PAULS™

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Ms. Dilan Roe
Alameda County Health Care Services Agency
Department of Environmental Health
1131 Harbor Bay Parkway, Suite 250
Alameda, CA 94502-6577

Re: 1233 Bockman Road
San Lorenzo, California
ACEH Case No: RO00003217

Dear Ms. Roe:

PaulsCorp, LLC, has retained Pangea Environmental Services, Inc. (Pangea) for environmental consulting services for the project referenced above. Pangea is submitting the attached report on my behalf.

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

Sincerely,

Andrew J. Lavaux
Managing Director Multifamily Development

October 17, 2016

Andrew Lavaux
PAULS Corporation, LLC
100 Saint Paul Street
Denver, Colorado 80206

Re: **Data Gap Field Investigation Workplan**
Bockman Road Property
1233 Bockman Road
San Lorenzo, California 94577
ACDEH Case # RO00003217

Dear Mr. Lavaux:

On behalf of PAULS Corporation, LLC, PANGEA Environmental Services, Inc. (PANGEA) prepared this *Data Gap Field Investigation Workplan* for the subject property. This workplan was prepared to further delineation contamination at the subject site as required by the October 14, 2016 letter from Alameda County Department of Environmental Health. Data gap investigation results will be used to assist with proposed corrective action documented in the *Draft Corrective Action Plan* (Draft CAP) dated October 14, 2016.

If you have any questions or comments, please call me at (510) 435-8664 or email briddell@pangeaenv.com.

Sincerely,
PANGEA Environmental Services, Inc.

Bob Clark-Riddell, P.E.
Principal Engineer

Attachment: *Data Gap Field Investigation Workplan*

DATA GAP FIELD INVESTIGATION WORKPLAN

1233 Bockman Road
San Lorenzo, CA 94577

October 17, 2016

Prepared for:

PaulsCorp, LLC
100 Saint Paul Street
Denver, Colorado 80206

Prepared by:

PANGEA Environmental Services, Inc.
1710 Franklin Street, Suite 200
Oakland, California 94612

Written by:

Ron Scheele, P.G.
Principal Geologist

Bob Clark-Riddell, P.E.
Principal Engineer

Data Gap Field Investigation Workplan
1233 Bockman Road
San Lorenzo, California 94580
October 17, 2016

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1.0 INTRODUCTION

On behalf of PAULS Corporation, LLC, PANGEA Environmental Services, Inc. (PANGEA) prepared this *Data Gap Field Investigation Workplan* for the subject property (Figure 1). This workplan was prepared to further delineation contamination at the subject site as required by the October 14, 2016 letter (Appendix A) from Alameda County Department of Environmental Health (ACDEH). Data gap investigation results will be used to assist with proposed corrective action documented in the *Draft Corrective Action Plan* (Draft CAP) dated October 14, 2016.

2.0 SITE BACKGROUND

The Site is currently under initial grading for residential development of 53 two-story residential units. Initial grading is occurring on the western portion of the Site, in compliance with the approved *Soil Management Plan* and agency correspondence. Extensive Site assessment has been conducted to initially delineate the extent of volatile organic compounds (VOCs) in the site subsurface. The VOC impact is apparently due a historic dry cleaner at 1269 Bockman Road (eastern portion of Site), a former auto shop at 1415 Bockman Road (western portion of the Site), and potential offsite sources of petroleum hydrocarbons from 1210 Bockman (former Impulse Motors fueling station/auto repair facility) and 17093 Via Chiquita (commercial street sweeping business).

2.1 Site Description and History

The Site consists of an approximately 3.87-acre lot along Bockman road in San Lorenzo, California (Figure 2). The property is owned and being redeveloped by PaulsCorp, LLC into 53 two-story residential units. The assessor parcel number (APN) for the Site is 411-63-17. The subject property is relatively flat and lies at an elevation of about 20 feet above mean sea level. There are currently no buildings on-site but historically the Site consisted of a strip mall and associated parking lot. The Site is surrounded in all directions by single and multi-family residences.

According to a Phase 1 Environmental Site Assessment (ESA) prepared on June 3, 2016, by ENGEO Incorporated (ENGEO), the Site was used a strip mall until the buildings were demolished in 2007. Two former tenants of note were identified: a dry cleaner that operated between approximately 1960 and 1979; and an automotive repair shop that operated hydraulic lifts. The report also noted that a gasoline service station previously existed on the adjacent parcel to the south of the Site across Bockman Road at 1210 Bockman Road.

2.2 Chemicals of Potential Concern

The chemicals of potential concern at this Site primarily include tetrachloroethene (PCE) and its potential breakdown products, and petroleum hydrocarbons. The following chemicals have been detected in shallow *soil*

gas in excess of conservative residential soil vapor environmental screening levels (ESLs) established by the San Francisco Bay Region Water Quality Control Board (RWQCB) and were identified as chemicals of concern (COCs): *benzene, ethylbenzene, and PCE*. The following additional VOCs have been detected at the Site below ESLs: acetone; chloroform; 1,2-dichloroethane; naphthalene; 1,1,1-trichloroethylene (TCE); toluene; xylenes; and gas-range, diesel-range, and motor oil-range total petroleum hydrocarbons. No significant VOC impact has been detected in soil or groundwater based on data comparison to ESLs.

2.3 Summary of Previous Site Investigations

Site assessment data through early August 2016 is documented in PANGEA's *Site Assessment Report* dated August 26, 2016. Additional Site investigation from late August and September 2016 is partially documented in PANGEA's Draft CAP dated October 14, 2016. All available historic Site assessment data is summarized on Tables 1 through 3 and Figures 4 through 8.

The following is a summary of previous environmental activities at the Site:

- **November 18, 2004, Phase I Environmental Site Assessment, Secor International Inc. (Secor):** A Phase 1 ESA revealed that the auto repair shop located on the western portion of the Site may have formerly had a fuel dispenser island and that an oil/water separator existed within the building. The possibility of a dry cleaner was noted but it was not determined if operations were on-site or if the business was just a drop-off location. A former gasoline station/automotive repair facility located at 1210 Bockman Road (adjacent to the Site to the south) was also indicated as an environmental concern due to the elevated levels of petroleum hydrocarbons detected in confirmation samples during tank removal activities in 2004.

- **December 21, 2004, Phase II Environmental Site Assessment, Secor:** A total of eight soil borings were advanced on site to a depth of 10 to 15 feet below ground surface (bgs), but sample data was not reported.

- **June 30, 2015, Phase I Environmental Site Assessment, ENGEO:** A Phase 1 ESA revealed the same three environmental concerns as the Phase 1 ESA completed in 2004: possible historical dry cleaner operations, the gas station adjacent and south of the Site, and the former automotive repair facility located on the western portion of the Site. Based on these findings and the lack of data from the Phase II ESA completed in 2004, ENGEO recommended completion of a new Phase II ESA.

- **July 2, 2015, Phase II Environmental Site Assessment, ENGEO:** Soil, groundwater, and soil gas were sampled to identify potential concerns related to the aforementioned historic operations. Three soil borings were advanced (S-1 through S-3) to a depth of 10 feet bgs in the vicinity of the former dry cleaner (S-1) and the former automotive repair facility (S-2 and S-3). Soil samples were collected at

depths of 1, 5, and 10 feet bgs from each boring. Grab groundwater samples (GW-1 through GW-3) were also collected from three separate borings at depths ranging from 15 to 25 feet bgs depending on where groundwater was first observed. Soil and groundwater samples were analyzed for VOCs, CAM-17 metals, and total petroleum hydrocarbons as gasoline (TPHg), diesel (TPHd), and motor oil (TPHmo). While VOCs, TPHg, and metals were detected in groundwater samples, all analytes were below screening levels except arsenic (which likely represents background conditions). For the two analyzed soil gas samples (SG-1 and SG-2), no VOCs were reported above environmental screening levels.

- **May 16, 2016, Site Management Plan (SMP), ENGEO:** A SMP was developed for the City Building Department to provide procedures and protocols to address potential soil impacts that would be encountered while developing the Site.

- **June 3, 2016, Phase I Environmental Site Assessment Update, ENGEO:** The Phase 1 ESA completed in 2015 was updated to include the results of an environmental record search. No new environmental concerns were recognized.

- **August 2, 2016, Revised Phase II Environmental Site Assessment, ENGEO:** Additional Site assessment activities including installing and sampling six new temporary soil gas wells (SG-5 through SG-10) and collecting four grab groundwater samples (GW-1 through GW-4). The soil gas wells were installed to depths of 7 feet bgs (SG-6, SG-8, and SG-9) and 10 feet bgs (SG-5, SG-7, and SG-10) and sampled for TPHg and VOCs. PCE was detected in SG-6 and SG-9 at an identical concentration of 256 micrograms per cubic meter ($\mu g/m^3$). Grab groundwater borings GW-1 through GW-3 were advanced in close proximity to the borings by the same identity in 2015. All four borings were advanced to a depth of 16 to 17 feet bgs depending on where first encountered groundwater was observed. A sample was collected from each boring and analyzed for VOCs, TPHg, TPHd, TPHmo, and CAM-17 metals. VOCs, TPHg, and metals were detected below screening levels except for arsenic.

- **August 17, 2016, Site Management Plan Supplement, PANGEA**: Prepared to facilitate grading work at the western portion of the Site.

- **August 26, 2016, Site Assessment Report, PANGEA:** A dynamic Site assessment was conducted involving the sampling of soil, groundwater, and shallow soil gas. Pangea employed MiHPT, a high resolution site characterization technique, to help delineate the extent of contaminants in the subsurface and to evaluate hydrogeologic conditions, primarily in the vicinity of the former drycleaners. No significant VOC impact was detected in soil and groundwater, but shallow soil gas in the eastern portion of the Site is impacted with concentrations of PCE, benzene, and ethylbenzene that exceed their respective residential shallow soil gas ESLs.

- **August and September, 2016, Additional Assessment, PANGEA;** Additional assessment was conducted in subsequent to Pangea's August 26, 2016 assessment report, and was summarized in PANGEA's Draft Corrective Action Plan dated October 14, 2016.

Another site report includes the *Geotechnical Investigation* dated October 1, 2015, prepared by Langan Treadwell Rollo. A Pilot Study Workplan was prepared by PANGEA dated October 7, 2016. A Draft CAP was prepared by PANGEA dated October 14, 2016.

2.4 Potential Offsite Sources of VOCs

1210 Bockman: A fueling station/auto repair facility (Impulse Motors, B.P.) was formerly located across the street from the Site and operated from the 1950s until 2004. In 2004, three fuel USTs, and two dispensers with associated piping were removed. Elevated levels of TPHg, TPHd and BTEX were detected in soil, groundwater and soil gas. The environmental case was granted closure by ACDEH in 2013. The case closure summary with historical maps and data is included in Appendix A. The 1210 Bockman property is located directly upgradient of the Site and may be the source or contributing source of select petroleum hydrocarbon compounds at the eastern boundary of the Site, where ethylbenzene concentrations in soil gas exceed ESLs. In 2013, dissolved-phased TPHd concentrations were reported in an irrigation well at a residential property (17109 Via Chiquita) located 155 feet north of the 1210 Bockman property.

17093 Via Chiquita: This property, immediately adjacent the Site's eastern property boundary, is currently occupied by a street sweeping business (Midnight Sweepers) with several commercial vehicles parked periodically at the property. PANGEA understands that historically numerous automotive vehicles are stored at this property. This property may be the source or contributing source of select petroleum hydrocarbon compounds at the eastern boundary of the Site, where ethylbenzene concentrations in soil gas exceed ESLs.

2.5 Site Geology and Hydrogeology

The Site property is located within the East Bay Plain subbasin, which is part of the larger Santa Clara Valley Groundwater Basin. The East Bay Plain subbasin is a northwest trending alluvial plain bounded to the north by San Pablo bay, to the east by the contact with Franciscan Basement rock, and to the south by the Niles Cone Groundwater basin. The basin extends beneath San Francisco Bay to the west. Groundwater is generally found very near the surface throughout the basin.

The East Bay Plain subbasin aquifer system consists of unconsolidated sediments of Quaternary age. The Early Holocene Temescal Formation is the most recently deposited and consists of primarily silts and clays with some gravel layers.

