Thomas K. Bauhs
Project Manager
Retail and Terminal
Business Unit

Chevron Environmental Management Company
6001 Bollinger Canyon Road
San Ramon, CA 94583
Tel (925) 842-8898
Fax (925) 842-8370

January 10, 2008
(date)

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

Re: Chevron Facility # 20-6127

Address: 2301 Blanding Avenue, Alameda, California

I have reviewed the attached report titled Soil Boring and Vapor Point Installation Work Plan and dated January 10, 2008.

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 Conestoga Rovers & Associates, 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,

Thomas K. Bauhs
Project Manager

Enclosure: Report

CONESTOGA-ROVERS
& ASSOCIATES

2000 Opportunity Dr, Suite 110, Roseville, California 95678
Telephone: 916-677-3407, ext. 100 Facsimile: 916-677-3687
www.CRAworld.com

January 10, 2008

Mr. Jerry Wickham
Alameda County Health Care Services Agency (ACHCSA)
Environmental Protection
1131 Harbor Bay Parkway, Suite 250
Alameda, CA 94502

Re: **Soil Boring and Vapor Point Installation Work Plan**
Former Signal Oil Marine Storage and Distribution Facility
(Former Chevron Bulk Plant 20-6127)
2301 Blanding Avenue
Alameda, California

Dear Mr. Wickham:

Conestoga-Rovers & Associated, Inc. (CRA) is submitting this *Soil Boring and Vapor Point Installation Work Plan* on behalf of Chevron Environmental Management Company (Chevron) for the site referenced above (Figure 1). In a letter dated October 17, 2007, the ACHCSA requested additional investigation of hydrocarbons in shallow groundwater, and VOCs and metals in soil, due to former operations of the bulk plant and storage facilities (Attachment A). CRA proposes advancing four soil borings to investigate the extent of metals and VOC's in shallow soil, and one boring to investigate shallow groundwater conditions near MW-1. CRA also proposes four vapor points to perform a vapor intrusion study. The site background and details of the proposed work are presented below.

SITE BACKGROUND

Eight aboveground storage tanks (ASTs) equipped with concrete secondary containment walls, underground piping, office and storage buildings, a loading rack and pumping station were used to store and distribute fuels and lubricants (Figure 2). A paint storage area, as identified on available site plans, was observed on aerial photos from 1932 and 1941. Between 1957 and 1963, the buildings at the site were reportedly removed and it is assumed that the tanks and piping were removed at this time also. From 1973 to 1983, the site was used as a construction yard and boat repair facility. Since 1987, the site has been developed as a strip mall. CRA has attempted to procure information regarding the removal of ASTs and associated piping, and documentation of site conditions during redevelopment in 1987. The property owners have not responded to our requests for this information.

CONESTOGA-ROVERS
& ASSOCIATES

SITE CONDITIONS

The site is underlain by fill consisting of clay with fine sand and concrete fragments to approximately 6 feet below grade (fbg). Native soil consists of sandy clay and clayey sand to depths of approximately 16 fbg. Underlying this layer is poorly-graded sand from approximately 15 to 18 fbg. Based on the quarterly groundwater monitoring events, depth to groundwater has ranged between approximately 7 and 10 fbg. Based on depth to water data collected from the borings, which were temporarily cased and monitored over a 2-day period, and information from RRM's *Tier 2 Risk Based Corrective Action (RBCA)* assessment, dated October 1998, groundwater flow is to the north/northeast toward Alameda Canal at an approximate gradient of 0.01 and is slightly tidally influenced.

SUMMARY OF PREVIOUS ENVIRONMENTAL WORK

In February 1995, Geomatrix advanced eight soil borings (SB-1 through SB-8) on site. Soil samples collected during the investigation contained total petroleum hydrocarbons diesel (TPHd) at a maximum concentration of 250 parts per million (ppm), total petroleum hydrocarbons as gasoline (TPHg) at a maximum concentration of 2,000 ppm and benzene at a maximum concentration of 3.7 ppm. In April 1995, Geomatrix collected groundwater samples from ten shallow borings (GWS-7 through GWS-16). TPHd, TPHg and benzene were detected at maximum concentrations of 1,200 parts per billion (ppb), 22,000 ppb and 6,200 ppb, respectively, in GWS-9 located east of the former loading racks along the Alameda Canal. Maximum hydrocarbon concentrations were observed in borings located in the northeastern portion of the site.

RRM, Inc. advanced additional borings SB-9 through SB-12 at the site in October 1998, as part of a RBCA assessment. Hydrocarbons were detected in soil samples from borings SB-9 and SB-11. TPHd, TPHg and benzene were detected in groundwater samples collected from SB-9 at maximum concentrations of 62,000 ppb, 14,000 ppb and 1,400 ppb, respectively. TPHd, TPHg and benzene were also detected in soil at maximum concentrations of 2,200 ppm, 900 ppm, and 3.3 ppm, respectively, in SB-9. Water samples collected from Alameda Canal, adjacent to the site, did not contain hydrocarbons above method reporting limits. Tidal measurements were collected from the Alameda Canal and the four temporary wells. Measurements indicated that the Alameda Canal varied by 2.62 feet while SB-9, located approximately 60 feet from the canal varied by 0.42 feet. SB-10, 11 and 12 located approximately 120, 260, and 330 feet from the canal fluctuated by 0.14, 0.17 and 0.14 feet, respectively.

In December 2000, Gettler Ryan, Inc. installed groundwater monitor well MW-1 along the northeastern portion of the site adjacent to the Alameda Canal. Low concentrations of hydrocarbons were detected in

CONESTOGA-ROVERS
& ASSOCIATES

soil at 10 fbg.

