Shell Oil Products US

May 29, 2009

Re: Additional Soil Vapor Survey Work Plan
Former Shell-Branded Service Station
15275 Washington Avenue
San Leandro, California

Dear Mr. Jerry Wickham:

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.

Sincerely,
Shell Oil Products US

Denis L. Brown
Project Manager

20945 S. Wilmington Avenue, Carson, CA 90810 P: (559) 645-9306; F: (559) 645-5643

May 29, 2009
Project: SCA1129M1
SAP: 135602

Mr. Jerry Wickham, PG, CEG, CHG
Senior Hazardous Materials Specialist
Alameda County Health Care Services Agency
1131 Harbor Bay Parkway, Suite 250
Alameda, CA 94502-6577

Re: Additional Soil Vapor Survey Work Plan
Former Shell-branded Service Station
15275 Washington Avenue
San Leandro, California

DELTA

Dear Mr. Wickham,

Delta Consultants (Delta), on behalf of Shell Oil Products US (Shell), has prepared this work plan for an additional soil vapor investigation at the site referenced above. In a letter to Mr. Denis Brown of Shell dated March 31, 2009, the Alameda County Health Care Services Agency (ACHCSA) requested additional soil vapor samples. This work plan addresses that request.

Site Description

The subject site is located on the northwest corner of the intersection of Washington Avenue and Lewelling Boulevard in San Leandro, California (Figure 1). The area is a mix of residential (predominantly multi-family units) and commercial properties. A mobile home park is directly adjacent the site to the west. An ARCO service station is still in operation across Lewelling Blvd. at the southwest corner of the intersection of Lewelling Blvd and Washington Avenue, and is also an open leaking underground fuel tank (LUFT) case.

The subject site, formerly a Shell-branded service station, is currently used as an automotive emissions testing facility (*Speedy Smog Check*) and tire service center (*Big O Tires*). Site details are shown on Figure 2.

a member of: Inogen Environmental Alliance

312 Piercy Road San Jose, California 95138 USA
Phone +1 408.224.4724 / USA Toll Free 800.477.7411
Fax +1 408.225.8506 www.deltaenv.com

Previous Investigation

In June 2008 Delta conducted a soil vapor survey consisting of 14 soil vapor sampling points (P-10 through P-23). The results of this survey indicate a plume of impacted soil vapor extends off-site, beneath an adjacent trailer park to the west of the site as shown on Figure 2.

WORK PLAN

The following sections describe tasks to be performed during completion of a soil vapor investigation at the site. Delta proposes to collect soil vapor samples at six off-site locations P-24 through P-29 (Figure 2) in order to evaluate the extent of the impacted soil vapor. The average depth to groundwater in the survey area for the last two semi-annual sampling events ranged from 6.31 to 7.42 feet below top of casing. Delta proposes to collect soil vapor samples at a depth of 5 feet below ground surface (bgs).

In addition, soil vapor samples will be collected at depths of 3 and 8 feet bgs at each sample location for analysis of carbon dioxide and oxygen only, for evaluation of attenuation factors associated with the presence of these gases. If groundwater is encountered, a shallower depth may be selected based on field observations. Soil vapor sampling will be conducted per Department of Toxic Substances Control (DTSC) guidelines and Shell policy.

Pre-survey Activities

Delta will obtain necessary access and drilling permits from the property owner(s) and Alameda County Public Works Agency, and prepare a site-specific health and safety plan prior to initiating field activities. Delta will mark the location of each proposed soil vapor boring, and contact Underground Services Alert a minimum of 48 hours prior to drilling. In addition, a utility locating contractor will be retained to perform a geophysical survey of the proposed boring locations. Each sample location will be air-knifed to the desired sampling depth (3, 5, and 8 feet bgs) to minimize the possibility of drilling equipment encountering unidentified underground utilities. If groundwater is encountered a new location will be selected and excavated to a shallower depth with the location and depth noted. The excavation will then be backfilled with the excavated soil to within 6 to 12 inches of the surface topped with hydrated bentonite chip cap to the surface, and allowed to equilibrate with surrounding soil for at least two weeks with no measurable rain during this time period.

