PERJURY STATEMENT

Subject: Metro Valley Cleaners
224 Rickenbacker Circle, Livermore, California
Soil Vapor Investigation Work Plan - 28 May 2014

"I declare under penalty of perjury, that the information and/or recommendations in the attached document or report is true or correct to the best of my knowledge."

5/29/14
Date

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

Soil Vapor Investigation Work Plan
METRO VALLEY CLEANERS
224 Rickenbacker Circle, Livermore, California

28 May 2014
AGE Project No. 08-1640

PREPARED FOR:

Mr. Robert Strong
METRO VALLEY CLEANERS

PREPARED BY:

***Advanced* GeoEnvironmental, Inc.**

Stockton • San Francisco Bay Area • Monterey • Los Angeles • Spokane • Reno • Dallas
(800) 511-9300
www.advgeoenv.com

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PREPARED BY:

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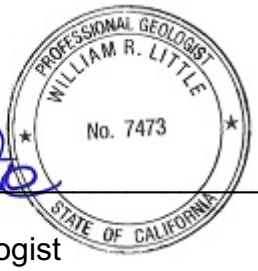
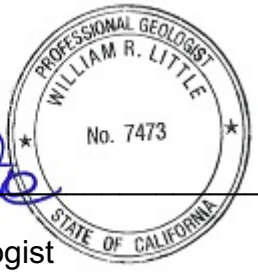


William R. Little
Senior Project Geologist
California Professional Geologist No. 7473

REVIEWED BY:



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Soil Vapor Investigation Work Plan
METRO VALLEY CLEANERS
224 Rickenbacker Circle, Livermore, California

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Soil Vapor Investigation Work Plan
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 *Soil Vapor Investigation Work Plan* for the property located at 224 Rickenbacker Circle, Livermore, California (site). The work plan proposes the installation of three semi-permanent soil-vapor wells for collection of soil-vapor samples. This work plan was prepared in accordance with Alameda County Health Services Agency directive letter dated, 29 August 2013.

The location of the site and the surrounding area are illustrated in Figure 1. Site structures and monitoring well locations are illustrated in Figure 2. Well construction details for wells installed at the site are included in Table 1. Historical soil and soil vapor analytical data is included in Tables 2 through 4. Historical site background information was included in the AGE-prepared, *Closure Summary Report*, 08 November 2010.

2.0. SCOPE OF WORK

AGE proposes to advance three (3) soil borings for the installation of semi-permanent soil-vapor wells for soil-vapor sample collection in areas of previously elevated chlorinated hydrocarbon impact. The scope of work will include the following tasks:

- Permitting and pre-field work activities.
- Soil-vapor well installations.
- Soil vapor sample collection and analysis.
- Report preparation.

2.1. PERMITTING AND PRE-FIELD WORK TASKS

Applicable site boring/well permits will be obtained from the Zone 7 Water Agency prior to performing the proposed scope of work. In addition, an update to the health and safety plan presently on-file will be prepared in accordance with *Occupational and Health Guidance Manual for Hazardous Waste Site Activities* (National Institute for Occupational Safety and Health Administration, U.S. Coast Guard and U.S. Environmental Protection Agency, 1985). Prior to mobilization, the proposed boring locations will be clearly marked and a utility clearance obtained through Underground Service Alert.

2.2. SOIL-VAPOR WELL INSTALLATIONS

AGE proposes to advance three (3) soil borings for the installation of depth discrete soil-vapor wells. One boring will be advanced to the west of boring SG-5, where the historical highest chlorinated vapor concentrations have been detected at the site. Additionally, two borings will be advanced adjacent to vapor sampling locations V-1 and V-3 to confirm results from the September 2010 investigation (Figure 2).

All proposed wells will be installed to a total depth of five (5) feet below surface grade (bsg). Vapor wells are proposed for collection of soil-vapor samples to evaluate the potential for soil-vapor to intrude into the on-site building and to confirm results from the September 2010 post-remediation investigation.

2.3. LABORATORY ANALYSIS

Soil-vapor samples will be analyzed by a CDPH-certified laboratory for the following constituents:

- VOC's in accordance with EPA Method TO-15.
- Isopropyl alcohol in accordance with EPA Method TO-15.

The proposed soil-vapor boring locations are illustrated in Figure 2. Field procedures for advancement of borings and collection of soil-vapor samples are presented in Section 3.0.

2.4. REPORT PREPARATION

Upon completion of field work and receipt of final laboratory analysis, a report of findings will be prepared presenting the findings of the investigation. The report will include a description of the work performed, results of the sampling and analysis and an initial Tier I - Human Health Risk Assessment (HHRA) signed by a California Professional Geologist. Conclusions, applicable recommendations, and maps will be included in the report.

3.0. FIELD PROCEDURES

All field procedures will be overseen by an AGE representative under the supervision of a California Professional Geologist. Procedures for the advancement of borings, soil-vapor sampling, soil sampling, equipment decontamination and sample shipment are outlined below.

3.1. SOIL-VAPOR WELL INSTALLATION

A total of three (3), four-inch pilot soil borings will be completed as soil-vapor wells utilizing ¼-inch diameter teflon tubing and a six-inch soil vapor tip installed to 5 feet bsg. The tubing will be attached to the vapor tip, which will be set to a depth of 4.5 to 5 feet bsg. Once the tip is set a filter pack material consisting of pre-washed #2/12 Lonestar sand will be added from total depth to approximately 4 feet bsg. A dry bentonite seal will be placed above the filter pack to a depth of 3 to 4 feet bsg and pre-hydrated bentonite will be placed above the dry bentonite from 3 feet bsg to near surface. The bentonite will be allowed to hydrate for a minimum of one half hour prior to installing a flush mounted well box over the wells. Approximately, 3 feet of extra tubing will be run above ground for soil-vapor sample collection. A well construction diagram illustrating the proposed design is included as Figure 3.

3.2. SOIL-VAPOR SAMPLE COLLECTION

Soil-vapor samples will be collected after allowing a minimum of 48 hours following installation of the soil-vapor wells.

Vapor wells will each be purged for approximately 10 to 11 minutes (equal to three purge volumes at 3.4 minutes per volume; Appendix B) utilizing a 6-liter purge canister and manifold, calibrated to 200 milliliters per minute (ml/min). An estimated volume of approximately 2.05 liters will be purged from each vapor well prior to sampling.

