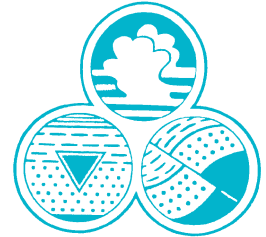


*Advanced*  
**GeoEnvironmental, Inc.**



19 April 2010  
AGE-NC Project No. 08-1640

Mr. Jerry Wickham  
Alameda County Environmental Health Services  
1131 Harbor Bay Parkway Suite 250  
Alameda, California 94502-6577

**RECEIVED**

10:54 am, Apr 21, 2010

Alameda County  
Environmental Health

**Subject: Soil Vapor Extraction Install, Start-up and Quarterly Monitoring Report - First Quarter 2010  
METRO VALLEY CLEANERS  
224 Rickenbacker Circle, Livermore, California**

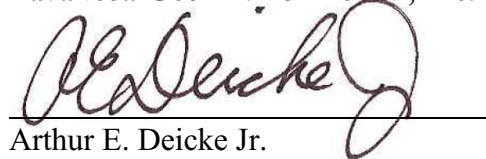
Dear Mr. Wickham:

At the request of Mr. Robert Strong, *Advanced GeoEnvironmental, Inc.* (AGE) has prepared the enclosed quarterly report of remedial activities conducted at 224 Rickenbacker Circle, Livermore, California. The scope of work performed within this report included installation of a soil vapor extraction (SVE) wells, an SVE piping network, installation of an SVE system, remediation system start-up and monitoring, and preparation of the enclosed report.

If you have any questions or require further information, please contact our office at (209) 467-1006.

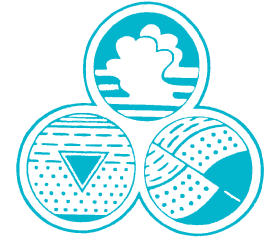
Sincerely,

***Advanced GeoEnvironmental, Inc.***



Arthur E. Deicke Jr.  
Project Scientist

# *Advanced* GeoEnvironmental, Inc.



19 April 2010  
AGE-NC Project No. 08-1640

Mr. Robert Strong  
500 Bollinger Canyon Way #A4  
San Ramon, 94582

**Subject: Soil Vapor Extraction Install, Start-up and Quarterly Monitoring Report - First Quarter 2010  
METRO VALLEY CLEANERS  
224 Rickenbacker Circle, Livermore, California**

Dear Mr. Strong:

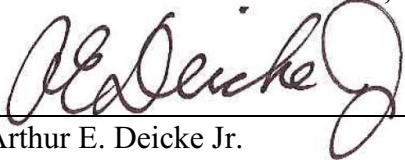
At your request, *Advanced* GeoEnvironmental, Inc. (AGE) has prepared the enclosed quarterly report of environmental activities conducted at 224 Rickenbacker Circle, Livermore, California.

The scope of work performed within this report included installation of a soil vapor extraction (SVE) wells, an SVE piping network, installation of an SVE system, remediation system start-up and monitoring, and preparation of the enclosed report. A copy of this report will be transmitted to Mr. Jerry Wickham of the Alameda County Environmental Health Services (ACEHS).

The opportunity to provide this service is greatly appreciated. If you have any questions or require further information, please contact our office at (209) 467-1006.

Sincerely,

***Advanced* GeoEnvironmental, Inc.**

  
\_\_\_\_\_  
Arthur E. Deicke Jr.  
Project Scientist

cc: Mr. Jerry Wickham, ACEHS

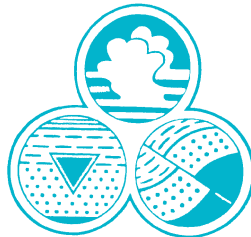
**Soil Vapor Extraction Install, Start-up & Quarterly Monitoring Report-First Quarter 2010**  
**METRO VALLEY CLEANERS**  
**224 Rickenbacker Circle, Livermore, California**

19 April 2010  
AGE-NC Project No. 08-1640

*PREPARED FOR:*

Mr. Robert Strong  
METRO VALLEY CLEANERS

*PREPARED BY:*



***Advanced GeoEnvironmental, Inc.***

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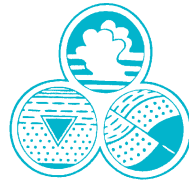
122 Calistoga Road, Santa Rosa #325, California 95409 • Phone (707) 570-1418 • Fax (707) 570-1461

395 Del Monte Center, #111, Monterey, California 93940 • Phone (800) 511-9300 • Fax (831) 394-5979

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**Soil Vapor Extraction Install, Start-up & Quarterly Monitoring Report-First Quarter 2010**  
**METRO VALLEY CLEANERS**  
**224 Rickenbacker Circle, Livermore, California**

19 April 2010  
AGE-NC Project No. 08-1640



**Advanced GeoEnvironmental, Inc.**  
**837 Shaw Road, Stockton, California**

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





**Soil Vapor Extraction Install, Start-up and Quarterly Monitoring Report - First Quarter 2010**  
**METRO VALLEY CLEANERS**  
**224 Rickenbacker Circle, Livermore, California**

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**Soil Vapor Extraction Install, Start-up and Quarterly Monitoring Report - First Quarter 2010**  
**METRO VALLEY CLEANERS**  
**224 Rickenbacker Circle, Livermore, California**

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**Soil Vapor Extraction Install, Start-up and Quarterly Monitoring Report - First Quarter 2010**  
**METRO VALLEY CLEANERS**  
**224 Rickenbacker Circle, Livermore, California**

## **1.0. INTRODUCTION**

At the request of Mr. Robert Strong, *Advanced GeoEnvironmental, Inc.* (AGE) has prepared this quarterly remedial report for the property located at 224 Rickenbacker Circle, Livermore, California. The site and the surrounding area are illustrated on Figure 1. Structures, boring and well locations are illustrated on Figure 2. Site background information is provided in Appendix A.

The scope of work performed within this report included installation of a soil vapor extraction (SVE) wells, an SVE piping network, installation of an SVE system, remediation system start-up and monitoring, and preparation of the enclosed report.

Remediation system installation and monitoring was conducted in accordance with the *Interim Soil Vapor Remedial Action Plan (IRAP)*, dated 11 September 2009 and approved by the Alameda County Environmental Health Services (ACEHS) letter dated 29 October 2009. The SVE unit operated in accordance with Bay Area Air Quality Management District (BAAQMD) Permit to Operate (Plant No. 20037; Application No. 21443; Condition No. 24545), provided as Appendix B.

## **2.0. PROCEDURES**

A brief summary of SVE remedial activities performed at the site between 07 December 2009 and 23 March 2010 is as follows:

- 07 December 2009: SVE wells SVE-2 and SVE-3 are installed at the site.
- 19, 21 and 27 January 2010: Remedial piping network installed.
- 22 February 2010: Delivery and start-up of SVE system.
- 22 through 26 February 2010: Start-up period and monitoring of SVE system. Daily operational data, and influent and effluent soil vapor samples collected.
- 01, 02, 03, 09, 16 and 23 March 2010: Observation and Maintenance of SVE system; influent and effluent soil vapor samples collected on 09 March 2010.

Procedures for the above scopes of work are presented below.

### **2.1. REMEDIATION WELL INSTALLATION**

Two SVE wells (SVE-2 and SVE-3) were installed at the site on 07 December 2009. Pilot soil borings SVE2 and SVE3 were advanced to depths of approximately 20 feet below surface grade

(bsg) inside the site building utilizing a Rhino - M5T limited access drill rig equipped with 8.25-inch diameter hollow-stem augers. SVE well SVE-2 was installed immediately north of the former dry-cleaning machine location and adjacent to soil vapor monitoring point SG-5. SVE well SVE-2 was installed approximately 18 feet north of well SVE-2 and adjacent to boring SG-6. SVE well locations are shown on Figure 2.

#### 2.1.1. Soil Sample Collection and Analysis

Relatively undisturbed soil samples were collected from the pilot borings using a California modified split-spoon sampler fitted with 1.5-inch diameter by 6-inch long stainless steel sleeves at five-foot intervals beginning at 5 feet bsg. Upon removal from the sampler assembly, sleeves were separated with a clean knife. Exposed ends of the second sleeve were covered with Teflon® sheets, capped and sealed with tape. Remaining soil was visually classified by an AGE representative in accordance with the Unified Soil Classification System (USCS). Soil samples were also field screened for the presence of volatile organic compounds using an organic vapor meter (OVM), equipped with a photo ionization detector (PID). Soil sample descriptions and OVM readings are detailed on boring logs included in Appendix C.

Following sample collection, each preserved sample sleeve was labeled with the boring location, depth, time, date and sampler's initials. Appropriately sealed and labeled samples were placed in a chilled container with ice and transported under chain of custody procedures to Cal Tech Environmental Laboratories (CTEL), a California Department of Public Health (CDPH)-certified laboratory for analysis of volatile organic compounds (VOCs) in accordance with EPA Method 8260B.

Any non-disposable equipment used for sample collection was thoroughly rinsed with clean water after being washed with a solution of Alconox.

#### 2.1.2. Well Installation

Pilot borings SVE-2 and SVE-3 were single-completed as SVE extraction wells utilizing 2-inch diameter schedule 40 polyvinylchloride (PVC) 0.030-inch slotted well screen and blank well casing. Based on geologic conditions, a 15-foot length of well screen, from 5 feet to 20 feet bsg was used for each well. After installing each well casing, a filter pack material consisting of #3 sand was added to approximately one foot above the screened interval.

A nominal one-foot bentonite seal (bentonite chips) was placed above the filter pack to minimize the potential for grout penetration into the screened section of the well. The bentonite seal was

formed by pouring bentonite chips into the annulus and allowing them to settle on the filter pack. Bentonite chips were hydrated using a few gallons of tap water and allowed to hydrate for a minimum of one-half hour prior to grouting.

Remaining annular space was filled to about 1 foot beneath ground surface with a cement grout mixture consisting of Type I/II Portland neat cement and not more than 6 gallons of water per 94-pound sack of cement.

Well construction details are summarized in Table 1 and shown on boring logs provided in Appendix C.

### 2.1.3. Waste Management

Soil cuttings generated during drilling activities were containerized in properly labeled Department of Transportation (DOT)-approved 55-gallon drums. Upon characterization and profiling, cuttings will be disposed at an appropriate landfill facility.

## 2.2. REMEDIAL PIPING INSTALLATION

On 19, 21 and 27 January 2010, the SVE remedial piping network was installed at the site. A single aboveground two-inch schedule 40 PVC piping was installed from the well-heads of SVE-1, SVE-2 and SVE-3 and connected to the SVE remediation system. From well SVE-3, the single-run two-inch PVC pipe runs south to well SVE-2 and then through an existing vent opening located at the base of the southernmost wall of the site building. Once outside, the PVC pipe extends west and joins the aboveground PVC piping from SVE wells OB-1 and OB-2; the shared vapor line then connects south to well SVE-1 and to the SVE remediation system.

Underground two-inch schedule 40 PVC piping was installed from the well-head of SVE wells OB-1 and OB-2; underground remedial piping was installed in a shared 1-foot wide by a 1-foot deep shallow trench up to the southeastern corner of the site building. From the southeastern corner of the site building, OB-1 and OB-2 remedial piping continues aboveground and joins the aboveground remedial piping of SVE-2 and SVE-3. Ball-valves were installed at the well-head of each SVE well to manually take each extraction well individually on-line or off-line during SVE operation. Following the installation of the underground remedial piping, trenches were backfilled, compacted and the concrete repaired.

SVE remedial system piping lay-out is depicted in Figure 2.

### 2.3. SOIL VAPOR EXTRACTION SYSTEM OPERATION AND MONITORING

The SVE unit consists of two 1,500-lbs granular activated carbon (GAC) vessels for adsorption and a nominal 250 standard cubic foot per minute (scfm) SVE extraction positive displacement (PD) lobe blower capable of drawing a maximum 250 scfm installed south of the former dry cleaning machine area.

The common, aboveground, two-inch PVC remedial piping from the SVE wells was connected with two-inch PVC pipe to the inlet of the vacuum blower through an 85-gallon condensation (knockout) vessel.

The SVE system network utilized three-inch diameter connections between GAC vessels to optimize the air-stream flow volume. A Magnehelic vacuum gauge was attached to the inlet of the blower to measure vacuum pressure exerted on the extraction well; an additional *Dwyer* Magnehelic® flow meter was installed on the influent to the SVE system. A cumulative flow rotometer was utilized downstream of the carbon canisters to monitor air flow.

Sampling ports were installed upstream of the knockout vessel, prior to the carbon vessels and downstream of the carbon vessels, to recover influent and effluent SVE air flow samples used to monitor the efficiency of volatile organic compound (VOC) removal. Additionally, influent and effluent streams were monitored routinely for the presence of organic vapors using an OVM equipped with a PID. Additionally, sampling ports were installed at each wellhead ball valve location to monitor individual well concentrations separately.

#### 2.3.1. Soil Vapor Extraction Start-Up

The SVE system began operation on 22 February 2010. During the first week of operation, the SVE system was monitoring daily and weekly thereafter. During each monitoring event, the flow rate of extracted soil vapor (influent) was measured using a *Blue-White*® acrylic tube rotometer model F-430. Vacuum potential was measured at the 2-inch influent line by the Magnehelic® vacuum gauge. In addition, organic vapor concentrations in the influent stream (before entering the blower) and the effluent stream (after exiting the carbon unit) were measured using an OVM.

#### 2.3.2. Soil Vapor Sampling

Soil vapor influent and effluent samples were collected daily during the first week of operation on 22 through 26 February 2010 to monitor the efficiency of carbon absorption of VOCs. Additionally, the outlet of GAC vessel 1 (GAC-1) was sampled on 22 February 2010 to insure breakthrough of

VOCs did not occur. Following the first week of operation, soil vapor influent and effluent samples were collected monthly on 09 March 2010.

Samples were collected from influent and effluent ports directly into Tedlar® vapor bags using a rigid air sample box (lung box) and vacuum pump. Samples were labeled, placed in a dry cooler and transported under chain of custody to CTEL, a CDPH-certified analytical laboratory. Each soil vapor sample was analyzed for VOCs in accordance with EPA Method 8260B.

### **3.0. FINDINGS**

Soil stratigraphy was determined from field data collected during advancement of the SVE well pilot soil borings; hydrocarbon impact to soil was quantified by laboratory analysis of soil samples collected on 07 December 2009. Based on field and analytical data collected from the SVE remediation system during the first quarter 2010, AGE determined average tetrachloroethene (PCE) concentrations and average flow rates to calculate the approximate mass and volume of PCE removed during the operation period.

#### **3.1. STRATIGRAPHY**

During the advancement of pilot borings SVE2 and SVE3 soil samples were collected at 5-foot intervals between 5 feet and 20 feet bsg. Silt was encountered in the upper ten feet of each boring, with gravel layers encountered at 15 feet and 20 feet bsg in boring SVE2 and 10.5 feet, 15 feet and 20 feet bsg in boring SVE3.

VOC odors were not observed in any of the samples collected; organic vapor readings were measured at 0 parts per million volume (ppmv) in each sample collected. Soil descriptions, field observations, and organic vapor field measurements are included on the boring logs in Appendix C. Boring logs for SVE wells SVE-2 and SVE-3 were uploaded to the State GeoTracker database under confirmation numbers 1917306363 and 7726327359. An updated site map depicting the locations of wells SVE-2, SVE-3, remedial piping, and the SVE system was uploaded to the State GeoTracker database under confirmation number 2550156950.

#### **3.2. ANALYTICAL RESULTS OF SOIL SAMPLES**

A total of three soil samples collected from SVE well pilot soil borings SVE2 and SVE3 were analyzed for VOCs by EPA Method 8260B. PCE was reported in each sample at concentrations of 0.010 milligrams per kilogram (mg/kg) in sample SVE-2-20, 0.0094 mg/kg in sample SVE-3-10,

and 0.0082 mg/kg in sample SVE-3-20.

No additional VOCs were reported at or above laboratory detection limits in the soil samples analyzed. Soil sample analytical results are summarized in Table 2. The laboratory report (CTEL Project No. CT214-0912057), quality assurance and quality control (QA/QC) reports, and chain of custody forms are included in Appendix D. Laboratory electronic deliverable format (EDF) files were uploaded to the State GeoTracker database under confirmation number 4560792326.

### 3.3. SOIL VAPOR EXTRACTION

Between 22 February and 23 March 2010, the SVE unit operated continuously for approximately 695 hours at an air flow rate ranging between 78 scfm and 175 scfm. Influent extracted organic vapor concentrations measured with the OVM ranged between 0 ppmv (multiple monitoring events) and 43 ppmv (during SVE start-up). Each effluent extracted organic vapor concentration was measured at a concentration of 0 ppmv with the OVM.

Wells utilized as active extraction wells varied during the operation period. All five SVE wells were utilized in the vapor extraction network between 22 February and 02 March 2010; due to low individual well OVM readings, wells SVE-2 and SVE-3 were removed from the active network on 02 March 2010. On 23 March 2010, operating wells SVE-1, OW-1 and OW-2 were taken off-line, and wells SVE-2 and SVE-3 were put online due to continued low influent PID readings (confirmed by laboratory analytical results).

Field measurements, recorded at regular intervals in February and March 2010, are summarized in Table 3.

#### 3.3.1. Analytical Results of Soil Vapor Samples

Analytical results of soil vapor samples collected during the first quarter 2010 are as follows:

- 22 February 2010: PCE and trichloroethene (TCE) were reported in the influent sample at concentrations of 93 micrograms per liter ( $\mu\text{g}/\text{l}$ ) and 4.5  $\mu\text{g}/\text{l}$ , respectively. VOCs were not reported at or above detection limits in the effluent and GAC-1 soil vapor samples.
- 23 February 2010: PCE was reported in the influent sample at a concentration of 48  $\mu\text{g}/\text{l}$ . VOCs were not reported at or above detection limits in the effluent soil vapor sample.
- 24 February 2010: PCE was reported in the influent sample at a concentration of 16  $\mu\text{g}/\text{l}$ . VOCs were not reported at or above detection limits in the effluent soil vapor sample.



- 25 February 2010: PCE was reported in the influent sample at a concentration of 9.0 µg/l. VOCs were not reported at or above detection limits in the effluent soil vapor sample.
- 26 February 2010: PCE was reported in the influent sample at a concentration of 7.6 µg/l. VOCs were not reported at or above detection limits in the effluent soil vapor sample.
- 09 March 2010: VOCs were not reported at or above detection limits in the influent and effluent soil vapor samples.

