

Crosby & Overton

Industrial & Environmental Services

September 17, 1992

STID 392

Richard Heitt
SFBRWQCB
2101 Webster Street
Oakland, California 94621

Dear Mr. Heitt,

Enclosed please find a copy of Crosby & Overton's recommendation for case closure for Mr. Gregg Weatherford's Weatherford BMW, 5903 Christie Avenue, Hayward, California site.

In this report I have tried to make it as convenient as possible for you to review. To this end I have reproduced the "recommended format for case closure referrals to RWQCB for site cleanup certification draft 6/19/89 DCW" in italics, and responded to each question in bold lettering directly below.

Also, I have included two Crosby & Overton reports which are cited in the closure request (see the two enclosed xeroxed and stapled reports). These two reports, as well as others, should have already been sent to your office. If these should prove to be redundant, please feel free to dispose of them.

Should you have any questions or comments, please do not hesitate to call me at (510) 633-0336.

Sincerely,

Darrell Taylor

Darrell Taylor
Environmental Geologist

RECOMMENDATION FOR CASE CLOSURE

WEATHERFORD BMW
5903 CHRISTIE AVENUE, EMERYVILLE,
CALIFORNIA
9-10-92

**This letter report follows the format recommended in the "Recommended Format for
Case Closure Referrals to RWQCB for Site Cleanup Certification"
(Draft 6/19/89 DCW)**

I. Background History of the Case

An assessment should be made as to the thoroughness of the investigation relative to the entire tank system including all tanks and associated piping. At a minimum, this should include a discussion of:

a) Cause and location of the leak, how it was discovered, estimate of the volume the release, duration of the leak, and effectiveness of the leak detection monitoring program

On April 18, 1989 the now defunct Mega General and Environmental Contracting, Inc. of Richmond, California (MEGA) removed two underground storage tanks from Weatherford BMW, 5903 Christie Avenue, Emeryville, California (see figure 1) after the termination of their lease. The following information is based on MEGA's notes dated April 18, 1989.

one- 2000 gallon gasoline tank- no indication of leakage, or overfilling were observed visually or in soil samples collected underneath the tank

one- 500 gallon waste oil tank- no defects could be found in the tank, suspected overfilling

The waste oil tank leakage was discovered when hydrocarbon stained soil was encountered during the waste oil tank pull. Volume and duration of the leak are unknown. The leak was not observed until the tank was pulled (leakage probably due to overfilling).

b) Pollutants involved

The pollutant involved was waste oil only, TPH-G+BTEX analysis indicated that no gasoline had leaked.

II. Investigative Methods

An overall evaluation should be made of the investigative methods used, and the validity of the data generated. At a minimum the following methods and procedures should be reviewed for appropriateness:

a) *Soil sampling methodology*

See Crosby & Overton (C&O) soil sampling SOP attached.

b) *Groundwater monitoring well design, installation, development*

See Crosby & Overton's October 18, 1989 letter report.

Three 4" groundwater monitoring wells were installed with well MW-2 placed within 10' of the excavated tank site in the estimated down-gradient direction.

c) *Groundwater sampling methodology*

See Crosby & Overton's groundwater sampling SOP attached.

d) *Certified laboratory, chain of custody procedures, sample preservation, holding times, sample preparation methods, and detection limits*

See attached SOP for soil and groundwater monitoring well sampling and laboratory analysis at the end of each C&O letter report. C&O holds samples for no longer than 48 hours. All samples are kept in a chilled environment under chain of custody and delivered to a California state certified laboratory (Quanteq (previously Med-Tox) of Pleasant Hill, California). All 40 ml VOA's are prepared by Environmental Sampling Supply. They are pre-cleaned and contain 5ml Hcl when delivered to C&O.

e) *Soil and/or groundwater analysis performed in accordance to table 2 of Regional Board Staff Recommendations*

See C&O letter reports- Cumulative analyses have included:

- Volatile Organic Compounds (EPA Method 8240)
- Cadmium in water
- Total Chromium in water
- Nickel in water
- Lead in water
- Zinc in water
- Total Oil and Grease Methods 9071 and 5520 B,C,F
- TPH-G+BTEX methods 5030/8020 Ca DOHS LUFT Manual
- TPH-D 3510/8020 (FID) and 3520 GCFID
- Total Organic Halogen 9020 - *when performed*
- Lead 3050/7420

Soil samples were taken at the time of the tank pull and during well installations. As of August 17, 1992 a total of four groundwater monitoring well sampling events have been performed.