The relatively flat Site lies at an elevation of approximately 20 feet above mean sea level to the east of San Francisco Bay (Figure 1). Soil beneath the site consists of sandy gravel fill (likely baserock material) to

approximately 1 ft bgs underlain by 2 to 3 feet of moderately plastic clay. The clay layer is underlain by silt and a discontinuous, one-foot thick sand lens observed intermittently between 6 and 10 feet bgs. Pangea observed groundwater between 7 and 9 feet bgs, while others reported first encountered groundwater deeper. Based on data from neighboring sites, static groundwater was approximately 8 ft bgs (1201 Bockman) and groundwater flows to the northwest. Lithologic and groundwater data is presented on geologic cross-section A-A' (Figure 3).

2.6 Agency Direction

In an October 14, 2016, ACDEH requested a *Data Gap Field Investigation Workplan* to further delineate contamination. Data gap investigation results will be used to assist with proposed corrective action documented in the *Draft Corrective Action Plan* (Draft CAP) dated October 14, 2016. Additional agency requirements beyond the data gap assessment are documented in ACDEH October 14, 2016 letter (Appendix A).

3.0 SITE CONDITIONS

Subsurface conditions based on most current data are summarized in PANGEA's Draft CAP dated October 14, 2016. Available historic Site assessment data is also summarized in this Workplan on Tables 1 through 3 and Figures 4 through 8, with additional figures in an *Interim Remediation Report* will further illustrate conditions near the former auto repair area on the western portion of the Site. The Site conditions are summarized as follows:

- Soil beneath the Site consists of sandy gravel fill (likely baserock) to approximately 1 ft bgs underlain by 2- to 3-feet of moderately plastic clay. The clay layer is underlain by silt and a discontinuous, one-foot thick sand lens observed intermittently between 6 and 10 feet bgs. The depth to static groundwater is approximately 8 feet bgs and groundwater flows to the northwest.

- *Soil* and *groundwater* on-site has not been significantly impacted by VOCs, TPHg or lead. Soil data is summarized on Table 1 and Figure 4. Groundwater data is summarized on Table 2 and Figure 5.

- Shallow *soil gas* in the *eastern* portion of the Site is impacted with concentrations of PCE, benzene, and ethylbenzene that exceed their respective residential shallow soil gas ESLs. Soil gas data for these VOCs is summarized on Table 3 and Figures 6, 7, and 8.

Shallow *soil gas* in the *western* portion of the Site, adjacent the hoists from the former automotive repair building, had contained PCE *below* residential shallow soil gas ESLs. Therefore, some assessment was conducted in the western portion of the Site via exploratory excavation and borings consistent with procedures of the *Site Management Plan Addendum*. The assessment and interim remediation conducted in the western portion of the Site will be documented in an Interim Remediation Report. After the interim remediation, post-

excavation conditions were evaluated by confirmation soil and soil gas sampling, indicating that residual conditions were below applicable ESLs.

4.0 PROPOSED DATA GAP INVESTIGATION

The proposed site assessment will further delineate site contamination as required during our recent correspondence and an October 14, 2016 letter from ACDEH. Our proposed site assessment sampling locations are shown on Figure 9. The specific objectives of the proposed site assessment are to:

- Search for potential source *soil* impact near elevated soil gas impact where soil data is not currently available. Three (3) soil borings are proposed to further evaluate potential PCE, benzene and ethylbenzene impact in soil.

- Further delineate the VOC extent in soil gas using *existing* probes to help establish concentration trends and stable conditions. Sampling from twenty-four (24) existing soil gas probes, which includes *all* soil gas probes located outside the planned excavation area.

- Evaluate soil gas conditions beneath several planned buildings where no soil gas data has been obtained. Eleven (11) *new* soil gas probes are proposed to further evaluate potential VOC impact in soil gas under Buildings 1, 2, 3, 4 and 10.

- Provide data for possible expansion of the excavation extent proposed in the Draft CAP, and possible installation of vapor mitigation systems beneath Buildings 1, 2, 3, 4 and/or 10.

- Evaluate *offsite* soil gas conditions adjacent to onsite VOC impact in soil gas. Four (4) soil gas probes are proposed to further evaluate potential VOC impact in offsite soil gas.

In summary, the above investigation objectives will be achieved through the drilling/installation and sampling of 3 soil borings, 24 existing soil gas probes, 11 new onsite soil gas probes, and 4 new offsite soil gas probes. The proposed sampling locations are shown on Figure 9. Due to schedule constraints, the offsite soil gas assessment may be conducted and reported separately if offsite access delays this offsite sampling.

4.1 Pre-Drilling Preparation

Prior to initiating field activities, the following tasks will be conducted:

- Obtain drilling permit from the Alameda County Public Works Agency;
- Obtain encroachment permit City of San Lorenzo, if necessary.
- Enter access agreements with residential property owners for offsite assessment;

- Pre-mark the excavation area with white paint and notify Underground Service Alert (USA) of the excavation activities at least 48 hours before work begins;
- Prepare a Site-specific health and safety plan to educate personnel and minimize their exposure to potential hazards related to Site activities; and
- Coordinate with excavation and laboratory contractors and with involved parties.

4.2 Soil Sampling

Three (3) soil borings will be advanced to further evaluate potential VOC impact in soil. As shown on Figure 9, one soil boring is proposed near SV-23 where elevated elevated ethylbenzene was detected in soil gas. A second boring is proposed near SV-18 where elevated elevated ethylbenzene was detected in soil gas. A third boring is proposed near SV-27 where elevated elevated ethylbenzene was detected in soil gas.

Soil samples will be collected at approximately 4 to 5 ft depth based on prior MiHPT data, or collected at depths corresponding to highest PID readings during soil boring logging. At least one soil sample from each boring will be collected using EPA Method 5035 (e.g., TerraCore) and analyzed for VOCs by EPA Method 8260B using at a California-certified laboratory.

To facilitate soil sampling, three borings will be conducted using hand auger or direct-push drilling techniques to approximately 8 ft bgs. The direct-push sampling rig will be equipped with a hydraulic hammer and steel drive rods to advance the borings to the total depth. With hydraulic-push drilling, continuous soil collection is conducted using acetate liners. Soil samples will be obtained by cutting 6-inch acetate subsections, trimming the excess soil from the ends, and capping the ends with Teflon® tape and plastic caps.

The soil samples will be classified according to the Unified Soil Classification System (USCS) and screened for field indications of petroleum hydrocarbons using visual and olfactory observations and a photo-ionization detector (PID). Additional soil samples may be collected near the water table and/or at lithologic changes. A groundwater sample will be collected for laboratory analysis from each boring that encounters groundwater. The grab groundwater samples will be collected using either temporary PVC casing or a discrete-depth sampler. The samples will be placed into a cooler filled with ice and delivered under chain-of-custody procedures to a State-certified laboratory. Completed borings will be tremie-grouted from the bottom of the hole to the surface. If groundwater is encountered, groundwater samples will be analyzed by total petroleum hydrocarbons as gasoline (TPHg) by EPA Method 8015, total petroleum hydrocarbons as diesel (TPHd) and motor oil (TPHmo) with silica gel cleanup by EPA Method 8015; and volatile organic compounds by EPA Method 8260B.

All site investigation activities will be performed under the supervision of a California Registered Civil Professional Engineer (P.E.) and in general accordance with the Standard Operating Procedures (SOPs) provided in Appendix B.

All soil samples will be analyzed for the following: Groundwater samples will be analyzed for volatile organic compounds by EPA Method 8260.

4.3 Soil Gas Sampling

To further evaluate VOC conditions in soil gas, PANGEA will sample soil gas at locations described above and shown on Figure 9. The new soil vapor probes/monitoring wells will be installed and sampled according to the State *Advisory – Active Soil Gas Investigations* (CalEPA/DTSC, 2015). The soil vapor wells will be constructed to a depth of 5.5 ft bgs. The wells will be constructed by setting a vapor implant attached to ¼-inch Teflon™ tubing at 5 feet bgs with six-inches of sand pack above and below it. A ½ foot of dry bentonite crumbles will be poured on top of the sand and the remaining annular space will be backfilled with hydrated bentonite. The Teflon™ tubing will be set in a 2-inch PVC riser and capped to prevent moisture from entering.

This is the same procedure used for prior sampling as documented in our *Site Assessment Report* dated August 26, 2016. Note that due to the naturally tight formation, soil gas wells installed for the prior assessment were purged between 24 and 48 hours prior to sampling to allow collection of representative samples in this tight soil. Samples will be collected by connecting a 1-liter Summa™ canister to the tubing through a flow rate regulator calibrated to a rate of approximately 100-200 milliliters per minute (mL/min). To further evaluate potential leakage within the sampling system, a leak-check enclosure/shroud will be placed over the sample train and isopropyl alcohol will be introduced into the shroud. A PID will be used to monitor the concentration of isopropyl alcohol within the shroud during sample collection.

Soil gas samples will be analyzed for VOCs by EPA Method TO-15. Shroud samples will also be collected from select shrouds to correlate PID readings for the tracker gas. At least four soil gas samples from the excavation area will be analyzed for fixed gases (oxygen, carbon dioxide, and methane) by ASTM Method D-1946. Pangea will attempt to retain the soil gas monitoring wells to collect additional repeatable data.

4.4 Investigation Derived Waste

Investigation derived waste (IDW) generated during field activities will be temporarily stored on Site on plastic sheeting. Following review of analytical results, the IDW will be transported to an appropriate facility for disposal or recycling in conjunction with pilot study or CAP excavation activities.

4.5 Reporting

As required by the ACDEH letter dated October 14, 2016, PANGEA will incorporate the data gas assessment data into the *Remedial Action Implementation Plan*. This report will present results of the Pilot Study, additional field investigation activities, and revisions to the proposed corrective actions presented in the Draft CAP.

5.0 REFERENCES

CalEPA/DTSC, 2011, (CalEPA, 2011) *Vapor Intrusion Mitigation Advisory (VIMA),* October 2011

CalEPA/DTSC, 2015, (CalEPA, 2015) *Advisory – Active Soil Gas Investigations,* July 2015

Department of Water Resources, 2003, *Bulletin 118*, October 2003.

ENGEO, 2015, *Phase I Environmental Site Assessment*, June 2015.

ENGEO, 2015, *Phase II Environmental Site Assessment,* July 2015.

ENGEO, 2016, *Site Management Plan*, May 2016.

ENGEO, 2016, *Phase I Environmental Site Assessment Update*, June 2016.

ENGEO, 2016, *Revised Phase II Environmental Site Assessment*, August 2016.

Figuers, S., 1998, Groundwater study and water supply history of the East Bay Plain, Alameda and Contra Costa Counties, California: Norfleet Consultants, June 15.

PANGEA, 2016, *Site Management Plan Addendum,* August 17, 2016.

PANGEA, 2016, *Site Assessment Report,* August 26, 2016.

PANGEA, 2016, Pilot Study Workplan, October 7, 2016.

PANGEA, 2016, Draft Corrective Action Plan. October 14, 2016.

Secor, 2004, *Phase I Environmental Site Assessment*, November 2004.

Secor, 2004, *Phase II Environmental Site Assessment*, December 2004.

