21 September 2012

Mr. Jerry Wickham, P.G.
Alameda County Health Care Services Agency
Environmental Health Services
1131 Harbor Bay Parkway, Suite 250
Alameda, CA 94502-6577

Re: Former Francis Plating Site, 751-785 7th Street, Oakland
Revised Work Plan for Soil Gas and Sub-Slab Vapor Investigations

Dear Mr. Wickham,

Enclosed please find the Revised Work Plan for Soil Gas and Sub-Slab Vapor Investigations at the Former Francis Plating site. The completion of project activities is very important to Brush Street, LLC. The Brush Street Group at this time has limited resources to implement the contemplated work, and plans to complete the indoor air portion of the described scope of services first. As this portion examines air quality in an occupied space, we believe that of the two areas for investigation the indoor space is more important. The work by consultants on the adjoining parcel show indoor air there to be of acceptable quality. We will prepare a short data transmittal upon completion of the sub-slab vapor investigation. This data will be incorporated into a larger report after completion of the proposed soil gas sampling.

Perjury Statement:

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

Thank you for your continued assistance.

Most sincerely,

Tom McCoy
Brush Street Group, LLC

BASELINE

ENVIRONMENTAL CONSULTING

21 September 2012
Y0323-05.01944

Mr. Jerry Wickham, CHG
Alameda County Health Care Services Agency
Environmental Health Services
1131 Harbor Bay Parkway, Suite 250
Alameda, California 94502-6577

Subject: Revised Work Plan for Soil Gas and Sub-Slab Vapor Investigations
751-785 7th Street, Oakland, California, Case No. RO0002586

Dear Mr. Wickham:

On behalf of the Brush Street Group, BASELINE Environmental Consulting is submitting the attached Revised Work Plan for Soil Gas and Sub-Slab Vapor Investigations at the Former Francis Plating facility - 751-785 7th Street, Oakland.

We look forward to working with the Alameda County Health Care Services Agency on this project. Should you have any questions or need additional information, please do not hesitate to contact us at your convenience.

Sincerely,

James McCarty, P.E.
Project Engineer

JGM:YN:km

Enclosure

cc: Tom McCoy, Brush Street Group LLC
Markus Niebanck, AMICUS

REVISED
WORK PLAN
FOR SOIL GAS AND
SUB-SLAB VAPOR INVESTIGATIONS

SEPTEMBER 2012

751 - 785 Seventh Street
Oakland, California

Alameda County Case No. RO0002586

For:

Brush Street Group, LLC
Oakland, California

Y0323-05.01944

5900 Hollis Street, Suite D • Emeryville, CA 94608 • (510) 420-8686

REVISED
WORK PLAN FOR SOIL GAS AND SUB-SLAB VAPOR INVESTIGATIONS

September 2012

751 - 785 Seventh Street
Oakland, California

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PROFESSIONAL CERTIFICATION

This report was prepared by me or by other professionals directly under my supervision.

James McCarty
P. E. No. C 62618

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REVISED

WORK PLAN SOIL GAS AND SUB-SLAB VAPOR INVESTIGATIONS

751 - 785 Seventh Street
Oakland, California

1.0 INTRODUCTION

On behalf of the Brush Street Group, LLC, BASELINE Environmental Consulting ("BASELINE") has prepared this Revised Work Plan for the former Francis Plating facility at 751 - 785 Seventh Street, Oakland, California ("site") (Figure 1). The site is bounded by Seventh Street to the north, Brush Street to the east, a commercial building and lot to the south, and a Shell Service Station to the west (Figure 2).

The site is currently under the regulatory oversight of the Alameda County Environmental Health Services ("ACEH") (Alameda County SLIC Case No. RO0002586). In a letter to the Brush Street Group, LLC, dated 1 August 2012, ACEH provided technical comments on BASELINE's report "*Conceptual Site Model and Work Plan for Sub-Slab Vapor Investigation Soil Gas Survey, 751-785 Seventh Street, Oakland, California,*" dated June 2012 (BASELINE, 2012), and requested the submittal of a Revised Work Plan to address the following technical comments:

- Present a diagram of the existing building showing the locations of interior walls with a description of the activities that take place within the different areas of the building;

- Conduct additional soil vapor sampling in the area of the Frog Pond and the former drum storage area south of the Frog Pond area;

- Conduct additional soil vapor sampling in Potential Source Area 6; and

- Revise Figure 9 regarding concentrations depicted for sampling location SG-04, if the figure were used in other reports.

This report provides the information requested by the ACEH.

2.0 BACKGROUND

In November 2011, BASELINE performed a soil gas survey at the site (BASELINE, 2012). Soil gas samples were collected from six locations as shown on Figure 3 (SG-01 through SG-06). Deep and shallow soil gas samples were collected at each location. The soil gas sample probe was initially advanced to 5 feet below ground surface ("bgs") for the shallow samples and 10 feet bgs for the deeper samples. Because of the low permeability of the soil, the probes had to be retracted as much as 2 feet to obtain enough soil gas for analysis. Trichloroethene ("TCE") was reported in shallow soil gas samples at concentrations exceeding the San Francisco Bay Regional

Water Quality Control Board's ("Regional Water Board") residential land use Environmental Screening Levels ("ESLs") at locations SG-01, SG-03, SG-04, and SG-05 (Table 1). TCE was reported at concentrations exceeding commercial land use screening levels in shallow soil gas samples collected near the southeastern corner of the existing building (SG-01) and the former Frog Pond (SG-04).

