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By Alameda County Environmental Health 3:39 pm, Aug 23, 2017

August 18, 2017

Mr. Robert Schultz
Alameda County Environmental Health
1131 Harbor Bay Parkway, Suite 250
Alameda, California 94502

Subject: **Submittal Acknowledgement Statement**
SVET System Evaluation
Former Young's Cleaners
10700 MacArthur Boulevard
Oakland, California 94605
AEI Project No. 365948
Toxics Case No. RO0002580

Dear Mr. Schultz:

I have read and acknowledge the content, recommendations and/or conclusions contained in the attached document or report submitted on my behalf to ACDEH's FTP server and the State Water Resources Control Board's Geotracker website.

If you have any questions or need additional information, please do not hesitate to call the undersigned at (310) 270-8339, or Mr. Peter McIntyre at AEI Consultants, (925) 746-6004.

Sincerely,

WAC Enterprises FHS, LLC
8245 W. 4th Street,
Los Angeles, CA 90048

cc: Mr. Peter McIntyre, AEI Consultants, 2500 Camino Diablo, Walnut Creek, CA 94597

AEI Consultants

August 18, 2017

Mr. Robert Schultz
Alameda County Department of Environmental Health
1131 Harbor Parkway
Alameda, California 94502

Re: SVET System Evaluation
Former Young's Cleaners
10700 MacArthur Boulevard, Oakland, California
Toxics Case No. RO0002580
AEI Project No. 365948

Dear Mr. Schultz:

On behalf of WAC Enterprises FHS, LLC (WAC), AEI Consultants (AEI) has prepared this evaluation of the soil vapor extraction and treatment (SVET) system installed at the former Young's Cleaners at 10700 MacArthur Boulevard in Oakland, California ("the Site"). This is being submitted in response to the request in the July 25, 2017 letter from the ACDEH regarding the interim remedial action plan for the Site. As presented in detail below, the extraction of volatile organic compound (VOC) affected soil vapor from the one extraction well, SVE-1, has removed approximately 176-pounds of VOCs since operation began in January 2014. Based upon it current effectiveness, AEI is proposing to continue operation of the SVET system while potential expansion of the SVET system is reviewed and further testing performed as described below.

SITE SETTING

The Site is approximately 13.5 acres in size and is currently developed with the Foothill Square Shopping Center. The property is situated in an urban mixed commercial and residential area of Oakland, California and is bound by MacArthur Boulevard to the west, Foothill Boulevard to the east, and 108th Avenue to the south. Residential properties are present adjacent to the Site to the north and immediately beyond 108th Avenue to the south. Commercial properties are located immediately west of MacArthur Boulevard with residential properties further to the west. The Interstate 580 is located across Foothill Boulevard to the east. The Location of the Site is shown on Figure 1. Figure 2 presents the Site plan.

Based on the available soil logs, the geological observations reported in AEI's *Soil Remedial Investigation and Excavation Project Summary* dated February 7, 1996, and known Site

history, surface soils at the Site consist of native and non-native fill materials from previous development and grading of the Site. These fill materials are present to a depth of up to four-feet below ground surface (bgs). The underlying soils are predominantly comprised of low permeability, fine grained silts and clays with intermittent lenses of sands of higher permeability sand and silt units.

BACKGROUND

The results of previous environmental investigations at the Site suggest that the primary source of chemicals of concern (COCs) are from one or more releases of tetrachloroethylene (PCE) from on-site dry-cleaning operations. The location of the former dry cleaner is shown on Figure 2. PCE has been identified in soil, soil vapor, and groundwater beneath the Site. Since SVET would be focused on the remediation of PCE in soil, we have focused the discussion of the nature and extent of PCE in the subsurface to soil and soil vapor as described below.

The highest concentrations of PCE reported in soil were historically located beneath the former Young's Cleaners facility. Following completion of remedial excavation activities that included the excavation of approximately 2,500 cubic yards of PCE-impacted soil, confirmation soil samples were collected along excavation sidewalls and the base of the excavation. Residual concentrations of PCE and/or trichloroethylene (TCE) were left in place in a total of twenty locations around the perimeter and base of the extents of the remedial excavation. The maximum concentrations of PCE and TCE left in place were 7.3 and 3.6 milligrams per kilogram (mg/kg), respectively. The excavation was reportedly backfilled with a sandy-silt soil. Tables 1 and 2 present summaries of the investigation and excavation confirmation soils sample results.

The elevated concentrations of residual PCE in soil continue to affect soil vapor, as noted by elevated concentrations of PCE in soil vapor. Isoconcentration contours of PCE in shallow soil vapor before and during the operation of the sub-slab depressurization (SSD) or SVET systems installed on the Site are presented in Figures 3 and 4, respectively. Soil vapor analytical data is summarized in Table 3. The initial investigation of the lateral extent of PCE in soil vapor was performed using temporary soil vapor probes installed at 29 locations (VB-1 through VB-29) between 2006 to 2008. The extent of PCE in shallow soil vapor which exceeds the environmental screening level (ESL) for vapor intrusion under a commercial use scenario (2,100 micrograms per cubic meter [µg/m^3]) in these temporary probes is well defined, with the most elevated concentrations of PCE in shallow soil vapor centered on the area defined by VB-8, VB-9, and VB-11. PCE concentrations were observed at concentrations below the vapor ESL in vapor borings located along the existing sanitary sewer utility corridor (VB-10, VB-6, VB-11, and VB-13).

In January 2014, permanent vapor monitoring points were installed at a depth of five-feet below ground surface and immediately beneath the building floor slab (sub-slab) to allow

for monitoring of the effectiveness of SSD and SVET systems. Since their installation, soil vapor samples have been collected from these monitoring points under an induced vacuum due to the operation the SSD and SVET systems and are not representative of subsurface conditions under static conditions. Samples collected from monitoring points during the SSD and SVET system operation have exhibited significantly higher concentrations of PCE and TCE than were observed during the 2006 to 2008 vapor investigation. During the most recent sampling event (March 2017), the maximum observed concentrations of PCE and TCE in the soil vapor and sub-slab vapor monitoring points was 340,000 µg/m^3 and 310,000 µg/m^3, respectively. Sub-slab vapor samples are generally lower than those reported for the five-foot below ground surface monitoring points with a maximum reported PCE concentration of 1,700 µg/m^3 and a maximum reported TCE concentration of 580 µg/m^3.

EVALUATION OF CURRENT REMEDIAL MEASURES

Current remediation and vapor intrusion mitigation measures consist of a SSD and SVET system, a vapor intrusion mitigation barrier, and engineering controls on the heating ventilation and air conditioning (HVAC) systems of tenant spaces at the affected areas of the Site. The SVET and SSD systems are further described below as they provide both mitigation and remediation.

Soil Vapor Extraction and Treatment System

The SVET system was installed in January 2014 in accordance with the request of the ACDEH in their letters dated April 10, 2008 and May 16, 2008. A process diagram depicting the SVET system is depicted in Figure 5. The SVET system currently is comprised of a single extraction well (SVE-1), screened from 7 to 12 feet below ground surface. Vapor extraction is accomplished via a dedicated regenerative blower connected to the well. Extracted vapors are routed through a liquid knock-out-tank followed by two 200-pound primary filters, in series, under negative pressure, before reaching the regenerative blower. The initial vessel contains potassium impregnated granular activated carbon filter and subsequent vessel contains a granular activated carbon (GAC) filter. Effluent from the regenerative blower is routed into a manifold which combines the SSD and SVET vapor streams into a single vapor stream which is then routed under positive pressure through two 200-pound GAC filters for polishing before being routed to the roof for discharge to the atmosphere under a Permit to Operate with the Bay Area Air Quality Management District (BAAQMD).

The SVET system operated continuously from January 2014 to February 2017, with the exceptions of planned shut downs or maintenance related shut downs. Under the existing SVET configuration, the system operates under high vacuum, low flow conditions (nominally 145 inches of water column and 7 standard cubic feet per minute). Table 4 presents a summary of SVET system influent sample results. Table 5 presents a summary

of SVET system operational data and mass removal estimates. A cumulative mass of 162 pounds of VOCs are estimated to have been removed by the operation of the SVET.

In February 2017, the regenerative blower of the SVET system failed, rendering the SVET system inoperable.

Sub-Slab Depressurization System

The SSD system was installed concurrently with the SVET system. A process diagram for the SSD system is provided in Figure 5. Vapor extraction is performed from six two-foot by two-foot by two-foot extraction sumps (ES-1 through ES-6). The location of the extraction sumps and conveyance piping is depicted on Figure 2. Vapor streams from each sump are conveyed via sub-slab PVC piping, which are combined at and above-ground manifold into a single vapor stream. This vapor stream is serially routed under negative pressure through a liquid knock-out drum followed by two 200-pound GACs before reaching a dedicated regenerative blower. Effluent from the regenerative blower is routed into a manifold which combines the SSD and SVET vapor streams into a single vapor stream which is then routed under positive pressure through two 200-pound GAC filters for polishing before being serially discharged to the atmosphere at the roof level under a Permit to Operate with the BAAQMD.

The SSD system has operated continuously since January 2014, with the exception of planned shut downs and maintenance related tasks. The system is currently operating under low vacuum, high flow conditions (nominally 12 inches of water column and 100 cubic feet per minute). Vacuum influence of the SSD system is at least 0.005 inches of water column in each sub-slab monitoring point. The SSD system operates as the primary vapor intrusion mitigation measure for the Site. The SSD system is estimated to have removed approximately 826 pounds of VOCs since operation began in January 2014.

RECOMENDATIONS

As noted above, the SVET and the SSD systems have been highly effective at removing VOCs from the subsurface. A total of approximately 941-pounds of VOCs have been removed by the combined systems. Therefore, AEI recommends the continued operation of both systems to continue the successful mass removal efforts and replacement of the damaged blower. However, future evaluation of the operation of the SVET system is warranted to assess how additional extraction wells may further improve VOC mass removal efforts. Since both systems began operation together, and there was the concern that shutting down the SSD system may allow the migration of VOC-affected vapors into the building, the radius of influence of the one SVE well is currently unknown.