2" #4

6/27/89 report for MW-1 in storage tank - samples collected 6/28/89 - samples analyzed 6/28/89 - samples analyzed 6/28/89

performed only 1 time 8/17/92

f) Methods used to measure free product thickness

A sterile bailer was inserted into each well prior to purging. The liquid in the bailer was noted for any free product or sheen. Based on this method there has never been any free product or sheen in the wells.

g) Method used to measure groundwater elevations

A pre-cleaned electrical water interface probe was used to gauge groundwater elevations to the nearest 0.01 foot in the three groundwater monitoring wells as part of each sampling event. All three wells had been surveyed both horizontally and vertically by a licensed surveyor to the nearest 0.01 foot.

III. Extent of Soil and Groundwater Pollution

The vertical and lateral extent of soil and groundwater contamination should be defined to non-detectable levels. All graphic presentations of this data should be reviewed. An assessment should be made as to whether the location and number of monitoring wells and soil samples are adequate in order to define:

a) Vertical and lateral definition of soil contamination

See figure A (attached) for an estimate of the localized contamination plume based on soil sampling concentrations.

b) Vertical and lateral definition of free-product and dissolved constituents

No free product was ever observed- see figure B attached and Table 1 Analytic Summary, pg 3 of C&O January 2 1992 letter report.

IV. Local and Regional Hydrogeology

Reference should be made to the groundwater sensitivity, site specific geology, and hydrogeologic setting of the area. All nearby surface water bodies, municipal, and domestic wells of concern should be noted. An evaluation should be made of all potential pollutant pathways and hydraulic connections. The following information should also be reviewed:

a) Local gradient evaluation and seasonal fluctuations

Local gradient is 0.004 ft/ft to the west. From September of 1989 to August of 1992, groundwater elevation has varied from a low of 2.49' to a high of 4.05' above sea level.

b) Graphic presentations such as cross-sections and gradient maps

See figures A & B attached.

c) *Aquifer characteristics*

Based on drilling logs: pea gravel and sandy fill to 5' below ground surface (BGS), clayey silts and sand to 16' BGS, clay to final drilling depth of 21' BGS. This site was built on fill material. This fill material is highly variable, but consists largely of imported clayey and sandy soil, and industrial and construction waste and refuse to a depth of at least 10 feet.

d) *Soil permeability*

Pea gravels are fill material with moderate to high estimated permeability. Clayey silts and sand, and clays would generally be less permeable. *really?* ☹️

V. *Beneficial Uses*

None Known. *No*

An evaluation should be made of all the existing and potential impacts on beneficial uses of surface and groundwater. The following information should be summarized:

a) *Existing beneficial uses as contained in the Regional Board's Basin Plan, and all potential future beneficial uses*

No known beneficial uses or potential beneficial uses. *No*

b) *Well surveys (municipal, agricultural, domestic)*

No municipal, agricultural, or domestic wells known in the area.

c) *Summary of factors affecting long-term fate of contaminants*

Organic hydrocarbons should be metabolized by microorganisms, sampling showed metal concentrations to be well below soluble threshold limit concentration (STLC) levels.

VI. *Remediation Activities*

An evaluation should be made as to the effectiveness of all remediation activities undertaken including:

a) *Rational for selected remedial option*

Due to the small quantity of contamination, the soil (approximately 15 cubic yards) was excavated and disposed of at Casmalia Resources, Casmalia, California- a class I facility.

b) Soil-remediation method and effectiveness

Not applicable. → *ce: did you re-sample the excavation?*

c) Groundwater remediation method(s) (free-product and dissolved constituents)

Not applicable.

d) Interim remediation actions undertaken

None.

e) Impact (potential and/or existing) of remedial actions on beneficial uses

Excavation pit was backfilled with clean compacted backfill material.