Analytical results of soil vapor samples are summarized in Table 3. The laboratory reports (CTEL Project Nos. CT214-1002173, -1002172, -1002183, -1002193, -1002199, -1003002, -1003058) QA/QC reports and chain of custody forms are included in Appendix D. EDF files were uploaded to the State GeoTracker database under confirmation numbers 4643762171, 8056367278, 3847092986, 6619218230, 3878976404, and 2430429041.

### 3.3.2. Mass of Recovered PCE

The VOC mass (PCE) removed during the operating period was calculated using the following equation:  $M = C \cdot Q \cdot t$

where:  $M$  = cumulative mass recovered (kg)  
 $C$  = soil vapor concentration (kg/m<sup>3</sup>)  
 $Q$  = extraction flow rate (m<sup>3</sup>/hr)  
 $t$  = operational period, in hours

The estimated mass of extracted PCE was calculated for the time period using average PCE concentrations of influent soil vapor sample analytical data, average air flow rates and duration of operation. Operational results are summarized in Table 3.

A calculated 1.8 lbs or an approximate volume of 0.13 gallons of PCE were extracted by the SVE system between 22 February and 09 March 2010. Volume-mass calculations of extracted PCE are summarized in Appendix E.

## 4.0. CONCLUSIONS

Based on the data collected from the site, AGE finds:

- The upper portion of wells SVE-2 and SVE-3 are screened across silt, and the lower portion

of the wells are screened across a gravelly layer.

- Concentrations of PCE reported in soil samples analyzed from wells SVE-2 and SVE-3 at depths of 10 feet bsg (SVE-3) and 20 feet bsg (SVE-2 and SVE-3) are below the San Francisco Bay Regional Water Quality Control Board's Environmental Screening Level (ESL) for PCE in residential use, shallow soils where ground water is a current or potential source of drinking water (0.37 mg/kg).
- After a rebound period of approximately 500 hours, SVE wells SVE-2 and SVE-3 continued to exhibit individual extracted organic vapor concentrations measured with the OVM during SVE field observations of 0 ppmv.
- Low influent extracted organic vapor concentrations measured with the OVM during SVE field observations were confirmed by laboratory analytical results.
- Concentrations of PCE reported in influent soil vapor samples quickly diminished from 93 µg/l to 7.6 µg/l after 97 hours of SVE operation. A trend graph showing the influent soil vapor PCE concentrations overtime is provided as Appendix F.
- A cumulative 1.49 pounds or an approximate volume of 0.11 gallons of PCE were extracted by the SVE system during the first quarter 2010 (695 total SVE operational hours).
- Influent soil vapor samples collected during the beginning of the second quarter 2010 continue to be below detection limits.

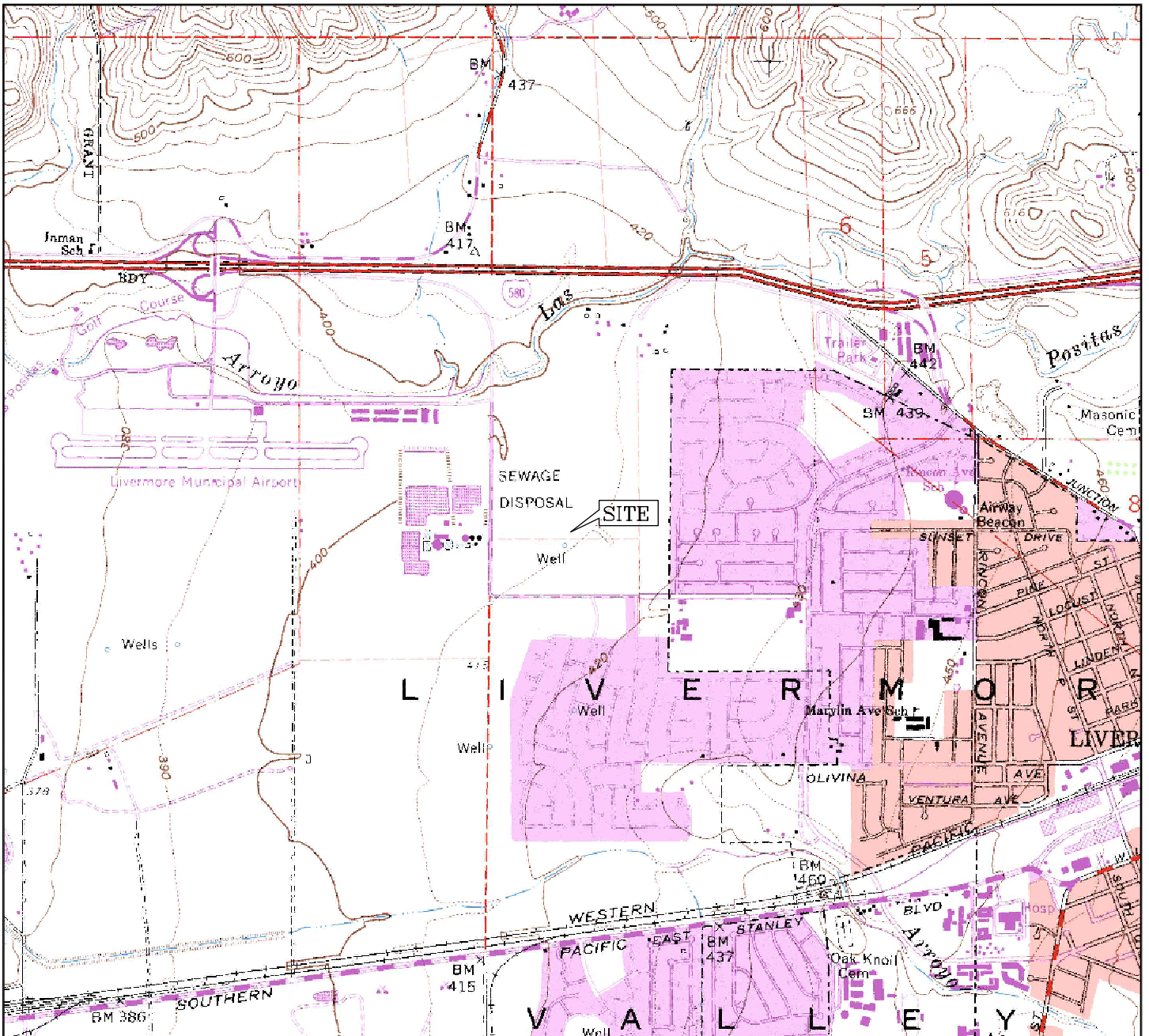
## **5.0. RECOMMENDATIONS**

Based on the findings of the environmental activities recounted in this report, AGE recommends discontinuing pulse or rebound operations of the SVE system utilizing a combination of SVE wells and shutting down the system for one month. After one month non-operation, the system will be restarted and based upon influent concentrations, either continued operation or completely shut-down.

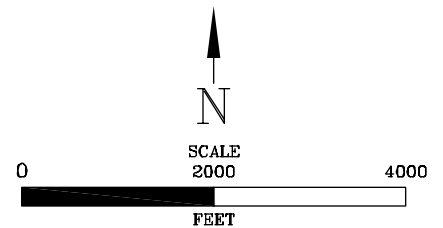
## **6.0. LIMITATIONS**

Our professional services were performed using that degree of care and skill ordinarily exercised by environmental consultants practicing in this or similar localities. Findings were based upon analytical results provided by an independent laboratory. Evaluation of the hydrogeologic conditions at the site for the purpose of this investigation was made from a limited number of available data points (e.g., soil vapor samples and soil samples) and subsurface conditions may vary away from these data points. No other warranty, expressed or implied, is made as to the professional interpretations, opinions, and recommendations contained in this report.

# FIGURES



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



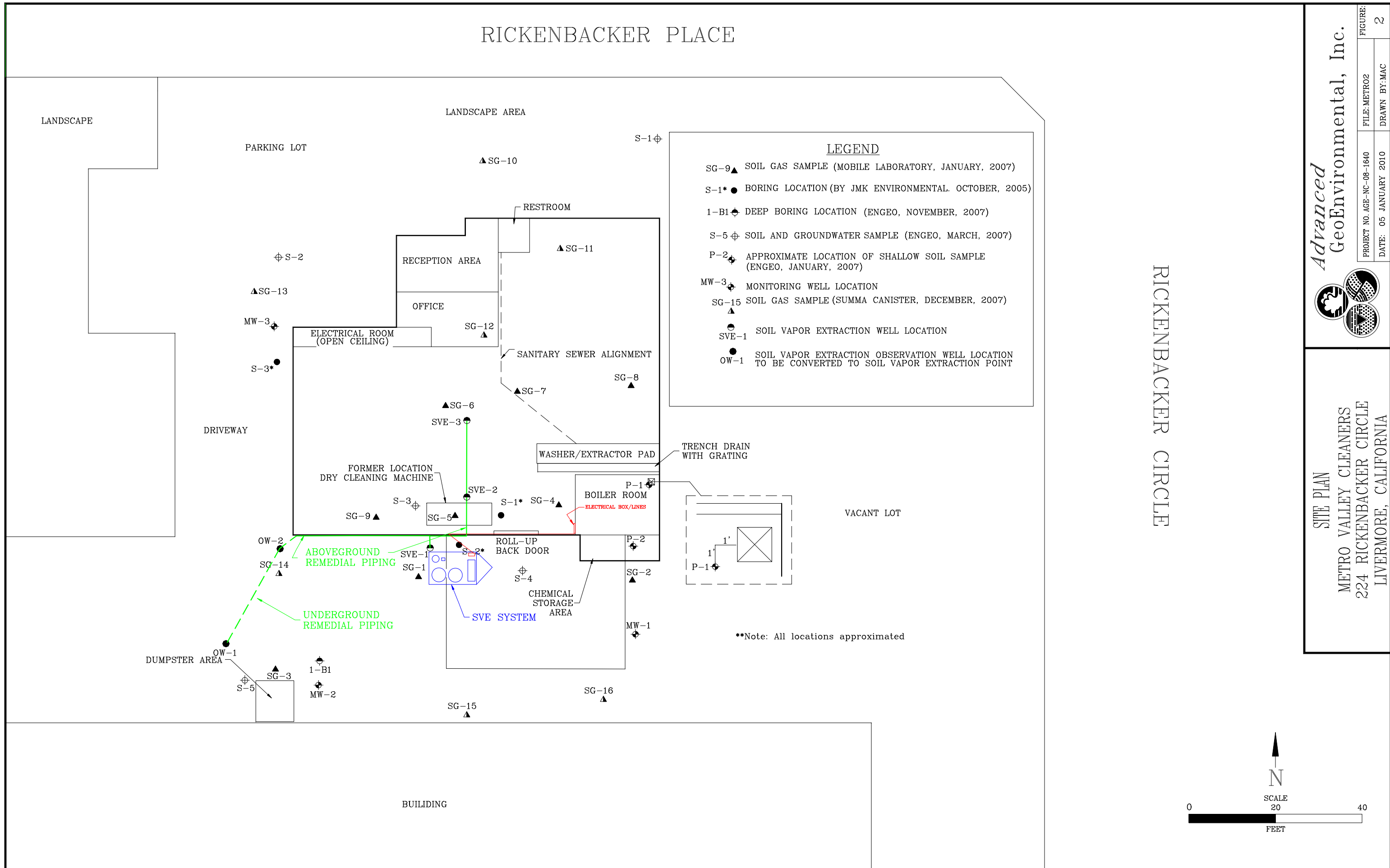
LOCATION MAP  
 METRO VALLEY CLEANERS  
 224 RICKENBACKER CIRCLE  
 LIVERMORE, CALIFORNIA



**Advanced**  
**GeoEnvironmental, Inc.**  
*of Northern California*

PROJECT NO. AGE-NC-08-1640	FILE: LOCATION	FIGURE:
DATE: 03 OCTOBER, 2008	DRAWN BY: MAC	1

# RICKENBACKER PLACE



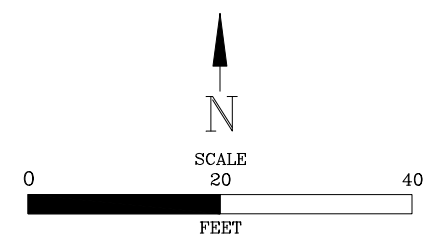
Advanced  
GeoEnvironmental, Inc.



SITE PLAN  
METRO VALLEY CLEANERS  
224 RICKENBACKER CIRCLE  
LIVERMORE, CALIFORNIA

PROJECT NO. AGE-NC-08-1640  
DATE: 05 JANUARY 2010  
FILE: METRO2  
DRAWN BY: MAC  
FIGURE:  
2

RICKENBACKER CIRCLE



# **TABLES**

**TABLE 1**  
**WELL CONSTRUCTION DETAILS**  
 Metro Valley Cleaners  
 224 Rickenbacker Circle, Livermore, CA

Well ID	Installation Date	Borehole Diameter (inches)	Total Depth (ft bsg)	Casing Diameter (inches)	Casing Material	Slot Size (inches)	Casing Elevation (ft MSL) <sup>1</sup>	Screen Interval (ft btoc)	Filterpack Interval (ft btoc)	Bentonite Interval (ft btoc)	Grout Interval (ft btoc)
<b>Ground Water Monitoring Wells</b>											
MW-1	12-18-2007	8	35	2	PVC	0.010	410.00	10 to 35	13 to 35	12 to 13	1 to 12
MW-2	12-18-2007	8	35	2	PVC	0.010	409.98	10 to 35	39 to 65	12 to 13	1 to 12
MW-3	25	8	35	2	PVC	0.010	409.48	10 to 35	43 to 65	12 to 13	1 to 12
<b>Remediation Wells</b>											
SVE-1	01-08-2009	8	20	2	PVC	0.030	ns	5 to 15	4 to 20	3 to 4	1 to 3
OW-1	01-08-2009	8	20	2	PVC	0.030	ns	5 to 15	4 to 20	3 to 4	1 to 3
OW-2	01-08-2009	8	20	2	PVC	0.030	ns	5 to 15	4 to 20	3 to 4	1 to 3
SVE-2	12-07-2009	8	20	2	PVC	0.030	ns	5 to 15	4 to 20	3 to 4	1 to 3
SVE-3	12-07-2009	8	20	2	PVC	0.030	ns	5 to 15	4 to 20	3 to 4	1 to 3

*Notes:*

- ft bsg: feet below surface grade
- PVC: polyvinylchloride
- ft MSL: feet mean sea level
- ft btoc: below top of well casing
- ns: not surveyed
- note 1: Survey data not available

**TABLE 2**  
**SOIL ANALYTICAL DATA**  
Metro Valley Cleaners  
224 Rickenbacker Circle, Livermore, California  
(mg/kg)

Sample ID	Depth (feet bsg)	Date	EPA Method 8260B					
			PCE	TCE	1,1-DCE	Trans 1,2-DCE	Cis 1,2-DCE	VC
S-1-5*	5	10-25-2005	<b>0.23</b>	<0.012	<0.012	<0.012	<0.012	<0.012
S-1-10*	10	10-25-2005	<b>0.032</b>	<0.005	<0.005	<0.005	<0.005	<0.005
S-1-15*	15	10-25-2005	<b>0.031</b>	<0.005	<0.005	<0.005	<0.005	<0.005
S-1-25*	25	10-25-2005	<b>0.057</b>	<0.005	<0.005	<0.005	<0.005	<0.005
S-1-35*	35	10-25-2005	<b>0.029</b>	<0.005	<0.005	<0.005	<0.005	<0.005
S-2-5*	5	10-25-2005	<b>0.45</b>	<0.005	<0.005	<0.005	<0.005	<0.005
S-2-10*	10	10-25-2005	<b>0.059</b>	<0.005	<0.005	<0.005	<0.005	<0.005
S-2-15*	15	10-25-2005	<b>0.036</b>	<0.005	<0.005	<0.005	<0.005	<0.005
S-2-25*	25	10-25-2005	<b>0.048</b>	<0.005	<0.005	<0.005	<0.005	<0.005
S-2-35*	35	10-25-2005	<b>0.023</b>	<0.005	<0.005	<0.005	<0.005	<0.005
S-3-25*	25	10-25-2005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
S-3-35*	35	10-25-2005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
P-1@1	1	01-22-2007	<0.0048	<0.0048	<0.0048	<0.0048	<0.0048	<0.0048
P-1@5	5	01-22-2007	<b>0.0055</b>	<0.0049	<0.0049	<0.0049	<0.0049	<0.0049
P-2@1	1	01-22-2007	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050
P-2@5	5	01-22-2007	<0.0047	<0.0047	<0.0047	<0.0047	<0.0047	<0.0047
S-1@24#	24	03-02-2007	<0.0045	<0.0045	<0.0045	<0.0045	<0.0045	<0.0045
S-2@26#	26	03-02-2007	<0.0049	<0.0049	<0.0049	<0.0049	<0.0049	<0.0049
S-3@2#	2	03-01-2007	<0.0048	<0.0048	<0.0048	<0.0048	<0.0048	<0.0048
S-3@4#	4	03-01-2007	<b>0.012</b>	<b>0.013</b>	<0.0049	<b>0.014</b>	<b>0.061</b>	<0.0049
S-3@8#	8	03-01-2007	<b>0.079</b>	<b>0.0066</b>	<0.0048	<0.0048	<0.0048	<0.0048
S-3@10#	10	03-01-2007	<b>0.023</b>	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050
S-3@27#	27	03-01-2007	<0.0047	<0.0047	<0.0047	<0.0047	<0.0047	<0.0047
S-4@25#	25	03-01-2007	<0.0049	<0.0049	<0.0049	<0.0049	<0.0049	<0.0049
S-5@30#	30	03-01-2007	<0.0048	<0.0048	<0.0048	<0.0048	<0.0048	<0.0048
1-B1/S-10	10	11-27-2007	<b>0.079</b>	<0.0049	<0.0049	<0.0049	<0.0049	<0.0049
1-B1/S-20	20	11-27-2007	<b>0.017</b>	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050
1-B1/S-30	30	11-27-2007	<0.0049	<0.0049	<0.0049	<0.0049	<0.0049	<0.0049
1-B1/S-40	40	11-27-2007	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050
1-B1/S-50	50	11-27-2007	<b>0.0014</b>	<0.0049	<0.0049	<0.0049	<0.0049	<0.0049
1-B1/S-60	60	11-27-2007	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050
1-B1/S-70	70	11-27-2007	<0.0049	<0.0049	<0.0049	<0.0049	<0.0049	<0.0049
1-B1/S-80	80	11-27-2007	<0.0049	<0.0049	<0.0049	<0.0049	<0.0049	<0.0049
1-B1/S-90	90	11-27-2007	<0.0048	<0.0048	<0.0048	<0.0048	<0.0048	<0.0048
MWB1	5.5	12-18-2007	<b>0.081</b>	<0.0047	<0.0047	<0.0047	<0.0047	<0.0047
MWB1	10.5	12-18-2007	<b>0.068</b>	<0.0049	<0.0049	<0.0049	<0.0049	<0.0049
MWB2	25.5	12-18-2007	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050
MW-3	26	12-19-2007	<0.0046	<0.0046	<0.0046	<0.0046	<0.0046	<0.0046
SVE-1-5	5	01-08-2009	<b>0.058</b>	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050
SVE-1-10	10	01-08-2009	<b>0.011</b>	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050
SVE-1-15	15	01-08-2009	<b>0.014</b>	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050
OW-1-5	5	01-08-2009	<b>0.040</b>	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050



**TABLE 2**  
**SOIL ANALYTICAL DATA**  
Metro Valley Cleaners  
224 Rickenbacker Circle, Livermore, California  
(mg/kg)

Sample ID	Depth (feet bsg)	Date	EPA Method 8260B					
			PCE	TCE	1,1-DCE	Trans 1,2-DCE	Cis 1,2-DCE	VC
OW-2-5	5	01-08-2009	<b>0.036</b>	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050
OW-2-10	10	01-08-2009	<b>0.026</b>	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050
SVE-2-20	20	12-07-2009	<b>0.010</b>	<0.005	<0.005	<0.005	<0.005	<0.005
SVE-3-10	10	12-07-2009	<b>0.0094</b>	<0.005	<0.005	<0.005	<0.005	<0.005
SVE-3-20	20	12-07-2009	<b>0.0082</b>	<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.