Cambria Environmental Technology Inc. (Cambria) collected surface soil samples S1, S2 and S3 from the soil bank above the western shore of the Alameda Canal in January 2004 in response to an October 16, 2002 letter from ACEHS regarding concerns of impact to surface water. One sample (S2) was collected directly down-slope of MW-1 near a water seep observed on the slope above the canal. Due to the historical industrial nature of the property two additional samples were collected approximately 70 feet east and 90 feet north of MW-1 to observe background concentrations. No TPHg, MTBE or BTEX was detected in any of the soil samples. Low to moderate concentrations of TPHd were detected in all three soil samples. Laboratory chromatographs indicate that the hydrocarbon pattern observed in these soil samples is not typical of diesel fuel. This may represent either highly degraded diesel fuel from various historical onsite and nearby operations, or residual organic material of unknown origin present in local fill material.

PROPOSED SCOPE OF WORK

CRA proposes advancing soil boring SB-13 through SB-16 to investigate metals and VOCs in shallow soil at the site (Figure 2). CRA also proposes advancing SB-17 to investigate shallow groundwater conditions near well MW-1. CRA proposes installing vapor points VP-1 through VP-4 to perform a vapor intrusion study at the site. The areas of investigation for the five borings are summarized in the table below. Standard Operating Procedures for soil boring and vapor probe installation are presented in Attachment B. Details of the proposed work are discussed below.

Boring ID	Area of Investigation
SB-13	Lateral extent of arsenic and metals in shallow soil
SB-14	VOCs in shallow soil near the former paint storage area
SB-15 and SB-16	VOCs in shallow soil near the former boat repair facility
SB-17	VOCs in shallow soil Shallow groundwater conditions near MW-1

The October 17, 2007 ACHCSA letter requested a review of historic metals data in soil and cited elevated concentrations of arsenic in soil samples collected in 1995. A review of Geomatrix's September 1995 investigation report cites tables and figures with elevated arsenic in shallow soil samples from SB-3 (68 mg/kg at 1 fbg) and SB-6 (130 mg/kg at 1 fbg). However, the report text cites 130 mg/kg arsenic in SB-8 instead of SB-6. The lab report was unavailable to confirm whether SB-6 or SB-8 contained the elevated arsenic concentration. Since Table 1 and Figure 2 of Geomatrix's report both refer to only SB-6 as having 130 mg/kg arsenic, CRA has based recommendations on the table and figure data and not the report text.

The soil data collected in 1995 showed that the lateral extent of arsenic was defined to below background levels in all directions except to the southwest. Soil boring SB-6 contained 130 mg/kg arsenic at 1 fbg and 2.5 mg/kg arsenic at 8 fbg. CRA proposes one additional boring southwest of SB-6 to determine the southern extent of arsenic in shallow soil (Figure 2). Although boring SB-3 contained 68 mg/kg arsenic at 1 fbg, the lateral extent cannot be determined southeast of this boring due to buildings that currently occupy the site. Borings southwest and east of SB-3 had low concentrations of arsenic or were non-detect in 1995.

Permits and Access Agreements: CRA will obtain soil boring permits from Alameda County Public Works Agency (ACPWA) prior to the beginning of any field operations. CRA will notify ACPWA at least 48 hours prior to the start of work. Any necessary access agreements will also be obtained prior to initiating field work.

Site Health and Safety Plan: CRA 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: CRA will notify Underground Service Alert prior to drilling to clear boring and vapor probe locations with utility companies. Additionally, CRA will contract a private utility line locator to ensure no utilities are in conflict with the proposed boring locations.

Soil Borings: CRA proposes advancing five soil borings to 10 fbg. Shallow soil samples will be collected from approximately 1 fbg and 5 fbg for metals analysis in SB-13, and VOC analyses in SB-14 through SB-17. Each boring will then be advanced to 10 fbg and a grab-groundwater sample will be collected and analyzed for the presence of hydrocarbons. Actual boring locations may be adjusted based upon underground utility locations. CRA's standard operating procedures for soil boring monitoring well installation are presented in Attachment B.

Soil Vapor Probe Installation: CRA proposes to advance four shallow hand-auger borings which will be completed as soil vapor probes at the approximate locations shown on Figure 2. The total depth of each boring will be approximately 6 fbg, and the bottom of each vapor probe will be approximately 5.5 fbg. Soil samples will be collected at approximately 2 fbg and 5.5 fbg using a slide hammer and a drive-core barrel. The borings will be continuously logged by CRA field personnel. The final locations of the borings will be based on site and utility constraints as evaluated in the field.

The soil vapor probes will also be constructed in general accordance with CRA's Standard Field Procedures (Attachment B). One-quarter inch diameter Nylaflow® nylon tubing will be fitted with a 6-inch long 0.010-inch slotted PVC filter screen. The tubing and screen will be placed into each open boring with the screen at approximately 5.5 fbg. Washed No. 2/16 silica sand will be placed from 5 to 6 fbg to

create a filter pack around the PVC screen. A 3-inch layer of dry granular bentonite will be placed on top of the sand pack followed by hydrated bentonite powder to a few inches from the surface. The tubing exiting the bentonite will be capped, and the top of the point will be protected by a traffic-rated vault.

Soil Vapor Sampling: Soil vapor samples will be collected no sooner than 72 hours after installation of the probes to allow adequate time for accumulation of representative soil vapor. Soil vapor sample collection will not be scheduled until after a minimum of five consecutive significantly precipitation-free days (less than 0.5 inches of rain). The property manager will be asked to discontinue any on-site watering for five days prior to soil vapor samples collection.