Figure 1

1233 Bockman Road
San Lorenzo, California

PANGEA

Vicinity Map

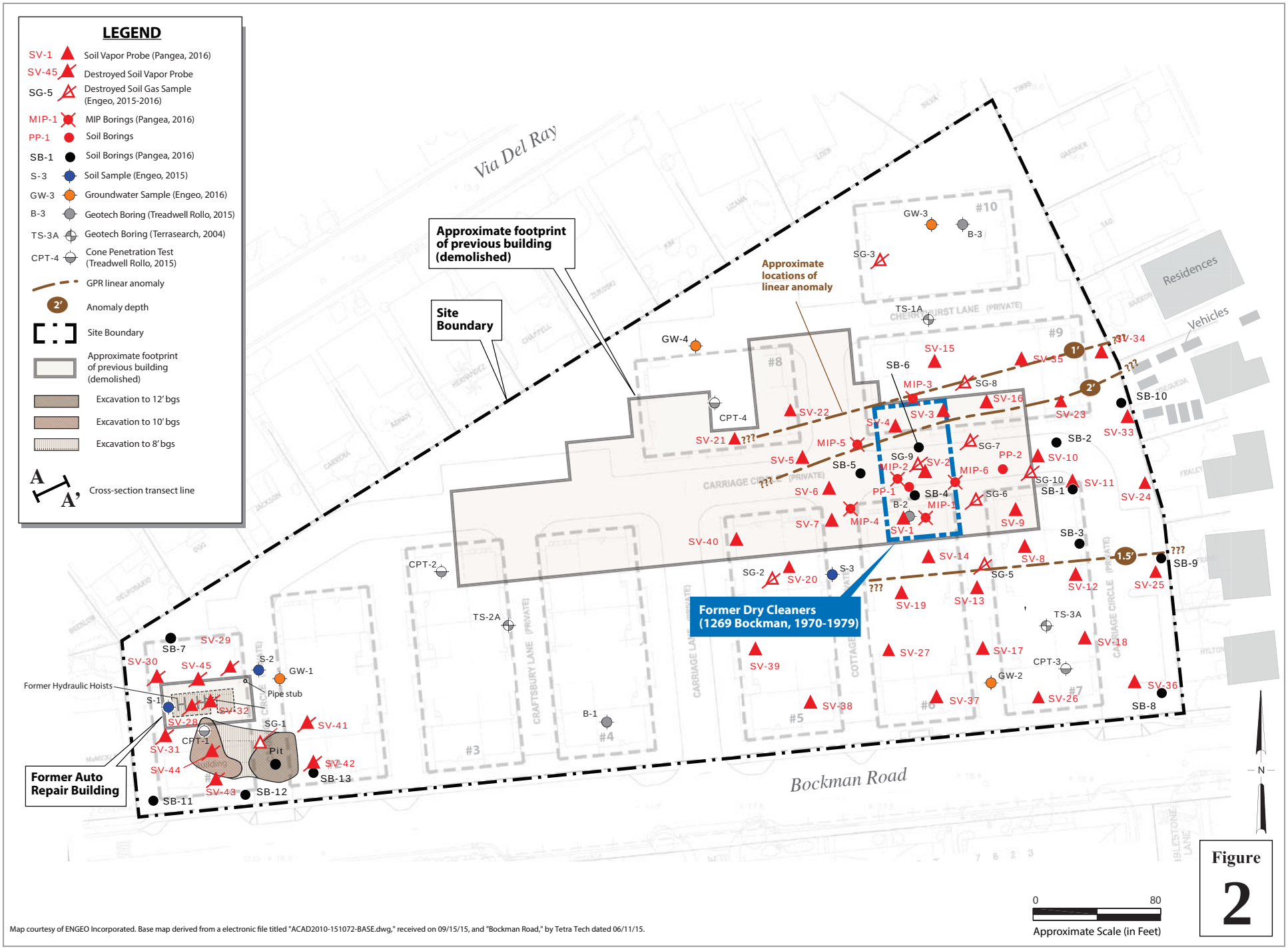


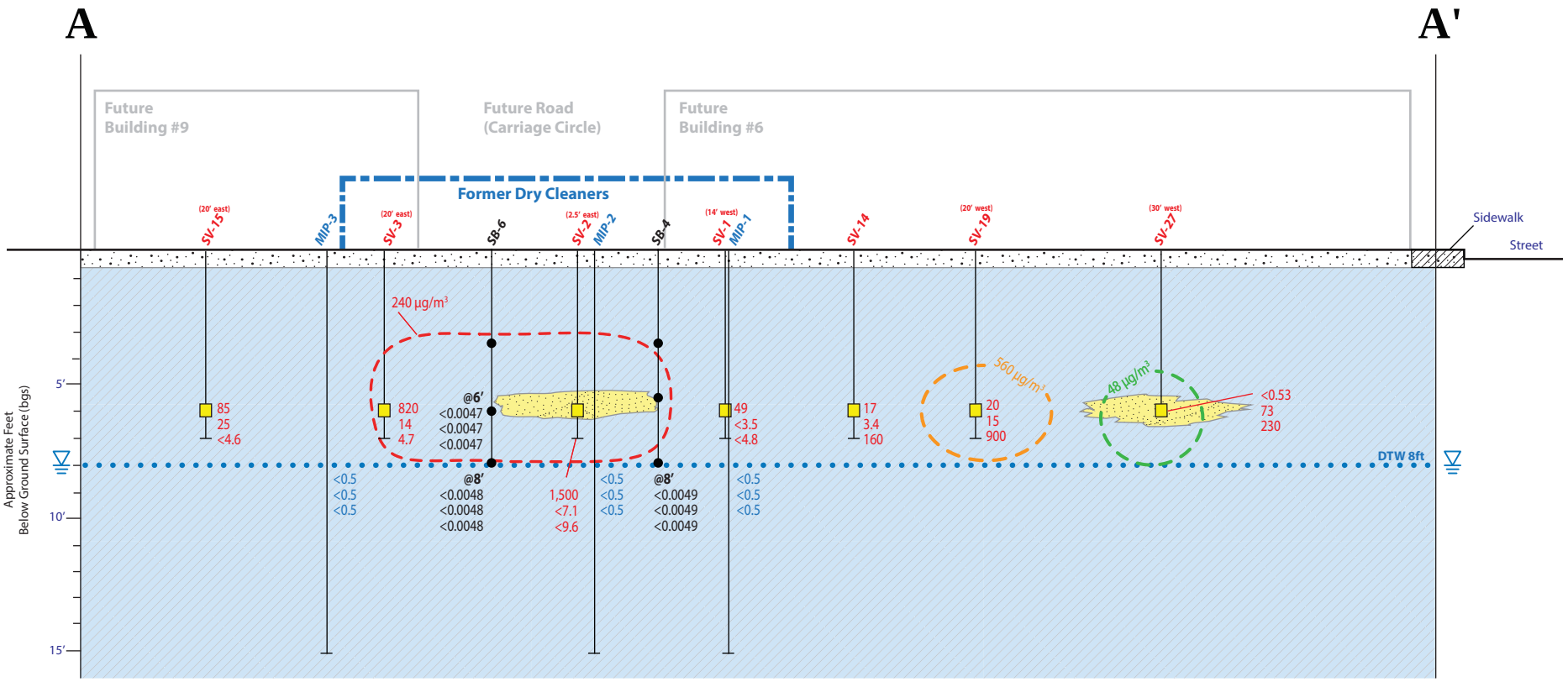
Figure 2

Map courtesy of ENGEO Incorporated. Base map derived from a electronic file titled "ACAD2010-151072-BASE.dwg," received on 09/15/15, and "Bockman Road," by Tetra Tech dated 06/11/15.

1233 Bockman Road
San Lorenzo, California

PANGEA

Site Map



LEGEND

MIP-1 Soil Vapor Probe Soil Boring Sand Silt/Clay

SV-15	Soil Vapor Probe	**MIP-3**	Grab Groundwater sample	**SB-6 @3.5'**	Soil boring sample in ft bgs
85	PCE in soil gas (µg/m3)	<0.5	PCE in groundwater (µg/L)	<0.0049	PCE in soil (mg/kg)
25	Benzene in soil gas (µg/m3)	<0.5	Benzene in groundwater (µg/L)	<0.0049	Benzene in soil (mg/kg)
<4.6	Ethylbenzene in soil gas (µg/m3)	<0.5	Ethylbenzene in groundwater (µg/L)	<0.0049	Ethylbenzene in soil (mg/kg)

PCE in Soil Gas Isocontour

Benzene in Soil Gas Isocontour

Ethylbenzene in Soil Gas Isocontour

0 30

Approximate Scale (in Feet)

Figure 3

1233 Bockman Road
San Lorenzo, California

PANGEA

Cross Section A-A'

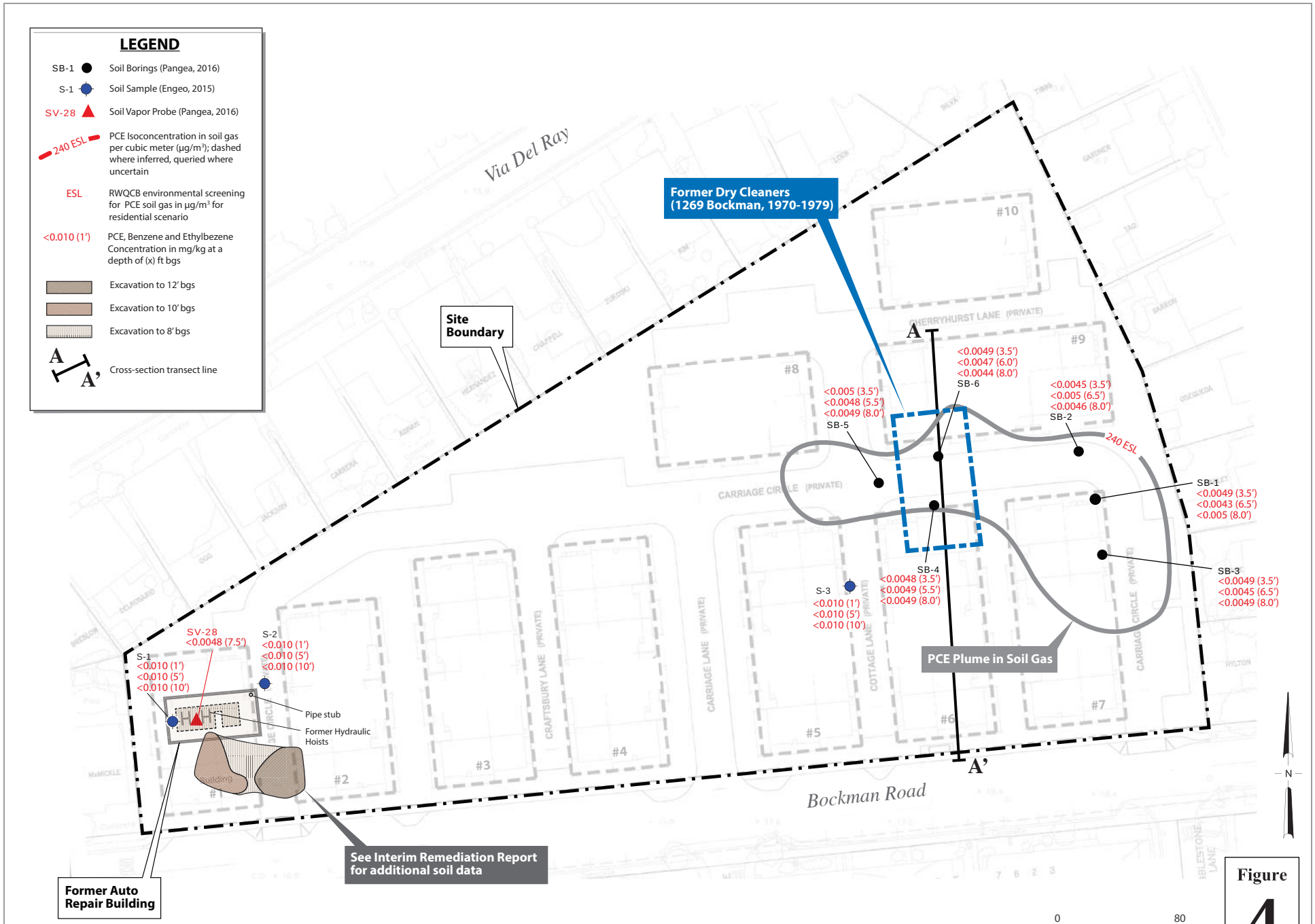


Figure 4

Map courtesy of ENGEO Incorporated. Base map derived from a electronic file titled "ACAD2010-151072-BASE.dwg," received on 09/15/15, and "Bockman Road," by Tetra Tech dated 06/11/15.

