# 475 Lesser Street, LLC

May 7, 2014

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

SUBJECT: SUBSURFACE INVESTIGATION 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.

- Subsurface Investigation Work Plan dated May 7, 2014 (document 0675.W1).

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.L1

# P&D ENVIRONMENTAL, INC.

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


May 7, 2014
Work Plan 0675.W1

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

SUBJECT: SUBSURFACE INVESTIGATION WORK PLAN
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, groundwater, and soil gas at and near 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 April 17, 2014.

Attached with this Work Plan are a Site Location Map (Figure 1), a Site Vicinity Aerial Photograph showing Total Petroleum Hydrocarbons as Diesel (TPH-D) groundwater grab sample concentrations at the subject site along with proposed borehole and soil gas well locations (Figure 2).

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.

## SCOPE OF WORK

To evaluate the extent of petroleum hydrocarbons at and near the subject site, P&D proposes to perform the following activities.

- Obtain street obstruction and drilling permits.
- Prepare a health and safety plan and mark drilling locations for Underground Service Alert.

- Oversee continuous soil coring and groundwater grab sample collection at four offsite locations, and collect shallow soil samples at one onsite location.
- Oversee installation and sampling of 3 permanent soil gas wells in the vicinity of the suspected former onsite diesel UST.
- Arrange for sample analysis.
- Prepare a subsurface investigation report.

Each of these is discussed below.

Obtain Permits

Permission will be obtained for access to offsite properties, obstruction and excavation permits will be obtained for work in the public right-of-way from the City of Oakland, and permits will be obtained from the Alameda County Public Works Agency for borehole drilling. All necessary permit-related notifications will be made prior to drilling.

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.

Soil Coring and Sample Collection

Groundwater grab samples will be collected from first-encountered groundwater at locations B5 through B8 (see Figure 2) to evaluate the extent of petroleum in first-encountered groundwater. In addition, soil samples will be collected from one onsite borehole (B1A, see Figure 2) at a depth of less than 5 feet bgs and also between the depths of 5 and 6 feet bgs adjacent to the borehole where the highest TPH-D concentration was encountered in soil for purposes of evaluating direct contract and outdoor air exposure.

All of the boreholes will be continuously cored by Vironex, Inc. of Concord, California (Vironex) using Geoprobe direct-push technology to drive a 2.5-inch outside diameter Geoprobe macrocore lined with transparent PVC sleeves. The soil from the borings will be logged in the field in accordance with standard geologic field techniques and the Unified Soil Classification System. All soil from the boreholes will be evaluated with a PID equipped with a 10.6 eV bulb and calibrated using a 100 ppm isobutylene standard.

The soil samples will be retained from boring B1A by selecting the interval to be sampled and cutting a 6-inch section of the liner corresponding to the sample collection depth. In addition, soil samples will be collected where evidence of contamination is encountered based on odors, PID values, staining, and discoloration. The ends of the tubes will be sequentially capped with aluminum foil and plastic endcaps. The samples will then be labeled and stored in a cooler with ice pending delivery to a State-accredited hazardous

waste testing laboratory. Chain of custody procedures will be observed for all sample handling.

Once groundwater is encountered in proposed boreholes B5 through B8, a 1-inch diameter temporary slotted PVC pipe will be placed in each borehole and a groundwater sample will be collected at each location using polyethylene tubing and a peristaltic pump. The groundwater samples will be transferred directly from the discharge tubing to 40-millileter VOA bottles, all of which will be supplied by the laboratory and contain hydrochloric acid preservative. The sample bottles will be labeled and placed in a cooler with ice pending delivery to the laboratory. Chain of custody procedures will be observed for all sample handling.

All drilling and sampling equipment will be cleaned by steam cleaning with an Alconox solution followed by a clean water rinse prior to use in each borehole. Following completion of logging and sample collection activities, the boreholes will be filled with neat cement grout. All soil and water generated during subsurface investigation will be stored in 55-gallon drums at the site and labeled pending characterization and proper disposal.