Soil Vapor Sampling

Delta will oversee soil vapor sampling performed by a licensed subcontractor utilizing the *Geoprobe Post Run Tubing System*®. Vapor sampling probes 1.75-inches in diameter will be pushed to the desired sampling depth using the hydraulic ram on a direct-push sampling rig. Once the desired sampling depth is reached, a hydrated bentonite chip cap will be placed around the drive rod at the ground surface to seal the top of the borehole from ambient air. Following this, 0.25-inch diameter Teflon tubing will be attached to a specially designed coupling mechanism and lowered down the center of the push rods. Once the tubing is coupled with the sampler, the sampler can be retracted to expose a filter screen (see Attachment A). A minimal equilibration time of 20 minutes is required before sample collection, per DTSC guidelines.

During this time the connections between the down-hole tubing and the vacuum-pump-manifold can be tested. The down-hole tubing is attached to a vacuum pump through a vacuum-pump-manifold (consisting of a flow regulator and vacuum gauge) with an air tight valve, and the other end of the

manifold is also connected to the vacuum pump with an air tight valve. The valve between the down-hole tubing and the manifold will be closed, the vacuum pump will create a vacuum and then the valve between the vacuum pump and the manifold will be closed and the applied vacuum monitored for a period of ten minutes by observing the attached vacuum gauge. When no leak is detected sampling will continue.

Vapor Purging

Prior to sample collection, the vacuum pump will extract one volume of air (dead air) from the sample tubing and manifold. Purging one dead air volume will remove any stagnant, non-representative air that exists within the sample tubing and equipment with minimal subsurface air influence. Minimizing the purged volume is preferable in order to obtain reliable vapor samples from the targeted depth intervals (API, 2005). The appropriate purge time for one dead air volume will be calculated based on the length and diameter of the tubing and the flow rate, controlled by a flow regulator set at an average flow rate of 200 milliliters/minute. When purging is complete, the vapor tight valve between the vacuum pump and the vacuum-pump-manifold will be closed.

Leak Test Compound

During sample collection, Delta field staff will use isopropyl alcohol leak tracer in order to evaluate the integrity of the system. To complete this activity, gauze or cloths saturated with isopropyl alcohol (IPA) will be placed where vapor probe sampling tubes emerge from the borehole, near each tubing joint (if any) within the sampling system, and near all manifold valve connections. Laboratory analytical results for IPA will be used to determine the air-tightness of the sampling system.

Vapor Sample Collection

Sample collection will begin by attaching an empty *Tedlar*® bag to the vacuum pump outflow and starting the vacuum pump, opening the valves on either end of the vacuum pump manifold and monitoring the filling of the *Tedlar*® bag. If the *Tedlar*® bag does not begin filling the vacuum gauge will be checked and the reading recorded every 10 minutes. If the *Tedlar*® bag does not fill within 30 minutes, an evaluation will be made based on field observations to continue or discontinue sampling at that location. When sampling is complete the *Tedlar*® bag will be sealed, labeled and placed in a location out of direct sunlight.

Multiple Depth Sampling

For multiple sampling depths in each location, three separate boreholes arranged in a cluster will be cleared with the air knife and marked for the specific depth.

Soil Vapor Sample Analysis

The *Tedlar*® bags will be submitted within 72-hours of sample collection to a California-state-certified laboratory under proper chain-of-custody documentation, and will be analyzed for total petroleum hydrocarbons as gasoline (TPH-g), benzene, toluene, ethylbenzene, and xylenes (BTEX compounds), methyl ter-butyl ether (MTBE), and ter-butyl alcohol (TBA) using Environmental Protection Agency (EPA) Method 8260. Samples will also be analyzed for the presence of IPA applied for leak testing. Analysis for carbon dioxide and oxygen will be performed by American Society for Testing and Materials (ASTM) Method 1945-96.

Soil Vapor Investigation Report

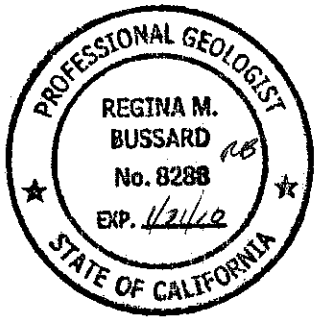
Following the soil vapor investigation field activities, Delta will prepare an Investigation Report describing our field methods, results and the analytical laboratory reports.

SCHEDULE

Delta will commence field activities within approximately 45 days of receipt of work plan approval from the CRWQCB.

