CAMBRIA

August 26, 2003

FILE COPY

Mr. Barney Chan
Alameda County Health Care Services Agency
Department of Environmental Health
1131 Harbor Bay Parkway, Suite 250
Alameda, California 94502

Re: **Investigation Workplan**
1137-1167 65th Street
Oakland, California 94608
Case No.: RO0000082

Dear Mr. Chan:

On behalf of John Nady, Cambria Environmental Technology, Inc. (Cambria) is pleased to submit this *Investigation Work Plan* for the above-referenced property.

If you have any questions or comments regarding this report, please contact me at (510) 420-3338 or Bob Clark-Riddell at (510) 420-3303.

Sincerely,
Cambria Environmental Technology, Inc.

Jason D. Olson, E.I.T.
Project Manager

Enclosure: August 26, 2003 *Investigation Work Plan*

cc: Mr. Frederic Schrag, 6701 Shellmound Street, Emeryville, California 94608

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INVESTIGATION WORK PLAN

1137-1167 65TH STREET
ALAMEDA, CALIFORNIA 94608
CASE NO.: RO0000082

AUGUST 26, 2003

Prepared for:

John Nady
6701 Shellmound Street
Emeryville, California 94608

Prepared by:

Cambria Environmental Technology, Inc.
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Jason D. Olson, E.I.T.
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REGISTERED PROFESSIONAL ENGINEER
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Principal Engineer

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INVESTIGATION WORK PLAN
1137-1167 65TH STREET
ALAMEDA, CALIFORNIA 94608
CASE NO.: RO0000082

AUGUST 26, 2003

1.0 INTRODUCTION

On behalf of John Nady, Cambria Environmental Technology, Inc. (Cambria) has prepared this work plan for a subsurface investigation at the above-referenced site (Figure 1). In letters dated May 19 and June 30, 2003 the Alameda County Health Care Services Agency (ACHCSA) requested a work plan for additional assessment and further site characterization. The regulatory letters are included in Appendix A. The primary objective of the workplan scope of work is to determine the lateral and vertical extent of chemicals of concern (COCs) using a dynamic assessment technique. Cambria will install planned borings and wells, with additional step out borings to more fully delineate the extent of COCs based on field and laboratory data. Additional work will include a utility / conduit survey, sensitive receptor survey, and a shallow soil gas investigation. Discussed below are the regulatory requests, site background, previous investigations, data gap analysis, and proposed scope of work and schedule.

2.0 REGULATORY REQUESTS

2.1. May 19, 2003 ACHCSA Letter

In the May 19, 2003 letter, the ACHCSA requested that John Nady submit a work plan for the following scope of work:

- Determine the extent of total petroleum hydrocarbons (TPH) as motor oil, diesel, stoddard solvent or gasoline in groundwater in the areas of borings SB-1, SB-6, SB-7, and SB-8 and the extent of halogenated volatile organic compounds (HVOCs) in groundwater in the areas of borings SB-6, SB-7, and SB-10.
- Determine the extent of TPH and HVOCs in the areas of the former USTs.
- Determine of the extent of free product in the area of soil boring SB-4.
- Identify and appropriately sample possible source area locations (piping, tanks, dispensers, etc.).
- Determine the site-specific groundwater gradient through the installation of monitoring wells screened appropriately for the various perched groundwater lenses.

2.2. June 30, 2003 ACHCSA Letter

In the June 30, 2003 letter, the ACHCSA granted a work plan extension to allow for incorporation of geologic cross sections and the completion of a geophysical survey.

3.0 SITE BACKGROUND

3.1. Site Description

The site is currently comprised of a group of buildings separated by narrow walkways and occupying the addresses of 1137, 1145, 1147, and 1167, Oakland, California (Figure 2). The site topography is at an elevation of approximately 35 feet above mean sea level (ft msl). The site vicinity is of mixed residential, commercial, and light industrial use.

3.2. Hydrogeologic Cross Sections

Cambria prepared three hydrogeologic cross sections to facilitate future placement of boring and well screen intervals. The cross section locations are shown on Figure 2. The cross sections are included as Figures 3, 4, and 5. Boring logs are included in Appendix B.

3.3. Regional Geology and Setting

The site is located approximately ¾ miles east of the San Francisco Bay. The site is situated on alluvial fan deposits of the Temescal Formation, comprised of interfingering lenses of clayey gravel, sandy silt, clay, and sand-clay-silt mixtures (Radburch, D.H., 1957).

3.4. Site Geology

Based on previous investigations, the subsurface soils generally consist of interbedded layers of low permeability silts and clays and moderate permeability sandy silt and clay mixtures to a total explored depth of 36 ft bgs. Several discontinuous, 0.5-foot thick stringers of silty sand are present from 15 to 18 ft bgs in the southeastern portion of the site.

3.5. Site Hydrogeology

Several water-bearing zones have been identified beneath the site. A perched zone ranging in thickness from 1.5 to 2.0-feet is typically present at varying depths from approximately 3.5 to 6 feet bgs. A shallow water-bearing zone ranging in thickness from 1 to 8-feet is present at varying depths

chloroethane in groundwater at this location is defined to the east and northeast by groundwater samples collected from borings SB-6 and SB-10, respectively, and undefined in all other directions.

SB-8 – Analytical data for the groundwater sample exceeds the ESL for TPHg, TPHss, TPHd, TPHmo, and 1,2-dichlorobenzene (1,2-DCB) (14 ug/L). The lateral extent of TPHg, TPHss, TPHd, TPHmo, and 1,2-DCB in groundwater at this location is defined to the north, east, southeast, and south by groundwater samples collected from borings SB-1, SB-2, SB-9, and SB-10, respectively, and undefined to the west.

SB-10 – Analytical data for the groundwater sample exceeds the ESL for vinyl chloride (4.9 ug/L). The lateral extent of vinyl chloride in groundwater at this location is defined to the south, southwest, north, and east by groundwater samples collected from borings SB-6, SB-7, SB-8, and SB-9, respectively, and undefined to the west and northwest.

5.3. Potential Source Area Data Gaps

Product piping detected during the July 7, 2003 geophysical survey and a large floor drain in the 1167 65th Street Building may represent additional source areas (Figure 2). The product piping runs are defined by samples collected from borings SB-8 and SB-9 and from the former interior and exterior UST areas. The "T" junction of piping underneath the 1167 65th Street building (Figure 2) has not been adequately characterized for possible TPH and VOCs in soil and groundwater. No assessment of the floor drain area in the 1167 65th Street building has been conducted.

6.0 INVESTIGATION SCOPE OF WORK

Cambria has prepared a thorough investigation scope of work to facilitate comprehensive site characterization in a rapid and cost effective manner. Cambria will first complete a utility / conduit study and a sensitive receptor survey and, if merited, expand our subsurface investigation scope of work. Cambria will then conduct borings and monitoring well installation using a dynamic site assessment technique. After completing the planned borings, additional "step out" borings and / or wells will be installed based on field and available laboratory data to fully delineate the extent of COCs. During the final phase of investigation, Cambria will conduct a soil gas investigation to collect data regarding potential indoor air exposures. These tasks are describe below.

6.1. Task 1 – Sensitive Receptor Survey and Conduit Study

Cambria will conduct a sensitive receptor survey that includes a review of available well completion logs for wells located within 1,320 feet (¼-mile) obtained from the California Department of Water

from approximately 6 to 12 ft bgs. In certain areas of the site, the perched and shallow water-bearing zones appear to be hydraulically connected. This perched and / or shallow water-bearing zone (present at approximately 3.5 to 12 ft bgs) has been designated water-bearing Zone A. A semi-confined or confined water-bearing zone is present in the southeastern portion of the site at approximately 15 to 18 ft bgs, and has been designated water-bearing Zone B. A deeper, confined or semi-confined water-bearing zone is present in the northeastern portion of the site (boring SB-2) at approximately 30 to 36 ft bgs, and has been designated water-bearing Zone C. The lower extent of water-bearing Zone C is not yet defined.

The groundwater gradients and flow directions for the various water-bearing zones cannot be determined due to an inadequate number of borings screened in each zone during the previous investigations. The inferred direction of groundwater flow for all water-bearing zones beneath the site is west towards the bay.

3.6. Site Groundwater Use

Cambria understands that groundwater in the East Bay plain beneath and adjacent to Emeryville, and therefore beneath the site, is not considered a potential drinking water resource.

4.0 PREVIOUS INVESTIGATIONS AND TANK REMOVAL

4.1. 1982 Tank Removal

One gasoline underground storage tank (UST) and associated gas pump was reportedly removed in 1982. Based on depressions in the site asphalt, the gasoline UST was most likely located beneath the former gasoline pump (Figure 2).

4.2. 1998 Tank Removal

In 1998, a 750-gallon heating oil underground storage tank (UST) was removed from beneath the sidewalk in front of 1167 65th Street (Figure 2). Approximately 18 cubic yards of impacted soil was removed from the UST cavity and transported under manifest for disposal. The former UST cavity was subsequently backfilled with clean fill and resurfaced. One confirmation soil sample was collected at a depth of 12 feet below ground surface (bgs) and analyzed for total petroleum hydrocarbons as diesel (TPHd) and benzene, toluene, ethylbenzene, and total xylenes (BTEX). The sample contained 14 micrograms per kilogram (µg/kg) TPHd and no detectable concentrations of BTEX constituents. Additional information is present in the December 24, 1998 *UST Removal Report* prepared by Artesian.

4.3. 2001 Product Removal

In November 2001, product containing total petroleum hydrocarbon (TPH) compounds with BTEX and volatile organic compounds (VOCs) including 1,2-dichloroethane were removed from six USTs located at the site. The removed product was transported under chain of custody for disposal as hazardous waste.

4.4. 2002 Tank Removal and Abandonments

In February 2002, five of the six USTs emptied in November 2001 were excavated and removed, and one tank was filled with cement slurry and abandoned in place. NorCal Geophysical Consultants (NorCal) conducted a limited geophysical survey to identify the location of the buried USTs. Analysis of soil and groundwater samples collected from the tank areas indicated elevated concentrations of TPH compounds including gasoline (TPHg), naphtha (TPHnap), Stoddard solvent (TPHss), and TPHd; BTEX; and VOCs. Soil removed from the former UST areas was transported under manifest for disposal. Additional information is present in the May 17, 2002 *UST Removal Report* prepared by SCI consultants.

4.5. 2002 Soil Boring and Geophysical Survey

In November 2002, Cambria advanced eleven soil borings (SB-1 through SB-11) to further define the extent of petroleum hydrocarbons and VOCs in soil and groundwater beneath the site (Figure 2). During the boring activities, Cambria installed temporary wells in each boring to assess groundwater elevation and to facilitate collection of groundwater samples. The eleven borings were located near the former USTs and associated piping, and upgradient, crossgradient and downgradient of the former UST/piping areas. ForeSite of Pleasant Hill, California conducted a brief geophysical survey to screen proposed boring locations prior to drilling. ForeSite was unable to locate piping emanating from the locations of USTs 1, 2, 3, & 4. Analysis of soil and groundwater samples detected TPH (predominantly derived from Stoddard solvent or mineral spirits) and VOCs. Separate phase hydrocarbon (i.e., free product) globules were observed in groundwater at the location of SB-4 (the former gasoline tank/pump location). The groundwater flow direction at the site could not be fully determined from the collected data.

4.6. July 2003 Geophysical Survey

On July 7, 2003, NorCal conducted a limited site geophysical survey to locate the former product piping. NorCal detected product piping connecting the former exterior and interior USTs, and additional piping north of the exterior UST location, presumably for supply of the former dry cleaning

machines (Figure 2). NorCal traced the extents of the pipe previously discovered by ForeSite back to a water box located in the sidewalk and to the bathroom. This pipe is likely a water supply line. NorCal conducted additional searches around the former product piping and have located the full extent of the former product piping. The NorCal geophysical survey map is included in Appendix C.

5.0 DATA GAP ANALYSIS

Cambria reviewed available data from the previous investigations to identify soil and groundwater data gaps for further investigation. This review encompassed the lateral and vertical extent of compounds of concern (COCs) in soil, and the location of possible source areas (e.g., product piping) discovered during geophysical surveying.

Previous soil and groundwater data were compared against the environmental screening levels (ESLs) established by the Regional Water Quality Control Board – San Francisco Bay Region (RWQCB-SFBR) in July 2003 for commercial/industrial property overlying a non-drinking water resource. Data gaps are defined as areas where soil and/or groundwater data exceeded the corresponding ESL and were not sufficiently defined below the ESL by nearby soil and/or groundwater data. Site soil and groundwater data from previous investigations is summarized in Tables 1 through 4. Site groundwater elevations and concentrations for TPH and VOCs are shown in Figures 6 and 7, respectively. Site soil concentrations for TPHg, TPHss, TPHd, and TPH as motor oil (TPHmo) are shown in Figures 8, 9, 10, and 11, respectively. The only VOC concentration in soil exceeding the ESLs was 310 micrograms per kilogram (ug/kg) in sample Tank 3, collected at 6 ft bgs.

5.1. Soil Data Gaps

Cambria identified the soil data gaps presented below.

SB-5 – Analytical data for the soil sample collected at 7.5 ft bgs exceeds the ESL for TPHg and TPHss of 400 mg/kg. The lateral extent of TPHg and TPHss in soil at this location is not defined by data from nearby soil borings. The vertical extent of TPHg and TPHss in soil at this location is defined by the soil sample collected at 11.5 ft bgs.

SB-7 – Analytical data for soil samples collected at 3.5 and 17.5 ft bgs exceed the ESL for TPHg and TPHss. The lateral extent of TPHg and TPHss in soil at this location is not defined by data from nearby soil borings. The vertical extent of TPHg and TPHss in soil at this location is not defined by vertical data but is bounded by groundwater.

SB-8 – Analytical data for the soil samples collected at 3.0 and 6.0 ft bgs exceed the ESL for TPHg and TPHss and the ESL for TPHd of 500 mg/kg. The lateral extent of TPHg, TPHss, and TPHd in soil at this location is not defined by data from nearby soil borings. The vertical extent of TPHg, TPHss, and TPHd in soil at this location is defined by data from the soil sample collected at 11.5 ft bgs.

Exterior UST Area – Analytical data for four of the six soil samples collected during UST removal at approximately 6 ft bgs exceed the ESL for TPHg and TPHss; and the ESL for Tetrachloroethene (PCE) of 0.250 mg/kg. The lateral extent of TPHg and TPHss in soil at this location is defined to the north by soil samples collected from borings SB-9 and SB-10 and undefined in all other directions.

Interior UST Area – Analytical data for samples Tank 5 E End and Tank 6 W End (located between the former USTs) collected during the UST removal / abandonment at approximately 6 ft bgs exceed the ESL for TPHg, TPHss, and TPHd. The lateral extent of TPHg, TPHss, and TPHd in soil at this location is defined to the west and east by soil samples collected from boring SB-9 and soil sample Tank 6 E End, respectively, and undefined in all other directions.

5.2. Groundwater Data Gaps

Cambria identified the groundwater data gaps presented below.

SB-1 (former heating oil UST location) – Analytical data for the groundwater sample exceeds the ESLs for TPHd and TPHmo of 640 micrograms per liter (ug/L). The lateral extent of TPHd and TPHmo at this location is undefined. The area of concern may be limited to the former UST pit location.

SB-4 (former gasoline UST location) – Free product globules were observed on groundwater sampling equipment used in boring SB-4. The lateral extent of the free product at this location is defined to the north by groundwater samples collected from boring SB-11 and undefined in all other directions. The area of concern may be limited to the former UST pit location.

SB-6 (former exterior UST location) – Analytical data for the groundwater sample exceeds the ESL for TPHg and TPHss of 400 ug/L, and for TPHd and TPHmo. The lateral extent of TPHg, TPHss, TPHd, and TPHmo in groundwater at this location is defined to the west, northeast, and north by groundwater samples collected from borings SB-7, SB-9, and SB-10, respectively, and undefined to the south and east.

SB-7 – Analytical data for the groundwater sample exceeds the ESL for TPHg, TPHss, TPHd, TPHmo, and chloroethane (12 ug/L). The lateral extent of TPHg, TPHss, TPHd, TPHmo, and

Resources to determine the presence of privately-owned water wells (including abandoned wells) that might be impacted or that might locally affect the migration of site COCs.

Cambria will conduct a survey of underground utilities that may serve as preferential pathways beneath 65th Street and Peabody Lane. To complete the conduit study, Cambria will request construction diagrams from the site owner, the City of Oakland Building Division, and/or the East Bay Municipal Utility District (EBMUD); and contract with a utility location company to conduct an offsite utility location survey.

6.2. Task 2 – Permitting and Prefield

6.2.1. Utility Location

The proposed drilling locations will be marked and Underground Service Alert will be notified of our site activities to identify utilities in the site vicinity. A private underground line locating service will survey the location of borings to clear buried utilities.

6.2.2. Site Health and Safety Plan

A comprehensive site safety plan will be prepared to protect site workers. The plan will be kept on site during field activities and signed by each site worker.

6.2.3. Permits

Drilling permits will be obtained as required from the Alameda County Public Works Agency (ACPWA). Excavation and encroachment permits will be obtained from the City of Oakland Building Division.

6.3. Task 3 – Soil Boring Investigation

To address identified data gaps, Cambria proposes the installation and sampling of 14 soil borings (Figure 12) by direct push in conjunction with the monitoring well installation and sampling proposed in Section 6.4. Borings will be installed using a Geoprobe or direct-push rig (see Appendix D). During direct push drilling, the soil will be field screened for hydrocarbons using visual observations and a portable volatile vapor analyzer. Soil and groundwater samples will be collected and analyzed as described below. Based on field observations and / or laboratory data, additional "step out" borings may be installed to fully delineate the extent of COCs in soil and groundwater (Figure 12). Upon completion of sampling activities, each boring will be sealed to the surface with bentonite-cement

grout and capped with concrete and/or asphalt as appropriate. The proposed direct push boring rationale, depths, and sampling schedule is summarized in Table 5.

6.3.1. Soil Data Gap Investigation

The identified soil data gaps will be investigated as described below.

- **SB-5 (TPHg and TPHss in soil at 7.5 ft bgs)** – Three soil borings (SB-14, SB-15, and SB-26) will be located approximately 20 – 30 feet from boring SB-5. These borings will be advanced to groundwater (to investigate other data gaps) and soil samples will be collected from the 7.5 and 11.5 foot intervals in each boring.

- **SB-7 (TPHg and TPHss in soil at 3.5 and 17.5 ft bgs)** – Three soil borings (SB-17, SB-18, and MW-6) will be located approximately 20-40 feet from boring SB-7. These borings will be advanced to groundwater and soil samples will be collected from the 3.5, 7.5, 11.5, 17.5 and 19.5 foot intervals in borings SB-17 and SB-18 and at five-foot intervals in boring MW-6.

- **SB-8 (TPHg, TPHss, and TPHd in soil at 3.0 and 6.0 ft bgs)** – Three soil borings (SB-22, SB-23, and SB-24) will be located approximately 20 – 25 feet from boring SB-8. These borings will be advanced to 9.5 ft bgs and soil samples will be collected from the 3.0, 6.0, and 9.0 foot intervals in each boring.

- **Exterior UST Area (TPHg, TPHss, and PCE at 6.0 ft bgs)** – Two soil borings (SB-16 and SB-17) will be installed and sampled to assess the Exterior UST Area: boring SB-16 located approximately 10 feet to the southeast and boring SB-17 located approximately 30 feet to the southwest. These borings will be advanced to a minimum of 12 ft bgs, and soil samples will be collected from the 7.5 and 11.5 foot intervals for assessment of this data gap.

- **Interior UST Area (TPHg, TPHss, TPHd at 6.0 ft bgs)** – Two soil borings (SB-13 and SB-26) will be installed and sampled to further assess the Interior UST Area: boring SB-13 located approximately 15 feet to the north and boring SB-26 located approximately 20 feet to the south. These borings will be advanced to a minimum of 12 ft bgs, and soil samples will be collected from the 6.0 and 11.5 foot intervals for assessment of this data gap.

- **Product Piping "T" Joint (potential source area)** – One soil boring (SB-24) will be advanced to 9.5 ft bgs and soil samples will be collected from the 3.0, 6.0, and 9.0 foot intervals.

- **1167 65th Street Building Floor Drain (potential source area)** – One soil boring (SB-21) will be advanced by hand auger to 10 ft bgs and soil samples will be collected from the 3.0, 6.0, and 9.0 foot intervals.

6.3.2. Groundwater Data Gap Investigation

Groundwater data gaps will be investigated by advancing 8 borings to groundwater at approximate 60 foot intervals (Figure 12). Groundwater samples will be collected from each boring. Borings SB-17 and SB-18 will be screened in water-bearing Zone B, and all other borings will be screened within water-bearing Zone A. Temporary wells will be allowed to equilibrate prior to sampling due to the confined and semi-confined groundwater conditions at the site. SB-7. Cambria will contract with a licensed surveyor to survey boring locations and boring ground surface elevation.

The free product data gap (SB-4) will be delineated by proposed borings SB-12 and SB-14 (Figure 12), and existing data from boring SB-11 (installed and sampled during the November 2002 investigation). These three borings will be located approximately 20 - 30 feet from boring SB-4 and screened in water-bearing Zone A.

6.4. Task 4 – Monitoring Well Installation

After sufficiently defining the extent of COCs in soil and groundwater, Cambria will install and sample an estimated 15 groundwater monitoring wells (Figure 12) to assess the extent of COCs in water-bearing Zones A, B, and C. Clusters of 2-inch diameter monitoring wells will be installed in the locations shown on Figure 12. Wells will be screened in water-bearing Zones A, B, and / or C as detailed in Table 6. To facilitate free product recovery near SB-4 (former gasoline UST backfill), well MW-2A will be four inches in diameter.

For each monitoring well location, one soil boring will be drilled to the depth proposed in Table 6 using a drilling rig equipped with 8-inch hollow stem augers (10-inch hollow stem augers will be used for well MW-2A). Soil samples will be collected at five-foot intervals using a modified California split spoon sampler (see Appendix D). Field screening of hydrocarbons and volatile organic compounds will include visual or olfactory observations, and/or photo-ionization detector readings.

Each groundwater monitoring well boring will be converted into a 2-inch diameter monitoring well (except for the 4-inch diameter MW-2A). The well will be constructed of threaded PVC well casing; screened with 0.010-inch machined slot; and screened as listed in Table 6. The well depth and screen interval may vary based on field observations. A filter pack consisting of No. 2/12 sand will be installed to 6 inches above the top of the well screen, overlain by 1 ft of bentonite, and the remaining

annulus filled with bentonite-cement grout to the surface. Traffic-rated vault-boxes will be installed to protect the wells. See Appendix D for Cambria's standard well procedures.

Following installation, the new wells will be surveyed and developed. The wells will be vertically and horizontally surveyed by a professional surveyor. Wells will be developed by surging and purging approximately 10 casing volumes of water or until the groundwater becomes clear of suspended solids. Wells will be sampled a minimum of 72 hours after well development. See Appendix D for Cambria's standard well procedures.

6.5. Task 5 – Soil Gas Probe Installation and Sampling

After monitoring well installation, Cambria will install and sample at least five temporary soil gas probes (SGP). SGPs will be installed in representative areas of the site (Figure 12) in order to assess the potential for indoor air exposure to site COCs. SGPs will be installed and sampled in accordance with the joint Department of Toxic Substances (DTSC) / Los Angeles Regional Water Quality Control Board (LARWQCB) January 23, 2003 *Active Soil Gas Investigations Advisory* (Appendix E).

Soil vapor sampling will be performed a minimum of three days after any significant precipitation (more than 0.5 inch). Prior to collecting samples, the SGPs will be purged of three casing-and-sample-tubing volumes of vapors using a purge pump equipped with a flow measure capable of measuring flow rate. If no flow is obtained from the SGP due to impermeable soil, one or more additional "step out" SGP(s) will be installed to further assess the area. During purging, soil vapor readings will be taken using a photoionization detector, and, after purging, samples will be collected in one-liter Summa canisters using a flow control orifice to maintain a sampling rate of 100 to 200 milliliters per minute. All connections of the Teflon sample tubing to the valves, fittings, pump, etc. will consist of compression fittings. The Summa canister will have a vacuum gauge to calculate the volume of vapor sampled, and to ensure that the negative pressure recorded within the Summa canister is maintained during transport to the analytical laboratory. A soil vapor sampling apparatus diagram is presented as Figure 3. Between sample collections, the Teflon tubing will be replaced and all fittings and connectors decontaminated.

6.5.1. Leak Testing

Leaks in the soil vapor sampling apparatus may dilute the sample with ambient air that would produce underestimated concentrations of petroleum hydrocarbon constituents. To test for leaks in the soil vapor sampling apparatus, a vacuum will be applied to the apparatus by closing the appropriate valves and by using the purge pump or Summa canister. The vacuum will be monitored using the vacuum

gauge for approximately 5 minutes to assure that there is no change in the vacuum, thus indicating that there are no leaks in the system. As discussed in the joint DTSC / LARWQCB advisory, shaving cream containing propane, isopropanol and/or isobutene as propellants will be placed on all compressor fittings of the soil vapor sampling apparatus. The propellant(s) within the shaving cream will then be included in the suite of target analytes as tracer gases to determine if the sample has been compromised.

6.5.2. Sample Quality Assurance / Quality Control

In addition to soil vapor samples collected from the SGPs, quality control samples will be collected for laboratory analysis. A duplicate sample will be collected from one of the SGPs suspected to be impacted by petroleum hydrocarbons. Additionally, a soil vapor sampling equipment blank of ambient air will be collected through the sampling apparatus, with shaving cream applied as described below. The equipment blank will provide data on the adequacy of the decontamination procedures performed between the collection of soil vapor samples and, in the event that the shaving cream propellants are detected in soil vapor samples, whether they originated from the shaving cream or from petroleum hydrocarbons in the subsurface.

6.6. Task 6 – Chemical Analysis

Soil and groundwater samples collected during the investigation will be submitted to a California-certified analytical laboratory. Soil and groundwater samples collected from soil borings will be analyzed for TPHg, TPHss, TPHd and TPHmo by modified EPA Method 8015 and for VOCs by EPA Method 8260. To control costs, only soil samples collected during the installation of the deepest monitoring well in each cluster will be analyzed for TPHg, TPHss, TPHd and TPHmo by modified EPA Method 8015 and VOCs by EPA Method 8260. If free product is encountered in any of the borings, a product sample will be collected for possible analysis.

The soil vapor and quality control samples will be kept at ambient temperatures and submitted under chain of custody procedures to a California-certified laboratory for analysis. The samples will be analyzed for TPHg and TPHss using EPA Method TO-3, and VOCs using EPA Method TO-15 or an equivalent. The detection limits for the shaving cream propellants will be less than or equal to 10 micrograms per liter.

6.7. Task 7 – Soil Matrix Sampling and Analysis

Selected shallow soil samples will be analyzed by a geotechnical laboratory to determine physical soil properties for future risk assessment and/or remediation. Soil classification is required for proper

evaluation of shallow soil gas results, especially if low permeability materials prevent adequate vapor sample collection.

6.8. Task 8 – Investigation Derived Waste (IDW)

IDW produced during field activities will be temporarily stored onsite. Following review of analytical results, the IDW will be transported to an appropriate facility for disposal/recycling.

6.9. Task 9 – Reporting

Cambria will prepare and submit a *Site Characterization Report* to ACHCSA detailing the findings of the above investigation phases. At a minimum, this report will contain:

- The findings of the SRS and conduit study, including detailed maps;
- Descriptions of the soil boring, monitoring well, and SGP drilling / installation methods;
- Descriptions of the sampling methods used;
- Tabulated soil and groundwater analytical results;
- Boring logs and well construction diagrams for the soil borings, monitoring wells, and SGPs;
- Revised hydrogeological cross sections;
- Analytical reports and chain-of-custody forms; and
- Soil and water disposal methods;

7.0 SCHEDULE

Upon receiving written work plan approval from the ACHCSA, Cambria will coordinate the approved activities and seek cost pre-approval from the California UST Cleanup Fund. Cambria anticipates completing the planned investigation and report within approximately 12 to 14 weeks after client approval.

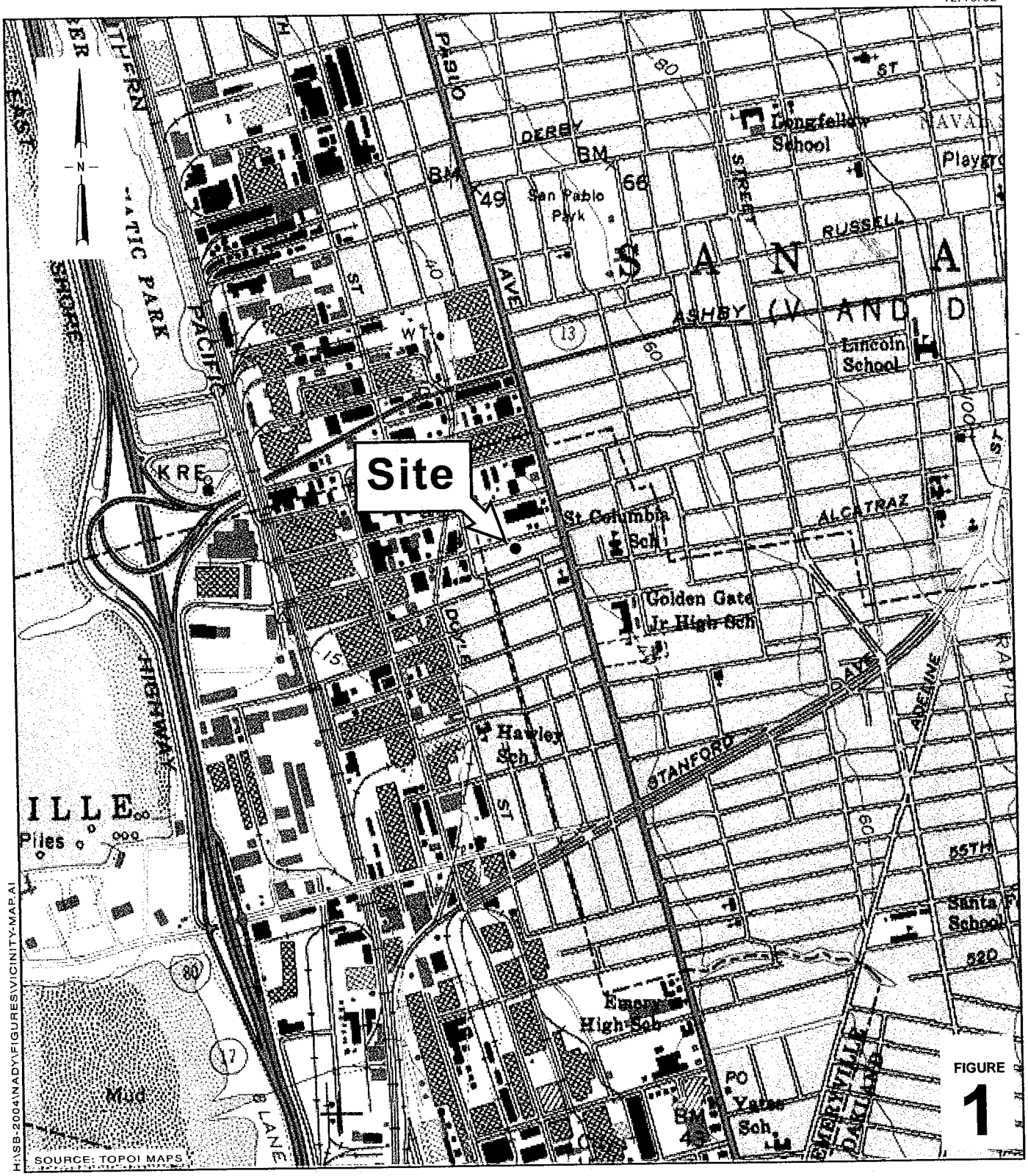
8.0 APPENDIXES

Figure 1 – Vicinity Map
Figure 2 – Site Plan
Figure 3 – Geologic Cross Section A – A'
Figure 4 – Geologic Cross Section B – B'
Figure 5 – Geologic Cross Section C – C'
Figure 6 – Groundwater Elevations with Petroleum Hydrocarbon Concentrations in Groundwater
Figure 7 – Volatile Organic Compound Concentrations in Groundwater
Figure 8 – TPHg Concentrations in Soil
Figure 9 – TPHss Concentrations in Soil
Figure 10 – TPHd Concentrations in Soil
Figure 11 – TPHmo Concentrations in Soil
Figure 12 – Proposed Boring Locations
Figure 13 – Soil Vapor Sampling Apparatus Diagram

Table 1 – Soil Analytical Data: Petroleum Hydrocarbons and Lead
Table 2 – Soil Analytical Data: Volatile Organic Compounds
Table 3 – Groundwater Analytical and Elevation Data: Petroleum Hydrocarbons
Table 4 – Groundwater Analytical and Elevation Data: Volatile Organic Compounds
Table 5 – Data Gap Investigation - Proposed Boring Locations, Boring Depth, Sampling Schedule, and Rationale
Table 6 – Proposed Monitoring Well Diameter and Screen Interval

Appendix A – ACHCSA Letters
Appendix B – Boring Logs
Appendix C – NorCal Geophysical Figure
Appendix D – Standard Field Procedures for Soil Borings and Monitoring Wells
Appendix E – DTSC / LARWQCB January 23, 2003 *Active Soil Gas Investigations Advisory*

12/19/02



0 1/8 1/4 1/2 1

SCALE : 1" = 1/4 MILE

FIGURE 1

Vicinity Map

1137 - 1167 65th Street
Oakland, California

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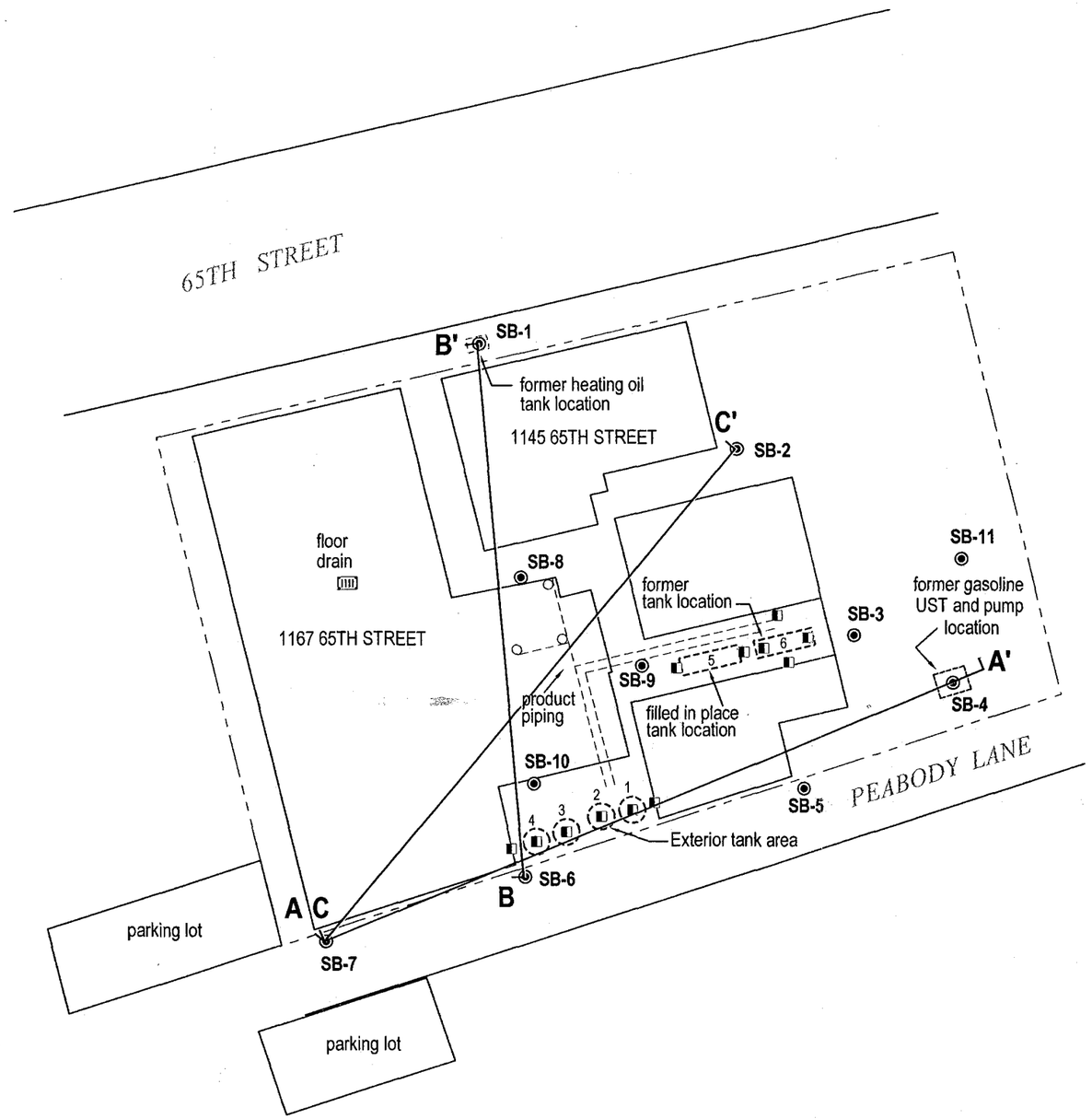
08/21/03

Site Plan

EXPLANATION

- SB-1 ◉ Cambria soil boring/temporary well location
- ◧ SCI soil sample location
- 1 ◌ Former tank location and tank nomenclature
- ---------- Product piping
- ○ Product piping stub-ups
- A ⌊ A' Location of geologic cross-section



N

0 20 40 80

Scale (ft)

FIGURE

2

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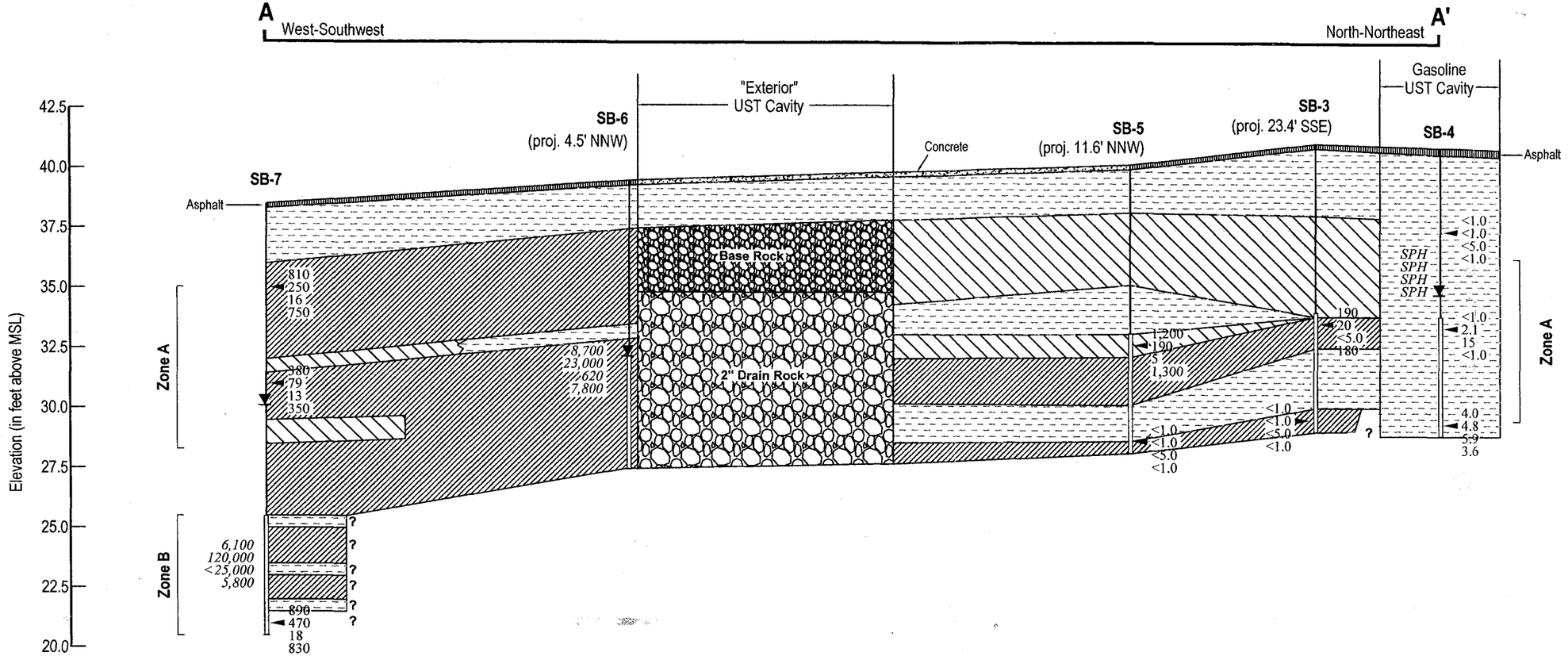
1137 - 1167 65thStreet
Oakland, California

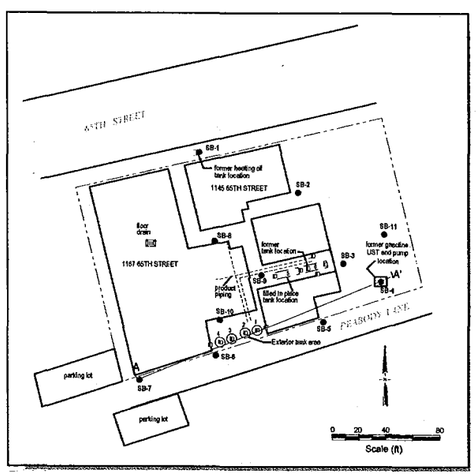
H:\SB-2004\UST\LINDY&DOYLE\GU\RESSITE\PLAN-7-03.DWG

08/19/03

Geologic Cross Section A - A'

A West-Southwest — A' North-Northeast





EXPLANATION

- = Low Permeability Soils (> 70% Fines)
- = Moderate Permeability Soils (Fines between 70% and 30%)
- = High Permeability Soils (< 30% Fines)
- Approximate sample location
- TPHg, TPHd, TPHmo, TPHss — Hydrocarbon concentrations in Soil, in parts per million
- **Well ID** — Well Designation
- Elev. — Top of Casing Elevation
- Temporary Monitoring Well
- Temporary Well Screen Interval
- Bottom of boring
- Depth of Groundwater - 11/26/2002
- *TPHg, TPHd, TPHmo, TPHss* — Hydrocarbon concentrations in Groundwater, in parts per billion
- **Zone A:** Shallow and/or perched water-bearing zone
- **Zone B:** Confined or semi-confined water-bearing zone

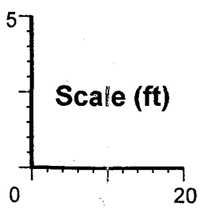


FIGURE
3

1137 - 1167 65th Street
Oakland, California

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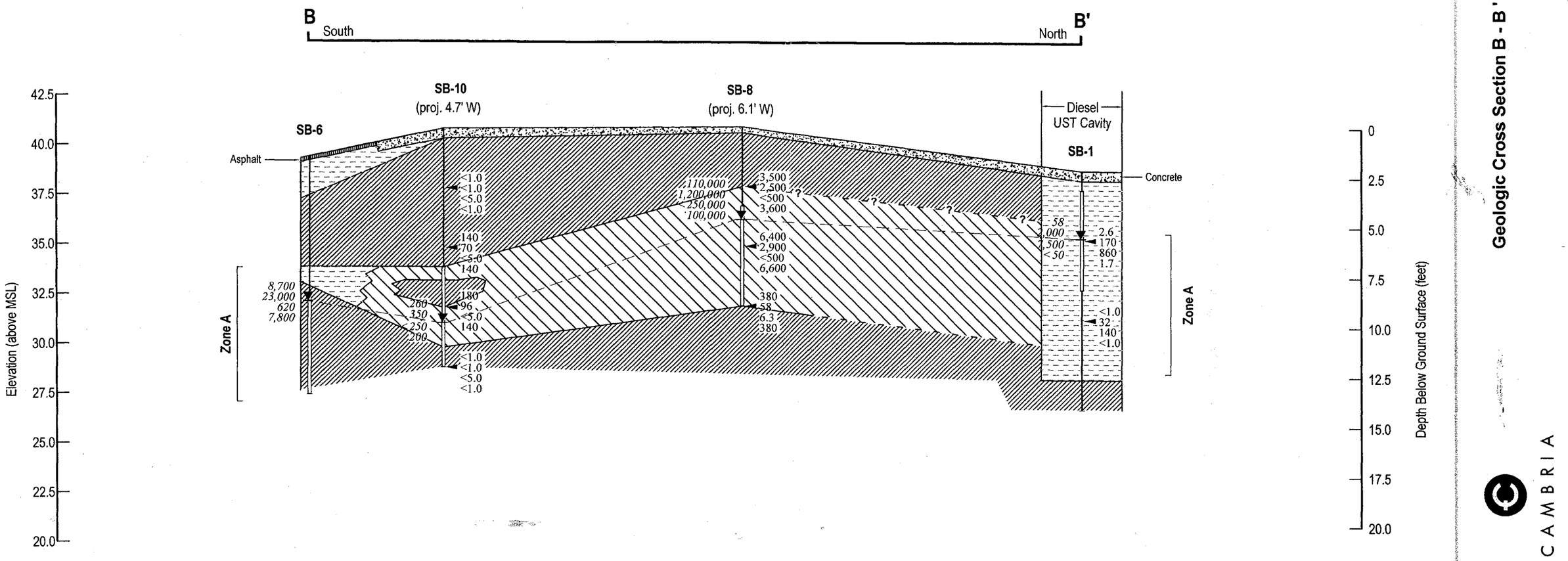
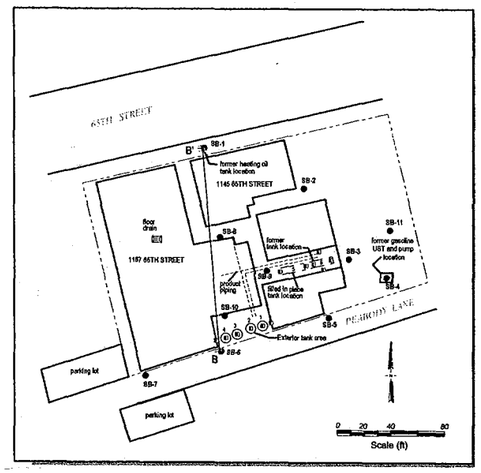
08/19/03

Geologic Cross Section B - B'





EXPLANATION

= Low Permeability Soils (> 70% Fines)

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= High Permeability Soils (< 30% Fines)

Approximate sample location

TPHg, TPHd, TPHmo, TPHss — Hydrocarbon concentrations in Soil, in parts per million

Well ID — Well Designation
Elev. — Top of Casing Elevation

Temporary Monitoring Well

Temporary Well Screen Interval

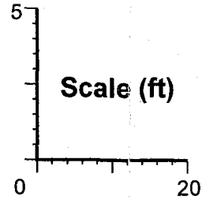
Bottom of boring

Depth of Groundwater - 11/26/2002

TPHg, TPHd, TPHmo, TPHss — Hydrocarbon concentrations in Groundwater, in parts per billion

Zone A: Shallow and/or perched water-bearing zone

Zone B: Confined or semi-confined water-bearing zone



FIGURE

4

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1137 - 1167 65th Street
Oakland, California

H:\SB-2004\UST\FUND\NAD\FIGURES\X-SECT-B-B'.DWG

08/19/03

Geologic Cross Section C - C'

C — Southwest — Northeast — C'

Elevation (in feet above MSL): 42.5, 40.0, 37.5, 35.0, 32.5, 30.0, 27.5, 25.0, 22.5, 20.0

Depth Below Ground Surface (feet): 0, 2.5, 5.0, 7.5, 10.0, 12.5, 15.0, 17.5, 20.0

SB-7 | SB-10 (proj. 16.5' NE) | SB-9 (proj. 18.6' NE) | SB-2

Concrete

Asphalt

Zone A

Zone B

Zone A & B?

Zone C

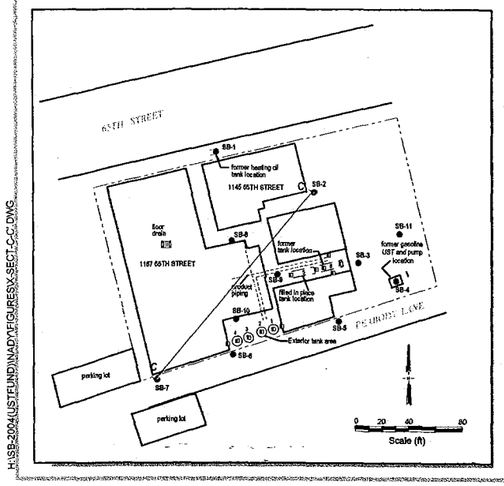
SB-7: 810, 250, 16, 750 / 380, 79, 13, 350 / 6,100, 120,000, <25,000, 5,800 / 890, 470, 18, 830

SB-10: <1.0, <1.0, <5.0, <1.0 / 140, 70, <5.0, 140 / 260, <350, <250, 200 / 180, 96, <5.0, 140 / <1.0, <1.0, <5.0, <1.0

SB-9: 9.5, 2.8, <5.0, 9.4 / <1.0, <1.0, <5.0, <1.0 / <50, <50, <50, 300

SB-2: <1.0, <1.0, <5.0, <1.0 / <1.0, <1.0, <5.0, <1.0 / <50, <50, <250, <50

?



EXPLANATION

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Approximate sample location

TPHg, TPHd, TPHmo, TPHss — Hydrocarbon concentrations in Soil, in parts per million

Well ID — Well Designation

Elev. — Top of Casing Elevation

Temporary Monitoring Well

Temporary Well Screen Interval

Bottom of boring

Depth of Groundwater - 11/26/2002

TPHg, TPHd, TPHmo, TPHss — Hydrocarbon concentrations in Groundwater, in parts per billion

Zone A: Shallow and/or perched water-bearing zone
Zone B: Confined or semi-confined water-bearing zone
Zone C: Deep water-bearing zone

5 — Scale (ft) — 0 — 20

FIGURE **5**

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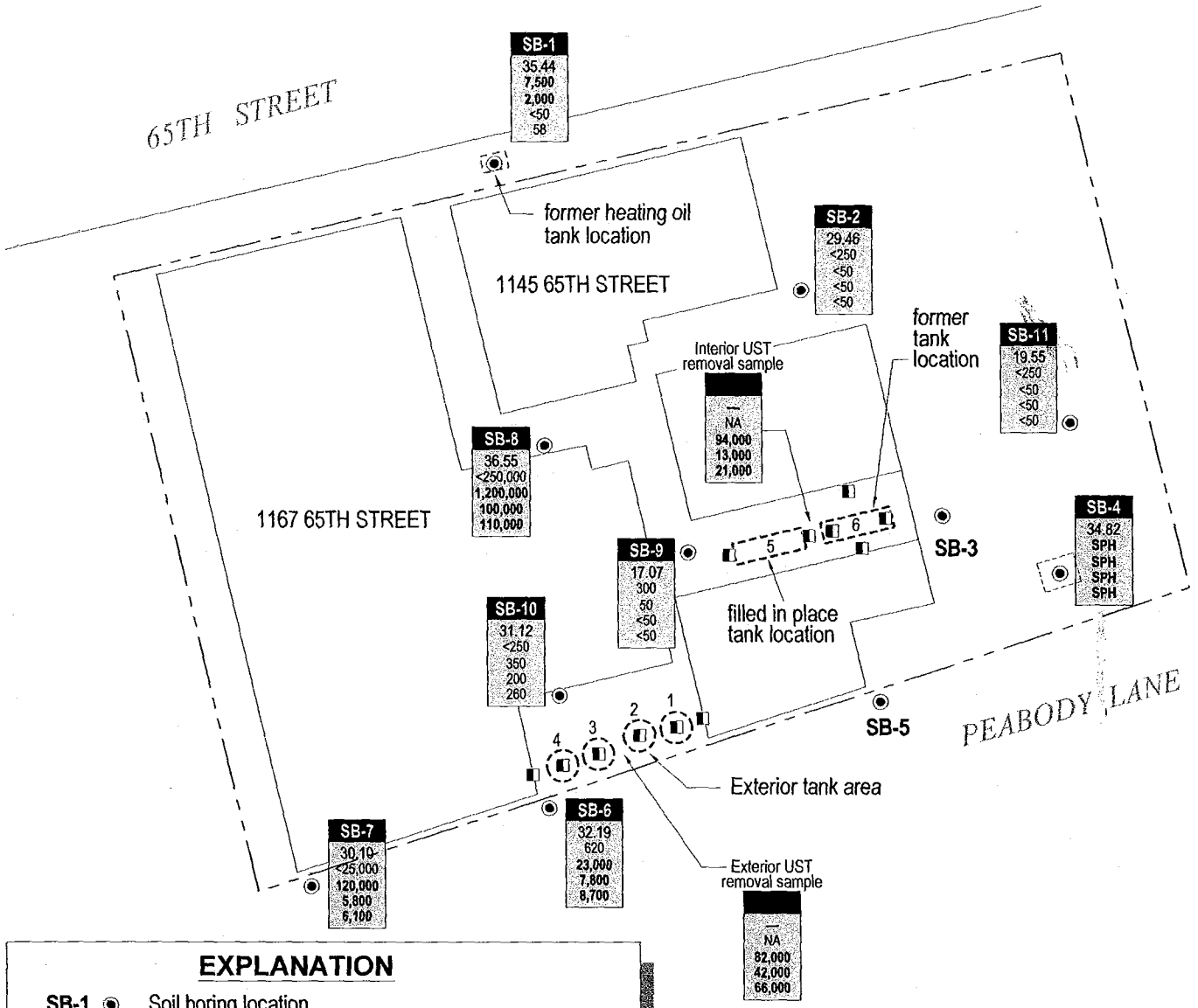
1137 - 1167 65th Street
Oakland, California

H:\SB-2004\UST-FUND\MAPS\FIGURES\X-SECT-C-C'.DWG



EXPLANATION

- **SB-1** ◉ Soil boring location
- ◧ SCI soil sample location
- **Boring** / ELEV / TPHmo / TPHd / TPHss / TPHg — Boring / Temporary well designation; Ground water elevation (msl); TPH concentrations are in parts per billion (ppb). Bolded concentrations exceed the corresponding ESL
- --- No groundwater elevation
- NA Not Analyzed
- SPH Separate Phase Hydrocarbon globules detected in groundwater; sample not analyzed
- 1 ◯ Former tank location and tank nomenclature

Note: Groundwater elevations were measured at 8:00 am on 11/26/02, approx. 15 to 24 hours following well installation. Benchmark elevation of 13.88 feet. (NAVD88)

N

0 20 40

Scale (ft)

FIGURE

6

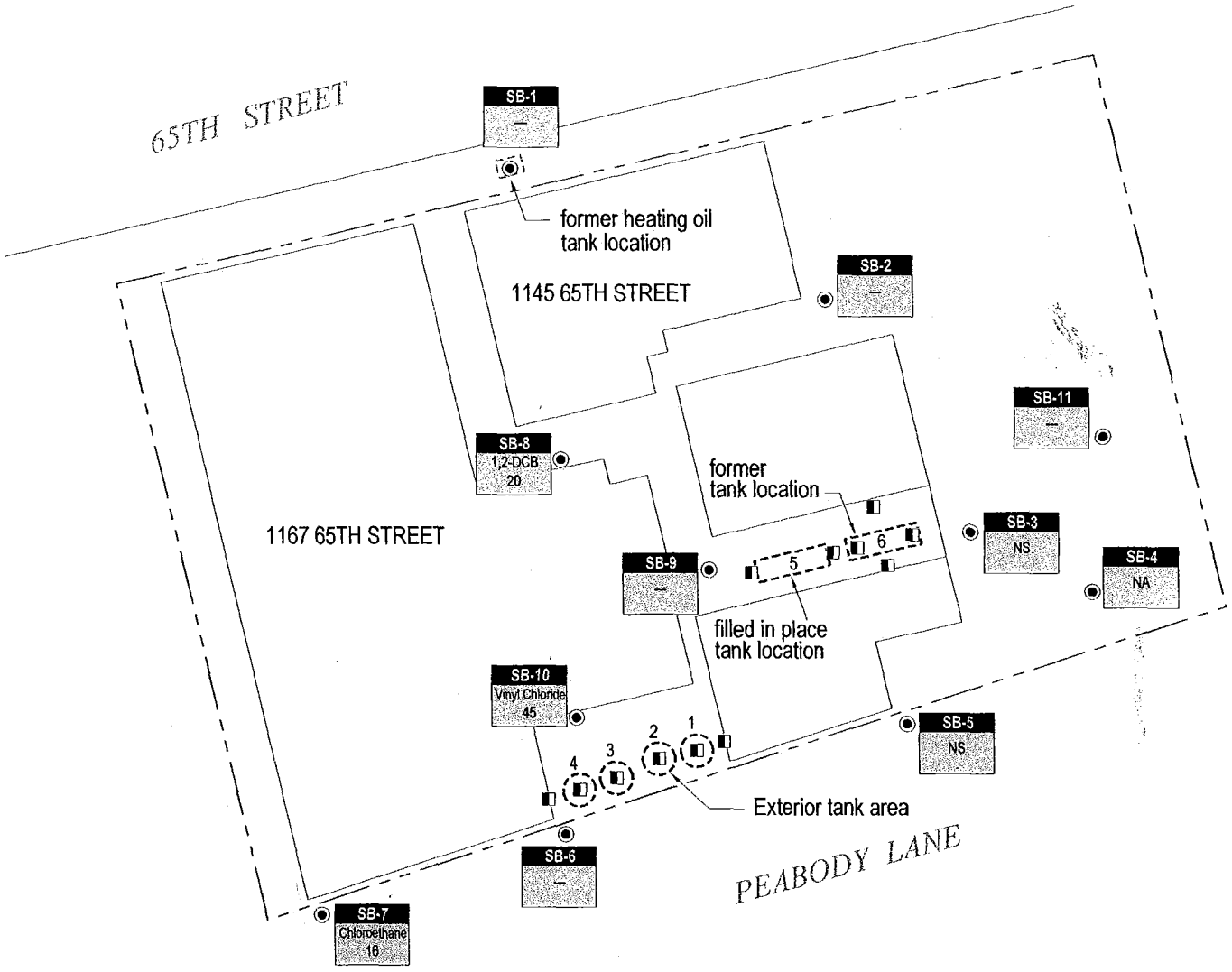
H:\SB-2004\NADY\FIGURES\GW-HC-4Q02.DWG

1137 - 1167 65th Street

Oakland. California

CAMBRIA

Groundwater Elevations with Petroleum Hydrocarbon Concentrations in Groundwater



EXPLANATION

SB-1 ◉	Soil boring location
◧	SCI UST Removal soil sample location
Boring / VOC	Boring / Temporary well designation; VOC concentration in groundwater in parts per billion
1,2 DCB	1,2-Dichlorobenzene
NA	Not Analyzed
NS	Not Sampled
---	No VOCs exceeding the ESL
1 ◯	Former tank location and tank nomenclature

N

0 20 40

Scale (ft)

FIGURE 7

H:\SB-2004\NADY\FIGURES\4002-VOC.DWG

1137 - 1167 65th Street
Oakland, California

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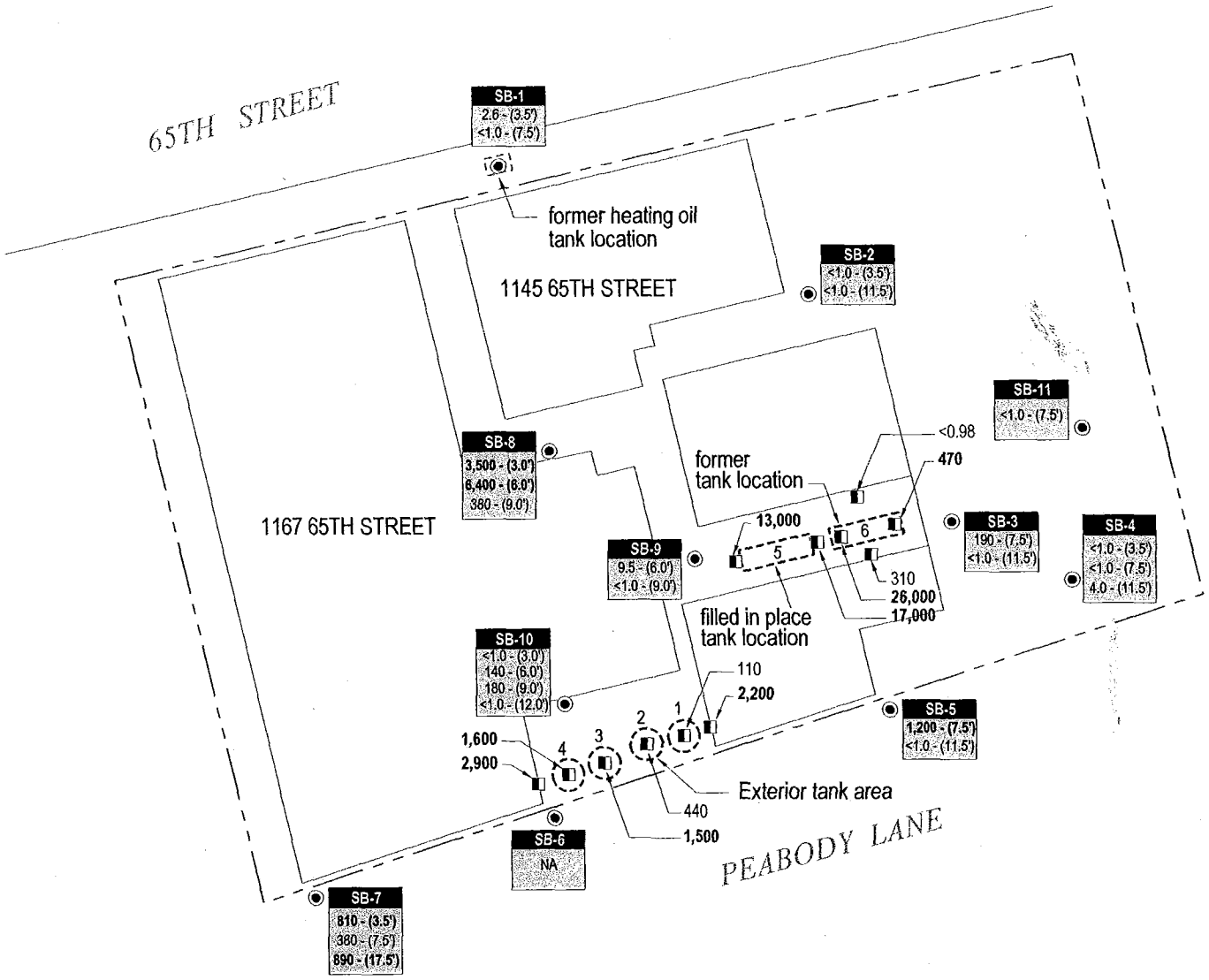
VOC Concentrations in Groundwater that exceed the ESL

08/15/03



EXPLANATION

- **SB-1** ◉ Soil boring location
- ◧ SCI UST Removal soil sample location
- Boring / TPHg-(depth) — Boring / Temporary well designation
- TPHg concentration in parts per million and depth of sample. Bolded concentrations exceed the corresponding ESL
- NA — Not Analyzed
- 1 ◌ — Former tank location and tank nomenclature

N

0 20 40

Scale (ft)

FIGURE

8

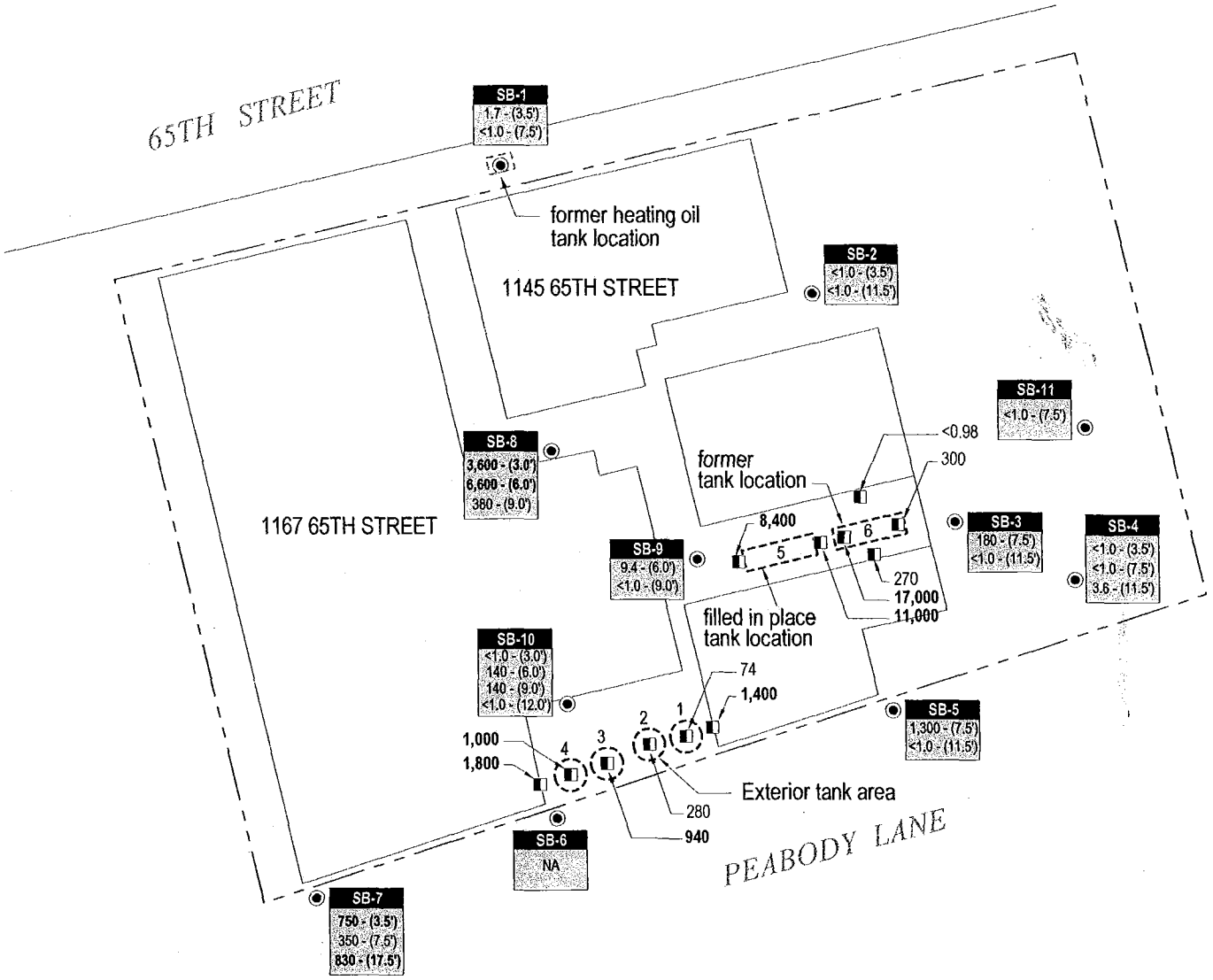
H:\SB-2004\NADY\FIGURES\4Q02-TPHG.DWG

CAMBRIA

TPHg Concentrations in Soil

1137 - 1167 65th Street

Oakland, California



EXPLANATION

- **SB-1** ◉ Soil boring location
- ◧ SCI UST Removal soil sample location
- Boring / TPHss-(depth) — Boring / Temporary well designation; TPHss concentration in parts per million and depth of sample. Bolded concentrations exceed the corresponding ESL
- NA — Not Analyzed
- 1 ◯ — Former tank location and tank nomenclature

N

0 20 40

Scale (ft)

FIGURE **9**

H:\SB-2004\NADY\FIGURES\4Q02-TPHSS.DWG

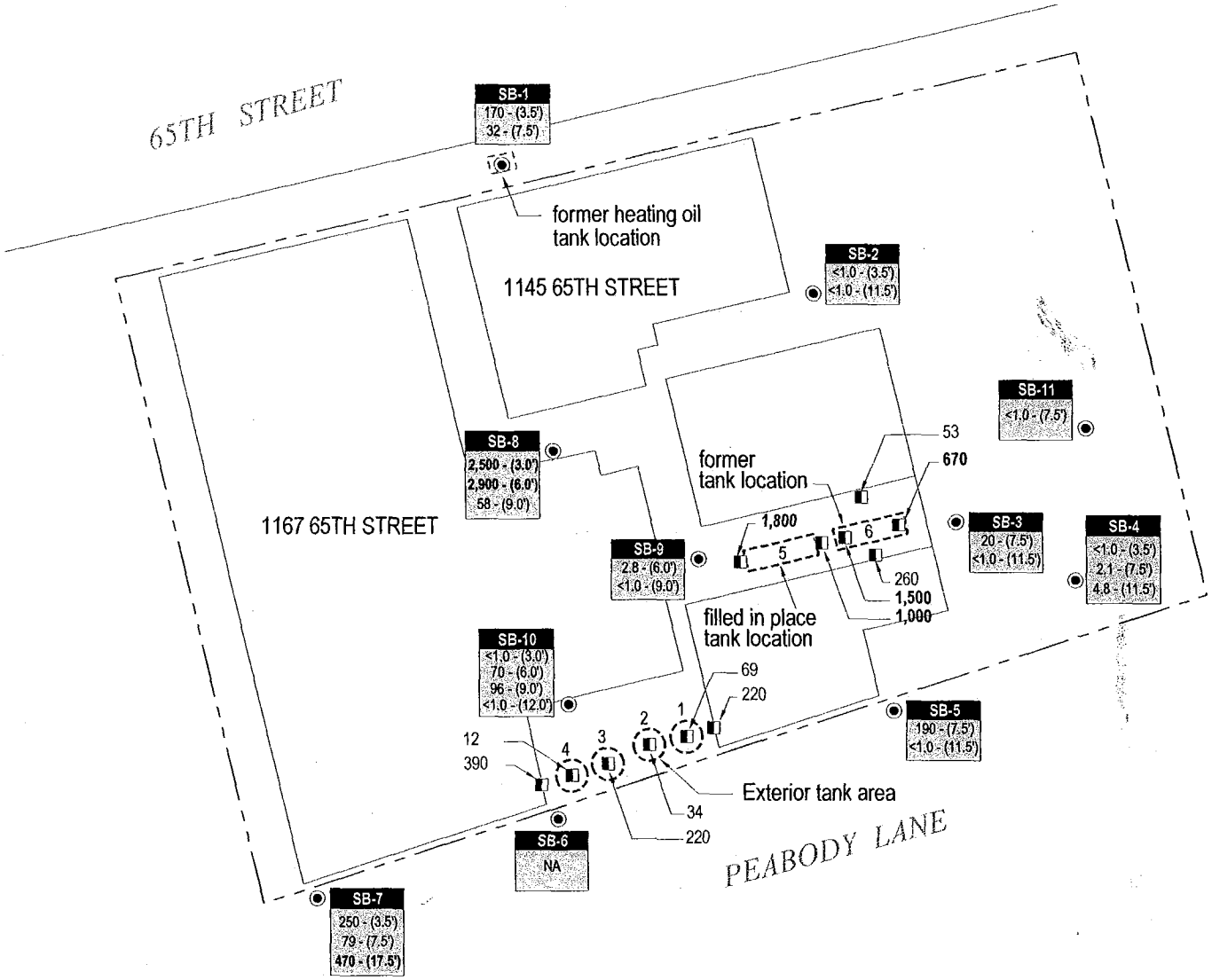
1137 - 1167 65th Street

Oakland, California

CAMBRIA

TPHss Concentrations in Soil

08/15/03



EXPLANATION

SB-1 ◉ Soil boring location

◧ SCI UST Removal soil sample location

Boring / Temporary well designation

TPHd (depth) — TPHd concentration in parts per million and depth of sample
Bolded concentrations exceed the corresponding ESL