Since startup of the SVET and SSD system additional vapor intrusion mitigation measures have been installed including a vapor intrusion barrier within one of the affected tenant spaces and adjusting the HVAC systems to keep the building at a slight positive pressure to reduce the potential for vapor intrusion. These additional controls allow for a pilot test

to be performed to assess the radius of influence of the SVE well. Therefore, AEI recommends shutting down the SSD system for a period of up to five-days to allow vacuum readings while only the SVET is operating. The SVET system radius of influence test would be performed as follows:

- Shut down both the SVET and SSD systems.
- After approximately 24-hours, measure the residual vacuum in the existing soil vapor monitoring probe network.
- If there is no residual vacuum then the pilot test would be started. If not, then another 24-hour rebound period would be allowed.
- Once no, or limited residual vacuum is observed in the soil vapor monitoring points, the SVET system would be restarted. Influenced vacuum would be monitored using the soil vapor monitoring points at 15-minute intervals for a period of up to four hours.
- Upon completion of the pilot test the SVET system would remain operating and the SSD system restarted.

AEI will prepare a report following the completion of the above activities. The report will detail the pilot test activities and results. Based upon the observed radius of influence the installation of additional SVE wells may be recommended to increase the removal of VOC mass from the subsurface. If recommended, the report will include the location and installation details of additional SVE wells.

CLOSING

AEI appreciates working with the ACDEH to actively move this Site towards closure and trust that this document meets with your approval. Please contact the undersigned at (925) 746-6000 if you have any questions or comments.

Sincerely,
AEI Consultants

Jeremy Smith
Senior Project Manager

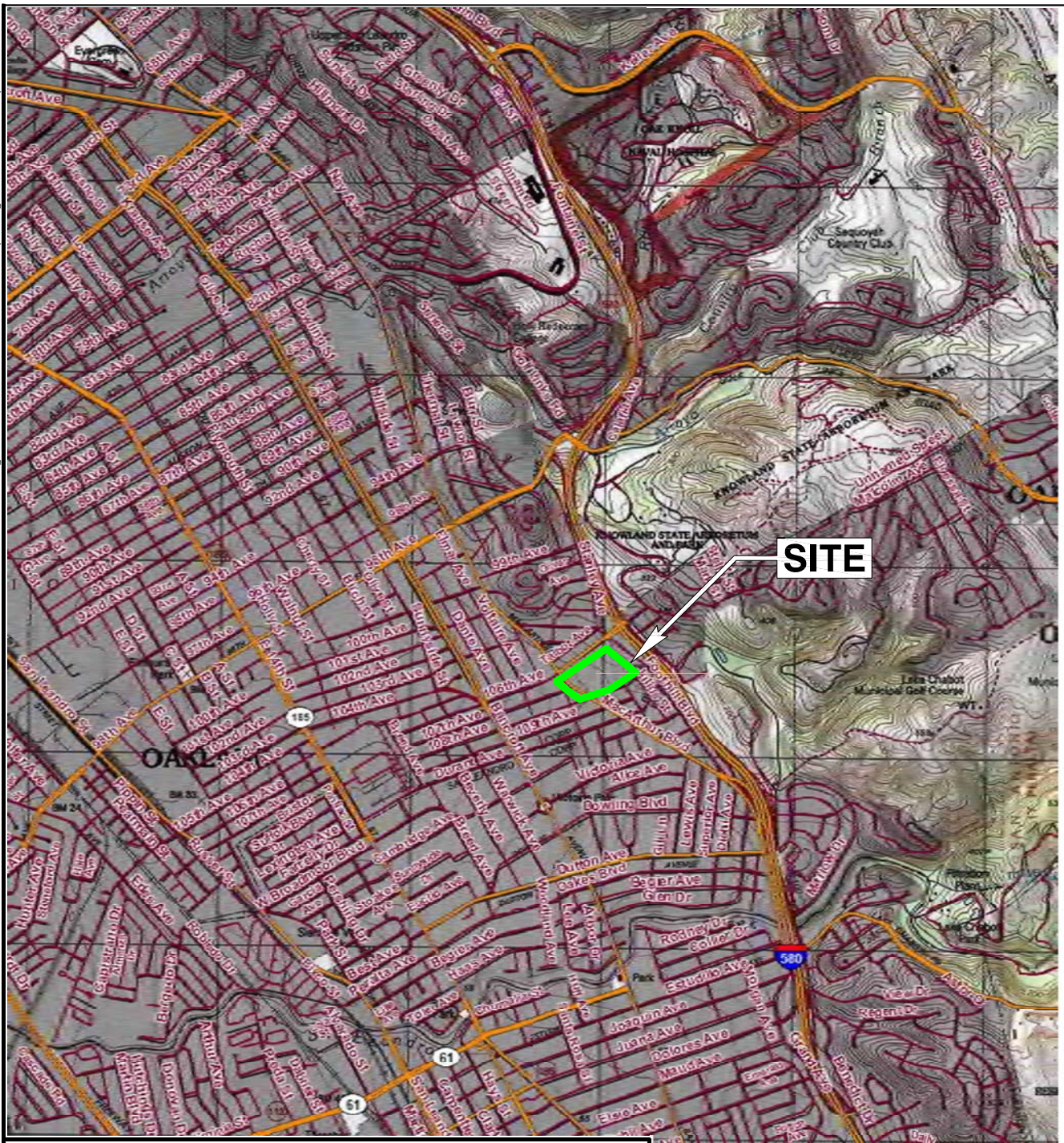
Trent A. Weise, P.E.
Vice President

Enclosures:
Figure 1 – Site Location
Figure 2 – Site Plan
Figure 3 – PCE Concentrations in Soil Vapor Prior to Further Remediation
Figure 4 – PCE Concentrations in Soil Vapor, January 6, 2014
Figure 5 – Process and Instrumentation Diagram – SSD and SVET Systems

Table 1 – Summary of Soil Analytical Results
Table 2 – Summary of Excavation Confirmation Soil Sample Results
Table 3 – Summary of Soil Vapor Sample Results
Table 4 – Summary of Soil Vapor Extraction System Results
Table 5 – Summary of SVET Operational Summary

Figures

C:\Drawing Files\AEI Consultants\365948\New Report\Fig 1. Site Location Map - 05/31/2017

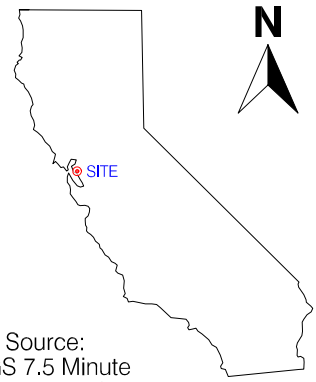


LEGEND

0 0.5 1 APPROXIMATE SCALE IN MILES

Site Location

REFERENCE LOCATION



Map Source:
USGS 7.5 Minute
Topographic Quadrangle Map,
San Leandro, CA - 1993

AEI Consultants

2500 Camino Diablo, Walnut Creek, California

SITE LOCATION MAP

Foothill Square
10700 MacArthur Boulevard
Oakland, California

FIGURE 1
Project No. 965948

D:\Voltaw CAD Design\CadFiles\AEI Consultants\365948 Former Young's Cleaners - Foothill Square\2017-0818 SVET - PO 1403231_AEI-365948-SVET_F2 - 08/18/2017

OFFICE

RESIDENTIAL

106TH AVENUE

RESIDENTIAL

TO I-580 WESTBOUND

FHS-MW-10

HP-4

HP-5

MW-5

ARCO - AM/PM

HP-9

MW-8

MW-4

RW-1

MW-3

MW-2

MW-5

HP-1

FUEL CENTER

VB-15

B-8

EB-1

VB-13

WGR-MW-2

COMPACTOR

EB-3

VB-16

VB-17

MW-6

EB-4

EB-2

B-2

MW-7

WGR-MW-3

VB-1

AMW-1

B-1

ADULT HEALTH CARE LIFELONG MEDICAL

VB-14

SB-1

AMW-8

VB-21

EB-5

FUTURE BUILDING AREA

AMW-6R

SS/VM-2

VB-18

CAR STEREO & ALARMS

DECKS

SHOE REPAIR

VACANT

NAIL SALON

BAY PARTY STORE

ROSS

VB-2

VB-25

ACADEMY OF HAWAIIAN ARTS

VB-4

SS/VM-1

VACANT

AMW-6

BINGO LOBBY

DAVITA HEMODIALYSIS

107TH AVENUE

FHS-MW-11

VB-29

SS/VM-10

VB-11

SS/VM-9

BINGO

VB-3

VB-24

VB-19

VB-22

VB-13

SS/VM-3

SS/VM-5

VB-28

SOONS BEAUTY SUPPLY

BREEZE

SS/VM-6

CLEAN AMERICA COIN LAUNDRY

CINGULAR WIRELESS

PRO WIRELESS

LUCKY EXPRESS RESTAURANT

YOUNGS CLEANERS

WELLS FARGO

MYERS STREET

MACARTHUR BOULEVARD

FOOTHILL BOULEVARD

VB-5

SS/VM-8

VB-23

SHOE PALACE

SS/VM-4

RAINBOW APPAREL

HP-7

B-6

SS/VM-7

VB-20

EB-15

AMW-7

VB-6

B-7

VB-12

VB-8

VB-9

AMW-9

SB-2

VB-7

B-3

VB-10

B-4

B-5

VB-27

VB-26

AMW-3

AMW-5

AMW-4

AMW-2

108TH AVENUE

CARL'S JR.

HEADSTART

FOODS CO.

