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CAMBRIA

June 22, 2004

Mr. Barney Chan
Hazardous Materials Specialist
Alameda County Health Care Services Agency (ACHCSA)
1131 Harbor Bay Parkway, Suite 250
Alameda, CA 94502

Re: **Addendum to Workplan for Additional Subsurface Investigation**
Former Chevron Service Station # 20-6145
800 Center Street
Oakland, California
Cambria Project No. 31E-2002

Dear Mr. Chan:

Cambria Environmental Technology, Inc. (Cambria) has prepared this workplan addendum for the site referenced above on behalf of Chevron Environmental Management Company (Chevron) to address technical comments stated in your May 7, 2004 letter. A site vicinity map is presented as Figure 1 and a copy of the regulatory letter is presented as Attachment A. Cambria addresses the technical comments of the letter and proposes a supplemental scope of work below.

TECHNICAL COMMENT NO. 1

In accordance with your request, Cambria will analyze the first soil sample collected from the borings advanced within the former excavation. This sample will be collected at approximately 12 feet below grade (fbg). Additional samples exhibiting hydrocarbons will also be analyzed, as well as deeper samples below obvious hydrocarbon impact to provide vertical definition. The 10 fbg sample collected from onsite borings outside the former excavation will be analyzed. Samples below 10 fbg will be analyzed as described above.

In accordance with your request, Cambria will collect depth-discrete soil and groundwater samples from five cone penetrometer test (CPT) borings. Cambria proposes advancing five CPT borings at the locations shown on Figure 2. Based on the CPT lithologic log, soil and groundwater samples will be collected at discrete zones.

Cambria Environmental Technology, Inc.

5900 Hollis Street
Suite A
Emeryville, CA 94608
Tel (510) 420-0700
Fax (510) 420-9170

TECHNICAL COMMENT NO. 2

The lateral definition of hydrocarbon impact in soil at the site is adequately defined along the western and southern sides of the property. Cambria proposes to advance one of the five CPT borings in Center Street, near previous boring P-2, to attain vertical definition. Three other proposed CPT borings will be located on-site near former soil borings which had high hydrocarbon impact at their greatest depth. Cambria has previously had difficulty obtaining encroachment permits from the City of Oakland. Based on known vertical and lateral hydrocarbon concentration data, Cambria will extrapolate on-site CPT data to the area near boring P-2 only if we cannot obtain an expedited encroachment permit from the City of Oakland. One other proposed CPT location will be located on-site in the northeastern corner of the property to delineate the extent of the hydrocarbon impact in that direction.

TECHNICAL COMMENT NO. 3

You requested that Cambria propose monitoring well locations for additional site characterization. Cambria recommends postponing this request until after the next phase of work is completed. Cambria will make well location and construction recommendations based on the new soil and groundwater data, if it appears necessary.

PROPOSED SCOPE OF WORK

Our objective is to delineate vertical soil impact at the site and to define the soil-impact on-site in the northern and eastern sides of the property. To meet this objective, Cambria proposes to advance borings C-1 through C-5 with a CPT rig, and soil borings GP-31 through GP-40 with a direct push drill rig. Figure 2 shows the proposed locations of these soil borings. If results from this investigation suggest that additional groundwater monitoring wells are necessary, Cambria will propose the number, location, and construction of additional groundwater monitoring wells. The chemical analysis, site health and safety plan, utility location, soil disposal, and reporting will follow Cambria's *Workplan for Additional Subsurface Investigation*, dated April 6, 2004.

CPT Borings: Assuming the absence of overhead and subsurface obstructions, Cambria will advance five CPT borings to an approximate depth of 75 fbg. Cambria will clear the CPT locations with an air knife, or equivalent equipment, to 8 fbg prior to drilling. Depth-discrete soil

samples will be collected at 5-foot intervals from 10 to 40 fbg and depth-discrete groundwater samples will be collected at 15-foot intervals from 15 to 75 fbg, depending on pore-water pressure measurements made by the CPT and on groundwater recovery by the sampler. Soil samples will be properly sealed, placed on ice, and transported under a chain of custody to a Chevron-approved, State-certified laboratory for analysis. Upon completion, the CPT borings will be tremie-grouted with neat-cement grout to match the existing grade. The locations of the CPT borings will be measured relative to nearby permanent structures and mapped to scale on a site plan. Cambria's standard field procedures for CPT borings are presented in Attachment A.