NA Not Analyzed

1 ◯ Former tank location and tank nomenclature

N

0 20 40

Scale (ft)

FIGURE

10

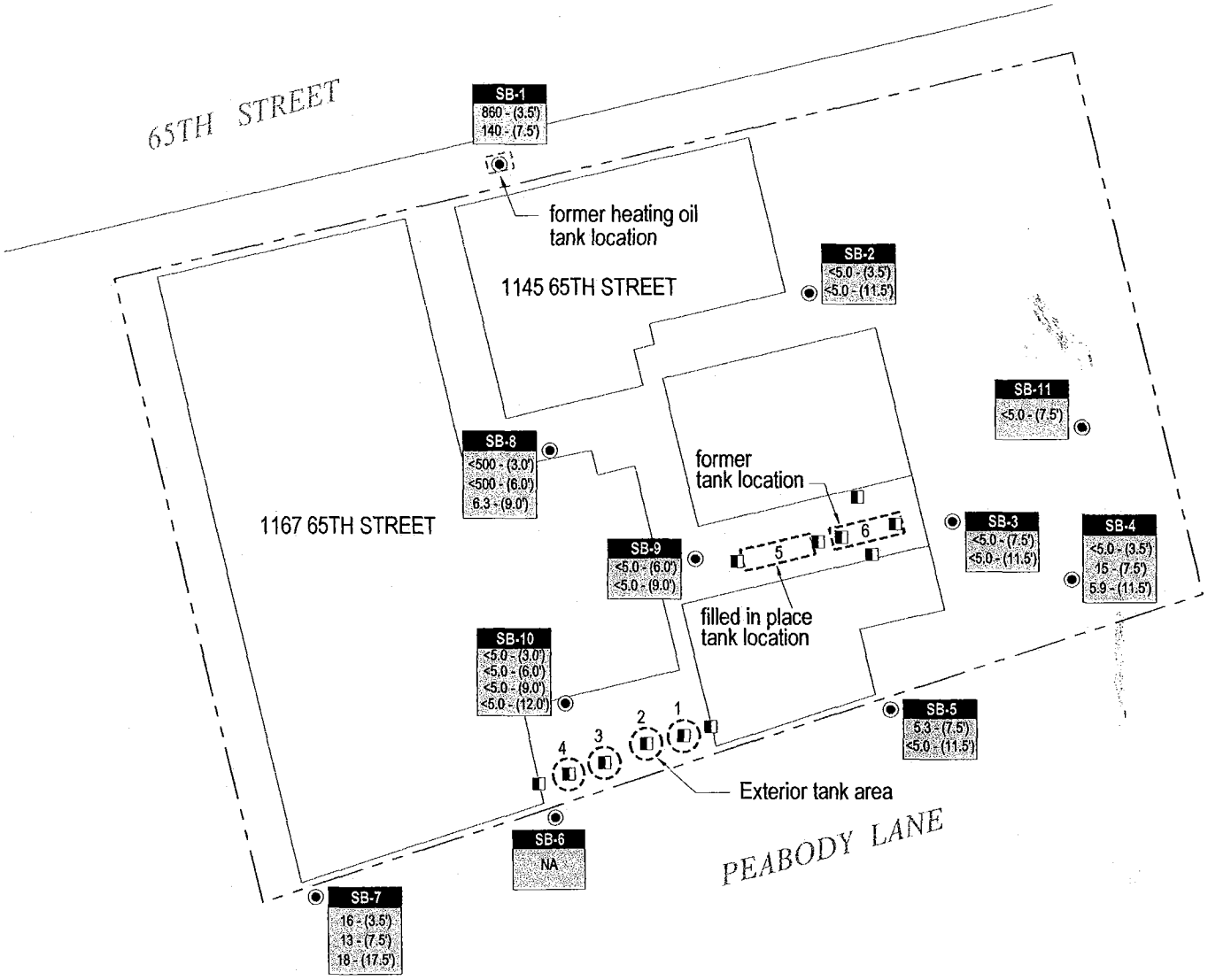
H:\SB-2004\NADY\FIGURES\4Q02-TPHD.DWG

1137 - 1167 65th Street

Oakland, California

CAMBRIA

TPHd Concentrations in Soil



EXPLANATION

- **SB-1** ◉ Soil boring location
- ◧ SCI soil sample location
- Boring / TPHmo-(depth) — Boring / Temporary well designation; TPHmo concentration in parts per million and depth of sample
- NA — Not Analyzed
- 1 ◯ Former tank location and tank nomenclature

N

0 20 40

Scale (ft)

FIGURE **11**

H:\SB-2002\NADY\FIGURES\4G02-TPHmo.DWG

1137 - 1167 65th Street

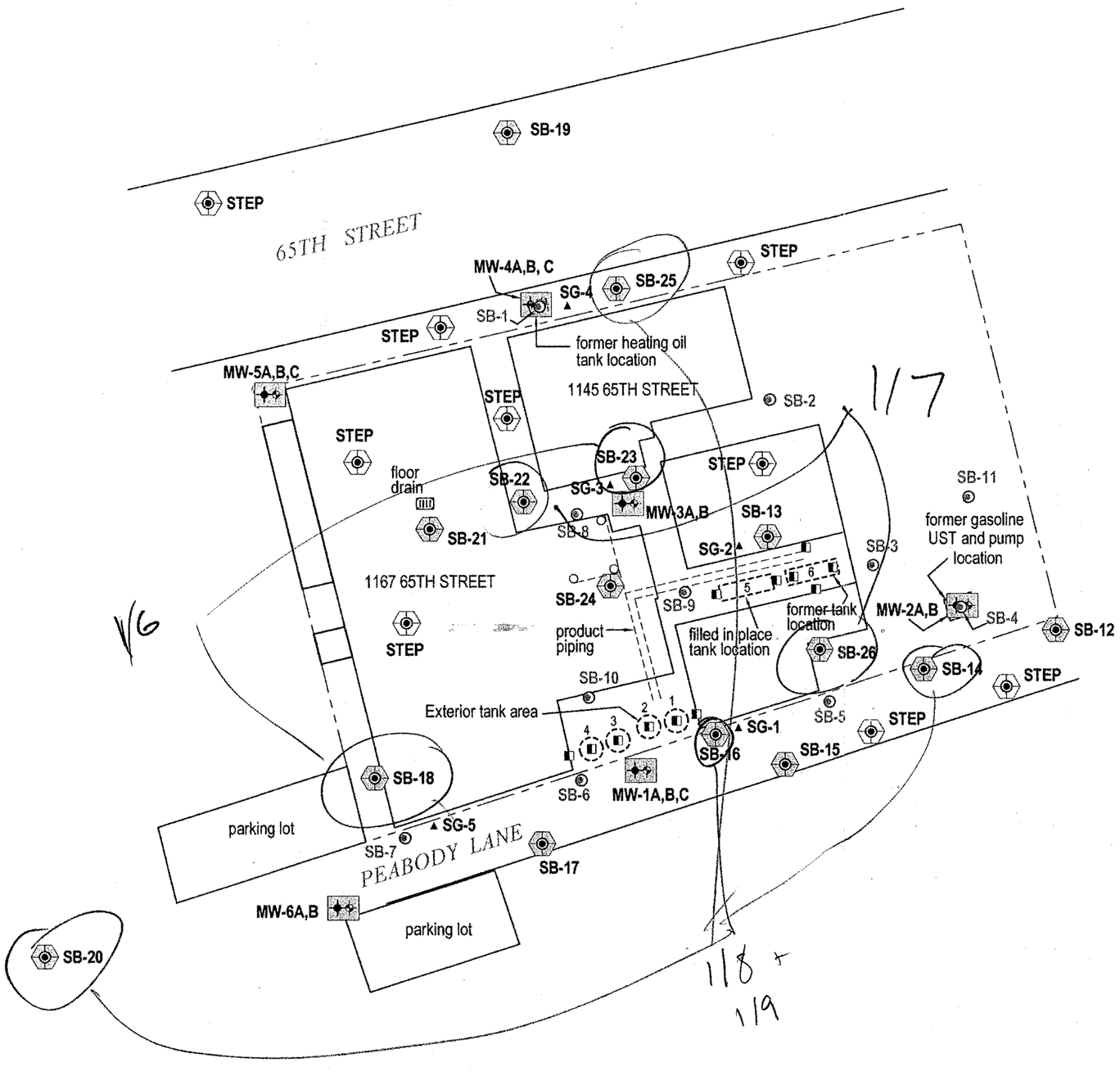
Oakland, California

CAMBRIA

TPHmo Concentrations in Soil

08/25/03

Proposed Soil Boring Locations



EXPLANATION

SB-12	Proposed soil boring location
STEP	Proposed step soil boring location, if needed
SG-1	Proposed shallow soil gas sampling location
MW-1A,B,C	Proposed monitoring well cluster
SB-1	Cambria soil boring/temporary well location
	SCI soil sample location
1	Former tank location and tank nomenclature
	Product piping
	Product piping stub-ups

N

0 20 40 80

Scale

CAMBRIA

Street

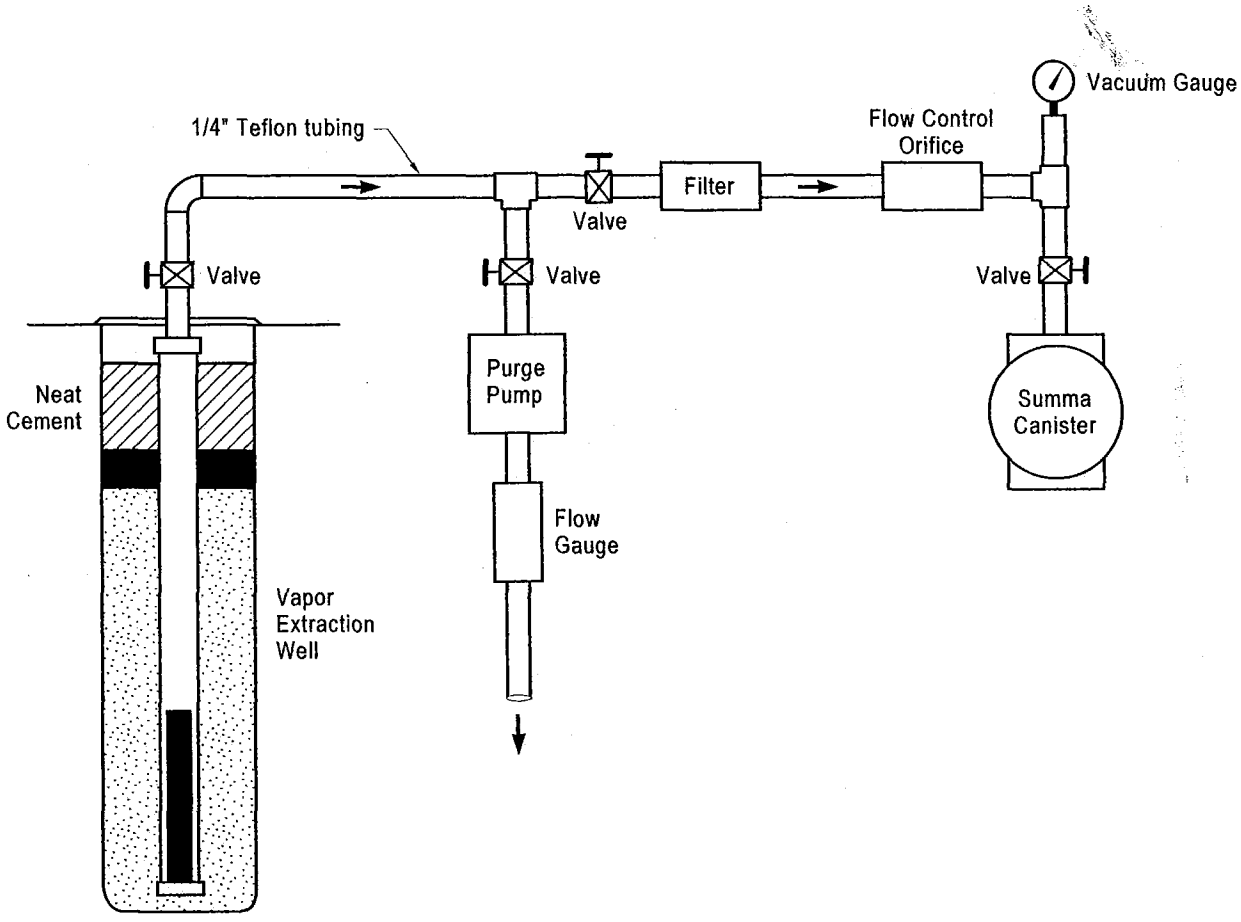


FIGURE
13

1137-1167 65th Street
Oakland, California

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Soil Vapor Sampling Apparatus Diagram

H:\SB-2004\FIGURES\SOIL-VAPOR-DIAGRAM.AI

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Table 1. Soil Analytical Data: Petroleum Hydrocarbons and Lead - 1137-1167 65th Street, Oakland, California

Sample ID	Date Sampled	Sample Depth (ft)	TPHmo	TPHd	TPHss	TPHg	TPHnap	Lead
			← mg/kg →					
Shallow Soil Commercial Non-Drinking Water ESL (risk driver)			1000 (soil leaching)	500 (soil leaching)	400 (soil leaching)	400 (soil leaching)	400 (soil leaching)	750
Deep Soil Commercial Non-Drinking Water ESL (risk driver)			1000 (soil leaching)	500 (soil leaching)	400 (soil leaching)	400 (soil leaching)	400 (soil leaching)	750
Cambria Samples								
SB-1-3.5	11/25/2002	3.5	860	170	1.7	2.6a,b	--	37
SB-1-7.5	11/25/2002	7.5	140	32	<1.0	<1.0	--	5.8
SB-2-3.5	11/25/2002	3.5	<5.0	<1.0	<1.0	<1.0	--	3.9
SB-2-11.5	11/25/2002	11.5	<5.0	<1.0	<1.0	<1.0	--	6.8
SB-3-7.5	11/25/2002	7.5	<5.0	20	180	190a	--	<3.0
SB-3-11.5	11/25/2002	11.5	<5.0	<1.0	<1.0	<1.0	--	9.7
SB-4-3.5	11/25/2002	3.5	<5.0	<1.0	<1.0	<1.0	--	3.1
SB-4-7.5	11/25/2002	7.5	15	2.1	<1.0	<1.0	--	21
SB-4-11.5	11/25/2002	11.5	5.9	4.8	3.6	4.0	--	3.9
SB-5-7.5	11/25/2002	7.5	5	190	**1,300**	**1,200a**	--	4.2
SB-5-11.5	11/25/2002	11.5	<5.0	<1.0	<1.0	<1.0	--	<3.0
SB-7-3.5	11/25/2002	3.5	16	250	**750**	**810a**	--	8.5
SB-7-7.5	11/25/2002	7.5	13	79	350	380a	--	6.1
SB-7-17.5	11/25/2002	17.5	18	470	**830**	**890a**	--	6.6
SB-8-3	11/25/2002	3.0	<500	**2,500**	**3,600**	**3,500a**	--	6.1
SB-8-6	11/25/2002	6.0	<500	**2,900**	**6,600**	**6,400a**	--	7.5
SB-8-9	11/25/2002	9.0	6.3	58	380	380a	--	7.5
SB-9-6	11/25/2002	6.0	<5.0	2.8	9.4	9.5a	--	6.4
SB-9-9	11/25/2002	9.0	<5.0	<1.0	<1.0	<1.0	--	6.0
SB-10-3	11/25/2002	3.0	<5.0	<1.0	<1.0	<1.0	--	5.0
SB-10-6	11/25/2002	6.0	<5.0	70	140	140a	--	6.4
SB-10-9	11/25/2002	9.0	<5.0	96	140	180a	--	<3.0
SB-10-12	11/25/2002	12.0	<5.0	<1.0	<1.0	<1.0	--	<3.0
SB-11-7.5	11/25/2002	7.5	<5.0	<1.0	<1.0	<1.0	--	9.1
Previous SCI Samples								
Tank 1 Bottom	2/25/2002	--	--	69	74	110	58	--
Tank 2 Bottom	2/25/2002	--	--	34	280	**440**	230	--

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Table 1. Soil Analytical Data: Petroleum Hydrocarbons and Lead - 1137-1167 65th Street, Oakland, California

Sample ID	Date Sampled	Sample Depth (ft)	TPHmo	TPHd	TPHss	TPHg	TPHnap	Lead
			← mg/kg →					
Shallow Soil Commercial Non-Drinking Water ESL (risk driver)			1000 (soil leaching)	500 (soil leaching)	400 (soil leaching)	400 (soil leaching)	400 (soil leaching)	750
Deep Soil Commercial Non-Drinking Water ESL (risk driver)			1000 (soil leaching)	500 (soil leaching)	400 (soil leaching)	400 (soil leaching)	400 (soil leaching)	750
Tank 3 Bottom	2/25/2002	--	--	220	**940**	**1,500**	**750**	--
Tank 4 Bottom	2/25/2002	--	--	12	**1,000**	**1,600**	**830**	--
E End @ 6'	2/26/2002	6.0	--	220	**1,400**	**2,200**	**1,100**	--
W End @ 6'	2/26/2002	6.0	--	390	**1,800**	**2,900**	**1,500**	--
Pipe #1	2/26/2002	--	--	68	<0.99	<0.99	<0.99	--
Pipe #2	2/26/2002	--	--	6.8	<0.95	<0.95	<0.95	--
Tank 5 E End	2/13/2002	--	--	**1,000**	**11,000**	**17,000**	**8,400**	--
Tank 5 W End	2/13/2002	--	--	**1,800**	**8,400**	**13,000**	**6,200**	--
Tank 6 N Wall	3/7/2002	2.0	--	53	<0.98	<0.98	<0.98	--
Tank 6 S Wall	3/7/2002	5.0	--	260	270	310	140	--
Tank 6 E End	2/13/2002	--	--	**670**	300	**470**	240	--
Tank 6 W End	2/13/2002	--	--	**1,500**	**17,000**	**26,000**	**12,000**	--

Abbreviations and Methods:

Concentrations exceeding ESLs shown in bold.

mg/kg = Milligrams per kilogram, equivalent to parts per million (ppm)

-- = Not available, not analyzed, or does not apply

<x = Not detected above laboratory reporting limit. Laboratory reporting limit = numerical value

TPHmo = Total petroleum hydrocarbons as motor oil by EPA Method 8015C with silica gel cleanup

TPHd = Total petroleum hydrocarbons as diesel by EPA Method 8015C with silica gel cleanup

TPHss = Total petroleum hydrocarbons as Stoddard solvent by EPA Method 8021B/8015Cm

TPHg = Total petroleum hydrocarbons as gasoline by EPA Method 8021B/8015Cm

TPHnap = Total petroleum hydrocarbons as naphtha by EPA Method 8015m/8020

Lead by EPA Method 6010C

a = Laboratory note: TPH pattern that does not appear to be derived from gasoline (Stoddard solvent/mineral spirit?)

b = Laboratory note: heavier gasoline range compounds are significant (aged gasoline?)

Table 1. Soil Analytical Data: Petroleum Hydrocarbons and Lead - 1137-1167 65th Street, Oakland, California

Sample ID	Date Sampled	Sample Depth (ft)	TPHmo	TPHd	TPHss	TPHg	TPHnap	Lead
			← mg/kg →					
Shallow Soil Commercial Non-Drinking Water ESL (risk driver)			1000 (soil leaching)	500 (soil leaching)	400 (soil leaching)	400 (soil leaching)	400 (soil leaching)	750
Deep Soil Commercial Non-Drinking Water ESL (risk driver)			1000 (soil leaching)	500 (soil leaching)	400 (soil leaching)	400 (soil leaching)	400 (soil leaching)	750

Commercial Non-Drinking Water ESL = Table B (Shallow Soil = 0 - 10 ft bgs) and Table D (Deep Soil = >10 ft bgs) - Environmental Screening Levels for Surface Soil (Groundwater is not a Current or Potential Source of Drinking Water) for commercial/industrial reuse for established by the SFBRWQCB, Interim Final July 2003.

(soil leaching) = ESL risk driver is shown in parentheses.

NE = not established

4010
8260

CAMBRIA

Table 2. Soil Analytical Data: Volatile Organic Compounds - 1137-1167 65th Street, Oakland, California

Sample ID	Date Sampled	Depth (ft)	Benzene	Toulene	Ethylbenzene	Xylenes	Tetrachloroethene	cis-1,2-Dichloroethene	Trichloroethene	Isopropylbenzene (Cumene)	n-Propylbenzene	1,3,5-Trimethylbenzene	1,2,4-Trimethylbenzene	sec-Butylbenzene	4-Isopropyl Toluene	n-Butylbenzene	Naphthalene	Styrene	Methylene Chloride	Acetone	2-Butanone (MEK)	4-methyl-2-pentanone(MIBK)	Other VOCs
			ug/kg																				
Shallow Non Drinking Water Commercial ESL (risk driver)			380 (de)	9,300 (sl)	13,000 (iai)	1,500 (sl)	250 (iai)	3,600 (iai)	730 (iai)	(520,000)	(550,000)	(70,000)	(170,000)	(410,000)	--	(550,000)	4,800 (sl)	15,000 (sl)	15,000 (iai)	500 (sl)	13,000 (sl)	3,900 (sl)	
Deep Non Drinking Water Commercial ESL (risk driver)			500 (iai)	9,300 (sl)	13,000 (iai)	1,500 (sl)	250 (iai)	3,600 (iai)	730 (iai)	(520,000)	(550,000)	(70,000)	(170,000)	(410,000)	--	(550,000)	4,800 (sl)	15,000 (sl)	1,500 (iai)	500 (sl)	13,000 (sl)	3,900 (sl)	
Cambria Samples																							
SB-1-3.5	11/25/2002	3.5	<5.0	37	16	120	44	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	9.6	36	<5.0	<5.0	<50	<10	<5.0	ND
SB-1-7.5	11/25/2002	7.5	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	150	<5.0	<5.0	<50	<10	<5.0	ND
SB-2-3.5	11/25/2002	3.5	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<50	<10	<5.0	ND
SB-2-11.5	11/25/2002	11.5	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<50	<10	<5.0	ND
SB-3-7.5	11/25/2002	7.5	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<1,000	<200	<100	ND
SB-3-11.5	11/25/2002	11.5	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<50	<10	<5.0	ND
SB-4-3.5	11/25/2002	3.5	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<50	<10	<5.0	ND
SB-4-7.5	11/25/2002	7.5	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<50	<10	<5.0	ND
SB-4-11.5	11/25/2002	11.5	<5.0	<5.0	7.4	11	<5.0	<5.0	<5.0	7.8	33	79	160	9.5	<5.0	<5.0	59	<5.0	<5.0	<50	<10	<5.0	ND
SB-5-7.5	11/25/2002	7.5	<200	<200	<200	<200	<200	<200	<200	360	970	300	<200	1,700	260	1,600	<200	<200	<200	<2,000	<400	<200	ND
SB-5-11.5	11/25/2002	11.5	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<50	<10	<5.0	ND
SB-7-3.5	11/25/2002	3.5	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	200	<100	<100	<1,000	<200	<100	ND
SB-7-7.5	11/25/2002	7.5	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	130	<100	<100	<100	<100	<1,000	<200	<100	ND
SB-7-17.5	11/25/2002	17.5	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	470	<100	<100	<100	<100	<1,000	<200	<100	ND
SB-8-3	11/25/2002	3.0	<500	<500	<500	<500	<500	<500	<500	<500	<500	<500	<500	<500	<500	<500	<500	<500	<500	<5,000	<1,000	<500	ND
SB-8-6	11/25/2002	6.0	<1,000	<1,000	<1,000	<1,000	<1,000	<1,000	<1,000	<1,000	<1,000	<1,000	<1,000	<1,000	<1,000	<1,000	<1,000	<1,000	<1,000	<10,000	<2,000	<1,000	ND
SB-8-9	11/25/2002	9.0	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	470	<100	<100	<100	<100	<1,000	<200	<100	ND
SB-9-6	11/25/2002	6.0	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<100	<20	<10	ND
SB-9-9	11/25/2002	9.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<50	<10	<5.0	ND
SB-10-3	11/25/2002	3.0	<5.0	<5.0	<5.0	<5.0	56	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<50	<10	<5.0	ND
SB-10-6	11/25/2002	6.0	<50	<50	<50	<50	<50	<50	<50	<50	100	<50	<50	260	71	260	<50	<50	<50	<500	<100	<50	ND
SB-10-9	11/25/2002	9.0	<500	<500	<500	<500	<500	<500	<500	<500	<500	<500	<500	<500	<500	<500	<500	<500	<500	<5,000	<1,000	<500	ND
SB-10-12	11/25/2002	12.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<50	<10	<5.0	a
SB-11-7.5	11/25/2002	7.5	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<50	<10	<5.0	ND
Previous SCI Samples																							
Tank 1 Bottom	2/25/2002	--	<130	<130	<130	<130	<130	<130	<130	<130	<130	<130	230	<130	<130	<130	<130	<130	<130	<130	<130	<130	
Tank 2 Bottom	2/25/2002	--	<250	<250	<250	<250	<250	<250	<250	<250	<250	300	680	290	370	550	<250	<250	<250	<250	<250	<250	
Tank 3 Bottom	2/25/2002	--	<250	<250	<250	<250	310	<250	<250	<250	570	680	1,600	960	930	1,500	<250	<250	<250	<250	<250	<250	
Tank 4 Bottom	2/25/2002	--	<250	<250	<250	<250	<250	<250	<250	740	1,700	<250	840	2,100	940	1,900	660	<250	<250	<250	<250	<250	
E End @ 6'	2/25/2002	6.0	<250	<250	<250	950	<250	<250	<250	1,300	3,200	<250	<250	1,700	920	2,400	<250	<250	<250	<250	<250	<250	
W End @ 6'	2/25/2002	6.0	<250	<250	<250	<250	<250	<250	<250	520	1,300	1,100	<250	1,700	890	1,700	<250	<250	<250	<250	<250	<250	
Pipe #1	2/25/2002	--	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	
Pipe #2	2/25/2002	--	<4.9	<4.9	<4.9	<4.9	<4.9	<4.9	<4.9	<4.9	<4.9	<4.9	<4.9	<4.9	<4.9	<4.9	<4.9	<4.9	<4.9	<4.9	<4.9	<4.9	
Tank 5 E End	3/7/2002	--	<2,000	<2,000	8,600	<2,000	<2,000	<2,000	<2,000	5,600	16,000	25,000	63,000	13,000	9,900	14,000	<2,000	<2,000	<2,000	<2,000	<2,000	<2,000	
Tank 5 W End	3/7/2002	--	<1,700	<1,700	5,900	<1,700	<1,700	<1,700	<1,700	4,100	11,000	17,000	47,000	9,600	8,500	1,000	<1,700	<1,700	<1,700	<1,700	<1,700	<1,700	
Tank 6 N Wall	3/7/2002	2.0	<4.7	<4.7	<4.7	<4.7	<4.7	<4.7	<4.7	<4.7	<4.7	<4.7	<4.7	<4.7	<4.7	<4.7	<4.7	<4.7	<4.7	<4.7	<4.7	<4.7	

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Table 2. Soil Analytical Data: Volatile Organic Compounds - 1137-1167 65th Street, Oakland, California

Sample ID	Date Sampled	Depth (ft)	Benzene	Toulene	Ethylbenzene	Xyleues	Tetrachloroethene	cis-1,2-Dichloroethene	Trichloroethene	Isopropylbenzene (Cumene)	n-Propylbenzene	1,3,5-Trimethylbenzene	1,2,4-Trimethylbenzene	sec-Butylbenzene	4-Isopropyl Toluene	n-Butylbenzene	Naphthalene	Styrene	Methylene Chloride	Acetone	2-Butanone (MEK)	4-methyl-2-pentanone(MIBK)	Other VOCs
			ug/kg																				
Shallow Non Drinking Water Commercial ESL (risk driver)			380 (de)	9,300 (sl)	13,000 (iai)	1,500 (sl)	250 (iai)	3,600 (iai)	730 (iai)	(520,000)	(550,000)	(70,000)	(170,000)	(410,000)	--	(550,000)	4,800 (sl)	15,000 (sl)	15,000 (iai)	500 (sl)	13,000 (sl)	3,900 (sl)	
Deep Non Drinking Water Commercial ESL (risk driver)			500 (iai)	9,300 (sl)	13,000 (iai)	1,500 (sl)	250 (iai)	3,600 (iai)	730 (iai)	(520,000)	(550,000)	(70,000)	(170,000)	(410,000)	--	(550,000)	4,800 (sl)	15,000 (sl)	1,500 (iai)	500 (sl)	13,000 (sl)	3,900 (sl)	
Tank 6 S Wall	3/7/2002	5.0	<4.8	<4.8	<4.8	<4.8	<4.8	<4.8	<4.8	<4.8	<4.8	<4.8	<4.8	<4.8	<4.8	<4.8	<4.8	<4.8	<4.8	<4.8	<4.8	<4.8	
Tank 6 E End	3/7/2002	--	<420	<420	<420	<420	<420	<420	<420	<420	<420	1,600	2,100	<420	510	<420	<420	<420	<420	<420	<420	<420	
Tank 6 W End	3/7/2002	--	<3,100	<3,100	<3,100	<3,100	<3,100	<3,100	<3,100	8,500	24,000	46,000	100,000	30,000	27,000	<3,100	<3,100	<3,100	<3,100	<3,100	<3,100	<3,100	

Notes:
a = Vinyl Chloride: 18 ug/kg

Abbreviations and Methods:
ug/kg = Micrograms per kilogram, equivalent to parts per billion (ppb)
Volatile organic compounds by EPA Method 8260B
< n = Chemical not present at a concentration in excess of detection limit shown
ND = None detected above laboratory reporting limit, see laboratory report for individual reporting limits.

Commercial Non-Drinking Water ESL = Table B (Shallow Soil = 0 - 10 ft bgs) and Table D (Deep Soil = >10 ft bgs) - Environmental Screening Levels for Surface Soil (Groundwater is not a Current or Potential Source of Drinking Water) for commercial/industrial reuse for established by the SFBRWQCB, Interim Final July 2003.
(soil leaching) = ESL risk driver is shown in parentheses.
NE = not established
(160,000) = No ESL published for component. The value presented is from EPA's Preliminary Remediation Goals (PRG), 2000.
-- = ESL or PRG not established
iai = indoor air impacts
sl = soil leaching
de = direct exposure
NE = not established

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Table 3. Groundwater Analytical and Elevation Data: Petroleum Hydrocarbons - 1137-1167 65th Street, Oakland, California

Boring ID *TOC* *(ft*)*	Date Sampled	Groundwater Elevation (ft)	Depth to Water (ft)	TPHmo	TPHd	TPHss	TPHg	TPHnap	Notes
				←		ug/L		→	
ESL - Not a Potential Drinking Water Source (risk driver)				640 (aquatic life protection)	640 (aquatic life protection)	640 (aquatic life protection)	500 (aquatic life protection)	500 (aquatic life protection)	
SB-1	11/25/2002	35.39	3.45	---	---	---	---	---	
(38.84)	11/26/2002	35.44	3.40	**7,500**	**2,000**	<50	58	---	
SB-2	11/25/2002	11.61	29.50	---	---	---	---	---	
(41.11)	11/26/2002	29.46	11.65	<250	<50	<50	<50	---	
SB-4	11/25/2002	34.02	6.90	---	---	---	---	---	
(40.92)	11/26/2002	34.82	6.10	---	---	---	---	---	SPH
SB-6	11/25/2002	28.24	11.25	---	---	---	---	---	
(39.49)	11/26/2002	32.19	7.30	620	**23,000**	**7,800**	**8,700a,b,c**	---	
SB-7	11/25/2002	28.20	10.30	---	---	---	---	---	
(38.50)	11/26/2002	30.10	8.40	<25,000	**120,000**	**5,800**	**6,100a,b,c**	---	
SB-8	11/25/2002	36.30	4.70	---	---	---	---	---	
(41.00)	11/26/2002	36.55	4.65	<250,000	**1,200,000**	**100,000**	**110,000a,b,c**	---	
SB-9	11/25/2002	16.02	25.00	---	---	---	---	---	
(41.02)	11/26/2002	17.07	23.95	300	50	<50	<50c	---	
SB-10	11/25/2002	29.27	11.60	---	---	---	---	---	
(40.87)	11/26/2002	31.12	9.75	<250	350	200	260a,c	---	
SB-11	11/25/2002	12.15	29.30	---	---	---	---	---	
(41.45)	11/26/2002	19.55	21.90	<250	<50	<50	<50	---	

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Table 3. Groundwater Analytical and Elevation Data: Petroleum Hydrocarbons - 1137-1167 65th Street, Oakland, California

Boring ID	Date	Groundwater	Depth	TPHmo	TPHd	TPHss	TPHg	TPHnap	Notes
TOC	Sampled	Elevation	to Water	←		ug/L		→	
(ft)*		(ft)	(ft)						
ESL - Not a Potential Drinking Water Source				640	640	640	500	500	
(risk driver)				(aquatic life protection)	(aquatic life protection)	(aquatic life protection)	(aquatic life protection)	(aquatic life protection)	
Previous SCI Samples									
Interior	2/20/2002	---	---	---	**94,000**	**13,000**	**21,000**	**11,000**	
Exterior	2/25/2002	---	---	---	**82,000**	**42,000**	**66,000**	**34,000**	

Abbreviations:

TOC Elev. (ft) = Top of casing elevation in feet above mean sea level

ug/L = micrograms per liter = parts per billion = ppb

TPHmo = Total petroleum hydrocarbons as motor oil by EPA Method 8015C with silica gel cleanup

TPHd = Total petroleum hydrocarbons as diesel by EPA Method 8015C with silica gel cleanup

TPHss = Total petroleum hydrocarbons as Stoddard solvent by EPA Method 8021B/8015Cm

TPHg = Total petroleum hydrocarbons as gasoline by EPA Method 8021B/8015Cm

TPHnap = Total petroleum hydrocarbons as naphtha by EPA Method 8015m/8020

ND = None detected above laboratory reporting limit, see laboratory report for individual reporting limits.

--- = Not available, not analyzed, or does not apply.

< n = Chemical not present at a concentration in excess of detection limit shown.

a = Laboratory note: TPH pattern that does not appear to be derived from gasoline (Stoddard solvent/mineral spirit?)

b = Laboratory note: lighter than water immiscible sheen/product is present

c = Laboratory note: liquid sample that contains greater than ~2 vol. % sediment

ESL - Not A Potential Drinking Water Source = Table F-2 - Components for Groundwater Screening Levels (Groundwater is not a Current or Potential Drinking Water Resource) established by the SFBRWQCB, Interim Final July 2003. (The risk driver is shown in parentheses.)

NE = not established

Notes:

SPH = Separate phase hydrocarbons detected in well; no groundwater collected.

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Table 4. Groundwater Analytical and Elevation Data: Volatile Organic Compounds - 1137-1167 65th Street, Oakland, California

Boring ID (TOC) (ft*)	Date Sampled	Groundwater Elevation (ft)	Depth to Water (ft)	Benzene	Toulene	Ethylbenzene	Xylenes	Tetrachloroethene	cis-1,2-Dichloroethene	Trichloroethene	Isopropylbenzene (Cumene)	n-Propylbenzene	1,3,5-Trimethylbenzene	1,2,4-Trimethylbenzene	sec-Butylbenzene	4-Isopropyl Toluene	n-Buylbenzene	Naphthalene	Styrene	Methylene Chloride	Acetone	2-Butanone (MEK)	4-methyl-2-pentanone(MIBK)	Notes
				ug/L																				
ESL - Not a Potential Drinking Water Source (risk driver)				46 (alp)	130 (alp)	290 (alp)	13 (alp)	120 (alp)	590 (alp)	360 (alp)	--	--	--	--	--	--	--	24 (alp)	100 (alp)	2,200 (alp)	1,500 (alp)	14,000 (alp)	170 (alp)	
SB-1	11/25/2002	35.39	3.45	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	
(38.84)	11/26/2002	35.44	3.40	1.7	3.2	0.55	3.6	1.2	<0.5	<0.5	<0.5	<0.5	<0.5	0.60	<0.5	<0.5	<0.5	13	<0.5	<0.5	39	6.8	2.7	a,b,c
SB-2	11/25/2002	11.61	29.50	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	
(41.11)	11/26/2002	29.46	11.65	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<10	<1.0	<0.5	
SB-4	11/25/2002	34.02	6.90	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	
(40.92)	11/26/2002	34.82	6.10	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	SPH
SB-6	11/25/2002	28.24	11.25	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	
(39.49)	11/26/2002	32.19	7.30	2.1	1.2	<0.5	0.55	<0.5	1.2	<0.5	<0.5	<0.5	<0.5	<0.5	11	<0.5	4.9	5.3	<0.5	<0.5	14	4.4	<0.5	d,e,f,g,h
SB-7	11/25/2002	28.20	10.30	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	
(38.50)	11/26/2002	30.10	8.40	<0.5	0.74	<0.5	3	<0.5	<0.5	<0.5	0.63	<0.5	2.1	6.6	<0.5	24	<0.5	7.8	<0.5	<0.5	9.2	1.5	<0.5	i,j,k,l,m,n
SB-8	11/25/2002	36.30	4.70	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	
(41.00)	11/26/2002	36.55	4.65	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	20	<10	<10	<10	<10	<200	<20	<10	o
SB-9	11/25/2002	16.02	25.00	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	
(41.02)	11/26/2002	17.07	23.95	<0.5	0.88	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	13	1.4	<0.5	
SB-10	11/25/2002	29.27	11.60	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	
(40.87)	11/26/2002	31.12	9.75	<2.5	3.4	<2.5	<2.5	<2.5	170	<2.5	<2.5	<2.5	<2.5	8.1	<2.5	<2.5	<2.5	<2.5	<2.5	<2.5	<25	5.6	<2.5	p,q,s
SB-11	11/25/2002	12.15	29.30	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	
(41.45)	11/26/2002	19.55	21.90	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<10	<1.0	<0.5	t
Trip Blank	11/26/2002	---	---	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<10	<1.0	<0.5	

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Table 4. Groundwater Analytical and Elevation Data: Volatile Organic Compounds - 1137-1167 65th Street, Oakland, California

Boring ID (TOC) (ft*)	Date Sampled	Groundwater Elevation (ft)	Depth to Water (ft)	Benzene	Toulene	Ethylbenzene	Xylenes	Tetrachloroethene	cis-1,2-Dichloroethene	Trichloroethene	Isopropylbenzene (Cumene)	n-Propylbenzene	1,3,5-Trimethylbenzene	1,2,4-Trimethylbenzene	sec-Butylbenzene	4-Isopropyl Toluene	n-Butylbenzene	Naphthalene	Styrene	Methylene Chloride	Acetone	2-Butanone (MEK)	4-methyl-2-pentanone(MIBK)	Notes
				ug/L																				
ESL - Not a Potential Drinking Water Source (risk driver)				46 (alp)	130 (alp)	290 (alp)	13 (alp)	120 (alp)	590 (alp)	360 (alp)	--	--	--	--	--	--	--	24 (alp)	100 (alp)	2,200 (alp)	1,500 (alp)	14,000 (alp)	170 (alp)	
Previous SCI Samples																								
Interior	2/20/2002	---	---	47	<5.0	9.4	114	<5.0	<5.0	<5.0	44	91	180	330	44	40	40	<5.0	<5.0	<5.0	23	<5.0	<5.0	
Exterior	2/20/2002	---	---	<7.1	<7.1	<7.1	24	83	9.6	<7.1	10	29	62	150	26	36	41	<7.1	<7.1	<7.1	<7.1	<7.1	<7.1	

Abbreviations:

TOC Elev. (ft) = Top of casing elevation in feet above mean sea level

ug/L = micrograms per liter = parts per billion = ppb

Volatile organic compounds by EPA Method 8260B

--- = Not available, not analyzed, or does not apply

< n = Chemical not present at a concentration in excess of detection limit shown

Notes:

a = Carbon Disulfide: 0.64 ug/L

a = 2-Hexanone: 0.58 ug/L

b = Methyl tertiary-butyl ether (MTBE): 5.1 ug/L

d = tert-Butylbenzene: 4.6 ug/L

e = Chloroethane: 3.8 ug/L

f = 1,1-Dichloroethene: 1.4 ug/L

g = trans-1,2-Dichloroethene: 2.6 ug/L

h = Vinyl Chloride: 0.90 ug/L

i = tert-Butylbenzene: 7.3 ug/L

j = Chloroethane: 16 ug/L

k = 1,1-Dichloroethene: 1.7 ug/L

l = trans-1,2-Dichloroethene: 0.99 ug/L

m = 1,1,2,2-Tetrachloroethane: 16 ug/L

n = Vinyl Chloride: 1.3 ug/L

o = 1,2-Dichlorobenzene: 20 ug/L

p = 1,1-Dichloroethene: 19 ug/L

q = trans-1,2-Dichloroethene: 3.9 ug/L

s = Vinyl Chloride: 45 ug/L

t = Methyl tertiary-butyl ether (MTBE): 3.9 ug/L

ESL - Not A Potential Drinking Water Source = Table F-1b - Components for Groundwater Screening Levels (Groundwater is not a Current or Potential Drinking Water Resource) established by the SFBRWQCB, Interim Final July 2003. (The risk driver is shown in parentheses.)

(600) = No ESL published for component. The value presented is from EPA's Preliminary Remediation Goals (PRG), 2000, with tap water as the risk driver.

cv = ceiling value (odors, etc,)

ht = human toxicity

alp = aquatic life protection

Table 5. Proposed Direct Push Boring Locations, Boring Depth, Sampling Schedule, and Rationale - 1137-1167 65th Street, Oakland, CA

Proposed Boring ID	Soil Investigation Rationale	GW Investigation Rationale	Proposed Depth (ft bgs)	Soil Samples	GW Samples
SB-12	None	FP extent (boring SB-4), GW Plume Extent	GW (A-Zone)	N	Y
SB-13	Define TPHg and ss in soil (Interior Tank Area @ 6.0)	None	12	6.0, 11.5	N
SB-14	Define TPHg and ss in soil (boring SB-5 @ 7.5)	FP extent (boring SB-4), GW Plume Extent	GW (A-Zone)	7.5, 11.5	Y
SB-15	Define TPHg and ss in soil (boring SB-5 @ 7.5);	GW Plume Extent	GW (A-Zone)	7.5, 11.5	Y
SB-16	Define TPHg, ss, d; & PCE in soil (Exterior Tank Area @ 6.0)	None	12	7.5, 11.5	N
SB-17	Define TPHg and ss in soil (boring SB-7 to 17.5) Define TPHg, ss, d; & PCE in soil (Exterior Tank Area @ 6.0)	GW Plume Extent	GW (B-Zone)	3.5, 7.5, 11.5, 17.5, 20.0	Y
SB-18	Define TPHg and ss in soil (boring SB-7 to 17.5)	GW Plume Extent	GW (B-Zone)	3.5, 7.5, 11.5, 17.5, 20.0	Y
SB-19	None	GW Plume Extent	GW (A-Zone)	N	Y
SB-20	None	GW Plume Extent	GW (B-Zone)	N	Y
SB-21	1167 65th Street Building Floor Drain	None	10	3.0, 6.0, 9.0	N
SB-22	Define TPHg, ss, & d in soil (boring SB-8 @ 3.5 & 6.0)	None	9.5	3.0, 6.0, 9.0	N
SB-23	Define TPHg, ss, & d in soil (boring SB-8 @ 3.5 & 6.0)	None	9.5	3.0, 6.0, 9.0	N
SB-24	Define TPHg, ss, & d in soil (boring SB-8 @ 3.5 & 6.0); Sample at pipe junction (Tri-Regional Board Guidelines)	None	9.5	3.0, 6.0, 9.0	N
SB-25	None	GW Plume Extent	GW (A-Zone)	N	Y
SB-26	Define TPHg and ss in soil (boring SB-5 @ 7.5); Define TPHg and ss in soil (Interior Tank Area @ 6.0)	None	12	7.5, 11.5	Y

Abbreviations and Notes:

TPHg = Total petroleum hydrocarbons as gasoline
TPHss = Total petroleum hydrocarbons as stoddard solvent
TPHd = Total petroleum hydrocarbons as diesel
TPHmo = Total petroleum hydrocarbons as motor oil
FP = Free Product
GW = Groundwater. Water bearing zone in parentheses.
ft bgs = feet below ground surface

Table 6. Proposed Monitoring Well Diameter and Screen Interval - 1137-1167 65th Street, Oakland, CA

Proposed Boring ID	Proposed Diameter	Screened Zone	Comments
MW-1A	2-inch	A-Zone	
MW-1B	2-inch	B-Zone	If encountered.
MW-1C	2-inch	C-Zone	Soil samples will be analyzed.
MW-2A	4-inch	A-Zone	Former gasoline UST backfill. Free product recovery well.
MW-2B	2-inch	B-Zone	Soil samples will be analyzed.
MW-3A	2-inch	A-Zone	
MW-3B	2-inch	B-Zone	If encountered. Soil samples will be analyzed.
MW-4A	2-inch	A-Zone	
MW-4B	2-inch	B-Zone	If encountered.
MW-4C	2-inch	C-Zone	Soil samples will be analyzed.
MW-5A	2-inch	A-Zone	
MW-5B	2-inch	B-Zone	If encountered.
MW-5C	2-inch	C-Zone	Soil samples will be analyzed.
MW-6A	2-inch	A-Zone	
MW-6B	2-inch	B-Zone	Soil samples will be analyzed.

Abbreviations and Notes:
ft bgs = feet below ground surface

APPENDIX A

ACHCSA Letters

ALAMEDA COUNTY
HEALTH CARE SERVICES
AGENCY
DAVID J. KEARS, Agency Director

ENVIRONMENTAL HEALTH SERVICES
ENVIRONMENTAL PROTECTION
1131 Harbor Bay Parkway, Suite 250
Alameda, CA 94502-6577
(510) 567-6700
FAX (510) 337-9335

June 30, 2003

Mr. John Nady
Nady Systems
6701 Shellmound St.
Emeryville, CA 94608

Dear Mr. Nady:

Subject: Fuel Leak Case RO0000082, 1137-1167 65th Ave., Oakland, CA 94608

This letter confirms the receipt of the June 27, 2003 e mail from Cambria Environmental, your consultant, requesting an extension for the submittal of the work plan for additional soil and groundwater characterization at the referenced site. Our office approves the extension date of August 8, 2003. This will allow the completion of a geophysical survey and preparation of geologic cross sections, which are instrumental in determining the construction of future monitoring wells.

Please contact me at (510) 567-6765 if you have any questions.

Sincerely,

Barney M. Chan
Hazardous Materials Specialist

C: B. Chan, D. Drogos
Mr. B. Clark-Riddell, Cambria Environmental, 5900 Hollis St., Suite A, Emeryville, 94608

1137-1167 65thwprqext

ALAMEDA COUNTY
HEALTH CARE SERVICES
AGENCY
DAVID J. KEARS, Agency Director

ENVIRONMENTAL HEALTH SERVICES
ENVIRONMENTAL PROTECTION
1131 Harbor Bay Parkway, Suite 250
Alameda, CA 94502-6577
(510) 567-6700
FAX (510) 337-9335

May 19, 2003

Mr. John Nady
Nady Systems
6701 Shellmound St.
Emeryville, CA 94608

Dear Mr. Nady:

Subject: Fuel Leak Case RO0000082, 1137-1167 65th Ave., Oakland, CA 94608

Alameda County Environmental Health, Local Oversight Program (LOP) staff has received and reviewed the February 13, 2003 Soil and Groundwater Investigation Report prepared by Cambria Environmental. We have also discussed the results with Mr. Clark-Riddell of Cambria. We have determined that additional information and investigation is needed to progress your site towards case closure. We request that you address the following technical comments and submit the technical report requested below.

Technical Comments

1. Elevated total petroleum hydrocarbons (TPH) as motor oil, diesel, stoddard solvent or gasoline were observed in groundwater samples from borings SB-8, SB-6, SB-7 and SB-1. In addition, halogenated volatile organic compounds (HVOC) were detected in groundwater samples from SB-10, SB-6 and SB-7. The extent of this contamination should be determined.
2. Results from soil and groundwater samples taken from the former underground tank pits detected elevated TPH of various boiling point range and HVOCs. The extent of this contamination should be determined.
3. Free petroleum product was observed in soil boring SB-4. The extent of this free product should be determined and removed to the extent possible.
4. In addition to determining the extent of soil and groundwater contamination, the source area (piping, tanks, dispensers, etc) locations should be verified and sampled appropriately.
5. Site-specific groundwater gradient is needed for site characterization. Therefore, monitoring wells should be installed. Previous results indicate that groundwater may appear as lenses of perched water beneath the site, therefore, additional temporary borings may be necessary prior to permanent well installation. Specify the screen interval if both perched and deep groundwater is being investigated.

Technical Report Request

Please submit the following technical report to our office according to the following schedule:

- June 23, 2003- Work plan for the additional soil and groundwater characterization and monitoring well installation.

You may contact me at 510-567-6765 if you have any questions.

Sincerely,

Barney M Chan

Barney M. Chan
Hazardous Materials Specialist

C: B. Chan, D. Drogos
✓Mr. B. Clark-Riddell, Cambria Environmental, 5900 Hollis St., Suite A, Emeryville, 94608

1137-1167 65tbwprq

APPENDIX B

Boring Logs

Cambria Environmental Technology, Inc.
2680 Bishop Drive, Suite 290
San Ramon, CA 94583
Telephone: (925) 275-3200
Fax: (925) 275-3204

BORING/WELL LOG

CLIENT NAME	Nady Systems	BORING/WELL NAME	SB-1
JOB/SITE NAME	Nady Systems	DRILLING STARTED	25-Nov-02
LOCATION	1137-1167 65th Street, Oakland, California	DRILLING COMPLETED	26-Nov-02
PROJECT NUMBER	522-1000	WELL DEVELOPMENT DATE (YIELD)	NA
DRILLER	Vironex	GROUND SURFACE ELEVATION	38.84 ft
DRILLING METHOD	Hydraulic push	TOP OF CASING ELEVATION	38.84 ft
BORING DIAMETER	2 inches	SCREENED INTERVAL	1 - 6 ft bgs
LOGGED BY	I. Young	DEPTH TO WATER (First Encountered)	3.5 ft (25-Nov-02)
REVIEWED BY	R. Clark-Riddell, PE# 49629	DEPTH TO WATER (Static)	3.4 ft (26-Nov-02)
REMARKS			

GRO (mg/kg)	BLOW COUNTS	SAMPLE ID	EXTENT	DEPTH (ft bgs)	U.S.C.S.	GRAPHIC LOG	LITHOLOGIC DESCRIPTION	CONTACT DEPTH (ft bgs)	WELL DIAGRAM
							CONCRETE	0.5	
					SP		**Gravelly SAND** (SP): Grey; dry; 10% silt, 60% medium- to coarse-grained sand, 30% fine to medium gravel; high estimated permeability.		
		SB-1- 3.5		5			@ 3.0 ft: Brick fragments. @ 3.5 ft: Wet.		
		SB-1- 7.5						9.0	
				10	GP		**Sandy GRAVEL** (GP): 30% coarse-grained sand, 70% fine to medium gravel.	10.5	
		SB-1- 11.5			ML		**Sandy SILT** (ML): Orangish brown; damp; 5% clay, 60% silt, 35% fine-grained sand; moderate estimated permeability.	12.0	Bottom of Boring @ 12 ft

WELL LOG (GRO) H:\SB-2004 (UST FUND)\NADY\NADY.GPJ DEFAULT.GDT 8/19/03

Cambria Environmental Technology, Inc.
2680 Bishop Drive, Suite 290
San Ramon, CA 94583
Telephone: (925) 275-3200
Fax: (925) 275-3204

BORING/WELL LOG

CLIENT NAME	Nady Systems	BORING/WELL NAME	SB-2
JOB/SITE NAME	Nady Systems	DRILLING STARTED	25-Nov-02
LOCATION	1137-1167 65th Street, Oakland, California	DRILLING COMPLETED	26-Nov-02
PROJECT NUMBER	522-1000	WELL DEVELOPMENT DATE (YIELD)	NA
DRILLER	Vironex	GROUND SURFACE ELEVATION	41.11 ft
DRILLING METHOD	Hydraulic push	TOP OF CASING ELEVATION	41.11 ft
BORING DIAMETER	2 inches	SCREENED INTERVAL	24 - 34 ft bgs
LOGGED BY	I. Young	DEPTH TO WATER (First Encountered)	NA
REVIEWED BY	R. Clark-Riddell, PE# 49629	DEPTH TO WATER (Static)	11.7 ft (26-Nov-02)
REMARKS			

GRO (mg/kg)	BLOW COUNTS	SAMPLE ID	EXTENT	DEPTH (ft bgs)	U.S.C.S.	GRAPHIC LOG	LITHOLOGIC DESCRIPTION	CONTACT DEPTH (ft bgs)	WELL DIAGRAM
					SP		**ASPHALT**	0.2	
							Gravelly SAND: Black; dry; 10% silt, 70% sand, 20% fine gravel; high estimated permeability.	1.5	
					ML		**SILT with Sand** (ML): Dark brown; dry; 10% clay, 80% silt, 10% fine-grained sand; low estimated permeability. Damp; 10% clay, 70% silt, 20% fine-grained sand.		
		SB-2- 3.5							
				5				5.0	
					CL		**Silty CLAY** (CL): Brown; dry; 60% clay, 35% silt, 5% fine-grained sand; low plasticity; low estimated permeability.	7.0	
		SB-2- 7.5					**SILT with Sand** (ML): Light brown; dry; 10% clay, 70% silt, 20% fine-grained sand; low estimated permeability.		
				10			@ 8.5 ft: **Sandy Gravelly SILT** (ML): Orangish brown; 10% clay, 50% silt, 20% medium-grained sand, 20% fine gravel; moderate estimated permeability. @ 9.0 ft: **Clayey SILT** (ML): Light brown; 20% clay, 75% silt, 5% fine-grained sand.		
		SB-2- 11.5					@ 9.5 ft: **Sandy SILT** (ML): Dark brown; damp; 10% clay, 60% silt, 30% fine-grained sand.		
					ML		@ 10.0 ft: **Clayey SILT** (ML): Light brown; 20% clay, 75% silt, 5% fine-grained sand; low estimated permeability.		
		SB-2- 14.5		15			@ 11.0 ft: **Sandy SILT** (ML): Orangish brown; 10% clay, 65% silt, 30% fine- to medium-grained sand; moderate estimated permeability.. @ 13 ft: Dark brown; 5% clay, 60% silt, 35% fine-grained sand; low to moderate estimated permeability.		
		SB-2- 17.5					@ 13.5 ft: **Sandy Gravelly SILT** (ML): Orangish brown; 5% clay, 60% silt, 25% fine-grained sand, 10% fine gravel; moderate estimated permeability.		Portland Type I/II Cement
							@ 14 ft: **Sandy SILT** (ML): Orangish brown; dry; 5% clay, 60% silt, 35% fine-grained sand; low to moderate estimated permeability. @ 17.5 ft: Lenses of black sands observed in sample. @ 18.5 ft: Brown.	19.0	
				20			**Silty CLAY** (CL): Brown; dry; 60% clay, 40% silt; low to medium plasticity; low estimated permeability.		
		SB-2- 21.5							
					CL		@ 24.0 ft: Moist.		
				25					
		SB-2- 27.5							
							@ 28.0 ft: **Sandy Silty CLAY** (CL): Damp; 50% clay, 20% silt, 30% fine- to medium-grained sand; low to moderate estimated permeability.	30.0	
				30	SM		@ 28.5 ft: **Silty CLAY** (CL): Dry; 80% clay, 20% silt; low estimated permeability.	30.5	
		SB-2- 31.5					**Silty SAND** (SM): Brown; damp; 5% clay, 40% silt, 55% fine- to medium-grained sand; moderate estimated permeability.		
					SC		**Clayey Sand** (SC): Brown; dry; 40% clay, 15% silt, 45% fine- to medium-grained sand; low estimated permeability.		
				35				35.0	

Continued Next Page

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BORING/WELL LOG

CLIENT NAME	Nady Systems	**BORING/WELL NAME**	SB-2
JOB/SITE NAME	Nady Systems	**DRILLING STARTED**	25-Nov-02
LOCATION	1137-1167 65th Street, Oakland, California	**DRILLING COMPLETED**	26-Nov-02

Continued from Previous Page

GRO (mg/kg)	BLOW COUNTS	SAMPLE ID	EXTENT	DEPTH (ft bgs)	U.S.C.S.	GRAPHIC LOG	LITHOLOGIC DESCRIPTION	CONTACT DEPTH (ft bgs)	WELL DIAGRAM
		SB-2- 35.5			SM		**Silty SAND** (SM): Brown; very damp; 15% clay, 30% silt, 55% fine- to medium-grained sand; moderate estimated permeability.	36.0	Bottom of Boring @ 36 ft

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BORING/WELL LOG

CLIENT NAME	Nady Systems	BORING/WELL NAME	SB-3
JOB/SITE NAME	Nady Systems	DRILLING STARTED	25-Nov-02
LOCATION	1137-1167 65th Street, Oakland, California	DRILLING COMPLETED	26-Nov-02
PROJECT NUMBER	522-1000	WELL DEVELOPMENT DATE (YIELD)	NA
DRILLER	Vironex	GROUND SURFACE ELEVATION	41.09 ft
DRILLING METHOD	Hydraulic push	TOP OF CASING ELEVATION	41.09 ft
BORING DIAMETER	2 inches	SCREENED INTERVAL	7 - 12 ft bgs
LOGGED BY	I. Young	DEPTH TO WATER (First Encountered)	NA
REVIEWED BY	R. Clark-Riddell, PE# 49629	DEPTH TO WATER (Static)	NA
REMARKS			

GRO (mg/kg)	BLOW COUNTS	SAMPLE ID	EXTENT	DEPTH (ft bgs)	U.S.C.S.	GRAPHIC LOG	LITHOLOGIC DESCRIPTION	CONTACT DEPTH (ft bgs)	WELL DIAGRAM
					SP		**ASPHALT** **Gravelly SAND** (SP): Black; dry; 10% silt, 70% sand, 20% fine gravel; high estimated permeability.	0.2 3.0	
		SB-3-3.5			CL		**Sandy Silty CLAY** (CL): Dark brown; dry; 50% clay, 20% silt; 30% fine-grained sand; slight plasticity; low estimated permeability.	4.5	
				5	ML		**Sandy SILT** (ML): Very dark brown; very damp; 5% clay, 55% silt, 40% fine-grained sand; moderate estimated permeability. @ 5.0 ft: **Clayey SILT** (ML): Dark brown; damp; 35% clay, 55% silt, 10% fine-grained sand; low estimated permeability.	7.2	Portland Type I/II Cement
		SB-3-7.5			CL		**CLAY** (CL): Greenish grey; dry; 80% clay, 15% silt, 5% fine-grained sand; low estimated permeability.	8.5	
				10	ML		**Sandy Gravelly SILT** (ML): Greenish grey; dry; 40% silt, 30% fine- to coarse-grained sand, 30% fine gravel; moderate to high estimated permeability.	11.0	
		SB-3-11.5			CL		**Sandy CLAY** (CL): Brown; dry; 70% clay, 5% silt, 25% fine- to medium-grained sand; low estimated permeability.	12.0	Bottom of Boring @ 12 ft

WELL LOG (GRO) H:\SB-2004 (UST FUND)\NADY\NADY.GPJ DEFAULT.GDT 8/19/03

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BORING/WELL LOG

CLIENT NAME	Nady Systems	BORING/WELL NAME	SB-4
JOB/SITE NAME	Nady Systems	DRILLING STARTED	25-Nov-02
LOCATION	1137-1167 65th Street, Oakland, California	DRILLING COMPLETED	26-Nov-02
PROJECT NUMBER	522-1000	WELL DEVELOPMENT DATE (YIELD)	NA
DRILLER	Vironex	GROUND SURFACE ELEVATION	40.92 ft
DRILLING METHOD	Hydraulic push	TOP OF CASING ELEVATION	40.92 ft
BORING DIAMETER	2 inches	SCREENED INTERVAL	7 - 12 ft bgs
LOGGED BY	I. Young	DEPTH TO WATER (First Encountered)	9.0 ft (26-Nov-02)
REVIEWED BY	R. Clark-Riddell, PE# 49629	DEPTH TO WATER (Static)	6.1 ft (26-Nov-02)
REMARKS			

GRO (mg/kg)	BLOW COUNTS	SAMPLE ID	EXTENT	DEPTH (ft bgs)	U.S.C.S.	GRAPHIC LOG	LITHOLOGIC DESCRIPTION	CONTACT DEPTH (ft bgs)	WELL DIAGRAM
							ASPHALT	0.3	Portland Type I/II Cement
		SB-4-3.5		5	SP		**SAND** (SP): Brown; dry; 100% medium- to coarse-grained sand; high estimated permeability.		
		SB-4-7.5		10			Damp.		
		SB-4-11.5					Black; wet; dark black staining visible in sample.	12.0	Bottom of Boring @ 12 ft

WELL LOG (GRO) H:\SB-2004 (UST FUND)\NADY\NADY.GPJ DEFAULT.GDT 8/19/03

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BORING/WELL LOG

CLIENT NAME	Nady Systems	**BORING/WELL NAME**	SB-5
JOB/SITE NAME	Nady Systems	**DRILLING STARTED**	25-Nov-02
LOCATION	1137-1167 65th Street, Oakland, California	**DRILLING COMPLETED**	26-Nov-02
PROJECT NUMBER	522-1000	**WELL DEVELOPMENT DATE (YIELD)**	NA
DRILLER	Vironex	**GROUND SURFACE ELEVATION**	40.18 ft
DRILLING METHOD	Hydraulic push	**TOP OF CASING ELEVATION**	40.18 ft
BORING DIAMETER	2 inches	**SCREENED INTERVAL**	7 - 12 ft bgs
LOGGED BY	I. Young	**DEPTH TO WATER (First Encountered)**	NA
REVIEWED BY	R. Clark-Riddell, PE# 49629	**DEPTH TO WATER (Static)**	NA
REMARKS			

GRO (mg/kg)	BLOW COUNTS	SAMPLE ID	EXTENT	DEPTH (ft bgs)	U.S.C.S.	GRAPHIC LOG	LITHOLOGIC DESCRIPTION	CONTACT DEPTH (ft bgs)	WELL DIAGRAM
					GP		**ASPHALT**	0.2	
					GP		**Sandy GRAVEL** (GP): Dark brown; dry; 40% medium- to coarse-grained sand, 60% fine gravel; high estimated permeability.	2.0	
		SB-5- 3.5			ML		**Clayey SILT** (ML): 20% clay, 70% silt, 10% fine-grained sand.	5.0	
				5	GP		**Sandy GRAVEL** (GP): Grey; 10% silt, 40% fine- to coarse-grained sand, 50% fine gravel.	6.0	Portland Type I/II Cement
					SP		**Gravelly SAND**(SP): Mottled brown and green; 60% medium- to coarse-grained sand, 40% fine gravel.	7.0	
		SB-5- 7.5			SM		**Silty SAND** (SM): Greenish grey; dry; 10% clay, 30% silt, 60% fine-grained sand; low to moderate estimated permeability.	8.0	
					CL		**Silty CLAY** (CL): Black; dry; 65% clay, 35% silt; low plasticity; low estimated permeability.	10.0	
				10	SP		@ 8.5 ft: **Silty CLAY** (ML): Greenish grey; 80% clay, 20% silt. **Gravelly SAND** (SP): Greenish grey; dry; 5% silt, 60% fine- to coarse-grained sand, 35% fine gravel; high estimated permeability.	11.5	
		SB-5- 11.5			CL		**Silty CLAY** (CL): Brown; dry; 75% clay, 20% silt, 5% fine-grained sand; moderate plasticity; low estimated permeability	12.0	Bottom of Boring @ 12 ft

WELL LOG (GRO) H:\SB-2004 (UST FUND)\NADY\NADY.GPJ DEFAULT.GDT 8/20/03

Cambria Environmental Technology, Inc.
2680 Bishop Drive, Suite 290
San Ramon, CA 94583
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Fax: (925) 275-3204

BORING/WELL LOG

CLIENT NAME	Nady Systems	**BORING/WELL NAME**	SB-6
JOB/SITE NAME	Nady Systems	**DRILLING STARTED**	25-Nov-02
LOCATION	1137-1167 65th Street, Oakland, California	**DRILLING COMPLETED**	26-Nov-02
PROJECT NUMBER	522-1000	**WELL DEVELOPMENT DATE (YIELD)**	NA
DRILLER	Vironex	**GROUND SURFACE ELEVATION**	39.49 ft
DRILLING METHOD	Hydraulic push	**TOP OF CASING ELEVATION**	39.49 ft
BORING DIAMETER	2 inches	**SCREENED INTERVAL**	7 - 12 ft bgs
LOGGED BY	I. Young	**DEPTH TO WATER (First Encountered)**	11.3 ft (25-Nov-03)
REVIEWED BY	R. Clark-Riddell, PE# 49629	**DEPTH TO WATER (Static)**	7.3 ft (26-Nov-02)
REMARKS	Located in Peabody Lane.		