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

\*: borings advanced by JML Environmental Solutions in 2005

#: borings advanced by ENGEO in 2007

# **APPENDIX A**

**Background Information**  
**METRO VALLEY CLEANERS**  
**224 Rickenbacker Circle, Livermore, California**

The site was formerly used as a dry cleaning facility utilizing a solvent-based dry cleaning machine. Reportedly, the tetrachloroethene (PCE)-based dry cleaning machine was upgraded in the early 1990s to an Exxon DF2000, which is a clean solvent machine, and then later to silicon-based dry cleaning technology. All dry cleaning equipment was reportedly removed from the site in 2005.

#### REGIONAL GEOLOGIC/HYDROGEOLOGIC CONDITIONS

In general, alternating layers of clay and silt were noted during the advancement of the pilot borings. Distinct layers of sand and gravel were also noted; sand layers encountered were poorly-graded containing some gravel pieces while gravel layers were noted as angular gravel containing some sands and silt.

#### PREVIOUS SITE ASSESSMENT

In October 2005, JMK Environmental Solutions advanced three soil borings for the collection of soil samples at the site. Soil samples were collected from borings S-1 and S-2 at five-foot intervals from 5 feet to 15 feet below surface grade (bsg) and in ten-foot intervals between 15 feet and 35 feet bsg.

In January 2007, ENGEO Inc. advanced nine soil borings (SG-1 to SG-9) to five feet bsg for the collection of soil-gas samples and two soil borings (P-1 and P-2) to one and five feet bsg for the collection of soil samples. Soil-gas samples were collected in syringes and analyzed by a mobile laboratory in accordance with EPA Method 8260M. PCE and related PCE-daughter products were reported in the soil-gas samples. PCE was also reported in soil sample P-1@5 at five feet bsg.

In March 2007, ENGEO, Inc. advanced five soil borings (S-1 through S-5) for the collection of soil and ground water. Soil samples were collected at various depths ranging from 2 feet to 30 feet bsg. In general, ground water samples were collected from the first water bearing unit at depths ranging from approximately 21 feet to 26 feet bsg. PCE was reported in soil samples collected from S-3, which is located near the former dry cleaning unit. PCE was reported in each grab water samples collected from boring S-2 through S-5.

In November 2007, ENGEO, Inc. advanced one boring (1-B1) near the current trash holding area to define the vertical extent of soil and ground water. Soil samples were collected at ten-foot intervals from 10 feet to 90 feet bsg; grab ground water samples were collected at depths of approximately 35, 70 and 95 feet bsg. PCE was reported in soil samples from collected from 10, 20 and 50 feet bsg. No target chemicals were reported in grab ground water samples.

In December 2007, ENGEO, Inc. performed a soil-gas survey and advanced seven soil borings (SG-10 through SG-16) to five feet bsg and collected eight soil-gas samples in Summa canisters and analyzed by EPA Method TO-15. Results from the survey indicated that all locations were either non-detect or below environmental screening levels for target chemicals.

In December 2007, ENGEO, Inc. installed three ground water monitoring wells (MW-1 through MW-3). Soil samples were collected from MW-1 at 5.5 feet and 10 feet bsg; one soil sample was collected during the advancement of MW-2 and MW-3 at depths of 25.5 feet and 26 feet, respectively. PCE was reported in both soil samples collected during the installation of well MW-1.

ENGEO, Inc. performed one ground water monitoring event at the site in January 2008 utilizing wells MW-1 through MW-3. PCE was reported in monitoring wells MW-1 and MW-2 at concentrations below Maximum Contaminate Level (MCL) of 5 ug/l. Historical analytical soil, ground water, soil-gas and other data is included in Tables 2 through 4 and 7.

On 08 January 2009 *Advanced* GeoEnvironmental, Inc. (AGE) advanced one SVE well (SVE-1) and two SVE observation wells (OW-1 and OW-2) at the site. Three pilot soil borings were advanced at the site to depths of approximately 20 feet bsg. SVE well SVE-1 was advanced south of the former dry-cleaning machine location and adjacent to soil vapor monitoring point SG-5. SVE observation well OW-1 was located approximately 39 feet to the southwest of well SVE-1 and north of the location of borings SG-3 and S-5. SVE observation well OW-2 was located approximately 21 feet west of well SVE-1. PCE was reported in samples collected at 5, 10 and 15 feet bsg in pilot boring SVE-1. PCE was reported in the sample collected at 5 feet bsg in pilot boring OW-1. PCE was reported in samples collected at 5 and 10 feet bsg in pilot boring.

On 19 and 20 January 2009 AGE performed vapor extraction tests at the site. Field work was performed as detailed in the AGE-prepared *Soil Vapor Extraction Pilot Test Work Plan* dated 02 October 2008 and as modified and approved by Alameda County Environmental Health Services (ACEHS) in their letter dated 07 November 2008 and consisted of a 24-hour variable speed pilot test utilizing SVE well SVE-1, screened from 5 feet to 20 feet bsg, to evaluate the use of the technology to effectively remove chlorinated solvents from the impacted soil. PCE was reported in each of the four soil vapor samples collected from SVE well SVE-1. Trichloroethene (TCE) was reported in soil vapor sample.

Based on the results of vapor extraction pilot tests performed at the site on, AGE had recommended installation of a soil vapor extraction (SVE) system utilizing existing shallow-screened vapor well SVE-1. AGE also recommended converting pilot test observation wells OW-1 and OW-2, which are constructed identical to SVE-1, to soil vapor extraction wells. Additionally AGE recommended the installation of two additional SVE wells near and north of the former drying cleaning system.

On 10 April 2009, Alameda County Environmental Health Services (ACEHS) concurred with

AGE's above stated recommendations and directed that an interim remediation work plan be submitted to the ACEHS by 15 June 2009 (Appendix A). Due to budget and scheduling constraints AGE requested two separate extensions for the submittal of the interim soil remediation work plan, which were approved by ACEHS in email correspondence dated 09 June and 11 August 2009.

# **APPENDIX B**



BAY AREA  
AIR QUALITY  
MANAGEMENT  
DISTRICT  
SINCE 1955

March 4, 2010

Hancock & Strong Properties(Metro Valley Cleaners)  
837 Shaw Road  
Stockton, CA 95215

Attention: Arthur Deicke

RECEIVED  
MAR 12 2010

Application Number: 21443  
Plant Number: 20037  
Equipment Location:  
224 Rickenbacker Cir  
Livermore, CA 94551

ALAMEDA COUNTY  
Tom Bates  
(Vice-Chair)  
Scott Haggerty  
Jennifer Hosterman  
Nate Miley

CONTRA COSTA COUNTY  
John Gioia  
(Secretary)  
David Hudson  
Mark Ross  
Gayle B. Uilkema

MARIN COUNTY  
Harold Brown, Jr.

NAPA COUNTY  
Brad Wagenknecht  
(Chair)

SAN FRANCISCO COUNTY  
Chris Daly  
Eric Mar  
Gavin Newsom

SAN MATEO COUNTY  
Carol Klatt  
Carole Groom

SANTA CLARA COUNTY  
Susan Garner  
Ash Kalra  
Liz Kniss  
Ken Yeager

SOLANO COUNTY  
Jim Spering

SONOMA COUNTY  
Shirlee Zane  
Pameia Torliatt

Jack P. Broadbent  
EXECUTIVE OFFICER/APCO

Dear Applicant:

Enclosed is your Permit to Operate the following:

**S-1 Soil Vapor Extraction System**

*abated by*

**A-1 SVE Abatement System**

The equipment described above is subject to condition no. 24545.

In accordance with Regulation 2-1-411.2, you must sign your Permit to Operate. All Permits should be posted in a clearly visible and accessible place on or near the equipment to be operated, or kept available for inspection at any time. Operation of this equipment in violation of District Regulations or any permit conditions is subject to penalty action.

In the absence of specific permit conditions to the contrary, the throughputs, fuel and material consumption, capacities, and hours of operation described in your permit application will be considered maximum allowable limits. A new permit will be required before any increase in these parameters, or change in raw material handled may be made.

Please include your permit number with any correspondence with the District. If you have any questions on this matter please call Judith A Cutino, Senior Air Quality Engineer at (415) 749-5115.

Very truly yours,

Jack P. Broadbent  
Executive Officer/APCO

*Scott Lutz*  
by  
Engineering Division

JAC:ryr  
Enclosure

*Spare the Air*

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BAY AREA  
AIR QUALITY  
MANAGEMENT  
DISTRICT  
SINCE 1979

# PERMIT TO OPERATE

PLANT No. 20037

SOURCE No. 1

**Hancock & Strong Properties(Metro Valley Cleaners)**

**224 Rickenbacker Cir, Livermore, CA 94551**

IS HEREBY GRANTED A PERMIT TO OPERATE THE FOLLOWING EQUIPMENT

Soil Vapor Extraction System  
consisting of a SLABY Environmental, SEI250 vacuum blower, 250 max scfm and liquid separator

*abated by*

A-1 SVE Abatement System

consisting of at least two (200 lb minimum capacity) Carbon Adsorption Vessels holding granular activated carbon arranged in series

Subject to attached condition no. 24545.<sup>1</sup>

JACK P. BROADBENT  
EXECUTIVE OFFICER/APCO

Permit Issue Date March 4, 2010  
Reported Start Up Date March 1, 2010  
Permit Expiration Date March 1, 2011

By 

**Right of Entry**

The Air Pollution Control Officer of the Bay Area Air Quality Management District, the Chairman of the California Air Resources Board, the Regional Administrator of the Environmental Protection Agency, and/or their designees, upon presentation of credentials, shall be granted the right of entry to any premises on which an air pollution source is located for the purposes of: i) the inspection of the source ii) the sampling of materials used at the source iii) the conduction of an emissions source test iv) the inspection of any records required by District rule or permit condition.

**Permit Expiration**

In accordance with Regulation 3-408, a Permit to Operate is valid for 12 months from the date of issuance or other time period as approved by the APCO. Use of this Permit to Operate is authorized by the District until the later of: the Permit Expiration Date or the Permit Renewal Date. Permit to operate fees will be prorated as described in Regulation 3-402 when the permit is renewed.

This permit does not authorize violation of the rules and regulations of the BAAQMD or the Health and Safety Code of the State of California. District regulations may be viewed on line at [www.baaqmd.gov](http://www.baaqmd.gov). This permit is not transferable to another person without approval from the District. It is the responsibility of the permit holder to have knowledge of and be in compliance with all District Rules and Regulations.

*1. Compliance with conditions contained in this permit does not mean that the permit holder is currently in compliance with District Rules and Regulations.*

**Permit Holder Must Sign Here** \_\_\_\_\_

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Plant Name: Hancock & Strong Properties(Metro Valley Cleaners)

Source No. 1 Soil Vapor Extraction System

Condition No. 24545

Plant No. 20037

Application No. 21443

COND# 24545 -----

1. The owner/operator shall abate the organic emissions from Source S-1 abated by A-1 SVE Abatement System consisting of at least two Activated Carbon Vessels (200 lbs minimum capacity each) arranged in series during all periods of operation. Start-up and subsequent operation of the abatement system shall take place only after written notification of same has been received by the District's Engineering Division. The owner/operator shall operate the sources such that the soil vapor flow rate from S-1 shall not exceed 250 scfm.

In no event shall emissions from S-1 of tetrachloroethylene and trichloroethylene) to the atmosphere exceed the following limits:

Compounds	Pounds/day
Tetrachloroethylene (PCE, PERC)	0.049
Trichloroethylene (TCE)	0.148

[basis: Cumulative Increase, Regulation. 8-47-301 and 302, Regulation 2-5, TBACT]

2. During operation of the Activated Carbon Vessels, the owner/operator of this source shall monitor with a photo-ionization detector (PID), flame-ionization detector (FID), or other method approved in writing by the District's Source Test Manager at the following locations:
  - a. At the inlet to the second to last Carbon vessel in series.
  - b. At the inlet to the last Carbon vessel in series.
  - c. At the outlet of the carbon vessel that is last in series prior to venting to the atmosphere.

When using a FID to monitor breakthrough, readings may be taken with and without a carbon filter tip fitted on the FID probe. Concentrations measured with the carbon filter tip in place shall be considered methane for the purposes of these permit conditions.

[basis: Cumulative Increase, Regulation 2-5, TBACT]

3. The owner/operator shall record these monitor readings in a monitoring log at the time they are taken. The owner/operator shall use the



**Plant Name: Hancock & Strong Properties(Metro Valley Cleaners)**

**Source No. 1 Soil Vapor Extraction System**

**Condition No. 24545**

**Plant No. 20037**

**Application No. 21443**

monitoring results to estimate the frequency of carbon change-out necessary to maintain compliance with conditions number 4 and 5, and monitoring shall be conducted on a weekly basis. The owner/operator of this source may propose for District review, based on actual measurements taken at the site during operation of the source, that the monitoring schedule be changed based on the decline in organic emissions and/or the demonstrated breakthrough rates of the carbon vessels. Written approval by the District's Engineering Division must be received by the owner/operator prior to a change to the monitoring schedule. [basis: Cumulative Increase, Regulation 2-5, TBACT]

4. The owner/operator shall change out the second to last carbon vessel with unspent carbon upon breakthrough, defined as the detection at its outlet in excess of the higher of the following limits:
  - a. 10 % of the inlet stream concentration to the Carbon vessel.
  - b. 10 ppmv or greater (measured as hexane).[basis: Cumulative Increase, Regulation 2-5, TBACT]
5. The owner/operator shall change out the last Carbon vessel with unspent Carbon upon detection at its outlet of 10 ppmv or greater (measured as hexane). [basis: Cumulative Increase, Regulation 2-5, TBACT]
6. The owner/operator of this source shall maintain the following records for each month of operation of the source and the abatement system:
  - a. The hours and times of operation.
  - b. Each emission test, monitor reading or analysis result logged in for the day of operation they were taken.
  - c. The number of Carbon vessels removed from service.
  - d. Total throughput of soil vapor from Source S-1 in Standard Cubic Feet.