VII. Remediation Effectiveness

An evaluation should be made of the effectiveness of all remediation activities undertaken at the site. At a minimum, the following information should be addressed:

a) Are final cleanup levels consistent with State Water Resources Control Board Resolution 68-16 "Statement of Policy with Respect to Maintaining High Quality of Waters in California"?

For all groundwater monitoring well sampling events (from installation to present sampling event) all contaminant levels have been less than 1.8 ppm.

TOG = ND to 1.8 ppm

TPH-D = ND to 1.6 ppm

BTEX = ND

b) Verification monitoring program and criteria, rational, sampling number, frequency, and duration

Three groundwater monitoring wells installed- one in June of 1989 and two additional wells in September of 1989.

Sampling was performed on 9/89, 5/91, 11/91, and 8/92.

3/11/90

6

*↓
VOC + 5 metals only*

c) *Impact (potential and/or existing) of residual pollutants on beneficial uses*

None known.

VIII. *Sign-off*

Cases which will be considered for sign-off by the Regional Board or Executive Officer are those in which 1) the release has not impacted groundwater, and does not appear to pose a potential threat to ground and/or surface water, or 2) groundwater has been impacted and the site has been sufficiently remediated. This section should include:

a) *A summary of findings and rationale for sign-off recommendation*

At this site a 500 gallon waste oil tank was found to have released a small quantity of waste oil probably due to overfilling. The contaminated soil was excavated and properly disposed of. Clean backfill material was placed in the excavation pit. Initial groundwater samples indicated very low levels of contamination (ND to < 1.8 ppm of TOG, TPH-d, and BTEX) all subsequent sampling events continue to indicate very low contamination levels.

~~And~~ And so based on ...
this is not a conclusion,

If you should have any questions or comments, please do not hesitate to call me at (510) 633-0336.

Written By:

Reviewed By:

Darrell Taylor

**Darrell Taylor
Environmental Geologist**

James A. Jacobs

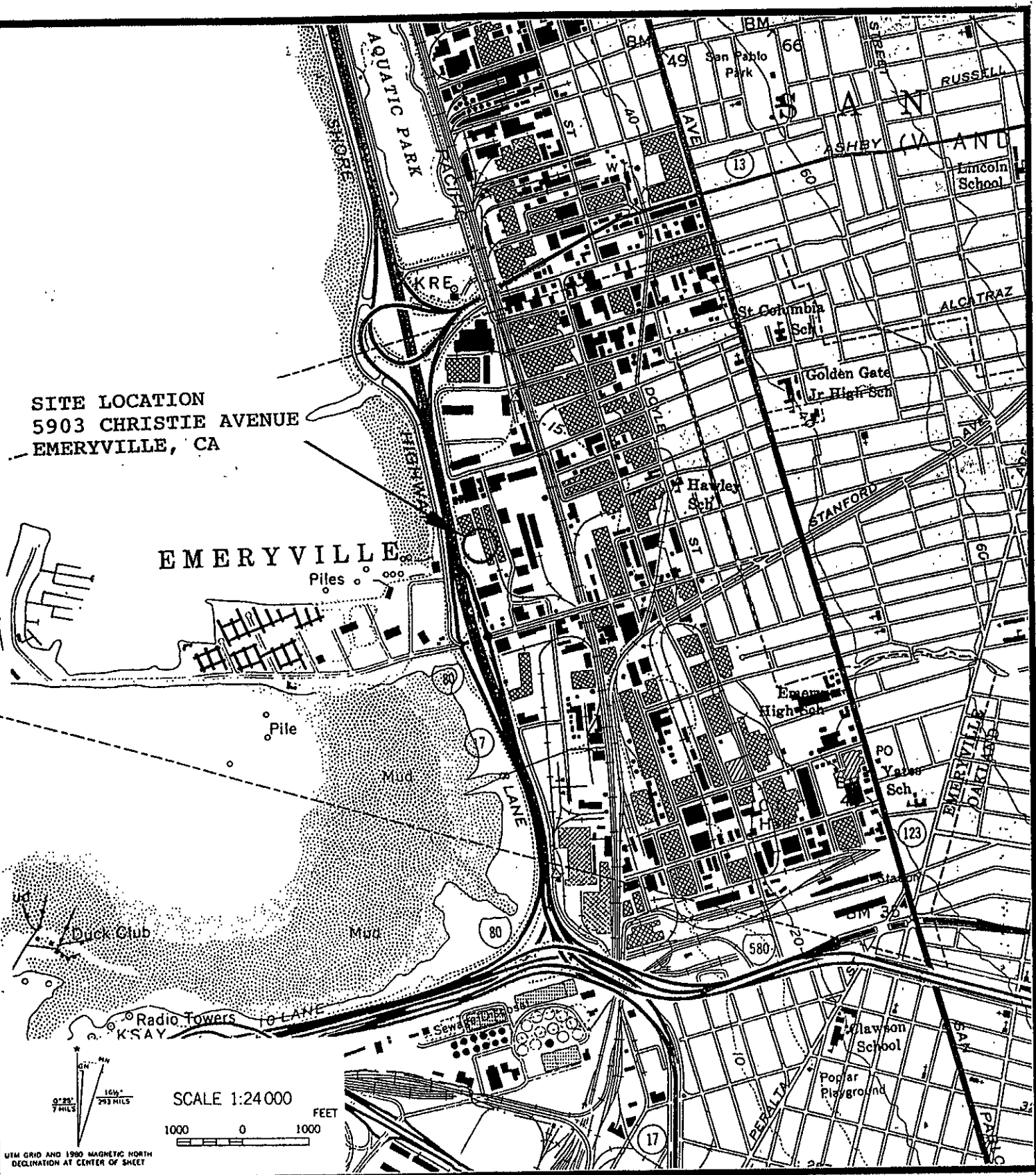
**James A Jacobs
California Registered Geologist
Number 4815**



