

May 23, 2006

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

RECEIVED

By loprojectop at 2:23 pm, May 24, 2006

RE: **Soil Disposal Profiling and Well Destruction Work Plan**
Former Signal Oil Service Station #20-6145 (S-800)
800 Center Street
Oakland, California
Fuel Leak Case # RO0000454



Dear Mr. Chan,

Cambria Environmental Technology, Inc. (Cambria), on behalf of Chevron Environmental Management Company (Chevron), has prepared this *Soil Disposal Profiling and Well Destruction Work Plan* in preparation for remedial excavation activities at the site referenced above. This work plan has been prepared to replace the previously submitted work plan prepared by Cambria, titled *Waste Profile for Disposal*, dated April 13, 2006. Cambria proposes to advance borings to profile soil for reuse and disposal, and further define the extent of hydrocarbons for the upcoming redevelopment activities. Additionally, Cambria proposes to destroy four onsite monitoring wells to facilitate redevelopment activities. The proposed scope of work is presented below.

SITE DESCRIPTION

Site Description: The site is a former Signal Oil gasoline service station located on the northeastern corner of the intersection of 8th Street and Center Street in Oakland, California (Figures 1 and 2). Local topography is relatively flat and the site is approximately 15 feet above mean sea level. The site is currently undeveloped with both commercial and residential properties located in the vicinity. Records indicate the site was first developed as a service station in 1932. Four 1,000-gallon fuel underground storage tanks (USTs) and one used oil UST were installed when the site was first developed. It is unknown as to how many subsequent generations of USTs were installed and operated before the final USTs were removed in 1973, when the station was abandoned. The nearest surface water body is the Oakland Inner Harbor, located approximately one mile south of the site.

PROPOSED WORK

Cambria's objective is to pre-characterize soil for reuse and disposal, and to further define the extent of hydrocarbon impacts for remedial excavation purposes. To meet this objective, we will

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advance approximately ten borings to 20 feet below grade (fbg). In addition, monitoring wells MW-1A, MW-2, MW3 and MW-7 will be destroyed to facilitate site redevelopment. As previously reported in Cambria's *Soil and Groundwater Management Plan*, dated November 17, 2005, onsite monitoring wells may be installed after redevelopment activities are completed, if warranted. The proposed scope of work for the advancement of approximately ten soil borings and the destruction of four onsite monitoring wells are presented below.

Permitting: Cambria has obtained a boring permit (#2006-0280) and will obtain a well destruction permit from the Alameda County Department of Public Works (ACDPW) prior to commencing field activities.



Site Health and Safety Plan: Cambria will prepare a comprehensive site safety plan to protect site workers. The plan will be reviewed and signed by each site worker and kept onsite during field activities.

Utility Location: Prior to drilling, Cambria will contact Underground Service Alert (USA) to clear the proposed boring locations and to identify the locations of subsurface utilities in the vicinity. To ensure that the boring locations are not in conflict with unmarked utilities, the boring locations will be cleared using an air knife-assisted vacuum truck or by hand-augering to eight fbg prior to the advancement of mechanical devices (i.e. direct-push rods or hollow-stem augers).

Soil Sampling: Soil borings will be continuously cored to log sediments encountered. Soil samples will be collected from the borings at least every five linear feet to evaluate physical characteristics and selected samples will be submitted for chemical analysis based on observations and field screening with a photo-ionization detector (PID). A tremie pipe will be used to backfill the borings with Portland I/II cement once completed. The proposed boring locations are shown on Figure 2. Cambria's *Standard Field Procedures for Geoprobe® Soil and Groundwater Sampling* is presented as Attachment A.

Chemical Analysis: Selected soil samples will be analyzed for total petroleum hydrocarbons as diesel (TPHd) and total petroleum hydrocarbons as gas (TPHg) by modified EPA Method 8015, benzene, toluene, ethylbenzene, xylenes, (BTEX), and methyl tertiary butyl ether (MTBE) by EPA Method 8260B.