Soil Borings: After the results from the CPT investigation are reviewed, Cambria proposes to advance soil borings GP-31 through GP-40 with a direct push drill rig to approximately 20 fbg or to below the maximum depth of observed hydrocarbon impact in the CPT borings. Soil samples will be collected at approximate five-foot intervals. No groundwater samples will be collected. Soil will be continuously cored to log subsurface lithology. A polyethylene macrocore barrel sampler driven into undisturbed sediments will be used to collect soil samples in the capillary fringe and where hydrocarbon impact is observed or indicated with a photoionization detector. Soil samples will be properly sealed, placed on ice, and transported under a chain of custody to a Chevron-approved, State-certified laboratory for analysis. A tremie pipe will be used to backfill the boring with neat cement grout once the boring is completed. The boring locations will be measured from a fixed point onsite and plotted on the site plan. Cambria's standard field procedures for soil borings are presented as Attachment B.

SCHEDULE

Cambria will proceed with the proposed scope of work upon receiving written approval from the ACHCSA. After approval, Cambria will obtain the necessary drilling and encroachment permits and schedule the subcontractors at their earliest availability. We will submit our investigation report approximately four to six weeks after completion of field activities.

CLOSING

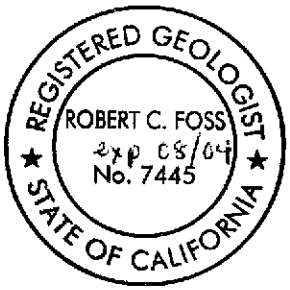
We appreciate the opportunity to work with you on this project. Please contact Sarah Owen at (510) 420-3350 or Robert Foss at (510) 420-3348 if you have any questions or comments regarding this work.

Sincerely,

Cambria Environmental Technology, Inc.

Sarah Owen
Staff Geologist

Robert Foss, R.G.
Senior Project Geologist



Figures: 1 – Vicinity Map
2 – Site Plan with Proposed Soil Boring and CPT Locations

Attachments: A – Regulatory Letter
B – Standard Field Procedures for CPT Borings
C – Standard Field Procedures for Soil Borings

cc: Ms. Karen Streich, Chevron Environmental Management Company, P.O. Box 6012, San Ramon, CA 94583
Mr. Terrell Sadler, 618 Brooklyn Avenue, Oakland, CA 94606
Mr. Hollis Rogers, c/o Mr. Victor Brown, 580 Grand Avenue, Oakland, CA 94610
Mr. Sunil Ramdass, SWRCB Cleanup Fund, 1001 1st Street, Sacramento, CA 95814