CHURCH'S CHICKEN

RETAIL

108TH AVENUE

LEGEND

- AMW-1 Groundwater Monitoring Well
- MW-5 Abandoned Groundwater Monitoring Well
- SS/VM-1 Twinned Permanent Soil Vapor/Sub-Slab Vapor Probe
- VB-1 Temporary Soil Vapor Probes (AEI, 2006-2008)
- SB-1 Soil Boring (AEI, 2006)
- HP-1 Soil Boring (Kaldveer, 1988)
- EB-1 Soil Boring (Augeas, 1994)
- B-1 CPT Boring/Hydropunch Sample (PES, 1997)
- Former Dry Cleaner Location
- Approximate Property Boundary
- Storm Drain Line
- Sanitary Sewer Line
- Underground Electrical Line
- Natural Gas Line
- Water Line

0 100 200 APPROXIMATE SCALE IN FEET

AEI Consultants

2500 Camino Diablo, Walnut Creek, California

SITE PLAN

Foothill Square
10700 MacArthur Boulevard
Oakland, California

FIGURE 2
Project No. 365948

D:\Votaw CAD Design\CadFiles\AEI Consultants\365948 Former Young's Cleaners - Foothill Square\2017-0818 SVET - PO 140323\ AEI-365948-SVET F3-F4 - 08/17/2017

SHOE PALACE

RAINBOW APPAREL

BREEZEWAY

AMW-1

AMW-2

AMW-3

AMW-4

AMW-5

AMW-6

AMW-6R

AMW-8

VB-1

VB-2

VB-3

VB-4

VB-5

VB-6

VB-7

VB-8

VB-9

VB-10

VB-11

VB-16

VB-17

VB-18

VB-19

VB-20

VB-21

VB-22

VB-23

VB-24

VB-25

VB-26

VB-28

VB-29

SS/VM-1

SS/VM-2

SS/VM-3

SS/VM-4

SS/VM-5

SS/VM-6

SS/VM-7

SS/VM-8

SS/VM-9

SS/VM-10

ES-1

ES-2

ES-3

ES-4

ES-5

ES-6

SVE-1

2,100

VB-16 (10/13/2006)
4 <100
11 <100

VB-17 (10/3/2006)
4 <100

VB-18 (6/25/2007)
4.5 <100
10 <100

VB-21 (6/25/2007)
4.5 <100
10 <100

VB-4 (10/13/2006)
4 <100
12 3,200

VB-11 (10/13/2006)
4.5 6,100
11.5 6,800,000

VB-22 (6/25/2007)
4.5 <100
10 <100

VB-29 (5/23/2008)
5 <100
5 <100

VB-25 (5/23/2008)
4 <100

VB-19 (6/25/2007)
4.5 <100

VB-3 (10/12/2006)
4.5 <100
9 <100

VB-24 (5/23/2008)
5 <100

VB-28 (5/23/2008)
3.5 <100

VB-5 (10/13/2006)
5 <100
12 <100
12 <100

VB-23 (5/23/2008)
4 <100

VB-20 (6/25/2007)
5 <100

VB-6 (10/11/2006)
5 530
8 <100
8 <100

VB-7 (10/12/2006)
5 <100
10 <100

VB-8 (10/12/2006)
5 61,000
10 5,600

VB-9 (10/12/2006)
5 6,700
11 12,000

VB-26 (5/23/2008)
3 <100

VB-10 (10/13/2006)
5 160
9 <100

LEGEND

- AMW-1 — Groundwater Monitoring Well
- AMW-2 — Abandoned Groundwater Monitoring Well
- VB-1 — Soil Vapor Sample
- SS/VM-1 — Twinned Permanent Soil Vapor / Sub-Slab Vapor Probe
- SVE-1 — Soil Vapor Extraction Well
- ES-1 — Sub-Slab Depressurization Sump (2' bgs)
- Storm Drain Line
- Sanitary Sewer Line
- Underground Electrical Line
- Natural Gas Line
- Water Line
- Extents of Vapor Intrusion Mitigation Barrier
- Extent of Vapor Intrusion Mitigation Barrier with Aggregate Finish
- Tenent Improvements Trenching (Typ. 18" bgs)
- SVE/SSD Trenching (Typ. 18" bgs)
- Excavation Limits, 5-7 Feet bgs
- Excavation Limits, 8-13 Feet bgs
- Excavation Limits, 14-18 Feet bgs
- PCE Isoconcentration Contour (ug/m^3)

Sample Location → VB-21
Sample Collection Date → (6/25/2007)
Sample Depth (feet bgs) → 4.5 <100
PCE Concentation (μg/m^3) → 10 <100

Maintenance Office
PG&E Room
Equipment Room (SVET/SSD)
Storeroom (Closet)
Rainbow Apparel (Stock Room)
Shoe Palace (Stock Room)
Storeroom
Shoe Palace (Sales Floor)
Rainbow Apparel (Sales Floor)

0 20 40
APPROXIMATE SCALE IN FEET

AEI Consultants

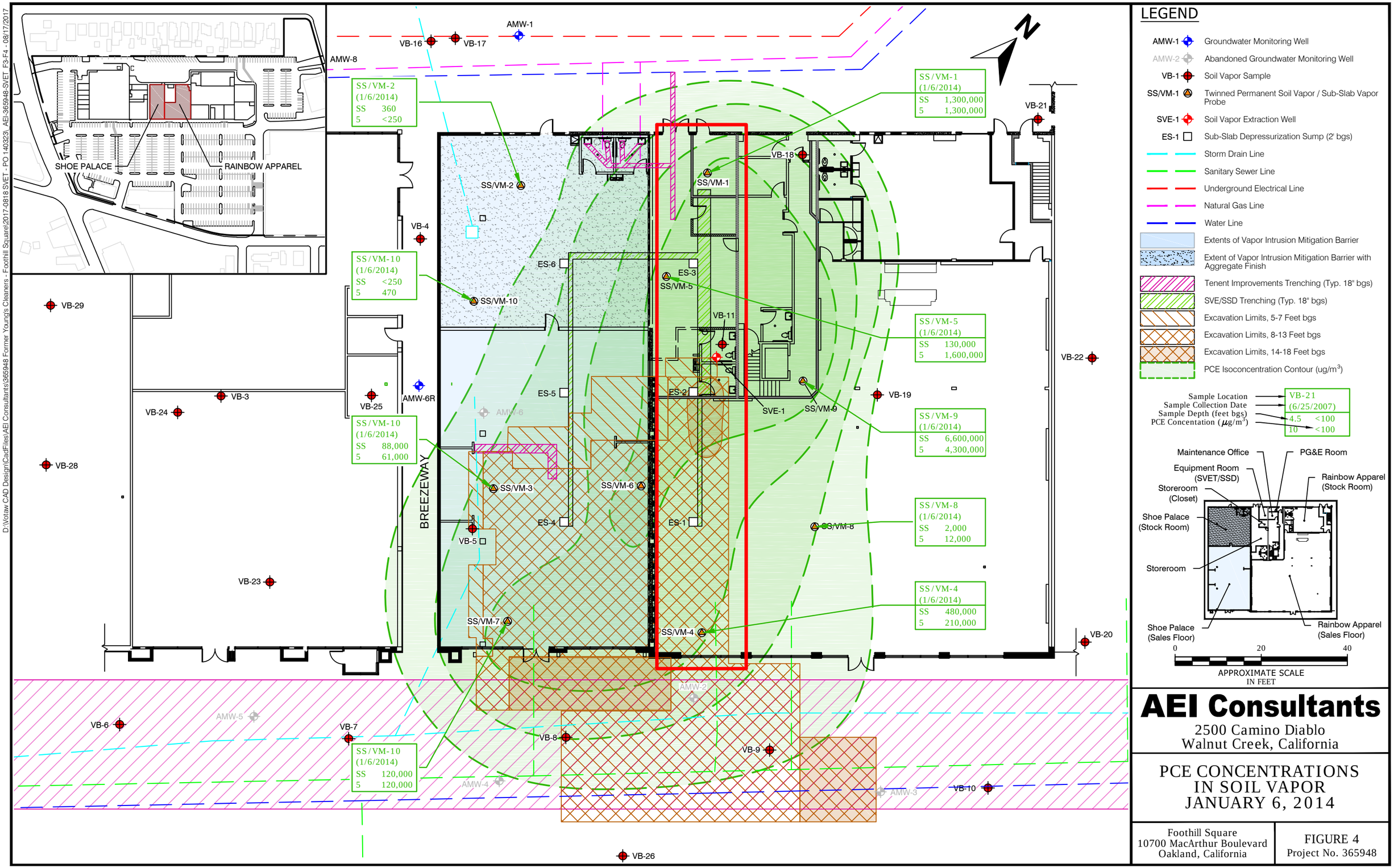
2500 Camino Diablo
Walnut Creek, California

PCE CONCENTRATIONS IN SOIL VAPOR PRIOR TO FURTHER REMEDIATION

Foothill Square
10700 MacArthur Boulevard
Oakland, California

FIGURE 3
Project No. 365948

D:\Votaw CAD Design\CadFiles\AEI Consultants\365948 Former Young's Cleaners - Foothill Square\2017-0818 SVET - PO 140323\ AEI-365948-SVET F3-F4 - 08/17/2017



LEGEND

- AMW-1 — Groundwater Monitoring Well
- AMW-2 — Abandoned Groundwater Monitoring Well
- VB-1 — Soil Vapor Sample
- SS/VM-1 — Twinned Permanent Soil Vapor / Sub-Slab Vapor Probe
- SVE-1 — Soil Vapor Extraction Well
- ES-1 — Sub-Slab Depressurization Sump (2' bgs)
- Storm Drain Line
- Sanitary Sewer Line
- Underground Electrical Line
- Natural Gas Line
- Water Line
- Extents of Vapor Intrusion Mitigation Barrier
- Extent of Vapor Intrusion Mitigation Barrier with Aggregate Finish
- Tenent Improvements Trenching (Typ. 18" bgs)
- SVE/SSD Trenching (Typ. 18" bgs)
- Excavation Limits, 5-7 Feet bgs
- Excavation Limits, 8-13 Feet bgs
- Excavation Limits, 14-18 Feet bgs
- PCE Isoconcentration Contour (ug/m^3)

Sample Location → VB-21
Sample Collection Date → (6/25/2007)
Sample Depth (feet bgs) → 4.5 <100
PCE Concentation (μg/m^3) → 10 <100

