475 Lesser Street, LLC

RECEIVED
By Alameda County Environmental Health at 4:16 pm, Jul 08, 2014

July 7, 2014

Mr. Jerry Wickham
Alameda County Department of Environmental Health
1131 Harbor Bay Parkway, Suite 250
Alameda, CA 94502

SUBJECT: SOIL VAPOR ASSESSMENT WORK PLAN CERTIFICATION
County Case # RO 3135
Lesser Commercial Property
475 Lesser Street
Oakland, CA

Dear Mr. Wickham:

You will find enclosed one copy of the following document prepared by P&D Environmental, Inc. for the subject site.

- Soil Vapor Assessment Work Plan dated July 7, 2014 (document 0675.W2).

I declare, under penalty of perjury, that the information and/or recommendations contained in the above-mentioned work plan for the subject site is true and correct to the best of my knowledge.

Please don't hesitate to call me if you have any questions.

Sincerely,

Daniel Rabin
475 Lesser Street, LLC.

0675.L3

P&D ENVIRONMENTAL, INC.

55 Santa Clara Avenue, Suite 240
Oakland, CA 94610
(510) 658-6916

July 7, 2014
Work Plan 0675.W2

Mr. Jerry Wickham
Alameda County Department of Environmental Health
1131 Harbor Parkway, Suite 250
Alameda, CA 94502

SUBJECT: SOIL GAS VAPOR ASSESSMENT WORK PLAN
(VP1 THROUGH VP6)
County Case # RO 3135
Lesser Commercial Property
475 Lesser Street
Oakland, California

Dear Mr. Wickham:

P&D Environmental, Inc. (P&D) has prepared this work plan to evaluate the presence and extent of petroleum hydrocarbons in soil gas in the vicinity of soil gas well SG3 at the subject site. This work plan has been prepared in accordance with a letter received from the Alameda County Department of Environmental Health (ACDEH) dated June 26, 2014.

Attached with this Work Plan are a Site Location Map (Figure 1); a Site Vicnity Aerial Photograph showing the site, nearby sites, and historical sample collection locations (Figure 2); and a Site Plan showing existing soil gas well locations and proposed vapor pin locations for sub-slab soil gas sample collection (Figure 3). The proposed vapor pin locations include evaluation of sub-slab soil gas in the vicinity of the adjacent property building for the American Cylinder Head facility. All work will be performed under the direct supervision of a California professional geologist.

BACKGROUND

AllWest Environmental, Inc. (AllWest) prepared an Environmental Site Assessment report dated September 28, 2012 for the subject site and identified the site as a rectangular 20,000 square foot parcel developed with four 1-story slab-on-grade light industrial buildings, with the remaining portion of the property covered with a concrete-paved driveway and outdoor service area. The two buildings located closest to Lesser Street were constructed in 1967 and 1969 and were used for food product processing. The two buildings located farthest from the Lesser Street were constructed in 1981 and 1983 and were used for food storage. The land was identified in the report as being undeveloped land from 1887 until construction of a Federal Housing Authority apartment complex throughout the area in the early-1940's. The apartment complex was demolished in 1965. The property was

occupied from 1967 through 2011 by Tip Top Foods, Inc. for production of dairy-based and other food products.

The AllWest report identified 104 release or contaminated sites within one mile of the subject property, including at the adjoining property southeast across Lesser Street which was listed as a closed leaking UST (LUST) site. The report stated that a former gasoline tank and impacted soil were removed and the case closed in 1997. None of the other sites were identified as a concern for the subject site.

The AllWest report also identified as a Recognized Environmental Condition (REC) the presence at the subject site of a closed-in-place 8,000-gallon diesel fuel UST. The report stated that review of City of Oakland Fire Department files identified limited records for an 8,000-gallon diesel fuel UST installed in 1980 for Instant Whip/Tip Top Foods, Inc. and that the UST was emptied, cleaned, filled with a sand slurry/cement mixture and abandoned in place in April 1987. There was no information regarding the location or condition of the UST, and no records of a subsurface investigation or collection of soil or groundwater samples associated with the closing of the UST.