1233 Bockman Road
San Lorenzo, California

PANGEA

VOCs in Shallow Soil

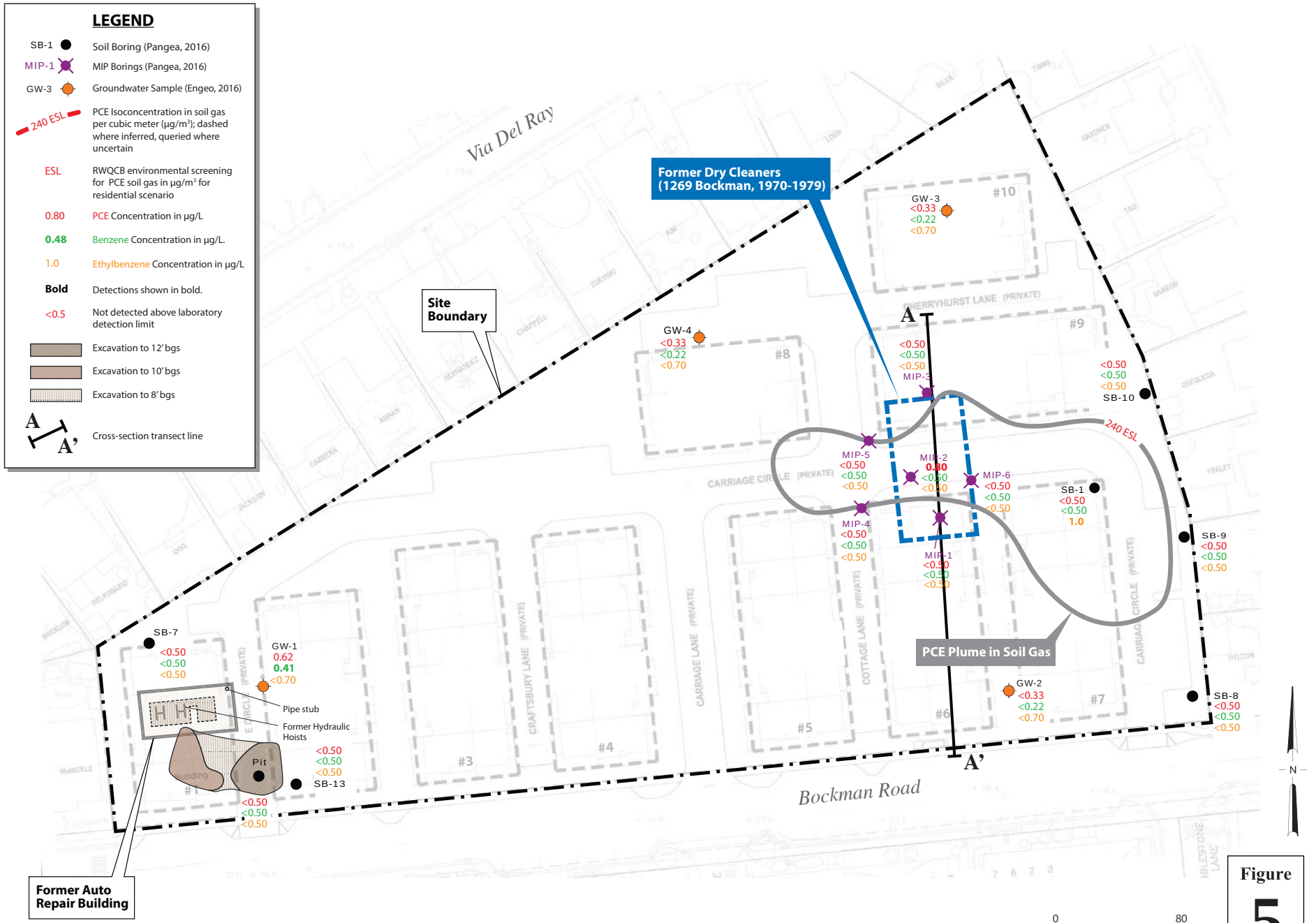


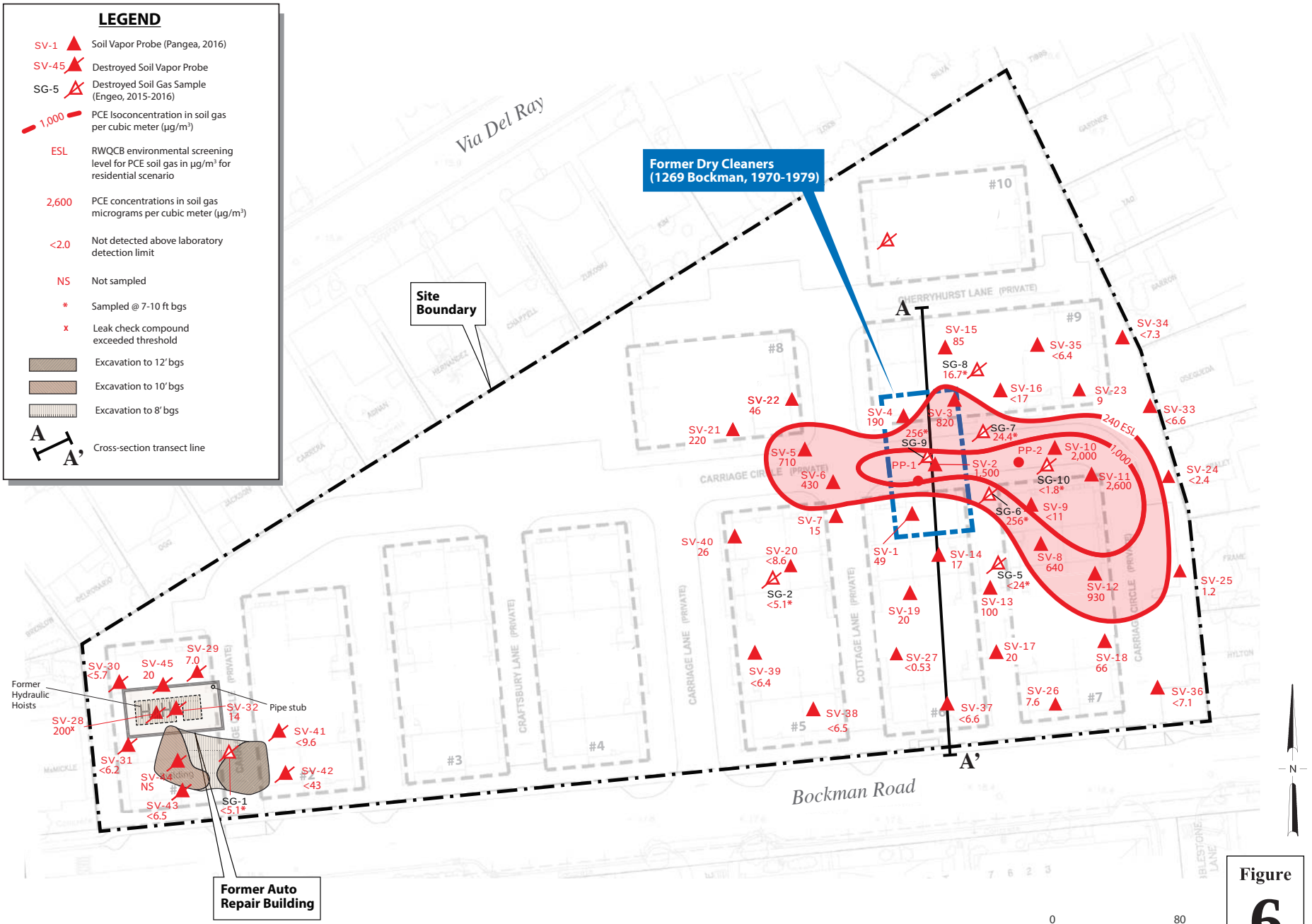
Figure 5

Map courtesy of ENGEO Incorporated. Base map derived from a electronic file titled "ACAD2010-151072-BASE.dwg," received on 09/15/15, and "Bockman Road," by Tetra Tech dated 06/11/15.

1233 Bockman Road
San Lorenzo, California

PANGEA

VOCs in Shallow Groundwater



Map courtesy of ENGEO Incorporated. Base map derived from a electronic file titled "ACAD2010-151072-BASE.dwg," received on 09/15/15, and "Bockman Road," by Tetra Tech dated 06/11/15.

Figure 6

1233 Bockman Road
San Lorenzo, California

PANGEA

PCE in Soil Gas

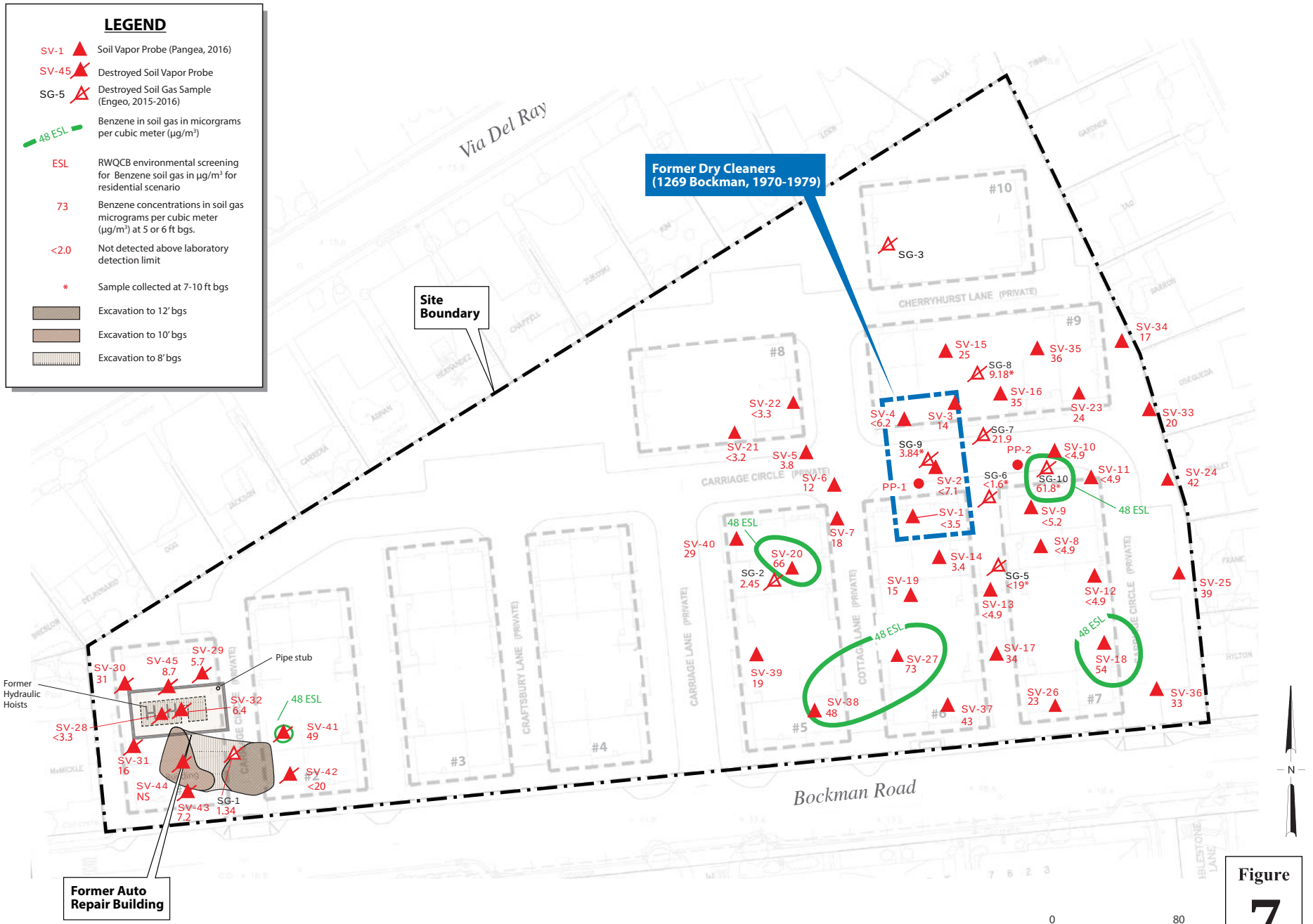


Figure 7

Map courtesy of ENGEO Incorporated. Base map derived from a electronic file titled "ACAD2010-151072-BASE.dwg," received on 09/15/15, and "Bockman Road," by Tetra Tech dated 06/11/15.

