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August 26, 2004

Mr. Barney Chan
Alameda County Health Care Services
Department of Environmental Health
1131 Harbor Bay Parkway Suite 250
Alameda, California 94502-6577

Re: **Soil Vapor Assessment Workplan**
Former Chevron Service Station #9-3322
7225 Bancroft Avenue,
Oakland, California
Cambria Project No. 31D-1806

Dear Mr. Chan:

On behalf of Chevron Environmental Management Company (ChevronTexaco), Cambria Environmental Technology, Inc. (Cambria) submits this soil vapor assessment workplan for the referenced site (Figure 1). The purpose of this investigation is to collect a horizontal and vertical profile of soil vapors along the down-gradient property boundary to evaluate potential hydrocarbon vapor inhalation risks to residents of the adjacent property. The acquired vapor data will be compared to conservative Environmental Screening Levels (ESLs) defined by the Regional Water Quality Control Board-San Francisco Bay Region (RWQCB-SFBR) guidelines, as noted in the *Screening for Environmental Concerns at Sites with Contaminated Soil and Groundwater Interim Final,* dated July 2003. If concentrations are above ESLs, a quantitative risk evaluation will be prepared using site-specific data. The site background and Cambria's proposed scope of work are presented below.

SITE DESCRIPTION

The site currently operates as a "Silver Gas" service station. It is located on a parcel bordered by Bancroft Avenue to the northeast, Halliday Avenue to the southwest, and 73rd Avenue to the southeast. The surrounding area is primarily residential with the Eastmont Mall located to the north across Bancroft Avenue. A Union 76 branded service station is located across Bancroft Avenue to the northeast. The site elevation is approximately 40 feet above mean sea level and the topography slopes gently towards San Francisco Bay, approximately two miles to the west. Arroyo Creek, the nearest surface body of water, is located approximately 1,300-feet south of the site. Currently, the site consists of three 10,000-gallon single-walled fiberglass underground storage tanks (USTs), five dispenser islands, and a small kiosk building (Figure 2). ChevronTexaco sold the property to Malwa Petroleum Sales, LLC (Malwa) in September 2000. Malwa sold the property to the current owners, Mike and Dean Najdawi in July 2001.

Cambria Environmental Technology, Inc.

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SITE BACKGROUND

1981 UST Removal and Replacement: ChevronTexaco records indicate the current USTs were installed in 1981. These tanks represent at least the second generation of USTs at the site. In 1981, no regulations requiring soil or the groundwater sampling existed to document conditions associated with the fuel system. As a result, no records of 1981 site conditions are available.

August 1996 Product Line Removal and Replacement: In August 1996, Gettler-Ryan Inc. (G-R) of Dublin, California removed and replaced product piping at the site. Touchstone Developments of Santa Rosa, California collected compliance soil samples between 2 and 4 feet below grade (fbg). Samples taken beneath the product lines and USTs contained up to 500 milligrams per kilogram (mg/kg) total petroleum hydrocarbons as gasoline (TPHg) and 4.2 mg/kg benzene in the vicinity of the center pump island. Either non-detected or low hydrocarbon concentrations were observed in all other samples. Records indicate that approximately 300 cubic yards of soil and pea gravel were excavated during line removal activities. The excavated soil and pea gravel were transported by Allwaste Transportation and Remediation, Inc. to Redwood Landfill in Novato, California. The removed product piping was disposed of by Erickson, Inc. in Richmond, California.

January 1998 Well Installation: In January 1998, G-R observed Bay Area Exploration Services, Inc. (BAES) install three 2-inch diameter monitoring wells MW-1 through MW-3. Maximum TPHg and benzene concentrations in soil were detected at concentrations of 23 mg/kg and 0.053 mg/kg, respectively, in MW-1 at 15 fbg. TPHg was detected in all groundwater samples from 24,000 (MW-2) to 130,000 (MW-1) micrograms per liter (μg/l). Benzene was also detected in all groundwater samples up to 12,000 μg/l (MW-3). Methyl tertiary butyl ether (MTBE) was detected in groundwater samples from MW-2 and MW-3 at 2,300 and 8,000 μg/l, respectively. Soil cuttings were transported by Integrated Wastestream Management (IWM) of Milpitas, California for disposal at Browning-Ferris Industries (BFI) in Livermore, California.

