

**RECEIVED**

**By dehloptoxic at 3:42 pm, Oct 10, 2006**

**Chevron Environmental  
Management Company**  
6001 Bollinger Canyon Rd, K2236  
P.O. Box 6012  
San Ramon, CA 94583-2324  
Tel 925-842-9559  
Fax 925-842-8370

**Dana Thurman**  
Project Manager

October 9, 2006

(date)

**ChevronTexaco**

Alameda County Health Care Services  
1131 Harbor Bay Parkway, Suite 250  
Alameda, CA 94502-6577

Re: Chevron Service Station # 9-2960

Address: 2416 Grove Way, Castro Valley, CA

I have reviewed the attached report titled Workplan for Additional Investigation  
and dated October 9, 2006.

I agree with the conclusions and recommendations presented in the referenced report. The information in this report is accurate to the best of my knowledge and all local Agency/Regional Board guidelines have been followed. This report was prepared by Cambria Environmental Technology, Inc., upon whose assistance and advice I have relied.

This letter is submitted pursuant to the requirements of California Water Code Section 13267(b)(1) and the regulating implementation entitled Appendix A pertaining thereto.

I declare under penalty of perjury that the foregoing is true and correct.

Sincerely,



Dana Thurman  
Project Manager

Enclosure: Report

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

Re: **Workplan for Additional Investigation**  
Former Chevron Service Station # 9-2960  
2416 Grove Way  
Castro Valley, California



Dear Mr. Chan:

Cambria Environmental Technology, Inc. (Cambria) is submitting this *Workplan for Additional Investigation* on behalf of Chevron Environmental Management Company (Chevron) for the site referenced above. Cambria proposes advancing two soil borings with depth discrete groundwater sampling to further define the extent of petroleum hydrocarbons in soil and groundwater. The site background and the proposed scope of work are described below.

## **SITE DESCRIPTION AND BACKGROUND**

The site is a former Chevron service station located at the northeast corner of the Grove Way and Redwood Road in Castro Valley, California (Figure 1). Topography in the general site vicinity is flat gently sloping to the south. The site is currently occupied by a Trader Joe's grocery store parking lot (Figure 2).

### **Previous Investigations**

**1986 Monitoring Well Installation:** In October 1986, EMCON Associates installed groundwater monitoring wells C-1 through C-4. The highest hydrocarbon concentrations in groundwater were reported from well C-1 with 120,000 parts per billion (ppb) total petroleum hydrocarbons as gasoline (TPHg) and 25,000 ppb benzene. No soil data is available from these wells.

**1990 Monitoring Well Installation:** GeoStrategies, Inc. installed off-site wells C-5 through C-7 to delineate the lateral extent of hydrocarbons in groundwater.

**1993 Groundwater and Soil Vapor Extraction Well Installation:** Weiss Associates (WA) installed well EW-1, which was used for a groundwater and soil vapor extraction system. No soil data is available for EW-1. The system operated from November 1993 through 1996 and removed approximately 8,900 pounds of petroleum hydrocarbons. In 1997, the extraction system was shut down and removed with approval from ACHCSA.

**Cambria  
Environmental  
Technology, Inc.**

2000 Opportunity Drive  
Suite 110  
Roseville, CA 95678  
Tel (916) 677-3407  
Fax (916) 677-3687

**1991 Subsurface Investigation:** In February 1997, Gettler-Ryan (G-R) advanced borings B-1 through B-6 to investigate soil near the former product piping and dispenser island areas. Borings B-1 through B-4 were advanced to a total depth of 16.5 feet below grade (fbg); borings B-5 and B-6 were advanced to 19.5 fbg. TPHg and benzene concentrations were reported in the capillary fringe zone, from 15.5 to 18.5 fbg, at a maximum of 2,300 and 13 milligrams per kilogram (mg/kg), respectively.

**2002 Subsurface Investigation:** In 2002, G-R advanced borings B-7 through B-9, and installed groundwater monitoring well C-8. C-8 was completed to a depth of 25 fbg, B-7 was completed to 25 fbg, and B-8 and B-9 were completed to 20 fbg. Hydrocarbons reported in soil and grab-groundwater did not appear not significant.

