DF | Analyzed | By | Method |
|---|---|---|---|---|---|---|---|
| Moisture, Percent | 7 | | % | 1 | 01/02/15 13:00 | TN | SM2540MOD G-97 |

RL = Reporting Limit

# Report of Analysis





**Client Sample ID:** CAT-B-2-2
**Lab Sample ID:** C37833-3
**Matrix:** SO - Soil
**Method:** SW846 8270C BY SIM SW846 3550B
**Project:** Alameda Cross Trail Phase II

**Date Sampled:** 12/29/14
**Date Received:** 12/31/14
**Percent Solids:** 90.9

| | File ID | DF | Analyzed | By | Prep Date | Prep Batch | Analytical Batch |
|---|---|---|---|---|---|---|---|
| Run #1 [a] | T17363.D | 5 | 01/03/15 | MT | 01/02/15 | OP11467 | ET768 |
| Run #2 | | | | | | | |

| | Initial Weight | Final Volume |
|---|---|---|
| Run #1 | 30.3 g | 1.0 ml |
| Run #2 | | |

**BN PAH List**

| CAS No. | Compound | Result | RL | MDL | Units | Q |
|---|---|---|---|---|---|---|
| 83-32-9 | Acenaphthene | ND | 91 | 9.1 | ug/kg | |
| 208-96-8 | Acenaphthylene | ND | 91 | 9.1 | ug/kg | |
| 120-12-7 | Anthracene | ND | 91 | 9.1 | ug/kg | |
| 56-55-3 | Benzo(a)anthracene | 9.5 | 18 | 4.5 | ug/kg | J |
| 50-32-8 | Benzo(a)pyrene | 14.4 | 18 | 3.1 | ug/kg | J |
| 205-99-2 | Benzo(b)fluoranthene | 19.0 | 18 | 3.6 | ug/kg | |
| 191-24-2 | Benzo(g,h,i)perylene | 18.8 | 18 | 4.0 | ug/kg | |
| 207-08-9 | Benzo(k)fluoranthene | 6.5 | 18 | 4.2 | ug/kg | J |
| 218-01-9 | Chrysene | 12.9 | 18 | 3.6 | ug/kg | J |
| 53-70-3 | Dibenzo(a,h)anthracene | ND | 18 | 5.1 | ug/kg | |
| 206-44-0 | Fluoranthene | 17.6 | 91 | 9.1 | ug/kg | J |
| 86-73-7 | Fluorene | ND | 91 | 9.1 | ug/kg | |
| 193-39-5 | Indeno(1,2,3-cd)pyrene | 16.6 | 18 | 4.5 | ug/kg | J |
| 90-12-0 | 1-Methylnaphthalene | ND | 91 | 18 | ug/kg | |
| 91-57-6 | 2-Methylnaphthalene | ND | 91 | 18 | ug/kg | |
| 91-20-3 | Naphthalene | ND | 91 | 18 | ug/kg | |
| 85-01-8 | Phenanthrene | ND | 91 | 9.1 | ug/kg | |
| 129-00-0 | Pyrene | 23.1 | 91 | 9.1 | ug/kg | J |

| CAS No. | Surrogate Recoveries | Run# 1 | Run# 2 | Limits |
|---|---|---|---|---|
| 4165-60-0 | Nitrobenzene-d5 | 92% | | 32-128% |
| 321-60-8 | 2-Fluorobiphenyl | 94% | | 48-122% |
| 1718-51-0 | Terphenyl-d14 | 105% | | 48-148% |

(a) Dilution required due to matrix interference (dark and viscous extract; high concentration of non-target hydrocarbons).

ND = Not detected MDL = Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

# Report of Analysis





**Client Sample ID:** CAT-B-2-2
**Lab Sample ID:** C37833-3
**Matrix:** SO - Soil
**Method:** SW846 8151A SW846 3546
**Project:** Alameda Cross Trail Phase II

**Date Sampled:** 12/29/14
**Date Received:** 12/31/14
**Percent Solids:** 90.9

| | File ID | DF | Analyzed | By | Prep Date | Prep Batch | Analytical Batch |
|---|---|---|---|---|---|---|---|
| Run #1 [a] | CC046846.D | 5 | 01/08/15 | AFL | 01/05/15 | F:OP54497 | F:GCC779 |
| Run #2 | | | | | | | |

| | Initial Weight | Final Volume |
|---|---|---|
| Run #1 | 15.5 g | 5.0 ml |
| Run #2 | | |

| CAS No. | Compound | Result | RL | MDL | Units | Q |
|---|---|---|---|---|---|---|
| 94-75-7 | 2,4-D | ND | 180 | 30 | ug/kg | |
| 93-72-1 | 2,4,5-TP (Silvex) | ND | 18 | 4.8 | ug/kg | |
| 93-76-5 | 2,4,5-T | ND | 18 | 3.6 | ug/kg | |
| 1918-00-9 | Dicamba | ND | 18 | 5.9 | ug/kg | |
| 88-85-7 | Dinoseb | ND | 440 | 89 | ug/kg | |
| 75-99-0 | Dalapon | ND | 890 | 180 | ug/kg | |
| 120-36-5 | Dichloroprop | ND | 180 | 67 | ug/kg | |
| 94-82-6 | 2,4-DB | ND | 180 | 66 | ug/kg | |
| 93-65-2 | MCPP | ND | 18000 | 4700 | ug/kg | |
| 94-74-6 | MCPA | ND | 18000 | 4300 | ug/kg | |
| 87-86-5 | Pentachlorophenol | ND | 18 | 2.7 | ug/kg | |

| CAS No. | Surrogate Recoveries | Run# 1 | Run# 2 | Limits |
|---|---|---|---|---|
| 19719-28-9 | 2,4-DCAA | 90% [b] | | 31-132% |

(a) Dilution required due to matrix interference. Analysis performed at Accutest Laboratories, Orlando FL.
(b) Surrogate recoveries corrected for actual spike amount.

ND = Not detected MDL = Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

# Report of Analysis





**Client Sample ID:** CAT-B-2-2
**Lab Sample ID:** C37833-3
**Matrix:** SO - Soil
**Method:** SW846 8015B M SW846 3550B
**Project:** Alameda Cross Trail Phase II

**Date Sampled:** 12/29/14
**Date Received:** 12/31/14
**Percent Solids:** 90.9

| | File ID | DF | Analyzed | By | Prep Date | Prep Batch | Analytical Batch |
|---|---|---|---|---|---|---|---|
| Run #1 | HH319819.D | 5 | 01/03/15 | AG | 01/02/15 | OP11469 | GHH1430 |
| Run #2 | | | | | | | |

| | Initial Weight | Final Volume |
|---|---|---|
| Run #1 | 30.1 g | 1.0 ml |
| Run #2 | | |

**TPH Extractable w/ Silica Gel Cleanup**

| CAS No. | Compound | Result | RL | MDL | Units | Q |
|---|---|---|---|---|---|---|
| | TPH (Diesel) | ND | 18 | 9.1 | mg/kg | |
| | TPH (Motor Oil) | 236 | 37 | 18 | mg/kg | |
| | TPH (Mineral Spirits) | ND | 18 | 9.1 | mg/kg | |
| | TPH (Kerosene) | ND | 18 | 9.1 | mg/kg | |

| CAS No. | Surrogate Recoveries | Run# 1 | Run# 2 | Limits |
|---|---|---|---|---|
| 630-01-3 | Hexacosane | 76% | | 37-122% |

ND = Not detected MDL = Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range

J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

# Report of Analysis





| | | | |
|---|---|---|---|
| **Client Sample ID:** | CAT-B-2-2 | | |
| **Lab Sample ID:** | C37833-3 | **Date Sampled:** | 12/29/14 |
| **Matrix:** | SO - Soil | **Date Received:** | 12/31/14 |
| | | **Percent Solids:** | 90.9 |
| **Project:** | Alameda Cross Trail Phase II | | |

**Metals Analysis**

| Analyte | Result | RL | Units | DF | Prep | Analyzed | By | Method | Prep Method |
|---|---|---|---|---|---|---|---|---|---|
| Arsenic | 29.7 | 0.24 | mg/kg | 5 | 01/06/15 | 01/08/15 | RS | SW846 6020 [1] | SW846 3050B [2] |
| Lead | 61.3 | 0.24 | mg/kg | 5 | 01/06/15 | 01/08/15 | RS | SW846 6020 [1] | SW846 3050B [2] |

(1) Instrument QC Batch: MA4523
(2) Prep QC Batch: MP8938

RL = Reporting Limit

# Report of Analysis





| | | | |
|---|---|---|---|
| **Client Sample ID:** | CAT-B-2-2 | | |
| **Lab Sample ID:** | C37833-3 | **Date Sampled:** | 12/29/14 |
| **Matrix:** | SO - Soil | **Date Received:** | 12/31/14 |
| | | **Percent Solids:** | 90.9 |
| **Project:** | Alameda Cross Trail Phase II | | |

**General Chemistry**

| Analyte | Result | RL | Units | DF | Analyzed | By | Method |
|---|---|---|---|---|---|---|---|
| Moisture, Percent | 9.1 | | % | 1 | 01/02/15 13:00 | TN | SM2540MOD G-97 |

RL = Reporting Limit

# Report of Analysis





| | | | |
|---|---|---|---|
| **Client Sample ID:** | CAT-B-2-5 | | |
| **Lab Sample ID:** | C37833-4 | **Date Sampled:** | 12/29/14 |
| **Matrix:** | SO - Soil | **Date Received:** | 12/31/14 |
| **Method:** | SW846 8270C BY SIM SW846 3550B | **Percent Solids:** | 81.4 |
| **Project:** | Alameda Cross Trail Phase II | | |

| | File ID | DF | Analyzed | By | Prep Date | Prep Batch | Analytical Batch |
|---|---|---|---|---|---|---|---|
| Run #1 [a] | T17364.D | 5 | 01/03/15 | MT | 01/02/15 | OP11467 | ET768 |
| Run #2 | | | | | | | |

| | Initial Weight | Final Volume |
|---|---|---|
| Run #1 | 30.4 g | 1.0 ml |
| Run #2 | | |

**BN PAH List**

| CAS No. | Compound | Result | RL | MDL | Units | Q |
|---|---|---|---|---|---|---|
| 83-32-9 | Acenaphthene | ND | 100 | 10 | ug/kg | |
| 208-96-8 | Acenaphthylene | ND | 100 | 10 | ug/kg | |
| 120-12-7 | Anthracene | ND | 100 | 10 | ug/kg | |
| 56-55-3 | Benzo(a)anthracene | 18.8 | 20 | 5.1 | ug/kg | J |
| 50-32-8 | Benzo(a)pyrene | 30.6 | 20 | 3.4 | ug/kg | |
| 205-99-2 | Benzo(b)fluoranthene | 33.3 | 20 | 4.0 | ug/kg | |
| 191-24-2 | Benzo(g,h,i)perylene | 42.9 | 20 | 4.4 | ug/kg | |
| 207-08-9 | Benzo(k)fluoranthene | 21.7 | 20 | 4.7 | ug/kg | |
| 218-01-9 | Chrysene | 29.6 | 20 | 4.0 | ug/kg | |
| 53-70-3 | Dibenzo(a,h)anthracene | 6.6 | 20 | 5.7 | ug/kg | J |
| 206-44-0 | Fluoranthene | 46.5 | 100 | 10 | ug/kg | J |
| 86-73-7 | Fluorene | ND | 100 | 10 | ug/kg | |
| 193-39-5 | Indeno(1,2,3-cd)pyrene | 42.2 | 20 | 5.1 | ug/kg | |
| 90-12-0 | 1-Methylnaphthalene | ND | 100 | 20 | ug/kg | |
| 91-57-6 | 2-Methylnaphthalene | ND | 100 | 20 | ug/kg | |
| 91-20-3 | Naphthalene | ND | 100 | 20 | ug/kg | |
| 85-01-8 | Phenanthrene | 18.4 | 100 | 10 | ug/kg | J |
| 129-00-0 | Pyrene | 49.0 | 100 | 10 | ug/kg | J |

| CAS No. | Surrogate Recoveries | Run# 1 | Run# 2 | Limits |
|---|---|---|---|---|
| 4165-60-0 | Nitrobenzene-d5 | 99% | | 32-128% |
| 321-60-8 | 2-Fluorobiphenyl | 94% | | 48-122% |
| 1718-51-0 | Terphenyl-d14 | 98% | | 48-148% |

(a) Dilution required due to matrix interference (dark and viscous extract; high concentration of non-target hydrocarbons).

ND = Not detected MDL = Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

# Report of Analysis





**Client Sample ID:** CAT-B-2-5
**Lab Sample ID:** C37833-4
**Matrix:** SO - Soil
**Method:** SW846 8151A SW846 3546
**Project:** Alameda Cross Trail Phase II

**Date Sampled:** 12/29/14
**Date Received:** 12/31/14
**Percent Solids:** 81.4

| | File ID | DF | Analyzed | By | Prep Date | Prep Batch | Analytical Batch |
|---|---|---|---|---|---|---|---|
| Run #1 [a] | CC046773.D | 1 | 01/06/15 | AFL | 01/05/15 | F:OP54497 | F:GCC777 |
| Run #2 | | | | | | | |

| | Initial Weight | Final Volume |
|---|---|---|
| Run #1 | 15.4 g | 5.0 ml |
| Run #2 | | |

| CAS No. | Compound | Result | RL | MDL | Units | Q |
|---|---|---|---|---|---|---|
| 94-75-7 | 2,4-D | ND | 40 | 6.8 | ug/kg | |
| 93-72-1 | 2,4,5-TP (Silvex) | ND | 4.0 | 1.1 | ug/kg | |
| 93-76-5 | 2,4,5-T | ND | 4.0 | 0.80 | ug/kg | |
| 1918-00-9 | Dicamba | ND | 4.0 | 1.3 | ug/kg | |
| 88-85-7 | Dinoseb | ND | 100 | 20 | ug/kg | |
| 75-99-0 | Dalapon | ND | 200 | 40 | ug/kg | |
| 120-36-5 | Dichloroprop | ND | 40 | 15 | ug/kg | |
| 94-82-6 | 2,4-DB | ND | 40 | 15 | ug/kg | |
| 93-65-2 | MCPP | ND | 4000 | 1100 | ug/kg | |
| 94-74-6 | MCPA | ND | 4000 | 960 | ug/kg | |
| 87-86-5 | Pentachlorophenol | ND | 4.0 | 0.61 | ug/kg | |

| CAS No. | Surrogate Recoveries | Run# 1 | Run# 2 | Limits |
|---|---|---|---|---|
| 19719-28-9 | 2,4-DCAA | 110% [b] | | 31-132% |

(a) Analysis performed at Accutest Laboratories, Orlando FL.
(b) Surrogate recoveries corrected for actual spike amount.

ND = Not detected MDL = Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

# Report of Analysis





**Client Sample ID:** CAT-B-2-5
**Lab Sample ID:** C37833-4
**Matrix:** SO - Soil
**Method:** SW846 8015B M SW846 3550B
**Project:** Alameda Cross Trail Phase II

**Date Sampled:** 12/29/14
**Date Received:** 12/31/14
**Percent Solids:** 81.4

| | File ID | DF | Analyzed | By | Prep Date | Prep Batch | Analytical Batch |
|---|---|---|---|---|---|---|---|
| Run #1 | HH319820.D | 5 | 01/03/15 | AG | 01/02/15 | OP11469 | GHH1430 |
| Run #2 | | | | | | | |

| | Initial Weight | Final Volume |
|---|---|---|
| Run #1 | 30.1 g | 1.0 ml |
| Run #2 | | |

**TPH Extractable w/ Silica Gel Cleanup**

| CAS No. | Compound | Result | RL | MDL | Units | Q |
|---|---|---|---|---|---|---|
| | TPH (Diesel) | ND | 20 | 10 | mg/kg | |
| | TPH (Motor Oil) | 178 | 41 | 20 | mg/kg | |
| | TPH (Mineral Spirits) | ND | 20 | 10 | mg/kg | |
| | TPH (Kerosene) | ND | 20 | 10 | mg/kg | |

| CAS No. | Surrogate Recoveries | Run# 1 | Run# 2 | Limits |
|---|---|---|---|---|
| 630-01-3 | Hexacosane | 70% | | 37-122% |

ND = Not detected MDL = Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range

J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

# Report of Analysis





| | | | |
|---|---|---|---|
| **Client Sample ID:** | CAT-B-2-5 | | |
| **Lab Sample ID:** | C37833-4 | **Date Sampled:** | 12/29/14 |
| **Matrix:** | SO - Soil | **Date Received:** | 12/31/14 |
| | | **Percent Solids:** | 81.4 |
| **Project:** | Alameda Cross Trail Phase II | | |

**Metals Analysis**

| Analyte | Result | RL | Units | DF | Prep | Analyzed | By | Method | Prep Method |
|---|---|---|---|---|---|---|---|---|---|
| Arsenic | 12.3 | 0.26 | mg/kg | 5 | 01/06/15 | 01/08/15 | RS | SW846 6020 [1] | SW846 3050B [2] |
| Lead | 79.7 | 0.26 | mg/kg | 5 | 01/06/15 | 01/08/15 | RS | SW846 6020 [1] | SW846 3050B [2] |

(1) Instrument QC Batch: MA4523
(2) Prep QC Batch: MP8938

RL = Reporting Limit

# Report of Analysis





| | | | |
|---|---|---|---|
| **Client Sample ID:** | CAT-B-2-5 | | |
| **Lab Sample ID:** | C37833-4 | **Date Sampled:** | 12/29/14 |
| **Matrix:** | SO - Soil | **Date Received:** | 12/31/14 |
| | | **Percent Solids:** | 81.4 |
| **Project:** | Alameda Cross Trail Phase II | | |

**General Chemistry**

| Analyte | Result | RL | Units | DF | Analyzed | By | Method |
|---|---|---|---|---|---|---|---|
| Moisture, Percent | 18.6 | | % | 1 | 01/02/15 13:00 | TN | SM2540MOD G-97 |

RL = Reporting Limit

# Report of Analysis





| | | | |
|---|---|---|---|
| **Client Sample ID:** | CAT-B-3-4 | | |
| **Lab Sample ID:** | C37833-5 | **Date Sampled:** | 12/29/14 |
| **Matrix:** | SO - Soil | **Date Received:** | 12/31/14 |
| **Method:** | SW846 8270C BY SIM SW846 3550B | **Percent Solids:** | 77.7 |
| **Project:** | Alameda Cross Trail Phase II | | |

| | File ID | DF | Analyzed | By | Prep Date | Prep Batch | Analytical Batch |
|---|---|---|---|---|---|---|---|
| Run #1 | T17348.D | 1 | 01/02/15 | MT | 01/02/15 | OP11467 | ET768 |
| Run #2 | | | | | | | |

| | Initial Weight | Final Volume |
|---|---|---|
| Run #1 | 15.3 g | 1.0 ml |
| Run #2 | | |

**BN PAH List**

| CAS No. | Compound | Result | RL | MDL | Units | Q |
|---|---|---|---|---|---|---|
| 83-32-9 | Acenaphthene | ND | 42 | 4.2 | ug/kg | |
| 208-96-8 | Acenaphthylene | ND | 42 | 4.2 | ug/kg | |
| 120-12-7 | Anthracene | ND | 42 | 4.2 | ug/kg | |
| 56-55-3 | Benzo(a)anthracene | ND | 8.4 | 2.1 | ug/kg | |
| 50-32-8 | Benzo(a)pyrene | ND | 8.4 | 1.4 | ug/kg | |
| 205-99-2 | Benzo(b)fluoranthene | ND | 8.4 | 1.7 | ug/kg | |
| 191-24-2 | Benzo(g,h,i)perylene | ND | 8.4 | 1.9 | ug/kg | |
| 207-08-9 | Benzo(k)fluoranthene | ND | 8.4 | 1.9 | ug/kg | |
| 218-01-9 | Chrysene | ND | 8.4 | 1.7 | ug/kg | |
| 53-70-3 | Dibenzo(a,h)anthracene | ND | 8.4 | 2.4 | ug/kg | |
| 206-44-0 | Fluoranthene | ND | 42 | 4.2 | ug/kg | |
| 86-73-7 | Fluorene | ND | 42 | 4.2 | ug/kg | |
| 193-39-5 | Indeno(1,2,3-cd)pyrene | ND | 8.4 | 2.1 | ug/kg | |
| 90-12-0 | 1-Methylnaphthalene | ND | 42 | 8.4 | ug/kg | |
| 91-57-6 | 2-Methylnaphthalene | ND | 42 | 8.4 | ug/kg | |
| 91-20-3 | Naphthalene | ND | 42 | 8.4 | ug/kg | |
| 85-01-8 | Phenanthrene | ND | 42 | 4.2 | ug/kg | |
| 129-00-0 | Pyrene | ND | 42 | 4.2 | ug/kg | |

| CAS No. | Surrogate Recoveries | Run# 1 | Run# 2 | Limits |
|---|---|---|---|---|
| 4165-60-0 | Nitrobenzene-d5 | 105% | | 32-128% |
| 321-60-8 | 2-Fluorobiphenyl | 100% | | 48-122% |
| 1718-51-0 | Terphenyl-d14 | 112% | | 48-148% |

ND = Not detected MDL = Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

# Report of Analysis





**Client Sample ID:** CAT-B-3-4
**Lab Sample ID:** C37833-5
**Matrix:** SO - Soil
**Method:** SW846 8151A SW846 3546
**Project:** Alameda Cross Trail Phase II

**Date Sampled:** 12/29/14
**Date Received:** 12/31/14
**Percent Solids:** 77.7

| | File ID | DF | Analyzed | By | Prep Date | Prep Batch | Analytical Batch |
|---|---|---|---|---|---|---|---|
| Run #1 [a] | CC046796.D | 1 | 01/06/15 | AFL | 01/05/15 | F:OP54497 | F:GCC777 |
| Run #2 | | | | | | | |

| | Initial Weight | Final Volume |
|---|---|---|
| Run #1 | 15.0 g | 5.0 ml |
| Run #2 | | |

| CAS No. | Compound | Result | RL | MDL | Units | Q |
|---|---|---|---|---|---|---|
| 94-75-7 | 2,4-D | ND | 43 | 7.3 | ug/kg | |
| 93-72-1 | 2,4,5-TP (Silvex) | ND | 4.3 | 1.2 | ug/kg | |
| 93-76-5 | 2,4,5-T | ND | 4.3 | 0.86 | ug/kg | |
| 1918-00-9 | Dicamba | ND | 4.3 | 1.4 | ug/kg | |
| 88-85-7 | Dinoseb | ND | 110 | 21 | ug/kg | |
| 75-99-0 | Dalapon | ND | 210 | 43 | ug/kg | |
| 120-36-5 | Dichloroprop | ND | 43 | 16 | ug/kg | |
| 94-82-6 | 2,4-DB | ND | 43 | 16 | ug/kg | |
| 93-65-2 | MCPP | ND | 4300 | 1100 | ug/kg | |
| 94-74-6 | MCPA | ND | 4300 | 1000 | ug/kg | |
| 87-86-5 | Pentachlorophenol | ND | 4.3 | 0.66 | ug/kg | |

| CAS No. | Surrogate Recoveries | Run# 1 | Run# 2 | Limits |
|---|---|---|---|---|
| 19719-28-9 | 2,4-DCAA | 100% [b] | | 31-132% |

(a) Analysis performed at Accutest Laboratories, Orlando FL.
(b) Surrogate recoveries corrected for actual spike amount.

ND = Not detected MDL = Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

# Report of Analysis





| | | | |
|---|---|---|---|
| **Client Sample ID:** | CAT-B-3-4 | | |
| **Lab Sample ID:** | C37833-5 | **Date Sampled:** | 12/29/14 |
| **Matrix:** | SO - Soil | **Date Received:** | 12/31/14 |
| **Method:** | SW846 8015B M SW846 3550B | **Percent Solids:** | 77.7 |
| **Project:** | Alameda Cross Trail Phase II | | |

| | File ID | DF | Analyzed | By | Prep Date | Prep Batch | Analytical Batch |
|---|---|---|---|---|---|---|---|
| Run #1 | HH319821.D | 1 | 01/03/15 | AG | 01/02/15 | OP11469 | GHH1430 |
| Run #2 | | | | | | | |

| | Initial Weight | Final Volume |
|---|---|---|
| Run #1 | 15.5 g | 1.0 ml |
| Run #2 | | |

**TPH Extractable w/ Silica Gel Cleanup**

| CAS No. | Compound | Result | RL | MDL | Units | Q |
|---|---|---|---|---|---|---|
| | TPH (Diesel) | ND | 8.3 | 4.1 | mg/kg | |
| | TPH (Motor Oil) | 15.3 | 17 | 8.3 | mg/kg | J |
| | TPH (Mineral Spirits) | ND | 8.3 | 4.1 | mg/kg | |
| | TPH (Kerosene) | ND | 8.3 | 4.1 | mg/kg | |

| CAS No. | Surrogate Recoveries | Run# 1 | Run# 2 | Limits |
|---|---|---|---|---|
| 630-01-3 | Hexacosane | 94% | | 37-122% |

ND = Not detected MDL = Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range

J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

# Report of Analysis





| | | | |
|---|---|---|---|
| **Client Sample ID:** | CAT-B-3-4 | | |
| **Lab Sample ID:** | C37833-5 | **Date Sampled:** | 12/29/14 |
| **Matrix:** | SO - Soil | **Date Received:** | 12/31/14 |
| | | **Percent Solids:** | 77.7 |
| **Project:** | Alameda Cross Trail Phase II | | |

**Metals Analysis**

| Analyte | Result | RL | Units | DF | Prep | Analyzed | By | Method | Prep Method |
|---|---|---|---|---|---|---|---|---|---|
| Arsenic [a] | 7.2 | 0.56 | mg/kg | 5 | 01/09/15 | 01/12/15 | RS | SW846 6020 [2] | SW846 3050B [4] |
| Lead | 2.6 | 0.28 | mg/kg | 5 | 01/06/15 | 01/08/15 | RS | SW846 6020 [1] | SW846 3050B [3] |

(1) Instrument QC Batch: MA4523
(2) Instrument QC Batch: MA4533
(3) Prep QC Batch: MP8938
(4) Prep QC Batch: MP8965

(a) Elevated RL/MDL due to positive bias of Method Blank.

RL = Reporting Limit

# Report of Analysis





| | | | |
|---|---|---|---|
| **Client Sample ID:** | CAT-B-3-4 | | |
| **Lab Sample ID:** | C37833-5 | **Date Sampled:** | 12/29/14 |
| **Matrix:** | SO - Soil | **Date Received:** | 12/31/14 |
| | | **Percent Solids:** | 77.7 |
| **Project:** | Alameda Cross Trail Phase II | | |

**General Chemistry**

| Analyte | Result | RL | Units | DF | Analyzed | By | Method |
|---|---|---|---|---|---|---|---|
| Moisture, Percent | 22.3 | | % | 1 | 01/02/15 13:00 | TN | SM2540MOD G-97 |

RL = Reporting Limit

# Report of Analysis





**Client Sample ID:** CAT-B-3-1
**Lab Sample ID:** C37833-6
**Matrix:** SO - Soil
**Method:** SW846 8270C BY SIM SW846 3550B
**Project:** Alameda Cross Trail Phase II

**Date Sampled:** 12/29/14
**Date Received:** 12/31/14
**Percent Solids:** 67.7

| | File ID | DF | Analyzed | By | Prep Date | Prep Batch | Analytical Batch |
|---|---|---|---|---|---|---|---|
| Run #1 | T17349.D | 1 | 01/02/15 | MT | 01/02/15 | OP11467 | ET768 |
| Run #2 | | | | | | | |

| | Initial Weight | Final Volume |
|---|---|---|
| Run #1 | 30.4 g | 1.0 ml |
| Run #2 | | |

**BN PAH List**

| CAS No. | Compound | Result | RL | MDL | Units | Q |
|---|---|---|---|---|---|---|
| 83-32-9 | Acenaphthene | ND | 24 | 2.4 | ug/kg | |
| 208-96-8 | Acenaphthylene | ND | 24 | 2.4 | ug/kg | |
| 120-12-7 | Anthracene | 3.4 | 24 | 2.4 | ug/kg | J |
| 56-55-3 | Benzo(a)anthracene | 23.5 | 4.9 | 1.2 | ug/kg | |
| 50-32-8 | Benzo(a)pyrene | 35.4 | 4.9 | 0.83 | ug/kg | |
| 205-99-2 | Benzo(b)fluoranthene | 36.7 | 4.9 | 0.97 | ug/kg | |
| 191-24-2 | Benzo(g,h,i)perylene | 43.1 | 4.9 | 1.1 | ug/kg | |
| 207-08-9 | Benzo(k)fluoranthene | 19.3 | 4.9 | 1.1 | ug/kg | |
| 218-01-9 | Chrysene | 36.2 | 4.9 | 0.97 | ug/kg | |
| 53-70-3 | Dibenzo(a,h)anthracene | ND | 4.9 | 1.4 | ug/kg | |
| 206-44-0 | Fluoranthene | 62.5 | 24 | 2.4 | ug/kg | |
| 86-73-7 | Fluorene | ND | 24 | 2.4 | ug/kg | |
| 193-39-5 | Indeno(1,2,3-cd)pyrene | 40.2 | 4.9 | 1.2 | ug/kg | |
| 90-12-0 | 1-Methylnaphthalene | ND | 24 | 4.9 | ug/kg | |
| 91-57-6 | 2-Methylnaphthalene | ND | 24 | 4.9 | ug/kg | |
| 91-20-3 | Naphthalene | ND | 24 | 4.9 | ug/kg | |
| 85-01-8 | Phenanthrene | 21.1 | 24 | 2.4 | ug/kg | J |
| 129-00-0 | Pyrene | 60.1 | 24 | 2.4 | ug/kg | |

| CAS No. | Surrogate Recoveries | Run# 1 | Run# 2 | Limits |
|---|---|---|---|---|
| 4165-60-0 | Nitrobenzene-d5 | 109% | | 32-128% |
| 321-60-8 | 2-Fluorobiphenyl | 101% | | 48-122% |
| 1718-51-0 | Terphenyl-d14 | 90% | | 48-148% |

ND = Not detected MDL = Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

# Report of Analysis





**Client Sample ID:** CAT-B-3-1
**Lab Sample ID:** C37833-6
**Matrix:** SO - Soil
**Method:** SW846 8151A SW846 3546
**Project:** Alameda Cross Trail Phase II

**Date Sampled:** 12/29/14
**Date Received:** 12/31/14
**Percent Solids:** 67.7

| | File ID | DF | Analyzed | By | Prep Date | Prep Batch | Analytical Batch |
|---|---|---|---|---|---|---|---|
| Run #1 [a] | CC046779.D | 1 | 01/06/15 | AFL | 01/05/15 | F:OP54497 | F:GCC777 |
| Run #2 | | | | | | | |

| | Initial Weight | Final Volume |
|---|---|---|
| Run #1 | 15.1 g | 5.0 ml |
| Run #2 | | |

| CAS No. | Compound | Result | RL | MDL | Units | Q |
|---|---|---|---|---|---|---|
| 94-75-7 | 2,4-D | ND | 49 | 8.3 | ug/kg | |
| 93-72-1 | 2,4,5-TP (Silvex) | ND | 4.9 | 1.3 | ug/kg | |
| 93-76-5 | 2,4,5-T | ND | 4.9 | 0.98 | ug/kg | |
| 1918-00-9 | Dicamba | ND | 4.9 | 1.6 | ug/kg | |
| 88-85-7 | Dinoseb | ND | 120 | 24 | ug/kg | |
| 75-99-0 | Dalapon | ND | 240 | 49 | ug/kg | |
| 120-36-5 | Dichloroprop | ND | 49 | 18 | ug/kg | |
| 94-82-6 | 2,4-DB | ND | 49 | 18 | ug/kg | |
| 93-65-2 | MCPP | ND | 4900 | 1300 | ug/kg | |
| 94-74-6 | MCPA | ND | 4900 | 1200 | ug/kg | |
| 87-86-5 | Pentachlorophenol | ND | 4.9 | 0.75 | ug/kg | |

| CAS No. | Surrogate Recoveries | Run# 1 | Run# 2 | Limits |
|---|---|---|---|---|
| 19719-28-9 | 2,4-DCAA | 80% [b] | | 31-132% |

(a) Analysis performed at Accutest Laboratories, Orlando FL.
(b) Surrogate recoveries corrected for actual spike amount.

ND = Not detected MDL = Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

# Report of Analysis





| | | | |
|---|---|---|---|
| **Client Sample ID:** | CAT-B-3-1 | | |
| **Lab Sample ID:** | C37833-6 | **Date Sampled:** | 12/29/14 |
| **Matrix:** | SO - Soil | **Date Received:** | 12/31/14 |
| **Method:** | SW846 8015B M SW846 3550B | **Percent Solids:** | 67.7 |
| **Project:** | Alameda Cross Trail Phase II | | |

| | File ID | DF | Analyzed | By | Prep Date | Prep Batch | Analytical Batch |
|---|---|---|---|---|---|---|---|
| Run #1 | HH319822.D | 1 | 01/03/15 | AG | 01/02/15 | OP11469 | GHH1430 |
| Run #2 | | | | | | | |

| | Initial Weight | Final Volume |
|---|---|---|
| Run #1 | 30.0 g | 1.0 ml |
| Run #2 | | |

**TPH Extractable w/ Silica Gel Cleanup**

| CAS No. | Compound | Result | RL | MDL | Units | Q |
|---|---|---|---|---|---|---|
| | TPH (Diesel) [a] | 42.7 | 4.9 | 2.5 | mg/kg | |
| | TPH (Motor Oil) [b] | 78.2 | 9.8 | 4.9 | mg/kg | |
| | TPH (Mineral Spirits) | ND | 4.9 | 2.5 | mg/kg | |
| | TPH (Kerosene) | ND | 4.9 | 2.5 | mg/kg | |

| CAS No. | Surrogate Recoveries | Run# 1 | Run# 2 | Limits |
|---|---|---|---|---|
| 630-01-3 | Hexacosane | 105% | | 37-122% |

(a) Atypical Diesel pattern (C12-C28); value due on discrete peaks and heavier hydrocarbons contributing to quantitation.
(b) Estimated value due to the presence of interfering peaks in the Motor Oil range.

ND = Not detected MDL = Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

# Report of Analysis





| | | | |
|---|---|---|---|
| **Client Sample ID:** | CAT-B-3-1 | | |
| **Lab Sample ID:** | C37833-6 | **Date Sampled:** | 12/29/14 |
| **Matrix:** | SO - Soil | **Date Received:** | 12/31/14 |
| | | **Percent Solids:** | 67.7 |
| **Project:** | Alameda Cross Trail Phase II | | |

**Metals Analysis**

| Analyte | Result | RL | Units | DF | Prep | Analyzed | By | Method | Prep Method |
|---|---|---|---|---|---|---|---|---|---|
| Arsenic | 8.0 | 0.31 | mg/kg | 5 | 01/06/15 | 01/08/15 | RS | SW846 6020 [1] | SW846 3050B [2] |
| Lead | 24.0 | 0.31 | mg/kg | 5 | 01/06/15 | 01/08/15 | RS | SW846 6020 [1] | SW846 3050B [2] |

(1) Instrument QC Batch: MA4523
(2) Prep QC Batch: MP8938

RL = Reporting Limit

# Report of Analysis





| | | | |
|---|---|---|---|
| **Client Sample ID:** | CAT-B-3-1 | | |
| **Lab Sample ID:** | C37833-6 | **Date Sampled:** | 12/29/14 |
| **Matrix:** | SO - Soil | **Date Received:** | 12/31/14 |
| | | **Percent Solids:** | 67.7 |
| **Project:** | Alameda Cross Trail Phase II | | |

**General Chemistry**

| Analyte | Result | RL | Units | DF | Analyzed | By | Method |
|---|---|---|---|---|---|---|---|
| Moisture, Percent | 32.3 | | % | 1 | 01/02/15 13:00 | TN | SM2540MOD G-97 |

RL = Reporting Limit

# Report of Analysis





**Client Sample ID:** CAT-B-5-1
**Lab Sample ID:** C37833-7
**Matrix:** SO - Soil
**Method:** SW846 8270C BY SIM SW846 3550B
**Project:** Alameda Cross Trail Phase II

**Date Sampled:** 12/29/14
**Date Received:** 12/31/14
**Percent Solids:** 77.5

| | File ID | DF | Analyzed | By | Prep Date | Prep Batch | Analytical Batch |
|---|---|---|---|---|---|---|---|
| Run #1 | T17350.D | 1 | 01/02/15 | MT | 01/02/15 | OP11467 | ET768 |
| Run #2 | | | | | | | |

| | Initial Weight | Final Volume |
|---|---|---|
| Run #1 | 30.0 g | 1.0 ml |
| Run #2 | | |

**BN PAH List**

| CAS No. | Compound | Result | RL | MDL | Units | Q |
|---|---|---|---|---|---|---|
| 83-32-9 | Acenaphthene | ND | 21 | 2.1 | ug/kg | |
| 208-96-8 | Acenaphthylene | 4.7 | 21 | 2.1 | ug/kg | J |
| 120-12-7 | Anthracene | 5.2 | 21 | 2.1 | ug/kg | J |
| 56-55-3 | Benzo(a)anthracene | 61.9 | 4.3 | 1.1 | ug/kg | |
| 50-32-8 | Benzo(a)pyrene | 123 | 4.3 | 0.73 | ug/kg | |
| 205-99-2 | Benzo(b)fluoranthene | 110 | 4.3 | 0.86 | ug/kg | |
| 191-24-2 | Benzo(g,h,i)perylene | 176 | 4.3 | 0.94 | ug/kg | |
| 207-08-9 | Benzo(k)fluoranthene | 62.0 | 4.3 | 0.99 | ug/kg | |
| 218-01-9 | Chrysene | 84.0 | 4.3 | 0.86 | ug/kg | |
| 53-70-3 | Dibenzo(a,h)anthracene | 14.1 | 4.3 | 1.2 | ug/kg | |
| 206-44-0 | Fluoranthene | 162 | 21 | 2.1 | ug/kg | |
| 86-73-7 | Fluorene | ND | 21 | 2.1 | ug/kg | |
| 193-39-5 | Indeno(1,2,3-cd)pyrene | 179 | 4.3 | 1.1 | ug/kg | |
| 90-12-0 | 1-Methylnaphthalene | ND | 21 | 4.3 | ug/kg | |
| 91-57-6 | 2-Methylnaphthalene | ND | 21 | 4.3 | ug/kg | |
| 91-20-3 | Naphthalene | ND | 21 | 4.3 | ug/kg | |
| 85-01-8 | Phenanthrene | 28.6 | 21 | 2.1 | ug/kg | |
| 129-00-0 | Pyrene | 191 | 21 | 2.1 | ug/kg | |

| CAS No. | Surrogate Recoveries | Run# 1 | Run# 2 | Limits |
|---|---|---|---|---|
| 4165-60-0 | Nitrobenzene-d5 | 110% | | 32-128% |
| 321-60-8 | 2-Fluorobiphenyl | 104% | | 48-122% |
| 1718-51-0 | Terphenyl-d14 | 102% | | 48-148% |

ND = Not detected MDL = Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range

J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

# Report of Analysis





**Client Sample ID:** CAT-B-5-1
**Lab Sample ID:** C37833-7
**Matrix:** SO - Soil
**Method:** SW846 8151A SW846 3546
**Project:** Alameda Cross Trail Phase II

**Date Sampled:** 12/29/14
**Date Received:** 12/31/14
**Percent Solids:** 77.5

| | File ID | DF | Analyzed | By | Prep Date | Prep Batch | Analytical Batch |
|---|---|---|---|---|---|---|---|
| Run #1 [a] | CC046780.D | 1 | 01/06/15 | AFL | 01/05/15 | F:OP54497 | F:GCC777 |
| Run #2 | | | | | | | |

| | Initial Weight | Final Volume |
|---|---|---|
| Run #1 | 15.1 g | 5.0 ml |
| Run #2 | | |

| CAS No. | Compound | Result | RL | MDL | Units | Q |
|---|---|---|---|---|---|---|
| 94-75-7 | 2,4-D | ND | 43 | 7.3 | ug/kg | |
| 93-72-1 | 2,4,5-TP (Silvex) | ND | 4.3 | 1.2 | ug/kg | |
| 93-76-5 | 2,4,5-T | ND | 4.3 | 0.86 | ug/kg | |
| 1918-00-9 | Dicamba | ND | 4.3 | 1.4 | ug/kg | |
| 88-85-7 | Dinoseb | ND | 110 | 21 | ug/kg | |
| 75-99-0 | Dalapon | ND | 210 | 43 | ug/kg | |
| 120-36-5 | Dichloroprop | ND | 43 | 16 | ug/kg | |
| 94-82-6 | 2,4-DB | ND | 43 | 16 | ug/kg | |
| 93-65-2 | MCPP | ND | 4300 | 1100 | ug/kg | |
| 94-74-6 | MCPA | ND | 4300 | 1000 | ug/kg | |
| 87-86-5 | Pentachlorophenol | ND | 4.3 | 0.65 | ug/kg | |

| CAS No. | Surrogate Recoveries | Run# 1 | Run# 2 | Limits |
|---|---|---|---|---|
| 19719-28-9 | 2,4-DCAA | 80% [b] | | 31-132% |

(a) Analysis performed at Accutest Laboratories, Orlando FL.
(b) Surrogate recoveries corrected for actual spike amount.