July 1998 Well Survey: In July 1998, G-R conducted a search of California Department of Water Resources records to identify domestic and municipal supply wells within a 0.5-mile radius of the site. Seven wells were located within the search area but none were identified as domestic or municipal wells.

January 1999 Well Installation: In January 1999, G-R observed BAES install 2-inch diameter monitoring wells MW-4 through MW-6 to further define the extent of hydrocarbons in soil and groundwater beneath the site. No hydrocarbons were detected in soil samples from any of the three wells. However, groundwater from MW-6, located downgradient of MW-3, contained 14,000 and

5,600 µg/l, TPHg and benzene, respectively. Drill cuttings were transported by IWM to BFI, in Livermore, California.

July 2000 Baseline Investigation: In July 2000, Cambria observed Vironex Inc. of San Leandro, California, advance soil borings B-1 and B-2 and install monitoring well MW-7. The purpose of the investigation was to provide information of environmental conditions beneath the site at the time of property transfer. Boring B-2 contained the highest TPHg and benzene concentrations of 140 and 0.88 mg/kg, respectively, in a soil sample collected from 18 fbg. MTBE was initially detected in boring B-2 at 18 fbg at 1.7 mg/kg by EPA Method 8020, but was not confirmed by EPA Method 8260B analysis. The highest TPHg and benzene concentrations detected in groundwater were 11,000 and 4,300 µg/l, respectively, in well MW-7. Maximum MTBE in groundwater at 2,000 µg/l was detected in boring B-1 by EPA Method 8260B. No groundwater sample was collected from boring B-2 due to low flow conditions.

September 2000 Additional Baseline Investigation: In September 2000, Cambria observed V&W Drilling of Hayward, California advance borings SB-4 through SB-6. The purpose of this investigation was to provide additional environmental data to satisfy real estate and lending requirements of the station operator for purchase of site facilities. No MTBE was detected in soil samples analyzed by EPA Method 8260B. Boring SB-5 contained the highest concentrations of TPHg and benzene at 1,400 and 3.1 mg/kg, respectively, in a sample collected at 24 fbg. No groundwater samples were collected from borings SB-4 through SB-6.

SITE CONDITIONS

Soil Lithology: The site is underlain primarily by interbedded clay, silt, and gravel. Fine grained materials consisting of clay to sandy clay exist between the surface and 11 to 15 fbg. Clayey gravel grading to sandy gravel underlies the clay layer to approximately 36.5 fbg, the maximum depth explored. A five-foot thick silt layer was observed during installation of wells MW-3 through MW-6 from 20 to 25 fbg, along the northwestern area of the property.

Groundwater: The site is located within the East Bay Plain groundwater basin. Groundwater usually occurs between 13 and 20 fbg, but has been measured from 7 to 22 fbg. General groundwater flow direction varies from north to northwest, at an average gradient of 0.08.

Hydrocarbon Concentrations in Groundwater: SPH has been observed on the water table in well MW-1 since June 1999 at a maximum thickness of 0.40 ft, in June 1999. No SPH has been observed since February 2002. A sample of the SPH from well MW-1 has been fingerprinted as pre-1992

leaded gasoline. The highest TPHg concentration detected in groundwater was 370,000 µg/l, seen in well MW-1 in July 1998, prior to the occurrence of SPH. With the exception of two apparently anomalous detections of MTBE, no hydrocarbons have ever been detected in well MW-4, downgradient of MW-1. This suggests that groundwater migration beneath the site is minimal. During the Second Quarter 2004 monitoring and sampling report, the highest TPHg and benzene were detected in MW-1 at concentrations of 80,000 and 13,000 µg/l, respectively. Wells MW-4 through MW-6 are located along the down-gradient property boundary. As mentioned above, no hydrocarbons have been detected in MW-4. MW- 5 has had very few, inconsistent detections of TPHg, benzene and MTBE, most recently 6.3 ug/l MTBE in November 2002. Well MW-6, located down-gradient of MW-3, has contained up to 25,000, 8,800 and 2,930 ug/l TPHg, benzene and MTBE, respectively. Second Quarter 2004 concentrations in MW-6 are 95, 11 and 120 ug/l TPHg, benaene and MTBE, respectively.