Because elevated concentrations of TCE were reported in the soil gas sample collected at SG-01, BASELINE collected vapor samples in February 2012 from beneath the concrete slab of the existing, on-site building (BASELINE, 2012). The vapor samples were collected from a vapor probe (Sub-Slab1 on Figure 3) installed by BASELINE in the shallow slab-on-grade foundation and analyzed for volatile organic compounds ("VOCs") (Table 2). The concentrations of VOCs in indoor air were estimated by applying the Department of Toxic Substances Control's ("DTSC") recommended attenuation factor to analytical results from vapor samples collected beneath shallow slab-on-grade foundations. This assumes that the VOC concentration in the indoor air would be $1/20^{th}$ the concentration measured beneath the foundation slab. The estimated indoor air concentrations of VOCs were below the Regional Water Board's ambient and indoor air ESLs for residential and commercial/industrial land uses (Table 2).

Based on the results of the sub-slab sampling and chemical analysis, the vapors beneath the slab do not appear to represent an unacceptable health risk to the current users of the building. However, because the leak detection agent used during the sampling was detected in both samples collected at the site, the reported concentrations may be biased low.

On 19 May 2009, P&D Environmental ("P&D") performed a subsurface investigation for the property at 601 Brush Street, located adjacent to and southwest of the site, (P&D Environmental, 2009). In addition to the collection of samples on the 601 Brush Street property, P&D installed two soil gas probes to a depth of 5 feet bgs (P&D-SG5 and P&D-SG6) on the southeastern portion of the 751-785 Seventh Street property (Figure 3).

The soil gas samples collected from P&D-SG5 and P&D-SG6 at 5 feet bgs on the 751-785 Seventh Street property were reported to contain TCE at 3,400 and 5,900 micrograms per cubic meter ($\mu g/m^3$), respectively, which exceed the residential ESLs for soil gas. The soil gas sample from P&D-SG5 was below the commercial ESL. The soil gas sample from P&D-SG6 exceeded the commercial ESL.

In a letter dated December 23, 2009 the Regional Water Board found that the risk of TCE vapor intrusion at the neighboring 601 Brush Street site, as reported by P&D, was within acceptable levels and judged that, due to the commercial use of the property, no further action was required. The Regional Water Board letter did not indicate whether the TCE measured in the soil gas was a result of TCE-containing soil gas migrating from an off-site location. Land uses at the 601 Brush Street site have included a shipping and receiving area, stockroom, parts room, office, sales room, manufacturing area, stripping room, degreasing room, service area, and toilets; some of these uses are potential sources of TCE.

A Conceptual Site Model was presented in the BASELINE report, previously submitted to ACEH (BASELINE, 2012) and will not be reiterated here. Discussion of historic site uses and hydrogeology in this report relies on the previously prepared report by BASELINE.

3.0 REVISED SOIL GAS INVESTIGATION WORK PLAN

3.1 Objective

The objective of the proposed soil gas sampling is to evaluate the soil gas concentrations along the subject site's southern property line to determine the potential health risk for users of the existing commercial building located downgradient of the site. The nearest building is located at 601 Brush Street (Figure 2).

3.2 Proposed Sampling Activities

Six soil gas samples will be collected from the three locations as shown on Figure 3. BASELINE will contract with a licensed drilling company to advance shallow soil borings using a direct push technique and install permanent soil gas probes. Permanent soil gas probes will allow for evaluation of changes in soil gas concentrations over time. To evaluate soil vapor concentration attenuation at each location, soil gas probes will be installed within the Merritt Sand at approximately 6 to 7 feet bgs and within the fill material at 3.5 feet bgs as shown on the proposed soil gas probe construction diagram (Figure 4).

3.3 Soil Gas Probe Installation

Because of the low permeability of the Merritt Sand, BASELINE proposes to install the lower soil gas probe using the methodology for soil gas sampling in low permeability soil as recommended by the DTSC (DTSC, 2012). This approach requires the installation of a vapor probe within a sand pack larger than traditional size. A large sand pack assures the availability of subsurface air for sampling.

A 4.5-inch diameter geoprobe sampler will be driven to a depth of approximately 4.0 feet below the top of the Merritt Sand; thus, the probe would be terminated at about 9 feet bgs. The soil cores will be retrieved to determine the depth to the fill-Merritt Sand interface. A 3-foot sand pack will be constructed from the bottom of the boring. The lower soil gas sampling probe will be placed at the middle of the sand pack (~6.0 to 7.0 feet bgs). A minimum of 6 inches of dry granular bentonite will be placed over the sand, followed by hydrated bentonite to approximately 4.0 feet bgs. The hydrated bentonite will be placed so that it straddles the fill-Merritt Sand interface. A second soil gas probe will be installed within a 1.0-foot sand pack at approximately 3.5 feet bgs. A minimum of 6 inches of dry granular bentonite will be placed over the sand and the remainder of the borehole backfilled with neat cement with 5 percent bentonite. The soil gas samples will not be collected for at least two weeks following installation of the soil gas probes.