ND = Not detected MDL = Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

# Report of Analysis





| | | | |
|---|---|---|---|
| **Client Sample ID:** | CAT-B-5-1 | | |
| **Lab Sample ID:** | C37833-7 | **Date Sampled:** | 12/29/14 |
| **Matrix:** | SO - Soil | **Date Received:** | 12/31/14 |
| **Method:** | SW846 8015B M SW846 3550B | **Percent Solids:** | 77.5 |
| **Project:** | Alameda Cross Trail Phase II | | |

| | File ID | DF | Analyzed | By | Prep Date | Prep Batch | Analytical Batch |
|---|---|---|---|---|---|---|---|
| Run #1 | HH319823.D | 1 | 01/03/15 | AG | 01/02/15 | OP11469 | GHH1430 |
| Run #2 | | | | | | | |

| | Initial Weight | Final Volume |
|---|---|---|
| Run #1 | 30.1 g | 1.0 ml |
| Run #2 | | |

**TPH Extractable w/ Silica Gel Cleanup**

| CAS No. | Compound | Result | RL | MDL | Units | Q |
|---|---|---|---|---|---|---|
| | TPH (Diesel) [a] | 6.17 | 4.3 | 2.1 | mg/kg | |
| | TPH (Motor Oil) [b] | 22.7 | 8.6 | 4.3 | mg/kg | |
| | TPH (Mineral Spirits) | ND | 4.3 | 2.1 | mg/kg | |
| | TPH (Kerosene) | ND | 4.3 | 2.1 | mg/kg | |

| CAS No. | Surrogate Recoveries | Run# 1 | Run# 2 | Limits |
|---|---|---|---|---|
| 630-01-3 | Hexacosane | 99% | | 37-122% |

(a) Atypical Diesel pattern (C12-C28); value due on discrete peaks and heavier hydrocarbons contributing to quantitation.
(b) Estimated value due to the presence of interfering peaks.

ND = Not detected MDL = Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

# Report of Analysis





| | | | |
|---|---|---|---|
| **Client Sample ID:** | CAT-B-5-1 | | |
| **Lab Sample ID:** | C37833-7 | **Date Sampled:** | 12/29/14 |
| **Matrix:** | SO - Soil | **Date Received:** | 12/31/14 |
| | | **Percent Solids:** | 77.5 |
| **Project:** | Alameda Cross Trail Phase II | | |

**Metals Analysis**

| Analyte | Result | RL | Units | DF | Prep | Analyzed | By | Method | Prep Method |
|---|---|---|---|---|---|---|---|---|---|
| Arsenic | 6.2 | 0.28 | mg/kg | 5 | 01/06/15 | 01/08/15 | RS | SW846 6020 [1] | SW846 3050B [2] |
| Lead | 68.4 | 0.28 | mg/kg | 5 | 01/06/15 | 01/08/15 | RS | SW846 6020 [1] | SW846 3050B [2] |

(1) Instrument QC Batch: MA4523
(2) Prep QC Batch: MP8938

RL = Reporting Limit

# Report of Analysis





| | | | |
|---|---|---|---|
| **Client Sample ID:** | CAT-B-5-1 | | |
| **Lab Sample ID:** | C37833-7 | **Date Sampled:** | 12/29/14 |
| **Matrix:** | SO - Soil | **Date Received:** | 12/31/14 |
| | | **Percent Solids:** | 77.5 |
| **Project:** | Alameda Cross Trail Phase II | | |

**General Chemistry**

| Analyte | Result | RL | Units | DF | Analyzed | By | Method |
|---|---|---|---|---|---|---|---|
| Moisture, Percent | 22.5 | | % | 1 | 01/02/15 13:00 | TN | SM2540MOD G-97 |

RL = Reporting Limit

# Report of Analysis





**Client Sample ID:** CAT-B-4-5
**Lab Sample ID:** C37833-8
**Matrix:** SO - Soil
**Method:** SW846 8270C BY SIM SW846 3550B
**Project:** Alameda Cross Trail Phase II

**Date Sampled:** 12/29/14
**Date Received:** 12/31/14
**Percent Solids:** 72.9

| | File ID | DF | Analyzed | By | Prep Date | Prep Batch | Analytical Batch |
|---|---|---|---|---|---|---|---|
| Run #1 | T17351.D | 1 | 01/02/15 | MT | 01/02/15 | OP11467 | ET768 |
| Run #2 | | | | | | | |

| | Initial Weight | Final Volume |
|---|---|---|
| Run #1 | 30.3 g | 1.0 ml |
| Run #2 | | |

**BN PAH List**

| CAS No. | Compound | Result | RL | MDL | Units | Q |
|---|---|---|---|---|---|---|
| 83-32-9 | Acenaphthene | 6.8 | 23 | 2.3 | ug/kg | J |
| 208-96-8 | Acenaphthylene | 15.9 | 23 | 2.3 | ug/kg | J |
| 120-12-7 | Anthracene | 32.5 | 23 | 2.3 | ug/kg | |
| 56-55-3 | Benzo(a)anthracene | 156 | 4.5 | 1.1 | ug/kg | |
| 50-32-8 | Benzo(a)pyrene | 264 | 4.5 | 0.77 | ug/kg | |
| 205-99-2 | Benzo(b)fluoranthene | 239 | 4.5 | 0.91 | ug/kg | |
| 191-24-2 | Benzo(g,h,i)perylene | 286 | 4.5 | 1.0 | ug/kg | |
| 207-08-9 | Benzo(k)fluoranthene | 118 | 4.5 | 1.0 | ug/kg | |
| 218-01-9 | Chrysene | 204 | 4.5 | 0.91 | ug/kg | |
| 53-70-3 | Dibenzo(a,h)anthracene | 30.2 | 4.5 | 1.3 | ug/kg | |
| 206-44-0 | Fluoranthene | 515 | 23 | 2.3 | ug/kg | |
| 86-73-7 | Fluorene | 12.6 | 23 | 2.3 | ug/kg | J |
| 193-39-5 | Indeno(1,2,3-cd)pyrene | 300 | 4.5 | 1.1 | ug/kg | |
| 90-12-0 | 1-Methylnaphthalene | ND | 23 | 4.5 | ug/kg | |
| 91-57-6 | 2-Methylnaphthalene | ND | 23 | 4.5 | ug/kg | |
| 91-20-3 | Naphthalene | ND | 23 | 4.5 | ug/kg | |
| 85-01-8 | Phenanthrene | 242 | 23 | 2.3 | ug/kg | |
| 129-00-0 | Pyrene | 495 | 23 | 2.3 | ug/kg | |

| CAS No. | Surrogate Recoveries | Run# 1 | Run# 2 | Limits |
|---|---|---|---|---|
| 4165-60-0 | Nitrobenzene-d5 | 109% | | 32-128% |
| 321-60-8 | 2-Fluorobiphenyl | 92% | | 48-122% |
| 1718-51-0 | Terphenyl-d14 | 90% | | 48-148% |

ND = Not detected MDL = Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

# Report of Analysis





**Client Sample ID:** CAT-B-4-5
**Lab Sample ID:** C37833-8
**Matrix:** SO - Soil
**Method:** SW846 8151A SW846 3546
**Project:** Alameda Cross Trail Phase II

**Date Sampled:** 12/29/14
**Date Received:** 12/31/14
**Percent Solids:** 72.9

| | File ID | DF | Analyzed | By | Prep Date | Prep Batch | Analytical Batch |
|---|---|---|---|---|---|---|---|
| Run #1 [a] | CC046781.D | 1 | 01/06/15 | AFL | 01/05/15 | F:OP54497 | F:GCC777 |
| Run #2 | | | | | | | |

| | Initial Weight | Final Volume |
|---|---|---|
| Run #1 | 15.2 g | 5.0 ml |
| Run #2 | | |

| CAS No. | Compound | Result | RL | MDL | Units | Q |
|---|---|---|---|---|---|---|
| 94-75-7 | 2,4-D | ND | 45 | 7.7 | ug/kg | |
| 93-72-1 | 2,4,5-TP (Silvex) | ND | 4.5 | 1.2 | ug/kg | |
| 93-76-5 | 2,4,5-T | ND | 4.5 | 0.91 | ug/kg | |
| 1918-00-9 | Dicamba | ND | 4.5 | 1.5 | ug/kg | |
| 88-85-7 | Dinoseb | ND | 110 | 23 | ug/kg | |
| 75-99-0 | Dalapon | ND | 230 | 45 | ug/kg | |
| 120-36-5 | Dichloroprop | ND | 45 | 17 | ug/kg | |
| 94-82-6 | 2,4-DB | ND | 45 | 17 | ug/kg | |
| 93-65-2 | MCPP | ND | 4500 | 1200 | ug/kg | |
| 94-74-6 | MCPA | ND | 4500 | 1100 | ug/kg | |
| 87-86-5 | Pentachlorophenol | ND | 4.5 | 0.69 | ug/kg | |

| CAS No. | Surrogate Recoveries | Run# 1 | Run# 2 | Limits |
|---|---|---|---|---|
| 19719-28-9 | 2,4-DCAA | 80% [b] | | 31-132% |

(a) Analysis performed at Accutest Laboratories, Orlando FL.
(b) Surrogate recoveries corrected for actual spike amount.

ND = Not detected MDL = Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

# Report of Analysis





| | | | |
|---|---|---|---|
| **Client Sample ID:** | CAT-B-4-5 | | |
| **Lab Sample ID:** | C37833-8 | **Date Sampled:** | 12/29/14 |
| **Matrix:** | SO - Soil | **Date Received:** | 12/31/14 |
| **Method:** | SW846 8015B M SW846 3550B | **Percent Solids:** | 72.9 |
| **Project:** | Alameda Cross Trail Phase II | | |

| | File ID | DF | Analyzed | By | Prep Date | Prep Batch | Analytical Batch |
|---|---|---|---|---|---|---|---|
| Run #1 | HH319824.D | 1 | 01/03/15 | AG | 01/02/15 | OP11469 | GHH1430 |
| Run #2 | | | | | | | |

| | Initial Weight | Final Volume |
|---|---|---|
| Run #1 | 30.0 g | 1.0 ml |
| Run #2 | | |

**TPH Extractable w/ Silica Gel Cleanup**

| CAS No. | Compound | Result | RL | MDL | Units | Q |
|---|---|---|---|---|---|---|
| | TPH (Diesel) [a] | 11.7 | 4.6 | 2.3 | mg/kg | |
| | TPH (Motor Oil) | 26.6 | 9.1 | 4.6 | mg/kg | |
| | TPH (Mineral Spirits) | ND | 4.6 | 2.3 | mg/kg | |
| | TPH (Kerosene) | ND | 4.6 | 2.3 | mg/kg | |

| CAS No. | Surrogate Recoveries | Run# 1 | Run# 2 | Limits |
|---|---|---|---|---|
| 630-01-3 | Hexacosane | 95% | | 37-122% |

(a) Atypical Diesel pattern (C12-C28); value due on discrete peaks and heavier hydrocarbons contributing to quantitation.

ND = Not detected MDL = Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range

J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

# Report of Analysis





| | | | |
|---|---|---|---|
| **Client Sample ID:** | CAT-B-4-5 | | |
| **Lab Sample ID:** | C37833-8 | **Date Sampled:** | 12/29/14 |
| **Matrix:** | SO - Soil | **Date Received:** | 12/31/14 |
| | | **Percent Solids:** | 72.9 |
| **Project:** | Alameda Cross Trail Phase II | | |

**Metals Analysis**

| Analyte | Result | RL | Units | DF | Prep | Analyzed | By | Method | Prep Method |
|---|---|---|---|---|---|---|---|---|---|
| Arsenic | 6.3 | 0.29 | mg/kg | 5 | 01/06/15 | 01/08/15 | RS | SW846 6020 [1] | SW846 3050B [2] |
| Lead | 36.6 | 0.29 | mg/kg | 5 | 01/06/15 | 01/08/15 | RS | SW846 6020 [1] | SW846 3050B [2] |

(1) Instrument QC Batch: MA4523
(2) Prep QC Batch: MP8938

RL = Reporting Limit

# Report of Analysis





| | | | |
|---|---|---|---|
| **Client Sample ID:** | CAT-B-4-5 | | |
| **Lab Sample ID:** | C37833-8 | **Date Sampled:** | 12/29/14 |
| **Matrix:** | SO - Soil | **Date Received:** | 12/31/14 |
| | | **Percent Solids:** | 72.9 |
| **Project:** | Alameda Cross Trail Phase II | | |

**General Chemistry**

| Analyte | Result | RL | Units | DF | Analyzed | By | Method |
|---|---|---|---|---|---|---|---|
| Moisture, Percent | 27.1 | | % | 1 | 01/02/15 13:00 | TN | SM2540MOD G-97 |

RL = Reporting Limit

# Report of Analysis





**Client Sample ID:** CAT-B-4-2
**Lab Sample ID:** C37833-9
**Matrix:** SO - Soil
**Method:** SW846 8270C BY SIM SW846 3550B
**Project:** Alameda Cross Trail Phase II

**Date Sampled:** 12/29/14
**Date Received:** 12/31/14
**Percent Solids:** 79.4

| | File ID | DF | Analyzed | By | Prep Date | Prep Batch | Analytical Batch |
|---|---|---|---|---|---|---|---|
| Run #1 | T17352.D | 1 | 01/02/15 | MT | 01/02/15 | OP11467 | ET768 |
| Run #2 | | | | | | | |

| | Initial Weight | Final Volume |
|---|---|---|
| Run #1 | 30.2 g | 1.0 ml |
| Run #2 | | |

**BN PAH List**

| CAS No. | Compound | Result | RL | MDL | Units | Q |
|---|---|---|---|---|---|---|
| 83-32-9 | Acenaphthene | ND | 21 | 2.1 | ug/kg | |
| 208-96-8 | Acenaphthylene | 7.6 | 21 | 2.1 | ug/kg | J |
| 120-12-7 | Anthracene | 7.6 | 21 | 2.1 | ug/kg | J |
| 56-55-3 | Benzo(a)anthracene | 99.6 | 4.2 | 1.0 | ug/kg | |
| 50-32-8 | Benzo(a)pyrene | 219 | 4.2 | 0.71 | ug/kg | |
| 205-99-2 | Benzo(b)fluoranthene | 220 | 4.2 | 0.83 | ug/kg | |
| 191-24-2 | Benzo(g,h,i)perylene | 293 | 4.2 | 0.92 | ug/kg | |
| 207-08-9 | Benzo(k)fluoranthene | 114 | 4.2 | 0.96 | ug/kg | |
| 218-01-9 | Chrysene | 163 | 4.2 | 0.83 | ug/kg | |
| 53-70-3 | Dibenzo(a,h)anthracene | 28.4 | 4.2 | 1.2 | ug/kg | |
| 206-44-0 | Fluoranthene | 285 | 21 | 2.1 | ug/kg | |
| 86-73-7 | Fluorene | ND | 21 | 2.1 | ug/kg | |
| 193-39-5 | Indeno(1,2,3-cd)pyrene | 320 | 4.2 | 1.0 | ug/kg | |
| 90-12-0 | 1-Methylnaphthalene | ND | 21 | 4.2 | ug/kg | |
| 91-57-6 | 2-Methylnaphthalene | ND | 21 | 4.2 | ug/kg | |
| 91-20-3 | Naphthalene | ND | 21 | 4.2 | ug/kg | |
| 85-01-8 | Phenanthrene | 60.0 | 21 | 2.1 | ug/kg | |
| 129-00-0 | Pyrene | 295 | 21 | 2.1 | ug/kg | |

| CAS No. | Surrogate Recoveries | Run# 1 | Run# 2 | Limits |
|---|---|---|---|---|
| 4165-60-0 | Nitrobenzene-d5 | 109% | | 32-128% |
| 321-60-8 | 2-Fluorobiphenyl | 103% | | 48-122% |
| 1718-51-0 | Terphenyl-d14 | 90% | | 48-148% |

ND = Not detected MDL = Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range

J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

# Report of Analysis





**Client Sample ID:** CAT-B-4-2
**Lab Sample ID:** C37833-9
**Matrix:** SO - Soil
**Method:** SW846 8151A SW846 3546
**Project:** Alameda Cross Trail Phase II

**Date Sampled:** 12/29/14
**Date Received:** 12/31/14
**Percent Solids:** 79.4

| | File ID | DF | Analyzed | By | Prep Date | Prep Batch | Analytical Batch |
|---|---|---|---|---|---|---|---|
| Run #1 [a] | CC046782.D | 1 | 01/06/15 | AFL | 01/05/15 | F:OP54497 | F:GCC777 |
| Run #2 | | | | | | | |

| | Initial Weight | Final Volume |
|---|---|---|
| Run #1 | 15.5 g | 5.0 ml |
| Run #2 | | |

| CAS No. | Compound | Result | RL | MDL | Units | Q |
|---|---|---|---|---|---|---|
| 94-75-7 | 2,4-D | ND | 41 | 6.9 | ug/kg | |
| 93-72-1 | 2,4,5-TP (Silvex) | ND | 4.1 | 1.1 | ug/kg | |
| 93-76-5 | 2,4,5-T | ND | 4.1 | 0.82 | ug/kg | |
| 1918-00-9 | Dicamba | ND | 4.1 | 1.4 | ug/kg | |
| 88-85-7 | Dinoseb | ND | 100 | 20 | ug/kg | |
| 75-99-0 | Dalapon | ND | 200 | 41 | ug/kg | |
| 120-36-5 | Dichloroprop | ND | 41 | 15 | ug/kg | |
| 94-82-6 | 2,4-DB | ND | 41 | 15 | ug/kg | |
| 93-65-2 | MCPP | ND | 4100 | 1100 | ug/kg | |
| 94-74-6 | MCPA | ND | 4100 | 980 | ug/kg | |
| 87-86-5 | Pentachlorophenol | 2.6 | 4.1 | 0.62 | ug/kg | J |

| CAS No. | Surrogate Recoveries | Run# 1 | Run# 2 | Limits |
|---|---|---|---|---|
| 19719-28-9 | 2,4-DCAA | 70% [b] | | 31-132% |

(a) All hits confirmed by dual column analysis. Analysis performed at Accutest Laboratories, Orlando FL.
(b) Surrogate recoveries corrected for actual spike amount.

ND = Not detected MDL = Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

# Report of Analysis





| | | | |
|---|---|---|---|
| **Client Sample ID:** | CAT-B-4-2 | | |
| **Lab Sample ID:** | C37833-9 | **Date Sampled:** | 12/29/14 |
| **Matrix:** | SO - Soil | **Date Received:** | 12/31/14 |
| **Method:** | SW846 8015B M SW846 3550B | **Percent Solids:** | 79.4 |
| **Project:** | Alameda Cross Trail Phase II | | |

| | File ID | DF | Analyzed | By | Prep Date | Prep Batch | Analytical Batch |
|---|---|---|---|---|---|---|---|
| Run #1 | HH319825.D | 1 | 01/03/15 | AG | 01/02/15 | OP11469 | GHH1430 |
| Run #2 | | | | | | | |

| | Initial Weight | Final Volume |
|---|---|---|
| Run #1 | 30.1 g | 1.0 ml |
| Run #2 | | |

**TPH Extractable w/ Silica Gel Cleanup**

| CAS No. | Compound | Result | RL | MDL | Units | Q |
|---|---|---|---|---|---|---|
| | TPH (Diesel) [a] | 8.76 | 4.2 | 2.1 | mg/kg | |
| | TPH (Motor Oil) | 28.2 | 8.4 | 4.2 | mg/kg | |
| | TPH (Mineral Spirits) | ND | 4.2 | 2.1 | mg/kg | |
| | TPH (Kerosene) | ND | 4.2 | 2.1 | mg/kg | |

| CAS No. | Surrogate Recoveries | Run# 1 | Run# 2 | Limits |
|---|---|---|---|---|
| 630-01-3 | Hexacosane | 94% | | 37-122% |

(a) Atypical Diesel pattern (C12-C28); value due on discrete peaks and heavier hydrocarbons contributing to quantitation.

ND = Not detected MDL = Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range

J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

# Report of Analysis





| | | | |
|---|---|---|---|
| **Client Sample ID:** | CAT-B-4-2 | | |
| **Lab Sample ID:** | C37833-9 | **Date Sampled:** | 12/29/14 |
| **Matrix:** | SO - Soil | **Date Received:** | 12/31/14 |
| | | **Percent Solids:** | 79.4 |
| **Project:** | Alameda Cross Trail Phase II | | |

**Metals Analysis**

| Analyte | Result | RL | Units | DF | Prep | Analyzed | By | Method | Prep Method |
|---|---|---|---|---|---|---|---|---|---|
| Arsenic | 6.8 | 0.27 | mg/kg | 5 | 01/06/15 | 01/08/15 | RS | SW846 6020 [1] | SW846 3050B [2] |
| Lead | 37.0 | 0.27 | mg/kg | 5 | 01/06/15 | 01/08/15 | RS | SW846 6020 [1] | SW846 3050B [2] |

(1) Instrument QC Batch: MA4523
(2) Prep QC Batch: MP8938

RL = Reporting Limit

# Report of Analysis





| | | | |
|---|---|---|---|
| **Client Sample ID:** | CAT-B-4-2 | | |
| **Lab Sample ID:** | C37833-9 | **Date Sampled:** | 12/29/14 |
| **Matrix:** | SO - Soil | **Date Received:** | 12/31/14 |
| | | **Percent Solids:** | 79.4 |
| **Project:** | Alameda Cross Trail Phase II | | |

**General Chemistry**

| Analyte | Result | RL | Units | DF | Analyzed | By | Method |
|---|---|---|---|---|---|---|---|
| Moisture, Percent | 20.6 | | % | 1 | 01/02/15 13:00 | TN | SM2540MOD G-97 |

RL = Reporting Limit

# Report of Analysis



**Client Sample ID:** CAT-B-5-5
**Lab Sample ID:** C37833-10
**Matrix:** SO - Soil
**Method:** SW846 8270C BY SIM SW846 3550B
**Project:** Alameda Cross Trail Phase II

**Date Sampled:** 12/29/14
**Date Received:** 12/31/14
**Percent Solids:** 91.8

| | File ID | DF | Analyzed | By | Prep Date | Prep Batch | Analytical Batch |
|---|---|---|---|---|---|---|---|
| Run #1 | T17353.D | 1 | 01/02/15 | MT | 01/02/15 | OP11467 | ET768 |
| Run #2 | | | | | | | |

| | Initial Weight | Final Volume |
|---|---|---|
| Run #1 | 30.5 g | 1.0 ml |
| Run #2 | | |

**BN PAH List**

| CAS No. | Compound | Result | RL | MDL | Units | Q |
|---|---|---|---|---|---|---|
| 83-32-9 | Acenaphthene | ND | 18 | 1.8 | ug/kg | |
| 208-96-8 | Acenaphthylene | ND | 18 | 1.8 | ug/kg | |
| 120-12-7 | Anthracene | ND | 18 | 1.8 | ug/kg | |
| 56-55-3 | Benzo(a)anthracene | 7.8 | 3.6 | 0.89 | ug/kg | |
| 50-32-8 | Benzo(a)pyrene | 14.7 | 3.6 | 0.61 | ug/kg | |
| 205-99-2 | Benzo(b)fluoranthene | 14.2 | 3.6 | 0.71 | ug/kg | |
| 191-24-2 | Benzo(g,h,i)perylene | 18.5 | 3.6 | 0.79 | ug/kg | |
| 207-08-9 | Benzo(k)fluoranthene | 7.4 | 3.6 | 0.82 | ug/kg | |
| 218-01-9 | Chrysene | 10.2 | 3.6 | 0.71 | ug/kg | |
| 53-70-3 | Dibenzo(a,h)anthracene | 1.9 | 3.6 | 1.0 | ug/kg | J |
| 206-44-0 | Fluoranthene | 17.7 | 18 | 1.8 | ug/kg | J |
| 86-73-7 | Fluorene | ND | 18 | 1.8 | ug/kg | |
| 193-39-5 | Indeno(1,2,3-cd)pyrene | 18.8 | 3.6 | 0.89 | ug/kg | |
| 90-12-0 | 1-Methylnaphthalene | ND | 18 | 3.6 | ug/kg | |
| 91-57-6 | 2-Methylnaphthalene | ND | 18 | 3.6 | ug/kg | |
| 91-20-3 | Naphthalene | ND | 18 | 3.6 | ug/kg | |
| 85-01-8 | Phenanthrene | ND | 18 | 1.8 | ug/kg | |
| 129-00-0 | Pyrene | 21.2 | 18 | 1.8 | ug/kg | |

| CAS No. | Surrogate Recoveries | Run# 1 | Run# 2 | Limits |
|---|---|---|---|---|
| 4165-60-0 | Nitrobenzene-d5 | 107% | | 32-128% |
| 321-60-8 | 2-Fluorobiphenyl | 100% | | 48-122% |
| 1718-51-0 | Terphenyl-d14 | 98% | | 48-148% |

ND = Not detected MDL = Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

# Report of Analysis



**Client Sample ID:** CAT-B-5-5
**Lab Sample ID:** C37833-10
**Matrix:** SO - Soil
**Method:** SW846 8151A SW846 3546
**Project:** Alameda Cross Trail Phase II

**Date Sampled:** 12/29/14
**Date Received:** 12/31/14
**Percent Solids:** 91.8

| | File ID | DF | Analyzed | By | Prep Date | Prep Batch | Analytical Batch |
|---|---|---|---|---|---|---|---|
| Run #1 [a] | CC046783.D | 1 | 01/06/15 | AFL | 01/05/15 | F:OP54497 | F:GCC777 |
| Run #2 | | | | | | | |

| | Initial Weight | Final Volume |
|---|---|---|
| Run #1 | 15.4 g | 5.0 ml |
| Run #2 | | |

| CAS No. | Compound | Result | RL | MDL | Units | Q |
|---|---|---|---|---|---|---|
| 94-75-7 | 2,4-D | ND | 35 | 6.0 | ug/kg | |
| 93-72-1 | 2,4,5-TP (Silvex) | ND | 3.5 | 0.96 | ug/kg | |
| 93-76-5 | 2,4,5-T | ND | 3.5 | 0.71 | ug/kg | |
| 1918-00-9 | Dicamba | ND | 3.5 | 1.2 | ug/kg | |
| 88-85-7 | Dinoseb | ND | 88 | 18 | ug/kg | |
| 75-99-0 | Dalapon | ND | 180 | 35 | ug/kg | |
| 120-36-5 | Dichloroprop | ND | 35 | 13 | ug/kg | |
| 94-82-6 | 2,4-DB | ND | 35 | 13 | ug/kg | |
| 93-65-2 | MCPP | ND | 3500 | 940 | ug/kg | |
| 94-74-6 | MCPA | ND | 3500 | 850 | ug/kg | |
| 87-86-5 | Pentachlorophenol | 2.9 | 3.5 | 0.54 | ug/kg | J |

| CAS No. | Surrogate Recoveries | Run# 1 | Run# 2 | Limits |
|---|---|---|---|---|
| 19719-28-9 | 2,4-DCAA | 40% [b] | | 31-132% |

(a) All hits confirmed by dual column analysis. Analysis performed at Accutest Laboratories, Orlando FL.
(b) Surrogate recoveries corrected for actual spike amount.

ND = Not detected MDL = Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

# Report of Analysis



**Client Sample ID:** CAT-B-5-5
**Lab Sample ID:** C37833-10
**Matrix:** SO - Soil
**Method:** SW846 8015B M SW846 3550B
**Project:** Alameda Cross Trail Phase II

**Date Sampled:** 12/29/14
**Date Received:** 12/31/14
**Percent Solids:** 91.8

| | File ID | DF | Analyzed | By | Prep Date | Prep Batch | Analytical Batch |
|---|---|---|---|---|---|---|---|
| Run #1 | HH319826.D | 1 | 01/03/15 | AG | 01/02/15 | OP11469 | GHH1430 |
| Run #2 | | | | | | | |

| | Initial Weight | Final Volume |
|---|---|---|
| Run #1 | 30.2 g | 1.0 ml |
| Run #2 | | |

**TPH Extractable w/ Silica Gel Cleanup**

| CAS No. | Compound | Result | RL | MDL | Units | Q |
|---|---|---|---|---|---|---|
| | TPH (Diesel) | ND | 3.6 | 1.8 | mg/kg | |
| | TPH (Motor Oil) | ND | 7.2 | 3.6 | mg/kg | |
| | TPH (Mineral Spirits) | ND | 3.6 | 1.8 | mg/kg | |
| | TPH (Kerosene) | ND | 3.6 | 1.8 | mg/kg | |

| CAS No. | Surrogate Recoveries | Run# 1 | Run# 2 | Limits |
|---|---|---|---|---|
| 630-01-3 | Hexacosane | 97% | | 37-122% |

ND = Not detected MDL = Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range

J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Accutest Laboratories

# Report of Analysis



| | | | |
|---|---|---|---|
| **Client Sample ID:** | CAT-B-5-5 | | |
| **Lab Sample ID:** | C37833-10 | **Date Sampled:** | 12/29/14 |
| **Matrix:** | SO - Soil | **Date Received:** | 12/31/14 |
| | | **Percent Solids:** | 91.8 |
| **Project:** | Alameda Cross Trail Phase II | | |

**Metals Analysis**

| Analyte | Result | RL | Units | DF | Prep | Analyzed | By | Method | Prep Method |
|---|---|---|---|---|---|---|---|---|---|
| Arsenic [a] | 1.7 | 0.52 | mg/kg | 5 | 01/09/15 | 01/12/15 | RS | SW846 6020 [2] | SW846 3050B [4] |
| Lead | 3.3 | 0.23 | mg/kg | 5 | 01/06/15 | 01/08/15 | RS | SW846 6020 [1] | SW846 3050B [3] |

(1) Instrument QC Batch: MA4523
(2) Instrument QC Batch: MA4533
(3) Prep QC Batch: MP8938
(4) Prep QC Batch: MP8965

(a) Elevated RL/MDL due to positive bias of Method Blank.

RL = Reporting Limit

Accutest Laboratories

# Report of Analysis



| | | | |
|---|---|---|---|
| **Client Sample ID:** | CAT-B-5-5 | | |
| **Lab Sample ID:** | C37833-10 | **Date Sampled:** | 12/29/14 |
| **Matrix:** | SO - Soil | **Date Received:** | 12/31/14 |
| | | **Percent Solids:** | 91.8 |
| **Project:** | Alameda Cross Trail Phase II | | |

**General Chemistry**

| Analyte | Result | RL | Units | DF | Analyzed | By | Method |
|---|---|---|---|---|---|---|---|
| Moisture, Percent | 8.2 | | % | 1 | 01/02/15 13:00 | TN | SM2540MOD G-97 |

RL = Reporting Limit

# Report of Analysis



**Client Sample ID:** CAT-B-6-4
**Lab Sample ID:** C37833-11
**Matrix:** SO - Soil
**Method:** SW846 8270C BY SIM SW846 3550B
**Project:** Alameda Cross Trail Phase II

**Date Sampled:** 12/29/14
**Date Received:** 12/31/14
**Percent Solids:** 67.9

| | File ID | DF | Analyzed | By | Prep Date | Prep Batch | Analytical Batch |
|---|---|---|---|---|---|---|---|
| Run #1 | T17354.D | 1 | 01/02/15 | MT | 01/02/15 | OP11467 | ET768 |
| Run #2 | | | | | | | |

| | Initial Weight | Final Volume |
|---|---|---|
| Run #1 | 30.3 g | 1.0 ml |
| Run #2 | | |

**BN PAH List**

| CAS No. | Compound | Result | RL | MDL | Units | Q |
|---|---|---|---|---|---|---|
| 83-32-9 | Acenaphthene | ND | 24 | 2.4 | ug/kg | |
| 208-96-8 | Acenaphthylene | ND | 24 | 2.4 | ug/kg | |
| 120-12-7 | Anthracene | ND | 24 | 2.4 | ug/kg | |
| 56-55-3 | Benzo(a)anthracene | 5.6 | 4.9 | 1.2 | ug/kg | |
| 50-32-8 | Benzo(a)pyrene | 7.4 | 4.9 | 0.83 | ug/kg | |
| 205-99-2 | Benzo(b)fluoranthene | 8.3 | 4.9 | 0.97 | ug/kg | |
| 191-24-2 | Benzo(g,h,i)perylene | 8.6 | 4.9 | 1.1 | ug/kg | |
| 207-08-9 | Benzo(k)fluoranthene | 4.3 | 4.9 | 1.1 | ug/kg | J |
| 218-01-9 | Chrysene | 7.8 | 4.9 | 0.97 | ug/kg | |
| 53-70-3 | Dibenzo(a,h)anthracene | ND | 4.9 | 1.4 | ug/kg | |
| 206-44-0 | Fluoranthene | 10.8 | 24 | 2.4 | ug/kg | J |
| 86-73-7 | Fluorene | ND | 24 | 2.4 | ug/kg | |
| 193-39-5 | Indeno(1,2,3-cd)pyrene | 8.7 | 4.9 | 1.2 | ug/kg | |
| 90-12-0 | 1-Methylnaphthalene | ND | 24 | 4.9 | ug/kg | |
| 91-57-6 | 2-Methylnaphthalene | ND | 24 | 4.9 | ug/kg | |
| 91-20-3 | Naphthalene | ND | 24 | 4.9 | ug/kg | |
| 85-01-8 | Phenanthrene | 3.1 | 24 | 2.4 | ug/kg | J |
| 129-00-0 | Pyrene | 10 | 24 | 2.4 | ug/kg | J |

| CAS No. | Surrogate Recoveries | Run# 1 | Run# 2 | Limits |
|---|---|---|---|---|
| 4165-60-0 | Nitrobenzene-d5 | 114% | | 32-128% |
| 321-60-8 | 2-Fluorobiphenyl | 106% | | 48-122% |
| 1718-51-0 | Terphenyl-d14 | 102% | | 48-148% |

ND = Not detected MDL = Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

# Report of Analysis



**Client Sample ID:** CAT-B-6-4
**Lab Sample ID:** C37833-11
**Matrix:** SO - Soil
**Method:** SW846 8151A SW846 3546
**Project:** Alameda Cross Trail Phase II

**Date Sampled:** 12/29/14
**Date Received:** 12/31/14
**Percent Solids:** 67.9

| | File ID | DF | Analyzed | By | Prep Date | Prep Batch | Analytical Batch |
|---|---|---|---|---|---|---|---|
| Run #1 [a] | CC046784.D | 1 | 01/06/15 | AFL | 01/05/15 | F:OP54497 | F:GCC777 |
| Run #2 | | | | | | | |

| | Initial Weight | Final Volume |
|---|---|---|
| Run #1 | 15.0 g | 5.0 ml |
| Run #2 | | |

| CAS No. | Compound | Result | RL | MDL | Units | Q |
|---|---|---|---|---|---|---|
| 94-75-7 | 2,4-D | ND | 49 | 8.3 | ug/kg | |
| 93-72-1 | 2,4,5-TP (Silvex) | ND | 4.9 | 1.3 | ug/kg | |
| 93-76-5 | 2,4,5-T | ND | 4.9 | 0.99 | ug/kg | |
| 1918-00-9 | Dicamba | ND | 4.9 | 1.6 | ug/kg | |
| 88-85-7 | Dinoseb | ND | 120 | 25 | ug/kg | |
| 75-99-0 | Dalapon | ND | 250 | 49 | ug/kg | |
| 120-36-5 | Dichloroprop | ND | 49 | 18 | ug/kg | |
| 94-82-6 | 2,4-DB | ND | 49 | 18 | ug/kg | |
| 93-65-2 | MCPP | ND | 4900 | 1300 | ug/kg | |
| 94-74-6 | MCPA | ND | 4900 | 1200 | ug/kg | |
| 87-86-5 | Pentachlorophenol | 1.4 | 4.9 | 0.75 | ug/kg | J |

| CAS No. | Surrogate Recoveries | Run# 1 | Run# 2 | Limits |
|---|---|---|---|---|
| 19719-28-9 | 2,4-DCAA | 90% [b] | | 31-132% |

(a) All hits confirmed by dual column analysis. Analysis performed at Accutest Laboratories, Orlando FL.
(b) Surrogate recoveries corrected for actual spike amount.

ND = Not detected MDL = Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

# Report of Analysis



| | | | |
|---|---|---|---|
| **Client Sample ID:** | CAT-B-6-4 | | |
| **Lab Sample ID:** | C37833-11 | **Date Sampled:** | 12/29/14 |
| **Matrix:** | SO - Soil | **Date Received:** | 12/31/14 |
| **Method:** | SW846 8015B M SW846 3550B | **Percent Solids:** | 67.9 |
| **Project:** | Alameda Cross Trail Phase II | | |

| | File ID | DF | Analyzed | By | Prep Date | Prep Batch | Analytical Batch |
|---|---|---|---|---|---|---|---|
| Run #1 | HH319828.D | 1 | 01/03/15 | AG | 01/02/15 | OP11469 | GHH1430 |
| Run #2 | | | | | | | |

| | Initial Weight | Final Volume |
|---|---|---|
| Run #1 | 30.1 g | 1.0 ml |
| Run #2 | | |

**TPH Extractable w/ Silica Gel Cleanup**

| CAS No. | Compound | Result | RL | MDL | Units | Q |
|---|---|---|---|---|---|---|
| | TPH (Diesel) [a] | 5.74 | 4.9 | 2.4 | mg/kg | |
| | TPH (Motor Oil) [b] | 9.43 | 9.8 | 4.9 | mg/kg | J |
| | TPH (Mineral Spirits) | ND | 4.9 | 2.4 | mg/kg | |
| | TPH (Kerosene) | ND | 4.9 | 2.4 | mg/kg | |

| CAS No. | Surrogate Recoveries | Run# 1 | Run# 2 | Limits |
|---|---|---|---|---|
| 630-01-3 | Hexacosane | 93% | | 37-122% |

(a) Atypical Diesel pattern (C12-C28); heavier hydrocarbons contributing to quantitation.
(b) Estimated value due to the presence of interfering peaks in the Motor Oil range.

ND = Not detected MDL = Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Accutest Laboratories

# Report of Analysis



| | | | |
|---|---|---|---|
| **Client Sample ID:** | CAT-B-6-4 | | |
| **Lab Sample ID:** | C37833-11 | **Date Sampled:** | 12/29/14 |
| **Matrix:** | SO - Soil | **Date Received:** | 12/31/14 |
| | | **Percent Solids:** | 67.9 |
| **Project:** | Alameda Cross Trail Phase II | | |

**Metals Analysis**

| Analyte | Result | RL | Units | DF | Prep | Analyzed | By | Method | Prep Method |
|---|---|---|---|---|---|---|---|---|---|
| Arsenic [a] | 3.9 | 0.68 | mg/kg | 5 | 01/09/15 | 01/12/15 | RS | SW846 6020 [2] | SW846 3050B [4] |
| Lead | 185 | 0.31 | mg/kg | 5 | 01/06/15 | 01/08/15 | RS | SW846 6020 [1] | SW846 3050B [3] |

(1) Instrument QC Batch: MA4523
(2) Instrument QC Batch: MA4533
(3) Prep QC Batch: MP8938
(4) Prep QC Batch: MP8965

(a) Elevated RL/MDL due to positive bias of Method Blank.

