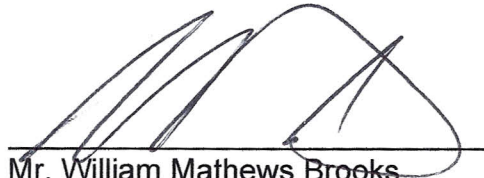


PERJURY STATEMENT

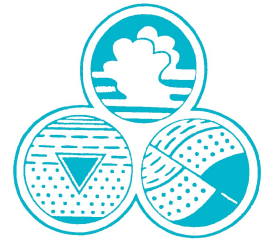
Subject: 1395 MacArthur Boulevard, San Leandro, California  
**Site Assessment Work Plan**

I certify, under penalty of law, that I have personally examined and am familiar with the information submitted in this document and all attachments, and that, based on my inquiry of those individuals immediately responsible for obtaining the information, I believe the information is true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment.



Mr. William Mathews Brooks  
4725 Thornton Avenue  
Fremont, CA, 94536

# *Advanced* GeoEnvironmental, Inc.



16 September 2013  
AGE Project No. 12-2461

Mr. Mark Detterman  
Alameda County Local Oversight Program  
1131 Harbor Bay Parkway  
Alameda, California, 94502-6577

**Subject:     Site Assessment Work Plan**  
**SWISS VALLEY CLEANERS (Case #RO0003120)**  
**1395 MacArthur Boulevard, San Leandro, California**

Dear Mr. Detterman:

At the request of Mr. Matt Brooks, *Advanced GeoEnvironmental, Inc.* (AGE) has prepared this *Site Assessment Work Plan* for the site located at 1395 MacArthur Boulevard, San Leandro, California. The work plan provides procedures for the collection of thirty-eight (38) vapor samples and establishment of eleven (11) soil borings to assess chlorinated hydrocarbon impact resulting from historic dry-cleaning operations at the site.

The site location is illustrated in Figure 1. A detailed site plan showing the proposed soil and soil-vapor boring locations is illustrated in Figure 2. Historic soil, soil-vapor and grab groundwater sample data are summarized in Tables 1 through 3.

## **SCOPE OF WORK**

Based on previously collected analytical data collected during investigations performed in 1998, 2005, 2008 and 2013, additional soil-vapor investigation is proposed to identify the source area and assess the lateral extent of chlorinated hydrocarbon impact at the site. Based on results from the vapor sampling, an addendum work plan may be prepared for additional soil and groundwater investigation at the site. The proposed scope will include the following tasks:

- Permitting and pre-field work activities.
- Advancement of thirty-eight (38) borings for collection of shallow soil vapor samples.
- Advancement of eleven (11) soil borings for collection of soil samples.
- Report preparation.

Each of these tasks is described in greater detail below.

## PERMITTING AND PRE-FIELD WORK ACTIVITIES

Applicable site assessment boring permits will be obtained from the Alameda County Public Works Agency - Water Resources Division (ACPWA) and a site-specific Health and Safety Plan will be prepared. Prior to mobilization, each soil probe location will be clearly marked and a utility clearance obtained through Underground Service Alert. The ACPWA will be contacted a minimum of five days prior to conducting investigation activities to arrange for inspection.

## SOIL BORINGS AND SAMPLING

A total of thirty-eight soil vapor borings (V4 through V42) will be advanced for the collection soil-vapor samples within the onsite facility and in the front and rear of the property (Figure 2). It is anticipated that approximately eleven (11) soil borings (B11 through B21) will be advanced for collection of soil samples adjacent to selected soil-vapor borings (Figure 2) All proposed soil-vapor borings will be advanced to a depth of five feet below surface grade (bsg) and soil sampling borings will be advanced to a maximum depth of fifteen feet bsg (depending on site conditions) using a limited access direct push power probe, hand tooling or a truck mounted powerprobe (depending on boring location accessibility). Soil-vapor and soil sample collection procedures are provided below.

## LABORATORY ANALYSIS

Soil and soil-vapor samples will be analyzed by a California Department of Public Health (CDPH)-certified laboratory for full scan volatile organic compounds (VOC's) by EPA method 8260. Laboratory reports for soil vapor analyses, testing methods, laboratory quality assurance/quality control (QA/QC) reports, and sample chain-of-custody documentation will be presented in a report of findings. Also, conclusions and applicable recommendations will be included within the report. Reports will be in a format acceptable by local agency and will be reviewed and signed by a California Professional Geologist.