GRO (mg/kg)	BLOW COUNTS	SAMPLE ID	EXTENT	DEPTH (ft bgs)	U.S.C.S.	GRAPHIC LOG	LITHOLOGIC DESCRIPTION	CONTACT DEPTH (ft bgs)	WELL DIAGRAM
					GP		**ASPHALT**	0.2	
					ML		**Sandy GRAVEL** (GP): Dark brown; dry; 40% medium- to coarse-grained sand, 60% fine gravel; high estimated permeability.	1.0	
					CL		**Clayey SILT** (ML): 20% clay, 70% silt, 10% fine-grained sand.	2.0	
		SB-6-3.5			ML		**Silty CLAY** (CL): Dark brown; dry; 60% clay, 35% silt, 5% sand; low plasticity; low estimated permeability.	3.0	
				5	CL		**Clayey SILT** (ML): Greenish grey; damp; 35% clay, 50% silt, 15% fine-grained sand; slight plasticity; low estimated permeability.	4.5	
					SP		**Silty CLAY** (CL): Greyish green; dry; 70% clay, 25% silt, 5% sand; low plasticity; low estimated permeability.	6.0	Portland Type I/II Cement
		SB-6-7.5			CL		**Gravelly SAND** (SP): Greyish green; dry; 10% silt, 50% medium- to coarse-grained sand, 40% fine gravel; high estimated permeability.	6.5	
				10	ML		**Silty CLAY** (CL): Greenish grey; dry; 80% clay, 20% silt; medium plasticity; low estimated permeability.	9.5	
		SB-6-11.5			CL		**Clayey SILT** (ML): Greyish green; damp; 40% clay, 60% silt; slight plasticity; low estimated permeability.	11.7	
							Silty CLAY (CL): Orangish brown; dry; 80% clay, 20% silt; medium plasticity; low estimated permeability.	12.0	Bottom of Boring @ 12 ft

WELL LOG (GRO) H:\SB-2004 (UST FUND)\NADY\NADY.GPJ DEFAULT.GDT 8/20/03

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BORING/WELL LOG

CLIENT NAME	Nady Systems	BORING/WELL NAME	SB-7
JOB/SITE NAME	Nady Systems	DRILLING STARTED	25-Nov-02
LOCATION	1137-1167 65th Street, Oakland, California	DRILLING COMPLETED	26-Nov-02
PROJECT NUMBER	522-1000	WELL DEVELOPMENT DATE (YIELD)	NA
DRILLER	Vironex	GROUND SURFACE ELEVATION	38.50 ft
DRILLING METHOD	Hydraulic push	TOP OF CASING ELEVATION	38.50 ft
BORING DIAMETER	2 inches	SCREENED INTERVAL	13 - 18 ft bgs
LOGGED BY	I. Young	DEPTH TO WATER (First Encountered)	18.0 ft (25-Nov-02)
REVIEWED BY	R. Clark-Riddell, PE# 49629	DEPTH TO WATER (Static)	8.4 ft (26-Nov-02)
REMARKS			

GRO (mg/kg)	BLOW COUNTS	SAMPLE ID	EXTENT	DEPTH (ft bgs)	U.S.C.S.	GRAPHIC LOG	LITHOLOGIC DESCRIPTION	CONTACT DEPTH (ft bgs)	WELL DIAGRAM
					GP		**ASPHALT**	0.2	
					ML		**Sandy GRAVEL** (GP): Dark brown; dry; 40% medium- to coarse-grained sand, 60% fine gravel; high estimated permeability.	1.0	
							Clayey SILT (ML): 20% clay, 70% silt, 10% fine-grained sand.	2.5	
		SB-7-3.5		5	CL		**Silty CLAY** (CL): Dark grey; dry; 60% clay, 35% silt, 5% fine-grained sand; slight plasticity; low estimated permeability. @ 4.0 ft: Grey		
		SB-7-7.5					@ 6.5 ft: **Sandy Silty CLAY** (CL): 50% clay, 20% silt, 30% fine-grained sand. @ 7.0 ft: **Silty CLAY** (CL): Grey; dry; 60% clay, 35% silt, 5% fine-grained sand.	9.0	Portland Type I/II Cement
					ML		**Sandy SILT** (ML): Grey; dry; 10% clay, 55% silt, 30% fine- to medium-grained sand, 5% fine gravel; low to moderate estimated permeability.	10.0	
		SB-7-11.5		10	CL		**Silty CLAY** (CL): Grey; dry; 50% clay, 35% silt, 15% fine-grained sand; slight plasticity; low estimated permeability.		
								13.0	
					SM		**Silty SAND** (SM): Grey; damp; 5% clay, 25% silt, 70% fine- to medium-grained sand; moderate estimated permeability.	13.5	
					CL		**Silty CLAY** (CL): Grey; damp; 55% clay, 35% silt, 10% fine-grained sand; slight plasticity; low estimated permeability.	15.0	
				15	SM		**Silty SAND** (SM): Grey; damp; 5% clay, 25% silt, 70% fine- to medium-grained sand; moderate estimated permeability.	15.5	
		SB-7-15.5			ML		**Clayey SILT** (ML): Grey; damp; 30% clay, 65% silt, 5% fine-grained sand; slight plasticity; low estimated permeability.	16.5	
					SM		**Silty SAND** (SM): Grey; damp; 5% clay, 25% silt, 70% fine- to medium-grained sand; moderate estimated permeability.	17.0	
		SB-7-17.5			CL		**Silty CLAY** (CL): Grey; wet; 50% clay, 35% silt, 15% fine-grained sand; slight plasticity; low estimated permeability.	18.0	Bottom of Boring @ 18 ft

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BORING/WELL LOG

CLIENT NAME	Nady Systems	**BORING/WELL NAME**	SB-8
JOB/SITE NAME	Nady Systems	**DRILLING STARTED**	25-Nov-02
LOCATION	1137-1167 65th Street, Oakland, California	**DRILLING COMPLETED**	26-Nov-02
PROJECT NUMBER	522-1000	**WELL DEVELOPMENT DATE (YIELD)**	NA
DRILLER	Vironex	**GROUND SURFACE ELEVATION**	41.00 ft
DRILLING METHOD	DPT- Badger	**TOP OF CASING ELEVATION**	41.00 ft
BORING DIAMETER	2 inches	**SCREENED INTERVAL**	4 - 9 ft bgs
LOGGED BY	M. Meyers	**DEPTH TO WATER (First Encountered)**	7.5 ft (25-Nov-02) ▽
REVIEWED BY	R. Clark-Riddell, PE# 49629	**DEPTH TO WATER (Static)**	4.7 ft (26-Nov-02) ▼
REMARKS			

GRO (mg/kg)	BLOW COUNTS	SAMPLE ID	EXTENT	DEPTH (ft bgs)	U.S.C.S.	GRAPHIC LOG	LITHOLOGIC DESCRIPTION	CONTACT DEPTH (ft bgs)	WELL DIAGRAM
					CL		**CONCRETE** **Silty CLAY** (CL): Dark brown; moist; 70% clay, 30% silt; high plasticity; low estimated permeability.	0.3	
		SB-8-3						3.0	
				5			**Clayey SAND** (SC): Medium grey; moist; 20% clay, 5% silt, 60% fine- to coarse-grained sand, 5% fine gravel; moderate estimated permeability; blue staining observed in sample. ▼ **Clayey Gravelly SAND** (SC): Blue grey; moist; 20% clay, 60% medium- to coarse-grained sand, 20% fine to medium gravel.		Portland Type I/II Cement
		SB-8-6			SC		▽ @ 7.5 ft: Wet.		
		SB-8-9						9.0	Bottom of Boring @ 9 ft

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BORING/WELL LOG

CLIENT NAME	Nady Systems	**BORING/WELL NAME**	SB-9
JOB/SITE NAME	Nady Systems	**DRILLING STARTED**	25-Nov-02
LOCATION	1137-1167 65th Street, Oakland, California	**DRILLING COMPLETED**	26-Nov-02
PROJECT NUMBER	522-1000	**WELL DEVELOPMENT DATE (YIELD)**	NA
DRILLER	Vironex	**GROUND SURFACE ELEVATION**	41.02 ft
DRILLING METHOD	DPT- Badger	**TOP OF CASING ELEVATION**	41.02 ft
BORING DIAMETER	2 inches	**SCREENED INTERVAL**	Unknown
LOGGED BY	M. Meyers	**DEPTH TO WATER (First Encountered)**	NA
REVIEWED BY	R. Clark-Riddell, PE# 49629	**DEPTH TO WATER (Static)**	24.0 ft (26-Nov-02)
REMARKS			

GRO (mg/kg)	BLOW COUNTS	SAMPLE ID	EXTENT	DEPTH (ft bgs)	U.S.C.S.	GRAPHIC LOG	LITHOLOGIC DESCRIPTION	CONTACT DEPTH (ft bgs)	WELL DIAGRAM
							CONCRETE	0.5	
					CL		**Silty CLAY** (CL): Dark brown; moist; 70% clay, 30% silt; high plasticity; low estimated permeability.		
				5					
		SB-9-6					@ 5.5 ft: **Sandy CLAY** (CL): Medium brown; wet; 60% clay, 10% silt; 30% fine-grained sand; low plasticity; moderate estimated permeability.	7.0	
		SB-9-9			ML		@ 6.0 ft: **Silty Clay** (CL): Medium brown; damp; 65% clay, 20% silt, 10% fine- to medium-grained sand, 5% fine angular gravel; low plasticity; low estimated permeability. **Sandy SILT** (ML): Light brown; damp; 10% clay, 50% silt, 35% fine-grained sand, 5% fine gravel; moderate estimated permeability. @ 9.0 ft: Orangish brown.		
				10					
		SB-9-12						13.5	
		SB-9-15		15	CL		**Silty CLAY** (CL): Olive grey; damp; 50% clay, 40% silt, 10% fine-grained sand; low plasticity; low to moderate estimated permeability.	15.5	Portland Type I/II Cement
					ML		**Clayey SILT** (ML): Orangish brown; damp; 30% clay, 60% silt; 10% fine-grained sands; low to moderate estimated permeability.		
		SB-9-18						19.5	
		SB-9-21		20	CL		**Silty CLAY** (CL): Orangish brown; moist; 50% clay, 40% silt, 10% fine-grained sand; moderate plasticity; low to moderate estimated permeability.		
		SB-9-24							
				25					
		SB-9-27						29.0	Bottom of Boring @ 29 ft

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BORING/WELL LOG

CLIENT NAME	Nady Systems	BORING/WELL NAME	SB-10
JOB/SITE NAME	Nady Systems	DRILLING STARTED	25-Nov-02
LOCATION	1137-1167 65th Street, Oakland, California	DRILLING COMPLETED	26-Nov-02
PROJECT NUMBER	522-1000	WELL DEVELOPMENT DATE (YIELD)	NA
DRILLER	Vironex	GROUND SURFACE ELEVATION	40.87 ft
DRILLING METHOD	DPT- Badger	TOP OF CASING ELEVATION	40.87 ft
BORING DIAMETER	2 inches	SCREENED INTERVAL	7 - 12 ft bgs
LOGGED BY	M. Meyers	DEPTH TO WATER (First Encountered)	NA
REVIEWED BY	R. Clark-Riddell, PE# 49629	DEPTH TO WATER (Static)	9.8 ft (26-Nov-02)
REMARKS			

GRO (mg/kg)	BLOW COUNTS	SAMPLE ID	EXTENT	DEPTH (ft bgs)	U.S.C.S.	GRAPHIC LOG	LITHOLOGIC DESCRIPTION	CONTACT DEPTH (ft bgs)	WELL DIAGRAM
							CONCRETE	0.5	Portland Type I/II Cement
		SB-10-3					**Silty CLAY** (CL): Dark brown; moist; 60% clay, 40% silt; high plasticity; low estimatetd permeability.		
				5			@ 3.0 ft: **Silty CLAY with Sand** (CL): Wet; 50% clay, 40% silt, 10% fine-grained sand; moderate plasticity.		
		SB-10-6			CL		@ 6.0 ft: **Silty CLAY** (CL): Blue gray; moist; 70% clay, 30% silt; high plasticity; blue staining noted in sample.		
							@ 7.0 ft: **Sandy CLAY** (CL): Light brown; damp; 60% clay, 10% silt, 40% fine-grained sand; slight plasticity; moderate estimated permeability.		
		SB-10-9					@ 8.0 ft: **Silty CLAY with Sand** (CL): Blue grey; moist; 60% clay, 30% silt, 10% fine-grained sand; moderate plasticity; low estimated permability; blue-green staining noted in sample.		
				10			@ 9.0 ft: **Gravelly Sandy CLAY** (CL): 45% clay, 10% silt, 25% fine- to coarse-grained sand, 20% fine gravel; moderate estimated permeability.	12.0	Bottom of Boring @ 12 ft
		SB-10-12					@ 11.0 ft: **Silty CLAY** (CL): Light brown; moist; 70% clay, 30% silt; high plasticity; low estimated permeability.		

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BORING/WELL LOG

CLIENT NAME	Nady Systems	**BORING/WELL NAME**	SB-11
JOB/SITE NAME	Nady Systems	**DRILLING STARTED**	25-Nov-02
LOCATION	1137-1167 65th Street, Oakland, California	**DRILLING COMPLETED**	26-Nov-02
PROJECT NUMBER	522-1000	**WELL DEVELOPMENT DATE (YIELD)**	NA
DRILLER	Vironex	**GROUND SURFACE ELEVATION**	41.85 ft
DRILLING METHOD	Hydraulic push	**TOP OF CASING ELEVATION**	41.45 ft
BORING DIAMETER	2 inches	**SCREENED INTERVAL**	20 - 30 ft bgs
LOGGED BY	I. Young	**DEPTH TO WATER (First Encountered)**	NA
REVIEWED BY	R. Clark-Riddell, PE# 49629	**DEPTH TO WATER (Static)**	19.6 ft (26-Nov-02)
REMARKS			

GRO (mg/kg)	BLOW COUNTS	SAMPLE ID	EXTENT	DEPTH (ft bgs)	U.S.C.S.	GRAPHIC LOG	LITHOLOGIC DESCRIPTION	CONTACT DEPTH (ft bgs)	WELL DIAGRAM
					SP		**ASPHALT**	0.2	
							Gravelly SAND (SP): Black; dry; 10% silt, 70% sand, 20% fine gravel; high estimated permeability.	2.0	
					ML		**SILT** (ML): Dark brown; dry; 10% clay, 80% silt, 10% fine-grained sand; slight plasticity; low estimated permeability.	3.5	
		SB-11-3.5			ML		**Clayey SILT** (ML): Black; dry; 30% clay, 65% silt, 5% fine-grained sand; slight to low plasticity; low estimated permeability.	4.5	
				5	CL		**CLAY** (CL): Greenigh grey; dry; 80% clay, 20% silt; moderate plasticity; low estimated permeability.		
		SB-11-7.5					@ 7.0 ft: **Silty CLAY** (CL): Brown; 60% clay, 35% silt, 5% fine-grained sand; slight to low plasticity; low estimated permeability.	8.5	
					SM		**Silty SAND** (SM): Brown; dry; 10% clay, 40% silt, 50% fine- to medium-grained sand; moderate estimated permeability.	10.0	
				10	SP		**Gravelly SAND** (SP): Dark brown; dry; 5% silt, 65% fine- to coarse-grained sand, 30% fine to medium gravel; high estimated permeability.	11.0	
		SB-11-11.5			SW		**SAND** (SW): Orangish brown mottled with light brown; dry; 15% silt, 80% medium-grained sand, 5% fine gravel; high estimated permeability.		
				15				15.0	Portland Type I/II Cement
		SB-11-11.5					**Silty CLAY** (CL): Orangish brown; moist; 55% clay, 40% silt, 5% fine-grained sand; moderate plasticity; low estimated permeability.		
		SB-11-19.5		20	CL				
		SB-11-23.5		25					
					SM		**Silty SAND** (SM): Black; damp; 30% silt, 70% fine- to medium-grained sand; moderate estimated permeability.	28.0 28.5	
		SB-11-29.5		30	ML		**Sandy SILT** (ML): Brown; damp; 10% clay, 60% silt, 30% fine- to medium-grained sand; slight plasticity; low to moderate estimated permeability.	30.0	Bottom of Boring @ 30 ft

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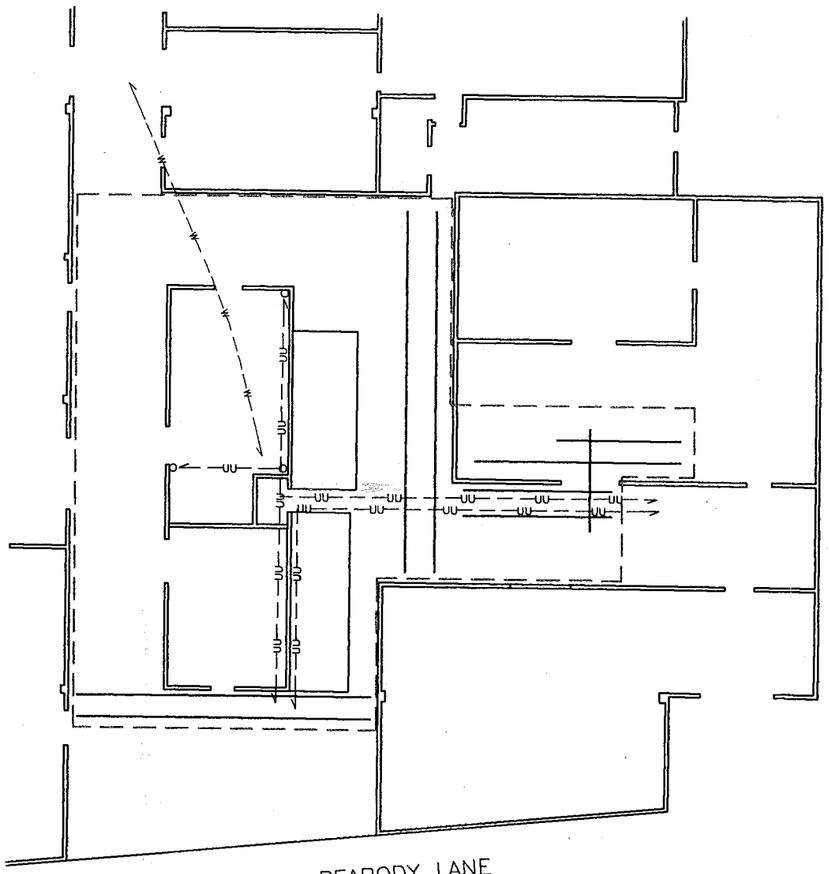
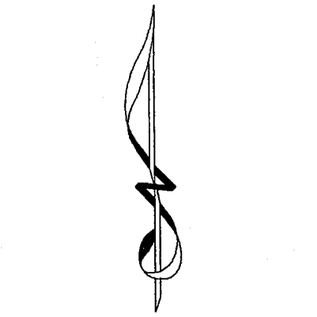
APPENDIX C

NorCal Geophysical Figure





APPROXIMATE SCALE

0 10 20 40

(1 inch = 20 feet)

LEGEND

— — —	APPROXIMATE LIMITS OF GEOPHYSICAL SURVEY (EQUIPMENT AND OTHER ABOVE GROUND OBJECTS LIMITED ACCESS WITHIN THIS AREA)
———	GPR TRAVERSE
— —UU— —	UNDIFFERENTIATED UTILITY LINE REPRESENTING POSSIBLE UST-ASSOCIATED PIPING
— — —W— —	WATER LINE

NOTE: BASE MAP DIGITIZED FROM SITE MAP PROVIDED BY CAMBRIA

NORCAL

GEOPHYSICAL SURVEY MAP
1137–1167 65TH STREET

LOCATION: EMERYVILLE, CALIFORNIA

CLIENT: CAMBRIA

NORCAL GEOPHYSICAL CONSULTANTS INC.

JOB #: 03-462.15

DATE: JUL. 2003

DRAWN BY: G.RANDALL

APPROVED BY: DJK

PLATE 1

APPENDIX D

Standard Field Procedures for Soil Borings and Monitoring Wells

CAMBRIA

STANDARD FIELD PROCEDURES FOR SOIL BORINGS

This document describes Cambria Environmental Technology's standard field methods for drilling and sampling soil borings. These procedures are designed to comply with Federal, State and local regulatory guidelines. Specific field procedures are summarized below.

Objectives

Soil samples are collected to characterize subsurface lithology, assess whether the soils exhibit obvious hydrocarbon or other compound vapor odor or staining, estimate ground water depth and quality and to submit samples for chemical analysis.

Soil Classification/Logging

All soil samples are classified according to the Unified Soil Classification System by a trained geologist or engineer working under the supervision of a California Registered Geologist (RG) or a Certified Engineering Geologist (CEG). The following soil properties are noted for each soil sample:

- X Principal and secondary grain size category (i.e. sand, silt, clay or gravel)
- X Approximate percentage of each grain size category,
- X Color,
- X Approximate water or product saturation percentage,
- X Observed odor and/or discoloration,
- X Other significant observations (i.e. cementation, presence of marker horizons, mineralogy), and
- X Estimated permeability.

Soil Boring and Sampling

Soil borings are typically drilled using hollow-stem augers or hydraulic push technologies. At least one and one half ft of the soil column is collected for every five ft of drilled depth. Additional soil samples are collected near the water table and at lithologic changes. Samples are collected using lined split-barrel or equivalent samplers driven into undisturbed sediments beyond the bottom of the borehole. The vertical location of each soil sample is determined by measuring the distance from the middle of the soil sample tube to the end of the drive rod used to advance the split barrel sampler. All sample depths use the ground surface immediately adjacent to the boring as a datum. The horizontal location of each boring is measured in the field from an onsite permanent reference using a measuring wheel or tape measure.

Drilling and sampling equipment is steam-cleaned prior to drilling and between borings to prevent cross-contamination. Sampling equipment is washed between samples with trisodium phosphate or an equivalent EPA-approved detergent.

Sample Storage, Handling and Transport

Sampling tubes chosen for analysis are trimmed of excess soil and capped with Teflon tape and plastic end caps. Soil samples are labeled and stored at or below 4°C on either crushed or dry ice, depending upon local regulations. Samples are transported under chain-of-custody to a State-certified analytic laboratory.

Field Screening

One of the remaining tubes is partially emptied leaving about one-third of the soil in the tube. The tube is capped with plastic end caps and set aside to allow hydrocarbons to volatilize from the soil. After ten to fifteen minutes, a portable photoionization detector (PID) measures volatile hydrocarbon vapor concentrations in the tube headspace, extracting the vapor through a slit in the cap. PID measurements are used along with the field observations, odors, stratigraphy and ground water depth to select soil samples for analysis.

Water Sampling

Water samples, if they are collected from the boring, are either collected using a driven Hydropunch type sampler or are collected from the open borehole using bailers. The ground water samples are decanted into the appropriate containers supplied by the analytic laboratory. Samples are labeled, placed in protective foam sleeves, stored on crushed ice at or below 4°C, and transported under chain-of-custody to the laboratory.

Duplicates and Blanks

Blind duplicate water samples are collected usually collected only for monitoring well sampling programs, at a rate of one blind sample for every 10 wells sampled. Laboratory-supplied trip blanks accompany samples collected for all sampling programs to check for cross-contamination caused by sample handling and transport. These trip blanks are analyzed if the internal laboratory QA/QC blanks contain the suspected field contaminants. An equipment blank may also be analyzed if non-dedicated sampling equipment is used.

Grouting

If the borings are not completed as wells, the borings are filled to the ground surface with cement grout poured or pumped through a tremie pipe.

Waste Handling and Disposal

Soil cuttings from drilling activities are usually stockpiled onsite on top of and covered by plastic sheeting. At least four individual soil samples are collected from the stockpiles for later compositing at the analytic laboratory. The composite sample is analyzed for the same constituents analyzed in the borehole samples. Soil cuttings are transported by licensed waste haulers and disposed in secure, licensed facilities based on the composite analytic results.

Ground water removed during sampling and/or rinsate generated during decontamination procedures are stored onsite in sealed 55 gallon drums. Each drum is labeled with the drum number, date of generation, suspected contents, generator identification and consultant contact. Disposal of the water is based on the analytic results for the well samples. The water is either pumped out using a vacuum truck for transport to a licensed waste treatment/disposal facility or the individual drums are picked up and transported to the waste facility where the drum contents are removed and appropriately disposed.

CAMBRIA

STANDARD FIELD PROCEDURES FOR MONITORING WELL INSTALLATION

This document presents standard field methods for drilling and sampling soil borings and installing, developing and sampling groundwater monitoring wells. These procedures are designed to comply with Federal, State and local regulatory guidelines. Specific field procedures are summarized below.

SOIL BORINGS

Objectives

Soil samples are collected to characterize subsurface lithology, assess whether the soils exhibit obvious hydrocarbon or other compound vapor or staining, and to collect samples for analysis at a State-certified laboratory. All borings are logged using the Unified Soil Classification System by a trained geologist working under the supervision of a California Registered Geologist (RG).

Soil Boring and Sampling

Soil borings are typically drilled using hollow-stem augers or direct-push technologies such as the Geoprobe®. Soil samples are collected at least every five ft to characterize the subsurface sediments and for possible chemical analysis. Additional soil samples are collected near the water table and at lithologic changes. Samples are collected using lined split-barrel or equivalent samplers driven into undisturbed sediments at the bottom of the borehole.

Drilling and sampling equipment is steam-cleaned prior to drilling and between borings to prevent cross-contamination. Sampling equipment is washed between samples with trisodium phosphate or an equivalent EPA-approved detergent.

Sample Analysis

Sampling tubes chosen for analysis are trimmed of excess soil and capped with Teflon tape and plastic end caps. Soil samples are labeled and stored at or below 4° C on either crushed or dry ice, depending upon local regulations. Samples are transported under chain-of-custody to a State-certified analytic laboratory.

Field Screening

One of the remaining tubes is partially emptied leaving about one-third of the soil in the tube. The tube is capped with plastic end caps and set aside to allow hydrocarbons to volatilize from the soil. After ten to fifteen minutes, a portable volatile vapor analyzer measures volatile hydrocarbon vapor concentrations in the tube headspace, extracting the vapor through a slit in the cap. Volatile vapor analyzer measurements are used along with the field observations, odors, stratigraphy and groundwater depth to select soil samples for analysis.

Water Sampling

Water samples, if they are collected from the boring, are either collected using a driven Hydropunch® type sampler or are collected from the open borehole using bailers. The groundwater samples are decanted into the appropriate containers supplied by the analytic laboratory. Samples are labeled, placed in protective foam sleeves, stored on crushed ice at or below 4°C, and transported under chain-of-custody to the laboratory. Laboratory-supplied trip blanks accompany the samples and are analyzed to check for cross-contamination. An equipment blank may be analyzed if non-dedicated sampling equipment is used.

Grouting

If the borings are not completed as wells, the borings are filled to the ground surface with cement grout poured or pumped through a tremie pipe.

MONITORING WELL INSTALLATION, DEVELOPMENT AND SAMPLING

Well Construction and Surveying

Groundwater monitoring wells are installed to monitor groundwater quality and determine the groundwater elevation, flow direction and gradient. Well depths and screen lengths are based on groundwater depth, occurrence of hydrocarbons or other compounds in the borehole, stratigraphy and State and local regulatory guidelines. Well screens typically extend 10 to 15 fee below and 5 feet above the static water level at the time of drilling. However, the well screen will generally not extend into or through a clay layer that is at least three feet thick.

Well casing and screen are flush-threaded, Schedule 40 PVC. Screen slot size varies according to the sediments screened, but slots are generally 0.010 or 0.020 inches wide. A rinsed and graded sand occupies the annular space between the boring and the well screen to about one to two feet above the well screen. A two feet thick hydrated bentonite seal separates the sand from the overlying sanitary surface seal composed of Portland type I,II cement.

Well-heads are secured by locking well-caps inside traffic-rated vaults finished flush with the ground surface. A stovepipe may be installed between the well-head and the vault cap for additional security.

The well top-of-casing elevation is surveyed with respect to mean sea level and the well is surveyed for horizontal location with respect to an onsite or nearby offsite landmark.

Well Development

Wells are generally developed using a combination of groundwater surging and extraction. Surging agitates the groundwater and dislodges fine sediments from the sand pack. After about ten minutes of surging, groundwater is extracted from the well using bailing, pumping and/or reverse air-lifting through an eductor pipe to remove the sediments from the well. Surging and extraction continue until at least ten well-casing volumes of groundwater are extracted and the sediment volume in the groundwater is negligible. This process usually occurs prior to installing the sanitary surface seal to ensure sand pack stabilization. If development occurs after surface seal installation, then development occurs 24 to 72 hours after seal installation to ensure that the Portland cement has set up correctly.

All equipment is steam-cleaned prior to use and air used for air-lifting is filtered to prevent oil entrained in the compressed air from entering the well. Wells that are developed using air-lift evacuation are not sampled until at least 24 hours after they are developed.

Groundwater Sampling

Depending on local regulatory guidelines, three to four well-casing volumes of groundwater are purged prior to sampling. Purging continues until groundwater pH, conductivity, and temperature have stabilized. Groundwater samples are collected using bailers or pumps and are decanted into the appropriate containers supplied by the analytic laboratory. Samples are labeled, placed in protective foam sleeves, stored on crushed ice at or below 4°C, and transported under chain-of-custody to the laboratory. Laboratory-supplied trip blanks accompany the samples and are analyzed to check for cross-contamination. An equipment blank may be analyzed if non-dedicated sampling equipment is used.

Waste Handling and Disposal

Soil cuttings from drilling activities are usually stockpiled onsite and covered by plastic sheeting. At least three individual soil samples are collected from the stockpiles and composited at the analytic laboratory. The composite sample is analyzed for the same constituents analyzed in the borehole samples in addition to any analytes required by the receiving disposal facility. Soil cuttings are transported by licensed waste haulers and disposed in secure, licensed facilities based on the composite analytic results.

Groundwater removed during development and sampling is typically stored onsite in sealed 55-gallon drums. Each drum is labeled with the drum number, date of generation, suspected contents, generator identification and consultant contact. Upon receipt of analytic results, the water is either pumped out using a vacuum truck for transport to a licensed waste treatment/disposal facility or the individual drums are picked up and transported to the waste facility where the drum contents are removed and appropriately disposed.

APPENDIX E

DTSC / LARWQCB January 23, 2003 *Active Soil Gas Investigations Advisory*

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January 28, 2003

To: Interested Parties

ADVISORY – ACTIVE SOIL GAS INVESTIGATIONS

In a coordinated effort, the Department of Toxic Substances Control (DTSC) and the California Regional Water Quality Control Board – Los Angeles Region (LARWQCB) have jointly developed the "Advisory – Active Soil Gas Investigations" (see the attached). This document is to ensure that consistent methodologies are applied during active soil gas investigations to produce high quality data for regulatory decision-making. The document has been reviewed by other government organizations and by the soil gas consulting community. Their comments have been considered and, where appropriate, incorporated in the document. This is an on-going effort to streamline the characterization of gas phase contaminant sites. As additional knowledge and experience are obtained, this Advisory may be modified as appropriate.

This document is issued by DTSC and LARWQCB as an Advisory subject to review and revision as necessary. The information in this Advisory should not be considered as regulations. Mention of trade names or commercial products does not constitute the Agency's endorsement or recommendation.

If you have any questions regarding this document, please contact the joint-agency project coordinator Mr. Joe Hwong, of DTSC, at (714) 484-5406.

Sincerely,

Edwin F. Lowry
Director
Department of Toxic Substances Control

Dennis A. Dickerson
Executive Officer
California Regional Water Quality Control Board
Los Angeles Region

Enclosure

The energy challenge facing California is real. Every Californian needs to take immediate action to reduce energy consumption. For a list of simple ways you can reduce demand and cut your energy costs, see our Web-site at www.dtsc.ca.gov.

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ADVISORY – ACTIVE SOIL GAS INVESTIGATIONS

As a coordinated effort, this document is issued by the California Regional Water Quality Control Board – Los Angeles Region (LARWQCB) and Department of Toxic Substances Control (DTSC) as an Advisory subject to review and revision as necessary. Mention of trade names or commercial products does not constitute the Agency's endorsement or recommendation. The information in this Advisory should not be considered as regulations. In this Advisory, "Agency" should mean LARWQCB and/or DTSC.

1.0 INTRODUCTION

Active soil gas investigations are useful to obtain vapor phase data at sites potentially affected by volatile organic compounds (VOCs), including chlorinated and aromatic hydrocarbons. Active soil gas investigations may also be used to investigate sites potentially affected by methane and hydrogen sulfide, and to measure fixed and biogenic gasses (e.g., oxygen, carbon dioxide, or carbon monoxide). Among other things, the data can be used to identify the source and determine the spatial distribution of VOC contamination at a site, or to estimate indoor air concentrations for risk assessment purposes.

For site characterization, the Agency encourages both soil gas and soil matrix sampling. Typically, soil gas data are more representative of actual site conditions in coarse-grained soil formations while soil matrix data are more representative of actual site conditions in fine-grained soil formations. For evaluating the risk associated with vapor intrusion to indoor air, soil gas data are the preferred contaminant data set, where practicable. Flux chamber and passive sampling methods are not discussed in this Advisory. Any sites where such sampling methods are necessary will be addressed separately.

On February 25, 1997, LARWQCB re-issued the "Interim Guidance for Active Soil Gas Investigation" (ASGI) as guidance for investigating sites with potential VOC contamination. Unless otherwise noted in this Advisory, the active soil gas investigation should be performed in accordance with the most current ASGI.

2.0 SUPPLEMENTAL RECOMMENDATIONS

The following sections supplement the ASGI in an effort to ensure that consistent methodologies are applied during soil gas investigations to produce reliable and defensible data of high quality. All sampling probe installation, sampling, and analytical procedures, whether or not discussed below, are subject to Agency review and approval.

2.1 Project Management
2.2 Soil Gas Sampling Probe Installation
2.3 Purge Volume Test
2.4 Leak Test
2.5 Purge/Sample Flow Rate
2.6 Soil Gas Sampling
2.7 Analysis of Soil Gas Samples

2.1 Project Management

2.1.1 Workplan: An appropriate workplan should be prepared and submitted to the Agency for review and approval at least 30 days prior to its implementation. Any variations or deviations from this Advisory should be specified in the workplan. The soil gas workplan can either be incorporated as part of a comprehensive site investigation workplan or as a stand-alone document, depending on site-specific circumstances.

2.1.2 Field Activities

A. The Agency should be notified 10 working days prior to implementation of field activities. All necessary permits and utility clearance(s) should be obtained prior to conducting any investigations described in this Advisory.

B. All engineering or geologic work (e.g., logging continuous soil cores, soil description) should be performed or supervised by a California Registered Professional in accordance with the Business and Professions Code, Chapters 7 and 12.5, and the California Code of Regulations, Title 16, Chapters 5 and 29.

In addition, for proposed school sites, all work performed should be under the direction and supervision of a project coordinator experienced in soil gas investigations [e.g., an Environmental Assessor as defined in Education Code Section 17210(b)].

C. Evaluation of raw data by Agency staff may occur either in the field or in the office.

1. Hard copies of the complete raw laboratory data, including handwritten data and field notes, should be provided to the Agency staff upon request.

2. Adjustments or modifications to the sampling program may be required by Agency staff to accommodate changes mandated by evaluation of the data set or unforeseen site conditions.

D. Investigation derived wastes (IDWs) should be managed as hazardous waste until proven otherwise or until specifically approved by the Agency as being non-hazardous waste. IDWs should be handled and disposed in accordance with federal, state and local requirements.

E. Field Variations

1. To expedite the completion of field activities and avoid potential project delays, contingencies should be proposed and included in the project workplan (e.g., soil matrix samples will also be collected if clayey soils [as defined in the Unified Soil Classification System (USCS)] are encountered during the proposed soil gas investigation).

2. The Agency field staff should be informed of any problems, unforeseen site conditions, or deviations from the approved workplan. When it becomes necessary to implement modifications to the approved workplan, the Agency should be notified and a verbal approval should be obtained before implementing changes.

F. Soil Matrix Sampling Requirements: Companion soil matrix sampling may be conducted concurrently with a soil gas investigation (in accordance with the ASGI, Section 5.0), except where extremely coarse-grained soils (as defined in USCS) are encountered or when specifically excluded by the Agency.

2.1.3 Soil Gas Investigation Reports: A soil gas investigation report including a discussion of field operations, deviations from the approved workplan, data inconsistencies, and other significant operational details should be prepared. The report may either be a stand-alone document in a format recommended by the Agency or be included within a site-specific assessment report. At a minimum, the report should contain the following:

A. Site plan map and probe location map at an appropriate scale as specified in the workplan (e.g., scale: one inch = 40 feet);

B. Final soil gas iso-concentration maps for contaminants of concern at the same scale as the site plan map;

C. Summary tables for analytical data, in micrograms per liter (µg/L), in accordance with the ASGI;

D. Legible copies of field and laboratory notes or logs;

E. All analytical results and Quality Assurance/Quality Control (QA/QC) information including tables and explanations of procedures, results, corrective actions and effect on the data, in the format specified by the Agency; and

F. Upon request, all raw data including chromatograms and calibration data should be submitted to the Agency.

2.2 Soil Gas Sampling Probe Installation

2.2.1 Lithology: Site soil or lithologic information should be used to select appropriate locations and depths for soil gas probes. If on-site lithologic information is not available prior to conducting the soil gas investigation, at least one (1) continuously cored boring to the proposed greatest depth of the soil gas investigation should be installed at the first sampling location, unless specifically waived or deferred by Agency. Depending on site conditions, additional continuously cored borings may be necessary.

A. Lithologic logs should be prepared for all borings (e.g., continuously cored borings, soil matrix sampling, geotechnical sampling, etc.). Note: This does not apply to direct-push soil gas probe installations.

B. Information gathered from the continuously cored borings may include soil physical parameters, geotechnical data and contaminant data.

C. If low-flow or no-flow conditions (e.g., fine-grained soil, clay, soil with vacuum readings that exceed approximately 10 inches of mercury or 136 inches of water) are encountered, soil matrix sampling using EPA Method 5035A should be conducted in these specific areas. Also see Section 4 of LARWQCB's "General Laboratory Testing Requirements for Petroleum Hydrocarbon Impacted Sites" on use of EPA Method 5035A.

D. If the bottom five (5) feet of a continuously cored boring is composed of clay or soil with a vacuum exceeding approximately 10 inches of mercury or 136 inches of water, the continuously cored boring should be extended an additional five (5) feet to identify permeable zones. If the extended boring is also composed entirely of clay, the boring may be terminated. Special consideration should always be given to advancing borings and ensuring that a contaminant pathway is not being created through a low permeability zone.

2.2.2 Sample Spacing: A scaled site plan depicting potential or known areas of concern (e.g., existing or former sumps, trenches, drains, sewer lines, clarifiers, septic systems, piping, underground storage tanks [USTs], chemical or waste management units) should be provided in the project workplan. Sample spacing should be in accordance with the most current ASGI and may be modified based on site-specific conditions with Agency approval. To optimize detecting and delineating VOCs, the grid spacing should be modified to include biased sampling locations.

2.2.3 Sample Depth: Sample depths should be chosen to minimize the effects of changes in barometric pressure, temperature, or breakthrough of ambient air from the surface; and to ensure that representative samples are collected. Consideration should be given to the types of chemicals of concern and the lithology encountered.

A. At each sample location, soil gas probes should be installed at a minimum of one sample depth, generally at five (5) feet below ground surface (bgs), in accordance with the most current ASGI.

B. Samples should be collected near lithologic interfaces or based on field instrument readings (e.g., Flame Ionization Detector [FID], Photo Ionization Detector [PID]) from soil cuttings and/or cores to determine the location of maximum analyte concentrations at the top or bottom of the interface depending upon the analyte.

C. Multi-depth sampling is appropriate for any of the following locations:

1. Sites identified with subsurface structures (e.g., USTs, sumps, clarifiers, waste or chemical management units), subsurface sources (e.g., oil fields, artificial fill, buried animal waste), changes in lithology, and/or contaminated groundwater. Soil gas probes should be emplaced below the base of any subsurface structures, sources or backfilled materials in the vadose zone. Collection of deeper samples should be done in consultation with Agency staff;

2. Areas with significantly elevated VOC concentrations detected during shallow or previous vapor sampling;

3. Areas where elevated field instrument readings are encountered from soil matrix cuttings, cores or samples; or

4. In the annular space of groundwater monitoring wells during construction, where an assessment of the vertical extent of soil gas contamination is necessary.

D. If no lithologic change or contamination is observed, default sampling depths may be selected for multi-depth sampling. For example, soil gas samples may be collected at 5, 15, 25, 40 feet bgs, etc., until either the groundwater is encountered or VOCs are not detected, whichever comes first.

1. Additional samples may be necessary based on site conditions.

2. For Preliminary Endangerment Assessments: When 40 feet bgs is reached, collection of deeper samples may be waived.

However, assessment and/or characterization of the deeper vadose zone may be required in the future to protect groundwater resources.

2.2.4 Sampling Tubes: Sampling tubes should be of a small diameter (1/8 to 1/4 inch) and made of material (e.g., nylon, polyethylene, copper or stainless steel) which will not react or interact with site contaminants. For example, metal tubes should not be used for collection of hydrogen sulfide samples.

A. Clean, dry tubing should be utilized at all times. If moisture, water, or an unknown material is present in the probe prior to insertion, the tubing should be decontaminated or replaced.

B. After use at each location:

1. Non-reusable (e.g., nylon or polyethylene) sampling tubes should be discarded; or

2. Reusable sampling tubes should be properly decontaminated as specified in Section 2.2.7.

C. A drawing of the proposed probe tip design and construction should be included in the project workplan.

2.2.5 Soil Gas Probe Emplacement Methods

A. Permanent or Semi-permanent Soil Gas Probe Methods: Permanent or semi-permanent soil gas probes may be installed, using a variety of drilling methods. Please note that the mud rotary drilling method is not acceptable for soil gas probe emplacement. Other drilling methods such as air rotary and rotosonic can adversely affect soil gas data during and after drilling and will require extensive equilibration times. Therefore, they are not recommended. Other soil gas probe designs and construction (e.g., soil gas wells or nested wells) may be appropriate and should be discussed with Agency staff prior to emplacement. When additional sampling is not anticipated per consultation with the Agency, such probes may be properly removed or decommissioned after completion of the soil gas investigation.

1. The probe tip should be emplaced midway within a minimum of one (1) foot of sand pack. The sand pack should be appropriately sized (e.g., no smaller than the adjacent formation) and installed to minimize disruption of airflow to the sampling tip. See Figure 1 for more information.

2. At least one (1) foot of dry granular bentonite should be emplaced on top of each sand pack to preclude the infiltration

of hydrated bentonite grout. The borehole should be grouted to the surface with hydrated bentonite. With respect to deep probe construction with multiple probe depths, the borehole should be grouted between probes. One (1) foot of dry granular bentonite should be emplaced between the filter pack and the grout at each probe location. See Figure 2 for more information.

3. The use of a downhole probe support may be required for deep probe construction (e.g., 40 feet bgs for direct push probes).

   a. Such probe support may be constructed from a one-inch diameter bentonite/cement grouted PVC pipe or other solid rod, or equivalent, allowing probes to be positioned at measured intervals.

   b. The support should be properly sealed or solid (internally or externally) to avoid possible cross-contamination or ambient air intrusion.

   c. The probes should be properly attached to the exterior of the support prior to placement downhole.

   d. Alternative probe support designs should be described in the project workplan. If probe support will not be used for deep probes, justification should be included in the project workplan.

4. Tubing should be properly marked at the surface to identify the probe location and depth.

5. As-built diagrams for probes or wells should be submitted with the soil gas investigation report detailing the well identification and corresponding probe depths. A typical probe construction diagram may be submitted for probes with common design and installation.

6. Unless soil gas probes are removed or decommissioned, probes should be properly secured, capped and completed to prevent infiltration of water or ambient air into the subsurface and to prevent accidental damage or vandalism. For surface completions, the following components may be installed:

   a. Gas-tight valve or fitting for capping the sampling tube;

   b. Utility vault or meter box with ventilation holes and lock;

   c. Surface seal; and

   d. Guard posts.

B. Temporary Soil Gas Probe Emplacement Method: In general, the drive rod is driven to a predetermined depth and then pulled back to expose the inlets of the soil gas probe. After sample collection, both the drive rod and tubing are removed.

1. During installation of the probe, hydrated bentonite should be used to seal around the drive rod at ground surface to prevent ambient air intrusion from occurring.

2. The inner soil gas pathway from probe tip to the surface should be continuously sealed (e.g., a sampling tube attached to a screw adapter fitted with an o-ring and connected to the probe tip) to prevent infiltration.

2.2.6 Equilibration Time: During probe emplacement, subsurface conditions are disturbed. To allow for subsurface conditions to equilibrate, the following equilibration times are recommended:

A. For probes installed with the direct push method where the drive rod remains in the ground, purge volume test, leak test, and soil gas sampling should not be conducted for at least 20 minutes following probe installation.

B. For probes installed with the direct push method where the drive rod does not remain in the ground, purge volume test, leak test, and soil gas sampling should not be conducted for at least 30 minutes following probe installation.

C. For probes installed with hollow stem drilling methods, purge volume test, leak test, and soil gas sampling should not be conducted for at least 48 hours (depending on site lithologic or drilling conditions) after the soil gas probe installation.

D. Probe installation time should be recorded in the field log book.

2.2.7 Decontamination: After each use, drive rods and other reusable components should be properly decontaminated to prevent cross contamination. These methods include:

A. 3-stage wash and rinse (e.g., wash equipment with a non-phosphate detergent, rinse with tap water, and finally rinse with distilled water); and/or

B. Steam cleaning process.

2.3 Purge Volume Test

To ensure stagnant or ambient air is removed from the sampling system and to assure samples collected are representative of subsurface conditions, a

purge volume versus contaminant concentration test should be conducted as the first soil gas sampling activity at the selected purge test point. The purge volume test is conducted by collecting and analyzing a sample for target compounds after the removal of appropriate purge volumes.

2.3.1 Purge Test Locations: The purge test location should be selected as near as possible to the anticipated or confirmed contaminant source, and in an area where soil gas concentrations are expected to be greatest based on lithology (e.g., coarse-grained sediments). The first purge test location should be selected through the workplan approval process or as a field decision in conjunction with Agency staff.

2.3.2 Purge Volume: The purge volume or "dead space volume" can be estimated based on a summation of the volume of the sample container (e.g., glass bulbs), internal volume of tubing used, and annular space around the probe tip. Summa™ canisters, syringe, and Tedlar™ bags are not included in the dead space volume calculation. The Agency recommends step purge tests of one (1), three (3), and seven (7) purge volumes be conducted as a means to determine the purge volume to be applied at all sampling points.

A. The appropriate purge volume should be selected based on the highest concentration for the compound(s) of concern detected during the step purge tests. The purge volume should be optimized for the compound(s) of greatest concern in accordance with Section 2.2 of the ASGI.

B. If VOCs are not detected in any of the step purge tests, a default of three (3) purge volumes should be extracted prior to sampling.

C. The step purge tests and purging should be conducted at the same rate soil gas is to be sampled (see Section 2.5).

D. The purge test data (e.g., calculated purge volume, rate and duration of each purge step) should be included in the report to support the purge volume selection.

2.3.3 Additional Purge Volume Test

A. Additional purge volume tests should be performed to ensure appropriate purge volumes are extracted if:

1. Widely variable or different site soils are encountered; or

2. The default purge volume is used and a VOC is newly detected.

B. If a new purge volume is selected after additional step purge tests are conducted, the soil gas investigation should be continued as follows:

1. In areas of the same or similar lithologic conditions:

   a. Re-sample 20 percent of the previously completed probes. This re-sampling requirement may be reduced or waived in consultation with Agency staff, depending on site conditions. If re-sampling indicates higher detections (e.g., more than 50 percent difference in samples detected at greater than or equal to 10 µg/L), all other previous probes should be re-sampled using the new purge volume.

   b. Continue the soil gas investigation with the newly selected purge volume in the remaining areas.

2. In areas of different lithologic conditions: Continue the soil gas investigation with the newly selected purge volume in the remaining areas.

2.4 Leak Test

Leakage during soil gas sampling may dilute samples with ambient air and produce results that underestimate actual site concentrations or contaminate the sample with external contaminants. Leak tests should be conducted to determine whether leakage is present (e.g., the leak check compound is detected and confirmed in the test sample after its application).

2.4.1 Leak tests should be conducted at every soil gas probe.

2.4.2 Leak Check Compounds: Tracer compounds, such as pentane, isopropanol, isobutene, propane, and butane, may be used as leak check compounds, if a detection limit (DL) of 10 µg/L or less can be achieved. These compounds may be contained in common products such as shaving cream.

2.4.3 A leak check compound should be placed at any location where ambient air could enter the sampling system or where cross contamination may occur, immediately before sampling. Locations of potential ambient air intrusion include:

A. Sample system connections;

B. Surface bentonite seals (e.g., around rods and tubing); or

C. Top of the Temporary Soil Gas Probe (see Section 2.2.5.B).

2.4.4 The leak test should include an analysis of the leak check compound. If a leak check compound is detected in the sample, the following actions should be followed:

A. The cause of the leak should be evaluated, determined and corrected through confirmation sampling;

B. If the leak check compound is suspected or detected as a site-specific contaminant, a new leak check compound should be used;

C. If leakage is confirmed and the problem can not be corrected, the soil gas probe should be properly decommissioned;

D. A replacement probe should be installed at least five (5) feet from the original probe decommissioned due to confirmed leakage, or consult with Agency staff; and

E. The leak check compound concentration detected in the soil gas sample should be included and discussed in the report.

2.5 Purge/Sample Flow Rate

Sampling and purging flow rates should not enhance compound partitioning during soil gas sampling. Samples should not be collected if field conditions as specified in Section 2.6.4 exist.

2.5.1 The purging or sampling flow rate should be attainable in the lithology adjacent to the soil gas probe.

A. To evaluate lithologic conditions adjacent to the soil gas probe (e.g., where no-flow or low-flow conditions), a vacuum gauge or similar device should be used between the soil gas sample tubing and the soil gas extraction devices (e.g., vacuum pump, Summa™ canister).

B. Gas tight syringes may also be used to qualitatively determine if a high vacuum soil condition (e.g., suction is felt while the plunger is being withdrawn) is present.

2.5.2 The Agency recommends purging or sampling at rates between 100 to 200 milliliters per minute (ml/min) to limit stripping, prevent ambient air from diluting the soil gas samples, and to reduce the variability of purging rates. The low flow purge rate increases the likelihood that representative samples may be collected. The purge/sample rate may be modified based on conditions encountered in individual soil gas probes. These modified rates should be documented in the soil gas report.

2.6 Soil Gas Sampling

After the soil gas probe is adequately purged, samples should be collected by appropriate methodologies.

2.6.1 Sample Container: Samples should be collected in gas-tight, opaque/dark containers (e.g., syringes, glass bulbs wrapped in aluminum foil, Summa™ canisters), so that light-sensitive or halogenated VOCs (e.g., vinyl chloride) will not degrade.

A. If a syringe is used, it should be leak-checked before each use by closing the exit valve and attempting to force ambient air through the needle.

B. If syringe samples are analyzed within five (5) minutes of collection, aluminum foil wrapping may not be necessary.

C. EPA Method TO-14A, TO-15, or an equivalent air analysis method, requires samples be collected in Summa™ canisters.

D. If a Summa™ canister is used, a flow regulator should be placed between the probe and the Summa™ canister to ensure the Summa™ canister is filled at the flow rate as specified in Section 2.5.2.

E. Tedlar™ bags should not be used to collect VOC samples.

F. Specific requirements for methane and hydrogen sulfide sample containers are specified in Section 2.7.9.

2.6.2 Sample Collection

A. Vacuum Pump: When a vacuum pump is used, samples should be collected on the intake side of the vacuum pump to prevent potential contamination from the pump. Vacuum readings or qualitative evidence of a vacuum should be recorded on field data sheets for each sample.

B. Shallow Samples: Care needs to be observed when collecting shallow soil gas samples to avoid sample breakthrough from the surface. Extensive purging or use of large volume sample containers (e.g., Summa™ canisters) should be avoided for collection of near-surface samples [e.g., shallower than five (5) feet bgs].

2.6.3 Sample Container Cleanliness and Decontamination

A. Prior to its first use at a site, each sample container should be assured clean by the analytical laboratory as follows:

1. New containers should be determined to be free of contaminants (e.g., lubricants) by either the supplier or the analytical laboratory; and

2. Reused/recycled containers: Method blank(s), as specified in Section 2.7.1.A, should be used to verify sample container cleanliness.

B. After each use, reusable sample containers should be properly decontaminated.

1. Glass syringes or bulbs should be disassembled and baked at 240° C for a minimum of 15 minutes or at 120° C for a minimum of 30 minutes, or be decontaminated by an equivalent method.

2. Summa™ canisters should be properly decontaminated as specified by appropriate EPA analytical methods.

3. During sampling activities using reused/recycled sampling containers (e.g., glass syringes, glass bulbs), at a minimum one (1) decontaminated sample container per 20 samples or per every 12 hours, whichever is more often, should be used as a method blank (as specified in Section 2.7.1.A) to verify and evaluate the effectiveness of decontamination procedures.

C. Plastic syringes should be used only once and then properly discarded.

2.6.4 Field Conditions: Field conditions, such as rainfall, irrigation, fine-grained sediments, or drilling conditions may affect the ability to collect soil gas samples.

A. Wet Conditions: If no-flow or low-flow conditions are caused by wet soils, the soil gas sampling should cease. In addition, the Agency recommends that the soil gas sampling should not be conducted during or immediately after a significant rain event (e.g., 1/2 inch or greater) or onsite watering.

B. If low flow conditions are determined to be from a specific lithology, a new probe should be installed at a greater depth or a new lateral location should be selected after evaluation of the site lithologic logs (See Section 2.2.1) or in consultation with Agency staff.

C. If moisture or unknown material is observed in the glass bulb or syringe, soil gas sampling should cease until the cause of the problem is determined and corrected.

D. If refusal occurs during drilling, soil gas samples should be collected as follows or in consultation with Agency staff.

1. For sample depths less than five feet, collect a soil gas sample following the precautions outlined in Section 2.6.2.B.

2. For sample depths greater than five feet, collect a soil gas sample at the depth of refusal.

3. A replacement probe should be installed within five (5) feet laterally from the original probe decommissioned due to refusal. If refusal still occurs after three tries, the sampling location may be abandoned.

2.6.5 Chain of Custody Records: A chain of custody form should be completed to maintain the custodial integrity of a sample. Probe installation times and sample collection times should be included in the soil gas report.

2.7 Analysis of Soil Gas Samples

2.7.1 Quality Assurance/Quality Control (QA/QC): The soil gas analytical laboratory should comply with the project Quality Assurance Project Plan (QAPP) and follow the QA/QC requirements of the most current ASGI and the employed EPA Method. If there is any inconsistency, the most restrictive and specific requirements should prevail. The analytical data should be consistent with the Data Quality Objectives (DQOs) established for the project. The Agency staff may inspect the field and/or laboratory QA/QC procedures. Copies of the QA/QC plan and laboratory calibration data should be presented to the Agency field staff upon request.

Field QC samples should be collected, stored, transported and analyzed in a manner consistent with site samples. The following QC samples should be collected to support the sampling activity:

A. Sample Blanks

1. Method Blanks: Method blanks should be used to verify the effectiveness of decontamination procedures as specified in Section 2.6.3.B.3 and to detect any possible interference from ambient air.

2. Trip Blanks for Off-site Shipments: Whenever VOC samples are shipped offsite for analysis, a minimum of one (1) trip blank

per day should be collected and analyzed for the target compounds. Trip blanks, consisting of laboratory grade ultra pure air, are prepared to evaluate if the shipping and handling procedures are introducing contaminants into the samples, and if cross contamination in the form of VOC migration has occurred between the collected VOC samples. Trip blank containers and media should be the same as site samples.

B. Duplicate Samples: At least one (1) duplicate sample per laboratory per day should be field duplicate(s). Duplicate samples should be collected from areas of concern.

1. Duplicate samples should be collected in separate sample containers, at the same location and depth.

2. Duplicate samples should be collected immediately after the original sample.

C. Laboratory Control Samples and Dilution Procedure Duplicates: Laboratory Control Samples (LCS) and Dilution Procedure Duplicates (DPD) should be done in accordance with the most recent ASGI (Sections 3.5.0 and 3.12.4, respectively).

D. Split Samples: The Agency staff may request that split samples be collected and analyzed by a separate laboratory.

2.7.2 Laboratory Certification: Although the California Department of Health Services, Environmental Laboratory Accreditation Program (ELAP) does not currently require certification for soil gas analytical laboratories, the Agency recommends laboratories utilizing EPA Methods 8260B, 8021B, and 8015B for analyses of soil gas samples obtain ELAP certifications for such EPA analytical methods accordingly. The Agency or DTSC's Hazardous Materials Laboratory (HML) staff may inspect the laboratory.

2.7.3 Detection Limits for Target Compounds: Analytical equipment calibration should be in accordance with the most current ASGI. Consideration and determination of appropriate DLs should be based on the DQOs of the investigation.

A. The DL for leak check compounds should be 10 µg/L or less (see Section 2.4.2). The DL for oxygen (O_2) and carbon dioxide (CO_2) should be one (1) percent or less. The DLs for methane and hydrogen sulfide are specified in Section 2.7.9.

B. If the investigation is being conducted to delineate the extent of contamination, a DL of 1 µg/L is appropriate for all targeted VOCs.

C. If the soil gas data are to be used to support risk assessment activities, a DL of 1 µg/L may be appropriate for the initial screening when evaluating all targeted VOCs. If the data are non-detect for all targeted VOCs, additional sampling with lower DLs is not required. If VOCs are detected, additional sampling, using a DL of 0.1 µg/L, may be required to confirm the non-detection of carcinogenic VOCs [see the Toxicity Criteria Database of the California Environmental Protection Agency, Office of Environmental Health Hazard (OEHHA), or the Integrated Risk Information System (IRIS) Database of the United States Environmental Protection Agency]. A DL of 0.1 µg/L may be proposed and used for all carcinogenic target VOCs from the beginning of the investigation.

D. Based on site-specific DQO needs, lower DLs may be required. Examples of sites requiring site-specifc DQO needs include, but are not limited to, chlorinated solvents sites, former industrial facilities and landfills. Several less common VOCs, not included on the ASGI-targeted compound list, may require lower detection limits [e.g., bis(chloromethyl)ether, DBCP (1,2-dibromo-3-chloropropane), or ethylene dibromide] when they are known or suspected to be present.

E. If the required DLs cannot be achieved by the proposed analytical method, additional sample analysis by a method achieving these DLs [e.g., EPA Method 8260B with selective ion method (SIM), TO-14A, TO-15] may be required. Use of these methods should comply with the QA/QC requirements as specified in Section 2.7.1.

F. For results with a high DL reported (e.g., due to matrix interference or dilution), the laboratory should provide a written explanation. Re-sampling and analyses may be required at the appropriate DL for a specific compound.

2.7.4 Sample Handling: Exposure to light, changes in temperature and pressure will accelerate sample degradation. To protect sample integrity:

A. Soil gas samples should not be chilled;

B. Soil gas samples should not be subjected to changes in ambient pressure. Shipping of sample containers by air should be avoided; and

C. If condensation is observed in the sample container, the sample should be discarded and a new sample should be collected.

2.7.5 Holding Time: All soil gas samples (e.g., samples of VOCs, methane, fixed gases, or biogenic gases), with the exception of hydrogen sulfide samples, should be analyzed within 30 minutes by an on-site mobile laboratory. Hydrogen sulfide samples should be analyzed as specified in Section 2.7.9.B.2. Under the following conditions, holding times may be extended and analyses performed off-site:

A. Soil gas samples collected in glass bulbs with surrogates added within 15 minutes of collection may be analyzed within 4 hours after collection;

B. Soil gas samples collected in Summa™ canisters may be analyzed within 72 hours after collection; and

C. Methane samples may be analyzed as specified in Section 2.7.9.A.2.

2.7.6 Analytical Methods

A. VOC Samples: All VOC samples should be analyzed using only a Gas Chromatograph/Mass Spectrometer (GC/MS) method (e.g., EPA Method 8260B, used for analysis of soil gas samples, EPA Method TO-14A or TO-15, or equivalent), except at well-characterized sites (e.g., VOCs are known to be present and confirmed based on previous GC/MS analyses). A non-GC/MS method (e.g., EPA Method 8021B, used for analysis of soil gas samples) may be used only for routine monitoring of VOC contamination at well-characterized sites.

If during routine monitoring, new VOC(s) were detected by a non-GC/MS method, then at least 10 percent of the samples with each newly identified VOC should be confirmed by a GC/MS method. Thereafter, routine monitoring can resume with the non-GC/MS method, including the new analyte(s).

B. Methane and Hydrogen Sulfide Samples: These gas samples should be analyzed using methods specified in Section 2.7.9.

2.7.7 Auto samplers may be used if:

A. One (1) sample is introduced at a time;

B. The sample vials are gas-tight and never opened after the sample is added;

C. Proper holding times are maintained (see Section 2.7.5); and

D. All samples are secured and under proper custody.

2.7.8 Target Compounds

A. VOCs

1. ASGI-Targeted Compounds: The ASGI (dated February 25, 1997) includes 23 primary and four (4) other target VOCs. All quantifiable results should be reported.

2. Others: The estimated results of all Tentatively Identified Compounds [TICs]) or non-AGSI-targeted compounds detected should be included in the report. If TICs or non-ASGI-targeted compounds are identified, contact the Agency to determine whether additional action is required (e.g., running additional standards to quantify TICs or non-ASGI compounds) and whether the use of these estimated data for risk evaluation is appropriate.

B. Leak Check Compounds: All quantifiable results should be reported as specified in Section 2.4.4.E.

C. Specific Compounds: Based on the site history and conditions, analyses for specific compounds may be required by the Agency staff. Examples include:

1. In areas where USTs or fuel pipelines are identified, soil gas samples should be analyzed for oxygenated compounds [e.g., methyl tertiary butyl ether (MTBE), ethyl tertiary butyl ether (ETBE), di-isopropyl ether (DIPE), tertiary amyl methyl ether (TAME), tertiary butyl alcohol (TBA), and ethanol];

2. At oilfield sites where semi-VOCs or Total Petroleum Hydrocarbons (TPHs) are detected in the soil gas samples, fixed and biogenic gas (O_2, CO_2, and CH_4) data should be obtained using a Thermal-Conductivity Detector (TCD) or a hand-held instrument;

3. At petroleum contaminated sites (including oilfields), dairies, wetlands, landfills or other sites where the presence of methane and/or hydrogen sulfide is suspected, soil gas samples should be analyzed for methane and/or hydrogen sulfide;

4. At sites where use of chlorinated solvents with 1,4-dioxane is suspected or known to exist, soil gas samples may be analyzed for 1,4-dioxane with a detection limit of 1 µg/L; or

5. See Section 2.7.9.A.4 below.

2.7.9 Methane and Hydrogen Sulfide Sampling Programs: If the presence of methane and/or hydrogen sulfide is suspected, they should also be included in the analytical plan. After evaluating the initial soil gas data, the Agency may recommend that testing for methane or hydrogen sulfide cease.

A. Methane Sampling Program: Methane samples may be analyzed by a GC using modified EPA Method 8015B, EPA Method TO-3, or ASTM 3416M (EPA 3C), or by an appropriate hand-held instrument (e.g., Land Tech Gas Analyzer GA-90, Gas Emissions Monitor GEM-500, GEM-2000).

1. Detection Limit: The DL for methane analysis should not exceed 500 parts per million by volume (ppmv).

2. Methane Sample Containers: In addition to the gas-tight sample containers previously specified in Section 2.6.1, Tedlar™ bags may be used for collection of methane samples with a holding time of no more than 24 hours.

3. Methane Screening Level: When methane is detected at 1,000 ppmv or more, additional sampling and/or further investigation is recommended to identify the source(s).

4. At sites where methane is investigated and detected at a level of 5,000 ppmv or more, fixed and biogenic gas (O_2, CO_2, and CH_4) data should be obtained using a Thermal-Conductivity Detector (TCD) or a hand-held instrument.

5. To determine that the area is pressurized by migration of gases, pressure readings of each sampling tube system should be recorded in the field logs and reported along with the methane concentration.

6. Special GC Requirements: The GC method requires calibration curves for analytes such as methane since it is not a normal target analyte for such an analytical method.

7. Special Hand-Held Instruments Requirements: Hand-held instruments should be calibrated in accordance with the manufacture's instructions. When a hand-held instrument is used to analyze methane samples, the Agency recommends that at least 10 percent of all positive methane samples (e.g., more than 5,000 ppmv), rounded to the nearest whole number, be confirmed by another hand-held instrument (different unit or brand) or by a GC method.

B. Hydrogen Sulfide Sampling Program: Hydrogen sulfide may be analyzed by a GC using the South Coast Air Quality Management District (SCAQMD) Method 307-91 or EPA Method 16, or by an

appropriate hand-held instrument (e.g., LTX-310 calibrated for hydrogen sulfide or Jerome 631-X).

1. Detection Limit: The DL should be equal to or less than 0.5 ppmv or be sensitive enough to allow for a modeled ambient air concentration (at least one microgram per cubic meter) at the soil surface.

2. Holding Time: Hydrogen sulfide samples should be extracted directly into a hand-held analyzer within 30 minutes of collection to minimize the risk of losing the hydrogen sulfide due to reaction with active surfaces. If a hand-held instrument is not used, hydrogen sulfide samples should be analyzed as below:

   a. Within 30 minutes of collection, using the GC procedures; or

   b. Within 24 hours of collection, if a surrogate is added to the samples, or 100 percent duplicate samples are collected.

3. Sample Containers: The following sample containers are recommended:

   a. Minimum one (1) liter black Tedlar™ bag fitted with polypropylene valves or the equivalent;

   b. 100-ml gas-tight syringe fitted with an inert valve and wrapped in aluminum foil;

   c. Gas-tight glass bulb wrapped in aluminum foil; or

   d. Glass-lined or silicon coated Summa™ canister.

4. Precautions

   a. Since hydrogen sulfide is extremely unstable in the presence of oxygen and moisture, contact of hydrogen sulfide samples with them should be avoided.

   b. Due to the high reactivity of hydrogen sulfide gas, contact of hydrogen sulfide samples with metallic or other non-passive surfaces should be avoided during sample collection, storage and analysis.

   c. Care must be taken so that GC components do not react with the sample. Typically glass-lined injection ports and Teflon™ tube packed columns are used to avoid loss of hydrogen sulfide due to reaction with active surfaces.

3.0 SOIL PARAMETERS

If the soil gas data will be used in a health risk assessment, an estimation of the indoor air concentration should be performed using soil gas data with an Agency approved or modified predictable indoor air model. Default values of input parameters may be used in accordance with the approved indoor air modeling guidance and in consultation with Agency staff. If default values are not used, site-specific soil parameters should be obtained as discussed below.

To assess health risk, indoor air quality, the threat of groundwater contamination from VOCs, or to evaluate the effectiveness of a proposed remedial technology, the following soil matrix parameters should be obtained from a minimum of three (3) sample locations (at depths* corresponding to or associated with the detected VOCs) for each soil type in association with the soil gas investigation:

3.1 Soil description performed and presented in accordance with the Unified Soil Classification System (USCS);

3.2 Density;

3.3 Organic carbon content of the soil** (by the Walkee Black Method);

3.4 Soil moisture;

3.5 Effective permeability***;

3.6 Porosity; and

3.7 Grain size distribution analysis (curve) and evaluation of fine-grained soil content (by wet sieve analysis and any supplementary methods as necessary) to determine the percent clay, silt and sand. (The grain size distribution analysis will be used to classify the soil in accordance with the U. S. Soil Conservation Service [SCS] soil type, which is the same as the U. S. Department of Agriculture soil type.)

* Samples may be collected from proposed depths at the continuously cored boring.

** This input parameter is required for soil matrix VOC samples only. This parameter sample should not be collected from an impacted area.

*** As an alternative, the measurements of saturated hydraulic conductivity may be used to estimate vapor permeability.

4.0 REFERENCES

Additional information may be found in the following documents:

American Society for Testing and Materials (ASTM), "Standard Guide for Soil Gas Monitoring in the Vadose Zone, ASTM Standard D 5314-92," January 1993; Reapproved 2001; website http://www.astm.org

California Regional Water Quality Control Board, Los Angeles Region, "Interim Guidance for Active Soil Gas Investigation," February 25, 1997

California Regional Water Quality Control Board, Los Angeles Region, "General Laboratory Testing Requirements for Petroleum Hydrocarbon Impacted Sites," June 22, 2000

U.S. Environmental Protection Agency, "Test Methods for Evaluating Solid Waste, Physical/Chemical Methods, EPA Publication SW-846, Third Edition," November 1986, as amended by Updates I (Jul. 1992), II (Sep. 1994), IIA (August 1993), IIB (Jan. 1995), III (Dec. 1996), IIIA (Apr. 1998), IVA (Jan. 1998) and IVB (Nov. 2000); website http://www.epa.gov/SW-846/main.html

U.S. Environmental Protection Agency, "U.S. EPA Contract Laboratory Program National Functional Guidelines for Organic Data Review, EPA 540/R-94/012," February 1994; website http://www.epa.gov/region09/qa/superfundclp.html

U.S. Environmental Protection Agency, "Soil Gas Sampling, SOP#: 2042, Revision #: 0.0," June 1, 1996; website http://www.ert.org/respns_resrcs/sops.asp

U.S. Environmental Protection Agency, "Summa Canister Cleaning Procedures, SOP #1703, Rev. #: 0.0," 09/01/94; website http://www.ert.org/respns_resrcs/sops.asp

California Environmental Protection Agency (Cal/EPA), Office of Environmental Health Hazard (OEHHA), Toxicity Criteria Database; website http://www.oehha.ca.gov/risk/ChemicalDB/index.asp

United States Environmental Protection Agency, Integrated Risk Information System (IRIS) Database; website http://www.epa.gov/iris/

ACKNOWLEDGEMENTS

This Advisory was prepared under the direction of Sharon Fair, Branch Chief of DTSC's School Property Evaluation and Cleanup Division. Many Agency project supervisors, engineers, geologists, toxicologists, industrial hygienists, legal advisors, and Hazardous Material Laboratory staff provided support and consultation. In addition, the contents of this Advisory were greatly improved through discussions and comments received from consultants, school districts and numerous soil gas companies.

FOR MORE INFORMATION

Please contact the following person if you need additional information or if you have comments:

Mr. Joe Hwong, RG, CHG
Department of Toxic Substances Control
Schools Unit – Cypress
5796 Corporate Avenue
Cypress, California 90630
(714) 484-5406
jhwong@dtsc.ca.gov

Figures – Soil Gas Probe Emplacement Methods

Figure 1 – Permanent/Semi-permanent Gas Probe Construction Diagram

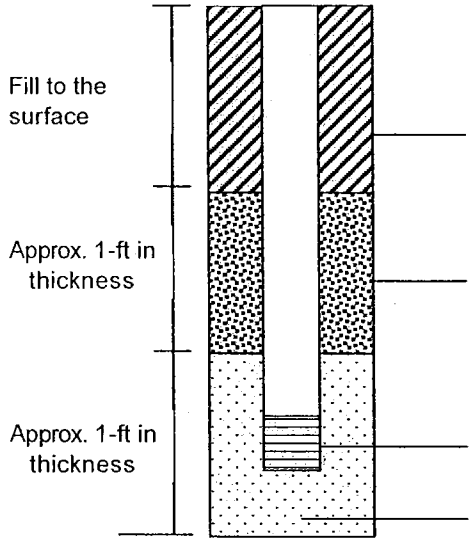
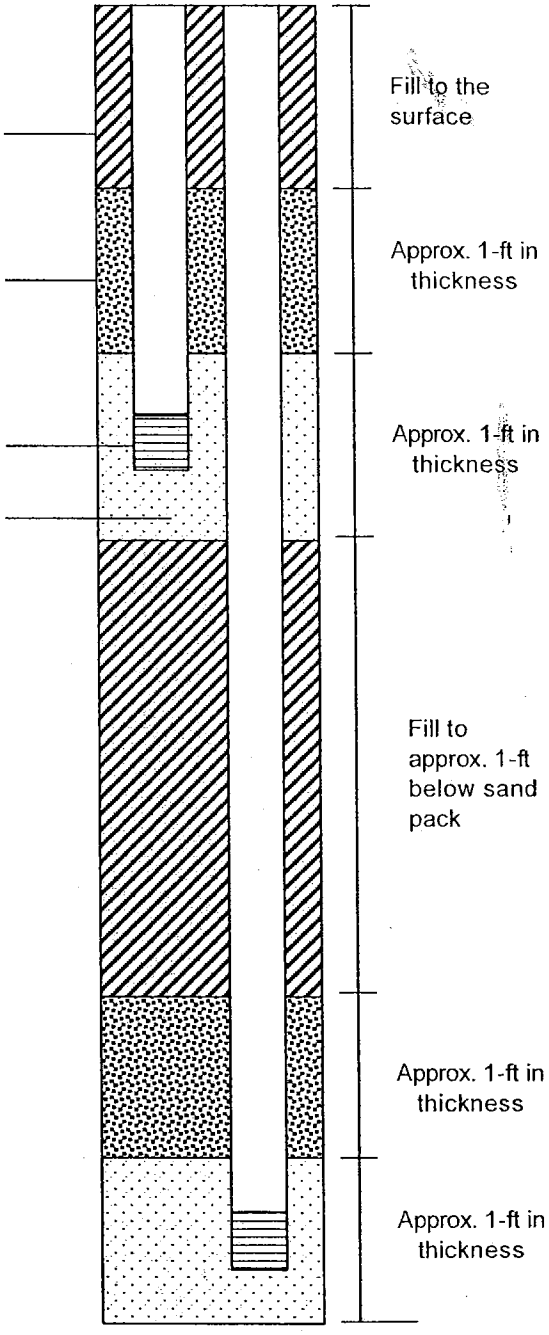
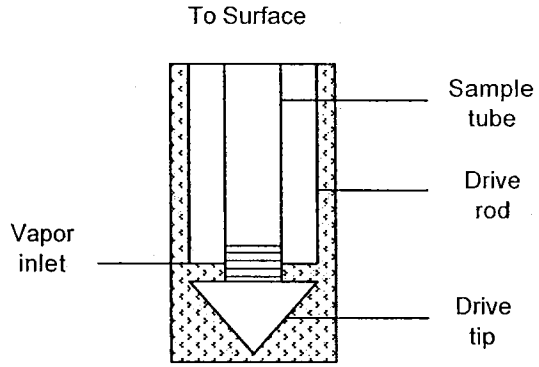


Figure 2 – Multi-depth Gas Probe Construction Diagram



Temporary Gas Probe Method



APPENDIX A

Agency Correspondence

ALAMEDA COUNTY
HEALTH CARE SERVICES
AGENCY
DAVID J. KEARS, Agency Director

ENVIRONMENTAL HEALTH SERVICES
ENVIRONMENTAL PROTECTION
1131 Harbor Bay Parkway, Suite 250
Alameda, CA 94502-6577
(510) 567-6700
FAX (510) 337-9335

September 17, 2003

Mr. John Nady
6701 Shellmound St.
Emeryville, CA 94608

Dear Mr. Nady:

Subject: Fuel Leak Case RO0000082, 1137-1167 65th St., Oakland, CA 94608

Alameda County Environmental Health, Local Oversight Program (LOP), staff has reviewed the August 26, 2003 Cambria Environmental Technology, Inc. (Cambria) *Investigation Work Plan* and met with your consultant, Cambria on September 11, 2003. The referenced work plan provides an interpretation of previous geologic data and proposes a comprehensive approach to determine the lateral and vertical extent of soil and groundwater contamination at this site. Based upon our discussion with your consultant, our office approves the investigation work plan with the following technical comments and conditions.

TECHNICAL COMMENTS

- Our office concurs with the proposal to perform a sensitive receptor survey and an underground utilities survey.

- Our office concurs in performing a soil and groundwater investigation to fill in data gaps. The proposed locations of soil borings and monitoring wells are acceptable. Additional step out borings may be warranted depending on the investigation results. However, specific changes and amendments to the work plan shall include the following:

    1. The borings identified in the Cambria work plan as SB-14, SB-16, SB-18, SB-20, SB-23 and SB-25 shall be advanced to the C zone. These deep borings shall be completed first and, based on their results, will dictate whether other planned borings will also be advanced to the C zone. Soil and groundwater, if encountered, should be collected for chemical analysis from each discrete horizon and water-bearing zone, as appropriate.

    2. Based upon the results of these initial borings, the final, multi-level monitoring plan shall be modified, as appropriate. Our office will be informed for concurrence prior to well installations, the locations and configurations of which will be proposed at a later date. Final configurations of well clusters, i.e., the zones across which the individual screens will be constructed, will be based on the outcome of this current phase of the investigation.

    3. Drilling will be performed in such a manner to prevent the potential for cross contamination while advancing borings through water bearing units.

- The proposed soil gas probe installation and sampling plan is not approved at this time. Additional research into the appropriate clean-up levels for the contaminants of concern should be done to verify the need for such sampling. Once the data from this investigation is received we will be meet with the RWQCB to discuss whether the site-specific conditions warrant this type of evaluation.

- Our office concurs with the cost control recommendation to analyze soil samples from only the deepest well of any well cluster. We also concur that free product, if encountered, should be sampled and analyzed for identification.