An unscaled Site Plan obtained from the AllWest 2012 report showing the buildings and area identified as the service area is attached as Figure 3. Based on the dates of construction of the buildings and the dates of UST installation and closure, the UST is suspected to not be located beneath the buildings and is suspected to be located either in the driveway or the service area. On February 6, 2014 P&D personnel met at the site with Golden Gate Tank Removal personnel who used a magnetometer to evaluate the driveway and service area in an effort to locate the UST. No magnetic signal, and no fuel dispenser pedestals, vent pipes, fuel ports, patched ground surface cover, or other evidence of a former UST were observed during the site visit.

On March 26, 2014 P&D personnel oversaw the drilling of boreholes B1 through B4 at the subject site to depths of 8.0 to 10.0 feet below the ground surface (bgs) and the collection of soil and groundwater grab samples from the boreholes using a Geoprobe drill rig. Groundwater was encountered in the boreholes at depths of 6.0 or 6.5 feet bgs. The subsurface materials consisted of gravelly sand and gravelly clayey sand fill to a depth of 2.0 to 4.5 feet bgs, beneath which variable amounts of clay, silty sand, and sand were encountered. No elevated Photoionization Detector (PID) values were measured and no odors, staining, or discoloration were observed in the soil from any of the boreholes. No odor or sheen were detected or observed for any of the groundwater grab samples.

Review of the soil sample results shows that benzene, toluene, ethylbenzene, and total xylenes (BTEX) were not detected in any of the soil samples, and that Total Petroleum Hydrocarbons as Diesel (TPH-D) was only detected in the samples collected from boreholes B1 and B4 at concentrations of 6.0 and 2.4 milligrams per kilogram (mg/kg), respectively. Review of the laboratory analytical report shows that the laboratory described the TPH-D results for soil samples B1-5.0 and B4-5.0 as consisting of both oil-range compounds and diesel-range compounds with no recognizable pattern.

Review of the groundwater sample results shows that BTEX compounds were not detected in any of the samples with the exception of the water sample from borehole B3, where benzene, toluene, ethylbenzene, and total xylenes were detected at concentrations of 2.6, 0.64, 4.3, and 20 micrograms per Liter (µg/L), respectively. TPH-D was detected in groundwater samples B1-W, B2-W, B3-W and B4-W at concentrations of 67, 450, 790, and 240 µg/L, respectively. Review of the laboratory analytical results shows that the laboratory described the TPH-D results for groundwater samples B1-W, B2-W, and B4-W as consisting of both oil-range compounds and diesel-range compounds with no recognizable pattern, and the TPH-D results for groundwater sample B3-W was described as consisting of oil-range compounds, diesel-range compounds with no recognizable pattern, and gasoline- range compounds. Documentation of the subsurface investigation is provided in P&D's Subsurface Investigation Report dated April 3, 2014 (document 0675.R1).

A Phase I Environmental Site Assessment for the subject site dated April 3, 2014 prepared by Basics Environmental, Inc. of Oakland, California (Basics) recommended that a copy of P&D's April 3, 2014 Subsurface Investigation Report be provided to a regulatory agency for review.

In a letter dated April 17, 2014 the Alameda County Department of Environmental Health (ACDEH) commented regarding P&D's April 3, 2014 Subsurface Investigation Report and also requested that copies of any other reports or documents relevant to the fuel release or other unauthorized releases not currently in the case files. On April 17, 2014 P&D personnel forwarded copies of the 2012 All West and the 2014 Basics Phase I reports to the ACDEH.