## **FIELD PROCEDURES**

All field procedures will be overseen by an AGE representative working under the supervision of a California Professional Geologist. Procedures for advancing soil probe borings, collection and analysis of soil-vapor, equipment decontamination and sample handling are presented below.

### **SOIL VAPOR BORING ADVANCEMENT AND VAPOR SAMPLE COLLECTION**

AGE proposes to advance thirty-eight (38) soil-vapor probe borings to evaluate the chlorinated hydrocarbon impact at the site. Soil-vapor samples will be obtained at depths of approximately four to five feet bsg in each boring. Samples will be collected using a Geoprobe soil-vapor assembly. An expendable vapor point will be placed into a point holder at the bottom of an assembly of 1.25-inch diameter hollow drive rods. The assembly will then be advanced to the specified depth and retracted approximately six to twelve inches in order to disengage the expendable point and expose a column of strata from which soil vapor can be extracted. A single use, 1/4-inch diameter disposable teflon tubing is then attached to a tubing adapter equipped with an O-ring to ensure a vacuum-tight seal. The adapter assembly is then lowered through the center of the Geoprobe hollow drive rods to the specified depth and secured by threading into the expendable vapor point holder. A stabilization time of 20 minutes will follow boring placement. A diagram of the soil vapor sampling tip is presented in Figure 3.

Above ground, the surface around the soil vapor sampler will be sealed with a bentonite sealant to prevent ambient air intrusion. The end of the teflon tubing is attached by a two-way inlet port to a Tedlar bag placed inside an SKC Vac-U-Chamber (lung box) vacuum chamber. A vacuum pump attached to a purge port of the vacuum chamber is then used to purge the exposed soil column, through the sampling tubing and inlet port, until approximately three volumes of soil-vapor or ambient air is evacuated through the sampling system. The vacuum chamber is then sealed and the vacuum pump is attached to a vacuum outlet port of the chamber. When vacuum is applied to the chamber, a negative pressure is created around the Tedlar bag, which inflates, allowing the soil-vapor sample to enter directly into the bag via the inlet port. When the sample is collected, the negative pressure in the chamber is reduced and the sample bag is sealed, labeled, log on a chain-of-custody form, and place into a dry cooler (room temperature). Subsequently, all of the collected soil-vapor samples will be delivered to a State-certified laboratory for analysis of volatile organic compounds (VOC's) by EPA method 8260.

After sample collection, soil-vapor from the teflon tubing will be monitored for the presence of volatile organics using a photo-ionization detector (PID) pre-calibrated to isobutylene.

Additionally, AGE proposes to utilize 70% isopropyl alcohol (rubbing alcohol) as a leak detection tracer compound to ensure that a reliable soil-vapor sample is collected from each soil boring with no ambient air breakthrough down the probe rods. AGE will apply an appropriate amount of rubbing alcohol (approximately 8 ounces) to adequately wet a cotton towel; the wetted towel will be completely wrapped around the base of the probe rod where it contacts the surface and the bentonite seal. Thereafter, a soil-vapor sample will be collected. Isopropyl alcohol analysis will verify the validity of each sample.

## SOIL BORING ADVANCEMENT AND SOIL SAMPLING

Proposed soil borings B11 through B21 will be advanced using either a limited access direct push drilling rig or a truck mounted AMS Powerprobe direct-push probing unit equipped with 1.25-inch probing rods. The direct push probes advance rods using a hydraulic hammer to drive soil and groundwater sampling tools to specified depths.

Soil samples will be collected from all borings at discreet five-foot intervals from five, ten and fifteen feet (depending on field conditions) using a 1.25 inch Geoprobe soil sampling assembly loaded with a two-foot acetate liner. Upon sample retrieval, a selected portion of the liner will be cut and covered with Teflon sheets, capped and sealed with tape.