A generalized schematic of the soil vapor sampling apparatus is illustrated in Attachment B. Vapor samples will be collected using a 1-liter SUMMA™ canister connected to the sampling tubing at each vapor point. Prior to collecting soil vapor samples, the initial vacuum of the canister will be measured and recorded on the chain-of-custody (this should be approximately 30 inches of mercury). 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. This is the residual vacuum and this measurement should be recorded on the chain-of-custody. With the flow controller set at approximately 30 ml/minute, sample collection should take approximately 30 minutes.

Prior to sample collection, stagnant air in the sampling apparatus will be sufficiently removed by purging approximately 3 probe volumes using a purge pump. The volume of the borehole will generally not be included in the volume calculation as it is assumed that the soil vapor concentrations in the probe and sand pack are equilibrated with the surrounding native soil.

A minimum of one field duplicate will be collected for each day of sampling. A field duplicate will be collected by using a splitter connected to the soil vapor probe. After vapor sampling, the SUMMA™ canisters will be properly labeled, packaged and sent to the Air Toxics laboratory under chain-of-custody for analysis. Samples will be analyzed on standard turn around time. CRA's *Standard Field Procedures for Soil and Soil Vapor Sampling* is presented as Attachment B.

Leak Detection: In order to detect any leakage of atmospheric gasses and/or ambient air during sampling, CRA will perform leak detection tests. Helium will be used as a source gas for leak detection. Field application of helium will be accomplished through using a containment structure (i.e. a clear, large volume Rubbermaid® or Tupperware® storage container) placed inverted over the entire sample probe and sampling apparatus. Additionally, CRA will analyze vapor samples for oxygen (O_2) and carbon dioxide (CO_2) to assess whether samples are compromised by surface vapor migration.

CONESTOGA-ROVERS
& ASSOCIATES

Chemical Analyses: Selected soil and groundwater samples will be analyzed at a standard turn around time for the following:

Soil sample analyses:

- Total Metals by EPA Method 200.7 (boring SB-13)
- Volatile Organic Compounds by EPA Method 8260B (SB-14 through SB-17)

Groundwater analyses:

- TPHg by EPA Method 8015B (SB-13 through SB-17)
- TPHd by EPA Method 8015 modified (SB-13 through SB-17)
- Benzene, toluene, ethylbenzene, xylene (BTEX) by EPA Method 8260B (SB-13 through SB-17)

Vapor Chemical Analyses: The soil vapor samples will be kept at ambient temperature and submitted under chain-of-custody to Air Toxics for analysis. The samples will be analyzed on a 72 hour turn around time for:

- TPHg by EPA Method TO-3
- TPHd by NIOSH Method 1550,
- BTEX by EPA method TO-15.
- Helium, O_2, and CO_2 by Method ASTM 1946

Soil and Water Disposal/Recycling: Soil and water produced during field activities will be temporarily stored onsite. Soil cuttings will either be stockpiled on plastic and covered with plastic or placed in 55-gallon drums and stored onsite. Rinseate water will be stored in drums. Following review of laboratory analytical results, the soil and water will be transported to a Chevron-approved facility for disposal/recycling.

GeoTracker Upload: Once all of the necessary data is received, the data will be uploaded to the State Water Resources Control Board GeoTracker databases as required in sections 2729 and 2729.1 of the California Code of Regulations for USTs.

CONESTOGA-ROVERS
& ASSOCIATES

Reporting: After all analytical results are received; CRA will prepare a subsurface investigation report that, at a minimum, will contain:

- A summary of the site background and history,
- Descriptions of the soil boring, vapor probe installation and soil sampling methods,
- Boring logs,
- Tabulated soil analytical results,
- Tabulated soil vapor analytical results,
- A figure illustrating boring and vapor probe locations,
- Analytical reports and chain-of-custody forms,
- Soil and groundwater disposal methods,
- A discussion of the metals and hydrocarbons in soil,
- An updated cross section showing the depth of the seawall in relation to static water levels measured onsite, and
- CRA's conclusions and recommendations.

The ACHCSA also requested an updated cross section as part of this work plan; however, CRA would like to submit the cross section with the assessment report to include data collected during the current investigation.

SCHEDULE

CRA will perform the proposed work after receiving written approval of this work plan, or 60 days following submittal of this work plan. CRA will submit a report approximately six weeks after receipt of analytical data.

CONESTOGA-ROVERS
& ASSOCIATES

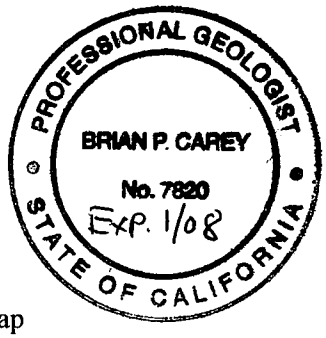
CLOSING

Please call Brian Carey at (916) 677-3407 (ext. 106) if you have any questions or comments regarding this investigation.