Following review of county assessor parcel maps, P&D personnel visited the City of Oakland offices on April 18, 2014 to identify the owner of the parcel located adjacent to Oakport Street in Oakland where a proposed borehole was located. Review of City files showed that the parcel is a Union Pacific Railroad (UPRR) right-of-way. Following telephone calls with the UPRR for site access, it was determined that the insurance requirements for site access were cost-prohibitive. On April 25, 2014 P&D personnel contacted representatives for the neighboring property at American Cylinder Head at 499 Lesser Street for permission for site access to drill a borehole for groundwater sample collection and access was denied. On April 29, 2014 P&D personnel contacted representatives for the neighboring property to the north of American Cylinder Head property at the Taz Marble property at 4445 Jensen Street (located on Oakport Street) and obtained permission for site access to drill a borehole for groundwater sample collection.

In a May 7, 2014 Subsurface Investigation Work Plan (document 0675.W1), P&D proposed to collect groundwater samples at four offsite locations to define the extent of petroleum hydrocarbons in groundwater, soil gas samples at three onsite locations in the suspected vicinity of the former UST, and soil samples from one onsite borehole to evaluate Low Threat Closure Policy (LTCP) direct contact and outdoor air exposure conditions at the site. The work plan was approved in a letter from the ACDEH dated May 8, 2014.

Soil and groundwater samples were collected and soil gas wells constructed at the site on May 15, 2014 and soil gas samples were collected from the soil gas wells on May 19, 2014. Because of the shallow depth to groundwater (approximately 3 feet), efforts to collect soil gas samples at locations SG1 and SG2 were not successful and a soil gas sample was only collected at location SG3. Based on the investigation sample results, P&D concluded that the extent of petroleum hydrocarbons in groundwater had been defined; that no unacceptable petroleum hydrocarbon concentrations were detected in soil; and that based on conditions encountered at the time of construction and sampling of soil gas well SG3 that well SG3 is located in the vicinity of the UST. Documentation of the investigation and sample results is provided in P&D's June 11, 2014 Subsurface Investigation Report (document 0675.R2). In a letter dated June 26, 2014 the ACDEH requested a Soil Vapor Assessment Work Plan.

SCOPE OF WORK

To evaluate the extent of petroleum hydrocarbons in sub-slab soil gas in the vicinity of soil gas well SG3, P&D proposes to perform the following activities.

- Prepare a health and safety plan and mark drilling locations for Underground Service Alert.
- Oversee installation and sampling of vapor pins at six locations designated as VP1 through VP6.
- Arrange for sample analysis.
- Prepare a subsurface investigation report.

Each of these is discussed below.

Prepare a Health and Safety Plan

A health and safety plan will be prepared for the scope of work identified in this work plan. In addition, the drilling locations will be marked with white paint and Underground Service Alert will be notified for underground utility location.

Vapor Pin Installation and Sample Collection

Flush-mounted vapor pins will be installed through the building floor slabs at locations VP1 through VP6 shown in Figure 3 in accordance with vapor pin manufacturer recommendations by IMX, Inc. of Oakland, California to evaluate the presence of petroleum soil vapor concentrations in the suspected vicinity of the former diesel UST (near soil gas well SG3). The soil gas samples will be collected in accordance with procedures recommended in the December 2013 San Francisco Bay Regional Water Quality Control Board User's Guide: Derivation and Application of Environmental Screening Levels, and the following Department of Toxic Substances Control (DTSC) documents:

- March 2013 – FAQ for the 2012 Advisory,
- April 2012 Advisory - Active Soil Gas Investigations,
- October 2011 – Vapor Intrusion Guidance,
- October 2011 – Vapor Intrusion Mitigation Advisory.

Each drilling location will be evaluated to verify that the concrete slab has been fully penetrated. No soil will be removed from the ground at any of the drilling locations, and for this reason no boring logs will be prepared. Following soil gas sample collection the vapor pins will be left in place and capped pending review of the results by the ACDEH.

Following construction, the soil gas wells will not be sampled for a minimum of 2 hours. Soil gas samples will not be collected if more than ½ inch of precipitation has occurred during the five days prior to the scheduled sampling date.