Appropriately sealed and labeled samples will be placed in a chilled container under ice and transported under chain-of-custody procedure to a CDPH-certified laboratory. Selected samples will be analyzed for volatile organic compounds in accordance with EPA method 8260B. Each withdrawn sample will be labeled with boring designation, depth, time, date and sampler's initials. Soils encountered in the borings will be visually classified by AGE personnel in accordance with the Unified Soil Classification System (USCS). Additionally, soil samples will be field-screened for presence of volatile organic compounds using an organic vapor meter (OVM), equipped with photo-ionization detector (PID) pre-calibrated to isobutylene.

## EQUIPMENT DECONTAMINATION

Prior to use, all sampling tools used for sample collection will be thoroughly rinsed with clean water after being washed with a solution of Alconox. All probing rods will be cleaned prior to advancement at each probe boring location.


**BORING ABANDONMENT**


All soil borings will be permanently sealed to prevent vertical migration of potential contaminants. Soil borings shall be abandoned by backfilling with cement grout from the total depth to surface grade. The top three to six inches of the boring abandonments will be completed flush to surface grade with native soils or concrete. The ACPWAWRD will be notified for grout inspection at least five days prior to conducting grouting procedures.

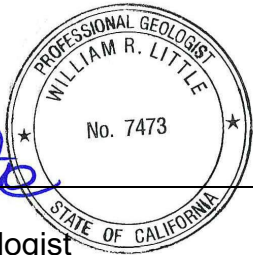
If you have any questions or require further information, please contact our office at (800) 511-9300.