1233 Bockman Road
San Lorenzo, California

PANGEA

Benzene in Shallow Soil Gas

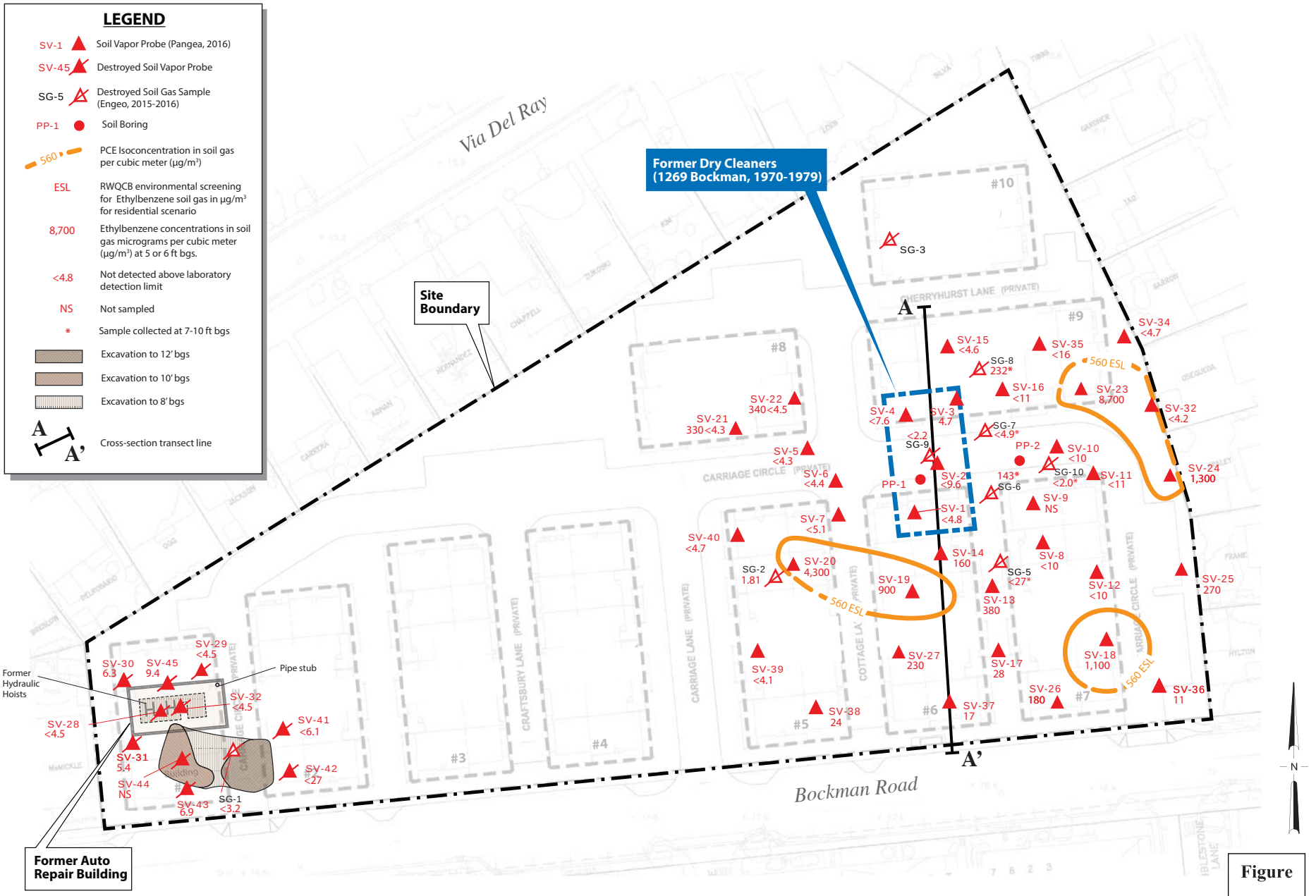


Figure 8

Map courtesy of ENGEO Incorporated. Base map derived from a electronic file titled "ACAD2010-151072-BASE.dwg," received on 09/15/15, and "Bockman Road," by Tetra Tech dated 06/11/15.

1233 Bockman Road
San Lorenzo, California

PANGEA

Ethylbenzene in Shallow Soil Gas

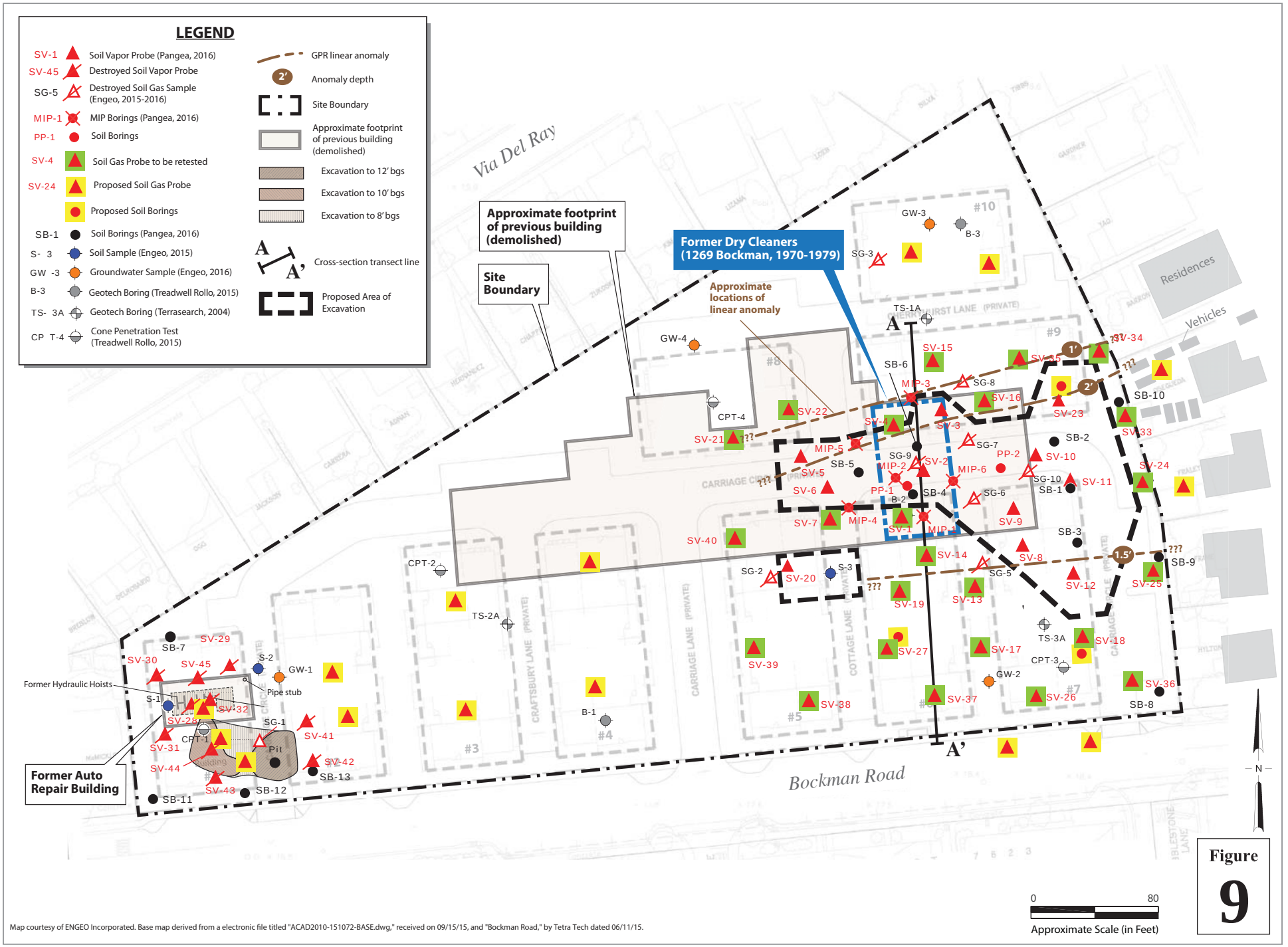


Figure 9

Map courtesy of ENGEO Incorporated. Base map derived from a electronic file titled "ACAD2010-151072-BASE.dwg," received on 09/15/15, and "Bockman Road," by Tetra Tech dated 06/11/15.

1233 Bockman Road
San Lorenzo, California

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Proposed Additional Assessment Locations

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Table 1. Soil Analytical Data - 1233 Bockman Road, San Lorenzo California

Boring / Sample ID	Date Sampled	Sample Depth (ft bgs)	TPHg	TPHd	TPHmo	Lead	Benzene	Toluene	Ethylbenzene	Xylenes	MTBE	Naphthalene	1,2-DCA	PCE	TCE	cis-1,2-DCE	trans-1,2-DCE	Vinyl Chloride	Chloroform	Acetone	Other VOC's	PCBs	Notes
Direct Exposure ESL - residential, shallow soil:			740	230	11,000	80	0.23	970	5.1	560	42	3.3	0.37	0.6	1.2	19	160	0.0082	0.30	59,000	varies		
			mg/Kg																				
Soil Borings - ENGEO Site Assessment 2015																							
S-1	6/25/2015	1	<0.1	3.6	32	13	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	---	<0.021	---	
	6/25/2015	5	<0.1	<2.0	<10	5.5	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	---	<0.021	---	
	6/25/2015	10	<0.1	<2.0	<10	5.6	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	---	<0.021	---	
S-2	6/25/2015	1	<0.1	<2.0	<10	7.6	<0.01	<0.01	<0.01	22.6	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	---	<0.021	---	
	6/25/2015	5	<0.1	<2.0	<10	8.3	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	---	<0.021	---	
	6/25/2015	10	<0.1	<2.0	<10	4.9	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	---	<0.021	---	
S-3	6/25/2015	1	<0.1	14	230	1.3	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	---	<0.021	---	
	6/25/2015	5	<0.1	<2.0	17	6.3	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	---	<0.021	---	
	6/25/2015	10	<0.1	<2.0	<10	5.6	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	---	<0.021	---	
Soil Borings in Dry Cleaner Area - PANGEA 2016																							
SB-1	8/3/2016	3.5	---	---	---	---	<0.0049	<0.0049	<0.0049	<0.0049	<0.0049	<0.0049	<0.0049	<0.0049	<0.0049	<0.0049	<0.0049	<0.0098	<0.0049	<0.02	<0.049	---	
		6.5	<0.96	---	---	---	<0.0043	<0.0043	<0.0043	<0.0043	<0.0043	<0.0043	<0.0043	<0.0043	<0.0043	<0.0043	<0.0043	<0.0087	<0.0043	<0.017	<0.043	---	
		8	---	---	---	---	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.0099	<0.005	<0.02	<0.050	---	
SB-2	8/3/2016	1	---	---	---	3.5	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	
		3	---	---	---	8.7	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	
		3.5	---	---	---	---	<0.0045	<0.0045	<0.0045	<0.0045	<0.0045	<0.0045	<0.0045	<0.0045	<0.0045	<0.0045	<0.0045	<0.0091	<0.0045	<0.018	<0.045	---	
		6	---	---	---	6.2	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	
		6.5	<1.1	---	---	---	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.01	<0.005	<0.02	<0.050	---	
		8	---	---	---	---	<0.0046	<0.0046	<0.0046	<0.0046	<0.0046	<0.0046	<0.0046	<0.0046	<0.0046	<0.0046	<0.0046	<0.0093	<0.0046	<0.019	<0.046	---	
SB-3	8/3/2016	3.5	---	---	---	---	<0.0049	<0.0049	<0.0049	<0.0049	<0.0049	<0.0049	<0.0049	<0.0049	<0.0049	<0.0049	<0.0049	<0.0098	<0.0049	0.027	<0.049	---	
		6.5	<0.99	---	---	---	<0.0045	<0.0045	<0.0045	<0.0045	<0.0045	<0.0045	<0.0045	<0.0045	<0.0045	<0.0045	<0.0045	<0.0091	<0.0045	<0.018	<0.045	---	
		8	---	---	---	---	<0.0049	<0.0049	<0.0049	<0.0049	<0.0049	<0.0049	<0.0049	<0.0049	<0.0049	<0.0049	<0.0049	<0.0098	<0.0049	<0.02	<0.049	---	
SB-4	8/3/2016	3.5	---	---	---	---	<0.0048	<0.0048	<0.0048	<0.0048	<0.0048	<0.0048	<0.0048	<0.0048	<0.0048	<0.0048	<0.0048	<0.0097	<0.0048	<0.019	<0.048	---	
		5.5	<0.99	---	---	---	<0.0049	<0.0049	<0.0049	<0.0049	<0.0049	<0.0049	<0.0049	<0.0049	<0.0049	<0.0049	<0.0049	<0.0097	<0.0049	<0.019	<0.049	---	
		8	---	---	---	---	<0.0049	<0.0049	<0.0049	<0.0049	<0.0049	<0.0049	<0.0049	<0.0049	<0.0049	<0.0049	<0.0049	<0.0098	<0.0049	<0.02	<0.049	---	
SB-5	8/3/2016	3.5	---	---	---	---	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.0099	<0.005	<0.02	<0.050	---	
		5.5	<1.1	---	---	---	<0.0048	<0.0048	<0.0048	<0.0048	<0.0048	<0.0048	<0.0048	<0.0048	<0.0048	<0.0048	<0.0048	<0.0097	<0.0048	<0.019	<0.048	---	
		8	---	---	---	---	<0.0049	<0.0049	<0.0049	<0.0049	<0.0049	<0.0049	<0.0049	<0.0049	<0.0049	<0.0049	<0.0049	<0.0098	<0.0049	<0.02	<0.049	---	
SB-6	8/3/2016	1	---	---	---	7.4	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	
		3	---	---	---	5.7	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	
		3.5	---	---	---	---	<0.0049	<0.0049	<0.0049	<0.0049	<0.0049	<0.0049	<0.0049	<0.0049	<0.0049	<0.0049	<0.0049	<0.0097	<0.0049	<0.019	<0.049	---	
		6	<0.98	---	---	4.1	<0.0047	<0.0047	<0.0047	<0.0047	<0.0047	<0.0047	<0.0047	<0.0047	<0.0047	<0.0047	<0.0047	<0.0093	<0.0047	<0.019	<0.047	---	
		8	---	---	---	---	<0.0044	<0.0044	<0.0044	<0.0044	<0.0044	<0.0044	<0.0044	<0.0044	<0.0044	<0.0044	<0.0044	<0.0089	<0.0044	<0.018	<0.044	---	