RL = Reporting Limit

Accutest Laboratories

# Report of Analysis



| | | | |
|---|---|---|---|
| **Client Sample ID:** | CAT-B-6-4 | | |
| **Lab Sample ID:** | C37833-11 | **Date Sampled:** | 12/29/14 |
| **Matrix:** | SO - Soil | **Date Received:** | 12/31/14 |
| | | **Percent Solids:** | 67.9 |
| **Project:** | Alameda Cross Trail Phase II | | |

**General Chemistry**

| Analyte | Result | RL | Units | DF | Analyzed | By | Method |
|---|---|---|---|---|---|---|---|
| Moisture, Percent | 32.1 | | % | 1 | 01/02/15 13:00 | TN | SM2540MOD G-97 |

RL = Reporting Limit

# Report of Analysis



**Client Sample ID:** CAT-B-6-1
**Lab Sample ID:** C37833-12
**Matrix:** SO - Soil
**Method:** SW846 8270C BY SIM SW846 3550B
**Project:** Alameda Cross Trail Phase II

**Date Sampled:** 12/29/14
**Date Received:** 12/31/14
**Percent Solids:** 78.1

| | File ID | DF | Analyzed | By | Prep Date | Prep Batch | Analytical Batch |
|---|---|---|---|---|---|---|---|
| Run #1 | T17355.D | 1 | 01/02/15 | MT | 01/02/15 | OP11467 | ET768 |
| Run #2 | | | | | | | |

| | Initial Weight | Final Volume |
|---|---|---|
| Run #1 | 30.9 g | 1.0 ml |
| Run #2 | | |

**BN PAH List**

| CAS No. | Compound | Result | RL | MDL | Units | Q |
|---|---|---|---|---|---|---|
| 83-32-9 | Acenaphthene | ND | 21 | 2.1 | ug/kg | |
| 208-96-8 | Acenaphthylene | 4.4 | 21 | 2.1 | ug/kg | J |
| 120-12-7 | Anthracene | 2.9 | 21 | 2.1 | ug/kg | J |
| 56-55-3 | Benzo(a)anthracene | 22.6 | 4.1 | 1.0 | ug/kg | |
| 50-32-8 | Benzo(a)pyrene | 47.6 | 4.1 | 0.71 | ug/kg | |
| 205-99-2 | Benzo(b)fluoranthene | 49.3 | 4.1 | 0.83 | ug/kg | |
| 191-24-2 | Benzo(g,h,i)perylene | 57.6 | 4.1 | 0.91 | ug/kg | |
| 207-08-9 | Benzo(k)fluoranthene | 30.4 | 4.1 | 0.95 | ug/kg | |
| 218-01-9 | Chrysene | 41.5 | 4.1 | 0.83 | ug/kg | |
| 53-70-3 | Dibenzo(a,h)anthracene | 8.4 | 4.1 | 1.2 | ug/kg | |
| 206-44-0 | Fluoranthene | 57.6 | 21 | 2.1 | ug/kg | |
| 86-73-7 | Fluorene | ND | 21 | 2.1 | ug/kg | |
| 193-39-5 | Indeno(1,2,3-cd)pyrene | 63.0 | 4.1 | 1.0 | ug/kg | |
| 90-12-0 | 1-Methylnaphthalene | ND | 21 | 4.1 | ug/kg | |
| 91-57-6 | 2-Methylnaphthalene | ND | 21 | 4.1 | ug/kg | |
| 91-20-3 | Naphthalene | ND | 21 | 4.1 | ug/kg | |
| 85-01-8 | Phenanthrene | 26.1 | 21 | 2.1 | ug/kg | |
| 129-00-0 | Pyrene | 69.3 | 21 | 2.1 | ug/kg | |

| CAS No. | Surrogate Recoveries | Run# 1 | Run# 2 | Limits |
|---|---|---|---|---|
| 4165-60-0 | Nitrobenzene-d5 | 109% | | 32-128% |
| 321-60-8 | 2-Fluorobiphenyl | 99% | | 48-122% |
| 1718-51-0 | Terphenyl-d14 | 94% | | 48-148% |

ND = Not detected MDL = Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

# Report of Analysis



**Client Sample ID:** CAT-B-6-1
**Lab Sample ID:** C37833-12
**Matrix:** SO - Soil
**Method:** SW846 8151A SW846 3546
**Project:** Alameda Cross Trail Phase II

**Date Sampled:** 12/29/14
**Date Received:** 12/31/14
**Percent Solids:** 78.1

| | File ID | DF | Analyzed | By | Prep Date | Prep Batch | Analytical Batch |
|---|---|---|---|---|---|---|---|
| Run #1 [a] | CC046785.D | 1 | 01/06/15 | AFL | 01/05/15 | F:OP54497 | F:GCC777 |
| Run #2 | | | | | | | |

| | Initial Weight | Final Volume |
|---|---|---|
| Run #1 | 15.5 g | 5.0 ml |
| Run #2 | | |

| CAS No. | Compound | Result | RL | MDL | Units | Q |
|---|---|---|---|---|---|---|
| 94-75-7 | 2,4-D | ND | 41 | 7.0 | ug/kg | |
| 93-72-1 | 2,4,5-TP (Silvex) | ND | 4.1 | 1.1 | ug/kg | |
| 93-76-5 | 2,4,5-T | ND | 4.1 | 0.83 | ug/kg | |
| 1918-00-9 | Dicamba | ND | 4.1 | 1.4 | ug/kg | |
| 88-85-7 | Dinoseb | ND | 100 | 21 | ug/kg | |
| 75-99-0 | Dalapon | ND | 210 | 41 | ug/kg | |
| 120-36-5 | Dichloroprop | ND | 41 | 16 | ug/kg | |
| 94-82-6 | 2,4-DB | ND | 41 | 15 | ug/kg | |
| 93-65-2 | MCPP | ND | 4100 | 1100 | ug/kg | |
| 94-74-6 | MCPA | ND | 4100 | 990 | ug/kg | |
| 87-86-5 | Pentachlorophenol | ND | 4.1 | 0.63 | ug/kg | |

| CAS No. | Surrogate Recoveries | Run# 1 | Run# 2 | Limits |
|---|---|---|---|---|
| 19719-28-9 | 2,4-DCAA | 80% [b] | | 31-132% |

(a) Analysis performed at Accutest Laboratories, Orlando FL.
(b) Surrogate recoveries corrected for actual spike amount.

ND = Not detected MDL = Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

# Report of Analysis



| | | | |
|---|---|---|---|
| **Client Sample ID:** | CAT-B-6-1 | | |
| **Lab Sample ID:** | C37833-12 | **Date Sampled:** | 12/29/14 |
| **Matrix:** | SO - Soil | **Date Received:** | 12/31/14 |
| **Method:** | SW846 8015B M SW846 3550B | **Percent Solids:** | 78.1 |
| **Project:** | Alameda Cross Trail Phase II | | |

| | File ID | DF | Analyzed | By | Prep Date | Prep Batch | Analytical Batch |
|---|---|---|---|---|---|---|---|
| Run #1 | HH319829.D | 1 | 01/03/15 | AG | 01/02/15 | OP11469 | GHH1430 |
| Run #2 | | | | | | | |

| | Initial Weight | Final Volume |
|---|---|---|
| Run #1 | 30.0 g | 1.0 ml |
| Run #2 | | |

**TPH Extractable w/ Silica Gel Cleanup**

| CAS No. | Compound | Result | RL | MDL | Units | Q |
|---|---|---|---|---|---|---|
| | TPH (Diesel) [a] | 8.22 | 4.3 | 2.1 | mg/kg | |
| | TPH (Motor Oil) [b] | 36.5 | 8.5 | 4.3 | mg/kg | |
| | TPH (Mineral Spirits) | ND | 4.3 | 2.1 | mg/kg | |
| | TPH (Kerosene) | ND | 4.3 | 2.1 | mg/kg | |

| CAS No. | Surrogate Recoveries | Run# 1 | Run# 2 | Limits |
|---|---|---|---|---|
| 630-01-3 | Hexacosane | 97% | | 37-122% |

(a) Atypical Diesel pattern (C12-C28); heavier hydrocarbons contributing to quantitation.
(b) Estimated value due to the presence of interfering peaks in the Motor Oil range.

ND = Not detected MDL = Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Accutest Laboratories

# Report of Analysis



| | | | |
|---|---|---|---|
| **Client Sample ID:** | CAT-B-6-1 | | |
| **Lab Sample ID:** | C37833-12 | **Date Sampled:** | 12/29/14 |
| **Matrix:** | SO - Soil | **Date Received:** | 12/31/14 |
| | | **Percent Solids:** | 78.1 |
| **Project:** | Alameda Cross Trail Phase II | | |

**Metals Analysis**

| Analyte | Result | RL | Units | DF | Prep | Analyzed | By | Method | Prep Method |
|---|---|---|---|---|---|---|---|---|---|
| Arsenic | 5.3 | 0.27 | mg/kg | 5 | 01/06/15 | 01/08/15 | RS | SW846 6020 [1] | SW846 3050B [2] |
| Lead | 26.2 | 0.27 | mg/kg | 5 | 01/06/15 | 01/08/15 | RS | SW846 6020 [1] | SW846 3050B [2] |

(1) Instrument QC Batch: MA4523
(2) Prep QC Batch: MP8938

RL = Reporting Limit

Accutest Laboratories

# Report of Analysis



| | | | |
|---|---|---|---|
| **Client Sample ID:** | CAT-B-6-1 | | |
| **Lab Sample ID:** | C37833-12 | **Date Sampled:** | 12/29/14 |
| **Matrix:** | SO - Soil | **Date Received:** | 12/31/14 |
| | | **Percent Solids:** | 78.1 |
| **Project:** | Alameda Cross Trail Phase II | | |

**General Chemistry**

| Analyte | Result | RL | Units | DF | Analyzed | By | Method |
|---|---|---|---|---|---|---|---|
| Moisture, Percent | 21.9 | | % | 1 | 01/02/15 13:00 | TN | SM2540MOD G-97 |

RL = Reporting Limit

Northern California ACCUTEST LABORATORIES



## Misc. Forms

# Custody Documents and Other Forms

Includes the following where applicable:

- Chain of Custody

C37833

**Tetra Tech EM Inc.**
San Francisco Office

# Chain of Custody Record No. 6926

Page 1 of 1

135 Main St. Suite 1800
San Francisco. CA 94105
415-543-4880
Fax 415-543-5480

| Project name: | TtEMI technical contact: | Lab: | Lab PO#: |
|---|---|---|---|
| Cross-Trail Alameda Phase II | Mark Duffy | Accutest | |

| Project (CTO) number: | TtEMI project manager: | Field samplers: | Field samplers' signatures: |
|---|---|---|---|
| 1035 3635 | Victor Early | Mark Duffy | |

| | Sample ID | Sample Location (Pt. ID) | Date | Time | Matrix | MS / MSD |
|---|---|---|---|---|---|---|
| -1 | CAT-B-1-2 | | 12-29-14 | 1105 | Soil | |
| -2 | CAT-B-1-4 | | | 1130 | | |
| -3 | CAT-B-2-2 | | | 1215 | | |
| -4 | CAT-B-2-5 | | | 1230 | | |
| -5 | CAT-B-3-4 | | | 1315 | | |
| -6 | CAT-B-3-1 | | | 1305 | | |
| -7 | CAT-B-5-1 | | | 1450 | | |
| -8 | CAT-B-4-5 | | | 1425 | | |
| -9 | CAT-B-4-2 | | | 1415 | | |
| -10 | CAT-B-5-5 | | | 1500 | | |
| -11 | CAT-B-6-4 | | | 1530 | | |
| -12 | CAT-B-6-1 | | | 1535 | | |

**No./Container Types**

| 40 ml VOA | 1 liter Amber | 500 ml Poly | Sleeve | Glass Jar 402/802 |
|---|---|---|---|---|
| | | | | 1 |

**Preservative Added**

| N/A |
|---|
| → |

**Analysis Required**

| VOA | SVOA | Pest/PCBs | Metals | TPH Purgeables | TPH Extractables w Silica | Method EPA 8151 | PAH 8270 SIM | Lead 6020 | Arsenic 6020 |
|---|---|---|---|---|---|---|---|---|---|
| | | | | | X | X | X | X | X |

| | Name (print) | Company Name | Date | Time |
|---|---|---|---|---|
| Relinquished by: Mark Duffy | Mark Duffy | Company: Tetra Tech | 12-30-14 | 1600 |
| Received by: | | | | |
| Relinquished by: FedEx | | FEDEX | 12/31/14 | 0930 |
| Received by: | LEE BAUTISTA | Accutest | 12/31/14 | 0930 |
| Relinquished by: | | | | |
| Received by: | | | | |

Turnaround time/remarks:

Fed Ex #: ~~8043~~ 8043 1647 0333

Temp 4.5/4.5

WHITE-Laboratory Copy YELLOW-Sample Tracker PINK-File Copy

**C37833: Chain of Custody**
**Page 1 of 2**

# Accutest Laboratories Sample Receipt Summary

**Accutest Job Number:** C37833 **Client:** TETRA TECH **Project:** CROSS-TRAIL ALAMEDA PHASE II

**Date / Time Received:** 12/31/2014 9:30:00 AM **Delivery Method:** FedEx **Airbill #'s:** 804316470333

**Cooler Temps (Initial/Adjusted):** #1: (4.5/4.5);



| Cooler Security | Y | or | N | | Y | or | N |
|---|---|---|---|---|---|---|---|
| 1. Custody Seals Present: | ☐ | | ☑ | 3. COC Present: | ☑ | | ☐ |
| 2. Custody Seals Intact: | ☐ | | ☐ | 4. Smpl Dates/Time OK | ☑ | | ☐ |

| Cooler Temperature | Y | or | N |
|---|---|---|---|
| 1. Temp criteria achieved: | ☑ | | ☐ |
| 2. Cooler temp verification: | IR2; | | |
| 3. Cooler media: | Ice (Bag) | | |
| 4. No. Coolers: | 1 | | |

| Quality Control Preservation | Y | or | N | N/A |
|---|---|---|---|---|
| 1. Trip Blank present / cooler: | ☐ | | ☐ | ☑ |
| 2. Trip Blank listed on COC: | ☐ | | ☐ | ☑ |
| 3. Samples preserved properly: | ☑ | | ☐ | |
| 4. VOCs headspace free: | ☐ | | ☐ | ☑ |

| Sample Integrity - Documentation | Y | or | N |
|---|---|---|---|
| 1. Sample labels present on bottles: | ☑ | | ☐ |
| 2. Container labeling complete: | ☑ | | ☐ |
| 3. Sample container label / COC agree: | ☑ | | ☐ |

| Sample Integrity - Condition | Y | or | N |
|---|---|---|---|
| 1. Sample recvd within HT: | ☑ | | ☐ |
| 2. All containers accounted for: | ☑ | | ☐ |
| 3. Condition of sample: | Intact | | |

| Sample Integrity - Instructions | Y | or | N | N/A |
|---|---|---|---|---|
| 1. Analysis requested is clear: | ☑ | | ☐ | |
| 2. Bottles received for unspecified tests | ☐ | | ☑ | |
| 3. Sufficient volume recvd for analysis: | ☑ | | ☐ | |
| 4. Compositing instructions clear: | ☐ | | ☐ | ☑ |
| 5. Filtering instructions clear: | ☐ | | ☐ | ☑ |

Comments

Accutest Laboratories
V:408.588.0200
2105 Lundy Avenue
F: 408.588.0201
San Jose, CA 95131
www/accutest.com

**C37833: Chain of Custody**
**Page 2 of 2**

Northern California ACCUTEST LABORATORIES



## GC/MS Semi-volatiles

# QC Data Summaries

Includes the following where applicable:

- Method Blank Summaries
- Blank Spike Summaries
- Matrix Spike and Duplicate Summaries

# Method Blank Summary



**Job Number:** C37833
**Account:** TETRCAO Tetra Tech EMI
**Project:** Alameda Cross Trail Phase II

| Sample | File ID | DF | Analyzed | By | Prep Date | Prep Batch | Analytical Batch |
|---|---|---|---|---|---|---|---|
| OP11467-MB | T17345.D | 1 | 01/02/15 | MT | 01/02/15 | OP11467 | ET768 |



**The QC reported here applies to the following samples:** **Method:** SW846 8270C BY SIM

C37833-1, C37833-2, C37833-3, C37833-4, C37833-5, C37833-6, C37833-7, C37833-8, C37833-9, C37833-10, C37833-11, C37833-12

| CAS No. | Compound | Result | RL | MDL | Units | Q |
|---|---|---|---|---|---|---|
| 83-32-9 | Acenaphthene | ND | 17 | 1.7 | ug/kg | |
| 208-96-8 | Acenaphthylene | ND | 17 | 1.7 | ug/kg | |
| 120-12-7 | Anthracene | ND | 17 | 1.7 | ug/kg | |
| 56-55-3 | Benzo(a)anthracene | ND | 3.3 | 0.83 | ug/kg | |
| 50-32-8 | Benzo(a)pyrene | ND | 3.3 | 0.57 | ug/kg | |
| 205-99-2 | Benzo(b)fluoranthene | ND | 3.3 | 0.67 | ug/kg | |
| 191-24-2 | Benzo(g,h,i)perylene | ND | 3.3 | 0.73 | ug/kg | |
| 207-08-9 | Benzo(k)fluoranthene | ND | 3.3 | 0.77 | ug/kg | |
| 218-01-9 | Chrysene | ND | 3.3 | 0.67 | ug/kg | |
| 53-70-3 | Dibenzo(a,h)anthracene | ND | 3.3 | 0.93 | ug/kg | |
| 206-44-0 | Fluoranthene | ND | 17 | 1.7 | ug/kg | |
| 86-73-7 | Fluorene | ND | 17 | 1.7 | ug/kg | |
| 193-39-5 | Indeno(1,2,3-cd)pyrene | ND | 3.3 | 0.83 | ug/kg | |
| 90-12-0 | 1-Methylnaphthalene | ND | 17 | 3.3 | ug/kg | |
| 91-57-6 | 2-Methylnaphthalene | ND | 17 | 3.3 | ug/kg | |
| 91-20-3 | Naphthalene | ND | 17 | 3.3 | ug/kg | |
| 85-01-8 | Phenanthrene | ND | 17 | 1.7 | ug/kg | |
| 129-00-0 | Pyrene | ND | 17 | 1.7 | ug/kg | |

| CAS No. | Surrogate Recoveries | | Limits |
|---|---|---|---|
| 4165-60-0 | Nitrobenzene-d5 | 110% | 32-128% |
| 321-60-8 | 2-Fluorobiphenyl | 106% | 48-122% |
| 1718-51-0 | Terphenyl-d14 | 110% | 48-148% |

# Blank Spike/Blank Spike Duplicate Summary



**Job Number:** C37833
**Account:** TETRCAO Tetra Tech EMI
**Project:** Alameda Cross Trail Phase II

| Sample | File ID | DF | Analyzed | By | Prep Date | Prep Batch | Analytical Batch |
|---|---|---|---|---|---|---|---|
| OP11467-BS | T17346.D | 1 | 01/02/15 | MT | 01/02/15 | OP11467 | ET768 |
| OP11467-BSD | T17347.D | 1 | 01/02/15 | MT | 01/02/15 | OP11467 | ET768 |



**The QC reported here applies to the following samples:** **Method:** SW846 8270C BY SIM

C37833-1, C37833-2, C37833-3, C37833-4, C37833-5, C37833-6, C37833-7, C37833-8, C37833-9, C37833-10, C37833-11, C37833-12

| CAS No. | Compound | Spike ug/kg | BSP ug/kg | BSP % | BSD ug/kg | BSD % | RPD | Limits Rec/RPD |
|---|---|---|---|---|---|---|---|---|
| 83-32-9 | Acenaphthene | 167 | 175 | 105 | 164 | 98 | 6 | 67-106/9 |
| 208-96-8 | Acenaphthylene | 167 | 168 | 101 | 162 | 97 | 4 | 67-104/9 |
| 120-12-7 | Anthracene | 167 | 181 | 109* [a] | 166 | 100 | 9 | 66-107/11 |
| 56-55-3 | Benzo(a)anthracene | 167 | 170 | 102 | 171 | 103 | 1 | 72-115/9 |
| 50-32-8 | Benzo(a)pyrene | 167 | 157 | 94 | 162 | 97 | 3 | 64-107/10 |
| 205-99-2 | Benzo(b)fluoranthene | 167 | 182 | 109 | 168 | 101 | 8 | 69-127/15 |
| 191-24-2 | Benzo(g,h,i)perylene | 167 | 179 | 107 | 186 | 112 | 4 | 63-125/14 |
| 207-08-9 | Benzo(k)fluoranthene | 167 | 151 | 91 | 159 | 95 | 5 | 73-127/14 |
| 218-01-9 | Chrysene | 167 | 174 | 104 | 168 | 101 | 4 | 72-119/8 |
| 53-70-3 | Dibenzo(a,h)anthracene | 167 | 169 | 101 | 183 | 110 | 8 | 65-128/16 |
| 206-44-0 | Fluoranthene | 167 | 174 | 104 | 168 | 101 | 4 | 74-119/11 |
| 86-73-7 | Fluorene | 167 | 170 | 102 | 168 | 101 | 1 | 71-111/10 |
| 193-39-5 | Indeno(1,2,3-cd)pyrene | 167 | 162 | 97 | 170 | 102 | 5 | 59-128/18 |
| 90-12-0 | 1-Methylnaphthalene | 167 | 130 | 78 | 167 | 100 | 25* [b] | 63-103/12 |
| 91-57-6 | 2-Methylnaphthalene | 167 | 161 | 97 | 166 | 100 | 3 | 64-106/12 |
| 91-20-3 | Naphthalene | 167 | 161 | 97 | 160 | 96 | 1 | 62-99/10 |
| 85-01-8 | Phenanthrene | 167 | 173 | 104 | 163 | 98 | 6 | 68-111/14 |
| 129-00-0 | Pyrene | 167 | 167 | 100 | 163 | 98 | 2 | 62-122/15 |

| CAS No. | Surrogate Recoveries | BSP | BSD | Limits |
|---|---|---|---|---|
| 4165-60-0 | Nitrobenzene-d5 | 111% | 110% | 32-128% |
| 321-60-8 | 2-Fluorobiphenyl | 104% | 101% | 48-122% |
| 1718-51-0 | Terphenyl-d14 | 105% | 101% | 48-148% |

(a) Outside of in-house control limits; but within the method control limits.
(b) Outside laboratory control limits. BS/BSD recoveries within control limits.

* = Outside of Control Limits.

# Matrix Spike/Matrix Spike Duplicate Summary



**Job Number:** C37833
**Account:** TETRCAO Tetra Tech EMI
**Project:** Alameda Cross Trail Phase II

| Sample | File ID | DF | Analyzed | By | Prep Date | Prep Batch | Analytical Batch |
|---|---|---|---|---|---|---|---|
| OP11467-MS [a] | T17368.D | 4 | 01/03/15 | MT | 01/02/15 | OP11467 | ET768 |
| OP11467-MSD [a] | T17369.D | 4 | 01/03/15 | MT | 01/02/15 | OP11467 | ET768 |
| C37834-5 [a] | T17365.D | 4 | 01/03/15 | MT | 01/02/15 | OP11467 | ET768 |



**The QC reported here applies to the following samples:** **Method:** SW846 8270C BY SIM

C37833-1, C37833-2, C37833-3, C37833-4, C37833-5, C37833-6, C37833-7, C37833-8, C37833-9, C37833-10, C37833-11, C37833-12

| CAS No. | Compound | C37834-5 ug/kg | Q | Spike ug/kg | MS ug/kg | MS % | Spike ug/kg | MSD ug/kg | MSD % | RPD | Limits Rec/RPD |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 83-32-9 | Acenaphthene | ND | | 218 | 227 | 104 | 218 | 218 | 100 | 4 | 67-106/9 |
| 208-96-8 | Acenaphthylene | ND | | 218 | 230 | 105* [b] | 218 | 220 | 101 | 4 | 67-104/9 |
| 120-12-7 | Anthracene | ND | | 218 | 219 | 100 | 218 | 239 | 110* [b] | 9 | 66-107/11 |
| 56-55-3 | Benzo(a)anthracene | 59.3 | | 218 | 267 | 95 | 218 | 276 | 99 | 3 | 72-115/9 |
| 50-32-8 | Benzo(a)pyrene | 121 | | 218 | 306 | 85 | 218 | 297 | 81 | 3 | 64-107/10 |
| 205-99-2 | Benzo(b)fluoranthene | 123 | | 218 | 374 | 115 | 218 | 345 | 102 | 8 | 69-127/15 |
| 191-24-2 | Benzo(g,h,i)perylene | 145 | | 218 | 307 | 74 | 218 | 316 | 78 | 3 | 63-125/14 |
| 207-08-9 | Benzo(k)fluoranthene | 54.3 | | 218 | 212 | 72* [b] | 218 | 217 | 75 | 2 | 73-127/14 |
| 218-01-9 | Chrysene | 86.2 | | 218 | 263 | 81 | 218 | 264 | 82 | 0 | 72-119/8 |
| 53-70-3 | Dibenzo(a,h)anthracene | 16.0 | J | 218 | 243 | 104 | 218 | 246 | 105 | 1 | 65-128/16 |
| 206-44-0 | Fluoranthene | 163 | | 218 | 310 | 67* [b] | 218 | 357 | 89 | 14* [b] | 74-119/11 |
| 86-73-7 | Fluorene | ND | | 218 | 231 | 106 | 218 | 222 | 102 | 4 | 71-111/10 |
| 193-39-5 | Indeno(1,2,3-cd)pyrene | 153 | | 218 | 356 | 93 | 218 | 352 | 91 | 1 | 59-128/18 |
| 90-12-0 | 1-Methylnaphthalene | ND | | 218 | 218 | 100 | 218 | 214 | 98 | 2 | 63-103/12 |
| 91-57-6 | 2-Methylnaphthalene | ND | | 218 | 212 | 97 | 218 | 216 | 99 | 2 | 64-106/12 |
| 91-20-3 | Naphthalene | ND | | 218 | 212 | 97 | 218 | 205 | 94 | 3 | 62-99/10 |
| 85-01-8 | Phenanthrene | 39.9 | J | 218 | 240 | 92 | 218 | 222 | 84 | 8 | 68-111/14 |
| 129-00-0 | Pyrene | 181 | | 218 | 314 | 61* [b] | 218 | 330 | 68 | 5 | 62-122/15 |

| CAS No. | Surrogate Recoveries | MS | MSD | C37834-5 | Limits |
|---|---|---|---|---|---|
| 4165-60-0 | Nitrobenzene-d5 | 105% | 107% | 115% | 32-128% |
| 321-60-8 | 2-Fluorobiphenyl | 110% | 104% | 108% | 48-122% |
| 1718-51-0 | Terphenyl-d14 | 101% | 98% | 109% | 48-148% |

(a) Dilution required due to matrix interference (dark and viscous extract; high concentration of non-target hydrocarbons).
(b) Outside laboratory control limits.

* = Outside of Control Limits.

Northern California ACCUTEST LABORATORIES

## GC Semi-volatiles



### QC Data Summaries

Includes the following where applicable:

- Method Blank Summaries
- Blank Spike Summaries
- Matrix Spike and Duplicate Summaries

# Method Blank Summary



**Job Number:** C37833
**Account:** TETRCAO Tetra Tech EMI
**Project:** Alameda Cross Trail Phase II

| Sample | File ID | DF | Analyzed | By | Prep Date | Prep Batch | Analytical Batch |
|---|---|---|---|---|---|---|---|
| OP11469-MB | HH319843.D | 1 | 01/03/15 | AG | 01/02/15 | OP11469 | GHH1430 |

**The QC reported here applies to the following samples:** **Method:** SW846 8015B M

C37833-1, C37833-2, C37833-3, C37833-4, C37833-5, C37833-6, C37833-7, C37833-8, C37833-9, C37833-10, C37833-11, C37833-12

| CAS No. | Compound | Result | RL | MDL | Units | Q |
|---|---|---|---|---|---|---|
| | TPH (Diesel) | ND | 3.3 | 1.7 | mg/kg | |
| | TPH (Motor Oil) | ND | 6.7 | 3.3 | mg/kg | |
| | TPH (Mineral Spirits) | ND | 3.3 | 1.7 | mg/kg | |
| | TPH (Kerosene) | ND | 3.3 | 1.7 | mg/kg | |

| CAS No. | Surrogate Recoveries | | Limits |
|---|---|---|---|
| 630-01-3 | Hexacosane | 96% | 37-122% |

# Blank Spike/Blank Spike Duplicate Summary



**Job Number:** C37833
**Account:** TETRCAO Tetra Tech EMI
**Project:** Alameda Cross Trail Phase II

| Sample | File ID | DF | Analyzed | By | Prep Date | Prep Batch | Analytical Batch |
|---|---|---|---|---|---|---|---|
| OP11469-BS | HH319841.D | 1 | 01/03/15 | AG | 01/02/15 | OP11469 | GHH1430 |
| OP11469-BSD | HH319842.D | 1 | 01/03/15 | AG | 01/02/15 | OP11469 | GHH1430 |



**The QC reported here applies to the following samples:** **Method:** SW846 8015B M

C37833-1, C37833-2, C37833-3, C37833-4, C37833-5, C37833-6, C37833-7, C37833-8, C37833-9, C37833-10, C37833-11, C37833-12

| CAS No. | Compound | Spike mg/kg | BSP mg/kg | BSP % | BSD mg/kg | BSD % | RPD | Limits Rec/RPD |
|---|---|---|---|---|---|---|---|---|
| | TPH (Diesel) | 33.3 | 27.0 | 81 | 29.1 | 87 | 7 | 38-102/28 |
| | TPH (Motor Oil) | 33.3 | 30.0 | 90 | 30.1 | 90 | 0 | 42-111/26 |

| CAS No. | Surrogate Recoveries | BSP | BSD | Limits |
|---|---|---|---|---|
| 630-01-3 | Hexacosane | 97% | 98% | 37-122% |

* = Outside of Control Limits.

# Matrix Spike/Matrix Spike Duplicate Summary



**Job Number:** C37833
**Account:** TETRCAO Tetra Tech EMI
**Project:** Alameda Cross Trail Phase II

| Sample | File ID | DF | Analyzed | By | Prep Date | Prep Batch | Analytical Batch |
|---|---|---|---|---|---|---|---|
| OP11469-MS | HH319839.D | 3 | 01/03/15 | AG | 01/02/15 | OP11469 | GHH1430 |
| OP11469-MSD | HH319840.D | 3 | 01/03/15 | AG | 01/02/15 | OP11469 | GHH1430 |
| C37834-5 | HH319834.D | 1 | 01/03/15 | AG | 01/02/15 | OP11469 | GHH1430 |

**The QC reported here applies to the following samples:** **Method:** SW846 8015B M

C37833-1, C37833-2, C37833-3, C37833-4, C37833-5, C37833-6, C37833-7, C37833-8, C37833-9, C37833-10, C37833-11, C37833-12

| CAS No. | Compound | C37834-5 mg/kg | Q | Spike mg/kg | MS mg/kg | MS % | Spike mg/kg | MSD mg/kg | MSD % | RPD | Limits Rec/RPD |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | TPH (Diesel) | 6.39 | | 43.7 | 34.7 | 65 | 43.6 | 44.9 | 88 | 26 | 38-102/28 |
| | TPH (Motor Oil) | 30.3 | | 43.7 | 66.7 | 83 | 43.6 | 127 | 222* [a] | 62* [a] | 42-111/26 |

| CAS No. | Surrogate Recoveries | MS | MSD | C37834-5 | Limits |
|---|---|---|---|---|---|
| 630-01-3 | Hexacosane | 92% | 88% | 93% | 37-122% |

(a) Outside laboratory control limits.

* = Outside of Control Limits.

Northern California ACCUTEST LABORATORIES

## Metals Analysis

# QC Data Summaries

Includes the following where applicable:

- Method Blank Summaries
- Matrix Spike and Duplicate Summaries
- Blank Spike and Lab Control Sample Summaries
- Serial Dilution Summaries

BLANK RESULTS SUMMARY
Part 2 - Method Blanks

Login Number: C37833
Account: TETRCAO - Tetra Tech EMI
Project: Alameda Cross Trail Phase II

QC Batch ID: MP8938
Matrix Type: SOLID

Methods: SW846 6020
Units: mg/kg

Prep Date: 01/06/15

| Metal | RL | IDL | MDL | MB raw | final |
|---|---|---|---|---|---|
| Aluminum | 25 | 2.3 | 2.5 | | |
| Antimony | 0.25 | .14 | .008 | | |
| Arsenic | 0.25 | .3 | .017 | 0.53 | * (a) |
| Barium | 0.50 | .011 | .036 | | |
| Beryllium | 0.25 | | .027 | | |
| Boron | 2.5 | .09 | .066 | | |
| Cadmium | 0.25 | .0028 | .011 | | |
| Calcium | 250 | 40 | 38 | | |
| Chromium | 1.0 | .025 | .053 | | |
| Cobalt | 0.25 | .018 | .0085 | | |
| Copper | 1.0 | .018 | .11 | | |
| Iron | 25 | 3.1 | 1.6 | | |
| Lead | 0.25 | .0056 | .038 | 0.024 | <0.25 |
| Magnesium | 250 | .54 | 2.1 | | |
| Manganese | 0.50 | .012 | .18 | | |
| Molybdenum | 0.50 | .11 | .026 | | |
| Nickel | 1.0 | .18 | .043 | | |
| Potassium | 250 | 2.3 | 1.5 | | |
| Selenium | 0.25 | .17 | .012 | | |
| Silver | 0.25 | .0048 | .006 | | |
| Sodium | 250 | 2.2 | 2.6 | | |
| Strontium | 2.5 | .021 | .018 | | |
| Thallium | 0.25 | .04 | .015 | | |
| Tin | 2.5 | .055 | .036 | | |
| Titanium | 0.50 | .083 | .038 | | |
| Uranium | 0.25 | .06 | .006 | | |
| Vanadium | 1.0 | .36 | .051 | | |
| Zinc | 2.0 | .22 | .11 | | |

Associated samples MP8938: C37833-1, C37833-2, C37833-3, C37833-4, C37833-5, C37833-6, C37833-7, C37833-8, C37833-9, C37833-10, C37833-11, C37833-12

Results < IDL are shown as zero for calculation purposes
(*) Outside of QC limits
(anr) Analyte not requested
(a) All sample results < RL or > 10x method blank concentration.

MATRIX SPIKE AND DUPLICATE RESULTS SUMMARY

Login Number: C37833
Account: TETRCAO - Tetra Tech EMI
Project: Alameda Cross Trail Phase II

QC Batch ID: MP8938
Matrix Type: SOLID

Methods: SW846 6020
Units: mg/kg

Prep Date: 01/06/15

| Metal | C37833-2 Original | MS | Spikelot MPIR5 | % Rec | QC Limits |
|---|---|---|---|---|---|
| Aluminum | | | | | |
| Antimony | | | | | |
| Arsenic | 27.2 | 55.4 | 45.6 | 61.9N(a) | 75-125 |
| Barium | | | | | |
| Beryllium | | | | | |
| Boron | | | | | |
| Cadmium | | | | | |
| Calcium | | | | | |
| Chromium | | | | | |
| Cobalt | | | | | |
| Copper | | | | | |
| Iron | | | | | |
| Lead | 34.1 | 74.0 | 45.6 | 84.1 | 75-125 |
| Magnesium | | | | | |
| Manganese | | | | | |
| Molybdenum | | | | | |
| Nickel | | | | | |
| Potassium | | | | | |
| Selenium | | | | | |
| Silver | | | | | |
| Sodium | | | | | |
| Strontium | | | | | |
| Thallium | | | | | |
| Tin | | | | | |
| Titanium | | | | | |
| Uranium | | | | | |
| Vanadium | | | | | |
| Zinc | | | | | |

Associated samples MP8938: C37833-1, C37833-2, C37833-3, C37833-4, C37833-5, C37833-6, C37833-7, C37833-8, C37833-9, C37833-10, C37833-11, C37833-12

Results < IDL are shown as zero for calculation purposes
(*) Outside of QC limits
(N) Matrix Spike Rec. outside of QC limits
(anr) Analyte not requested
(a) Spike recovery indicates possible matrix interference and/or sample nonhomogeneity.

MATRIX SPIKE AND DUPLICATE RESULTS SUMMARY

Login Number: C37833
Account: TETRCAO - Tetra Tech EMI
Project: Alameda Cross Trail Phase II

QC Batch ID: MP8938
Matrix Type: SOLID

Methods: SW846 6020
Units: mg/kg

Prep Date: 01/06/15

| Metal | C37833-2 Original | MSD | Spikelot MPIR5 | % Rec | MSD RPD | QC Limit |
|---|---|---|---|---|---|---|
| Aluminum | | | | | | |
| Antimony | | | | | | |
| Arsenic | 27.2 | 88.2 | 46 | 132.7N(a | 21.2 (b) | 20 |
| Barium | | | | | | |
| Beryllium | | | | | | |
| Boron | | | | | | |
| Cadmium | | | | | | |
| Calcium | | | | | | |
| Chromium | | | | | | |
| Cobalt | | | | | | |
| Copper | | | | | | |
| Iron | | | | | | |
| Lead | 34.1 | 89.0 | 46 | 116.0 | 4.7 | 20 |
| Magnesium | | | | | | |
| Manganese | | | | | | |
| Molybdenum | | | | | | |
| Nickel | | | | | | |
| Potassium | | | | | | |
| Selenium | | | | | | |
| Silver | | | | | | |
| Sodium | | | | | | |
| Strontium | | | | | | |
| Thallium | | | | | | |
| Tin | | | | | | |
| Titanium | | | | | | |
| Uranium | | | | | | |
| Vanadium | | | | | | |
| Zinc | | | | | | |

Associated samples MP8938: C37833-1, C37833-2, C37833-3, C37833-4, C37833-5, C37833-6, C37833-7, C37833-8, C37833-9, C37833-10, C37833-11, C37833-12

Results < IDL are shown as zero for calculation purposes
(*) Outside of QC limits
(N) Matrix Spike Rec. outside of QC limits
(anr) Analyte not requested
(a) Spike recovery indicates possible matrix interference and/or sample nonhomogeneity.
(b) RPD acceptable due to low duplicate and sample concentrations.

SPIKE BLANK AND LAB CONTROL SAMPLE SUMMARY

Login Number: C37833
Account: TETRCAO - Tetra Tech EMI
Project: Alameda Cross Trail Phase II

QC Batch ID: MP8938
Matrix Type: SOLID

Methods: SW846 6020
Units: mg/kg

Prep Date: 01/06/15

| Metal | BSP Result | Spikelot MPIR5 | % Rec | QC Limits |
|---|---|---|---|---|
| Aluminum | | | | |
| Antimony | | | | |
| Arsenic | 54.5 | 50 | 109.0 | 80-120 |
| Barium | | | | |
| Beryllium | | | | |
| Boron | | | | |
| Cadmium | | | | |
| Calcium | | | | |
| Chromium | | | | |
| Cobalt | | | | |
| Copper | | | | |
| Iron | | | | |
| Lead | 54.6 | 50 | 109.2 | 80-120 |
| Magnesium | | | | |
| Manganese | | | | |
| Molybdenum | | | | |
| Nickel | | | | |
| Potassium | | | | |
| Selenium | | | | |
| Silver | | | | |
| Sodium | | | | |
| Strontium | | | | |
| Thallium | | | | |
| Tin | | | | |
| Titanium | | | | |
| Uranium | | | | |
| Vanadium | | | | |
| Zinc | | | | |

Associated samples MP8938: C37833-1, C37833-2, C37833-3, C37833-4, C37833-5, C37833-6, C37833-7, C37833-8, C37833-9, C37833-10, C37833-11, C37833-12

Results < IDL are shown as zero for calculation purposes
(*) Outside of QC limits
(anr) Analyte not requested

SERIAL DILUTION RESULTS SUMMARY

Login Number: C37833
Account: TETRCAO - Tetra Tech EMI
Project: Alameda Cross Trail Phase II

QC Batch ID: MP8938
Matrix Type: SOLID

Methods: SW846 6020
Units: ug/l

Prep Date: 01/06/15

| Metal | C37833-2 Original | SDL 5:25 | %DIF | QC Limits |
|---|---|---|---|---|
| Aluminum | | | | |
| Antimony | | | | |
| Arsenic | 296 | 366 | 10.5 (a) | 0-10 |
| Barium | | | | |
| Beryllium | | | | |
| Boron | | | | |
| Cadmium | | | | |
| Calcium | | | | |
| Chromium | | | | |
| Cobalt | | | | |
| Copper | | | | |
| Iron | | | | |
| Lead | 388 | 409 | 10.0 | 0-10 |
| Magnesium | | | | |
| Manganese | | | | |
| Molybdenum | | | | |
| Nickel | | | | |
| Potassium | | | | |
| Selenium | | | | |
| Silver | | | | |
| Sodium | | | | |
| Strontium | | | | |
| Thallium | | | | |
| Tin | | | | |
| Titanium | | | | |
| Uranium | | | | |
| Vanadium | | | | |
| Zinc | | | | |

Associated samples MP8938: C37833-1, C37833-2, C37833-3, C37833-4, C37833-5, C37833-6, C37833-7, C37833-8, C37833-9, C37833-10, C37833-11, C37833-12

Results < IDL are shown as zero for calculation purposes
(*) Outside of QC limits
(anr) Analyte not requested
(a) Percent difference acceptable due to low initial sample concentration (< 50 times IDL).