PROPOSED SCOPE OF WORK

To evaluate potential hydrocarbon vapor inhalation risks to adjacent residents, associated with volatilized hydrocarbons from soil and groundwater beneath the site, Cambria proposes to drill borings VP-1 through VP-3 along the northwest property boundary. These borings will be drilled to approximately 11 fbg and three discrete vapor sampling points will be installed in each boring. These permanent vapor sampling points will be installed at depths of 5, 7.5 and 10 fbg. The proposed locations of these borings are shown on Figure 2. To complete the scope of work, Cambria proposes to perform the following tasks:

Site Health and Safety Plan: Cambria will prepare a site safety plan to protect site workers. The plan will be reviewed and signed by all site workers, and kept on site at all times.

Permits: Cambria will obtain boring permits from the Alameda County Public Works Department prior to the beginning of field operations. A minimum of 72 hours will be given prior to beginning field activities.

Underground Utility Location: Cambria will contact Underground Service Alert prior to drilling to identify locations of utilities in the assessment area and review ChevronTexaco site plans, and contact the current owner to obtain available site plans and information of any new or modified utilities.

Utility Clearance: As per ChevronTexaco safety requirements, each boring location will be cleared to 8 fbg using an air-knife assisted vacuum truck prior to advancing the soil borings in an attempt to locate any unknown utilities.

Soil Borings and Sampling Technique: Cambria proposes to advance borings VP-1 through VP-3 and install vapor probes as illustrated on Figure 3. It is estimated that the total depth of borings will not exceed 11 fbg. Soil samples will be collected using a hand-auger above 8 fbg and using a split-spoon sampler at depths greater than 8 fbg. Borings will be continuously logged. Actual locations will be based on site and utility constraints as determined in the field. Cambria's Standard Field Procedures for Soil Borings are presented as Attachment A.

Vapor Probe Construction and Vapor Sampling: Vapor probes will be constructed of 1-inch diameter Schedule 40 slotted PVC. Each probe will be capped and a fitting placed on the upper end connecting nylon tubing from the probe to the surface. Each probe will be placed at the desired depth and surrounded by a sand pack. Each probe will be isolated from the others by a bentonite grout mixture. Vapor points will be finished at the surface using a traditional well vault. Collection of soil vapor samples will be conducted at least 48 hours after the placement of the probes. Samples from soil vapor points VP-1 through VP-3 will be collected using 30-minute flow meters and 6-liter Summa™ canisters connected to the sampling tubing at each vapor point. A battery powered air pump with attached vacuum-chamber and Tedlar™ bag will be used to purge an appropriate volume from the sampling point tubing. After purging, the valve between the purge pump and Summa™ canister will be closed and the Summa™ canister valve will be opened. The vacuum of the Summa™ canister will be used to draw the soil vapor through the flow controller until a negative pressure of approximately 5-inches of Hg is observed on the vacuum gauge. After sampling, the Summa™ canisters will be packaged and sent to the Air Toxics laboratory under chain-of-custody for analysis. Standard Field Procedures for Soil and Soil Vapor Sampling are presented as Attachment B.

Vapor Chemical Analysis: Vapor samples will be analyzed for the following analytes:

- TPHg, BTEX, and MTBE by EPA Method TO-14,
- O_2 and CO_2 by ASTM 1946 (GC/TCD).

Soil Chemical Analysis: Select soil samples from the vapor point borings will be analyzed for the following analytes:

- TPHg by EPA Method 8015 modified,
- BTEX and oxygenates MTBE, tertiary butyl alcohol (TBA), tertiary amyl methyl ether (TAME), ethyl tertiary butyl ether (ETBE), di isopropyl ether (DIPE), and lead scavengers 1,2 dichloroethane (1,2-DCA) and ethylene dibromide (EDB) by EPA Method 8260B, and

- Physical parameters including moisture content, bulk density, porosity, organic carbon and effective permeability in soil samples collected below 8 fbg. Samples collected above 8 fbg will be disturbed and any measurement of physical parameter will be meaningless.

Soil Disposal: Soil cuttings will be temporarily stored onsite, placed on and covered with visqueen. Cuttings will be sampled, profiled and transported to an appropriate ChevronTexaco-approved disposal facility.

Reporting: After the analytic results are received, we will prepare a subsurface investigation report that, at a minimum, will contain:

- A summary of the site background and history,
- Descriptions of the drilling and sampling methods,
- Boring logs,
- Tabulated vapor analytic results,
- A figure illustrating the boring locations,
- Analytic reports and chain-of-custody forms,
- Soil disposal methods, and
- A discussion of the findings.