**2004 Soil and Vapor Investigation:** In April and May 2004, Cambria advanced soil boring SB-1 and installed temporary soil vapor points SV-1 through SV-4. No significant hydrocarbons were reported in soil from SB-1. Groundwater from SB-1 had concentrations of TPHg at 180 micrograms per liter ( $\mu\text{g/L}$ ) and benzene at 0.5  $\mu\text{g/L}$ . Slight concentrations of hydrocarbon constituents were reported in the soil vapor samples, with up to 100  $\mu\text{g/m}^3$  benzene reported from SV-2, slightly exceeding the residential ESL for benzene of 84  $\mu\text{g/m}^3$ . The detection limits for SV-1 were raised due to the presence of non-target species identified as 2-proponol.

**Groundwater Monitoring:** Gettler-Ryan (GR) began groundwater monitoring in March 1987. In October 1989, C-1 contained 0.91 feet of separate-phase hydrocarbons (SPH). GR began interim recovery of SPH from C-1 in January 1990. Bailing and pumping continued through January 1995. Semi-annual monitoring and sampling was initiated for all wells in January 1997, during the first and third quarters. Well C-8 has been monitored and sampled quarterly since installation.

## PROPOSED SCOPE OF WORK

To further evaluate the extent of hydrocarbons in soil and groundwater, Cambria proposes two Geoprobe<sup>®</sup> soil borings with discrete grab groundwater samples. Proposed boring locations are shown on Figure 2. Cambria's standard operating procedures are presented as Attachment A. The specific scope of work is discussed below.

**Underground Utility Location:** Cambria will notify underground service alert (USA) prior to field work to clear boring locations with utility companies. A private utility line locator will be contracted to additionally clear boring locations of utility lines.

**Site Health and Safety Plan:** Cambria will prepare a site safety plan to inform site workers of known hazards and to provide health and safety guidance. The plan will be kept on site at all times and signed by all site workers.

**Permits:** Cambria will obtain boring permits from the ACHCSA and an encroachment permit from the City of Castro Valley prior to beginning field operations. A minimum of 72-hours notice will be given to the ACHCSA prior to field work.

**Soil borings:** Cambria proposes advancing two Geoprobe® soil borings. After clearing to 8 fbg using a hand auger to further ensure no utilities are present, each boring will be advanced to approximately 15 feet below first encountered groundwater. Soil will be logged and sampled at 5 foot intervals beginning at 5 fbg. Upon completion of each boring and collection of groundwater samples as described below, the borings will grouted to surface with neat Portland cement. Cambria's Standard Field Procedures are presented as Attachment A.

**Soil Screening:** Soil samples will be screened using a photoionization detector (PID). PID readings, evidence of discoloration, stratigraphic location, the depth to groundwater, and the collection depth of previous samples containing hydrocarbons will be used to select soil samples for laboratory analysis.

**Grab Groundwater Sampling:** One groundwater sample will be collected from each borehole at first encountered groundwater, and a second sample will be collected at approximately 10 to 15 feet below first encountered water. The ground water samples will be decanted into the appropriate containers supplied by the analytic laboratory. Samples will be labeled, stored on crushed ice at or below 4° C, and transported under chain-of-custody to the laboratory.

**Chemical Analysis:** The groundwater and select soil samples will be analyzed for:

- TPHg by EPA Method 8015, and
- BTEX, MTBE, tert-butyl alcohol (TBA), di-isopropyl ether (DIPE), tert-amyl methyl ether (TAME), ethyl tert-butyl ether (ETBE), 1,2-dichloroethane (1,2-DCA), ethylene dibromide (EDB), and ethanol by EPA Method 8260.

**Soil and Water Disposal:** Soil cuttings will be temporarily stockpiled and covered with plastic or placed in sealed DOT-approved drums on-site. Rinse water will be stored in drums pending proper disposal. Following review of laboratory analytical reports, wastes will be transported to a Chevron approved disposal facility.