Sincerely,

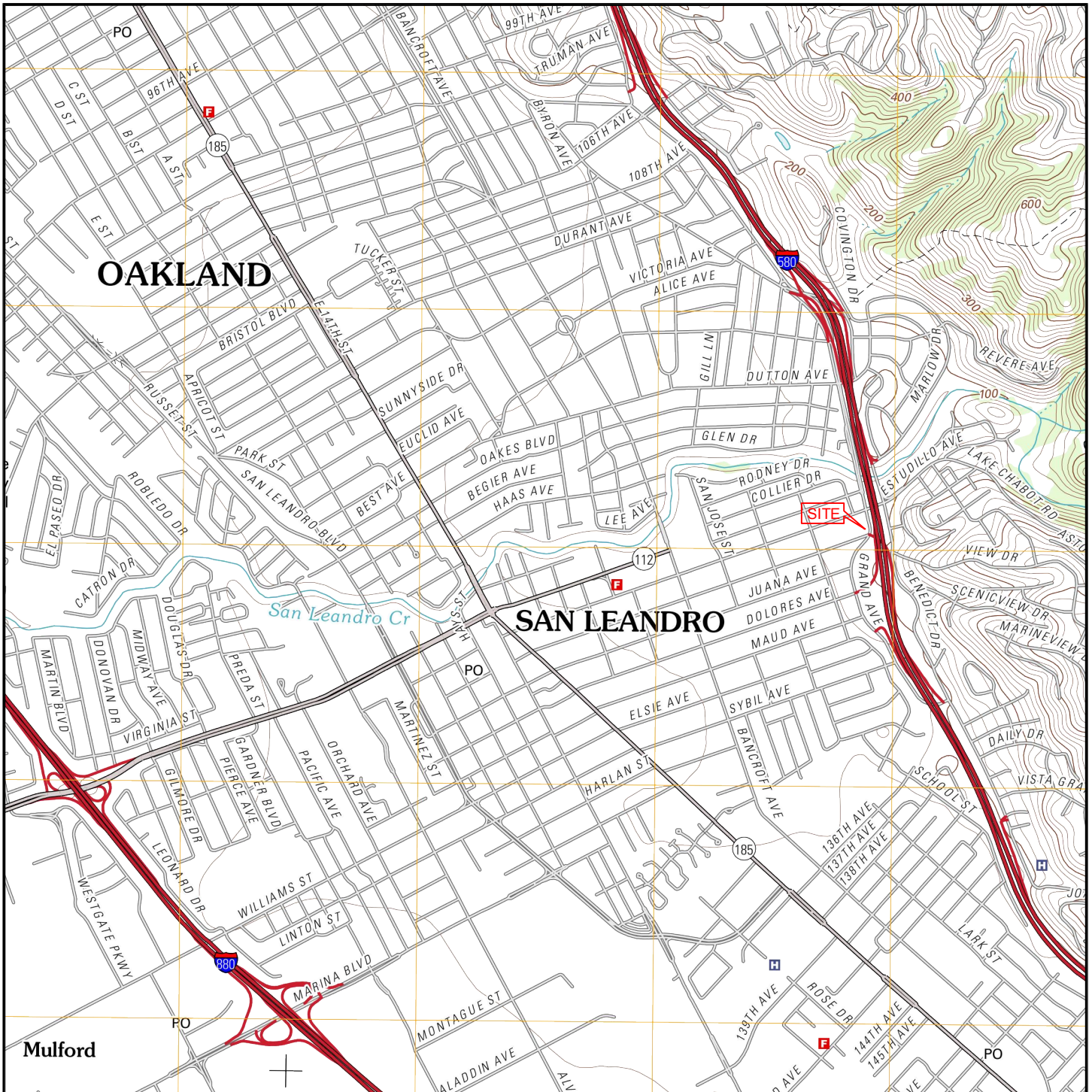
**Advanced GeoEnvironmental, Inc.**

  
Daniel Villanueva  
Project Geologist

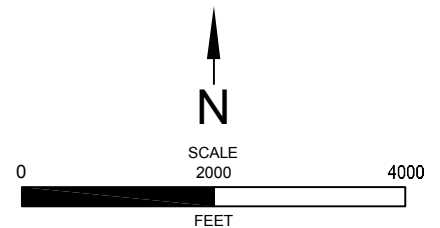
  
William R. Little  
Senior Project Geologist  
California Professional Geologist No. 7473