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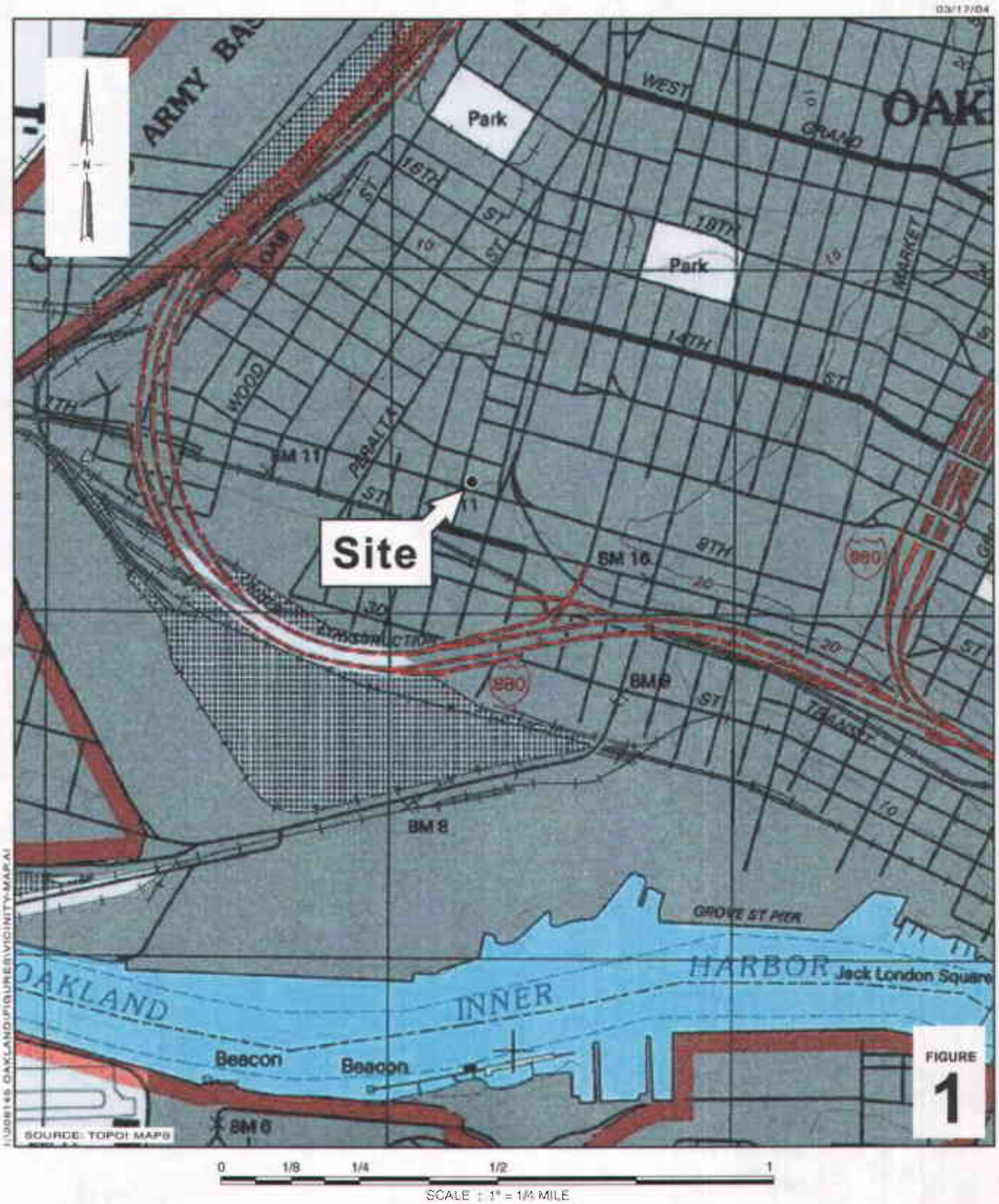