A soil gas sampling manifold with a 1-liter Summa canister as the sampling canister for each location (see Figure 4) will be assembled in a shroud consisting of a 35-gallon Rubbermaid bin that has been modified by cutting viewing ports into the sides of the shroud and covering the viewing ports with transparent polycarbonate sheets. A hole measuring approximately two inches square in the bottom of the shroud allows the shroud to cover the vapor pin while still allowing access to the vapor pin through the bottom of the bin. At the time that the sampling manifold is assembled, the vacuum for the sample canister will be verified with a vacuum gauge and recorded.

Prior to sampling the vapor pin, a 10 minute shut-in test of the sampling manifold will be performed by closing the valve located between the filter and the pressure gauge, opening the purge canister valve, and recording the manifold system vacuum (see Figure 4). No purge testing for purge volume determination will be performed because the samples will be collected using 1-liter Summa canisters, and the volume of the canisters is substantially larger than the purge volumes used for purge volume testing. Following successful verification of the manifold shut-in test, a default of three purge volumes will be extracted prior to sample collection. The purge volume will be calculated based on the void space below the vapor pin plus the volume of the tube that extends through the vapor pin and the volume of the tubing that connects the vapor pin to the sample media. The purge time will be calculated using a nominal flow rate provided by the flow controller of 150 cubic centimeters per minute. In addition, a dish containing 2-Propanol will be placed in the shroud to be used as a tracer gas for EPA Method TO-17 sample analysis.

Following completion of the purging of three volumes, a lid will be placed onto the shroud and a tracer gas 1,1-Difluoroethane (DFA) will be sprayed into the shroud interior for one second through a tube connected to a hole in the side of the shroud. Gloves in the lid of the shroud will be used to open the sample canister valve. After verifying that low flow conditions are not present associated with the soil gas sample, an air sample will be collected from the shroud atmosphere to quantify the shroud tracer gas concentration while the soil gas sample is being collected. The shroud atmosphere sample will be

collected into a Tedlar bag that is placed into a vacuum chamber with the Tedlar bag inlet connected to a new piece of Teflon or polyethylene tubing that is inserted into the shroud atmosphere through a hole in the side of the shroud.

Once the vacuum for the sample canister valve has decreased to 5 inches of mercury, the gloves in the lid of the bin will be used to close the sample canister valve. The pressure gage on the inlet side of the flow controller (see Figure 4) will be monitored during sample collection to ensure that the vacuum applied to the soil gas well does not exceed 100 inches of water.

One duplicate soil gas sample will be collected into a Summa canister from one of the vapor pins using a stainless steel sampling tee for the Summa canisters using methods described above. Following soil gas sample collection, a PID will be connected to the vapor pin to obtain a preliminary field value for the sample collection location. The soil gas Summa canisters will be stored in a box and promptly shipped to the laboratory for extraction and analysis.

In addition to collection of Summa canister samples as described above, sorbent tube samples will be collected at each location as follows. Each manifold will be equipped with a tee located downstream from the flow controller. At the time that the manifold is assembled (prior to the shut-in test), a sorbent tube will be connected inside the shroud to the tee that is located downstream from the flow controller with a valve located between the sorbent tube and the tee. The downstream side of the sorbent tube will be connected with a polyethylene tube to a flow meter and a vacuum pump. Following Summa canister sample collection, the Summa canister will be isolated from the manifold with a valve, and the valve between the manifold and the sorbent tube will be opened. A vacuum pump will be used to apply a vacuum to the sorbent tube and a flow meter will be used to measure the soil gas flow rate at a nominal flow rate of 150 cubic centimeters per minute for collection of a 200 cubic centimeter sample. In addition to collection of one sample at each vapor pin location, one replicate sample will be collected. Following collection of each sorbent tube soil gas sample the ends of the sorbent tube will be sealed. Before and after connection of the sorbent tube to the manifold the sorbent tube will be stored in a cooler with ice.