One-liter Summa® sampling and six-liter Summa® purge canisters will be used to collect soil-vapor samples for TO-15 analysis. Sampling and purge canisters will be connected together with a dedicated and serialized sampling inlet manifold. The sampling inlet manifold consists of a vapor-tight valve; a particulate filter; a flow restrictor calibrated to 200 milliliters per minute (ml/min); a stainless steel tee-fitting; two vacuum gauges at either end of the flow controller and connections for both purge and sampling canisters (manifold assembly). The manifold assembly will be attached to the ¼-inch Teflon® tubing from the soil-vapor well. The purge canister will be attached to the end of the stainless steel sampling manifold while the sample canisters will be attached to the tee-fitting between the ¼-inch Teflon® tubing and purge container. Teflon® tape will be placed on the threads of each open fitting of the manifold assembly prior to attaching the ¼-inch Teflon® tubing and sampling and purge canisters (Figure 4).

Each canister's initial vacuum will be measured and recorded between -28 and -30 inches of mercury (in hg). Shut-in tests will be performed on each assembly by attaching and securing the sample and purge canisters to the manifold and opening the valves on the purge canister and the manifold. The shut-in test is performed for approximately 10 minutes on each assembly.

Each soil-vapor monitoring well location will be isolated from ambient air by enclosing the borehole, tubing and manifold/canister assembly in a 100-liter shroud. Isopropyl alcohol (IPA) is emitted into the shroud surrounding the well borehole, tubing and manifold/canister assembly and acts as a tracer gas to evaluate if leaks in the sampling apparatus have allowed infiltration of ambient air.

Upon achieving a successful leak test, the purge canister valve will be opened for a period of time to allow the three calculated volumes of air to be purged (Appendix B). The purge vacuum gauge will be monitored to ensure a proper decrease of vacuum purged.

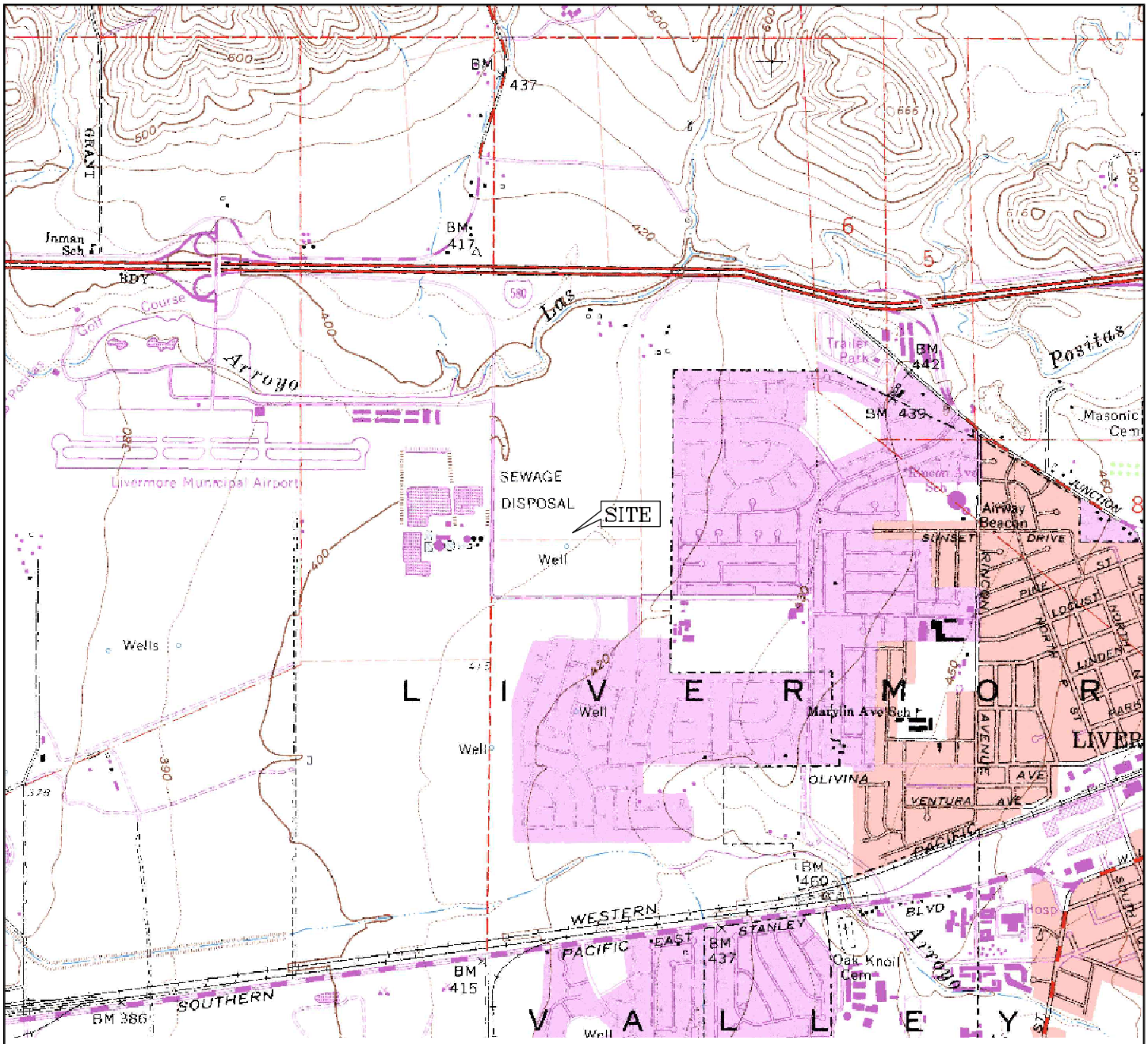
Upon achieving the targeted purge volume, the purge canister valve will be closed and the sample canister valve opened. The initial pressure and time is recorded. Upon reaching at least -5 in Hg or less, the sample canister valve will be closed and final pressure and time recorded. The sampling port on the sampling canister will be capped with a brass end-cap.

After collection of the sample, soil-vapor from the Teflon tubing will be monitored for the presence of volatile organics using a PID.

3.3. EQUIPMENT DECONTAMINATION

Prior to use, all sampling tools used for sample collection will be thoroughly rinsed with clean water after being washed with a solution of Alconox.