BLANK RESULTS SUMMARY
Part 2 - Method Blanks

Login Number: C37833
Account: TETRCAO - Tetra Tech EMI
Project: Alameda Cross Trail Phase II

QC Batch ID: MP8965
Matrix Type: SOLID

Methods: SW846 6020
Units: mg/kg

Prep Date: 01/09/15

| Metal | RL | IDL | MDL | MB raw | final |
|---|---|---|---|---|---|
| Aluminum | 25 | 2.3 | 2.5 | | |
| Antimony | 0.25 | .14 | .008 | | |
| Arsenic | 0.50 | .3 | .017 | 0.26 | <0.50(a) |
| Barium | 0.50 | .011 | .036 | | |
| Beryllium | 0.25 | | .027 | | |
| Boron | 2.5 | .09 | .066 | | |
| Cadmium | 0.25 | .0028 | .011 | | |
| Calcium | 250 | 40 | 38 | | |
| Chromium | 1.0 | .025 | .053 | | |
| Cobalt | 0.25 | .018 | .0085 | | |
| Copper | 1.0 | .018 | .11 | | |
| Iron | 25 | 3.1 | 1.6 | | |
| Lead | 0.25 | .0056 | .038 | | |
| Magnesium | 250 | .54 | 2.1 | | |
| Manganese | 0.50 | .012 | .18 | | |
| Molybdenum | 0.50 | .11 | .026 | | |
| Nickel | 1.0 | .18 | .043 | | |
| Potassium | 250 | 2.3 | 1.5 | | |
| Selenium | 0.25 | .17 | .012 | | |
| Silver | 0.25 | .0048 | .006 | | |
| Sodium | 250 | 2.2 | 2.6 | | |
| Strontium | 2.5 | .021 | .018 | | |
| Thallium | 0.25 | .04 | .015 | | |
| Tin | 2.5 | .055 | .036 | | |
| Titanium | 0.50 | .083 | .038 | | |
| Uranium | 0.25 | .06 | .006 | | |
| Vanadium | 1.0 | .36 | .051 | | |
| Zinc | 2.0 | .22 | .11 | | |

Associated samples MP8965: C37833-5, C37833-10, C37833-11

Results < IDL are shown as zero for calculation purposes
(*) Outside of QC limits
(anr) Analyte not requested
(a) Elevated RL/MDL due to positive bias of Method Blank.

MATRIX SPIKE AND DUPLICATE RESULTS SUMMARY

Login Number: C37833
Account: TETRCAO - Tetra Tech EMI
Project: Alameda Cross Trail Phase II

QC Batch ID: MP8965
Matrix Type: SOLID

Methods: SW846 6020
Units: mg/kg

Prep Date: 01/09/15

| Metal | C37834-1 Original | MS | Spikelot MPIR5 | % Rec | QC Limits |
|---|---|---|---|---|---|
| Aluminum | | | | | |
| Antimony | | | | | |
| Arsenic | 2.7 | 53.2 | 57.8 | 87.4 | 75-125 |
| Barium | | | | | |
| Beryllium | | | | | |
| Boron | | | | | |
| Cadmium | | | | | |
| Calcium | | | | | |
| Chromium | | | | | |
| Cobalt | | | | | |
| Copper | | | | | |
| Iron | | | | | |
| Lead | | | | | |
| Magnesium | | | | | |
| Manganese | | | | | |
| Molybdenum | | | | | |
| Nickel | | | | | |
| Potassium | | | | | |
| Selenium | | | | | |
| Silver | | | | | |
| Sodium | | | | | |
| Strontium | | | | | |
| Thallium | | | | | |
| Tin | | | | | |
| Titanium | | | | | |
| Uranium | | | | | |
| Vanadium | | | | | |
| Zinc | | | | | |

Associated samples MP8965: C37833-5, C37833-10, C37833-11

Results < IDL are shown as zero for calculation purposes
(*) Outside of QC limits
(N) Matrix Spike Rec. outside of QC limits
(anr) Analyte not requested

MATRIX SPIKE AND DUPLICATE RESULTS SUMMARY

Login Number: C37833
Account: TETRCAO - Tetra Tech EMI
Project: Alameda Cross Trail Phase II

QC Batch ID: MP8965
Matrix Type: SOLID

Methods: SW846 6020
Units: mg/kg

Prep Date: 01/09/15

| Metal | C37834-1 Original | MSD | Spikelot MPIR5 | % Rec | MSD RPD | QC Limit |
|---|---|---|---|---|---|---|
| Aluminum | | | | | | |
| Antimony | | | | | | |
| Arsenic | 2.7 | 58.5 | 59.9 | 93.2 | 9.5 | 20 |
| Barium | | | | | | |
| Beryllium | | | | | | |
| Boron | | | | | | |
| Cadmium | | | | | | |
| Calcium | | | | | | |
| Chromium | | | | | | |
| Cobalt | | | | | | |
| Copper | | | | | | |
| Iron | | | | | | |
| Lead | | | | | | |
| Magnesium | | | | | | |
| Manganese | | | | | | |
| Molybdenum | | | | | | |
| Nickel | | | | | | |
| Potassium | | | | | | |
| Selenium | | | | | | |
| Silver | | | | | | |
| Sodium | | | | | | |
| Strontium | | | | | | |
| Thallium | | | | | | |
| Tin | | | | | | |
| Titanium | | | | | | |
| Uranium | | | | | | |
| Vanadium | | | | | | |
| Zinc | | | | | | |

Associated samples MP8965: C37833-5, C37833-10, C37833-11

Results < IDL are shown as zero for calculation purposes
(*) Outside of QC limits
(N) Matrix Spike Rec. outside of QC limits
(anr) Analyte not requested

SPIKE BLANK AND LAB CONTROL SAMPLE SUMMARY

Login Number: C37833
Account: TETRCAO - Tetra Tech EMI
Project: Alameda Cross Trail Phase II

QC Batch ID: MP8965
Matrix Type: SOLID

Methods: SW846 6020
Units: mg/kg

Prep Date: 01/09/15

| Metal | BSP Result | Spikelot MPIR5 | % Rec | QC Limits |
|---|---|---|---|---|
| Aluminum | | | | |
| Antimony | | | | |
| Arsenic | 45.1 | 50 | 90.2 | 80-120 |
| Barium | | | | |
| Beryllium | | | | |
| Boron | | | | |
| Cadmium | | | | |
| Calcium | | | | |
| Chromium | | | | |
| Cobalt | | | | |
| Copper | | | | |
| Iron | | | | |
| Lead | | | | |
| Magnesium | | | | |
| Manganese | | | | |
| Molybdenum | | | | |
| Nickel | | | | |
| Potassium | | | | |
| Selenium | | | | |
| Silver | | | | |
| Sodium | | | | |
| Strontium | | | | |
| Thallium | | | | |
| Tin | | | | |
| Titanium | | | | |
| Uranium | | | | |
| Vanadium | | | | |
| Zinc | | | | |

Associated samples MP8965: C37833-5, C37833-10, C37833-11

Results < IDL are shown as zero for calculation purposes
(*) Outside of QC limits
(anr) Analyte not requested

SERIAL DILUTION RESULTS SUMMARY

Login Number: C37833
Account: TETRCAO - Tetra Tech EMI
Project: Alameda Cross Trail Phase II

QC Batch ID: MP8965
Matrix Type: SOLID

Methods: SW846 6020
Units: ug/l

Prep Date: 01/09/15

| Metal | C37834-1 Original | SDL 5:25 | %DIF | QC Limits |
|---|---|---|---|---|
| Aluminum | | | | |
| Antimony | | | | |
| Arsenic | 22.5 | 29.1 | 29.4 (a) | 0-10 |
| Barium | | | | |
| Beryllium | | | | |
| Boron | | | | |
| Cadmium | | | | |
| Calcium | | | | |
| Chromium | | | | |
| Cobalt | | | | |
| Copper | | | | |
| Iron | | | | |
| Lead | | | | |
| Magnesium | | | | |
| Manganese | | | | |
| Molybdenum | | | | |
| Nickel | | | | |
| Potassium | | | | |
| Selenium | | | | |
| Silver | | | | |
| Sodium | | | | |
| Strontium | | | | |
| Thallium | | | | |
| Tin | | | | |
| Titanium | | | | |
| Uranium | | | | |
| Vanadium | | | | |
| Zinc | | | | |

Associated samples MP8965: C37833-5, C37833-10, C37833-11

Results < IDL are shown as zero for calculation purposes
(*) Outside of QC limits
(anr) Analyte not requested
(a) Percent difference acceptable due to low initial sample concentration (< 50 times IDL).

Northern California ACCUTEST LABORATORIES

## Misc. Forms

### Custody Documents and Other Forms

(Accutest Laboratories Southeast, Inc.)

Includes the following where applicable:

- Chain of Custody

2105 Lundy Avenue, San Jose, CA 95131 Phone:(408)588-0200 Fax: (408)588-0201

Accutest ID and PO#: C37833

# Subcontract Chain of Custody

**Subcontract Lab:** Accutest Laboratories Southeast
**Date Sent:** 01/02/2015
**Date Due: 01/08/2015**

**Project Name: TETRCAO6786**
**Project Location:**

| Accutest Lab Number | Customer Sample Name/Field Point ID | Matrix | Method | Collect Date | Collect Time |
|---|---|---|---|---|---|
| C37833-1 | | SO | H8151FL | | |
| C37833-2 | | SO | H8151FL | | |
| C37833-3 | | SO | H8151FL | | |
| C37833-4 | | SO | H8151FL | | |
| C37833-5 | | SO | H8151FL | | |
| C37833-6 | | SO | H8151FL | | |
| C37833-7 | | SO | H8151FL | | |
| C37833-8 | | SO | H8151FL | | |
| C37833-9 | | SO | H8151FL | | |
| C37833-10 | | SO | H8151FL | | |
| C37833-11 | | SO | H8151FL | | |
| C37833-12 | | SO | H8151FL | | |

**Comments**: 1 x 4oz Glass Jar per sample

| Relinquished By: Lee B | Received By: FedEx | Date: 01/02/15 | Time: 15:00 |
|---|---|---|---|
| Relinquished By: FedEx 01-03-15 12:15 | Received By: | Date: | Time: |
| Relinquished By: | Received By: | Date: | Time: |

Page 1

**Send Report to: nutank@accutest.com**

8.1 8

# ACCUTEST LABORATORIES SAMPLE RECEIPT CONFIRMATION

ACCUTEST'S JOB NUMBER: C37833 CLIENT: ALNC PROJECT: Tetra06786

DATE/TIME RECEIVED: 01-03-15 12:15 {MM/DD/YY 24:00} NUMBER OF COOLERS RECEIVED: 1

METHOD OF DELIVERY: (FEDEX) UPS ACCUTEST COURIER DELIVERY OTHER:

AIRBILL NUMBERS: 7724 4045 6232

## COOLER INFORMATION

- [ ] CUSTODY SEAL NOT PRESENT OR NOT INTACT
- [ ] CHAIN OF CUSTODY NOT RECEIVED (COC)
- [ ] ANALYSIS REQUESTED IS UNCLEAR OR MISSING
- [ ] SAMPLE DATES OR TIMES UNCLEAR OR MISSING
- [ ] TEMPERATURE CRITERIA NOT MET

## TEMPERATURE INFORMATION

- [ ] IR THERM ID 1 CORR. FACTOR +0.4
- [ ] OBSERVED TEMPS: 2.6
- [ ] CORRECTED TEMPS: 3.0

## TRIP BLANK INFORMATION

- [ ] TRIP BLANK PROVIDED
- [x] TRIP BLANK NOT PROVIDED
- [x] TRIP BLANK NOT ON COC
- [ ] TRIP BLANK INTACT
- [ ] TRIP BLANK NOT INTACT
- [ ] RECEIVED WATER TRIP BLANK
- [ ] RECEIVED SOIL TRIP BLANK

## SAMPLE INFORMATION

- [ ] INCORRECT NUMBER OF CONTAINERS USED
- [ ] SAMPLE RECEIVED IMPROPERLY PRESERVED
- [ ] INSUFFICIENT VOLUME FOR ANALYSIS
- [ ] DATES/TIMES ON COC DO NOT MATCH SAMPLE LABEL
- [ ] ID'S ON COC DO NOT MATCH LABEL
- [ ] VOC VIALS HAVE HEADSPACE (MACRO BUBBLES)
- [ ] BOTTLES RECEIVED BUT ANALYSIS NOT REQUESTED
- [ ] NO BOTTLES RECEIVED FOR ANALYSIS REQUESTED
- [ ] UNCLEAR FILTERING OR COMPOSITING INSTRUCTIONS
- [ ] SAMPLE CONTAINER(S) RECEIVED BROKEN
- [ ] 5035 FIELD KITS NOT RECEIVED WITHIN 48 HOURS
- [ ] BULK VOA SOIL JARS NOT RECEIVED WITHIN 48 HOURS
- [ ] % SOLIDS JAR NOT RECEIVED
- [ ] RESIDUAL CHLORINE PRESENT LOT#

{APPLICABLE TO EPA 600 SERIES OR NORTH CAROLINA ORGANICS}

## MISC. INFORMATION

NUMBER OF ENCORES ? 25-GRAM 5-GRAM

NUMBER OF 5035 FIELD KITS ?

NUMBER OF LAB FILTERED METALS ?

pH PAPER LOT#s WIDE RANGE A036122 NARROW RANGE HC421754 OTHER (specify) 405-230010

SUMMARY OF COMMENTS:

TECHNICIAN SIGNATURE/DATE 01-03-15 REVIEWER SIGNATURE/DATE 01/03/15

NF 10/14

receipt confirmation 102914.xls

8.1

8

**C37833: Chain of Custody**

**Page 2 of 3**

8.1

8

**C37833: Chain of Custody**
**Page 3 of 3**

Northern California ACCUTEST LABORATORIES

## GC Semi-volatiles

# QC Data Summaries

(Accutest Laboratories Southeast, Inc.)



Includes the following where applicable:

- Method Blank Summaries
- Blank Spike Summaries
- Matrix Spike and Duplicate Summaries

# Method Blank Summary



**Job Number:** C37833
**Account:** ALNCA Accutest Northern California, Inc.
**Project:** TETRCAO: Alameda Cross Trail Phase II

| Sample | File ID | DF | Analyzed | By | Prep Date | Prep Batch | Analytical Batch |
|---|---|---|---|---|---|---|---|
| OP54497-MB | CC046769.D | 1 | 01/06/15 | FS | 01/05/15 | OP54497 | GCC777 |

**The QC reported here applies to the following samples:** **Method:** SW846 8151A

C37833-1, C37833-2, C37833-3, C37833-4, C37833-5, C37833-6, C37833-7, C37833-8, C37833-9, C37833-10, C37833-11, C37833-12

| CAS No. | Compound | Result | RL | MDL | Units | Q |
|---|---|---|---|---|---|---|
| 94-75-7 | 2,4-D | ND | 33 | 5.7 | ug/kg | |
| 93-72-1 | 2,4,5-TP (Silvex) | ND | 3.3 | 0.91 | ug/kg | |
| 93-76-5 | 2,4,5-T | ND | 3.3 | 0.67 | ug/kg | |
| 1918-00-9 | Dicamba | ND | 3.3 | 1.1 | ug/kg | |
| 88-85-7 | Dinoseb | ND | 83 | 17 | ug/kg | |
| 75-99-0 | Dalapon | ND | 170 | 33 | ug/kg | |
| 120-36-5 | Dichloroprop | ND | 33 | 13 | ug/kg | |
| 94-82-6 | 2,4-DB | ND | 33 | 12 | ug/kg | |
| 93-65-2 | MCPP | ND | 3300 | 890 | ug/kg | |
| 94-74-6 | MCPA | ND | 3300 | 800 | ug/kg | |
| 87-86-5 | Pentachlorophenol | ND | 3.3 | 0.51 | ug/kg | |

| CAS No. | Surrogate Recoveries | | Limits |
|---|---|---|---|
| 19719-28-9 | 2,4-DCAA | 100% [a] | 31-132% |

(a) Surrogate recoveries corrected for actual spike amount.

# Blank Spike Summary



**Job Number:** C37833
**Account:** ALNCA Accutest Northern California, Inc.
**Project:** TETRCAO: Alameda Cross Trail Phase II

| Sample | File ID | DF | Analyzed | By | Prep Date | Prep Batch | Analytical Batch |
|---|---|---|---|---|---|---|---|
| OP54497-BS | CC046768.D | 1 | 01/06/15 | FS | 01/05/15 | OP54497 | GCC777 |

**The QC reported here applies to the following samples:** **Method:** SW846 8151A

C37833-1, C37833-2, C37833-3, C37833-4, C37833-5, C37833-6, C37833-7, C37833-8, C37833-9, C37833-10, C37833-11, C37833-12

| CAS No. | Compound | Spike ug/kg | BSP ug/kg | BSP % | Limits |
|---|---|---|---|---|---|
| 94-75-7 | 2,4-D | 167 | 163 | 98 | 43-124 |
| 93-72-1 | 2,4,5-TP (Silvex) | 16.7 | 16.1 | 97 | 41-130 |
| 93-76-5 | 2,4,5-T | 16.7 | 15.5 | 93 | 40-124 |
| 1918-00-9 | Dicamba | 16.7 | 14.8 | 89 | 32-129 |
| 88-85-7 | Dinoseb | 83.3 | 32.2 | 39 | 10-124 |
| 75-99-0 | Dalapon | 417 | 158 | 38 | 10-133 |
| 120-36-5 | Dichloroprop | 167 | 190 | 114 | 51-145 |
| 94-82-6 | 2,4-DB | 167 | 134 | 80 | 42-130 |
| 93-65-2 | MCPP | 16700 | 14800 | 89 | 34-130 |
| 94-74-6 | MCPA | 16700 | 14600 | 88 | 37-124 |
| 87-86-5 | Pentachlorophenol | 33.4 | 33.3 | 100 | 45-126 |

| CAS No. | Surrogate Recoveries | BSP | Limits |
|---|---|---|---|
| 19719-28-9 | 2,4-DCAA | 130% [a] | 31-132% |

(a) Surrogate recoveries corrected for actual spike amount.

* = Outside of Control Limits.

# Matrix Spike/Matrix Spike Duplicate Summary



**Job Number:** C37833
**Account:** ALNCA Accutest Northern California, Inc.
**Project:** TETRCAO: Alameda Cross Trail Phase II

| Sample | File ID | DF | Analyzed | By | Prep Date | Prep Batch | Analytical Batch |
|---|---|---|---|---|---|---|---|
| OP54497-MS | CC046797.D | 1 | 01/06/15 | FS | 01/05/15 | OP54497 | GCC777 |
| OP54497-MSD | CC046798.D | 1 | 01/06/15 | FS | 01/05/15 | OP54497 | GCC777 |
| C37834-5 | CC046792.D | 1 | 01/06/15 | FS | 01/05/15 | OP54497 | GCC777 |

**The QC reported here applies to the following samples:** **Method:** SW846 8151A

C37833-1, C37833-2, C37833-3, C37833-4, C37833-5, C37833-6, C37833-7, C37833-8, C37833-9, C37833-10, C37833-11, C37833-12

| CAS No. | Compound | C37834-5 ug/kg | Q | Spike ug/kg | MS ug/kg | MS % | Spike ug/kg | MSD ug/kg | MSD % | RPD | Limits Rec/RPD |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 94-75-7 | 2,4-D | ND | | 216 | 187 | 87 | 213 | 192 | 90 | 3 | 43-124/32 |
| 93-72-1 | 2,4,5-TP (Silvex) | ND | | 21.6 | 19.8 | 92 | 21.3 | 16.9 | 79 | 16 | 41-130/31 |
| 93-76-5 | 2,4,5-T | ND | | 21.6 | 17.0 | 79 | 21.3 | 16.4 | 77 | 4 | 40-124/35 |
| 1918-00-9 | Dicamba | ND | | 21.6 | 15.0 | 69 | 21.3 | 13.9 | 65 | 8 | 32-129/34 |
| 88-85-7 | Dinoseb | ND | | 108 | 59.9 | 56 | 107 | 45.9 | 43 | 26 | 10-124/41 |
| 75-99-0 | Dalapon | ND | | 540 | 242 | 45 | 533 | 174 | 33 | 33 | 10-133/35 |
| 120-36-5 | Dichloroprop | ND | | 216 | 231 | 107 | 213 | 213 | 100 | 8 | 51-145/34 |
| 94-82-6 | 2,4-DB | ND | | 216 | 7300 | 3382* | 213 | 909 | 427* | 156* | 42-130/34 |
| 93-65-2 | MCPP | ND | | 21600 | 19100 | 88 | 21300 | 18900 | 89 | 1 | 34-130/34 |
| 94-74-6 | MCPA | ND | | 21600 | 20000 | 93 | 21300 | 19300 | 91 | 4 | 37-124/35 |
| 87-86-5 | Pentachlorophenol | ND | | 43.2 | 41.3 | 96 | 42.6 | 39.9 | 94 | 3 | 45-126/32 |

| CAS No. | Surrogate Recoveries | MS | MSD | C37834-5 | Limits |
|---|---|---|---|---|---|
| 19719-28-9 | 2,4-DCAA | 110% [a] | 80% [a] | 60% [a] | 31-132% |

(a) Surrogate recoveries corrected for actual spike amount.

* = Outside of Control Limits.

Northern California ACCUTEST LABORATORIES

01/13/15

Technical Report for

Tetra Tech EMI

Alameda Cross Trail Phase II

10353635

Accutest Job Number: C37834

Sampling Date: 12/30/14

Report to:

Tetra Tech
1999 Harrison St. Suite 500
Oakland, CA 94612
mark.duffy@tetratech.com; victor.early@tetratech.com

ATTN: Mark Duffy

Total number of pages in report: **93**

NELAP ACCREDITED TNI LABORATORY

Test results contained within this data package meet the requirements of the National Environmental Laboratory Accreditation Program and/or state specific certification programs as applicable.

James J. Rhudy
Lab Director

Client Service contact: Nutan Kabir 408-588-0200

Certifications: CA (ELAP 2910) AK (UST-092) AZ (AZ0762) NV (CA00150) OR (CA300006) WA (C925) DoD ELAP (L-A-B L2242)

Sections: 1 2 3 4 5 6 7 8 9

# Table of Contents

-1-

Accutest Laboratories

# Sample Summary

Tetra Tech EMI

**Job No:** C37834

Alameda Cross Trail Phase II
Project No: 10353635

| Sample Number | Collected Date | Time | By | Received | Matrix Code | Type | Client Sample ID |
|---|---|---|---|---|---|---|---|
| C37834-1 | 12/30/14 | 11:20 | MD | 12/31/14 | SO | Soil | CAT-B-8-8 |
| C37834-2 | 12/30/14 | 11:25 | MD | 12/31/14 | SO | Soil | CAT-B-8-2 |
| C37834-3 | 12/30/14 | 08:40 | MD | 12/31/14 | SO | Soil | CAT-B-7-4 |
| C37834-4 | 12/30/14 | 08:35 | MD | 12/31/14 | SO | Soil | CAT-B-7-1 |
| C37834-5 | 12/30/14 | 12:25 | MD | 12/31/14 | SO | Soil | CAT-B-9-1 |
| C37834-5D | 12/30/14 | 12:25 | MD | 12/31/14 | SO | Soil | CAT-B-9-1 |
| C37834-5S | 12/30/14 | 12:25 | MD | 12/31/14 | SO | Soil | CAT-B-9-1 |
| C37834-6 | 12/30/14 | 12:30 | MD | 12/31/14 | SO | Soil | CAT-B-9-6 |
| C37834-7 | 12/30/14 | 13:05 | MD | 12/31/14 | SO | Soil | CAT-B-10-5 |
| C37834-8 | 12/30/14 | 13:20 | MD | 12/31/14 | SO | Soil | CAT-B |
| C37834-9 | 12/30/14 | 13:10 | MD | 12/31/14 | SO | Soil | CAT-B-10-2 |

Soil samples reported on a dry weight basis unless otherwise indicated on result page.

# Summary of Hits

**Job Number:** C37834
**Account:** Tetra Tech EMI
**Project:** Alameda Cross Trail Phase II
**Collected:** 12/30/14

| Lab Sample ID / Analyte | Client Sample ID | Result/ Qual | RL | MDL | Units | Method |
|---|---|---|---|---|---|---|
| **C37834-1** | **CAT-B-8-8** | | | | | |
| Benzo(a)anthracene | | 2.0 J | 4.3 | 1.1 | ug/kg | SW846 8270C BY SIM |
| Benzo(a)pyrene | | 2.0 J | 4.3 | 0.73 | ug/kg | SW846 8270C BY SIM |
| Benzo(b)fluoranthene | | 5.0 | 4.3 | 0.86 | ug/kg | SW846 8270C BY SIM |
| Benzo(g,h,i)perylene | | 5.0 | 4.3 | 0.95 | ug/kg | SW846 8270C BY SIM |
| Benzo(k)fluoranthene | | 4.9 | 4.3 | 0.99 | ug/kg | SW846 8270C BY SIM |
| Chrysene | | 2.8 J | 4.3 | 0.86 | ug/kg | SW846 8270C BY SIM |
| Indeno(1,2,3-cd)pyrene | | 3.7 J | 4.3 | 1.1 | ug/kg | SW846 8270C BY SIM |
| Pyrene | | 2.3 J | 22 | 2.2 | ug/kg | SW846 8270C BY SIM |
| Pentachlorophenol [a] | | 5.2 J | 21 | 3.2 | ug/kg | SW846 8151A |
| Arsenic [b] | | 2.7 | 0.60 | | mg/kg | SW846 6020 |
| Lead | | 16.9 | 0.28 | | mg/kg | SW846 6020 |
| **C37834-2** | **CAT-B-8-2** | | | | | |
| Benzo(a)anthracene [c] | | 36.4 | 20 | 5.1 | ug/kg | SW846 8270C BY SIM |
| Benzo(a)pyrene [c] | | 81.6 | 20 | 3.5 | ug/kg | SW846 8270C BY SIM |
| Benzo(b)fluoranthene [c] | | 79.4 | 20 | 4.1 | ug/kg | SW846 8270C BY SIM |
| Benzo(g,h,i)perylene [c] | | 105 | 20 | 4.5 | ug/kg | SW846 8270C BY SIM |
| Benzo(k)fluoranthene [c] | | 42.6 | 20 | 4.7 | ug/kg | SW846 8270C BY SIM |
| Chrysene [c] | | 54.9 | 20 | 4.1 | ug/kg | SW846 8270C BY SIM |
| Dibenzo(a,h)anthracene [c] | | 12.3 J | 20 | 5.7 | ug/kg | SW846 8270C BY SIM |
| Fluoranthene [c] | | 89.6 J | 100 | 10 | ug/kg | SW846 8270C BY SIM |
| Indeno(1,2,3-cd)pyrene [c] | | 100 | 20 | 5.1 | ug/kg | SW846 8270C BY SIM |
| Phenanthrene [c] | | 20.3 J | 100 | 10 | ug/kg | SW846 8270C BY SIM |
| Pyrene [c] | | 113 | 100 | 10 | ug/kg | SW846 8270C BY SIM |
| TPH (Diesel) [d] | | 7.35 | 4.1 | 2.1 | mg/kg | SW846 8015B M |
| TPH (Motor Oil) | | 31.8 | 8.2 | 4.1 | mg/kg | SW846 8015B M |
| Arsenic | | 6.5 | 0.27 | | mg/kg | SW846 6020 |
| Lead | | 40.5 | 0.27 | | mg/kg | SW846 6020 |
| **C37834-3** | **CAT-B-7-4** | | | | | |
| Benzo(a)anthracene | | 5.9 | 3.8 | 0.95 | ug/kg | SW846 8270C BY SIM |
| Benzo(a)pyrene | | 9.8 | 3.8 | 0.65 | ug/kg | SW846 8270C BY SIM |
| Benzo(b)fluoranthene | | 9.1 | 3.8 | 0.76 | ug/kg | SW846 8270C BY SIM |
| Benzo(g,h,i)perylene | | 11.5 | 3.8 | 0.84 | ug/kg | SW846 8270C BY SIM |
| Benzo(k)fluoranthene | | 5.8 | 3.8 | 0.88 | ug/kg | SW846 8270C BY SIM |
| Chrysene | | 8.5 | 3.8 | 0.76 | ug/kg | SW846 8270C BY SIM |
| Dibenzo(a,h)anthracene | | 1.7 J | 3.8 | 1.1 | ug/kg | SW846 8270C BY SIM |
| Fluoranthene | | 12.9 J | 19 | 1.9 | ug/kg | SW846 8270C BY SIM |
| Indeno(1,2,3-cd)pyrene | | 9.7 | 3.8 | 0.95 | ug/kg | SW846 8270C BY SIM |
| Phenanthrene | | 4.9 J | 19 | 1.9 | ug/kg | SW846 8270C BY SIM |
| Pyrene | | 18.9 J | 19 | 1.9 | ug/kg | SW846 8270C BY SIM |

# Summary of Hits

**Job Number:** C37834
**Account:** Tetra Tech EMI
**Project:** Alameda Cross Trail Phase II
**Collected:** 12/30/14

| Lab Sample ID / Analyte | Client Sample ID | Result/ Qual | RL | MDL | Units | Method |
|---|---|---|---|---|---|---|
| TPH (Diesel) [d] | | 8.49 | 3.8 | 1.9 | mg/kg | SW846 8015B M |
| TPH (Motor Oil) | | 19.9 | 7.6 | 3.8 | mg/kg | SW846 8015B M |
| Arsenic | | 5.1 | 0.25 | | mg/kg | SW846 6020 |
| Lead | | 92.9 | 0.25 | | mg/kg | SW846 6020 |
| **C37834-4** | **CAT-B-7-1** | | | | | |
| Acenaphthylene | | 2.4 J | 21 | 2.1 | ug/kg | SW846 8270C BY SIM |
| Anthracene | | 2.7 J | 21 | 2.1 | ug/kg | SW846 8270C BY SIM |
| Benzo(a)anthracene | | 49.2 | 4.2 | 1.1 | ug/kg | SW846 8270C BY SIM |
| Benzo(a)pyrene | | 119 | 4.2 | 0.71 | ug/kg | SW846 8270C BY SIM |
| Benzo(b)fluoranthene | | 105 | 4.2 | 0.84 | ug/kg | SW846 8270C BY SIM |
| Benzo(g,h,i)perylene | | 146 | 4.2 | 0.93 | ug/kg | SW846 8270C BY SIM |
| Benzo(k)fluoranthene | | 55.8 | 4.2 | 0.97 | ug/kg | SW846 8270C BY SIM |
| Chrysene | | 69.4 | 4.2 | 0.84 | ug/kg | SW846 8270C BY SIM |
| Dibenzo(a,h)anthracene | | 11.6 | 4.2 | 1.2 | ug/kg | SW846 8270C BY SIM |
| Fluoranthene | | 133 | 21 | 2.1 | ug/kg | SW846 8270C BY SIM |
| Indeno(1,2,3-cd)pyrene | | 123 | 4.2 | 1.1 | ug/kg | SW846 8270C BY SIM |
| Phenanthrene | | 25.0 | 21 | 2.1 | ug/kg | SW846 8270C BY SIM |
| Pyrene | | 192 | 21 | 2.1 | ug/kg | SW846 8270C BY SIM |
| TPH (Diesel) [d] | | 6.52 | 4.2 | 2.1 | mg/kg | SW846 8015B M |
| TPH (Motor Oil) | | 16.0 | 8.4 | 4.2 | mg/kg | SW846 8015B M |
| Arsenic | | 4.3 | 0.27 | | mg/kg | SW846 6020 |
| Lead | | 22.0 | 0.27 | | mg/kg | SW846 6020 |
| **C37834-5** | **CAT-B-9-1** | | | | | |
| Benzo(a)anthracene [c] | | 59.3 | 17 | 4.3 | ug/kg | SW846 8270C BY SIM |
| Benzo(a)pyrene [c] | | 121 | 17 | 2.9 | ug/kg | SW846 8270C BY SIM |
| Benzo(b)fluoranthene [c] | | 123 | 17 | 3.4 | ug/kg | SW846 8270C BY SIM |
| Benzo(g,h,i)perylene [c] | | 145 | 17 | 3.8 | ug/kg | SW846 8270C BY SIM |
| Benzo(k)fluoranthene [c] | | 54.3 | 17 | 4.0 | ug/kg | SW846 8270C BY SIM |
| Chrysene [c] | | 86.2 | 17 | 3.4 | ug/kg | SW846 8270C BY SIM |
| Dibenzo(a,h)anthracene [c] | | 16.0 J | 17 | 4.8 | ug/kg | SW846 8270C BY SIM |
| Fluoranthene [c] | | 163 | 86 | 8.6 | ug/kg | SW846 8270C BY SIM |
| Indeno(1,2,3-cd)pyrene [c] | | 153 | 17 | 4.3 | ug/kg | SW846 8270C BY SIM |
| Phenanthrene [c] | | 39.9 J | 86 | 8.6 | ug/kg | SW846 8270C BY SIM |
| Pyrene [c] | | 181 | 86 | 8.6 | ug/kg | SW846 8270C BY SIM |
| TPH (Diesel) [d] | | 6.39 | 4.4 | 2.2 | mg/kg | SW846 8015B M |
| TPH (Motor Oil) | | 30.3 | 8.7 | 4.4 | mg/kg | SW846 8015B M |
| Arsenic | | 7.8 | 0.27 | | mg/kg | SW846 6020 |
| Lead | | 54.6 | 0.27 | | mg/kg | SW846 6020 |

# Summary of Hits

**Job Number:** C37834
**Account:** Tetra Tech EMI
**Project:** Alameda Cross Trail Phase II
**Collected:** 12/30/14

| Lab Sample ID / Analyte | Client Sample ID | Result/ Qual | RL | MDL | Units | Method |
|---|---|---|---|---|---|---|
| **C37834-6** | **CAT-B-9-6** | | | | | |
| Benzo(a)anthracene | | 1.4 J | 4.1 | 1.0 | ug/kg | SW846 8270C BY SIM |
| Benzo(a)pyrene | | 1.3 J | 4.1 | 0.70 | ug/kg | SW846 8270C BY SIM |
| Benzo(b)fluoranthene | | 1.2 J | 4.1 | 0.82 | ug/kg | SW846 8270C BY SIM |
| Benzo(g,h,i)perylene | | 0.95 J | 4.1 | 0.90 | ug/kg | SW846 8270C BY SIM |
| Chrysene | | 1.2 J | 4.1 | 0.82 | ug/kg | SW846 8270C BY SIM |
| Indeno(1,2,3-cd)pyrene | | 1.3 J | 4.1 | 1.0 | ug/kg | SW846 8270C BY SIM |
| Arsenic | | 4.9 | 0.26 | | mg/kg | SW846 6020 |
| Lead | | 6.9 | 0.26 | | mg/kg | SW846 6020 |
| **C37834-7** | **CAT-B-10-5** | | | | | |
| TPH (Diesel) [e] | | 88.2 | 12 | 6.2 | mg/kg | SW846 8015B M |
| TPH (Motor Oil) | | 164 | 25 | 12 | mg/kg | SW846 8015B M |
| Arsenic [b] | | 1.4 | 0.58 | | mg/kg | SW846 6020 |
| Lead | | 26.0 | 0.26 | | mg/kg | SW846 6020 |
| **C37834-8** | **CAT-B** | | | | | |
| Benzo(a)pyrene [c] | | 10.4 J | 41 | 6.9 | ug/kg | SW846 8270C BY SIM |
| Benzo(b)fluoranthene [c] | | 10.5 J | 41 | 8.1 | ug/kg | SW846 8270C BY SIM |
| Benzo(g,h,i)perylene [c] | | 14.8 J | 41 | 9.0 | ug/kg | SW846 8270C BY SIM |
| Chrysene [c] | | 10.7 J | 41 | 8.1 | ug/kg | SW846 8270C BY SIM |
| Indeno(1,2,3-cd)pyrene [c] | | 12.0 J | 41 | 10 | ug/kg | SW846 8270C BY SIM |
| TPH (Diesel) [e] | | 188 | 100 | 51 | mg/kg | SW846 8015B M |
| TPH (Motor Oil) | | 922 | 200 | 100 | mg/kg | SW846 8015B M |
| Pentachlorophenol [f] | | 1.1 J | 4.0 | 0.61 | ug/kg | SW846 8151A |
| Arsenic | | 4.9 | 0.26 | | mg/kg | SW846 6020 |
| Lead | | 170 | 0.26 | | mg/kg | SW846 6020 |
| **C37834-9** | **CAT-B-10-2** | | | | | |
| Benzo(a)anthracene [g] | | 52.6 J | 110 | 28 | ug/kg | SW846 8270C BY SIM |
| Benzo(a)pyrene [g] | | 65.7 J | 110 | 19 | ug/kg | SW846 8270C BY SIM |
| Benzo(b)fluoranthene [g] | | 57.1 J | 110 | 22 | ug/kg | SW846 8270C BY SIM |
| Benzo(g,h,i)perylene [g] | | 97.7 J | 110 | 24 | ug/kg | SW846 8270C BY SIM |
| Benzo(k)fluoranthene [g] | | 45.9 J | 110 | 25 | ug/kg | SW846 8270C BY SIM |
| Chrysene [g] | | 61.8 J | 110 | 22 | ug/kg | SW846 8270C BY SIM |
| Fluoranthene [g] | | 88.7 J | 550 | 55 | ug/kg | SW846 8270C BY SIM |
| Indeno(1,2,3-cd)pyrene [g] | | 66.8 J | 110 | 28 | ug/kg | SW846 8270C BY SIM |
| Phenanthrene [g] | | 84.3 J | 550 | 55 | ug/kg | SW846 8270C BY SIM |
| Pyrene [g] | | 85.8 J | 550 | 55 | ug/kg | SW846 8270C BY SIM |
| TPH (Diesel) [e] | | 129 | 92 | 46 | mg/kg | SW846 8015B M |
| TPH (Motor Oil) | | 609 | 180 | 92 | mg/kg | SW846 8015B M |

# Summary of Hits

**Job Number:** C37834
**Account:** Tetra Tech EMI
**Project:** Alameda Cross Trail Phase II
**Collected:** 12/30/14

| Lab Sample ID / Analyte | Client Sample ID | Result/ Qual | RL | MDL | Units | Method |
|---|---|---|---|---|---|---|
| Arsenic | | 6.2 | 0.23 | | mg/kg | SW846 6020 |
| Lead | | 126 | 0.23 | | mg/kg | SW846 6020 |

(a) All hits confirmed by dual column analysis. Dilution required due to matrix interference. Analysis performed at Accutest Laboratories, Orlando FL.
(b) Elevated RL/MDL due to positive bias of Method Blank.
(c) Dilution required due to matrix interference (dark and viscous extract; high concentration of non-target hydrocarbons).
(d) Atypical Diesel pattern (C12-C28); heavier hydrocarbons contributing to quantitation.
(e) Atypical Diesel pattern (C10-C28); heavier hydrocarbons contributing to quantitation.
(f) All hits confirmed by dual column analysis. Analysis performed at Accutest Laboratories, Orlando FL. Primary and confirmation results differ by more than 40%. Lower value reported due to possible coelution.
(g) Dilution required due to matrix interference. Extract would not concentrate (dark and viscous); and high concentration of non-target hydrocarbons.