Well Destruction: To prevent damage to or potential loss of onsite monitoring wells during redevelopment activities, Cambria will properly destroy monitoring wells MW-1A, MW-2, MW-3 and MW-7. A well destruction permit will be obtained from the ACDPW prior to the

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destruction of these well. Monitoring well MW-1A is located in the proposed excavation area and will be removed via excavation to total depth during the redevelopment activities. Wells MW-2, MW-3 and MW-7 are not located inside the currently proposed excavated area, but the proposed excavation area may expanded based on investigation results. Once the wells are drilled to depth, the boring voids are filled with Portland I/II cement, injected through the augers or a tremie pipe under pressure, to the bottom of the void. The well vault is removed and the area resurfaced as required. A copy of boring logs for MW-1A, MW-2 and MW-3 are presented as Attachment B. The boring log for MW-7 is unavailable at this time. Cambria's *Standard Field Procedures for Monitoring Well Destruction* is presented as Attachment A.

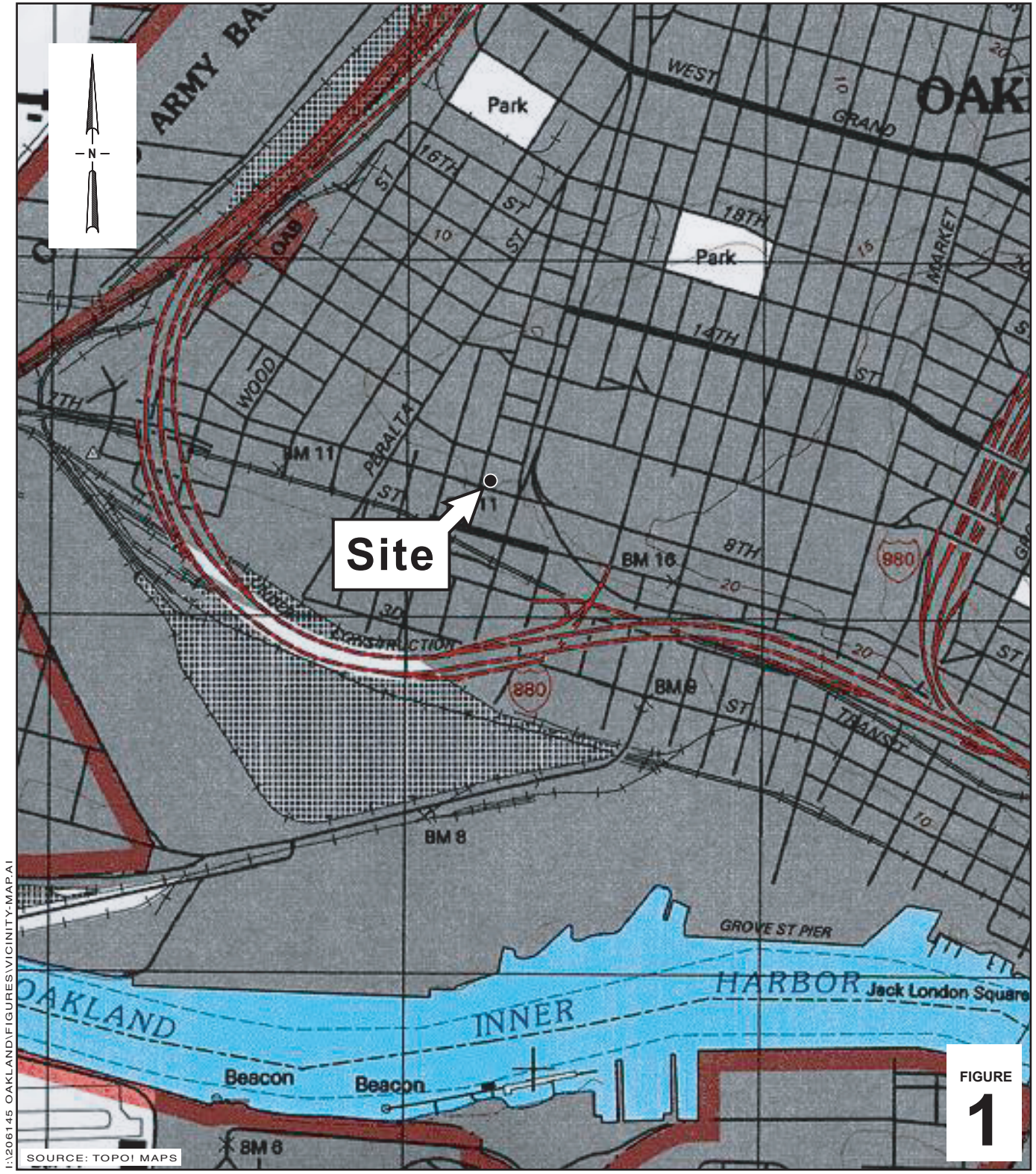


Well Replacement: After the current property owner has completed development activities Cambria may reinstall monitoring wells necessary to monitor the hydrocarbon plume in groundwater, if warranted.

Waste Disposal: Wastewater generated during drilling will temporarily be stored onsite in DOT-approved 55-gallon steel drums. The water will be treated onsite during the upcoming scheduled excavation activities. Soil waste will be stockpiled onsite, underlain and covered with visqueen, and properly transported and disposed of at a Chevron-approved landfill during excavation activities.

SCHEDULE

To facilitate the property owner's redevelopment schedule, Cambria has scheduled the related fieldwork for boring and well destruction activities to commence on June 7, 2006. Results of this investigation will be reported after all redevelopment activities are completed at the site.