If you have any questions, please call Suzanne McClurkin-Nelson, (Delta) at (408) 826-1875 or Denis Brown, (Shell) at (707) 865-0251.

Sincerely,
Delta Consultants



Suzanne McClurkin-Nelson
Senior Project Manager

Regina Bussard, P.G.
Project Geologist

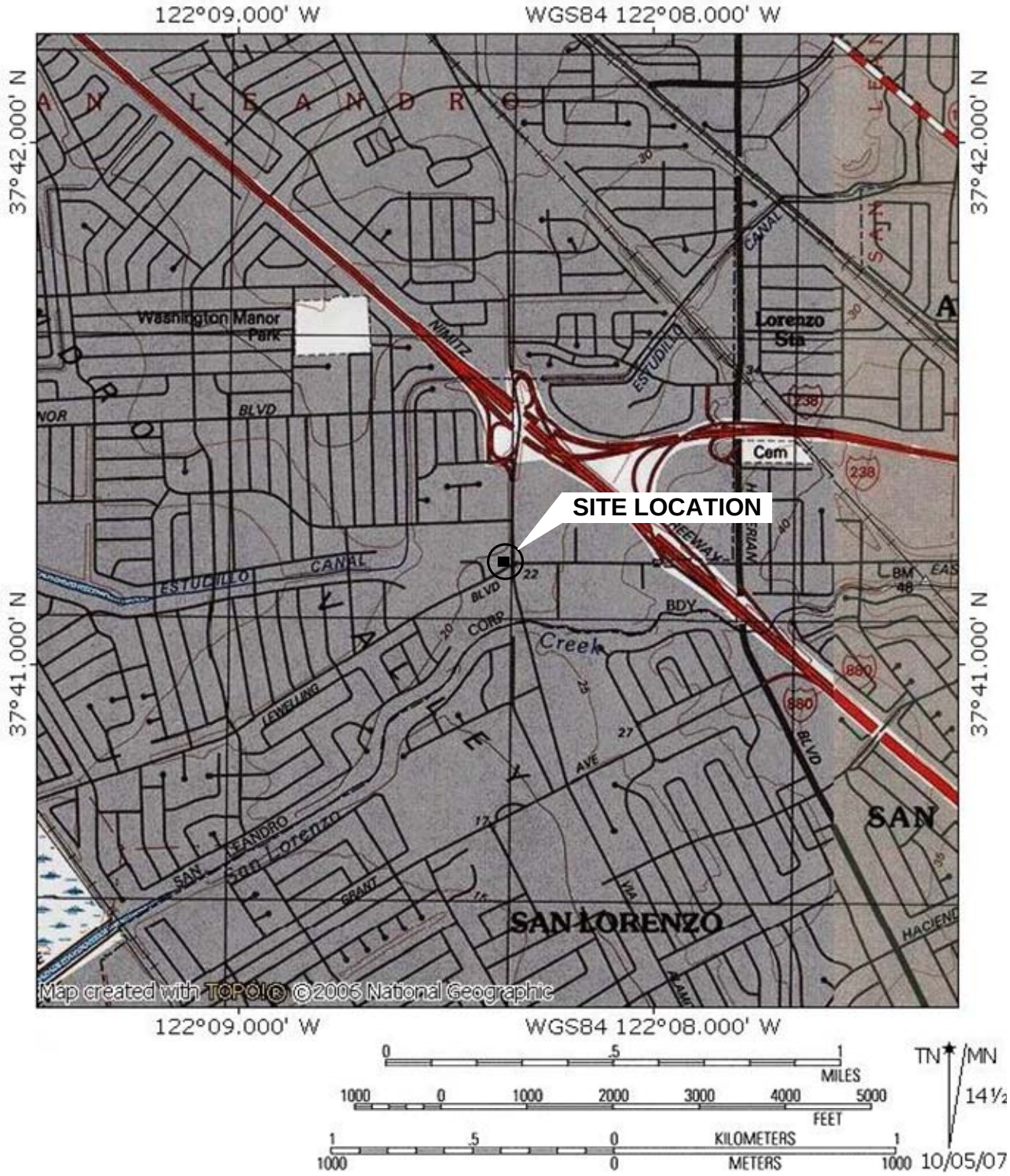
cc: Denis Brown, Shell Oil Products US, Carson
Mike Bakaldin, San Leandro Fire Department, San Leandro
Salel Enterprises c/o Foothill Hardware, Oakland

Attachments:

Figure 1 – Site Location Map
Figure 2 – Site Map
Figure 3 – Vapor Sampling Flow Diagram
Attachment A – Vapor Sampling Procedures (Gregg Drilling)

FIGURES

DRAWING NUMBER	APPROVED BY	CHECKEDBY	DRAWN BY
SCA152751A			J.F.F.