- Soil samples are proposed for collection for physical property analyses. In accordance with the DTSC/LARWQCB January 23, 2003 *Active Soil Gas Investigations Advisory*, samples should be collected from a minimum of 3 locations in non-impacted areas and at depths corresponding to detected VOCs and for each soil type within this depth.

You may contact me at (510) 567-6765 if you have any questions.

Sincerely,

Barney M Chan

Barney M. Chan
Hazardous Materials Specialist

C: B. Chan, D. Drogos, S. Seery
Mr. Bob Clark-Riddell, Cambria Environmental, 5900 Hollis St., Suite A, Emeryville, 94608
Wpap1137 65th

Olson, Jason

From: Chan, Barney, Env. Health [BChan@co.alameda.ca.us]
Sent: Monday, October 20, 2003 4:07 PM
To: 'jolson@cambria-env.com'
Subject: RE: Case No. RO0000082 - 1137-1167 65th St, Oakland - Analytical Concurrence

Jason:
After speaking with you, the modifications in the analysis rationale and methodology is approved by our office. As you noted there is no compromise in detection limits going from EPA 8260 to 8020 and although you do not plan to analyze all soil samples, soil samples will be collected approximately every 5 feet and screened with a PID and those samples detecting significant readings (>100ppm ?) will be analyzed.

Please let me know if this is not consistent with your understanding.

Barney Chan
ACEH
510-567-6765

-----Original Message-----
From: Jason Olson [mailto:jolson@cambria-env.com]
Sent: Friday, October 17, 2003 1:09 PM
To: 'Barney Chan (ACHCSA) (E-mail)'
Cc: Bob Clark-Riddell (E-mail)
Subject: Case No. RO0000082 - 1137-1167 65th St, Oakland - Analytical Concurrence

Barney,

I'm preparing the Cost Pre-Approval for the UST Fund and trying to trim some costs while still achieving our data quality objectives. I have reviewed the VOCs detected at the site above the RWQCB ESLs, and determined that we can analyze for all the site COCs with an 8010 analysis rather than an 8260, which costs twice as much. Also, since we're sampling several groundwater zones, there really isn't any need to analyze soil below 15 feet in most areas of the site (exceptions are data gaps near boring SB-7 and the Exterior Tank Area).

Thus, I propose the following:

1. Change all 8260 analyses to 8010.
2. Collect and analyze soil samples at the discrete depths proposed in Table 5 of the workplan (this only affects the borings you have requested to get deeper groundwater samples at).
3. Analyze soil in the proposed monitoring well clusters MW-1 and MW-6 to a maximum depth of 20 ft bgs, and 15 ft bgs in all other well clusters (maximum sample analysis depth for the wells is unclear in the workplan).

This will give us the data we're looking for, and trim around $20,000 off the analytical bill, making it much more cost effective (and palatable to the UST Fund).

Please respond as soon as possible. I'm hoping to get this Cost Pre-Approval out today to get the ball rolling. If you have any questions, please call me.

Thanks,

Jason D. Olson, EIT
Project Manager

Cambria Environmental Technology, Inc.
(510) 420-3338 (direct)
(510) 420-0700 (general office)
(510) 420-9170 (fax)

ALAMEDA COUNTY
HEALTH CARE SERVICES
AGENCY
DAVID J. KEARS, Agency Director

ENVIRONMENTAL HEALTH SERVICES
ENVIRONMENTAL PROTECTION
1131 Harbor Bay Parkway, Suite 250
Alameda, CA 94502-6577
(510) 567-6700
FAX (510) 337-9335

March 26, 2004

Mr. John Nady
Nady Systems
6701 Shellmound St.
Emeryville, CA 94608

Dear Mr. Nady:

Subject: Fuel Leak Case RO0000082, 1137-1167 65th Ave., Oakland, CA 94608

Alameda County Environmental Health staff has received and reviewed the March 17, 2004 *Well Installation Work Plan Addendum* from Cambria Environmental. The work plan responds to prior County comments and proposes the installation of two additional shallow screened wells, MW-7A and MW-8A to further investigate the area near and down-gradient of boring SB-8. These wells are approved as are the six wells previously proposed and described in Cambria August 26, 2003 *Investigation Workplan.*

The soil gas probe sampling and soil matrix sampling portion of the investigation workplan shall be temporarily placed on-hold until groundwater sampling data is evaluated.

You may contact me at (510) 567-6765 if you any questions.

Sincerely,

Barney M. Chan
Hazardous Materials Specialist

C: B. Chan, D. Drogos
Mr. Bob Clark-Riddell, Cambria Environmental, 5900 Hollis St., Suite A, Emeryville, CA 94608

Wellwpaddn113711167 65thAve

Olson, Jason

From: Olson, Jason [jolson@cambria-env.com]
Sent: Tuesday, April 27, 2004 1:15 PM
To: 'Chan, Barney, Env. Health'
Cc: Bob Clark-Riddell (E-mail); Frederic D. Schrag (E-mail)
Subject: RE: Nady site, 1137-1167 65th St., Oakland, RO82

Barney,

As we discussed today, there is sufficient overhead clearance to install a well in the area of former boring SB-8 (the breezeway). As you recall, when we thought there was insufficient overhead clearance to install a well at this location, we proposed installing two wells located on either side of the boring (MW-3A to the east and MW-7A to the west). The installation of one well at SB-8 now eliminates the need for two wells in the breezeway.

Based on our conversation today, Cambria will change our scope of work as follows:

1. Install well MW-3A at the location of former boring SB-8.
2. Eliminate the well location designated MW-7A in our Workplan Addendum
3. Re-designate well MW-8A as MW-7A

We currently have the drilling in this area scheduled for Friday, May 7, 2004. Please issue your concurrence via email. If you have any questions, please call me.

Sincerely,

Jason D. Olson, EIT
Project Manager

Cambria Environmental Technology, Inc.
(510) 420-3338 (direct)
(510) 420-0700 (general office)
(510) 420-9170 (fax)

On Wednesday, March 10, 2004 3:33 PM, Chan, Barney, Env. Health [SMTP:barney.chan@acgov.org] wrote:
| Jason: I reviewed your Interim Investigation report. I've got a couple of
| questions/comments
|
|
| * Is there possible source near SB-21 and the floor drain? GW
| concentrations were high. Would it be possible to add a well near SB-21 or
| near the STEP boring just sw of SB-21?
| * Is it possible/reasonable to have a mw near the inner tanks 5&6
| since we know there is high residual soil contamination left in place.
| * Could the location of proposed well MW3 be moved west, near SB-8
| which exhibited very high soil and gw concentrations?
|
| Sincerely,
|
| Barney M. Chan
| Hazardous Materials Specialist
| Alameda County Environmental Health
| 510-567-6765
|
|
| << File: ATT00002.html >>

Olson, Jason

From: Chan, Barney, Env. Health [barney.chan@acgov.org]
Sent: Monday, May 17, 2004 1:33 PM
To: 'jolson@cambria-env.com'
Subject: RE: 1137-1167 65th Street, Oakland - Request to install additiona l well

Jason:
Based upon your field observations when installing the wells in the proposed location of MW-4, our office approves of the installation of a B-zone well in addition to the previously approved A and C zone wells.

Barney Chan
ACEH, Hazardous Materials Specialist
510-567-6765

-----Original Message-----
From: Olson, Jason [mailto:jolson@cambria-env.com]
Sent: Monday, May 17, 2004 11:31 AM
To: 'Barney Chan (ACHCSA) (E-mail)'
Cc: Frederic D. Schrag (E-mail)
Subject: 1137-1167 65th Street, Oakland - Request to install additional well

Barney,

As we discussed today, Cambria will install a "B-zone" well at the location of MW-4. During well installation activities for the "C-zone" well MW-4C, our field geologist observed a saturated zone within the same interval as the "B-zone" (17-21 ft bgs). This additional well will give us 3 wells in the "B-zone" and will allow us to triangulate the groundwater flow. The "B-zone" well at this location will be designated MW-4B.

As we are currently drilling at the site, please issue your concurrence as soon as possible.

Thank you,

Jason D. Olson, EIT
Project Manager

Cambria Environmental Technology, Inc.
(510) 420-3338 (direct)
(510) 420-0700 (general office)
(510) 420-9170 (fax)

APPENDIX B

Field Activities Description

FIELD ACTIVITIES DESCRIPTION

Monitoring Well Installations and Sampling Activities

Personnel Present: Cambria's Senior Staff Geologist Matthew Meyers performed the well installation activities and Staff Scientist Sanjiv Gill performed the well sampling activities, which were overseen by Cambria's Senior Geologist Ron Scheele, a California Registered Geologist.

Number of Wells: Thirteen monitoring wells (MW-1A,B,C; MW-2A; MW-3A; MW-4A,B,C; MW-5B; MW-6A,B,C; and MW-7A) were installed on- and offsite.

Well Locations: Monitoring wells MW-1A,B,C were installed in the vicinity of previous boring SB-6 and near the exterior tank area. Monitoring well MW-2A was installed in the vicinity of previous boring SB-4 and near the former gasoline UST and pump location. Monitoring well MW-3A was installed in the vicinity of previous boring SB-8. Monitoring wells MW-4A,B,C were installed in the vicinity of previous boring SB-1 and near the former heating oil tank location. Monitoring well MW-5B was installed in the vicinity of previous boring SB-4 and near the former gasoline UST and pump location. Monitoring well MW-5B was installed in the northwest corner of the property. Monitoring wells MW-6A,B,C were installed in Peabody Lane near the southwest property corner. Monitoring well MW-7A was installed in the vicinity of previous boring SB-21 (Figure 2).

Permits: Alameda County Public Works Agency issued drilling permits for the installation of the thirteen wells. The permits are included in Appendix F.

Contractor: Precision Drilling Corporation of Richmond, California performed the well installation and development activities.

Well Install Date: Drilling activities began on May 7, and were completed on May 18, 2004.

Well Installation Method: The borings for wells MW-1A,B,C; MW-3A; MW-4A,B,C; MW-5B; and MW-6A,B,C were drilled with 8-inch diameter hollow stem augers to total depth. A 2-inch diameter screened well casing was then installed in the borehole.

The boring for well MW-2A was drilled with 10-inch diameter hollow stem augers to total depth. A 4-inch diameter screened well casing was then installed in the borehole.

The boring for well MW-7A was drilled with a hand auger to total depth. A 1-inch diameter, screened, and pre-packed well casing was then installed.

Soil Sampling Method: Soil samples were collected continuously using a Macrocore™ sampler.

Total Depths Drilled: Borings MW-1A, MW-2A, MW-3A, MW-4A, MW-6A, and MW-7A were advanced to 14.5, 12.0, 16.0, 16.0, 14.5 and 10.0 ft bgs, respectively. Borings MW-1B, MW-4B, MW-5B, and MW-6B were advanced to 20.0, 24.0, 24.0, and 24.5 ft bgs, respectively. Borings MW-1C, MW-4C, and MW-6C were advanced to 40.0, 40.0, and 39.5 ft bgs, respectively.

Groundwater Depth: Saturated soil was encountered from 3.5 to 15.5 ft bgs.

Well Development: On May 24, 2004, Precision Drilling Corporation developed the wells by surging and purging between 6 to 30 gallons of groundwater.

Groundwater Sampling: On June 3, 2004, Cambria gauged and collected groundwater samples from the monitoring wells. The groundwater samples were collected using a disposable bailer following the removal of between 2 and 13 gallons of groundwater with a disposable bailer. Samples were transported under chain-of-custody procedures to McCampbell Analytical of Pacheco, California for analysis. Groundwater samples were analyzed for TPHg, TPHd, TPH as stoddard solvent (TPHss), and TPH as motor oil (TPHmo) by modified EPA Method 8015C; BTEX and MTBE by EPA Method 8021B; and halogenated volatile organic compounds (HVOCs) by EPA Method 8260B.

Soil Sampling: Cambria collected soil samples from the soil borings. Samples were transported under chain-of-custody procedures to McCampbell Analytical of Pacheco, California for analysis. Select samples were analyzed for TPHg, TPHd, TPHss, and TPHmo by modified EPA Method 8015C; BTEX and MTBE by EPA Method 8021B; and HVOCs by EPA Method 8260B.

Soil Types Encountered: Soils encountered during drilling consisted of interbedded layers of silty clays, clayey silts, sandy silts, and silty sands to the total depth drilled. The boring logs are included in Appendix C.

Well Survey Information: On June 2, 2004, Virgil Chavez Land Surveying of Vallejo, California surveyed the well location and elevation. The well survey information is included in Appendix F.

APPENDIX C

Boring Logs

Cambria Environmental Technology, Inc.
5900 Hollis Street, Suite A
Emeryville, California 94608
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Fax: (510) 420-9170

BORING/WELL LOG

CLIENT NAME	John Nady	**BORING/WELL NAME**	MW-1A
JOB/SITE NAME	65th Street	**DRILLING STARTED**	10-May-04
LOCATION	1137-1167 65th Street, Oakland, California	**DRILLING COMPLETED**	10-May-04
PROJECT NUMBER	522-1000	**WELL DEVELOPMENT DATE (YIELD)**	24-May-04 (19 gallons)
DRILLER	Precision	**GROUND SURFACE ELEVATION**	39.95
DRILLING METHOD	Hollow-stem auger	**TOP OF CASING ELEVATION**	39.64 ft
BORING DIAMETER	8 inches	**SCREENED INTERVAL**	4.5 to 14.5 ft bgs
LOGGED BY	M. Meyers	**DEPTH TO WATER (First Encountered)**	7.0 ft (10-May-04) ▽
REVIEWED BY	N. Siler, RG #7004	**DEPTH TO WATER (Static)**	4.5 ft (03-Jun-04) ▼
REMARKS	Located in Peabody Lane.		

PID (ppm)	TPHg (ppm)	BLOW COUNTS	SAMPLE ID	EXTENT	DEPTH (ft bgs)	U.S.C.S.	GRAPHIC LOG	LITHOLOGIC DESCRIPTION	CONTACT DEPTH (ft bgs)	WELL DIAGRAM
								ASPHALT: 2 inches thick.	0.3	Portland Type I/II Cement
						ML		**Clayey SILT** (ML): black; stiff; moist; 30% clay, 50% silt, 10% very fine to fine grained sand, 10% angular to subround gravel to 10mm; low plasticity; low estimated permeability.		Bentonite Seal
								@ 4': becomes blue gray. ▼	5.0	Monterey Sand #2/12
					5			No soil samples observed below 5 ft. See boring log for MW-1C for lithology. ▽		
					10					2"-diameter, 0.010" Slotted Schedule 40 PVC
									14.5	Bottom of Boring @ 14.5 ft

WELL LOG (PID/TPHG) H:\NADY\NADY.GPJ DEFAULT.GDT 7/23/04

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BORING/WELL LOG

CLIENT NAME	John Nady	**BORING/WELL NAME**	MW-1B
JOB/SITE NAME	65th Street	**DRILLING STARTED**	12-May-04
LOCATION	1137-1167 65th Street, Oakland, California	**DRILLING COMPLETED**	12-May-04
PROJECT NUMBER	522-1000	**WELL DEVELOPMENT DATE (YIELD)**	24-May-04 (19 gallons)
DRILLER	Precision	**GROUND SURFACE ELEVATION**	39.88
DRILLING METHOD	Hollow-stem auger	**TOP OF CASING ELEVATION**	39.50 ft
BORING DIAMETER	8 inches	**SCREENED INTERVAL**	16.5 to 20 ft bgs
LOGGED BY	M. Meyers	**DEPTH TO WATER (First Encountered)**	7.0 ft (12-May-04) ▽
REVIEWED BY	N. Siler, RG #7004	**DEPTH TO WATER (Static)**	14.4 ft (03-Jun-04) ▼
REMARKS	Located in Peabody Lane.		

PID (ppm)	TPHg (ppm)	BLOW COUNTS	SAMPLE ID	EXTENT	DEPTH (ft bgs)	U.S.C.S.	GRAPHIC LOG	LITHOLOGIC DESCRIPTION	CONTACT DEPTH (ft bgs)	WELL DIAGRAM
					0			**ASPHALT**: 3 inches thick.	0.3	
						ML		**Clayey SILT** (ML): black; stiff; moist; 30% clay, 50% silt, 10% very fine to fine grained sand, 10% angular to subround gravel to 10mm; low plasticity; low estimated permeability.		
								@ 4': becomes blue gray.	5.0	
					5			No soil samples observed below 5 ft. See boring log for MW-1C for lithology.		Portland Type I/II Cement
					10					
					15					Bentonite Seal
										Monterey Sand #2/12
					20				20.0	2"-diameter, 0.010" Slotted Schedule 40 PVC
										Bottom of Boring @ 20 ft

WELL LOG (PID/TPHG) H:\NADY\NADY.GPJ DEFAULT.GDT 7/23/04

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BORING/WELL LOG

CLIENT NAME	John Nady	**BORING/WELL NAME**	MW-1C
JOB/SITE NAME	65th Street	**DRILLING STARTED**	10-May-04
LOCATION	1137-1167 65th Street, Oakland, California	**DRILLING COMPLETED**	10-May-04
PROJECT NUMBER	522-1000	**WELL DEVELOPMENT DATE (YIELD)**	24-May-04 (25 gallons)
DRILLER	Precision	**GROUND SURFACE ELEVATION**	39.91
DRILLING METHOD	Hollow-stem auger	**TOP OF CASING ELEVATION**	39.49 ft
BORING DIAMETER	8 inches	**SCREENED INTERVAL**	25 to 34 ft bgs
LOGGED BY	M. Meyers	**DEPTH TO WATER (First Encountered)**	7.0 ft (10-May-04) ▽
REVIEWED BY	N. Siler, RG #7004	**DEPTH TO WATER (Static)**	9.4 ft (03-Jun-04) ▼
REMARKS	Located in Peabody Lane.		

PID (ppm)	TPHg (ppm)	BLOW COUNTS	SAMPLE ID	EXTENT	DEPTH (ft bgs)	U.S.C.S.	GRAPHIC LOG	LITHOLOGIC DESCRIPTION	CONTACT DEPTH (ft bgs)
								ASPHALT: 3 inches thick.	0.3
								Clayey SILT (ML): black; stiff; moist; 35% clay, 50% silt, 10% very fine to fine grained sand, 5% angular to subround gravel to 10mm; low plasticity; low estimated permeability.	
								@ 4': becomes blue gray and very stiff.	
0		10 28 40	MW-1C @6.5		5	ML		@ 7': becomes wet. ▽	
		28 68 50 for 3"	MW-1C @9.5					@ 9': becomes hard. ▼	
212		10 15 36 38 48			10			@ 10': becomes moist. @ 11': becomes wet.	
									12.5
89		44 27 30 40				SM		**Silty SAND** (SM): blue gray; very stiff; moist; 10% clay, 30% silt, 50% fine to medium grained sand, 10% gravel to 30mm; moderate estimated permeability.	14.5
0		37 38 55	MW-1C @14.5		15	CL		**Silty CLAY** (CL): orange brown; very stiff; damp; 50% clay, 35% silt, 15% very fine to fine grained sand, 5% gravel to 8mm; low plasticity; low estimated permeability.	15.0
		25 55 70				SC		**Clayey SAND** (SC): orange brown; dense; moist; 30% clay, 10% silt, 50% fine to medium grained sand, 10% gravel to 40mm; moderate estimated permeability.	16.5
0		11 22 40	MW-1C @17.5			SM		**Silty SAND** (SM): orange brown; dense; wet; 10% clay, 30% silt, 60% very fine to fine grained sand; moderate estimated permeability.	18.0
		22 50 for 3"	MW-1C @20		20			@ 17': becomes damp and very dense.	
0		14 32 55				ML		**Sandy SILT** (ML): orange brown; stiff; damp; 10% clay, 50% silt, 30% very fine to fine grained sand, 10% gravel; low plasticity; low estimated permeability; some light gray veins; FeO2 nodules.	
		22 41	MW-1C @23					@ 19.5: becomes hard.	
		60 24 30						@ 20.5': becomes moist.	24.5
0		60 40 100	MW-1C @25		25	SM		@ 21.5': becomes very stiff; 10% clay, 50% silt, 30% sand, 10% well rounded gravel to 40mm.	25.0
		25 35 38						@ 23': becomes mottled orange brown - light gray.	
		32 75	MW-1C @29			SM		**Silty SAND** (SM): orange brown; very dense; wet; 10% clay, 30% silt, 50% fine to very coarse grained sand, 10% gravel; moderate estimated permeability.	
0		31 60 51			30			**Gravelly Silty SAND** (SM): orange brown; very dense; wet; 10% clay, 20% silt, 55% fine to very coarse grained sand, 15% angular gravel to 30mm; moderate estimated permeability.	
		31 50	MW-1C @31						32.5
		60 36 60				SM		**Silty SAND** (SM): orange brown; very dense; wet; 10% clay, 30% silt, 60% medium to very coarse grained sand; moderate estimated permeability.	34.0
0		75 for 3" 21 36			35			**Sandy SILT** (ML): orange brown; very stiff; moist; 10%	

WELL DIAGRAM

- Portland Type I/II Cement
- Bentonite Seal
- Monterey Sand #2/12
- 2"-diameter, 0.010" Slotted Schedule 40 PVC

WELL LOG (PID/TPHG) H:\NADY\NADY.GPJ DEFAULT.GDT 7/23/04

Continued Next Page

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BORING/WELL LOG

CLIENT NAME	John Nady	**BORING/WELL NAME**	MW-1C
JOB/SITE NAME	65th Street	**DRILLING STARTED**	10-May-04
LOCATION	1137-1167 65th Street, Oakland, California	**DRILLING COMPLETED**	10-May-04

Continued from Previous Page

PID (ppm)	TPHg (ppm)	BLOW COUNTS	SAMPLE ID	EXTENT	DEPTH (ft bgs)	U.S.C.S.	GRAPHIC LOG	LITHOLOGIC DESCRIPTION	CONTACT DEPTH (ft bgs)	WELL DIAGRAM
		62 100 for 6"	MW-1C @35			ML		clay, 60% silt, 30% very fine to medium grained sand; low plasticity; low estimated permeability. @ 35': becomes hard.	37.0	
0		14 18 23 27 28 35	MW-1C @38 MW-1C @39.5		40	SM		**Gravelly Silty SAND** (SM): light gray; medium dense; wet; 10% clay, 25% silt, 50% very fine to very coarse grained sand, 15% well rounded gravel to 30mm; moderate estimated permeability. @ 39': as above with angular gravel to 10mm.	40.0	Bentonite Plug Bottom of Boring @ 40 ft

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BORING/WELL LOG

CLIENT NAME	John Nady	**BORING/WELL NAME**	MW-2A
JOB/SITE NAME	65th Street	**DRILLING STARTED**	11-May-04
LOCATION	1137-1167 65th Street, Oakland, California	**DRILLING COMPLETED**	11-May-04
PROJECT NUMBER	522-1000	**WELL DEVELOPMENT DATE (YIELD)**	24-May-04 (20 gallons)
DRILLER	Precision	**GROUND SURFACE ELEVATION**	40.99
DRILLING METHOD	Hollow-stem auger	**TOP OF CASING ELEVATION**	40.72 ft
BORING DIAMETER	10 inches	**SCREENED INTERVAL**	3 to 12 ft bgs
LOGGED BY	M. Meyers	**DEPTH TO WATER (First Encountered)**	4.5 ft (11-May-04) ▽
REVIEWED BY	N. Siler, RG #7004	**DEPTH TO WATER (Static)**	4.2 ft (03-Jun-04) ▼
REMARKS	Located in parking lot. Former UST cavity well.		

PID (ppm)	TPHg (ppm)	BLOW COUNTS	SAMPLE ID	EXTENT	DEPTH (ft bgs)	U.S.C.S.	GRAPHIC LOG	LITHOLOGIC DESCRIPTION	CONTACT DEPTH (ft bgs)	WELL DIAGRAM
								ASPHALT: 2 inches thick.	0.2	Portland Type I/II Cement
								SAND (SW): light brown; medium dense; moist; 100% fine grained sand; high estimated permeability.		Bentonite Seal
										Monterey Sand #3
		3			5			@ 4.5': becomes green gray and wet.		
0		2				SW		@ 5': as above with some clayey silt chunks.		
		4								4"-diam., 0.020" Slotted Schedule 40 PVC
					10					
		5								
0		5							11.5	
		25				CL		**Silty CLAY** (CL): light brown; very stiff; damp; 60% clay, 40% silt; low plasticity; low estimated permeability.	12.0	Bottom of Boring @ 12 ft

WELL LOG (PID/TPHG) H:\NADY\NADY.GPJ DEFAULT.GDT 7/23/04

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BORING/WELL LOG

CLIENT NAME	John Nady	**BORING/WELL NAME**	MW-3A
JOB/SITE NAME	65th Street	**DRILLING STARTED**	07-May-04
LOCATION	1137-1167 65th Street, Oakland, California	**DRILLING COMPLETED**	07-May-04
PROJECT NUMBER	522-1000	**WELL DEVELOPMENT DATE (YIELD)**	24-May-04 (30 gallons)
DRILLER	Precision	**GROUND SURFACE ELEVATION**	41.05
DRILLING METHOD	Hollow-stem auger/Direct Push	**TOP OF CASING ELEVATION**	40.88 ft
BORING DIAMETER	8 inches	**SCREENED INTERVAL**	3.5 to 14 ft bgs
LOGGED BY	M. Meyers	**DEPTH TO WATER (First Encountered)**	4.0 ft (07-May-04) ▽
REVIEWED BY	N. Siler, RG #7004	**DEPTH TO WATER (Static)**	4.3 ft (03-Jun-04) ▼
REMARKS	Located in breezeway area.		

PID (ppm)	TPHg (ppm)	BLOW COUNTS	SAMPLE ID	EXTENT	DEPTH (ft bgs)	U.S.C.S.	GRAPHIC LOG	LITHOLOGIC DESCRIPTION	CONTACT DEPTH (ft bgs)	WELL DIAGRAM
118						CL		**CONCRETE**: 3 inches thick.	0.3	Portland Type I/II Cement
								Silty CLAY (CL): medium brown; soft; moist; 60% clay, 30% silt, 10% very fine grained sand; medium plasticity; low estimated permeability.		Bentonite Seal
								@ 3': becomes light brown.	4.0 ▽	Monterey Sand #2/12
584			MW-3A @5.5		5	SC		**Clayey SAND** (SC): green gray; soft; wet; 30% clay, 10% silt, 60% fine to medium grained sand; moderate estimated permeability.		
230								@ 5': becomes dark gray; 20% clay, 80% fine to very coarse grained sand; high estimated permeability.		2"-diameter, 0.010" Slotted Schedule 40 PVC
			MW-3A @10.5		10			@ 10': becomes green gray.	11.0	
86						CL		**Silty CLAY** (CL): light brown; very stiff; damp; 60% clay, 40% silt; low plasticity; low estimated permeability.	14.0	
	11		MW-3A @15		15	CL		**Sandy Silty CLAY** (CL): orange brown; very stiff; damp; 40% clay, 30% silt, 20% medium grained sand, 10% well rounded gravel to 40mm; low plasticity; low estimated permeability.	16.0	Slough from Caving
										Bottom of Boring @ 16 ft

WELL LOG (PID/TPHG) H:\NADY\NADY.GPJ DEFAULT.GDT 7/23/04

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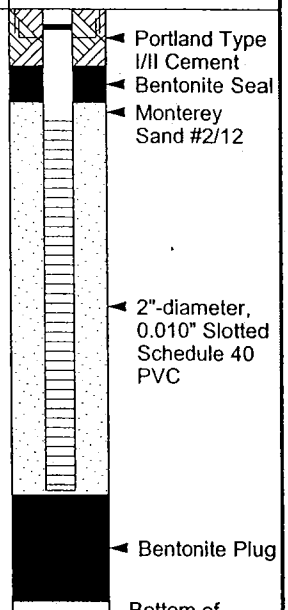
BORING/WELL LOG

CLIENT NAME	John Nady	**BORING/WELL NAME**	MW-4A
JOB/SITE NAME	65th Street	**DRILLING STARTED**	17-May-04
LOCATION	1137-1167 65th Street, Oakland, California	**DRILLING COMPLETED**	18-May-04
PROJECT NUMBER	522-1000	**WELL DEVELOPMENT DATE (YIELD)**	24-May-04 (18 gallons)
DRILLER	Precision	**GROUND SURFACE ELEVATION**	38.89
DRILLING METHOD	Hollow-stem auger/Direct Push	**TOP OF CASING ELEVATION**	38.71 ft
BORING DIAMETER	8 Inches	**SCREENED INTERVAL**	3 to 13 ft bgs
LOGGED BY	M. Meyers	**DEPTH TO WATER (First Encountered)**	NA
REVIEWED BY	N. Siler, RG #7004	**DEPTH TO WATER (Static)**	2.5 ft (03-Jun-04)
REMARKS	Located in sidewalk on 65th Street		

PID (ppm)	TPHg (ppm)	BLOW COUNTS	SAMPLE ID	EXTENT	DEPTH (ft bgs)	U.S.C.S.	GRAPHIC LOG	LITHOLOGIC DESCRIPTION	CONTACT DEPTH (ft bgs)
								CONCRETE: 4 inches thick.	0.3
						SP		**Gravelly SAND** (SP): dark gray; dense; moist; 75% fine to coarse grained sand, 25% gravel to 30mm; high estimated permeability. ▼ @ 3': difficulty hand augering.	
					5				
0									8.0
				P	10	SM		**Silty SAND and Gravelly Sandy SILT** (SM-ML): orange brown/olive gray; medium dense; moist; moderate estimated permeability; mottled materials.	
0									13.0
				P		ML		**Clayey SILT** (ML): light gray; very stiff; moist; 30% clay, 70% silt; low plasticity; low estimated permeability.	14.0
						SM		**Silty SAND** (SM): light brown; dense; moist; 40% silt, 60% fine grained sand; moderate estimated permeability.	15.0
					15	ML		**Clayey SILT** (ML): olive gray; very stiff; moist; 30% clay, 70% silt; low plasticity; low estimated permeability.	16.0

WELL DIAGRAM



WELL LOG (PID/TPHG) H:\NADY\NADY.GPJ DEFAULT.GDT 7/23/04

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BORING/WELL LOG

CLIENT NAME	John Nady	**BORING/WELL NAME**	MW-4B
JOB/SITE NAME	65th Street	**DRILLING STARTED**	18-May-04
LOCATION	1137-1167 65th Street, Oakland, California	**DRILLING COMPLETED**	18-May-04
PROJECT NUMBER	522-1000	**WELL DEVELOPMENT DATE (YIELD)**	24-May-04 (22 gallons)
DRILLER	Precision	**GROUND SURFACE ELEVATION**	38.96
DRILLING METHOD	Hollow-stem auger/Direct Push	**TOP OF CASING ELEVATION**	38.54 ft
BORING DIAMETER	8 Inches	**SCREENED INTERVAL**	17 to 21 ft bgs
LOGGED BY	M. Meyers	**DEPTH TO WATER (First Encountered)**	3.5 ft (18-May-04) ▽
REVIEWED BY	N. Siler, RG #7004	**DEPTH TO WATER (Static)**	5.0 ft (03-Jun-04) ▼
REMARKS	Located in sidewalk along 65th Street.		

PID (ppm)	TPHg (ppm)	BLOW COUNTS	SAMPLE ID	EXTENT	DEPTH (ft bgs)	U.S.C.S.	GRAPHIC LOG	LITHOLOGIC DESCRIPTION	CONTACT DEPTH (ft bgs)	WELL DIAGRAM
						SW		**CONCRETE**: 3 inches thick.	0.3	
								Gravelly SAND (SW): medium gray; dense; damp; 10% silt, 60% fine grained sand, 30% angular gravel to 20mm; high estimated permeability.	1.0	
						SM		**Silty SAND** (SM): medium gray; medium dense; moist; 40% silt, 50% fine grained sand, 10% gravel; moderate estimated permeability. ▽ ▼	5.0	
					5			No soil samples observed 5 to 16 ft bgs. See boring log for MW-4C for lithology.		Portland Type I/II Cement
					10					Bentonite Seal
					15					Slough from Caving
									16.0	Monterey Sand #2/12
				P		ML		**Sandy SILT** (ML): light gray; stiff; moist; 10% clay, 50% silt, 30% fine grained sand, 10% gravel to 20mm; low plasticity; moderate estimated permeability.	19.0	
						ML		**Clayey SILT** (ML): light brown; very stiff; moist; 30% clay, 70% silt; low plasticity; low estimated permeability.	20.0	2"-diameter, 0.010" Slotted Schedule 40 PVC
					20	SM		**Silty SAND** (SM): light brown; medium dense; wet; 40% silt, 60% fine grained sand; moderate estimated permeability.	21.0	
				P		ML		**Clayey SILT** (ML): light brown; very stiff; moist; 30% clay, 70% silt; low plasticity; low estimated permeability. @ 22': becomes damp.	24.0	Bentonite Plug
										Bottom of Boring @ 24 ft

WELL LOG (PID/TPHG) H:\NADY\NADY.GPJ DEFAULT.GDT 7/23/04

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BORING/WELL LOG

CLIENT NAME	John Nady	**BORING/WELL NAME**	MW-4C
JOB/SITE NAME	65th Street	**DRILLING STARTED**	17-May-04
LOCATION	1137-1167 65th Street, Oakland, California	**DRILLING COMPLETED**	17-May-04
PROJECT NUMBER	522-1000	**WELL DEVELOPMENT DATE (YIELD)**	24-May-04 (19 gallons)
DRILLER	Precision	**GROUND SURFACE ELEVATION**	39.00
DRILLING METHOD	Hollow-stem auger/Direct Push	**TOP OF CASING ELEVATION**	38.50 ft
BORING DIAMETER	8 inches	**SCREENED INTERVAL**	27 to 32 ft bgs
LOGGED BY	M. Meyers	**DEPTH TO WATER (First Encountered)**	12.0 ft (17-May-04) ▽
REVIEWED BY	N. Siler, RG #7004	**DEPTH TO WATER (Static)**	8.4 ft (03-Jun-04) ▼
REMARKS	Located in sidewalk along 65th Street.		

PID (ppm)	TPHg (ppm)	BLOW COUNTS	SAMPLE ID	EXTENT	DEPTH (ft bgs)	U.S.C.S.	GRAPHIC LOG	LITHOLOGIC DESCRIPTION	CONTACT DEPTH (ft bgs)
						SW		**CONCRETE**: 3 inches thick.	0.3
								Gravelly SAND (SW): medium gray; dense; damp; 10% silt, 60% fine grained sand, 30% angular gravel to 20mm; low plasticity; high estimated permeability.	1.0
						SM		**Silty SAND** (SM): medium gray; medium dense; moist; 40% silt, 50% fine grained sand, 10% gravel.	5.0
0			MW-4C @5	P	5	ML		**Clayey SILT** (ML): orange brown; stiff; moist; 20% clay, 70% silt, 10% very fine grained sand; low plasticity; low estimated permeability.	
0				P				▼	9.0
			MW-4C @10		10	ML		**Sandy SILT** (ML): orange brown; very stiff; moist to wet; 10% clay, 60% silt, 30% fine to medium grained sand; low estimated permeability.	11.0
				P		ML		**Sandy SILT** (ML): orange brown; very stiff; wet; 5% clay, 50% silt, 40% fine to very coarse grained sand, 5% gravel to 8mm; low plasticity; moderate estimated permeability. ▽	12.0
				P		ML		**Clayey SILT** (ML): orange brown; stiff; moist; 20% clay, 70% silt, 10% fine grained sand; low plasticity; low estimated permeability.	14.0
			MW-4C @15		15	SM		**Silty SAND** (SM): light gray/orange brown; dense; moist; 40% silt, 60% fine grained sand; moderate estimated permeability.	15.0
0				P		ML		**Clayey SILT** (ML): light gray/orange brown; stiff; moist; 30% clay, 70% silt; medium plasticity; low estimated permeability.	17.5
0				P		ML		**Clayey SILT** (ML): orange brown; stiff; moist; 20% clay, 50% silt, 20% fine to coarse grained sand, 10% angular gravel to 20mm; low plasticity; low estimated permeability.	19.0
			MW-4C @20		20	ML		**Sandy SILT** (ML): light gray; medium stiff; wet; 60% silt, 40% fine grained sand; moderate estimated permeability.	20.0
				P				**Clayey SILT** (ML): light gray/orange brown; very stiff; damp; 30% clay, 70% silt; low plasticity; low estimated permeability.	23.0
0			MW-4C @25	P	25	ML		**Sandy SILT** (ML): orange brown; soft; moist; 70% silt, 30% fine grained sand; low plasticity; moderate estimated permeability.	
0				P					29.0
			MW-4C @30	P	30	SM		**Silty SAND** (SM): medium brown; medium dense; wet; 30% silt, 50% sand, 20% gravel; moderate estimated permeability.	33.0
				P		ML		**Sandy SILT** (ML): orange brown; stiff; moist; 10% clay, 60% silt, 30% medium grained sand; low plasticity; low estimated permeability.	35.0
					35				

WELL DIAGRAM

- Portland Type I/II Cement
- Bentonite Seal
- Monterey Sand #2/12
- 2"-diameter, 0.010" Slotted Schedule 40 PVC

WELL LOG (PID/TPHG) H:\NADY\NADY.GPJ DEFAULT.GDT 7/23/04

Continued Next Page

Cambria Environmental Technology, Inc.
5900 Hollis Street, Suite A
Emeryville, California 94608
Telephone: (510) 420-0700
Fax: (510) 420-9170

BORING/WELL LOG

CLIENT NAME John Nady
JOB/SITE NAME 65th Street
LOCATION 1137-1167 65th Street, Oakland, California

BORING/WELL NAME MW-4C
DRILLING STARTED 17-May-04
DRILLING COMPLETED 17-May-04

Continued from Previous Page

PID (ppm)	TPHg (ppm)	BLOW COUNTS	SAMPLE ID	EXTENT	DEPTH (ft bgs)	U.S.C.S.	GRAPHIC LOG	LITHOLOGIC DESCRIPTION	CONTACT DEPTH (ft bgs)	WELL DIAGRAM
0			MW-4C @35			ML		**Clayey SILT** (ML): orange brown; very stiff; moist; 30% clay, 70% silt; low plasticity; low estimated permeability.	36.0	Bentonite Plug
						ML		**Sandy SILT** (ML): brown; medium stiff; moist; 60% silt, 40% fine grained sand; low plasticity; medium estimated permeability.	38.0	
0			MW-4C @40		40	ML		**Clayey SILT** (ML): orange brown; very stiff; damp; 20% clay, 70% silt, 10% very fine grained sand; low plasticity; low estimated permeability.	40.0	Bottom of Boring @ 40 ft

WELL LOG (PID/TPHG) H:\NADY\NADY.GPJ DEFAULT.GDT 7/23/04

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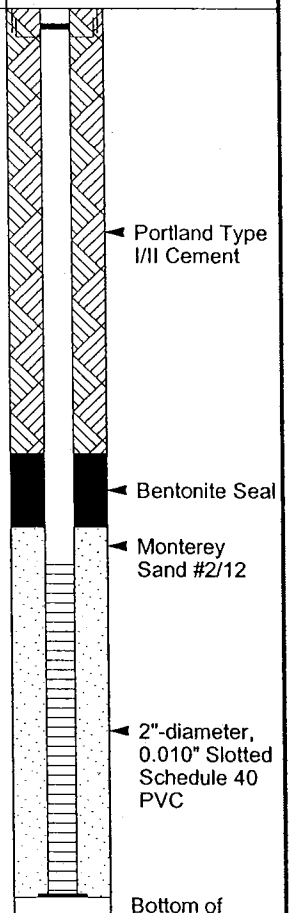
BORING/WELL LOG

CLIENT NAME	John Nady	**BORING/WELL NAME**	MW-5B
JOB/SITE NAME	65th Street	**DRILLING STARTED**	18-May-04
LOCATION	1137-1167 65th Street, Oakland, California	**DRILLING COMPLETED**	18-May-04
PROJECT NUMBER	522-1000	**WELL DEVELOPMENT DATE (YIELD)**	24-May-04 (19 gallons)
DRILLER	Precision	**GROUND SURFACE ELEVATION**	39.45
DRILLING METHOD	Hollow-stem auger/Direct Push	**TOP OF CASING ELEVATION**	38.98 ft
BORING DIAMETER	8 Inches	**SCREENED INTERVAL**	15 to 24 ft bgs
LOGGED BY	M. Meyers	**DEPTH TO WATER (First Encountered)**	NA
REVIEWED BY	N. Siler, RG #7004	**DEPTH TO WATER (Static)**	8.8 ft (03-Jun-04)
REMARKS	Located in northwest corner of property.		

PID (ppm)	TPHg (ppm)	BLOW COUNTS	SAMPLE ID	DEPTH (ft bgs)	U.S.C.S.	LITHOLOGIC DESCRIPTION	CONTACT DEPTH (ft bgs)
						CONCRETE: 6 inches thick.	0.5
					ML	**Clayey SILT** (ML): dark brown; very stiff; damp; 30% clay, 50% silt, 10% sand, 10% gravel to 15mm; low plasticity; low estimated permeability.	5.0
0			MW-5B @5	5	ML	**Clayey SILT** (ML): dark brown; very stiff; damp; 20% clay, 80% silt; low plasticity; low estimated permeability.	6.5
0					ML	**SILT** (ML): olive gray; very stiff; dry; 10% clay, 90% silt; low plasticity; low estimated permeability. ▼	10.0
			MW-5B @10	10	ML	**Sandy SILT** (ML): orange brown; very stiff; damp; 10% clay, 60% silt, 30% fine to coarse grained sand; low plasticity; low estimated permeability.	15.0
282			MW-5B @15	15	ML	**Sandy SILT** (ML): green gray; very stiff; damp; 10% clay, 60% silt, 20% fine to very coarse grained sand, 10% angular gravel to 20mm; low plasticity; low estimated permeability.	17.5
					ML	**Clayey SILT** (ML): medium brown; stiff; moist; 30% clay, 70% silt; low plasticity; low estimated permeability.	
0			MW-5B @20	20	ML	@ 20': becomes medium stiff.	22.0
					ML	**Sandy SILT** (ML): medium brown; stiff; moist; 10% clay, 70% silt, 20% fine to very coarse grained sand; low plasticity; low estimated permeability.	24.0
0			MW-5B @24			@ 23': becomes very stiff and damp.	



WELL LOG (PID/TPHG) H:\NADY\NADY.GPJ DEFAULT.GDT 7/23/04

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BORING/WELL LOG

CLIENT NAME	John Nady	**BORING/WELL NAME**	MW-6A
JOB/SITE NAME	65th Street	**DRILLING STARTED**	11-May-04
LOCATION	1137-1167 65th Street, Oakland, California	**DRILLING COMPLETED**	11-May-04
PROJECT NUMBER	522-1000	**WELL DEVELOPMENT DATE (YIELD)**	24-May-04 (19 gallons)
DRILLER	Precision	**GROUND SURFACE ELEVATION**	38.29
DRILLING METHOD	Hollow-stem auger	**TOP OF CASING ELEVATION**	37.98 ft
BORING DIAMETER	8 inches	**SCREENED INTERVAL**	4.5 to 14.5 ft bgs
LOGGED BY	M. Meyers	**DEPTH TO WATER (First Encountered)**	12.0 ft (11-May-04) ▽
REVIEWED BY	N. Siler, RG #7004	**DEPTH TO WATER (Static)**	6.0 ft (03-Jun-04) ▼
REMARKS	Located in Peabody Lane.		

PID (ppm)	TPHg (ppm)	BLOW COUNTS	SAMPLE ID	EXTENT	DEPTH (ft bgs)	U.S.C.S.	GRAPHIC LOG	LITHOLOGIC DESCRIPTION	CONTACT DEPTH (ft bgs)	WELL DIAGRAM
								ASPHALT: 2 inches thick.	0.2	Portland Type I/II Cement
						ML		**Gravelly Sandy SILT** (ML): dark brown; stiff; moist; 10% clay, 50% silt, 25% fine to medium grained sand, 15% gravel to 30mm; low plasticity; moderate estimated permeability.	2.0	Bentonite Seal
						ML		**Sandy SILT** (ML): green gray; medium stiff; moist; 10% clay, 60% silt, 30% sand; low plasticity; moderate estimated permeability.		Monterey Sand #2/12
					5			@ 3': becomes 10% clay, 50% silt, 30% fine to very coarse grained sand, 10% gravel to 30mm.	5.0	
								@ 4': becomes 10% clay, 50% silt, 40% sand.		
								No soil samples observed 5 to 14.5 ft bgs. See boring log for MW-6C for lithology.		
					10					2"-diameter, 0.010" Slotted Schedule 40 PVC
								@ 12': auger cuttings were wet. ▽		
									14.5	Bottom of Boring @ 14.5 ft

WELL LOG (PID/TPH(G)) H:\NADY\NADY.GPJ DEFAULT.GDT 7/23/04

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BORING/WELL LOG

CLIENT NAME	John Nady	**BORING/WELL NAME**	MW-6B
JOB/SITE NAME	65th Street	**DRILLING STARTED**	12-May-04
LOCATION	1137-1167 65th Street, Oakland, California	**DRILLING COMPLETED**	12-May-04
PROJECT NUMBER	522-1000	**WELL DEVELOPMENT DATE (YIELD)**	24-May-04 (20 gallons)
DRILLER	Precision	**GROUND SURFACE ELEVATION**	38.16
DRILLING METHOD	Hollow-stem auger	**TOP OF CASING ELEVATION**	37.66 ft
BORING DIAMETER	8 inches	**SCREENED INTERVAL**	17 to 22 ft bgs
LOGGED BY	M. Meyers	**DEPTH TO WATER (First Encountered)**	15.5 ft (12-May-04) ▽
REVIEWED BY	N. Siler, RG #7004	**DEPTH TO WATER (Static)**	8.3 ft (03-Jun-04) ▼
REMARKS	Located in Peabody Lane.		

PID (ppm)	TPHg (ppm)	BLOW COUNTS	SAMPLE ID	EXTENT	DEPTH (ft bgs)	U.S.C.S.	GRAPHIC LOG	LITHOLOGIC DESCRIPTION	CONTACT DEPTH (ft bgs)
								ASPHALT: 2.5 inches thick.	0.2
						ML		**Gravelly Clayey SILT** (ML): dark brown; stiff; moist; 30% clay, 55% silt, 5% fine to medium grained sand, 10% gravel to 30mm; low plasticity; low estimated permeability.	2.0
						ML		**Sandy SILT** (ML): green gray; medium stiff; moist; 10% clay, 60% silt, 30% sand; low plasticity; moderate estimated permeability.	
					5			@ 3': becomes 10% clay, 50% silt, 30% fine to very coarse grained sand, 10% gravel to 30mm.	5.0
								@ 4': becomes 10% clay, 50% silt, 40% sand.	
								No soil samples collected 5 to 14 ft bgs. See boring log for MW-6C for lithology.	
					10			@ 10': Auger cuttings become wet.	
									14.0
33		11 13 15 13			15	ML		**Clayey SILT** (ML): light brown; stiff; moist; 30% clay, 70% silt; low plasticity; low estimated permeability; some blue gray staining. ▽	15.5
3160		16 22 26 38				SM		**Silty SAND** (SM): medium green gray; medium dense; wet; 10% clay, 30% silt, 60% fine to medium grained sand; moderate estimated permeability.	18.0
16		42 20 32 30			20	ML		**Sandy SILT** (ML): orange brown; very stiff; moist; 60% silt, 40% fine grained sand; moderate plasticity; moderate estimated permeability. @ 19': No recovery.	21.0
		15 17 21 17				ML		**Gravelly Sandy SILT** (ML): orange brown; stiff; moist; 50% silt, 25% very fine to medium grained sand, 25% gravel to 20mm; low plasticity; moderate estimated permeability; mottled.	22.0
		22 26 8 11				ML		**Clayey SILT** (ML): orange brown; stiff; moist; 30% clay, 70% silt; low plasticity; low estimated permeability.	24.5
21		18							

WELL DIAGRAM

- Portland Type I/II Cement
- Bentonite Seal
- Monterey Sand #2/12
- 2"-diameter, 0.010" Slotted Schedule 40 PVC
- Bentonite Plug
- Bottom of Boring @ 24.5 ft

WELL LOG (PID/TPHG) H:\NADY\NADY.GPJ DEFAULT.GDT 7/23/04

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BORING/WELL LOG

CLIENT NAME	John Nady	**BORING/WELL NAME**	MW-6C
JOB/SITE NAME	65th Street	**DRILLING STARTED**	11-May-04
LOCATION	1137-1167 65th Street, Oakland, California	**DRILLING COMPLETED**	11-May-04
PROJECT NUMBER	522-1000	**WELL DEVELOPMENT DATE (YIELD)**	24-May-04 (28 gallons)
DRILLER	Precision	**GROUND SURFACE ELEVATION**	38.07
DRILLING METHOD	Hollow-stem auger	**TOP OF CASING ELEVATION**	37.59 ft
BORING DIAMETER	8 inches	**SCREENED INTERVAL**	26.5 to 34 ft bgs
LOGGED BY	M. Meyers	**DEPTH TO WATER (First Encountered)**	15.0 ft (11-May-04) ▽
REVIEWED BY	N. Siler, RG #7004	**DEPTH TO WATER (Static)**	9.7 ft (03-Jun-04) ▼
REMARKS	Located in Peabody Lane.		

PID (ppm)	TPHg (ppm)	BLOW COUNTS	SAMPLE ID	EXTENT	DEPTH (ft bgs)	U.S.C.S.	GRAPHIC LOG	LITHOLOGIC DESCRIPTION	CONTACT DEPTH (ft bgs)	WELL DIAGRAM
						ML		**ASPHALT**: 2 inches thick.	0.2	
						ML		**Clayey SILT** (ML): dark brown; stiff; moist; 30% clay, 55% silt, 5% sand, 10% gravel to 30mm; low plasticity; low estimated permeability.	3.0	
39		5 9 15	MW-6C @5.5		5	ML		**Sandy SILT** (ML): green gray; stiff; damp; 10% clay, 60% silt, 30% very fine to fine grained sand; low plasticity; low estimated permeability.		
					10	ML		▼	10.0	
95		7 10 15	MW-6C @11			ML		**Sandy SILT** (ML): green gray; stiff; moist; 10% clay, 50% silt, 25% fine to very coarse grained sand, 15% angular gravel to 10mm; low plasticity; moderate estimated permeability.		Portland Type I/II Cement
						ML		▽	15.0	
224		7 12 18	MW-6C @16		15	ML		**Clayey SILT** (ML): green gray/olive gray; stiff; wet; 20% clay, 70% silt, 10% sand; low plasticity; low estimated permeability; mottled.	16.0	
						ML		**Clayey SILT** (ML): orange brown; stiff; damp; 30% clay, 70% silt; low plasticity; low estimated permeability.		
0		10 16 26	MW-6C @21		20	ML		@ 20': becomes very stiff; 30% clay, 65% silt, 5% very fine grained sand; FeO2 nodules.		
									25.0	Bentonite Seal
0		10 13 24	MW-6C @26.5		25	ML		**Clayey SILT** (ML): light brown; stiff; wet; 30% clay, 70% silt; low plasticity; low estimated permeability.	25.5	Monterey Sand #2/12
						ML		**Clayey SILT** (ML): light brown; very stiff; damp; 30% clay, 70% silt; low plasticity; low estimated permeability; laminar layering.		
									30.0	
0		7 10 14	MW-6C @31		30	ML		**Sandy SILT** (ML): light gray/light brown; medium stiff; wet; 10% clay, 50% silt, 40% fine grained sand; low plasticity; moderate estimated permeability; mottled.		2"-diameter, 0.010" Slotted Schedule 40 PVC
					35					

WELL LOG (PID/TPHG) H:\NADY\NADY.GPJ DEFAULT.GDT 7/23/04

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BORING/WELL LOG

CLIENT NAME	John Nady	**BORING/WELL NAME**	MW-6C
JOB/SITE NAME	65th Street	**DRILLING STARTED**	11-May-04
LOCATION	1137-1167 65th Street, Oakland, California	**DRILLING COMPLETED**	11-May-04

Continued from Previous Page

PID (ppm)	TPHg (ppm)	BLOW COUNTS	SAMPLE ID	EXTENT	DEPTH (ft bgs)	U.S.C.S.	GRAPHIC LOG	LITHOLOGIC DESCRIPTION	CONTACT DEPTH (ft bgs)	WELL DIAGRAM
0		16 22 30 22	MW-6C @36.5					@ 35': becomes very stiff; damp; 10% clay, 70% silt, 20% very fine grained sand, low estimated permeability.	37.0	Bentonite Plug
0		36 28 16 26 50	MW-6C @37.5 MW-6C @39.5			ML		**Gravelly SILT** (ML): light brown; very stiff; wet; 10% clay, 60% silt, 10% sand, 20% gravel to 30mm; low plasticity; moderate estimated permeability.	39.5	Bottom of Boring @ 39.5 ft

WELL LOG (PID/TPHG) H:\NADY\NADY.GPJ DEFAULT.GDT 7/23/04

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BORING/WELL LOG

CLIENT NAME	John Nady	**BORING/WELL NAME**	MW-7A
JOB/SITE NAME	65th Street	**DRILLING STARTED**	07-May-04
LOCATION	1137-1167 65th Street, Oakland, California	**DRILLING COMPLETED**	07-May-04
PROJECT NUMBER	522-1000	**WELL DEVELOPMENT DATE (YIELD)**	24-May-04 (6 gallons)
DRILLER	Precision	**GROUND SURFACE ELEVATION**	40.74
DRILLING METHOD	Hand Auger	**TOP OF CASING ELEVATION**	40.58 ft
BORING DIAMETER	6 inches to 6 ft, 4 inches to 10 ft	**SCREENED INTERVAL**	5 to 8 ft bgs
LOGGED BY	M. Meyers	**DEPTH TO WATER (First Encountered)**	6.0 ft (07-May-04) ▽
REVIEWED BY	N. Siler, RG #7004	**DEPTH TO WATER (Static)**	4.5 ft (03-Jun-04) ▼
REMARKS	Located inside Berkeley Architectural Salvage building.		

PID (ppm)	TPHg (ppm)	BLOW COUNTS	SAMPLE ID	EXTENT	DEPTH (ft bgs)	U.S.C.S.	GRAPHIC LOG	LITHOLOGIC DESCRIPTION	CONTACT DEPTH (ft bgs)
								CONCRETE: 4 inches thick.	0.3
						ML		**Clayey SILT** (ML): dark brown; stiff; damp; 30% clay, 60% silt, 10% fine grained sand; low plasticity; low estimated permeability.	
0								@ 3': becomes soft; 30% clay; 50% silt, 10% fine grained sand, 10% well rounded gravel to 20mm.	
27					5	CH		**Silty CLAY** (CH): green gray; soft; moist; 60% clay, 40% silt; high plasticity; low estimated permeability. ▼	5.0
555								@ 6': becomes olive gray. ▽	
691						ML		**Clayey SILT** (ML): olive gray; stiff; moist; 40% clay, 60% silt; low plasticity; low estimated permeability; strong odor.	7.0
594						ML			8.0
						ML			9.0
726					10	SP		**Gravelly Sandy SILT** (ML): olive gray; stiff; wet; 50% silt, 30% fine to coarse grained sand, 20% gravel to 40mm; low plasticity; moderate estimated permeability.	10.0
								Gravelly SAND (SP): olive gray; medium dense; wet; 20% silt, 50% medium to very coarse grained sand, 30% gravel to 40mm; high estimated permeability.	

WELL DIAGRAM

- Portland Type I/II Cement
- Bentonite Seal
- Monterey Sand #2/12
- 1"-diam., 0.010" Slotted Schedule 40 PVC
- Bottom of Boring @ 10 ft

WELL LOG (PID/TPHG) H:\NADY\NADY.GPJ DEFAULT.GDT 7/23/04

APPENDIX D

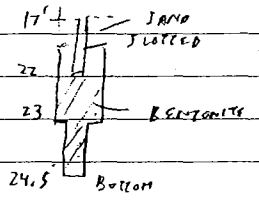
Field Data Sheets

CAMBRIA

DAILY FIELD REPORT

Project Name: NADY	Cambria Mgr: JDO	Field Person: MM
Project Number: 522-1000	Date: 5-12-04	Site Address: 1167 65TH STREET OAKLAND, CA
General Tasks: OBSERVE DRILLING OF MW-6B; OBSERVE WELL INSTALLATION		

Time	Activity/Comments	Code	Hours
10:20 AM (ARRIVE)	PRECISION SAMPLING DRILLING W/ HOLLOW STEM AUGERS (8" ϕ)		
	GW @ 17' A.T.D. → DRILLER - "THIS WELL HAS A LOT MORE H_2O THAN THE OTHER WELLS"		
	SAMPLES - COLLECTED IN STEEL LINERS (2"), 140 lbs/30" DROP		
	• MODIFIED CALIFORNIA SAMPLER → 2.5" O.D.		
	• CONTINUOUS SAMPLES → IDENTIFY H_2O-BEARING ZONES 15'-25'		
	• 21.5-23.0' → MOIST; WET ON OUTSIDE; SAMPLES LOOK SLIGHTLY DAMP, CLAYEY TO SANDY SILT (22'), V. STIFF (LOW PERMEABILITY)		
	BCR = "STODDARD" SOLVENT		
11:10	BOTTOM OF HOLE @ 24'6" • "PLUG" 24½'-22'		
	• SCREEN (PRE-SLOTTED), 2" I.D. → 17'-22'		
	• 0.010-SLOT SIZE (FINER = FINER GRAINED SOIL)		
	• 2/12 → MONTEREY SAND		
	• SAND → 22' • BENTONITE ~14'-16'		
	• GROUT/CEMENT → 0'-14'		
	• PID = DETECT VOCs IN VAPOR PHASE ↳ REQUIRED		
	• TYPE I-II CEMENT		



WELL DEVELOPMENT FORM

DATE: 5-24-04

PRECISION SAMPLING INC

WELL #: MW-7A

DEPTH / DIAMETER: 12' 1"

PROJECT NO.

INITIAL DTW: 8'

SITE LOCATION: 1137 65th St Oakland

FINAL DTW:

NAME: Fernando Ambriz

CALCULATED WELL VOLUME:

DEVELOPMENT METHOD:

TOTAL WATER REMOVED 6

Well Dia. (OD-INCH):	3/4	1	2	4	4.5	6	8			
Gallons / Linear FT:	(0.02)	(0.04)	(0.17)	(0.66)	(0.83)	(1.5)	(2.8)			

TIME	Cum. Vol. Rmvd. (G)	pH	COND (mS/cm)	TURB	DO (mg/L	TEMP (Deg C)	SAL (%)	Appearance / Comments
1200	0	7.26	1.01	882	9.80	19.5	.06	Lt Brown
1210	2	7.28	1.10	620	9.82	18.7	.07	Very Light Brown
1216	4	7.30	1.12	480	9.80	19.0	.06	" "
1220	6	7.28	1.14	320	9.79	18.9	.06	Clear
~~1230~~		~~DRY~~						
~~1250~~								

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To Matt Meyers | From Raquel Barron

Co./Dept. Cambria | Co. Precision Sampling

Phone 510-420-3314 | Phone # 510-237-4335

Fax # 510-420-9170 | Fax # 510-237-4574

WELL DEVELOPMENT FORM	DATE: 5-24-04
PRECISION SAMPLING INC	WELL #: MW-3A
	DEPTH / DIAMETER: 14', 2"
PROJECT NO	INITIAL DTW: 10'
SITE LOCATION: 1137 65th St Oakland	FINAL DTW:
NAME: Fernando Ambriz	CALCULATED WELL VOLUME:
DEVELOPMENT METHOD:	TOTAL WATER REMOVED

Well Dia. (OD-INCH):	3/4	1	2	4	4.5	6	8			
Gallons / Linear FT:	(0.02)	(0.04)	(0.17	(0.66)	(0.83)	(1.5)	(2.6)			

TIME	Cum. Vol Rmvd. (G)	pH	COND (mS/cm)	TURB	DO (mg/)L	TEMP (Deg C)	SAL (%)	Appearance / Comments
11:20	0	6.59	1.08		9.69	17.1	.04	Dark Gray
11:25	8	6.48	1.13		9.68	17.1	.05	" "
11:30	11	6.42	1.05	890	9.62	17.0	.04	Gray
11:36	15	6.41	1.03	686	9.61	17.0	.04	Light Gray
11:41	20	6.37	1.02	561	9.50	17.0	.04	Very Light Gray
11:50	30	6.34	1.01	320	9.41	17.1	.04	Clear

WELL DEVELOPMENT FORM

PRECISION SAMPLING INC

PROJECT NO:

SITE LOCATION: 1137 65th St Oakland

NAME: Fernando Ambris

DEVELOPMENT METHOD:

DATE: 5-24-04

WELL #: MW-5B

DEPTH / DIAMETER: 23' - 2"

INITIAL DTW: 13

FINAL DTW:

CALCULATED WELL VOLUME:

TOTAL WATER REMOVED 19 Bal

Well Dia. (OD-INCH):	3/4	1	2	4	4.5	6	8			
Gallons / Linear FT:	(0.02)	(0.04)	(0.17	(0.66)	(0.83)	(1.5)	(2.6)			

TIME	Cum. Vol. Rmvd. (G)	pH	COND (mS/cm)	TURB	DO (mg/)L	TEMP (Deg C)	SAL (%)	Appearance / Comments
10:23	0	6.76	1.65		9.83	17.4	.07	Brown
10:27	5	6.64	1.44	540	9.62	17.5	.06	Light Brown
10:34	10	6.46	1.50	620	9.60	17.5	.06	" "
10:40	15	6.42	1.46	450	9.61	17.4	.06	Very "
10:50	19	6.44	1.48	286	9.64	17.4	.06	Clear

WELL DEVELOPMENT FORM

DATE: 5-24-04

PRECISION SAMPLING INC

WELL #: MW-4B

DEPTH / DIAMETER: 21', 2"

PROJECT NO:

INITIAL DTW: 13'

SITE LOCATION: 1137 65th St Oakland

FINAL DTW:

NAME: Fernando Ambriz

CALCULATED WELL VOLUME:

DEVELOPMENT METHOD:

TOTAL WATER REMOVED 22 Gal

Well Dia (OD-INCH):	3/4	1	2	4	4.5	6	8			
Gallons / Linear FT:	(0.02)	(0.04)	(0.17	(0.66)	(0.83)	(1.5)	(2.6)			

TIME	Cum. Vol. Rmvd. (G)	pH	COND (mS/cm)	TURB	DO (mg/)L	TEMP (Deg C)	SAL (%)	Appearance / Comments
9:30	0	7.64	1.85		9.50	17.3	.08	Drak Broun
9:38	11	7.30	2.10	890	9.03	18.6	.00	Broun
9:44	12	7.41	2.08	809	9.01	18.8	.10	Light Broun
9:50	15	7.36	2.01	620	9.10	18.8	.10	Very Light Broun
9:59	22	7.30	2.06	320	9.13	18.6	.11	Clear

WELL DEVELOPMENT FORM

PRECISION SAMPLING INC

PROJECT NO

SITE LOCATION: 1137 65 H St Oakland

NAME: Fernando Ambriz

DEVELOPMENT METHOD:

DATE: 5-24-04

WELL #: MW-4A

DEPTH / DIAMETER: 13', 2"

INITIAL DTW: 10'

FINAL DTW:

CALCULATED WELL VOLUME:

TOTAL WATER REMOVED 18 Gal

Well Dia. (OD-INCH):	3/4	1	2	4	4.5	6	8			
Gallons / Linear FT:	(0.02)	(0.04)	(0.17	(0.66)	(0.83)	(1.5)	(2.6)			

TIME	Cum. Vol. Rmvd. (G)	pH	COND (mS/cm)	TURB	DO (mg/)L	TEMP (Deg C)	SAL (%)	Appearance / Comments
855	0	9.56	.750		8.60	19.8	.03	Drak Brown
859	8	10.42	.765	780	8.67	19.2	.03	Light Brown
904	12	10.09	.656	460	8.91	18.7	.02	Very Light Brown
909	15	10.07	.652	351	8.90	18.4	.02	" "
914	18	10.05	.650	210	8.95	18.2	.02	Clear

WELL DEVELOPMENT FORM	DATE: 5-24-04
PRECISION SAMPLING INC	WELL #: MW-4C
	DEPTH / DIAMETER: 32', 2"
PROJECT NO:	INITIAL DTW: 21
SITE LOCATION: 1137 65th St Oakland	FINAL DTW:
NAME: Fernando Ambriz	CALCULATED WELL VOLUME: 19 Gal
DEVELOPMENT METHOD: Surface Pump	TOTAL WATER REMOVED

Well Dia. (OD-INCH):	3/4	1	2	4	4.5	6	8			
Gallons / Linear FT:	(0.02)	(0.04)	(0.17	(0.66)	(0.83)	(1.5)	(2.6)			

TIME	Cum. Vol. Rmvd. (G)	pH	COND (mS/cm)	TURB	DO (mg/)L	TEMP (Deg C)	SAL (%)	Appearance / Comments
8:25	0	9.11	1.86		8.93	18.1	.08	Brown
8:34	6	9.62	1.46	773	8.26	19.8	.06	Light Brown
8:40	12	9.15	1.44	414	8.09	20.6	.06	Very Light Brown
8:49	19	8.79	1.40	230	7.94	21.1	.06	Clear

WELL DEVELOPMENT FORM

PRECISION SAMPLING INC

PROJECT NO:

SITE LOCATION: 1137 65th St Oakland

NAME: Fernando Ambriz

DEVELOPMENT METHOD:

DATE: 5-24-04

WELL #: MW-2A

DEPTH / DIAMETER: 13', 4"

INITIAL DTW: 10

FINAL DTW:

CALCULATED WELL VOLUME:

TOTAL WATER REMOVED 20 Gal

Well Dia. (OD-INCH):	3/4	1	2	4	4.5	6	8			
Gallons / Linear FT:	(0.02)	(0.04)	(0.17	(0.66)	(0.83)	(1.5)	(2.6)			

TIME	Cum. Vol. Rmvd. (G)	pH	COND (mS/cm)	TURB	DO (mg/)L	TEMP (Deg C)	SAL (%)	Appearance / Comments
12:40	0	8.73	.528		9.14	19.5	.02	Drak Gray
12:49	8	7.85	.657	840	8.79	19.8	.03	Gray
12:57	14	7.63	.646	624	8.78	19.2	.02	Light Gray
1:09	15	7.40	.686	460	8.80	19.5	.02	Very Light Gray
1:15	20	7.20	.661	340	8.62	19.7	.02	Clear

WELL DEVELOPMENT FORM	DATE: 5-24-04
PRECISION SAMPLING INC	WELL #: MW-1C
	DEPTH / DIAMETER: 35'-2"
PROJECT NO.	INITIAL DTW: 24
SITE LOCATION: 1137 65th St Oakland	FINAL DTW:
NAME: Fernando Ambriz	CALCULATED WELL VOLUME:
DEVELOPMENT METHOD:	TOTAL WATER REMOVED 25

Well Dia. (OD-INCH):	3/4	1	2	4	4.5	6	8			
Gallons / Linear FT:	(0.02)	(0.04)	(0.17	(0.66)	(0.83)	(1.5)	(2.6)			

TIME	Cum. Vol. Rmvd. (G)	pH	COND (mS/cm)	TURB	DO (mg/)L	TEMP (Deg C)	SAL (%)	Appearance / Comments
130	0	7.30	1.72		8.33	20.5	.08	Dark Brown
136	8	7.25	1.31		8.87	19.3	.05	Dark Brown
141	10	6.83	1.26		9.03	19.2	.05	Brown
145	12	6.77	1.25	820	8.91	19.3	.05	Light Brown
152	15	6.83	1.20	624	8.97	18.9	.05	Light Brown
154	20	6.78	1.22	460	8.95	18.9	.05	Very Light Brown
206	25	6.70	1.21	310	9.00	18.8	.05	Clear

WELL DEVELOPMENT FORM	DATE: 5-24-04
PRECISION SAMPLING INC	WELL #: MW-1B
	DEPTH / DIAMETER: 20', 2"
PROJECT NO:	INITIAL DTW: 13
SITE LOCATION: 1137 65th St Oakland	FINAL DTW:
NAME: Fernando Ambriz	CALCULATED WELL VOLUME:
DEVELOPMENT METHOD:	TOTAL WATER REMOVED 19

Well Dia. (OD-INCH):	3/4	1	2	4	4.5	6	8			
Gallons / Linear FT:	(0.02)	(0.04)	(0.17)	(0.66)	(0.83)	(1.5)	(2.6)			

TIME	Cum. Vol. Rmvd. (G)	pH	COND (mS/cm)	TURB	DO (mg/)L	TEMP (Deg C)	SAL (%)	Appearance / Comments
2:20	0	7.26	2.42		8.91	19.2	.11	Dark Gray
2:29	5	7.20	2.40	810	8.88	19.3	.10	Gray
2:36	12	7.26	2.38	656	8.78	19.2	.08	Light Gray
2:41	16	7.28	2.35	432	8.76	19.2	.08	Very Light Gray
2:49	19	7.27	2.32	306	8.76	19.3	.08	Clear

WELL DEVELOPMENT FORM

PRECISION SAMPLING INC

PROJECT NO.