All measurements, records and data required to be maintained by the owner/operator shall be retained and made available for inspection by the District for at least two years following the date the data is recorded. [basis:Regulation 1-523]

7. The owner/operator shall report any non-compliance with these conditions to the



**Plant Name: Hancock & Strong Properties(Metro Valley Cleaners)**

**Source No. 1 Soil Vapor Extraction System**

**Condition No. 24545**

**Plant No. 20037**

**Application No. 21443**

Director of the Compliance & Enforcement  
Division at the time that it is discovered. The  
submittal shall detail the corrective action  
taken and shall include the data showing the  
exceedance as well as the time of occurrence.  
[basis: Cumulative Increase, Regulation 2-5, TBACT]

8. Upon final completion of the remediation  
project, the owner/operator of Source S-1 shall  
notify the Engineering Division within two  
weeks of decommissioning the operation. [basis:  
Cumulative Increase, Regulation 2-5, TBACT]

*End of Conditions*

# **APPENDIX C**



# Advanced GeoEnvironmental, Inc.

837 Shaw Road, Stockton, CA 95215  
(209) 467-1006 FAX: (209) 467-1118

## BORING LOG

BOREHOLE NO.: **SVE-2**

TOTAL DEPTH: **20'**

Project: METRO VALLEY CLEANERS  
Site Location: 224 RICKENBACKER CIRCLE  
LIVERMORE  
CALIFORNIA  
Project No.: AGE-NC-08-1640

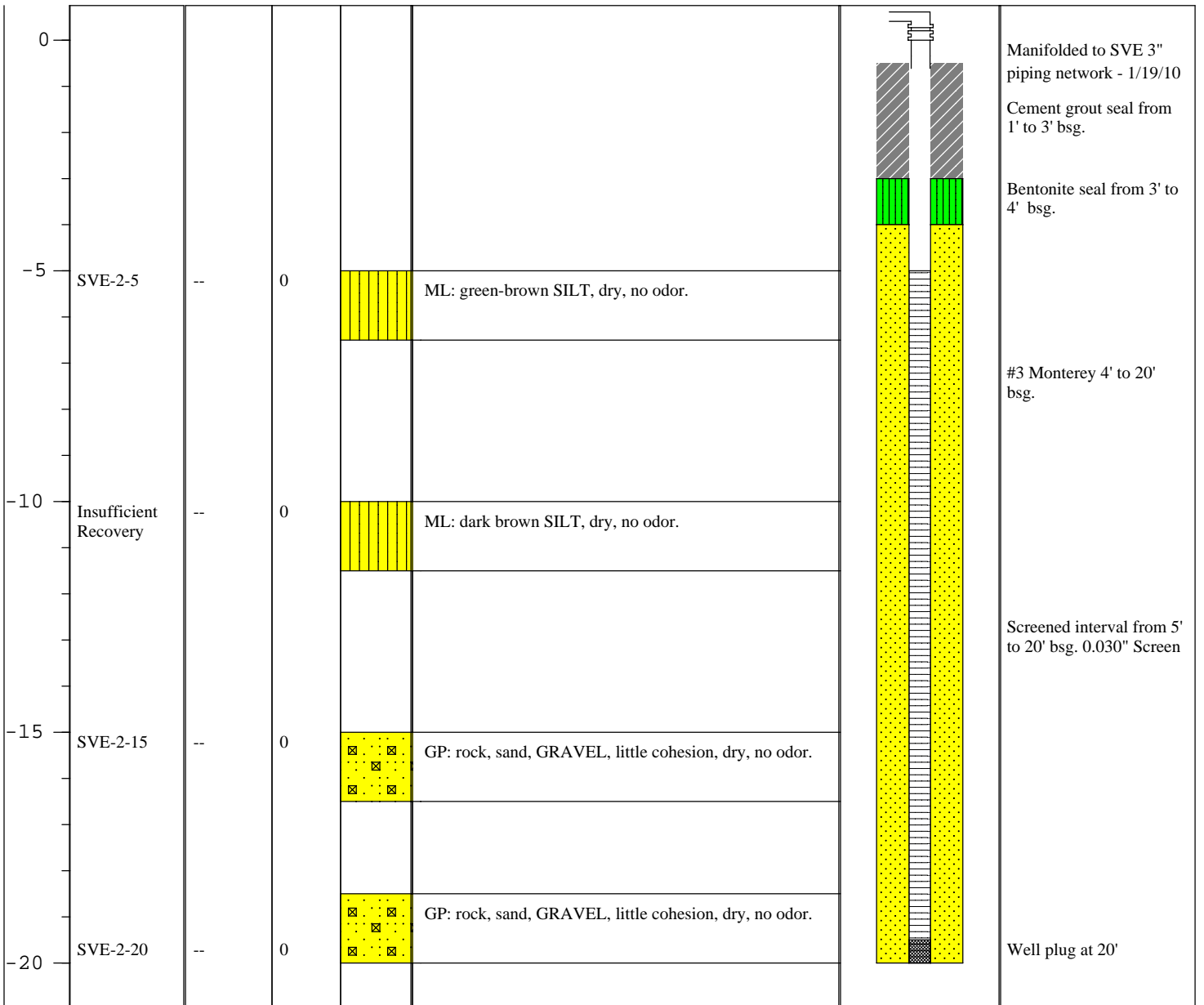
Drilling Co.: Gregg Drilling  
Rig/Auger Type: RHINO - M5T / 8.25" HSA  
Logged By: A. DEICKE  
Reviewed By: W. LITTLE  
Date(s) Drilled: 07 December 2009

Notes: Total depth of boring equal to 20 feet bsg; boring completed as 2-inch diameter soil vapor extraction well

☒ Water Level Before Drilling  
☑ Water Level After Drilling

Page 1 of 1

Depth	Sample ID	Blows (per 6")	PID (ppm)	Soil Symbol	USCS Class and Soil Description	Well Completion	Well Description
-------	-----------	----------------	-----------	-------------	---------------------------------	-----------------	------------------





# Advanced GeoEnvironmental, Inc.

837 Shaw Road, Stockton, CA 95215  
(209) 467-1006 FAX: (209) 467-1118

## BORING LOG

BOREHOLE NO.: **SVE-3**

TOTAL DEPTH: **20'**

**Project:** METRO VALLEY CLEANERS  
**Site Location:** 224 RICKENBACKER CIRCLE  
LIVERMORE  
CALIFORNIA  
**Project No.:** AGE-NC-08-1640

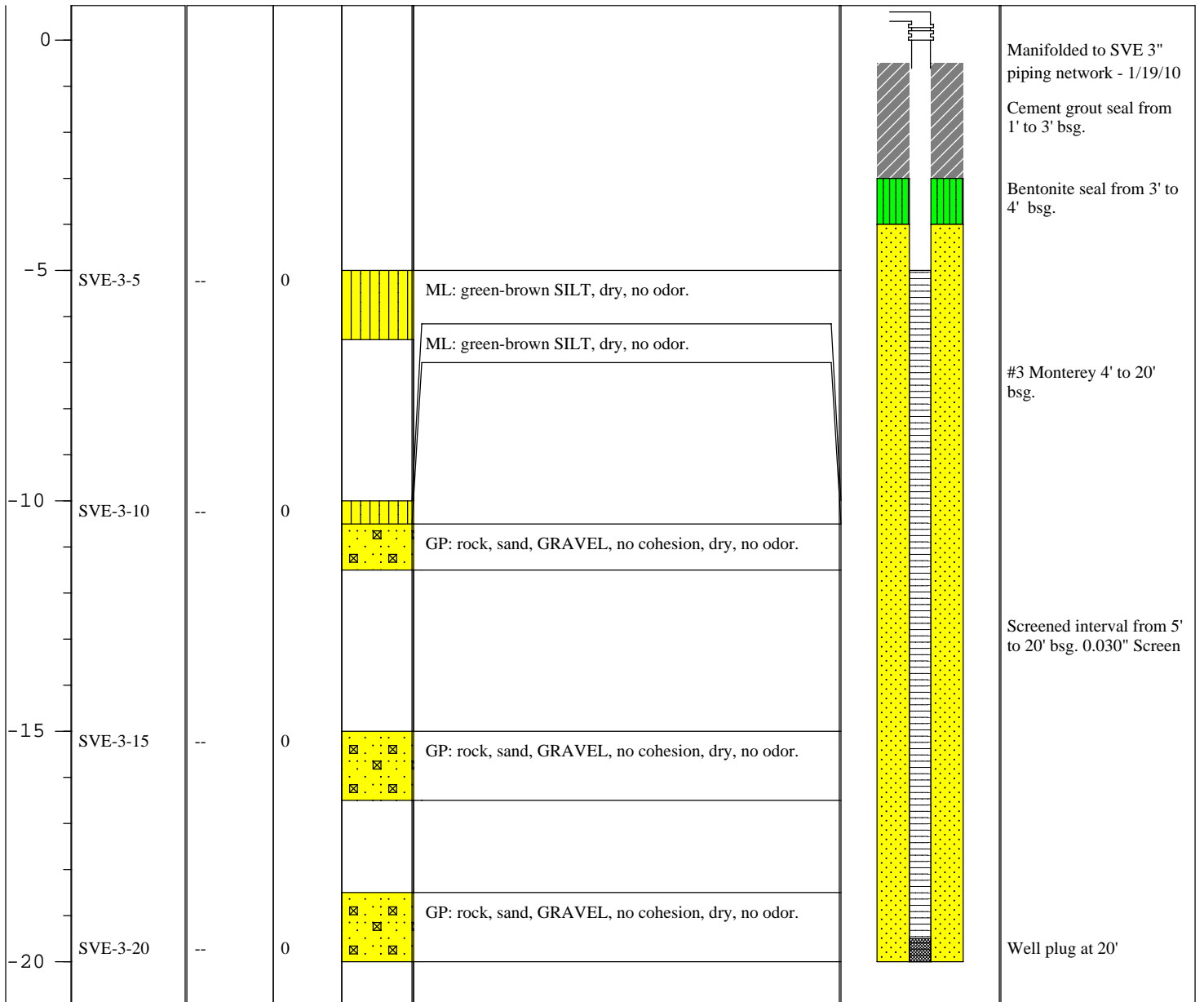
**Drilling Co.:** Gregg Drilling  
**Rig/Auger Type:** RHINO - M5T / 8.25" HSA  
**Logged By:** A. DEICKE  
**Reviewed By:** W. LITTLE  
**Date(s) Drilled:** 07 December 2009

**Notes:** Total depth of boring equal to 20 feet bsg; boring completed as 2-inch diameter soil vapor extraction well

☒ Water Level Before Drilling  
☑ Water Level After Drilling

Page 1 of 1

Depth	Sample ID	Blows (per 6")	PID (ppm)	Soil Symbol	USCS Class and Soil Description	Well Completion	Well Description
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# **APPENDIX D**

# CAL TECH Environmental Laboratories



6814 Rosecrans Avenue, Paramount, CA 90723-3146  
 Telephone: (562) 272-2700 Fax: (562) 272-2789

## ANALYTICAL RESULTS\*

**CTEL Project No:** CT214-0912057

**Client Name:** Advanced Geo Environmental, Inc.  
 837 Shaw Road  
 Stockton, CA 95215

**Phone:**(209) 467-1006  
**Fax:** (209) 467-1118

**Attention:** Mr. Art Deicke

**Project ID:** Global ID:

**Project Name:** Metro Valley Cleaners

**Date Sampled:** 12/07/09 @ 09:20 am

**Date Received:** 12/08/09 @ 12:30 p.m.

**Date Analyzed:** 12/09/09

**Matrix:** Soil

<b>Laboratory ID:</b>	0912-057-3	0912-057-5	0912-057-7	<b>Method</b>	<b>Units:</b>	<b>Detection Limit</b>
<b>Client Sample ID:</b>	SVE-2-20	SVE-3-10	SVE-3-20			
<b>Dilution</b>	1	1	1			
Dichlorodifluoromethane	ND	ND	ND	EPA 8260B	mg/Kg	0.005
Chloromethane	ND	ND	ND	EPA 8260B	mg/Kg	0.005
Vinyl Chloride	ND	ND	ND	EPA 8260B	mg/Kg	0.005
Bromomethane	ND	ND	ND	EPA 8260B	mg/Kg	0.005
Chloroethane	ND	ND	ND	EPA 8260B	mg/Kg	0.005
Trichlorofluoromethane	ND	ND	ND	EPA 8260B	mg/Kg	0.005
Iodomethane	ND	ND	ND	EPA 8260B	mg/Kg	0.005
Acetone	ND	ND	ND	EPA 8260B	mg/Kg	0.005
1,1-Dichloroethene	ND	ND	ND	EPA 8260B	mg/Kg	0.005
t-Butyl Alcohol (TBA)	ND	ND	ND	EPA 8260B	mg/Kg	0.020
Methylene Chloride	ND	ND	ND	EPA 8260B	mg/Kg	0.02
Freon 113	ND	ND	ND	EPA 8260B	mg/Kg	0.01
Carbon disulfide	ND	ND	ND	EPA 8260B	mg/Kg	0.005
Trans,1,2-Dichloroethene	ND	ND	ND	EPA 8260B	mg/Kg	0.005
Methyl-tert-butyl-ether(MtBE)	ND	ND	ND	EPA 8260B	mg/Kg	0.002
1,1-Dichloroethane	ND	ND	ND	EPA 8260B	mg/Kg	0.005
Vinyl acetate	ND	ND	ND	EPA 8260B	mg/Kg	0.005
Diisopropyl Ether (DIPE)	ND	ND	ND	EPA 8260B	mg/Kg	0.002
Methyl Ethyl Ketone	ND	ND	ND	EPA 8260B	mg/Kg	0.01
Cis,1,2-Dichloroethene	ND	ND	ND	EPA 8260B	mg/Kg	0.005
Bromochloromethane	ND	ND	ND	EPA 8260B	mg/Kg	0.005
Chloroform	ND	ND	ND	EPA 8260B	mg/Kg	0.005
2,2-Dichloropropane	ND	ND	ND	EPA 8260B	mg/Kg	0.005
Ethyl-t-butyl ether (ETBE)	ND	ND	ND	EPA 8260B	mg/Kg	0.002
1,1,1-Trichloroethane	ND	ND	ND	EPA 8260B	mg/Kg	0.005
1,2-Dichloroethane	ND	ND	ND	EPA 8260B	mg/Kg	0.005
1,1-Dichloropropene	ND	ND	ND	EPA 8260B	mg/Kg	0.005
Carbon Tetrachloride	ND	ND	ND	EPA 8260B	mg/Kg	0.005
Benzene	ND	ND	ND	EPA 8260B	mg/Kg	0.001
t-Amyl Methyl Ether (TAME)	ND	ND	ND	EPA 8260B	mg/Kg	0.002
1,2-Dichloropropane	ND	ND	ND	EPA 8260B	mg/Kg	0.005
Trichloroethene	ND	ND	ND	EPA 8260B	mg/Kg	0.005
Dibromomethane	ND	ND	ND	EPA 8260B	mg/Kg	0.005
Bromodichloromethane	ND	ND	ND	EPA 8260B	mg/Kg	0.005
2-Chloroethylvinylether	ND	ND	ND	EPA 8260B	mg/Kg	0.005
Cis, 1,3-Dichloropropene	ND	ND	ND	EPA 8260B	mg/Kg	0.005
4-Methyl-2-pentanone(MI)	ND	ND	ND	EPA 8260B	mg/Kg	0.01
Trans,1,3-Dichloropropene	ND	ND	ND	EPA 8260B	mg/Kg	0.005
Toluene	ND	ND	ND	EPA 8260B	mg/Kg	0.001
1,1,2-Trichloroethane	ND	ND	ND	EPA 8260B	mg/Kg	0.005



**CTEL Project No:** CT214-0912057

**Project ID:** Global ID:  
**Project Name:** Metro Valley Cleaners

Laboratory ID:	0912-057-3	0912-057-5	0912-057-7	Method	Units	Detection Limit
Client Sample ID:	SVE-2-20	SVE-3-10	SVE-3-20			
1,2-Dibromoethane(EDB)	ND	ND	ND	EPA 8260B	mg/Kg	0.005
1,3-Dichloropropane	ND	ND	ND	EPA 8260B	mg/Kg	0.005
Dibromochloromethane	ND	ND	ND	EPA 8260B	mg/Kg	0.005
2-Hexanone	ND	ND	ND	EPA 8260B	mg/Kg	0.01
Tetrachloroethene	0.010	0.0094	0.0082	EPA 8260B	mg/Kg	0.005
Chlorobenzene	ND	ND	ND	EPA 8260B	mg/Kg	0.005
1,1,1,2-Tetrachloroethane	ND	ND	ND	EPA 8260B	mg/Kg	0.005
Ethylbenzene	ND	ND	ND	EPA 8260B	mg/Kg	0.001
m,p-Xylene	ND	ND	ND	EPA 8260B	mg/Kg	0.001
Bromoform	ND	ND	ND	EPA 8260B	mg/Kg	0.005
Styrene	ND	ND	ND	EPA 8260B	mg/Kg	0.005
o-Xylene	ND	ND	ND	EPA 8260B	mg/Kg	0.001
1,1,2,2-Tetrachloroethane	ND	ND	ND	EPA 8260B	mg/Kg	0.005
1,2,3-Trichloropropane	ND	ND	ND	EPA 8260B	mg/Kg	0.005
Isopropylbenzene	ND	ND	ND	EPA 8260B	mg/Kg	0.005
Bromobenzene	ND	ND	ND	EPA 8260B	mg/Kg	0.005
2-Chlorotoluene	ND	ND	ND	EPA 8260B	mg/Kg	0.005
n-Propylbenzene	ND	ND	ND	EPA 8260B	mg/Kg	0.005
4-Chlorotoluene	ND	ND	ND	EPA 8260B	mg/Kg	0.005
1,3,5-Trimethylbenzene	ND	ND	ND	EPA 8260B	mg/Kg	0.005
Tert-Butylbenzene	ND	ND	ND	EPA 8260B	mg/Kg	0.005
1,2,4-Trimethylbenzene	ND	ND	ND	EPA 8260B	mg/Kg	0.005
Sec-Butylbenzene	ND	ND	ND	EPA 8260B	mg/Kg	0.005
1,3-Dichlorobenzene	ND	ND	ND	EPA 8260B	mg/Kg	0.005
1,4-Dichlorobenzene	ND	ND	ND	EPA 8260B	mg/Kg	0.005
p-Isopropyltoluene	ND	ND	ND	EPA 8260B	mg/Kg	0.005
1,2-Dichlorobenzene	ND	ND	ND	EPA 8260B	mg/Kg	0.005
n-Butylbenzene	ND	ND	ND	EPA 8260B	mg/Kg	0.005
1,2 Dibromo-3-Chloropropane	ND	ND	ND	EPA 8260B	mg/Kg	0.005
1,2,4-Trichlorobenzene	ND	ND	ND	EPA 8260B	mg/Kg	0.005
Naphthalene	ND	ND	ND	EPA 8260B	mg/Kg	0.005
1,2,3-Trichlorobenzene	ND	ND	ND	EPA 8260B	mg/Kg	0.005
Hexachlorobutadiene	ND	ND	ND	EPA 8260B	mg/Kg	0.005
Ethanol	ND	ND	ND	EPA 8260B	mg/Kg	0.1

ND = Not Detected at the indicated Detection Limit

SURROGATE SPIKE	% SURROGATE RECOVERY			Control Limit
Dibromofluoromethane	104	105	101	70-130
1,2 Dichloromethaned4	101	105	100	70-130
Toluene-d8	97	95	97	70-130
Bromofluorobenzene	82	84	86	70-130

  
 Greg Tejirian  
 Laboratory Director

\*The results are base upon the sample received.