I:\206145 OAKLAND\FIGURES\VICINITY-MAP.A1

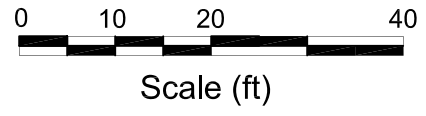
FIGURE 1

Chevron Service Station # 206145
 800 Center Street
 Oakland, California

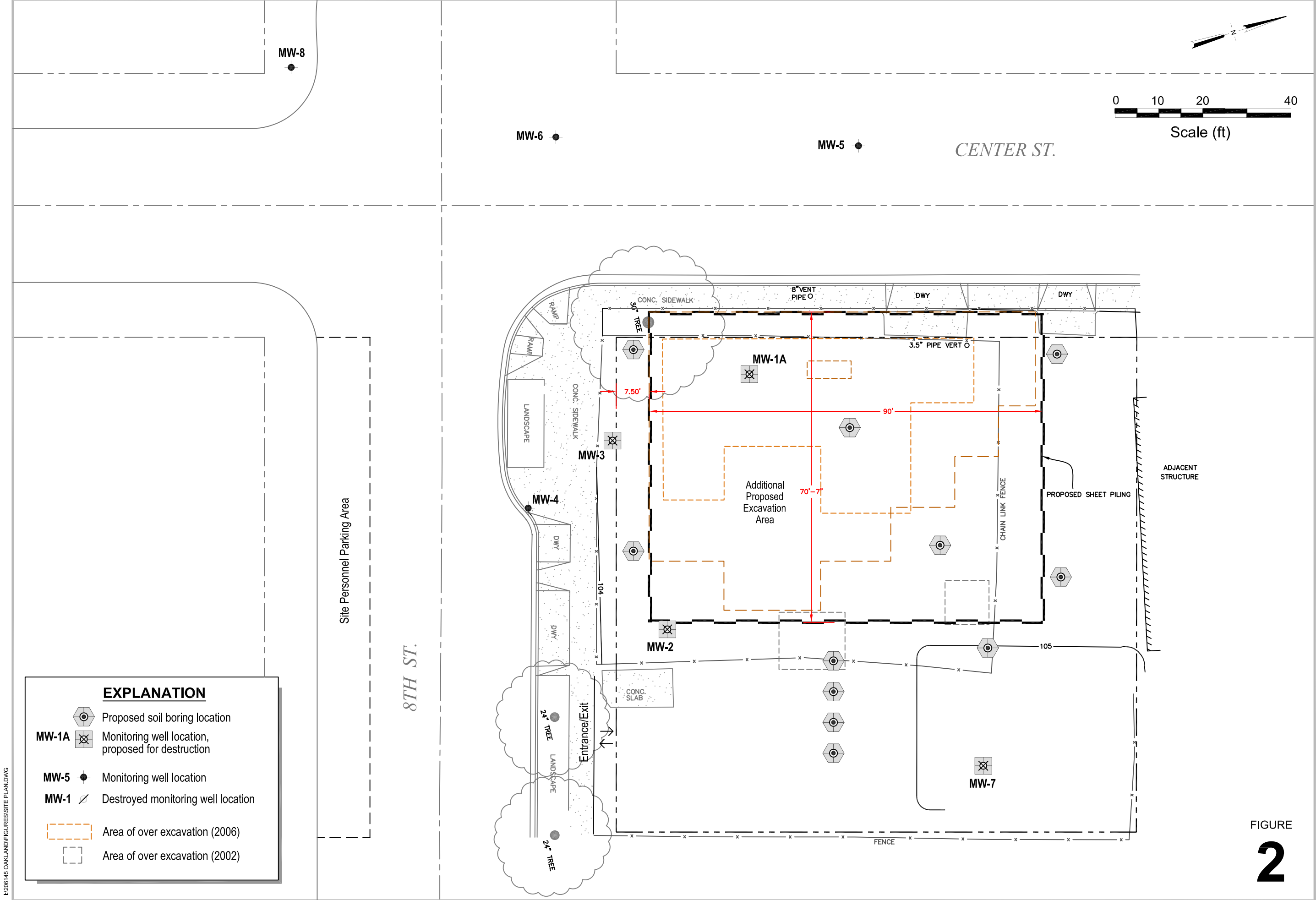


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Vicinity Map



Site Plan



EXPLANATION	
	Proposed soil boring location
MW-1A	Monitoring well location, proposed for destruction
MW-5	Monitoring well location
MW-1	Destroyed monitoring well location
	Area of over excavation (2006)
	Area of over excavation (2002)

R:\206145 OAKLAND\FIGURES\SITE PLAN.DWG

FIGURE 2



Former Chevron Service Station 206145

800 Center Street
Oakland, California

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ATTACHMENT A

Standard Field Procedures

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 Professional Geologist (PG) 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.

CAMBRIA

STANDARD FIELD PROCEDURES FOR MONITORING WELL DESTRUCTION

This document presents standard field methods for destroying groundwater monitoring wells. The objective of well destruction is to destroy wells in a manner that is protective of potential water resources. The two procedures most commonly used are pressure grouting and drilling out the well. These procedures are designed to comply with Federal, State and local regulatory guidelines. Specific field procedures are summarized below.

Pressure Grouting

Pressure grouting consists of injecting neat Portland cement through a tremie pipe under pressure to the bottom of the well. The cement is composed of about five gallons of water to a 94 lb. sack of Portland I/II Cement. Once the well casing is full of grout, it remains pressurized for five minutes by applying a pressure of 25 pounds per square inch (psi) with a grout pump. The well casing can also be pressurized by extending the well casing to the appropriate height and filling it with grout. In either case, the additional pressure allows the grout to be forced into the sand pack. After grouting the sand pack and casing, the well vault is removed and the area resurfaced or backfilled as required.