3.4 Soil Gas Sample Collection

Soil gas samples will be collected from each sample location in 1.4-liter Summa canisters supplied by Curtis & Tompkins Laboratories ("C&T"). The canisters will be equipped with flow regulators limiting the flow rate to less than 200 milliliters per minute ("ml/min").

Leak detection during sampling will be conducted using a helium tracer shroud provided by C&T. The helium tracer shroud will be used to test the sampling train for leaks during purging and as a quality control measure during sampling. An air concentration of 20 percent helium will be maintained around the sampling train and above the sample probe by positioning a shroud and sampling train with canister and helium detector over the soil gas probe. The shroud

will be constructed of a food-grade polycarbonate box that contains the sampling train integrated with a 3-way stainless steel valve for directing the airflow for purging and sampling.

Helium will be released into the shroud until the concentration of helium inside the shroud is 20 percent. The helium gas concentration inside the shroud will be monitored by a diffusion cell helium detector. The assembly will also include a flow-through helium detector in the purge line to monitor the helium content during purging. Both helium detectors will be capable of measuring helium in air to an accuracy and precision of 0.1 percent over the range of helium concentrations in air (between 0.5 and 95 percent). Additional helium will be fed into the shroud to maintain the target helium concentration at 20 percent, as needed. Field personnel will record the helium concentration in the shroud at 2-minute intervals during each the sampling event.

The deeper soil gas probe will be sampled first. The soil gas probe and sampling train assembly will be field-screened for leaks by drawing air from the soil gas probe at less than 200 ml/min using a sampling pump. The purge air will be monitored for helium using the helium detector mounted on the purge line. If helium is detected in the purge air, indicating a leak, the field personnel will take corrective action to correct the problem prior to collecting a sample for laboratory analysis. Purging for the deep soil gas sample will be complete when three volumes of air of the sampling train and tubing have been removed and no concentration of helium detected. Purging for the shallow soil gas sample will be complete when three volumes of air of the sampling train, dry bentonite, and sand pack have been removed and no concentration of helium detected.

Soil gas samples will be collected from each probe in the 1.4-liter Summa canisters after the purging and leak detection activities have been successfully completed. The flow regulators will maintain the airflow rate as less than 200 ml/min. The Summa canisters will initially have a vacuum of approximately 30 inches of mercury ("in-Hg") and sampling will terminate when the vacuum on the Summa canisters has been expended.

Each canister will be labeled with the sample location, the sampler's initials, the initial and final vacuum readings, and the time that sampling started and ended.

3.5 Soil Gas Sample Analyses

Soil gas samples will be submitted to C&T under Chain-of-Custody protocol for VOC analysis in accordance with US EPA Method TO-15 and helium in accordance with ASTM D1946. The analyte list and C&T's reporting limits are presented in Appendix A. The reporting limits for the constituents of concern; TCE, cis-1,2-dichloroethene, trans-1,2-dichloroethene, vinyl chloride, 1,1,1- trichloroethane, and 1,1-dichloroethene, along with the ESL values are presented on Table 3. To evaluate whether the reporting limits would meet the data evaluation objectives, the reporting limits were compared to soil gas screening values for commercial land use (Table 3). All reporting limits would be expected to meet the data objectives for health risk evaluation.

3.6 Quality Control

The representativeness of the soil gas sample will be confirmed by analyzing the sample for helium. The laboratory will quantify all detections of helium at a reporting limit equal to 1,000 microliters per liter or 0.1 percent.

If helium is detected in samples, the proportion of the sample attributable to ambient air leakage can be determined by the ratio of helium concentration determined in the sample to the average helium concentration recorded in the shroud during the sampling event. DTSC guidance states that an ambient air leak up to 5 percent is acceptable if quantitative tracer testing is performed by shrouding (DTSC, 2012). If helium is detected in the sample at 5 percent or lower, the target compound concentrations will be corrected using a Dilution Factor ("DF"). The DF will be calculated using the following equation:

DF = [Concentration of Helium in Sample (%)] ÷ [Concentration of Helium in the Shroud (%)]

The corrected target compound concentration will be determined by applying the DF using the following equation:

Corrected Concentration (µg/m3) = Reported Concentration + [Reported Concentration x DF]

If helium is detected at a concentration over 5 percent, the samples will be corrected but reported as biased low.

4.0 REVISED SUB-SLAB VAPOR INVESTIGATION WORK PLAN

4.1 Objective

The objective of the proposed sub-slab vapor sampling is to evaluate the potential health risk of VOC in the subsurface to the current users of the building.

4.2 Proposed Sampling Activities

The DTSC Vapor Intrusion Guidance recommends that at least two sub-slab probes be installed for evaluating residential structures; no specific recommendations are provided for the number of probes to be used for evaluating commercial buildings (DTSC, 2011).