Cal Tech Environmental Laboratories, Inc. ELAP ID #: 2424

# CAL TECH Environmental Laboratories



6814 Rosecrans Avenue, Paramount, CA 90723-3146  
 Telephone: (562) 272-2700 Fax: (562) 272-2789

## QA/QC Report

Method: 8260B  
 Matrix: Soil  
 Date Analyzed: 12/9/2009  
 Date Extracted: 12/9/2009

Perimeters	Conc. ug/Kg		Spike Added	Recovery %		Control Rec.	Limits RPD	RPD
	MS	MSD		MS	MSD			
1,1-Dichloroethene	45	44	50	90	88	70-130	20	2
Benzene	49	47	50	98	94	70-130	20	4
Trichloroethene	49	48	50	98	96	70-130	20	2
Toluene	50	49	50	100	98	70-130	20	2
Chlorobenzene	46	46	50	92	92	70-130	20	0
m,p-Xylenes	91	93	100	91	93	70-130	20	2

MS: Matrix Spike  
 MSD: Matrix Spike Duplicate

RPD: Relative Percent Difference of MS and MSD

Perimeters	Method Blank	Units	Det. Limit
1,1-Dichloroethene	ND	ug/Kg	5
Benzene	ND	ug/Kg	5
Trichloroethene	ND	ug/Kg	5
Toluene	ND	ug/Kg	5
Chlorobenzene	ND	ug/Kg	5
m,p-Xylenes	ND	ug/Kg	5
MTBE	ND	ug/Kg	5
TBA	ND	ug/Kg	100
DIPE	ND	ug/Kg	10
ETBE	ND	ug/Kg	10
TAME	ND	ug/Kg	10
1,2-Dichloroethane	ND	ug/Kg	5
EDB	ND	ug/Kg	5
Ethylbenzene	ND	ug/Kg	5
o-Xylene	ND	ug/Kg	5



# Advanced GeoEnvironmental, Inc.

www.advgeoenv.com

## CHAIN OF CUSTODY RECORD

- 837 Shaw Road, Stockton, California 95215 • Phone (209) 467-1006 • Fax (209) 467-1118
- 381 Thor Place, Brea, California 92821 • Phone (714) 529-0200 • Fax (714) 529-0203
- 2318 Fourth Street, Santa Rosa, California 95404 • Phone (707) 570-1418 • Fax (707) 570-1461
- 395 Del Monte Center, #111, Monterey, California 93940 • Phone (800) 511-9300 • Fax (831) 394-5979

12-057

Date: 12-7-09 Page 1 of 1

### Analysis Required

Full 8260																				

Project Name: Metro Valley Cleaners Project Manager: Arthur Deicke

Client: \_\_\_\_\_ Sampler (initials & signature): \_\_\_\_\_

Invoice to:  AGE  Client Lab Project No.: \_\_\_\_\_

Sample ID/Location/Description	Date	Time	Matrix	Number	Notes
SVE-2-5	12-7-09	0905	S	1	HOLD
SVE-2-15	12-7-09	0910 <sup>0915</sup>	S	1	HOLD
SVE-2-20	12-7-09	0915 <sup>0920</sup>	S	1	
SVE-3-5	12-7-09	1020	S	1	HOLD
SVE-3-10	12-7-09	1025	S	1	
SVE-3-15	12-7-09	1028	S	1	HOLD
SVE-3-20	12-7-09	1030	S	1	

Relinquished by: ADeicke Date: \_\_\_\_\_ Time: \_\_\_\_\_ Laboratory: CTEL

Courier: OnTrac Received by: GREG T Date: 12/8/09 Time: 12:30

Relinquished by: \_\_\_\_\_ Date: \_\_\_\_\_ Time: \_\_\_\_\_ Received by: \_\_\_\_\_ Date: \_\_\_\_\_ Time: \_\_\_\_\_

Relinquished by: \_\_\_\_\_ Date: \_\_\_\_\_ Time: \_\_\_\_\_ Received by: \_\_\_\_\_ Date: \_\_\_\_\_ Time: \_\_\_\_\_

Requested Turn Around Time (circle): 24 hours 48 hours 72 hours 5 days (standard) Other: \_\_\_\_\_

Special Instructions to lab: \_\_\_\_\_

Matrix Codes: A = Air W = Water S = Solid

I hereby authorize the performance of the above indicated work.

Signature: ADeicke

Geotracker EDF to:  geotracker@advgeoenv.com  Global ID: \_\_\_\_\_



# CAL TECH Environmental Laboratories



6814 Rosecrans Avenue. Paramount, CA 90723-3146  
 Telephone: (562) 272-2700 Fax: (562) 272-2789

## ANALYTICAL RESULTS\*

**CTEL Project No:** CT214-1002173  
**Client Name:** Advanced Geo Environmental, Inc.  
 837 Shaw Road  
 Stockton, CA 95215  
**Attention:** Mr. Art Deicke

**Phone:**(209) 467-1006  
**Fax:** (209) 467-1118

**Project ID:** Global ID: T06019748481  
**Project Name:** Metro Valley Cleaners

**Date Sampled:** 02/22/10 @ 11:43 am  
**Date Received:** 02/23/10 @ 08:30 am  
**Date Analyzed:** 02/23/10

**Matrix:** Air

**Laboratory ID:** 1002-173-1  
**Client Sample ID:** GAC-1-V  
**Dilution:** 1

		Method	Units:	Detection Limit
Dichlorodifluoromethane	ND	EPA 8260B	ug/L	1
Chloromethane	ND	EPA 8260B	ug/L	1
Vinyl Chloride	ND	EPA 8260B	ug/L	0.5
Bromomethane	ND	EPA 8260B	ug/L	1
Chloroethane	ND	EPA 8260B	ug/L	1
Trichlorofluoromethane	ND	EPA 8260B	ug/L	1
Iodomethane	ND	EPA 8260B	ug/L	1
Acetone	ND	EPA 8260B	ug/L	10
1,1-Dichloroethene	ND	EPA 8260B	ug/L	1
t-Butyl Alcohol (TBA)	ND	EPA 8260B	ug/L	25
Methylene Chloride	ND	EPA 8260B	ug/L	10
Freon 113	ND	EPA 8260B	ug/L	5
Carbon disulfide	ND	EPA 8260B	ug/L	1
trans,1,2-Dichloroethene	ND	EPA 8260B	ug/L	1
Methyl-tert-butyl-ether(MtBE)	ND	EPA 8260B	ug/L	5
1,1-Dichloroethane	ND	EPA 8260B	ug/L	1
Vinyl acetate	ND	EPA 8260B	ug/L	50
Diisopropyl Ether (DIPE)	ND	EPA 8260B	ug/L	1
Methyl Ethyl Ketone	ND	EPA 8260B	ug/L	10
cis,1,2-Dichloroethene	ND	EPA 8260B	ug/L	1
Bromochloromethane	ND	EPA 8260B	ug/L	1
Chloroform	ND	EPA 8260B	ug/L	1
2,2-Dichloropropane	ND	EPA 8260B	ug/L	1
Ethyl-t-butyl ether (ETBE)	ND	EPA 8260B	ug/L	1
1,1,1-Trichloroethane	ND	EPA 8260B	ug/L	1
1,2-Dichloroethane	ND	EPA 8260B	ug/L	0.5
1,1-Dichloropropene	ND	EPA 8260B	ug/L	1
Carbon Tetrachloride	ND	EPA 8260B	ug/L	0.5
Benzene	ND	EPA 8260B	ug/L	0.5
t-Amyl Methyl Ether (TAME)	ND	EPA 8260B	ug/L	1
1,2-Dichloropropane	ND	EPA 8260B	ug/L	1
Trichloroethene	ND	EPA 8260B	ug/L	1
Dibromomethane	ND	EPA 8260B	ug/L	1
Bromodichloromethane	ND	EPA 8260B	ug/L	1
2-Chloroethylvinylether	ND	EPA 8260B	ug/L	5
cis,1,3-Dichloropropene	ND	EPA 8260B	ug/L	1
4-Methyl-2-pentanone(MI)	ND	EPA 8260B	ug/L	10
trans,1,3-Dichloropropene	ND	EPA 8260B	ug/L	1
Toluene	ND	EPA 8260B	ug/L	0.5
1,1,2-Trichloroethane	ND	EPA 8260B	ug/L	1

(Continued)

CTEL Project No: CT214-1002173

Project ID: Global ID: T06019748481

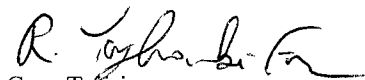
Project Name: Metro Valley Cleaners

Laboratory ID: 1002-173-1  
Client Sample ID: GAC-1-V

		Method	Units	Detection Limit
1,2-Dibromoethane(EDB)	ND	EPA 8260B	ug/L	0.5
1,3-Dichloropropane	ND	EPA 8260B	ug/L	1
Dibromochloromethane	ND	EPA 8260B	ug/L	1
2-Hexanone	ND	EPA 8260B	ug/L	10
Tetrachloroethene	ND	EPA 8260B	ug/L	1
Chlorobenzene	ND	EPA 8260B	ug/L	1
1,1,1,2-Tetrachloroethane	ND	EPA 8260B	ug/L	1
Ethylbenzene	ND	EPA 8260B	ug/L	0.5
m,p-Xylene	ND	EPA 8260B	ug/L	0.6
Bromoform	ND	EPA 8260B	ug/L	1
Styrene	ND	EPA 8260B	ug/L	1
o-Xylene	ND	EPA 8260B	ug/L	0.6
1,1,2,2-Tetrachloroethane	ND	EPA 8260B	ug/L	1
1,2,3-Trichloropropane	ND	EPA 8260B	ug/L	1
Isopropylbenzene	ND	EPA 8260B	ug/L	1
Bromobenzene	ND	EPA 8260B	ug/L	1
2-Chlorotoluene	ND	EPA 8260B	ug/L	1
n-Propylbenzene	ND	EPA 8260B	ug/L	1
4-Chlorotoluene	ND	EPA 8260B	ug/L	1
1,3,5-Trimethylbenzene	ND	EPA 8260B	ug/L	1
tert-Butylbenzene	ND	EPA 8260B	ug/L	1
1,2,4-Trimethylbenzene	ND	EPA 8260B	ug/L	1
sec-Butylbenzene	ND	EPA 8260B	ug/L	1
1,3-Dichlorobenzene	ND	EPA 8260B	ug/L	1
1,4-Dichlorobenzene	ND	EPA 8260B	ug/L	1
p-Isopropyltoluene	ND	EPA 8260B	ug/L	1
1,2-Dichlorobenzene	ND	EPA 8260B	ug/L	1
n-Butylbenzene	ND	EPA 8260B	ug/L	1
1,2 Dibromo-3-Chloropropane	ND	EPA 8260B	ug/L	1
1,2,4-Trichlorobenzene	ND	EPA 8260B	ug/L	1
Naphthalene	ND	EPA 8260B	ug/L	1
1,2,3-Trichlorobenzene	ND	EPA 8260B	ug/L	1
Hexachlorobutadiene	ND	EPA 8260B	ug/L	1

ND = Not Detected at the indicated Detection Limit

SURROGATE SPIKE	% SURROGATE RECOVERY	Control Limit
Dibromofluoromethane	115	70-130
1,2 Dichloromethaned4	117	70-130
Toluene-d8	93	70-130
Bromofluorobenzene	118	70-130

  
Greg Tefirian  
Laboratory Director

\*The results are base upon the sample received.

Cal Tech Environmental Laboratories, Inc. ELAP ID #: 2424

# CAL TECH Environmental Laboratories



6814 Rosecrans Avenue. Paramount, CA 90723-3146  
 Telephone: (562) 272-2700 Fax: (562) 272-2789

## QA/QC Report

Method: 8260B / TO15

Matrix: Water / Air

Date Analyzed: 2/23/2010

Date Extracted: 2/23/2010

Perimeters	Conc. ug/L		Spike Added	Recovery %		Control Rec.	Limits RPD	RPD
	MS	MSD		MS	MSD			
1,1-Dichloroethane	49	48	50	98	96	70-130	20	2
Benzene	51	52	50	102	104	70-130	20	2
Trichloroethene	49	51	50	98	102	70-130	20	4
Toluene	50	50	50	100	100	70-130	20	0
Chlorobenzene	47	48	50	94	96	70-130	20	2
m,p-Xylenes	104	107	100	104	107	70-130	20	3

MS: Matrix Spike

MSD: Matrix Spike Duplicate

RPD: Relative Percent Difference of MS and MSD

Perimeters	Method Blank	Units	Det. Limit
1,1-Dichloroethene	ND	ug/L	1
Benzene	ND	ug/L	0.5
Trichloroethene	ND	ug/L	0.5
Toluene	ND	ug/L	0.5
Chlorobenzene	ND	ug/L	0.5
m,p-Xylenes	ND	ug/L	0.6
MTBE	ND	ug/L	1
TBA	ND	ug/L	10
DIPE	ND	ug/L	1
ETBE	ND	ug/L	1
TAME	ND	ug/L	1
1,2-Dichloroethane	ND	ug/L	0.5
EDB	ND	ug/L	0.5
Ethylbenzene	ND	ug/L	0.5
o-Xylene	ND	ug/L	0.6
TCE	ND	ug/L	1
PCE	ND	ug/L	1





# CAL TECH Environmental Laboratories



6814 Rosecrans Avenue, Paramount, CA 90723-3146  
 Telephone: (562) 272-2700 Fax: (562) 272-2789

## ANALYTICAL RESULTS\*

**CTEL Project No:** CT214-1002172  
**Client Name:** Advanced Geo Environmental, Inc.  
 837 Shaw Road  
 Stockton, CA 95215  
**Attention:** Mr. Art Deicke

**Phone:** (209) 467-1006  
**Fax:** (209) 467-1118

**Project ID:** Global ID: T06019748481  
**Project Name:** Metro Valley Cleaners

**Date Sampled:** 02/22/10 @ 11:42 am  
**Date Received:** 02/23/10 @ 08:30 am  
**Date Analyzed:** 02/23/10

**Matrix:** Air

Laboratory ID:	1002-172-1	1002-172-2	Method	Units:	Detection Limit
Client Sample ID:	Influent	Effluent			
Dilution	1	1			
Dichlorodifluoromethane	ND	ND	EPA 8260B	ug/L	1
Chloromethane	ND	ND	EPA 8260B	ug/L	1
Vinyl Chloride	ND	ND	EPA 8260B	ug/L	0.5
Bromomethane	ND	ND	EPA 8260B	ug/L	1
Chloroethane	ND	ND	EPA 8260B	ug/L	1
Trichlorofluoromethane	ND	ND	EPA 8260B	ug/L	1
Iodomethane	ND	ND	EPA 8260B	ug/L	1
Acetone	ND	ND	EPA 8260B	ug/L	10
1,1-Dichloroethene	ND	ND	EPA 8260B	ug/L	1
t-Butyl Alcohol (TBA)	ND	ND	EPA 8260B	ug/L	25
Methylene Chloride	ND	ND	EPA 8260B	ug/L	10
Freon 113	ND	ND	EPA 8260B	ug/L	5
Carbon disulfide	ND	ND	EPA 8260B	ug/L	1
trans,1,2-Dichloroethene	ND	ND	EPA 8260B	ug/L	1
Methyl-tert-butyl-ether(MtBE)	ND	ND	EPA 8260B	ug/L	5
1,1-Dichloroethane	ND	ND	EPA 8260B	ug/L	1
Vinyl acetate	ND	ND	EPA 8260B	ug/L	50
Diisopropyl Ether (DIPE)	ND	ND	EPA 8260B	ug/L	1
Methyl Ethyl Ketone	ND	ND	EPA 8260B	ug/L	10
cis,1,2-Dichloroethene	ND	ND	EPA 8260B	ug/L	1
Bromochloromethane	ND	ND	EPA 8260B	ug/L	1
Chloroform	ND	ND	EPA 8260B	ug/L	1
2,2-Dichloropropane	ND	ND	EPA 8260B	ug/L	1
Ethyl-t-butyl ether (ETBE)	ND	ND	EPA 8260B	ug/L	1
1,1,1-Trichloroethane	ND	ND	EPA 8260B	ug/L	1
1,2-Dichloroethane	ND	ND	EPA 8260B	ug/L	0.5
1,1-Dichloropropene	ND	ND	EPA 8260B	ug/L	1
Carbon Tetrachloride	ND	ND	EPA 8260B	ug/L	0.5
Benzene	ND	ND	EPA 8260B	ug/L	0.5
t-Amyl Methyl Ether (TAME)	ND	ND	EPA 8260B	ug/L	1
1,2-Dichloropropane	ND	ND	EPA 8260B	ug/L	1
Trichloroethene	4.5	ND	EPA 8260B	ug/L	1
Dibromomethane	ND	ND	EPA 8260B	ug/L	1
Bromodichloromethane	ND	ND	EPA 8260B	ug/L	1
2-Chloroethylvinylether	ND	ND	EPA 8260B	ug/L	5
cis,1,3-Dichloropropene	ND	ND	EPA 8260B	ug/L	1
4-Methyl-2-pentanone(MI)	ND	ND	EPA 8260B	ug/L	10
trans,1,3-Dichloropropene	ND	ND	EPA 8260B	ug/L	1
Toluene	ND	ND	EPA 8260B	ug/L	0.5
1,1,2-Trichloroethane	ND	ND	EPA 8260B	ug/L	1

(Continued)



CTEL Project No: CT214-1002172

Project ID: Global ID: T06019748481

Project Name: Metro Valley Cleaners

Laboratory ID: Client Sample ID:	1002-172-1 Influent	1002-172-2 Effluent	Method	Units	Detection Limit
1,2-Dibromoethane(EDB)	ND	ND	EPA 8260B	ug/L	0.5
1,3-Dichloropropane	ND	ND	EPA 8260B	ug/L	1
Dibromochloromethane	ND	ND	EPA 8260B	ug/L	1
2-Hexanone	ND	ND	EPA 8260B	ug/L	10
Tetrachloroethene	93	ND	EPA 8260B	ug/L	1
Chlorobenzene	ND	ND	EPA 8260B	ug/L	1
1,1,1,2-Tetrachloroethane	ND	ND	EPA 8260B	ug/L	1
Ethylbenzene	ND	ND	EPA 8260B	ug/L	0.5
m.p-Xylene	ND	ND	EPA 8260B	ug/L	0.6
Bromoform	ND	ND	EPA 8260B	ug/L	1
Styrene	ND	ND	EPA 8260B	ug/L	1
o-Xylene	ND	ND	EPA 8260B	ug/L	0.6
1,1,2,2-Tetrachloroethane	ND	ND	EPA 8260B	ug/L	1
1,2,3-Trichloropropane	ND	ND	EPA 8260B	ug/L	1
Isopropylbenzene	ND	ND	EPA 8260B	ug/L	1
Bromobenzene	ND	ND	EPA 8260B	ug/L	1
2-Chlorotoluene	ND	ND	EPA 8260B	ug/L	1
n-Propylbenzene	ND	ND	EPA 8260B	ug/L	1
4-Chlorotoluene	ND	ND	EPA 8260B	ug/L	1
1,3,5-Trimethylbenzene	ND	ND	EPA 8260B	ug/L	1
tert-Butylbenzene	ND	ND	EPA 8260B	ug/L	1
1,2,4-Trimethylbenzene	ND	ND	EPA 8260B	ug/L	1
sec-Butylbenzene	ND	ND	EPA 8260B	ug/L	1
1,3-Dichlorobenzene	ND	ND	EPA 8260B	ug/L	1
1,4-Dichlorobenzene	ND	ND	EPA 8260B	ug/L	1
p-Isopropyltoluene	ND	ND	EPA 8260B	ug/L	1
1,2-Dichlorobenzene	ND	ND	EPA 8260B	ug/L	1
n-Butylbenzene	ND	ND	EPA 8260B	ug/L	1
1,2 Dibromo-3-Chloropropane	ND	ND	EPA 8260B	ug/L	1
1,2,4-Trichlorobenzene	ND	ND	EPA 8260B	ug/L	1
Naphthalene	ND	ND	EPA 8260B	ug/L	1
1,2,3-Trichlorobenzene	ND	ND	EPA 8260B	ug/L	1
Hexachlorobutadiene	ND	ND	EPA 8260B	ug/L	1

ND = Not Detected at the indicated Detection Limit

SURROGATE SPIKE	% SURROGATE RECOVERY		Control Limit
Dibromofluoromethane	112	117	70-130
1,2 Dichloromethaned4	120	124	70-130
Toluene-d8	96	97	70-130
Bromofluorobenzene	114	115	70-130



Greg Tejirian  
Laboratory Director

\*The results are base upon the sample received.