Chevron Service Station # 206145

800 Center Street

Oakland, California

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Vicinity Map

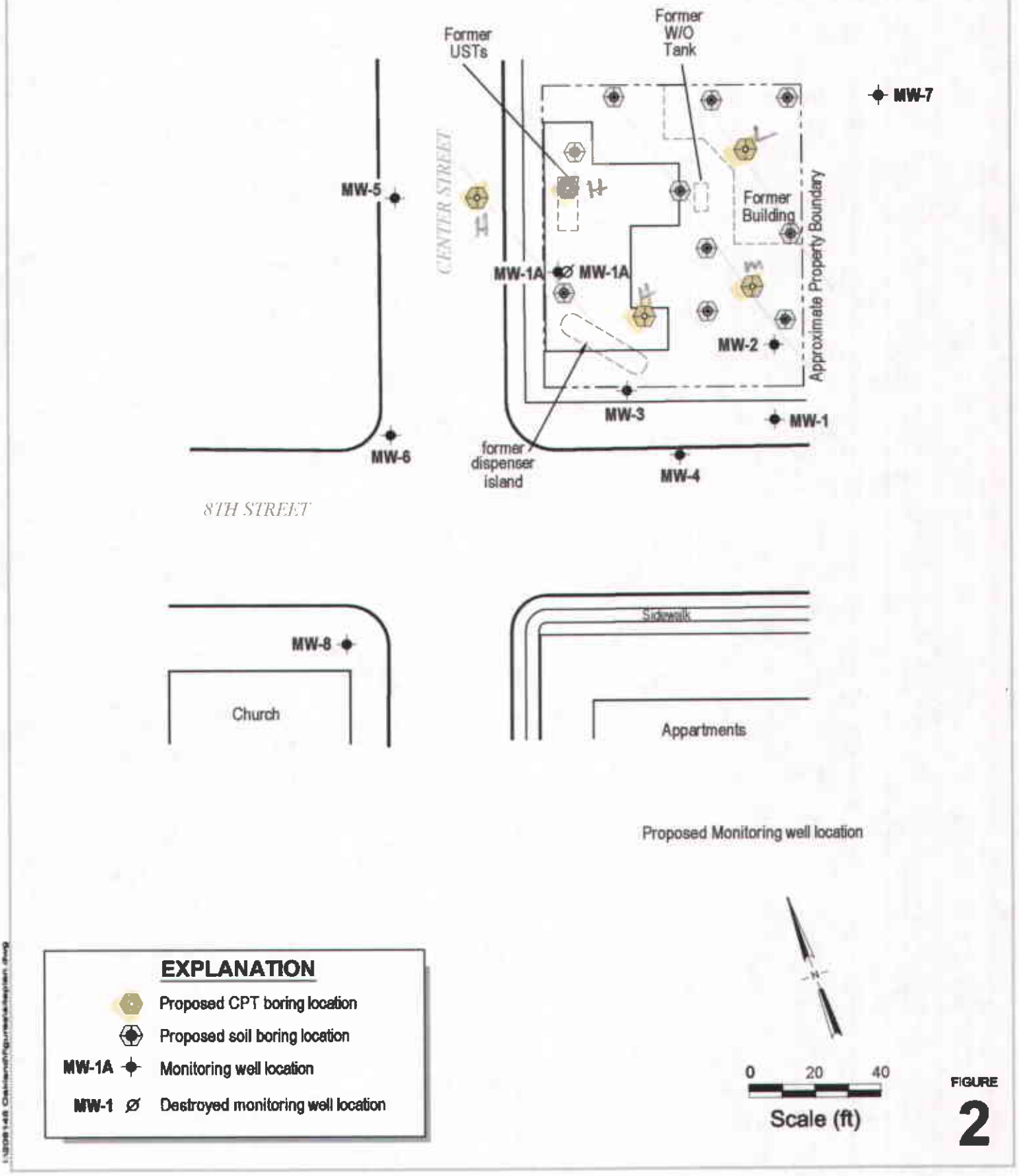

FIGURE
2

Chevron Service Station # 206145

800 Center Street

Oakland, California

CAMBRIA

Site Plan with Proposed Soil Boring and Proposed CPT Boring Locations

ATTACHMENT A

REGULATORY LETTER

Foss, Bob (Robert)

From: Streich, Karen (stka) [stka@chevrontexaco.com]
Sent: Monday, May 10, 2004 1:15 PM
To: sowen@cambria-env.com
Cc: bfoss@cambria-env.com
Subject: FW: Former Chevron Station 20-6145, 800 Center St., Oakland

Karen Streich
Project Manager, Retail Business Unit
925-842-1589
stka@chevrontexaco.com
6001 Bollinger Canyon Rd, L4050
P.O. Box 6012
San Ramon, CA 94583-2324

-----Original Message-----
From: Chan, Barney, Env. Health [mailto:barney.chan@acgov.org]
Sent: Monday, May 10, 2004 10:09 AM
To: Streich, Karen (stka)
Subject: Former Chevron Station 20-6145, 800 Center St., Oakland

Ms. Streich: I have received a phone message from Cambria requesting that we meet to discuss this site. I do not see the need for a meeting, however, if you insist, please propose an agenda. I have attached my recent comment to Cambria's April 6, 2004 Workplan of Additional Subsurface Investigation. Apparently my conversation with Sarah Owens of Cambria regarding the work plan precipitated this request for a meeting. Please review my letter and let me know if you still think a meeting is necessary.

Sincerely,

Barney M. Chan
Hazardous Materials Specialist
Alameda County Environmental Health
510-567-6765

May 7, 2004

Ms. Karen Streich
Chevron Environmental Management Co.
P.O. Box 6012
San Ramon, CA 94583

Dear Ms. Streich:

Subject: Fuel Leak Case RO000454, Former Chevron Station #20-6145, 800 Center St., Oakland, CA 94607

Alameda County Environmental Health staff has reviewed the case file for the subject site including the April 6, 2004 Workplan for Additional Subsurface Investigation by Cambria Environmental Technology. The objective of this work plan is to delineate the vertical and horizontal extent of soil contamination at the site. In addition, groundwater samples are proposed for sampling. Areas in the north and eastern portions of the site are targeted along with some of the locations where prior results indicated elevated petroleum concentrations at their deepest depth explored. In general, our office approves of the work plan, however, we request that you address the following technical comments when performing the proposed work.