# FIGURES



SAN LEANDRO QUADRANGLE, CALIFORNIA  
 7.5 MINUTE SERIES (U.S. GEOLOGICAL SURVEY)



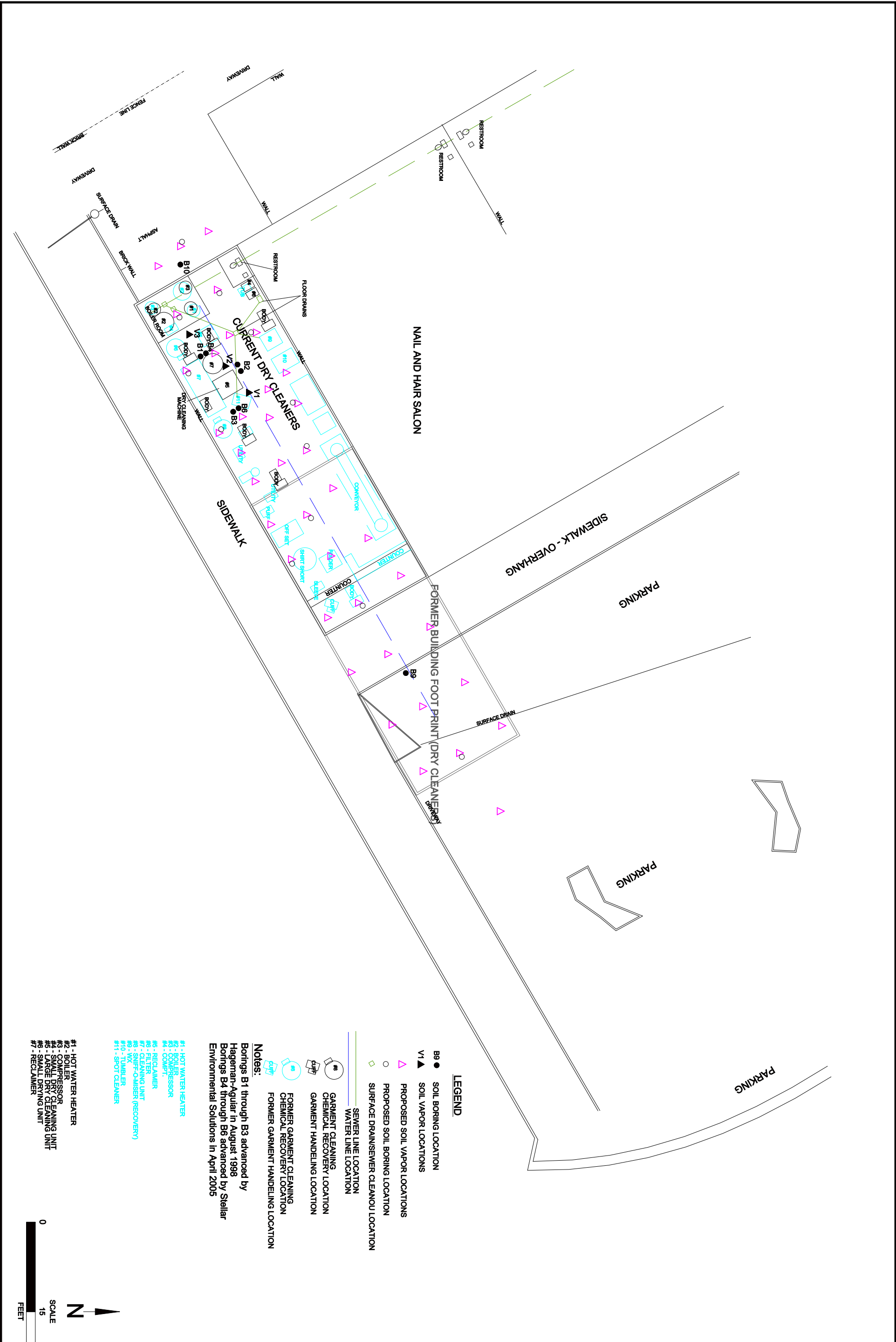
**LOCATION MAP**  
 SWISS VALLEY CLEANERS  
 1395 MacArthur Boulevard  
 SAN LEANDRO, CALIFORNIA