Chain of custody procedures will be observed for all sample handling. Measurements of vacuums, purging and equilibration time intervals, and PID readings will be recorded on Soil Gas Sampling Data Sheets.

All vapor pin construction equipment will be cleaned with an Alconox solution wash followed by a clean water rinse prior to use at each location. New or cleaned vapor pins with new silicone sleeves will be used at each sample collection location. Clean, unused vacuum gages and stainless steel sampling manifolds will be used at each sample collection location.

Sample Analysis

All of the Summa canister and sorbent tube soil gas samples will be analyzed at Air Toxics Limited of Folsom California. The samples collected in Summa canisters will be analyzed for TPH-G, MTBE, BTEX, and DFA (the tracer gas) using EPA Method TO-15. The samples collected on sorbent tubes will be analyzed for naphthalene and 2-Propanol (the tracer gas) using EPA Method TO-17. The analyses will be performed with detection limits that equal or are less than SFRWQCB December 2013 Table E-2 soil gas commercial/industrial Environmental Screening Levels (ESLs).

All of the Tedlar bags will be analyzed using EPA Method TO-15 for the tracer gases DFA for Summa canister samples collected for TO-15 analysis and for 2-Propanol for sorbent tube samples collected for TO-17 analysis.

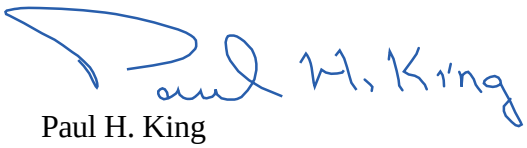
Report Preparation

Upon receipt of the laboratory analytical results, a report will be prepared. The report will document the results of the soil gas sample collection procedures and sample results. The report will include maps showing the sample collection locations, tables summarizing the sample results, recommendations based on the results, and the stamp of an appropriately registered professional. A copy of the report and associated laboratory and borehole information will be uploaded to the County ftp site and to GeoTracker.

Should you have any questions, please do not hesitate to contact us at (510) 658-6916.

Sincerely,

P&D Environmental, Inc.



Paul H. King
Professional Geologist #5901
Expires: 12/31/15

Attachments:

Figure 1 - Site Location Map
Figure 2 - Site Vicinity Aerial Photograph Showing Historical Sample Collection Locations
Figure 3 – Site Plan Showing Proposed Soil Gas Sample Collection Locations
Figure 4 - Typical Soil Gas Sample Collection Manifold

Cc: Ms. Kendra Marshall, 475 Lesser Street, LLC.