James A. Jacobs

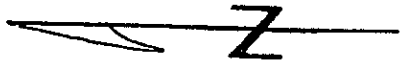
Weatherford 5903 christie closure

SITE LOCATION
 5903 CHRISTIE AVENUE
 EMERYVILLE, CA

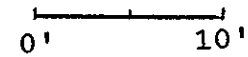
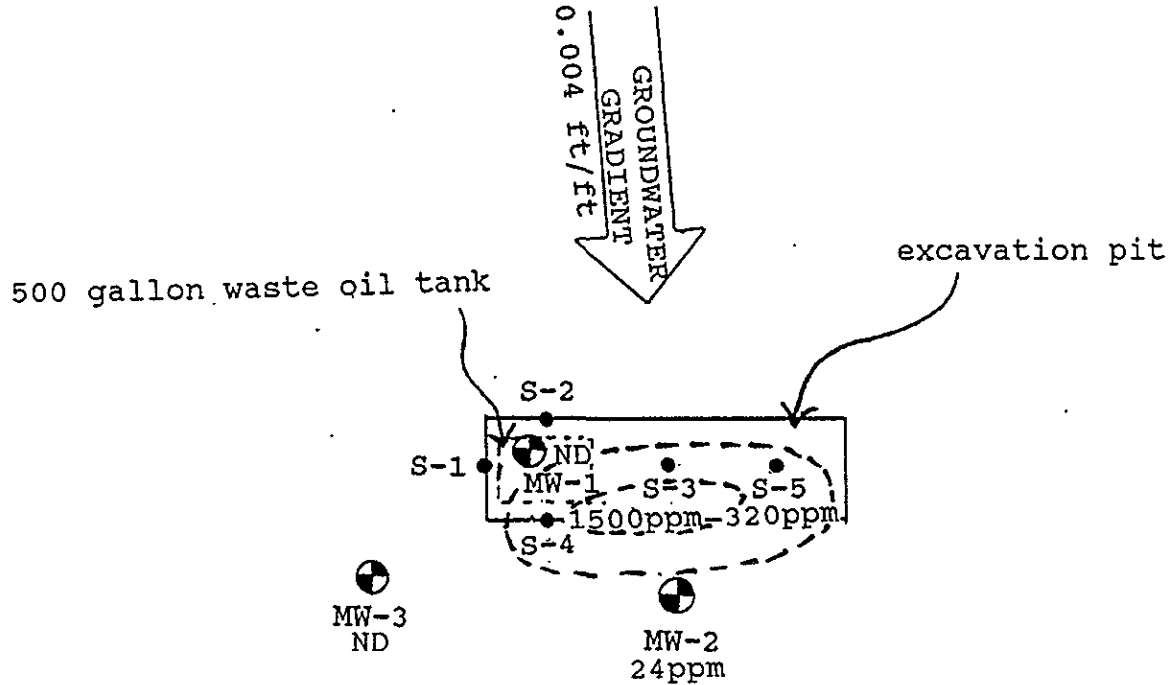