SITE LOCATION: 1177 65th St Oakland

NAME: Fernando Ambriz

DEVELOPMENT METHOD:

DATE: 5-24-04

WELL #: MW-1 B A

DEPTH / DIAMETER: 20' - 2"

INITIAL DTW: ~~18~~ 10

FINAL DTW:

CALCULATED WELL VOLUME:

TOTAL WATER REMOVED 19 Gal

Well Dia. (OD-INCH):	3/4	1	2	4	4.5	6	8			
Gallons / Linear FT:	(0.02)	(0.04)	(0.17	(0.66)	(0.83)	(1.5)	(2.6)			

TIME	Cum. Vol. Rmvd. (G)	pH	COND (mS/cm)	TURB	DO (mg/)L	TEMP (Deg C)	SAL (%)	Appearance / Comments
3:00	0	8.68	.852	736	8.50	20.5	.02	Light Gray
3:08	10	8.12	1.44	560	8.78	19.7	.06	" "
3:15	15	8.26	.540	384	8.98	19.8	.02	Clear
3:25	19	8.10	1.54	248	8.28	21.6	.07	" "

WELL DEVELOPMENT FORM

DATE: 5-24-04

PRECISION SAMPLING INC

WELL #: MW-6A

DEPTH / DIAMETER: 15', 2"

PROJECT NO:

INITIAL DTW: 9'

SITE LOCATION: 1137 65th St Oakland

FINAL DTW:

NAME: Fernando Ambriz

CALCULATED WELL VOLUME:

DEVELOPMENT METHOD:

TOTAL WATER REMOVED 19 Gal

Well Dia. (OD-INCH):	3/4	1	2	4	4.5	6	8			
Gallons / Linear FT:	(0.02)	(0.04)	(0.17)	(0.68)	(0.83)	(1.5)	(2.6)			

TIME	Cum. Vol. Rmvd. (G)	pH	COND (mS/cm)	TURB	DO (mg/)L	TEMP (Deg C)	SAL (%)	Appearance / Comments
3:45	0	7.30	1.82		8.28	19.5	.07	Dark Brown
3:50	5	7.26	1.90		8.31	19.8	.06	" "
3:56	11	7.28	1.91	860	8.34	19.0	.06	Light Brown
3:59	12	7.24	1.87	621	8.26	19.4	.07	Light Brown
4:06	14	7.20	1.86	0505	8.24	18.9	.06	Very Light Brown
4:12	19	7.27	1.88	309	8.32	18.9	.06	Clear

WELL DEVELOPMENT FORM

PRECISION SAMPLING INC

PROJECT NO

SITE LOCATION: 1137 65th St Oakland

NAME: Fernando Ambriz

DEVELOPMENT METHOD:

DATE: 5-24-04

WELL #: MW-6B

DEPTH / DIAMETER: 23' - 2"

INITIAL DTW: 13'

FINAL DTW:

CALCULATED WELL VOLUME:

TOTAL WATER REMOVED 20

Well Dia. (OD-INCH):	3/4	1	2	4	4.5	6	8			
Gallons / Linear FT:	(0.02)	(0.04)	(0.17	(0.66)	(0.83)	(1.5)	(2.8)			

TIME	Cum. Vol. Rmvd. (G)	pH	COND (mS/cm)	TURB	DO (mg/)L	TEMP (Deg C)	SAL (%)	Appearance / Comments
4:20	0	6.81	1.79		8.21	19.1	.06	Dark Brown
4:26	5	6.84	1.76	870	8.30	19.0	.04	Brown
4:29	8	6.78	1.80	620	8.34	19.2	.05	Light Brown
4:35	12	6.76	1.78	510	8.28	19.3	.04	Very Light Brown
4:40	16	6.82	1.79	420	8.26	19.4	.06	Clear
4:45	20	6.80	1.79	310	8.50	19.6	.06	Clear

WELL DEVELOPMENT FORM	DATE: [redacted] 5-24-04
PRECISION SAMPLING INC	WELL #: MW-6C
	DEPTH / DIAMETER: 35', 2"
PROJECT NO	INITIAL DTW: 22
SITE LOCATION: 1137 65th St Oakland	FINAL DTW:
NAME: Fernando Ambriz	CALCULATED WELL VOLUME:
DEVELOPMENT METHOD:	TOTAL WATER REMOVED 28

Well Dia. (OD-INCH):	3/4	1	2	4	4.5	6	8			
Gallons / Linear FT:	(0.02)	(0.04)	(0.17	(0.66)	(0.83)	(1.5)	(2.6)			

TIME	Cum. Vol. Rmvd. (G)	pH	COND (mS/cm)	TURB	DO (mg/)L	TEMP (Deg C)	SAL (%)	Appearance / Comments
5:00	0	7.10	1.82		8.10	20.1	.02	Brown
5:08	7	7.08	1.84	870	8.16	20.0	.02	Light Brown
5:16	11	7.11	1.79	614	8.11	20.2	.03	Light Brown
5:20	16	7.08	1.76	6420	8.16	20.1	.03	Very Light Brown
5:25	20	7.10	1.80	390	8.10	20.1	.02	Clear
5:31	28	7.09	1.80	280	8.12	20.0	.02	Clear

CAMBRIA

Groundwater Monitoring Field Sheet

Well ID	Time	DTP	DTW	Depth to Bottom	Product Thickness	Amount of Product Removed	Casing Diam.	Comments
MW-1A	5:15		4.50	14.07				
MW-1B	5:10		14.40	19.53				
MW-1C	5:05		9.42	34.40				
MW-2A	5:55		4.24	10.82				4"
MW-3A	5:50		4.32	13.40				
MW-4A	5:35		2.45	12.40				
MW-4B	5:40		5.02	20.61				
MW-4C	5:45		8.40	31.85				
MW-5B	5:00		8.82	22.75				
MW-6A	5:30		6.00	14.25				
MW-6B	5:25		8.30	21.80				
MW-6C	5:20		9.70	33.70				
MW-7A	2:15		4.50	9.85				1"

Project Name: Nadx

Project Number/Task: 522-1000/027

Technician: J. Hill

Date: 6-3-04

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WELL SAMPLING FORM

Project Name: Nady	Cambria Mgr: JD	Well ID: MW-1A
Project Number: 522-1000	Date: 6-3-04	Well Yield:
Site Address: 1137-1167 65th St. Oakland, CA	Sampling Method: disposable bailer	Well Diameter: 2 ☐ pvc
		Technician(s): SG
Initial Depth to Water: 4.50	Total Well Depth: 14.07	Water Column Height: 9.57
Volume/ft: 0.16	1 Casing Volume: 1.53	3 Casing Volumes: 4.59
Purging Device: disposable bailer	Did Well Dewater?: no	Total Gallons Purged: 4
Start Purge Time: 10:00	Stop Purge Time: 10:14	Total Time: 14mins

1 Casing Volume = Water column height x Volume/ ft.

Well Diam.	Volume/ft (gallons)
2"	0.16
4"	0.65
6"	1.47

Time	Casing Volume	Temp. (°C)	pH	Cond. (uS)	Comments
10:05	1.5	18.7	7.13	1510	
10:10	3	18.6	7.08	1690	
10:15	4	18.6	7.05	1582	

Fe = mg/L **ORP =** mV **DO =** mg/L

Sample ID	Date	Time	Container Type	Preservative	Analytes	Analytic Method
MW-1A	6-3-04	10:20	4 VOA 1 Amb	HCl		

CAMBRIA

WELL SAMPLING FORM

Project Name: Nady	Cambria Mgr: JD	Well ID: MW-1B
Project Number: 522-1000	Date: 6-3-04	Well Yield:
Site Address: 1137-1167 65th St. Oakland, CA	Sampling Method: disposable bailer	Well Diameter: 2 ☐ pvc
		Technician(s): SG
Initial Depth to Water: 14.40	Total Well Depth: 19.53	Water Column Height: 5.13
Volume/ft: 0.16	1 Casing Volume: 0.82	3 Casing Volumes: 2.46
Purging Device: disposable bailer	Did Well Dewater?: no	Total Gallons Purged: 2
Start Purge Time: 9:30	Stop Purge Time:	Total Time:

1 Casing Volume = Water column height x Volume/ ft.

Well Diam.	Volume/ft (gallons)
2"	0.16
4"	0.65
6"	1.47

Time	Casing Volume	Temp. (°C)	pH	Cond. (uS)	Comments
9:35	1	18.8	7.04	620	
9:40	1.5	18.7	7.01	1013	
9:45	2	18.8	6.99	970	

Fe = **mg/L** **ORP =** **mV** **DO =** **mg/L**

Sample ID	Date	Time	Container Type	Preservative	Analytes	Analytic Method
MW-1B	6-3-04	9:50	4 VOA 1 Amb	HCl		

CAMBRIA

WELL SAMPLING FORM

Project Name: Nady	Cambria Mgr: JD	Well ID: MW-1C
Project Number: 522-1000	Date: 6-3-04	Well Yield:
Site Address: 1137-1167 65th St. Oakland, CA	Sampling Method: disposable bailer	Well Diameter: ☐ pvc
		Technician(s): SG
Initial Depth to Water: 9.42	Total Well Depth: 34.40	Water Column Height: 24.98
Volume/ft: 0.16	1 Casing Volume: 3.99	3 Casing Volumes: 11.99
Purging Device: disposable bailer	Did Well Dewater?: no	Total Gallons Purged: 12
Start Purge Time: 8:45	Stop Purge Time: 9:14	Total Time: 29mins

1 Casing Volume = Water column height x Volume/ ft.

Well Diam.	Volume/ft (gallons)
2"	0.16
4"	0.65
6"	1.47

Time	Casing Volume	Temp. (°C)	pH	Cond. (uS)	Comments
8:55	4	18.8	7.03	703	
9:05	8	18.6	6.97	820	
9:15	12	18.7	6.99	857	

Fe = **mg/L** **ORP =** **mV** **DO =** **mg/L**

Sample ID	Date	Time	Container Type	Preservative	Analytes	Analytic Method
MW-1C	6-3-04	9:20	4voa 1Amb	HCl		

CAMBRIA

WELL SAMPLING FORM

Project Name: Nady	Cambria Mgr: JD	Well ID: MW-2A
Project Number: 522-1000	Date: 6-3-04	Well Yield:
Site Address: 1137-1167 65th St. Oakland, CA	Sampling Method: disposable bailer	Well Diameter: ☐ pvc Technician(s): SG
Initial Depth to Water: 4.24	Total Well Depth: 10.82	Water Column Height: 6.58
Volume/ft: 0.65	1 Casing Volume: 4.27	3 Casing Volumes: 12.83
Purging Device: 4" pvc bailer	Did Well Dewater?: no	Total Gallons Purged: 13
Start Purge Time: 3:05	Stop Purge Time: 3:19	Total Time: 14mins

1 Casing Volume = Water column height x Volume/ ft.

Well Diam.	Volume/ft (gallons)
2"	0.16
4"	0.65
6"	1.47

Time	Casing Volume	Temp. (°C)	pH	Cond. (uS)	Comments
3:10	5	19.1	7.00	1295	
3:15	10	19.1	6.95	1439	
3:20	13	19.1	6.97	1604	

Fe = **mg/L** **ORP =** **mV** **DO =** **mg/L**

Sample ID	Date	Time	Container Type	Preservative	Analytes	Analytic Method
MW-2A	6-3-04	3:25	4 voa 1 Amb	HCl		

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NSM 5/31/94

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WELL SAMPLING FORM

Project Name: Nady	Cambria Mgr: JD	Well ID: MW-3A
Project Number: 522-1000	Date: 6-3-04	Well Yield:
Site Address: 1137-1167 65th St. Oakland, CA	Sampling Method: disposable bailer	Well Diameter: 2" pvc
		Technician(s): SG
Initial Depth to Water: 4.32	Total Well Depth: 13.40	Water Column Height: 9.08
Volume/ft: 0.16	1 Casing Volume: 1.45	3 Casing Volumes: 4.35
Purging Device: disposable bailer	Did Well Dewater?: no	Total Gallons Purged: 4
Start Purge Time: 2:40	Stop Purge Time: 2:54	Total Time: 14 mins

1 Casing Volume = Water column height x Volume/ ft.

Well Diam.	Volume/ft (gallons)
2"	0.16
4"	0.65
6"	1.47

Time	Casing Volume	Temp. (°C)	pH	Cond. (uS)	Comments
2:45	1.5	19.2	7.01	610	
2:50	3	19.1	7.04	631	
2:55	4	19.0	7.07	650	

Fe = **mg/L** **ORP =** **mV** **DO =** **mg/L**

Sample ID	Date	Time	Container Type	Preservative	Analytes	Analytic Method
MW-3A	6-3-04	3:00	4 VOA 1 Amb	HCl		

CAMBRIA

WELL SAMPLING FORM

Project Name: Nady	Cambria Mgr: JO	Well ID: MW-4A
Project Number: 5221000	Date: 6-3-04	Well Yield:
Site Address: 1137-1167 65th St. Oakland, CA	Sampling Method: disposable bailer	Well Diameter: 2 ☐ pvc
		Technician(s): SG
Initial Depth to Water: 2.45	Total Well Depth: 12.40	Water Column Height: 9.95
Volume/ft: 0.16	1 Casing Volume: 1.59	3 Casing Volumes: 4.77
Purging Device: disposable bailer	Did Well Dewater?: NO	Total Gallons Purged: 5
Start Purge Time: 1:50	Stop Purge Time: 2:04	Total Time: 14mins

1 Casing Volume = Water column height x Volume/ ft.

Well Diam.	Volume/ft (gallons)
2"	0.16
4"	0.65
6"	1.47

Time	Casing Volume	Temp. (°C)	pH	Cond. (uS)	Comments
1:55	1.5	19.0	7.00	1391	
2:00	3	18.9	6.99	1105	
2:05	5	19.1	6.98	1239	

Fe = **mg/L** **ORP =** **mV** **DO =** **mg/L**

Sample ID	Date	Time	Container Type	Preservative	Analytes	Analytic Method
MW-4A	6-3-04	2:10	4 VOA 1 Amb	HCl		

CAMBRIA

WELL SAMPLING FORM

Project Name: Nady	Cambria Mgr: JD	Well ID: MW-4B
Project Number: 522-1000	Date: 6-3-04	Well Yield:
Site Address: 1137-1167 65th St. Oakland, CA	Sampling Method: disposable bailer	Well Diameter: 2 ☐ pvc
		Technician(s): SG
Initial Depth to Water: 5.02	Total Well Depth: 20.61	Water Column Height: 15.59
Volume/ft: 0.16	1 Casing Volume: 2.49	3 Casing Volumes: 7.48
Purging Device: disposable bailer	Did Well Dewater?: NO	Total Gallons Purged: 7
Start Purge Time: 1:25	Stop Purge Time: 1:39	Total Time: 14mins

1 Casing Volume = Water column height x Volume/ ft.

Well Diam.	Volume/ft (gallons)
2"	0.16
4"	0.65
6"	1.47

Time	Casing Volume	Temp. (°C)	pH	Cond. (uS)	Comments
1:30	2.5	19.1	7.05	830	
1:35	5	19.3	7.01	651	
1:40	7	19.3	7.02	693	

Fe = **mg/L** **ORP =** **mV** **DO =** **mg/L**

Sample ID	Date	Time	Container Type	Preservative	Analytes	Analytic Method
MW-4B	6-3-04	1:45	4voa 1Amb	HCl		

CAMBRIA

WELL SAMPLING FORM

Project Name: Nady	Cambria Mgr: JD	Well ID: MW-4C
Project Number: 522-1000	Date: 6-3-04	Well Yield:
Site Address: 1137-1167 65th St. Oakland, CA	Sampling Method: disposable bailer	Well Diameter: 2 ☐ pvc
		Technician(s): SG
Initial Depth to Water: 8.40	Total Well Depth: 31.85	Water Column Height: 23.45
Volume/ft: 0.16	1 Casing Volume: 3.75	3 Casing Volumes: 11.25
Purging Device: disposable bailer	Did Well Dewater?: no	Total Gallons Purged: 11
Start Purge Time: 12:45	Stop Purge Time: 1:14	Total Time: 29 mins

1 Casing Volume = Water column height x Volume/ ft.

Well Diam.	Volume/ft (gallons)
2"	0.16
4"	0.65
6"	1.47

Time	Casing Volume	Temp. (°C)	pH	Cond. (uS)	Comments
12:55	4	19.1	7.02	1325	
1:05	8	18.9	6.95	1068	
1:15	11	19.0	6.99	921	

Fe = **mg/L** **ORP =** **mV** **DO =** **mg/L**

Sample ID	Date	Time	Container Type	Preservative	Analytes	Analytic Method
MW-4C	6-3-04	1:20	4 voa 1 Amb	HCl		

CAMBRIA

WELL SAMPLING FORM

Project Name: Nady	Cambria Mgr: JO	Well ID: MW-5B
Project Number: 522-1000	Date: 6-3-04	Well Yield:
Site Address: 1137-1167 65th St. Oakland, CA	Sampling Method: disposable bailer	Well Diameter: 2 ☐ pvc
		Technician(s): SG
Initial Depth to Water: 8.82	Total Well Depth: 22.75	Water Column Height: 13.93
Volume/ft: 0.16	1 Casing Volume: 2.22	3 Casing Volumes: 6.66
Purging Device: disposable bailer	Did Well Dewater?: no	Total Gallons Purged: 6
Start Purge Time: 10:35	Stop Purge Time: 10:49	Total Time: 14 min

1 Casing Volume = Water column height x Volume/ ft.

Well Diam.	Volume/ft (gallons)
2"	0.16
4"	0.65
6"	1.47

Time	Casing Volume	Temp. (°C)	pH	Cond. (uS)	Comments
10:40	2	18.5	7.02	7.12	
10:45	4	18.7	6.99	7.10	
10:50	6	18.8	6.98	7.09	

Fe = **mg/L** **ORP =** **mV** **DO =** **mg/L**

Sample ID	Date	Time	Container Type	Preservative	Analytes	Analytic Method
MW-5B	6-3-04	10:55	4 voa 1 Amb	HCl		

CAMBRIA

WELL SAMPLING FORM

Project Name: Nady	Cambria Mgr: JD	Well ID: MW-6A
Project Number: 522-1000	Date: 6-3-04	Well Yield:
Site Address: 1137-1167 65th St. Oakland, CA	Sampling Method: disposable bailer	Well Diameter: 2 ☐ pvc
		Technician(s): SG
Initial Depth to Water: 6.00	Total Well Depth: 14.25	Water Column Height: 8.25
Volume/ft: 0.16	1 Casing Volume: 1.32	3 Casing Volumes: 3.96
Purging Device: disposable bailer	Did Well Dewater?: no	Total Gallons Purged: 4
Start Purge Time: 8:10	Stop Purge Time: 8:24	Total Time: 14mins

1 Casing Volume = Water column height x Volume/ ft.

Well Diam.	Volume/ft (gallons)
2"	0.16
4"	0.65
6"	1.47

Time	Casing Volume	Temp. (°C)	pH	Cond. (uS)	Comments
8:15	1.5	18.9	7.07	870	
8:20	3	18.7	7.05	635	
8:25	4	18.8	7.02	792	

Fe = **mg/L** **ORP =** **mV** **DO =** **mg/L**

Sample ID	Date	Time	Container Type	Preservative	Analytes	Analytic Method
MW-6A	6-3-04	8:30	4 voa 1 Amb	HCl		

CAMBRIA

WELL SAMPLING FORM

Project Name: Nady	Cambria Mgr: JD	Well ID: MW-6B
Project Number: 522-1000	Date: 6-3-04	Well Yield:
Site Address: 1137-1167 65th St. Oakland, CA	Sampling Method: disposable bailer	Well Diameter: 2 ☐ pvc
		Technician(s): SG
Initial Depth to Water: 8.30	Total Well Depth: 21.80	Water Column Height: 13.5
Volume/ft: 0.16	1 Casing Volume: 2.16	3 Casing Volumes: 6.48
Purging Device: disposable bailer	Did Well Dewater?: no	Total Gallons Purged: 6
Start Purge Time: 7:40	Stop Purge Time: 7:54	Total Time: ~~7:55~~ 14 mins

1 Casing Volume = Water column height x Volume/ ft.

Well Diam.	Volume/ft (gallons)
2"	0.16
4"	0.65
6"	1.47

Time	Casing Volume	Temp. (°C)	pH	Cond. (uS)	Comments
7:45	2	18.5	7.15	1041	
7:50	4	18.5	7.19	728	
7:55	6	18.5	7.19	850	

Fe = **mg/L** **ORP =** **mV** **DO =** **mg/L**

Sample ID	Date	Time	Container Type	Preservative	Analytes	Analytic Method
MW-6B	6-3-04	8:00	4 voa 1 Amb	HCl		

CAMBRIA

WELL SAMPLING FORM

Project Name: Nady	Cambria Mgr: JO	Well ID: MW-6C
Project Number: 522-1000	Date: 6-3-04	Well Yield:
Site Address: 1137-1167 65th St. Oakland, CA	Sampling Method: disposable bailer	Well Diameter: 2" pvc
		Technician(s): SG
Initial Depth to Water: 9.70	Total Well Depth: 33.70	Water Column Height: 24.00
Volume/ft: 0.16	1 Casing Volume: 3.84	3 Casing Volumes: 11.52
Purging Device: disposable bailer	Did Well Dewater?: no	Total Gallons Purged: 11
Start Purge Time: 7:00	Stop Purge Time: 7:29	Total Time: 29 mins

1 Casing Volume = Water column height x Volume/ ft.

Well Diam.	Volume/ft (gallons)
2"	0.16
4"	0.65
6"	1.47

Time	Casing Volume	Temp. (°C)	pH	Cond. (uS)	Comments
7:10	4	18.7	7.03	690	
7:20	8	18.5	7.12	410	
7:30	11	18.8	7.08	451	

Fe = **mg/L** **ORP =** **mV** **DO =** **mg/L**

Sample ID	Date	Time	Container Type	Preservative	Analytes	Analytic Method
MW-6C	6-3-04	7:35	4 voa 1 Amb	HCl		

CAMBRIA

WELL SAMPLING FORM

Project Name: Nady	Cambria Mgr: JO	Well ID: MW-7A
Project Number: 522-1000	Date: 6-3-04	Well Yield:
Site Address: 1137-1167 65th St. Oakland, CA	Sampling Method: disposable bailer	Well Diameter: 1 ☐ pvc
		Technician(s): SG
Initial Depth to Water: 4.50	Total Well Depth: 9.85	Water Column Height: 5.35
Volume/ft: 0.0055	1 Casing Volume: 0.029	3 Casing Volumes: .088
Purging Device:	Did Well Dewater?: Yes	Total Gallons Purged:
Start Purge Time: 2:20	Stop Purge Time:	Total Time:

1 Casing Volume = Water column height x Volume/ ft.

Well Diam.	Volume/ft (gallons)
2"	0.16
4"	0.65
6"	1.47

Time	Casing Volume	Temp. (°C)	pH	Cond. (uS)	Comments
2:21		dewatered			

Fe = **mg/L** **ORP =** **mV** **DO =** **mg/L**

Sample ID	Date	Time	Container Type	Preservative	Analytes	Analytic Method
MW-7A	6-3-04	2:35	4voa [redacted]b.	HCl		

D:\TEMPLATE\FORMS\FIELD\WELLSAMP2.WPD
NSM 5/31/94

FILE COPY

CHAIN OF CUSTODY RECORD

McCAMPBELL ANALYTICAL INC.
110 2nd AVENUE SOUTH, #D7
PACHECO, CA 94553-5560
Telephone: (925) 798-1620 Fax: (925) 798-1622

TURN AROUND TIME: ☐ RUSH ☐ 24 HOUR ☐ 48 HOUR ☒ 5 DAY

EDF Required? ☐ Yes ☒ No

Report To: Matt Meyers	Bill To: Cambria
Company: Cambria Environmental Technology, Inc.	
5900 Hollis Street, Suite A	
Emeryville, Ca 94608	E-mail: mmeyers@cambria-env.com
Tele: (510) 420-3314	Fax: (510) 420-9170
Project #: 522-1000-027	Project Name: John Nady
Project Location: 1167 65th Street, Oakland	
Sampler Signature:	

SAMPLE ID (Field Point Name)	LOCATION	SAMPLING Date	SAMPLING Time	# Containers	Type Containers	MATRIX Water	Soil	Air	Sludge	Other	METHOD PRESERVED Ice	HCl	HNO_3	Other	Analysis Request: BTEX & TPH as Gas & Stoddard Solvent (602/8020 + 8015)/ MTBE	TPH as Diesel & Motor Oil (8015)	HVOCs (8010)	Other	Comments
MW-1A		6-3-04	10:20	5	VOA Amb	X					X	X			X	X	X		
MW-1B			9:50																
MW-1C			9:20																
MW-2A			3:25																
MW-3A			3:00																
MW-4A			2:10																
MW-4B			1:45																
MW-4C			1:20																
MW-5B			10:55																
MW-6A			8:30																
MW-6B			8:00																
MW-6C			7:35	X	X	X					X	X			X	X	X		
MW-7A		X	2:35	4	VOA	X					X	X			X		X		

	Date:	Time:	Received By:
Relinquished By:	6-3-04	4:00	secure location
Relinquished By:			
Relinquished By:			

Remarks:
Lowest possible detection limits.
Please email results.

APPENDIX E

Standard Field Procedures

STANDARD FIELD PROCEDURES FOR MONITORING WELL INSTALLATION

This document presents standard field methods for drilling and sampling soil borings and installing, developing and sampling groundwater monitoring wells. These procedures are designed to comply with Federal, State and local regulatory guidelines. Specific field procedures are summarized below.

DRILLING AND SAMPLING

Objectives

Soil samples are collected to characterize subsurface lithology, assess whether the soils exhibit obvious hydrocarbon or other compound vapor or staining, and to collect samples for analysis at a State-certified laboratory. All borings are logged using the Unified Soil Classification System by a trained geologist working under the supervision of a California Registered Geologist (RG).

Soil Boring and Sampling

Soil borings are typically drilled using hollow-stem augers or direct-push technologies such as the Geoprobe®. Prior to drilling, the first 8 ft of the boring are cleared using an air or water knife and vacuum extraction. This minimizes the potential for impacting utilities.

Soil samples are collected at least every five ft to characterize the subsurface sediments and for possible chemical analysis. Additional soil samples are collected near the water table and at lithologic changes. Samples are collected using lined split-barrel or equivalent samplers driven into undisturbed sediments at the bottom of the borehole.

Drilling and sampling equipment is steam-cleaned prior to drilling and between borings to prevent cross-contamination. Sampling equipment is washed between samples with trisodium phosphate or an equivalent EPA-approved detergent.

Sample Analysis

Sampling tubes chosen for analysis are trimmed of excess soil and capped with Teflon tape and plastic end caps. Soil samples are labeled and stored at or below 4o C on either crushed or dry ice, depending upon local regulations. Samples are transported under chain-of-custody to a State-certified analytic laboratory.

Field Screening

One of the remaining tubes is partially emptied leaving about one-third of the soil in the tube. The tube is capped with plastic end caps and set aside to allow hydrocarbons to volatilize from the soil. After ten to fifteen minutes, a portable volatile vapor analyzer measures volatile hydrocarbon vapor concentrations in the tube headspace, extracting the vapor through a slit in the cap. Volatile vapor analyzer measurements are used along with the field observations, odors, stratigraphy and groundwater depth to select soil samples for analysis.

Water Sampling

Water samples, if they are collected from the boring, are either collected using a driven Hydropunch® type sampler or are collected from the open borehole using bailers. The groundwater samples are decanted into the appropriate containers supplied by the analytic laboratory. Samples are labeled, placed in protective foam sleeves, stored on crushed ice at or below 4oC, and transported under chain-of-custody to the laboratory. Laboratory-supplied trip blanks accompany the samples and are analyzed to check for cross-contamination. An equipment blank may be analyzed if non-dedicated sampling equipment is used.

MONITORING WELL INSTALLATION, DEVELOPMENT AND SAMPLING

Well Construction and Surveying

Groundwater monitoring wells are installed to monitor groundwater quality and determine the groundwater elevation, flow direction and gradient. Well depths and screen lengths are based on groundwater depth, occurrence of hydrocarbons or other compounds in the borehole, stratigraphy and State and local regulatory guidelines. Well screens typically extend 10 to 15 fee below and 5 feet above the static water level at the time of drilling. However, the well screen will generally not extend into or through a clay layer that is at least three feet thick.

Well casing and screen are flush-threaded, Schedule 40 PVC. Screen slot size varies according to the sediments screened, but slots are generally 0.010 or 0.020 inches wide. A rinsed and graded sand occupies the annular space between the boring and the well screen to about one to two feet above the well screen. A two feet thick hydrated bentonite seal separates the sand from the overlying sanitary surface seal composed of Portland type I,II cement.

Well-heads are secured by locking well-caps inside traffic-rated vaults finished flush with the ground surface. A stovepipe may be installed between the well-head and the vault cap for additional security.

The well top-of-casing elevation is surveyed with respect to mean sea level and the well is surveyed for horizontal location with respect to an onsite or nearby offsite landmark.

Well Development

Wells are generally developed using a combination of groundwater surging and extraction. Surging agitates the groundwater and dislodges fine sediments from the sand pack. After about ten minutes of surging, groundwater is extracted from the well using bailing, pumping and/or reverse air-lifting through an eductor pipe to remove the sediments from the well. Surging and extraction continue until at least ten well-casing volumes of groundwater are extracted and the sediment volume in the groundwater is negligible. This process usually occurs prior to installing the sanitary surface seal to ensure sand pack stabilization. If development occurs after surface seal installation, then development occurs 24 to 72 hours after seal installation to ensure that the Portland cement has set up correctly.

All equipment is steam-cleaned prior to use and air used for air-lifting is filtered to prevent oil entrained in the compressed air from entering the well. Wells that are developed using air-lift evacuation are not sampled until at least 24 hours after they are developed.

Groundwater Sampling

Depending on local regulatory guidelines, three to four well-casing volumes of groundwater are purged prior to sampling. Purging continues until groundwater pH, conductivity, and temperature have stabilized. Groundwater samples are collected using bailers or pumps and are decanted into the appropriate containers supplied by the analytic laboratory. Samples are labeled, placed in protective foam sleeves, stored on crushed ice at or below 4oC, and transported under chain-of-custody to the laboratory. Laboratory-supplied trip blanks accompany the samples and are analyzed to check for cross-contamination. An equipment blank may be analyzed if non-dedicated sampling equipment is used.

Waste Handling and Disposal

Soil cuttings from drilling activities are usually stockpiled onsite and covered by plastic sheeting. At least three individual soil samples are collected from the stockpiles and composited at the analytic laboratory. The composite sample is analyzed for the same constituents analyzed in the borehole samples in addition to any analytes required by the receiving disposal facility. Soil cuttings are transported by licensed waste haulers and disposed in secure, licensed facilities based on the composite analytic results.

Groundwater removed during development and sampling is typically stored onsite in sealed 55-gallon drums. Each drum is labeled with the drum number, date of generation, suspected contents, generator identification and consultant contact. Upon receipt of analytic results, the water is either pumped out using a vacuum truck for transport to a licensed waste treatment/disposal facility or the individual drums are picked up and transported to the waste facility where the drum contents are removed and appropriately disposed.

APPENDIX F

Well Permits and Well Survey Report

CONFIDENTIAL

STATE OF CALIFORNIA DWR
WELL COMPLETION REPORT
(WELL LOGS)

REMOVED

CONFIDENTIAL

STATE OF CALIFORNIA DWR
WELL COMPLETION REPORT
(WELL LOGS)

REMOVED

CONFIDENTIAL

STATE OF CALIFORNIA DWR
WELL COMPLETION REPORT
(WELL LOGS)

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WELL COMPLETION REPORT
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STATE OF CALIFORNIA DWR
WELL COMPLETION REPORT
(WELL LOGS)

REMOVED

CONFIDENTIAL

STATE OF CALIFORNIA DWR
WELL COMPLETION REPORT
(WELL LOGS)

REMOVED

ALAMEDA COUNTY PUBLIC WORKS AGENCY

WATER RESOURCES SECTION
399 ELMHURST ST. HAYWARD CA. 94544-1395
PHONE (510) 670-6633 James Yoo
FAX (510)782-1939

APPLICANTS: PLEASE ATTACH A SITE MAP FOR ALL DRILLING PERMIT APPLICATIONS
DESTRUCTION OF WELLS OVER 45 FEET REQUIRES A SEPARATE PERMIT APPLICATION

DRILLING PERMIT APPLICATION

FOR APPLICANT TO COMPLETE

LOCATION OF PROJECT 1137-1167 65th Street
in Oakland, Ca

CLIENT
Name Fredric Schrag
Address 6101 Shellmound St Phone 510-652-2411
City Emeryville Zip 94608

APPLICANT
Name Cambria Environmental Technology, Inc.
Attn: Matt Meyers Fax 510-420-9170
Address 5900 Hollis St, Suite A Phone 510-420-3314
City Emeryville Zip 94608

TYPE OF PROJECT

Well Construction	X	Geotechnical Investigation	
Cathodic Protection		General	
Water Supply		Contamination	
Monitoring	X	Well Destruction	

PROPOSED WATER SUPPLY WELL USE

New Domestic		Replacement Domestic	
Municipal		Irrigation	
Industrial		Other	

DRILLING METHOD:

Mud Rotary		Air Rotary		Auger	X
Cable		Other			

DRILLER'S NAME: Precision Drilling
DRILLER'S LICENSE NO. 636387

WELL PROJECTS
Drill Hole Diameter 8 in. Maximum
Casing Diameter 2 in. Depth 12 ft.
Surface Seal Depth 5 ft. Owner's Well Number MW-1A

GEOTECHNICAL PROJECTS
Number of Borings ____ Maximum
Hole Diameter ____ in Depth ____ ft.

ESTIMATED STARTING DATE 4/30/04
ESTIMATED COMPLETION DATE 5/8/04

I hereby agree to comply with all requirements of this permit and Alameda County Ordinance No. 73-68.

APPLICANT'S SIGNATURE [signature] DATE 4/22/04

PLEASE PRINT NAME Matt Meyers Rev.3-04-02
of Cambria Environmental Technology, Inc.

FOR OFFICE USE
PERMIT NUMBER W04-0467
WELL NUMBER
APN

PERMIT CONDITIONS
Circled Permit Requirements Apply

(A) GENERAL
1. A permit application should be submitted so as to arrive at the ACPWA office five days prior to proposed starting date.
2. Submit to ACPWA within 60 days after completion of permitted original Department of Water Resources Well Completion Report.
3. Permit is void if project not begun within 90 days of approval date.

B. WATER SUPPLY WELLS
1. Minimum surface seal thickness is two inches of cement grout placed by tremie.
2. Minimum seal depth is 50 feet for municipal and industrial wells or 20 feet for domestic and irrigation wells unless a lesser depth is specially approved.

(C) GROUNDWATER MONITORING WELLS INCLUDING PIEZOMETERS
1. Minimum surface seal thickness is two inches of cement grout placed by tremie.
2. Minimum seal depth for monitoring wells is the maximum depth practicable or 20 feet.

D. GEOTECHNICAL
Backfill bore hole by tremie with cement grout or cement grout/sand mixture. Upper two-three feet replaced in kind or with compacted cuttings.

E. CATHODIC
Fill hole above zone with concrete placed by tremie.

F. WELL DESTRUCTION
Send a map of work site. A separate permit is required for wells deeper than 45 feet.

(G) SPECIAL CONDITIONS — MW#1

NOTE: One application must be submitted for each well or well destruction. Multiple borings on one application are acceptable for geotechnical and contamination investigations.

APPROVED [signature] DATE 4-28-04

ALAMEDA COUNTY PUBLIC WORKS AGENCY

WATER RESOURCES SECTION
399 ELMHURST ST. HAYWARD CA. 94544-1395
PHONE (510) 670-6633 James Yoo
FAX (510)782-1939
APPLICANTS: PLEASE ATTACH A SITE MAP FOR ALL DRILLING PERMIT APPLICATIONS
DESTRUCTION OF WELLS OVER 45 FEET REQUIRES A SEPARATE PERMIT APPLICATION

DRILLING PERMIT APPLICATION

FOR APPLICANT TO COMPLETE

LOCATION OF PROJECT 1137-1167 65th Street
Oakland, Ca

CLIENT
Name Fredric Schrag
Address 6301 Shellmound St Phone 510-652-2411
City Emeryville Zip 94608

APPLICANT
Name Cambria Environmental Technology, Inc.
Attn: Matt Meyers Fax 510-420-9170
Address 5900 Hollis St, Suite A Phone 510-420-2314
City Emeryville Zip 94608

TYPE OF PROJECT

Well Construction	☒	Geotechnical Investigation	
Cathodic Protection		General	
Water Supply		Contamination	
Monitoring	X	Well Destruction	

PROPOSED WATER SUPPLY WELL USE

New Domestic		Replacement Domestic	
Municipal		Irrigation	
Industrial		Other	

DRILLING METHOD:

Mud Rotary		Air Rotary		Auger	X
Cable		Other			

DRILLER'S NAME Precision Drilling
DRILLER'S LICENSE NO. 636387

WELL PROJECTS
Drill Hole Diameter 8 in. Maximum Depth 22 ft.
Casing Diameter 2 in.
Surface Seal Depth 10 ft. Owner's Well Number MW-1B

GEOTECHNICAL PROJECTS
Number of Borings ____ Maximum Depth ____ ft.
Hole Diameter ____ in.

ESTIMATED STARTING DATE 4/30/04
ESTIMATED COMPLETION DATE 5/3/04

I hereby agree to comply with all requirements of this permit and Alameda County Ordinance No. 73-68.

APPLICANT'S SIGNATURE _____ DATE 4/22/04
PLEASE PRINT NAME Matt Meyers of Cambria Environmental Technology, Inc.

Rev. 3-04-02

FOR OFFICE USE
PERMIT NUMBER W04-0468
WELL NUMBER
APN

PERMIT CONDITIONS
Circled Permit Requirements Apply

A. GENERAL
1. A permit application should be submitted so as to arrive at the ACPWA office five days prior to proposed starting date.
2. Submit to ACPWA within 60 days after completion of permitted original Department of Water Resources Well Completion Report.
3. Permit is void if project not begun within 90 days of approval date

B. WATER SUPPLY WELLS
1. Minimum surface seal thickness is two inches of cement grout placed by tremie.
2. Minimum seal depth is 50 feet for municipal and industrial wells or 20 feet for domestic and irrigation wells unless a lesser depth is specially approved.

C. GROUNDWATER MONITORING WELLS INCLUDING PIEZOMETERS
1. Minimum surface seal thickness is two inches of cement grout placed by tremie.
2. Minimum seal depth for monitoring wells is the maximum depth practicable or 20 feet.

D. GEOTECHNICAL
Backfill bore hole by tremie with cement grout or cement grout/sand mixture. Upper two-three feet replaced in kind or with compacted cuttings.

E. CATHODIC
Fill hole anode zone with concrete placed by tremie.

F. WELL DESTRUCTION
Send a map of work site. A separate permit is required for wells deeper than 45 feet.

G. SPECIAL CONDITIONS — MW#1

NOTE: One application must be submitted for each well or well destruction. Multiple borings on one application are acceptable for geotechnical and contamination investigations.

APPROVED _____ DATE 4-28-04

ALAMEDA COUNTY PUBLIC WORKS AGENCY

WATER RESOURCES SECTION
399 ELMHURST ST. HAYWARD CA. 94544-1395
PHONE (510) 670-6633 James Yoo
FAX (510)782-1939
APPLICANTS PLEASE ATTACH A SITE MAP FOR ALL DRILLING PERMIT APPLICATIONS
DESTRUCTION OF WELLS OVER 45 FEET REQUIRES A SEPARATE PERMIT APPLICATION

DRILLING PERMIT APPLICATION

FOR APPLICANT TO COMPLETE

LOCATION OF PROJECT 1137-1167 65th Street in Oakland, Ca

CLIENT
Name Fredric Schrag
Address 6701 Shellmound ST Phone 510-652-2411
City Emeryville Zip 94608

APPLICANT
Name Cambria Environmental Technology, Inc
Attn: Matt Meyers Fax 510-420-9170
Address 5900 Hollis St, Suite A Phone 510-420-3314
City Emeryville Zip 94608

TYPE OF PROJECT

Well Construction	X	Geotechnical Investigation	
Cathodic Protection		General	
Water Supply		Contamination	
Monitoring	X	Well Destruction	

PROPOSED WATER SUPPLY WELL USE

New Domestic		Replacement Domestic	
Municipal		Irrigation	
Industrial		Other	

DRILLING METHOD:

Mud Rotary		Air Rotary		Auger	X
Cable		Other			

DRILLER'S NAME Precision Drilling
DRILLER'S LICENSE NO. 636387

WELL PROJECTS
Drill Hole Diameter 8 in. Maximum
Casing Diameter 2 in. Depth 40 ft.
Surface Seal Depth 28 ft. Owner's Well Number MW-1C

GEOTECHNICAL PROJECTS
Number of Borings ____ Maximum
Hole Diameter ____ in Depth ____ ft.

ESTIMATED STARTING DATE 4/30/04
ESTIMATED COMPLETION DATE 5/3/04

I hereby agree to comply with all requirements of this permit and Alameda County Ordinance No. 73-68.

APPLICANT'S SIGNATURE _____ DATE 4/22/04

PLEASE PRINT NAME Matt Meyers of Cambria Environmental Technology, Inc.

Rev.3-04-02

FOR OFFICE USE
PERMIT NUMBER W04-0469
WELL NUMBER
APN

PERMIT CONDITIONS
Circled Permit Requirements Apply

A. GENERAL
1. A permit application should be submitted so as to arrive at the ACPWA office five days prior to proposed starting date.
2. Submit to ACPWA within 60 days after completion of permitted original Department of Water Resources Well Completion Report.
3. Permit is void if project not begun within 90 days of approval date.

B. WATER SUPPLY WELLS
1. Minimum surface seal thickness is two inches of cement grout placed by tremie.
2. Minimum seal depth is 50 feet for municipal and industrial wells or 20 feet for domestic and irrigation wells unless a lesser depth is specially approved.

C. GROUNDWATER MONITORING WELLS INCLUDING PIEZOMETERS
1. Minimum surface seal thickness is two inches of cement grout placed by tremie.
2. Minimum seal depth for monitoring wells is the maximum depth practicable or 20 feet.

D. GEOTECHNICAL
Backfill bore hole by tremie with cement grout or cement grout/sand mixture. Upper two-three feet replaced in kind or with compacted cuttings.

E. CATHODIC
Fill hole above zone with concrete placed by tremie.

F. WELL DESTRUCTION
Send a map of work site. A separate permit is required for wells deeper than 45 feet.

G. SPECIAL CONDITIONS MW#1

NOTE: One application must be submitted for each well or well destruction. Multiple borings on one application are acceptable for geotechnical and contamination investigations.

APPROVED _____ DATE 4/26/04

ALAMEDA COUNTY PUBLIC WORKS AGENCY

WATER RESOURCES SECTION
399 ELMHURST ST. HAYWARD CA. 94544-1395
PHONE (510) 670-6633 James Yoo
FAX (510)782-1939
APPLICANT: PLEASE ATTACH A SITE MAP FOR ALL DRILLING PERMIT APPLICATIONS
DESTRUCTION OF WELLS OVER 45 FEET REQUIRES A SEPARATE PERMIT APPLICATION

DRILLING PERMIT APPLICATION

FOR APPLICANT TO COMPLETE

LOCATION OF PROJECT 1137-1167 65th Street
in Oakland, Ca

CLIENT
Name Fredric Schrag
Address 6701 Shellmound St. Phone 510-652-2411
City Emeryville Zip 94608

APPLICANT
Name Cambria Environmental Technology, Inc.
Attn: Matt Meyers Fax 510-420-9170
Address 5900 Hollis St, Suite A Phone 510-420-3314
City Emeryville Zip 94608

TYPE OF PROJECT

Well Construction	☒	Geotechnical Investigation	☐
Cathodic Protection	☐	General	☐
Water Supply	☐	Contamination	☐
Monitoring	☒	Well Destruction	☐

PROPOSED WATER SUPPLY WELL USE

New Domestic	☐	Replacement Domestic	☐
Municipal	☐	Irrigation	☐
Industrial	☐	Other	☐

DRILLING METHOD:

Mud Rotary	☐	Air Rotary	☐	Auger	☒
Cable	☐	Other	☐		

DRILLER'S NAME: Precision Drilling
DRILLER'S LICENSE NO. 636387

WELL PROJECTS
Drill Hole Diameter 10 in. Maximum Depth 15 ft.
Casing Diameter 4 in. Owner's Well Number MW-2A
Surface Seal Depth 5 ft.

GEOTECHNICAL PROJECTS
Number of Borings ____ Maximum
Hole Diameter ____ in. Depth ____ ft.

ESTIMATED STARTING DATE 4/30/04
ESTIMATED COMPLETION DATE 5/8/04

I hereby agree to comply with all requirements of this permit and Alameda County Ordinance No. 73-68.

APPLICANT'S SIGNATURE _____ DATE 4/22/04

PLEASE PRINT NAME Matt Meyers
of Cambria Environmental Technology, Inc.

Rev.3-04-02

FOR OFFICE USE
PERMIT NUMBER W04-0470
WELL NUMBER
APN

PERMIT CONDITIONS
Circled Permit Requirements Apply

A. GENERAL
1. A permit application should be submitted so as to arrive at the ACPWA office five days prior to proposed starting date.
2. Submit to ACPWA within 60 days after completion of permitted original Department of Water Resources Well Completion Report.
3. Permit is void if project not begun within 90 days of approval date

B. WATER SUPPLY WELLS
1. Minimum surface seal thickness is two inches of cement grout placed by tremie.
2. Minimum seal depth is 50 feet for municipal and industrial wells or 20 feet for domestic and irrigation wells unless a lesser depth is specially approved.

C. GROUNDWATER MONITORING WELLS INCLUDING PIEZOMETERS
1. Minimum surface seal thickness is two inches of cement grout placed by tremie.
2. Minimum seal depth for monitoring wells is the maximum depth practicable or 20 feet.

D. GEOTECHNICAL
Backfill bore hole by tremie with cement grout or cement grout/sand mixture. Upper two-three feet replaced in kind or with compacted cuttings.

E. CATHODIC
Fill hole anode zone with concrete placed by tremie.

F. WELL DESTRUCTION
Send a map of work site. A separate permit is required for wells deeper than 45 feet.

G. SPECIAL CONDITIONS MW#1

NOTE: One application must be submitted for each well or well destruction. Multiple borings on one application are acceptable for geotechnical and contamination investigations.

APPROVED _____ DATE 4/28/04

ALAMEDA COUNTY PUBLIC WORKS AGENCY

WATER RESOURCES SECTION
399 ELMHURST ST. HAYWARD CA. 94544-1395
PHONE (510) 670-6633 James Yoo
FAX (510)782-1939
APPLICANTS: PLEASE ATTACH A SITE MAP FOR ALL DRILLING PERMIT APPLICATIONS
DESTRUCTION OF WELLS OVER 45 FEET REQUIRES A SEPARATE PERMIT APPLICATION

DRILLING PERMIT APPLICATION

FOR APPLICANT TO COMPLETE

LOCATION OF PROJECT 1137-1167 65th Street
in Oakland, Ca

CLIENT
Name Fredric Schraa
Address 6161 Shellmound St. Phone 510-652-2411
City Emeryville Zip 94608

APPLICANT
Name Cambria Environmental Technology, Inc.
Attn: Matt Meyers Fax 510-420-9170
Address 5900 Hollis St, Suite A Phone 510-420-3314
City Emeryville Zip 94608

TYPE OF PROJECT

Well Construction	☒	Geotechnical Investigation	☐
Cathodic Protection	☐	General	☐
Water Supply	☐	Contamination	☐
Monitoring	☒	Well Destruction	☐

PROPOSED WATER SUPPLY WELL USE

New Domestic	☐	Replacement Domestic	☐
Municipal	☐	Irrigation	☐
Industrial	☐	Other	☐

DRILLING METHOD:

Mud Rotary	☐	Air Rotary	☐	Auger	☒
Cable	☐	Other	☐		

DRILLER'S NAME Precision Drilling
DRILLER'S LICENSE NO. 636387

WELL PROJECTS
Drill Hole Diameter 8 in. Maximum
Casing Diameter 2 in. Depth 15 ft.
Surface Seal Depth 5 ft. Owner's Well Number MW-3A

GEOTECHNICAL PROJECTS
Number of Borings ____ Maximum
Hole Diameter ____ in. Depth ____ ft.

ESTIMATED STARTING DATE 4/30/04
ESTIMATED COMPLETION DATE 5/7/04

I hereby agree to comply with all requirements of this permit and Alameda County Ordinance No. 73-68.

APPLICANT'S SIGNATURE [signature] DATE 4/22/04

PLEASE PRINT NAME Matt Meyers Rev.3-04-02
of Cambria Environmental Technology, Inc.

FOR OFFICE USE
PERMIT NUMBER W04-0471
WELL NUMBER
APN

PERMIT CONDITIONS
Circled Permit Requirements Apply

A. GENERAL
1. A permit application should be submitted so as to arrive at the ACPWA office five days prior to proposed starting date.
2. Submit to ACPWA within 60 days after completion of permitted original Department of Water Resources Well Completion Report.
3. Permit is void if project not begun within 90 days of approval date

B. WATER SUPPLY WELLS
1. Minimum surface seal thickness is two inches of cement grout placed by tremie.
2. Minimum seal depth is 50 feet for municipal and industrial wells or 20 feet for domestic and irrigation wells unless a lesser depth is specially approved.

C. GROUNDWATER MONITORING WELLS INCLUDING PIEZOMETERS
1. Minimum surface seal thickness is two inches of cement grout placed by tremie.
2. Minimum seal depth for monitoring wells is the maximum depth practicable or 20 feet.

D. GEOTECHNICAL
Backfill bore hole by tremie with cement grout or cement grout/sand mixture. Upper two-thirds feet replaced in kind or with compacted cuttings.

E. CATHODIC
Fill hole anode zone with concrete placed by tremie.

F. WELL DESTRUCTION
Send a map of work site. A separate permit is required for wells deeper than 45 feet.

G. SPECIAL CONDITIONS MW#1

NOTE: One application must be submitted for each well or well destruction. Multiple borings on one application are acceptable for geotechnical and contamination investigations.

APPROVED [signature] DATE 4/28/04

ALAMEDA COUNTY PUBLIC WORKS AGENCY

WATER RESOURCES SECTION
399 ELMHURST ST. HAYWARD CA. 94544-1395
PHONE (510) 670-6633 James Yoo
FAX (510)782-1939

APPLICANT: PLEASE ATTACH A SITE MAP FOR ALL DRILLING PERMIT APPLICATIONS
DESTRUCTION OF WELLS OVER 45 FEET REQUIRES A SEPARATE PERMIT APPLICATION

DRILLING PERMIT APPLICATION

FOR APPLICANT TO COMPLETE

LOCATION OF PROJECT 1137-1167 65th Street
in Oakland, Ca

CLIENT
Name Eydvic Schrag
Address 6701 Shellmound St. Phone 510-652-2411
City Emeryville Zip 94608

APPLICANT
Name Cambria Environmental Technology, Inc.
Attn: Matt Meyers Fax 510-420-9170
Address 5900 Hollis St, Suite A Phone 510-420-3314
City Emeryville Zip 94608

TYPE OF PROJECT

Well Construction	X	Geotechnical Investigation	
Cathodic Protection		General	
Water Supply		Contamination	
Monitoring	X	Well Destruction	

PROPOSED WATER SUPPLY WELL USE

New Domestic		Replacement Domestic	
Municipal		Irrigation	
Industrial		Other	

DRILLING METHOD:

Mud Rotary		Air Rotary		Auger	X
Cable		Other			

DRILLER'S NAME Precision Drilling
DRILLER'S LICENSE NO. 636387

WELL PROJECTS
Drill Hole Diameter 8 in. Maximum
Casing Diameter 2 in. Depth 15 ft.
Surface Seal Depth 5 ft. Owner's Well Number MW-4A

GEOTECHNICAL PROJECTS
Number of Borings ____ Maximum
Hole Diameter ____ in Depth ____ ft.

ESTIMATED STARTING DATE 4/30/04
ESTIMATED COMPLETION DATE 5/8/04

I hereby agree to comply with all requirements of this permit and Alameda County Ordinance No. 73-68.

APPLICANT'S SIGNATURE _____ DATE 4/22/04

PLEASE PRINT NAME Matt Meyers of Cambria Environmental Technology, Inc.

Rev.3-04-02

FOR OFFICE USE

PERMIT NUMBER W04-0472
WELL NUMBER
APN

PERMIT CONDITIONS
Circled Permit Requirements Apply

A. GENERAL
1. A permit application should be submitted so as to arrive at the ACPWA office five days prior to proposed starting date.
2. Submit to ACPWA within 60 days after completion of permitted original Department of Water Resources Well Completion Report.
3. Permit is void if project not begun within 90 days of approval date

B. WATER SUPPLY WELLS
1. Minimum surface seal thickness is two inches of cement grout placed by tremie.
2. Minimum seal depth is 50 feet for municipal and industrial wells or 20 feet for domestic and irrigation wells unless a lesser depth is specially approved.

C. GROUNDWATER MONITORING WELLS INCLUDING PIEZOMETERS
1. Minimum surface seal thickness is two inches of cement grout placed by tremie.
2. Minimum seal depth for monitoring wells is the maximum depth practicable or 20 feet.

D. GEOTECHNICAL
Backfill bore hole by tremie with cement grout or cement grout/sand mixture. Upper two-three feet replaced in kind or with compacted cuttings.

E. CATHODIC
Fill hole anode zone with concrete placed by tremie.

F. WELL DESTRUCTION
Send a map of work site. A separate permit is required for wells deeper than 45 feet.

G. SPECIAL CONDITIONS — PMWT 1

NOTE: One application must be submitted for each well or well destruction. Multiple borings on one application are acceptable for geotechnical and contamination investigations.

APPROVED _____ DATE 4-28-04

ALAMEDA COUNTY PUBLIC WORKS AGENCY

WATER RESOURCES SECTION
399 ELMHURST ST. HAYWARD CA. 94544-1395
PHONE (510) 670-6633 James Yoo
FAX (510)782-1939
APPLICANTS: PLEASE ATTACH A SITE MAP FOR ALL DRILLING PERMIT APPLICATIONS
DESTRUCTION OF WELLS OVER 45 FEET REQUIRES A SEPARATE PERMIT APPLICATION

DRILLING PERMIT APPLICATION

FOR APPLICANT TO COMPLETE

LOCATION OF PROJECT 1137-1167 65th Street
in Oakland, Ca

CLIENT
Name Fredric Schrag
Address 6701 Shellmound ST Phone 510-652-2411
City Emeryville Zip 94608

APPLICANT
Name Cambria Environmental Technology, Inc.
Attn: Matt Meyers Fax 510-420-9170
Address 5900 Hollis St, Suite A Phone 510-420-3314
City Emeryville Zip 94608

TYPE OF PROJECT

Well Construction	☒	Geotechnical Investigation	☐
Cathodic Protection	☐	General	☐
Water Supply	☐	Contamination	☐
Monitoring	☒	Well Destruction	☐

PROPOSED WATER SUPPLY WELL USE

New Domestic	☐	Replacement Domestic	☐
Municipal	☐	Irrigation	☐
Industrial	☐	Other	☐

DRILLING METHOD:

Mud Rotary	☐	Air Rotary	☐	Auger	☒
Cable	☐	Other	☐		

DRILLER'S NAME: Precision Drilling
DRILLER'S LICENSE NO. 636387

WELL PROJECTS
Drill Hole Diameter 8 in. Maximum
Casing Diameter 2 in. Depth 40 ft.
Surface Seal Depth 28 ft. Owner's Well Number MW-4C

GEOTECHNICAL PROJECTS
Number of Borings ____ Maximum
Hole Diameter ____ in. Depth ____ ft.

ESTIMATED STARTING DATE 4/30/04
ESTIMATED COMPLETION DATE 5/8/04

I hereby agree to comply with all requirements of this permit and Alameda County Ordinance No. 73-68.

APPLICANT'S SIGNATURE _____ DATE 4/22/04

PLEASE PRINT NAME Matt Meyers
of Cambria Environmental Technology, Inc.

Rev 3-04-02

FOR OFFICE USE
PERMIT NUMBER WR4-0473
WELL NUMBER
APN

PERMIT CONDITIONS
Circled Permit Requirements Apply

A. GENERAL
1. A permit application should be submitted so as to arrive at the ACPWA office five days prior to proposed starting date.
2. Submit to ACPWA within 60 days after completion of permitted original Department of Water Resources Well Completion Report.
3. Permit is void if project not begun within 90 days of approval date.

B. WATER SUPPLY WELLS
1. Minimum surface seal thickness is two inches of cement grout placed by tremie.
2. Minimum seal depth is 50 feet for municipal and industrial wells or 20 feet for domestic and irrigation wells unless a lesser depth is specially approved.

C. GROUNDWATER MONITORING WELLS INCLUDING PIEZOMETERS
1. Minimum surface seal thickness is two inches of cement grout placed by tremie.
2. Minimum seal depth for monitoring wells is the maximum depth practicable or 20 feet.

D. GEOTECHNICAL
Backfill bore hole by tremie with cement grout or cement grout/sand mixture. Upper two-three feet replaced in kind or with compacted cuttings.

E. CATHODIC
Fill hole anode zone with concrete placed by tremie.

F. WELL DESTRUCTION
Send a map of work site. A separate permit is required for wells deeper than 45 feet.

G. SPECIAL CONDITIONS MWA 1

NOTE: One application must be submitted for each well or well destruction. Multiple borings on one application are acceptable for geotechnical and contamination investigations.

APPROVED _____ DATE 4/28/04

ALAMEDA COUNTY PUBLIC WORKS AGENCY

WATER RESOURCES SECTION
399 ELMHURST ST. HAYWARD CA. 94544-1395
PHONE (510) 670-6633 James Yoo
FAX (510)782-1939
APPLICANTS: PLEASE ATTACH A SITE MAP FOR ALL DRILLING PERMIT APPLICATIONS
DESTRUCTION OF WELLS OVER 45 FEET REQUIRES A SEPARATE PERMIT APPLICATION

DRILLING PERMIT APPLICATION

FOR APPLICANT TO COMPLETE

LOCATION OF PROJECT 1137-1167 65th Street
in Oakland, Ca

CLIENT
Name Fredric Schrag
Address 6101 Shellmound St Phone 510-652-2411
City Emeryville Zip 94608

APPLICANT
Name Cambria Environmental Technology, Inc
Attn: Matt Meyers Fax 510-420-9170
Address 5900 Hollis St, Suite A Phone 510-420-3314
City Emeryville Zip 94608

TYPE OF PROJECT

Well Construction		Geotechnical Investigation	
Cathodic Protection		General	
Water Supply		Contamination	
Monitoring	X	Well Destruction	

PROPOSED WATER SUPPLY WELL USE

New Domestic		Replacement Domestic	
Municipal		Irrigation	
Industrial		Other	

DRILLING METHOD:

Mud Rotary		Air Rotary		Auger	X
Cable		Other			

DRILLER'S NAME Precision Drilling
DRILLER'S LICENSE NO. 636387

WELL PROJECTS
Drill Hole Diameter 8 in. Maximum
Casing Diameter 2 in. Depth 15 ft.
Surface Seal Depth 5 ft. Owner's Well Number MW-5A

GEOTECHNICAL PROJECTS
Number of Borings ____ Maximum
Hole Diameter ____ in. Depth ____ ft.

ESTIMATED STARTING DATE 4/30/04
ESTIMATED COMPLETION DATE 5/8/04

I hereby agree to comply with all requirements of this permit and Alameda County Ordinance No. 73-68.

APPLICANT'S SIGNATURE _____ DATE 4/22/04

PLEASE PRINT NAME Matt Meyers of Cambria Environmental Technology, Inc.

Rev.3-04-02

FOR OFFICE USE
PERMIT NUMBER W04-0474
WELL NUMBER
APN

PERMIT CONDITIONS
Circled Permit Requirements Apply

A. GENERAL
1. A permit application should be submitted so as to arrive at the ACPWA office five days prior to proposed starting date.
2. Submit to ACPWA within 60 days after completion of permitted original Department of Water Resources Well Completion Report.
3. Permit is void if project not begun within 90 days of approval date.

B. WATER SUPPLY WELLS
1. Minimum surface seal thickness is two inches of cement grout placed by tremie.
2. Minimum seal depth is 50 feet for municipal and industrial wells or 20 feet for domestic and irrigation wells unless a lesser depth is specially approved.

C. GROUNDWATER MONITORING WELLS INCLUDING PIEZOMETERS
1. Minimum surface seal thickness is two inches of cement grout placed by tremie.
2. Minimum seal depth for monitoring wells is the maximum depth practicable or 20 feet.

D. GEOTECHNICAL
Backfill bore hole by tremie with cement grout or cement grout/sand mixture. Upper two-three feet replaced in kind or with compacted cuttings.

E. CATHODIC
Fill hole anode zone with concrete placed by tremie.

F. WELL DESTRUCTION
Send a map of work site. A separate permit is required for wells deeper than 45 feet.

G. SPECIAL CONDITIONS – MW#1

NOTE: One application must be submitted for each well or well destruction. Multiple borings on one application are acceptable for geotechnical and contamination investigations.

APPROVED _____ DATE 4-28-04

ALAMEDA COUNTY PUBLIC WORKS AGENCY

WATER RESOURCES SECTION
399 ELMHURST ST. HAYWARD CA. 94544-1395
PHONE (510) 670-6633 James Yoo
FAX (510)782-1939

APPLICANT: PLEASE ATTACH A SITE MAP FOR ALL DRILLING PERMIT APPLICATIONS
DESTRUCTION OF WELLS OVER 45 FEET REQUIRES A SEPARATE PERMIT APPLICATION

DRILLING PERMIT APPLICATION

FOR APPLICANT TO COMPLETE

LOCATION OF PROJECT 1137-1147 65th Street
in Oakland, Ca

CLIENT
Name Fredric Schrag
Address 6101 Shellmound St Phone 510-652-2411
City Emeryville Zip 94608

APPLICANT
Name Cambria Environmental Technology, Inc.
Attn: Matt Meyers Fax 510-420-9170
Address 5900 Hollis St, Suite A Phone 510-420-3314
City Emeryville Zip 94608

TYPE OF PROJECT

Well Construction	☒	Geotechnical Investigation	
Cathodic Protection		General	
Water Supply		Contamination	
Monitoring	X	Well Destruction	

PROPOSED WATER SUPPLY WELL USE

New Domestic		Replacement Domestic	
Municipal		Irrigation	
Industrial		Other	

DRILLING METHOD:

Mud Rotary		Air Rotary		Auger	X
Cable		Other			

DRILLER'S NAME Precision Drilling
DRILLER'S LICENSE NO. 636387

WELL PROJECTS
Drill Hole Diameter 8 in. Maximum
Casing Diameter 2 in. Depth 12 ft.
Surface Seal Depth 5 ft. Owner's Well Number MW-6A

GEOTECHNICAL PROJECTS
Number of Borings ____ Maximum
Hole Diameter ____ in. Depth ____ ft.

ESTIMATED STARTING DATE 4/30/04
ESTIMATED COMPLETION DATE 5/7/04

I hereby agree to comply with all requirements of this permit and Alameda County Ordinance No. 73-68.

APPLICANT'S SIGNATURE _____ DATE 4/22/04

PLEASE PRINT NAME Matt Meyers Rev.3-04-02
of Cambria Environmental Technology, Inc.

FOR OFFICE USE
PERMIT NUMBER W04-0475
WELL NUMBER
APN

PERMIT CONDITIONS
Circled Permit Requirements Apply

A. GENERAL
1. A permit application should be submitted so as to arrive at the ACPWA office five days prior to proposed starting date.
2. Submit to ACPWA within 60 days after completion of permitted original Department of Water Resources-Well Completion Report.
3. Permit is void if project not begun within 90 days of approval date

B. WATER SUPPLY WELLS
1. Minimum surface seal thickness is two inches of cement grout placed by tremie.
2. Minimum seal depth is 50 feet for municipal and industrial wells or 20 feet for domestic and irrigation wells unless a lesser depth is specially approved.

C. GROUNDWATER MONITORING WELLS INCLUDING PIEZOMETERS
1. Minimum surface seal thickness is two inches of cement grout placed by tremie.
2. Minimum seal depth for monitoring wells is the maximum depth practicable or 20 feet.

D. GEOTECHNICAL
Backfill bore hole by tremie with cement grout or cement grout/sand mixture. Upper two-three feet replaced in kind or with compacted cuttings.

E. CATHODIC
Fill hole anode zone with concrete placed by tremie.

F. WELL DESTRUCTION
Send a map of work site. A separate permit is required for wells deeper than 45 feet.

G. SPECIAL CONDITIONS — MW#1

NOTE: One application must be submitted for each well or well destruction. Multiple borings on one application are acceptable for geotechnical and contamination investigations.

APPROVED _____ DATE 4-28-04

ALAMEDA COUNTY PUBLIC WORKS AGENCY

WATER RESOURCES SECTION
399 ELMHURST ST. HAYWARD CA. 94544-1395
PHONE (510) 670-6633 James Yoo
FAX (510)782-1939

APPLICANTS: PLEASE ATTACH A SITE MAP FOR ALL DRILLING PERMIT APPLICATIONS
DESTRUCTION OF WELLS OVER 45 FEET REQUIRES A SEPARATE PERMIT APPLICATION

DRILLING PERMIT APPLICATION

FOR APPLICANT TO COMPLETE

LOCATION OF PROJECT 1137-1167 65th Street
in Oakland, Ca

CLIENT
Name Fredric Schrag
Address 6701 Shellmound St Phone 510-652-2411
City Emeryville Zip 94608

APPLICANT
Name Cambria Environmental Technology, Inc.
Attn: Matt Meyers Fax 510-420-9170
Address 5900 Hollis St, Suite A Phone 510-420-3314
City Emeryville Zip 94608

TYPE OF PROJECT

Well Construction		Geotechnical Investigation	
Cathodic Protection		General	
Water Supply		Contamination	
Monitoring	X	Well Destruction	

PROPOSED WATER SUPPLY WELL USE

New Domestic		Replacement Domestic	
Municipal		Irrigation	
Industrial		Other	

DRILLING METHOD:

Mud Rotary		Air Rotary		Auger	X
Cable		Other			

DRILLER'S NAME Precision Drilling
DRILLER'S LICENSE NO. 636387

WELL PROJECTS
Drill Hole Diameter 8 in. Maximum
Casing Diameter 2 in. Depth 22 ft.
Surface Seal Depth 11a ft. Owner's Well Number MW-16B

GEOTECHNICAL PROJECTS
Number of Borings ____ Maximum
Hole Diameter ____ in Depth ____ ft.

ESTIMATED STARTING DATE 4/30/04
ESTIMATED COMPLETION DATE 5/8/04

I hereby agree to comply with all requirements of this permit and Alameda County Ordinance No. 73-68.

APPLICANT'S SIGNATURE _____ DATE 4/22/04

PLEASE PRINT NAME Matt Meyers
of Cambria Environmental Technology, Inc.

Rev.3-04-02

FOR OFFICE USE
PERMIT NUMBER W04-0476
WELL NUMBER
APN

PERMIT CONDITIONS
Circled Permit Requirements Apply

A. GENERAL
1. A permit application should be submitted so as to arrive at the ACPWA office five days prior to proposed starting date.
2. Submit to ACPWA within 60 days after completion of permitted original Department of Water Resources Well Completion Report.
3. Permit is void if project not begun within 90 days of approval date.

B. WATER SUPPLY WELLS
1. Minimum surface seal thickness is two inches of cement grout placed by tremie.
2. Minimum seal depth is 50 feet for municipal and industrial wells or 20 feet for domestic and irrigation wells unless a lesser depth is specially approved.

C. GROUNDWATER MONITORING WELLS INCLUDING PIEZOMETERS
1. Minimum surface seal thickness is two inches of cement grout placed by tremie.
2. Minimum seal depth for monitoring wells is the maximum depth practicable or 20 feet.

D. GEOTECHNICAL
Backfill bore hole by tremie with cement grout or cement grout/sand mixture. Upper two-three feet replaced in kind or with compacted cuttings.

E. CATHODIC
Fill hole above zone with concrete placed by tremie.

F. WELL DESTRUCTION
Send a map of work site. A separate permit is required for wells deeper than 45 feet.

G. SPECIAL CONDITIONS MW#1

NOTE: One application must be submitted for each well or well destruction. Multiple borings on one application are acceptable for geotechnical and contamination investigations.

APPROVED _____ DATE 4-28-04

ALAMEDA COUNTY PUBLIC WORKS AGENCY

WATER RESOURCES SECTION
399 ELMHURST ST, HAYWARD CA. 94544-1395
PHONE (510) 670-6633 James Yoo
FAX (510)782-1939
APPLICANTS: PLEASE ATTACH A SITE MAP FOR ALL DRILLING PERMIT APPLICATIONS
DESTRUCTION OF WELLS OVER 45 FEET REQUIRES A SEPARATE PERMIT APPLICATION

DRILLING PERMIT APPLICATION

FOR APPLICANT TO COMPLETE

LOCATION OF PROJECT 1137-1167 65th Street
in Oakland, Ca

CLIENT
Name Fredric Schrag
Address 620 Shellmound St Phone 510-652-2411
City Emeryville Zip 94608

APPLICANT
Name Cambria Environmental Technology, Inc.
Attn: Matt Meyers Fax 510-420-9170
Address 5900 Hollis St, Suite A Phone 510-420-2314
City Emeryville Zip 94608

TYPE OF PROJECT

Well Construction	☒	Geotechnical Investigation	
Cathodic Protection		General	
Water Supply		Contamination	
Monitoring	X	Well Destruction	

PROPOSED WATER SUPPLY WELL USE

New Domestic		Replacement Domestic	
Municipal		Irrigation	
Industrial		Other	

DRILLING METHOD:

Mud Rotary		Air Rotary		Auger	X
Cable		Other			

DRILLER'S NAME Precision Drilling
DRILLER'S LICENSE NO. 636387

WELL PROJECTS
Drill Hole Diameter 8 in. Maximum
Casing Diameter 2 in. Depth 40 ft.
Surface Seal Depth 20 ft. Owner's Well Number MW-6C

GEOTECHNICAL PROJECTS
Number of Borings ____ Maximum
Hole Diameter ____ in Depth ____ ft.

ESTIMATED STARTING DATE 4/30/04
ESTIMATED COMPLETION DATE 5/8/04

FOR OFFICE USE
PERMIT NUMBER W04-0477
WELL NUMBER
APN

PERMIT CONDITIONS
Circled Permit Requirements Apply

A. GENERAL
1. A permit application should be submitted so as to arrive at the ACPWA office five days prior to proposed starting date.
2. Submit to ACPWA within 60 days after completion of permitted original Department of Water Resources Well Completion Report.
3. Permit is void if project not begun within 90 days of approval date.

B. WATER SUPPLY WELLS
1. Minimum surface seal thickness is two inches of cement grout placed by tremie.
2. Minimum seal depth is 50 feet for municipal and industrial wells or 20 feet for domestic and irrigation wells unless a lesser depth is specially approved.

C. GROUNDWATER MONITORING WELLS INCLUDING PIEZOMETERS
1. Minimum surface seal thickness is two inches of cement grout placed by tremie.
2. Minimum seal depth for monitoring wells is the maximum depth practicable or 20 feet.

D. GEOTECHNICAL
Backfill bore hole by tremie with cement grout or cement grout/sand mixture. Upper two-three feet replaced in kind or with compacted cuttings.

E. CATHODIC
Fill hole anode zone with concrete placed by tremie.

F. WELL DESTRUCTION
Send a map of work site. A separate permit is required for wells deeper than 45 feet.

G. SPECIAL CONDITIONS — MW-1

NOTE: One application must be submitted for each well or well destruction. Multiple borings on one application are acceptable for geotechnical and contamination investigations.

APPROVED [signature] DATE 4/28/04

I hereby agree to comply with all requirements of this permit and Alameda County Ordinance No. 73-68.

APPLICANT'S SIGNATURE [signature] DATE 4/22/04

PLEASE PRINT NAME Matt Meyers of Cambria Environmental Technology, Inc.

Rev.3-04-02

ALAMEDA COUNTY PUBLIC WORKS AGENCY

WATER RESOURCES SECTION
399 ELMHURST ST. HAYWARD CA. 94544-1395
PHONE (510) 670-6633 James Yoo
FAX (510)782-1939
APPLICANTS: PLEASE ATTACH A SITE MAP FOR ALL DRILLING PERMIT APPLICATIONS
DESTRUCTION OF WELLS OVER 45 FEET REQUIRES A SEPARATE PERMIT APPLICATION

DRILLING PERMIT APPLICATION

FOR APPLICANT TO COMPLETE

LOCATION OF PROJECT 1137-1167 65th Street
in Oakland, Ca

CLIENT
Name Eydie Schrag
Address 6161 Shellmound St Phone 510-652-2411
City Emeryville Zip 94608

APPLICANT
Name Cambria Environmental Technology, Inc.
Attn: Matt Meyers Fax 510-420-9170
Address 5900 Hollis St, Suite A Phone 510-420-3314
City Emeryville Zip 94608

TYPE OF PROJECT

Well Construction		Geotechnical Investigation	
Cathodic Protection		General	
Water Supply		Contamination	
Monitoring	X	Well Destruction	

PROPOSED WATER SUPPLY WELL USE

New Domestic		Replacement Domestic	
Municipal		Irrigation	
Industrial		Other	

DRILLING METHOD:

Mud Rotary		Air Rotary		Auger	X
Cable		Other			

DRILLER'S NAME Precision Drilling
DRILLER'S LICENSE NO. 636387

WELL PROJECTS
Drill Hole Diameter 8 in. Maximum Depth 15 ft.
Casing Diameter 4 in. Owner's Well Number MW-7A
Surface Seal Depth 10 ft.