Results of vapor analyses will be provided to ChevronTexaco's risk assessment specialist for evaluation. The evaluation of risk will be summarized in a separate document and submitted under separate cover.

SCHEDULE

Cambria will schedule this investigation following receipt of written approval of this workplan. Once approved, Cambria will obtain the necessary boring permits. We will submit our investigation report approximately four to six weeks after receiving the analytic data.

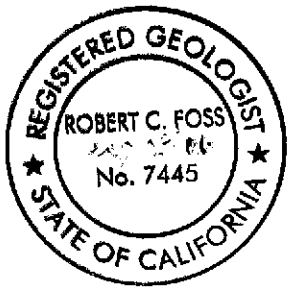
CLOSING

Please contact either Sarah Owen at (510) 420-3350 or Robert Foss at (510) 420-3348 if you have any questions or comments.

Sincerely,
Cambria Environmental Technology, Inc.

Sarah Owen
Senior Staff Geologist

Robert Foss, R.G. #7445
Associate Geologist



Figures: 1 - Vicinity Map
2 – Proposed Vapor Point Location Map
3 - Soil Vapor Point

Attachments: A – Standard Field Procedures for Soil Borings
B – Standard Field Procedures for Soil and Soil Vapor Sampling

cc: Karen Streich, ChevronTexaco, P.O. Box 6012, San Ramon, California 94583
Mike and Dean Najdawi, 3120 Melendy Drive, San Carlos CA 94070

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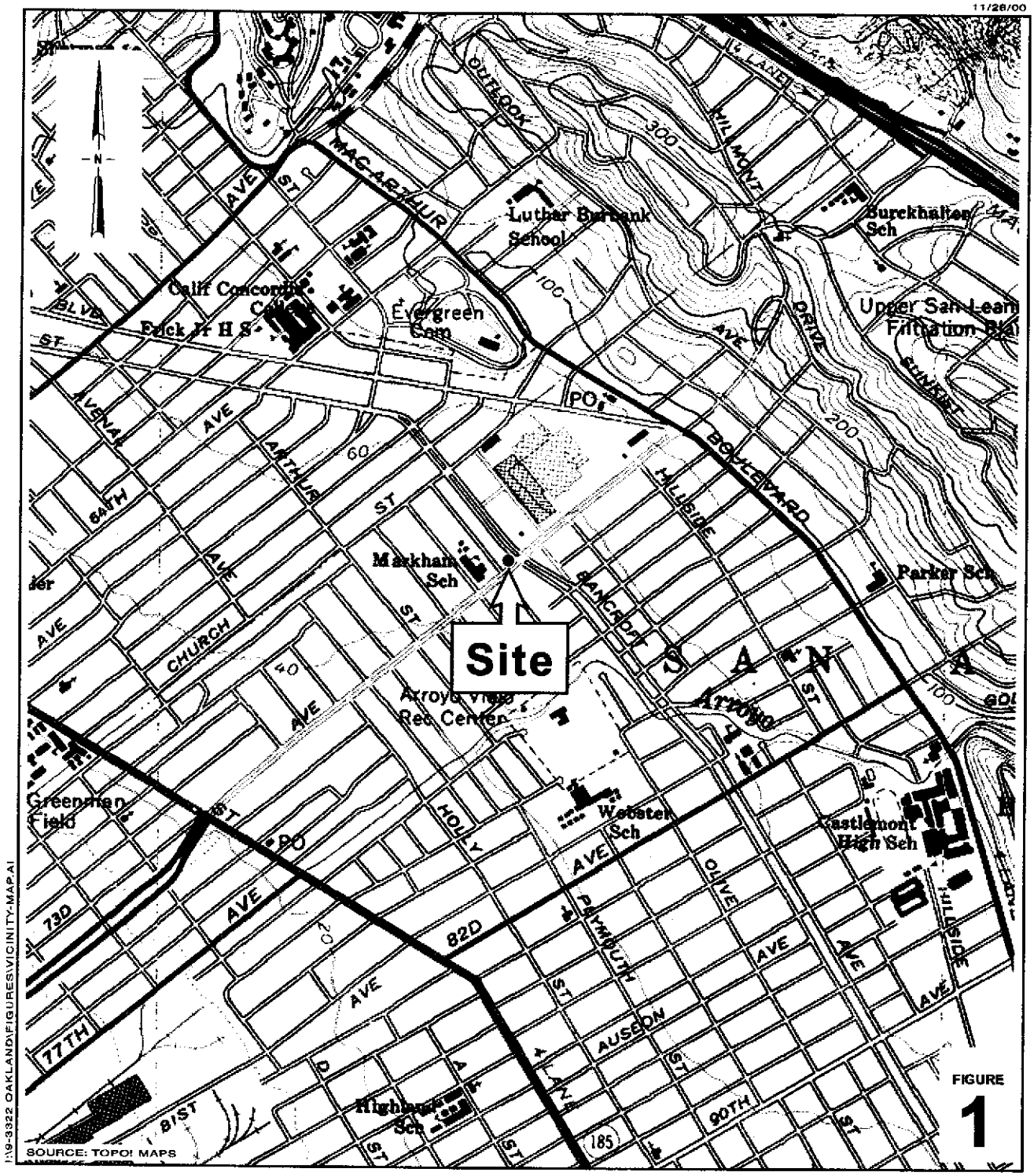