TECHNICAL COMMENTS

1. Soil samples are proposed to be collected in the previously excavated areas starting at a depth of 12' and continuing until no evidence of hydrocarbon impact is observed. In the other areas, soil samples will be collected at five-foot intervals. A grab groundwater sample will also be collected from each borehole. Please analyze, at a minimum, the first soil sample collected from the borings from within the former excavation and the 10' sample from the borings in the other areas. Because previous borings have indicated clayey sand, silty sand and sand at the deepest depth explored, we request that depth discrete soil and groundwater samples be taken so as to better characterize the three dimensional extent of the plume. The absence of petroleum contamination in a competent impermeable zone would be an appropriate terminus.
2. Although not specified, it is assumed that total petroleum hydrocarbons impact refers to all analytes previously detected, TPHd, TPHd, BTEX and MTBE. With this in mind, it appears that locations both on and off-site which have identified elevated TPH at their deepest sample depth have not been proposed for sampling. Please explain how data will be extrapolated to these areas. The end result of this investigation is anticipated to be the three- dimensional representation of TPH in soil and groundwater.
3. The work plan states that monitoring wells will not be installed as part of this investigation. However, it appears that existing wells do not monitor a significant portion of the site, ie that area immediately up-gradient of the former USTs and dispenser islands. Therefore, as part of your investigation report, monitoring well(s) should be proposed for additional characterization of the site. Monitoring well installation should not be held up due to potential excavation for development, unless the excavation is part of an interim remediation action plan. Shallow soil samples would be necessary to document such excavation as a viable remedial action.

TECHNICAL REPORT REQUEST

Please submit the following technical reports according to the following schedule.

- June 10, 2004- Written response to above comments.
- 45 days after completion of the proposed investigation- technical report submission including summary of data, three dimensional iso-concentration plots of TPH in soil and groundwater, conclusions and recommendations for remedial action plan and monitoring well installation.

If you have any questions, please call me at (510) 567-6765.

Sincerely,

Barney M. Chan
Hazardous Materials Specialist

C: B. Chan, D. Drogos
Mr. Terrell Sadler, 618 Brooklyn Ave., Oakland, CA 94606
Mr. Hollis Rogers, c/o Mr. Victor Brown, 580 Grand Ave., Oakland, CA 94610
Mr. Robert Foss, Cambria Environmental, 5900 Hollis St., Suite A, Emeryville, CA 94608
Mr. Sunil Ramdass, SWRCB Cleanup Fund, 1001 I St., Sacramento, CA 95814

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ATTACHMENT B

STANDARD FIELD PROCEDURES FOR CPT BORINGS

STANDARD FIELD PROCEDURES FOR CONE PENETROMETER TESTING AND SAMPLING

This document describes Cambria Environmental Technology's standard field methods for Cone Penetrometer Testing (CPT) and direct-push soil and groundwater sampling. These procedures are designed to comply with Federal, State and local regulatory guidelines.

Use of CPT for logging and soil and groundwater sampling requires separate borings. Typically an initial boring is advanced to estimate soil and groundwater characteristics as described below. To collect soil samples a separate boring must be advanced using a soil sampling device. If groundwater samples are collected, another separate boring must be advanced using a groundwater sampling device. Specific field procedures are summarized below.

Cone Penetrometer Testing (CPT)

Cone Penetrometer Testing is performed by a trained geologist or engineer working under the supervision of a California Registered Geologist (RG) or a Certified Engineering Geologist (CEG). Cone Penetrometer Tests (CPT) are carried out by pushing an integrated electronic piezocone into the subsurface. The piezocone is pushed using a specially designed CPT rig with a force capacity of 20 to 25 tons. The piezocones are capable of recording the following parameters:

Tip Resistance (Qc)
Sleeve Friction (Fs)
Pore Water Pressure (U)
Bulk Soil Resistivity (rho) - with an added module

A compression cone is used for each CPT sounding. Piezocones with rated load capacities of 5, 10 or 20 tons are used depending on soil conditions. The 5 and 10 ton cones have a tip area of 10 sq. cm. and a friction sleeve area of 150 sq. cm. The 20 ton cones have a tip area of 15 sq. cm. and a friction sleeve area of 250 sq. cm. A pore water pressure filter is located directly behind the cone tip. Each of the filters is saturated in glycerin under vacuum pressure prior to penetration. Pore Pressure Dissipation Tests (PPDT) are recorded at 5 second intervals during pauses in penetration. The equilibrium pore water pressure from the dissipation test can be used to identify the depth to groundwater.