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SHELL OIL PRODUCTS US
FORMER SHELL SERVICE STATION
SAN LEANDRO, CALIFORNIA

FIGURE 1
SITE LOCATION MAP

15275 WASHINGTON AVENUE
SAN LEANDRO, CALIFORNIA

PROJECT NUMBER SCA15275-1

APPROVED BY

CHECKED BY

DRAWN BY AD 5/26/09

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W E

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P-26 P-20 P-25 P-27 P-18 P-17 P-19 P-22 P-21 P-12 P-28 P-16 P-23 P-14 P-11 P-15 P-13 P-29 P-24 P-10

S-19 S-18 S-16 S-1 S-17 S-5 S-9 S-6 S-10 S-15 S-7 S-8 S-13 S-12 S-11 S-14

BIG O TIRE STORE

BIG O TIRE STORE

SALEL'S MOBILE HOME PARK

FORMER BUILDING LOCATION

ET-2

FORMER DISPENSER ISLANDS

SV-1

SPEEDY SMOG

FORMER DISPENSER ISLAND

FORMER USTs

SP-1

WASHINGTON AVENUE

LEWELLING BOULEVARD

LEGEND

- P-24 — PROPOSED SOIL VAPOR PROBE LOCATION AND DESIGNATION
- S-15 — GROUNDWATER MONITORING WELL LOCATION AND DESIGNATION
- S-1 — GROUNDWATER MONITORING WELL MODIFIED FOR SOIL VAPOR EXTRACTION
- SV-1 — SOIL VAPOR EXTRACTION WELL LOCATION AND DESIGNATION
- P-18 — SOIL VAPOR PROBE LOCATION AND DESIGNATION
- ET-1 — CURRENT BUILDING LOCATION LOCATION AND DESIGNATION
- EXTENDED TEST WELL
- TRAILER PARK STRUCTER
- FORMER BUILDING
- FORMER UST LOCATION
- PROPERTY LINE
- FENCING