GEOTECHNICAL PROJECTS
Number of Borings
Hole Diameter in. Maximum Depth ft.

ESTIMATED STARTING DATE 4/30/04
ESTIMATED COMPLETION DATE 5/18/04

I hereby agree to comply with all requirements of this permit and Alameda County Ordinance No. 73-68.

APPLICANT'S SIGNATURE [signature] DATE 4/22/04
PLEASE PRINT NAME Matt Meyers Rev.3-04-02
of Cambria Environmental Technology, Inc.

FOR OFFICE USE
PERMIT NUMBER WO4-0478
WELL NUMBER
APN

PERMIT CONDITIONS
Circled Permit Requirements Apply

A. GENERAL
1. A permit application should be submitted so as to arrive at the ACPWA office five days prior to proposed starting date.
2. Submit to ACPWA within 60 days after completion of permitted original Department of Water Resources Well Completion Report.
3. Permit is void if project not begun within 90 days of approval date.

B. WATER SUPPLY WELLS
1. Minimum surface seal thickness is two inches of cement grout placed by tremie.
2. Minimum seal depth is 50 feet for municipal and industrial wells or 20 feet for domestic and irrigation wells unless a lesser depth is specially approved.

C. GROUNDWATER MONITORING WELLS INCLUDING PIEZOMETERS
1. Minimum surface seal thickness is two inches of cement grout placed by tremie.
2. Minimum seal depth for monitoring wells is the maximum depth practicable or 20 feet.

D. GEOTECHNICAL
Backfill bore hole with cement grout or cement grout/sand mixture. Upper two-three feet replaced in kind or with compacted cuttings.

E. CATHODIC
Fill hole above anode zone with concrete placed by tremie.

F. WELL DESTRUCTION
Send a map of work site. A separate permit is required for wells deeper than 45 feet.

G. SPECIAL CONDITIONS —PAWH-1

NOTE: One application must be submitted for each well or well destruction. Multiple borings on one application are acceptable for geotechnical and contamination investigations.

APPROVED [signature] DATE 4-28-04

APPLICANT'S SIGNATURE [signature] DATE 4/22/04
PLEASE PRINT NAME Matt Meyers Rev.3-04-02
of Cambria Environmental Technology, Inc.

ALAMEDA COUNTY PUBLIC WORKS AGENCY
WATER RESOURCES SECTION
399 ELMHURST ST. HAYWARD, CA. 94544-1395
PHONE (510) 670-6633 James Yoo FAX (510) 782-1939

PERMIT NO. W04-0467-0478

WATER RESOURCES SECTION
GROUNDWATER PROTECTION ORDINANCE
MW#1-GENERAL CONDITIONS: MONITIORING WELL

1. Prior to installation of any monitoring wells into 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.

2. The minimum surface seal thickness two inches of cement grout placed by tremie.

3. All monitoring wells shall have a minimum surface cement seal depth of five (5) feet or the maximum depth practicable or twenty (20) feet.

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

5. Permitte, permittee's, contractors, consultants or agents shall be responsible to assure that all material or waters generated during drilling, boring destruction, and/or other activities associated with this Permit will be safely handled, properly managed, and disposed of according to all applicable federal, state, and local statues 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. No changes in construction procedures or well type shall change, as described on this permit application. This permit may be voided if it contains incorrect information.

7. Drilling Permit(s) can be voided/ canceled only in writing. It is the applicants responsibilities to notify Alameda County Public Works Agency, Water Resources Section in writing for an extension or to cancel the drilling permit application. No drilling permit application(s) shall be extended beyond ninety (90) days from the original start date. **Permit is valid from April 30 to May 8, 2004**. Applicants may not cancel a drilling permit application after the completion date of the permit issued has passed.

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

9. 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.

ALAMEDA COUNTY PUBLIC WORKS AGENCY

WATER RESOURCES SECTION
399 ELMHURST ST. HAYWARD CA. 94544-1395
PHONE (510) 670-6633 James Yoo
FAX (510) 782-1939 www.acfcwcd.org

APPLICANTS: PLEASE ATTACH A SITE MAP FOR ALL DRILLING PERMIT APPLICATIONS
DESTRUCTION OF WELLS OVER 45 FEET REQUIRES A SEPARATE PERMIT APPLICATION

DRILLING PERMIT APPLICATION

FOR APPLICANT TO COMPLETE

LOCATION OF PROJECT 1137-1167 65th St Oakland

CLIENT
Name John Nady
Address 1167 65th St Phone 510-420-3338
City Oakland Zip 94608

APPLICANT
Name JASON OLSON
CAMBRIA Fax 510-420-9170
Address 5900 Hollis, STE 4 Phone 510-420-3338
City Emeryville, CA Zip 94608

TYPE OF PROJECT

Well Construction	Geotechnical Investigation
Cathodic Protection	General
Water Supply	Contamination
Monitoring	Well Destruction

PROPOSED WATER SUPPLY WELL USE

New Domestic	Replacement Domestic
Municipal	Irrigation
Industrial	Other

DRILLING METHOD:

Mud Rotary	Air Rotary	Auger
Cable	Other	

DRILLER'S NAME Precision Sampling
DRILLER'S LICENSE NO. C57-636387

WELL PROJECTS
Drill Hole Diameter 8 in. Maximum
Casing Diameter 2 in. Depth 22 ft.
Surface Seal Depth 16 ft. Owner's Well Number MW-4B

GEOTECHNICAL/CONTAMINATION PROJECTS
Number of Borings ____ Maximum
Hole Diameter ____ in. Depth ____ ft.

STARTING DATE 5/18/04
COMPLETION DATE 5/18/04

I hereby agree to comply with all requirements of this permit and Alameda County Ordinance No. 73-68.
APPLICANT'S SIGNATURE [signature] DATE 5/17/04
PLEASE PRINT NAME JASON OLSON Rev.5-11-04

FOR OFFICE USE
PERMIT NUMBER WR04-0574
WELL NUMBER
APN

PERMIT CONDITIONS
Circled Permit Requirements Apply

A. GENERAL
1. A permit application should be submitted so as to arrive at the ACPWA office five days prior to proposed starting date.
2. Submit to ACPWA within 60 days after completion of permitted original Department of Water Resources-Well Completion Report.
3. Permit is void if project not begun within 90 days of approval date

B. WATER SUPPLY WELLS
1. Minimum surface seal thickness is two inches of cement grout placed by tremie.
2. Minimum seal depth is 50 feet for municipal and industrial wells or 20 feet for domestic and irrigation wells unless a lesser depth is specially approved.

C. GROUNDWATER MONITORING WELLS INCLUDING PIEZOMETERS
1. Minimum surface seal thickness is two inches of cement grout placed by tremie.
2. Minimum seal depth for monitoring wells is the maximum depth practicable or 20 feet.

D. GEOTECHNICAL/CONTAMINATION
Backfill bore hole by tremie with cement grout or cement grout/sand mixture. Upper two-three feet replaced in kind or with compacted cuttings.

E. CATHODIC
Fill hole anode zone with concrete placed by tremie.

F. WELL DESTRUCTION
Send a map of work site. A separate permit is required for wells deeper than 45 feet.

G. SPECIAL CONDITIONS MW#1

NOTE: One application must be submitted for each well or well destruction. Multiple borings on one application are acceptable for geotechnical and contamination investigations.

APPROVED [signature] DATE 5-18-04

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

Job Site 1167 65TH ST Parcel# 016 -1505-011-03 Appl# X0401968

Descr install 6 wells on Peabody Lane
all monitoring wells

Permit Issued 05/05/04

Work Type EXCAVATION-PRIVATE P

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

	Applcnt	Phone#	Lic#	--License Classes--
Owner JOHN NADY				
Contractor				
Arch/Engr PRECISION SAMPLING INC	X	(510)237-4575	636387	

[illegible] MEYERS

CHMOND, CA, 94804

$291.84 TOTAL FEES PAID AT ISSUANCE

$51.00 Applic	$205.00 Permit
$.00 Process	$23.04 Rec Mgmt
$.00 Gen Plan	$.00 Invstg
$.00 Other	$12.80 Tech Enh

ITE

OF OAKLAND

CITY OF OAKLAND
Community & Economic Development Agency
250 Frank H. Ogawa Pl, Oakland CA, 94612
Phone: (510)238-3587 FAX: (510)238-2263

PAYMENT RECEIPT

Application#: X0401968 Payment#: 001

APPLICATION FEE	$51.00
EXCAVATION PERMIT	$205.00
RECORDS MANAGEMENT FEE (	$23.04
TECHNOLOGY ENHANCEMENT FE	$12.80
Subtotal:	$291.84
Sales Tax:	$.00
****** TOTAL PAID:	$291.84
Check Payment:	$291.84

ayor: CAMBRIA ENVIRON ~~CK3022~~ CK3023
Date: 05/05/04 Time: 15:10:59
By: ANL Register R03 Receipt# 007982
****
ORIGINAL RECEIPT REQUIRED FOR REFUND
****

Date: 05/05/04 Amt Paid: $291.84
: ANL Register R03 Receipt# 007982

CITY OF OAKLAND
Office of Planning and Building

EXCAVATION PERMIT

TO EXCAVATE IN STREETS OR OTHER SPECIFIED WORK

CIVIL ENGINEERING

ON PEABODY LANE

PERMIT NUMBER	SITE ADDRESS/LOCATION
X0401968	1167 65th Street, Oakland
APPROX. START DATE: 5/7/04 — APPROX. END DATE: 5/21/04	24-HOUR EMERGENCY PHONE NUMBER (Permit not valid without 24-Hour number): 1-888-881-4367
CONTRACTOR'S LICENSE # AND CLASS: C57 636287	CITY BUSINESS TAX #: 559 628

ATTENTION:

1) State law requires that the contractor/owner call *Underground Service Alert (USA)* two working days before excavating. This permit is not valid unless applicant has secured an inquiry identification number issued by USA. The USA telephone number is 1 (800) 642-2444. UNDERGROUND SERVICE ALERT (USA) #: 15 0067

2) **48 hours prior to starting work, YOU MUST CALL (510) 238-3651 TO SCHEDULE AN INSPECTION.**

OWNER/BUILDER

I hereby affirm that I am exempt from the Contractor's License Law for the following reason (Sec. 7031.5 Business and Professions Code: Any city or county which requires a permit to construct, alter, improve, demolish, or repair any structure, prior to its issuance, also requires the applicant for such permit to file a signed statement that he is licensed pursuant to the provisions of the Contractor's License law Chapter 9 (commencing with Sec. 7000) of Division 3 of the Business and Professions Code, or that he is exempt therefrom and the basis for the alleged exemption. Any violation of Section 7031.5 by any applicant for a permit subjects the applicant to a civil penalty of not more than $500):

☐ I, as an owner of the property, or my employees with wages as their sole compensation, will do the work, and the structure is not intended or offered for sale (Sec. 7044, Business Professions Code: The Contractor's License Law does not apply to an owner of property who builds or improves thereon, and who does such work himself or through his own employees, provided that such improvements are not intended or offered for sale. If however, the building or improvement is sold within one year of completion, the owner-builder will have the burden of proving that he did not build or improve for the purpose of sale).

☐ I, as owner of the property, am exempt from the sale requirements of the above due to: (1) I am improving my principal place of residence or appurtenances thereto, (2) the work will be performed prior to sale, (3) I have resided in the residence for the 12 months prior to completion of the work, and (4) I have not claimed exemption on this subdivision on more than two structures more than once during any three-year period, (Sec. 7044 Business and Professions Code).

☒ I, as owner of the property, am exclusively contracting with licensed contractors to construct the project, (Sec. 7044, Business and Professions Code: The Contractor's License Law does not apply to an owner of property who builds or improves thereon, and who contracts for such projects with a contractor(s) licensed pursuant to the Contractor's License law).

☐ I am exempt under Sec. _____, B&PC for this reason _____

WORKER'S COMPENSATION

☒ I hereby affirm that I have a certificate of consent to self-insure, or a certificate of Worker's Compensation Insurance, or a certified copy thereof (Sec. 3700, Labor Code).

Policy # WC2 B71072339 013 Company Name: Liberty Mutual Fire Insurance Company

☐ I certify that in the performance of the work for which this permit is issued, I shall not employ any person in any manner so as to become subject to the Worker's Compensation Laws of California (not required for work valued at one hundred dollars ($100) or less).

NOTICE TO APPLICANT: If, after making this Certificate of Exemption, you should become subject to the Worker's Compensation provisions of the Labor Code, you must forthwith comply with such provisions or this permit shall be deemed revoked. This permit is issued pursuant to all provisions of Title 12 Chapter 12.12 of the Oakland Municipal Code. It is granted upon the express condition that the permittee shall be responsible for all claims and liabilities arising out of work performed under the permit or arising out of permittee's failure to perform the obligations with respect to street maintenance. The permittee shall, and by acceptance of the permit agrees to defend, indemnify, save and hold harmless the City, its officers and employees, from and against any and all suits, claims, or actions brought by any person for or on account of any bodily injuries, disease or illness or damage to persons and/or property sustained or arising in the construction of the work performed under the permit or in consequence of permittee's failure to perform the obligations with respect to street maintenance. This permit is void 90 days from the date of issuance unless an extension is granted by the Director of the Office of Planning and Building.

I hereby affirm that I am licensed under provisions of Chapter 9 of Division 3 of the Business and Professions Code and my license is in full force and effect (if contractor), that I have read this permit and agree to its requirements, and that the above information is true and correct under penalty of law.

Matt Meyers Camorra 5/5/04
Cory Bean Precision Sampling 5/3/04

Signature of Permittee ☒ Agent for ☒ Contractor ☐ Owner Date

DATE STREET LAST RESURFACED:	SPECIAL PAVING DETAIL REQUIRED? ☐ YES ☒ NO	HOLIDAY RESTRICTION (NOV 1 - JAN 1) ☐ YES ☒ NO	LIMITED OPERATION AREA? (7AM-9AM & 4PM-6PM) ☐ YES ☒ NO
ISSUED BY		DATE ISSUED	

forms/pmt/excavate.pm2 (04/98)

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

Job Site 1167 65TH ST Parcel# 016 -1505-011-03 Appl# X0401967

Descr install 2 wells on 65th street Permit Issued 05/05/04

all monitoring wells
Work Type EXCAVATION-PRIVATE P

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

	Applcnt	Phone#	Lic#	License Classes
Owner JOHN NADY				
Contractor				
Arch/Engr PRECISION SAMPLING INC	X	(510)237-4575	636387	
Agent MATT MEYERS				

RICHMOND, CA, 94804

$291.84 TOTAL FEES PAID AT ISSUANCE

$51.00 Applic	$205.00 Permit
$.00 Process	$23.04 Rec Mgmt
$.00 Gen Plan	$.00 Invstg
$.00 Other	$12.80 Tech Enh

ITE

OF OAKLAND

CITY OF OAKLAND
mmunity & Economic Development Agency
0 Frank H. Ogawa Pl, Oakland CA, 94612
one: (510)238-3587 FAX: (510)238-2263

PAYMENT RECEIPT

plication#: X0401967	Payment#: 001
PLICATION FEE	$51.00
CAVATION PERMIT	$205.00
CORDS MANAGEMENT FEE (	$23.04
CHNOLOGY ENHANCEMENT FE	$12.80
Subtotal:	$291.84
Sales Tax:	$.00
****** TOTAL PAID:	$291.84
Check Payment:	$291.84

yor: CAMBRIA ENVIRON #3622
ate: 05/05/04 Time: 15:09:57
By: ANL Register R03 Receipt# 087981
****
ORIGINAL RECEIPT REQUIRED FOR REFUND
****

CITY OF OAKLAND
Office of Planning and Building

EXCAVATION PERMIT

TO EXCAVATE IN STREETS OR OTHER SPECIFIED WORK

CIVIL ENGINEERING

ON 65th ST

PERMIT NUMBER	SITE ADDRESS/LOCATION
X0401967	1167 65th Street, Oakland
APPROX. START DATE: 5/7/04 / APPROX. END DATE: 5/21/04	24-HOUR EMERGENCY PHONE NUMBER (Permit not valid without 24-Hour number): 1-888-881-4367
CONTRACTOR'S LICENSE # AND CLASS: C57 636887	CITY BUSINESS TAX #: 559 628

ATTENTION:

1) State law requires that the contractor/owner call *Underground Service Alert (USA)* two working days before excavating. This permit is not valid unless applicant has secured an inquiry identification number issued by USA. The USA telephone number is 1 (800) 642-2444. UNDERGROUND SERVICE ALERT (USA) #: 150067

2) **48 hours prior to starting work, YOU MUST CALL (510) 238-3651 TO SCHEDULE AN INSPECTION.**

OWNER/BUILDER

I hereby affirm that I am exempt from the Contractor's License Law for the following reason (Sec. 7031.5 Business and Professions Code: Any city or county which requires a permit to construct, alter, improve, demolish, or repair any structure, prior to its issuance, also requires the applicant for such permit to file a signed statement that he is licensed pursuant to the provisions of the Contractor's License law Chapter 9 (commencing with Sec. 7000) of Division 3 of the Business and Professions Code, or that he is exempt therefrom and the basis for the alleged exemption. Any violation of Section 7031.5 by any applicant for a permit subjects the applicant to a civil penalty of not more than $500):

☐ I, as an owner of the property, or my employees with wages as their sole compensation, will do the work, and the structure is not intended or offered for sale (Sec. 7044, Business Professions Code: The Contractor's License Law does not apply to an owner of property who builds or improves thereon, and who does such work himself or through his own employees, provided that such improvements are not intended or offered for sale. If however, the building or improvement is sold within one year of completion, the owner-builder will have the burden of proving that he did not build or improve for the purpose of sale).

☐ I, as owner of the property, am exempt from the sale requirements of the above due to: (1) I am improving my principal place of residence or appurtenances thereto, (2) the work will be performed prior to sale, (3) I have resided in the residence for the 12 months prior to completion of the work, and (4) I have not claimed exemption on this subdivision on more than two structures more than once during any three-year period, (Sec. 7044 Business and Professions Code).

☒ I, as owner of the property, am exclusively contracting with licensed contractors to construct the project, (Sec. 7044, Business and Professions Code: The Contractor's License Law does not apply to an owner of property who builds or improves thereon, and who contracts for such projects with a contractor(s) licensed pursuant to the Contractor's License law).

☐ I am exempt under Sec. _____, B&PC for this reason _____

WORKER'S COMPENSATION

☒ I hereby affirm that I have a certificate of consent to self-insure, or a certificate of Worker's Compensation Insurance, or a certified copy thereof (Sec. 3700, Labor Code).

Policy # WC2B71072339013 Company Name: Liberty Mutual Fire Insurance Company

☐ I certify that in the performance of the work for which this permit is issued, I shall not employ any person in any manner so as to become subject to the Worker's Compensation Laws of California (not required for work valued at one hundred dollars ($100) or less).

NOTICE TO APPLICANT: If, after making this Certificate of Exemption, you should become subject to the Worker's Compensation provisions of the Labor Code, you must forthwith comply with such provisions or this permit shall be deemed revoked. This permit is issued pursuant to all provisions of Title 12 Chapter 12.12 of the Oakland Municipal Code. It is granted upon the express condition that the permittee shall be responsible for all claims and liabilities arising out of work performed under the permit or arising out of permittee's failure to perform the obligations with respect to street maintenance. The permittee shall, and by acceptance of the permit agrees to defend, indemnify, save and hold harmless the City, its officers and employees, from and against any and all suits, claims, or actions brought by any person for or on account of any bodily injuries, disease or illness or damage to persons and/or property sustained or arising in the construction of the work performed under the permit or in consequence of permittee's failure to perform the obligations with respect to street maintenance. This permit is void 90 days from the date of issuance unless an extension is granted by the Director of the Office of Planning and Building.

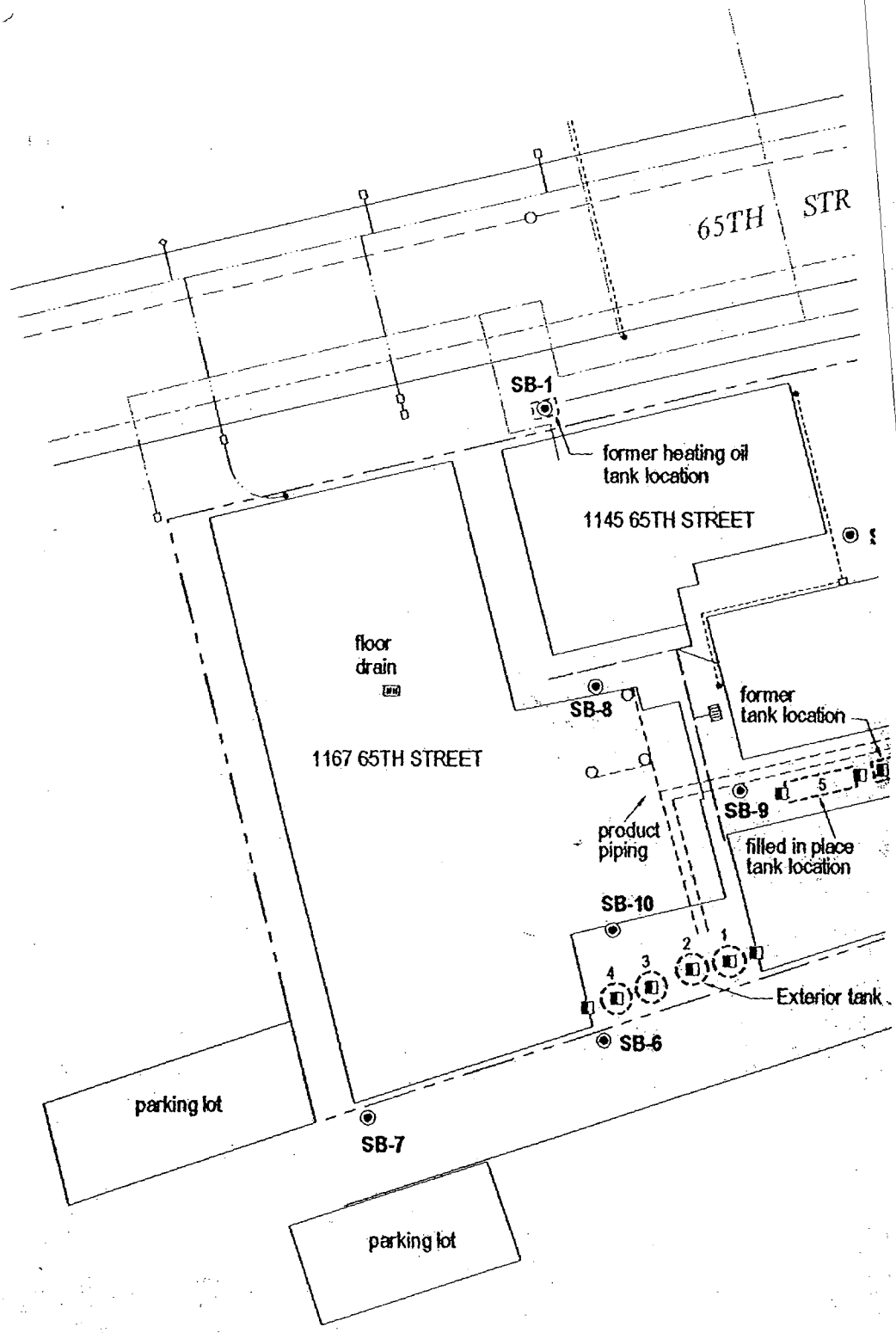
I hereby affirm that I am licensed under provisions of Chapter 9 of Division 3 of the Business and Professions Code and my license is in full force and effect (if contractor), that I have read this permit and agree to its requirements, and that the above information is true and correct under penalty of law.

Matt Meyers Cambria 5/5/04
Cory Bean Precision Sampling 5/3/04

Signature of Permittee ☒ Agent for ☐ Contractor ☐ Owner Date

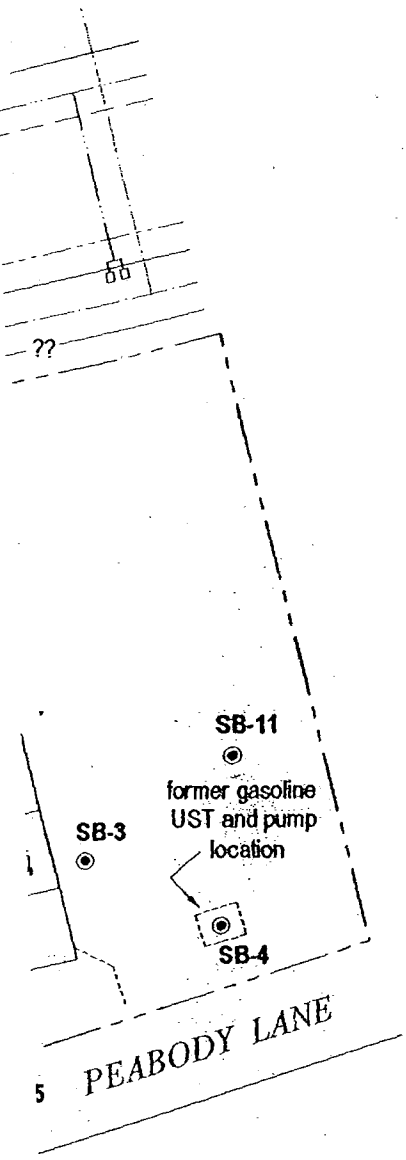
DATE STREET LAST RESURFACED:	SPECIAL PAVING DETAIL REQUIRED? ☐ YES ☒ NO	HOLIDAY RESTRICTION (NOV 1 - JAN 1) ☐ YES ☒ NO	LIMITED OPERATION AREA? (7AM-9AM & 4PM-6PM) ☐ YES ☒ NO
ISSUED BY		DATE ISSUED	

forms/permits/excavate.pm2 (04/98)


65TH STR
SB-1
former heating oil tank location
1145 65TH STREET
floor drain
SB-8
former tank location
1167 65TH STREET
SB-9
product piping
filled in place tank location
SB-10
Exterior tank
SB-6
parking lot
SB-7
parking lot

EXPLANATION

- SB-1 ◉ Cambria soil boring/temporary well location
- ◧ SCI soil sample location
- (1) Former tank location and tank nomenclature
- Product piping
- ○ Product piping stub-ups
- Electrical line
- Storm drain
- Sanitary sewer line
- Water line
- Gas line
- Communications line



sewer laterals were unable to be located

N

0 20 40 80

Scale (ft)

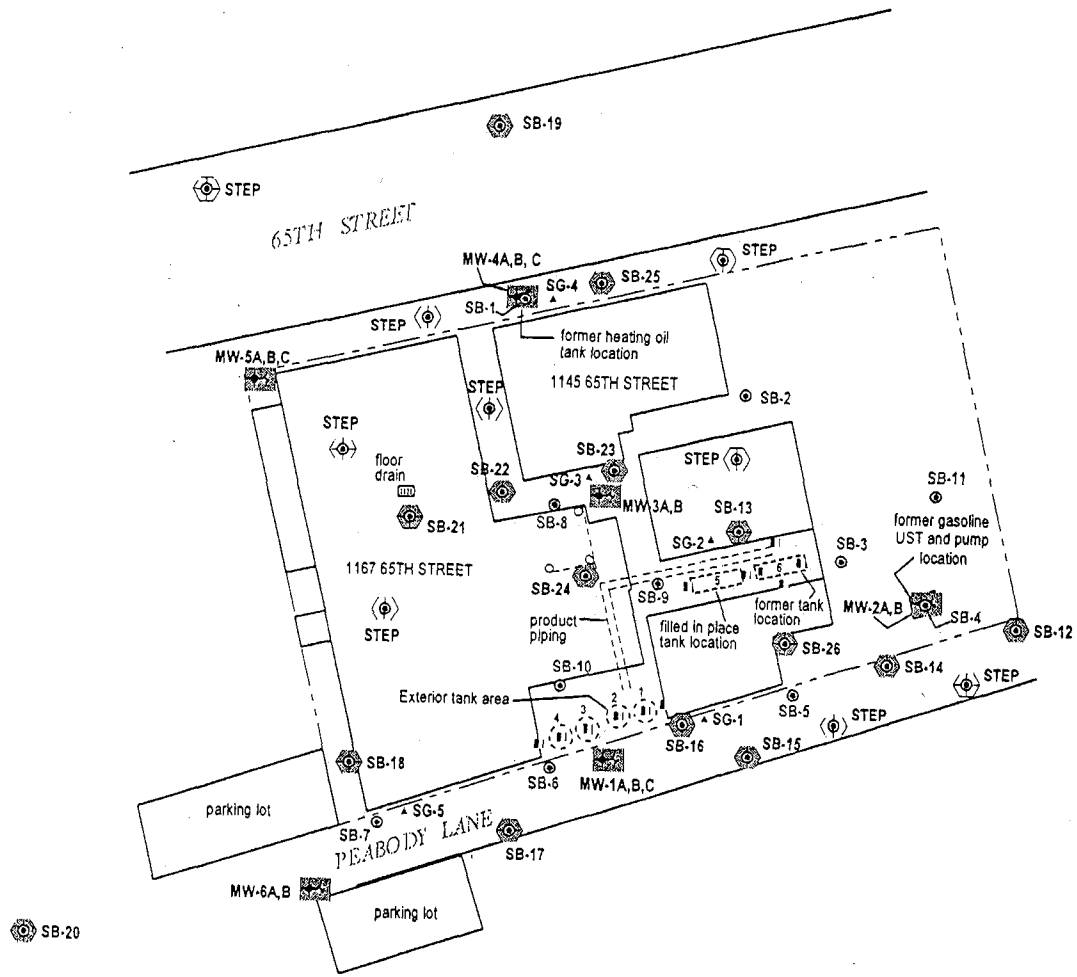
FIGURE

2

Conduit Map and Site Plan

CAMBRIA

1137 - 1167 65th Street
Oakland, California



EXPLANATION

- SB-12 — Proposed soil boring location
- STEP — Proposed step soil boring location, if needed
- SG-1 — Proposed shallow soil gas sampling location
- MW-1A,B,C — Proposed monitoring well cluster
- SB-1 — Cambria soil boring/temporary well location
- SCI soil sample location
- Former tank location and tank nomenclature
- Product piping
- Product piping stub-ups

0 20 40 80

Scale (ft)

FIGURE

12

Proposed Soil Boring Locations

CAMBRIA

1137 - 1167 65th Street
Oakland, California

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

Job Site 1137 65TH ST Parcel# 016 -1505-011-03 Appl# X0301

Descr soil boring on 65th St Permit Issued 12/31/03

Work Type EXCAVATION-PRIVATE P

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

		Applcnt	Phone#	Lic#	--License Classes--
Owner	NADY JOHN TR				
Contractor	PRECISION SAMPLING,INC	X	(510)237-4575	636387	C57
Arch/Engr					
Agent	MATT MEYERS				
pplic Addr	1400 SOUTH 50TH ST, RICHMOND, CA, 94804				

JOB SITE

$256.00 TOTAL FEES PAID AT ISSUANCE

$51.00 Applic	$205.00 Permit
$.00 Process	$.00 Rec Mgmt
$.00 Gen Plan	$.00 Invstg
$.00 Other	

ADDRESS:

CITY OF OAKLAND

Office of ...ing and Building

EXCAVATION PERMIT

TO EXCAVATE IN STREETS OR OTHER SPECIFIED WORK

CIVIL ENGINEERING

ON 65th ST

PERMIT NUMBER		SITE ADDRESS/LOCATION
X0301216		Street and Alley bordering 1137-1167 65th St, Oakland
APPROX. START DATE: 1/5/04	APPROX. END DATE: 1/20/04	24-HOUR EMERGENCY PHONE NUMBER (Permit not valid without 24-Hour number): 1-888-881-4367
CONTRACTOR'S LICENSE # AND CLASS: C57 # 636387		CITY BUSINESS TAX #: 559628

ATTENTION:

State law requires that the contractor/owner call *Underground Service Alert (USA)* two working days before excavating. This permit is not valid unless applicant has secured an inquiry identification number issued by USA. The USA telephone number is 1 (800) 642-2444. UNDERGROUND SERVICE ALERT (USA) #: 465055

48 hours prior to starting work, YOU MUST CALL (510) 238-3651 TO SCHEDULE AN INSPECTION.

OWNER/BUILDER

...ereby affirm that I am exempt from the Contractor's License Law for the following reason (Sec. 7031.5 Business and Professions Code: Any city or county which requires a permit to ...nstruct, alter, improve, demolish, or repair any structure, prior to its issuance, also requires the applicant for such permit to file a signed statement that he is licensed pursuant to the ...ovisions of the Contractor's License law Chapter 9 (commencing with Sec. 7000) of Division 3 of the Business and Professions Code, or that he is exempt therefrom and the basis for the ...eged exemption. Any violation of Section 7031.5 by any applicant for a permit subjects the applicant to a civil penalty of not more than $500):

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I, as owner of the property, am exempt from the sale requirements of the above due to: (1) I am improving my principal place of residence or appurtenances thereto, (2) the work will ...performed prior to sale, (3) I have resided in the residence for the 12 months prior to completion of the work, and (4) I have not claimed exemption on this subdivision on more than two ...ictures more than once during any three-year period. (Sec. 7044 Business and Professions Code).

I, as owner of the property, am exclusively contracting with licensed contractors to construct the project, (Sec. 7044, Business and Professions Code: The Contractor's License Law ...s not apply to an owner of property who builds or improves thereon, and who contracts for such projects with a contractor(s) licensed pursuant to the Contractor's License law).

I am exempt under Sec. _____, B&PC for this reason _____.

...RKER'S COMPENSATION

I hereby affirm that I have a certificate of consent to self-insure, or a certificate of Worker's Compensation Insurance, or a certified copy thereof (Sec. 3700, Labor Code).

...cy # WC2-871-072339-013 Company Name Liberty Mutual

I certify that in the performance of the work for which this permit is issued, I shall not employ any person in any manner so as to become subject to the Worker's Compensation Laws ...California (not required for work valued at one hundred dollars ($100) or less).

...TICE TO APPLICANT: If, after making this Certificate of Exemption, you should become subject to the Worker's Compensation provisions of the Labor Code, you must forthwith ...ply with such provisions or this permit shall be deemed revoked. This permit is issued pursuant to all provisions of Title 12 Chapter 12.12 of the Oakland Municipal Code. It is ...ted upon the express condition that the permittee shall be responsible for all claims and liabilities arising out of work performed under the permit or arising out of permittee's failure to ...rm the obligations with respect to street maintenance. The permittee shall, and by acceptance of the permit agrees to defend, indemnify, save and hold harmless the City, its officers ...employees, from and against any and all suits, claims, or actions brought by any person for or on account of any bodily injuries, disease or illness or damage to persons and/or property ...ined or arising in the construction of the work performed under the permit or in consequence of permittee's failure to perform the obligations with respect to street maintenance. This ...it is void 90 days from the date of issuance unless an extension is granted by the Director of the Office of Planning and Building.

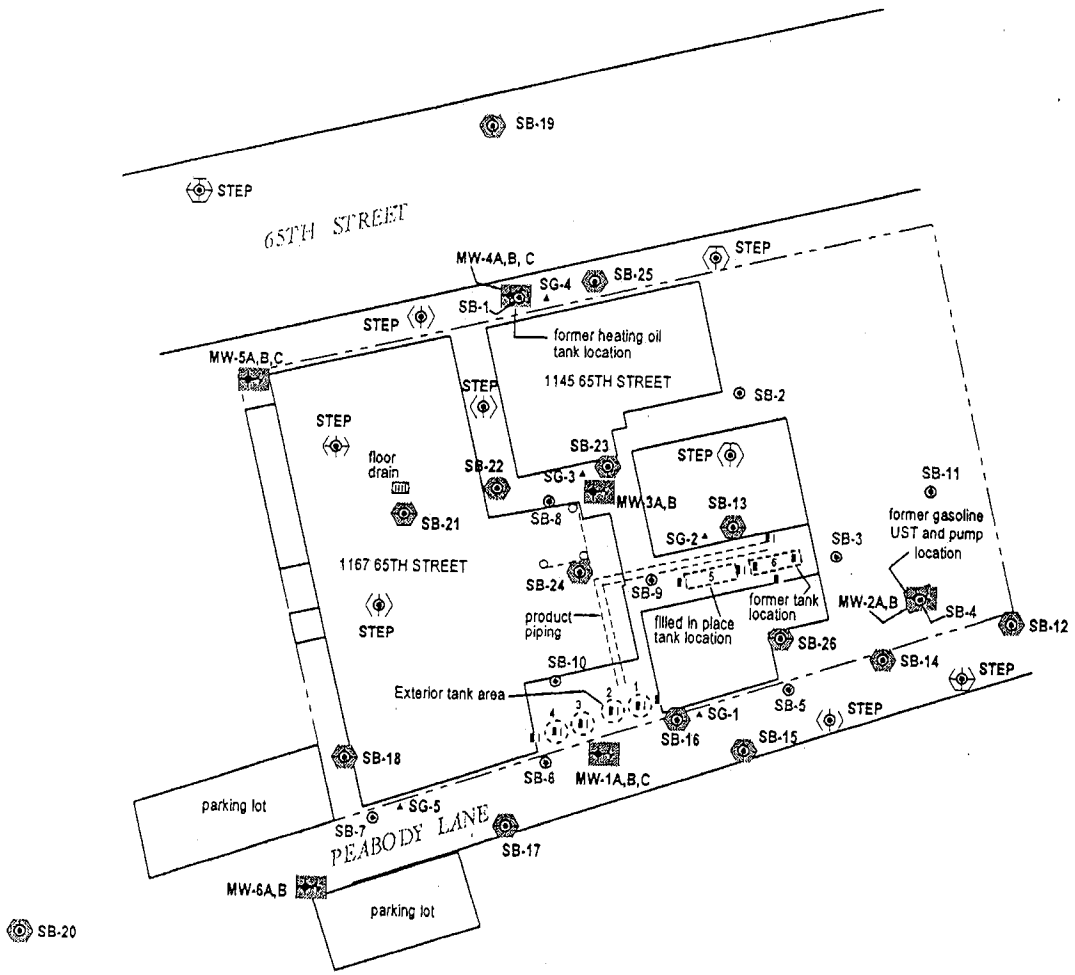
...by affirm that I am licensed under provisions of Chapter 9 of Division 3 of the Business and Professions Code and my license is in full force and effect (if contractor), that I have read ...ermit and agree to its requirements, and that the above information is true and correct under penalty of law.

...ture of Permittee for Precision Drilling

☒ Agent for ☒ Contractor ☐ Owner

12/30/03 Date

...E STREET LAST ...RFACED	SPECIAL PAVING DETAIL REQUIRED? ☐ YES ☒ NO	HOLIDAY RESTRICTION? (NOV 1 - JAN 1) ☐ YES ☒ NO	LIMITED OPERATION AREA? (7AM-9AM & 4PM-6PM) ☐ YES ☒ NO
...ED BY		DATE ISSUED	



EXPLANATION

- SB-12 — Proposed soil boring location
- STEP — Proposed step soil boring location, if needed
- SG-1 — Proposed shallow soil gas sampling location
- MW-1A,B,C — Proposed monitoring well cluster
- SB-1 — Cambria soil boring/temporary well location
- SCI soil sample location
- 1 — Former tank location and tank nomenclature
- Product piping
- Product piping stub-ups

0 20 40 80

Scale (ft)

FIGURE

12

Proposed Soil Boring Locations

CAMBRIA

1137 - 1167 65th Street
Oakland, California

Monday-2 3p.m

CITY OF OAKLAND
Office of Planning and Building

EXCAVATION PERMIT

TO EXCAVATE IN STREETS OR OTHER SPECIFIED WORK

CIVIL ENGINEERIN(

Permit valid for 90 days from date of issuance.

PERMIT NUMBER	SITE ADDRESS/LOCATION
X 0 3 0 1 2 1 7	1137 - 1167 (5th Street, Oakland on Peabody Lane
APPROX. START DATE / APPROX. END DATE	24-HOUR EMERGENCY PHONE NUMBER (Permit not valid without 24-Hour number)
CONTRACTOR'S LICENSE # AND CLASS: CSI # 636387	CITY BUSINESS TAX #

ATTENTION:

1- State law requires that the contractor/owner call Underground Service Alert (USA) two working days before excavating. This permit is not valid unless applicant has secured an inquiry identification number issued by USA. The USA telephone number is 1-800-642-2444. Underground Service Alert (USA) # _____

2- **48 hours prior to starting work, you MUST CALL (510) 238-3651 to schedule an inspection.**

3- **48 hours prior to re-paving, a compaction certificate is required (waived for approved slurry backfill).**

OWNER/BUILDER

I hereby affirm that I am exempt from the Contractor's License Law for the following reason (Sec. 7031.5 Business and Professions Code: Any city or county which requires a permit to construct, alter, improve, demolish, or repair any structure, prior to its issuance, also requires the applicant for such permit to file a signed statement that he is licensed pursuant to the provisions of the Contractor's License law Chapter 9 (commencing with Sec. 7000) of Division 3 of the Business and Professions Code, or that he is exempt therefrom and the basis for the alleged exemption. Any violation of Section 7031.5 by any applicant for a permit subjects the applicant to a civil penalty of not more than $500):

☐ I, as an owner of the property, or my employees with wages as their sole compensation, will do the work, and the structure is not intended or offered for sale (Sec. 7044, Business Professions Code: The Contractor's License Law does not apply to an owner of property who builds or improves thereon, and who does such work himself or through his own employees, provided that such improvements are not intended or offered for sale. If however, the building or improvement is sold within one year of completion, the owner-builder will have the burden of proving that he did not build or improve for the purpose of sale).

☐ I, as owner of the property, am exempt from the sale requirements of the above due to: (1) I am improving my principal place of residence or appurtenances thereto, (2) the work will be performed prior to sale, (3) I have resided in the residence for the 12 months prior to completion of the work, and (4) I have not claimed exemption on this subdivision on more than two structures more than once during any three-year period. (Sec. 7044 Business and Professions Code).

☐ I, as owner of the property, am exclusively contracting with licensed contractors to construct the project, (Sec. 7044, Business and Professions Code: The Contractor's License Law does not apply to an owner of property who builds or improves thereon, and who contracts for such projects with a contractor(s) licensed pursuant to the Contractor's License law).

☐ I am exempt under Sec. _____, B&PC for this reason _____.

WORKER'S COMPENSATION

☐ I hereby affirm that I have a certificate of consent to self-insure, or a certificate of Worker's Compensation Insurance, or a certified copy thereof (Sec. 3700, Labor Code).

Policy # _____ Company Name _____

☐ I certify that in the performance of the work for which this permit is issued, I shall not employ any person in any manner so as to become subject to the Worker's Compensation Laws of California (not required for work valued at one hundred dollars ($100) or less).

NOTICE TO APPLICANT: If, after making this Certificate of Exemption, you should become subject to the Worker's Compensation provisions of the Labor Code, you must forthwith comply with such provisions or this permit shall be deemed revoked. This permit is issued pursuant to all provisions of Title 12 Chapter 12.12 of the Oakland Municipal Code. It is granted upon the express condition that the permittee shall be responsible for all claims and liabilities arising out of work performed under the permit or arising out of permittee's failure to perform the obligations with respect to street maintenance. The permittee shall, and by acceptance of the permit agrees to defend, indemnify, save and hold harmless the City, its officers and employees, from and against any and all suits, claims, or actions brought by any person for or on account of any bodily injuries, disease or illness or damage to persons and/or property sustained or arising in the construction of the work performed under the permit or in consequence of permittee's failure to perform the obligations with respect to street maintenance. This permit is void 90 days from the date of issuance unless an extension is granted by the Director of the Office of Planning and Building.

I hereby affirm that I am licensed under provisions of Chapter 9 of Division 3 of the Business and Professions Code and my license is in full force and effect (if contractor), that I have read this permit and agree to its requirements, and that the above information is true and correct under penalty of law.

for Precision Sampling, Inc. 12/30/03

Signature of Permittee ☒ Agent for ☒ Contractor ☐ Owner Date

DATE STREET LAST RESURFACED	SPECIAL PAVING DETAIL REQUIRED? ☐ YES ☒ NO	HOLIDAY RESTRICTION? (NOV 1 - JAN 1) ☐ YES ☒ NO	LIMITED OPERATION AREA? (7AM-9AM & 4PM-6PM) ☐ YES ☒ NO
ISSUED BY		DATE ISSUED	

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

Job Site 1137 65TH ST Parcel# 016 -1505-011-03 Appl# X0301217

Descr soil boring on Peabody Lane Permit Issued 12/31/03

Work Type EXCAVATION-PRIVATE P

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

		Applcnt	Phone#	Lic#	--License Classes--
Owner	NADY JOHN TR				
Contractor	PRECISION SAMPLING INC	X	(510)237-4575	636387	C57
Arch/Engr					
Agent	MATT MEYERS				
Applic Addr	1400 SOUTH 50TH ST, RICHMOND, CA, 94804				

$256.00 TOTAL FEES PAID AT ISSUANCE

$51.00	Applic	$205.00	Permit
$.00	Process	$.00	Rec Mgmt
$.00	Gen Plan	$.00	Invstg
$.00	Other		

JOB SITE

CITY OF OAKLAND

ADDRESS:

DIST:

PTS100-01 UPDATE/QUERY PROJECT INFORMATION 5/05/04 15:00:20
Next Option: 101

Applic#* ENMI04493 Type: 1
Date Filed: 04/21/04 Disposition:

		NUMBER	STREET NAME	SUFFIX*	SUITE	ASSESSOR PARCEL#
Site addr:	1)	1167	65TH	ST		016 -1505-011-03
	2)					
	3)					

Prcl Cond: X Cond Aprvl: Viol:

Proj Descr: install 2 wells on 65th street and
6 wells on Peabody Lane
all monitoring wells

Insp Div: ENG-SVCS Dist:

		Lic#	Phone#	Applicant
Track:				
Owner:	JOHN NADY			
Contractor:				
Arch/Engr:	CAMBRIA ENVIRONMENTAL TECHNO		( )420-0700	X
Agent:	JASON GERKE			

Applicant Addr: 5900 HOLLIS STREET No Fee:
City/State: EMERYVILLE, CA Zip: 94608 Wrkrs Comp*
Other Related Applic#s: X0401967 X0401968

F3=Ext F5=Chg F6=Add F7=Fwd F8=Bck F11=Fnd F12=Prv F23=Dsc F24=Com
307 Press ENTER to view page 2 data

JOB SITE

Virgil Chavez Land Surveying
312 Georgia Street, Suite 225
Vallejo, California 94590-5907
(707) 553-2476 • Fax (707) 553-8698

June 9, 2004
Project No.: 2111-48

Matt Meyers
Cambria Environmental
5900 Hollis Street, Suite A
Emeryville, CA 94608

Subject: Monitoring Well Survey
1137-1167 65th St.
Oakland, CA

Dear Matt:

This is to confirm that we have proceeded at your request to survey the new ground water monitoring wells located at the above referenced location. The survey was performed on June 2, 2004. The benchmark for this survey was a well monument on Powell St. under the westbound lanes of I-580. The latitude, longitude and coordinates are for top of casings and are based on the California State Coordinate System, Zone II (NAD83). Benchmark Elevation = 13.88 feet (NAVD88).

Latitude	Longitude	Northing	Easting	Elev.	Desc.
37.8472236	-122.2866863	2135879.67	6045809.48	39.64	TOC MW-1A
				39.95	RIM MW-1A
37.8472300	-122.2866958	2135882.07	6045806.77	39.50	TOC MW-1B
				39.88	RIM MW-1B
37.8472323	-122.2866825	2135882.83	6045810.62	39.49	TOC MW-1C
				39.91	RIM MW-1C
37.8473761	-122.2863455	2135933.32	6045908.93	40.72	TOC MW-2A
				40.99	RIM MW-2A
37.8474515	-122.2867589	2135963.03	6045790.09	40.88	TOC MW-3A
				41.05	RIM MW-3A
37.8476410	-122.2868200	2136032.35	6045773.77	38.71	TOC MW-4A
				38.89	RIM MW-4A
37.8476310	-122.2868258	2136028.76	6045772.04	38.54	TOC MW-4B
				38.96	RIM MW-4B
37.8476355	-122.2868037	2136030.28	6045778.45	38.50	TOC MW-4C
				39.00	RIM MW-4C
37.8475435	-122.2871088	2135998.46	6045689.73	38.98	TOC MW-5A
				39.45	RIM MW-5A
37.8471299	-122.2869907	2135847.24	6045720.94	37.98	TOC MW-6A
				38.29	RIM MW-6A
37.8471254	-122.2870078	2135845.69	6045715.98	37.66	TOC MW-6B
				38.16	RIM MW-6B

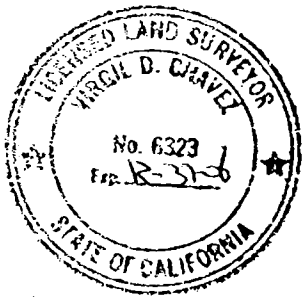
Virgil Chavez Land Surveying
312 Georgia Street, Suite 225
Vallejo, California 94590-5907
(707) 553-2476 • Fax (707) 553-8698

June 9, 2004
Project No.: 2111-48

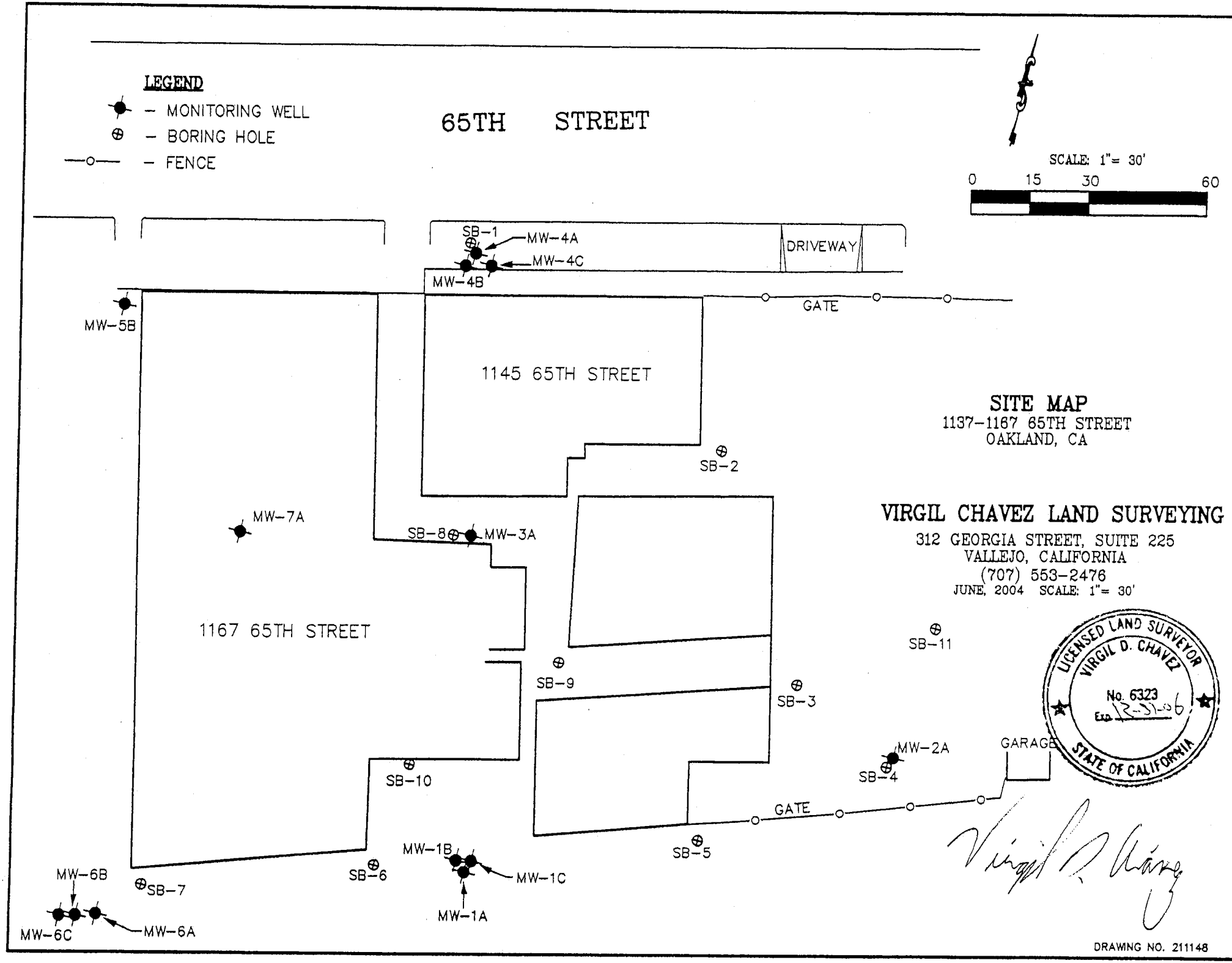
Monitoring Well Survey
1137-1167 65th St.
Oakland, CA

Latitude	Longitude	Northing	Easting	Elev.	Desc.
37.8471225	-122.2870218	2135844.71	6045711.92	37.59	TOC MW-6C
				38.07	RIM MW-6C
37.8474130	-122.2869572	2135950.12	6045732.59	40.58	TOC MW-7A
				40.74	RIM MW-7A

Sincerely,



Virgil D. Chavez, PLS 6323



SITE MAP

1137–1167 65TH STREET
OAKLAND, CA

VIRGIL CHAVEZ LAND SURVEYING
312 GEORGIA STREET, SUITE 225
VALLEJO, CALIFORNIA
(707) 553–2476

JUNE, 2004 SCALE: 1"= 30'

LICENSED LAND SURVEYOR
VIRGIL D. CHAVEZ
No. 6323
Exp 12-31-06
STATE OF CALIFORNIA

DRAWING NO. 211148

APPENDIX G

Laboratory Analytical Reports

McCampbell Analytical, Inc.
110 2nd Avenue South, #D7, Pacheco, CA 94553-5560
Telephone : 925-798-1620 Fax : 925-798-1622
Website: www.mccampbell.com E-mail: main@mccampbell.com

Cambria Env. Technology	Client Project ID: #522-1000-28; John Nady	Date Sampled: 05/07/04
5900 Hollis St, Suite A		Date Received: 05/10/04
Emeryville, CA 94608	Client Contact: Matt Meyers	Date Reported: 05/14/04
	Client P.O.:	Date Completed: 05/14/04

WorkOrder: 0405130

May 14, 2004

Dear Matt:

Enclosed are:

1). the results of 2 analyzed samples from your **#522-1000-28; John Nady project,**

2). a QC report for the above samples

3). a copy of the chain of custody, and

4). a bill for analytical services.

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

If you have any questions please contact me. McCampbell Analytical Laboratories strives for excellence in quality, service and cost. Thank you for your business and I look forward to working with you again.

Yours truly,

Angela Rydelius, Lab Manager

McCampbell Analytical, Inc.
110 2nd Avenue South, #D7, Pacheco, CA 94553-5560
Telephone : 925-798-1620 Fax : 925-798-1622
Website: www.mccampbell.com E-mail: main@mccampbell.com

Cambria Env. Technology	Client Project ID: #522-1000-28; John Nady	Date Sampled: 05/07/04
5900 Hollis St, Suite A		Date Received: 05/10/04
Emeryville, CA 94608	Client Contact: Matt Meyers	Date Extracted: 05/10/04
	Client P.O.:	Date Analyzed: 05/11/04

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

Extraction method: SW5030B Analytical methods: SW8021B/8015Cm Work Order: 0405130

Lab ID	Client ID	Matrix	TPH(g)	MTBE	Benzene	Toluene	Ethylbenzene	Xylenes	DF	% SS
003A	MW-3A@15	S	11,g,m	ND	ND	ND	ND	ND	1	97.4
	Reporting Limit for DF =1; ND means not detected at or above the reporting limit	W	NA	NA	NA	NA	NA	NA	1	ug/L
		S	1.0	0.05	0.005	0.005	0.005	0.005	1	mg/Kg

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

cluttered chromatogram; sample peak coelutes with surrogate peak.

+The following descriptions of the TPH chromatogram are cursory in nature and McCampbell Analytical is not responsible for their interpretation: a) unmodified or weakly modified gasoline is significant; b) heavier gasoline range compounds are significant(aged gasoline?); c) lighter gasoline range compounds (the most mobile fraction) are significant; d) gasoline range compounds having broad chromatographic peaks are significant; biologically altered gasoline?; e) TPH pattern that does not appear to be derived from gasoline (stoddard solvent / mineral spirit?); f) one to a few isolated non-target peaks present; g) strongly aged gasoline or diesel range compounds are significant; h) lighter than water immiscible sheen/product is present; i) liquid sample that contains greater than ~1 vol. % sediment; j) reporting limit raised due to high MTBE content; k) TPH pattern that does not appear to be derived from gasoline (aviation gas). m) no recognizable pattern.

DHS Certification No. 1644

Angela Rydelius, Lab Manager

McCampbell Analytical, Inc.
110 2nd Avenue South, #D7, Pacheco, CA 94553-5560
Telephone : 925-798-1620 Fax : 925-798-1622
Website: www.mccampbell.com E-mail: main@mccampbell.com

Cambria Env. Technology	Client Project ID: #522-1000-28; John Nady	Date Sampled: 05/07/04
5900 Hollis St, Suite A		Date Received: 05/10/04
Emeryville, CA 94608	Client Contact: Matt Meyers	Date Extracted: 05/10/04
	Client P.O.:	Date Analyzed: 05/12/04

Diesel (C10-23) and Oil (C18+) Range Extractable Hydrocarbons as Diesel and Motor Oil*

Extraction method: SW3550C Analytical methods: SW8015C Work Order: 0405130

Lab ID	Client ID	Matrix	TPH(d)	TPH(mo)	DF	% SS
0405130-003A	MW-3A@15	S	180,d,b,g	9.2	1	107
	Reporting Limit for DF =1; ND means not detected at or above the reporting limit	W	NA	NA		ug/L
		S	1.0	5.0		mg/Kg

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

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

+The following descriptions of the TPH chromatogram are cursory in nature and McCampbell Analytical is not responsible for their interpretation: a) unmodified or weakly modified diesel is significant; b) diesel range compounds are significant; no recognizable pattern; c) aged diesel? is significant); d) gasoline range compounds are significant; e) unknown medium boiling point pattern that does not appear to be derived from diesel (asphalt); f) one to a few isolated peaks present; g) oil range compounds are significant; h) lighter than water immiscible sheen/product is present; i) liquid sample that contains greater than ~1 vol. % sediment; k) kerosene/kerosene range; l) bunker oil; m) fuel oil; n) stoddard solvent/mineral spirit.

DHS Certification No. 1644

Angela Rydelius, Lab Manager

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Telephone : 925-798-1620 Fax : 925-798-1622
Website: www.mccampbell.com E-mail: main@mccampbell.com

Cambria Env. Technology	Client Project ID: #522-1000-28; John Nady	Date Sampled: 05/07/04
5900 Hollis St, Suite A		Date Received: 05/10/04
Emeryville, CA 94608	Client Contact: Matt Meyers	Date Extracted: 05/10/04
	Client P.O.:	Date Analyzed: 05/11/04

Halogenated Volatile Organics by P&T and GC-ELCD (8010 Basic Target List)*

Extraction Method: SW5030 Analytical Method: SW8021B Work Order: 0405130

Lab ID	0405130-003A				Reporting Limit for DF =1	
Client ID	MW-3A@15					
Matrix	S				S	W
DF	20					
Compound	**Concentration**				µg/Kg	µg/L
Bromodichloromethane	ND<100				5.0	NA
Bromoform	ND<100				5.0	NA
Bromomethane	ND<100				5.0	NA
Carbon Tetrachloride	ND<100				5.0	NA
Chlorobenzene	ND<100				5.0	NA
Chloroethane	ND<100				5.0	NA
2-Chloroethyl vinyl ether	ND<100				5.0	NA
Chloroform	ND<100				5.0	NA
Chloromethane	ND<100				5.0	NA
1,4-Dichlorobenzene	ND<100				5.0	NA
Dibromochloromethane	ND<100				5.0	NA
1,2-Dichlorobenzene	ND<100				5.0	NA
1,3-Dichlorobenzene	ND<100				5.0	NA
Dichlorodifluoromethane	ND<100				5.0	NA
1,1-Dichloroethane	ND<100				5.0	NA
1,2-Dichloroethane	ND<100				5.0	NA
1,1-Dichloroethene	ND<100				5.0	NA
cis-1,2-Dichloroethene	ND<100				5.0	NA
trans-1,2-Dichloroethene	ND<100				5.0	NA
1,2-Dichloropropane	ND<100				5.0	NA
cis-1,3-Dichloropropene	ND<100				5.0	NA
trans-1,3-Dichloropropene	ND<100				5.0	NA
Methylene chloride	ND<100				5.0	NA
1,1,2,2-Tetrachloroethane	ND<100				5.0	NA
Tetrachloroethene	ND<100				5.0	NA
1,1,1-Trichloroethane	ND<100				5.0	NA
1,1,2-Trichloroethane	ND<100				5.0	NA
Trichloroethene	ND<100				5.0	NA
Trichlorofluoromethane	ND<100				5.0	NA
Vinyl Chloride	ND<100				5.0	NA
Surrogate Recoveries (%)						
%SS:	90.0					
Comments	j					

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

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

surrogate diluted out of range or surrogate coelutes with another peak.

h) lighter than water immiscible sheen/product is present; i) liquid sample that contains greater than ~1 vol. % sediment; j) sample diluted due to high organic content; k) reporting limit raised due to insufficient sample amount.

DHS Certification No. 1644

Angela Rydelius, Lab Manager

McCampbell Analytical, Inc.
110 2nd Avenue South, #D7, Pacheco, CA 94553-5560
Telephone : 925-798-1620 Fax : 925-798-1622
Website: www.mccampbell.com E-mail: main@mccampbell.com

QC SUMMARY REPORT FOR SW8021B/8015Cm

Matrix: S WorkOrder: 0405130

EPA Method: SW8021B/8015Cm	Extraction: SW5030B			BatchID: 11483			Spiked Sample ID: 0405133-021A			
	Sample	Spiked	MS*	MSD*	MS-MSD*	LCS	LCSD	LCS-LCSD	Acceptance Criteria (%)	
	mg/Kg	mg/Kg	% Rec.	% Rec.	% RPD	% Rec.	% Rec.	% RPD	Low	High
TPH(btex)£	0.15	0.60	75.4	74.4	0.973	101	100	0.942	70	130
MTBE	ND	0.10	102	97.6	4.79	111	108	2.21	70	130
Benzene	ND	0.10	112	107	4.37	109	105	3.63	70	130
Toluene	ND	0.10	94.1	91.6	2.69	90	88.4	1.81	70	130
Ethylbenzene	ND	0.10	111	110	0.806	109	107	2.19	70	130
Xylenes	ND	0.30	100	96	4.08	96.7	96	0.692	70	130
%SS:	96.4	0.10	99.5	90	10.0	94.9	94.7	0.240	70	130

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

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

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

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

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

cluttered chromatogram, sample peak coelutes with surrogate peak

N/A = not enough sample to perform matrix spike and matrix spike duplicate.
NR = analyte concentration in sample exceeds spike amount for soil matrix or exceeds 2x spike amount for water matrix or sample diluted due to high matrix or analyte content.

DHS Certification No. 1644 TL QA/QC Officer

McCampbell Analytical, Inc.
110 2nd Avenue South, #D7, Pacheco, CA 94553-5560
Telephone : 925-798-1620 Fax : 925-798-1622
Website: www.mccampbell.com E-mail: main@mccampbell.com

QC SUMMARY REPORT FOR SW8015C

Matrix: S WorkOrder: 0405130

EPA Method: SW8015C	Extraction: SW3550C			BatchID: 11479			Spiked Sample ID: 0405123-001A			
	Sample	Spiked	MS*	MSD*	MS-MSD*	LCS	LCSD	LCS-LCSD	Acceptance Criteria (%)	
	mg/Kg	mg/Kg	% Rec.	% Rec.	% RPD	% Rec.	% Rec.	% RPD	Low	High
TPH(d)	ND	150	105	104	1.40	115	116	1.04	70	130
%SS:	100	50	105	104	1.38	112	113	0.715	70	130

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

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

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

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

N/A = not enough sample to perform matrix spike and matrix spike duplicate
NR = analyte concentration in sample exceeds spike amount for soil matrix or exceeds 2x spike amount for water matrix or sample diluted due to high matrix or analyte content.

DHS Certification No. 1644 TL QA/QC Officer

McCampbell Analytical, Inc.
110 2nd Avenue South, #D7, Pacheco, CA 94553-5560
Telephone : 925-798-1620 Fax : 925-798-1622
Website: www.mccampbell.com E-mail: main@mccampbell.com

QC SUMMARY REPORT FOR SW8021B

Matrix: S WorkOrder: 0405130

EPA Method: SW8021B	Extraction: SW5030			BatchID: 11484			Spiked Sample ID: 0405130-003A			
	Sample	Spiked	MS*	MSD*	MS-MSD*	LCS	LCSD	LCS-LCSD	Acceptance Criteria (%)	
	µg/Kg	µg/Kg	% Rec.	% Rec.	% RPD	% Rec.	% Rec.	% RPD	Low	High
Chlorobenzene	ND<100	50	87.6	91.6	4.46	97.2	95.9	1.37	70	130
1,1-Dichloroethene	ND<100	50	84.3	86.6	2.69	118	113	4.94	70	130
Trichloroethene	ND<100	50	71	79	10.7	102	100	1.70	70	130
%SS:	90.0	50	87.4	89.4	2.26	104	104	0	70	130

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

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

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

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

N/A = not enough sample to perform matrix spike and matrix spike duplicate.
NR = analyte concentration in sample exceeds spike amount for soil matrix or exceeds 2x spike amount for water matrix or sample diluted due to high matrix or analyte content.

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

DHS Certification No. 1644 TL QA/QC Officer

McCampbell Analytical, Inc.
110 Second Avenue South, #D7
Pacheco, CA 94553-5560
(925) 798-1620

CHAIN-OF-CUSTODY RECORD

Page 1 of 1

WorkOrder: 0405130 ClientID: CETE

Requested TAT: 5 days

Report to:
Matt Meyers
Cambria Env. Technology
5900 Hollis St, Suite A
Emeryville, CA 94608
TEL: (510) 420-0700
FAX: (510) 420-9170
ProjectNo: #522-1000-28; John Nady
PO:

Bill to:
Accounts Payable
Cambria Env. Technology
5900 Hollis St, Ste. A
Emeryville, CA 94608

Date Received: 5/10/04
Date Printed: 5/10/04

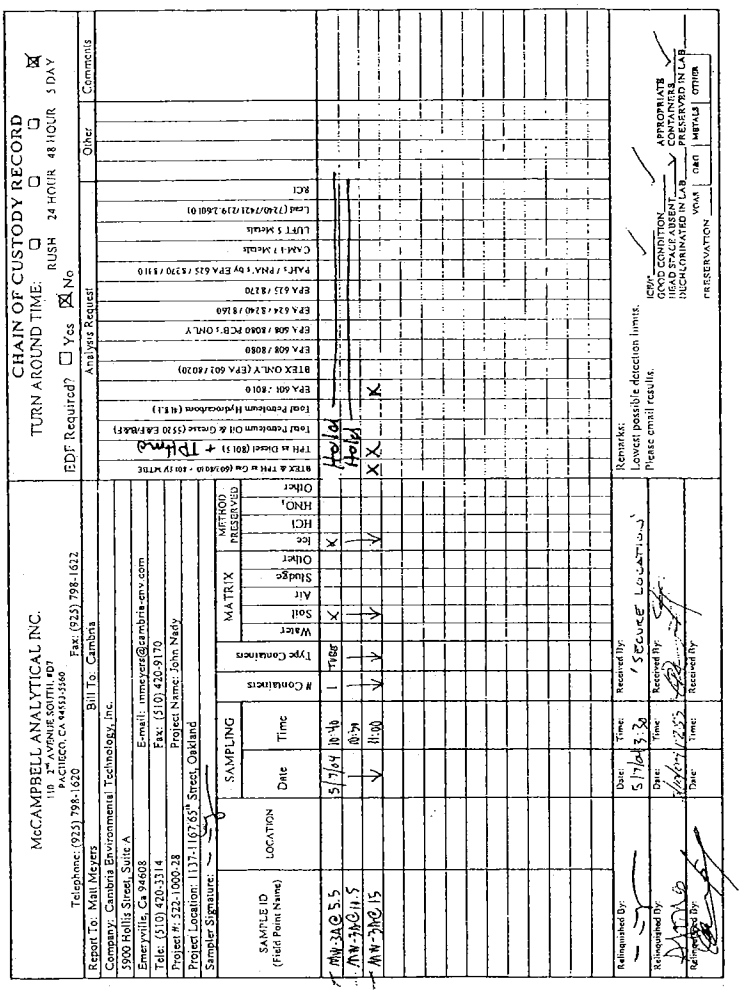
Sample ID	ClientSampID	Matrix	Collection Date	Hold	Requested Tests (See legend below)												
0405130-003	MW-3A@15'	Soil	5/7/04 11:00:00 AM		A	A	A										

Test Legend:
1 8010B_S
2 G-MBTEX_S
3 TPH(DMO)_S
4
5
6
7
8
9
10
11
12
13
14
15

Prepared by: Melissa Valles

Comments:

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



McCampbell Analytical, Inc.	110 2nd Avenue South, #D7, Pacheco, CA 94553-5560 Telephone : 925-798-1620 Fax : 925-798-1622 Website: www.mccampbell.com E-mail: main@mccampbell.com	
Cambria Env. Technology	Client Project ID: #522-1000-28; John Nady	Date Sampled: 05/07/04
5900 Hollis St, Suite A		Date Received: 05/10/04
Emeryville, CA 94608	Client Contact: Matt Meyers	Date Extracted: 05/10/04
	Client P.O.:	Date Analyzed: 05/11/04

Gasoline Range (C6-C12), Stoddard Solvent Range (C9-C12) Volatile Hydrocarbons with BTEX and MTBE*

Extraction Method: SW5030B Analytical Method: SW8021B/8015Cm Work Order: 0405130

Lab ID	0405130-003A				Reporting Limit for DF = 1	
Client ID	MW-3A@15					
Matrix	S					
DF	1				S	W
Compound	**Concentration**				**mg/Kg**	**ug/L**
TPH(g)	11				1.0	NA
TPH(ss)	26				1.0	NA
MTBE	ND				0.05	NA
Benzene	ND				0.005	NA
Toluene	ND				0.005	NA
Ethylbenzene	ND				0.005	NA
Xylenes	ND				0.005	NA
Surrogate Recoveries (%)						
%SS:	97.4					
Comments	g,m					

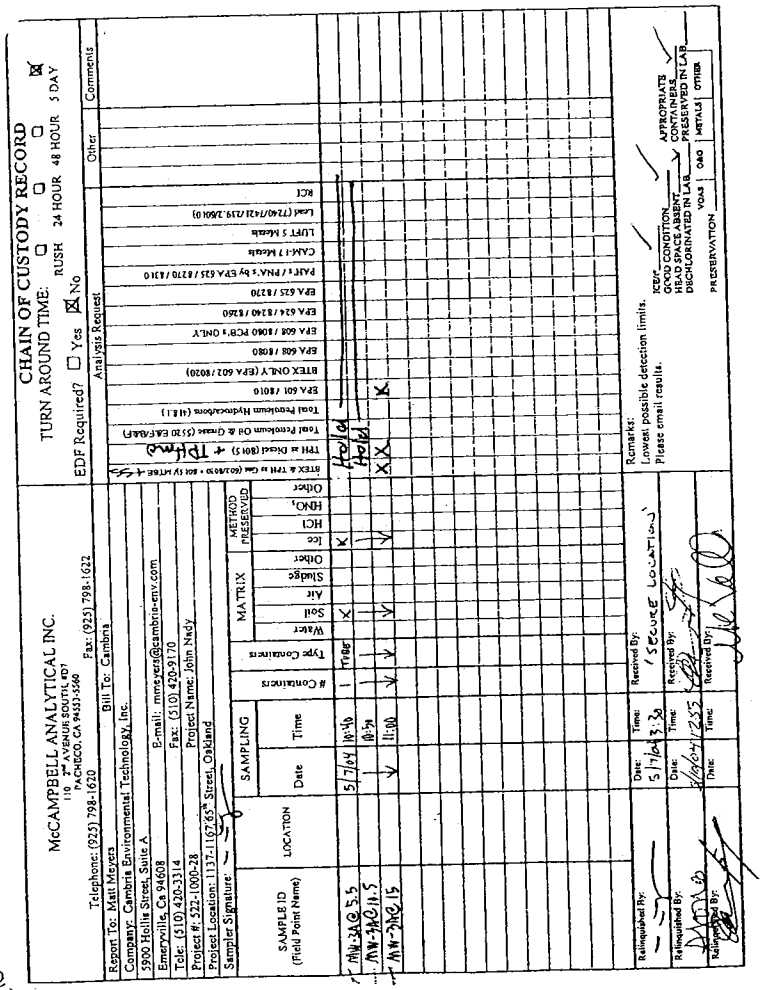
* water and vapor samples and all TCLP & SPLP extracts are reported in µg/L, soil/sludge/solid samples in mg/kg, wipe samples in µg/wipe, product/oil/non-aqueous liquid samples in mg/L.

cluttered chromatogram; sample peak coelutes with surrogate peak.