As discussed above, BASELINE previously collected a sub-slab vapor sample and duplicate at the location shown on Figure 5 (samples Sub-Slab1a and Sub-Slab1b from location Sub-Slab1). These vapor samples were reported to contain TCE, 1,1,1-trichloroethane, tetrachloroethene, and xylenes at levels below human health concerns (Table 2). However, the leak detection agent used during the sample collection was reported in the samples indicating the results are biased low. This revised work plan proposes the installation of two additional permanent sub-slab vapor probes and collection of vapor samples for VOC analysis from the existing probe location Sub-Slab1 and the two new sub-slab vapor probes, designated Sub-Slab2 and Sub-Slab3.

This revised work plan proposes the installation Sub-Slab2 and Sub-Slab3 at the locations shown on Figure 5. A floor plan of the building showing the activities that take place within different areas is provided in Appendix B. BASELINE proposes to locate Sub-Slab2 near the center of the building's foundation over the former containment vault and Sub-Slab3 toward the west wing of the building. Installing a sample probe within the western wing of the building is not feasible since the Dance/Aerobics Room (see Appendix B) is covered with a raised wooden dance floor. Because the central portion of the existing building contains the former containment vault, which has been filled with crushed concrete and capped with cement concrete, an alternate location has

been provided on Figure 5 for proposed location Sub-Slab2 in the event that the probe cannot be installed due to the crush concrete in the subsurface.

4.3 Vapor Probe Installation

Using a rotary hammer, a 1.25-inch hole will be drilled approximately 1/8-inch deep, followed by a 1-inch hole through the slab; the slab is expected to be approximately 6 inches thick at the sample locations. The sub-slab hole will be advanced 3 inches into the fill below the slab. All drill cuttings will be removed from the borehole. A vapor probe, constructed of 1/8-inch diameter tubing with a permeable probe tip, will be installed at each location. Each vapor probe will be cleaned with an Alconox solution and rinsed with de-ionized water prior to installation.

The vapor probes will be placed in the hole with the top of the probe slightly below grade. The annular space around the permeable probe tip will be filled with clean sand. Dry granular bentonite will be used to fill the borehole annular space from above the sand to just above the base of the concrete foundation. The remaining annular space to just below the top of the slab's ground surface will be filled with quick-drying bentonite grout. A stainless steel cap will be screwed into the top of the probe to seat into the 1.25-inch inset until flush with the floor surface. Figure 6 presents a construction diagram of the vapor probe.

4.4 Vapor Sample Collection

No earlier than 2 hours after installation of the probes, a vapor sample will be collected from each vapor probe (Sub-Slab1, Sub-Slab2, and Sub-Slab3) in 1.4-liter Summa canisters supplied by C&T. The canisters will be equipped with flow regulators limiting the flow rate to less than 200 ml/min.

Leak detection during sampling will be conducted using a helium tracer shroud provided by C&T as described in Section 3.4. If helium is detected in the purge air, indicating a leak, the field personnel will take corrective action to correct the problem prior to collecting a sample for laboratory analysis. Purging will be complete when three volumes of air of the sampling train have been removed and no concentration of helium detected.

Sub-slab vapor samples will be collected in the 1.4-liter Summa canisters after the purging and leak detection activities have been successfully completed. The flow regulators will maintain the airflow rate as less than 200 ml/min. The Summa canisters will initially have a vacuum of approximately 30 in-Hg and sampling will terminate when the vacuum on the Summa canisters has been expended.

Each canister will be labeled with the sample location, the sampler's initials, the initial and final vacuum readings, and the time that sampling started and ended.

4.5 Vapor Sample Analyses

Sub-slab vapor samples will be submitted to C&T under Chain-of-Custody protocol for VOC analysis in accordance with US EPA Method TO-15 and helium in accordance with ASTM D1946. The analyte list and C&T's reporting limits are presented in Appendix A. The reporting limits for the constituents of concern TCE, cis-1,2-dichloroethene, trans-1,2-dichloroethene, vinyl chloride, 1,1,1-trichloroethane, and 1,1-dichloroethene, along with the ESL values, are

presented on Table 5. To evaluate whether the reporting limits would meet the data evaluation objectives, the reporting limits were compared to indoor air screening values considering a sub-slab-to-indoor air attenuation factor (Table 3). With the exception of vinyl chloride, all reporting limits would be expected to meet the data objectives for health risk evaluation. The laboratory will be requested to report vinyl chloride to the method detection limit.

4.6 Quality Control

The representativeness of the vapor sample will be confirmed by analyzing the sample for helium. The laboratory will quantify all detections of helium at a reporting limit equal to 1,000 microliters per liter or 0.1 percent. If helium is detected in samples, the proportion of the sample attributable to ambient air leakage will be determined using the same methodology presented in Section 3.6.