CROSBY & OVERTON, INC.

FIGURE 1
 AREA MAP



building
5903 Christie Avenue
Emeryville, California



- ⊕ groundwater monitoring well
- soil sample

VALUES GIVEN IN PPM REPRESENT TOG ANALYSIS IN SOIL



CROSBY & OVERTON, INC.
8430 AMELIA STREET • OAKLAND, CA 94621

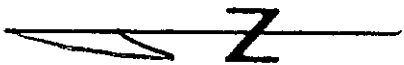
(800) 821-0424 • (415) 633-0336
FAX (415) 633-0759

Figure A
Contamination Plume Based on
Total Oil and Grease in Soil Analysis

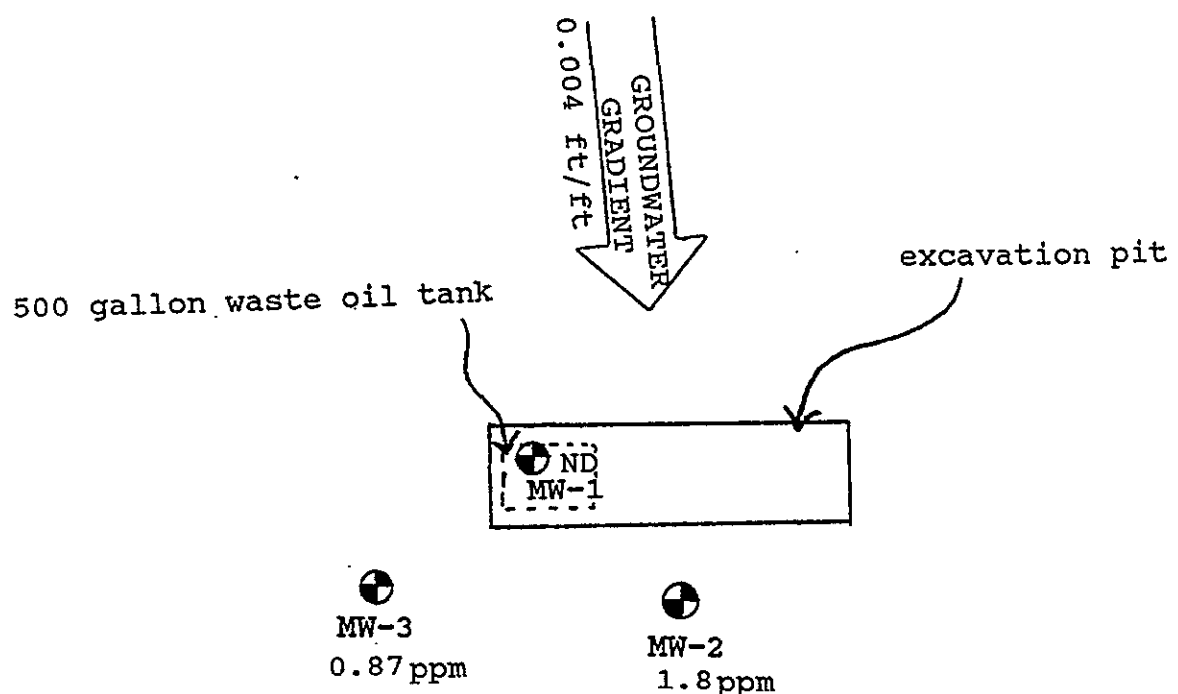
DATE: 7-27-92

JOB NUMBER: 9343-S

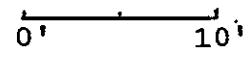
DRAWN BY: D. Taylor



building
5903 Christie Avenue
Emeryville, California



⊕ groundwater monitoring well



VALUES GIVEN IN PPM REPRESENT INITIAL TOG ANALYSIS IN GROUNDWATER



CROSBY & OVERTON, INC.
8430 AMELIA STREET • OAKLAND, CA 94621

(800) 821-0424 • (415) 633-0336
FAX (415) 633-0759

Figure B
Maximum Groundwater
Total Oil and Grease Analyses

DATE: 7-27-92

JOB NUMBER: 9343-S

DRAWN BY: D. Taylor

STANDARD OPERATING PROCEDURES

Collecting, Labelling, and Transporting Soil Samples

Soil samples from drilling operations are collected using a California split-spoon sampler. The sampler holds three, pre-cleaned, six inch long by two inch diameter stainless steel tubes. The sampler is inserted into the hollow stem auger and hammered into the undisturbed soil in the center of the borehole utilizing a 140 pound drop hammer. After the sampler is driven at least 18 inches into undisturbed soil (the length of three sample tubes) it is removed, opened, and the middle tube is extracted. Immediately after extraction, the tube ends are sealed with Teflon film[®], plastic cap plugs, and wrapped with duct tape to prevent the loss of any volatile compounds. Soil samples collected from drill cuttings, soil piles, and tank excavations are collected in a similar manner (i.e., the soil is collected in a stainless steel tube and secured in the same fashion as outlined above). The sample is then labeled with a unique label (which includes the project number, site, date, time, sampler signature, and unique sample number), packed on Blue Ice[®], and transported in a refrigerated environment under Chain-of-Custody documentation to a California State certified hazardous materials laboratory for the analyses requested. Soil sampling is performed in accordance with the California Regional Water Quality Control Board (RWQCB) procedures described in the *Leaking Underground Fuel Tank (LUFT) Field Manual*, the *Tri-Regional Board Staff Recommendations for Preliminary Evaluation and Investigation of Underground Tank Sites*, and local regulatory guidelines.