Cal Tech Environmental Laboratories, Inc. ELAP ID #: 2424

# CAL TECH Environmental Laboratories



6814 Rosecrans Avenue, Paramount, CA 90723-3146  
 Telephone: (562) 272-2700 Fax: (562) 272-2789

## QA/QC Report

Method: 8260B / TO15

Matrix: Water / Air

Date Analyzed: 2/23/2010

Date Extracted: 2/23/2010

Perimeters	Conc. ug/L		Spike Added	Recovery %		Control Rec.	Limits RPD	RPD
	MS	MSD		MS	MSD			
1,1-Dichloroethane	49	48	50	98	96	70-130	20	2
Benzene	51	52	50	102	104	70-130	20	2
Trichloroethene	49	51	50	98	102	70-130	20	4
Toluene	50	50	50	100	100	70-130	20	0
Chlorobenzene	47	48	50	94	96	70-130	20	2
m,p-Xylenes	104	107	100	104	107	70-130	20	3

MS: Matrix Spike

MSD: Matrix Spike Duplicate

RPD: Relative Percent Difference of MS and MSD

Perimeters	Method Blank	Units	Det. Limit
1,1-Dichloroethene	ND	ug/L	1
Benzene	ND	ug/L	0.5
Trichloroethene	ND	ug/L	0.5
Toluene	ND	ug/L	0.5
Chlorobenzene	ND	ug/L	0.5
m,p-Xylenes	ND	ug/L	0.6
MTBE	ND	ug/L	1
TBA	ND	ug/L	10
DIPE	ND	ug/L	1
ETBE	ND	ug/L	1
TAME	ND	ug/L	1
1,2-Dichloroethane	ND	ug/L	0.5
EDB	ND	ug/L	0.5
Ethylbenzene	ND	ug/L	0.5
o-Xylene	ND	ug/L	0.6
TCE	ND	ug/L	1
PCE	ND	ug/L	1



**Advanced GeoEnvironmental, Inc.**

www.advgeoenv.com

**CHAIN OF CUSTODY RECORD**

- 837 Shaw Road, Stockton, California 95215 • Phone (209) 467-1006 • Fax (209) 467-1118
- 381 Thor Place, Brea, California 92821 • Phone (714) 529-0200 • Fax (714) 529-0203
- 2318 Fourth Street, Santa Rosa, California 95404 • Phone (707) 570-1418 • Fax (707) 570-1461
- 395 Del Monte Center, #111, Monterey, California 93940 • Phone (800) 511-9300 • Fax (831) 394-5979
- 

02-172

Date: 2/22/10 Page 1 of 1

**Analysis Required**

Full 8260																				
	X																			

Project Name: Metro Valley Cleaners Project Manager: Art Deicke

Client: \_\_\_\_\_ Sampler (initials & signature): RM

Invoice to:  AGE  Client Lab Project No.: \_\_\_\_\_

Sample ID/Location/Description	Date	Time	Matrix	Number	Notes
<u>Influent/vapor</u>	<u>2/22/10</u>	<u>1142</u>	<u>A</u>	<u>1</u>	
<u>Effluent/vapor</u>	<u>2/22/10</u>	<u>1144</u>	<u>A</u>	<u>1</u>	

Relinquished by: Rick Mart Date: 2/22/10 Time: 1300 Laboratory: Cal Tech

Courier: Outrac Received by: \_\_\_\_\_ Date: \_\_\_\_\_ Time: \_\_\_\_\_

Relinquished by: \_\_\_\_\_ Date: \_\_\_\_\_ Time: \_\_\_\_\_ Received by: \_\_\_\_\_ Date: \_\_\_\_\_ Time: \_\_\_\_\_

Relinquished by: \_\_\_\_\_ Date: \_\_\_\_\_ Time: \_\_\_\_\_ Received by: R. Taylor Date: 2-23-10 Time: 8:30

Requested Turn Around Time (circle): 24 hours 48 hours 72 hours 5 days (standard) Other: \_\_\_\_\_ Matrix Codes: A = Air W = Water S = Solid

Special Instructions to lab: \_\_\_\_\_ I hereby authorize the performance of the above indicated work.

Geotracker EDF to:  geotracker@advgeoenv.com  \_\_\_\_\_ Global ID: \_\_\_\_\_

Rick Mart

# CAL TECH Environmental Laboratories



6814 Rosecrans Avenue, Paramount, CA 90723-3146  
 Telephone: (562) 272-2700 Fax: (562) 272-2789

## ANALYTICAL RESULTS\*

**CTEL Project No:** CT214-1002183

**Client Name:** Advanced Geo Environmental, Inc.  
 837 Shaw Road  
 Stockton, CA 95215

**Phone:**(209) 467-1006

**Fax:** (209) 467-1118

**Attention:** Mr. Art Deicke

**Project ID:** Global ID: T06019748481

**Project Name:** Metro Valley Cleaners

**Date Sampled:** 02/23/10 @ 10:00 am

**Matrix:** Air

**Date Received:** 02/24/10 @ 09:00 am

**Date Analyzed:** 02/24/10

Laboratory ID:	1002-183-1	1002-183-2	Method	Units:	Detection Limit
Client Sample ID:	Influent	Effluent			
Dilution	1	1			
Dichlorodifluoromethane	ND	ND	EPA 8260B	ug/L	1
Chloromethane	ND	ND	EPA 8260B	ug/L	1
Vinyl Chloride	ND	ND	EPA 8260B	ug/L	0.5
Bromomethane	ND	ND	EPA 8260B	ug/L	1
Chloroethane	ND	ND	EPA 8260B	ug/L	1
Trichlorofluoromethane	ND	ND	EPA 8260B	ug/L	1
Iodomethane	ND	ND	EPA 8260B	ug/L	1
Acetone	ND	ND	EPA 8260B	ug/L	10
1,1-Dichloroethene	ND	ND	EPA 8260B	ug/L	1
t-Butyl Alcohol (TBA)	ND	ND	EPA 8260B	ug/L	25
Methylene Chloride	ND	ND	EPA 8260B	ug/L	10
Freon 113	ND	ND	EPA 8260B	ug/L	5
Carbon disulfide	ND	ND	EPA 8260B	ug/L	1
trans,1,2-Dichloroethene	ND	ND	EPA 8260B	ug/L	1
Methyl-tert-butyl-ether(MtBE)	ND	ND	EPA 8260B	ug/L	5
1,1-Dichloroethane	ND	ND	EPA 8260B	ug/L	1
Vinyl acetate	ND	ND	EPA 8260B	ug/L	50
Diisopropyl Ether (DIPE)	ND	ND	EPA 8260B	ug/L	1
Methyl Ethyl Ketone	ND	ND	EPA 8260B	ug/L	10
cis,1,2-Dichloroethene	ND	ND	EPA 8260B	ug/L	1
Bromochloromethane	ND	ND	EPA 8260B	ug/L	1
Chloroform	ND	ND	EPA 8260B	ug/L	1
2,2-Dichloropropane	ND	ND	EPA 8260B	ug/L	1
Ethyl-t-butyl ether (ETBE)	ND	ND	EPA 8260B	ug/L	1
1,1,1-Trichloroethane	ND	ND	EPA 8260B	ug/L	1
1,2-Dichloroethane	ND	ND	EPA 8260B	ug/L	0.5
1,1-Dichloropropene	ND	ND	EPA 8260B	ug/L	1
Carbon Tetrachloride	ND	ND	EPA 8260B	ug/L	0.5
Benzene	ND	ND	EPA 8260B	ug/L	0.5
t-Amyl Methyl Ether (TAME)	ND	ND	EPA 8260B	ug/L	1
1,2-Dichloropropane	ND	ND	EPA 8260B	ug/L	1
Trichloroethene	ND	ND	EPA 8260B	ug/L	1
Dibromomethane	ND	ND	EPA 8260B	ug/L	1
Bromodichloromethane	ND	ND	EPA 8260B	ug/L	1
2-Chloroethylvinylether	ND	ND	EPA 8260B	ug/L	5
cis,1,3-Dichloropropene	ND	ND	EPA 8260B	ug/L	1
4-Methyl-2-pentanone(MI)	ND	ND	EPA 8260B	ug/L	10
trans,1,3-Dichloropropene	ND	ND	EPA 8260B	ug/L	1
Toluene	ND	ND	EPA 8260B	ug/L	0.5
1,1,2-Trichloroethane	ND	ND	EPA 8260B	ug/L	1

(Continued)

**CTEL Project No:** CT214-1002183


**Project ID:** Global ID: T06019748481

**Project Name:** Metro Valley Cleaners

<b>Laboratory ID:</b>	1002-183-1	1002-183-2	<b>Method</b>	<b>Units</b>	<b>Detection Limit</b>
<b>Client Sample ID:</b>	Influent	Effluent			
1,2-Dibromoethane(EDB)	ND	ND	EPA 8260B	ug/L	0.5
1,3-Dichloropropane	ND	ND	EPA 8260B	ug/L	1
Dibromochloromethane	ND	ND	EPA 8260B	ug/L	1
2-Hexanone	ND	ND	EPA 8260B	ug/L	10
Tetrachloroethene	48	ND	EPA 8260B	ug/L	1
Chlorobenzene	ND	ND	EPA 8260B	ug/L	1
1,1,1,2-Tetrachloroethane	ND	ND	EPA 8260B	ug/L	1
Ethylbenzene	ND	ND	EPA 8260B	ug/L	0.5
m,p-Xylene	ND	ND	EPA 8260B	ug/L	0.6
Bromoform	ND	ND	EPA 8260B	ug/L	1
Styrene	ND	ND	EPA 8260B	ug/L	1
o-Xylene	ND	ND	EPA 8260B	ug/L	0.6
1,1,2,2-Tetrachloroethane	ND	ND	EPA 8260B	ug/L	1
1,2,3-Trichloropropane	ND	ND	EPA 8260B	ug/L	1
Isopropylbenzene	ND	ND	EPA 8260B	ug/L	1
Bromobenzene	ND	ND	EPA 8260B	ug/L	1
2-Chlorotoluene	ND	ND	EPA 8260B	ug/L	1
n-Propylbenzene	ND	ND	EPA 8260B	ug/L	1
4-Chlorotoluene	ND	ND	EPA 8260B	ug/L	1
1,3,5-Trimethylbenzene	ND	ND	EPA 8260B	ug/L	1
tert-Butylbenzene	ND	ND	EPA 8260B	ug/L	1
1,2,4-Trimethylbenzene	ND	ND	EPA 8260B	ug/L	1
sec-Butylbenzene	ND	ND	EPA 8260B	ug/L	1
1,3-Dichlorobenzene	ND	ND	EPA 8260B	ug/L	1
1,4-Dichlorobenzene	ND	ND	EPA 8260B	ug/L	1
p-Isopropyltoluene	ND	ND	EPA 8260B	ug/L	1
1,2-Dichlorobenzene	ND	ND	EPA 8260B	ug/L	1
n-Butylbenzene	ND	ND	EPA 8260B	ug/L	1
1,2 Dibromo-3-Chloropropane	ND	ND	EPA 8260B	ug/L	1
1,2,4-Trichlorobenzene	ND	ND	EPA 8260B	ug/L	1
Naphthalene	ND	ND	EPA 8260B	ug/L	1
1,2,3-Trichlorobenzene	ND	ND	EPA 8260B	ug/L	1
Hexachlorobutadiene	ND	ND	EPA 8260B	ug/L	1

ND = Not Detected at the indicated Detection Limit

<i>SURROGATE SPIKE</i>	% SURROGATE RECOVERY		Control Limit
Dibromofluoromethane	109	114	70-130
1,2 Dichloromethaned4	124	124	70-130
Toluene-d8	95	90	70-130
Bromofluorobenzene	109	115	70-130

  
 Greg Tejrjian  
 Laboratory Director

\*The results are base upon the sample received.

Cal Tech Environmental Laboratories, Inc. ELAP ID #: 2424



# CAL TECH Environmental Laboratories



6814 Rosecrans Avenue, Paramount, CA 90723-3146  
 Telephone: (562) 272-2700 Fax: (562) 272-2789

## QA/QC Report

Method: 8260B / TO15

Matrix: Water / Air

Date Analyzed: 2/24/2010

Date Extracted: 2/24/2010

Perimeters	Conc. ug/L		Spike Added	Recovery %		Control Rec.	Limits RPD	RPD
	MS	MSD		MS	MSD			
1,1-Dichloroethane	49	48	50	98	96	70-130	20	2
Benzene	45	46	50	90	92	70-130	20	2
Trichloroethene	46	46	50	92	92	70-130	20	0
Toluene	50	51	50	100	102	70-130	20	2
Chlorobenzene	47	46	50	94	92	70-130	20	2
m,p-Xylenes	95	93	100	95	93	70-130	20	2

MS: Matrix Spike

MSD: Matrix Spike Duplicate

RPD: Relative Percent Difference of MS and MSD

Perimeters	Method Blank	Units	Det. Limit
1,1-Dichloroethene	ND	ug/L	1
Benzene	ND	ug/L	0.5
Trichloroethene	ND	ug/L	0.5
Toluene	ND	ug/L	0.5
Chlorobenzene	ND	ug/L	0.5
m,p-Xylenes	ND	ug/L	0.6
MTBE	ND	ug/L	1
TBA	ND	ug/L	10
DIPE	ND	ug/L	1
ETBE	ND	ug/L	1
TAME	ND	ug/L	1
1,2-Dichloroethane	ND	ug/L	0.5
EDB	ND	ug/L	0.5
Ethylbenzene	ND	ug/L	0.5
o-Xylene	ND	ug/L	0.6
TCE	ND	ug/L	1
PCE	ND	ug/L	1





# CAL TECH Environmental Laboratories



6814 Rosecrans Avenue. Paramount, CA 90723-3146  
 Telephone: (562) 272-2700 Fax: (562) 272-2789

## ANALYTICAL RESULTS\*

**CTEL Project No:** CT214-1002193  
**Client Name:** Advanced Geo Environmental, Inc.  
 837 Shaw Road  
 Stockton, CA 95215  
**Attention:** Mr. Art Deicke

**Phone:** (209) 467-1006  
**Fax:** (209) 467-1118

**Project ID:** Global ID: T06019748481  
**Project Name:** Metro Valley Cleaners

**Date Sampled:** 02/24/10 @ 12:40 p.m.  
**Date Received:** 02/25/10 @ 09:00 am  
**Date Analyzed:** 02/25/10

**Matrix:** Air

Laboratory ID:	1002-193-1	1002-193-2	Method	Units:	Detection Limit
Client Sample ID:	Influent	Effluent			
Dilution	1	1			
Dichlorodifluoromethane	ND	ND	EPA 8260B	ug/L	1
Chloromethane	ND	ND	EPA 8260B	ug/L	1
Vinyl Chloride	ND	ND	EPA 8260B	ug/L	0.5
Bromomethane	ND	ND	EPA 8260B	ug/L	1
Chloroethane	ND	ND	EPA 8260B	ug/L	1
Trichlorofluoromethane	ND	ND	EPA 8260B	ug/L	1
Iodomethane	ND	ND	EPA 8260B	ug/L	1
Acetone	ND	ND	EPA 8260B	ug/L	10
1,1-Dichloroethene	ND	ND	EPA 8260B	ug/L	1
t-Butyl Alcohol (TBA)	ND	ND	EPA 8260B	ug/L	25
Methylene Chloride	ND	ND	EPA 8260B	ug/L	10
Freon 113	ND	ND	EPA 8260B	ug/L	5
Carbon disulfide	ND	ND	EPA 8260B	ug/L	1
trans,1,2-Dichloroethene	ND	ND	EPA 8260B	ug/L	1
Methyl-tert-butyl-ether(MtBE)	ND	ND	EPA 8260B	ug/L	5
1,1-Dichloroethane	ND	ND	EPA 8260B	ug/L	1
Vinyl acetate	ND	ND	EPA 8260B	ug/L	50
Diisopropyl Ether (DIPE)	ND	ND	EPA 8260B	ug/L	1
Methyl Ethyl Ketone	ND	ND	EPA 8260B	ug/L	10
cis,1,2-Dichloroethene	ND	ND	EPA 8260B	ug/L	1
Bromochloromethane	ND	ND	EPA 8260B	ug/L	1
Chloroform	ND	ND	EPA 8260B	ug/L	1
2,2-Dichloropropane	ND	ND	EPA 8260B	ug/L	1
Ethyl-t-butyl ether (ETBE)	ND	ND	EPA 8260B	ug/L	1
1,1,1-Trichloroethane	ND	ND	EPA 8260B	ug/L	1
1,2-Dichloroethane	ND	ND	EPA 8260B	ug/L	0.5
1,1-Dichloropropene	ND	ND	EPA 8260B	ug/L	1
Carbon Tetrachloride	ND	ND	EPA 8260B	ug/L	0.5
Benzene	ND	ND	EPA 8260B	ug/L	0.5
t-Amyl Methyl Ether (TAME)	ND	ND	EPA 8260B	ug/L	1
1,2-Dichloropropane	ND	ND	EPA 8260B	ug/L	1
Trichloroethene	ND	ND	EPA 8260B	ug/L	1
Dibromomethane	ND	ND	EPA 8260B	ug/L	1
Bromodichloromethane	ND	ND	EPA 8260B	ug/L	1
2-Chloroethylvinylether	ND	ND	EPA 8260B	ug/L	5
cis,1,3-Dichloropropene	ND	ND	EPA 8260B	ug/L	1
4-Methyl-2-pentanone(MI)	ND	ND	EPA 8260B	ug/L	10
trans,1,3-Dichloropropene	ND	ND	EPA 8260B	ug/L	1
Toluene	ND	ND	EPA 8260B	ug/L	0.5
1,1,2-Trichloroethane	ND	ND	EPA 8260B	ug/L	1