Northern California ACCUTEST LABORATORIES



## Sample Results

Report of Analysis

# Report of Analysis





| | | | |
|---|---|---|---|
| **Client Sample ID:** | CAT-B-8-8 | | |
| **Lab Sample ID:** | C37834-1 | **Date Sampled:** | 12/30/14 |
| **Matrix:** | SO - Soil | **Date Received:** | 12/31/14 |
| **Method:** | SW846 8270C BY SIM SW846 3550B | **Percent Solids:** | 77.3 |
| **Project:** | Alameda Cross Trail Phase II | | |

| | File ID | DF | Analyzed | By | Prep Date | Prep Batch | Analytical Batch |
|---|---|---|---|---|---|---|---|
| Run #1 | X41457.D | 1 | 01/05/15 | BJ | 01/05/15 | OP11471 | EX1771 |
| Run #2 | | | | | | | |

| | Initial Weight | Final Volume |
|---|---|---|
| Run #1 | 30.0 g | 1.0 ml |
| Run #2 | | |

**BN PAH List**

| CAS No. | Compound | Result | RL | MDL | Units | Q |
|---|---|---|---|---|---|---|
| 83-32-9 | Acenaphthene | ND | 22 | 2.2 | ug/kg | |
| 208-96-8 | Acenaphthylene | ND | 22 | 2.2 | ug/kg | |
| 120-12-7 | Anthracene | ND | 22 | 2.2 | ug/kg | |
| 56-55-3 | Benzo(a)anthracene | 2.0 | 4.3 | 1.1 | ug/kg | J |
| 50-32-8 | Benzo(a)pyrene | 2.0 | 4.3 | 0.73 | ug/kg | J |
| 205-99-2 | Benzo(b)fluoranthene | 5.0 | 4.3 | 0.86 | ug/kg | |
| 191-24-2 | Benzo(g,h,i)perylene | 5.0 | 4.3 | 0.95 | ug/kg | |
| 207-08-9 | Benzo(k)fluoranthene | 4.9 | 4.3 | 0.99 | ug/kg | |
| 218-01-9 | Chrysene | 2.8 | 4.3 | 0.86 | ug/kg | J |
| 53-70-3 | Dibenzo(a,h)anthracene | ND | 4.3 | 1.2 | ug/kg | |
| 206-44-0 | Fluoranthene | ND | 22 | 2.2 | ug/kg | |
| 86-73-7 | Fluorene | ND | 22 | 2.2 | ug/kg | |
| 193-39-5 | Indeno(1,2,3-cd)pyrene | 3.7 | 4.3 | 1.1 | ug/kg | J |
| 90-12-0 | 1-Methylnaphthalene | ND | 22 | 4.3 | ug/kg | |
| 91-57-6 | 2-Methylnaphthalene | ND | 22 | 4.3 | ug/kg | |
| 91-20-3 | Naphthalene | ND | 22 | 4.3 | ug/kg | |
| 85-01-8 | Phenanthrene | ND | 22 | 2.2 | ug/kg | |
| 129-00-0 | Pyrene | 2.3 | 22 | 2.2 | ug/kg | J |

| CAS No. | Surrogate Recoveries | Run# 1 | Run# 2 | Limits |
|---|---|---|---|---|
| 4165-60-0 | Nitrobenzene-d5 | 98% | | 32-128% |
| 321-60-8 | 2-Fluorobiphenyl | 94% | | 48-122% |
| 1718-51-0 | Terphenyl-d14 | 108% | | 48-148% |

ND = Not detected MDL = Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range

J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

# Report of Analysis





**Client Sample ID:** CAT-B-8-8
**Lab Sample ID:** C37834-1
**Matrix:** SO - Soil
**Method:** SW846 8151A SW846 3546
**Project:** Alameda Cross Trail Phase II

**Date Sampled:** 12/30/14
**Date Received:** 12/31/14
**Percent Solids:** 77.3

| | File ID | DF | Analyzed | By | Prep Date | Prep Batch | Analytical Batch |
|---|---|---|---|---|---|---|---|
| Run #1 [a] | CC046847.D | 5 | 01/08/15 | AFL | 01/05/15 | F:OP54497 | F:GCC779 |
| Run #2 | | | | | | | |

| | Initial Weight | Final Volume |
|---|---|---|
| Run #1 | 15.5 g | 5.0 ml |
| Run #2 | | |

| CAS No. | Compound | Result | RL | MDL | Units | Q |
|---|---|---|---|---|---|---|
| 94-75-7 | 2,4-D | ND | 210 | 35 | ug/kg | |
| 93-72-1 | 2,4,5-TP (Silvex) | ND | 21 | 5.7 | ug/kg | |
| 93-76-5 | 2,4,5-T | ND | 21 | 4.2 | ug/kg | |
| 1918-00-9 | Dicamba | ND | 21 | 7.0 | ug/kg | |
| 88-85-7 | Dinoseb | ND | 520 | 100 | ug/kg | |
| 75-99-0 | Dalapon | ND | 1000 | 210 | ug/kg | |
| 120-36-5 | Dichloroprop | ND | 210 | 78 | ug/kg | |
| 94-82-6 | 2,4-DB | ND | 210 | 78 | ug/kg | |
| 93-65-2 | MCPP | ND | 21000 | 5600 | ug/kg | |
| 94-74-6 | MCPA | ND | 21000 | 5000 | ug/kg | |
| 87-86-5 | Pentachlorophenol | 5.2 | 21 | 3.2 | ug/kg | J |

| CAS No. | Surrogate Recoveries | Run# 1 | Run# 2 | Limits |
|---|---|---|---|---|
| 19719-28-9 | 2,4-DCAA | 100% [b] | | 31-132% |

(a) All hits confirmed by dual column analysis. Dilution required due to matrix interference. Analysis performed at Accutest Laboratories, Orlando FL.
(b) Surrogate recoveries corrected for actual spike amount.

ND = Not detected MDL = Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

# Report of Analysis





| | | | |
|---|---|---|---|
| **Client Sample ID:** | CAT-B-8-8 | | |
| **Lab Sample ID:** | C37834-1 | **Date Sampled:** | 12/30/14 |
| **Matrix:** | SO - Soil | **Date Received:** | 12/31/14 |
| **Method:** | SW846 8015B M SW846 3550B | **Percent Solids:** | 77.3 |
| **Project:** | Alameda Cross Trail Phase II | | |

| | File ID | DF | Analyzed | By | Prep Date | Prep Batch | Analytical Batch |
|---|---|---|---|---|---|---|---|
| Run #1 | HH319830.D | 1 | 01/03/15 | AG | 01/02/15 | OP11469 | GHH1430 |
| Run #2 | | | | | | | |

| | Initial Weight | Final Volume |
|---|---|---|
| Run #1 | 30.0 g | 1.0 ml |
| Run #2 | | |

**TPH Extractable w/ Silica Gel Cleanup**

| CAS No. | Compound | Result | RL | MDL | Units | Q |
|---|---|---|---|---|---|---|
| | TPH (Diesel) | ND | 4.3 | 2.2 | mg/kg | |
| | TPH (Motor Oil) | ND | 8.6 | 4.3 | mg/kg | |
| | TPH (Mineral Spirits) | ND | 4.3 | 2.2 | mg/kg | |
| | TPH (Kerosene) | ND | 4.3 | 2.2 | mg/kg | |

| CAS No. | Surrogate Recoveries | Run# 1 | Run# 2 | Limits |
|---|---|---|---|---|
| 630-01-3 | Hexacosane | 94% | | 37-122% |

ND = Not detected MDL = Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range

J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

# Report of Analysis





| | | | |
|---|---|---|---|
| **Client Sample ID:** | CAT-B-8-8 | | |
| **Lab Sample ID:** | C37834-1 | **Date Sampled:** | 12/30/14 |
| **Matrix:** | SO - Soil | **Date Received:** | 12/31/14 |
| | | **Percent Solids:** | 77.3 |
| **Project:** | Alameda Cross Trail Phase II | | |

**Metals Analysis**

| Analyte | Result | RL | Units | DF | Prep | Analyzed | By | Method | Prep Method |
|---|---|---|---|---|---|---|---|---|---|
| Arsenic [a] | 2.7 | 0.60 | mg/kg | 5 | 01/09/15 | 01/12/15 | RS | SW846 6020 [2] | SW846 3050B [4] |
| Lead | 16.9 | 0.28 | mg/kg | 5 | 01/07/15 | 01/08/15 | RS | SW846 6020 [1] | SW846 3050B [3] |

(1) Instrument QC Batch: MA4523
(2) Instrument QC Batch: MA4533
(3) Prep QC Batch: MP8944
(4) Prep QC Batch: MP8965

(a) Elevated RL/MDL due to positive bias of Method Blank.

RL = Reporting Limit

# Report of Analysis





| | | | |
|---|---|---|---|
| **Client Sample ID:** | CAT-B-8-8 | | |
| **Lab Sample ID:** | C37834-1 | **Date Sampled:** | 12/30/14 |
| **Matrix:** | SO - Soil | **Date Received:** | 12/31/14 |
| | | **Percent Solids:** | 77.3 |
| **Project:** | Alameda Cross Trail Phase II | | |

**General Chemistry**

| Analyte | Result | RL | Units | DF | Analyzed | By | Method |
|---|---|---|---|---|---|---|---|
| Moisture, Percent | 22.7 | | % | 1 | 01/02/15 13:00 | TN | SM2540MOD G-97 |

RL = Reporting Limit

# Report of Analysis





| | | | |
|---|---|---|---|
| **Client Sample ID:** | CAT-B-8-2 | | |
| **Lab Sample ID:** | C37834-2 | **Date Sampled:** | 12/30/14 |
| **Matrix:** | SO - Soil | **Date Received:** | 12/31/14 |
| **Method:** | SW846 8270C BY SIM SW846 3550B | **Percent Solids:** | 80.7 |
| **Project:** | Alameda Cross Trail Phase II | | |

| | File ID | DF | Analyzed | By | Prep Date | Prep Batch | Analytical Batch |
|---|---|---|---|---|---|---|---|
| Run #1 [a] | T17366.D | 5 | 01/03/15 | MT | 01/02/15 | OP11467 | ET768 |
| Run #2 | | | | | | | |

| | Initial Weight | Final Volume |
|---|---|---|
| Run #1 | 30.5 g | 1.0 ml |
| Run #2 | | |

**BN PAH List**

| CAS No. | Compound | Result | RL | MDL | Units | Q |
|---|---|---|---|---|---|---|
| 83-32-9 | Acenaphthene | ND | 100 | 10 | ug/kg | |
| 208-96-8 | Acenaphthylene | ND | 100 | 10 | ug/kg | |
| 120-12-7 | Anthracene | ND | 100 | 10 | ug/kg | |
| 56-55-3 | Benzo(a)anthracene | 36.4 | 20 | 5.1 | ug/kg | |
| 50-32-8 | Benzo(a)pyrene | 81.6 | 20 | 3.5 | ug/kg | |
| 205-99-2 | Benzo(b)fluoranthene | 79.4 | 20 | 4.1 | ug/kg | |
| 191-24-2 | Benzo(g,h,i)perylene | 105 | 20 | 4.5 | ug/kg | |
| 207-08-9 | Benzo(k)fluoranthene | 42.6 | 20 | 4.7 | ug/kg | |
| 218-01-9 | Chrysene | 54.9 | 20 | 4.1 | ug/kg | |
| 53-70-3 | Dibenzo(a,h)anthracene | 12.3 | 20 | 5.7 | ug/kg | J |
| 206-44-0 | Fluoranthene | 89.6 | 100 | 10 | ug/kg | J |
| 86-73-7 | Fluorene | ND | 100 | 10 | ug/kg | |
| 193-39-5 | Indeno(1,2,3-cd)pyrene | 100 | 20 | 5.1 | ug/kg | |
| 90-12-0 | 1-Methylnaphthalene | ND | 100 | 20 | ug/kg | |
| 91-57-6 | 2-Methylnaphthalene | ND | 100 | 20 | ug/kg | |
| 91-20-3 | Naphthalene | ND | 100 | 20 | ug/kg | |
| 85-01-8 | Phenanthrene | 20.3 | 100 | 10 | ug/kg | J |
| 129-00-0 | Pyrene | 113 | 100 | 10 | ug/kg | |

| CAS No. | Surrogate Recoveries | Run# 1 | Run# 2 | Limits |
|---|---|---|---|---|
| 4165-60-0 | Nitrobenzene-d5 | 65% | | 32-128% |
| 321-60-8 | 2-Fluorobiphenyl | 85% | | 48-122% |
| 1718-51-0 | Terphenyl-d14 | 88% | | 48-148% |

(a) Dilution required due to matrix interference (dark and viscous extract; high concentration of non-target hydrocarbons).

ND = Not detected MDL = Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

# Report of Analysis



**Client Sample ID:** CAT-B-8-2
**Lab Sample ID:** C37834-2
**Matrix:** SO - Soil
**Method:** SW846 8151A SW846 3546
**Project:** Alameda Cross Trail Phase II

**Date Sampled:** 12/30/14
**Date Received:** 12/31/14
**Percent Solids:** 80.7

| | File ID | DF | Analyzed | By | Prep Date | Prep Batch | Analytical Batch |
|---|---|---|---|---|---|---|---|
| Run #1 [a] | CC046787.D | 1 | 01/06/15 | AFL | 01/05/15 | F:OP54497 | F:GCC777 |
| Run #2 | | | | | | | |

| | Initial Weight | Final Volume |
|---|---|---|
| Run #1 | 15.2 g | 5.0 ml |
| Run #2 | | |

| CAS No. | Compound | Result | RL | MDL | Units | Q |
|---|---|---|---|---|---|---|
| 94-75-7 | 2,4-D | ND | 41 | 6.9 | ug/kg | |
| 93-72-1 | 2,4,5-TP (Silvex) | ND | 4.1 | 1.1 | ug/kg | |
| 93-76-5 | 2,4,5-T | ND | 4.1 | 0.82 | ug/kg | |
| 1918-00-9 | Dicamba | ND | 4.1 | 1.4 | ug/kg | |
| 88-85-7 | Dinoseb | ND | 100 | 20 | ug/kg | |
| 75-99-0 | Dalapon | ND | 200 | 41 | ug/kg | |
| 120-36-5 | Dichloroprop | ND | 41 | 15 | ug/kg | |
| 94-82-6 | 2,4-DB | ND | 41 | 15 | ug/kg | |
| 93-65-2 | MCPP | ND | 4100 | 1100 | ug/kg | |
| 94-74-6 | MCPA | ND | 4100 | 980 | ug/kg | |
| 87-86-5 | Pentachlorophenol | ND | 4.1 | 0.62 | ug/kg | |

| CAS No. | Surrogate Recoveries | Run# 1 | Run# 2 | Limits |
|---|---|---|---|---|
| 19719-28-9 | 2,4-DCAA | 90% [b] | | 31-132% |

(a) Analysis performed at Accutest Laboratories, Orlando FL.
(b) Surrogate recoveries corrected for actual spike amount.

ND = Not detected MDL = Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

# Report of Analysis





| | | | |
|---|---|---|---|
| **Client Sample ID:** | CAT-B-8-2 | | |
| **Lab Sample ID:** | C37834-2 | **Date Sampled:** | 12/30/14 |
| **Matrix:** | SO - Soil | **Date Received:** | 12/31/14 |
| **Method:** | SW846 8015B M SW846 3550B | **Percent Solids:** | 80.7 |
| **Project:** | Alameda Cross Trail Phase II | | |

| | File ID | DF | Analyzed | By | Prep Date | Prep Batch | Analytical Batch |
|---|---|---|---|---|---|---|---|
| Run #1 | HH319831.D | 1 | 01/03/15 | AG | 01/02/15 | OP11469 | GHH1430 |
| Run #2 | | | | | | | |

| | Initial Weight | Final Volume |
|---|---|---|
| Run #1 | 30.2 g | 1.0 ml |
| Run #2 | | |

**TPH Extractable w/ Silica Gel Cleanup**

| CAS No. | Compound | Result | RL | MDL | Units | Q |
|---|---|---|---|---|---|---|
| | TPH (Diesel) [a] | 7.35 | 4.1 | 2.1 | mg/kg | |
| | TPH (Motor Oil) | 31.8 | 8.2 | 4.1 | mg/kg | |
| | TPH (Mineral Spirits) | ND | 4.1 | 2.1 | mg/kg | |
| | TPH (Kerosene) | ND | 4.1 | 2.1 | mg/kg | |

| CAS No. | Surrogate Recoveries | Run# 1 | Run# 2 | Limits |
|---|---|---|---|---|
| 630-01-3 | Hexacosane | 83% | | 37-122% |

(a) Atypical Diesel pattern (C12-C28); heavier hydrocarbons contributing to quantitation.

ND = Not detected MDL = Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range

J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

# Report of Analysis





| | | | |
|---|---|---|---|
| **Client Sample ID:** | CAT-B-8-2 | | |
| **Lab Sample ID:** | C37834-2 | **Date Sampled:** | 12/30/14 |
| **Matrix:** | SO - Soil | **Date Received:** | 12/31/14 |
| | | **Percent Solids:** | 80.7 |
| **Project:** | Alameda Cross Trail Phase II | | |

**Metals Analysis**

| Analyte | Result | RL | Units | DF | Prep | Analyzed | By | Method | Prep Method |
|---|---|---|---|---|---|---|---|---|---|
| Arsenic | 6.5 | 0.27 | mg/kg | 5 | 01/07/15 | 01/08/15 | RS | SW846 6020 [1] | SW846 3050B [2] |
| Lead | 40.5 | 0.27 | mg/kg | 5 | 01/07/15 | 01/08/15 | RS | SW846 6020 [1] | SW846 3050B [2] |

(1) Instrument QC Batch: MA4523
(2) Prep QC Batch: MP8944

RL = Reporting Limit

# Report of Analysis





| | | | |
|---|---|---|---|
| **Client Sample ID:** | CAT-B-8-2 | | |
| **Lab Sample ID:** | C37834-2 | **Date Sampled:** | 12/30/14 |
| **Matrix:** | SO - Soil | **Date Received:** | 12/31/14 |
| | | **Percent Solids:** | 80.7 |
| **Project:** | Alameda Cross Trail Phase II | | |

**General Chemistry**

| Analyte | Result | RL | Units | DF | Analyzed | By | Method |
|---|---|---|---|---|---|---|---|
| Moisture, Percent | 19.3 | | % | 1 | 01/02/15 13:00 | TN | SM2540MOD G-97 |

RL = Reporting Limit

# Report of Analysis





**Client Sample ID:** CAT-B-7-4
**Lab Sample ID:** C37834-3
**Matrix:** SO - Soil
**Method:** SW846 8270C BY SIM SW846 3550B
**Project:** Alameda Cross Trail Phase II

**Date Sampled:** 12/30/14
**Date Received:** 12/31/14
**Percent Solids:** 87.5

| | File ID | DF | Analyzed | By | Prep Date | Prep Batch | Analytical Batch |
|---|---|---|---|---|---|---|---|
| Run #1 | X41458.D | 1 | 01/05/15 | BJ | 01/05/15 | OP11471 | EX1771 |
| Run #2 | | | | | | | |

| | Initial Weight | Final Volume |
|---|---|---|
| Run #1 | 30.0 g | 1.0 ml |
| Run #2 | | |

**BN PAH List**

| CAS No. | Compound | Result | RL | MDL | Units | Q |
|---|---|---|---|---|---|---|
| 83-32-9 | Acenaphthene | ND | 19 | 1.9 | ug/kg | |
| 208-96-8 | Acenaphthylene | ND | 19 | 1.9 | ug/kg | |
| 120-12-7 | Anthracene | ND | 19 | 1.9 | ug/kg | |
| 56-55-3 | Benzo(a)anthracene | 5.9 | 3.8 | 0.95 | ug/kg | |
| 50-32-8 | Benzo(a)pyrene | 9.8 | 3.8 | 0.65 | ug/kg | |
| 205-99-2 | Benzo(b)fluoranthene | 9.1 | 3.8 | 0.76 | ug/kg | |
| 191-24-2 | Benzo(g,h,i)perylene | 11.5 | 3.8 | 0.84 | ug/kg | |
| 207-08-9 | Benzo(k)fluoranthene | 5.8 | 3.8 | 0.88 | ug/kg | |
| 218-01-9 | Chrysene | 8.5 | 3.8 | 0.76 | ug/kg | |
| 53-70-3 | Dibenzo(a,h)anthracene | 1.7 | 3.8 | 1.1 | ug/kg | J |
| 206-44-0 | Fluoranthene | 12.9 | 19 | 1.9 | ug/kg | J |
| 86-73-7 | Fluorene | ND | 19 | 1.9 | ug/kg | |
| 193-39-5 | Indeno(1,2,3-cd)pyrene | 9.7 | 3.8 | 0.95 | ug/kg | |
| 90-12-0 | 1-Methylnaphthalene | ND | 19 | 3.8 | ug/kg | |
| 91-57-6 | 2-Methylnaphthalene | ND | 19 | 3.8 | ug/kg | |
| 91-20-3 | Naphthalene | ND | 19 | 3.8 | ug/kg | |
| 85-01-8 | Phenanthrene | 4.9 | 19 | 1.9 | ug/kg | J |
| 129-00-0 | Pyrene | 18.9 | 19 | 1.9 | ug/kg | J |

| CAS No. | Surrogate Recoveries | Run# 1 | Run# 2 | Limits |
|---|---|---|---|---|
| 4165-60-0 | Nitrobenzene-d5 | 89% | | 32-128% |
| 321-60-8 | 2-Fluorobiphenyl | 89% | | 48-122% |
| 1718-51-0 | Terphenyl-d14 | 103% | | 48-148% |

ND = Not detected MDL = Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

# Report of Analysis





**Client Sample ID:** CAT-B-7-4
**Lab Sample ID:** C37834-3
**Matrix:** SO - Soil
**Method:** SW846 8151A SW846 3546
**Project:** Alameda Cross Trail Phase II

**Date Sampled:** 12/30/14
**Date Received:** 12/31/14
**Percent Solids:** 87.5

| | File ID | DF | Analyzed | By | Prep Date | Prep Batch | Analytical Batch |
|---|---|---|---|---|---|---|---|
| Run #1 [a] | CC046788.D | 1 | 01/06/15 | AFL | 01/05/15 | F:OP54497 | F:GCC777 |
| Run #2 | | | | | | | |

| | Initial Weight | Final Volume |
|---|---|---|
| Run #1 | 15.0 g | 5.0 ml |
| Run #2 | | |

| CAS No. | Compound | Result | RL | MDL | Units | Q |
|---|---|---|---|---|---|---|
| 94-75-7 | 2,4-D | ND | 38 | 6.5 | ug/kg | |
| 93-72-1 | 2,4,5-TP (Silvex) | ND | 3.8 | 1.0 | ug/kg | |
| 93-76-5 | 2,4,5-T | ND | 3.8 | 0.77 | ug/kg | |
| 1918-00-9 | Dicamba | ND | 3.8 | 1.3 | ug/kg | |
| 88-85-7 | Dinoseb | ND | 95 | 19 | ug/kg | |
| 75-99-0 | Dalapon | ND | 190 | 38 | ug/kg | |
| 120-36-5 | Dichloroprop | ND | 38 | 14 | ug/kg | |
| 94-82-6 | 2,4-DB | ND | 38 | 14 | ug/kg | |
| 93-65-2 | MCPP | ND | 3800 | 1000 | ug/kg | |
| 94-74-6 | MCPA | ND | 3800 | 910 | ug/kg | |
| 87-86-5 | Pentachlorophenol | ND | 3.8 | 0.58 | ug/kg | |

| CAS No. | Surrogate Recoveries | Run# 1 | Run# 2 | Limits |
|---|---|---|---|---|
| 19719-28-9 | 2,4-DCAA | 80% [b] | | 31-132% |

(a) Analysis performed at Accutest Laboratories, Orlando FL.
(b) Surrogate recoveries corrected for actual spike amount.

ND = Not detected MDL = Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

# Report of Analysis





| | | | |
|---|---|---|---|
| **Client Sample ID:** | CAT-B-7-4 | | |
| **Lab Sample ID:** | C37834-3 | **Date Sampled:** | 12/30/14 |
| **Matrix:** | SO - Soil | **Date Received:** | 12/31/14 |
| **Method:** | SW846 8015B M SW846 3550B | **Percent Solids:** | 87.5 |
| **Project:** | Alameda Cross Trail Phase II | | |

| | File ID | DF | Analyzed | By | Prep Date | Prep Batch | Analytical Batch |
|---|---|---|---|---|---|---|---|
| Run #1 | HH319832.D | 1 | 01/03/15 | AG | 01/02/15 | OP11469 | GHH1430 |
| Run #2 | | | | | | | |

| | Initial Weight | Final Volume |
|---|---|---|
| Run #1 | 30.1 g | 1.0 ml |
| Run #2 | | |

**TPH Extractable w/ Silica Gel Cleanup**

| CAS No. | Compound | Result | RL | MDL | Units | Q |
|---|---|---|---|---|---|---|
| | TPH (Diesel) [a] | 8.49 | 3.8 | 1.9 | mg/kg | |
| | TPH (Motor Oil) | 19.9 | 7.6 | 3.8 | mg/kg | |
| | TPH (Mineral Spirits) | ND | 3.8 | 1.9 | mg/kg | |
| | TPH (Kerosene) | ND | 3.8 | 1.9 | mg/kg | |

| CAS No. | Surrogate Recoveries | Run# 1 | Run# 2 | Limits |
|---|---|---|---|---|
| 630-01-3 | Hexacosane | 85% | | 37-122% |

(a) Atypical Diesel pattern (C12-C28); heavier hydrocarbons contributing to quantitation.

ND = Not detected MDL = Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range

J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

# Report of Analysis





| | | | |
|---|---|---|---|
| **Client Sample ID:** | CAT-B-7-4 | | |
| **Lab Sample ID:** | C37834-3 | **Date Sampled:** | 12/30/14 |
| **Matrix:** | SO - Soil | **Date Received:** | 12/31/14 |
| | | **Percent Solids:** | 87.5 |
| **Project:** | Alameda Cross Trail Phase II | | |

**Metals Analysis**

| Analyte | Result | RL | Units | DF | Prep | Analyzed | By | Method | Prep Method |
|---|---|---|---|---|---|---|---|---|---|
| Arsenic | 5.1 | 0.25 | mg/kg | 5 | 01/07/15 | 01/08/15 | RS | SW846 6020 [1] | SW846 3050B [2] |
| Lead | 92.9 | 0.25 | mg/kg | 5 | 01/07/15 | 01/08/15 | RS | SW846 6020 [1] | SW846 3050B [2] |

(1) Instrument QC Batch: MA4523
(2) Prep QC Batch: MP8944

RL = Reporting Limit

# Report of Analysis





| | | | |
|---|---|---|---|
| **Client Sample ID:** | CAT-B-7-4 | | |
| **Lab Sample ID:** | C37834-3 | **Date Sampled:** | 12/30/14 |
| **Matrix:** | SO - Soil | **Date Received:** | 12/31/14 |
| | | **Percent Solids:** | 87.5 |
| **Project:** | Alameda Cross Trail Phase II | | |

**General Chemistry**

| Analyte | Result | RL | Units | DF | Analyzed | By | Method |
|---|---|---|---|---|---|---|---|
| Moisture, Percent | 12.5 | | % | 1 | 01/02/15 13:00 | TN | SM2540MOD G-97 |

RL = Reporting Limit

# Report of Analysis





| | | | |
|---|---|---|---|
| **Client Sample ID:** | CAT-B-7-1 | | |
| **Lab Sample ID:** | C37834-4 | **Date Sampled:** | 12/30/14 |
| **Matrix:** | SO - Soil | **Date Received:** | 12/31/14 |
| **Method:** | SW846 8270C BY SIM SW846 3550B | **Percent Solids:** | 79.2 |
| **Project:** | Alameda Cross Trail Phase II | | |

| | File ID | DF | Analyzed | By | Prep Date | Prep Batch | Analytical Batch |
|---|---|---|---|---|---|---|---|
| Run #1 | X41459.D | 1 | 01/05/15 | BJ | 01/05/15 | OP11471 | EX1771 |
| Run #2 | | | | | | | |

| | Initial Weight | Final Volume |
|---|---|---|
| Run #1 | 30.0 g | 1.0 ml |
| Run #2 | | |

**BN PAH List**

| CAS No. | Compound | Result | RL | MDL | Units | Q |
|---|---|---|---|---|---|---|
| 83-32-9 | Acenaphthene | ND | 21 | 2.1 | ug/kg | |
| 208-96-8 | Acenaphthylene | 2.4 | 21 | 2.1 | ug/kg | J |
| 120-12-7 | Anthracene | 2.7 | 21 | 2.1 | ug/kg | J |
| 56-55-3 | Benzo(a)anthracene | 49.2 | 4.2 | 1.1 | ug/kg | |
| 50-32-8 | Benzo(a)pyrene | 119 | 4.2 | 0.71 | ug/kg | |
| 205-99-2 | Benzo(b)fluoranthene | 105 | 4.2 | 0.84 | ug/kg | |
| 191-24-2 | Benzo(g,h,i)perylene | 146 | 4.2 | 0.93 | ug/kg | |
| 207-08-9 | Benzo(k)fluoranthene | 55.8 | 4.2 | 0.97 | ug/kg | |
| 218-01-9 | Chrysene | 69.4 | 4.2 | 0.84 | ug/kg | |
| 53-70-3 | Dibenzo(a,h)anthracene | 11.6 | 4.2 | 1.2 | ug/kg | |
| 206-44-0 | Fluoranthene | 133 | 21 | 2.1 | ug/kg | |
| 86-73-7 | Fluorene | ND | 21 | 2.1 | ug/kg | |
| 193-39-5 | Indeno(1,2,3-cd)pyrene | 123 | 4.2 | 1.1 | ug/kg | |
| 90-12-0 | 1-Methylnaphthalene | ND | 21 | 4.2 | ug/kg | |
| 91-57-6 | 2-Methylnaphthalene | ND | 21 | 4.2 | ug/kg | |
| 91-20-3 | Naphthalene | ND | 21 | 4.2 | ug/kg | |
| 85-01-8 | Phenanthrene | 25.0 | 21 | 2.1 | ug/kg | |
| 129-00-0 | Pyrene | 192 | 21 | 2.1 | ug/kg | |

| CAS No. | Surrogate Recoveries | Run# 1 | Run# 2 | Limits |
|---|---|---|---|---|
| 4165-60-0 | Nitrobenzene-d5 | 99% | | 32-128% |
| 321-60-8 | 2-Fluorobiphenyl | 95% | | 48-122% |
| 1718-51-0 | Terphenyl-d14 | 110% | | 48-148% |

ND = Not detected MDL = Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

# Report of Analysis



**Client Sample ID:** CAT-B-7-1
**Lab Sample ID:** C37834-4
**Matrix:** SO - Soil
**Method:** SW846 8151A SW846 3546
**Project:** Alameda Cross Trail Phase II

**Date Sampled:** 12/30/14
**Date Received:** 12/31/14
**Percent Solids:** 79.2

| | File ID | DF | Analyzed | By | Prep Date | Prep Batch | Analytical Batch |
|---|---|---|---|---|---|---|---|
| Run #1 [a] | CC046791.D | 1 | 01/06/15 | AFL | 01/05/15 | F:OP54497 | F:GCC777 |
| Run #2 | | | | | | | |

| | Initial Weight | Final Volume |
|---|---|---|
| Run #1 | 15.5 g | 5.0 ml |
| Run #2 | | |

| CAS No. | Compound | Result | RL | MDL | Units | Q |
|---|---|---|---|---|---|---|
| 94-75-7 | 2,4-D | ND | 41 | 6.9 | ug/kg | |
| 93-72-1 | 2,4,5-TP (Silvex) | ND | 4.1 | 1.1 | ug/kg | |
| 93-76-5 | 2,4,5-T | ND | 4.1 | 0.82 | ug/kg | |
| 1918-00-9 | Dicamba | ND | 4.1 | 1.4 | ug/kg | |
| 88-85-7 | Dinoseb | ND | 100 | 20 | ug/kg | |
| 75-99-0 | Dalapon | ND | 200 | 41 | ug/kg | |
| 120-36-5 | Dichloroprop | ND | 41 | 15 | ug/kg | |
| 94-82-6 | 2,4-DB | ND | 41 | 15 | ug/kg | |
| 93-65-2 | MCPP | ND | 4100 | 1100 | ug/kg | |
| 94-74-6 | MCPA | ND | 4100 | 980 | ug/kg | |
| 87-86-5 | Pentachlorophenol | ND | 4.1 | 0.62 | ug/kg | |

| CAS No. | Surrogate Recoveries | Run# 1 | Run# 2 | Limits |
|---|---|---|---|---|
| 19719-28-9 | 2,4-DCAA | 70% [b] | | 31-132% |

(a) Analysis performed at Accutest Laboratories, Orlando FL.
(b) Surrogate recoveries corrected for actual spike amount.

ND = Not detected MDL = Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

# Report of Analysis



| | | | |
|---|---|---|---|
| **Client Sample ID:** | CAT-B-7-1 | | |
| **Lab Sample ID:** | C37834-4 | **Date Sampled:** | 12/30/14 |
| **Matrix:** | SO - Soil | **Date Received:** | 12/31/14 |
| **Method:** | SW846 8015B M SW846 3550B | **Percent Solids:** | 79.2 |
| **Project:** | Alameda Cross Trail Phase II | | |

| | File ID | DF | Analyzed | By | Prep Date | Prep Batch | Analytical Batch |
|---|---|---|---|---|---|---|---|
| Run #1 | HH319833.D | 1 | 01/03/15 | AG | 01/02/15 | OP11469 | GHH1430 |
| Run #2 | | | | | | | |

| | Initial Weight | Final Volume |
|---|---|---|
| Run #1 | 30.0 g | 1.0 ml |
| Run #2 | | |

**TPH Extractable w/ Silica Gel Cleanup**

| CAS No. | Compound | Result | RL | MDL | Units | Q |
|---|---|---|---|---|---|---|
| | TPH (Diesel) [a] | 6.52 | 4.2 | 2.1 | mg/kg | |
| | TPH (Motor Oil) | 16.0 | 8.4 | 4.2 | mg/kg | |
| | TPH (Mineral Spirits) | ND | 4.2 | 2.1 | mg/kg | |
| | TPH (Kerosene) | ND | 4.2 | 2.1 | mg/kg | |

| CAS No. | Surrogate Recoveries | Run# 1 | Run# 2 | Limits |
|---|---|---|---|---|
| 630-01-3 | Hexacosane | 94% | | 37-122% |

(a) Atypical Diesel pattern (C12-C28); heavier hydrocarbons contributing to quantitation.

ND = Not detected MDL = Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range

J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

# Report of Analysis



| | | | |
|---|---|---|---|
| **Client Sample ID:** | CAT-B-7-1 | | |
| **Lab Sample ID:** | C37834-4 | **Date Sampled:** | 12/30/14 |
| **Matrix:** | SO - Soil | **Date Received:** | 12/31/14 |
| | | **Percent Solids:** | 79.2 |
| **Project:** | Alameda Cross Trail Phase II | | |

**Metals Analysis**

| Analyte | Result | RL | Units | DF | Prep | Analyzed | By | Method | Prep Method |
|---|---|---|---|---|---|---|---|---|---|
| Arsenic | 4.3 | 0.27 | mg/kg | 5 | 01/07/15 | 01/08/15 | RS | SW846 6020 [1] | SW846 3050B [2] |
| Lead | 22.0 | 0.27 | mg/kg | 5 | 01/07/15 | 01/08/15 | RS | SW846 6020 [1] | SW846 3050B [2] |

(1) Instrument QC Batch: MA4523
(2) Prep QC Batch: MP8944

RL = Reporting Limit

Accutest Laboratories

# Report of Analysis



| | | | |
|---|---|---|---|
| **Client Sample ID:** | CAT-B-7-1 | | |
| **Lab Sample ID:** | C37834-4 | **Date Sampled:** | 12/30/14 |
| **Matrix:** | SO - Soil | **Date Received:** | 12/31/14 |
| | | **Percent Solids:** | 79.2 |
| **Project:** | Alameda Cross Trail Phase II | | |

**General Chemistry**

| Analyte | Result | RL | Units | DF | Analyzed | By | Method |
|---|---|---|---|---|---|---|---|
| Moisture, Percent | 20.8 | | % | 1 | 01/02/15 13:00 | TN | SM2540MOD G-97 |

RL = Reporting Limit

# Report of Analysis





| | | | |
|---|---|---|---|
| **Client Sample ID:** | CAT-B-9-1 | | |
| **Lab Sample ID:** | C37834-5 | **Date Sampled:** | 12/30/14 |
| **Matrix:** | SO - Soil | **Date Received:** | 12/31/14 |
| **Method:** | SW846 8270C BY SIM SW846 3550B | **Percent Solids:** | 76.2 |
| **Project:** | Alameda Cross Trail Phase II | | |

| | File ID | DF | Analyzed | By | Prep Date | Prep Batch | Analytical Batch |
|---|---|---|---|---|---|---|---|
| Run #1 [a] | T17365.D | 4 | 01/03/15 | MT | 01/02/15 | OP11467 | ET768 |
| Run #2 | | | | | | | |

| | Initial Weight | Final Volume |
|---|---|---|
| Run #1 | 30.6 g | 1.0 ml |
| Run #2 | | |

**BN PAH List**

| CAS No. | Compound | Result | RL | MDL | Units | Q |
|---|---|---|---|---|---|---|
| 83-32-9 | Acenaphthene | ND | 86 | 8.6 | ug/kg | |
| 208-96-8 | Acenaphthylene | ND | 86 | 8.6 | ug/kg | |
| 120-12-7 | Anthracene | ND | 86 | 8.6 | ug/kg | |
| 56-55-3 | Benzo(a)anthracene | 59.3 | 17 | 4.3 | ug/kg | |
| 50-32-8 | Benzo(a)pyrene | 121 | 17 | 2.9 | ug/kg | |
| 205-99-2 | Benzo(b)fluoranthene | 123 | 17 | 3.4 | ug/kg | |
| 191-24-2 | Benzo(g,h,i)perylene | 145 | 17 | 3.8 | ug/kg | |
| 207-08-9 | Benzo(k)fluoranthene | 54.3 | 17 | 4.0 | ug/kg | |
| 218-01-9 | Chrysene | 86.2 | 17 | 3.4 | ug/kg | |
| 53-70-3 | Dibenzo(a,h)anthracene | 16.0 | 17 | 4.8 | ug/kg | J |
| 206-44-0 | Fluoranthene | 163 | 86 | 8.6 | ug/kg | |
| 86-73-7 | Fluorene | ND | 86 | 8.6 | ug/kg | |
| 193-39-5 | Indeno(1,2,3-cd)pyrene | 153 | 17 | 4.3 | ug/kg | |
| 90-12-0 | 1-Methylnaphthalene | ND | 86 | 17 | ug/kg | |
| 91-57-6 | 2-Methylnaphthalene | ND | 86 | 17 | ug/kg | |
| 91-20-3 | Naphthalene | ND | 86 | 17 | ug/kg | |
| 85-01-8 | Phenanthrene | 39.9 | 86 | 8.6 | ug/kg | J |
| 129-00-0 | Pyrene | 181 | 86 | 8.6 | ug/kg | |

| CAS No. | Surrogate Recoveries | Run# 1 | Run# 2 | Limits |
|---|---|---|---|---|
| 4165-60-0 | Nitrobenzene-d5 | 115% | | 32-128% |
| 321-60-8 | 2-Fluorobiphenyl | 108% | | 48-122% |
| 1718-51-0 | Terphenyl-d14 | 109% | | 48-148% |

(a) Dilution required due to matrix interference (dark and viscous extract; high concentration of non-target hydrocarbons).