0 25 50

SCALE IN FEET

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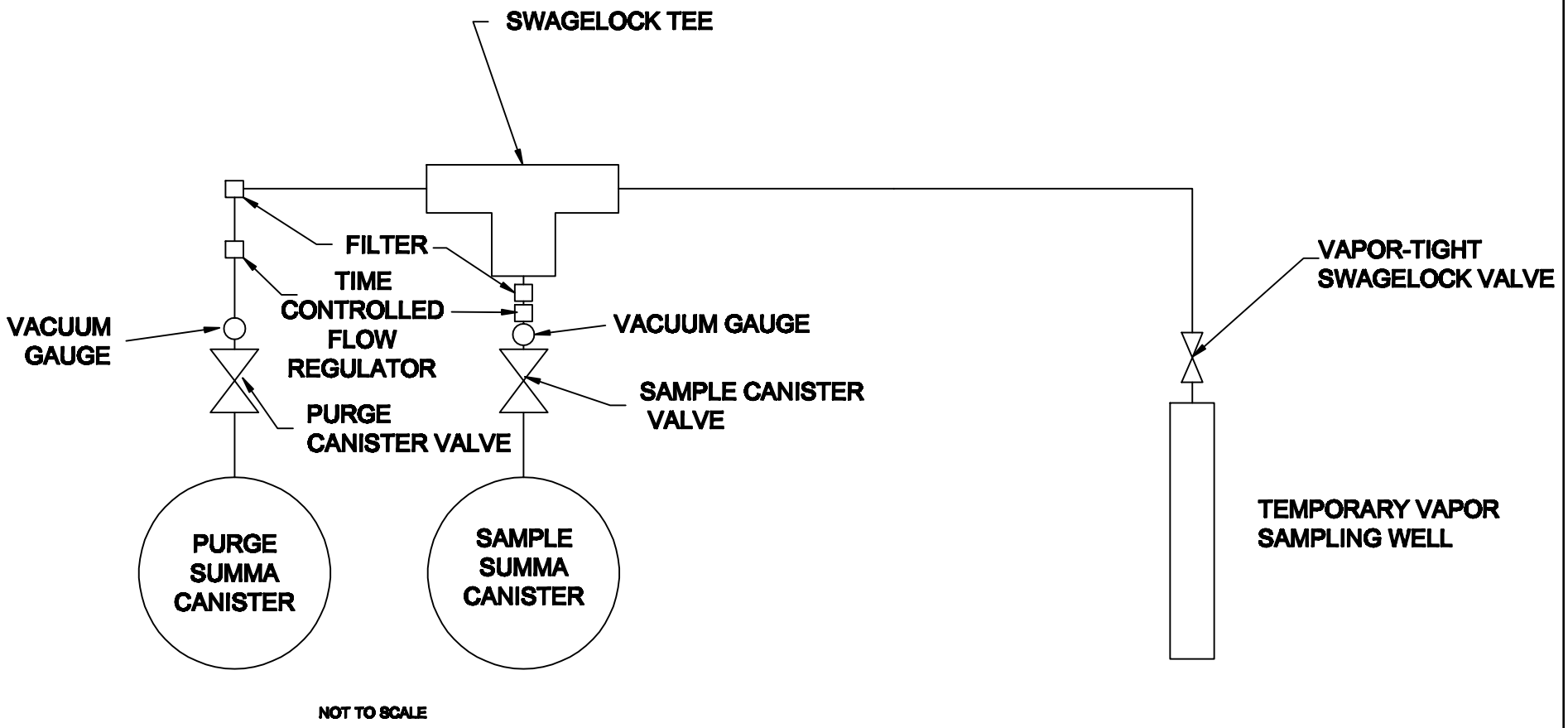
SAN LEANDRO, CALIFORNIA

FIGURE 2

SITE MAP WITH
PROPOSED SAMPLE LOCAITONS

15275 WASHINGTON AVENUE
SAN LEANDRO, CALIFORNIA



NOT TO SCALE

FIGURE 3
VAPOR SAMPLING FLOW DIAGRAM

SHELL SERVICE STATION
1129 MISSION STREET
SANTA CRUZ, CALIFORNIA

PROJECT NO. SJ80-00A-1.2006	DRAWN BY JL 06/08/06
FILE NO. SJ80-00A-1.2006	PREPARED BY HB
REVISION NO. 1	REVIEWED BY

DELTA

Y:_Shell Sites\1\1129 Mission Street\FIGURE 3(1129 MISSION)_VAPOR SAMPLING FLOW DIAGRAM.dwg, 8.5 X 11 (H) (2), 4/22/2008 9:34:37 AM

ATTACHMENT A

VAPOR SAMPLING PROCEDURES
(GREGG DRILLING)

Vapor Sampling
(VS)

Gregg In Situ, Inc. performs vapor sampling using either a post run sampling system or a specially designed filter probe attached to the piezocone. Both vapor sampling probes are pushed with the hydraulic ram on the CPT or the Ram-Set system.

The post run system uses a one foot sampler that is pushed in the closed position, *Figure VS*. Once the sample interval is achieved, 1/4 inch tubing is attached to a specially designed coupling mechanism and lowered down the center of the push rods. When the tubing is coupled with the sampler, the sampler is retracted to expose a stainless steel filter screen and the sample is pulled to the surface via a vacuum pump, *Figure VS2*. After the sample has been taken, the sampler is withdrawn from the test hole, decontaminated and ready to re-deploy.

The second method involves using real time lithology measurements to determine appropriate sampling locations on site. The CPT sounding is then stopped at a determined interval to collect soil gas samples. The soil gas module is attached to the cone approximately two feet behind the cone tip and consists of a stainless steel filter that is slightly inset from the module to help prevent soil smearing, *Figure VS*. 1/4 inch tubing is pre strung through the rods and is attached to the sampling module.

