Chevron Envirommental
Management Company
Dana Thurman Project Manager

# Alameda County Health Care Services 

1131 Harbor Bay Parkway, Suite 250
Alameda, CA 94502-6577

Re: Chevron Service Station \# 9-5542

Address: 7007 San Ramon Road, Dublin, California

I have reviewed the attached report titled Monitoring Well Installation Workplan
$\qquad$ and dated March 2, 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.


Dana Thurman
Project Manager

Enclosure: Report

Mr. Barney Chan<br>Alameda County Health Care Services Agency (ACHCSA)<br>Department of Environmental Health<br>1131 Harbor Bay Parkway, Suite 250<br>Alameda, CA 94502-6577<br>\section*{Re: Monitoring Well Installation Workplan}<br>Chevron Service Station 9-5542<br>7007 San Ramon Road<br>Dublin, California<br>Dear Mr. Chan:<br>On behalf of Chevron Environmental Management Company (Chevron), Cambria Environmental Technology, Inc. (Cambria) is submitting this Monitoring Well Installation Workplan for the installation of one additional groundwater monitoring well to further evaluate hydrocarbon trends in the lower groundwater bearing zone, and recover existing well MW- 5 to evaluate the lateral extent of hydrocarbons in shallow groundwater. The following report presents the site background and the proposed scope of work.

## SITE BACKGROUND

The site is an active Chevron branded service station located on the northeast corner of the intersection of San Ramon Road and Dublin Boulevard in Dublin, California. The surrounding land use is primarily commercial with residential to the northwest. In February 1990, the existing service station was remodeled and the underground storage tanks (USTs) and product lines were removed and replaced. Chevron records indicate the property was leased by Chevron in 1965 at which time a station was constructed and operations began. Chevron purchased the property in 1990, coincidental with the station remodel referenced above.

Site Description: On-site facilities consist of a station building with three dispenser islands beneath a common canopy (Figure 2). Three gasoline USTs in a common pit are located directly east of the

Cambria
Environmental Technology, Inc. dispenser islands. Former gasoline and used-oil USTs were located northeast of the current dispenser islands (north of the current USTs). The site is located along the western edge of the Livermore Valley at the base of the eastern slope of the East Bay Hills.

2000 Opportunity Drive Suite 110

The site resides at an elevation of approximately 360 feet above mean sea level (msl) with local
topography gently sloping eastward toward San Ramon Creek, approximately 2,900 feet east, which appears to be the bottom of the valley. The nearest surface water is Dublin Creek located approximately 900 feet south of the site. California Department of Water Resources well search data indicates no domestic or municipal supply wells exist within a 2,000 feet radius of the site.

Site Hydrogeology: Sediments beneath the site are characterized as alluvial fan deposits, consisting primarily of silt, silty clay, sandy clay, silty sand, clayey sand and occasional gravel lenses. Groundwater beneath the site has varied from approximately 15 feet below grade (fbg) to approximately 28 fbg . Groundwater flow direction beneath the site has typically been to the east and southeast.

## PROPOSED SCOPE OF WORK

Due to the elevated TPHg concentrations reported in boring CPT-2, as presented in Cambria's Subsurface Investigation and Well Destruction Report, dated March 2, 2006, Cambria proposes the installation of an additional monitoring well into the lower water bearing zone to further evaluate the hydrocarbon plume trends in the lower groundwater bearing zone, and will locate and recover well MW-5 to evaluate shallow groundwater cross gradient of the site. The new well location is shown on Figure 2. Cambria proposes to perform the following tasks:

Permits: Cambria will obtain well installation permits from Zone 7 Water Resources Management (Zone 7) prior to the beginning of any field operations. Cambria will notify Zone 7 at least 48 hours prior to the start of work.

Site Health and Safety Plan: Cambria will prepare a site safety plan to protect on-site workers. The plan will be kept onsite at all times and signed by all site workers and visitors each day.