ND = Not detected MDL = Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

# Report of Analysis





**Client Sample ID:** CAT-B-9-1
**Lab Sample ID:** C37834-5
**Matrix:** SO - Soil
**Method:** SW846 8151A SW846 3546
**Project:** Alameda Cross Trail Phase II

**Date Sampled:** 12/30/14
**Date Received:** 12/31/14
**Percent Solids:** 76.2

| | File ID | DF | Analyzed | By | Prep Date | Prep Batch | Analytical Batch |
|---|---|---|---|---|---|---|---|
| Run #1 [a] | CC046792.D | 1 | 01/06/15 | AFL | 01/05/15 | F:OP54497 | F:GCC777 |
| Run #2 | | | | | | | |

| | Initial Weight | Final Volume |
|---|---|---|
| Run #1 | 15.5 g | 5.0 ml |
| Run #2 | | |

| CAS No. | Compound | Result | RL | MDL | Units | Q |
|---|---|---|---|---|---|---|
| 94-75-7 | 2,4-D | ND | 42 | 7.2 | ug/kg | |
| 93-72-1 | 2,4,5-TP (Silvex) | ND | 4.2 | 1.2 | ug/kg | |
| 93-76-5 | 2,4,5-T | ND | 4.2 | 0.85 | ug/kg | |
| 1918-00-9 | Dicamba | ND | 4.2 | 1.4 | ug/kg | |
| 88-85-7 | Dinoseb | ND | 110 | 21 | ug/kg | |
| 75-99-0 | Dalapon | ND | 210 | 42 | ug/kg | |
| 120-36-5 | Dichloroprop | ND | 42 | 16 | ug/kg | |
| 94-82-6 | 2,4-DB | ND | 42 | 16 | ug/kg | |
| 93-65-2 | MCPP | ND | 4200 | 1100 | ug/kg | |
| 94-74-6 | MCPA | ND | 4200 | 1000 | ug/kg | |
| 87-86-5 | Pentachlorophenol | ND | 4.2 | 0.65 | ug/kg | |

| CAS No. | Surrogate Recoveries | Run# 1 | Run# 2 | Limits |
|---|---|---|---|---|
| 19719-28-9 | 2,4-DCAA | 60% [b] | | 31-132% |

(a) Analysis performed at Accutest Laboratories, Orlando FL.
(b) Surrogate recoveries corrected for actual spike amount.

ND = Not detected MDL = Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

# Report of Analysis





| | | | |
|---|---|---|---|
| **Client Sample ID:** | CAT-B-9-1 | | |
| **Lab Sample ID:** | C37834-5 | **Date Sampled:** | 12/30/14 |
| **Matrix:** | SO - Soil | **Date Received:** | 12/31/14 |
| **Method:** | SW846 8015B M SW846 3550B | **Percent Solids:** | 76.2 |
| **Project:** | Alameda Cross Trail Phase II | | |

| | File ID | DF | Analyzed | By | Prep Date | Prep Batch | Analytical Batch |
|---|---|---|---|---|---|---|---|
| Run #1 | HH319834.D | 1 | 01/03/15 | AG | 01/02/15 | OP11469 | GHH1430 |
| Run #2 | | | | | | | |

| | Initial Weight | Final Volume |
|---|---|---|
| Run #1 | 30.2 g | 1.0 ml |
| Run #2 | | |

**TPH Extractable w/ Silica Gel Cleanup**

| CAS No. | Compound | Result | RL | MDL | Units | Q |
|---|---|---|---|---|---|---|
| | TPH (Diesel) [a] | 6.39 | 4.4 | 2.2 | mg/kg | |
| | TPH (Motor Oil) | 30.3 | 8.7 | 4.4 | mg/kg | |
| | TPH (Mineral Spirits) | ND | 4.4 | 2.2 | mg/kg | |
| | TPH (Kerosene) | ND | 4.4 | 2.2 | mg/kg | |

| CAS No. | Surrogate Recoveries | Run# 1 | Run# 2 | Limits |
|---|---|---|---|---|
| 630-01-3 | Hexacosane | 93% | | 37-122% |

(a) Atypical Diesel pattern (C12-C28); heavier hydrocarbons contributing to quantitation.

ND = Not detected MDL = Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range

J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

# Report of Analysis





| | | | |
|---|---|---|---|
| **Client Sample ID:** | CAT-B-9-1 | | |
| **Lab Sample ID:** | C37834-5 | **Date Sampled:** | 12/30/14 |
| **Matrix:** | SO - Soil | **Date Received:** | 12/31/14 |
| | | **Percent Solids:** | 76.2 |
| **Project:** | Alameda Cross Trail Phase II | | |

**Metals Analysis**

| Analyte | Result | RL | Units | DF | Prep | Analyzed | By | Method | Prep Method |
|---|---|---|---|---|---|---|---|---|---|
| Arsenic | 7.8 | 0.27 | mg/kg | 5 | 01/07/15 | 01/08/15 | RS | SW846 6020 [1] | SW846 3050B [2] |
| Lead | 54.6 | 0.27 | mg/kg | 5 | 01/07/15 | 01/08/15 | RS | SW846 6020 [1] | SW846 3050B [2] |

(1) Instrument QC Batch: MA4523
(2) Prep QC Batch: MP8944

RL = Reporting Limit

# Report of Analysis





| | | | |
|---|---|---|---|
| **Client Sample ID:** | CAT-B-9-1 | | |
| **Lab Sample ID:** | C37834-5 | **Date Sampled:** | 12/30/14 |
| **Matrix:** | SO - Soil | **Date Received:** | 12/31/14 |
| | | **Percent Solids:** | 76.2 |
| **Project:** | Alameda Cross Trail Phase II | | |

**General Chemistry**

| Analyte | Result | RL | Units | DF | Analyzed | By | Method |
|---|---|---|---|---|---|---|---|
| Moisture, Percent | 23.8 | | % | 1 | 01/02/15 13:00 | TN | SM2540MOD G-97 |

RL = Reporting Limit

# Report of Analysis





**Client Sample ID:** CAT-B-9-6
**Lab Sample ID:** C37834-6
**Matrix:** SO - Soil
**Method:** SW846 8270C BY SIM SW846 3550B
**Project:** Alameda Cross Trail Phase II

**Date Sampled:** 12/30/14
**Date Received:** 12/31/14
**Percent Solids:** 80.9

| | File ID | DF | Analyzed | By | Prep Date | Prep Batch | Analytical Batch |
|---|---|---|---|---|---|---|---|
| Run #1 | T17359.D | 1 | 01/03/15 | MT | 01/02/15 | OP11467 | ET768 |
| Run #2 | | | | | | | |

| | Initial Weight | Final Volume |
|---|---|---|
| Run #1 | 30.2 g | 1.0 ml |
| Run #2 | | |

**BN PAH List**

| CAS No. | Compound | Result | RL | MDL | Units | Q |
|---|---|---|---|---|---|---|
| 83-32-9 | Acenaphthene | ND | 20 | 2.0 | ug/kg | |
| 208-96-8 | Acenaphthylene | ND | 20 | 2.0 | ug/kg | |
| 120-12-7 | Anthracene | ND | 20 | 2.0 | ug/kg | |
| 56-55-3 | Benzo(a)anthracene | 1.4 | 4.1 | 1.0 | ug/kg | J |
| 50-32-8 | Benzo(a)pyrene | 1.3 | 4.1 | 0.70 | ug/kg | J |
| 205-99-2 | Benzo(b)fluoranthene | 1.2 | 4.1 | 0.82 | ug/kg | J |
| 191-24-2 | Benzo(g,h,i)perylene | 0.95 | 4.1 | 0.90 | ug/kg | J |
| 207-08-9 | Benzo(k)fluoranthene | ND | 4.1 | 0.94 | ug/kg | |
| 218-01-9 | Chrysene | 1.2 | 4.1 | 0.82 | ug/kg | J |
| 53-70-3 | Dibenzo(a,h)anthracene | ND | 4.1 | 1.1 | ug/kg | |
| 206-44-0 | Fluoranthene | ND | 20 | 2.0 | ug/kg | |
| 86-73-7 | Fluorene | ND | 20 | 2.0 | ug/kg | |
| 193-39-5 | Indeno(1,2,3-cd)pyrene | 1.3 | 4.1 | 1.0 | ug/kg | J |
| 90-12-0 | 1-Methylnaphthalene | ND | 20 | 4.1 | ug/kg | |
| 91-57-6 | 2-Methylnaphthalene | ND | 20 | 4.1 | ug/kg | |
| 91-20-3 | Naphthalene | ND | 20 | 4.1 | ug/kg | |
| 85-01-8 | Phenanthrene | ND | 20 | 2.0 | ug/kg | |
| 129-00-0 | Pyrene | ND | 20 | 2.0 | ug/kg | |

| CAS No. | Surrogate Recoveries | Run# 1 | Run# 2 | Limits |
|---|---|---|---|---|
| 4165-60-0 | Nitrobenzene-d5 | 96% | | 32-128% |
| 321-60-8 | 2-Fluorobiphenyl | 94% | | 48-122% |
| 1718-51-0 | Terphenyl-d14 | 99% | | 48-148% |

ND = Not detected MDL = Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

# Report of Analysis





**Client Sample ID:** CAT-B-9-6
**Lab Sample ID:** C37834-6
**Matrix:** SO - Soil
**Method:** SW846 8151A SW846 3546
**Project:** Alameda Cross Trail Phase II

**Date Sampled:** 12/30/14
**Date Received:** 12/31/14
**Percent Solids:** 80.9

| | File ID | DF | Analyzed | By | Prep Date | Prep Batch | Analytical Batch |
|---|---|---|---|---|---|---|---|
| Run #1 [a] | CC046793.D | 1 | 01/06/15 | AFL | 01/05/15 | F:OP54497 | F:GCC777 |
| Run #2 | | | | | | | |

| | Initial Weight | Final Volume |
|---|---|---|
| Run #1 | 15.2 g | 5.0 ml |
| Run #2 | | |

| CAS No. | Compound | Result | RL | MDL | Units | Q |
|---|---|---|---|---|---|---|
| 94-75-7 | 2,4-D | ND | 41 | 6.9 | ug/kg | |
| 93-72-1 | 2,4,5-TP (Silvex) | ND | 4.1 | 1.1 | ug/kg | |
| 93-76-5 | 2,4,5-T | ND | 4.1 | 0.82 | ug/kg | |
| 1918-00-9 | Dicamba | ND | 4.1 | 1.4 | ug/kg | |
| 88-85-7 | Dinoseb | ND | 100 | 20 | ug/kg | |
| 75-99-0 | Dalapon | ND | 200 | 41 | ug/kg | |
| 120-36-5 | Dichloroprop | ND | 41 | 15 | ug/kg | |
| 94-82-6 | 2,4-DB | ND | 41 | 15 | ug/kg | |
| 93-65-2 | MCPP | ND | 4100 | 1100 | ug/kg | |
| 94-74-6 | MCPA | ND | 4100 | 980 | ug/kg | |
| 87-86-5 | Pentachlorophenol | ND | 4.1 | 0.62 | ug/kg | |

| CAS No. | Surrogate Recoveries | Run# 1 | Run# 2 | Limits |
|---|---|---|---|---|
| 19719-28-9 | 2,4-DCAA | 110% [b] | | 31-132% |

(a) Analysis performed at Accutest Laboratories, Orlando FL.
(b) Surrogate recoveries corrected for actual spike amount.

ND = Not detected MDL = Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

# Report of Analysis





| | | | |
|---|---|---|---|
| **Client Sample ID:** | CAT-B-9-6 | | |
| **Lab Sample ID:** | C37834-6 | **Date Sampled:** | 12/30/14 |
| **Matrix:** | SO - Soil | **Date Received:** | 12/31/14 |
| **Method:** | SW846 8015B M SW846 3550B | **Percent Solids:** | 80.9 |
| **Project:** | Alameda Cross Trail Phase II | | |

| | File ID | DF | Analyzed | By | Prep Date | Prep Batch | Analytical Batch |
|---|---|---|---|---|---|---|---|
| Run #1 | HH319835.D | 1 | 01/03/15 | AG | 01/02/15 | OP11469 | GHH1430 |
| Run #2 | | | | | | | |

| | Initial Weight | Final Volume |
|---|---|---|
| Run #1 | 30.1 g | 1.0 ml |
| Run #2 | | |

**TPH Extractable w/ Silica Gel Cleanup**

| CAS No. | Compound | Result | RL | MDL | Units | Q |
|---|---|---|---|---|---|---|
| | TPH (Diesel) | ND | 4.1 | 2.1 | mg/kg | |
| | TPH (Motor Oil) | ND | 8.2 | 4.1 | mg/kg | |
| | TPH (Mineral Spirits) | ND | 4.1 | 2.1 | mg/kg | |
| | TPH (Kerosene) | ND | 4.1 | 2.1 | mg/kg | |

| CAS No. | Surrogate Recoveries | Run# 1 | Run# 2 | Limits |
|---|---|---|---|---|
| 630-01-3 | Hexacosane | 93% | | 37-122% |

ND = Not detected MDL = Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range

J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

# Report of Analysis





| | | | |
|---|---|---|---|
| **Client Sample ID:** | CAT-B-9-6 | | |
| **Lab Sample ID:** | C37834-6 | **Date Sampled:** | 12/30/14 |
| **Matrix:** | SO - Soil | **Date Received:** | 12/31/14 |
| | | **Percent Solids:** | 80.9 |
| **Project:** | Alameda Cross Trail Phase II | | |

**Metals Analysis**

| Analyte | Result | RL | Units | DF | Prep | Analyzed | By | Method | Prep Method |
|---|---|---|---|---|---|---|---|---|---|
| Arsenic | 4.9 | 0.26 | mg/kg | 5 | 01/07/15 | 01/08/15 | RS | SW846 6020 [1] | SW846 3050B [2] |
| Lead | 6.9 | 0.26 | mg/kg | 5 | 01/07/15 | 01/08/15 | RS | SW846 6020 [1] | SW846 3050B [2] |

(1) Instrument QC Batch: MA4523
(2) Prep QC Batch: MP8944

RL = Reporting Limit

# Report of Analysis





| | | | |
|---|---|---|---|
| **Client Sample ID:** | CAT-B-9-6 | | |
| **Lab Sample ID:** | C37834-6 | **Date Sampled:** | 12/30/14 |
| **Matrix:** | SO - Soil | **Date Received:** | 12/31/14 |
| | | **Percent Solids:** | 80.9 |
| **Project:** | Alameda Cross Trail Phase II | | |

**General Chemistry**

| Analyte | Result | RL | Units | DF | Analyzed | By | Method |
|---|---|---|---|---|---|---|---|
| Moisture, Percent | 19.1 | | % | 1 | 01/02/15 13:00 | TN | SM2540MOD G-97 |

RL = Reporting Limit

# Report of Analysis





**Client Sample ID:** CAT-B-10-5
**Lab Sample ID:** C37834-7
**Matrix:** SO - Soil
**Method:** SW846 8270C BY SIM SW846 3550B
**Project:** Alameda Cross Trail Phase II

**Date Sampled:** 12/30/14
**Date Received:** 12/31/14
**Percent Solids:** 80.2

| | File ID | DF | Analyzed | By | Prep Date | Prep Batch | Analytical Batch |
|---|---|---|---|---|---|---|---|
| Run #1 | T17360.D | 1 | 01/03/15 | MT | 01/02/15 | OP11467 | ET768 |
| Run #2 | | | | | | | |

| | Initial Weight | Final Volume |
|---|---|---|
| Run #1 | 30.2 g | 1.0 ml |
| Run #2 | | |

**BN PAH List**

| CAS No. | Compound | Result | RL | MDL | Units | Q |
|---|---|---|---|---|---|---|
| 83-32-9 | Acenaphthene | ND | 21 | 2.1 | ug/kg | |
| 208-96-8 | Acenaphthylene | ND | 21 | 2.1 | ug/kg | |
| 120-12-7 | Anthracene | ND | 21 | 2.1 | ug/kg | |
| 56-55-3 | Benzo(a)anthracene | ND | 4.1 | 1.0 | ug/kg | |
| 50-32-8 | Benzo(a)pyrene | ND | 4.1 | 0.70 | ug/kg | |
| 205-99-2 | Benzo(b)fluoranthene | ND | 4.1 | 0.83 | ug/kg | |
| 191-24-2 | Benzo(g,h,i)perylene | ND | 4.1 | 0.91 | ug/kg | |
| 207-08-9 | Benzo(k)fluoranthene | ND | 4.1 | 0.95 | ug/kg | |
| 218-01-9 | Chrysene | ND | 4.1 | 0.83 | ug/kg | |
| 53-70-3 | Dibenzo(a,h)anthracene | ND | 4.1 | 1.2 | ug/kg | |
| 206-44-0 | Fluoranthene | ND | 21 | 2.1 | ug/kg | |
| 86-73-7 | Fluorene | ND | 21 | 2.1 | ug/kg | |
| 193-39-5 | Indeno(1,2,3-cd)pyrene | ND | 4.1 | 1.0 | ug/kg | |
| 90-12-0 | 1-Methylnaphthalene | ND | 21 | 4.1 | ug/kg | |
| 91-57-6 | 2-Methylnaphthalene | ND | 21 | 4.1 | ug/kg | |
| 91-20-3 | Naphthalene | ND | 21 | 4.1 | ug/kg | |
| 85-01-8 | Phenanthrene | ND | 21 | 2.1 | ug/kg | |
| 129-00-0 | Pyrene | ND | 21 | 2.1 | ug/kg | |

| CAS No. | Surrogate Recoveries | Run# 1 | Run# 2 | Limits |
|---|---|---|---|---|
| 4165-60-0 | Nitrobenzene-d5 | 112% | | 32-128% |
| 321-60-8 | 2-Fluorobiphenyl | 101% | | 48-122% |
| 1718-51-0 | Terphenyl-d14 | 103% | | 48-148% |

ND = Not detected MDL = Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

# Report of Analysis





**Client Sample ID:** CAT-B-10-5
**Lab Sample ID:** C37834-7
**Matrix:** SO - Soil
**Method:** SW846 8151A SW846 3546
**Project:** Alameda Cross Trail Phase II

**Date Sampled:** 12/30/14
**Date Received:** 12/31/14
**Percent Solids:** 80.2

| | File ID | DF | Analyzed | By | Prep Date | Prep Batch | Analytical Batch |
|---|---|---|---|---|---|---|---|
| Run #1 [a] | CC046848.D | 5 | 01/08/15 | AFL | 01/05/15 | F:OP54497 | F:GCC779 |
| Run #2 | | | | | | | |

| | Initial Weight | Final Volume |
|---|---|---|
| Run #1 | 15.0 g | 5.0 ml |
| Run #2 | | |

| CAS No. | Compound | Result | RL | MDL | Units | Q |
|---|---|---|---|---|---|---|
| 94-75-7 | 2,4-D | ND | 210 | 35 | ug/kg | |
| 93-72-1 | 2,4,5-TP (Silvex) | ND | 21 | 5.7 | ug/kg | |
| 93-76-5 | 2,4,5-T | ND | 21 | 4.2 | ug/kg | |
| 1918-00-9 | Dicamba | ND | 21 | 6.9 | ug/kg | |
| 88-85-7 | Dinoseb | ND | 520 | 100 | ug/kg | |
| 75-99-0 | Dalapon | ND | 1000 | 210 | ug/kg | |
| 120-36-5 | Dichloroprop | ND | 210 | 78 | ug/kg | |
| 94-82-6 | 2,4-DB | ND | 210 | 78 | ug/kg | |
| 93-65-2 | MCPP | ND | 21000 | 5500 | ug/kg | |
| 94-74-6 | MCPA | ND | 21000 | 5000 | ug/kg | |
| 87-86-5 | Pentachlorophenol | ND | 21 | 3.2 | ug/kg | |

| CAS No. | Surrogate Recoveries | Run# 1 | Run# 2 | Limits |
|---|---|---|---|---|
| 19719-28-9 | 2,4-DCAA | 60% [b] | | 31-132% |

(a) Dilution required due to matrix interference. Analysis performed at Accutest Laboratories, Orlando FL.
(b) Surrogate recoveries corrected for actual spike amount.

ND = Not detected MDL = Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

# Report of Analysis





| | | | |
|---|---|---|---|
| **Client Sample ID:** | CAT-B-10-5 | | |
| **Lab Sample ID:** | C37834-7 | **Date Sampled:** | 12/30/14 |
| **Matrix:** | SO - Soil | **Date Received:** | 12/31/14 |
| **Method:** | SW846 8015B M SW846 3550B | **Percent Solids:** | 80.2 |
| **Project:** | Alameda Cross Trail Phase II | | |

| | File ID | DF | Analyzed | By | Prep Date | Prep Batch | Analytical Batch |
|---|---|---|---|---|---|---|---|
| Run #1 | HH319853.D | 3 | 01/05/15 | AG | 01/02/15 | OP11469 | GHH1431 |
| Run #2 | | | | | | | |

| | Initial Weight | Final Volume |
|---|---|---|
| Run #1 | 30.2 g | 1.0 ml |
| Run #2 | | |

**TPH Extractable w/ Silica Gel Cleanup**

| CAS No. | Compound | Result | RL | MDL | Units | Q |
|---|---|---|---|---|---|---|
| | TPH (Diesel) [a] | 88.2 | 12 | 6.2 | mg/kg | |
| | TPH (Motor Oil) | 164 | 25 | 12 | mg/kg | |
| | TPH (Mineral Spirits) | ND | 12 | 6.2 | mg/kg | |
| | TPH (Kerosene) | ND | 12 | 6.2 | mg/kg | |

| CAS No. | Surrogate Recoveries | Run# 1 | Run# 2 | Limits |
|---|---|---|---|---|
| 630-01-3 | Hexacosane | 94% | | 37-122% |

(a) Atypical Diesel pattern (C10-C28); heavier hydrocarbons contributing to quantitation.

ND = Not detected MDL = Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range

J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

# Report of Analysis





| | | | |
|---|---|---|---|
| **Client Sample ID:** | CAT-B-10-5 | | |
| **Lab Sample ID:** | C37834-7 | **Date Sampled:** | 12/30/14 |
| **Matrix:** | SO - Soil | **Date Received:** | 12/31/14 |
| | | **Percent Solids:** | 80.2 |
| **Project:** | Alameda Cross Trail Phase II | | |

**Metals Analysis**

| Analyte | Result | RL | Units | DF | Prep | Analyzed | By | Method | Prep Method |
|---|---|---|---|---|---|---|---|---|---|
| Arsenic [a] | 1.4 | 0.58 | mg/kg | 5 | 01/09/15 | 01/12/15 | RS | SW846 6020 [2] | SW846 3050B [4] |
| Lead | 26.0 | 0.26 | mg/kg | 5 | 01/07/15 | 01/08/15 | RS | SW846 6020 [1] | SW846 3050B [3] |

(1) Instrument QC Batch: MA4523
(2) Instrument QC Batch: MA4533
(3) Prep QC Batch: MP8944
(4) Prep QC Batch: MP8965

(a) Elevated RL/MDL due to positive bias of Method Blank.

RL = Reporting Limit

# Report of Analysis





| | | | |
|---|---|---|---|
| **Client Sample ID:** | CAT-B-10-5 | | |
| **Lab Sample ID:** | C37834-7 | **Date Sampled:** | 12/30/14 |
| **Matrix:** | SO - Soil | **Date Received:** | 12/31/14 |
| | | **Percent Solids:** | 80.2 |
| **Project:** | Alameda Cross Trail Phase II | | |

**General Chemistry**

| Analyte | Result | RL | Units | DF | Analyzed | By | Method |
|---|---|---|---|---|---|---|---|
| Moisture, Percent | 19.8 | | % | 1 | 01/02/15 13:00 | TN | SM2540MOD G-97 |

RL = Reporting Limit

# Report of Analysis





| | | | |
|---|---|---|---|
| **Client Sample ID:** | CAT-B | | |
| **Lab Sample ID:** | C37834-8 | **Date Sampled:** | 12/30/14 |
| **Matrix:** | SO - Soil | **Date Received:** | 12/31/14 |
| **Method:** | SW846 8270C BY SIM SW846 3550B | **Percent Solids:** | 81.6 |
| **Project:** | Alameda Cross Trail Phase II | | |

| | File ID | DF | Analyzed | By | Prep Date | Prep Batch | Analytical Batch |
|---|---|---|---|---|---|---|---|
| Run #1 [a] | T17367.D | 10 | 01/03/15 | MT | 01/02/15 | OP11467 | ET768 |
| Run #2 | | | | | | | |

| | Initial Weight | Final Volume |
|---|---|---|
| Run #1 | 30.1 g | 1.0 ml |
| Run #2 | | |

**BN PAH List**

| CAS No. | Compound | Result | RL | MDL | Units | Q |
|---|---|---|---|---|---|---|
| 83-32-9 | Acenaphthene | ND | 200 | 20 | ug/kg | |
| 208-96-8 | Acenaphthylene | ND | 200 | 20 | ug/kg | |
| 120-12-7 | Anthracene | ND | 200 | 20 | ug/kg | |
| 56-55-3 | Benzo(a)anthracene | ND | 41 | 10 | ug/kg | |
| 50-32-8 | Benzo(a)pyrene | 10.4 | 41 | 6.9 | ug/kg | J |
| 205-99-2 | Benzo(b)fluoranthene | 10.5 | 41 | 8.1 | ug/kg | J |
| 191-24-2 | Benzo(g,h,i)perylene | 14.8 | 41 | 9.0 | ug/kg | J |
| 207-08-9 | Benzo(k)fluoranthene | ND | 41 | 9.4 | ug/kg | |
| 218-01-9 | Chrysene | 10.7 | 41 | 8.1 | ug/kg | J |
| 53-70-3 | Dibenzo(a,h)anthracene | ND | 41 | 11 | ug/kg | |
| 206-44-0 | Fluoranthene | ND | 200 | 20 | ug/kg | |
| 86-73-7 | Fluorene | ND | 200 | 20 | ug/kg | |
| 193-39-5 | Indeno(1,2,3-cd)pyrene | 12.0 | 41 | 10 | ug/kg | J |
| 90-12-0 | 1-Methylnaphthalene | ND | 200 | 41 | ug/kg | |
| 91-57-6 | 2-Methylnaphthalene | ND | 200 | 41 | ug/kg | |
| 91-20-3 | Naphthalene | ND | 200 | 41 | ug/kg | |
| 85-01-8 | Phenanthrene | ND | 200 | 20 | ug/kg | |
| 129-00-0 | Pyrene | ND | 200 | 20 | ug/kg | |

| CAS No. | Surrogate Recoveries | Run# 1 | Run# 2 | Limits |
|---|---|---|---|---|
| 4165-60-0 | Nitrobenzene-d5 | 105% | | 32-128% |
| 321-60-8 | 2-Fluorobiphenyl | 110% | | 48-122% |
| 1718-51-0 | Terphenyl-d14 | 101% | | 48-148% |

(a) Dilution required due to matrix interference (dark and viscous extract; high concentration of non-target hydrocarbons).

ND = Not detected MDL = Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

# Report of Analysis





**Client Sample ID:** CAT-B
**Lab Sample ID:** C37834-8
**Matrix:** SO - Soil
**Method:** SW846 8151A SW846 3546
**Project:** Alameda Cross Trail Phase II

**Date Sampled:** 12/30/14
**Date Received:** 12/31/14
**Percent Solids:** 81.6

| | File ID | DF | Analyzed | By | Prep Date | Prep Batch | Analytical Batch |
|---|---|---|---|---|---|---|---|
| Run #1 [a] | CC046795.D | 1 | 01/06/15 | AFL | 01/05/15 | F:OP54497 | F:GCC777 |
| Run #2 | | | | | | | |

| | Initial Weight | Final Volume |
|---|---|---|
| Run #1 | 15.3 g | 5.0 ml |
| Run #2 | | |

| CAS No. | Compound | Result | RL | MDL | Units | Q |
|---|---|---|---|---|---|---|
| 94-75-7 | 2,4-D | ND | 40 | 6.8 | ug/kg | |
| 93-72-1 | 2,4,5-TP (Silvex) | ND | 4.0 | 1.1 | ug/kg | |
| 93-76-5 | 2,4,5-T | ND | 4.0 | 0.80 | ug/kg | |
| 1918-00-9 | Dicamba | ND | 4.0 | 1.3 | ug/kg | |
| 88-85-7 | Dinoseb | ND | 100 | 20 | ug/kg | |
| 75-99-0 | Dalapon | ND | 200 | 40 | ug/kg | |
| 120-36-5 | Dichloroprop | ND | 40 | 15 | ug/kg | |
| 94-82-6 | 2,4-DB | ND | 40 | 15 | ug/kg | |
| 93-65-2 | MCPP | ND | 4000 | 1100 | ug/kg | |
| 94-74-6 | MCPA | ND | 4000 | 960 | ug/kg | |
| 87-86-5 | Pentachlorophenol [b] | 1.1 | 4.0 | 0.61 | ug/kg | J |

| CAS No. | Surrogate Recoveries | Run# 1 | Run# 2 | Limits |
|---|---|---|---|---|
| 19719-28-9 | 2,4-DCAA | 60% [c] | | 31-132% |

(a) All hits confirmed by dual column analysis. Analysis performed at Accutest Laboratories, Orlando FL.
(b) Primary and confirmation results differ by more than 40%. Lower value reported due to possible coelution.
(c) Surrogate recoveries corrected for actual spike amount.

ND = Not detected MDL = Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

# Report of Analysis





| | | | |
|---|---|---|---|
| **Client Sample ID:** | CAT-B | | |
| **Lab Sample ID:** | C37834-8 | **Date Sampled:** | 12/30/14 |
| **Matrix:** | SO - Soil | **Date Received:** | 12/31/14 |
| **Method:** | SW846 8015B M SW846 3550B | **Percent Solids:** | 81.6 |
| **Project:** | Alameda Cross Trail Phase II | | |

| | File ID | DF | Analyzed | By | Prep Date | Prep Batch | Analytical Batch |
|---|---|---|---|---|---|---|---|
| Run #1 | HH319854.D | 25 | 01/05/15 | AG | 01/02/15 | OP11469 | GHH1431 |
| Run #2 | | | | | | | |

| | Initial Weight | Final Volume |
|---|---|---|
| Run #1 | 30.1 g | 1.0 ml |
| Run #2 | | |

**TPH Extractable w/ Silica Gel Cleanup**

| CAS No. | Compound | Result | RL | MDL | Units | Q |
|---|---|---|---|---|---|---|
| | TPH (Diesel) [a] | 188 | 100 | 51 | mg/kg | |
| | TPH (Motor Oil) | 922 | 200 | 100 | mg/kg | |
| | TPH (Mineral Spirits) | ND | 100 | 51 | mg/kg | |
| | TPH (Kerosene) | ND | 100 | 51 | mg/kg | |

| CAS No. | Surrogate Recoveries | Run# 1 | Run# 2 | Limits |
|---|---|---|---|---|
| 630-01-3 | Hexacosane | 41% | | 37-122% |

(a) Atypical Diesel pattern (C10-C28); heavier hydrocarbons contributing to quantitation.

ND = Not detected MDL = Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range

J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

# Report of Analysis





| | | | |
|---|---|---|---|
| **Client Sample ID:** | CAT-B | | |
| **Lab Sample ID:** | C37834-8 | **Date Sampled:** | 12/30/14 |
| **Matrix:** | SO - Soil | **Date Received:** | 12/31/14 |
| | | **Percent Solids:** | 81.6 |
| **Project:** | Alameda Cross Trail Phase II | | |

**Metals Analysis**

| Analyte | Result | RL | Units | DF | Prep | Analyzed | By | Method | Prep Method |
|---|---|---|---|---|---|---|---|---|---|
| Arsenic | 4.9 | 0.26 | mg/kg | 5 | 01/07/15 | 01/08/15 | RS | SW846 6020 [1] | SW846 3050B [2] |
| Lead | 170 | 0.26 | mg/kg | 5 | 01/07/15 | 01/08/15 | RS | SW846 6020 [1] | SW846 3050B [2] |

(1) Instrument QC Batch: MA4523
(2) Prep QC Batch: MP8944

RL = Reporting Limit

# Report of Analysis





| | | | |
|---|---|---|---|
| **Client Sample ID:** | CAT-B | | |
| **Lab Sample ID:** | C37834-8 | **Date Sampled:** | 12/30/14 |
| **Matrix:** | SO - Soil | **Date Received:** | 12/31/14 |
| | | **Percent Solids:** | 81.6 |
| **Project:** | Alameda Cross Trail Phase II | | |

**General Chemistry**

| Analyte | Result | RL | Units | DF | Analyzed | By | Method |
|---|---|---|---|---|---|---|---|
| Moisture, Percent | 18.4 | | % | 1 | 01/02/15 13:00 | TN | SM2540MOD G-97 |

RL = Reporting Limit

# Report of Analysis





**Client Sample ID:** CAT-B-10-2
**Lab Sample ID:** C37834-9
**Matrix:** SO - Soil
**Method:** SW846 8270C BY SIM SW846 3550B
**Project:** Alameda Cross Trail Phase II

**Date Sampled:** 12/30/14
**Date Received:** 12/31/14
**Percent Solids:** 90.1

| | File ID | DF | Analyzed | By | Prep Date | Prep Batch | Analytical Batch |
|---|---|---|---|---|---|---|---|
| Run #1 [a] | T17397.D | 20 | 01/05/15 | MT | 01/05/15 | OP11471 | ET769 |
| Run #2 | | | | | | | |

| | Initial Weight | Final Volume |
|---|---|---|
| Run #1 | 30.1 g | 1.5 ml |
| Run #2 | | |

**BN PAH List**

| CAS No. | Compound | Result | RL | MDL | Units | Q |
|---|---|---|---|---|---|---|
| 83-32-9 | Acenaphthene | ND | 550 | 55 | ug/kg | |
| 208-96-8 | Acenaphthylene | ND | 550 | 55 | ug/kg | |
| 120-12-7 | Anthracene | ND | 550 | 55 | ug/kg | |
| 56-55-3 | Benzo(a)anthracene | 52.6 | 110 | 28 | ug/kg | J |
| 50-32-8 | Benzo(a)pyrene | 65.7 | 110 | 19 | ug/kg | J |
| 205-99-2 | Benzo(b)fluoranthene | 57.1 | 110 | 22 | ug/kg | J |
| 191-24-2 | Benzo(g,h,i)perylene | 97.7 | 110 | 24 | ug/kg | J |
| 207-08-9 | Benzo(k)fluoranthene | 45.9 | 110 | 25 | ug/kg | J |
| 218-01-9 | Chrysene | 61.8 | 110 | 22 | ug/kg | J |
| 53-70-3 | Dibenzo(a,h)anthracene | ND | 110 | 31 | ug/kg | |
| 206-44-0 | Fluoranthene | 88.7 | 550 | 55 | ug/kg | J |
| 86-73-7 | Fluorene | ND | 550 | 55 | ug/kg | |
| 193-39-5 | Indeno(1,2,3-cd)pyrene | 66.8 | 110 | 28 | ug/kg | J |
| 90-12-0 | 1-Methylnaphthalene | ND | 550 | 110 | ug/kg | |
| 91-57-6 | 2-Methylnaphthalene | ND | 550 | 110 | ug/kg | |
| 91-20-3 | Naphthalene | ND | 550 | 110 | ug/kg | |
| 85-01-8 | Phenanthrene | 84.3 | 550 | 55 | ug/kg | J |
| 129-00-0 | Pyrene | 85.8 | 550 | 55 | ug/kg | J |

| CAS No. | Surrogate Recoveries | Run# 1 | Run# 2 | Limits |
|---|---|---|---|---|
| 4165-60-0 | Nitrobenzene-d5 | 90% | | 32-128% |
| 321-60-8 | 2-Fluorobiphenyl | 98% | | 48-122% |
| 1718-51-0 | Terphenyl-d14 | 86% | | 48-148% |

(a) Dilution required due to matrix interference. Extract would not concentrate (dark and viscous); and high concentration of non-target hydrocarbons.

ND = Not detected MDL = Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

# Report of Analysis





**Client Sample ID:** CAT-B-10-2
**Lab Sample ID:** C37834-9
**Matrix:** SO - Soil
**Method:** SW846 8151A SW846 3546
**Project:** Alameda Cross Trail Phase II

**Date Sampled:** 12/30/14
**Date Received:** 12/31/14
**Percent Solids:** 90.1

| | File ID | DF | Analyzed | By | Prep Date | Prep Batch | Analytical Batch |
|---|---|---|---|---|---|---|---|
| Run #1 [a] | CC046855.D | 1 | 01/08/15 | AFL | 01/06/15 | F:OP54503 | F:GCC779 |
| Run #2 | | | | | | | |

| | Initial Weight | Final Volume |
|---|---|---|
| Run #1 | 15.0 g | 5.0 ml |
| Run #2 | | |

| CAS No. | Compound | Result | RL | MDL | Units | Q |
|---|---|---|---|---|---|---|
| 94-75-7 | 2,4-D | ND | 37 | 6.3 | ug/kg | |
| 93-72-1 | 2,4,5-TP (Silvex) | ND | 3.7 | 1.0 | ug/kg | |
| 93-76-5 | 2,4,5-T | ND | 3.7 | 0.74 | ug/kg | |
| 1918-00-9 | Dicamba | ND | 3.7 | 1.2 | ug/kg | |
| 88-85-7 | Dinoseb | ND | 92 | 18 | ug/kg | |
| 75-99-0 | Dalapon | ND | 180 | 37 | ug/kg | |
| 120-36-5 | Dichloroprop | ND | 37 | 14 | ug/kg | |
| 94-82-6 | 2,4-DB | ND | 37 | 14 | ug/kg | |
| 93-65-2 | MCPP | ND | 3700 | 980 | ug/kg | |
| 94-74-6 | MCPA | ND | 3700 | 890 | ug/kg | |
| 87-86-5 | Pentachlorophenol | ND | 3.7 | 0.57 | ug/kg | |

| CAS No. | Surrogate Recoveries | Run# 1 | Run# 2 | Limits |
|---|---|---|---|---|
| 19719-28-9 | 2,4-DCAA | 15% [b] | | 31-132% |

(a) Analysis performed at Accutest Laboratories, Orlando FL.
(b) Surrogate recoveries outside of control limits,confirmed by MS/MSD.

ND = Not detected MDL = Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

# Report of Analysis





| | | | |
|---|---|---|---|
| **Client Sample ID:** | CAT-B-10-2 | | |
| **Lab Sample ID:** | C37834-9 | **Date Sampled:** | 12/30/14 |
| **Matrix:** | SO - Soil | **Date Received:** | 12/31/14 |
| **Method:** | SW846 8015B M SW846 3550B | **Percent Solids:** | 90.1 |
| **Project:** | Alameda Cross Trail Phase II | | |

| | File ID | DF | Analyzed | By | Prep Date | Prep Batch | Analytical Batch |
|---|---|---|---|---|---|---|---|
| Run #1 | HH319873.D | 25 | 01/05/15 | AG | 01/05/15 | OP11472 | GHH1431 |
| Run #2 | | | | | | | |

| | Initial Weight | Final Volume |
|---|---|---|
| Run #1 | 30.2 g | 1.0 ml |
| Run #2 | | |

**TPH Extractable w/ Silica Gel Cleanup**

| CAS No. | Compound | Result | RL | MDL | Units | Q |
|---|---|---|---|---|---|---|
| | TPH (Diesel) [a] | 129 | 92 | 46 | mg/kg | |
| | TPH (Motor Oil) | 609 | 180 | 92 | mg/kg | |
| | TPH (Mineral Spirits) | ND | 92 | 46 | mg/kg | |
| | TPH (Kerosene) | ND | 92 | 46 | mg/kg | |

| CAS No. | Surrogate Recoveries | Run# 1 | Run# 2 | Limits |
|---|---|---|---|---|
| 630-01-3 | Hexacosane | 55% | | 37-122% |

(a) Atypical Diesel pattern (C10-C28); heavier hydrocarbons contributing to quantitation.