Sincerely,
Conestoga Rovers and Associates, Inc.

for Edward T. Weyrens
Staff Geologist

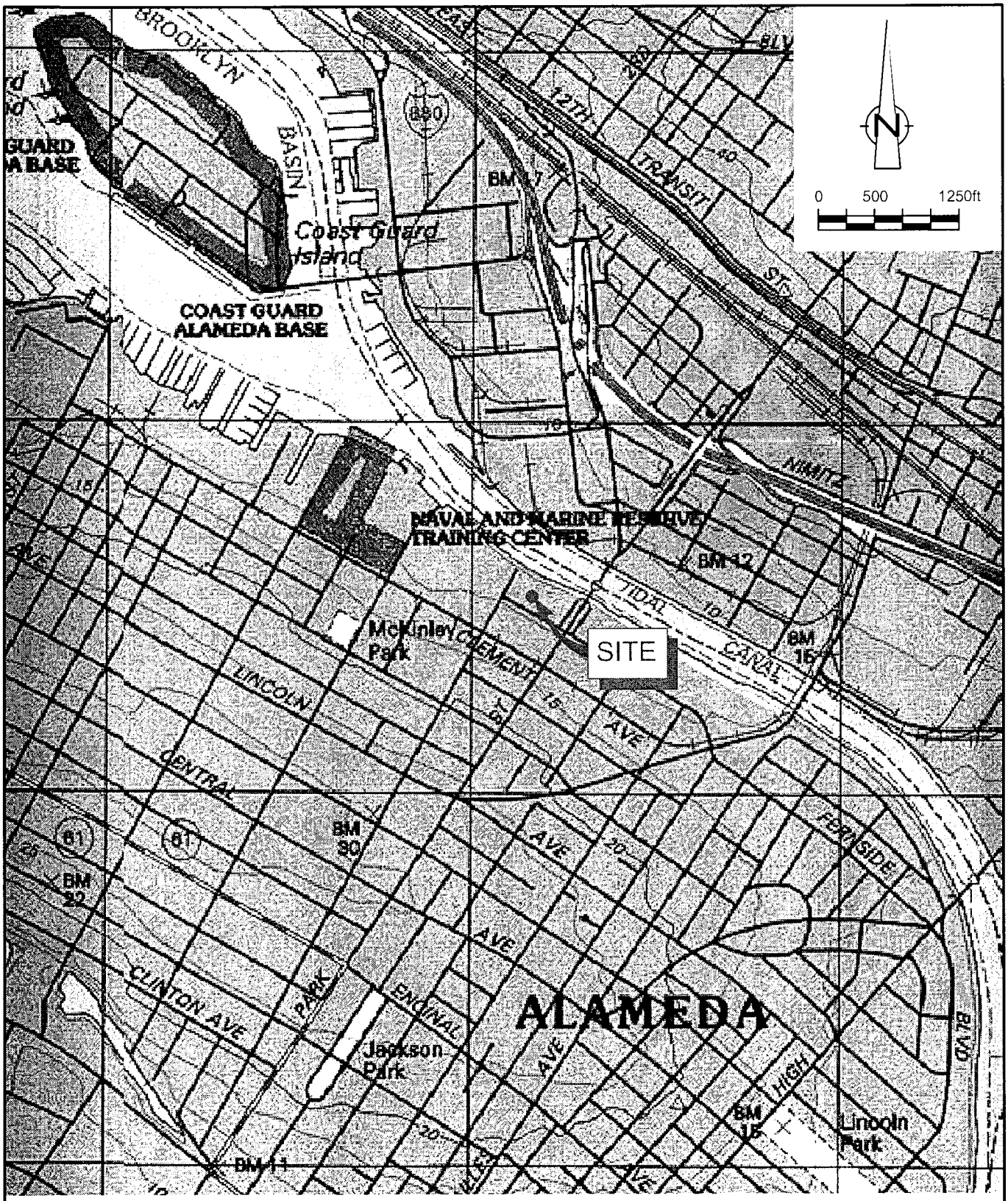
Brian P. Carey, P.G. #7820
Senior Project Geologist



Figures:
1 – Vicinity Map
2 – Site Plan
3 – Soil Vapor Probe Schematic
4 – Soil Vapor Sampling Apparatus Schematic

Attachments:
A – Regulatory Correspondence
B – Standard Operating Procedures

cc: Ms. Stacie Hartung-Frerichs, Chevron Environmental Management Company, P.O. Box 6012, K2200, San Ramon, CA 94583
Ms. Julie Beck Ball, Ms. Helen Beck Kleeman, Mr. Peter Reinhold Beck, 2720 Broderick Street, San Francisco, CA 94123
CRA File Copy



SOURCE: TOPO! MAPS.

figure 1

VICINITY MAP
CHEVRON # 206127 - FORMER SIGNAL OIL BULK PLANT
2301-2311 BLANDING AVENUE
Alameda, California