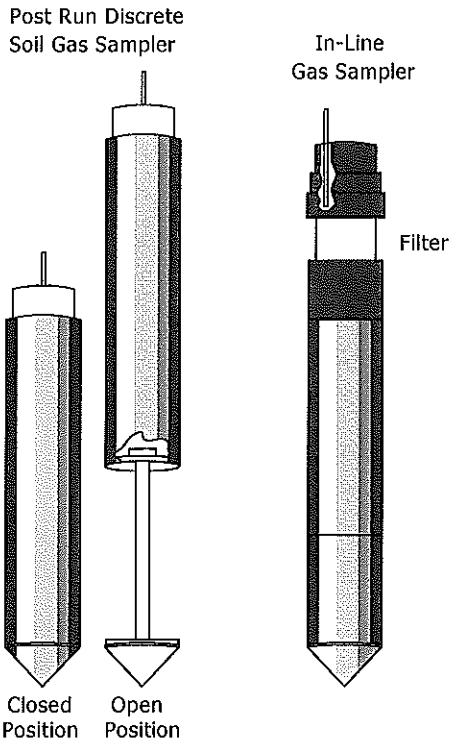


Figure VS

As the module is advanced, positive pressure is applied to the sample line between sample depths to purge the line and to keep the filter clear. Once the sample interval has been achieved the positive pressure source is shut off and the line is purged by the vacuum source, generally 2 to 3 times the tubing volume. The sample is then collected into either a TEDLAR bag, SUMA canister or a syringe, *Figure VS2*. The resulting benefit is that the sounding can continue without removing the sampler from the hole between samples.

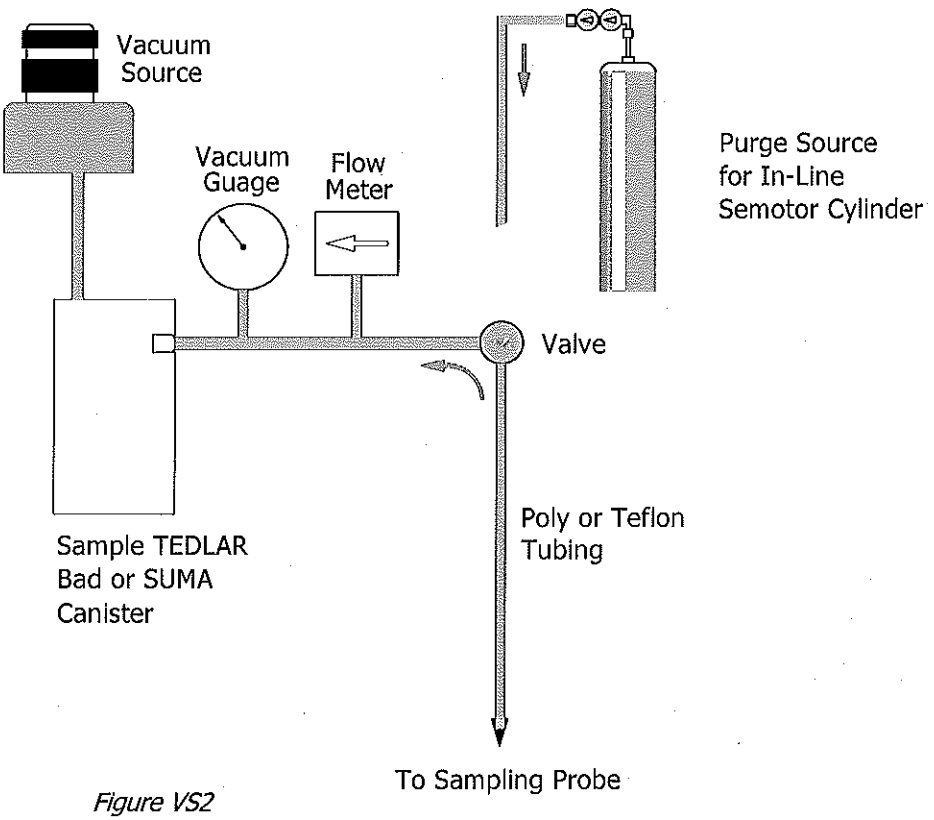


Figure VS2

For a detailed reference on soil gas sampling, refer to DeGroot et. al., 1998.

GREGG

2726 Walnut Avenue · Signal Hill · California · 90755 · Phone: (562) 427-6899 · Fax: (562) 427-3314
Web Site: www.greggdrilling.com Email: info@greggdrilling.com
Additional locations in: Charleston · Houston · Palo Alto · Salt Lake City · San Francisco · Vancouver