ND = Not detected MDL = Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range

J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

# Report of Analysis





| | | | |
|---|---|---|---|
| **Client Sample ID:** | CAT-B-10-2 | | |
| **Lab Sample ID:** | C37834-9 | **Date Sampled:** | 12/30/14 |
| **Matrix:** | SO - Soil | **Date Received:** | 12/31/14 |
| | | **Percent Solids:** | 90.1 |
| **Project:** | Alameda Cross Trail Phase II | | |

**Metals Analysis**

| Analyte | Result | RL | Units | DF | Prep | Analyzed | By | Method | Prep Method |
|---|---|---|---|---|---|---|---|---|---|
| Arsenic | 6.2 | 0.23 | mg/kg | 5 | 01/07/15 | 01/08/15 | RS | SW846 6020 [1] | SW846 3050B [2] |
| Lead | 126 | 0.23 | mg/kg | 5 | 01/07/15 | 01/08/15 | RS | SW846 6020 [1] | SW846 3050B [2] |

(1) Instrument QC Batch: MA4523
(2) Prep QC Batch: MP8944

RL = Reporting Limit

# Report of Analysis





| | | | |
|---|---|---|---|
| **Client Sample ID:** | CAT-B-10-2 | | |
| **Lab Sample ID:** | C37834-9 | **Date Sampled:** | 12/30/14 |
| **Matrix:** | SO - Soil | **Date Received:** | 12/31/14 |
| | | **Percent Solids:** | 90.1 |
| **Project:** | Alameda Cross Trail Phase II | | |

**General Chemistry**

| Analyte | Result | RL | Units | DF | Analyzed | By | Method |
|---|---|---|---|---|---|---|---|
| Moisture, Percent | 9.9 | | % | 1 | 01/02/15 13:00 | TN | SM2540MOD G-97 |

RL = Reporting Limit

Northern California ACCUTEST LABORATORIES



## Misc. Forms

# Custody Documents and Other Forms

Includes the following where applicable:

- Chain of Custody

FedEX # 804316470333

C37834

# Chain of Custody Record No. 6927



Tetra Tech EM Inc.
San Francisco Office

135 Main St. Suite 1800
San Francisco. CA 94105
415-543-4880
Fax 415-543-5480

| | | | |
|---|---|---|---|
| Lab PO#: | | Lab: Accutest | |
| Project name: Cross-track Alameda Phase II | TtEMI technical contact: Mark Duffy | Field samplers: Mark Duffy | |
| Project (CTO) number: 103536.35 | TtEMI project manager: Victor Early | Field samplers' signatures: | |

Preservative Added: N/A

| Sample ID | Sample Location (Pt. ID) | Date | Time | Matrix | MS / MSD | No./Container Types: 40 ml VOA | 1 liter Amber | 500 ml Poly | Sleeve | Glass Jar 4oz/8oz | Analysis Required: VOA | SVOA | Pest/PCBs | Metals | TPH Purgeables | TPH Extractables w Silica gel | EDB 8151 | PAH 8270 SIM | Lead 6020 | Arsenic 6020 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 CAT-B-8-8 | | 12-30-14 | 1120 | Soil | | | | | | 2 | | | | | | X | X | X | X | X |
| 2 CAT-B-8-2 | | | 1125 | | | | | | | | | | | | | | | | | |
| 3 CAT-B-7-4 | | | 840 | | | | | | | | | | | | | | | | | |
| 4 CAT-B-7-1 | | | 835 | | | | | | | | | | | | | | | | | |
| 5 CAT-B-9-1 | | | 1225 | | X | | | | | 4 | | | | | | | | | | |
| 6 CAT-B-9-6 | | | 1230 | | | | | | | 2 | | | | | | | | | | |
| 7 CAT-B-10-5 | | | 1305 | | | | | | | | | | | | | | | | | |
| 8 CAT-B | | | 1320 | | | | | | | | | | | | | | | | | |
| 9 CAT-B-10-2 | | | 1310 | | | | | | | | | | | | | | | | | |

| | Name (print) | Company Name | Date | Time |
|---|---|---|---|---|
| Relinquished by: | Mark Duffy | Tetra Tech | 12-31-14 | 1600 |
| Received by: Lee Bautista | Lee Bautista | Accutest | 12/31/14 | 09:30 |
| Relinquished by: | | | | |
| Received by: | | | | |
| Relinquished by: | | | | |
| Received by: | | | | |

Turnaround time/remarks: Temp Blank included

Fed Ex #: 8043 1647 0333

WHITE-Laboratory Copy YELLOW-Sample Tracker PINK-File Copy

Temp: 0.4 / 4.5C

# Accutest Laboratories Sample Receipt Summary

**Accutest Job Number:** C37834 **Client:** TETRA TECH **Project:** CROSS-TRAIL ALAMEDA PHASE II

**Date / Time Received:** 12/31/2014 9:30:00 AM **Delivery Method:** FedEx **Airbill #'s:** 804316470333

**Cooler Temps (Initial/Adjusted):** #1: (4.5/4.5);



| Cooler Security | Y | or | N | | Y | or | N |
|---|---|---|---|---|---|---|---|
| 1. Custody Seals Present: | ☐ | | ☑ | 3. COC Present: | ☑ | | ☐ |
| 2. Custody Seals Intact: | ☐ | | ☐ | 4. Smpl Dates/Time OK | ☑ | | ☐ |

| Cooler Temperature | Y | or | N |
|---|---|---|---|
| 1. Temp criteria achieved: | ☑ | | ☐ |
| 2. Cooler temp verification: | IR2; | | |
| 3. Cooler media: | Ice (Bag) | | |
| 4. No. Coolers: | 1 | | |

| Quality Control Preservation | Y | or | N | N/A |
|---|---|---|---|---|
| 1. Trip Blank present / cooler: | ☐ | | ☐ | ☑ |
| 2. Trip Blank listed on COC: | ☐ | | ☐ | ☑ |
| 3. Samples preserved properly: | ☑ | | ☐ | |
| 4. VOCs headspace free: | ☐ | | ☐ | ☑ |

| Sample Integrity - Documentation | Y | or | N |
|---|---|---|---|
| 1. Sample labels present on bottles: | ☑ | | ☐ |
| 2. Container labeling complete: | ☑ | | ☐ |
| 3. Sample container label / COC agree: | ☑ | | ☐ |

| Sample Integrity - Condition | Y | or | N |
|---|---|---|---|
| 1. Sample recvd within HT: | ☑ | | ☐ |
| 2. All containers accounted for: | ☑ | | ☐ |
| 3. Condition of sample: | Intact | | |

| Sample Integrity - Instructions | Y | or | N | N/A |
|---|---|---|---|---|
| 1. Analysis requested is clear: | ☑ | | ☐ | |
| 2. Bottles received for unspecified tests | ☐ | | ☑ | |
| 3. Sufficient volume recvd for analysis: | ☑ | | ☐ | |
| 4. Compositing instructions clear: | ☐ | | ☐ | ☑ |
| 5. Filtering instructions clear: | ☐ | | ☐ | ☑ |

Comments

Accutest Laboratories
V:408.588.0200
2105 Lundy Avenue
F: 408.588.0201
San Jose, CA 95131
www/accutest.com

**C37834: Chain of Custody**
**Page 2 of 2**

Northern California ACCUTEST LABORATORIES



## GC/MS Semi-volatiles

# QC Data Summaries

Includes the following where applicable:

- Method Blank Summaries
- Blank Spike Summaries
- Matrix Spike and Duplicate Summaries

# Method Blank Summary



**Job Number:** C37834
**Account:** TETRCAO Tetra Tech EMI
**Project:** Alameda Cross Trail Phase II

| Sample | File ID | DF | Analyzed | By | Prep Date | Prep Batch | Analytical Batch |
|---|---|---|---|---|---|---|---|
| OP11467-MB | T17345.D | 1 | 01/02/15 | MT | 01/02/15 | OP11467 | ET768 |



**The QC reported here applies to the following samples:** **Method:** SW846 8270C BY SIM

C37834-2, C37834-5, C37834-6, C37834-7, C37834-8

| CAS No. | Compound | Result | RL | MDL | Units | Q |
|---|---|---|---|---|---|---|
| 83-32-9 | Acenaphthene | ND | 17 | 1.7 | ug/kg | |
| 208-96-8 | Acenaphthylene | ND | 17 | 1.7 | ug/kg | |
| 120-12-7 | Anthracene | ND | 17 | 1.7 | ug/kg | |
| 56-55-3 | Benzo(a)anthracene | ND | 3.3 | 0.83 | ug/kg | |
| 50-32-8 | Benzo(a)pyrene | ND | 3.3 | 0.57 | ug/kg | |
| 205-99-2 | Benzo(b)fluoranthene | ND | 3.3 | 0.67 | ug/kg | |
| 191-24-2 | Benzo(g,h,i)perylene | ND | 3.3 | 0.73 | ug/kg | |
| 207-08-9 | Benzo(k)fluoranthene | ND | 3.3 | 0.77 | ug/kg | |
| 218-01-9 | Chrysene | ND | 3.3 | 0.67 | ug/kg | |
| 53-70-3 | Dibenzo(a,h)anthracene | ND | 3.3 | 0.93 | ug/kg | |
| 206-44-0 | Fluoranthene | ND | 17 | 1.7 | ug/kg | |
| 86-73-7 | Fluorene | ND | 17 | 1.7 | ug/kg | |
| 193-39-5 | Indeno(1,2,3-cd)pyrene | ND | 3.3 | 0.83 | ug/kg | |
| 90-12-0 | 1-Methylnaphthalene | ND | 17 | 3.3 | ug/kg | |
| 91-57-6 | 2-Methylnaphthalene | ND | 17 | 3.3 | ug/kg | |
| 91-20-3 | Naphthalene | ND | 17 | 3.3 | ug/kg | |
| 85-01-8 | Phenanthrene | ND | 17 | 1.7 | ug/kg | |
| 129-00-0 | Pyrene | ND | 17 | 1.7 | ug/kg | |

| CAS No. | Surrogate Recoveries | | Limits |
|---|---|---|---|
| 4165-60-0 | Nitrobenzene-d5 | 110% | 32-128% |
| 321-60-8 | 2-Fluorobiphenyl | 106% | 48-122% |
| 1718-51-0 | Terphenyl-d14 | 110% | 48-148% |

# Method Blank Summary



**Job Number:** C37834
**Account:** TETRCAO Tetra Tech EMI
**Project:** Alameda Cross Trail Phase II

| Sample | File ID | DF | Analyzed | By | Prep Date | Prep Batch | Analytical Batch |
|---|---|---|---|---|---|---|---|
| OP11471-MB | T17382.D | 1 | 01/05/15 | MT | 01/05/15 | OP11471 | ET769 |



**The QC reported here applies to the following samples:** **Method:** SW846 8270C BY SIM

C37834-1, C37834-3, C37834-4, C37834-9

| CAS No. | Compound | Result | RL | MDL | Units | Q |
|---|---|---|---|---|---|---|
| 83-32-9 | Acenaphthene | ND | 17 | 1.7 | ug/kg | |
| 208-96-8 | Acenaphthylene | ND | 17 | 1.7 | ug/kg | |
| 120-12-7 | Anthracene | ND | 17 | 1.7 | ug/kg | |
| 56-55-3 | Benzo(a)anthracene | ND | 3.3 | 0.83 | ug/kg | |
| 50-32-8 | Benzo(a)pyrene [a] | 0.62 | 3.3 | 0.57 | ug/kg | J |
| 205-99-2 | Benzo(b)fluoranthene | ND | 3.3 | 0.67 | ug/kg | |
| 191-24-2 | Benzo(g,h,i)perylene | ND | 3.3 | 0.73 | ug/kg | |
| 207-08-9 | Benzo(k)fluoranthene | ND | 3.3 | 0.77 | ug/kg | |
| 218-01-9 | Chrysene | ND | 3.3 | 0.67 | ug/kg | |
| 53-70-3 | Dibenzo(a,h)anthracene | ND | 3.3 | 0.93 | ug/kg | |
| 206-44-0 | Fluoranthene | ND | 17 | 1.7 | ug/kg | |
| 86-73-7 | Fluorene | ND | 17 | 1.7 | ug/kg | |
| 193-39-5 | Indeno(1,2,3-cd)pyrene | ND | 3.3 | 0.83 | ug/kg | |
| 90-12-0 | 1-Methylnaphthalene | ND | 17 | 3.3 | ug/kg | |
| 91-57-6 | 2-Methylnaphthalene | ND | 17 | 3.3 | ug/kg | |
| 91-20-3 | Naphthalene | ND | 17 | 3.3 | ug/kg | |
| 85-01-8 | Phenanthrene | ND | 17 | 1.7 | ug/kg | |
| 129-00-0 | Pyrene | ND | 17 | 1.7 | ug/kg | |

| CAS No. | Surrogate Recoveries | | Limits |
|---|---|---|---|
| 4165-60-0 | Nitrobenzene-d5 | 98% | 32-128% |
| 321-60-8 | 2-Fluorobiphenyl | 95% | 48-122% |
| 1718-51-0 | Terphenyl-d14 | 113% | 48-148% |

(a) Associated sample(s) with "B" qualifiers indicate analyte is found at concentrations less than 10 times of method blank. Concentration present in blank is less than 1/2 RL; meeting method criteria.

# Method Blank Summary



**Job Number:** C37834
**Account:** TETRCAO Tetra Tech EMI
**Project:** Alameda Cross Trail Phase II

| Sample | File ID | DF | Analyzed | By | Prep Date | Prep Batch | Analytical Batch |
|---|---|---|---|---|---|---|---|
| OP11471-MB | X41456.D | 1 | 01/05/15 | BJ | 01/05/15 | OP11471 | EX1771 |



**The QC reported here applies to the following samples:** **Method:** SW846 8270C BY SIM

C37834-1, C37834-3, C37834-4, C37834-9

| CAS No. | Compound | Result | RL | MDL | Units | Q |
|---|---|---|---|---|---|---|
| 83-32-9 | Acenaphthene | ND | 17 | 1.7 | ug/kg | |
| 208-96-8 | Acenaphthylene | ND | 17 | 1.7 | ug/kg | |
| 120-12-7 | Anthracene | ND | 17 | 1.7 | ug/kg | |
| 56-55-3 | Benzo(a)anthracene | ND | 3.3 | 0.83 | ug/kg | |
| 50-32-8 | Benzo(a)pyrene | ND | 3.3 | 0.57 | ug/kg | |
| 205-99-2 | Benzo(b)fluoranthene | ND | 3.3 | 0.67 | ug/kg | |
| 191-24-2 | Benzo(g,h,i)perylene | ND | 3.3 | 0.73 | ug/kg | |
| 207-08-9 | Benzo(k)fluoranthene | ND | 3.3 | 0.77 | ug/kg | |
| 218-01-9 | Chrysene | ND | 3.3 | 0.67 | ug/kg | |
| 53-70-3 | Dibenzo(a,h)anthracene | ND | 3.3 | 0.93 | ug/kg | |
| 206-44-0 | Fluoranthene | ND | 17 | 1.7 | ug/kg | |
| 86-73-7 | Fluorene | ND | 17 | 1.7 | ug/kg | |
| 193-39-5 | Indeno(1,2,3-cd)pyrene | ND | 3.3 | 0.83 | ug/kg | |
| 90-12-0 | 1-Methylnaphthalene | ND | 17 | 3.3 | ug/kg | |
| 91-57-6 | 2-Methylnaphthalene | ND | 17 | 3.3 | ug/kg | |
| 91-20-3 | Naphthalene | ND | 17 | 3.3 | ug/kg | |
| 85-01-8 | Phenanthrene | ND | 17 | 1.7 | ug/kg | |
| 129-00-0 | Pyrene | ND | 17 | 1.7 | ug/kg | |

| CAS No. | Surrogate Recoveries | | Limits |
|---|---|---|---|
| 4165-60-0 | Nitrobenzene-d5 | 97% | 32-128% |
| 321-60-8 | 2-Fluorobiphenyl | 97% | 48-122% |
| 1718-51-0 | Terphenyl-d14 | 115% | 48-148% |

# Blank Spike/Blank Spike Duplicate Summary



**Job Number:** C37834
**Account:** TETRCAO Tetra Tech EMI
**Project:** Alameda Cross Trail Phase II

| Sample | File ID | DF | Analyzed | By | Prep Date | Prep Batch | Analytical Batch |
|---|---|---|---|---|---|---|---|
| OP11467-BS | T17346.D | 1 | 01/02/15 | MT | 01/02/15 | OP11467 | ET768 |
| OP11467-BSD | T17347.D | 1 | 01/02/15 | MT | 01/02/15 | OP11467 | ET768 |



**The QC reported here applies to the following samples:** **Method:** SW846 8270C BY SIM

C37834-2, C37834-5, C37834-6, C37834-7, C37834-8

| CAS No. | Compound | Spike ug/kg | BSP ug/kg | BSP % | BSD ug/kg | BSD % | RPD | Limits Rec/RPD |
|---|---|---|---|---|---|---|---|---|
| 83-32-9 | Acenaphthene | 167 | 175 | 105 | 164 | 98 | 6 | 67-106/9 |
| 208-96-8 | Acenaphthylene | 167 | 168 | 101 | 162 | 97 | 4 | 67-104/9 |
| 120-12-7 | Anthracene | 167 | 181 | 109* [a] | 166 | 100 | 9 | 66-107/11 |
| 56-55-3 | Benzo(a)anthracene | 167 | 170 | 102 | 171 | 103 | 1 | 72-115/9 |
| 50-32-8 | Benzo(a)pyrene | 167 | 157 | 94 | 162 | 97 | 3 | 64-107/10 |
| 205-99-2 | Benzo(b)fluoranthene | 167 | 182 | 109 | 168 | 101 | 8 | 69-127/15 |
| 191-24-2 | Benzo(g,h,i)perylene | 167 | 179 | 107 | 186 | 112 | 4 | 63-125/14 |
| 207-08-9 | Benzo(k)fluoranthene | 167 | 151 | 91 | 159 | 95 | 5 | 73-127/14 |
| 218-01-9 | Chrysene | 167 | 174 | 104 | 168 | 101 | 4 | 72-119/8 |
| 53-70-3 | Dibenzo(a,h)anthracene | 167 | 169 | 101 | 183 | 110 | 8 | 65-128/16 |
| 206-44-0 | Fluoranthene | 167 | 174 | 104 | 168 | 101 | 4 | 74-119/11 |
| 86-73-7 | Fluorene | 167 | 170 | 102 | 168 | 101 | 1 | 71-111/10 |
| 193-39-5 | Indeno(1,2,3-cd)pyrene | 167 | 162 | 97 | 170 | 102 | 5 | 59-128/18 |
| 90-12-0 | 1-Methylnaphthalene | 167 | 130 | 78 | 167 | 100 | 25* [b] | 63-103/12 |
| 91-57-6 | 2-Methylnaphthalene | 167 | 161 | 97 | 166 | 100 | 3 | 64-106/12 |
| 91-20-3 | Naphthalene | 167 | 161 | 97 | 160 | 96 | 1 | 62-99/10 |
| 85-01-8 | Phenanthrene | 167 | 173 | 104 | 163 | 98 | 6 | 68-111/14 |
| 129-00-0 | Pyrene | 167 | 167 | 100 | 163 | 98 | 2 | 62-122/15 |

| CAS No. | Surrogate Recoveries | BSP | BSD | Limits |
|---|---|---|---|---|
| 4165-60-0 | Nitrobenzene-d5 | 111% | 110% | 32-128% |
| 321-60-8 | 2-Fluorobiphenyl | 104% | 101% | 48-122% |
| 1718-51-0 | Terphenyl-d14 | 105% | 101% | 48-148% |

(a) Outside of in-house control limits; but within the method control limits.
(b) Outside laboratory control limits. BS/BSD recoveries within control limits.

* = Outside of Control Limits.

# Blank Spike/Blank Spike Duplicate Summary



**Job Number:** C37834
**Account:** TETRCAO Tetra Tech EMI
**Project:** Alameda Cross Trail Phase II

| Sample | File ID | DF | Analyzed | By | Prep Date | Prep Batch | Analytical Batch |
|---|---|---|---|---|---|---|---|
| OP11471-BS | T17380.D | 1 | 01/05/15 | MT | 01/05/15 | OP11471 | ET769 |
| OP11471-BSD | T17381.D | 1 | 01/05/15 | MT | 01/05/15 | OP11471 | ET769 |



**The QC reported here applies to the following samples:** **Method:** SW846 8270C BY SIM

C37834-1, C37834-3, C37834-4, C37834-9

| CAS No. | Compound | Spike ug/kg | BSP ug/kg | BSP % | BSD ug/kg | BSD % | RPD | Limits Rec/RPD |
|---|---|---|---|---|---|---|---|---|
| 83-32-9 | Acenaphthene | 167 | 161 | 97 | 165 | 99 | 2 | 67-106/9 |
| 208-96-8 | Acenaphthylene | 167 | 137 | 82 | 169 | 101 | 21* [a] | 67-104/9 |
| 120-12-7 | Anthracene | 167 | 167 | 100 | 175 | 105 | 5 | 66-107/11 |
| 56-55-3 | Benzo(a)anthracene | 167 | 175 | 105 | 175 | 105 | 0 | 72-115/9 |
| 50-32-8 | Benzo(a)pyrene | 167 | 158 | 95 | 152 | 91 | 4 | 64-107/10 |
| 205-99-2 | Benzo(b)fluoranthene | 167 | 197 | 118 | 192 | 115 | 3 | 69-127/15 |
| 191-24-2 | Benzo(g,h,i)perylene | 167 | 197 | 118 | 197 | 118 | 0 | 63-125/14 |
| 207-08-9 | Benzo(k)fluoranthene | 167 | 141 | 85 | 145 | 87 | 3 | 73-127/14 |
| 218-01-9 | Chrysene | 167 | 167 | 100 | 175 | 105 | 5 | 72-119/8 |
| 53-70-3 | Dibenzo(a,h)anthracene | 167 | 185 | 111 | 192 | 115 | 4 | 65-128/16 |
| 206-44-0 | Fluoranthene | 167 | 181 | 109 | 187 | 112 | 3 | 74-119/11 |
| 86-73-7 | Fluorene | 167 | 155 | 93 | 179 | 107 | 14* [a] | 71-111/10 |
| 193-39-5 | Indeno(1,2,3-cd)pyrene | 167 | 196 | 118 | 211 | 127 | 7 | 59-128/18 |
| 90-12-0 | 1-Methylnaphthalene | 167 | 176 | 106* [b] | 162 | 97 | 8 | 63-103/12 |
| 91-57-6 | 2-Methylnaphthalene | 167 | 173 | 104 | 159 | 95 | 8 | 64-106/12 |
| 91-20-3 | Naphthalene | 167 | 167 | 100* [c] | 154 | 92 | 8 | 62-99/10 |
| 85-01-8 | Phenanthrene | 167 | 180 | 108 | 172 | 103 | 5 | 68-111/14 |
| 129-00-0 | Pyrene | 167 | 164 | 98 | 152 | 91 | 8 | 62-122/15 |

| CAS No. | Surrogate Recoveries | BSP | BSD | Limits |
|---|---|---|---|---|
| 4165-60-0 | Nitrobenzene-d5 | 96% | 100% | 32-128% |
| 321-60-8 | 2-Fluorobiphenyl | 92% | 103% | 48-122% |
| 1718-51-0 | Terphenyl-d14 | 96% | 98% | 48-148% |

(a) Outside laboratory control limits. BS/BSD recoveries within control limits.
(b) Outside laboratory control limits; but within marginal exceedence criteria.
(c) Outside of in-house control limits; but within the method control limits.

* = Outside of Control Limits.

# Matrix Spike/Matrix Spike Duplicate Summary



**Job Number:** C37834
**Account:** TETRCAO Tetra Tech EMI
**Project:** Alameda Cross Trail Phase II

| Sample | File ID | DF | Analyzed | By | Prep Date | Prep Batch | Analytical Batch |
|---|---|---|---|---|---|---|---|
| OP11467-MS [a] | T17368.D | 4 | 01/03/15 | MT | 01/02/15 | OP11467 | ET768 |
| OP11467-MSD [a] | T17369.D | 4 | 01/03/15 | MT | 01/02/15 | OP11467 | ET768 |
| C37834-5 [a] | T17365.D | 4 | 01/03/15 | MT | 01/02/15 | OP11467 | ET768 |



**The QC reported here applies to the following samples:** **Method:** SW846 8270C BY SIM

C37834-2, C37834-5, C37834-6, C37834-7, C37834-8

| CAS No. | Compound | C37834-5 ug/kg | Q | Spike ug/kg | MS ug/kg | MS % | Spike ug/kg | MSD ug/kg | MSD % | RPD | Limits Rec/RPD |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 83-32-9 | Acenaphthene | ND | | 218 | 227 | 104 | 218 | 218 | 100 | 4 | 67-106/9 |
| 208-96-8 | Acenaphthylene | ND | | 218 | 230 | 105* [b] | 218 | 220 | 101 | 4 | 67-104/9 |
| 120-12-7 | Anthracene | ND | | 218 | 219 | 100 | 218 | 239 | 110* [b] | 9 | 66-107/11 |
| 56-55-3 | Benzo(a)anthracene | 59.3 | | 218 | 267 | 95 | 218 | 276 | 99 | 3 | 72-115/9 |
| 50-32-8 | Benzo(a)pyrene | 121 | | 218 | 306 | 85 | 218 | 297 | 81 | 3 | 64-107/10 |
| 205-99-2 | Benzo(b)fluoranthene | 123 | | 218 | 374 | 115 | 218 | 345 | 102 | 8 | 69-127/15 |
| 191-24-2 | Benzo(g,h,i)perylene | 145 | | 218 | 307 | 74 | 218 | 316 | 78 | 3 | 63-125/14 |
| 207-08-9 | Benzo(k)fluoranthene | 54.3 | | 218 | 212 | 72* [b] | 218 | 217 | 75 | 2 | 73-127/14 |
| 218-01-9 | Chrysene | 86.2 | | 218 | 263 | 81 | 218 | 264 | 82 | 0 | 72-119/8 |
| 53-70-3 | Dibenzo(a,h)anthracene | 16.0 | J | 218 | 243 | 104 | 218 | 246 | 105 | 1 | 65-128/16 |
| 206-44-0 | Fluoranthene | 163 | | 218 | 310 | 67* [b] | 218 | 357 | 89 | 14* [b] | 74-119/11 |
| 86-73-7 | Fluorene | ND | | 218 | 231 | 106 | 218 | 222 | 102 | 4 | 71-111/10 |
| 193-39-5 | Indeno(1,2,3-cd)pyrene | 153 | | 218 | 356 | 93 | 218 | 352 | 91 | 1 | 59-128/18 |
| 90-12-0 | 1-Methylnaphthalene | ND | | 218 | 218 | 100 | 218 | 214 | 98 | 2 | 63-103/12 |
| 91-57-6 | 2-Methylnaphthalene | ND | | 218 | 212 | 97 | 218 | 216 | 99 | 2 | 64-106/12 |
| 91-20-3 | Naphthalene | ND | | 218 | 212 | 97 | 218 | 205 | 94 | 3 | 62-99/10 |
| 85-01-8 | Phenanthrene | 39.9 | J | 218 | 240 | 92 | 218 | 222 | 84 | 8 | 68-111/14 |
| 129-00-0 | Pyrene | 181 | | 218 | 314 | 61* [b] | 218 | 330 | 68 | 5 | 62-122/15 |

| CAS No. | Surrogate Recoveries | MS | MSD | C37834-5 | Limits |
|---|---|---|---|---|---|
| 4165-60-0 | Nitrobenzene-d5 | 105% | 107% | 115% | 32-128% |
| 321-60-8 | 2-Fluorobiphenyl | 110% | 104% | 108% | 48-122% |
| 1718-51-0 | Terphenyl-d14 | 101% | 98% | 109% | 48-148% |

(a) Dilution required due to matrix interference (dark and viscous extract; high concentration of non-target hydrocarbons).
(b) Outside laboratory control limits.

* = Outside of Control Limits.

# Matrix Spike/Matrix Spike Duplicate Summary



**Job Number:** C37834
**Account:** TETRCAO Tetra Tech EMI
**Project:** Alameda Cross Trail Phase II

| Sample | File ID | DF | Analyzed | By | Prep Date | Prep Batch | Analytical Batch |
|---|---|---|---|---|---|---|---|
| OP11471-MS | T17395.D | 1 | 01/05/15 | MT | 01/05/15 | OP11471 | ET769 |
| OP11471-MSD | T17396.D | 1 | 01/05/15 | MT | 01/05/15 | OP11471 | ET769 |
| C37843-9 | T17393.D | 1 | 01/05/15 | MT | 01/05/15 | OP11471 | ET769 |



**The QC reported here applies to the following samples:** **Method:** SW846 8270C BY SIM

C37834-1, C37834-3, C37834-4, C37834-9

| CAS No. | Compound | C37843-9 ug/kg | Q | Spike ug/kg | MS ug/kg | MS % | Spike ug/kg | MSD ug/kg | MSD % | RPD | Limits Rec/RPD |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 83-32-9 | Acenaphthene | ND | | 166 | 160 | 96 | 166 | 169 | 102 | 5 | 67-106/9 |
| 208-96-8 | Acenaphthylene | ND | | 166 | 161 | 97 | 166 | 173 | 104 | 7 | 67-104/9 |
| 120-12-7 | Anthracene | ND | | 166 | 164 | 99 | 166 | 168 | 101 | 2 | 66-107/11 |
| 56-55-3 | Benzo(a)anthracene | ND | | 166 | 162 | 98 | 166 | 172 | 104 | 6 | 72-115/9 |
| 50-32-8 | Benzo(a)pyrene | ND | | 166 | 149 | 90 | 166 | 155 | 93 | 4 | 64-107/10 |
| 205-99-2 | Benzo(b)fluoranthene | ND | | 166 | 189 | 114 | 166 | 209 | 126 | 10 | 69-127/15 |
| 191-24-2 | Benzo(g,h,i)perylene | ND | | 166 | 160 | 96 | 166 | 170 | 102 | 6 | 63-125/14 |
| 207-08-9 | Benzo(k)fluoranthene | ND | | 166 | 132 | 79 | 166 | 141 | 85 | 7 | 73-127/14 |
| 218-01-9 | Chrysene | ND | | 166 | 153 | 92 | 166 | 172 | 104 | 12* [a] | 72-119/8 |
| 53-70-3 | Dibenzo(a,h)anthracene | ND | | 166 | 166 | 100 | 166 | 175 | 105 | 5 | 65-128/16 |
| 206-44-0 | Fluoranthene | ND | | 166 | 180 | 108 | 166 | 181 | 109 | 1 | 74-119/11 |
| 86-73-7 | Fluorene | ND | | 166 | 169 | 102 | 166 | 179 | 108 | 6 | 71-111/10 |
| 193-39-5 | Indeno(1,2,3-cd)pyrene | ND | | 166 | 186 | 112 | 166 | 180 | 108 | 3 | 59-128/18 |
| 90-12-0 | 1-Methylnaphthalene | ND | | 166 | 172 | 104* [b] | 166 | 167 | 101 | 3 | 63-103/12 |
| 91-57-6 | 2-Methylnaphthalene | ND | | 166 | 163 | 98 | 166 | 168 | 101 | 3 | 64-106/12 |
| 91-20-3 | Naphthalene | ND | | 166 | 158 | 95 | 166 | 161 | 97 | 2 | 62-99/10 |
| 85-01-8 | Phenanthrene | ND | | 166 | 165 | 99 | 166 | 163 | 98 | 1 | 68-111/14 |
| 129-00-0 | Pyrene | ND | | 166 | 145 | 87 | 166 | 149 | 90 | 3 | 62-122/15 |

| CAS No. | Surrogate Recoveries | MS | MSD | C37843-9 | Limits |
|---|---|---|---|---|---|
| 4165-60-0 | Nitrobenzene-d5 | 96% | 103% | 98% | 32-128% |
| 321-60-8 | 2-Fluorobiphenyl | 94% | 103% | 87% | 48-122% |
| 1718-51-0 | Terphenyl-d14 | 84% | 89% | 95% | 48-148% |

(a) Outside laboratory control limits. MS/MSD recoveries within control limits.
(b) Outside laboratory control limits.

* = Outside of Control Limits.

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## GC Semi-volatiles



### QC Data Summaries

Includes the following where applicable:

- Method Blank Summaries
- Blank Spike Summaries
- Matrix Spike and Duplicate Summaries

# Method Blank Summary



**Job Number:** C37834
**Account:** TETRCAO Tetra Tech EMI
**Project:** Alameda Cross Trail Phase II

| Sample | File ID | DF | Analyzed | By | Prep Date | Prep Batch | Analytical Batch |
|---|---|---|---|---|---|---|---|
| OP11469-MB | HH319843.D | 1 | 01/03/15 | AG | 01/02/15 | OP11469 | GHH1430 |

**The QC reported here applies to the following samples:** **Method:** SW846 8015B M

C37834-1, C37834-2, C37834-3, C37834-4, C37834-5, C37834-6, C37834-7, C37834-8

| CAS No. | Compound | Result | RL | MDL | Units | Q |
|---|---|---|---|---|---|---|
| | TPH (Diesel) | ND | 3.3 | 1.7 | mg/kg | |
| | TPH (Motor Oil) | ND | 6.7 | 3.3 | mg/kg | |
| | TPH (Mineral Spirits) | ND | 3.3 | 1.7 | mg/kg | |
| | TPH (Kerosene) | ND | 3.3 | 1.7 | mg/kg | |

| CAS No. | Surrogate Recoveries | | Limits |
|---|---|---|---|
| 630-01-3 | Hexacosane | 96% | 37-122% |

# Method Blank Summary



**Job Number:** C37834
**Account:** TETRCAO Tetra Tech EMI
**Project:** Alameda Cross Trail Phase II

| Sample | File ID | DF | Analyzed | By | Prep Date | Prep Batch | Analytical Batch |
|---|---|---|---|---|---|---|---|
| OP11472-MB | HH319860.D | 1 | 01/05/15 | AG | 01/05/15 | OP11472 | GHH1431 |

**The QC reported here applies to the following samples:** **Method:** SW846 8015B M

C37834-9

| CAS No. | Compound | Result | RL | MDL | Units | Q |
|---|---|---|---|---|---|---|
| | TPH (Diesel) | ND | 3.3 | 1.7 | mg/kg | |
| | TPH (Motor Oil) | ND | 6.7 | 3.3 | mg/kg | |
| | TPH (Mineral Spirits) | ND | 3.3 | 1.7 | mg/kg | |
| | TPH (Kerosene) | ND | 3.3 | 1.7 | mg/kg | |

| CAS No. | Surrogate Recoveries | | Limits |
|---|---|---|---|
| 630-01-3 | Hexacosane | 92% | 37-122% |

# Blank Spike/Blank Spike Duplicate Summary



**Job Number:** C37834
**Account:** TETRCAO Tetra Tech EMI
**Project:** Alameda Cross Trail Phase II

| Sample | File ID | DF | Analyzed | By | Prep Date | Prep Batch | Analytical Batch |
|---|---|---|---|---|---|---|---|
| OP11469-BS | HH319841.D | 1 | 01/03/15 | AG | 01/02/15 | OP11469 | GHH1430 |
| OP11469-BSD | HH319842.D | 1 | 01/03/15 | AG | 01/02/15 | OP11469 | GHH1430 |



**The QC reported here applies to the following samples:** **Method:** SW846 8015B M

C37834-1, C37834-2, C37834-3, C37834-4, C37834-5, C37834-6, C37834-7, C37834-8

| CAS No. | Compound | Spike mg/kg | BSP mg/kg | BSP % | BSD mg/kg | BSD % | RPD | Limits Rec/RPD |
|---|---|---|---|---|---|---|---|---|
| | TPH (Diesel) | 33.3 | 27.0 | 81 | 29.1 | 87 | 7 | 38-102/28 |
| | TPH (Motor Oil) | 33.3 | 30.0 | 90 | 30.1 | 90 | 0 | 42-111/26 |

| CAS No. | Surrogate Recoveries | BSP | BSD | Limits |
|---|---|---|---|---|
| 630-01-3 | Hexacosane | 97% | 98% | 37-122% |

* = Outside of Control Limits.

# Blank Spike/Blank Spike Duplicate Summary



**Job Number:** C37834
**Account:** TETRCAO Tetra Tech EMI
**Project:** Alameda Cross Trail Phase II

| Sample | File ID | DF | Analyzed | By | Prep Date | Prep Batch | Analytical Batch |
|---|---|---|---|---|---|---|---|
| OP11472-BS | HH319858.D | 1 | 01/05/15 | AG | 01/05/15 | OP11472 | GHH1431 |
| OP11472-BSD | HH319859.D | 1 | 01/05/15 | AG | 01/05/15 | OP11472 | GHH1431 |

**The QC reported here applies to the following samples:** **Method:** SW846 8015B M

C37834-9

| CAS No. | Compound | Spike mg/kg | BSP mg/kg | BSP % | BSD mg/kg | BSD % | RPD | Limits Rec/RPD |
|---|---|---|---|---|---|---|---|---|
| | TPH (Diesel) | 33.3 | 28.9 | 87 | 28.8 | 86 | 0 | 38-102/28 |
| | TPH (Motor Oil) | 33.3 | 30.2 | 91 | 28.8 | 86 | 5 | 42-111/26 |

| CAS No. | Surrogate Recoveries | BSP | BSD | Limits |
|---|---|---|---|---|
| 630-01-3 | Hexacosane | 92% | 90% | 37-122% |

* = Outside of Control Limits.

# Matrix Spike/Matrix Spike Duplicate Summary



**Job Number:** C37834
**Account:** TETRCAO Tetra Tech EMI
**Project:** Alameda Cross Trail Phase II

| Sample | File ID | DF | Analyzed | By | Prep Date | Prep Batch | Analytical Batch |
|---|---|---|---|---|---|---|---|
| OP11469-MS | HH319839.D | 3 | 01/03/15 | AG | 01/02/15 | OP11469 | GHH1430 |
| OP11469-MSD | HH319840.D | 3 | 01/03/15 | AG | 01/02/15 | OP11469 | GHH1430 |
| C37834-5 | HH319834.D | 1 | 01/03/15 | AG | 01/02/15 | OP11469 | GHH1430 |

**The QC reported here applies to the following samples:** **Method:** SW846 8015B M

C37834-1, C37834-2, C37834-3, C37834-4, C37834-5, C37834-6, C37834-7, C37834-8

| CAS No. | Compound | C37834-5 mg/kg | Q | Spike mg/kg | MS mg/kg | MS % | Spike mg/kg | MSD mg/kg | MSD % | RPD | Limits Rec/RPD |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | TPH (Diesel) | 6.39 | | 43.7 | 34.7 | 65 | 43.6 | 44.9 | 88 | 26 | 38-102/28 |
| | TPH (Motor Oil) | 30.3 | | 43.7 | 66.7 | 83 | 43.6 | 127 | 222* [a] | 62* [a] | 42-111/26 |

| CAS No. | Surrogate Recoveries | MS | MSD | C37834-5 | Limits |
|---|---|---|---|---|---|
| 630-01-3 | Hexacosane | 92% | 88% | 93% | 37-122% |

(a) Outside laboratory control limits.

* = Outside of Control Limits.

# Matrix Spike/Matrix Spike Duplicate Summary



**Job Number:** C37834
**Account:** TETRCAO Tetra Tech EMI
**Project:** Alameda Cross Trail Phase II

| Sample | File ID | DF | Analyzed | By | Prep Date | Prep Batch | Analytical Batch |
|---|---|---|---|---|---|---|---|
| OP11472-MS | HH319856.D | 25 | 01/05/15 | AG | 01/05/15 | OP11472 | GHH1431 |
| OP11472-MSD | HH319857.D | 25 | 01/05/15 | AG | 01/05/15 | OP11472 | GHH1431 |
| C37834-9 | HH319873.D | 25 | 01/05/15 | AG | 01/05/15 | OP11472 | GHH1431 |

**The QC reported here applies to the following samples:** **Method:** SW846 8015B M

C37834-9

| CAS No. | Compound | C37834-9 mg/kg | Q | Spike mg/kg | MS mg/kg | MS % | Spike mg/kg | MSD mg/kg | MSD % | RPD | Limits Rec/RPD |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | TPH (Diesel) | 129 | | 36.8 | 127 | -5* [a] | 36.8 | 96.0 | -90* [a] | 28 | 38-102/28 |
| | TPH (Motor Oil) | 609 | | 36.8 | 577 | -87* [a] | 36.8 | 560 | -133* [a] | 3 | 42-111/26 |

| CAS No. | Surrogate Recoveries | MS | MSD | C37834-9 | Limits |
|---|---|---|---|---|---|
| 630-01-3 | Hexacosane | 49% | 45% | 55% | 37-122% |

(a) Outside control limits due to high level in sample relative to spike amount.