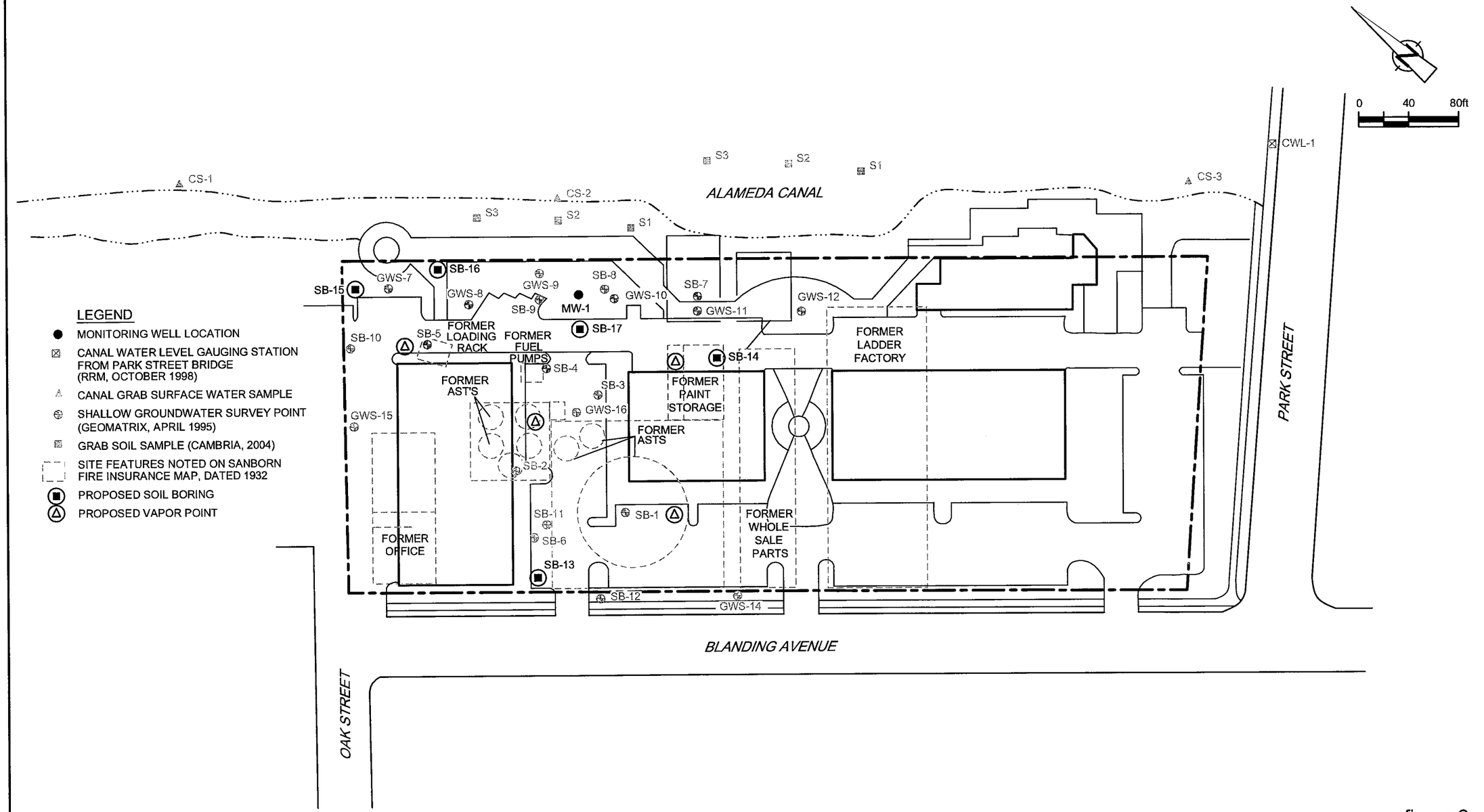


figure 2

SITE PLAN
CHEVRON # 206127 - FORMER SIGNAL OIL BULK PLANT
2301-2311 BLANDING AVENUE
Alameda, California

631916-201(PRES001)GN-WA002 JAN 11/2008

CONESTOGA-ROVERS
& ASSOCIATES

ATTACHMENT A
Regulatory Correspondence

ALAMEDA COUNTY
HEALTH CARE SERVICES
AGENCY
DAVID J. KEARS, Agency Director

ENVIRONMENTAL HEALTH SERVICES
ENVIRONMENTAL PROTECTION
1131 Harbor Bay Parkway, Suite 250
Alameda, CA 94502-6577
(510) 567-6700
FAX (510) 337-9335

October 17, 2007

Mr. Tom Bauhs
Chevron Environmental Management Company
P.O. Box 6012, K2204
San Ramon, CA 94583

Ms. Julie Beck Ball
Ms. Helen Beck Kleeman
Mr. Peter Reinhold Beck
2720 Broderick Street
San Francisco, CA 94123

Subject: SLIC Case No. RO0002466 and Geotracker Global ID T06019744728, Park Street Landing 2301-2337 Blanding Avenue, Alameda, CA 94501

Dear Mr. Bauhs and Ms. Ball:

Alameda County Environmental Health (ACEH) staff has reviewed the case file for the above-referenced site and your request for case closure dated January 10, 2006. We also received funds for regulatory oversight enclosed with correspondence dated August 9, 2007.

The site is a former fuel distribution terminal on Blanding Avenue in Alameda, CA. The site was also used as a construction yard and boat repair facility and is currently used for commercial offices and stores. Elevated concentrations of petroleum hydrocarbons have been detected in soil and groundwater in the area of the former fuel distribution terminal. Total petroleum hydrocarbons as gasoline (TPHg) and benzene have been detected in soil at concentrations up to 2,000 and 3.7 milligrams per kilogram (mg/kg), respectively. TPHg and benzene have been detected in groundwater at concentrations up to 22,000 and 6,200 micrograms per liter (µg/L), respectively. In addition, elevated concentrations of metals have been detected in soils at the site.

Based on our review of the case file, the case cannot be closed at this time. The Closure Request dated January 10, 2006 concluded that the concentrations of petroleum hydrocarbons in groundwater beneath the site have steadily decreased since installation of monitoring well MW-1. We suspect that the decrease in dissolved fuel hydrocarbons observed in monitoring well MW-1 might not accurately reflect groundwater quality at the site. As discussed in the technical comment 1 below, we request that you collect additional data to substantiate the conclusions that petroleum hydrocarbons are not migrating and discharging to Alameda Canal. In addition, the potential for indoor vapor intrusion must be evaluated. We request that you prepare a Work Plan that addresses the following technical comments by January 10, 2008.

REQUEST FOR INFORMATION

We request that you submit copies of the following reports, which are referenced in existing site investigation reports but are not in the ACEH case file:

- CET Environmental Services, Preliminary Site Assessment, January 13, 1995.