Soil Gas Sample Collection

Permanent soil gas wells will be constructed at locations SG1 through SG3 (see Figure 2) to evaluate the presence of petroleum soil vapor concentrations and oxygen in the suspected vicinity of the former diesel UST. 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.

Permanent soil gas wells SG1 through SG3 (see Figure 2) will be constructed by Vironex by driving a hollow 1.5-inch outside diameter drilling rod with an expendable tip to a depth of 5 feet bgs at each soil gas well location. The expendable tip will be dislodged and a #2/16 Lonestar sack sand will be poured into the borehole to fill the lowermost 6 inches of the borehole with sand as the drilling rod is withdrawn from the ground. A 0.250-inch outside diameter (0.187-inch inside diameter) Teflon tube with a HDPE filter at the bottom of the tube will be inserted to the top of the 6-inch thick sand layer (a depth of 6 inches above the bottom of the borehole), and additional #2/16 Lonestar sack sand will be poured into the borehole to one foot above the bottom of the borehole (the lowermost one foot of the borehole will be filled with sand with the filter at the end of the tube in the middle of the sand interval).

Granular bentonite (measuring approximately 1 to 2 millimeters in diameter) will be placed in the annular space above the sand to 6 inches above the sand, and the remaining borehole will be filled with hydrated bentonite slurry. The tubing length will be 6.5 feet for the boreholes. The top of each soil gas well will be enclosed in a well box with a lid that is secured with bolts.

Following construction, the soil gas wells will not be sampled for a minimum of 48 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 soil gas well while still allowing access to the temporary well 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 soil gas, 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 Summa canisters. 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 surrounding the HDPE filter and the volume of the tube. 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 soil gas wells 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 Teflon tubing 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 soil gas well 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 soil gas well construction equipment will be cleaned with an Alconox solution wash followed by a clean water rinse prior to use at each location. New Teflon tubing and filters 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. All soil and water generated during soil gas well construction will be stored in 55-gallon drums at the site and labeled pending characterization and proper disposal.

Sample Analysis

All of the groundwater samples will be analyzed at McCampbell Analytical, Inc. (McCampbell) in Pittsburg, California for Total Petroleum Hydrocarbons as Gasoline (TPH-G), using EPA Method 5030B in conjunction with EPA Method 8021B and modified EPA Method 8015B, for TPH-D and Total Petroleum Hydrocarbons as Motor Oil (TPH-MO) by EPA Method 3510 in conjunction with EPA Method 8015B: and for Volatile Organic Compounds (VOCs), including MTBE and BTEX, by EPA Method 8260B.

All of the soil samples will be analyzed for TPH-G using EPA Method 5030B in conjunction with EPA Method 8021B and/or modified EPA Method 8015B, for TPH-D and TPH-MO using EPA Method 3550B in conjunction with EPA Method 8015B, for MTBE and BTEX using EPA Method 8260B, and for Semi-Volatile Organic Compounds (SVOCs) using EPA Method 3550B in conjunction with EPA Method 8270C.

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, and for oxygen, methane and carbon dioxide using method ASTM D-1946. 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 8260B for the tracer gases DFA for Summa canister samples collected for TO-15 analysis and 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 groundwater, soil and 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.

May 7, 2014
Work Plan 0675.W1

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 Proposed Sample Collection Locations
Figure 3 – AllWest Site Plan
Figure 4 - Typical Soil Gas Sample Collection Manifold