* = Outside of Control Limits.

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## Metals Analysis

# QC Data Summaries

Includes the following where applicable:

- Method Blank Summaries
- Matrix Spike and Duplicate Summaries
- Blank Spike and Lab Control Sample Summaries
- Serial Dilution Summaries

BLANK RESULTS SUMMARY
Part 2 - Method Blanks

Login Number: C37834
Account: TETRCAO - Tetra Tech EMI
Project: Alameda Cross Trail Phase II

QC Batch ID: MP8944
Matrix Type: SOLID

Methods: SW846 6020
Units: mg/kg

Prep Date: 01/07/15

| Metal | RL | IDL | MDL | MB raw | final |
|---|---|---|---|---|---|
| Aluminum | 25 | 2.3 | 2.5 | | |
| Antimony | 0.25 | .14 | .008 | | |
| Arsenic | 0.25 | .3 | .017 | 0.33 | * (a) |
| Barium | 0.50 | .011 | .036 | | |
| Beryllium | 0.25 | | .027 | | |
| Boron | 2.5 | .09 | .066 | | |
| Cadmium | 0.25 | .0028 | .011 | | |
| Calcium | 250 | 40 | 38 | | |
| Chromium | 1.0 | .025 | .053 | | |
| Cobalt | 0.25 | .018 | .0085 | | |
| Copper | 1.0 | .018 | .11 | | |
| Iron | 25 | 3.1 | 1.6 | | |
| Lead | 0.25 | .0056 | .038 | 0.018 | <0.25 |
| Magnesium | 250 | .54 | 2.1 | | |
| Manganese | 0.50 | .012 | .18 | | |
| Molybdenum | 0.50 | .11 | .026 | | |
| Nickel | 1.0 | .18 | .043 | | |
| Potassium | 250 | 2.3 | 1.5 | | |
| Selenium | 0.25 | .17 | .012 | | |
| Silver | 0.25 | .0048 | .006 | | |
| Sodium | 250 | 2.2 | 2.6 | | |
| Strontium | 2.5 | .021 | .018 | | |
| Thallium | 0.25 | .04 | .015 | | |
| Tin | 2.5 | .055 | .036 | | |
| Titanium | 0.50 | .083 | .038 | | |
| Uranium | 0.25 | .06 | .006 | | |
| Vanadium | 1.0 | .36 | .051 | | |
| Zinc | 2.0 | .22 | .11 | | |

Associated samples MP8944: C37834-1, C37834-2, C37834-3, C37834-4, C37834-5, C37834-6, C37834-7, C37834-8, C37834-9

Results < IDL are shown as zero for calculation purposes
(*) Outside of QC limits
(anr) Analyte not requested
(a) All sample results < RL or > 10x method blank concentration.

MATRIX SPIKE AND DUPLICATE RESULTS SUMMARY

Login Number: C37834
Account: TETRCAO - Tetra Tech EMI
Project: Alameda Cross Trail Phase II

QC Batch ID: MP8944
Matrix Type: SOLID

Methods: SW846 6020
Units: mg/kg

Prep Date: 01/07/15

| Metal | C37834-5 Original | MS | Spikelot MPIR5 | % Rec | QC Limits |
|---|---|---|---|---|---|
| Aluminum | | | | | |
| Antimony | | | | | |
| Arsenic | 7.8 | 51.4 | 56.1 | 72.4N(a) | 75-125 |
| Barium | | | | | |
| Beryllium | | | | | |
| Boron | | | | | |
| Cadmium | | | | | |
| Calcium | | | | | |
| Chromium | | | | | |
| Cobalt | | | | | |
| Copper | | | | | |
| Iron | | | | | |
| Lead | 54.6 | 141 | 56.1 | 151.9N | 75-125 |
| Magnesium | | | | | |
| Manganese | | | | | |
| Molybdenum | | | | | |
| Nickel | | | | | |
| Potassium | | | | | |
| Selenium | | | | | |
| Silver | | | | | |
| Sodium | | | | | |
| Strontium | | | | | |
| Thallium | | | | | |
| Tin | | | | | |
| Titanium | | | | | |
| Uranium | | | | | |
| Vanadium | | | | | |
| Zinc | | | | | |

Associated samples MP8944: C37834-1, C37834-2, C37834-3, C37834-4, C37834-5, C37834-6, C37834-7, C37834-8, C37834-9

Results < IDL are shown as zero for calculation purposes
(*) Outside of QC limits
(N) Matrix Spike Rec. outside of QC limits
(anr) Analyte not requested
(a) Spike recovery indicates possible matrix interference and/or sample nonhomogeneity.

MATRIX SPIKE AND DUPLICATE RESULTS SUMMARY

Login Number: C37834
Account: TETRCAO - Tetra Tech EMI
Project: Alameda Cross Trail Phase II

QC Batch ID: MP8944 Methods: SW846 6020
Matrix Type: SOLID Units: mg/kg

Prep Date: 01/07/15

| Metal | C37834-5 Original | MSD | Spikelot MPIR5 | % Rec | MSD RPD | QC Limit |
|---|---|---|---|---|---|---|
| Aluminum | | | | | | |
| Antimony | | | | | | |
| Arsenic | 7.8 | 47.2 | 56.1 | 64.9N(a) | 8.5 | 20 |
| Barium | | | | | | |
| Beryllium | | | | | | |
| Boron | | | | | | |
| Cadmium | | | | | | |
| Calcium | | | | | | |
| Chromium | | | | | | |
| Cobalt | | | | | | |
| Copper | | | | | | |
| Iron | | | | | | |
| Lead | 54.6 | 206 | 56.1 | 267.8N(a | 37.5 (b) | 20 |
| Magnesium | | | | | | |
| Manganese | | | | | | |
| Molybdenum | | | | | | |
| Nickel | | | | | | |
| Potassium | | | | | | |
| Selenium | | | | | | |
| Silver | | | | | | |
| Sodium | | | | | | |
| Strontium | | | | | | |
| Thallium | | | | | | |
| Tin | | | | | | |
| Titanium | | | | | | |
| Uranium | | | | | | |
| Vanadium | | | | | | |
| Zinc | | | | | | |

Associated samples MP8944: C37834-1, C37834-2, C37834-3, C37834-4, C37834-5, C37834-6, C37834-7, C37834-8, C37834-9

Results < IDL are shown as zero for calculation purposes
(*) Outside of QC limits
(N) Matrix Spike Rec. outside of QC limits
(anr) Analyte not requested
(a) Spike recovery indicates possible matrix interference and/or sample nonhomogeneity.
(b) RPD acceptable due to low duplicate and sample concentrations.

SPIKE BLANK AND LAB CONTROL SAMPLE SUMMARY

Login Number: C37834
Account: TETRCAO - Tetra Tech EMI
Project: Alameda Cross Trail Phase II

QC Batch ID: MP8944
Matrix Type: SOLID

Methods: SW846 6020
Units: mg/kg

Prep Date: 01/07/15

| Metal | BSP Result | Spikelot MPIR5 | % Rec | QC Limits |
|---|---|---|---|---|
| Aluminum | | | | |
| Antimony | | | | |
| Arsenic | 46.7 | 50 | 93.4 | 80-120 |
| Barium | | | | |
| Beryllium | | | | |
| Boron | | | | |
| Cadmium | | | | |
| Calcium | | | | |
| Chromium | | | | |
| Cobalt | | | | |
| Copper | | | | |
| Iron | | | | |
| Lead | 45.8 | 50 | 91.6 | 80-120 |
| Magnesium | | | | |
| Manganese | | | | |
| Molybdenum | | | | |
| Nickel | | | | |
| Potassium | | | | |
| Selenium | | | | |
| Silver | | | | |
| Sodium | | | | |
| Strontium | | | | |
| Thallium | | | | |
| Tin | | | | |
| Titanium | | | | |
| Uranium | | | | |
| Vanadium | | | | |
| Zinc | | | | |

Associated samples MP8944: C37834-1, C37834-2, C37834-3, C37834-4, C37834-5, C37834-6, C37834-7, C37834-8, C37834-9

Results < IDL are shown as zero for calculation purposes
(*) Outside of QC limits
(anr) Analyte not requested

SERIAL DILUTION RESULTS SUMMARY

Login Number: C37834
Account: TETRCAO - Tetra Tech EMI
Project: Alameda Cross Trail Phase II

QC Batch ID: MP8944
Matrix Type: SOLID

Methods: SW846 6020
Units: ug/l

Prep Date: 01/07/15

| Metal | C37834-5 Original | SDL 5:25 | %DIF | QC Limits |
|---|---|---|---|---|
| Aluminum | | | | |
| Antimony | | | | |
| Arsenic | 71.7 | 112 | 12.7 (a) | 0-10 |
| Barium | | | | |
| Beryllium | | | | |
| Boron | | | | |
| Cadmium | | | | |
| Calcium | | | | |
| Chromium | | | | |
| Cobalt | | | | |
| Copper | | | | |
| Iron | | | | |
| Lead | 500 | 553 | 8.4 | 0-10 |
| Magnesium | | | | |
| Manganese | | | | |
| Molybdenum | | | | |
| Nickel | | | | |
| Potassium | | | | |
| Selenium | | | | |
| Silver | | | | |
| Sodium | | | | |
| Strontium | | | | |
| Thallium | | | | |
| Tin | | | | |
| Titanium | | | | |
| Uranium | | | | |
| Vanadium | | | | |
| Zinc | | | | |

Associated samples MP8944: C37834-1, C37834-2, C37834-3, C37834-4, C37834-5, C37834-6, C37834-7, C37834-8, C37834-9

Results < IDL are shown as zero for calculation purposes
(*) Outside of QC limits
(anr) Analyte not requested
(a) Percent difference acceptable due to low initial sample concentration (< 50 times IDL).

BLANK RESULTS SUMMARY
Part 2 - Method Blanks

Login Number: C37834
Account: TETRCAO - Tetra Tech EMI
Project: Alameda Cross Trail Phase II

QC Batch ID: MP8965
Matrix Type: SOLID

Methods: SW846 6020
Units: mg/kg

Prep Date: 01/09/15

| Metal | RL | IDL | MDL | MB raw | final |
|---|---|---|---|---|---|
| Aluminum | 25 | 2.3 | 2.5 | | |
| Antimony | 0.25 | .14 | .008 | | |
| Arsenic | 0.50 | .3 | .017 | 0.26 | <0.50(a) |
| Barium | 0.50 | .011 | .036 | | |
| Beryllium | 0.25 | | .027 | | |
| Boron | 2.5 | .09 | .066 | | |
| Cadmium | 0.25 | .0028 | .011 | | |
| Calcium | 250 | 40 | 38 | | |
| Chromium | 1.0 | .025 | .053 | | |
| Cobalt | 0.25 | .018 | .0085 | | |
| Copper | 1.0 | .018 | .11 | | |
| Iron | 25 | 3.1 | 1.6 | | |
| Lead | 0.25 | .0056 | .038 | | |
| Magnesium | 250 | .54 | 2.1 | | |
| Manganese | 0.50 | .012 | .18 | | |
| Molybdenum | 0.50 | .11 | .026 | | |
| Nickel | 1.0 | .18 | .043 | | |
| Potassium | 250 | 2.3 | 1.5 | | |
| Selenium | 0.25 | .17 | .012 | | |
| Silver | 0.25 | .0048 | .006 | | |
| Sodium | 250 | 2.2 | 2.6 | | |
| Strontium | 2.5 | .021 | .018 | | |
| Thallium | 0.25 | .04 | .015 | | |
| Tin | 2.5 | .055 | .036 | | |
| Titanium | 0.50 | .083 | .038 | | |
| Uranium | 0.25 | .06 | .006 | | |
| Vanadium | 1.0 | .36 | .051 | | |
| Zinc | 2.0 | .22 | .11 | | |

Associated samples MP8965: C37834-1, C37834-7

Results < IDL are shown as zero for calculation purposes
(*) Outside of QC limits
(anr) Analyte not requested
(a) Elevated RL/MDL due to positive bias of Method Blank.

MATRIX SPIKE AND DUPLICATE RESULTS SUMMARY

Login Number: C37834
Account: TETRCAO - Tetra Tech EMI
Project: Alameda Cross Trail Phase II

QC Batch ID: MP8965
Matrix Type: SOLID

Methods: SW846 6020
Units: mg/kg

Prep Date: 01/09/15

| Metal | C37834-1 Original | MS | Spikelot MPIR5 | % Rec | QC Limits |
|---|---|---|---|---|---|
| Aluminum | | | | | |
| Antimony | | | | | |
| Arsenic | 2.7 | 53.2 | 57.8 | 87.4 | 75-125 |
| Barium | | | | | |
| Beryllium | | | | | |
| Boron | | | | | |
| Cadmium | | | | | |
| Calcium | | | | | |
| Chromium | | | | | |
| Cobalt | | | | | |
| Copper | | | | | |
| Iron | | | | | |
| Lead | | | | | |
| Magnesium | | | | | |
| Manganese | | | | | |
| Molybdenum | | | | | |
| Nickel | | | | | |
| Potassium | | | | | |
| Selenium | | | | | |
| Silver | | | | | |
| Sodium | | | | | |
| Strontium | | | | | |
| Thallium | | | | | |
| Tin | | | | | |
| Titanium | | | | | |
| Uranium | | | | | |
| Vanadium | | | | | |
| Zinc | | | | | |

Associated samples MP8965: C37834-1, C37834-7

Results < IDL are shown as zero for calculation purposes
(*) Outside of QC limits
(N) Matrix Spike Rec. outside of QC limits
(anr) Analyte not requested

MATRIX SPIKE AND DUPLICATE RESULTS SUMMARY

Login Number: C37834
Account: TETRCAO - Tetra Tech EMI
Project: Alameda Cross Trail Phase II

QC Batch ID: MP8965
Matrix Type: SOLID

Methods: SW846 6020
Units: mg/kg

Prep Date: 01/09/15

| Metal | C37834-1 Original | MSD | Spikelot MPIR5 | % Rec | MSD RPD | QC Limit |
|---|---|---|---|---|---|---|
| Aluminum | | | | | | |
| Antimony | | | | | | |
| Arsenic | 2.7 | 58.5 | 59.9 | 93.2 | 9.5 | 20 |
| Barium | | | | | | |
| Beryllium | | | | | | |
| Boron | | | | | | |
| Cadmium | | | | | | |
| Calcium | | | | | | |
| Chromium | | | | | | |
| Cobalt | | | | | | |
| Copper | | | | | | |
| Iron | | | | | | |
| Lead | | | | | | |
| Magnesium | | | | | | |
| Manganese | | | | | | |
| Molybdenum | | | | | | |
| Nickel | | | | | | |
| Potassium | | | | | | |
| Selenium | | | | | | |
| Silver | | | | | | |
| Sodium | | | | | | |
| Strontium | | | | | | |
| Thallium | | | | | | |
| Tin | | | | | | |
| Titanium | | | | | | |
| Uranium | | | | | | |
| Vanadium | | | | | | |
| Zinc | | | | | | |

Associated samples MP8965: C37834-1, C37834-7

Results < IDL are shown as zero for calculation purposes
(*) Outside of QC limits
(N) Matrix Spike Rec. outside of QC limits
(anr) Analyte not requested

SPIKE BLANK AND LAB CONTROL SAMPLE SUMMARY

Login Number: C37834
Account: TETRCAO - Tetra Tech EMI
Project: Alameda Cross Trail Phase II

QC Batch ID: MP8965
Matrix Type: SOLID

Methods: SW846 6020
Units: mg/kg

Prep Date: 01/09/15

| Metal | BSP Result | Spikelot MPIR5 | % Rec | QC Limits |
|---|---|---|---|---|
| Aluminum | | | | |
| Antimony | | | | |
| Arsenic | 45.1 | 50 | 90.2 | 80-120 |
| Barium | | | | |
| Beryllium | | | | |
| Boron | | | | |
| Cadmium | | | | |
| Calcium | | | | |
| Chromium | | | | |
| Cobalt | | | | |
| Copper | | | | |
| Iron | | | | |
| Lead | | | | |
| Magnesium | | | | |
| Manganese | | | | |
| Molybdenum | | | | |
| Nickel | | | | |
| Potassium | | | | |
| Selenium | | | | |
| Silver | | | | |
| Sodium | | | | |
| Strontium | | | | |
| Thallium | | | | |
| Tin | | | | |
| Titanium | | | | |
| Uranium | | | | |
| Vanadium | | | | |
| Zinc | | | | |

Associated samples MP8965: C37834-1, C37834-7

Results < IDL are shown as zero for calculation purposes
(*) Outside of QC limits
(anr) Analyte not requested

SERIAL DILUTION RESULTS SUMMARY

Login Number: C37834
Account: TETRCAO - Tetra Tech EMI
Project: Alameda Cross Trail Phase II

QC Batch ID: MP8965
Matrix Type: SOLID

Methods: SW846 6020
Units: ug/l

Prep Date: 01/09/15

| Metal | C37834-1 Original | SDL 5:25 | %DIF | QC Limits |
|---|---|---|---|---|
| Aluminum | | | | |
| Antimony | | | | |
| Arsenic | 22.5 | 29.1 | 29.4 (a) | 0-10 |
| Barium | | | | |
| Beryllium | | | | |
| Boron | | | | |
| Cadmium | | | | |
| Calcium | | | | |
| Chromium | | | | |
| Cobalt | | | | |
| Copper | | | | |
| Iron | | | | |
| Lead | | | | |
| Magnesium | | | | |
| Manganese | | | | |
| Molybdenum | | | | |
| Nickel | | | | |
| Potassium | | | | |
| Selenium | | | | |
| Silver | | | | |
| Sodium | | | | |
| Strontium | | | | |
| Thallium | | | | |
| Tin | | | | |
| Titanium | | | | |
| Uranium | | | | |
| Vanadium | | | | |
| Zinc | | | | |

Associated samples MP8965: C37834-1, C37834-7

Results < IDL are shown as zero for calculation purposes
(*) Outside of QC limits
(anr) Analyte not requested
(a) Percent difference acceptable due to low initial sample concentration (< 50 times IDL).

Northern California ACCUTEST LABORATORIES

## Misc. Forms

### Custody Documents and Other Forms

(Accutest Laboratories Southeast, Inc.)

Includes the following where applicable:

- Chain of Custody

ACCUTEST LABORATORIES

Accutest ID and PO#: C37834

2105 Lundy Avenue, San Jose, CA 95131 Phone :( 408)588-0200 Fax: (408)588-0201

# Subcontract Chain of Custody

**Subcontract Lab: Accutest Laboratories Southeast**
**Date Sent:** 01/02/2015
**Date Due: 01/08/2015**

**Project Name: TETRCAO6786**
**Project Location:**

| Accutest Lab Number | Customer Sample Name/Field Point ID | Matrix | Method | Collect Date | Collect Time |
|---|---|---|---|---|---|
| C37834-1 | | SO | H8151FL | | |
| C37834-2 | | SO | H8151FL | | |
| C37834-3 | | SO | H8151FL | | |
| C37834-4 | | SO | H8151FL | | |
| C37834-5 (run MS/MSD) | | SO | H8151FL (run MS/MSD) | | |
| C37834-6 | | SO | H8151FL | | |
| C37834-7 | | SO | H8151FL | | |
| C37834-8 | | SO | H8151FL | | |
| C37834-9 | | SO | H8151FL | | |
| | | | | | |
| | | | | | |

**Comments**: 1 x 4oz Glass Jar per sample

| | | |
|---|---|---|
| Relinquished By: Lee.B | Received By: FedEx | Date: 01/02/15 Time: 15:00 |
| Relinquished By: FedEx 01-03-15 1215 | Received By: | Date: Time: |
| Relinquished By: | Received By: | Date: Time: |

Page 1

30

**Send Report to:** nutank@accutest.com

C37834: Chain of Custody
Page 1 of 3
Accutest Laboratories Southeast, Inc.

# ACCUTEST LABORATORIES SAMPLE RECEIPT CONFIRMATION

ACCUTEST'S JOB NUMBER: C37834 CLIENT: ALNC PROJECT: Tetra 06786

DATE/TIME RECEIVED: 01-03-15 12:15 {MM/DD/YY 24:00} NUMBER OF COOLERS RECEIVED: 1

METHOD OF DELIVERY: (FEDEX) UPS ACCUTEST COURIER DELIVERY OTHER:

AIRBILL NUMBERS: 7724 4045 6232

## COOLER INFORMATION

- [ ] CUSTODY SEAL NOT PRESENT OR NOT INTACT
- [ ] CHAIN OF CUSTODY NOT RECEIVED (COC)
- [ ] ANALYSIS REQUESTED IS UNCLEAR OR MISSING
- [ ] SAMPLE DATES OR TIMES UNCLEAR OR MISSING
- [ ] TEMPERATURE CRITERIA NOT MET

## TEMPERATURE INFORMATION

- [ ] IR THERM ID 1 CORR. FACTOR +0.4
- [ ] OBSERVED TEMPS: 2.6
- [ ] CORRECTED TEMPS: 3.0

## TRIP BLANK INFORMATION

- [ ] TRIP BLANK PROVIDED
- [Y] TRIP BLANK NOT PROVIDED
- [Y] TRIP BLANK NOT ON COC
- [ ] TRIP BLANK INTACT
- [ ] TRIP BLANK NOT INTACT
- [ ] RECEIVED WATER TRIP BLANK
- [ ] RECEIVED SOIL TRIP BLANK

## SAMPLE INFORMATION

- [ ] INCORRECT NUMBER OF CONTAINERS USED
- [ ] SAMPLE RECEIVED IMPROPERLY PRESERVED
- [ ] INSUFFICIENT VOLUME FOR ANALYSIS
- [ ] DATES/TIMES ON COC DO NOT MATCH SAMPLE LABEL
- [ ] ID'S ON COC DO NOT MATCH LABEL
- [ ] VOC VIALS HAVE HEADSPACE (MACRO BUBBLES)
- [ ] BOTTLES RECEIVED BUT ANALYSIS NOT REQUESTED
- [ ] NO BOTTLES RECEIVED FOR ANALYSIS REQUESTED
- [ ] UNCLEAR FILTERING OR COMPOSITING INSTRUCTIONS
- [ ] SAMPLE CONTAINER(S) RECEIVED BROKEN
- [ ] 5035 FIELD KITS NOT RECEIVED WITHIN 48 HOURS
- [ ] BULK VOA SOIL JARS NOT RECEIVED WITHIN 48 HOURS
- [ ] % SOLIDS JAR NOT RECEIVED
- [ ] RESIDUAL CHLORINE PRESENT LOT#

{APPLICABLE TO EPA 600 SERIES OR NORTH CAROLINA ORGANICS}

## MISC. INFORMATION

NUMBER OF ENCORES ? 25-GRAM 5-GRAM

NUMBER OF 5035 FIELD KITS ?

NUMBER OF LAB FILTERED METALS ?

pH PAPER LOT#s WIDE RANGE A036122 NARROW RANGE HC421754 OTHER (specify) 405-230010

SUMMARY OF COMMENTS:

TECHNICIAN SIGNATURE/DATE 01-03-15 REVIEWER SIGNATURE/DATE 01/03/15

NF 10/14 receipt confirmation 102914.xls

8.1

8

**C37834: Chain of Custody**
**Page 2 of 3**

8.1

8

**C37834: Chain of Custody**
**Page 3 of 3**

Northern California ACCUTEST LABORATORIES

## GC Semi-volatiles

# QC Data Summaries

(Accutest Laboratories Southeast, Inc.)



Includes the following where applicable:

- Method Blank Summaries
- Blank Spike Summaries
- Matrix Spike and Duplicate Summaries

# Method Blank Summary



**Job Number:** C37834
**Account:** ALNCA Accutest Northern California, Inc.
**Project:** TETRCAO: Alameda Cross Trail Phase II

| Sample | File ID | DF | Analyzed | By | Prep Date | Prep Batch | Analytical Batch |
|---|---|---|---|---|---|---|---|
| OP54497-MB | CC046769.D | 1 | 01/06/15 | FS | 01/05/15 | OP54497 | GCC777 |

**The QC reported here applies to the following samples:** **Method:** SW846 8151A

C37834-1, C37834-2, C37834-3, C37834-4, C37834-5, C37834-6, C37834-7, C37834-8

| CAS No. | Compound | Result | RL | MDL | Units | Q |
|---|---|---|---|---|---|---|
| 94-75-7 | 2,4-D | ND | 33 | 5.7 | ug/kg | |
| 93-72-1 | 2,4,5-TP (Silvex) | ND | 3.3 | 0.91 | ug/kg | |
| 93-76-5 | 2,4,5-T | ND | 3.3 | 0.67 | ug/kg | |
| 1918-00-9 | Dicamba | ND | 3.3 | 1.1 | ug/kg | |
| 88-85-7 | Dinoseb | ND | 83 | 17 | ug/kg | |
| 75-99-0 | Dalapon | ND | 170 | 33 | ug/kg | |
| 120-36-5 | Dichloroprop | ND | 33 | 13 | ug/kg | |
| 94-82-6 | 2,4-DB | ND | 33 | 12 | ug/kg | |
| 93-65-2 | MCPP | ND | 3300 | 890 | ug/kg | |
| 94-74-6 | MCPA | ND | 3300 | 800 | ug/kg | |
| 87-86-5 | Pentachlorophenol | ND | 3.3 | 0.51 | ug/kg | |

| CAS No. | Surrogate Recoveries | | Limits |
|---|---|---|---|
| 19719-28-9 | 2,4-DCAA | 100% [a] | 31-132% |

(a) Surrogate recoveries corrected for actual spike amount.

# Method Blank Summary



**Job Number:** C37834
**Account:** ALNCA Accutest Northern California, Inc.
**Project:** TETRCAO: Alameda Cross Trail Phase II

| Sample | File ID | DF | Analyzed | By | Prep Date | Prep Batch | Analytical Batch |
|---|---|---|---|---|---|---|---|
| OP54503-MB | CC046854.D | 1 | 01/08/15 | EM | 01/06/15 | OP54503 | GCC779 |

**The QC reported here applies to the following samples:** **Method:** SW846 8151A

C37834-9

| CAS No. | Compound | Result | RL | MDL | Units | Q |
|---|---|---|---|---|---|---|
| 94-75-7 | 2,4-D | ND | 33 | 5.7 | ug/kg | |
| 93-72-1 | 2,4,5-TP (Silvex) | ND | 3.3 | 0.91 | ug/kg | |
| 93-76-5 | 2,4,5-T | ND | 3.3 | 0.67 | ug/kg | |
| 1918-00-9 | Dicamba | ND | 3.3 | 1.1 | ug/kg | |
| 88-85-7 | Dinoseb | ND | 83 | 17 | ug/kg | |
| 75-99-0 | Dalapon | ND | 170 | 33 | ug/kg | |
| 120-36-5 | Dichloroprop | ND | 33 | 13 | ug/kg | |
| 94-82-6 | 2,4-DB | ND | 33 | 12 | ug/kg | |
| 93-65-2 | MCPP | ND | 3300 | 890 | ug/kg | |
| 94-74-6 | MCPA | ND | 3300 | 800 | ug/kg | |
| 87-86-5 | Pentachlorophenol | ND | 3.3 | 0.51 | ug/kg | |

| CAS No. | Surrogate Recoveries | | Limits |
|---|---|---|---|
| 19719-28-9 | 2,4-DCAA | 80% | 31-132% |

# Blank Spike Summary



**Job Number:** C37834
**Account:** ALNCA Accutest Northern California, Inc.
**Project:** TETRCAO: Alameda Cross Trail Phase II

| Sample | File ID | DF | Analyzed | By | Prep Date | Prep Batch | Analytical Batch |
|---|---|---|---|---|---|---|---|
| OP54497-BS | CC046768.D | 1 | 01/06/15 | FS | 01/05/15 | OP54497 | GCC777 |

**The QC reported here applies to the following samples:** **Method:** SW846 8151A

C37834-1, C37834-2, C37834-3, C37834-4, C37834-5, C37834-6, C37834-7, C37834-8

| CAS No. | Compound | Spike ug/kg | BSP ug/kg | BSP % | Limits |
|---|---|---|---|---|---|
| 94-75-7 | 2,4-D | 167 | 163 | 98 | 43-124 |
| 93-72-1 | 2,4,5-TP (Silvex) | 16.7 | 16.1 | 97 | 41-130 |
| 93-76-5 | 2,4,5-T | 16.7 | 15.5 | 93 | 40-124 |
| 1918-00-9 | Dicamba | 16.7 | 14.8 | 89 | 32-129 |
| 88-85-7 | Dinoseb | 83.3 | 32.2 | 39 | 10-124 |
| 75-99-0 | Dalapon | 417 | 158 | 38 | 10-133 |
| 120-36-5 | Dichloroprop | 167 | 190 | 114 | 51-145 |
| 94-82-6 | 2,4-DB | 167 | 134 | 80 | 42-130 |
| 93-65-2 | MCPP | 16700 | 14800 | 89 | 34-130 |
| 94-74-6 | MCPA | 16700 | 14600 | 88 | 37-124 |
| 87-86-5 | Pentachlorophenol | 33.4 | 33.3 | 100 | 45-126 |

| CAS No. | Surrogate Recoveries | BSP | Limits |
|---|---|---|---|
| 19719-28-9 | 2,4-DCAA | 130% [a] | 31-132% |

(a) Surrogate recoveries corrected for actual spike amount.

* = Outside of Control Limits.

# Blank Spike Summary



**Job Number:** C37834
**Account:** ALNCA Accutest Northern California, Inc.
**Project:** TETRCAO: Alameda Cross Trail Phase II

| Sample | File ID | DF | Analyzed | By | Prep Date | Prep Batch | Analytical Batch |
|---|---|---|---|---|---|---|---|
| OP54503-BS | CC046853.D | 1 | 01/08/15 | EM | 01/06/15 | OP54503 | GCC779 |

**The QC reported here applies to the following samples:** **Method:** SW846 8151A

C37834-9

| CAS No. | Compound | Spike ug/kg | BSP ug/kg | BSP % | Limits |
|---|---|---|---|---|---|
| 94-75-7 | 2,4-D | 167 | 186 | 112 | 43-124 |
| 93-72-1 | 2,4,5-TP (Silvex) | 16.7 | 19.1 | 115 | 41-130 |
| 93-76-5 | 2,4,5-T | 16.7 | 19.4 | 116 | 40-124 |
| 1918-00-9 | Dicamba | 16.7 | 16.9 | 101 | 32-129 |
| 88-85-7 | Dinoseb | 83.3 | 36.7 | 44 | 10-124 |
| 75-99-0 | Dalapon | 417 | 134 | 32 | 10-133 |
| 120-36-5 | Dichloroprop | 167 | 214 | 128 | 51-145 |
| 94-82-6 | 2,4-DB | 167 | 176 | 106 | 42-130 |
| 93-65-2 | MCPP | 16700 | 17700 | 106 | 34-130 |
| 94-74-6 | MCPA | 16700 | 16700 | 100 | 37-124 |
| 87-86-5 | Pentachlorophenol | 33.3 | 39.2 | 118 | 45-126 |

| CAS No. | Surrogate Recoveries | BSP | Limits |
|---|---|---|---|
| 19719-28-9 | 2,4-DCAA | 100% | 31-132% |

* = Outside of Control Limits.

# Matrix Spike/Matrix Spike Duplicate Summary



**Job Number:** C37834
**Account:** ALNCA Accutest Northern California, Inc.
**Project:** TETRCAO: Alameda Cross Trail Phase II

| Sample | File ID | DF | Analyzed | By | Prep Date | Prep Batch | Analytical Batch |
|---|---|---|---|---|---|---|---|
| OP54497-MS | CC046797.D | 1 | 01/06/15 | FS | 01/05/15 | OP54497 | GCC777 |
| OP54497-MSD | CC046798.D | 1 | 01/06/15 | FS | 01/05/15 | OP54497 | GCC777 |
| C37834-5 | CC046792.D | 1 | 01/06/15 | FS | 01/05/15 | OP54497 | GCC777 |

**The QC reported here applies to the following samples:** **Method:** SW846 8151A

C37834-1, C37834-2, C37834-3, C37834-4, C37834-5, C37834-6, C37834-7, C37834-8

| CAS No. | Compound | C37834-5 ug/kg | Q | Spike ug/kg | MS ug/kg | MS % | Spike ug/kg | MSD ug/kg | MSD % | RPD | Limits Rec/RPD |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 94-75-7 | 2,4-D | ND | | 216 | 187 | 87 | 213 | 192 | 90 | 3 | 43-124/32 |
| 93-72-1 | 2,4,5-TP (Silvex) | ND | | 21.6 | 19.8 | 92 | 21.3 | 16.9 | 79 | 16 | 41-130/31 |
| 93-76-5 | 2,4,5-T | ND | | 21.6 | 17.0 | 79 | 21.3 | 16.4 | 77 | 4 | 40-124/35 |
| 1918-00-9 | Dicamba | ND | | 21.6 | 15.0 | 69 | 21.3 | 13.9 | 65 | 8 | 32-129/34 |
| 88-85-7 | Dinoseb | ND | | 108 | 59.9 | 56 | 107 | 45.9 | 43 | 26 | 10-124/41 |
| 75-99-0 | Dalapon | ND | | 540 | 242 | 45 | 533 | 174 | 33 | 33 | 10-133/35 |
| 120-36-5 | Dichloroprop | ND | | 216 | 231 | 107 | 213 | 213 | 100 | 8 | 51-145/34 |
| 94-82-6 | 2,4-DB | ND | | 216 | 7300 | 3382* | 213 | 909 | 427* | 156* | 42-130/34 |
| 93-65-2 | MCPP | ND | | 21600 | 19100 | 88 | 21300 | 18900 | 89 | 1 | 34-130/34 |
| 94-74-6 | MCPA | ND | | 21600 | 20000 | 93 | 21300 | 19300 | 91 | 4 | 37-124/35 |
| 87-86-5 | Pentachlorophenol | ND | | 43.2 | 41.3 | 96 | 42.6 | 39.9 | 94 | 3 | 45-126/32 |

| CAS No. | Surrogate Recoveries | MS | MSD | C37834-5 | Limits |
|---|---|---|---|---|---|
| 19719-28-9 | 2,4-DCAA | 110% [a] | 80% [a] | 60% [a] | 31-132% |

(a) Surrogate recoveries corrected for actual spike amount.

* = Outside of Control Limits.

# Matrix Spike/Matrix Spike Duplicate Summary



**Job Number:** C37834
**Account:** ALNCA Accutest Northern California, Inc.
**Project:** TETRCAO: Alameda Cross Trail Phase II

| Sample | File ID | DF | Analyzed | By | Prep Date | Prep Batch | Analytical Batch |
|---|---|---|---|---|---|---|---|
| OP54503-MS | CC046856.D | 1 | 01/08/15 | EM | 01/06/15 | OP54503 | GCC779 |
| OP54503-MSD | CC046857.D | 1 | 01/08/15 | EM | 01/06/15 | OP54503 | GCC779 |
| C37834-9 | CC046855.D | 1 | 01/08/15 | EM | 01/06/15 | OP54503 | GCC779 |

**The QC reported here applies to the following samples:** **Method:** SW846 8151A

C37834-9

| CAS No. | Compound | C37834-9 ug/kg | Q | Spike ug/kg | MS ug/kg | MS % | Spike ug/kg | MSD ug/kg | MSD % | RPD | Limits Rec/RPD |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 94-75-7 | 2,4-D | ND | | 185 | 76.2 | 41* | 185 | 101 | 55 | 28 | 43-124/32 |
| 93-72-1 | 2,4,5-TP (Silvex) | ND | | 18.5 | 7.0 | 38* | 18.5 | 9.9 | 54 | 34* | 41-130/31 |
| 93-76-5 | 2,4,5-T | ND | | 18.5 | 6.4 | 35* | 18.5 | 9.2 | 50 | 36* | 40-124/35 |
| 1918-00-9 | Dicamba | ND | | 18.5 | 5.4 | 29* | 18.5 | 8.7 | 47 | 47* | 32-129/34 |
| 88-85-7 | Dinoseb | ND | | 92.5 | 38.3 | 41 | 92.5 | 52.9 | 57 | 32 | 10-124/41 |
| 75-99-0 | Dalapon | ND | | 462 | 44.3 | 10 | 462 | 151 | 33 | 109* | 10-133/35 |
| 120-36-5 | Dichloroprop | ND | | 185 | 96.9 | 52 | 185 | 152 | 82 | 44* | 51-145/34 |
| 94-82-6 | 2,4-DB | ND | | 185 | 992 | 536* | 185 | 502 | 271* | 66* | 42-130/34 |
| 93-65-2 | MCPP | ND | | 18500 | 8370 | 45 | 18500 | 20400 | 110 | 84* | 34-130/34 |
| 94-74-6 | MCPA | ND | | 18500 | 9020 | 49 | 18500 | 13100 | 71 | 37* | 37-124/35 |
| 87-86-5 | Pentachlorophenol | ND | | 37 | 16.3 | 44* | 37 | 23.5 | 64 | 36* | 45-126/32 |

| CAS No. | Surrogate Recoveries | MS | MSD | C37834-9 | Limits |
|---|---|---|---|---|---|
| 19719-28-9 | 2,4-DCAA | 30%* | 46% | 15%* [a] | 31-132% |

(a) Surrogate recoveries outside of control limits, confirmed by MS/MSD.

* = Outside of Control Limits.

# ATTACHMENT C

# Permits

# Alameda County Public Works Agency - Water Resources Well Permit

Public Works Agency
Alameda County

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

**Application Approved on: 12/22/2014 By jamesy**

**Permit Numbers: W2014-1180**
**Permits Valid from 12/29/2014 to 12/30/2014**

| | | | |
|---|---|---|---|
| **Application Id:** | 1419011003212 | **City of Project Site:** | Alameda |
| **Site Location:** | APN: 74-905-20-3 Former railroad immediately south of Ralph Appazzato Parkway, between Main St. and Webster St. | | |
| **Project Start Date:** | 12/29/2014 | **Completion Date:** | 12/30/2014 |
| **Assigned Inspector:** | Contact Steve Miller at (510) 670-5517 or stevem@acpwa.org | | |
| **Applicant:** | Tetra Tech - Mark Duffy<br>1999 Harrison St., Suite 500, Oakland, CA 94612 | **Phone:** | 510-302-6278 |
| **Property Owner:** | City of Alameda Public Works Dept.<br>950 West Mall Square, Alameda, CA 94501 | **Phone:** | 510-747-7948 |
| **Client:** | City of Alameda Public Works Dept.<br>950 West Mall Square, Alameda, CA 94501 | **Phone:** | 510-747-7930 |
| **Contact:** | Mark Duffy | **Phone:**<br>**Cell:** | 510-302-6278<br>518-480-5947 |

| | | |
|---|---|---|
| | **Total Due:** | $265.00 |
| **Receipt Number: WR2014-0521** | **Total Amount Paid:** | $265.00 |
| **Payer Name : Mark T. Duffy** | Paid By: VISA | **PAID IN FULL** |

**Works Requesting Permits:**

Borehole(s) for Geo Probes-Sampling 24 to 72 hours only - 10 Boreholes
Driller: Vironex - Lic #: 705927 - Method: DP **Work Total: $265.00**

**Specifications**

| Permit Number | Issued Dt | Expire Dt | # Boreholes | Hole Diam | Max Depth |
|---|---|---|---|---|---|
| W2014-1180 | 12/22/2014 | 03/29/2015 | 10 | 2.25 in. | 8.00 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 assigned inspector listed on the top of the permit at least five (5) working days prior to starting, once the permit has been approved. Confirm the scheduled date(s) at least 24 hours prior to drilling.

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

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

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

7. NOTE:
Under California laws, the owner/operator are responsible for reporting the contamination to the governmental regulatory agencies under Section 25295(a). The owner/operator is liable for civil penalties under Section 25299(a)(4) and criminal penalties under Section 25299(d) for failure to report a leak. The owner/operator is liable for civil penalties under Section 25299(b)(4) for knowing failure to ensure compliance with the law by the operator. These penalty provisions do not apply to a potential buyer.

8. 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.

9. 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.