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Table 1. Soil Analytical Data - 1233 Bockman Road, San Lorenzo California

Boring / Sample ID	Date Sampled	Sample Depth (ft bgs)	TPHg	TPHd	TPHmo	Lead	Benzene	Toluene	Ethylbenzene	Xylenes	MTBE	Naphthalene	1,2-DCA	PCE	TCE	cis-1,2-DCE	trans-1,2-DCE	Vinyl Chloride	Chloroform	Acetone	Other VOC's	PCBs	Notes
Direct Exposure ESL - residential, shallow soil:			740	230	11,000	80	0.23	970	5.1	560	42	3.3	0.37	0.6	1.2	19	160	0.0082	0.30	59,000	varies		
			← mg/Kg →																				
Soil Sampling in Auto Repair Area - PANGEA 2016																							
SV-28	8/22/2016	7.5	5.2	**1,400**	2,800	---	<0.0048	<0.0048	<0.0048	<0.0096	<0.0048	<0.0048	<0.0048	<0.0048	<0.0048	<0.0048	<0.0048	<0.0095	<0.0048	<0.019	<0.048	---	Excavated to 8'
SS-1	9/2/2016	2.5	---	---	---	---	<0.0047	<0.0047	<0.0047	<0.0094	<0.0047	<0.0047	<0.0047	<0.0047	<0.0047	<0.0047	<0.0047	<0.0094	<0.0047	<0.019	<0.047	---	
SS-2	9/2/2016	2.5	<1.0	43	300	---	<0.0046	<0.0046	<0.0046	<0.0092	<0.0046	<0.0046	<0.0046	<0.0046	<0.0046	<0.0046	<0.0046	<0.0093	<0.0046	<0.019	<0.046	---	Excavated to 8'
SS-3	9/2/2016	2.5	---	---	---	---	<0.0050	<0.0050	<0.0050	<0.010	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.010	<0.0050	<0.020	<0.050	---	
SS-4	9/2/2016	2.5	---	---	---	---	<0.0049	<0.0049	<0.0049	<0.0098	<0.0049	<0.0049	<0.0049	<0.0049	<0.0049	<0.0049	<0.0049	<0.0098	<0.0049	0.059	<0.049	---	
SS-5	9/2/2016	2.5	---	---	---	---	<0.0050	<0.0050	<0.0050	<0.010	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.010	<0.0050	0.050	<0.050	---	
SS-6	9/2/2016	8	---	---	---	---	<0.0050	<0.0050	<0.0050	<0.010	<0.0050	0.0084	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.010	<0.0050	<0.020	<0.050	---	Excavated to 12'
	9/2/2016	10	---	---	---	---	<0.0049	<0.0049	<0.0049	<0.0098	<0.0049	<0.0049	<0.0049	<0.0049	<0.0049	<0.0049	<0.0049	<0.0097	<0.0049	<0.019	<0.049	---	
SS-7	9/2/2016	8	---	---	---	---	<0.0049	<0.0049	<0.0049	<0.0098	<0.0049	<0.0049	<0.0049	<0.0049	<0.0049	<0.0049	<0.0049	<0.0097	<0.0049	<0.019	<0.049	---	
SS-8	9/2/2016	8	---	---	---	---	<0.0045	<0.0045	<0.0045	<0.0090	<0.0045	<0.0045	<0.0045	<0.0045	<0.0045	<0.0045	<0.0045	<0.0090	<0.0045	<0.018	<0.045	---	
SS-9	9/2/2016	8	4.0	**650**	3,100	---	<0.0049	<0.0049	<0.0049	<0.0098	<0.0049	<0.0049	<0.0049	<0.0049	<0.0049	<0.0049	<0.0049	<0.0098	<0.0049	0.030	<0.049	---	Excavated to 10'
	9/2/2016	10	<0.96	<1.0	<5.0	---	<0.0049	<0.0049	<0.0049	<0.0098	<0.0049	<0.0049	<0.0049	<0.0049	<0.0049	<0.0049	<0.0049	<0.0099	<0.0049	<0.020	<0.049	---	
Confirmation Samples at Auto Repair Area																							
H-1	8/30/2016	8	---	110	310	---	<0.0048	<0.0048	<0.0048	<0.0048	<0.0048	<0.0048	<0.0048	<0.0048	<0.0048	<0.0048	<0.0048	<0.0095	<0.0048	<0.019	<0.048	<0.024	bottom of excavation sample
H-2	8/30/2016	8	---	<1.0	<5.0	---	<0.0048	<0.0048	<0.0048	<0.0048	<0.0048	<0.0048	<0.0048	<0.0048	<0.0048	<0.0048	<0.0048	<0.0095	<0.0048	<0.019	<0.048	<0.024	bottom of excavation sample
H-3	8/30/2016	8	---	1.5	16	---	<0.0046	<0.0046	<0.0046	<0.0046	<0.0046	<0.0046	<0.0046	<0.0046	<0.0046	<0.0046	<0.0046	<0.0092	<0.0046	<0.018	<0.048	<0.024	bottom of excavation sample
BS-1-12	9/7/2016	12	<1.1	<1.0	<5.0	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	bottom of excavation sample
BS-2-12	9/7/2016	12	<1.1	<0.99	<5.0	---	<0.0048	<0.0048	<0.0048	<0.0096	<0.0048	<0.0048	<0.0048	<0.0048	<0.0048	<0.0048	<0.0048	<0.0097	<0.0048	<0.019	<0.048	---	bottom of excavation sample
BS-3-12	9/7/2016	12	<1.0	<1.0	<5.0	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	bottom of excavation sample
BS-4-8	9/7/2016	8	<1.1	<1.0	<5.0	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	bottom of excavation sample
BS-5-10	9/7/2016	10	<0.97	<0.99	<5.0	---	<0.0048	<0.0048	<0.0048	<0.0096	<0.0048	<0.0048	<0.0048	<0.0048	<0.0048	<0.0048	<0.0048	<0.0097	<0.0048	<0.019	<0.048	---	bottom of excavation sample
BS-6-10	9/7/2016	10	<0.94	<1.0	<5.0	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	bottom of excavation sample
BS-7-10	9/7/2016	10	<0.97	<0.99	<5.0	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	bottom of excavation sample
SW-1-10	9/7/2016	10	<1.0	<1.0	<5.0	---	<0.0049	<0.0049	<0.0049	<0.0098	<0.0049	<0.0049	<0.0049	<0.0049	<0.0049	<0.0049	<0.0049	<0.0099	<0.0049	<0.020	<0.049	---	excavation sidewall sample
SW-2-10	9/7/2016	10	<1.0	<0.99	<5.0	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	excavation sidewall sample

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Table 1. Soil Analytical Data - 1233 Bockman Road, San Lorenzo California

Boring / Sample ID	Date Sampled	Sample Depth (ft bgs)	TPHg	TPHd	TPHmo	Lead	Benzene	Toluene	Ethylbenzene	Xylenes	MTBE	Naphthalene	1,2-DCA	PCE	TCE	cis-1,2-DCE	trans-1,2-DCE	Vinyl Chloride	Chloroform	Acetone	Other VOC's	PCBs	Notes
Direct Exposure ESL - residential, shallow soil:			740	230	11,000	80	0.23	970	5.1	560	42	3.3	0.37	0.6	1.2	19	160	0.0082	0.30	59,000	varies		
			← mg/Kg →																				
SW-3-10	9/8/2016	10	<0.97	1.1	<5.0	---	<0.0050	<0.0050	<0.0050	<0.010	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0099	<0.0049	<0.020	<0.050	---	excavation sidewall sample
SW-4-8	9/7/2016	8	<0.97	<1.0	<5.0	---	<0.0050	<0.0050	<0.0050	<0.010	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0099	<0.0050	<0.020	<0.050	---	excavation sidewall sample
SW-5-8	9/7/2016	8	<0.95	<1.0	<5.0	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	excavation sidewall sample
SW-6-8	9/7/2016	8	<1.0	<1.0	<5.0	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	excavation sidewall sample

Explanation:

TPHd and TPHmo analyzed by EPA Method 8015, TPHg and VOC's analyzed by EPA Method 8260

Benzene, Toluene, Ethylbenzene and Xylenes by EPA Method 8021.

TPHg = Total Petroleum Hydrocarbons as gasoline

TPHd = Total Petroleum Hydrocarbons as diesel

TPHmo = Total Petroleum Hydrocarbons as motor oil

MTBE = Methyl tert-butyl ether

1,2-DCA = 1,2-Dichloroethane

PCE = Tetrachloroethene

TCE = Trichloroethene

cis-1,2-DCE = cis-1,2-Dichloroethene

PCB = total polychlorinated biphenyls including Aroclors 1016, 1221, 1232, 1242, 1248, 1254, and 1260

mg/Kg = Milligrams per kilogram

ft bgs = Depth below ground surface (bgs) in feet.

ESL = Environmental Screening Level, from California Regional Water Quality Control Board - San Francisco Bay Region, Screening for Environmental Concerns at Sites with Contaminated Soil and Groundwater, Interim Revised February 2016 (Revision 3).

< n = Chemical not present at a concentration in excess of detection limit shown.

ND = not detected

contaminant detections highlighted in gray

Table 2. Groundwater Analytical Data - 1233 Bockman Road, San Lorenzo, California

Boring / Sample ID	Date Sampled	Depth to Water (ft bgs)	TPHg	TPHd	TPHmo	Benzene	Toluene	Ethylbenzene	Xylenes	Naphthalene	1,2-DCA	PCE	TCE	Chloroform	Other VOCs	Notes
			µg/L													
Tier 1 ESL - Groundwater:			100	100	n/a	1.0	40	13	20	0.12	0.5	3.0	5.0	50	varies	
Vapor Intrusion ESL - shallow groundwater, residential:			100	100	n/a	1.1	3,600	13	1,300	20	6.1	3.0	5.6	2.3	varies	
Vapor Intrusion ESL - shallow groundwater, commercial:			5,000	5,000	n/a	9.7	30,000	110	11,000	170	53	26	49	20	varies	
Grab Groundwater Samples - ENGEO Site Assessment																
GW-1	6/25/2015	15-25[a]	51	---	---	0.48	0.42	<0.59	0.26	0.28	<0.17	<0.59	<0.59	<0.59	ND	
	7/15/2016	12-17[b]	<41	---	---	0.41	<0.20	<0.70	<0.55	<1.7	0.15	0.62	<0.70	<0.70	ND	
GW-2	6/25/2015	15-25[a]	<50	---	---	<0.50	<0.50	<0.50	<1.0	<0.16	<0.17	<0.50	<0.50	<0.50	ND	
	7/15/2016	12-17[b]	<41	---	---	<0.22	<0.20	<0.70	<0.55	<1.7	<0.15	<0.33	<0.70	<0.70	ND	
GW-3	6/25/2015	15-25[a]	<50	---	---	<0.50	<0.50	<0.50	<1.0	<0.16	<0.17	<0.50	<0.50	<0.50	ND	
	7/15/2016	12-17[b]	53.2	---	---	<0.22	<0.20	<0.70	<0.55	<1.7	<0.13	<0.33	<0.70	<0.70	ND	
GW-4	7/15/2016	12-17[b]	<41	---	---	<0.22	<0.20	<0.70	<0.55	<1.7	<0.15	<0.33	<0.70	<0.70	ND	
Grab Groundwater Samples - PANGEA																
MIP-1	7/25/2016	8-12	<50	---	---	<0.5	0.70	<0.5	<1.0	<2.0	<0.5	<0.5	<0.5	**2.3**	<10	
MIP-2	7/25/2016	8-12	<50	---	---	<0.5	<0.5	<0.5	<1.0	<2.0	<0.5	0.80	<0.5	**3.6**	<10	
MIP-3	7/25/2016	8-12	<50	---	---	<0.5	3.3	<0.5	<1.0	<2.0	<0.5	<0.5	<0.5	**8.1**	<10	
MIP-4	7/25/2016	8-12	<50	---	---	<0.5	1.5	<0.5	0.60	<2.0	<0.5	<0.5	<0.5	**13**	<10	
MIP-5	7/25/2016	8-12	<50	---	---	<0.5	<0.5	<0.5	<1.0	<2.0	<0.5	<0.5	<0.5	<0.5	<10	
MIP-6	7/25/2016	8-12	<50	---	---	<0.5	<0.5	<0.5	<1.0	<2.0	<0.5	<0.5	<0.5	**2.6**	<10	
SB-1-W	8/3/2016	8	<50	---	---	<0.5	<0.5	1.0	6.2	<2.0	<0.5	<0.5	<0.5	<0.5	<10	
SB-7	8/22/2016	8	--	---	---	<0.5	<0.5	<0.5	<1.0	<2.0	<0.5	<0.5	<0.5	<0.5	<10	