5.0 DATA EVALUATION AND REPORTING

5.1 Data Evaluation

The results of the soil gas and vapor sampling will be compared against the Regional Water Board ESLs for commercial land use (Regional Water Board, 2008). The ESLs are based on the lowest chemical-specific value that would be expected to represent an adverse cancer or non-cancer health risk, using conservative exposure assumptions. The ESLs assume an unacceptable health risk to be an excess cancer risk over one in a million (10^{-6}) or a non-cancer Hazard Index over 0.2 (Regional Water Board, 2008).[1] An attenuation factor of 0.05 will be used for estimating indoor air concentrations from sub-slab vapor measurement as recommended by the DTSC (DTSC, 2011).

If the estimated indoor air concentrations of detected VOCs exceed the ESLs, site-specific health risk calculations will be performed to determine if the health risk for the existing users is unacceptable. The cancer and non-cancer health risk will be calculated in accordance with Regional Water Board guidance (Regional Water Board, 2008) by summing the risk of the individual detected chemicals of concern. The cancer risk will be evaluated by comparing the results of the health risk assessment to an increased cancer risk of one in a million or 10^{-6}. The non-cancer health risks will be evaluated by comparing the results of the health risk assessment to a health index of one.

5.2 Sampling Reporting

An investigative results report will be prepared at the conclusion of this phase of project activity. The report will include a description of methods used in sample collection and the results of the analyses.

If the investigation results indicate that the cancer risk exceeds 10^{-6} or the non-cancer risk exceeds a health index of one, potential alternative measures for site management or mitigation will be described. Detailed recommendations for such measures would be made in a document to be prepared and submitted in the future.

[1] The ESLs use a chemical-specific Hazard Quotient of 0.2 to account for exposure of up to five separate chemicals. The Hazard Index is a sum of the chemical-specific Hazard Quotients.

If the investigation results do not indicate that the cancer risk exceeds 10^{-6} or the non-cancer risk exceeds a health index of one, a risk management plan may be developed in a future document if appropriate to enable continued use of the site while ensuring that the current cap on the site remains in place and that any breach of the cap or exposure to residual contaminants in the soil are performed in a manner that does not expose users of the site or construction workers to unacceptable health risks.

The investigation report will also provide a description of the necessity and timing of further site assessment and remedial action.

6.0 REFERENCES

BASELINE Environmental Consulting ("BASELINE"), 2012, Soil Gas Survey, 751-785 Seventh Street, Oakland, California, 6 March

Department of Toxic Substances Control ("DTSC"), Los Angeles Regional Water Quality Control Board, and San Francisco Regional Water Quality Control Board, 2012, Advisory Active Soil Gas Investigations, April.

DTSC, 2011, Final Guidance for the Evaluation and Mitigation of Subsurface Vapor Intrusion to Indoor Air (Vapor Intrusion Guidance), October.

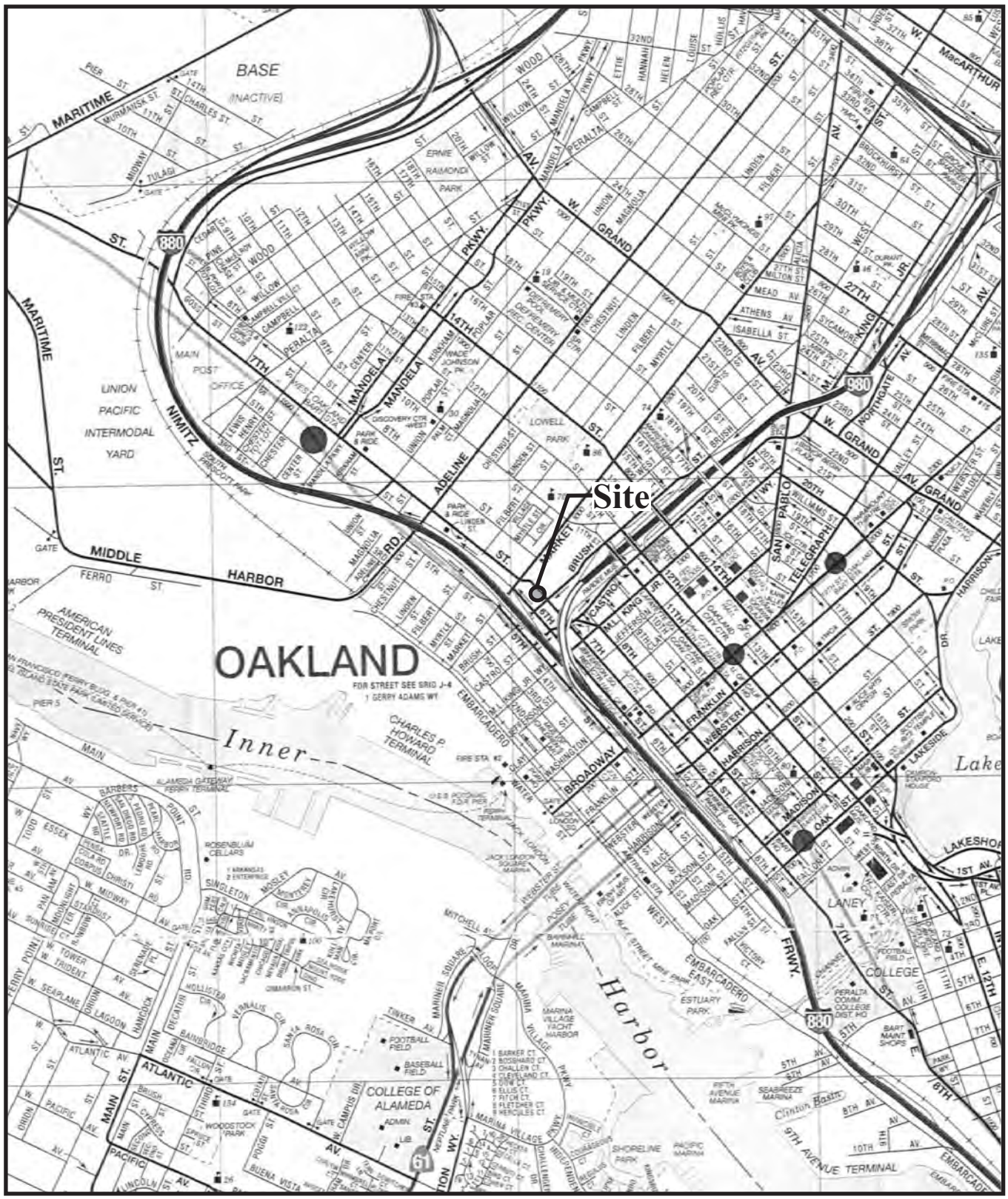
P&D Environmental ("P&D"), 2009, Subsurface Investigation Report, (SG1 through SG6 and B6 through B8), 601 Brush Street, 12 November.