TECHNICAL COMMENTS

1. **Plume Stability.** Based on decreasing concentrations over time of total petroleum hydrocarbons as gasoline (TPHg) and benzene detected in groundwater from monitoring well MW-1, the Closure Request dated January 10, 2006 concluded that the dissolved hydrocarbon plume was not migrating and discharges to Alameda Canal were not occurring. During installation of MW-1, groundwater was first encountered at 17.5 feet bgs and rose in the well boring to approximately 7.5 feet bgs. During the initial sampling of groundwater from MW-1 on January 23, 2001, TPHg and benzene were detected at concentrations of 5,210 and 868 micrograms per liter (µg/L), respectively. In groundwater samples collected one year later on January 13, 2002, TPHg and benzene were detected at concentrations of 930 and 320 µg/L, respectively. Abrupt decreases in contaminant concentrations of this magnitude are generally not consistent with a contaminant plume that has apparently been in place for 38 years since operation of the former bulk fuel distribution facility ended. The accelerated decreases in concentrations appear more likely to be related to ambient upward groundwater flow in the well. In this case, it appears that upward ambient flow of cleaner groundwater from the lowermost interval of the well caused significant decreases in the concentrations of dissolved petroleum hydrocarbons detected in samples from the well over time. However, water quality in the well may not be indicative of shallow groundwater quality in the surrounding area. We request that you propose additional sampling of shallow groundwater in this area to assess whether the data collected in well MW-1 accurately reflects shallow groundwater quality at the site. Please present these plans in the Work Plan requested below.

2. **Tank and Piping Removals.** No information appears to be available regarding the removal of the tanks and piping and observed conditions during the removals. In the Work Plan requested below, please provide all available information on observed conditions and soil excavation at the time of strip mall construction. Please describe what efforts have been made to locate piping that may have been left in place and other any additional features of potential significance to contaminant distribution beyond those identified on Sanborn Fire Insurance maps.

3. **Potential for Vapor Intrusion.** Benzene has been detected in soil and groundwater at concentrations that exceed Environmental Screening Levels (San Francisco Bay Regional Water Quality Control Board February 2005 revised November 2006) for potential intrusion to indoor air under commercial or industrial land use. Please include plans in the Work Plan requested below to conduct soil vapor sampling to evaluate potential indoor vapor intrusion for existing buildings at the site.

4. **Metals in Soil.** Elevated concentrations of arsenic were detected in shallow soil samples collected in 1995. In addition, approximately 3.5 feet of black granular material that

contained 1,700 mg/kg of copper was observed in soil boring GSW-7. In the Work Plan requested below, please review the existing metals data and propose additional investigation that may be necessary to characterize the extent of elevated concentrations of metals at the site.

5. **Paint Storage Area and Boat Repair Facility.** A paint storage area, apparently associated with Chevron's use of the site, was located in the north-central portion of the site. In addition, the northern portion of the site was used as a construction yard and boat repair facility from 1973 to 1983. Limited analyses for VOCs have been conducted at the site. In the Work Plan requested below, please propose additional investigation to evaluate whether VOCs may have been released in the vicinity of the paint storage area and former boat yard.

6. **Hydrogeologic Cross Sections.** The cross section shown on Figure 3 of the Closure Request dated January 10, 2006 does not show soil types encountered in the borings and apparently shows a seawall that is approximately 15 feet high. Please prepare a revised hydrogeologic cross section that depicts the lateral and vertical extent of soil layers encountered, where groundwater was first encountered in borings and the static water levels, screen intervals in the monitoring well, observations of staining and odor, analytical results for soil and groundwater samples, and site features such as the former fuel pump and piping. In addition, the cross section must accurately show the depth of the seawall in relation to static water levels measured at the site. Please include the revised cross section in the Work Plan requested below.

7. **Figure 5 of Closure Request.** Figure 5 of the Closure Request shows groundwater elevations over time and a linear trend line for the concentration of TPH as diesel in groundwater from well MW-1. Only the linear trend and not actual data for TPH as diesel concentrations are shown on Figure 5. Figures 4 and 6, which show TPHg and benzene concentrations include both the linear trend and concentration data along with groundwater elevations. Showing only a linear trend on Figure 5 may be misleading since variability, correlation with water levels, and recent trends in the data are not apparent. Future presentations of time and concentration graphs must include actual concentration data and not just linear trend lines.

TECHNICAL REPORT REQUEST

Please submit technical reports to Alameda County Environmental Health (Attention: Jerry Wickham), according to the following schedule:

- **January 10, 2008** – Work Plan

These reports are being requested pursuant to California Health and Safety Code Section 25296.10. 23 CCR Sections 2652 through 2654, and 2721 through 2728 outline the responsibilities of a responsible party in response to an unauthorized release from a petroleum UST system, and require your compliance with this request.

ELECTRONIC SUBMITTAL OF REPORTS

The Alameda County Environmental Cleanup Oversight Programs (LOP and SLIC) require submission of all reports in electronic form to the county's ftp site. Paper copies of reports will no longer be accepted. The electronic copy replaces the paper copy and will be used for all public information requests, regulatory review, and compliance/enforcement activities. Instructions for submission of electronic documents to the Alameda County Environmental Cleanup Oversight Program ftp site are provided on the attached "Electronic Report Upload (ftp) Instructions." Please do not submit reports as attachments to electronic mail.

Submission of reports to the Alameda County ftp site is an addition to existing requirements for electronic submittal of information to the State Water Resources Control Board (SWRCB) Geotracker website. Submission of reports to the Geotracker website does not fulfill the requirement to submit documents to the Alameda County ftp site. In September 2004, the SWRCB adopted regulations that require electronic submittal of information for groundwater cleanup programs. For several years, responsible parties for cleanup of leaks from underground storage tanks (USTs) have been required to submit groundwater analytical data, surveyed locations of monitor wells, and other data to the Geotracker database over the Internet. Beginning July 1, 2005, electronic submittal of a complete copy of all necessary reports was required in Geotracker (in PDF format). Please visit the SWRCB website for more information on these requirements (http://www.swrcb.ca.gov/ust/cleanup/electronic_reporting).