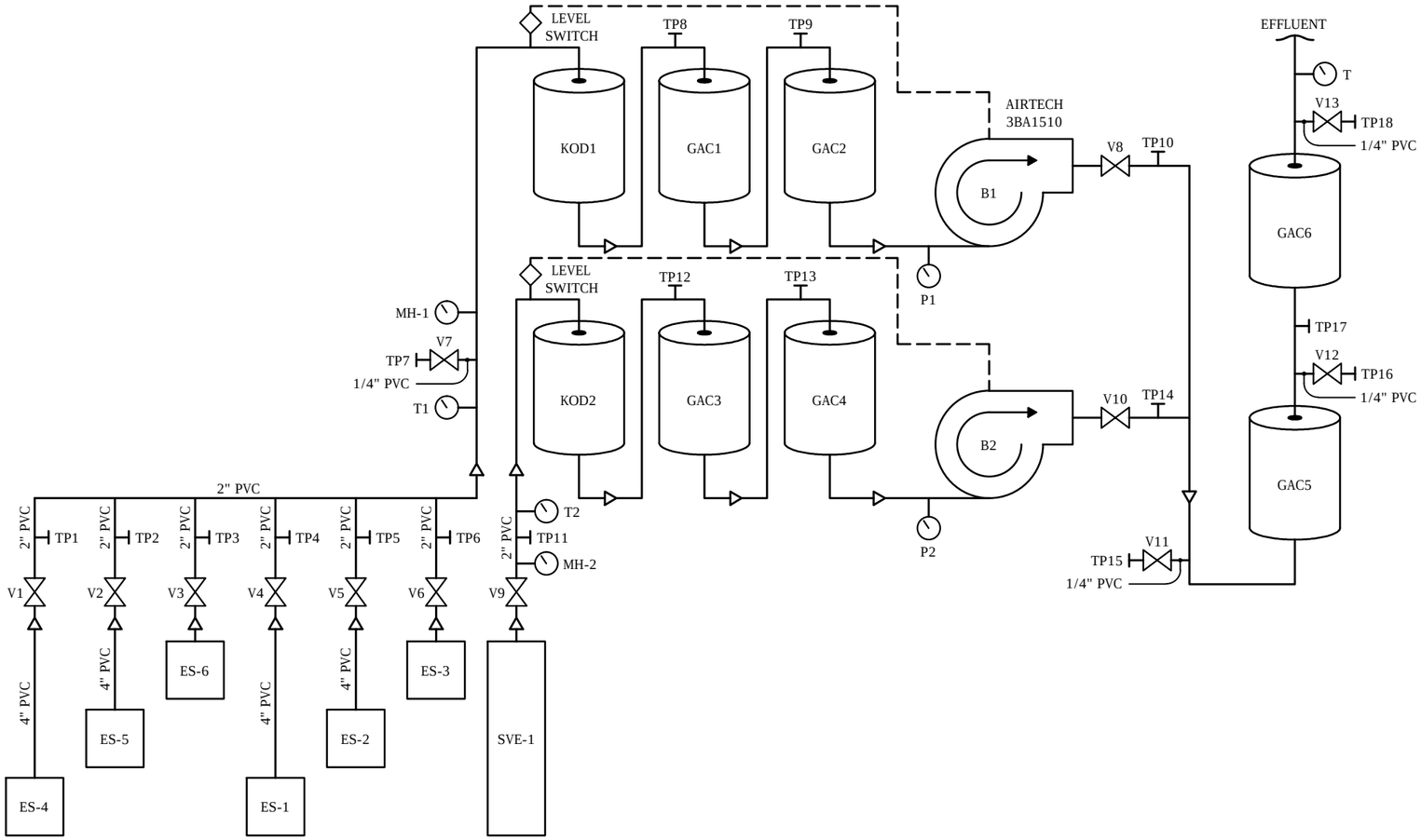
AEI Consultants

2500 Camino Diablo
Walnut Creek, California

PCE CONCENTRATIONS IN SOIL VAPOR JANUARY 6, 2014

Foothill Square
10700 MacArthur Boulevard
Oakland, California

FIGURE 4
Project No. 365948



NOTES:
1) ALL PIPING IS SCH. 40 PVC.
2) TEST PORTS (TP) ARE 1/4" BRASS SWAGELOCK AND ARE SEALED WITH BRASS END CAPS.
3) VALVES ARE 2" PVC BALL VALVE. UNLESS OTHERWISE NOTED.
4) GAC3 INCLUDES $KMnO_2$ IMPREGNATED CARBON.

LEGEND

DRAWING NOT TO SCALE

SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION
⋈	BALL VALVE	V1	VALVE NUMBER
◯	DIRECT READOUT GAUGE	MH-1	MAGNEHELIC VELOCITY HEAD GAUGE NUMBER
◇	ELECTRONIC SWITCH	T1	TEMPERATURE GAUGE NUMBER
▷	INDICATES FLOW DIRECTION	P1	PRESSURE GAUGE NUMBER
– – – –	INDICATES ELECTRONIC CONTROL		

AEI Consultants
San Jose, California

PIPING AND INSTRUMENTATION DIAGRAM
FOR SSD & SVET SYSTEMS

FORMER YOUNG'S CLEANERS
10700 MACARTHUR BLVD.
OAKLAND, CA 94605

FIGURE 5
Project No. 365948

Tables

TABLE 1
SUMMARY OF SOIL ANALYTICAL RESULTS
Former Young's Cleaners
10700 MacArthur Boulevard, Oakland, California

Location ID	Date Sampled	Depth (feet bgs)	PCE (mg/kg)	TCE (mg/kg)	cis-1,2-DCE (mg/kg)	trans-1,2-DCE (mg/kg)	1,1-DCE (mg/kg)	Vinyl Chloride (mg/kg)
WGR MW-1	12/05/88	20	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
		31.5	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
WGR MW-2	12/05/88	20	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
		40.5	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
WGR MW-3	12/06/88	18	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
		38.5	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002
WGRMW-4	12/07/88	14.5	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
		49	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
WGRMW-4	12/08/88	14.5	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
B-2	09/12/94	6	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
		11	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
		16	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
		21	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
		24	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
B-3	10/07/94	6	**0.015**	<0.008	<0.005	<0.006	<0.012	<0.02
		13	<0.01	<0.008	<0.005	<0.006	<0.012	<0.02
		16	**0.012**	<0.008	<0.005	<0.006	<0.012	<0.02
		21	**0.027**	<0.008	<0.005	<0.006	<0.012	<0.02
B-4	10/07/94	5.5	**1.6**	**0.15**	**0.12**	<0.006	<0.012	<0.02
		11	**0.07**	<0.008	0.022	<0.006	<0.012	<0.02
		16	**0.10**	<0.008	0.009	<0.006	<0.012	<0.02
		21	**0.03**	<0.008	<0.005	<0.006	<0.012	<0.02

TABLE 1
SUMMARY OF SOIL ANALYTICAL RESULTS
Former Young's Cleaners
10700 MacArthur Boulevard, Oakland, California

Location ID	Date Sampled	Depth (feet bgs)	PCE (mg/kg)	TCE (mg/kg)	cis-1,2-DCE (mg/kg)	trans-1,2-DCE (mg/kg)	1,1-DCE (mg/kg)	Vinyl Chloride (mg/kg)
B-5	11/03/94	6.5	**1.6**	<0.005	<0.005	<0.005	<0.005	<0.01
		11	**0.45**	<0.005	<0.005	<0.005	<0.005	<0.01
		16	**0.44**	<0.005	<0.005	<0.005	<0.005	<0.01
		21	<0.005	<0.005	<0.005	<0.005	<0.005	<0.01
		26	<0.005	<0.005	<0.005	<0.005	<0.005	<0.01
B-6	11/03/94	11	**5.0**	<0.005	<0.005	<0.005	<0.005	<0.01
		15.5	**0.59**	<0.005	<0.005	<0.005	<0.005	<0.01
		21	<0.005	<0.005	<0.005	<0.005	<0.005	<0.01
		26	<0.005	<0.005	<0.005	<0.005	<0.005	<0.01
B-7	11/23/94	10.5	**0.038**	<0.005	<0.005	<0.005	<0.005	<0.01
		15.5	**0.06**	<0.005	<0.005	<0.005	<0.005	<0.01
		20.5	<0.005	<0.005	<0.005	<0.005	<0.005	<0.01
		25.5	<0.005	<0.005	<0.005	<0.005	<0.005	<0.01
B-8	03/23/95	6	<0.0005	<0.0005	---	<0.0005	---	<0.001
AMW-1	09/12/94	4	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
		6	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
		11	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
		16	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
		21	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
		26	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
		31	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
		34	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
AMW-2	09/30/94	10	**22**	**0.05**	**0.25**	<0.006	<0.012	<0.02
		15	**90**	**0.6**	**0.21**	<0.006	<0.012	<0.02
		20	**0.4**	**0.02**	**0.03**	<0.006	<0.012	<0.02
		25	**0.03**	<0.008	<0.005	<0.006	<0.012	<0.02

TABLE 1
SUMMARY OF SOIL ANALYTICAL RESULTS
Former Young's Cleaners
10700 MacArthur Boulevard, Oakland, California

Location ID	Date Sampled	Depth (feet bgs)	PCE (mg/kg)	TCE (mg/kg)	cis-1,2-DCE (mg/kg)	trans-1,2-DCE (mg/kg)	1,1-DCE (mg/kg)	Vinyl Chloride (mg/kg)
AMW-3	11/18/94	5.5	**0.006**	<0.005	<0.005	<0.005	<0.005	<0.01
		10	**0.39**	<0.005	<0.005	<0.005	<0.005	<0.01
		15.5	**0.059**	<0.005	<0.005	<0.005	<0.005	<0.01
		20.5	**0.82**	<0.005	<0.005	<0.005	<0.005	<0.01
		25.5	**1.4**	<0.005	<0.005	<0.005	<0.005	<0.01
		30	**0.21**	<0.005	<0.005	<0.005	<0.005	<0.01
AMW-4	03/22/95	6	**0.87**	<0.005	---	<0.005	---	<0.01
		11	**0.013**	<0.0005	---	<0.0005	---	<0.001
		16	**0.0075**	<0.0005	---	<0.0005	---	<0.001
		21	**0.0053**	<0.0005	---	<0.0005	---	<0.001
		26	<0.0005	0.021	---	<0.0005	---	<0.001
AMW-5	03/22/95	6	**0.0011**	<0.0005	---	<0.0005	---	<0.01
		11	<0.0005	<0.0005	---	<0.0005	---	<0.001
		16	<0.0005	<0.0005	---	<0.0005	---	<0.001
		21	<0.0005	<0.0005	---	<0.0005	---	<0.001
		26	<0.0005	<0.0005	---	<0.0005	---	<0.001
		31	<0.0005	<0.0005	---	<0.0005	---	<0.001
AMW-6	08/01/95	6	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.01
		11	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.001
		16.5	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.001
		21	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.001
		26	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.001
AMW-7	08/02/98	6	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.01
		11.5	**0.033**	**0.014**	<0.0005	<0.0005	<0.0005	<0.001
		16	**0.06**	**0.01**	<0.0005	<0.0005	<0.0005	<0.001
		21	**0.085**	**0.011**	<0.0005	<0.0005	<0.0005	<0.001
		26	**0.21**	**0.039**	<0.0005	<0.0005	<0.0005	<0.001

TABLE 1
SUMMARY OF SOIL ANALYTICAL RESULTS
Former Young's Cleaners
10700 MacArthur Boulevard, Oakland, California