San Francisco Regional Water Quality Control Board ("Regional Water Board"), 2008, Screening for Environmental Concerns at Sites with Contaminated Soil and Groundwater - Interim Final, November 2007 (Revised May 2008).

FIGURES

REGIONAL LOCATION

Figure 1



751-785 Seventh Street
Oakland, California

0 2000 Feet

BASELINE

Y0323-05.01842.Fig1-3.cdr 09/21/12

AERIAL MAP - 2009

Figure 2

751-785 Seventh Street
Oakland, California

LEGEND
Site Boundary
Groundwater Monitoring Well

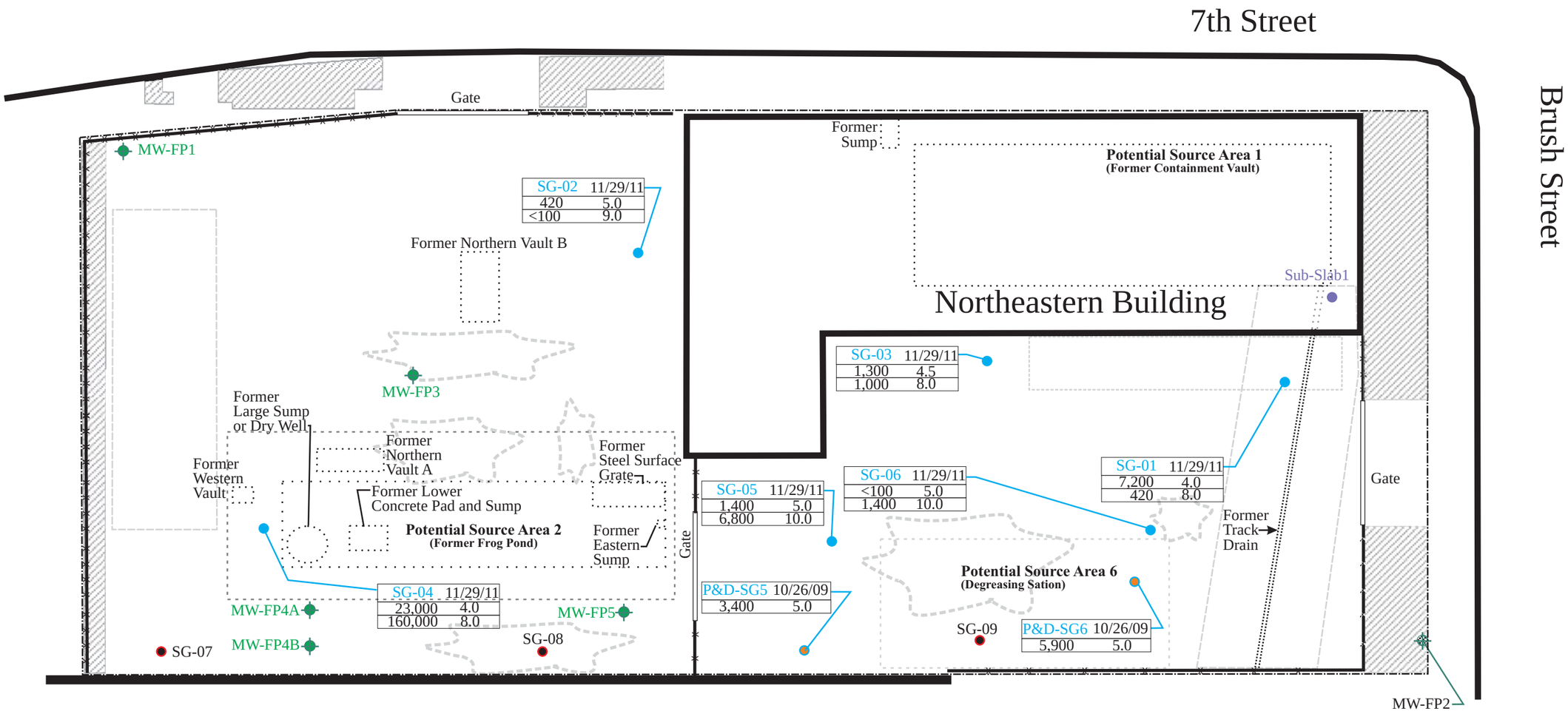
0 80 Feet

BASELINE

Y0323-05.01842.Fig1-3.cdr 09/21/12

PROPOSED SOIL GAS SAMPLE LOCATIONS

Figure 3



LEGEND

Soil Gas Sample Location – SG-04 11/29/11 – Date Sampled
TCE Concentration ($\mu g/m^3$) – 23,000 4.0 / 160,000 8.0 – Sample depth ft bgs

- Proposed Soil Gas Sample Location
- Monitoring Well Location
- Soil Gas Sample Location
- Sub-Slab Vapor Probe
- Soil Gas Sample Location (P&D Environmental, 2009)
- **Potential Source Area 5 (Drum Storage Areas)**
- Exposed Soil Areas
- Property Boundary
- Location of Historical Features Since Removed or Sealed and Capped
- Potential Source Areas 1,2,3,4 & 6

Notes:
TCE = Trichloroethene
$\mu g/m^3$ = micrograms per cubic meter
ft bgs = feet below ground surface