**Reporting:** Upon completion, Cambria will document all field activities and analytical results in a report that, at a minimum, will contain:

- A brief summary of the site background and history,
- Boring logs,
- Tabulated soil and groundwater sample analytic results,
- A figure illustrating the location of the borings,
- Analytic reports and chain-of-custody forms,
- Soil/water disposal methods,
- An updated Site Conceptual Model (SCM), and
- Cambria's conclusions and recommendations.



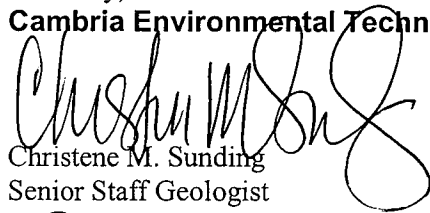
### **SCHEDULE**

Cambria will proceed with this work after receiving written approval of this work plan from the ACHCSA. Cambria will submit an investigation report approximately six to eight weeks after completion of field activities.

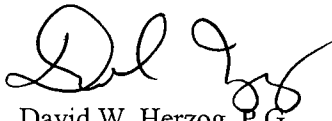
**CLOSING**

Cambria appreciates the opportunity to work with you on this project. Please contact Christene Sunding at (916) 677-3407 (ext. 109) if you have any questions or comments.

Sincerely,  