Location ID	Date Sampled	Depth (feet bgs)	PCE (mg/kg)	TCE (mg/kg)	cis-1,2-DCE (mg/kg)	trans-1,2-DCE (mg/kg)	1,1-DCE (mg/kg)	Vinyl Chloride (mg/kg)
AMW-8	08/01/95	6	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.01
		11	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.001
		16.5	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.001
		21	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.001
		26	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.001
		31.5	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.001
		36.5	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.001
		41	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.001
		46	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.001
		51.5	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.001
AMW-9	08/02/95	5	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.001
		9.5	**0.029**	**0.017**	<0.0005	<0.0005	<0.0005	<0.001
		14.5	**0.12**	**0.031**	<0.0005	<0.0005	<0.0005	<0.001
		19.5	**0.027**	**0.0077**	<0.0005	<0.0005	<0.0005	<0.001
		24.5	**0.11**	**0.0021**	<0.0005	<0.0005	<0.0005	<0.001
		31	**0.03**	<0.0005	<0.0005	<0.0005	<0.0005	<0.001
		36	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.001
		41	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.001
		45	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.001
		51	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.001
		54.5	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.001

Notes / Abbreviations:

(a) No sample collected; water present
(b) No sample collected; now flow conditions encounterd
mg/kg = milligrams per kilogram
bgs = below ground surface
<0.005 = indicates that the analyte was not detected at or above the laboratory reporting limit shown
PCE = tetrachloroethylene
TCE = trichloroethylene
cis-1,2-DCE = cis-1,2-dichloroethylene
trans-1,2-DCE = trans-1,2-dichloroethylene
Shaded cells indicate that the soils in the vicinity of the sample have been removed

TABLE 2
SUMMARY OF EXCAVATION CONFIRMATION SOIL SAMPLE RESULTS
Former Young's Cleaners
10700 MacArthur Boulevard, Oakland, California

Sample ID	N (feet)	W (feet)	Depth (feet bgs)	PCE (mg/kg)	TCE (mg/kg)	1,1-DCE (mg/kg)	1,2-DCE (mg/kg)
1	75	-1	9	**0.12**	**0.056**	<0.005	<0.005
2	40	1	7	**0.11**	**0.46**	<0.005	**0.043**
3	75	1	8	**1.3**	**0.98**	<0.005	<0.005
4	0	1	8	**0.014**	**0.058**	<0.005	<0.005
5	5	2	8	**0.017**	**0.10**	<0.005	<0.005
6	80	2	8	**0.77**	**0.57**	**0.012**	<0.005
7	60	2	4	<0.005	<0.005	<0.005	**0.030**
8	96	5	4	**0.23**	**0.35**	<0.005	**0.060**
9	5	5	12	**0.42**	**0.040**	<0.005	<0.005
10	13	5	12	**0.74**	**0.12**	<0.005	<0.005
11	80	5	15	**0.071**	<0.005	**0.014**	<0.005
12	96	8	8	**0.43**	**0.95**	**0.024**	**0.250**
13	50	8	12	**0.20**	**0.091**	<0.005	**0.029**
14	40	10	12	**0.40**	**0.44**	<0.005	**0.16**
15	50	12	8	**0.22**	**0.18**	<0.005	**0.018**
16	96	15	4	**0.095**	<0.005	<0.005	<0.005
17	34	18	9	<0.005	**0.50**	<0.005	**0.585**
18	20	18	12	**0.64**	**0.19**	<0.005	<0.005
19	54	19	10	**0.25**	**0.047**	<0.005	**0.11**
20	25	20	18	**0.11**	**0.074**	**0.013**	**0.30**
21	71	20	9	**0.84**	**0.54**	<0.005	**0.066**
22	85	20	11	**0.49**	**0.39**	**0.018**	**0.093**
23	71	21	12	**0.15**	**0.059**	<0.005	<0.005
24	68	22	8	**1.4**	**1.0**	<0.005	**0.041**
25	79	22	9	**1.5**	**1.2**	**0.011**	**0.080**
26	35	22	9	**0.053**	**0.5**	**0.023**	**0.20**
27	90	24	5	<0.005	<0.005	<0.005	**0.064**
28	28	25	14	**0.14**	**0.14**	<0.005	**0.010**
29	18	27	11	**0.33**	**0.14**	<0.005	<0.005
30	55	27	1	**0.16**	**0.017**	<0.005	<0.005
31	70	28	7	**1.4**	**1.1**	<0.005	<0.005
32	27	28	18	**0.34**	**0.14**	<0.005	**0.020**
33	32	32	6	**1.7**	**0.74**	**0.016**	**0.62**
34	85	37	5	**0.018**	<0.005	**0.025**	**0.28**
35	27	37	9	**7.3**	**2.6**	<0.005	**0.23**
36	42	37	8	**1.6**	**3.3**	<0.005	**0.78**
37	27	37	6	**0.080**	**3.6**	0.096	**0.64**
38	15	37	7	**0.045**	<0.005	<0.005	**0.01**
39	63	37	8	**0.9**	**0.72**	**0.010**	**0.26**
40	1	38	5	<0.005	<0.005	<0.005	<0.005
41	40	42	6	**0.76**	**1.1**	<0.005	**0.23**
43	25	44	10	**0.32**	**0.054**	**1.8**	<0.005
44	26	46	5	**0.25**	<0.005	**1.1**	**0.54**
45	40	46	6	**1.9**	**1.5**	<0.005	**0.66**
46	70	48	5	**1.6**	**0.77**	<0.005	**0.18**

TABLE 2
SUMMARY OF EXCAVATION CONFIRMATION SOIL SAMPLE RESULTS
Former Young's Cleaners
10700 MacArthur Boulevard, Oakland, California

Sample ID	N (feet)	W (feet)	Depth (feet bgs)	PCE (mg/kg)	TCE (mg/kg)	1,1-DCE (mg/kg)	1,2-DCE (mg/kg)
47	32	48	5	**0.5**	**1.6**	**0.044**	**1.2**
48	57	48	4	**0.015**	**0.037**	<0.005	**0.026**
49	70	53	5	**0.97**	**0.36**	<0.005	**0.025**
50	45	66	5	**0.57**	**1.5**	<0.005	**0.019**
51	75	32	6	**1.7**	**0.74**	**0.016**	**0.62**
52	70	50	8	**0.47**	**0.33**	<0.005	**0.024**
53	35	50	9	**0.71**	**0.52**	<0.005	<0.005
54	55	40	9	**2.1**	**2.0**	<0.005	**0.096**
55	55	38	12	**0.21**	**0.072**	<0.005	<0.005
59	60	53	8	**0.68**	**0.30**	<0.005	**0.052**
60	70	47	9	**0.15**	**0.071**	**0.025**	<0.005
61	60	46	12	**0.43**	**0.12**	**0.050**	<0.005
62	53	26	7	**0.53**	**0.42**	<0.005	**0.065**
63	33	61	5	<0.005	<0.005	**0.051**	<0.005
64	78	45	5	<0.005	<0.005	<0.005	**0.031**
65	60	61	5	**0.016**	<0.005	**0.018**	<0.005
66	71	23	12	**0.060**	**0.46**	**0.027**	<0.005
67	50	52	9	**0.39**	<0.005	**0.008**	<0.005
68	23	51	5	<0.005	<0.005	**0.086**	**0.027**
69	23	51	9	**0.025**	**0.054**	**0.021**	**0.027**
70	23	42	15	**0.015**	**0.053**	**0.040**	<0.005
71	18	56	8	<0.005	<0.005	<0.005	<0.005
72	22	57	12	<0.005	<0.005	<0.005	<0.005
73	74	57	5	<0.005	<0.005	<0.005	<0.005
74	71	55	12	**0.019**	<0.005	<0.005	<0.005
75	71	59	9	<0.005	<0.005	<0.005	<0.005
76	55	57	9	**0.059**	**0.012**	<0.005	<0.005
77	42	59	8	**0.11**	**0.038**	<0.005	<0.005
78	55	26	12	**0.080**	**0.032**	<0.005	<0.005
79	35	25	12	**0.20**	**0.080**	<0.005	**0.014**

TABLE 2
SUMMARY OF EXCAVATION CONFIRMATION SOIL SAMPLE RESULTS
Former Young's Cleaners
10700 MacArthur Boulevard, Oakland, California

Sample ID	N (feet)	W (feet)	Depth (feet bgs)	PCE (mg/kg)	TCE (mg/kg)	1,1-DCE (mg/kg)	1,2-DCE (mg/kg)
80	52	54	5	**0.038**	<0.005	<0.005	<0.005
81	56	72	5	**0.008**	<0.005	<0.005	<0.005
82	42	56	11	**0.025**	<0.005	<0.005	<0.005

Notes / Abbreviations:

mg/kg = milligrams per kilogram
bgs = below ground surface
<0.005 = indicates that the analyte was not detected at or above the laboratory reporting limit shown
PCE = tetrachloroethylene
TCE = trichloroethylene
cis-1,2-DCE = cis-1,2-dichloroethylene
trans-1,2-DCE = trans-1,2-dichloroethylene
Shaded cells indicate that the soils in the vicinity of the sample have been removed

TABLE 3
SUMMARY OF SOIL VAPOR SAMPLE RESULTS
Former Young's Cleaners
10700 MacArthur Blvd, Oakland, California