*Advanced*  
**GeoEnvironmental, Inc.**  
 www.advgeoenv.com

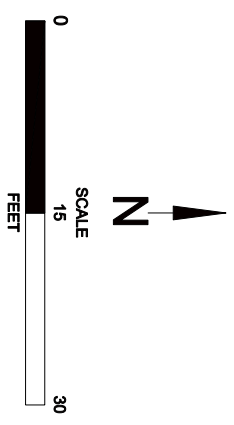
PROJECT NO. AGE-NC-12-2461	FILE: LOCATION	FIGURE:
DATE: 21 MAY, 2013	DRAWN BY: MAC	1

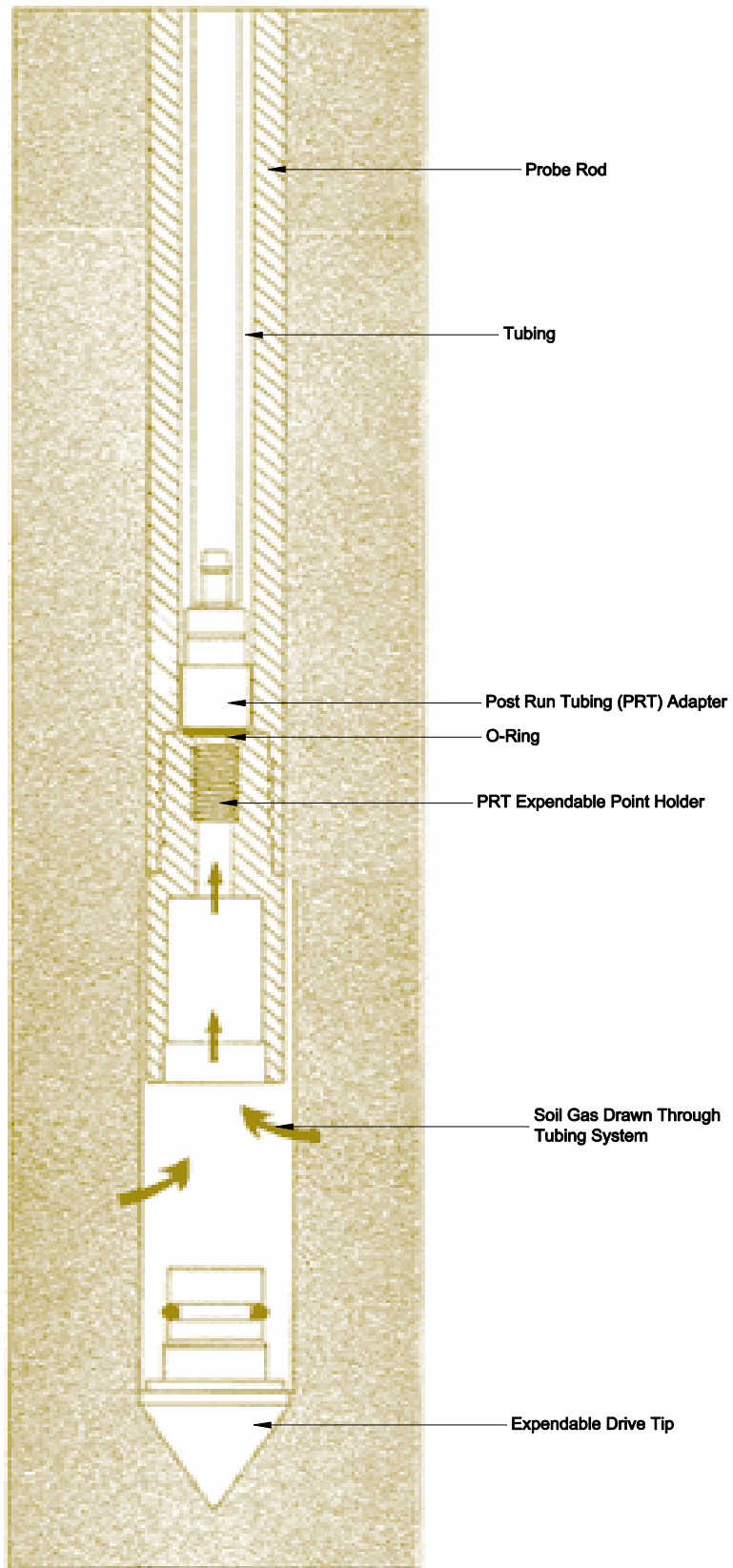




**SITE PLAN**  
**SWISS VALLEY CLEANERS**  
**1395 MACAUTHER BOULEVARD, SUITE 100**  
**SAN LEANDRO, CALIFORNIA**

 <b>Advanced GeoEnvironmental, Inc.</b> www.advgeoenv.com		FIGURE: <b>2</b>
PROJECT NO. AGE-12-2461	FILE: SP	
DATE: SEPTEMBER 2013	DRAWN BY: MAC	





**SOIL-VAPOR SAMPLING TIP**  
 SWISS VALLEY CLEANERS  
 1395 MacArthur Boulevard  
 SAN LEANDRO, CALIFORNIA



*Advanced*  
 GeoEnvironmental, Inc.  
 www.advgeoenv.com

PROJECT NO. AGE 12-2461

FILE: TIP

FIGURE:

DATE: SEPTEMBER 2013

DRAWN BY: MAC

3

# **TABLES**

**TABLE 1**  
**ANALYTICAL RESULTS OF SOIL VAPOR SAMPLES**  
**Swiss Valley Cleaners**  
**1395 MacArthur Boulevard, San Leandro, California**  
**(micrograms per cubic meter)**

Sample ID	Date	Depth (feet bsg)	EPA Method 8260B					
			PCE	TCE	1,1-DCE	Trans 1,2-DCE	Cis 1,2-DCE	VC
V-1	05-08-2013	5	<b>29,000</b>	<2	<2	<2	<2	<2
V-2	05-08-2013	5	<b>23,000</b>	<2	<2	<2	<2	<2
V-3	05-08-2013	5	<b>15,000</b>	<2	<2	<2	<2	<2
CHHSLs (Residential)			180	528	1,500	31,900	44,400	13.3
SFBRWCB ESL Shallow Soil Gas (Commercial)			1,400	4,100	5,100	41,000	20,000	100
SFBRWCB ESL Shallow Soil Gas (Residential)			410	1,200	1,500	15,000	7,300	31

Notes:

SFBRWCB ESL: San Francisco Bay Regional Water Quality Control Board Environmental Screening Level for shallow soil gas

<: Indicates constituents were not detected at a concentration greater than the reporting limit shown.