**Cambria Environmental Technology, Inc.**

  
Christene M. Sunding  
Senior Staff Geologist



  
David W. Herzog, P.G.  
Senior Geologist

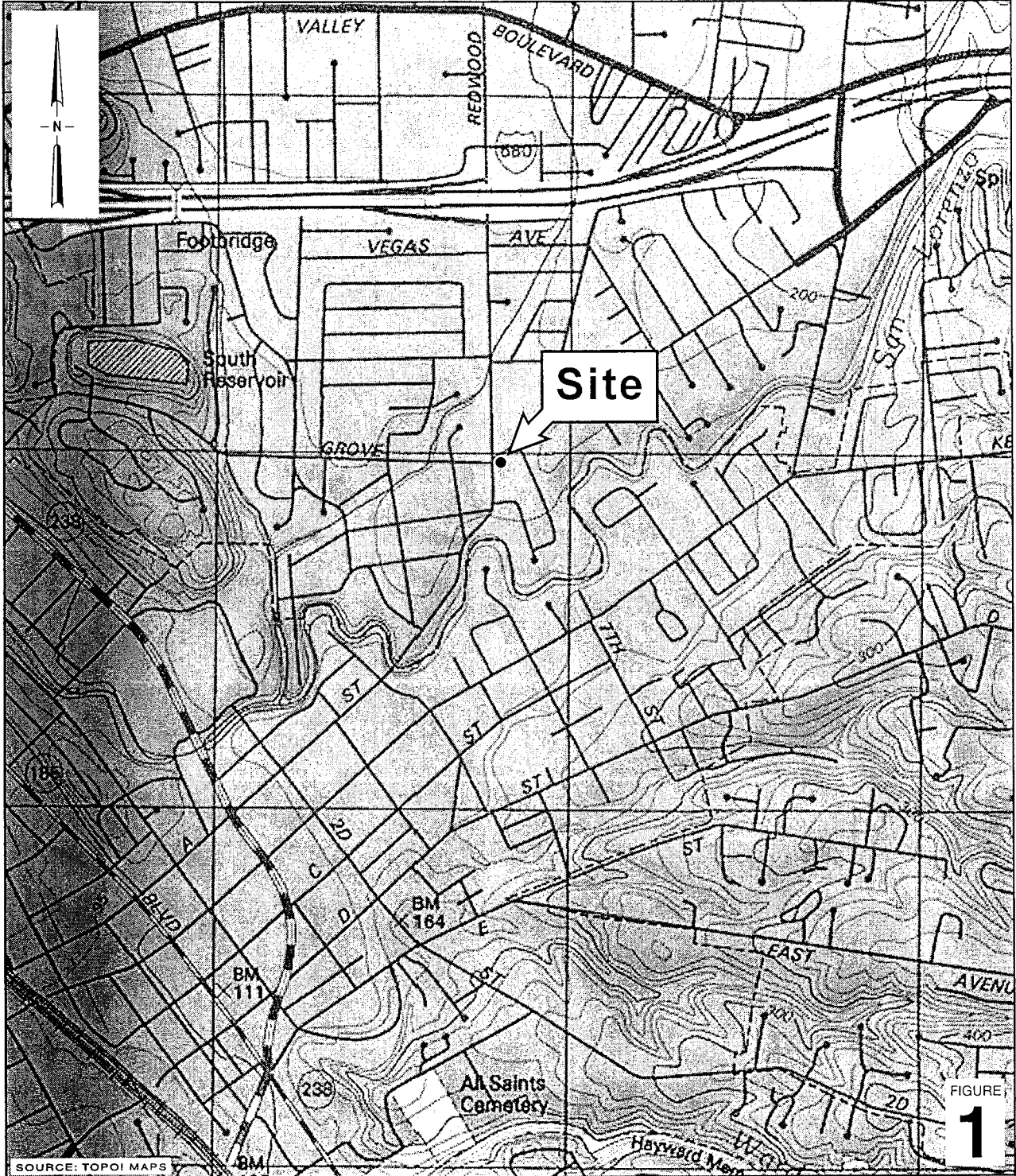


Figures:        1 – Vicinity Map  
                    2 – Site Plan with Proposed Boring Locations

Attachments:   A – Standard Field Procedures for Soil Borings

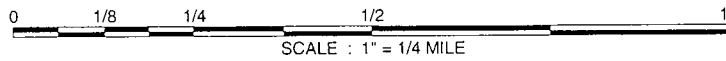
cc:                Mr. Dana Thurman, Chevron Environmental Management Company  
                    P.O. Box 6012, K2236, San Ramon, CA 94583

R:\9-2960 CASTRO VALLEY\9-2960 WORKPLAN 9-06.DOC



I:\9-2960 CASTRO VALLEY\FIGURES\VICINITY-MAP.A1

SOURCE: TOPOI MAPS




**Former Chevron Station 9-2960**  
 2416 Grove Way  
 Castro Valley, California

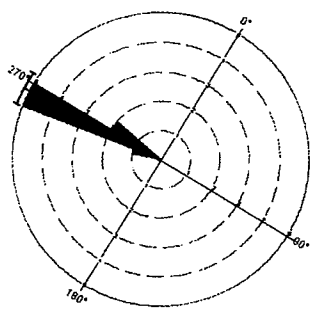


C A M B R I A

Vicinity Map

FIGURE  
**1**

EXPLANATION	
SV-1	Vapor boring location
MW-1	Monitoring well location
B-1	Soil boring location
SB-1	Soil boring location (2004)
C-2	Abandoned well location
	Proposed boring locations