FIGURES



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

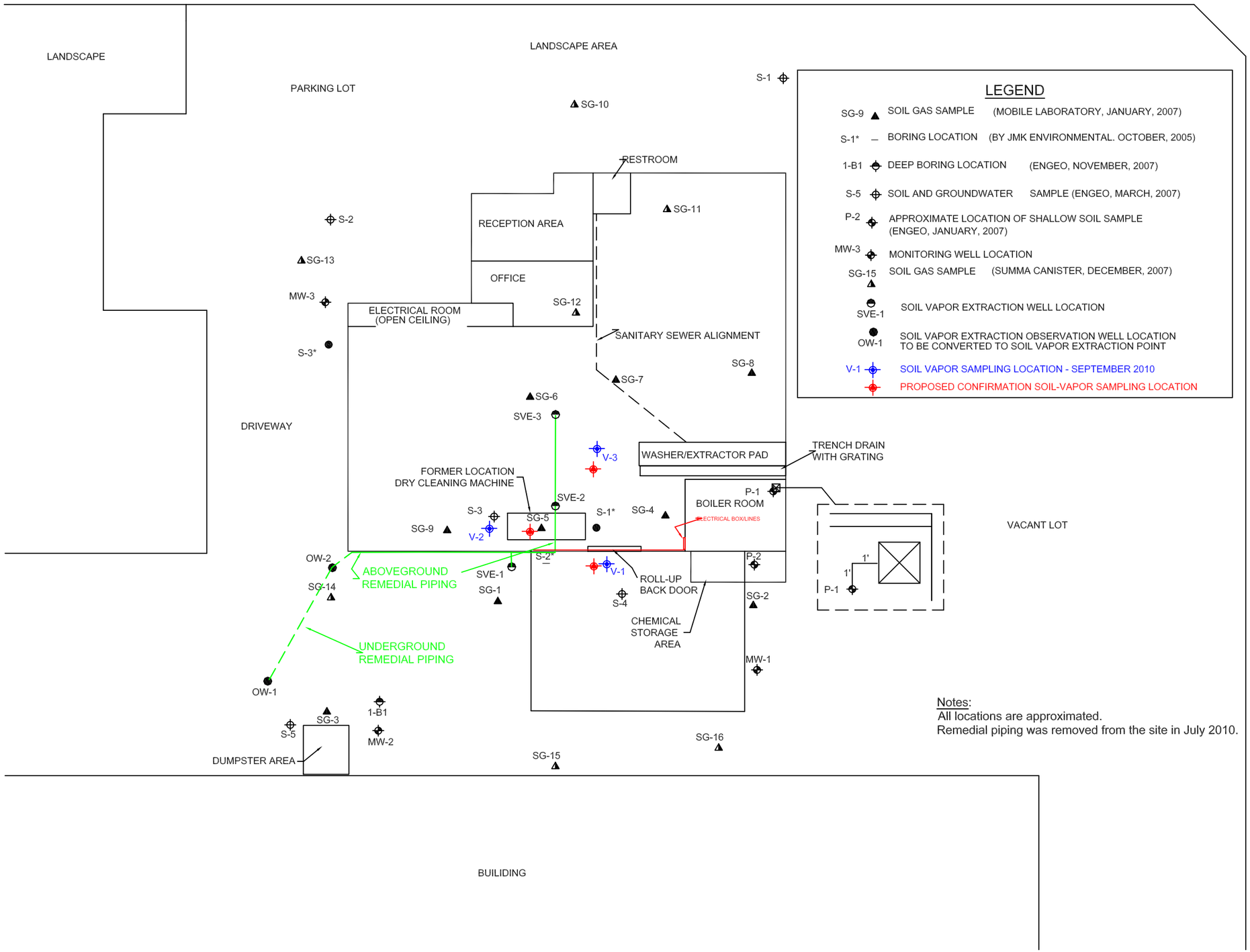
LOCATION MAP

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



LEGEND

SG-9 ▲	SOIL GAS SAMPLE	(MOBILE LABORATORY, JANUARY, 2007)
S-1* —	BORING LOCATION	(BY JMK ENVIRONMENTAL. OCTOBER, 2005)
1-B1	DEEP BORING LOCATION	(ENGEO, NOVEMBER, 2007)
S-5	SOIL AND GROUNDWATER	SAMPLE (ENGEO, MARCH, 2007)
P-2	APPROXIMATE LOCATION OF SHALLOW SOIL SAMPLE (ENGEO, JANUARY, 2007)	
MW-3	MONITORING WELL LOCATION	
SG-15 ▲	SOIL GAS SAMPLE	(SUMMA CANISTER, DECEMBER, 2007)
SVE-1	SOIL VAPOR EXTRACTION WELL LOCATION	
OW-1	SOIL VAPOR EXTRACTION OBSERVATION WELL LOCATION TO BE CONVERTED TO SOIL VAPOR EXTRACTION POINT	
V-1	SOIL VAPOR SAMPLING LOCATION - SEPTEMBER 2010	
	PROPOSED CONFIRMATION SOIL-VAPOR SAMPLING LOCATION	

Notes:
All locations are approximated.
Remedial piping was removed from the site in July 2010.

N

SCALE
0 20 40
FEET

RICKENBACKER CIRCLE

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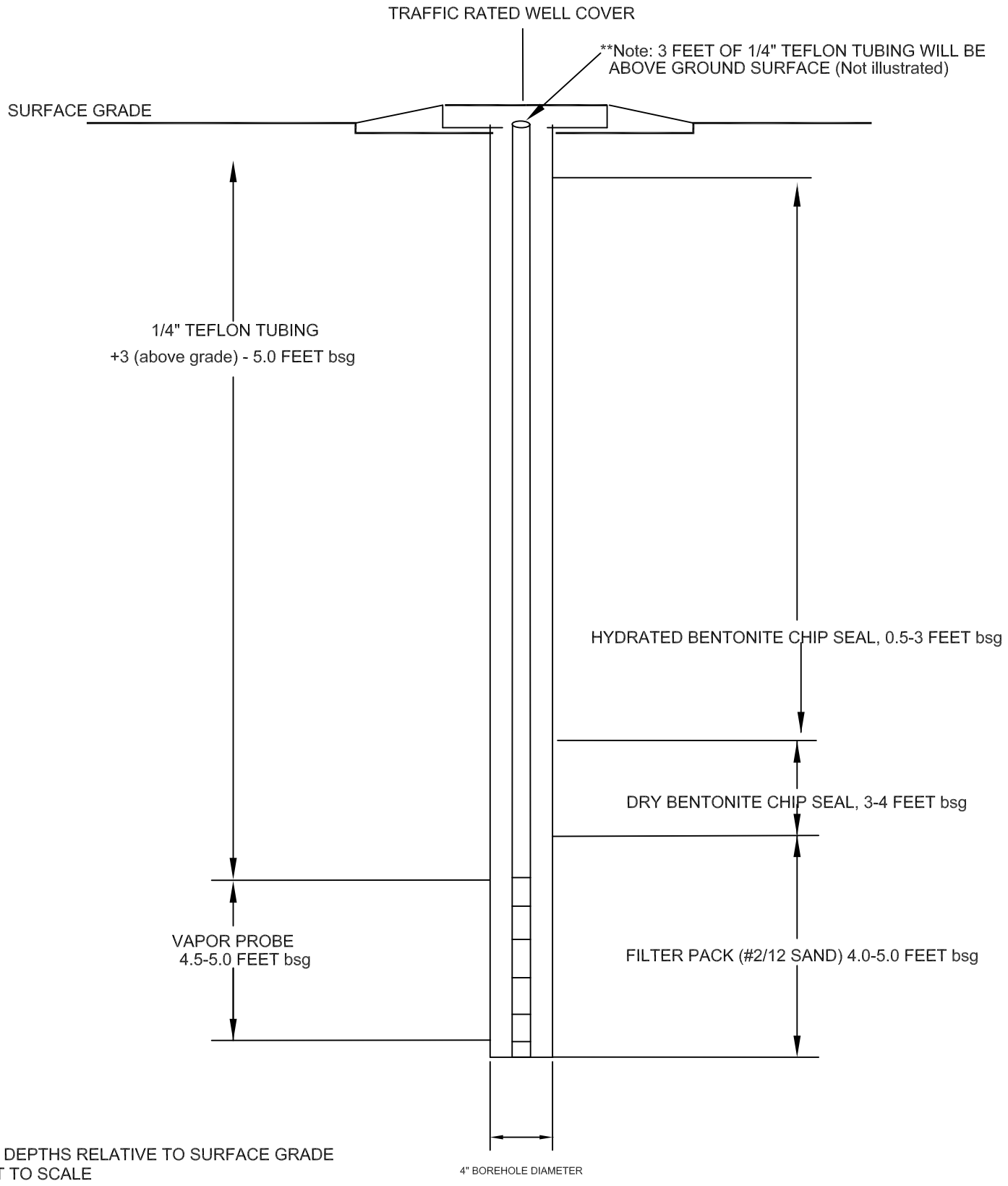
PROJECT NO. AGE 08-1640 | FILE: SP2014 | FIGURE: 2
DATE: MAY 2014 | DRAWN BY: MAC