Pangea

Table 2. Groundwater Analytical Data - 1233 Bockman Road, San Lorenzo, California

Boring / Sample ID	Date Sampled	Depth to Water (ft bgs)	TPHg (µg/L)	TPHd (µg/L)	TPHmo (µg/L)	Benzene (µg/L)	Toluene (µg/L)	Ethylbenzene (µg/L)	Xylenes (µg/L)	Naphthalene (µg/L)	1,2-DCA (µg/L)	PCE (µg/L)	TCE (µg/L)	Chloroform (µg/L)	Other VOCs (µg/L)	Notes
		Tier 1 ESL - Groundwater:	100	100	n/a	1.0	40	13	20	0.12	0.5	3.0	5.0	50	varies	
		Vapor Intrusion ESL - shallow groundwater, residential:	100	100	n/a	1.1	3,600	13	1,300	20	6.1	3.0	5.6	2.3	varies	
		Vapor Intrusion ESL - shallow groundwater, commercial:	5,000	5,000	n/a	9.7	30,000	110	11,000	170	53	26	49	20	varies	
SB-8-W	9/7/2016	8	<50	**590**	17,000	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<10	
SB-9-W	9/7/2016	8	<50	**380**	4,300	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<10	
SB-13-W	9/8/2016	7	<50	<50	<250	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<10	
Pit	9/7/2016	8	64	73	<250	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<10[c]	

Explanation:

TPHg = Gasoline range Total Petroleum Hydrocarbons by EPA Method SW8021B/8015Bm.

TPHd = Diesel Range Total Petroleum Hydrocarbons by EPA Method SW8015B.

TPHmo = Motor Oil Range Total Petroleum Hydrocarbons by EPA Method SW8015B.

VOCs = Volatile Organic Compounds by EPA Methond 8260B.

1,2-DCA = 1,2-Dichloroethane

PCE = Tetrachloroethene

TCE = Trichloroethene

µg/L = micrograms per Liter

ft bgs = feet below grade surface.

ESL = Environmental screening level established by the SFB-RWQCB, Interim Final - November 2007 and amended in February 2016, (Rev. 3)

--- = Not analyzed or not available.

a = ENGEO report dated 07/02/2015 states samples were taken at first encountered groundwater which ranged between 15-25 ft bgs

b = ENGEO report dated 08/02/2016 states samples were taken at first encountered groundwater which ranged between 12-17 ft bgs

c = N-butylbenzene (0.64 ug/L) and 1,2,4-trimethylbenzene (1.6 ug/L)

d7 = strongly aged gasoline or diesel range compounds are significant in the TPH(g) chromatogram

e2 = diesel range compounds are significant; no recognizable pattern

e7 = oil range compounds are significant

e4/e11 = gasoline range compounds are significant; and/or stoddard solvent/mineral spirit?

Bold indicates concentration meets or exceeds Residential Vapor Intrusion ESL

< n = Chemical not present at a concentration in excess of laboratory detection limit shown.

Contaminent detections highlighted in gray

Table 3. Soil Gas Analytical Data - 1233 Bockman Road, San Lorenzo, California

Boring/ Sample ID	Date Sampled	Sample Depth (ft bgs)	Benzene	Toluene	Ethylbenzene	Xylenes	Naphthalene	1,2-DCA	PCE	TCE	Chloroform	Other VOCs	Isopropyl Alcohol (Leak Check Compound)	Oxygen	Notes
			ug/m^3											%	
Residential ESL - Soil/Subslab Gas:			**48**	**160,000**	**560**	**52,000**	**41**	**54**	**240**	**240**	**61**	**Varies**	**NA**	**NA**	
Soil Gas Samples - Engeo 2015 - 2016															
SG-1	06/25/15	5.0	1.34	6.33	<3.2	<6.5	<7.8	<3.1	<5.1	<8.1	4.92	--	<30	--	
SG-2	06/25/15	5.0	2.45	18.3	1.81	14.83	<7.8	<3.1	<5.1	<8.1	<7.4	--	<30	--	
SG-5	06/24/16	10	<19	<26	<27	<44	<140	<55	<24	<150	<130	--	--	--	
SG-6	06/24/16	7.0	<1.6	4.1	143	260	<5.2	<2.1	**256**	<5.4	<4.9	--	--	--	
SG-7	06/24/16	10	21.9	20.9	<4.9	<9.9	<12	<4.7	24.4	<12	<11	--	--	--	
SG-8	06/24/16	7.0	9.18	19.1	232	1,172	<5.2	<2.1	16.7	<5.4	<4.9	--	--	--	
SG-9	06/24/16	7.0	3.84	9.96	<2.2	4.69	<5.2	<2.1	**256**	<5.4	<4.9	--	--	--	
SG-10	06/24/16	10	**61.8**	76.2	<2.0	6.97	<10	<4.1	<1.8	<11	<9.8	--	--	--	
Soil Gas Samples - Pangea 2016															
SV-1	07/27/16	6.0	<3.5	<4.2	<4.8	<4.8	<23	<4.5	49	<5.9	<5.4	--	<11	--	
SV-2	07/27/16	6.0	<7.1	<8.3	<9.6	<9.6	<46	<8.9	**1,500**	<12	<11	--	<22	--	
SV-3	07/27/16	6.0	14	14	4.7	7.7	<22	<4.2	**820**	<5.6	<5.1	--	140	--	
SV-4	07/27/16	6.0	18	7.5	<7.6	<7.6	<36	<7.0	150	<9.4	<8.5	--	<17	--	
	09/01/16	6.0	<6.2	<7.3	<8.4	<16.8	<40	<7.8	190	<10	<9.4	--	<19	--	SV-4 resample
SV-5	07/27/16	6.0	3.8	<3.7	<4.3	<4.3	<21	<4.0	**710**	<5.3	<4.8	--	<9.6	--	
SV-6	07/27/16	6.0	12	<3.8	<4.4	<4.4	<21	<4.1	**430**	<5.4	<4.9	--	<9.9	--	
SV-7	07/27/16	6.0	18	27	<5.1	<5.1	<25	<4.7	15	<6.3	<5.7	--	<12	--	
SV-8	07/28/16	6.0	<4.9*	<11*	<10*	<15*	--	<14*	**640**	<8.7*	<9.4*	--	<22*	--	
Shroud (SV-8)	07/28/16	--	--	--	--	--	--	--	--	--	--	--	130,000	--	
SV-9	09/01/16	6.0	<5.2	<6.1	<7.1	<14.2	<34	<6.6	<11	<8.8	<8.0	--	62	--	
SV-10	07/28/16	6.0	<4.9*	<11*	<10*	<15*	--	<14*	**2,000**	170*	<9.4*	--	<22*	--	
SV-11	07/28/16	6.0	<4.9*	<11*	<10*	<15*	--	<14*	**2,600**	150*	<9.4*	--	<22*	--	
SV-12	07/28/16	6.0	<4.9*	<11*	<10*	110*	--	<14*	**930**	76*	<9.4*	--	<22*	--	
SV-13	07/28/16	6.0	<4.9*	<11*	380	1,470	--	<14*	100*	<8.7*	<9.4*	--	<22*	--	
SV-14	07/27/16	6.0	3.4	3.6	160	980	<20	<3.8	17	<5.1	<4.6	--	64	--	
SV-15	07/27/16	6.0	25	9.2	<4.6	8.6	<22	<4.3	85	6.1	<5.2	--	<10	--	
SV-16	07/27/16	6.0	35	13	<11	<11	<52	<10	<17	<13	<12	--	<24	--	
SV-17	07/28/16	6.0	34	13	28	191	--	<4.1	20	9.7	<5.0	--	150	--	
SV-18	07/28/16	6.0	**54**	59	**1,100**	3,190	--	<4.1	66	<5.5	<5.0	--	7.9*	--	
SV-19	07/28/16	6.0	15	40	**900**	2,490	--	<4.1	20	11	<5.0	--	8.7*	--	
SV-20	08/05/16	6.0	66*	160	**4,300**	18,400	17*	<130	<8.6*	<170	<160	--	<310	--	
SV-21	08/05/16	6.0	5.6*	<11	330	3,090	3.2*	<12	160	<16	<15	--	<29	--	

Table 3. Soil Gas Analytical Data - 1233 Bockman Road, San Lorenzo, California

Boring/ Sample ID	Date Sampled	Sample Depth (ft bgs)	Benzene	Toluene	Ethylbenzene	Xylenes	Naphthalene	1,2-DCA	PCE	TCE	Chloroform	Other VOCs	Isopropyl Alcohol (Leak Check Compound)	Oxygen	Notes
			ug/m^3											%	
Residential ESL - Soil/Subslab Gas:			**48**	**160,000**	**560**	**52,000**	**41**	**54**	**240**	**240**	**61**	**Varies**	**NA**	**NA**	
	09/01/16	6.0	<3.2	<3.8	<4.3	9.7	<21	<4.0	220	<5.4	<4.9	--	<9.8	--	resample SV-21
SV-22	08/05/16	6.0	21*	<82	340	18,100	10*	<88	24*	<120	<110	--	<210	--	
	09/01/16	6.0	<3.3	<3.9	<4.5	30.7	<21	<4.1	46	<5.5	8.0	--	<10	--	resample SV-22
SV-23	08/05/16	6.0	24*	150	**8,700**	34,000	19*	<130	9.0*	<170	<150	--	<310	--	
SV-24	08/05/16	6.0	42	45	**1,300**	5,500	13*	<35	<2.4*	<47	<43	--	<86	--	
Shroud (SV-24)	08/05/16	--	--	--	--	--	--	--	--	--	--	--	180,000	--	
SV-25	08/05/16	6.0	39	47	270	1,440	<1.2*	<11	1.2*	<14	<13	--	<26	--	
SV-26	08/05/16	6.0	23	28	180	920	2.6*	<4.4	7.6	<5.8	<5.3	--	<11	--	
SV-27	08/05/16	6.0	**73**	48	230	1,250	3.9*	<7.9	<0.53*	<11	<9.6	--	<19	--	
SV-28	08/23/16	6.0	<3.3	<3.9	<4.5	<9.0	<22	<4.2	200	9.6	<5.1	--	1,800	--	auto repair area, well destroyed 08/23/16
SV-29	08/23/16	6.0	7.5	<3.9	<4.5	17.1	<21	<4.1	7.0	<5.5	<5.0	--	83	--	auto repair area, well destroyed 08/23/16
SV-30	09/01/16	6.0	31	42	6.3	33.3	<21	<4.0	<6.7	<5.3	6.6	--	<9.7	--	auto repair area, well destroyed 09/01/16
SV-31	09/01/16	6.0	16	34	6.4	40	<19	<3.7	<6.2	<4.9	<4.5	--	<9.0	--	auto repair area, well destroyed 09/01/16
SV-32	09/01/16	6.0	6.4	3.9	<4.5	<9.0	<21	<4.1	14	<5.5	<5.0	--	<10	--	auto repair area, well destroyed 09/01/16
SV-33	09/01/16	6.0	20	27	<4.2	8.8	<20	<3.9	<6.6	<5.2	<4.7	--	<9.5	--	
SV-34	09/01/16	6.0	17	33	4.7	24.3	<22	<4.3	<7.3	<5.7	<5.2	--	<11	--	
SV-35	09/01/16	6.0	36	100	16	79	<20	<3.8	<6.4	<5.1	5.8	--	<9.3	--	
SV-36	09/01/16	6.0	33	72	11	53	<22	<4.2	<7.1	<5.6	<5.1	--	<10	--	