Historical Groundwater Gradient  
1Q96 to 4Q98

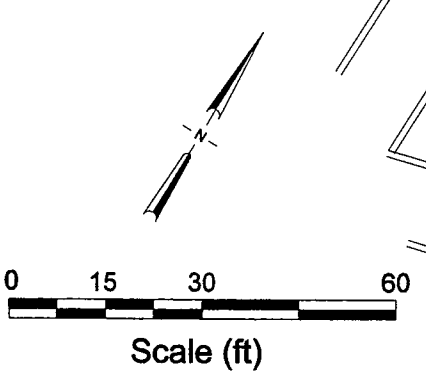
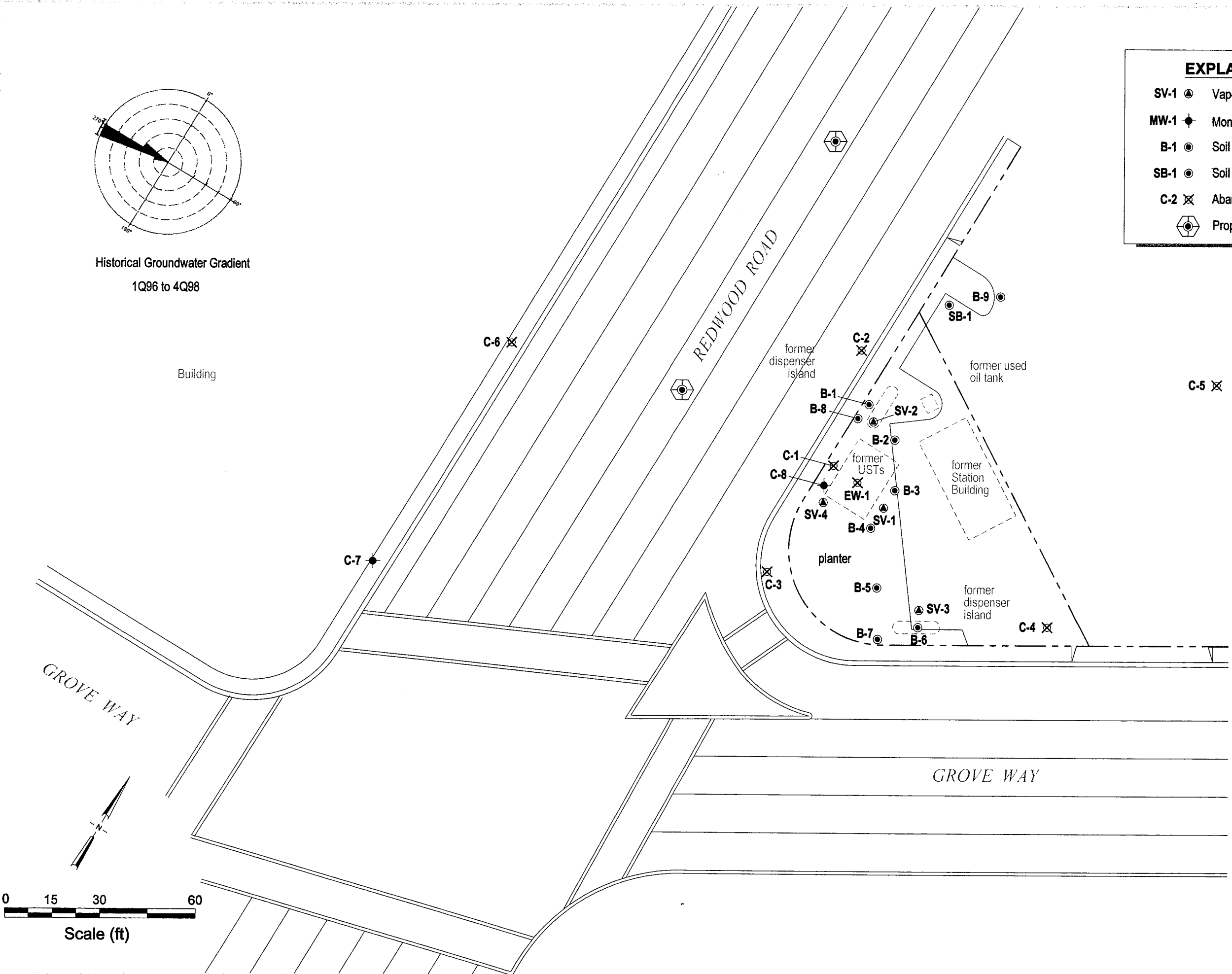


FIGURE  
**2**

I:\0-Rocking-2960 CASTRO VALLEY\FIGURES\9-2960\_SITEPLAN.DWG



## **ATTACHMENT A**

### **Standard Field Procedures for Soil Borings**

## STANDARD FIELD PROCEDURES FOR GEOPROBE® SOIL AND GROUNDWATER SAMPLING

This document describes Cambria Environmental Technology, Inc.'s standard field methods for GeoProbe® soil and groundwater 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, and
- Other significant observations (i.e., cementation, presence of marker horizons, mineralogy)

### Soil Sampling

GeoProbe® 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 GasTech® or 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 ground water depth to select soil samples for analysis.

## **Grab Groundwater Sampling**

Groundwater 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.

F:\TEMPLATE\SOPS\GEOPROBE.DOC