SITE PLAN
METRO VALLEY CLEANERS
224 RICKENBACKER CIRCLE
LIVERMORE, CALIFORNIA



PROPOSED SOIL-VAPOR WELL - 5.0

METRO VALLEY CLEANERS
224 RICKENBACKER CIRCLE
LIVERMORE, CALIFORNIA

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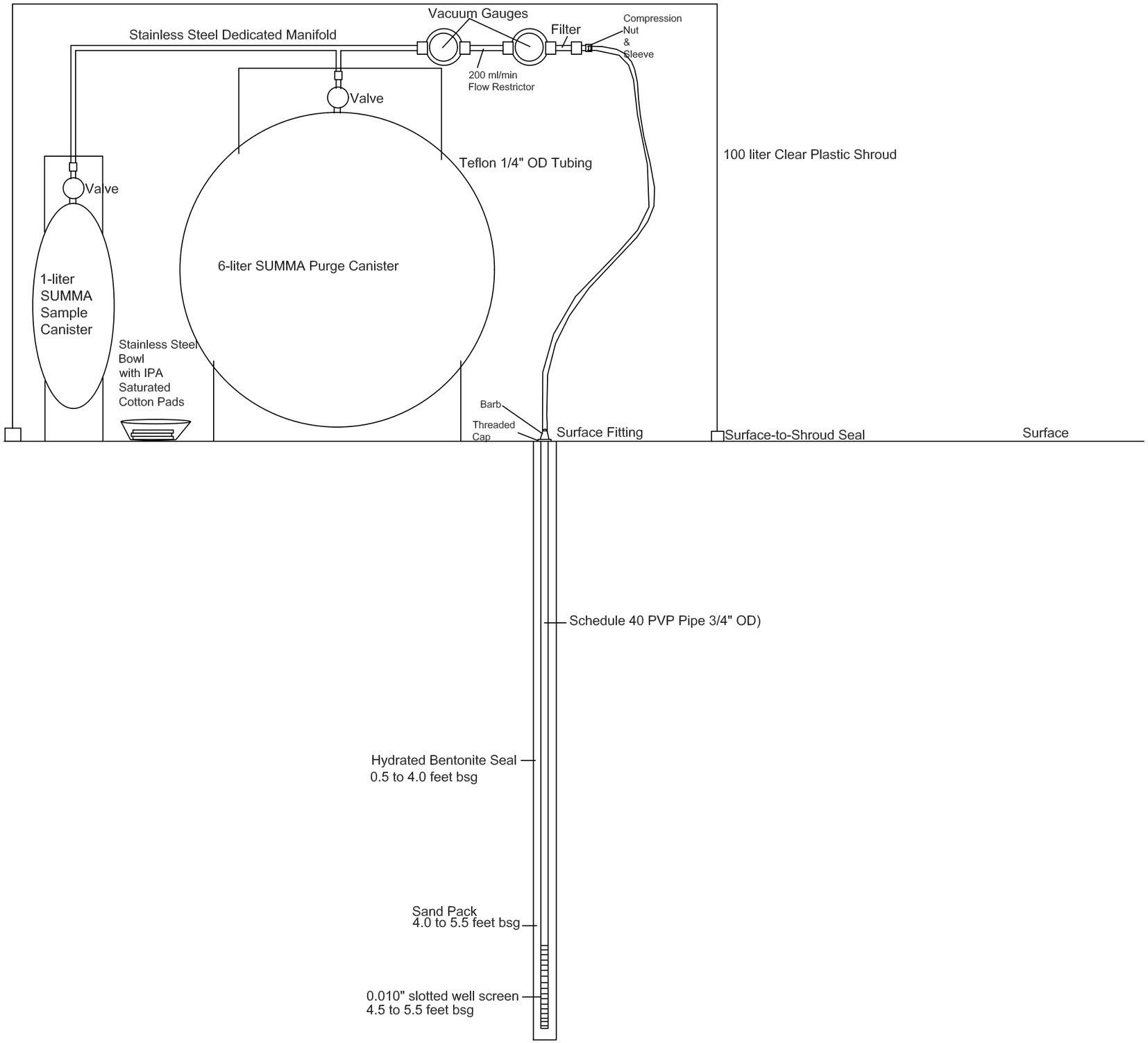
PROJECT NO. AGE 08-1640	FILE: VW	FIGURE: 3
DATE: MAY 2014	DRAWN BY: MAC	



SAMPLING TRAIN

METRO VALLEY CLEANERS
224 RICKENBACKER CIRCLE
LIVERMORE, CALIFORNIA

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PROJECT NO. AGE 08-1640 | FILE: ST | FIGURE: 4
DATE: MAY 2014 | DRAWN BY: MAC