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Chevron Service Station 9-3322

7225 Bancroft Avenue

Oakland, California

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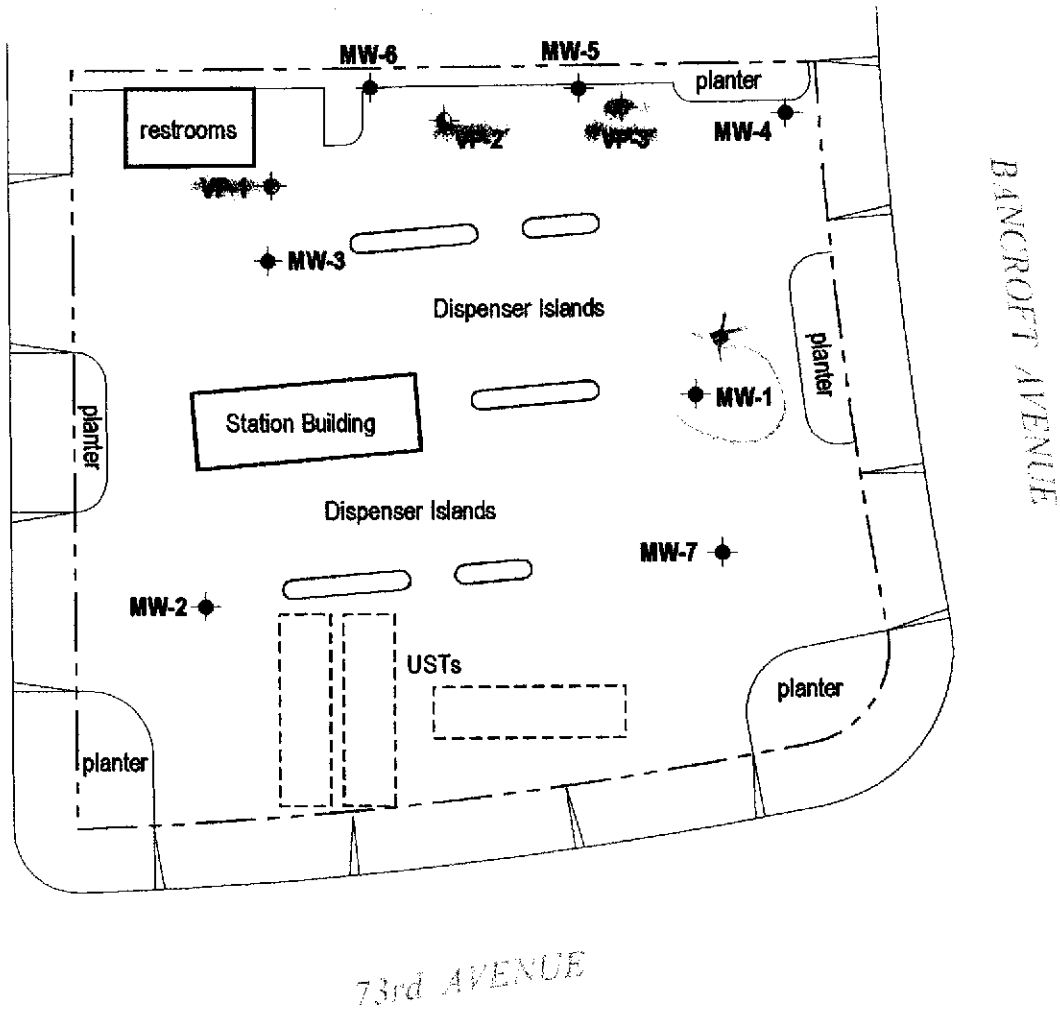
Vicinity Map