Sample ID	Date	Depth (feet bgs)	PCE ($\mu g/m^3$)	TCE ($\mu g/m^3$)	cis-1,2-DCE ($\mu g/m^3$)	trans-1,2 DCE ($\mu g/m^3$)	Vinyl Chloride ($\mu g/m^3$)
SS-1	1/6/2014	0.5	**1,300,000**	**440,000**	**150,000**	<50,000	<50,000
	9/28/2015		**360**	**440**	<250	<250	<250
	3/15/2017		<250	<250	<250	<250	<250
SS-2	1/6/2014	0.5	**360**	<250	<250	<250	<250
	9/28/2015		**490**	**480**	<250	<250	<250
	3/15/2017		<250	<250	<250	<250	<250
SS-3	1/6/2014	0.5	**88,000**	**11,000**	<2,500	<2,500	<2,500
	9/28/2015		**670**	**430**	<250	<250	<250
	3/15/2017		**1,700**	<250	<250	<250	<250
SS-4	1/6/2014	0.5	**48,000**	**18,000**	**9,200**	**2,300**	<1,200
	9/28/2015		**680**	**510**	<250	<250	<250
	3/15/2017		<250	<250	<250	<250	<250
SS-5	1/6/2014	0.5	**130,000**	**31,000**	**36,000**	**7,300**	<2,500
	9/28/2015		**530**	**470**	<250	<250	<250
	3/15/2017		<250	**580**	<250	<250	<250
SS-6	1/6/2014	0.5	**59,000**	**7,800**	<2,500	<2,500	<2,500
	9/28/2015		**640**	**420**	<250	<250	<250
	3/15/2017		<250	<250	<250	<250	<250
SS-7	1/6/2014	0.5	**120,000**	**16,000**	<2,500	<2,500	<2,500
	9/28/2015		**740**	**500**	<250	<250	<250
	3/15/2017		**320**	<250	<250	<250	<250
SS-8	1/6/2014	0.5	**2,000**	**1,000**	2,500	<250	<250
	9/28/2015		**710**	**510**	<250	<250	<250
	3/15/2017		<250	<250	<250	<250	<250
SS-9	1/6/2014	0.5	**6,600,000**	**2,500,000**	**1,100,000**	**180,000**	**240,000**
	9/28/2015		**610**	**520**	<250	<250	<250
	3/15/2017		<250	<250	<250	<250	<250
SS-10	1/6/2014	0.5	<250	<250	<250	<250	<250
	9/28/2015		**640**	**410**	<250	<250	<250
	3/15/2017		**430**	<250	<250	<250	<250
VM-1	1/6/2014	5'	**1,300,000**	**440,000**	**180,000**	<50,000	<50,000
	9/28/2015		**16,000**	**1,900**	**2,300**	**600**	<250
(a)	3/15/2017		NS	NS	NS	NS	NS
VM-2	1/6/2014	5'	<250	<250	<250	<250	<250
	9/28/2015		**16,000**	**3,200**	**3,900**	**1,000**	<250
(a)	3/15/2017		NS	NS	NS	NS	NS
VM-3	1/6/2014	5'	**61,000**	**10,000**	<2,500	<2,500	<2,500
	9/28/2015		**14,000**	**2,200**	**2,700**	**770**	<250
	3/15/2017		**14,000**	**1,700**	<250	<250	<250
VM-4	1/6/2014	5'	**210,000**	**86,000**	**39,000**	**9,100**	<5,000
	9/28/2015		**14,000**	**2,700**	**3,200**	**880**	<250
	3/15/2017		<12,000	**27,000**	<12,000	<12,000	<12,000

TABLE 3
SUMMARY OF SOIL VAPOR SAMPLE RESULTS
Former Young's Cleaners
10700 MacArthur Blvd, Oakland, California

Sample ID	Date	Depth (feet bgs)	PCE (µg/m³)	TCE (µg/m³)	cis-1,2-DCE (µg/m³)	trans-1,2 DCE (µg/m³)	Vinyl Chloride (µg/m³)
VM-5	1/6/2014	5'	**1,600,000**	**5,800,000**	**8,800,000**	**2,400,000**	**18,000,000**
	9/28/2015		**26,000**	**7,300**	**12,000**	**3,400**	**320**
(b)	3/15/2017		NS	NS	NS	NS	NS
VM-6	1/6/2014	5'	**1,700,000**	**640,000**	**250,000**	<50,000	<50,000
	9/28/2015		**15,000**	**2,100**	**2,400**	**680**	<250
	3/15/2017		**27,000**	**19,000**	**17,000**	**2,000**	<1,000
VM-7	1/6/2014	5'	**120,000**	**22,000**	<2,500	<2,500	<2,500
	9/28/2015		**18,000**	**2,800**	**3,400**	**950**	<250
	3/15/2017		**56,000**	**7,400**	<250	<250	<250
VM-8	1/6/2014	5'	**12,000**	**1,700**	**1,700**	<250	<250
	9/28/2015		**17,000**	**2,300**	**2,700**	**760**	<250
	3/15/2017		**5,800**	**460**	<250	<250	<250
VM-9	1/6/2014	5'	**4,300,000**	**1,800,000**	**720,000**	**110,000**	**130,000**
	9/28/2015		**32,000**	**6,800**	**9,000**	**2,500**	**270**
	3/15/2017		**340,000**	**310,000**	**170,000**	**21,000**	**39,000**
VM-10	1/6/2014	5'	**470**	**280**	<250	<250	<250
	9/28/2015		**14,000**	**2,000**	**2,400**	**650**	<250
(a)	3/15/2017		NS	NS	NS	NS	NS
Temporary Soil Vapor Probe Results							
VB-1	10/12/06	5	<100	<100	<100	<100	<100
		11.5	**4,900**	**440**	<100	<100	<100
VB-2	10/12/06	2.5	<100	<100	<100	<100	<100
		8	<100	<100	**510**	<100	<100
VB-3	10/12/06	4.5	<100	<100	**160**	<100	**2,000**
		9	<100	<100	<100	<100	<100
VB-4	10/13/06	4	<100	<100	<100	<100	<100
		12	**3,200**	**250**	<100	<100	<100
VB-5	10/13/06	5	<100	<100	<100	<100	<100
		12	<100	<100	**810**	**130**	**280**
		12	<100	<100	**940**	**130**	**290**
VB-6	10/11/06	5	**530**	<100	<100	<100	<100
		8	<100	<100	**220**	<100	<100
		8	<100	<100	**160**	<100	<100
VB-7	10/12/06	5	<100	<100	<100	<100	<100
		10	<100	<100	<100	<100	<100
VB-8	10/12/06	5	**61,000**	**1,900**	**130**	<100	<100
		10	**5,600**	**2,600**	**1,400**	<100	<100
VB-9	10/12/06	5	**6,700**	**670**	**150**	<100	<100
		11	**12,000**	**3,600**	**7,000**	<100	<100
VB-10	10/13/06	5	**160**	<100	<100	<100	<100
		9	<100	<100	<100	<100	<100
VB-11	10/13/06	4.5	**6,100**	**7,000**	**700,000**	**170,000**	**520,000**
		11.5	**6,800,000**	**1,400,000**	**540,000**	**64,000**	**23,000**

TABLE 3
SUMMARY OF SOIL VAPOR SAMPLE RESULTS
Former Young's Cleaners
10700 MacArthur Blvd, Oakland, California

Sample ID	Date	Depth (feet bgs)	PCE ($\mu g/m^3$)	TCE ($\mu g/m^3$)	cis-1,2-DCE ($\mu g/m^3$)	trans-1,2 DCE ($\mu g/m^3$)	Vinyl Chloride ($\mu g/m^3$)
VB-12	10/11/06	5	**420**	<100	<100	<100	<100
		12	**18,000**	<100	<100	<100	<100
VB-13	10/11/06	5	**130**	<100	<100	<100	<100
		12	**8,000**	<100	<100	<100	<100
VB-14	10/11/06	5	<100	<100	<100	<100	<100
		11	<100	<100	<100	<100	<100
VB-15	10/11/06	5	<100	<100	<100	<100	<100
		12	<100	<100	<100	<100	<100
VB-16	10/13/06	4	<100	<100	<100	<100	<100
		11	<100	<100	<100	<100	<100
VB-17	10/13/06	4	<100	<100	<100	<100	<100
		8	<100	<100	<100	<100	<100
VB-18	06/25/07	4.5	<100	<100	<100	<100	<100
		10	<100	<100	<100	<100	<100
VB-19	06/25/07	4.5	<100	<100	<100	<100	<100
VB-20	06/25/07	5	<100	<100	<100	<100	<100
VB-21	06/25/07	4.5	<100	<100	<100	<100	<100
		10	<100	<100	<100	<100	<100
VB-22	06/25/07	4.5	<100	<100	<100	<100	<100
		10	<100	<100	<100	<100	<100
VB-23	05/23/08	4	<100	<100	<100	<100	<100
VB-24	05/23/08	5	<100	<100	<100	<100	<100
VB-25	05/23/08	4	<100	<100	<100	<100	<100
VB-26	05/23/08	3	<100	<100	<100	<100	<100
VB-27	05/23/08	5	<100	<100	<100	<100	<100
VB-28	05/23/08	3.5	<100	<100	<100	<100	<100
VB-29	05/23/08	5	<100	<100	<100	<100	<100
		5	<100	<100	<100	<100	<100

Notes / Abbreviations:

(a) No sample collected; water present
(b) No sample collected; now flow conditions encounterd
$\mu g/m^3$ = micrograms per cubic meter
bgs = below ground surface
<100 = indicates that the analyte was not detected at or above the laboratory reporting limit shown
PCE = tetrachloroethylene
TCE = trichloroethylene
cis-1,2-DCE = cis-1,2-dichloroethylene
trans-1,2-DCE = trans-1,2-dichloroethylene

TABLE 4
SUMMARY OF SOIL VAPOR EXTRACTION SYSTEM SAMPLE RESULTS
Former Young's Cleaners
10700 MacArthur Boulevard, Oakland, California

Sample Date	Sample ID	PCE ($\mu g/m^3$)	TCE ($\mu g/m^3$)	cis-1,2-DCE ($\mu g/m^3$)	trans-1,2 DCE ($\mu g/m^3$)	Vinyl Chloride ($\mu g/m^3$)	Total VOCs ($\mu g/m^3$)
1/13/2014	SVE-1	670,000	470,000	1,500,000	420,000	1,900,000	5,000,000
1/15/2014	SVE-1 INF	530,000	290,000	760,000	210,000	810,000	2,600,000
3/5/2014	SVE-1 INF	690,000	380,000	480,000	130,000	430,000	2,100,000
3/20/2014	SV-1 INF	330,000	97,000	120,000	18,000	34,000	600,000
4/16/2014	SV-1 INF	130,000	45,000	75,000	11,000	10,000	270,000
5/2/2014	SV-1 INF	75,000	25,000	38,000	5,000	<2,500	140,000
5/23/2014	SV-1 INF	97,000	38,000	54,000	7,200	3,600	200,000
7/3/2014	SVE INF	110,000	33,000	34,000	5,400	<2,500	180,000
8/11/2014	SVE INF	98,000	27,000	28,000	<5000	<5,000	150,000
9/12/2014	SVE INF	130,000	26,000	25,000	3,500	<2,500	180,000
10/14/2014	SVE INF	91,000	20,000	21,000	3,300	<2,500	140,000
11/20/2014	SVE INF	81,000	18,000	18,000	2,500	<1,700	120,000
12/31/2014	SVE INF	3,100	1,200	1,300	<250	<250	6,000
1/14/2015	SVE INF	82,000	25,000	26,000	4,200	<1,700	140,000
2/12/2015	SVE INF	77,000	27,000	26,000	4,100	<1,700	130,000
3/27/2015	SVE INF	---	---	---	---	---	---
4/21/2015	SVE INF	39,000	<1,700	<1,700	<1,700	<1,700	40,000
5/7/2015	SVE INF	81,000	8,000	800	<250	<250	90,000
6/18/2015	SVE INF	130,000	<5,000	<5,000	<5,000	<5,000	130,000
7/8/2015	SVE INF	250,000	<5,000	<5,000	<5,000	<5,000	250,000
8/27/2015	SVE INF	190,000	15,000	7,100	<5000	<5,000	210,000
10/26/2015	SVE INF	110,000	6,700	1,100	<250	<250	120,000
11/24/2015	SVE INF	94,000	4,400	1,800	<8.1	<5.2	100,000
12/30/2015	SVE INF	110,000	7,000	<2,500	<2,500	<2,500	120,000
1/27/2016	SVE INF	150,000	9,600	<5000	<5,000	<5,000	160,000
2/18/2016	SVE INF	99,000	11,000	<5000	<5,000	<5,000	110,000
3/29/2016	SVE INF	240,000	30,000	13,000	<10,000	<10,000	280,000
4/26/2016	SVE INF	230,000	18,000	<10,000	<10,000	<10,000	250,000
5/26/2016	SVE INF	220,000	19,000	<10,000	<10,000	<10,000	240,000
6/29/2016	SVE INF	440,000	41,000	<10,000	<10,000	<10,000	500,000
7/27/2016	SVE INF	380,000	39,000	9,000	<5,000	<5,000	400,000
8/23/2016	SVE INF	280,000	30,000	9,200	<5,000	<5,000	300,000
9/30/2016	SVE INF	230,000	28,000	10,000	<10,000	<10,000	270,000
10/19/2016	SVE INF	210,000	28,000	10,000	<5,000	<5,000	250,000
11/29/2016	SVE INF	86,000	13,000	5,700	<2,500	<2,500	100,000
12/30/2016	SVE INF	150,000	26,000	14,000	<5,000	<5,000	190,000
1/31/2017	SVE INF	190,000	28,000	9,200	<5,000	<5,000	230,000
2/23/2017	---	---	---	---	---	---	---
3/31/2017	---	---	---	---	---	---	---
5/31/2017	---	---	---	---	---	---	---