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)[1]	Screen Interval (ft btoc)	Filterpack Interval (ft btoc)	Bentonite Interval (ft btoc)	Grout Interval (ft btoc)
Ground Water Monitoring Wells											
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	12-18-2007	8	35	2	PVC	0.010	409.48	10 to 35	43 to 65	12 to 13	1 to 12
Remediation Wells											
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 - EPA METHODS 8260B / 8015B
Metro Valley Cleaners
224 Rickenbacker Circle, Livermore, CA
(mg/kg)

Sample ID	Depth (ft bsg)	Date	PCE	TCE	1,1-DCE	Trans 1,2-DCE	Cis 1,2-DCE	VC	TPH-g	TPH-d	TPH-mo
S-1-5*	5	10/25/05	**0.23**	<0.012	<0.012	<0.012	<0.012	<0.012	-	-	-
S-1-10*	10	10/25/05	**0.032**	<0.005	<0.005	<0.005	<0.005	<0.005	-	-	-
S-1-15*	15	10/25/05	**0.031**	<0.005	<0.005	<0.005	<0.005	<0.005	-	-	-
S-1-25*	25	10/25/05	**0.057**	<0.005	<0.005	<0.005	<0.005	<0.005	-	-	-
S-1-35*	35	10/25/05	**0.029**	<0.005	<0.005	<0.005	<0.005	<0.005	-	-	-
S-2-5*	5	10/25/05	**0.45**	<0.005	<0.005	<0.005	<0.005	<0.005	-	-	-
S-2-10*	10	10/25/05	**0.059**	<0.005	<0.005	<0.005	<0.005	<0.005	-	-	-
S-2-15*	15	10/25/05	**0.036**	<0.005	<0.005	<0.005	<0.005	<0.005	-	-	-
S-2-25*	25	10/25/05	**0.048**	<0.005	<0.005	<0.005	<0.005	<0.005	-	-	-
S-2-35*	35	10/25/05	**0.023**	<0.005	<0.005	<0.005	<0.005	<0.005	-	-	-
S-3-25*	25	10/25/05	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	-	-	-
S-3-35*	35	10/25/05	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	-	-	-
P-1@1	1	01/22/07	<0.0048	<0.0048	<0.0048	<0.0048	<0.0048	<0.0048	<0.24	**2.6**	<48
P-1@5	5	01/22/07	**0.0055**	<0.0049	<0.0049	<0.0049	<0.0049	<0.0049	<0.23	**190**	**1,000**
P-2@1	1	01/22/07	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.24	2.9	<49
P-2@5	5	01/22/07	<0.0047	<0.0047	<0.0047	<0.0047	<0.0047	<0.0047	<0.25	<0.99	<50
S-1@24#	24	03/02/07	<0.0045	<0.0045	<0.0045	<0.0045	<0.0045	<0.0045	<0.24	<0.96	<48
S-2@26#	26	03/02/07	<0.0049	<0.0049	<0.0049	<0.0049	<0.0049	<0.0049	<0.22	**11**	<48
S-3@2#	2	03/01/07	<0.0048	<0.0048	<0.0048	<0.0048	<0.0048	<0.0048	**0.33**	**4.5**	<47
S-3@4#	4	03/01/07	**0.012**	**0.013**	<0.0049	**0.014**	**0.061**	<0.0049	<0.23	**1.0**	<46
S-3@8#	8	03/01/07	**0.079**	**0.0066**	<0.0048	<0.0048	<0.0048	<0.0048	<0.24	<0.96	<48
S-3@10#	10	03/01/07	**0.023**	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.23	**13**	<47
S-3@27#	27	03/01/07	<0.0047	<0.0047	<0.0047	<0.0047	<0.0047	<0.0047	<0.22	<0.99	<49
S-4@25#	25	03/01/07	<0.0049	<0.0049	<0.0049	<0.0049	<0.0049	<0.0049	<0.23	<0.98	<49
S-5@30#	30	03/01/07	<0.0048	<0.0048	<0.0048	<0.0048	<0.0048	<0.0048	<0.22	**1.0**	<46
1-B1/S-10	10	11/27/07	**0.079**	<0.0049	<0.0049	<0.0049	<0.0049	<0.0049	<0.23	<1.0	<50
1-B1/S-20	20	11/27/07	**0.017**	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.24	**17**	<50
1-B1/S-30	30	11/27/07	<0.0049	<0.0049	<0.0049	<0.0049	<0.0049	<0.0049	<0.24	<0.99	<50
1-B1/S-40	40	11/27/07	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.25	<0.99	<49
1-B1/S-50	50	11/27/07	**0.014**	<0.0049	<0.0049	<0.0049	<0.0049	<0.0049	<0.23	**1.1**	<49
1-B1/S-60	60	11/27/07	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.23	<0.99	<50
1-B1/S-70	70	11/27/07	<0.0049	<0.0049	<0.0049	<0.0049	<0.0049	<0.0049	<0.24	<0.98	<49
1-B1/S-80	80	11/27/07	<0.0049	<0.0049	<0.0049	<0.0049	<0.0049	<0.0049	<0.23	<1.0	<50
1-B1/S-90	90	11/27/07	<0.0048	<0.0048	<0.0048	<0.0048	<0.0048	<0.0048	<0.24	<0.99	<50
MWB1	5.5	12/18/07	**0.081**	<0.0047	<0.0047	<0.0047	<0.0047	<0.0047	<0.23	<1.0	<50
MWB1	10.5	12/18/07	**0.068**	<0.0049	<0.0049	<0.0049	<0.0049	<0.0049	<0.23	<1.0	<50
MWB2	25.5	12/18/07	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.24	<1.0	<50

TABLE 2

SOIL ANALYTICAL DATA - EPA METHODS 8260B / 8015B
Metro Valley Cleaners
224 Rickenbacker Circle, Livermore, CA
(mg/kg)

Sample ID	Depth (ft bsg)	Date	PCE	TCE	1,1-DCE	Trans 1,2-DCE	Cis 1,2-DCE	VC	TPH-g	TPH-d	TPH-mo
MW-3	26	12/19/07	<0.0046	<0.0046	<0.0046	<0.0046	<0.0046	<0.0046	<0.23	**2.2**	<49
SVE-1-5	5	01/08/09	**0.058**	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	-	-	-
SVE-1-10	10	01/08/09	**0.011**	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	-	-	-
SVE-1-15	15	01/08/09	**0.014**	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	-	-	-
OW-1-5	5	01/08/09	**0.040**	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	-	-	-
OW-2-5	5	01/08/09	**0.036**	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	-	-	-
OW-2-10	10	01/08/09	**0.026**	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	-	-	-
SVE-2-20	20	12/07/09	**0.010**	<0.005	<0.005	<0.005	<0.005	<0.005	-	-	-
SVE-3-10	10	12/07/09	**0.0094**	<0.005	<0.005	<0.005	<0.005	<0.005	-	-	-
SVE-3-20	20	12/07/09	**0.0082**	<0.005	<0.005	<0.005	<0.005	<0.005	-	-	-
	ESLs (Shallow Soil):		*0.7*	*0.46*	*1.0*	*0.67*	*0.19*	*0.047*	*83*	*83*	*2,500*
	ESLs (Deep Soil):		*0.7*	*0.46*	*1.0*	*0.67*	*0.19*	*0.085*	*83*	*83*	*5,000*