PERJURY STATEMENT

All work plans, technical reports, or technical documents submitted to ACEH must be accompanied by a cover letter from the responsible party that states, at a minimum, the following: "I declare, under penalty of perjury, that the information and/or recommendations contained in the attached document or report is true and correct to the best of my knowledge." This letter must be signed by an officer or legally authorized representative of your company. Please include a cover letter satisfying these requirements with all future reports and technical documents submitted for this fuel leak case.

PROFESSIONAL CERTIFICATION & CONCLUSIONS/RECOMMENDATIONS

The California Business and Professions Code (Sections 6735, 6835, and 7835.1) requires that work plans and technical or implementation reports containing geologic or engineering evaluations and/or judgments be performed under the direction of an appropriately registered or certified professional. For your submittal to be considered a valid technical report, you are to present site specific data, data interpretations, and recommendations prepared by an appropriately licensed professional and include the professional registration stamp, signature, and statement of professional certification. Please ensure all that all technical reports submitted for this fuel leak case meet this requirement.

AGENCY OVERSIGHT

If it appears as though significant delays are occurring or reports are not submitted as requested, we will consider referring your case to the Regional Board or other appropriate agency, including the County District Attorney, for possible enforcement actions. California Health and Safety Code, Section 25299.76 authorizes enforcement including administrative action or monetary penalties of up to $10,000 per day for each day of violation.

If you have any questions, please call me at (510) 567-6791.

Sincerely,

Jerry Wickham
Hazardous Materials Specialist

Enclosure: ACEH Electronic Report Upload (ftp) Instructions

cc: Mr. Brian Carey
Conestoga-Rovers & Associates
2000 Opportunity Drive, Suite 110
Roseville, CA 95678

Mr. Monroe Wingate
3030 Bridgeway, Suite 231
Sausalito, CA 94965

Donna Drogos, ACEH
Jerry Wickham, ACEH
File

CONESTOGA-ROVERS
& ASSOCIATES

ATTACHMENT B

Standard Operating Procedures

CRA

STANDARD FIELD PROCEDURES FOR SOIL BORING AND 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 (PG).

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° 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

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.

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 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. 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 feet 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.

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°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.

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 55-gallon 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.

STANDARD FIELD PROCEDURES FOR SOIL VAPOR PROBE INSTALLATION AND SAMPLING

DIRECT PUSH AND VAPOR POINT METHODS

This document describes Conestoga-Rovers & Associates' 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

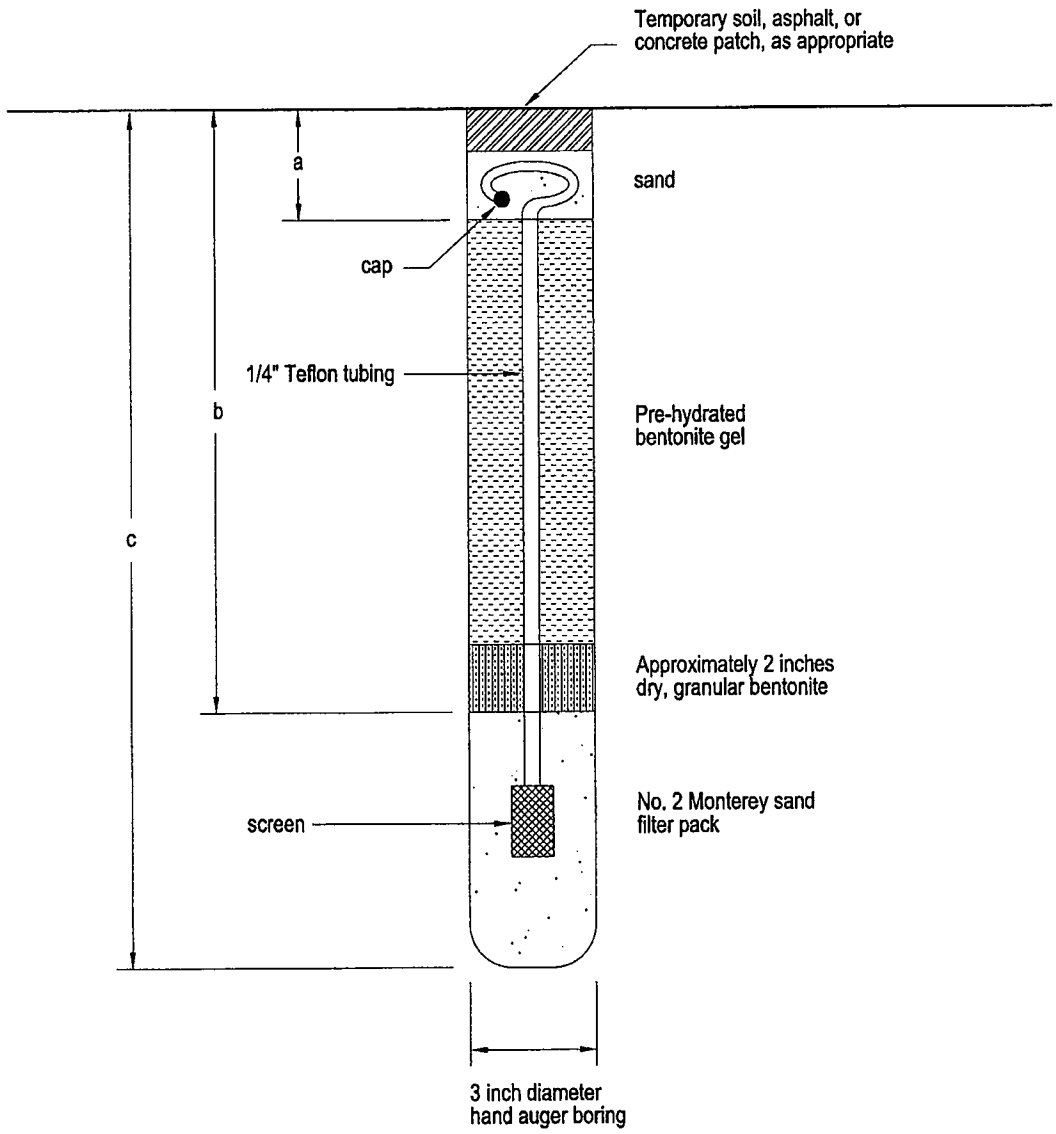
an equivalent EPA-approved detergent. Once the sampling is completed, the borings are filled to the ground surface with neat cement.