Notes / Abbreviations:

$\mu g/m^3$ = micrograms per cubic meter

bgs = below ground surface

<100 = indicates that the analyte was not detected at or above the laboratory reporting limit shown

PCE = tetrachloroethylene

TCE = trichloroethylene

cis-1,2-DCE = cis-1,2-dichloroethylene

trans-1,2-DCE = trans-1,2-dichloroethylene

TABLE 5
SVET OPERATIONAL SUMMARY
Former Young's Cleaners
10700 MacArthur Boulevard, Oakland, California

Date	Time	System Status (ON/OFF)	Hour Meter	Inlet Temp (°F)	VFD Setting (Hertz)	System Vacuum (in-WC)	Vapor Stream Velocity (FPM)	**Total Flow (ACFM)	Total Flow (SCFM)	Outlet Temp (°F)	Total Influent VOCs (µg/m^3)	Mass Removal Rate (lbs/day)	Mass Removal Per Period (lbs)	Cumulative Mass Removed (lbs)
07/03/14	6:00	ON	2806.7	72	50	145	500	11	7	84	180,000	0.12	1.0	53
07/10/14	6:30	ON	2975.9	74	50	145	500	11	7	86	---	0.12	0.8	54
08/11/14	5:30	ON	3745.6	72	50	145	500	11	7	84	150,000	0.10	3.1	57
09/12/14	8:00	ON	4520.1	72	50	145	500	11	7	86	180,000	0.12	3.8	61
10/14/14	10:00	ON	5293.1	70	50	145	500	11	7	84	140,000	0.09	2.9	63
11/20/14	5:00	ON	6183.8	68	50	145	500	11	7	80	120,000	0.08	2.9	66
12/31/14	5:30	ON	7172.6	54	50	145	500	11	7	70	6,000	0.00	0.17	67
01/14/15	7:30	ON	7512.5	58	50	145	500	11	7	70	140,000	0.09	1.3	68
02/11/15	7:30	ON	8187.9	60	50	145	500	11	7	72	130,000	0.09	2.4	70
03/26/15	8:15	Off	9226.3	--	--	--	--			--	--	--	--	
04/20/15	6:00	ON	9297.4	60	50	145	500	11	7	70	40,000	0.03	0.08	70
05/07/15	8:00	ON	9667.1	68	50	145	500	11	7	74	90,000	0.06	0.9	71
06/18/15	10:00	ON	10706.3	60	50	145	500	11	7	79	130,000	0.09	3.7	75
07/08/15	4:45	ON	11192.3	60	50	145	500	11	7	78	250,000	0.17	3.4	78
08/27/15	14:45	ON / OFF	12434.7	86	50	145	500	11	7	86	210,000	0.13	6.9	85
09/28/15		Restart	12435.1	---	---	---	---	---	---	---	---	---	---	---
10/26/15	8:00	ON	13124.1	67	50	145	500	11	7	78	120,000	0.08	2.3	87
11/24/15	---	---	*13820*	---	---	---	---	---	*7*	---	100,000	0.06	1.8	89
12/30/15	---	---	*14684*	---	---	---	---	---	*7*	---	120,000	0.08	2.7	92
01/27/16	---	---	*15356*	---	---	---	---	---	*7*	---	160,000	0.10	2.8	95
02/18/16	---	---	*15884*	---	---	---	---	---	*7*	---	110,000	0.07	1.5	96
03/29/16	---	---	*16844*	---	---	---	---	---	*7*	---	280,000	0.18	7.1	103
04/26/16	---	---	*17516*	---	---	---	---	---	*7*	---	250,000	0.16	4.4	108
05/26/16	---	---	*18236*	---	---	---	---	---	*7*	---	240,000	0.15	4.5	112
06/29/16	---	---	*19052*	---	---	---	---	---	*7*	---	500,000	0.32	11	123
07/27/16	11:35	ON	19885.5	78	50	145	500	11	7	86	400,000	0.26	8.9	132
08/23/16	12:13	ON	20548.3	72	50	145	500	11	7	81	300,000	0.19	5.4	137
09/30/16	13:00	ON	21482.6	70	50	145	500	11	7	78	270,000	0.18	6.8	144

TABLE 5
SVET OPERATIONAL SUMMARY
Former Young's Cleaners
10700 MacArthur Boulevard, Oakland, California

Date	Time	System Status (ON/OFF)	Hour Meter	Inlet Temp (°F)	VFD Setting (Hertz)	System Vacuum (in-WC)	Vapor Stream Velocity (FPM)	**Total Flow (ACFM)	Total Flow (SCFM)	Outlet Temp (°F)	Total Influent VOCs (µg/m^3)	Mass Removal Rate (lbs/day)	Mass Removal Per Period (lbs)	Cumulative Mass Removed (lbs)
10/18/16	9:50	ON	21945.5	65	50	145	500	11	7	74	250,000	0.16	3.2	147
11/29/16	14:10	ON	22957.3	63	50	145	500	11	7	70	100,000	0.07	2.8	150
12/29/16	14:50	ON	23994.4	64	50	145	500	11	7	70	190,000	0.13	5.4	156
01/31/17	12:35	ON	24502.0	62	50	145	500	11	7	68	230,000	0.15	3.2	159
02/23/17	11:48	OFF	25064.8	---	---	---	---	---	7	---	---	0.14	3.4	162

Notes / Abbreviations:

1) system configuration altered to increase vacuum capability

^{o}F = degrees Farenheight

in-WC = inches of water column

FPM = feet per minute

ACFM = actual cubic feet per minute

SCFM = standard cubic feet per minute

µg/m^3 = micrograms per cubic meter

lbs = pounds

$$SCFM = ACFM(\frac{P_{gauge} + 14.7\ PSI}{14.7\ PSI})(\frac{519\ ^{o}F}{460\ ^{o}F + T})$$

TABLE 6
SUMMARY OF SUB-SLAB DEPRESSURIZATION SYSTEM SAMPLE RESULTS
Former Young's Cleaners
10700 MacArthur Boulevard, Oakland, California

Sample Date	Sample ID	PCE ($\mu g/m^3$)	TCE ($\mu g/m^3$)	cis-1,2-DCE ($\mu g/m^3$)	trans-1,2 DCE ($\mu g/m^3$)	Vinyl Chloride ($\mu g/m^3$)	Total VOCs ($\mu g/m^3$)
1/13/2014	SSD INF	18,000	3,600	2,200	340	<250	24,000
1/15/2014	SSD INF	17,000	2,500	1,500	<250	<250	21,000
3/5/2014	SSD INF	12,000	2,200	1,300	<250	<250	16,000
3/20/2014	SSD INF	5,800	730	330	<250	<250	7,000
4/16/2014	SSD INF	2,500	510	270	<250	<250	3,000
5/2/2014	SSD INF	1,800	320	<250	<250	<250	2,100
5/23/2014	SSD INF	2,000	270	<250	<250	<250	2,300
7/3/2014	SSD INF	6,500	600	<250	<250	<250	7,000
8/11/2014	SSD INF	6,000	700	280	<250	<250	7,000
9/12/2014	SSD INF	6,100	510	<250	<250	<250	7,000
10/14/2014	SSD INF	5,400	510	<250	<250	<250	6,000
11/20/2014	SSD INF	22,000	1,600	710	<500	<500	24,000
12/31/2014	SSD INF	1,000	<250	<250	<250	<250	1,000
1/14/2015	SSD INF	780	<250	<250	<250	<250	800
2/12/2015	SSD INF	1,600	<250	300	<250	<250	1,900
3/27/2015	SSD INF	790	300	250	<250	<250	1,300
4/21/2015	SSD INF	22,000	1,000	<1,000	<1,000	<1,000	23,000
5/7/2015	SSD INF	26,000	1,100	<250	<250	<250	27,000
6/18/2015	SSD INF	4,500	340	270	<250	<250	5,000
7/8/2015	SSD INF	870	<250	<250	<250	<250	900
8/27/2015	SSD INF	2,000	480	360	<250	<250	2,800
10/26/2015	SSD INF	<250	<250	<250	<250	<250	0
11/24/2015	SSD INF	<140	<110	<81	<81	<52	0
12/30/2015	SSD INF	290	<250	<250	<250	<250	290
1/27/2016	SSD INF	890	270	<250	<250	<250	1,200
2/18/2016	SSD INF	1,100	340	300	<250	<250	1,700
3/29/2016	SSD INF	2,700	390	290	<250	<250	3,000
4/26/2016	SSD INF	1,000	260	250	<250	<250	1,500
5/26/2016	SSD INF	1,500	370	300	<250	<250	2,200
6/29/2016	SSD INF	2,900	570	400	<250	<250	4,000
7/27/2016	SSD INF	1,900	420	330	<250	<250	2,700
8/23/2016	SSD INF	470	<250	<250	<250	<250	500
9/30/2016	SSD INF	3,700	580	370	<250	<250	5,000
10/19/2016	SSD INF	3,400	640	350	<250	<250	4,000
11/29/2016	SSD INF	2,600	500	270	<250	<250	3,000
12/30/2016	SSD INF	7,900	1,200	750	<250	<250	10,000
1/31/2017	SSD INF	5,800	980	470	<250	<250	7,000
2/23/2017	SSD INF	3,100	450	270	<250	<250	4,000
3/31/2017	SSD INF	1,700	310	<250	<250	<250	2,000
5/31/2017	SSD INF	2,000	370	<250	<250	<250	2,400
6/28/2017	SSD INF	670	<250	<250	<250	<250	700
7/28/2017	SSD INF	2,100	430	<250	<250	<250	2,500