Notes:

mg/kg:	milligrams per kilogram
ft bsg:	feet 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
-:	not analyzed
ESL:	San Francisco Bay Regional Water Quality Control Board California Environmental Protection Agency Environmental Screening Level (soil) for commercial/industrial land use.
Shallow soil:	soil samples collected at maximum depths of 3 meters below surface grade
Deep Soil:	soil samples collected at depths greater than 3 meters below surface grade

TABLE 3

HISTORICAL SOIL VAPOR ANALYTICAL DATA
Metro Valley Cleaners
224 Rickenbacker Circle, Livermore, CA
($\mu g/m^3$)

Sample ID	Date	PCE	TCE	1,1-DCE	Trans 1,2-DCE	Cis 1,2-DCE	VC	Benzene	Toluene	Ethyl-benzene	Total Xylenes	Tracer Compound
EPA METHOD 8260 / Mobile Laboratory / Syringe Sampling[1]												
SG-1	01/22/07	**16,000**	**150**	<100	<100	<100	<100	<100	<100	<100	<100	<100
SG-2	01/22/07	**15,000**	**480**	<100	<100	<100	<100	<100	**320**	<100	**120**	<100
SG-3	01/22/07	**38,000**	**18,000**	<100	<100	**17,000**	<100	<100	**220**	<100	<100	<100
SG-4	01/22/07	**11,000**	**1,200**	<100	<100	**450**	<100	<100	**210**	<100	<100	<100
SG-5	01/22/07	**860,000**	**4,600,000**	**4,700**	**140,000**	**780,000**	**1,800**	<100	<100	<100	<100	<100
SG-6	01/22/07	**25,000**	**1,300**	<100	<100	<100	<100	<100	**250**	<100	<100	<100
SG-7	01/22/07	**5,700**	**3,000**	<100	<100	**470**	<100	<100	**550**	**120**	**450**	<100
SG-8	01/22/07	**4,300**	**310**	<100	<100	<100	<100	<100	**270**	<100	**100**	<100
SG-9	01/22/07	**4,100**	**3,100**	<100	**500**	**1,700**	<100	<100	**270**	<100	**130**	<100
EPA METHOD TO-15 / Summa Canisters[2]												
SG-10	12/17/07	<2.1	<0.86	<1.3	<0.90	<0.90	<0.40	**2.8**	**31**	<0.51	**48**	<2.7
SG-11	12/17/07	**64**	<0.83	<1.3	<0.88	<0.88	<0.39	**3.5**	**25**	<0.48	**49**	<2.6
SG-12	12/17/07	**10**	<0.82	<1.2	<0.86	<0.86	<0.39	**2.5**	**16**	<0.48	**31.4**	<2.6
SG-12[3]	12/17/07	**8.7**	<0.78	<1.2	<0.82	<0.82	<0.37	**2.2**	**14**	<0.46	**26.3**	<2.6
SG-13	12/17/07	<1.3	<0.55	<0.79	<0.55	<0.55	<0.25	**3.1**	**48**	<0.31	**43.2**	<1.6
SG-14	12/17/07	<2.0	<0.87	<1.2	<0.87	<0.87	<0.39	<1.4	**3.3**	**1.7**	**8.0**	<2.6
SG-15	12/17/07	<1.9	<0.77	<1.2	<0.81	<0.81	<0.37	**4.0**	**68**	<0.46	**50**	<2.4
SG-16	12/17/07	**15**	**22**	<1.2	**8.2**	**7.9**	<0.37	**6.6**	**30**	**8.2**	**59**	<2.5
	ESL:	*1,400*	*4,100*	*5,100*	*41,000*	*20,000*	*100*	*280*	*180,000*	*3,300*	*58,000*	-
	CHHSL:	*603*	*1,770*	--	*88,700*	*44,400*	*44.8*	*122*	*378,000*	--	*887,000*	--

TABLE 3

HISTORICAL SOIL VAPOR ANALYTICAL DATA

Metro Valley Cleaners

224 Rickenbacker Circle, Livermore, CA

($\mu g/m^3$)

Notes:

$\mu g/m^3$	micrograms per cubic meter
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
<:	Indicates constituents were not detected at a concentration greater than the laboratory reporting limit shown.
Note 1:	Tracer compound: 1,1-diflouroethane
Note 2:	Tracer compound: isopropanol
Note 3:	duplicate sample
ESL:	San Francisco Bay Regional Water Quality Control Board California Environmental Protection Agency Environmental Screening Level (soil gas) for commercial/industrial land use.
-:	indicates there is no ESL for the listed constituent
CHHSL:	California Human Health Screening Levels (soil gas) for commercial/industrial land use.
--:	indicates there is no CHHSL for the listed constituent.

TABLE 4

SOIL VAPOR ANALYTICAL DATA - EPA METHOD TO-15: SEPTEMBER 2010

Metro Valley Cleaners

224 Rickenbacker Circle, Livermore, California

(µg/m^3)

Sample I.D.	Sample Date	PCE	TCE	1,1-DCE	Trans 1,2-DCE	Cis 1,2-DCE	VC	Benzene	Toluene	Ethyl-benzene	Total Xylenes	IPA
V-1A	09/02/10	<2.5	<2.5	<2.5	<2.5	<2.5	<1.0	<2.5	<2.5	<2.5	<2.5	<2.5
V-2A	09/02/10	<2.5	<2.5	<2.5	<2.5	<2.5	<1.0	<2.5	<2.5	<2.5	<2.5	<2.5
V-3A	09/02/10	<2.5	<2.5	<2.5	<2.5	<2.5	<1.0	<2.5	<2.5	<2.5	<2.5	<2.5
	ESL:	*1,400*	*4,100*	*5,100*	*41,000*	*20,000*	*100*	*280*	*180,000*	*3,300*	*58,000*	-
	CHHSL:	*603*	*1,770*	--	*88,700*	*44,400*	*44.8*	*122*	*378,000*	--	*887,000*	--

Notes:

µg/m^3: micrograms per cubic meter

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

Naph: Napth

IPA: isopropyl alcohol or 2-propanol (tracer compound)

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

ESL: San Francisco Bay Regional Water Quality Control Board California Environmental Protection Agency Environmental Screening Level (soil gas) for commercial/industrial land use.