EXPLANATION

MW-1 ✦ Monitoring well location

VP-1 ✦ Proposed permanent vapor probe location

0 15 30

Scale (ft)

FIGURE

2

Chevron Service Station 9-3322

7225 Bancroft Avenue

Oakland, California

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Vapor Probe Location Map

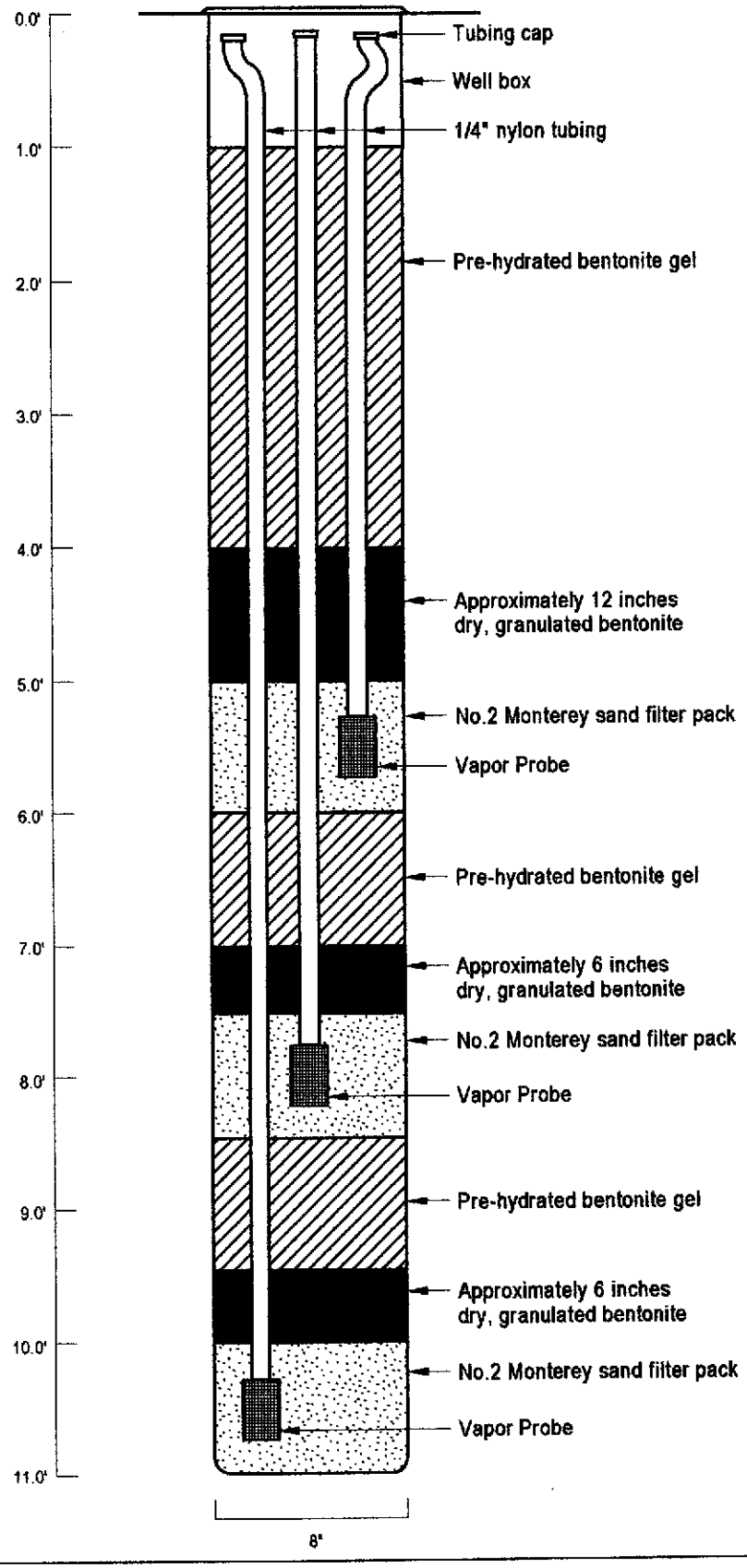

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FIGURE
3

Chevron Service Station 9-3322

7225 Bancroft Avenue

Oakland, California

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Soil Vapor Probe Construction