+The following descriptions of the TPH chromatogram are cursory in nature and McCampbell Analytical is not responsible for their interpretation: a) unmodified or weakly modified gasoline is significant; b) heavier gasoline range compounds are significant(aged gasoline?); c) lighter gasoline range compounds (the most mobile fraction) are significant; d) gasoline range compounds having broad chromatographic peaks are significant; biologically altered gasoline?; e) TPH pattern that does not appear to be derived from gasoline (stoddard solvent / mineral spirit?); f) one to a few isolated non-target peaks present; g) strongly aged gasoline or diesel range compounds are significant; h) lighter than water immiscible sheen/product is present; i) liquid sample that contains greater than ~1 vol. % sediment; j) reporting limit raised due to high MTBE content, k) TPH pattern that does not appear to be derived from gasoline (aviation gas). m) no recognizable pattern.

DHS Certification No. 1644

Angela Rydelius, Lab Manager



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Cambria Env. Technology	Client Project ID: #522-1000-28; John Nady	Date Sampled: 05/10/04
5900 Hollis St, Suite A		Date Received: 05/12/04
Emeryville, CA 94608	Client Contact: Matt Meyers	Date Reported: 05/19/04
	Client P.O.:	Date Completed: 05/19/04

WorkOrder: 0405184

May 19, 2004

Dear Matt:

Enclosed are:

1). the results of 4 analyzed samples from your **#522-1000-28; John Nady project,**

2). a QC report for the above samples

3). a copy of the chain of custody, and

4). a bill for analytical services.

All analyses were completed satisfactorily and all QC samples were found to be within our control limits. If you have any questions please contact me. McCampbell Analytical Laboratories strives for excellence in quality, service and cost. Thank you for your business and I look forward to working with you again.

Yours truly,

Angela Rydelius, Lab Manager

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Telephone : 925-798-1620 Fax : 925-798-1622
Website: www.mccampbell.com E-mail: main@mccampbell.com

Cambria Env. Technology	Client Project ID: #522-1000-28; John Nady	Date Sampled: 05/10/04
5900 Hollis St, Suite A		Date Received: 05/12/04
Emeryville, CA 94608	Client Contact: Matt Meyers	Date Extracted: 05/12/04
	Client P.O.:	Date Analyzed: 05/14/04

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

Extraction method: SW5030B Analytical methods: SW8021B/8015Cm Work Order: 0405184

Lab ID	Client ID	Matrix	TPH(g)	MTBE	Benzene	Toluene	Ethylbenzene	Xylenes	DF	% SS
001A	MW-1C@6.5	S	ND	ND	ND	ND	ND	ND	1	84.9
002A	MW-1C@9.5	S	160,b	ND<2.0	ND<0.20	ND<0.20	ND<0.20	ND<0.20	40	98.8
003A	MW-1C@14.5	S	6.0,b	ND	ND	ND	0.0053	ND	1	80.1
005A	MW-1C@20	S	ND	ND	ND	ND	ND	ND	1	89.0
Reporting Limit for DF =1; ND means not detected at or above the reporting limit		W	NA	NA	NA	NA	NA	NA	1	ug/L
		S	1.0	0.05	0.005	0.005	0.005	0.005	1	mg/Kg

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

cluttered chromatogram; sample peak coelutes with surrogate peak.

+ The following descriptions of the TPH chromatogram are cursory in nature and McCampbell Analytical is not responsible for their interpretation: a) unmodified or weakly modified gasoline is significant; b) heavier gasoline range compounds are significant(aged gasoline?); c) lighter gasoline range compounds (the most mobile fraction) are significant; d) gasoline range compounds having broad chromatographic peaks are significant; biologically altered gasoline?; e) TPH pattern that does not appear to be derived from gasoline (stoddard solvent / mineral spirit?); f) one to a few isolated non-target peaks present; g) strongly aged gasoline or diesel range compounds are significant; h) lighter than water immiscible sheen/product is present; i) liquid sample that contains greater than ~1 vol. % sediment; j) reporting limit raised due to high MTBE content; k) TPH pattern that does not appear to be derived from gasoline (aviation gas). m) no recognizable pattern.

DHS Certification No. 1644

Angela Rydelius, Lab Manager

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Telephone : 925-798-1620 Fax : 925-798-1622
Website: www.mccampbell.com E-mail: main@mccampbell.com

Cambria Env. Technology	Client Project ID: #522-1000-28; John Nady	Date Sampled: 05/10/04
5900 Hollis St, Suite A		Date Received: 05/12/04
Emeryville, CA 94608	Client Contact: Matt Meyers	Date Extracted: 05/12/04
	Client P.O.:	Date Analyzed: 05/14/04-05/15/04

Diesel (C10-23) and Oil (C18+) Range Extractable Hydrocarbons as Diesel and Motor Oil*

Extraction method: SW3550C Analytical methods: SW8015C Work Order: 0405184

Lab ID	Client ID	Matrix	TPH(d)	TPH(mo)	DF	% SS
0405184-001A	MW-1C@6.5	S	ND	ND	1	99.1
0405184-002A	MW-1C@9.5	S	60,n	ND	1	101
0405184-003A	MW-1C@14.5	S	9.5,n	ND	1	103
0405184-005A	MW-1C@20	S	ND	ND	1	100
Reporting Limit for DF =1; ND means not detected at or above the reporting limit		W	NA	NA	ug/L	
		S	1.0	5.0	mg/Kg	

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

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

+ The following descriptions of the TPH chromatogram are cursory in nature and McCampbell Analytical is not responsible for their interpretation: a) unmodified or weakly modified diesel is significant; b) diesel range compounds are significant; no recognizable pattern; c) aged diesel? is significant), d) gasoline range compounds are significant; e) unknown medium boiling point pattern that does not appear to be derived from diesel (asphalt); f) one to a few isolated peaks present; g) oil range compounds are significant; h) lighter than water immiscible sheen/product is present; i) liquid sample that contains greater than ~1 vol. % sediment; k) kerosene/kerosene range; l) bunker oil; m) fuel oil; n) stoddard solvent/mineral spirit.

DHS Certification No. 1644

Angela Rydelius, Lab Manager

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Telephone : 925-798-1620 Fax : 925-798-1622
Website: www.mccampbell.com E-mail: main@mccampbell.com

Cambria Env. Technology	Client Project ID: #522-1000-28; John Nady	Date Sampled: 05/10/04
5900 Hollis St, Suite A		Date Received: 05/12/04
Emeryville, CA 94608	Client Contact: Matt Meyers	Date Extracted: 05/12/04
	Client P.O.:	Date Analyzed: 05/14/04

Halogenated Volatile Organics by P&T and GC-ELCD (8010 Basic Target List)*

Extraction Method: SW5030 Analytical Method: SW8021B Work Order: 0405184

Lab ID	0405184-001A	0405184-002A	0405184-003A	0405184-005A	Reporting Limit for DF =1	
Client ID	MW-1C@6.5	MW-1C@9.5	MW-1C@14.5	MW-1C@20		
Matrix	S	S	S	S		
DF	1	4	1	1	S	W
Compound	**Concentration**				**µg/Kg**	**µg/L**
Bromodichloromethane	ND	ND<20	ND	ND	5.0	NA
Bromoform	ND	ND<20	ND	ND	5.0	NA
Bromomethane	ND	ND<20	ND	ND	5.0	NA
Carbon Tetrachloride	ND	ND<20	ND	ND	5.0	NA
Chlorobenzene	ND	ND<20	ND	ND	5.0	NA
Chloroethane	ND	ND<20	ND	ND	5.0	NA
2-Chloroethyl vinyl ether	ND	ND<20	ND	ND	5.0	NA
Chloroform	ND	ND<20	ND	ND	5.0	NA
Chloromethane	ND	ND<20	ND	ND	5.0	NA
1,4-Dichlorobenzene	ND	ND<20	ND	ND	5.0	NA
Dibromochloromethane	ND	ND<20	ND	ND	5.0	NA
1,2-Dichlorobenzene	ND	ND<20	ND	ND	5.0	NA
1,3-Dichlorobenzene	ND	ND<20	ND	ND	5.0	NA
Dichlorodifluoromethane	ND	ND<20	ND	ND	5.0	NA
1,1-Dichloroethane	ND	ND<20	ND	ND	5.0	NA
1,2-Dichloroethane	ND	ND<20	ND	ND	5.0	NA
1,1-Dichloroethene	ND	ND<20	ND	ND	5.0	NA
cis-1,2-Dichloroethene	ND	ND<20	ND	ND	5.0	NA
trans-1,2-Dichloroethene	ND	ND<20	ND	ND	5.0	NA
1,2-Dichloropropane	ND	ND<20	ND	ND	5.0	NA
cis-1,3-Dichloropropene	ND	ND<20	ND	ND	5.0	NA
trans-1,3-Dichloropropene	ND	ND<20	ND	ND	5.0	NA
Methylene chloride	ND	ND<20	ND	ND	5.0	NA
1,1,2,2-Tetrachloroethane	ND	ND<20	ND	ND	5.0	NA
Tetrachloroethene	ND	ND<20	ND	ND	5.0	NA
1,1,1-Trichloroethane	ND	ND<20	ND	ND	5.0	NA
1,1,2-Trichloroethane	ND	ND<20	ND	ND	5.0	NA
Trichloroethene	ND	ND<20	ND	ND	5.0	NA
Trichlorofluoromethane	ND	ND<20	ND	ND	5.0	NA
Vinyl Chloride	ND	ND<20	ND	ND	5.0	NA
Surrogate Recoveries (%)						
%SS:	110	97.5	109	107		
Comments		j				

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

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

surrogate diluted out of range or surrogate coelutes with another peak.

b) lighter than water immiscible sheen/product is present; i) liquid sample that contains greater than ~1 vol. % sediment; j) sample diluted due to high organic content; k) reporting limit raised due to insufficient sample amount.

DHS Certification No. 1644

Angela Rydelius, Lab Manager

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1100 2nd Avenue South, #D7, Pacheco, CA 94553-5560
Telephone : 925-798-1620 Fax : 925-798-1622
Website: www.mccampbell.com E-mail: main@mccampbell.com

QC SUMMARY REPORT FOR SW8021B/8015Cm

Matrix: S WorkOrder: 0405184

EPA Method: SW8021B/8015Cm Extraction: SW5030B BatchID: 11526 Spiked Sample ID: 0405185-004A

	Sample	Spiked	MS*	MSD*	MS-MSD*	LCS	LCSD	LCS-LCSD	Acceptance Criteria (%)	
	mg/Kg	mg/Kg	% Rec.	% Rec.	% RPD	% Rec.	% Rec.	% RPD	Low	High
TPH(btex)[£]	ND	0.60	100	99.1	0.955	99.1	99.1	0	70	130
MTBE[#]	ND	0.10	104	103	0.696	108	101	7.04	70	130
Benzene	ND	0.10	104	102	1.23	116	112	3.08	70	130
Toluene	ND	0.10	89.8	89.1	0.723	98.2	96.2	2.04	70	130
Ethylbenzene	ND	0.10	110	109	0.401	118	115	2.00	70	130
Xylenes	ND	0.30	100	100	0	107	100	6.45	70	130
%SS:	81.0	0.10	95.8	101	5.28	109	88.9	20.3	70	130

All target compounds in the Method Blank of this extraction batch were ND less than the method RL with the following exceptions:

NONE

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

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

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

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

cluttered chromatogram; sample peak coelutes with surrogate peak.

N/A = not enough sample to perform matrix spike and matrix spike duplicate.
NR = analyte concentration in sample exceeds spike amount for soil matrix or exceeds 2x spike amount for water matrix or sample diluted due to high matrix or analyte content.

DHS Certification No. 1644

TL QA/QC Officer

McCampbell Analytical, Inc.
110 2nd Avenue South, #D7, Pacheco, CA 94553-5560
Telephone : 925-798-1620 Fax : 925-798-1622
Website: www.mccampbell.com E-mail: main@mccampbell.com

QC SUMMARY REPORT FOR SW8015C

Matrix: S WorkOrder: 0405184

EPA Method: SW8015C	Extraction: SW3550C		BatchID: 11527		Spiked Sample ID: 0405185-004A					
	Sample	Spiked	MS*	MSD*	MS-MSD*	LCS	LCSD	LCS-LCSD	Acceptance Criteria (%)	
	mg/Kg	mg/Kg	% Rec.	% Rec.	% RPD	% Rec.	% Rec.	% RPD	Low	High
TPH(d)	ND	150	92.1	93.1	1.03	92.2	91.9	0.324	70	130
%SS:	99.6	50	101	101	0	102	101	0.211	70	130

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

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

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

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

N/A = not enough sample to perform matrix spike and matrix spike duplicate.
NR = analyte concentration in sample exceeds spike amount for soil matrix or exceeds 2x spike amount for water matrix or sample diluted due to high matrix or analyte content.

DHS Certification No. 1644

QA/QC Officer

McCampbell Analytical, Inc.
110 2nd Avenue South, #D7, Pacheco, CA 94553-5560
Telephone : 925-798-1620 Fax : 925-798-1622
Website: www.mccampbell.com E-mail: main@mccampbell.com

QC SUMMARY REPORT FOR SW8021B

Matrix: S WorkOrder: 0405184

EPA Method: SW8021B	Extraction: SW5030		BatchID: 11484		Spiked Sample ID: 0405130-003A					
	Sample	Spiked	MS*	MSD*	MS-MSD*	LCS	LCSD	LCS-LCSD	Acceptance Criteria (%)	
	µg/Kg	µg/Kg	% Rec.	% Rec.	% RPD	% Rec.	% Rec.	% RPD	Low	High
Chlorobenzene	ND<100	50	87.6	91.6	4.46	97.7	95.9	1.37	70	130
1,1-Dichloroethene	ND<100	50	84.3	86.6	2.69	118	113	4.94	70	130
Trichloroethene	ND<100	50	71	79	10.7	102	100	1.70	70	130
%SS:	90.0	50	87.4	89.4	2.26	104	104	0	70	130

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

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

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

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

N/A = not enough sample to perform matrix spike and matrix spike duplicate.
NR = analyte concentration in sample exceeds spike amount for soil matrix or exceeds 2x spike amount for water matrix or sample diluted due to high matrix or analyte content.

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

DHS Certification No. 1644

QA/QC Officer

McCampbell Analytical, Inc.
110 Second Avenue South, #D7
Pacheco, CA 94553-5560
(925) 798-1620

CHAIN-OF-CUSTODY RECORD

Page 1 of 1

WorkOrder: 0405184 ClientID: CETE

Report to:
Matt Meyers
Cambria Env. Technology
5900 Hollis St, Suite A
Emeryville, CA 94608
TEL: (510) 420-0700
FAX: (510) 420-9170
ProjectNo: #522-1000-28; John Nady
PO:

Bill to:
Accounts Payable
Cambria Env. Technology
5900 Hollis St, Ste. A
Emeryville, CA 94608

Requested TAT: 5 days
Date Received: 5/12/04
Date Printed: 5/12/04

Sample ID	ClientSampID	Matrix	Collection Date	Hold	Requested Tests (See legend below) 1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
0405184-001	MW-1C@6.5	Soil	5/10/04 8:45:00 AM		A	A													
0405184-002	MW-1C@9.5	Soil	5/10/04 9:05:00 AM		A	A													
0405184-003	MW-1C@14.5	Soil	5/10/04 9:35:00 AM		A	A													
0405184-005	MW-1C@20	Soil	5/10/04 10:20:00		A	A													

Test Legend:

1	8010B_S	2	G-MBTEX_S	3	TPH(DMO)_S	4		5	
6		7		8		9		10	
11		12		13		14		15	

Prepared by: Melissa Valles

Comments:

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

CHAIN OF CUSTODY RECORD

TURN AROUND TIME: ☐ RUSH ☐ 24 HOUR ☐ 48 HOUR ☒ 5 DAY

EDF Required? ☐ Yes ☒ No

McCAMPBELL ANALYTICAL INC.
110 2ND AVENUE SOUTH, #D7
PACHECO, CA 94553-5560
Telephone: (925) 798-1620 Fax: (925) 798-1622

Report To: Matt Meyers Bill To: Cambria
Company: Cambria Environmental Technology, Inc.
5900 Hollis Street, Suite A
Emeryville, CA 94608 E-mail: mmeyers@cambria-env.com
Tele: (510) 420-3314 Fax: (510) 420-9170
Project #: 522-1000-28 Project Name: John Nady
Project Location: 1137-1167 65th Street, Oakland
Sampler Signature:

SAMPLE ID (Field Point Name)	LOCATION	SAMPLING Date	SAMPLING Time	# Containers	Type Containers	MATRIX Water	MATRIX Soil	MATRIX Air	MATRIX Sludge	MATRIX Other	METHOD PRESERVED Ice	METHOD PRESERVED HCl	METHOD PRESERVED HNO3	METHOD PRESERVED Other	BTEX & TPH as Gas (602/8020 + 8015) / TPH as Diesel (8015)	TPH as Diesel (8015) / TPH as Motor Oil & Grease (5520 E&F/B&F)	Total Petroleum Oil & Grease (5520 E&F/B&F)	Total Petroleum Hydrocarbons (418.1)	EPA 601 / 8010	BTEX ONLY (EPA 602 / 8020)	EPA 608 / 8080	EPA 608 / 8080 PCB's ONLY	EPA 624 / 8240 / 8260	EPA 625 / 8270	PAH's / PNA's by EPA 625 / 8270 / 1310	CAM-17 Metals	LUFT 5 Metals	Lead (7240/7421/239.2/6010)	RCI	Other	Comments
MW-1C@6.5		5/10/04	8:45	1	TUBE	X					X				X	X			X												
MW-1C@9.5			9:05												X	X			X												
MW-1C@14.5			9:35												X	X			X												
MW-1C@20			10:20												X	X			X												
MW-1C@22			10:40																												
MW-1C@15			10:50																												
MW-1C@24			11:20																												
MW-1C@25			11:45																												
MW-1C@35			12:25																												
MW-1C@39			11:50																												
MW-1C@45			1:10																												

Remarks:
Lowest possible detection limits.
Please email results.

ICE/T ☐ GOOD CONDITION ☐ HEAD SPACE ABSENT ☐ DECHLORINATED IN LAB ☐ APPROPRIATE CONTAINERS ☐ PRESERVED IN LAB ☐ VOA ☐ VOA[0] ☐ OTHER ☐ PRESERVATION

Relinquished By:	Date:	Time:	Received By:
	5/10/04	7:30	
Relinquished By:	Date:	Time:	Received By:
	5/12/04	8:45	
Relinquished By:	Date:	Time:	Received By:
	5/12/04	1:30	

McCampbell Analytical, Inc.

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Website: www.mccampbell.com E-mail: main@mccampbell.com

Cambria Env. Technology	Client Project ID: #522-1000-28; John Nady	Date Sampled: 05/10/04
5900 Hollis St, Suite A		Date Received: 05/12/04
Emeryville, CA 94608	Client Contact: Matt Meyers	Date Extracted: 05/12/04
	Client P.O.:	Date Analyzed: 05/14/04

Gasoline Range (C6-C12), Stoddard Solvent Range (C9-C12) Volatile Hydrocarbons with BTEX and MTBE*

Extraction Method SW5030B | Analytical Method SW8021B/8015Cm | Work Order: 0405184

Lab ID	0405184-001A	0405184-002A	0405184-005A	Reporting Limit for DF =1	
Client ID	MW-1C@6.5	MW-1C@9.5	MW-1C@20		
Matrix	S	S	S		
DF	1	40	1	S	W
Compound	**Concentration**			mg/Kg	ug/L
TPH(g)	ND	160	ND	1.0	NA
TPH(ss)	ND	340	ND	1.0	NA
MTBE	ND	ND<2.0	ND	0.05	NA
Benzene	ND	ND<0.70	ND	0.005	NA
Toluene	ND	ND<0.20	ND	0.005	NA
Ethylbenzene	ND	ND<0.20	ND	0.005	NA
Xylenes	ND	ND<0.20	ND	0.005	NA
Surrogate Recoveries (%)					
%SS:	84.9	98.8	89.0		
Comments		b			

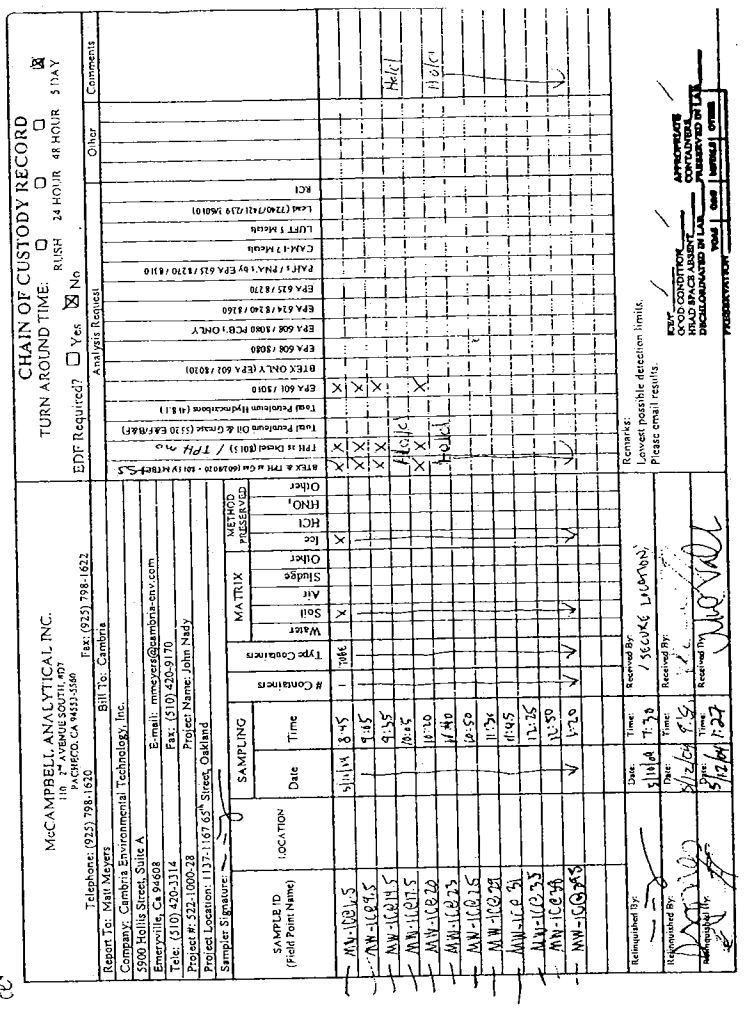
* water and vapor samples and all TCLP & SPLP extracts are reported in µg/L, soil/sludge/solid samples in mg/kg, wipe samples in µg/wipe, product/oil/non-aqueous liquid samples in mg/L.

cluttered chromatogram; sample peak coelutes with surrogate peak.

+The following descriptions of the TPH chromatogram are cursory in nature and McCampbell Analytical is not responsible for their interpretation: a) unmodified or weakly modified gasoline is significant; b) heavier gasoline range compounds are significant(aged gasoline?), c) lighter gasoline range compounds (the most mobile fraction) are significant; d) gasoline range compounds having broad chromatographic peaks are significant; biologically altered gasoline?; e) TPH pattern that does not appear to be derived from gasoline (stoddard solvent / mineral spirit?); f) one to a few isolated non-target peaks present; g) strongly aged gasoline or diesel range compounds are significant; h) lighter than water immiscible sheen/product is present; i) liquid sample that contains greater than ~1 vol. % sediment; j) reporting limit raised due to high MTBE content; k) TPH pattern that does not appear to be derived from gasoline (aviation gas). m) no recognizable pattern.

DHS Certification No. 1644

Angela Rydelius, Lab Manager



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Website: www.mccampbell.com E-mail: main@mccampbell.com

Cambria Env. Technology	Client Project ID: #522-1000-28; John Nady	Date Sampled: 05/11/04
5900 Hollis St, Suite A		Date Received: 05/12/04
Emeryville, CA 94608	Client Contact: Matt Meyers	Date Reported: 05/19/04
	Client P.O.:	Date Completed: 05/19/04

WorkOrder: 0405185

May 19, 2004

Dear Matt:

Enclosed are:

1). the results of 4 analyzed samples from your **#522-1000-28; John Nady project,**

2). a QC report for the above samples

3). a copy of the chain of custody, and

4). a bill for analytical services.

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

If you have any questions please contact me. McCampbell Analytical Laboratories strives for excellence in quality, service and cost. Thank you for your business and I look forward to working with you again.

Yours truly,

Angela Rydelius, Lab Manager

McCampbell Analytical, Inc.

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Cambria Env. Technology	Client Project ID: #522-1000-28; John Nady	Date Sampled: 05/11/04
5900 Hollis St, Suite A		Date Received: 05/12/04
Emeryville, CA 94608	Client Contact: Matt Meyers	Date Extracted: 05/12/04
	Client P.O.:	Date Analyzed: 05/14/04-05/15/04

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

Extraction method: SW5030B | Analytical methods: SW8021B/8015Cm | Work Order: 0405185

Lab ID	Client ID	Matrix	TPH(g)	MTBE	Benzene	Toluene	Ethylbenzene	Xylenes	DF	% SS
001A	MW-6C@5.5	S	5.9,g	ND	ND	ND	ND	ND	1	95.4
002A	MW-6C@11	S	29,g,m	ND<0.25	ND<0.025	ND<0.025	ND<0.025	ND<0.025	5	89.3
003A	MW-6C@16	S	100,g,m	ND<0.50	ND<0.050	ND<0.050	ND<0.050	ND<0.050	10	84.5
004A	MW-6C@21	S	ND	ND	ND	ND	ND	ND	1	81.0
Reporting Limit for DF =1; ND means not detected at or above the reporting limit		W	NA	NA	NA	NA	NA	NA	1	ug/L
		S	1.0	0.05	0.005	0.005	0.005	0.005	1	mg/Kg

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

cluttered chromatogram; sample peak coelutes with surrogate peak.

+The following descriptions of the TPH chromatogram are cursory in nature and McCampbell Analytical is not responsible for their interpretation: a) unmodified or weakly modified gasoline is significant; b) heavier gasoline range compounds are significant(aged gasoline?); c) lighter gasoline range compounds (the most mobile fraction) are significant; d) gasoline range compounds having broad chromatographic peaks are significant; biologically altered gasoline?; e) TPH pattern that does not appear to be derived from gasoline (stoddard solvent / mineral spirit?); f) one to a few isolated non-target peaks present; g) strongly aged gasoline or diesel range compounds are significant; h) lighter than water immiscible sheen/product is present; i) liquid sample that contains greater than ~1 vol. % sediment; j) reporting limit raised due to high MTBE content; k) TPH pattern that does not appear to be derived from gasoline (aviation gas). m) no recognizable pattern.

DHS Certification No. 1644

Angela Rydelius, Lab Manager

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Cambria Env. Technology 5900 Hollis St, Suite A Emeryville, CA 94608	Client Project ID: #522-1000-28; John Nady	Date Sampled: 05/11/04 Date Received: 05/12/04
	Client Contact: Matt Meyers	Date Extracted: 05/12/04
	Client P.O.:	Date Analyzed: 05/14/04-05/15/04

Diesel (C10-23) and Oil (C18+) Range Extractable Hydrocarbons as Diesel and Motor Oil*

Extraction method: SW3550C Analytical methods: SW8015C Work Order: 0405185

Lab ID	Client ID	Matrix	TPH(d)	TPH(mo)	DF	% SS
0405185-001A	MW-6C@5.5	S	810,g,b	1800	100	107
0405185-002A	MW-6C@11	S	18,n	ND	1	97.1
0405185-003A	MW-6C@16	S	16,n	ND	1	99.3
0405185-004A	MW-6C@21	S	ND	ND	1	99.6

Reporting Limit for DF =1; ND means not detected at or above the reporting limit				
	W	NA	NA	ug/L
	S	1.0	5.0	mg/Kg

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

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

+The following descriptions of the TPH chromatogram are cursory in nature and McCampbell Analytical is not responsible for their interpretation: a) unmodified or weakly modified diesel is significant; b) diesel range compounds are significant; no recognizable pattern; c) aged diesel? is significant); d) gasoline range compounds are significant; e) unknown medium boiling point pattern that does not appear to be derived from diesel (asphalt); f) one to a few isolated peaks present; g) oil range compounds are significant; h) lighter than water immiscible sheen/product is present; i) liquid sample that contains greater than ~1 vol. % sediment; k) kerosene/kerosene range; l) bunker oil; m) fuel oil; n) stoddard solvent/mineral spirit.

DHS Certification No. 1644

Angela Rydelius, Lab Manager

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Cambria Env. Technology 5900 Hollis St, Suite A Emeryville, CA 94608	Client Project ID: #522-1000-28; John Nady	Date Sampled: 05/11/04 Date Received: 05/12/04
	Client Contact: Matt Meyers	Date Extracted: 05/12/04
	Client P.O.:	Date Analyzed: 05/13/04-05/14/04

Halogenated Volatile Organics by P&T and GC-ELCD (8010 Basic Target List)*

Extraction Method: SW5030 Analytical Method: SW8021B Work Order: 0405185

Lab ID	0405185-001A	0405185-002A	0405185-003A	0405185-004A	Reporting Limit for DF =1	
Client ID	MW-6C@5.5	MW-6C@11	MW-6C@16	MW-6C@21		
Matrix	S	S	S	S		
DF	1	1	1	1	S	W
Compound	**Concentration**				µg/Kg	µg/L
Bromodichloromethane	ND	ND	ND	ND	5.0	NA
Bromoform	ND	ND	ND	ND	5.0	NA
Bromomethane	ND	ND	ND	ND	5.0	NA
Carbon Tetrachloride	ND	ND	ND	ND	5.0	NA
Chlorobenzene	ND	ND	ND	ND	5.0	NA
Chloroethane	ND	ND	ND	ND	5.0	NA
2-Chloroethyl vinyl ether	ND	ND	ND	ND	5.0	NA
Chloroform	ND	ND	ND	ND	5.0	NA
Chloromethane	ND	ND	ND	ND	5.0	NA
1,4-Dichlorobenzene	ND	ND	ND	ND	5.0	NA
Dibromochloromethane	ND	ND	ND	ND	5.0	NA
1,2-Dichlorobenzene	ND	ND	ND	ND	5.0	NA
1,3-Dichlorobenzene	ND	ND	ND	ND	5.0	NA
Dichlorodifluoromethane	ND	ND	ND	ND	5.0	NA
1,1-Dichloroethane	ND	ND	ND	ND	5.0	NA
1,2-Dichloroethane	ND	ND	ND	ND	5.0	NA
1,1-Dichloroethene	ND	ND	ND	ND	5.0	NA
cis-1,2-Dichloroethene	ND	ND	ND	ND	5.0	NA
trans-1,2-Dichloroethene	ND	ND	ND	ND	5.0	NA
1,2-Dichloropropane	ND	ND	ND	ND	5.0	NA
cis-1,3-Dichloropropene	ND	ND	ND	ND	5.0	NA
trans-1,3-Dichloropropene	ND	ND	ND	ND	5.0	NA
Methylene chloride	ND	ND	ND	ND	5.0	NA
1,1,2,2-Tetrachloroethane	ND	ND	ND	ND	5.0	NA
Tetrachloroethene	ND	ND	ND	ND	5.0	NA
1,1,1-Trichloroethane	ND	ND	ND	ND	5.0	NA
1,1,2-Trichloroethane	ND	ND	ND	ND	5.0	NA
Trichloroethene	ND	ND	ND	ND	5.0	NA
Trichlorofluoromethane	ND	ND	ND	ND	5.0	NA
Vinyl Chloride	ND	ND	ND	ND	5.0	NA
Surrogate Recoveries (%)						
%SS:	108	110	110	107		
Comments						

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

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

surrogate diluted out of range or surrogate coelutes with another peak.

h) lighter than water immiscible sheen/product is present; i) liquid sample that contains greater than ~1 vol. % sediment; j) sample diluted due to high organic content; k) reporting limit rasied due to insufficient sample amount.

DHS Certification No. 1644

Angela Rydelius, Lab Manager

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QC SUMMARY REPORT FOR SW8021B/8015Cm

Matrix: S WorkOrder: 0405185

EPA Method: SW8021B/8015Cm Extraction: SW5030B BatchID: 11528 Spiked Sample ID: 0405191-001A

	Sample	Spiked	MS*	MSD*	MS-MSD	LCS	LCSD	LCS-LCSD	Acceptance Criteria (%)	
	mg/Kg	mg/Kg	% Rec.	% Rec.	% RPD	% Rec.	% Rec.	% RPD	Low	High
TPH(btex)[£]	ND	0.60	101	101	0	99.7	101	0.811	70	130
MTBE	ND	0.10	102	100	1.79	105	102	2.92	70	130
Benzene	ND	0.10	101	103	1.17	116	113	2.24	70	130
Toluene	ND	0.10	89.2	89.6	0.510	98.9	95.8	3.19	70	130
Ethylbenzene	ND	0.10	109	110	0.854	118	116	1.91	70	130
Xylenes	ND	0.30	96.7	100	3.39	107	100	6.45	70	130
%SS:	109	0.10	101	90.2	11.3	104	112	7.41	70	130

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

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

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

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

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

cluttered chromatogram; sample peak coelutes with surrogate peak.

N/A = not enough sample to perform matrix spike and matrix spike duplicate.
NR = analyte concentration in sample exceeds spike amount for soil matrix or exceeds 2x spike amount for water matrix or sample diluted due to high matrix or analyte content.

DHS Certification No. 1644

QA/QC Officer

McCampbell Analytical, Inc.

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QC SUMMARY REPORT FOR SW8021B/8015Cm

Matrix: S WorkOrder: 0405185

EPA Method: SW8021B/8015Cm Extraction: SW5030B BatchID: 11526 Spiked Sample ID: 0405185-004A

	Sample	Spiked	MS*	MSD*	MS-MSD*	LCS	LCSD	LCS-LCSD	Acceptance Criteria (%)	
	mg/Kg	mg/Kg	% Rec.	% Rec.	% RPD	% Rec.	% Rec.	% RPD	Low	High
TPH(btex)[£]	ND	0.60	100	99.1	0.955	99.1	99.1	0	70	130
MTBE	ND	0.10	104	103	0.696	108	101	7.04	70	130
Benzene	ND	0.10	104	102	1.23	116	112	3.08	70	130
Toluene	ND	0.10	89.8	89.1	0.723	98.2	96.2	2.04	70	130
Ethylbenzene	ND	0.10	110	109	0.401	118	115	2.00	70	130
Xylenes	ND	0.30	100	100	0	107	100	6.45	70	130
%SS:	81.0	0.10	95.8	101	5.28	109	88.9	20.3	70	130

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

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

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

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

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

cluttered chromatogram; sample peak coelutes with surrogate peak.

N/A = not enough sample to perform matrix spike and matrix spike duplicate.
NR = analyte concentration in sample exceeds spike amount for soil matrix or exceeds 2x spike amount for water matrix or sample diluted due to high matrix or analyte content.

DHS Certification No. 1644

QA/QC Officer

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QC SUMMARY REPORT FOR SW8015C

Matrix: S WorkOrder: 0405185

EPA Method: SW8015C	Extraction: SW3550C		BatchID: 11527			Spiked Sample ID: 0405185-004A				
	Sample	Spiked	MS*	MSD*	MS-MSD*	LCS	LCSD	LCS-LCSD	Acceptance Criteria (%)	
	mg/Kg	mg/Kg	% Rec.	% Rec.	% RPD	% Rec.	% Rec.	% RPD	Low	High
TPH(d)	ND	150	92.1	93.1	1.03	92.2	91.9	0.324	70	130
%SS:	99.6	50	101	101	0	102	101	0.211	70	130

All target compounds in the Method Blank of this extraction batch were ND less than the method RL with the following exceptions:

NONE

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

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

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

N/A = not enough sample to perform matrix spike and matrix spike duplicate.
NR = analyte concentration in sample exceeds spike amount for soil matrix or exceeds 2x spike amount for water matrix or sample diluted due to high matrix or analyte content.

DHS Certification No. 1644

QA/QC Officer

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QC SUMMARY REPORT FOR SW8021B

Matrix: S WorkOrder: 0405185

EPA Method: SW8021B	Extraction: SW5030		BatchID: 11484			Spiked Sample ID: 0405130-003A				
	Sample	Spiked	MS*	MSD*	MS-MSD*	LCS	LCSD	LCS-LCSD	Acceptance Criteria (%)	
	µg/Kg	µg/Kg	% Rec.	% Rec.	% RPD	% Rec.	% Rec.	% RPD	Low	High
Chlorobenzene	ND<100	50	87.6	91.6	4.46	97.2	95.9	1.37	70	130
1,1-Dichloroethene	ND<100	50	84.3	86.6	2.69	118	113	4.94	70	130
Trichloroethene	ND<100	50	71	79	10.7	102	100	1.70	70	130
%SS:	90.0	50	87.4	89.4	2.26	104	104	0	70	130

All target compounds in the Method Blank of this extraction batch were ND less than the method RL with the following exceptions:

NONE

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

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

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

N/A = not enough sample to perform matrix spike and matrix spike duplicate.
NR = analyte concentration in sample exceeds spike amount for soil matrix or exceeds 2x spike amount for water matrix or sample diluted due to high matrix or analyte content.

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

DHS Certification No. 1644

QA/QC Officer

McCampbell Analytical, Inc.
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Pacheco, CA 94553-5560
(925) 798-1620

CHAIN-OF-CUSTODY RECORD

Page 1 of 1

WorkOrder: 0405185 ClientID: CETE

Report to:
Matt Meyers
Cambria Env. Technology
5900 Hollis St, Suite A
Emeryville, CA 94608
TEL: (510) 420-0700
FAX: (510) 420-9170
ProjectNo: #522-1000-28; John Nady
PO:

Bill to:
Accounts Payable
Cambria Env. Technology
5900 Hollis St, Ste. A
Emeryville, CA 94608

Requested TAT: 5 days
Date Received: 5/12/04
Date Printed: 5/12/04

Sample ID	ClientSampID	Matrix	Collection Date	Hold	Requested Tests (See legend below) 1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
0405185-001	MW-6C@5.5	Soil	5/11/04 7:50:00 AM		A	A													
0405185-002	MW-6C@11	Soil	5/11/04 8:05:00 AM		A	A													
0405185-003	MW-6C@16	Soil	5/11/04 8:15:00 AM		A	A													
0405185-004	MW-6C@21	Soil	5/11/04 8:25:00 AM		A	A													

Test Legend:

1	8010B_S	2	G-MBTEX_S	3	TPH(DMO)_S	4		5	
6		7		8		9		10	
11		12		13		14		15	

Prepared by: Melissa Valles

Comments:

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

0405185

CHAIN OF CUSTODY RECORD

TURN AROUND TIME: RUSH 24 HOUR 48 HOUR 5 DAY

EDF Required? Yes No

McCAMPBELL ANALYTICAL INC.
110 2ND AVENUE SOUTH, #D7
PACHECO, CA 94553-5560
Telephone: (925) 798-1620 Fax: (925) 798-1622

Report To: Matt Meyers Bill To: Cambria
Company: Cambria Environmental Technology, Inc.
5900 Hollis Street, Suite A E-mail: mmeyers@cambria-env.com
Emeryville, Ca 94608 Fax: (510) 420-9170
Tele: (510) 420-3314 Project Name: John Nady
Project #: 522-1000-28
Project Location: 1137-1167 65th Street, Oakland
Sampler Signature:

SAMPLE ID (Field Point Name)	LOCATION	SAMPLING Date	SAMPLING Time	# Containers	Type Containers	MATRIX Water	MATRIX Soil	MATRIX Air	MATRIX Sludge	MATRIX Other	METHOD PRESERVED Ice	METHOD PRESERVED HCl	METHOD PRESERVED HNO3	METHOD PRESERVED Other	BTEX & TPH as Gas (602/8020 + 8015) MTBE	TPH as Diesel (8015) / TPH_MO	Total Petroleum Oil & Grease (5520 E&F/B&F)	Total Petroleum Hydrocarbons (418.1)	EPA 601 / 8010	BTEX ONLY (EPA 602 / 8020)	EPA 608 / 8080	EPA 608 / 8080 PCB's ONLY	EPA 624 / 8240 / 8260	EPA 625 / 8270	PAH's / PNA's by EPA 625 / 8270 / 8310	CAM-17 Metals	LUFT 5 Metals	Lead (7240/7421/239.2/6010)	RCI	Other	Comments
MW-6C@5.5		5/11/04	7:50	1	T1806		X					X			X	X			X												HOLD
MW-6C@11			8:05																												HOLD
MW-6C@16			8:15																												HOLD
MW-6C@21			8:25																												HOLD
MW-6C@32.5			9:10																												HOLD
MW-6C@37.5			9:30																												HOLD
MW-6C@38.5			9:30																												HOLD

Relinquished By: Date: 5/11/04 Time: 5:30 Received By: SECURE LOCATION

Relinquished By: Date: Time: Received By:

Relinquished By: Date: Time: Received By:

Remarks: Lowest possible detection limits. Please email results.

ICE/t° GOOD CONDITION HEAD SPACE ABSENT DECHLORINATED IN LAB

APPROPRIATE CONTAINERS PRESERVED IN LAB

PRESERVATION VOAs O&G METALS OTHER

McCampbell Analytical, Inc.

110 2nd Avenue South, #D7, Pacheco, CA 94553-5560
Telephone: 925-798-1620 Fax: 925-798-1622
Website: www.mccampbell.com E-mail: main@mccampbell.com

Cambria Env. Technology 5900 Hollis St, Suite A Emeryville, CA 94608	Client Project ID: #522-1000-28; John Nady	Date Sampled: 05/11/04 Date Received: 05/12/04
	Client Contact: Matt Meyers	Date Extracted: 05/12/04
	Client P.O.:	Date Analyzed: 05/14/04-05/15/04

Gasoline Range (C6-C12), Stoddard Solvent Range (C9-C12) Volatile Hydrocarbons with BTEX and MTBE*

Extraction Method: SW5030B Analytical Method: SW8021B/8015Cm Work Order: 0405185

Lab ID	0405185-001A	0405185-002A	0405185-003A	0405185-004A	Reporting Limit for DF =1	
Client ID	MW-6C@5.5	MW-6C@11	MW-6C@16	MW-6C@21		
Matrix	S	S	S	S		
DF	1	5	10	1	S	W
Compound	**Concentration**				mg/Kg	ug/L
TPH(g)	5.9	29	100	ND	1.0	NA
TPH(ss)	11	68	230	ND	1.0	NA
MTBE	ND	ND<0.25	ND<0.50	ND	0.05	NA
Benzene	ND	ND<0.025	ND<0.050	ND	0.005	NA
Toluene	ND	ND<0.025	ND<0.050	ND	0.005	NA
Ethylbenzene	ND	ND<0.025	ND<0.050	ND	0.005	NA
Xylenes	ND	ND<0.025	ND<0.050	ND	0.005	NA
Surrogate Recoveries (%)						
%SS:	95.4	89.3	84.5	81.0		
Comments	g	g,m	g,m			

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

cluttered chromatogram; sample peak coelutes with surrogate peak.

+The following descriptions of the TPH chromatogram are cursory in nature and McCampbell Analytical is not responsible for their interpretation: a) unmodified or weakly modified gasoline is significant; b) heavier gasoline range compounds are significant(aged gasoline?); c) lighter gasoline range compounds (the most mobile fraction) are significant; d) gasoline range compounds having broad chromatographic peaks are significant; biologically altered gasoline?; e) TPH pattern that does not appear to be derived from gasoline (stoddard solvent / mineral spirit?); f) one to a few isolated non-target peaks present; g) strongly aged gasoline or diesel range compounds are significant; h) lighter than water immiscible sheen/product is present; i) liquid sample that contains greater than ~1 vol. % sediment; j) reporting limit raised due to high MTBE content; k) TPH pattern that does not appear to be derived from gasoline (aviation gas). m) no recognizable pattern.

DHS Certification No. 1644 Angela Rydelius, Lab Manager

0405185

CHAIN OF CUSTODY RECORD

TURN AROUND TIME: ☐ RUSH ☐ 24 HOUR ☐ 48 HOUR ☒ 5 DAY

EDF Required? ☐ Yes ☒ No

McCAMPBELL ANALYTICAL INC.
110 2nd AVENUE SOUTH, #D7
PACHECO, CA 94553-5560
Telephone: (925) 798-1620 Fax: (925) 798-1622

Report To: Matt Meyers Bill To: Cambria
Company: Cambria Environmental Technology, Inc.
5900 Hollis Street, Suite A
Emeryville, Ca 94608 E-mail: mmeyers@cambria-env.com
Tele: (510) 420-3314 Fax: (510) 420-9170
Project #: 522-1000-28 Project Name: John Nady
Project Location: 1137-1167 65th Street, Oakland
Sampler Signature:

Sample ID	Date	Time	# Containers	Type Containers	Matrix	Preserved	BTEX & TPH as Gas (602/8020 + 8015) MTBE + SS	TPH as Diesel (8015) / TPH mo	EPA 601 / 8010	Comments
MW-6C@5.5	5/11/04	7:50	1	TUBE	Soil	Ice	X	X	X	
MW-6C@11		8:05					X	X	X	
MW-6C@16		8:15					X	X	X	
MW-6C@21		8:25					X	X	X	
MW-6C@26.5		8:40								HOLD
MW-6C@31		8:58								HOLD
MW-6C@36.5		9:10								HOLD
MW-6C@37.5		9:20								HOLD
MW-6C@39.5		9:30								HOLD

Other analysis columns (no entries): Total Petroleum Oil & Grease (5520 E&F/B&F); Total Petroleum Hydrocarbons (418.1); BTEX ONLY (EPA 602 / 8020); EPA 608 / 8080; EPA 608 / 8080 PCB's ONLY; EPA 624 / 8240 / 8260; EPA 625 / 8270; PAH's / PNA's by EPA 625 / 8270 / 8310; CAM-17 Metals; LUFT 5 Metals; Lead (7240/7421/239.2/6010); RCI.

Remarks: Lowest possible detection limits. Please email results.

Relinquished By	Date	Time	Received By
	5/11/04	5:30	SECURE LOCATION
	5/12/04	9:56	
	5/12/04	1:24	

ICE/t° ✓ GOOD CONDITION ✓ HEAD SPACE ABSENT DECHLORINATED IN LAB APPROPRIATE CONTAINERS ✓ PRESERVED IN LAB
PRESERVATION VOAS O&G METALS OTHER

McCampbell Analytical, Inc.

110 2nd Avenue South, #D7, Pacheco, CA 94553-5560
Telephone: 925-798-1620 Fax: 925-798-1622
Website: www.mccampbell.com E-mail: main@mccampbell.com

Cambria Env. Technology 5900 Hollis St, Suite A Emeryville, CA 94608	Client Project ID: #522-1000-28; John Nady	Date Sampled: 05/18/04 Date Received: 05/20/04
	Client Contact: Matt Meyers	Date Reported: 05/25/04
	Client P.O.:	Date Completed: 05/25/04

WorkOrder: 0405329

May 25, 2004

Dear Matt:

Enclosed are:

1). the results of 1 analyzed sample from your **#522-1000-28; John Nady project,**

2). a QC report for the above sample

3). a copy of the chain of custody, and

4). a bill for analytical services.

All analyses were completed satisfactorily and all QC samples were found to be within our control limits. If you have any questions please contact me. McCampbell Analytical Laboratories strives for excellence in quality, service and cost. Thank you for your business and I look forward to working with you again.

Yours truly,

Angela Rydelius, Lab Manager

McCampbell Analytical, Inc.

110 2nd Avenue South, #D7, Pacheco, CA 94553-5560
Telephone: 925-798-1620 Fax: 925-798-1622
Website: www.mccampbell.com E-mail: main@mccampbell.com

Cambria Env. Technology 5900 Hollis St, Suite A Emeryville, CA 94608	Client Project ID: #522-1000-28; John Nady	Date Sampled: 05/18/04 Date Received: 05/20/04
	Client Contact: Matt Meyers	Date Extracted: 05/20/04
	Client P.O.:	Date Analyzed: 05/21/04

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

Extraction method: SW5030B Analytical methods: SW8021B/8015Cm Work Order: 0405329

Lab ID	Client ID	Matrix	TPH(g)	MTBE	Benzene	Toluene	Ethylbenzene	Xylenes	DF	% SS
001A	SP-1A-H	S	80,g,m	ND	ND	ND	0.026	0.14	1	110
Reporting Limit for DF =1; ND means not detected at or above the reporting limit	W	NA	NA	NA	NA	NA	NA	1	ug/L	
	S	1.0	0.05	0.005	0.005	0.005	0.005	1	mg/Kg	

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

cluttered chromatogram; sample peak coelutes with surrogate peak.

+The following descriptions of the TPH chromatogram are cursory in nature and McCampbell Analytical is not responsible for their interpretation: a) unmodified or weakly modified gasoline is significant; b) heavier gasoline range compounds are significant(aged gasoline?); c) lighter gasoline range compounds (the most mobile fraction) are significant; d) gasoline range compounds having broad chromatographic peaks are significant; biologically altered gasoline?; e) TPH pattern that does not appear to be derived from gasoline (stoddard solvent / mineral spirit?); f) one to a few isolated non-target peaks present; g) strongly aged gasoline or diesel range compounds are significant; h) lighter than water immiscible sheen/product is present; i) liquid sample that contains greater than ~1 vol. % sediment; j) reporting limit raised due to high MTBE content; k) TPH pattern that does not appear to be derived from gasoline (aviation gas). m) no recognizable pattern.

DHS Certification No. 1644 Angela Rydelius, Lab Manager

McCampbell Analytical, Inc.
110 2nd Avenue South, #D7, Pacheco, CA 94553-5560
Telephone : 925-798-1620 Fax : 925-798-1622
Website: www.mccampbell.com E-mail: main@mccampbell.com

Cambria Env. Technology	Client Project ID: #522-1000-28; John Nady	Date Sampled: 05/18/04
5900 Hollis St, Suite A		Date Received: 05/20/04
Emeryville, CA 94608	Client Contact: Matt Meyers	Date Extracted: 05/20/04
	Client P.O.:	Date Analyzed: 05/22/04

Diesel (C10-23) and Oil (C18+) Range Extractable Hydrocarbons as Diesel and Motor Oil*

Extraction method: SW3550C Analytical methods: SW8015C Work Order: 0405329

Lab ID	Client ID	Matrix	TPH(d)	TPH(mo)	DF	% SS
0405329-001A	SP-1A-H	S	12,d,g	9.3	1	89.5
Reporting Limit for DF =1; ND means not detected at or above the reporting limit		W	NA	NA	ug/L	
		S	1.0	5.0	mg/Kg	

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

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

+The following descriptions of the TPH chromatogram are cursory in nature and McCampbell Analytical is not responsible for their interpretation: a) unmodified or weakly modified diesel is significant; b) diesel range compounds are significant; no recognizable pattern; c) aged diesel? is significant); d) gasoline range compounds are significant; e) unknown medium boiling point pattern that does not appear to be derived from diesel (asphalt); f) one to a few isolated peaks present; g) oil range compounds are significant; h) lighter than water immiscible sheen/product is present; i) liquid sample that contains greater than ~1 vol % sediment; k) kerosene/kerosene range; l) bunker oil; m) fuel oil; n) stoddard solvent/mineral spirit.

DHS Certification No. 1644

Angela Rydelius, Lab Manager

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Telephone : 925-798-1620 Fax : 925-798-1622
Website: www.mccampbell.com E-mail: main@mccampbell.com

Cambria Env. Technology	Client Project ID: #522-1000-28; John Nady	Date Sampled: 05/18/04
5900 Hollis St, Suite A		Date Received: 05/20/04
Emeryville, CA 94608	Client Contact: Matt Meyers	Date Extracted: 05/20/04
	Client P.O.:	Date Analyzed: 05/21/04

Lead by ICP*

Extraction method: SW3050B Analytical methods: 6010C Work Order: 0405329

Lab ID	Client ID	Matrix	Extraction	Lead	DF	% SS
0405329-001A	SP-1A-H	S	TTLC	21	1	97.8
Reporting Limit for DF =1; ND means not detected at or above the reporting limit		W	TTLC	NA	mg/L	
		S	TTLC	5.0	mg/Kg	

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

means surrogate recovery outside of acceptance range due to matrix interference; & means surrogate diluted out of acceptance range; ND means not detected above the reporting limit; N/A means not applicable to this sample or instrument.

Analytical Methods: EPA 6010C/200.7 for all elements except: 200.9 (water/liquid- Sb, As, Pb, Se, Tl); 245.1 (Hg); 7010 (sludge/soil/solid/oil/product/wipe/filter - As, Se, Tl); 7471B (Hg).

i) liquid sample that contains greater than ~1 vol. % sediment; this sediment is extracted with the liquid, in accordance with EPA methodologies and can significantly effect reported metal concentrations; j) reporting limit raised due to insufficient sample amount; k) results are reported by dry weight; y) estimated values due to low surrogate recovery; z) reporting limit raised due to matrix interference.

DHS Certification No. 1644

Angela Rydelius, Lab Manager

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QC SUMMARY REPORT FOR SW8021B/8015Cm

Matrix: S WorkOrder: 0405329

EPA Method: SW8021B/8015Cm Extraction: SW5030B BatchID: 11613 Spiked Sample ID: 0405321-001A

	Sample	Spiked	MS*	MSD*	MS-MSD*	LCS	LCSD	LCS-LCSD	Acceptance Criteria (%)	
	mg/Kg	mg/Kg	% Rec.	% Rec.	% RPD	% Rec.	% Rec.	% RPD	Low	High
TPH(btex)£	ND	0.60	106	112	5.72	97.1	99.3	2.30	70	130
MTBE	ND	0.10	82.9	90.4	8.69	99.7	93.6	6.32	70	130
Benzene	ND	0.10	109	111	1.32	108	106	1.73	70	130
Toluene	ND	0.10	94.5	91.4	3.36	92.1	90.1	2.22	70	130
Ethylbenzene	ND	0.10	114	112	1.30	107	110	3.10	70	130
Xylenes	ND	0.30	107	100	6.45	100	100	0	70	130
%SS:	89.0	0.10	107	103	3.81	87.4	103	16.4	70	130

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

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

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

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

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

cluttered chromatogram; sample peak coelutes with surrogate peak.

N/A = not enough sample to perform matrix spike and matrix spike duplicate.
NR = analyte concentration in sample exceeds spike amount for soil matrix or exceeds 2x spike amount for water matrix or sample diluted due to high matrix or analyte content.

DHS Certification No. 1644

TL QA/QC Officer

McCampbell Analytical, Inc.
110 2nd Avenue South, #D7, Pacheco, CA 94553-5560
Telephone : 925-798-1620 Fax : 925-798-1622
Website: www.mccampbell.com E-mail: main@mccampbell.com

QC SUMMARY REPORT FOR SW8015C

Matrix: S WorkOrder: 0405329

EPA Method: SW8015C Extraction: SW3550C BatchID: 11612 Spiked Sample ID: 0405321-001A

	Sample	Spiked	MS*	MSD*	MS-MSD*	LCS	LCSD	LCS-LCSD	Acceptance Criteria (%)	
	mg/Kg	mg/Kg	% Rec.	% Rec.	% RPD	% Rec.	% Rec.	% RPD	Low	High
TPH(d)	ND	150	95.1	96.6	1.54	100	98.8	1.44	70	130
%SS:	102	50	92.1	93.2	1.16	104	102	1.63	70	130

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

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

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

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

N/A = not enough sample to perform matrix spike and matrix spike duplicate.
NR = analyte concentration in sample exceeds spike amount for soil matrix or exceeds 2x spike amount for water matrix or sample diluted due to high matrix or analyte content.

DHS Certification No. 1644

TL QA/QC Officer

McCampbell Analytical, Inc.
110 2nd Avenue South, #D7, Pacheco, CA 94553-5560
Telephone : 925-798-1620 Fax : 925-798-1622
Website: www.mccampbell.com E-mail: main@mccampbell.com

QC SUMMARY REPORT FOR 6010C

Matrix: S WorkOrder: 0405329

EPA Method: 6010C	Extraction: SW3050B			BatchID: 11623		Spiked Sample ID: 0405330-002A				
	Sample	Spiked	MS*	MSD*	MS-MSD	LCS	LCSD	LCS-LCSD	Acceptance Criteria (%)	
	mg/Kg	mg/Kg	% Rec.	% Rec.	% RPD	% Rec.	% Rec.	% RPD	Low	High
Lead	10.16	50	123	95.2	21.7	100	103	2.76	80	120
%SS	99.8	250	101	98.8	2.15	102	105	3.09	80	120

All target compounds in the Method Blank of this extraction batch were ND less than the method RL with the following exceptions:

NONE

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

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

* Acceptance Criteria for MS / MSD is between 70% and 130%. MS and / or MSD spike recoveries may not be near 100% or the RPDs near 0% if: a) the sample is inhomogeneous AND contains significant concentrations of analyte relative to the amount spiked, or b) if that specific sample matrix interferes with spike recovery

N/A = not applicable to this method.
NR = analyte concentration in sample exceeds spike amount for soil matrix or exceeds 2x spike amount for water matrix or sample diluted due to high matrix or analyte content

DHS Certification No. 1644

QA/QC Officer

CHAIN-OF-CUSTODY RECORD

Page 1 of 1

McCampbell Analytical, Inc.
110 Second Avenue South, #D7
Pacheco, CA 94553-5560
(925) 798-1620

WorkOrder: 0405329 ClientID: CETE

Requested TAT: 5 days

Report to: Matt Meyers, Cambria Env. Technology, 5900 Hollis St, Suite A, Emeryville, CA 94608

Bill to: Accounts Payable, Cambria Env. Technology, 5900 Hollis St, Ste. A, Emeryville, CA 94608

TEL: (510) 420-0700
FAX: (510) 420-9170
ProjectNo: #522-1000-28; John Nady
PO:

Date Received: 5/20/04
Date Printed: 5/20/04

Sample ID	ClientSampID	Matrix	Collection Date	Hold	Requested Tests (See legend below)													
					1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
0405329-001	SP-1A-H	Soil	5/18/04		A	A	A	A											
0405329-002	PB_S												TPH(DMO) 3						
0405329-003	G-MBTEX_S																		

Test Legend:

1	G-MBTEX_S	2	PB_S	3	TPH(DMO)	4		5	
6		7		8		9		10	
11		12		13		14		15	

Prepared by: Melissa Valles

Comments:

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

CHAIN OF CUSTODY RECORD

TURN AROUND TIME: ☐ RUSH ☐ 24 HOUR ☐ 48 HOUR ☒ 5 DAY

EDF Required? ☐ Yes ☒ No

Analysis Request | Other | Comments

McCAMPBELL ANALYTICAL INC.
110 2nd AVENUE SOUTH, #D7
PACHECO, CA 94553-3560
Telephone: (925) 798-1620 Fax: (925) 798-1622

Report To: Matt Meyers Bill To: Cambria
Company: Cambria Environmental Technology, Inc.
5900 Hollis Street, Suite A
E-mail: mmeyers@cambria-env.com
Emeryville, Ca 94608
Fax: (510) 420-9170
Tele: (510) 420-3314
Project #: 522-1000-28
Project Name: John Nady
Project Location: 1137-1167 65th Street, Oakland
Sampler Signature:

SAMPLE ID (Field Point Name)	LOCATION	SAMPLING Date	SAMPLING Time	# Containers	Type Containers	MATRIX: Water	Soil	Air	Sludge	Other	METHOD PRESERVED: Ice	HCl	HNO3	Other	BTEX & TPH as Gas (602/8020 + 8015) MTBE	TPH as Diesel (8015)	Total Petroleum Oil & Grease (5520 E&F/B&F)	Total Petroleum Hydrocarbons (418.1)	EPA 601 / 8010	BTEX ONLY (EPA 602 / 8020)	EPA 608 / 8080	EPA 608 / 8080 PCB's ONLY	EPA 624 / 8240 / 8260	EPA 625 / 8270	PAH's / PNA's by EPA 625 / 8270 / 8310	CAM-17 Metals	LUFT 5 Metals	Lead (7240/7421/239.2/6010)	RCI	TOTAL LEAD
SP-1A		5/18/04	11:00	1	TUBE		X				X				X	X														X
SP-1B			11:15																											
SP-1C			5:00																											
SP-1D		5/19/04	10 am																											
SP-1E																														
SP-1F																														
SP-1G																														
SP-1H																														

Composite & hold

Relinquished By: Date: 5/19/04 Time: 12:00 Received By: Service Location

Relinquished By: Date: 5/19/04 Time: 13:10 Received By:

Relinquished By: Date: 5/20 Time: 10:30 Received By:

Remarks: Lowest possible detection limits. Please email results.

If total lead is >50ppm, run STLC for lead.
If Benzene is >10 ppm, run TLCP.

KEY: 1 VOAs, 2 VOA NO HEAD SPACE, 3 CANS, 4 GLASS, 5 PLASTIC, 6 OTHER; PRESERVATION: 7 HCL, 8 HNO3, 9 H2SO4, 10 NAOH, 11 OTHER

McCampbell Analytical, Inc.

110 2nd Avenue South, #D7, Pacheco, CA 94553-5560
Telephone : 925-798-1620 Fax : 925-798-1622
Website: www.mccampbell.com E-mail: main@mccampbell.com

Cambria Env. Technology	Client Project ID: #522-1000-28; John Nady	Date Sampled: 05/18/04
5900 Hollis St, Suite A		Date Received: 05/20/04
Emeryville, CA 94608	Client Contact: Matt Meyers	Date Reported: 05/26/04
	Client P.O.:	Date Completed: 05/26/04

WorkOrder: 0405331

May 26, 2004

Dear Matt:

Enclosed are:

1). the results of 5 analyzed samples from your **#522-1000-28; John Nady project,**

2). a QC report for the above samples

3). a copy of the chain of custody, and

4). a bill for analytical services.

All analyses were completed satisfactorily and all QC samples were found to be within our control limits. If you have any questions please contact me. McCampbell Analytical Laboratories strives for excellence in quality, service and cost. Thank you for your business and I look forward to working with you again.

Yours truly,

Angela Rydelius, Lab Manager

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Website: www.mccampbell.com E-mail: main@mccampbell.com

Cambria Env. Technology 5900 Hollis St, Suite A Emeryville, CA 94608	Client Project ID: #522-1000-28; John Nady	Date Sampled: 05/18/04 Date Received: 05/20/04
	Client Contact: Matt Meyers	Date Extracted: 05/20/04
	Client P.O.:	Date Analyzed: 05/21/04

Gasoline Range (C6-C12), Stoddard Solvent Range (C9-C12) Volatile Hydrocarbons with BTEX and MTBE*

Extraction Method: SW5030B Analytical Method: SW8021B/8015Cm Work Order: 0405331

Lab ID	0405331-001A	0405331-002A	0405331-003A	0405331-004A	Reporting Limit for DF = 1	
Client ID	MW-5B@5	MW-5B@10	MW-5B@15	MW-5B@20		
Matrix	S	S	S	S		
DF	1	1	20	1	S	W
Compound	**Concentration**				**mg/Kg**	**ug/L**
TPH(g)	ND	ND	410	ND	1.0	NA
TPH(ss)	ND	ND	390	ND	1.0	NA
MTBE	ND	ND	ND<1.0	ND	0.05	NA
Benzene	ND	ND	ND<0.10	ND	0.005	NA
Toluene	ND	ND	ND<0.10	ND	0.005	NA
Ethylbenzene	ND	ND	ND<0.10	ND	0.005	NA
Xylenes	ND	ND	1.4	ND	0.005	NA
Surrogate Recoveries (%)						
%SS:	99.7	108	93.5	96.5		
Comments			g			

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

cluttered chromatogram; sample peak coelutes with surrogate peak.

+The following descriptions of the TPH chromatogram are cursory in nature and McCampbell Analytical is not responsible for their interpretation: a) unmodified or weakly modified gasoline is significant; b) heavier gasoline range compounds are significant(aged gasoline?); c) lighter gasoline range compounds (the most mobile fraction) are significant; d) gasoline range compounds having broad chromatographic peaks are significant; biologically altered gasoline?; e) TPH pattern that does not appear to be derived from gasoline (stoddard solvent / mineral spirit?); f) one to a few isolated non-target peaks present; g) strongly aged gasoline or diesel range compounds are significant; h) lighter than water immiscible sheen/product is present; i) liquid sample that contains greater than ~1 vol. % sediment; j) reporting limit raised due to high MTBE content; k) TPH pattern that does not appear to be derived from gasoline (aviation gas). m) no recognizable pattern.

DHS Certification No. 1644

Angela Rydelius, Lab Manager

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Website: www.mccampbell.com E-mail: main@mccampbell.com

Cambria Env. Technology 5900 Hollis St, Suite A Emeryville, CA 94608	Client Project ID: #522-1000-28; John Nady	Date Sampled: 05/18/04 Date Received: 05/20/04
	Client Contact: Matt Meyers	Date Extracted: 05/20/04
	Client P.O.:	Date Analyzed: 05/21/04

Gasoline Range (C6-C12), Stoddard Solvent Range (C9-C12) Volatile Hydrocarbons with BTEX and MTBE*

Extraction Method: SW5030B Analytical Method: SW8021B/8015Cm Work Order: 0405331

Lab ID	0405331-005A				Reporting Limit for DF = 1	
Client ID	MW-5B@24					
Matrix	S					
DF	1				S	W
Compound	**Concentration**				**mg/Kg**	**ug/L**
TPH(g)	ND				1.0	NA
TPH(ss)	ND				1.0	NA
MTBE	ND				0.05	NA
Benzene	ND				0.005	NA
Toluene	ND				0.005	NA
Ethylbenzene	ND				0.005	NA
Xylenes	ND				0.005	NA
Surrogate Recoveries (%)						
%SS:	98.3					
Comments						

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

cluttered chromatogram; sample peak coelutes with surrogate peak.

+The following descriptions of the TPH chromatogram are cursory in nature and McCampbell Analytical is not responsible for their interpretation: a) unmodified or weakly modified gasoline is significant; b) heavier gasoline range compounds are significant(aged gasoline?); c) lighter gasoline range compounds (the most mobile fraction) are significant; d) gasoline range compounds having broad chromatographic peaks are significant; biologically altered gasoline?; e) TPH pattern that does not appear to be derived from gasoline (stoddard solvent / mineral spirit?); f) one to a few isolated non-target peaks present; g) strongly aged gasoline or diesel range compounds are significant; h) lighter than water immiscible sheen/product is present; i) liquid sample that contains greater than ~1 vol. % sediment; j) reporting limit raised due to high MTBE content; k) TPH pattern that does not appear to be derived from gasoline (aviation gas). m) no recognizable pattern.

DHS Certification No. 1644

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Cambria Env. Technology 5900 Hollis St, Suite A Emeryville, CA 94608	Client Project ID: #522-1000-28; John Nady	Date Sampled: 05/18/04 Date Received: 05/20/04
	Client Contact: Matt Meyers	Date Extracted: 05/20/04
	Client P.O.:	Date Analyzed: 05/22/04

Diesel (C10-23) and Oil (C18+) Range Extractable Hydrocarbons as Diesel and Motor Oil*

Extraction method: SW3550C Analytical methods: SW8015C Work Order: 0405331

Lab ID	Client ID	Matrix	TPH(d)	TPH(mo)	DF	% SS
0405331-001A	MW-5B@5	S	ND	ND	1	102
0405331-002A	MW-5B@10	S	ND	ND	1	102
0405331-003A	MW-5B@15	S	42,d,b	ND	1	107
0405331-004A	MW-5B@20	S	ND	ND	1	102
0405331-005A	MW-5B@24	S	ND	ND	1	102
Reporting Limit for DF = 1; ND means not detected at or above the reporting limit		W	NA	NA		ug/L
		S	1.0	5.0		mg/Kg

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

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

+The following descriptions of the TPH chromatogram are cursory in nature and McCampbell Analytical is not responsible for their interpretation: a) unmodified or weakly modified diesel is significant; b) diesel range compounds are significant; no recognizable pattern; c) aged diesel? is significant); d) gasoline range compounds are significant; e) unknown medium boiling point pattern that does not appear to be derived from diesel (asphalt); f) one to a few isolated peaks present; g) oil range compounds are significant; h) lighter than water immiscible sheen/product is present; i) liquid sample that contains greater than ~1 vol. % sediment; k) kerosene/kerosene range; l) bunker oil; m) fuel oil; n) stoddard solvent/mineral spirit.