The measured parameters are printed simultaneously on a printer and stored on a computer disk for future analysis. All CPTs are carried out in accordance with ASTM D-3441. A complete set of baseline readings is taken prior to each sounding to determine any zero load offsets.

The inferred stratigraphic profile at each CPT location is included on the plotted CPT logs. The stratigraphic interpretations are based on relationships between cone bearing (Qc) and friction ratio (Rf). The friction ratio is a calculated parameter (Fs/Qc) used in conjunction with the cone bearing to identify the soil type. Generally, soft cohesive soils have low cone bearing pressures and high friction ratios. Cohesionless soils (sands) have high cone bearing pressures and low friction ratios. The classification of soils is based on correlations developed by Robertson et al (1986). It is not always possible to clearly identify a soil type based on Qc and Rf alone. Correlation with existing soils information and analysis of pore water pressure measurements should also be used in determining soil type.

CPT and sampling equipment are steam-cleaned or washed prior to work and between borings to prevent cross-contamination. Sampling equipment is washed between samples with trisodium phosphate or an equivalent EPA-approved detergent. Groundwater samples are decanted into 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.

After the CPT probes are removed, the borings are filled to the ground surface with cement grout poured or pumped through a tremie pipe.

Objectives

Soil samples are collected to characterize subsurface lithology, assess whether the soils exhibit obvious hydrocarbon or other compound vapor odor or staining, estimate groundwater 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:

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

Soil Sampling

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 from borings driven using hydraulic push technologies. A minimum of one and one half ft of the soil column is collected for every five ft of drilled depth. Additional soil samples can be collected near the water table and at lithologic changes. Samples are collected using samplers lined with polyethylene or brass tubes driven into undisturbed sediments at the bottom of the borehole. The ground surface immediately adjacent to the boring is used as a datum to measure sample depth. The horizontal location of each boring is measured in the field relative to a permanent on-site reference using a measuring wheel or tape measure.

Drilling and sampling equipment is steam-cleaned or washed 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

After a soil sample has been collected, soil from the remaining tubing is placed inside a sealed plastic bag and set aside to allow hydrocarbons to volatilize from the soil. After ten to fifteen minutes, a portable photoionization detector measures volatile hydrocarbon vapor concentrations in the bag=s headspace, extracting the vapor through a slit in the plastic bag. The measurements are used along with the field observations, odors, stratigraphy and groundwater depth to select soil samples for analysis.

Grab Groundwater Sampling

Groundwater samples are collected from the open borehole using bailers, advancing disposable Tygon[7] tubing into the borehole and extracting groundwater using a diaphragm pump, or using a hydro-punch style sampler with a bailer or tubing. 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.

Duplicates and Blanks

Blind duplicate water samples are 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 quality assurance/quality control (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.

ATTACHMENT C

STANDARD FIELD PROCEDURES FOR SOIL BORINGS

STANDARD FIELD PROCEDURES FOR GEOPROBE® SAMPLING

This document describes Cambria Environmental Technology's standard field methods for GeoProbe® soil and ground water sampling. 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:

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

Soil Sampling

GeoProbe® soil samples are collected from borings driven using hydraulic push technologies. 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.

A minimum of one and one half ft of the soil column is collected for every five ft of drilled depth. Additional soil samples can be collected near the water table and at lithologic changes. Samples are collected using samplers lined with polyethylene or brass tubes driven into undisturbed sediments at the bottom of the borehole. The ground surface immediately adjacent to the boring is used as a datum to measure sample depth. The horizontal location of each boring is measured in the field relative to a permanent on-site reference using a measuring wheel or tape measure.

Drilling and sampling equipment is steam-cleaned or washed 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

After a soil sample has been collected, soil from the remaining tubing is placed inside a sealed plastic bag and set aside to allow hydrocarbons to volatilize from the soil. After ten to fifteen minutes, a portable GasTech® or photo ionization detector measures volatile hydrocarbon vapor concentrations in the bag's headspace, extracting the vapor through a slit in the plastic bag. The measurements are used along with the field observations, odors, stratigraphy and ground water depth to select soil samples for analysis.

Grab Ground Water Sampling

Ground water samples are collected from the open borehole using bailers, advancing disposable Tygon® tubing into the borehole and extracting ground water using a diaphragm pump, or using a hydro-punch style sampler with a bailer or tubing. 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 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 quality assurance/quality control (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.