Notes / Abbreviations:

$\mu g/m^3$ = micrograms per cubic meter

bgs = below ground surface

<100 = indicates that the analyte was not detected at or above the laboratory reporting limit shown

PCE = tetrachloroethylene

TCE = trichloroethylene

cis-1,2-DCE = cis-1,2-dichloroethylene

trans-1,2-DCE = trans-1,2-dichloroethylene

TABLE 7
SSD OPERATIONAL SUMMARY
Former Young's Cleaners
10700 MacArthur Boulevard, Oakland, California

Date	Time	System Status (ON/OFF)	Hour Meter	Inlet Temp (°F)	VFD Setting (Hz)	System Vacuum (in-H2O)	Total Velocity (fpm)	**Total Flow (ACFM)	Total Flow (SCFM)	Outlet Temp (°F)	Total Influent VOCs ($\mu g/m^3$)	Mass Removal Rate (lbs/day)	Mass Removal Per Period (lbs)	Cumulative Mass Removed (lbs)
01/13/14	10:00	Startup	0.4	60	50	20	5000	114	109	80	24,000	0.24	0.0	0.0
01/14/14	8:54	ON	22.9	60	50	20	5000	114	109	86	21,000	0.21	0.20	0.2
01/15/14	12:00	ON	50.0	66	50	20	5000	114	108	90		0.20	0.42	0.6
01/16/14	8:00	ON	70.0	62	50	20	5000	114	108	86		0.20	0.60	1.2
01/17/14	9:10	ON	95.0	62	50	20	5000	114	108	86		0.20	0.81	2.0
03/03/14	10:00	Startup	96.1	64	50	18	5000	114	109	72		0.21	0.82	2.8
03/04/14	14:00	ON	124.1	66	50	18	5000	114	108	92		0.20	1.1	3.9
03/05/14	8:30	ON	143.2	68	50	18	5000	114	108	94	16,000	0.16	0.93	4.8
03/06/14	11:30	ON	170.2	68	50	18	5000	114	108	102		0.16	1.1	5.9
03/07/14	13:20	ON	196.9	70	50	18	5000	114	107	110		0.15	1.3	7.2
03/10/14	7:40	Startup	196.9	68	50	18	5000	114	108	68		0.16	1.3	8.5
03/11/14	14:10	ON	228.4	72	50	18	5000	114	107	110		0.15	1.5	9.9
03/12/14	13:05	ON	251.3	74	50	18	5000	114	107	112		0.15	1.6	12
03/13/14	15:45	ON	277.7	76	50	18	5000	114	106	116		0.15	1.8	13
03/20/14	9:40	ON	443.3	72	50	18	5000	114	107	100	7,000	0.067	1.2	15
03/27/14	13:10	ON	617.7	76	50	18	5000	114	106	100		0.067	1.7	16
04/03/14	8:45	ON	785.1	72	50	18	5000	114	107	100		0.067	2.2	18
04/10/14	11:45	ON	948.4	74	50	18	5000	114	107	100		0.067	2.7	21
04/16/14	9:15	ON	1097.1	69	50	16	5000	114	108	88		0.068	3.1	24
04/25/14	5:55	ON	1310.7	70	50	16	5000	114	108	82	3,000	0.029	1.6	26
05/02/14	7:27	ON	1480.6	70	50	16	5000	114	108	86	2,100	0.020	1.3	27
05/09/14	10:00	ON	1652.0	70	50	16	5000	114	108	82		0.020	1.4	28
05/16/14	9:30	ON	1920.0	70	50	16	5000	114	108	88		0.020	1.6	30
05/23/14	9:00	ON	1988.3	68	50	16	5000	114	108	80	2,300	0.022	1.9	32
05/30/14	8:30	ON	2156.4	70	50	16	5000	114	108	80		0.022	2.0	34
06/06/14	5:00	ON	2320.5	68	50	10	4000	92	88	80		0.018	1.8	36
06/18/14	10:45	ON	2613.9	70	50	10	4000	92	88	80		0.018	2.0	38
06/24/14	12:45	ON	2760.1	70	50	10	4000	92	88	80		0.018	2.1	40
07/03/14	6:00	ON	2970.6	72	50	10	4000	92	87	84	7,000	0.055	6.8	47

TABLE 7
SSD OPERATIONAL SUMMARY
Former Young's Cleaners
10700 MacArthur Boulevard, Oakland, California

Date	Time	System Status (ON/OFF)	Hour Meter	Inlet Temp (°F)	VFD Setting (Hz)	System Vacuum (in-H2O)	Total Velocity (fpm)	**Total Flow (ACFM)	Total Flow (SCFM)	Outlet Temp (°F)	Total Influent VOCs ($\mu g/m^3$)	Mass Removal Rate (lbs/day)	Mass Removal Per Period (lbs)	Cumulative Mass Removed (lbs)
07/10/14	6:30	ON	3139.6	72	50	10	4000	92	87	86		0.055	7.2	54
08/11/14	5:30	ON	3909.8	72	50	10	4000	92	87	84	7,000	0.055	9.0	63
09/12/14	8:00	ON	4282.6	70	50	10	4000	92	88	86	7,000	0.055	9.9	73
10/14/14	10:00	ON	5457.2	70	50	10	4000	92	88	84	6,000	0.047	10.8	83
11/20/14	5:00	ON	6344.9	68	50	10	4000	92	88	80	24,000	0.19	50.2	134
12/31/14	5:30	ON	7333.0	62	50	10	4000	92	89	70	1,000	0.0080	2.4	136
01/14/15	7:30	ON	7672.6	62	50	10	4000	92	89	70	800	0.0064	2.0	138
02/11/15	7:30	ON	8347.5	64	50	10	4000	92	89	68	1,900	0.015	5.3	143
03/26/15	8:17	ON	9384.9	68	50	12	4200	96	92	72	1,300	0.011	4.2	148
04/20/15	6:00	ON	9995.6	62	50	12	4200	96	93	70	23,000	0.192	80.1	228
05/07/15	8:00	ON	10412.5	68	50	12	4200	96	92	74	27,000	0.223	96.9	325
06/18/15	10:00	ON	11448.2	68	50	12	4200	96	92	79	5,000	0.041	19.7	344
07/08/15	4:45	ON	11933.1	68	50	12	4200	96	92	78	900	0.0074	3.7	348
08/27/15	14:45	ON / OFF	13172.4	78	50	12	4200	96	90	86	2,800	0.023	12	360
09/28/15		Restart	13173.4	---	---	---	---	---	---	---	---	---	---	---
10/26/15	8:00	ON	13859.9	68	50	12	4200	96	92	78	0	0.00	0.0	360
11/24/15			*14556*						*92*		0	0.00	0.0	360
12/30/15			*15420*						*92*		290	0.0024	1.5	362
01/27/16			*16092*						*92*		1,200	0.010	6.7	369
02/18/16			*16620*						*92*		1,700	0.014	9.7	378
03/29/16			*17580*						*92*		3,000	0.025	18	397
04/26/16			*18252*						*92*		1,500	0.012	9.4	406
05/26/16			*18972*						*92*		2,200	0.018	14.4	420
06/29/16			*19788*						*92*		4,000	0.033	27.3	448
07/27/16	11:35	ON	20604.3	78	50	12	4200	96	90	86	2,700	0.022	18.8	466
08/23/16	12:18	ON	21265.4	72	50	12	4200	96	91	82	500	0.004	3.6	470
09/30/16	13:02	ON	22197.2	70	50	12	4200	96	92	78	5,000	0.041	38	508
10/18/16	9:52	ON	22658.8	67	50	12	4200	96	92	74	4,000	0.033	31	540
11/29/16	14:10	ON	23668.1	63	50	12	4000	92	88	70	3,000	0.024	24	563

TABLE 7
SSD OPERATIONAL SUMMARY
Former Young's Cleaners
10700 MacArthur Boulevard, Oakland, California

Date	Time	System Status (ON/OFF)	Hour Meter	Inlet Temp (°F)	VFD Setting (Hz)	System Vacuum (in-H2O)	Total Velocity (fpm)	**Total Flow (ACFM)	Total Flow (SCFM)	Outlet Temp (°F)	Total Influent VOCs (µg/m^3)	Mass Removal Rate (lbs/day)	Mass Removal Per Period (lbs)	Cumulative Mass Removed (lbs)
12/29/16	14:50	ON	24403.5	60	50	12	4000	92	89	70	10,000	0.080	81	644
01/31/17	12:35	ON	25209.2	60	50	12	4000	92	89	68	7,000	0.056	59	703
02/23/17	11:50	ON	25770.7	60	50	12	4000	92	89	60	4,000	0.032	34	737
03/31/17	14:50	ON	*26544*	---	---	---	---	---	*89*	---	2,000	0.016	18	755
04/25/17	17:05	ON	27315.3	70	50	12	---	---	*89*	80	---	0.016	18	773
05/31/17	13:34	ON	28132.3	72	50	12	4000	92	87	86	2,400	0.019	22	795
06/28/17	12:46	ON	28807.5	70	50	12	4000	92	87	80	700	0.005	7	802
07/28/17	12:30	ON	29506.9	72	50	12	4000	92	87	80	2,500	0.020	24	826

Notes / Abbreviations:

^{o}F = degrees Farenheight
in-WC = inches of water column
FPM = feet per minute
ACFM = actual cubic feet per minute
SCFM = standard cubic feet per minute
µg/m^3 = micrograms per cubic meter
lbs = pounds

$$SCFM = ACFM(\frac{P_{gauge} + 14.7\ PSI}{14.7\ PSI})(\frac{519\ ^{o}F}{460\ ^{o}F + T})$$