PHK/sjc
0675.W2

FIGURES

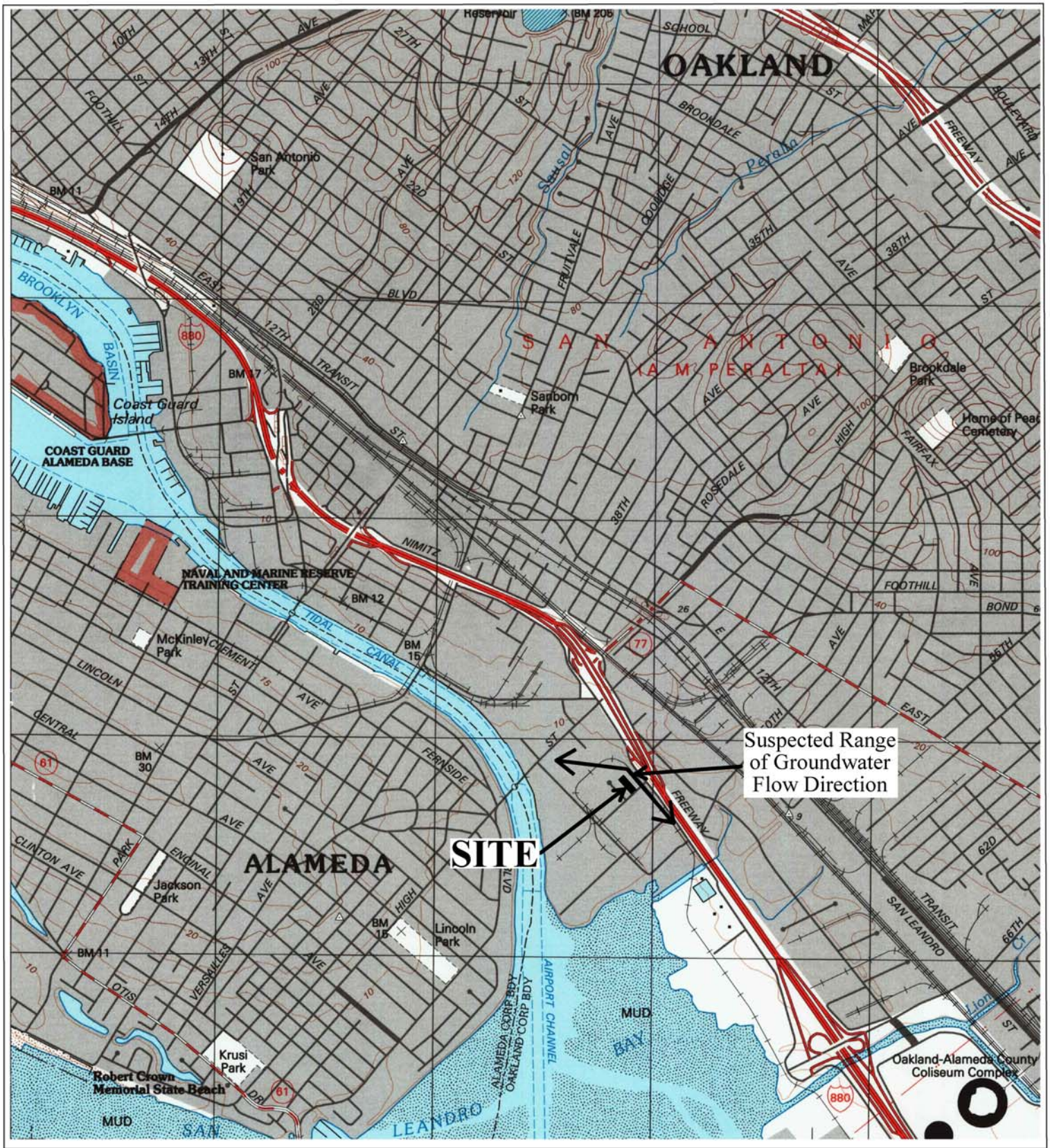


Figure 1
Site Location Map
475 Lesser Street
Oakland, California

Basemap from:
U.S. Geological Survey
Oakland East, California
7.5-Minute Quadrangle, Map edited 1996