Well Drill Out

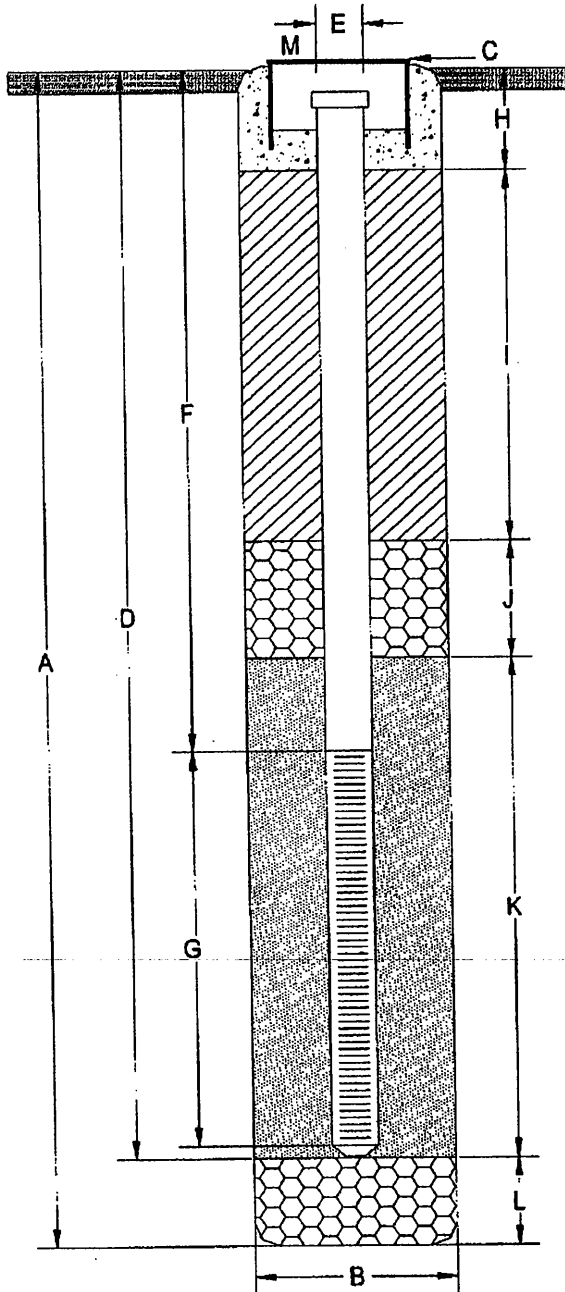
When well drill out is required, the well location is cleared for subsurface utilities and a hollow-stem auger drilling rig is used to drill out the well casing and filter pack materials. First, drill rods are dropped down the well and used to guide the augers as they drill out the well. Once the well is drilled out, the boring is filled with Portland cement injected through the augers or a tremie pipe under pressure to the bottom of the boring. The well vault is removed and the area resurfaced or backfilled as required.

F:\TEMPLATE\SOPs\Well Destruction SOP.doc

ATTACHMENT B

Well Construction Logs

WELL CONSTRUCTION DETAIL



- A Total Depth of Boring 16 ft.
- B Diameter of Boring 8 in.
Drilling Method Hollow Stem Auger
- C Top of Box Elevation _____ ft.
 Referenced to Mean Sea Level
 Referenced to Project-Datum
- D Casing Length 16 ft.
Material PVC
- E Casing Diameter 2 in.
- F Depth to Top Perforations 6 ft.
- G Perforated Length 10 ft.
Perforated interval from 6 to 16 ft.
Perforation Size 0.01 in.
- H Surface Seal from 0 to 1 ft.
Seal Material Concrete
- I Backfill from 1 to 4 ft.
Seal Material Grout
- J Seal from 4 to 5 ft.
Seal Material Bentonite
- K Gravel Pack from 5 to 16 ft.
Pack Material Lonestar #2/12
- L Bottom Seal None ft.
Seal Material None
- M _____

Note: Depths measured from initial ground surface.



Gettler - Ryan, Inc.