Field observations include lithologic logging of soil borings and samples using the Unified Soil Classification System (USCS); visual and olfactory inspections for discoloration and/or odor; and screening utilizing a photoionization detector (PID) and/or organic vapor analyzer (OVA).

STANDARD OPERATING PROCEDURES**Monitoring Well Sampling**

A minimum of three well volumes are pumped from each well, each well is permitted to recharge to $\geq 80\%$ of original capacity and stabilize. Stabilization is determined by measuring the parameters of pH; temperature; and electrical conductivity. When two subsequent measurements of these three parameters are within 10% of each other, the well is considered stabilized and is sampled.

The samples are collected using a new polyethylene bailer with a bottom siphon and nylon cord. The bailers are disposable and therefore, never reused. Duplicate water samples for volatile organic compounds are collected from the well and siphoned into three (3) clear 40 ml VOA vials with all headspace removed, and preserved with hydrochloric acid. For all other analyses, samples are collected in 950 ml amber glass bottles. All samples are labeled, chilled to 4°C (utilizing either crushed ice or Blue-Ice®) in an ice chest, and sent to a California State Certified hazardous materials testing laboratory under chain-of-custody documentation.

Groundwater sampling is performed in accordance with the California Regional Water Quality Control Board (RWQCB) procedures described in the *Leaking Underground Fuel Tank (LUFT) Field Manual*, the *Tri-Regional Board Staff Recommendations for Preliminary Evaluation and Investigation of Underground Tank Sites*, and local regulatory guidelines.

Standard Environmental Protection Agency (EPA), San Francisco Bay Regional Water Quality Control Board (SFBRWQCB), and Department of Health Services (DHS) methodologies are routinely utilized.

Chain of Custody documentation accompanies all samples to the laboratory. A copy of the Chain of Custody documentation is attached to the Certificate of Analysis.