-: indicates there is no ESL for the listed constituent

CHHSL: California Human Health Screening Levels (soil gas) for commercial/industrial land use.

--: indicates there is no CHHSL for the listed constituent.

APPENDIX A

ALAMEDA COUNTY
HEALTH CARE SERVICES
AGENCY
ALEX BRISCOE, Agency Director

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

August 29, 2013

Mr. Lawrence Hancock
Country Club Cleaners
500 Bollinger Canyon Way #A4
San Ramon, CA 94582
(*Sent via E-mail to: larry@blueskycleaners.com*)

Mr. Mark Ratto
Peter J. Ratto Trust
670 W. Fruit Cive Forest Road
Jacksonville, FL 32259

Mr. Robert Strong
Country Club Cleaners
500 Bollinger Canyon Way #A4
San Ramon, CA 94582
(*Sent via E-mail to: bob@blueskycleanersca.com*)

Subject: Case File Review for SLIC Case RO0002913 and GeoTracker Global ID T06019748481, Perciva/Metro Valley Cleaners, 224 Rickenbacker Circle, Livermore, CA 94550

Dear Mr. Hancock, Mr. Strong, and Mr. Ratto:

Alameda County Environmental Health (ACEH) staff has reviewed the case file for the above referenced site. During a soil vapor sampling event in January 2007, tetrachloroethene (PCE) and trichloroethene (TCE) were detected in soil vapor samples collected from the site at concentrations up to 860,000 micrograms per cubic meter (µg/m^3) and 4,600,000 µg/m^3, respectively. The January 2007 soil vapor samples were collected from temporary direct push vapor probes using syringes and were analyzed using EPA Method 8260. During a second sampling event in December 2007, PCE and TCE were detected in soil vapor samples at maximum concentrations of 64 and 22 µg/m^3, respectively. The December 2007 soil vapor samples were collected from temporary direct push vapor probes using 6-liter sample canisters and were analyzed using EPA Method TO015. No remediation was conducted between January 2007 and December 2007. The cause of the significant variability between the January 2007 and December 2007 sampling events is unknown.

A 24-hour variable flow rate soil vapor extraction (SVE) pilot test was performed in January 2009. PCE and TCE were detected in influent vapor samples at concentrations of 110,000 and 33,000 µg/m^3, respectively. An SVE system operated intermittently at the site from February 2010 until June 2010. PCE was detected in the influent vapor at concentrations ranging from 7,600 to 93,000 64 and 22 µg/m^3. The mass of PCE removed during the SVE operating period was an estimated 7.54 pounds. The SVE system was removed from the site in July 2010 due to low mass removal.

On September 2, 2010, soil vapor samples were collected from three borings (V-1 through V-3) to assess the remaining chlorinated hydrocarbon mass and to evaluate the potential for vapor intrusion to the building. Volatile organic compounds (VOCs) were not detected at concentrations above reporting limits in any of the three soil vapor samples analyzed.

Based on the highly elevated concentrations of PCE and TCE detected in soil vapor during the initial sampling event in January 2007, the limited mass removal during remediation, and the detections of PCE and TCE in influent samples from the SVE system at the end of remediation, the absence of VOCs at concentrations above reporting limits in any of the three September 2010 soil vapor samples appears unusual. In addition, previous soil vapor sampling events have displayed a high degree of variability. In

order to confirm these results and consider the site for closure, ACEH requests that additional soil vapor sampling be conducted to confirm that soil vapor beneath the building does not pose a risk for vapor intrusion. Therefore, we request that you submit a Work Plan to conduct confirmation soil vapor sampling.

TECHNICAL REPORT REQUEST

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

- **October 30, 2013** – Work Plan for Soil Vapor Sampling

If you have any questions, please call me at (510) 567-6791 or send me an electronic mail message at jerry.wickham@acgov.org.

Sincerely,

Jerry Wickham, California PG 3766, CEG 1177, and CHG 297
Senior Hazardous Materials Specialist

Attachment: Responsible Party(ies) Legal Requirements/Obligations

Enclosure: ACEH Electronic Report Upload (ftp) Instructions

cc: Danielle Stefani, Livermore Pleasanton Fire Department, 3560 Nevada St, Pleasanton, CA 94566
(*Sent via E-mail to: dstefani@lpfire.org*)

Colleen Winey (QIC 8021), Zone 7 Water Agency, 100 North Canyons Pkwy, Livermore, CA 94551
(*Sent via E-mail to: cwiney@zone7water.com*)

Paul Smith, Livermore-Pleasanton Fire Department, 3560 Nevada Street
Pleasanton, CA 94566(*Sent via E-mail to: psmith@lpfire.org*)

Donna Drogos, ACEH (*Sent via E-mail to: donna.drogos@acgov.org*)
Jerry Wickham, ACEH (*Sent via E-mail to: jerry.wickham@acgov.org*)

GeoTracker, eFile

Attachment 1

Responsible Party(ies) Legal Requirements/Obligations

REPORT/DATA REQUESTS

These reports/data are being requested pursuant to Division 7 of the California Water Code (Water Quality), Chapter 6.7 of Division 20 of the California Health and Safety Code (Underground Storage of Hazardous Substances), and Chapter 16 of Division 3 of Title 23 of the California Code of Regulations (Underground Storage Tank Regulations).

ELECTRONIC SUBMITTAL OF REPORTS

ACEH's Environmental Cleanup Oversight Programs (Local Oversight Program [LOP] for unauthorized releases from petroleum Underground Storage Tanks [USTs], and Site Cleanup Program [SCP] for unauthorized releases of non-petroleum hazardous substances) require submission of reports in electronic format pursuant to Chapter 3 of Division 7, Sections 13195 and 13197.5 of the California Water Code, and Chapter 30, Articles 1 and 2, Sections 3890 to 3895 of Division 3 of Title 23 of the California Code of Regulations (23 CCR). Instructions for submission of electronic documents to the ACEH FTP site are provided on the attached "Electronic Report Upload Instructions."