6747 Sierra Ct., Suite J (925) 551-7555
Dublin, CA 94568

PROPOSED WELL CONSTRUCTION DETAIL - MW-1A

Former Chevron SS #20-6145
800 Center Street
Oakland, California

FIGURE

5

JOB NUMBER

DG26145I.5C01

REVIEWED BY

DATE

1/23/03

REVISED DATE

REVISED DATE

Drilling Log

Monitoring Well MW-3



**GROUNDWATER
TECHNOLOGY**

Proj Signal S0800 Owner CHY/USA
 Location 800 Center St. Project No. 020200105 Date drilled 10/17/95
 Surface Elev. 18.1 ft. Total Hole Depth 18.5 ft. Diameter 8.25 in.
 Top of Casing 15.46 ft. Water Level Initial 10 ft. Static 10.37 ft.
 Screen: Dia 2 in. Length 10 ft. Type/Size PVC/0.020 in.
 Casing: Dia 2 in. Length 5 ft. Type PVC
 Filter Pack Material #3 Monterey Sand Rig/Core Type CME 75/Splitspoon
 Drilling Company Bay Area Explor. Method Hollow Stem Auger Permit # 65864
 Driller Scott Filche Log By Terry James
 Checked By E K Simonis License No. R.G. 4422

See Site Map
For Boring Location

COMMENTS:

Depth (ft.)	Well Completion	PTD (ppm)	Sample ID Blow Count/ % Recovery	Graphic Log	USCS Class.	Description (Color, Texture, Structure)
						Trace < 10%. Little 10% to 20%. Some 20% to 35%. And 35% to 50%
-2						
0						Thin Asphalt
2						
4						
6		7	MW3/5 18 7 8		SM	Clayey, silty, very fine SAND (10,20,70); red-yellow, damp, loose, no hydrocarbon odor, trace root stems.
8						
10		83	MW3/10 17 7 15		SW	Fine SAND: green-gray, wet, loose, strong hydrocarbon odor. Groundwater encountered during drilling Static water level after 24 hours
12						
14						
16		82	MW3/15 8 4 7		SC	Silty, clayey, very fine SAND (10,20,70); mottled orange-brown/green-gray, saturated, loose, slight hydrocarbon odor
18						End of boring. (All percentages are approximate.)
20						
22						
24						

ENVIRONMENTAL COMPANY

PACIFIC ENVIRONMENTAL GROUP, INC.



Drilling Log



GROUNDWATER TECHNOLOGY

Monitoring Well **MW-2**

Project Signal S0800 Owner CHV/USA
 Location 800 Center St. Project No. 020200105 Date drilled 10/17/95
 Surface Elev. 16.3 ft. Total Hole Depth 18.5 ft. Diameter 8.25 in.
 Top of Casing 15.77 ft. Water Level Initial 10 ft. Static 10.60 ft.
 Screen: Dia 2 in. Length 10 ft. Type/Size PVC/0.020 in.
 Casing: Dia 2 in. Length 5 ft. Type PVC
 Filter Pack Material #3 Monterey Sand Rig/Core Type CME 75/Splitspoon
 Drilling Company Bay Area Explor. Method Hollow Stem Auger Permit # 65864
 Driller Scott Fitcher Log By Terry James
 Checked By E K Simonis License No. R.G. 4422

See Site Map
For Boring Location

COMMENTS:

Depth (ft.)	Well Completion	PID (ppm)	Sample ID Blow Count/ % Recovery	Graphic Log	USCS Class.	Description (Color, Texture, Structure)
-2						Trace < 10%, Little 10% to 20%, Some 20% to 35%, And 35% to 50%
0						Thin Asphalt
2						
4						
6		4	3 7 12 MW2/5		SM	Clayey, silty, very fine SAND (10,20,70): red-yellow, damp, medium dense, no hydrocarbon odor.
8						
10		3	7 20 25 MW2/10			Grades fine sand, reddish-brown, wet. Groundwater encountered during drilling Static water level after 24 hours
12						
14						
16		3	4 10 10 MW2/5		SC	Silty, clayey, very fine SAND (10,30,60): saturated, soft, no hydrocarbon odor.
18						End of boring. (All percentages are approximate.)
20						
22						
24						

ANY COMPANY

PACIFIC ENVIRONMENTAL GROUP, INC.