Shallow Soil Vapor Point Method for Soil Vapor Sampling

The shallow soil vapor point method for soil vapor sampling utilizes a hand auger or drill rig to advance a boring for the installation of a soil vapor sampling point. Once the boring is hand augered to the final depth, a 6-inch slotted probe, capped on either end with brass or Swagelok fittings, is placed within 12-inches of number 2/16 filter sand (Figure A). Nylon tubing of ¼-inch inner-diameter of known length is attached to the probe. A 2-inch to 12-inch layer of unhydrated bentonite chips is placed on top of the filter pack. Next pre-hydrated granular bentonite is then poured into the hole to approximately and topped with another 2-inch layer of unhydrated bentonite chips or concrete, depending if the boring will hold one probe or multiple probes. 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 vacuum pump and a tedlar bag. Immediatelyafter purging, soil-vapor samples will be collected using the appropriate size Summa canister with attached flow regulatorand sediment filter. 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 and transported under chain-of-custody to a state-certified analytic laboratory. Samples should never be cooled due to the possibility of condensation within the canister.



FIGURE

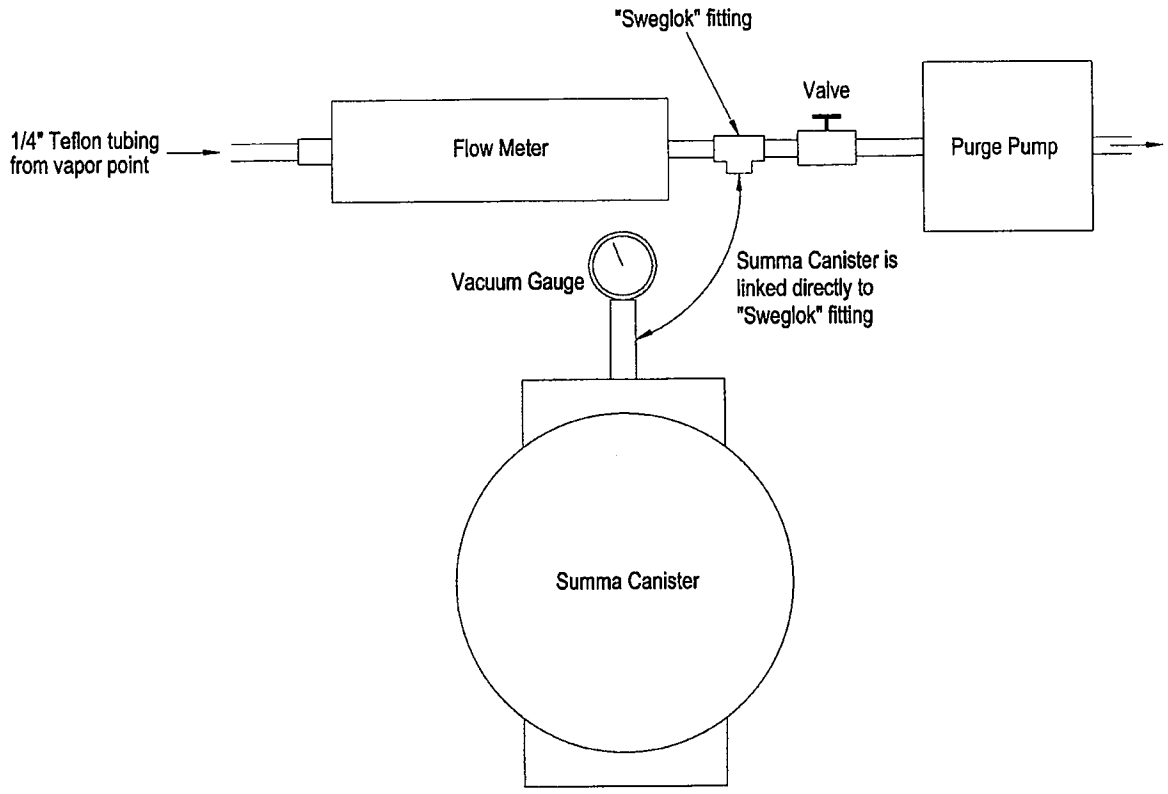
A

Schematic Not to Scale

CONESTOGA-ROVERS
& ASSOCIATES

Soil Vapor Point

09/25/02



FIGURE

B

Schematic Not to Scale

S:\10-TEXACO\TEX-SITES\211273\FIGURES\VAPOR-DIAG.DWG

CONESTOGA-ROVERS
& ASSOCIATES

Soil Vapor Sampling Apparatus Diagram