ATTACHMENT A

Standard Field Procedures for Borings and Wells

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:

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

Soil Boring and Sampling

Soil borings are typically drilled using hollow-stem augers or 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.

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 4oC 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 4oC, 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.

ATTACHMENT B

Standard Field Procedures for Soil and Soil Vapor Sampling

Cambria

STANDARD FIELD PROCEDURES SOIL VAPOR SAMPLING

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

Objectives

Soil vapor samples are collected and analyzed to assess whether vapor-phase subsurface contaminants pose a threat to human health or the environment.

Direct Push Method for Soil Vapor Sampling

The direct push method for soil vapor sampling uses a hollow vapor probe, which is pushed into the ground, rather than augured, and the stratigraphy forms a vapor seal between the surface and subsurface environments ensuring that the surface and subsurface gases do not mix. Once the desired soil vapor sampling depth has been reached, the field technician installs disposable polyethylene tubing with a threaded adapter that screw into the bottom of the rods. The screw adapter ensures that the vapor sample comes directly from the bottom of the drill rods and does not mix with other vapor from inside the rod or from the ground surface. In addition, hydrated bentonite is placed around the sampling rod and the annulus of the boring to prevent ambient air from entering the boring. The operator then pulls up on the rods and exposes the desired stratigraphy by leaving an expendable drive point at the maximum depth. The required volume of soil vapor is then purged through the polyethylene tubing using a standard vacuum pump. The soil vapor can be sampled for direct injection into a field gas chromatograph, pumped into inert tedlar bags using a "bell jar" sampling device, or allowed to enter a Summa vacuum canister. Once collected, the vapor sample is transported under chain-of-custody to a state-certified laboratory. 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 washed between samples with trisodium phosphate or an equivalent EPA-approved detergent. Once the sampling is completed, the borings are filled to the ground surface with neat cement.

Shallow Soil Vapor Point Method for Soil Vapor Sampling

The shallow soil vapor point method for soil vapor sampling utilizes a hand augur to advance a boring for the installation of a soil vapor sampling point. Once the boring is hand augered to the final depth, a half a foot of number 2/16 filter sand is placed at the base of the boring (Figure A). One, ¼-inch inner-diameter Teflon™ tube of known length is placed into the boring. The tube is fitted with a stainless steel screen and barbed brass fitting to prevent sand from clogging the tube and is capped at the top with another barbed brass fitting. Another half a foot of number 2/16 filter sand is placed above the bottom of the tubing creating a one foot zone of filter sand with the end of the tubing in the middle. A 2-inch layer of unhydrated bentonite chips is placed on top of the filter pack. Next pre-hydrated bentonite gel is then poured into the hole to approximately 0.5 fbg. Another 2-inch layer of unhydrated bentonite chips is placed on top of the bentonite gel. The tube is coiled and placed within a wellbox finished flush to the surface. Soil vapor samples will be collected no sooner than one week after installation of the soil-vapor points to allow adequate time for representative soil vapors to accumulate. Soil vapor sample collection will not be scheduled until after a minimum of three consecutive precipitation-free days and irrigation onsite has ceased. Figure B shows the soil vapor sampling apparatus. A measured volume of air will be purged from the tubing using a hand-held purge pump and a tedlar bag. Immediately after purging, soil-vapor samples will be collected over an approximate 30-minute period using 6-liter Summa canisters and capillary air-flow controllers. The soil-vapor points will be preserved until they are no longer needed for risk evaluation purposes. At that time, they will be destroyed by extracting the tubing, hand augering to remove the sand and bentonite, and backfilling the boring with neat cement. The boring will

be patched with asphalt or concrete, as appropriate.

Vapor Sample Storage, Handling, and Transport

Samples are stored out of direct sunlight in coolers or boxes and transported under chain-of-custody to a state-certified analytic laboratory.