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

PHK/sjc
0675.W1

# FIGURES

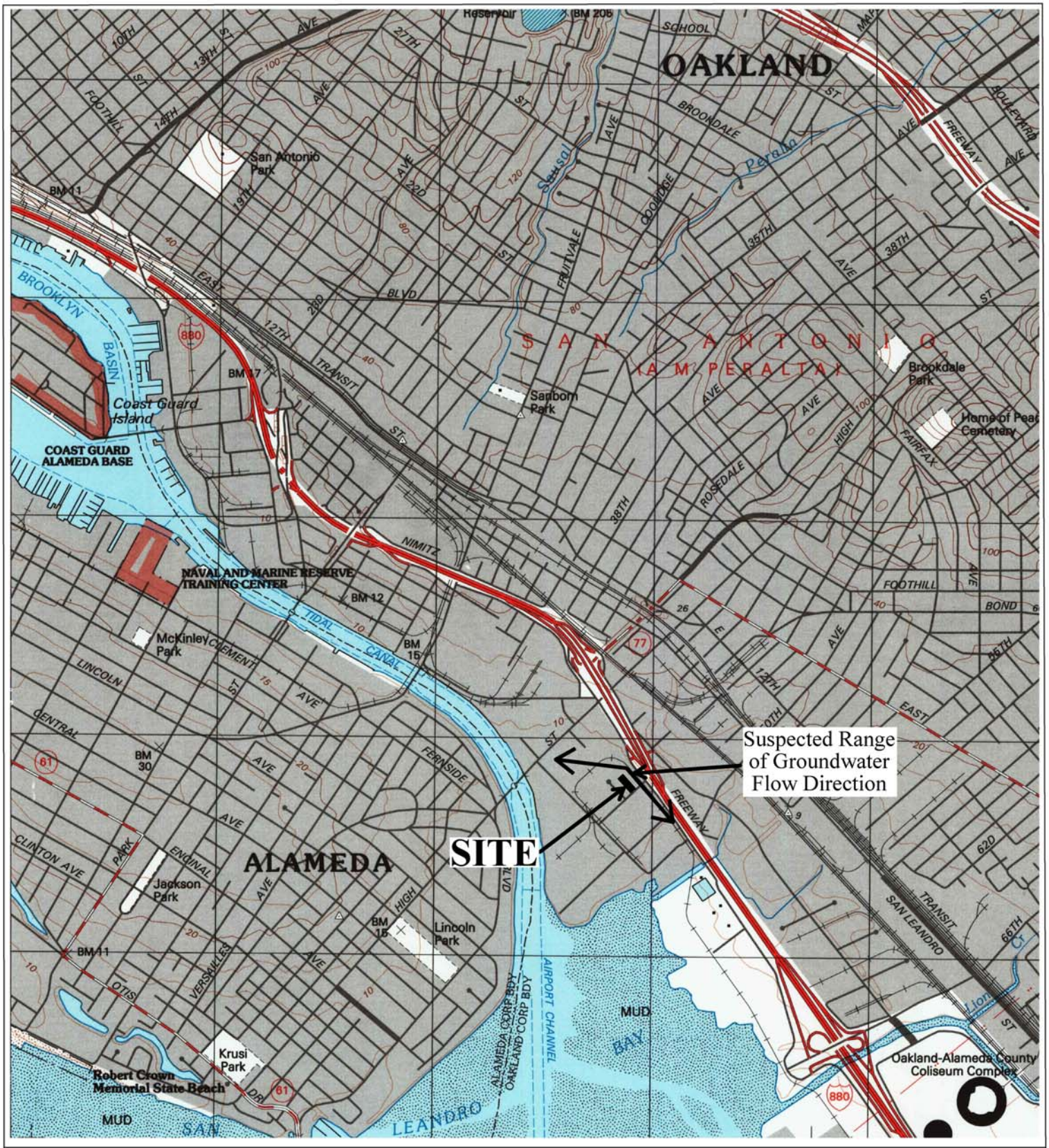


Figure 1
Site Location Map
475 Lesser Street
Oakland, California