Underground Utility Location: Cambria will visit the site and mark the locations of the proposed monitoring well. Cambria will then contact Underground Service Alert (USA) prior to drilling to identify locations of utilities on and adjacent to the property.

Utility Clearance: Cambria will clear the well location by air-knife to 8 fbg to ensure that no underground utilities are located beneath the specified location.

Well Installation: Cambria proposes the installation of one groundwater monitoring well to approximately 55 fbg based on groundwater impact reported during previous site investigations. The well will be constructed using 2 -inch diameter, schedule 40 PVC pipe with 0.010 -inch slotted casing from approximately 45 to 55 fbg with No. $2 / 12$ sand pack. The well annulus will have a 2 -foot bentonite seal above the screen and sand pack and will be filled with neat Portland cement to grade. Cambria's standard field procedure for monitoring well installation is presented as Attachment A.

Chemical Analysis: Groundwater samples will be analyzed for the following constituents:

- TPHg by N. CA. LUFT Method
- BTEX (benzene, toluene, ethylbenzene, xylenes), MTBE (Methyl tert-Butyl Ether), TBA (t-Butyl alcohol), TAME (t-Amyl methyl ether), ETBE (Ethyl t-butyl ether), and DIPE (di-Isopropyl ether), and lead scavengers 1,2-DCA (1,2-Dichloroethane) and EDB (1,2-Dibromoethane) by EPA Method 8260B

Soil and Water Disposal: Soil cuttings will be temporarily stockpiled onsite and covered with plastic or stored in 55 gallon DOT-approved steel drums. Rinse water generated during the investigation will be held temporarily onsite in 55 -gallon DOT-approved steel drums. The soil and water will be transported to a Chevron-approved disposal facility following receipt of the analytical results.

Well Development and Sampling: The well will be developed using agitation and evacuation to settle the sand pack. Gettler-Ryan Inc. of Dublin, California will develop and sample the well no sooner than 72 hours after installation.

Well Elevation Survey: The well top-of-casing elevation will be surveyed with respect to mean sea level.

Reporting: Following receipt of analytical results, Cambria will prepare a subsurface investigation report that will include:

- A summary of the site background and history,
- Descriptions of the drilling methods,
- A figure illustrating the monitoring well location,
- Boring log and well construction details,
- Analytical reports and chain-of-custody forms,
- Soil and water disposal methods,
- A discussion of the hydrocarbon distribution in groundwater, and
- Cambria's conclusions and recommendations.


## SCHEDULE

Cambria will perform this investigation within 45 days after receiving written approval of this workplan from the ACHCSA. Cambria will obtain the necessary permits from Zone 7. Cambria will submit a subsurface investigation report approximately four to six weeks after receipt of data from Gettler-Ryan's field activities.

## CLOSING

If you have any questions or comments please contact Leon Gearhart at (916) 677-3407 ext. 115.

## Sincerely,

Cambria Environmental Technology, Inc.


David W. Herzos, PG\#7211
Senior Project Geologist


Figures: $\quad 1$ - Vicinity Map
2 - Site Plan
Attachments: A - Standard Field Procedures for Monitoring Well Installation
cc: Mr. Dana Thurman, Chevron Products Company, P.O. Box 6012, San Ramon, CA 94583 Mr. Tim Kircher, See's Candies, 400 Allan St., Daly City, CA 94014



# ATTACHMENT A 

## Standard Field Procedures <br> for <br> Monitoring Well Installation

## 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 Professional Geologist (P.G.) or Professional Engineer (P.E.).

## 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 $4^{\circ} \mathrm{C}$ on either crushed or dry ice, depending upon local regulations. Samples are transported under chain-of-custody to a Statecertified 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.

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## Water Sampling

Water samples, if they are collected from the boring, are either collected using a driven Hydropunch $\circledR$ 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 $4^{\circ} \mathrm{C}$, 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.

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## 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 $4^{\circ} \mathrm{C}$, and transported under chain-ofcustody 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 nondedicated 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 55gallon 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.