P&D Environmental, Inc.
55 Santa Clara Ave., Suite 240
Oakland, CA 94610

0 1,000 2,000
Approximate Scale in Feet

N

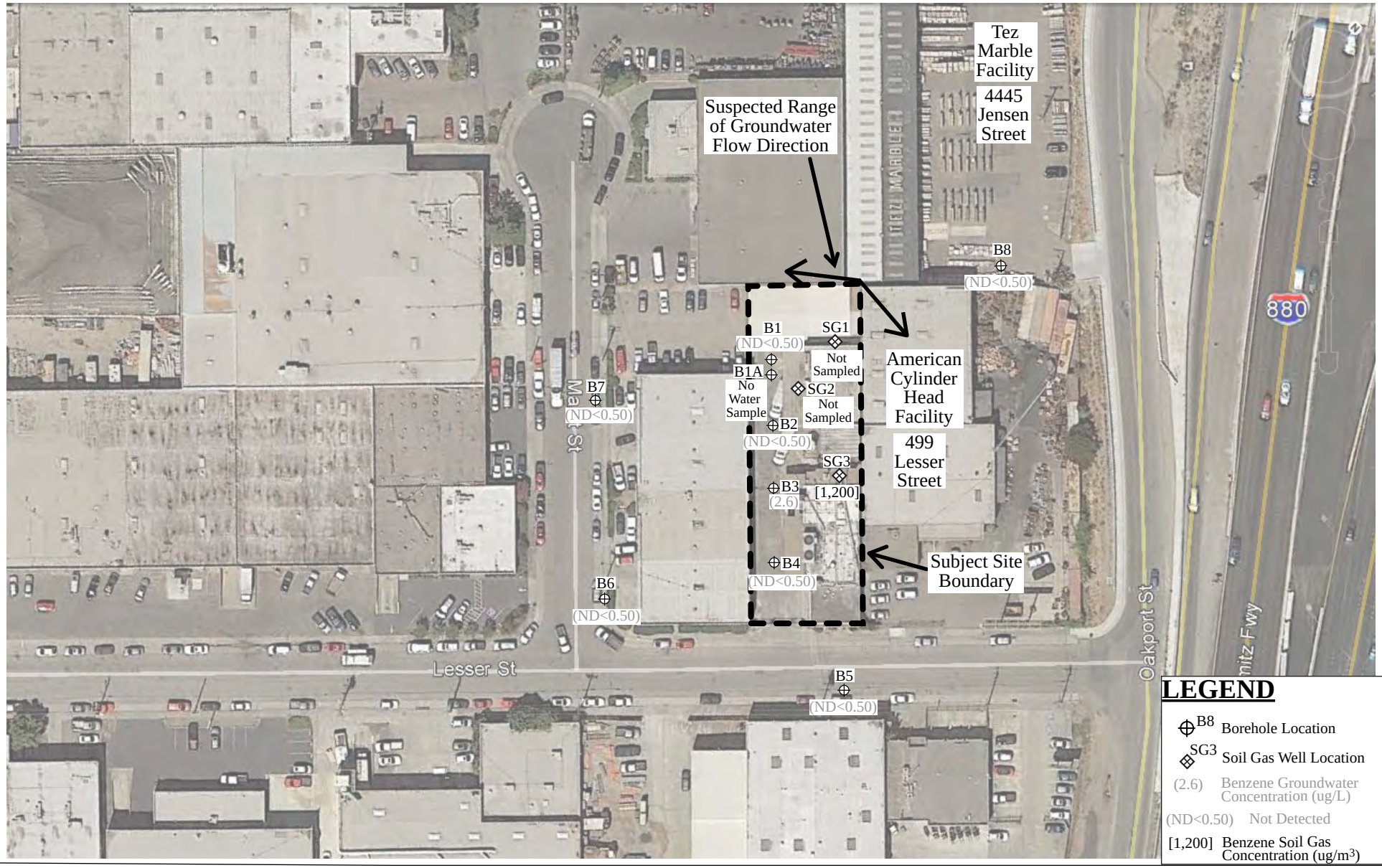


Figure 2
Site Vicinity Aerial Photograph Showing
Historical Sample Collection Locations
475 Lesser Street
Oakland, California

Base Map From:
Basics Environmental, Inc., dated April 3, 2014, and
Google Earth, 8/28/2012