Submission of reports to the ACEH FTP site is in addition to requirements for electronic submittal of information (ESI) to the State Water Resources Control Board's (SWRCB) Geotracker website. In April 2001, the SWRCB adopted 23 CCR, Division 3, Chapter 16, Article 12, Sections 2729 and 2729.1 (Electronic Submission of Laboratory Data for UST Reports). Article 12 required electronic submittal of analytical laboratory data submitted in a report to a regulatory agency (effective September 1, 2001), and surveyed locations (latitude, longitude and elevation) of groundwater monitoring wells (effective January 1, 2002) in Electronic Deliverable Format (EDF) to Geotracker. Article 12 was subsequently repealed in 2004 and replaced with Article 30 (Electronic Submittal of Information) which expanded the ESI requirements to include electronic submittal of any report or data required by a regulatory agency from a cleanup site. The expanded ESI submittal requirements for petroleum UST sites subject to the requirements of 23 CCR, Division, 3, Chapter 16, Article 11, became effective December 16, 2004. All other electronic submittals required pursuant to Chapter 30 became effective January 1, 2005. Please visit the SWRCB website for more information on these requirements. (http://www.waterboards.ca.gov/water_issues/programs/ust/electronic_submittal/)

PERJURY STATEMENT

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

PROFESSIONAL CERTIFICATION & CONCLUSIONS/RECOMMENDATIONS

The California Business and Professions Code (Sections 6735, 7835, and 7835.1) requires that work plans and technical or implementation reports containing geologic or engineering evaluations and/or judgments be performed under the direction of an appropriately registered or certified professional. For your submittal to be considered a valid technical report, you are to present site specific data, data interpretations, and recommendations prepared by an appropriately licensed professional and include the professional registration stamp, signature, and statement of professional certification. Please ensure all that all technical reports submitted for this fuel leak case meet this requirement.

UNDERGROUND STORAGE TANK CLEANUP FUND

Please note that delays in investigation, late reports, or enforcement actions may result in your becoming ineligible to receive grant money from the state's Underground Storage Tank Cleanup Fund (Senate Bill 2004) to reimburse you for the cost of cleanup.

AGENCY OVERSIGHT

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

Alameda County Environmental Cleanup Oversight Programs (LOP and SCP)	**REVISION DATE:** July 25, 2012
	ISSUE DATE: July 5, 2005
	PREVIOUS REVISIONS: October 31, 2005; December 16, 2005; March 27, 2009; July 8, 2010
SECTION: Miscellaneous Administrative Topics & Procedures	**SUBJECT:** Electronic Report Upload (ftp) Instructions

The Alameda County Environmental Cleanup Oversight Programs (petroleum UST and SCP) require submission of all reports in electronic form to the county's FTP site. Paper copies of reports will no longer be accepted. The electronic copy replaces the paper copy and will be used for all public information requests, regulatory review, and compliance/enforcement activities.

REQUIREMENTS

- **Please do not submit reports as attachments to electronic mail.**
- Entire report including cover letter must be submitted to the ftp site as **a single Portable Document Format (PDF) with no password protection**.
- It is **preferable** that reports be converted to PDF format from their original format, (e.g., Microsoft Word) rather than scanned.
- **Signature pages and perjury statements must be included and have either original or electronic signature.**
- **Do not password protect the document**. Once indexed and inserted into the correct electronic case file, the document will be secured in compliance with the County's current security standards and a password. **Documents with password protection will not be accepted**.
- Each page in the PDF document should be rotated in the direction that will make it easiest to read on a computer monitor.
- Reports must be named and saved using the following naming convention:

  RO#_Report Name_Year-Month-Date (e.g., RO#5555_WorkPlan_2005-06-14)

Submission Instructions

1) Obtain User Name and Password
   a) Contact the Alameda County Environmental Health Department to obtain a User Name and Password to upload files to the ftp site.
      i) Send an e-mail to .loptoxic@acgov.org
   b) In the subject line of your request, be sure to include **"ftp PASSWORD REQUEST"** and in the body of your request, include the **Contact Information, Site Addresses**, and the **Case Numbers (RO# available in Geotracker) you will be posting for**.

2) Upload Files to the ftp Site
   a) Using Internet Explorer (IE4+), go to ://alcoftp1.acgov.org
      (i) Note: Netscape, Safari, and Firefox browsers will not open the FTP site as they are NOT being supported at this time.
   b) Click on Page located on the Command bar on upper right side of window, and then scroll down to Open FTP Site in Windows Explorer.
   c) Enter your User Name and Password. (Note: Both are Case Sensitive.)
   d) Open "My Computer" on your computer and navigate to the file(s) you wish to upload to the ftp site.
   e) With both "My Computer" and the ftp site open in separate windows, drag and drop the file(s) from "My Computer" to the ftp window.

3) Send E-mail Notifications to the Environmental Cleanup Oversight Programs
   a) Send email to .loptoxic@acgov.org notify us that you have placed a report on our ftp site.
   b) Copy your Caseworker on the e-mail. Your Caseworker's e-mail address is the entire first name then a period and entire last name @acgov.org. (e.g., firstname.lastname@acgov.org)
   c) The subject line of the e-mail must start with the RO# followed by **Report Upload**. (e.g., Subject: RO1234 Report Upload) If site is a new case without an RO#, use the street address instead.
   d) If your document meets the above requirements and you follow the submission instructions, you will receive a notification by email indicating that your document was successfully uploaded to the ftp site.

APPENDIX B

APPENDIX B

PURGE VOLUME CALCULATIONS

Metro Valley Cleaners

224 Rickenbacker Circle, Livermore, California

Purge Calculations:

1. Tubing (0.25" OD, 0.17" ID)

a. length of tubing = 8 ft (96 in)

b. volume=$\pi r^2 h$

r=ID/2	0.085	in
$\pi(0.085^2)96$=	2.18	in^3
$1in^3$=16.4ml	**35.72**	**ml**

2. Volume of sand pack and dry bentonite (4" OD, 0.25" ID)

a. height (length) = 1 ft (12 in)

b. Outer vol=total vol-inner vol 4"-0.25" = 3.75"

c. estimated air space in sand = 30%

d. $v_T = \pi r^2 h$

r=3.75/2	1.875	in
$\pi(2^2)12$=	132.47	in^3
$1in^3$=16.4ml	**2,172.49**	**ml**
30% of v_T	**651.75**	**ml**

Volume Formula:

A=	# of purge volumes	**1**	
B=	volume of tubing	**35.72**	**ml**
C=	volume of well	**0.00**	**ml**
D=	volume of sand pack	**651.75**	**ml**
E=	total volume to be purged		

E= A(B+C+D)

E= 1(22.32+741.54)

Total volume to be purged=	**687.46**	**ml**

APPENDIX B

PURGE VOLUME CALCULATIONS

Metro Valley Cleaners

224 Rickenbacker Circle, Livermore, California

Time Formula:

E= total volume to be purged

F= purge rate (200ml/min peristaltic pump)

G= 60 seconds/min

H= total purge time in seconds at 200 ml (cc) per min

H= (E/F)G

$$H = 687.46 \frac{\text{x 1 min}}{\text{200ml}} \frac{\text{x 60 sec}}{\text{1 min}}$$

Total purge time= 206.24 sec

or

3.44 min