(Continued)



**CTEL Project No:** CT214-1002193

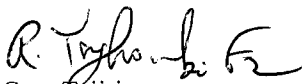
**Project ID:** Global ID: T06019748481

**Project Name:** Metro Valley Cleaners

<b>Laboratory ID:</b>	1002-193-1	1002-193-2	<b>Method</b>	<b>Units</b>	<b>Detection Limit</b>
<b>Client Sample ID:</b>	Influent	Effluent			
1,2-Dibromoethane(EDB)	ND	ND	EPA 8260B	ug/L	0.5
1,3-Dichloropropane	ND	ND	EPA 8260B	ug/L	1
Dibromochloromethane	ND	ND	EPA 8260B	ug/L	1
2-Hexanone	ND	ND	EPA 8260B	ug/L	10
Tetrachloroethene	16	ND	EPA 8260B	ug/L	1
Chlorobenzene	ND	ND	EPA 8260B	ug/L	1
1,1,1,2-Tetrachloroethane	ND	ND	EPA 8260B	ug/L	1
Ethylbenzene	ND	ND	EPA 8260B	ug/L	0.5
m.p-Xylene	ND	ND	EPA 8260B	ug/L	0.6
Bromoform	ND	ND	EPA 8260B	ug/L	1
Styrene	ND	ND	EPA 8260B	ug/L	1
o-Xylene	ND	ND	EPA 8260B	ug/L	0.6
1,1,1,2-Tetrachloroethane	ND	ND	EPA 8260B	ug/L	1
1,2,3-Trichloropropane	ND	ND	EPA 8260B	ug/L	1
Isopropylbenzene	ND	ND	EPA 8260B	ug/L	1
Bromobenzene	ND	ND	EPA 8260B	ug/L	1
2-Chlorotoluene	ND	ND	EPA 8260B	ug/L	1
n-Propylbenzene	ND	ND	EPA 8260B	ug/L	1
4-Chlorotoluene	ND	ND	EPA 8260B	ug/L	1
1,3,5-Trimethylbenzene	ND	ND	EPA 8260B	ug/L	1
tert-Butylbenzene	ND	ND	EPA 8260B	ug/L	1
1,2,4-Trimethylbenzene	ND	ND	EPA 8260B	ug/L	1
sec-Butylbenzene	ND	ND	EPA 8260B	ug/L	1
1,3-Dichlorobenzene	ND	ND	EPA 8260B	ug/L	1
1,4-Dichlorobenzene	ND	ND	EPA 8260B	ug/L	1
p-Isopropyltoluene	ND	ND	EPA 8260B	ug/L	1
1,2-Dichlorobenzene	ND	ND	EPA 8260B	ug/L	1
n-Butylbenzene	ND	ND	EPA 8260B	ug/L	1
1,2 Dibromo-3-Chloropropane	ND	ND	EPA 8260B	ug/L	1
1,2,4-Trichlorobenzene	ND	ND	EPA 8260B	ug/L	1
Naphthalene	ND	ND	EPA 8260B	ug/L	1
1,2,3-Trichlorobenzene	ND	ND	EPA 8260B	ug/L	1
Hexachlorobutadiene	ND	ND	EPA 8260B	ug/L	1

ND = Not Detected at the indicated Detection Limit

<b>SURROGATE SPIKE</b>	<b>% SURROGATE RECOVERY</b>		<b>Control Limit</b>
Dibromofluoromethane	102	107	70-130
1,2 Dichloromethaned4	87	92	70-130
Toluene-d8	104	101	70-130
Bromofluorobenzene	107	110	70-130



Greg Fejirian  
Laboratory Director

\*The results are base upon the sample received.

Cal Tech Environmental Laboratories, Inc. ELAP ID #: 2424

# CAL TECH Environmental Laboratories



6814 Rosecrans Avenue, Paramount, CA 90723-3146  
 Telephone: (562) 272-2700 Fax: (562) 272-2789

## QA/QC Report

Method: 8260B / TO15

Matrix: Water / Air

Date Analyzed: 2/25/2010

Date Extracted: 2/25/2010

Perimeters	Conc. ug/L		Spike Added	Recovery %		Control Rec.	Limits RPD	RPD
	MS	MSD		MS	MSD			
1,1-Dichloroethane	47	48	50	94	96	70-130	20	2
Benzene	49	51	50	98	102	70-130	20	4
Trichloroethene	51	53	50	102	106	70-130	20	4
Toluene	53	55	50	106	110	70-130	20	4
Chlorobenzene	47	48	50	94	96	70-130	20	2
m,p-Xylenes	107	109	100	107	109	70-130	20	2

MS: Matrix Spike

MSD: Matrix Spike Duplicate

RPD: Relative Percent Difference of MS and MSD

Perimeters	Method Blank	Units	Det. Limit
1,1-Dichloroethene	ND	ug/L	1
Benzene	ND	ug/L	0.5
Trichloroethene	ND	ug/L	0.5
Toluene	ND	ug/L	0.5
Chlorobenzene	ND	ug/L	0.5
m,p-Xylenes	ND	ug/L	0.6
MTBE	ND	ug/L	1
TBA	ND	ug/L	10
DIPE	ND	ug/L	1
ETBE	ND	ug/L	1
TAME	ND	ug/L	1
1,2-Dichloroethane	ND	ug/L	0.5
EDB	ND	ug/L	0.5
Ethylbenzene	ND	ug/L	0.5
o-Xylene	ND	ug/L	0.6
TCE	ND	ug/L	1
PCE	ND	ug/L	1







# CAL TECH Environmental Laboratories



6814 Rosecrans Avenue, Paramount, CA 90723-3146  
 Telephone: (562) 272-2700 Fax: (562) 272-2789

## ANALYTICAL RESULTS\*

**CTEL Project No:** CT214-1002199

**Client Name:** Advanced Geo Environmental, Inc.  
 837 Shaw Road  
 Stockton, CA 95215

**Phone:** (209) 467-1006

**Fax:** (209) 467-1118

**Attention:** Mr. Art Deicke

**Project ID:** Global ID: T06019748481

**Project Name:** Metro Valley Cleaners

**Date Sampled:** 02/25/10 @ 09:18 am

**Matrix:** Air

**Date Received:** 02/26/10 @ 09:00 am

**Date Analyzed:** 02/26/10

Laboratory ID:	1002-199-1	1002-199-2	Method	Units:	Detection Limit
Client Sample ID:	Influent	Effluent			
Dilution	1	1			
Dichlorodifluoromethane	ND	ND	EPA 8260B	ug/L	1
Chloromethane	ND	ND	EPA 8260B	ug/L	1
Vinyl Chloride	ND	ND	EPA 8260B	ug/L	0.5
Bromomethane	ND	ND	EPA 8260B	ug/L	1
Chloroethane	ND	ND	EPA 8260B	ug/L	1
Trichlorofluoromethane	ND	ND	EPA 8260B	ug/L	1
Iodomethane	ND	ND	EPA 8260B	ug/L	1
Acetone	ND	ND	EPA 8260B	ug/L	10
1,1-Dichloroethene	ND	ND	EPA 8260B	ug/L	1
t-Butyl Alcohol (TBA)	ND	ND	EPA 8260B	ug/L	25
Methylene Chloride	ND	ND	EPA 8260B	ug/L	10
Freon 113	ND	ND	EPA 8260B	ug/L	5
Carbon disulfide	ND	ND	EPA 8260B	ug/L	1
trans,1,2-Dichloroethene	ND	ND	EPA 8260B	ug/L	1
Methyl-tert-butyl-ether(MtBE)	ND	ND	EPA 8260B	ug/L	5
1,1-Dichloroethane	ND	ND	EPA 8260B	ug/L	1
Vinyl acetate	ND	ND	EPA 8260B	ug/L	50
Diisopropyl Ether (DIPE)	ND	ND	EPA 8260B	ug/L	1
Methyl Ethyl Ketone	ND	ND	EPA 8260B	ug/L	10
cis,1,2-Dichloroethene	ND	ND	EPA 8260B	ug/L	1
Bromochloromethane	ND	ND	EPA 8260B	ug/L	1
Chloroform	ND	ND	EPA 8260B	ug/L	1
2,2-Dichloropropane	ND	ND	EPA 8260B	ug/L	1
Ethyl-t-butyl ether (ETBE)	ND	ND	EPA 8260B	ug/L	1
1,1,1-Trichloroethane	ND	ND	EPA 8260B	ug/L	1
1,2-Dichloroethane	ND	ND	EPA 8260B	ug/L	0.5
1,1-Dichloropropene	ND	ND	EPA 8260B	ug/L	1
Carbon Tetrachloride	ND	ND	EPA 8260B	ug/L	0.5
Benzene	ND	ND	EPA 8260B	ug/L	0.5
t-Amyl Methyl Ether (TAME)	ND	ND	EPA 8260B	ug/L	1
1,2-Dichloropropane	ND	ND	EPA 8260B	ug/L	1
Trichloroethene	ND	ND	EPA 8260B	ug/L	1
Dibromomethane	ND	ND	EPA 8260B	ug/L	1
Bromodichloromethane	ND	ND	EPA 8260B	ug/L	1
2-Chloroethylvinylether	ND	ND	EPA 8260B	ug/L	5
cis,1,3-Dichloropropene	ND	ND	EPA 8260B	ug/L	1
4-Methyl-2-pentanone(MI)	ND	ND	EPA 8260B	ug/L	10
trans,1,3-Dichloropropene	ND	ND	EPA 8260B	ug/L	1
Toluene	ND	ND	EPA 8260B	ug/L	0.5
1,1,2-Trichloroethane	ND	ND	EPA 8260B	ug/L	1

(Continued)

TOTALLY DEDICATED TO CUSTOMER SATISFACTION

**CTEL Project No:** CT214-1002199

**Project ID:** Global ID: T06019748481

**Project Name:** Metro Valley Cleaners

<b>Laboratory ID:</b>	1002-199-1	1002-199-2	<b>Method</b>	<b>Units</b>	<b>Detection Limit</b>
<b>Client Sample ID:</b>	Influent	Effluent			
1,2-Dibromoethane(EDB)	ND	ND	EPA 8260B	ug/L	0.5
1,3-Dichloropropane	ND	ND	EPA 8260B	ug/L	1
Dibromochloromethane	ND	ND	EPA 8260B	ug/L	1
2-Hexanone	ND	ND	EPA 8260B	ug/L	10
Tetrachloroethene	9.0	ND	EPA 8260B	ug/L	1
Chlorobenzene	ND	ND	EPA 8260B	ug/L	1
1,1,1,2-Tetrachloroethane	ND	ND	EPA 8260B	ug/L	1
Ethylbenzene	ND	ND	EPA 8260B	ug/L	0.5
m,p-Xylene	ND	ND	EPA 8260B	ug/L	0.6
Bromoform	ND	ND	EPA 8260B	ug/L	1
Styrene	ND	ND	EPA 8260B	ug/L	1
o-Xylene	ND	ND	EPA 8260B	ug/L	0.6
1,1,2,2-Tetrachloroethane	ND	ND	EPA 8260B	ug/L	1
1,2,3-Trichloropropane	ND	ND	EPA 8260B	ug/L	1
Isopropylbenzene	ND	ND	EPA 8260B	ug/L	1
Bromobenzene	ND	ND	EPA 8260B	ug/L	1
2-Chlorotoluene	ND	ND	EPA 8260B	ug/L	1
n-Propylbenzene	ND	ND	EPA 8260B	ug/L	1
4-Chlorotoluene	ND	ND	EPA 8260B	ug/L	1
1,3,5-Trimethylbenzene	ND	ND	EPA 8260B	ug/L	1
tert-Butylbenzene	ND	ND	EPA 8260B	ug/L	1
1,2,4-Trimethylbenzene	ND	ND	EPA 8260B	ug/L	1
sec-Butylbenzene	ND	ND	EPA 8260B	ug/L	1
1,3-Dichlorobenzene	ND	ND	EPA 8260B	ug/L	1
1,4-Dichlorobenzene	ND	ND	EPA 8260B	ug/L	1
p-Isopropyltoluene	ND	ND	EPA 8260B	ug/L	1
1,2-Dichlorobenzene	ND	ND	EPA 8260B	ug/L	1
n-Butylbenzene	ND	ND	EPA 8260B	ug/L	1
1,2 Dibromo-3-Chloropropane	ND	ND	EPA 8260B	ug/L	1
1,2,4-Trichlorobenzene	ND	ND	EPA 8260B	ug/L	1
Naphthalene	ND	ND	EPA 8260B	ug/L	1
1,2,3-Trichlorobenzene	ND	ND	EPA 8260B	ug/L	1
Hexachlorobutadiene	ND	ND	EPA 8260B	ug/L	1

ND = Not Detected at the indicated Detection Limit

<b>SURROGATE SPIKE</b>	<b>% SURROGATE RECOVERY</b>		<b>Control Limit</b>
Dibromofluoromethane	123	113	70-130
1,2 Dichloromethaned4	126	115	70-130
Toluene-d8	91	92	70-130
Bromofluorobenzene	117	112	70-130



Greg Tejfrian  
Laboratory Director

\*The results are base upon the sample received.

Cal Tech Environmental Laboratories, Inc. ELAP ID #: 2424



# CAL TECH Environmental Laboratories



6814 Rosecrans Avenue, Paramount, CA 90723-3146  
 Telephone: (562) 272-2700 Fax: (562) 272-2789

## QA/QC Report

Method: 8260B / TO15

Matrix: Water / Air

Date Analyzed: 2/26/2010

Date Extracted: 2/26/2010

Perimeters	Conc. ug/L		Spike Added	Recovery %		Control Rec.	Limits RPD	RPD
	MS	MSD		MS	MSD			
1,1-Dichloroethane	44	46	50	88	92	70-130	20	4
Benzene	44	46	50	88	92	70-130	20	4
Trichloroethene	47	47	50	94	94	70-130	20	0
Toluene	51	51	50	102	102	70-130	20	0
Chlorobenzene	44	45	50	88	90	70-130	20	2
m,p-Xylenes	91	96	100	91	96	70-130	20	5

MS: Matrix Spike

MSD: Matrix Spike Duplicate

RPD: Relative Percent Difference of MS and MSD

Perimeters	Method Blank	Units	Det. Limit
1,1-Dichloroethene	ND	ug/L	1
Benzene	ND	ug/L	0.5
Trichloroethene	ND	ug/L	0.5
Toluene	ND	ug/L	0.5
Chlorobenzene	ND	ug/L	0.5
m,p-Xylenes	ND	ug/L	0.6
MTBE	ND	ug/L	1
TBA	ND	ug/L	10
DIPE	ND	ug/L	1
ETBE	ND	ug/L	1
TAME	ND	ug/L	1
1,2-Dichloroethane	ND	ug/L	0.5
EDB	ND	ug/L	0.5
Ethylbenzene	ND	ug/L	0.5
o-Xylene	ND	ug/L	0.6
TCE	ND	ug/L	1
PCE	ND	ug/L	1





# CAL TECH Environmental Laboratories



6814 Rosecrans Avenue. Paramount, CA 90723-3146  
 Telephone: (562) 272-2700 Fax: (562) 272-2789

## ANALYTICAL RESULTS\*

**CTEL Project No:** CT214-1003002

**Client Name:** Advanced Geo Environmental, Inc.  
 837 Shaw Road  
 Stockton, CA 95215

**Phone:**(209) 467-1006  
**Fax:** (209) 467-1118

**Attention:** Mr. Art Deicke

**Project ID:** Global ID: T06019748481

**Project Name:** Metro Valley Cleaners

**Date Sampled:** 02/26/10 @ 12:11 p.m.

**Date Received:** 03/01/10 @ 10:00 am

**Date Analyzed:** 03/01/10

**Matrix:** Air

Laboratory ID:	1003-002-1	1003-002-2	Method	Units:	Detection Limit
Client Sample ID:	Effluent	Influent			
Dilution	1	1			
Dichlorodifluoromethane	ND	ND	EPA 8260B	ug/L	1
Chloromethane	ND	ND	EPA 8260B	ug/L	1
Vinyl Chloride	ND	ND	EPA 8260B	ug/L	0.5
Bromomethane	ND	ND	EPA 8260B	ug/L	1
Chloroethane	ND	ND	EPA 8260B	ug/L	1
Trichlorofluoromethane	ND	ND	EPA 8260B	ug/L	1
Iodomethane	ND	ND	EPA 8260B	ug/L	1
Acetone	ND	ND	EPA 8260B	ug/L	10
1,1-Dichloroethene	ND	ND	EPA 8260B	ug/L	1
t-Butyl Alcohol (TBA)	ND	ND	EPA 8260B	ug/L	25
Methylene Chloride	ND	ND	EPA 8260B	ug/L	10
Freon 113	ND	ND	EPA 8260B	ug/L	5
Carbon disulfide	ND	ND	EPA 8260B	ug/L	1
trans,1,2-Dichloroethene	ND	ND	EPA 8260B	ug/L	1
Methyl-tert-butyl-ether(MtBE)	ND	ND	EPA 8260B	ug/L	5
1,1-Dichloroethane	ND	ND	EPA 8260B	ug/L	1
Vinyl acetate	ND	ND	EPA 8260B	ug/L	50
Diisopropyl Ether (DIPE)	ND	ND	EPA 8260B	ug/L	1
Methyl Ethyl Ketone	ND	ND	EPA 8260B	ug/L	10
cis,1,2-Dichloroethene	ND	ND	EPA 8260B	ug/L	1
Bromochloromethane	ND	ND	EPA 8260B	ug/L	1
Chloroform	ND	ND	EPA 8260B	ug/L	1
2,2-Dichloropropane	ND	ND	EPA 8260B	ug/L	1
Ethyl-t-butyl ether (ETBE)	ND	ND	EPA 8260B	ug/L	1
1,1,1-Trichloroethane	ND	ND	EPA 8260B	ug/L	1
1,2-Dichloroethane	ND	ND	EPA 8260B	ug/L	0.5
1,1-Dichloropropene	ND	ND	EPA 8260B	ug/L	1
Carbon Tetrachloride	ND	ND	EPA 8260B	ug/L	0.5
Benzene	ND	ND	EPA 8260B	ug/L	0.5
t-Amyl Methyl Ether (TAME)	ND	ND	EPA 8260B	ug/L	1
1,2-Dichloropropane	ND	ND	EPA 8260B	ug/L	1
Trichloroethene	ND	ND	EPA 8260B	ug/L	1
Dibromomethane	ND	ND	EPA 8260B	ug/L	1
Bromodichloromethane	ND	ND	EPA 8260B	ug/L	1
2-Chloroethylvinylether	ND	ND	EPA 8260B	ug/L	5
cis,1,3-Dichloropropene	ND	ND	EPA 8260B	ug/L	1
4-Methyl-2-pentanone(MI)	ND	ND	EPA 8260B	ug/L	10
trans,1,3-Dichloropropene	ND	ND	EPA 8260B	ug/L	1
Toluene	ND	ND	EPA 8260B	ug/L	0.5
1,1,2-Trichloroethane	ND	ND	EPA 8260B	ug/L	1