CHHSLs: California Human Health Screening Levels

PCE: Tetrachloroethene

TCE: Trichloroethene

1,1-DCE: 1,1-Dichloroethene

Trans 1,2-DCE: Trans 1,2-Dichloroethene

Cis 1,2-DCE: Cis 1,2-Dichloroethene

VC: Vinyl Chloride

bsg: below surface grade

**TABLE 2**  
**ANALYTICAL RESULTS OF SOIL SAMPLES**  
 Swiss Valley Cleaners  
 1395 MacArthur Boulevard, San Leandro, California  
 (mg/kg)

Sample ID	Depth (feet bsg)	Date	EPA SW 846/8260B					
			Tetrachloroethene (PCE)	Trichloroethene (TCE)	1,1- Dichloroethene (1,1-DCE)	Trans 1,2- Dichloroethene (Trans 1,2-DCE)	Cis 1,2- Dichloroethene (Cis 1,2-DCE)	Vinyl Chloride (VC)
B-1@3'	3	08-19-1998	<0.005	<0.005	<0.005	-	-	<0.005
B-1@5'	5	08-19-1998	<0.005	<0.005	<0.005	-	-	<0.005
B-2@3'	3	08-19-1998	<0.005	<0.005	<0.005	-	-	<0.005
B-2@5'	5	08-19-1998	<0.005	<0.005	<0.005	-	-	<0.005
B-3@3'	3	08-19-1998	<0.005	<0.005	<0.005	-	-	<0.005
B-3@5'	5	08-19-1998	<0.005	<0.005	<0.005	-	-	<0.005
B-4	1.75	04-06-2005	<b>0.0057</b>	<0.0049	<0.0049	<0.0049	<0.0049	<0.0098
B-5	1.83	04-06-2005	<b>0.0074</b>	<0.0047	<0.0047	<0.0047	<0.0047	<0.0094
B-6	1.67	04-06-2005	<b>0.022</b>	<0.0046	<0.0046	<0.0046	<0.0046	<0.0093
B-7	2	07-08-2008	<0.005	<0.0047	<0.0047	<0.0047	<0.0047	<0.0094
B-8	2	07-08-2008	<b>0.060</b>	<0.0047	<0.0047	<0.0047	<0.0047	<0.0094
B9-5	5	05-07-2013	<b>0.028</b>	<0.005	<0.005	<0.005	<0.005	<0.005
B9-10	10	05-07-2013	<b>0.012</b>	<0.005	<0.005	<0.005	<0.005	<0.005
B9-15	15	05-07-2013	<b>0.022</b>	<0.005	<0.005	<0.005	<0.005	<0.005
B10-5	5	05-07-2013	<b>0.010</b>	<0.005	<0.005	<0.005	<0.005	<0.005
B10-10	10	05-07-2013	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
B10-15	15	05-07-2013	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005

Notes:

mg/kg: milligrams per kilogram

bsg: below surface grade

<: Indicates constituents were not detected at a concentration greater than the reporting limit shown.

**TABLE 3**  
**ANALYTICAL RESULTS OF GRAB GROUNDWATER SAMPLES**  
**Swiss Valley Cleaners**  
**1395 MacArthur Boulevard, San Leandro, California**  
**(ug/l)**

Sample ID	Date	EPA 8260B						
		Tetrachloroethene (PCE)	Trichloroethene (TCE)	1,1-Dichloroethene (1,1-DCE)	Trans 1,2-Dichloroethene (Trans 1,2-DCE)	Cis 1,2-Dichloroethene (Cis 1,2-DCE)	Vinyl Chloride (VC)	Acetone
SVC-1	08-19-1998	<0.5	<0.5	<0.5	-	-	-	-
B9W@46-50	05-07-2013	<b>7.6</b>	<0.5	<1	<1	<1	<0.5	<10
B10W@46-50	05-07-2013	<b>2.7</b>	<0.5	<1	<1	<1	<0.5	<10
US EPA MCL		5	5	7	100	70	2	-
CDPH MCL		5	5	6	10	6	0.5	-
SFBRWCB ESL		5	5	6	10	6	0.5	6,300

Notes:

<:

µg/l: micrograms per liter

bsg:

below surface grade

US EPA MCL: United State Environmental Protection Agency Maximum Contaminant Level

CDPH MCL: California Department of Public Health Maximum Contaminant Level

SFBRWCB ESL: San Francisco Bay Regional Water Quality Control Board Environmental Screening Level

SVC-1: Sample I.D refers to sample collected from floor drain inside unit.