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Table 3. Soil Gas Analytical Data - 1233 Bockman Road, San Lorenzo, California

Boring/ Sample ID	Date Sampled	Sample Depth (ft bgs)	Benzene	Toluene	Ethylbenzene	Xylenes	Naphthalene	1,2-DCA	PCE	TCE	Chloroform	Other VOCs	Isopropyl Alcohol (Leak Check Compound)	Oxygen	Notes
			ug/m^3											%	
Residential ESL - Soil/Subslab Gas:			**48**	**160,000**	**560**	**52,000**	**41**	**54**	**240**	**240**	**61**	**Varies**	**NA**	**NA**	
SV-37	09/01/16	6.0	43	110	17	85	<21	<4.0	<6.6	<5.3	<4.8	--	<9.6	--	
SV-38	09/01/16	6.0	**48**	120	24	120	<20	<3.9	<6.5	<5.2	<4.7	--	<9.4	--	
SV-39	09/01/16	6.0	19	30	<4.1	12	<20	<3.8	<6.4	<5.1	<4.6	--	<9.3	--	
SV-40	09/01/16	6.0	29	51	<4.7	22.2	<23	<4.4	26	<5.9	17	--	<11	--	
SV-41	09/19/16	6.0	**49**	31	<6.1	7.6	<30	<5.7	<9.6	<7.6	<6.9	#	<14	2.9	auto repair area, well destroyed 10/3/16
SV-42	09/19/16	6.0	<20	<24	<27	<54	<130	<25	<43	<34	<31	#	<62	11	auto repair area, well destroyed 10/3/16
SV-43	09/19/16	6.5	7.2	23	6.9	32.2	<20	<3.9	<6.5	<5.2	<4.7	#	<9.5	10	auto repair area, well destroyed 10/3/16
SV-44	09/19/16	6.0	--	--	--	--	--	--	--	--	--	--	--	--	auto repair area, water in well, well destroyed 10/3/16
SV-45	09/19/16	6.0	8.7	33	9.4	43.3	<23	<4.4	20	<5.8	<5.2	#	<11	4.5	auto repair area, well destroyed 10/3/16

Abbreviations:

DCA = 1,2-dichloroethane

PCE = Tetrachloroethene

TCE = Trichloroethene

1,1,1-TCA = 1,1,1-Trichloroethane

VOCs by EPA Method TO-15.

See lab report for trace concentrations of other VOCs

ug/m^3 = Micrograms per cubic meter of air.

ft bgs = Feet below ground surface

ESL = Environmental Screening Level for Shallow Soil Gas for Evaluation of Potential Vapor Intrusion (Table E-2). Established by the SFBRWQCB, Interim Final - November 2007; Feb 2016 (Rev. 3)

ND = not detected above laboratory reporting limits.

-- = Not analyzed

< n = Chemical not present at a concentration in excess of laboratory detection limit shown.

Bold concentrations exceed residential ESL.

* = Represents an estimated concentration (j-flag value) below the reporting limit, or indicates that there was no detection above the method detection limit.

= other VOCs detected below screening level thresholds. See lab report for details.

contaminant detections highlighted in gray

APPENDIX A

Agency Correspondence

Alameda County
Department of
Environmental Health
1131 Harbor Bay Parkway, Alameda, CA 94502 - (510) 567-6700

Ronald Browder, Director of Environmental Health
Phone: 510.567.6777 Fax: 510.337.9135

October 14, 2016

Mr. Andrew Lavaux
PaulsCorp, LLC
100 Saint Paul Street
Denver, Colorado 80206

Subject: Status of Project Approval; Voluntary Remedial Action Program Case RO0003217 and GeoTracker Global ID T0000009292, Bockman Redevelopment, 1233 Bockman Road, San Lorenzo, CA 94580

Dear Mr. Lavaux:

Alameda County Department of Environmental Health (ACDEH) is providing regulatory oversight of the proposed redevelopment project located at 1233 Bockman Road, San Lorenzo, California. ACDEH's oversight is limited to evaluation of historic subsurface contamination at the site with respect to the proposed redevelopment of the entire site with 53 two-story residential units.

It is the understanding of ACDEH that the financial funding of the proposed project beyond the initial grading activities currently being performed at the site is on hold until ACDEH concurs with the proposed corrective action presented in the Draft Corrective Action Plan, dated October 14, 2016 prepared by Pangea Environmental Services, Inc. (Pangea). In order to allow commencement of funding for this project, you have requested that ACDEH provide a letter with information on ACDEH's approval status.

A review of historic data in the case files including the following documents can be reviewed online at the following website: http://www.acgov.org/aceh/index.htm.

- Site Assessment Report, Pangea, August 26, 2016
- Pilot Study Workplan, Pangea, October 7, 2016
- Draft Corrective Action Plan (Draft CAP), Pangea, October 14, 2016
- Fact Sheet on Corrective Action Plan, October 11, 2016

Based on the information presented in these documents, ACDEH is in general concurrence with the additional site investigations, pilot study, and corrective actions proposed to facilitate site development. ACDEH anticipates approving the project formally and taking steps necessary to close the site to allow occupancy of the residential structures providing the following items are submitted for review and approval by ACDEH:

- Interim Remediation Report documenting interim excavation activities performed during initial site grading in accordance with the Site Management Plan (SMP);
- Data Gap Field Investigation Work Plan to further delineate contamination
- Remedial Action Implementation Plan presenting the results of the Pilot Study, additional field investigation activities and revisions to the proposed corrective actions presented in the Draft CAP based on the results of the additional assessment;

- Draft Post Construction SMP presenting requirements for long-term site management of the proposed mitigation systems and residual soil contamination (to be finalized after construction is complete); and

- Record Report of Construction of Corrective Action and Mitigation Measures.

If you have any questions, please call me at (510) 567-6791.

Sincerely,

Kit Soo, California PG 8957
Senior Hazardous Materials Specialist

Cc: Bob Clark Riddell, Pangea Environmental Services, Inc.
(Sent via E-mail to: briddell@pangeaenv.com)

Dilan Roe, ACDEH
(Sent via E-mail to: dilan.roe@acgov.org)
GeoTracker, eFile

APPENDIX B

Standard Operating Procedures

STANDARD FIELD PROCEDURES FOR SOIL BORINGS

This document describes Pangea Environmental Services' standard field methods for drilling and sampling soil borings. These procedures are designed to comply with Federal, State and local regulatory guidelines. Specific field procedures are summarized below.

Objectives

Soil samples are collected to characterize subsurface lithology, assess whether the soils exhibit obvious hydrocarbon or other compound vapor odor or staining, estimate ground water depth and quality, and to submit samples for chemical analysis.

Soil Classification/Logging

All soil samples are classified according to the Unified Soil Classification System by a trained geologist, scientist or engineer working under the supervision of a California Registered Engineer, California Registered Geologist (RG) or a Certified Engineering Geologist (CEG). The following soil properties are noted for each soil sample:

- Principal and secondary grain size category (i.e. sand, silt, clay or gravel)
- Approximate percentage of each grain size category,
- Color,
- Approximate water or product saturation percentage,
- Observed odor and/or discoloration,
- Other significant observations (i.e. cementation, presence of marker horizons, mineralogy), and
- Estimated permeability.

Soil Boring and Sampling

Soil borings are typically drilled using hollow-stem augers or hydraulic-push technologies. At least one and one half ft of the soil column is collected for every five ft of drilled depth. Additional soil samples are collected near the water table and at lithologic changes. With hollow-stem drilling, samples are collected using lined split-barrel or equivalent samplers driven into undisturbed sediments beyond the bottom of the borehole. With hydraulic-push drilling, samples are typically collected using acetate liners. The vertical location of each soil sample is determined by measuring the distance from the middle of the soil sample tube to the end of the drive rod used to advance the split barrel sampler or the acetate tube. All sample depths use the ground surface immediately adjacent to the boring as a datum. The horizontal location of each boring is measured in the field from an onsite permanent reference using a measuring wheel or tape measure.

Drilling and sampling equipment is steam-cleaned prior to drilling and between borings to prevent cross-contamination. Sampling equipment is washed between samples with trisodium phosphate or an equivalent EPA-approved detergent.

Sample Storage, Handling and Transport

Sampling tubes or cut acetate liners chosen for analysis are trimmed of excess soil and capped with Teflon tape and plastic end caps. Soil samples are labeled and stored at or below 4°C on either crushed or dry ice, depending upon local regulations. Samples are transported under chain-of-custody to a State-certified analytic laboratory.

Field Screening

Soil samples collected during drilling will be analyzed in the field for ionizable organic compounds using a photo-ionization detector (PID) with a 10.2 eV lamp. The screening procedure will involve placing an undisturbed soil sample in a sealed container (either a zip-lock bag, glass jar, or a capped soil tube). The container will be set aside, preferably in the sun or warm location. After approximately fifteen minutes, the head space within the container will be tested for total organic vapor, measured in parts per million on a volume to volume basis (ppmv) by the PID. The PID instrument will be calibrated prior to boring using hexane or isobutylene. PID measurements are used along with the field observations, odors, stratigraphy and ground water depth to select soil samples for analysis.

Water Sampling

Water samples collected from borings are either collected from the open borehole, from within screened PVC inserted into the borehole, or from a driven Hydropunch-type sampler. Groundwater is typically extracted using a bailer, check valve and/or a peristaltic pump. The ground water samples are decanted into the appropriate containers supplied by the analytic laboratory. Samples are labeled, placed in protective foam sleeves, stored on crushed ice at or below 4°C, and transported under chain-of-custody to the laboratory.

Pangea often performs electrical conductivity (EC) logging and/or continuous coring to identify potential water-bearing zones. Hydropunch-type sampling is then performed to provide discrete-depth grab groundwater sampling within potential water-bearing zones for vertical contaminant delineation. Hydropunch-type sampling typically involves driving a cylindrical sheath of hardened steel with an expendable drive point to the desired depth within undisturbed soil. The sheath is retracted to expose a stainless steel or PVC screen that is sealed inside the sheath with Neoprene O-rings to prevent infiltration of formation fluids until the desired depth is attained. The groundwater is extracted using tubing inserted down the center of the rods into the screened sampler.

Duplicates and Blanks

Blind duplicate water samples are collected usually collected only for monitoring well sampling programs, at a rate of one blind sample for every 10 wells sampled. Laboratory-supplied trip blanks accompany samples collected for all sampling programs to check for cross-contamination caused by sample handling and transport. These trip blanks are analyzed if the internal laboratory QA/QC blanks contain the suspected field contaminants. An equipment blank may also be analyzed if non-dedicated sampling equipment is used.

Grouting

If the borings are not completed as wells, the borings are filled to the ground surface with cement grout poured or pumped through a tremie pipe.

Waste Handling and Disposal

Soil cuttings from drilling activities are usually stockpiled onsite on top of and covered by plastic sheeting. At least four individual soil samples are collected from the stockpiles for later compositing at the analytic laboratory. The composite sample is analyzed for the same constituents analyzed in the borehole samples. Soil cuttings are transported by licensed waste haulers and disposed in secure, licensed facilities based on the composite analytic results.

Ground water removed during sampling and/or rinsate generated during decontamination procedures are stored onsite in sealed 55 gallon drums. Each drum is labeled with the drum number, date of generation, suspected contents, generator identification and consultant contact. Disposal of the water is based on the analytic results for the well samples. The water is either pumped out using a vacuum truck for transport to a licensed waste treatment/disposal facility or the individual drums are picked up and transported to the waste facility where the drum contents are removed and appropriately disposed.