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

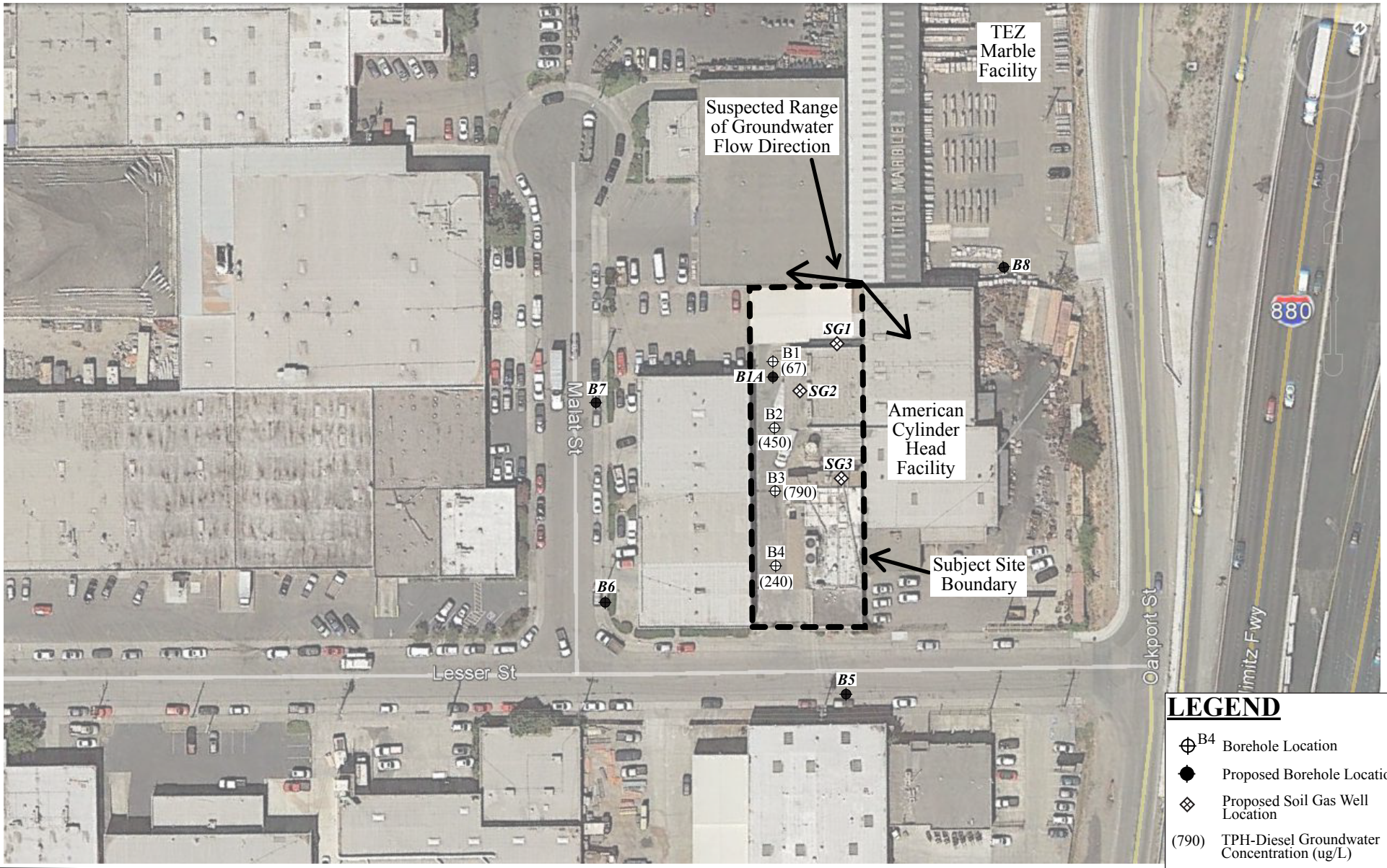


Figure 2
Site Vicinity Aerial Photograph Showing
Proposed Sample Collection Locations
475 Lesser Street
Oakland, California