(Continued)

TOTALLY DEDICATED TO CUSTOMER SATISFACTION

CTEL Project No: CT214-1003002


Project ID: Global ID: T06019748481

Project Name: Metro Valley Cleaners

Laboratory ID:	1003-002-1	1003-002-2	Method	Units	Detection Limit
Client Sample ID:	Effluent	Influent			
1,2-Dibromoethane(EDB)	ND	ND	EPA 8260B	ug/L	0.5
1,3-Dichloropropane	ND	ND	EPA 8260B	ug/L	1
Dibromochloromethane	ND	ND	EPA 8260B	ug/L	1
2-Hexanone	ND	ND	EPA 8260B	ug/L	10
Tetrachloroethene	ND	7.6	EPA 8260B	ug/L	1
Chlorobenzene	ND	ND	EPA 8260B	ug/L	1
1,1,1,2-Tetrachloroethane	ND	ND	EPA 8260B	ug/L	1
Ethylbenzene	ND	ND	EPA 8260B	ug/L	0.5
m,p-Xylene	ND	ND	EPA 8260B	ug/L	0.6
Bromoform	ND	ND	EPA 8260B	ug/L	1
Styrene	ND	ND	EPA 8260B	ug/L	1
o-Xylene	ND	ND	EPA 8260B	ug/L	0.6
1,1,2,2-Tetrachloroethane	ND	ND	EPA 8260B	ug/L	1
1,2,3-Trichloropropane	ND	ND	EPA 8260B	ug/L	1
Isopropylbenzene	ND	ND	EPA 8260B	ug/L	1
Bromobenzene	ND	ND	EPA 8260B	ug/L	1
2-Chlorotoluene	ND	ND	EPA 8260B	ug/L	1
n-Propylbenzene	ND	ND	EPA 8260B	ug/L	1
4-Chlorotoluene	ND	ND	EPA 8260B	ug/L	1
1,3,5-Trimethylbenzene	ND	ND	EPA 8260B	ug/L	1
tert-Butylbenzene	ND	ND	EPA 8260B	ug/L	1
1,2,4-Trimethylbenzene	ND	ND	EPA 8260B	ug/L	1
sec-Butylbenzene	ND	ND	EPA 8260B	ug/L	1
1,3-Dichlorobenzene	ND	ND	EPA 8260B	ug/L	1
1,4-Dichlorobenzene	ND	ND	EPA 8260B	ug/L	1
p-Isopropyltoluene	ND	ND	EPA 8260B	ug/L	1
1,2-Dichlorobenzene	ND	ND	EPA 8260B	ug/L	1
n-Butylbenzene	ND	ND	EPA 8260B	ug/L	1
1,2 Dibromo-3-Chloropropane	ND	ND	EPA 8260B	ug/L	1
1,2,4-Trichlorobenzene	ND	ND	EPA 8260B	ug/L	1
Naphthalene	ND	ND	EPA 8260B	ug/L	1
1,2,3-Trichlorobenzene	ND	ND	EPA 8260B	ug/L	1
Hexachlorobutadiene	ND	ND	EPA 8260B	ug/L	1

ND = Not Detected at the indicated Detection Limit

SURROGATE SPIKE	% SURROGATE RECOVERY		Control Limit
Dibromofluoromethane	87	84	70-130
1,2 Dichloromethaned4	90	89	70-130
Toluene-d8	85	84	70-130
Bromofluorobenzene	90	90	70-130

  
 Greg Tejjian  
 Laboratory Director

\*The results are base upon the sample received.

Cal Tech Environmental Laboratories, Inc. ELAP ID #: 2424

# CAL TECH Environmental Laboratories



6814 Rosecrans Avenue. Paramount, CA 90723-3146  
 Telephone: (562) 272-2700 Fax: (562) 272-2789

## QA/QC Report

Method: 8260B / TO15

Matrix: Water / Air

Date Analyzed: 3/1/2010

Date Extracted: 3/1/2010

Perimeters	Conc. ug/L		Spike Added	Recovery %		Control Rec.	Limits RPD	RPD
	MS	MSD		MS	MSD			
1,1-Dichloroethene	54	56	50	108	112	70-130	20	4
Benzene	58	57	50	116	114	70-130	20	2
Trichloroethene	54	54	50	108	108	70-130	20	0
Toluene	53	50	50	106	100	70-130	20	6
Chlorobenzene	54	52	50	108	104	70-130	20	4
m,p-Xylenes	107	104	100	107	104	70-130	20	3

MS: Matrix Spike

MSD: Matrix Spike Duplicate

RPD: Relative Percent Difference of MS and MSD

Perimeters	Method Blank	Units	Det. Limit
1,1-Dichloroethene	ND	ug/L	1
Benzene	ND	ug/L	0.5
Trichloroethene	ND	ug/L	0.5
Toluene	ND	ug/L	0.5
Chlorobenzene	ND	ug/L	0.5
m,p-Xylenes	ND	ug/L	0.6
MTBE	ND	ug/L	1
TBA	ND	ug/L	10
DIPE	ND	ug/L	1
ETBE	ND	ug/L	1
TAME	ND	ug/L	1
1,2-Dichloroethane	ND	ug/L	0.5
EDB	ND	ug/L	0.5
Ethylbenzene	ND	ug/L	0.5
o-Xylene	ND	ug/L	0.6
TCE	ND	ug/L	1
PCE	ND	ug/L	1





# CAL TECH Environmental Laboratories



1000 Riverbank Road, Riverbank, CA 95127  
 Telephone: (209) 221-1100 Fax: (209) 221-1101

## ANALYTICAL RESULTS\*

**CTEL Project No:** CT214-1003058  
**Client Name:** Advanced Geo Environmental, Inc.  
 837 Shaw Road  
 Stockton, CA 95215  
**Attention:** Mr. Art Deicke

**Phone:**(209) 467-1006  
**Fax:** (209) 467-1118

**Project ID:** Global ID: T06019748481  
**Project Name:** Metro Valley Cleaners

**Date Sampled:** 03/09/10 @ 08:25 am  
**Date Received:** 03/10/10 @ 09:00 am  
**Date Analyzed** 03/10/10

**Matrix:** Air

Laboratory ID:	1003-058-1	1003-058-2	Method	Units:	Detection Limit
Client Sample ID:	Influent	Effluent			
Dilution	1	1			
Dichlorodifluoromethane	ND	ND	EPA 8260B	ug/L	1
Chloromethane	ND	ND	EPA 8260B	ug/L	1
Vinyl Chloride	ND	ND	EPA 8260B	ug/L	0.5
Bromomethane	ND	ND	EPA 8260B	ug/L	1
Chloroethane	ND	ND	EPA 8260B	ug/L	1
Trichlorofluoromethane	ND	ND	EPA 8260B	ug/L	1
Iodomethane	ND	ND	EPA 8260B	ug/L	1
Acetone	ND	ND	EPA 8260B	ug/L	10
1,1-Dichloroethene	ND	ND	EPA 8260B	ug/L	1
t-Butyl Alcohol (TBA)	ND	ND	EPA 8260B	ug/L	25
Methylene Chloride	ND	ND	EPA 8260B	ug/L	10
Freon 113	ND	ND	EPA 8260B	ug/L	5
Carbon disulfide	ND	ND	EPA 8260B	ug/L	1
trans,1,2-Dichloroethene	ND	ND	EPA 8260B	ug/L	1
Methyl-tert-butyl-ether(MtBE)	ND	ND	EPA 8260B	ug/L	5
1,1-Dichloroethane	ND	ND	EPA 8260B	ug/L	1
Vinyl acetate	ND	ND	EPA 8260B	ug/L	50
Diisopropyl Ether (DIPE)	ND	ND	EPA 8260B	ug/L	1
Methyl Ethyl Ketone	ND	ND	EPA 8260B	ug/L	10
cis,1,2-Dichloroethene	ND	ND	EPA 8260B	ug/L	1
Bromochloromethane	ND	ND	EPA 8260B	ug/L	1
Chloroform	ND	ND	EPA 8260B	ug/L	1
2,2-Dichloropropane	ND	ND	EPA 8260B	ug/L	1
Ethyl-t-butyl ether (ETBE)	ND	ND	EPA 8260B	ug/L	1
1,1,1-Trichloroethane	ND	ND	EPA 8260B	ug/L	1
1,2-Dichloroethane	ND	ND	EPA 8260B	ug/L	0.5
1,1-Dichloropropene	ND	ND	EPA 8260B	ug/L	1
Carbon Tetrachloride	ND	ND	EPA 8260B	ug/L	0.5
Benzene	ND	ND	EPA 8260B	ug/L	0.5
t-Amyl Methyl Ether (TAME)	ND	ND	EPA 8260B	ug/L	1
1,2-Dichloropropane	ND	ND	EPA 8260B	ug/L	1
Trichloroethene	ND	ND	EPA 8260B	ug/L	1
Dibromomethane	ND	ND	EPA 8260B	ug/L	1
Bromodichloromethane	ND	ND	EPA 8260B	ug/L	1
2-Chloroethylvinylether	ND	ND	EPA 8260B	ug/L	5
cis,1,3-Dichloropropene	ND	ND	EPA 8260B	ug/L	1
4-Methyl-2-pentanone(MI)	ND	ND	EPA 8260B	ug/L	10
trans,1,3-Dichloropropene	ND	ND	EPA 8260B	ug/L	1
Toluene	ND	ND	EPA 8260B	ug/L	0.5
1,1,2-Trichloroethane	ND	ND	EPA 8260B	ug/L	1

(Continued)

**CTEL Project No:** CT214-1003058

**Project ID:** Global ID: T06019748481

**Project Name:** Metro Valley Cleaners

<b>Laboratory ID:</b>	1003-058-1	1003-058-2	<b>Method</b>	<b>Units</b>	<b>Detection Limit</b>
<b>Client Sample ID:</b>	Influent	Effluent			
1,2-Dibromoethane(EDB)	ND	ND	EPA 8260B	ug/L	0.5
1,3-Dichloropropane	ND	ND	EPA 8260B	ug/L	1
Dibromochloromethane	ND	ND	EPA 8260B	ug/L	1
2-Hexanone	ND	ND	EPA 8260B	ug/L	10
Tetrachloroethene	ND	ND	EPA 8260B	ug/L	1
Chlorobenzene	ND	ND	EPA 8260B	ug/L	1
1,1,1,2-Tetrachloroethane	ND	ND	EPA 8260B	ug/L	1
Ethylbenzene	ND	ND	EPA 8260B	ug/L	0.5
m,p-Xylene	ND	ND	EPA 8260B	ug/L	0.6
Bromoform	ND	ND	EPA 8260B	ug/L	1
Styrene	ND	ND	EPA 8260B	ug/L	1
o-Xylene	ND	ND	EPA 8260B	ug/L	0.6
1,1,2,2-Tetrachloroethane	ND	ND	EPA 8260B	ug/L	1
1,2,3-Trichloropropane	ND	ND	EPA 8260B	ug/L	1
Isopropylbenzene	ND	ND	EPA 8260B	ug/L	1
Bromobenzene	ND	ND	EPA 8260B	ug/L	1
2-Chlorotoluene	ND	ND	EPA 8260B	ug/L	1
n-Propylbenzene	ND	ND	EPA 8260B	ug/L	1
4-Chlorotoluene	ND	ND	EPA 8260B	ug/L	1
1,3,5-Trimethylbenzene	ND	ND	EPA 8260B	ug/L	1
tert-Butylbenzene	ND	ND	EPA 8260B	ug/L	1
1,2,4-Trimethylbenzene	ND	ND	EPA 8260B	ug/L	1
sec-Butylbenzene	ND	ND	EPA 8260B	ug/L	1
1,3-Dichlorobenzene	ND	ND	EPA 8260B	ug/L	1
1,4-Dichlorobenzene	ND	ND	EPA 8260B	ug/L	1
p-Isopropyltoluene	ND	ND	EPA 8260B	ug/L	1
1,2-Dichlorobenzene	ND	ND	EPA 8260B	ug/L	1
n-Butylbenzene	ND	ND	EPA 8260B	ug/L	1
1,2 Dibromo-3-Chloropropane	ND	ND	EPA 8260B	ug/L	1
1,2,4-Trichlorobenzene	ND	ND	EPA 8260B	ug/L	1
Naphthalene	ND	ND	EPA 8260B	ug/L	1
1,2,3-Trichlorobenzene	ND	ND	EPA 8260B	ug/L	1
Hexachlorobutadiene	ND	ND	EPA 8260B	ug/L	1

ND = Not Detected at the indicated Detection Limit

<b>SURROGATE SPIKE</b>	<b>% SURROGATE RECOVERY</b>		<b>Control Limit</b>
Dibromofluoromethane	118	103	70-130
1,2 Dichloromethaned4	111	86	70-130
Toluene-d8	111	109	70-130
Bromofluorobenzene	91	99	70-130

  
 Greg Tejrjian  
 Laboratory Director

\*The results are base upon the sample received.

Cal Tech Environmental Laboratories, Inc. ELAP ID #: 2424

# CAL TECH Environmental Laboratories



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## QA/QC Report

Method: 8260B / TO15

Matrix: Water / Air

Date Analyzed: 3/10/2010

Date Extracted: 3/10/2010

Perimeters	Conc. ug/L		Spike Added	Recovery %		Control Rec.	Limits RPD	RPD
	MS	MSD		MS	MSD			
1,1-Dichloroethene	46	47	50	92	94	70-130	20	2
Benzene	51	53	50	102	106	70-130	20	4
Trichloroethene	50	50	50	100	100	70-130	20	0
Toluene	48	48	50	96	96	70-130	20	0
Chlorobenzene	48	51	50	96	102	70-130	20	6
m,p-Xylenes	97	102	100	97	102	70-130	20	5

MS: Matrix Spike

MSD: Matrix Spike Duplicate

RPD: Relative Percent Difference of MS and MSD

Perimeters	Method Blank	Units	Det. Limit
1,1-Dichloroethene	ND	ug/L	1
Benzene	ND	ug/L	0.5
Trichloroethene	ND	ug/L	0.5
Toluene	ND	ug/L	0.5
Chlorobenzene	ND	ug/L	0.5
m,p-Xylenes	ND	ug/L	0.6
MTBE	ND	ug/L	1
TBA	ND	ug/L	10
DIPE	ND	ug/L	1
ETBE	ND	ug/L	1
TAME	ND	ug/L	1
1,2-Dichloroethane	ND	ug/L	0.5
EDB	ND	ug/L	0.5
Ethylbenzene	ND	ug/L	0.5
o-Xylene	ND	ug/L	0.6
TCE	ND	ug/L	1
PCE	ND	ug/L	1





# **APPENDIX E**

## APPENDIX E

### VOLUME-MASS CALCULATIONS OF EXTRACTED PCE METRO VALLEY CLEANERS - 224 Rickenbacker Circle, Livermore, California

**Assumptions:**

- Utilizing field measurements collected during the SVE remediation and analytical data collected from air samples (Table 3), the volume of extracted tetrachloroethene (PCE) at the site can be approximated.

Hydrocarbon mass removed during the operating period can be calculated using the following equation:

$$M = C \cdot Q \cdot t$$

Where: M = cumulative mass recovered (kg)  
 C = PCE vapor concentration (kg/m<sup>3</sup>)  
 Q = extraction flow rate (m<sup>3</sup>/hr)  
 t = operational period (hrs)

- The average inlet PCE concentration and average inlet flow rates during each time interval were utilized for calculating the approximate mass/volume of extracted gasoline hydrocarbons.
- PCE weighs 13.6 pounds per gallon, providing a conversion of 0.0735 gallons/pound to calculate the volume of PCE extracted.

Time Interval	C (PCE)			Q			t (hours)	M		Volume (gallons)
	(µg/l)	Average (µg/l)	Average (kg/m <sup>3</sup> )	(ft <sup>3</sup> /min)	Average (ft <sup>3</sup> /min)	Average (m <sup>3</sup> /hr)		(kg)	(pounds)	
02/22/10	93	71	7.05E-05	130	136	231.07	22	0.36	<b>0.79</b>	<b>0.06</b>
02/23/10	48			142						
02/23/10	48	32	0.000032	142	141	239.56	26	0.20	<b>0.44</b>	<b>0.03</b>
02/24/10	16			140						
02/24/10	16	12.5	1.25E-05	140	141	239.56	21	0.06	<b>0.14</b>	<b>0.01</b>
02/25/10	9.0			142						
02/25/10	9.0	8.3	8.3E-06	142	142	241.26	27	0.05	<b>0.12</b>	<b>0.01</b>
02/26/10	7.6			142						
02/26/10	7.6	4.3	4.25E-06	78	78	132.52	260	0.15	<b>0.32</b>	<b>0.02</b>
03/09/10 <sup>1</sup>	0.9			78						
<b>PCE recovered in the first quarter 2010:</b>									<b>1.81</b>	<b>0.13</b>

*Notes:*

µg/l: micrograms per liter

kg: kilograms

m<sup>3</sup>/hr: cubic meters per hour

kg/m<sup>3</sup>: kilograms per cubic meter

ft<sup>3</sup>/min: cubic feet per minute

hr: hours

1: Influent analytical result for PCE is <1 µg/l, 0.9 µg/l utilized in calculations; flow not recorded and 2/26/10 data utilized

# **APPENDIX F**

**APPENDIX F**  
**METRO VALLEY CLEANERS**

**SVE Influent PCE Concentrations Overtime**