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Cambria Env. Technology 5900 Hollis St, Suite A Emeryville, CA 94608	Client Project ID: #522-1000-28; John Nady	Date Sampled: 05/18/04 Date Received: 05/20/04
	Client Contact: Matt Meyers	Date Extracted: 05/20/04
	Client P.O.:	Date Analyzed: 05/21/04-05/24/04

Halogenated Volatile Organics by P&T and GC-ELCD (8010 Basic Target List)*

Extraction Method: SW5030 Analytical Method: SW8021B Work Order: 0405331

Lab ID	0405331-001A	0405331-002A	0405331-003A	0405331-004A	Reporting Limit for DF = 1	
Client ID	MW-5B@5	MW-5B@10	MW-5B@15	MW-5B@20		
Matrix	S	S	S	S		
DF	1	1	4	1	S	W
Compound	**Concentration**				**µg/Kg**	**µg/L**
Bromodichloromethane	ND	ND	ND<20	ND	5.0	NA
Bromoform	ND	ND	ND<20	ND	5.0	NA
Bromomethane	ND	ND	ND<20	ND	5.0	NA
Carbon Tetrachloride	ND	ND	ND<20	ND	5.0	NA
Chlorobenzene	ND	ND	ND<20	ND	5.0	NA
Chloroethane	ND	ND	ND<20	ND	5.0	NA
2-Chloroethyl vinyl ether	ND	ND	ND<20	ND	5.0	NA
Chloroform	ND	ND	ND<20	ND	5.0	NA
Chloromethane	ND	ND	ND<20	ND	5.0	NA
1,4-Dichlorobenzene	ND	ND	ND<20	ND	5.0	NA
Dibromochloromethane	ND	ND	ND<20	ND	5.0	NA
1,2-Dichlorobenzene	ND	ND	ND<20	ND	5.0	NA
1,3-Dichlorobenzene	ND	ND	ND<20	ND	5.0	NA
Dichlorodifluoromethane	ND	ND	ND<20	ND	5.0	NA
1,1-Dichloroethane	ND	ND	ND<20	ND	5.0	NA
1,2-Dichloroethane	ND	ND	ND<20	ND	5.0	NA
1,1-Dichloroethene	ND	ND	ND<20	ND	5.0	NA
cis-1,2-Dichloroethene	ND	ND	ND<20	ND	5.0	NA
trans-1,2-Dichloroethene	ND	ND	ND<20	ND	5.0	NA
1,2-Dichloropropane	ND	ND	ND<20	ND	5.0	NA
cis-1,3-Dichloropropene	ND	ND	ND<20	ND	5.0	NA
trans-1,3-Dichloropropene	ND	ND	ND<20	ND	5.0	NA
Methylene chloride	ND	ND	ND<20	ND	5.0	NA
1,1,2,2-Tetrachloroethane	ND	ND	ND<20	ND	5.0	NA
Tetrachloroethene	ND	ND	ND<20	ND	5.0	NA
1,1,1-Trichloroethane	ND	ND	ND<20	ND	5.0	NA
1,1,2-Trichloroethane	ND	ND	ND<20	ND	5.0	NA
Trichloroethene	ND	ND	ND<20	ND	5.0	NA
Trichlorofluoromethane	ND	ND	ND<20	ND	5.0	NA
Vinyl Chloride	ND	ND	ND<20	ND	5.0	NA
Surrogate Recoveries (%)						
%SS:	115	109	107	107		
Comments			j			

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

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

surrogate diluted out of range or surrogate coelutes with another peak.

h) lighter than water immiscible sheen/product is present, i) liquid sample that contains greater than ~1 vol. % sediment; j) sample diluted due to high organic content; k) reporting limit raised due to insufficient sample amount.

DHS Certification No. 1644

Angela Rydelius, Lab Manager

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Cambria Env. Technology	Client Project ID: #522-1000-28; John Nady	Date Sampled: 05/18/04
5900 Hollis St, Suite A		Date Received: 05/20/04
Emeryville, CA 94608	Client Contact: Matt Meyers	Date Extracted: 05/20/04
	Client P.O.:	Date Analyzed: 05/21/04-05/24/04

Halogenated Volatile Organics by P&T and GC-ELCD (8010 Basic Target List)*

Extraction Method SW5030 Analytical Method SW8021B Work Order 0405331

		Reporting Limit for DF =1	
Lab ID	0405331-005A		
Client ID	MW-5B@24		
Matrix	S		
DF	1	S	W
Compound	**Concentration**	µg/Kg	µg/L
Bromodichloromethane	ND	5.0	NA
Bromoform	ND	5.0	NA
Bromomethane	ND	5.0	NA
Carbon Tetrachloride	ND	5.0	NA
Chlorobenzene	ND	5.0	NA
Chloroethane	ND	5.0	NA
2-Chloroethyl vinyl ether	ND	5.0	NA
Chloroform	ND	5.0	NA
Chloromethane	ND	5.0	NA
1,4-Dichlorobenzene	ND	5.0	NA
Dibromochloromethane	ND	5.0	NA
1,2-Dichlorobenzene	ND	5.0	NA
1,3-Dichlorobenzene	ND	5.0	NA
Dichlorodifluoromethane	ND	5.0	NA
1,1-Dichloroethane	ND	5.0	NA
1,2-Dichloroethane	ND	5.0	NA
1,1-Dichloroethene	ND	5.0	NA
cis-1,2-Dichloroethene	ND	5.0	NA
trans-1,2-Dichloroethene	ND	5.0	NA
1,2-Dichloropropane	ND	5.0	NA
cis-1,3-Dichloropropene	ND	5.0	NA
trans-1,3-Dichloropropene	ND	5.0	NA
Methylene chloride	ND	5.0	NA
1,1,2,2-Tetrachloroethane	ND	5.0	NA
Tetrachloroethene	ND	5.0	NA
1,1,1-Trichloroethane	ND	5.0	NA
1,1,2-Trichloroethane	ND	5.0	NA
Trichloroethene	ND	5.0	NA
Trichlorofluoromethane	ND	5.0	NA
Vinyl Chloride	ND	5.0	NA
Surrogate Recoveries (%)			
%SS:	108		
Comments			

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

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

surrogate diluted out of range or surrogate coelutes with another peak.

h) lighter than water immiscible sheen/product is present; i) liquid sample that contains greater than ~1 vol. % sediment; j) sample diluted due to high organic content; k) reporting limit raised due to insufficient sample amount.

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QC SUMMARY REPORT FOR SW8021B/8015Cm

Matrix: S WorkOrder: 0405331

EPA Method: SW8021B/8015Cm Extraction: SW5030B BatchID: 11613 Spiked Sample ID: 0405321-001A

	Sample	Spiked	MS*	MSD*	MS-MSD*	LCS	LCSD	LCS-LCSD	Acceptance Criteria (%)	
	mg/Kg	mg/Kg	% Rec.	% Rec.	% RPD	% Rec.	% Rec.	% RPD	Low	High
TPH(btex)£	ND	0.60	106	112	5.72	97.1	99.3	2.30	70	130
MTBE	ND	0.10	82.9	90.4	8.69	99.7	93.6	6.32	70	130
Benzene	ND	0.10	109	111	1.32	108	106	1.73	70	130
Toluene	ND	0.10	94.5	91.4	3.36	92.1	90.1	2.22	70	130
Ethylbenzene	ND	0.10	114	112	1.30	107	110	3.10	70	130
Xylenes	ND	0.30	107	100	6.45	100	100	0	70	130
%SS:	89.0	0.10	107	103	3.81	87.4	103	16.4	70	130

All target compounds in the Method Blank of this extraction batch were ND less than the method RL with the following exceptions:

NONE

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

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

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

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

cluttered chromatogram; sample peak coelutes with surrogate peak.

N/A = not enough sample to perform matrix spike and matrix spike duplicate.
NR = analyte concentration in sample exceeds spike amount for soil matrix or exceeds 2x spike amount for water matrix or sample diluted due to high matrix or analyte content.

DHS Certification No. 1644

QA/QC Officer

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QC SUMMARY REPORT FOR SW8021B/8015Cm

Matrix: S WorkOrder: 0405331

EPA Method: SW8021B/8015Cm Extraction: SW5030B BatchID: 11625 Spiked Sample ID: 0405333-004A

	Sample	Spiked	MS*	MSD*	MS-MSD*	LCS	LCSD	LCS-LCSD	Acceptance Criteria (%)	
	mg/Kg	mg/Kg	% Rec.	% Rec.	% RPD	% Rec.	% Rec.	% RPD	Low	High
TPH(btex)£	ND	0.60	105	105	0	99.8	96.6	3.23	70	130
MTBE	ND	0.10	87.1	87.9	0.886	93	93.7	0.687	70	130
Benzene	ND	0.10	108	112	3.22	108	109	0.780	70	130
Toluene	ND	0.10	92.8	94.9	2.22	92.3	91.7	0.573	70	130
Ethylbenzene	ND	0.10	115	112	2.41	113	112	1.05	70	130
Xylenes	ND	0.30	103	107	3.17	103	100	3.28	70	130
%SS:	90.7	0.10	105	111	5.56	97.3	103	5.69	70	130

All target compounds in the Method Blank of this extraction batch were ND less than the method RL with the following exceptions:

NONE

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

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

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

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

cluttered chromatogram; sample peak coelutes with surrogate peak.

N/A = not enough sample to perform matrix spike and matrix spike duplicate.
NR = analyte concentration in sample exceeds spike amount for soil matrix or exceeds 2x spike amount for water matrix or sample diluted due to high matrix or analyte content.

DHS Certification No. 1644

QA/QC Officer

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QC SUMMARY REPORT FOR SW8015C

Matrix: S WorkOrder: 0405331

EPA Method: SW8015C Extraction: SW3550C BatchID: 11624 Spiked Sample ID: 0405333-004A

	Sample	Spiked	MS*	MSD*	MS-MSD	LCS	LCSD	LCS-LCSD	Acceptance Criteria (%)	
	mg/Kg	mg/Kg	% Rec.	% Rec.	% RPD	% Rec.	% Rec.	% RPD	Low	High
TPH(d)	ND	150	97.9	99.1	1.27	91.4	92.1	0	70	130
%SS:	103	50	101	103	1.53	103	105	0	70	130

All target compounds in the Method Blank of this extraction batch were ND less than the method RL with the following exceptions:

NONE

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

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

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

N/A = not enough sample to perform matrix spike and matrix spike duplicate.
NR = analyte concentration in sample exceeds spike amount for soil matrix or exceeds 2x spike amount for water matrix or sample diluted due to high matrix or analyte content.

DHS Certification No. 1644

QA/QC Officer

McCampbell Analytical, Inc.

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QC SUMMARY REPORT FOR SW8021B

Matrix: S WorkOrder: 0405331

EPA Method: SW8021B	Extraction: SW5030		BatchID: 11626			Spiked Sample ID: 0405331-005A				
	Sample	Spiked	MS*	MSD*	MS-MSD*	LCS	LCSD	LCS-LCSD	Acceptance Criteria (%)	
	µg/Kg	µg/Kg	% Rec.	% Rec.	% RPD	% Rec.	% Rec.	% RPD	Low	High
Chlorobenzene	ND	50	94	87.7	6.96	100	111	10.6	70	130
1,1-Dichloroethene	ND	50	101	91.5	9.43	111	110	1.68	70	130
Trichloroethene	ND	50	98	88.9	9.80	104	103	1.50	70	130
%SS:	108	50	106	105	0.918	105	105	0	70	130

All target compounds in the Method Blank of this extraction batch were ND less than the method RL with the following exceptions:

NONE

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

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

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

N/A = not enough sample to perform matrix spike and matrix spike duplicate.
NR = analyte concentration in sample exceeds spike amount for soil matrix or exceeds 2x spike amount for water matrix or sample diluted due to high matrix or analyte content

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

DHS Certification No. 1644

TL QA/QC Officer

McCampbell Analytical, Inc.
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Pacheco, CA 94553-5560
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CHAIN-OF-CUSTODY RECORD

Page 1 of 1

WorkOrder: 0405331 ClientID: CETE

Report to:
Matt Meyers
Cambria Env. Technology
5900 Hollis St, Suite A
Emeryville, CA 94608

TEL: (510) 420-0700
FAX: (510) 420-9170
ProjectNo: #522.1000-28; John Nady
PO:

Bill to:
Accounts Payable
Cambria Env. Technology
5900 Hollis St, Ste. A
Emeryville, CA 94608

Requested TAT: 5 days
Date Received: 5/20/04
Date Printed: 5/20/04

Sample ID	ClientSampID	Matrix	Collection Date	Hold	Requested Tests (See legend below)											
					1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
0405331-001	MW-5B@5	Soil	5/18/04 4:05:00 PM		A	A	A												
0405331-002	MW-5B@10	Soil	5/18/04 4:10:00 PM		A	A	A												
0405331-003	MW-5B@15	Soil	5/18/04 4:15:00 PM		A	A	A												
0405331-004	MW-5B@20	Soil	5/18/04 4:50:00 PM		A	A	A												
0405331-005	MW-5B@24	Soil	5/18/04 5:00:00 PM		A	A	A												

Test Legend:
1 8010B_S 2 G-MBTEX_S 3 TPH(DMO)_S 4 5
6 7 8 9
11 12 13 14 15

Comments:

Prepared by: Melissa Valles

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

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PACHECO, CA 94553-5560
Telephone: (925) 798-1620 Fax: (925) 798-1622

CHAIN OF CUSTODY RECORD

TURN AROUND TIME: ☐ RUSH ☐ 24 HOUR ☐ 48 HOUR ☒ 5 DAY
EDF Required? ☐ Yes ☒ No

Report To: Matt Meyers Bill To: Cambria
Company: Cambria Environmental Technology, Inc.
5900 Hollis Street, Suite A E-mail: mmeyers@cambria-env.com
Emeryville, Ca 94608 Fax: (510) 420-9170
Tele: (510) 420-3314 Project Name: John Nady
Project #: 522-1000-28
Project Location: 1137-1167 65th Street, Oakland
Sampler Signature:

SAMPLE ID (Field Point Name)	LOCATION	SAMPLING Date	SAMPLING Time	# Containers	Type Containers	MATRIX: Water	Soil	Air	Sludge	Other	METHOD PRESERVED: Ice	HCl	HNO3	Other	55	BTEX & TPH as Gas (602/8020 + 8015) MTBE	TPH as Diesel (8015) TPH mo	Total Petroleum Oil & Grease (5520 E&F/B&F)	Total Petroleum Hydrocarbons (418.1)	EPA 601 / 8010	BTEX ONLY (EPA 602 / 8020)	EPA 608 / 8080	EPA 608 / 8080 PCB's ONLY	EPA 624 / 8240 / 8260	EPA 625 / 8270	PAH's / PNA's by EPA 625 / 8270 / 8310	CAM-17 Metals	LUFT 5 Metals	Lead (7240/7421/239.2/6010)	RCI	Other	Comments
MW-5B@5		5/18/04	4:05	1	TUBE		X				X				X	X																
MW-5B@10			4:10																													
MW-5B@15			4:15																													
MW-5B@20			4:50																													
MW-5B@24		↓	5:00	↓	↓		↓				↓				↓	↓																

Relinquished By: Date: 5/19/04 Time: 8pm Received By: Jason Clark
Relinquished By: Date: Time: Received By:
Relinquished By: Date: Time: Received By:

Remarks: Lowest possible detection limits. Please email results.

ICE/ GOOD CONDITION HEAD SPACE ABSENT DECHLORINATED IN LAB
APPROPRIATE CONTAINERS PRESERVED IN LAB
PRESERVATION VOAs O&G METALS OTHER

McCAMPBELL ANALYTICAL INC.
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PACHECO, CA 94553-5560
Telephone: (925) 798-1620 Fax: (925) 798-1622

CHAIN OF CUSTODY RECORD

TURN AROUND TIME: ☐ RUSH ☐ 24 HOUR ☐ 48 HOUR ☒ 5 DAY
EDF Required? ☐ Yes ☒ No

Report To: Matt Meyers Bill To: Cambria
Company: Cambria Environmental Technology, Inc.
5900 Hollis Street, Suite A E-mail: mmeyers@cambria-env.com
Emeryville, Ca 94608 Fax: (510) 420-9170
Tele: (510) 420-3314 Project Name: John Nady
Project #: 522-1000-28
Project Location: 1137-1167 65th Street, Oakland
Sampler Signature:

SAMPLE ID (Field Point Name)	LOCATION	SAMPLING Date	SAMPLING Time	# Containers	Type Containers	MATRIX: Water	Soil	Air	Sludge	Other	METHOD PRESERVED: Ice	HCl	HNO3	Other	BTEX & TPH as Gas (602/8020 + 8015) MTBE	TPH as Diesel (8015) TPH mo	Total Petroleum Oil & Grease (5520 E&F/B&F)	Total Petroleum Hydrocarbons (418.1)	EPA 601 / 8010	BTEX ONLY (EPA 602 / 8020)	EPA 608 / 8080	EPA 608 / 8080 PCB's ONLY	EPA 624 / 8240 / 8260	EPA 625 / 8270	PAH's / PNA's by EPA 625 / 8270 / 8310	CAM-17 Metals	LUFT 5 Metals	Lead (7240/7421/239.2/6010)	RCI	Other	Comments
MW-5B@5		5/18/04	4:05	1	TUBE		X				X				X	X																
MW-5B@10			4:10																													
MW-5B@15			4:15																													
MW-5B@20			4:50																													
MW-5B@24		↓	5:00	↓	↓		↓				↓				↓	↓																

Relinquished By: Date: 5/19/04 Time: 8pm Received By: Jason Clark
Relinquished By: Date: Time: Received By:
Relinquished By: Date: Time: Received By:

Remarks: Lowest possible detection limits. Please email results.

ICE/ GOOD CONDITION HEAD SPACE ABSENT DECHLORINATED IN LAB
APPROPRIATE CONTAINERS PRESERVED IN LAB
PRESERVATION VOAs O&G METALS OTHER

McCampbell Analytical, Inc.
110 2nd Avenue South, #D7, Pacheco, CA 94553-5560
Telephone : 925-798-1620 Fax : 925-798-1622
Website: www.mccampbell.com E-mail: main@mccampbell.com

Cambria Env. Technology	Client Project ID: #522-1000-28; John Nady	Date Sampled: 05/17/04
5900 Hollis St, Suite A		Date Received: 05/20/04
Emeryville, CA 94608	Client Contact: Matt Meyers	Date Reported: 06/11/04
	Client P.O.:	Date Completed: 06/11/04

WorkOrder: 0406090

June 11, 2004

Dear Matt:

Enclosed are:

1). the results of 2 analyzed samples from your #522-1000-28; John Nady project,

2). a QC report for the above samples

3). a copy of the chain of custody, and

4). a bill for analytical services.

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

If you have any questions please contact me. McCampbell Analytical Laboratories strives for excellence in quality, service and cost. Thank you for your business and I look forward to working with you again.

Yours truly,

Angela Rydelius, Lab Manager

McCampbell Analytical, Inc.
110 2nd Avenue South, #D7, Pacheco, CA 94553-5560
Telephone : 925-798-1620 Fax : 925-798-1622
Website: www.mccampbell.com E-mail: main@mccampbell.com

Cambria Env. Technology	Client Project ID: #522-1000-28; John Nady	Date Sampled: 05/17/04
5900 Hollis St, Suite A		Date Received: 05/20/04
Emeryville, CA 94608	Client Contact: Matt Meyers	Date Extracted: 06/07/04
	Client P.O.:	Date Analyzed: 06/08/04-06/09/04

Gasoline Range (C6-C12) Stoddard Solvent Range (C9-C12) Volatile Hydrocarbons with BTEX & MTBE*

Extraction Method: SW5030B Analytical Method: SW8021B/8015Cm Work Order: 0406090

Lab ID	0406090-002A	0406090-003A			Reporting Limit for DF = 1	
Client ID	MW-4C@10	MW-4C@15				
Matrix	S	S				
DF	1	1			S	W
Compound	**Concentration**				**mg/Kg**	**ug/L**
TPH(g)	ND	ND			1.0	NA
TPH(ss)	ND	ND			1.0	NA
MTBE	ND	ND			0.05	NA
Benzene	ND	ND			0.005	NA
Toluene	ND	ND			0.005	NA
Ethylbenzene	ND	ND			0.005	NA
Xylenes	ND	ND			0.005	NA
Surrogate Recoveries (%)						
%SS:	88.5	89.4				
Comments						

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

cluttered chromatogram; sample peak coelutes with surrogate peak.

+The following descriptions of the TPH chromatogram are cursory in nature and McCampbell Analytical is not responsible for their interpretation: a) unmodified or weakly modified gasoline is significant; b) heavier gasoline range compounds are significant(aged gasoline?); c) lighter gasoline range compounds (the most mobile fraction) are significant; d) gasoline range compounds having broad chromatographic peaks are significant; biologically altered gasoline?; e) TPH pattern that does not appear to be derived from gasoline (stoddard solvent / mineral spirit?); f) one to a few isolated non-target peaks present; g) strongly aged gasoline or diesel range compounds are significant; h) lighter than water immiscible sheen/product is present; i) liquid sample that contains greater than ~1 vol. % sediment; j) reporting limit raised due to high MTBE content; k) TPH pattern that does not appear to be derived from gasoline (aviation gas). m) no recognizable pattern.

DHS Certification No. 1644

Angela Rydelius, Lab Manager

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Cambria Env. Technology	Client Project ID: #522-1000-28; John Nady	Date Sampled: 05/17/04
5900 Hollis St, Suite A		Date Received: 05/20/04
Emeryville, CA 94608	Client Contact: Matt Meyers	Date Extracted: 06/07/04
	Client P.O.:	Date Analyzed: 06/08/04

Diesel (C10-23) and Oil (C18+) Range Extractable Hydrocarbons as Diesel and Motor Oil*

Extraction method: SW3550C Analytical methods: SW8015C Work Order: 0406090

Lab ID	Client ID	Matrix	TPH(d)	TPH(mo)	DF	% SS
0406090-002A	MW-4C@10	S	ND	ND	1	106
0406090-003A	MW-4C@15	S	ND	ND	1	106

Reporting Limit for DF = 1; ND means not detected at or above the reporting limit	W	NA	NA	ug/L
	S	1.0	5.0	mg/Kg

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

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

+The following descriptions of the TPH chromatogram are cursory in nature and McCampbell Analytical is not responsible for their interpretation: a) unmodified or weakly modified diesel is significant; b) diesel range compounds are significant; no recognizable pattern; c) aged diesel? is significant; d) gasoline range compounds are significant; e) unknown medium boiling point pattern that does not appear to be derived from diesel (asphalt); f) one to a few isolated peaks present; g) oil range compounds are significant; h) lighter than water immiscible sheen/product is present; i) liquid sample that contains greater than ~1 vol. % sediment; k) kerosene/kerosene range; l) bunker oil; m) fuel oil; n) stoddard solvent/mineral spirit.

DHS Certification No. 1644

Angela Rydelius, Lab Manager

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Website: www.mccampbell.com E-mail: main@mccampbell.com

Cambria Env. Technology	Client Project ID: #522-1000-28; John Nady	Date Sampled: 05/17/04
5900 Hollis St, Suite A		Date Received: 05/20/04
Emeryville, CA 94608	Client Contact: Matt Meyers	Date Extracted: 06/07/04
	Client P.O.:	Date Analyzed: 06/11/04

Halogenated Volatile Organics by P&T and GC-ELCD (8010 Basic Target List)*

Extraction Method: SW5030 Analytical Method: SW8021B Work Order: 0406090

Lab ID	0406090-002A	0406090-003A			Reporting Limit for DF = 1	
Client ID	MW-4C@10	MW-4C@15				
Matrix	S	S				
DF	1	1			S	W
Compound	**Concentration**				**µg/Kg**	**µg/L**
Bromodichloromethane	ND	ND			5.0	NA
Bromoform	ND	ND			5.0	NA
Bromomethane	ND	ND			5.0	NA
Carbon Tetrachloride	ND	ND			5.0	NA
Chlorobenzene	ND	ND			5.0	NA
Chloroethane	ND	ND			5.0	NA
2-Chloroethyl vinyl ether	ND	ND			5.0	NA
Chloroform	ND	ND			5.0	NA
Chloromethane	ND	ND			5.0	NA
1,4-Dichlorobenzene	ND	ND			5.0	NA
Dibromochloromethane	ND	ND			5.0	NA
1,2-Dichlorobenzene	ND	ND			5.0	NA
1,3-Dichlorobenzene	ND	ND			5.0	NA
Dichlorodifluoromethane	ND	ND			5.0	NA
1,1-Dichloroethane	ND	ND			5.0	NA
1,2-Dichloroethane	ND	ND			5.0	NA
1,1-Dichloroethene	ND	ND			5.0	NA
cis-1,2-Dichloroethene	ND	ND			5.0	NA
trans-1,2-Dichloroethene	ND	ND			5.0	NA
1,2-Dichloropropane	ND	ND			5.0	NA
cis-1,3-Dichloropropene	ND	ND			5.0	NA
trans-1,3-Dichloropropene	ND	ND			5.0	NA
Methylene chloride	ND	ND			5.0	NA
1,1,2,2-Tetrachloroethane	ND	ND			5.0	NA
Tetrachloroethene	ND	ND			5.0	NA
1,1,1-Trichloroethane	ND	ND			5.0	NA
1,1,2-Trichloroethane	ND	ND			5.0	NA
Trichloroethene	ND	ND			5.0	NA
Trichlorofluoromethane	ND	ND			5.0	NA
Vinyl Chloride	ND	ND			5.0	NA
Surrogate Recoveries (%)						
%SS:	97.0	114				
Comments						

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

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

surrogate diluted out of range or surrogate coelutes with another peak.

h) lighter than water immiscible sheen/product is present; i) liquid sample that contains greater than ~1 vol. % sediment; j) sample diluted due to high organic content; k) reporting limit rasied due to insufficient sample amount.

DHS Certification No. 1644

Angela Rydelius, Lab Manager

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QC SUMMARY REPORT FOR SW8021B/8015Cm

Matrix: S WorkOrder: 0406090

EPA Method: SW8021B/8015Cm	Extraction: SW5030B				BatchID: 11847			Spiked Sample ID: 0406097-002A		
	Sample	Spiked	MS*	MSD*	MS-MSD*	LCS	LCSD	LCS-LCSD	Acceptance Criteria (%)	
	mg/Kg	mg/Kg	% Rec.	% Rec.	% RPD	% Rec.	% Rec.	% RPD	Low	High
TPH(btex)[£]	ND	0.60	99.8	98.4	1.46	98	98.1	0.144	70	130
MTBE	ND	0.10	104	99.6	3.93	107	108	0.440	70	130
Benzene	ND	0.10	110	104	4.92	119	117	1.55	70	130
Toluene	ND	0.10	89.5	84	6.40	95.3	93.9	1.38	70	130
Ethylbenzene	ND	0.10	110	106	3.50	116	114	2.24	70	130
Xylenes	ND	0.30	95.3	95	0.350	100	100	0	70	130
%SS:	91.3	0.10	103	87	16.8	109	103	5.66	70	130

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

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

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

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

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

cluttered chromatogram; sample peak coelutes with surrogate peak

N/A = not enough sample to perform matrix spike and matrix spike duplicate.
NR = analyte concentration in sample exceeds spike amount for soil matrix or exceeds 2x spike amount for water matrix or sample diluted due to high matrix or analyte content.

DHS Certification No. 1644 QA/QC Officer

McCampbell Analytical, Inc.
110 2nd Avenue South, #D7, Pacheco, CA 94553-5560
Telephone : 925-798-1620 Fax : 925-798-1622
Website: www.mccampbell.com E-mail: main@mccampbell.com

QC SUMMARY REPORT FOR SW8015C

Matrix: S WorkOrder: 0406090

EPA Method: SW8015C	Extraction: SW3550C				BatchID: 11841			Spiked Sample ID: 0406075-001A		
	Sample	Spiked	MS*	MSD*	MS-MSD*	LCS	LCSD	LCS-LCSD	Acceptance Criteria (%)	
	mg/Kg	mg/Kg	% Rec.	% Rec.	% RPD	% Rec.	% Rec.	% RPD	Low	High
TPH(d)	ND	150	102	97.5	4.29	97.5	99.3	1.84	70	130
%SS:	107	50	114	108	5.40	104	104	0	70	130

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

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

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

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

N/A = not enough sample to perform matrix spike and matrix spike duplicate.
NR = analyte concentration in sample exceeds spike amount for soil matrix or exceeds 2x spike amount for water matrix or sample diluted due to high matrix or analyte content.

DHS Certification No. 1644 QA/QC Officer

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

QC SUMMARY REPORT FOR SW8021B

Matrix: S WorkOrder: 0406090

EPA Method: SW8021B	Extraction: SW5030				BatchID: 11851			Spiked Sample ID: 0406090-003A		
	Sample	Spiked	MS*	MSD*	MS-MSD*	LCS	LCSD	LCS-LCSD	Acceptance Criteria (%)	
	µg/Kg	µg/Kg	% Rec.	% Rec.	% RPD	% Rec.	% Rec.	% RPD	Low	High
Chlorobenzene	ND	50	86.7	86.3	0.422	96.8	94	2.95	70	130
1,1-Dichloroethene	ND	50	71.1	73.9	3.86	84.2	80.2	4.82	70	130
Trichloroethene	ND	50	78.6	83.5	6.07	90.1	84.1	6.89	70	130
%SS:	114	50	109	105	4.20	109	114	4.77	70	130

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

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

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

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

N/A = not enough sample to perform matrix spike and matrix spike duplicate.
NR = analyte concentration in sample exceeds spike amount for soil matrix or exceeds 2x spike amount for water matrix or sample diluted due to high matrix or analyte content.

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

DHS Certification No. 1644 QA/QC Officer

CHAIN-OF-CUSTODY RECORD

McCampbell Analytical, Inc.
110 Second Avenue South, #D7
Pacheco, CA 94553-5560
(925) 798-1620

Page 1 of 1

WorkOrder: 0406090 ClientID: CETE

Requested TAT: 5 days
Date Received: 5/20/04
Date Printed: 6/7/04

Report to:
Matt Meyers
Cambria Env. Technology
5900 Hollis St, Suite A
Emeryville, CA 94608

Bill to:
Accounts Payable
Cambria Env. Technology
5900 Hollis St, Ste. A
Emeryville, CA 94608

TEL: (510) 420-0700
FAX: (510) 420-9170
ProjectNo: #522-1000-26; John Nady
PO:

Sample ID	ClientSampID	Matrix	Collection Date	Hold	Requested Tests (See legend below)														
					1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
0406090-002	MW-4C@10	Soil	5/17/04 8:40:00 AM		A	A	A												
0406090-003	MW-4C@15	Soil	5/17/04 8:50:00 AM		A	A	A												

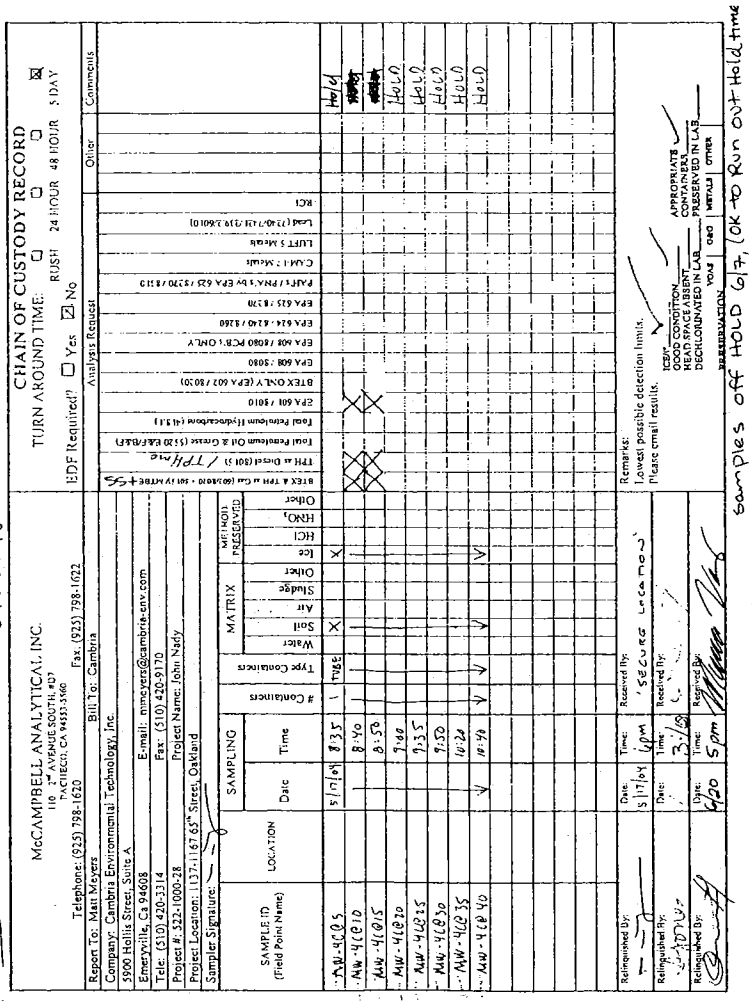
Test Legend:

1	8010B_S	2	G-MBTEX_S	3	TPH(DMO)_S	4		5	
6		7		8		9		10	
11		12		13		14		15	

Prepared by: Maria Venegas

Comments: Sample off hold 6/7/04(received 5/20) ok to run out of hold time

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



CHAIN OF CUSTODY RECORD

TURN AROUND TIME: RUSH 24 HOUR 48 HOUR 5 DAY

EDF Required? Yes No

Analysis Request

Other | Comments

BTEX & TPH as Gas (8020 + 8015) MTBE +SS
TPH as Diesel (8015)
Total Petroleum Oil & Grease (5520 E&F/B&F)
Total Petroleum Hydrocarbons (418.1)
EPA 601 / 8010
BTEX ONLY (EPA 602 / 8020)
EPA 608 / 8080
EPA 608 / 8080 PCB's ONLY
EPA 624 / 8240 / 8260
EPA 625 / 8270
PAH's / PNA's by EPA 625 / 8270 / 8310
CAM-17 Metals
LUFT 5 Metals
Lead (7240/239.2/3112/3130/6010)
RCI

Remarks: Lowest possible detection limits. Please email results.

ICE/GOOD CONDITION
HEAD SPACE ABSENT
DECHLORINATED IN LAB
PRESERVATION VOA | O&G | METALS | OTHER
APPROPRIATE CONTAINERS
PRESERVED IN LAB

Relinquished By: Date: 5/17/04 Time: 4pm Received By: Lacena
Relinquished By: Date: 5/17/04 Time: 5:10 Received By:
Relinquished By: Date: 5/20 Time: 5pm Received By:

MCCAMPBELL ANALYTICAL, INC.
110 2nd AVENUE SOUTH, #D7
PACHECO, CA 94553-5560
Telephone: (925) 798-1620 Fax: (925) 798-1622

Report To: Matt Meyers Bill To: Cambria
Company: Cambria Environmental Technology, Inc.
5900 Hollis Street, Suite A
Emeryville, Ca 94608 E-mail: mmeyers@cambria-env.com
Tele: (510) 420-3314 Fax: (510) 420-9170
Project #: 522-1000-28 Project Name: John Nady
Project Location: 1137-1167 65th Street, Oakland
Sampler Signature:

SAMPLE ID (Field Point Name)	LOCATION	SAMPLING Date	SAMPLING Time	# Containers	Type Containers	MATRIX: Water	Soil	Air	Sludge	Other	METHOD PRESERVED: Ice	HCl	HNO3	Other
MW-4Q05		5/17/04	8:35	1	Tube		X				X			
MW-4Q10			8:40											
MW-4Q15			8:50											
MW-4Q20			9:00											
MW-4Q25			9:35											
MW-4Q30			9:50											
MW-4Q35			10:20											
MW-4Q40			10:40											

Samples off HOLD 6/7, OK to Run out Holdtime

UTUUUMU

McCampbell Analytical, Inc.

110 2nd Avenue South, #D7, Pacheco, CA 94553-5560
Telephone : 925-798-1620 Fax : 925-798-1622
Website: www.mccampbell.com E-mail: main@mccampbell.com

Cambria Env. Technology	Client Project ID: #522-1000-027; John Nady	Date Sampled: 06/03/04
5900 Hollis St, Suite A		Date Received: 06/04/04
Emeryville, CA 94608	Client Contact: Matt Meyers	Date Reported: 06/14/04
	Client P.O.:	Date Completed: 06/14/04

WorkOrder: 0406080

June 14, 2004

Dear Matt:

Enclosed are:

1). the results of 13 analyzed samples from your #522-1000-027; John Nady project,

2). a QC report for the above samples

3). a copy of the chain of custody, and

4). a bill for analytical services.

All analyses were completed satisfactorily and all QC samples were found to be within our control limits. If you have any questions please contact me. McCampbell Analytical Laboratories strives for excellence in quality, service and cost. Thank you for your business and I look forward to working with you again.

Yours truly,

Angela Rydelius, Lab Manager

McCampbell Analytical, Inc.

110 2nd Avenue South, #D7, Pacheco, CA 94553-5560
Telephone : 925-798-1620 Fax : 925-798-1622
Website: www.mccampbell.com E-mail: main@mccampbell.com

Cambria Env. Technology	Client Project ID: #522-1000-027; John Nady	Date Sampled: 06/03/04
5900 Hollis St, Suite A		Date Received: 06/04/04
Emeryville, CA 94608	Client Contact: Matt Meyers	Date Extracted: 06/09/04-06/11/04
	Client P.O.:	Date Analyzed: 06/09/04-06/11/04

Gasoline (C6-C12), Stoddard Solvent (C9-C12) Volatile Hydrocarbons as Gasoline with BTEX and MTBE*

Extraction Method: SW5030B Analytical Method: SW8021B/8015Cm Work Order: 0406080

Lab ID	0406080-001A	0406080-002A	0406080-003A	0406080-004A	Reporting Limit for DF =1	
Client ID	MW-1A	MW-1B	MW-1C	MW-2A		
Matrix	W	W	W	W		
DF	1	1	1	1	S	W
Compound	**Concentration**				**ug/kg**	**µg/L**
TPH(g)	1400	ND	ND	1700	NA	50
TPH(ss)	2500	ND	ND	3500	NA	50
MTBE	ND	ND	ND	ND	NA	5.0
Benzene	ND	ND	ND	ND	NA	0.5
Toluene	ND	ND	ND	3.5	NA	0.5
Ethylbenzene	2.0	ND	ND	4.9	NA	0.5
Xylenes	11	ND	ND	5.1	NA	0.5
Surrogate Recoveries (%)						
%SS:	106	87.6	87.3	113		
Comments	e			e,m		

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

cluttered chromatogram; sample peak coelutes with surrogate peak.

+The following descriptions of the TPH chromatogram are cursory in nature and McCampbell Analytical is not responsible for their interpretation: a) unmodified or weakly modified gasoline is significant; b) heavier gasoline range compounds are significant(aged gasoline?); c) lighter gasoline range compounds (the most mobile fraction) are significant; d) gasoline range compounds having broad chromatographic peaks are significant; biologically altered gasoline?; e) TPH pattern that does not appear to be derived from gasoline (stoddard solvent / mineral spirit?); f) one to a few isolated non-target peaks present; g) strongly aged gasoline or diesel range compounds are significant; h) lighter than water immiscible sheen/product is present; i) liquid sample that contains greater than ~ 1 vol. % sediment; j) reporting limit raised due to high MTBE content; k) TPH pattern that does not appear to be derived from gasoline (aviation gas). m) no recognizable pattern.

DHS Certification No. 1644

Angela Rydelius, Lab Manager

McCampbell Analytical, Inc.

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Website: www.mccampbell.com E-mail: main@mccampbell.com

Cambria Env. Technology	Client Project ID: #522-1000-027; John Nady	Date Sampled: 06/03/04
5900 Hollis St, Suite A		Date Received: 06/04/04
Emeryville, CA 94608	Client Contact: Matt Meyers	Date Extracted: 06/09/04-06/11/04
	Client P.O.:	Date Analyzed: 06/09/04-06/11/04

Gasoline (C6-C12), Stoddard Solvent (C9-C12) Volatile Hydrocarbons as Gasoline with BTEX and MTBE*

Extraction Method: SW5030B Analytical Method: SW8021B/8015Cm Work Order: 0406080

Lab ID	0406080-005A	0406080-006A	0406080-007A	0406080-008A	Reporting Limit for DF =1	
Client ID	MW-3A	MW-4A	MW-4B	MW-4C		
Matrix	W	W	W	W		
DF	10	1	1	1	S	W
Compound	**Concentration**				**ug/kg**	**µg/L**
TPH(g)	4800	ND	ND	ND	NA	50
TPH(ss)	12,000	ND	ND	ND	NA	50
MTBE	ND<50	ND	ND	ND	NA	5.0
Benzene	ND<5.0	ND	ND	ND	NA	0.5
Toluene	ND<5.0	ND	ND	ND	NA	0.5
Ethylbenzene	ND<5.0	ND	ND	ND	NA	0.5
Xylenes	ND<5.0	ND	ND	ND	NA	0.5
Surrogate Recoveries (%)						
%SS:	82.0	84.5	86.4	87.1		
Comments	e,h,i					

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

cluttered chromatogram; sample peak coelutes with surrogate peak.

+The following descriptions of the TPH chromatogram are cursory in nature and McCampbell Analytical is not responsible for their interpretation: a) unmodified or weakly modified gasoline is significant; b) heavier gasoline range compounds are significant(aged gasoline?); c) lighter gasoline range compounds (the most mobile fraction) are significant; d) gasoline range compounds having broad chromatographic peaks are significant; biologically altered gasoline?; e) TPH pattern that does not appear to be derived from gasoline (stoddard solvent / mineral spirit?); f) one to a few isolated non-target peaks present; g) strongly aged gasoline or diesel range compounds are significant; h) lighter than water immiscible sheen/product is present; i) liquid sample that contains greater than ~ 1 vol. % sediment; j) reporting limit raised due to high MTBE content; k) TPH pattern that does not appear to be derived from gasoline (aviation gas). m) no recognizable pattern.

DHS Certification No. 1644

Angela Rydelius, Lab Manager

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Cambria Env. Technology	Client Project ID: #522-1000-027; John Nady	Date Sampled: 06/03/04
5900 Hollis St, Suite A		Date Received: 06/04/04
Emeryville, CA 94608	Client Contact: Matt Meyers	Date Extracted: 06/09/04-06/11/04
	Client P.O.:	Date Analyzed: 06/09/04-06/11/04

Gasoline (C6-C12), Stoddard Solvent (C9-C12) Volatile Hydrocarbons as Gasoline with BTEX and MTBE*

Extraction Method: SW5030B | Analytical Method: SW8021B/8015Cm | Work Order: 0406080

Lab ID	0406080-009A	0406080-010A	0406080-011A	0406080-012A	Reporting Limit for DF =1	
Client ID	MW-5B	MW-6A	MW-6B	MW-6C		
Matrix	W	W	W	W		
DF	1	1	1	1	S	W
Compound	**Concentration**				ug/kg	µg/L
TPH(g)	ND	970	1100	160	NA	50
TPH(ss)	ND	2400	2900	340	NA	50
MTBE	ND	ND	ND	ND	NA	5.0
Benzene	ND	ND	ND	ND	NA	0.5
Toluene	ND	ND	ND	ND	NA	0.5
Ethylbenzene	ND	ND	ND	ND	NA	0.5
Xylenes	ND	2.1	1.4	1.1	NA	0.5
Surrogate Recoveries (%)						
%SS:	86.0	82.8	82.7	90.3		
Comments		e	e	e		

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

cluttered chromatogram; sample peak coelutes with surrogate peak.

+The following descriptions of the TPH chromatogram are cursory in nature and McCampbell Analytical is not responsible for their interpretation: a) unmodified or weakly modified gasoline is significant; b) heavier gasoline range compounds are significant(aged gasoline?); c) lighter gasoline range compounds (the most mobile fraction) are significant; d) gasoline range compounds having broad chromatographic peaks are significant; biologically altered gasoline?; e) TPH pattern that does not appear to be derived from gasoline (stoddard solvent / mineral spirit?); f) one to a few isolated non-target peaks present; g) strongly aged gasoline or diesel range compounds are significant; h) lighter than water immiscible sheen/product is present; i) liquid sample that contains greater than ~1 vol. % sediment; j) reporting limit raised due to high MTBE content; k) TPH pattern that does not appear to be derived from gasoline (aviation gas); m) no recognizable pattern.

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Cambria Env. Technology	Client Project ID: #522-1000-027; John Nady	Date Sampled: 06/03/04
5900 Hollis St, Suite A		Date Received: 06/04/04
Emeryville, CA 94608	Client Contact: Matt Meyers	Date Extracted: 06/09/04-06/11/04
	Client P.O.:	Date Analyzed: 06/09/04-06/11/04

Gasoline (C6-C12), Stoddard Solvent (C9-C12) Volatile Hydrocarbons as Gasoline with BTEX and MTBE*

Extraction Method: SW5030B | Analytical Method: SW8021B/8015Cm | Work Order: 0406080

Lab ID	0406080-013A				Reporting Limit for DF =1	
Client ID	MW-7A					
Matrix	W					
DF	10				S	W
Compound	**Concentration**				ug/kg	µg/L
TPH(g)	3900				NA	50
TPH(ss)	9900				NA	50
MTBE	ND<50				NA	5.0
Benzene	ND<5.0				NA	0.5
Toluene	ND<5.0				NA	0.5
Ethylbenzene	ND<5.0				NA	0.5
Xylenes	6.6				NA	0.5
Surrogate Recoveries (%)						
%SS:	81.6					
Comments	e,i					

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

cluttered chromatogram; sample peak coelutes with surrogate peak.

+The following descriptions of the TPH chromatogram are cursory in nature and McCampbell Analytical is not responsible for their interpretation: a) unmodified or weakly modified gasoline is significant; b) heavier gasoline range compounds are significant(aged gasoline?); c) lighter gasoline range compounds (the most mobile fraction) are significant; d) gasoline range compounds having broad chromatographic peaks are significant; biologically altered gasoline?; e) TPH pattern that does not appear to be derived from gasoline (stoddard solvent / mineral spirit?); f) one to a few isolated non-target peaks present; g) strongly aged gasoline or diesel range compounds are significant; h) lighter than water immiscible sheen/product is present; i) liquid sample that contains greater than ~1 vol. % sediment; j) reporting limit raised due to high MTBE content; k) TPH pattern that does not appear to be derived from gasoline (aviation gas); m) no recognizable pattern.

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Cambria Env. Technology	Client Project ID: #522-1000-027; John Nady	Date Sampled: 06/03/04
5900 Hollis St, Suite A		Date Received: 06/04/04
Emeryville, CA 94608	Client Contact: Matt Meyers	Date Extracted: 06/04/04
	Client P.O.:	Date Analyzed: 06/07/04-06/09/04

Diesel (C10-23) and Oil (C18+) Range Extractable Hydrocarbons as Diesel and Motor Oil*

Extraction method: SW3510C | Analytical methods: SW8015C | Work Order: 0406080

Lab ID	Client ID	Matrix	TPH(d)	TPH(mo)	DF	% SS
0406080-001C	MW-1A	W	1300,d,b	260	1	102
0406080-002C	MW-1B	W	ND	ND	1	108
0406080-003C	MW-1C	W	ND	ND	1	102
0406080-004C	MW-2A	W	2900,d	ND	1	105
0406080-005C	MW-3A	W	90,000,n,b,g,h,i	6000	20	89.6
0406080-006C	MW-4A	W	270,g,b	440	1	92.7
0406080-007C	MW-4B	W	ND	ND	1	102
0406080-008C	MW-4C	W	ND	ND	1	104
0406080-009C	MW-5B	W	ND	ND	1	101
0406080-010C	MW-6A	W	3500,d,b	340	1	97.6
0406080-011C	MW-6B	W	2300,d,b	ND	1	102
0406080-012C	MW-6C	W	240,d,b	ND	1	97.5
Reporting Limit for DF =1; ND means not detected at or above the reporting limit		W	50	250	µg/L	
		S	NA	NA	mg/Kg	

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

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

+The following descriptions of the TPH chromatogram are cursory in nature and McCampbell Analytical is not responsible for their interpretation: a) unmodified or weakly modified diesel is significant; b) diesel range compounds are significant; no recognizable pattern; c) aged diesel? is significant); d) gasoline range compounds are significant; e) unknown medium boiling point pattern that does not appear to be derived from diesel (automatic transmission fluid); f) one to a few isolated peaks present; g) oil range compounds are significant; h) lighter than water immiscible sheen/product is present; i) liquid sample that contains greater than ~1 vol. % sediment; k) kerosene/kerosene range; l) bunker oil; m) fuel oil; n) stoddard solvent/mineral spirit.

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Cambria Env. Technology	Client Project ID: #522-1000-027; John Nady	Date Sampled: 06/03/04
5900 Hollis St, Suite A		Date Received: 06/04/04
Emeryville, CA 94608	Client Contact: Matt Meyers	Date Extracted: 06/09/04-06/15/04
	Client P.O.:	Date Analyzed: 06/09/04-06/15/04

Halogenated Volatile Organics by P&T and GC-MS (8010 Basic Target List)*

Extraction Method: SW5030B | Analytical Method: SW8021B by 8260 | Work Order: 0406080

Lab ID	0406080-001B	0406080-002B	0406080-003B	0406080-004B	Reporting Limit for DF =1	
Client ID	MW-1A	MW-1B	MW-1C	MW-2A		
Matrix	W	W	W	W		
DF	5	1	1	1	S	W
Compound	**Concentration**				µg/kg	µg/L
Bromodichloromethane	ND<2.5	ND	ND	ND	NA	0.5
Bromoform	ND<2.5	ND	ND	ND	NA	0.5
Bromomethane	ND<2.5	ND	ND	ND	NA	0.5
Carbon Tetrachloride	ND<2.5	ND	ND	ND	NA	0.5
Chlorobenzene	ND<2.5	ND	ND	ND	NA	0.5
Chloroethane	ND<2.5	ND	ND	ND	NA	0.5
2-Chloroethyl vinyl ether	ND<2.5	ND	ND	ND	NA	0.5
Chloroform	ND<2.5	8.3	0.57	ND	NA	0.5
Chloromethane	ND<2.5	ND	ND	ND	NA	0.5
Dibromochloromethane	ND<2.5	ND	ND	ND	NA	0.5
1,2-Dichlorobenzene	ND<2.5	ND	ND	ND	NA	0.5
1,3-Dichlorobenzene	ND<2.5	ND	ND	ND	NA	0.5
1,4-Dichlorobenzene	ND<2.5	ND	ND	ND	NA	0.5
Dichlorodifluoromethane	ND<2.5	ND	ND	ND	NA	0.5
1,1-Dichloroethane	ND<2.5	8.1	ND	ND	NA	0.5
1,2-Dichloroethane	ND<2.5	7.9	ND	ND	NA	0.5
1,1-Dichloroethene	ND<2.5	ND	ND	ND	NA	0.5
cis-1,2-Dichloroethene	36	3.9	ND	ND	NA	0.5
trans-1,2-Dichloroethene	ND<2.5	ND	ND	ND	NA	0.5
1,2-Dichloropropane	ND<2.5	ND	ND	ND	NA	0.5
cis-1,3-Dichloropropene	ND<2.5	ND	ND	ND	NA	0.5
trans-1,3-Dichloropropene	ND<2.5	ND	ND	ND	NA	0.5
Methylene chloride	ND<2.5	ND	ND	ND	NA	0.5
1,1,2,2-Tetrachloroethane	ND<2.5	ND	ND	ND	NA	0.5
Tetrachloroethene	55	ND	ND	ND	NA	0.5
1,1,1-Trichloroethane	ND<2.5	ND	ND	ND	NA	0.5
1,1,2-Trichloroethane	ND<2.5	ND	ND	ND	NA	0.5
Trichloroethene	16	ND	ND	ND	NA	0.5
Trichlorofluoromethane	ND<2.5	ND	ND	ND	NA	0.5
Vinyl Chloride	6.3	ND	ND	ND	NA	0.5
Surrogate Recoveries (%)						
%SS:	91.4	102	92.6	88.1		
Comments	j					

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

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

surrogate diluted out of range or surrogate coelutes with another peak.

h) lighter than water immiscible sheen/product is present; i) liquid sample that contains greater than ~1 vol. % sediment; j) sample diluted due to high organic content; k) reporting limit raised due to insufficient sample amount.

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Cambria Env. Technology	Client Project ID: #522-1000-027; John Nady	Date Sampled: 06/03/04
5900 Hollis St, Suite A		Date Received: 06/04/04
Emeryville, CA 94608	Client Contact: Matt Meyers	Date Extracted: 06/09/04-06/15/04
	Client P.O.:	Date Analyzed: 06/09/04-06/15/04

Halogenated Volatile Organics by P&T and GC-MS (8010 Basic Target List)*

Extraction Method: SW5030B | Analytical Method: SW8021B by 8260 | Work Order: 0406080

Lab ID	0406080-005B	0406080-006B	0406080-007B	0406080-008B	Reporting Limit for DF = 1	
Client ID	MW-3A	MW-4A	MW-4B	MW-4C		
Matrix	W	W	W	W		
DF	100	1	1	1	S	W
Compound	**Concentration**				µg/kg	µg/L
Bromodichloromethane	ND<50	ND	ND	ND	NA	0.5
Bromoform	ND<50	ND	ND	ND	NA	0.5
Bromomethane	ND<50	ND	ND	ND	NA	0.5
Carbon Tetrachloride	ND<50	ND	ND	ND	NA	0.5
Chlorobenzene	ND<50	ND	ND	ND	NA	0.5
Chloroethane	ND<50	ND	ND	ND	NA	0.5
2-Chloroethyl vinyl ether	ND<50	ND	ND	ND	NA	0.5
Chloroform	ND<50	ND	ND	0.84	NA	0.5
Chloromethane	ND<50	ND	ND	ND	NA	0.5
Dibromochloromethane	ND<50	ND	ND	ND	NA	0.5
1,2-Dichlorobenzene	ND<50	ND	ND	ND	NA	0.5
1,3-Dichlorobenzene	ND<50	ND	ND	ND	NA	0.5
1,4-Dichlorobenzene	ND<50	ND	ND	ND	NA	0.5
Dichlorodifluoromethane	ND<50	ND	ND	ND	NA	0.5
1,1-Dichloroethane	ND<50	ND	ND	ND	NA	0.5
1,2-Dichloroethane	ND<50	ND	ND	ND	NA	0.5
1,1-Dichloroethene	ND<50	ND	ND	ND	NA	0.5
cis-1,2-Dichloroethene	ND<50	ND	ND	ND	NA	0.5
trans-1,2-Dichloroethene	ND<50	ND	ND	ND	NA	0.5
1,2-Dichloropropane	ND<50	ND	ND	ND	NA	0.5
cis-1,3-Dichloropropene	ND<50	ND	ND	ND	NA	0.5
trans-1,3-Dichloropropene	ND<50	ND	ND	ND	NA	0.5
Methylene chloride	ND<50	ND	ND	ND	NA	0.5
1,1,2,2-Tetrachloroethane	ND<50	ND	ND	ND	NA	0.5
Tetrachloroethene	ND<50	1.7	ND	ND	NA	0.5
1,1,1-Trichloroethane	ND<50	ND	ND	ND	NA	0.5
1,1,2-Trichloroethane	ND<50	ND	ND	ND	NA	0.5
Trichloroethene	ND<50	ND	ND	ND	NA	0.5
Trichlorofluoromethane	ND<50	ND	ND	ND	NA	0.5
Vinyl Chloride	ND<50	ND	ND	ND	NA	0.5
Surrogate Recoveries (%)						
%SS:	100	99.6	97	99 8		
Comments	j,h,i					

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

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

surrogate diluted out of range or surrogate coelutes with another peak.

h) lighter than water immiscible sheen/product is present; i) liquid sample that contains greater than ~1 vol. % sediment; j) sample diluted due to high organic content; k) reporting limit rasied due to insufficient sample amount.

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Cambria Env. Technology	Client Project ID: #522-1000-027; John Nady	Date Sampled: 06/03/04
5900 Hollis St, Suite A		Date Received: 06/04/04
Emeryville, CA 94608	Client Contact: Matt Meyers	Date Extracted: 06/09/04-06/15/04
	Client P.O.:	Date Analyzed: 06/09/04-06/15/04

Halogenated Volatile Organics by P&T and GC-MS (8010 Basic Target List)*

Extraction Method: SW5030B | Analytical Method: SW8021B by 8260 | Work Order: 0406080

Lab ID	0406080-009B	0406080-010B	0406080-011B	0406080-012B	Reporting Limit for DF = 1	
Client ID	MW-5B	MW-6A	MW-6B	MW-6C		
Matrix	W	W	W	W		
DF	1	1	1	1	S	W
Compound	**Concentration**				µg/kg	µg/L
Bromodichloromethane	ND	ND	ND	ND	NA	0.5
Bromoform	ND	ND	ND	ND	NA	0.5
Bromomethane	ND	ND	ND	ND	NA	0.5
Carbon Tetrachloride	ND	ND	ND	ND	NA	0.5
Chlorobenzene	ND	ND	ND	ND	NA	0.5
Chloroethane	ND	4.7	0.65	ND	NA	0.5
2-Chloroethyl vinyl ether	ND	ND	ND	ND	NA	0.5
Chloroform	ND	0.51	ND	ND	NA	0.5
Chloromethane	ND	ND	ND	ND	NA	0.5
Dibromochloromethane	ND	ND	ND	ND	NA	0.5
1,2-Dichlorobenzene	ND	ND	ND	ND	NA	0.5
1,3-Dichlorobenzene	ND	ND	ND	ND	NA	0.5
1,4-Dichlorobenzene	ND	ND	ND	ND	NA	0.5
Dichlorodifluoromethane	ND	ND	ND	ND	NA	0.5
1,1-Dichloroethane	ND	2.1	ND	0.61	NA	0.5
1,2-Dichloroethane	ND	ND	ND	ND	NA	0.5
1,1-Dichloroethene	ND	ND	ND	ND	NA	0.5
cis-1,2-Dichloroethene	ND	ND	ND	2.8	NA	0.5
trans-1,2-Dichloroethene	ND	1.8	ND	ND	NA	0.5
1,2-Dichloropropane	ND	ND	ND	ND	NA	0.5
cis-1,3-Dichloropropene	ND	ND	ND	ND	NA	0.5
trans-1,3-Dichloropropene	ND	ND	ND	ND	NA	0.5
Methylene chloride	ND	ND	ND	ND	NA	0.5
1,1,2,2-Tetrachloroethane	ND	ND	ND	ND	NA	0.5
Tetrachloroethene	ND	ND	ND	ND	NA	0.5
1,1,1-Trichloroethane	ND	ND	ND	ND	NA	0.5
1,1,2-Trichloroethane	ND	ND	ND	ND	NA	0.5
Trichloroethene	ND	ND	ND	ND	NA	0.5
Trichlorofluoromethane	ND	ND	ND	ND	NA	0.5
Vinyl Chloride	ND	6.7	ND	ND	NA	0.5
Surrogate Recoveries (%)						
%SS:	95.9	93.7	93.4	95		
Comments						

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

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

surrogate diluted out of range or surrogate coelutes with another peak.

h) lighter than water immiscible sheen/product is present; i) liquid sample that contains greater than ~1 vol. % sediment; j) sample diluted due to high organic content; k) reporting limit rasied due to insufficient sample amount.

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Cambria Env. Technology	Client Project ID: #522-1000-027; John Nady	Date Sampled: 06/03/04
5900 Hollis St, Suite A		Date Received: 06/04/04
Emeryville, CA 94608	Client Contact: Matt Meyers	Date Extracted: 06/09/04-06/15/04
	Client P.O.:	Date Analyzed: 06/09/04-06/15/04

Halogenated Volatile Organics by P&T and GC-MS (8010 Basic Target List)*

Extraction Method: SW5030B | Analytical Method: SW8021B by 8260 | Work Order: 0406080

Lab ID	0406080-013B				Reporting Limit for DF = 1	
Client ID	MW-7A					
Matrix	W					
DF	1				S	W
Compound	**Concentration**				µg/kg	µg/L
Bromodichloromethane	ND				NA	0.5
Bromoform	ND				NA	0.5
Bromomethane	ND				NA	0.5
Carbon Tetrachloride	ND				NA	0.5
Chlorobenzene	ND				NA	0.5
Chloroethane	ND				NA	0.5
2-Chloroethyl vinyl ether	ND				NA	0.5
Chloroform	ND				NA	0.5
Chloromethane	ND				NA	0.5
Dibromochloromethane	ND				NA	0.5
1,2-Dichlorobenzene	2.0				NA	0.5
1,3-Dichlorobenzene	ND				NA	0.5
1,4-Dichlorobenzene	ND				NA	0.5
Dichlorodifluoromethane	ND				NA	0.5
1,1-Dichloroethane	ND				NA	0.5
1,2-Dichloroethane	ND				NA	0.5
1,1-Dichloroethene	ND				NA	0.5
cis-1,2-Dichloroethene	ND				NA	0.5
trans-1,2-Dichloroethene	ND				NA	0.5
1,2-Dichloropropane	ND				NA	0.5
cis-1,3-Dichloropropene	ND				NA	0.5
trans-1,3-Dichloropropene	ND				NA	0.5
Methylene chloride	ND				NA	0.5
1,1,2,2-Tetrachloroethane	ND				NA	0.5
Tetrachloroethene	ND				NA	0.5
1,1,1-Trichloroethane	ND				NA	0.5
1,1,2-Trichloroethane	ND				NA	0.5
Trichloroethene	ND				NA	0.5
Trichlorofluoromethane	ND				NA	0.5
Vinyl Chloride	ND				NA	0.5
Surrogate Recoveries (%)						
%SS:	109					
Comments	i					

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

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

surrogate diluted out of range or surrogate coelutes with another peak.

h) lighter than water immiscible sheen/product is present; i) liquid sample that contains greater than ~1 vol. % sediment; j) sample diluted due to high organic content; k) reporting limit rasied due to insufficient sample amount.

DHS Certification No. 1644

Angela Rydelius, Lab Manager

McCampbell Analytical, Inc.
110 2nd Avenue South, #D7, Pacheco, CA 94553-5560
Telephone : 925-798-1620 Fax : 925-798-1622
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QC SUMMARY REPORT FOR SW8021B/8015Cm

Matrix: W | WorkOrder: 0406080

EPA Method: SW8021B/8015Cm	Extraction: SW5030B		BatchID: 11839			Spiked Sample ID: 0406077-001A				
	Sample	Spiked	MS*	MSD*	MS-MSD	LCS	LCSD	LCS-LCSD	Acceptance Criteria (%)	
	µg/L	µg/L	% Rec.	% Rec.	% RPD	% Rec.	% Rec.	% RPD	Low	High
TPH(btex)[f]	ND	60	98.1	99.4	1.40	83.8	102	19.5	70	130
MTBE	ND	10	105	103	1.91	104	115	10.3	70	130
Benzene	ND	10	110	110	0	103	115	11.2	70	130
Toluene	ND	10	109	108	1.30	98.5	109	10.5	70	130
Ethylbenzene	ND	10	109	109	0	105	114	8.59	70	130
Xylenes	ND	30	96	96	0	95.3	100	4.78	70	130
%SS:	96.6	10	105	106	0.782	100	104	3.69	70	130

All target compounds in the Method Blank of this extraction batch were ND less than the method RL with the following exceptions

NONE

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

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

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

[f] TPH(btex) = sum of BTEX areas from the FID.

cluttered chromatogram; sample peak coelutes with surrogate peak.

N/A = not applicable or not enough sample to perform matrix spike and matrix spike duplicate.
NR = analyte concentration in sample exceeds spike amount for soil matrix or exceeds 2x spike amount for water matrix or sample diluted due to high matrix or analyte content.

DHS Certification No. 1644

QA/QC Officer

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QC SUMMARY REPORT FOR SW8021B/8015Cm

Matrix: W WorkOrder: 0406080

EPA Method: SW8021B/8015Cm	Extraction: SW5030B			BatchID: 11843			Spiked Sample ID: 0406080-009A		
	Sample	Spiked	MS*	MSD*	MS-MSD	LCS	LCSD	LCS-LCSD	Acceptance Criteria (%)	
	µg/L	µg/L	% Rec.	% Rec.	% RPD	% Rec.	% Rec.	% RPD	Low	High
TPH(btex)[f]	ND	60	99.5	97	2.55	83.5	84.8	1.57	70	130
MTBE	ND	10	104	105	1.47	84.8	85.8	1.16	70	130
Benzene	ND	10	111	107	3.48	86.5	87.3	0.992	70	130
Toluene	ND	10	108	105	2.45	87.9	88.6	0.788	70	130
Ethylbenzene	ND	10	110	105	4.52	90.7	90.7	0.533	70	130
Xylenes	ND	30	96	95	1.05	90.3	90.3	0	70	130
%SS:	86.0	10	107	107	0	95.6	96.3	0.679	70	130

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

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

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

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

[f] TPH(btex) = sum of BTEX areas from the FID

cluttered chromatogram, sample peak coelutes with surrogate peak

N/A = not applicable or not enough sample to perform matrix spike and matrix spike duplicate
NR = analyte concentration in sample exceeds spike amount for soil matrix or exceeds 2x spike amount for water matrix or sample diluted due to high matrix or analyte content

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QC SUMMARY REPORT FOR SW8015C

Matrix: W WorkOrder: 0406080

EPA Method: SW8015C	Extraction: SW3510C			BatchID: 11833			Spiked Sample ID: N/A		
	Sample	Spiked	MS*	MSD*	MS-MSD	LCS	LCSD	LCS-LCSD	Acceptance Criteria (%)	
	µg/L	µg/L	% Rec.	% Rec.	% RPD	% Rec.	% Rec.	% RPD	Low	High
TPH(d)	N/A	7500	N/A	N/A	N/A	109	108	0.413	70	130
%SS:	N/A	2500	N/A	N/A	N/A	117	116	0.491	70	130

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

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

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

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

N/A = not enough sample to perform matrix spike and matrix spike duplicate
NR = analyte concentration in sample exceeds spike amount for soil matrix or exceeds 2x spike amount for water matrix or sample diluted due to high matrix or analyte content

DHS Certification No. 1644

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QC SUMMARY REPORT FOR SW8015C

Matrix: W WorkOrder: 0406080

EPA Method: SW8015C	Extraction: SW3510C			BatchID: 11844			Spiked Sample ID: N/A		
	Sample	Spiked	MS*	MSD*	MS-MSD	LCS	LCSD	LCS-LCSD	Acceptance Criteria (%)	
	µg/L	µg/L	% Rec.	% Rec.	% RPD	% Rec.	% Rec.	% RPD	Low	High
TPH(d)	N/A	7500	N/A	N/A	N/A	98.1	106	7.44	70	130
%SS:	N/A	2500	N/A	N/A	N/A	108	115	6.74	70	130

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

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

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

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

N/A = not enough sample to perform matrix spike and matrix spike duplicate.
NR = analyte concentration in sample exceeds spike amount for soil matrix or exceeds 2x spike amount for water matrix or sample diluted due to high matrix or analyte content.

DHS Certification No. 1644

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QC SUMMARY REPORT FOR SW8021B

Matrix: W WorkOrder: 0406080

EPA Method: SW8021B	Extraction: SW5030B			BatchID: 11845			Spiked Sample ID: 0406080-012A		
	Sample	Spiked	MS*	MSD*	MS-MSD	LCS	LCSD	LCS-LCSD	Acceptance Criteria (%)	
	µg/L	µg/L	% Rec.	% Rec.	% RPD	% Rec.	% Rec.	% RPD	Low	High
Chlorobenzene	ND	10	99.8	99.2	0.603	105	105	0	70	130
1,1-Dichloroethene	ND	10	119	123	2.98	113	113	0	70	130
Trichloroethene	ND	10	90.2	90.7	0.553	107	106	0.522	70	130
%SS:	93	10	102	92.2	10.1	115	109	5.39	70	130

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

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

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

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

N/A = not enough sample to perform matrix spike and matrix spike duplicate.
NR = analyte concentration in sample exceeds spike amount for soil matrix or exceeds 2x spike amount for water matrix or sample diluted due to high matrix or analyte content.

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

DHS Certification No. 1644

QA/QC Officer

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110 Second Avenue South, #D7
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(925) 798-1620

CHAIN-OF-CUSTODY RECORD

WorkOrder: 0406080 ClientID: CETE

Report to:
Matt Meyers
Cambria Env. Technology
5900 Hollis St, Suite A
Emeryville, CA 94608

TEL: (510) 420-0700
FAX: (510) 420-9170
ProjectNo: #522-1000-027; John Nady
PO:

Bill to:
Accounts Payable
Cambria Env. Technology
5900 Hollis St, Ste. A
Emeryville, CA 94608

Requested TAT: 5 days
Date Received: 6/4/04
Date Printed: 6/4/04

Sample ID	ClientSampID	Matrix	Collection Date	Hold	Requested Tests (See legend below) 1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
0406080-001	MW-1A	Water	6/3/04 10:20:00 AM		B	A	C												
0406080-002	MW-1B	Water	6/3/04 9:50:00 AM		B	A	C												
0406080-003	MW-1C	Water	6/3/04 9:20:00 AM		B	A	C												
0406080-004	MW-2A	Water	6/3/04 3:25:00 PM		B	A	C												
0406080-005	MW-3A	Water	6/3/04 3:00:00 PM		B	A	C												
0406080-006	MW-4A	Water	6/3/04 2:10:00 PM		B	A	C												
0406080-007	MW-4B	Water	6/3/04 1:45:00 PM		B	A	C												
0406080-008	MW-4C	Water	6/3/04 1:20:00 PM		B	A	C												
0406080-009	MW-5B	Water	6/3/04 10:55:00 AM		B	A	C												
0406080-010	MW-6A	Water	6/3/04 8:30:00 AM		B	A	C												
0406080-011	MW-6B	Water	6/3/04 8:00:00 AM		B	A	C												
0406080-012	MW-6C	Water	6/3/04 7:35:00 AM		B	A	C												
0406080-013	MW-7A	Water	6/3/04 2:35:00 PM		B	A													

Test Legend:

1 8010B_W	2 G-MBTEX_W	3 TPH(DMO)_W	4	5
6	7	8	9	10
11	12	13	14	15

Prepared by: Melissa Valles

Comments:

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

0406080

CHAIN OF CUSTODY RECORD

McCAMPBELL ANALYTICAL INC.
110 2ND AVENUE SOUTH, #D7
PACHECO, CA 94553-5560
Telephone: (925) 798-1620 Fax: (925) 798-162

TURN AROUND TIME: ☐ RUSH ☐ 24 HOUR ☐ 48 HOUR ☒ 5 DAY

EDF Required? ☐ Yes ☒ No

Report To: Matt Meyers Bill To: Cambria
Company: Cambria Environmental Technology, Inc.
5900 Hollis Street, Suite A
Emeryville, Ca 94608 E-mail: mmeyers@cambria-env.com
Tele: (510) 420-3314 Fax: (510) 420-9170
Project #: 522-1000-027 Project Name: John Nady
Project Location: 1167 65th Street, Oakland
Sampler Signature:

SAMPLE ID (Field Point Name)	LOCATION	SAMPLING Date	Time	# Containers	Type Containers	MATRIX Water	Soil	Air	Sludge	Other	METHOD PRESERVED Ice	HCl	HNO3	Other	Analysis Request: BTEX & TPH as Gas & Stoddard Solvent (602/8020 + 8015) MTBE	TPH as Diesel & Motor Oil (8015)	HVOCs (8010)	Other	Comments
MW-1A		6-3-04	10:20	5	VOA AMB	X					X	X			X	X	X		
MW-1B			9:50																
MW-1C			9:20																
MW-2A			3:25																
MW-3A			3:00																
MW-4A			2:10																
MW-4B			1:45																
MW-4C			1:20																
MW-5B			10:55																
MW-6A			8:30																
MW-6B			8:00																
MW-6C			7:35	X	X	X					X	X			X	X	X		
MW-7A		X	2:35	4	VOA	X					X	X			X	X			

Relinquished By:	Date:	Time:	Received By:
	6-3-04	4:00	secure location
Relinquished By:	Date: 6/4/04	Time: 11:50	Received By:
Relinquished By:	Date: 6/4	Time: 4PM	Received By:

Remarks:
Lowest possible detection limits.
Please email results.

ICE/t ✓ ✓
GOOD CONDITION
HEAD SPACE ABSENT
DECHLORINATED IN LAB
APPROPRIATE CONTAINERS
PRESERVED IN LAB
PRESERVATION VOAS | O&G | METALS | OTHER