P&D Environmental, Inc.
55 Santa Clara Ave., Suite 240
Oakland, CA 94610

0 50 100
Approximate Scale in Feet

N

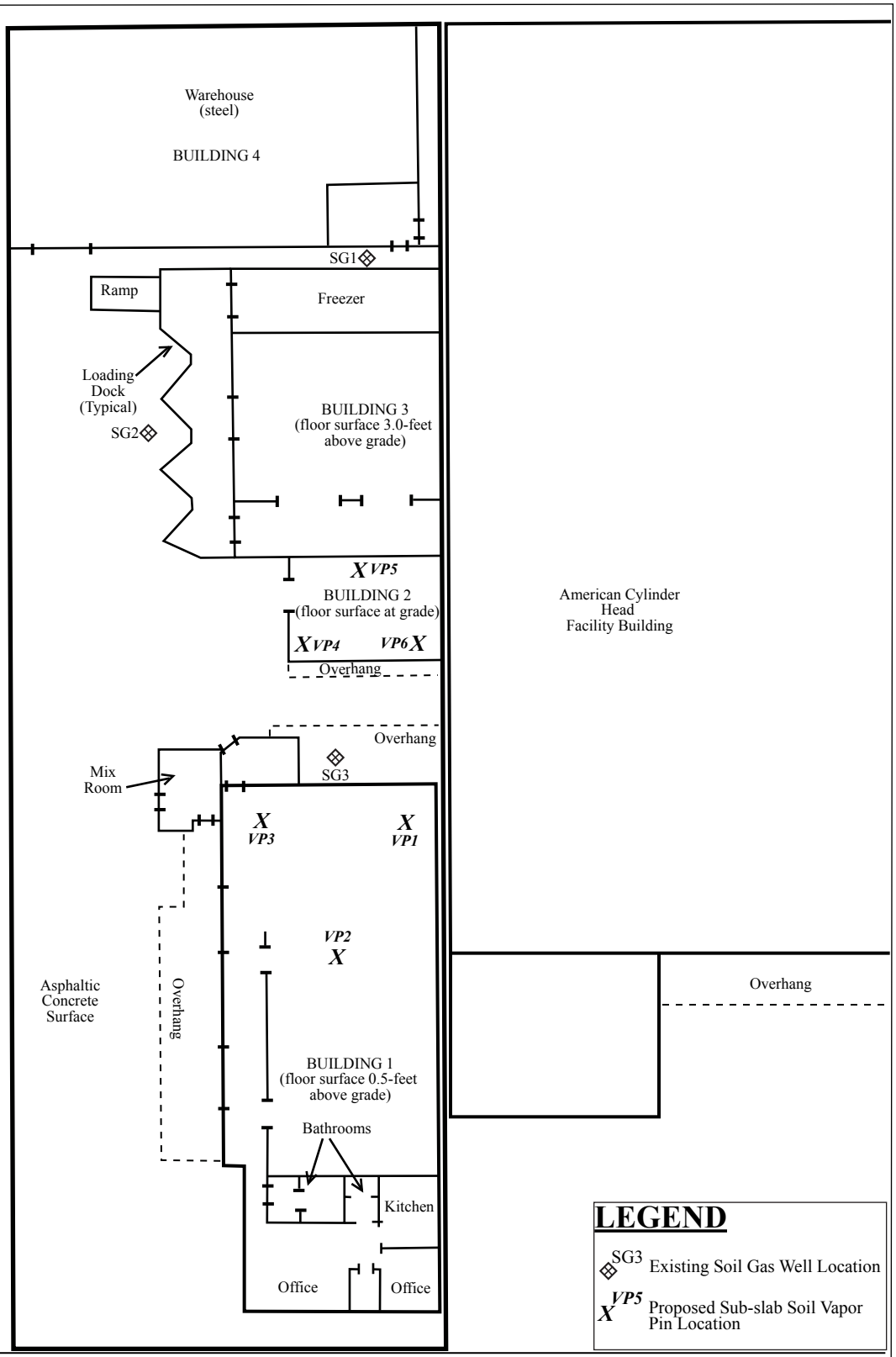


Figure 3
Site Plan Showing Proposed Soil Gas Sample Collection Locations
475 Lesser Street
Oakland, California

Base Map From: Basics Environmental, Inc., dated April 3, 2014, and Google Earth, 8/28/2012	P&D Environmental, Inc. 55 Santa Clara Ave., Suite 240 Oakland, CA 94610	0 15 30 Approximate Scale in Feet N

Figure 4
Typical Soil Gas Sample Collection Manifold
475 Lesser Street
Oakland, California