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

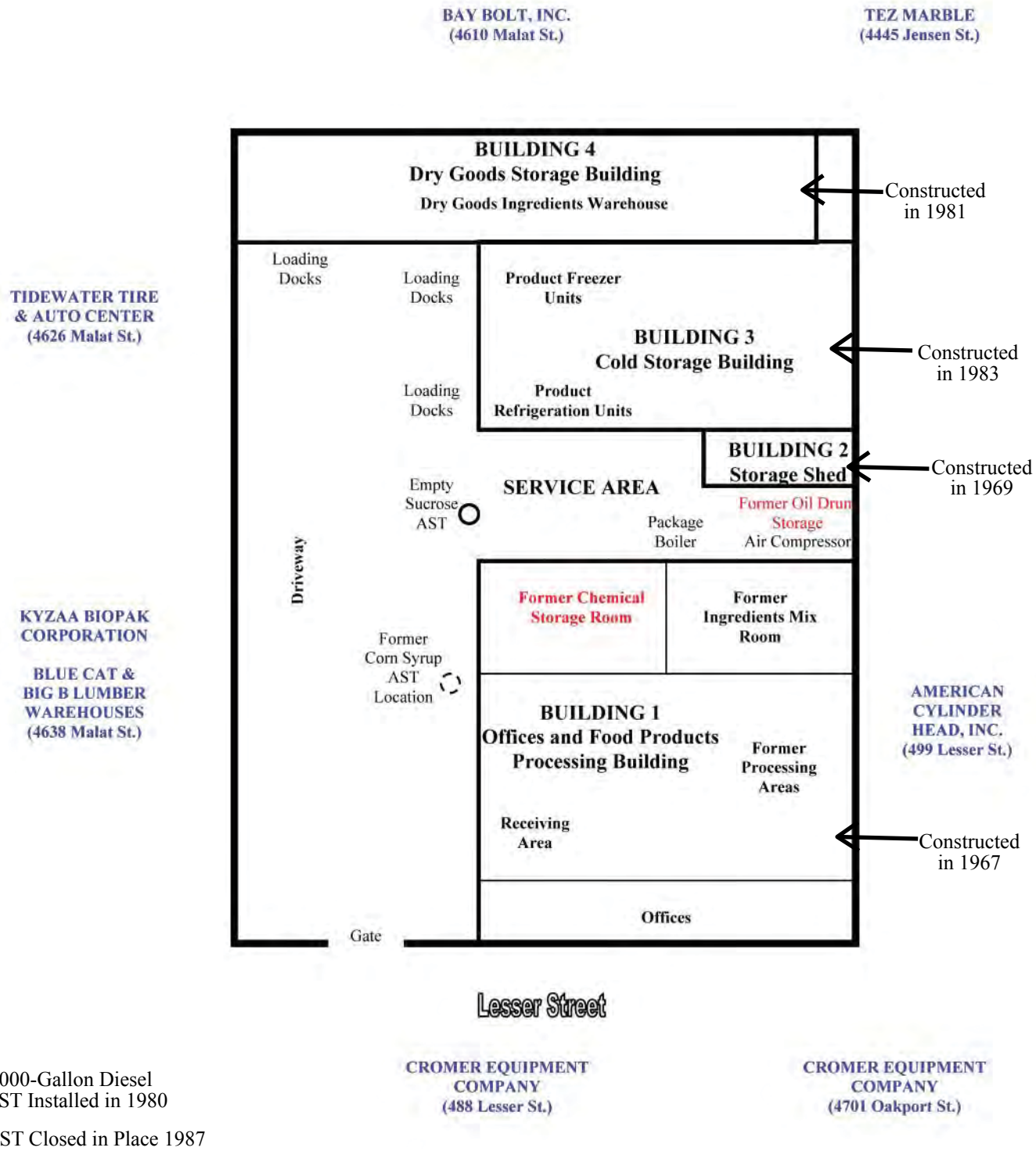


Figure 3
AllWest Site Plan
475 Lesser Street
Oakland, California

Basemap from:
AllWest Environmental, Inc.'s
Environmental Site Assessment dated
September 28, 2012

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

Not To Scale

N


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