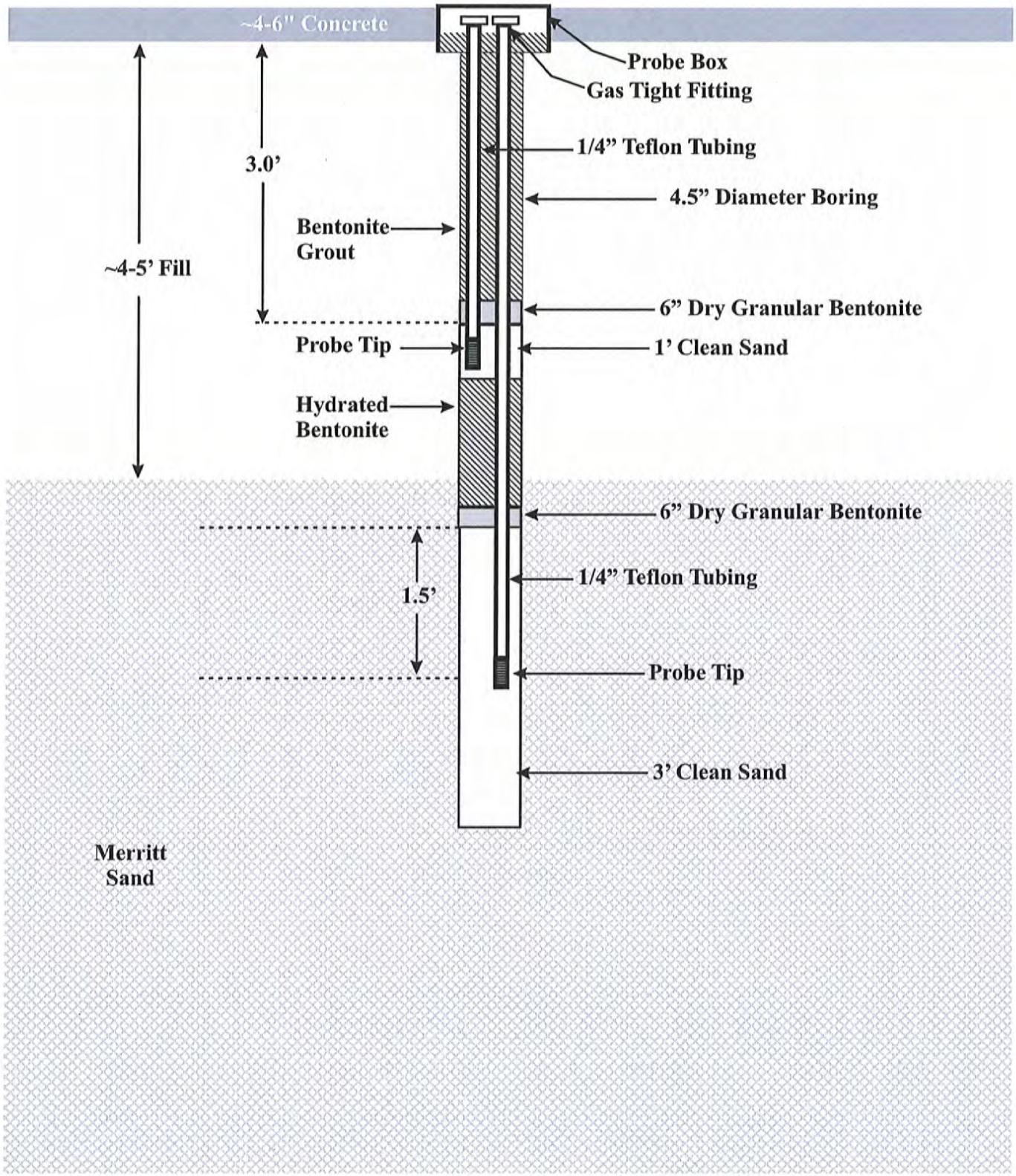
0 20 Feet

751-785 Brush Street
Oakland, California

BASELINE

Y0323-05.01944.Fig-3,5.cdr 09/21/12

SOIL GAS PROBE CONSTRUCTION DIAGRAM Figure 4



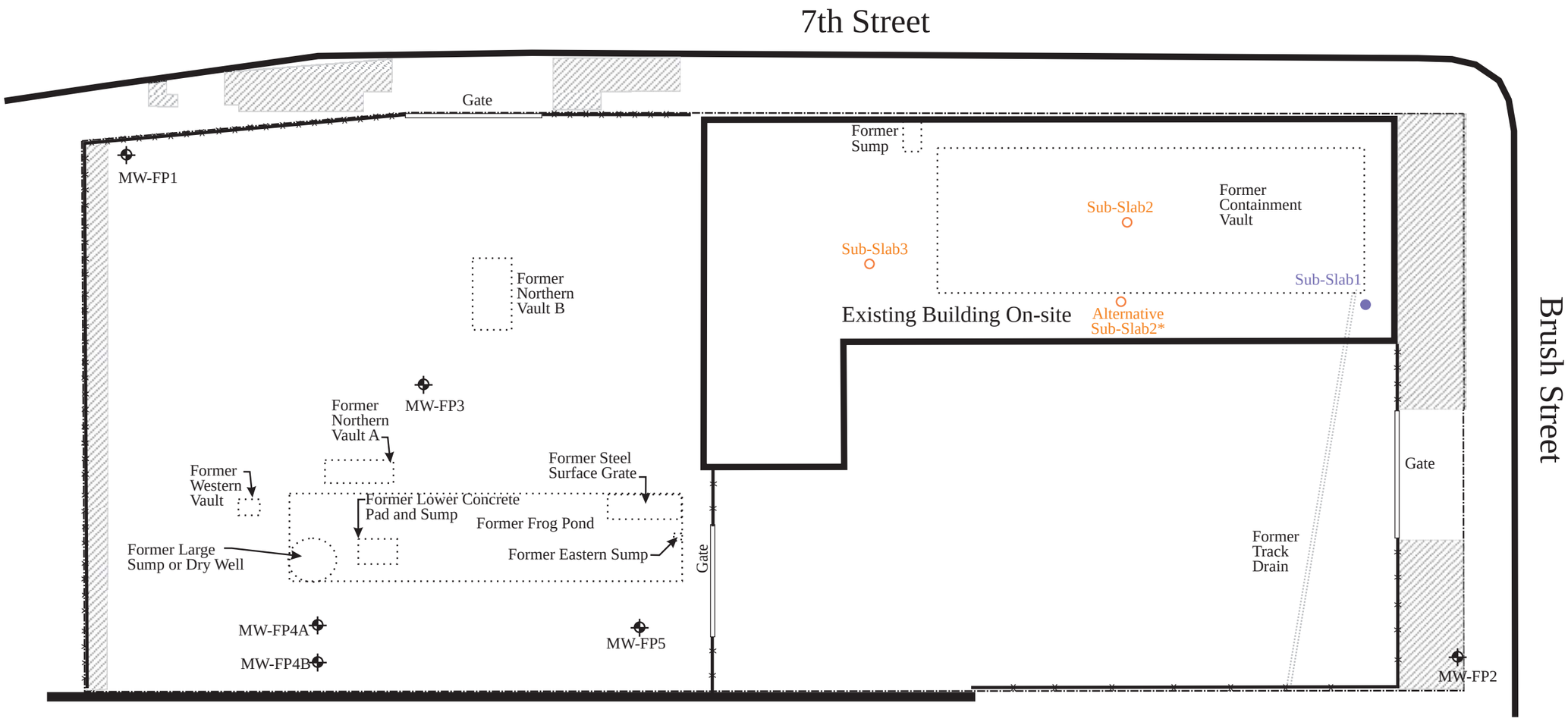
785 Seventh Street
Oakland, California

BASELINE

Y0323-05.01944.Fig4.cdr 09/21/12

PROPOSED SUB-SLAB VAPOR PROBE LOCATIONS

Figure 5



LEGEND

- Property Boundary
- Monitoring Well Location
- Sub-Slab Vapor Probe
- Proposed Sub-Slab Vapor Probe Location
- Exposed Soil Areas

NOTES

* An alternate location has been provided for proposed location Sub-Slab2 in the event that the probe cannot be installed in the center of the building's foundation due to the existence of crush concrete in the subsurface.

751-785 Brush Street
Oakland, California

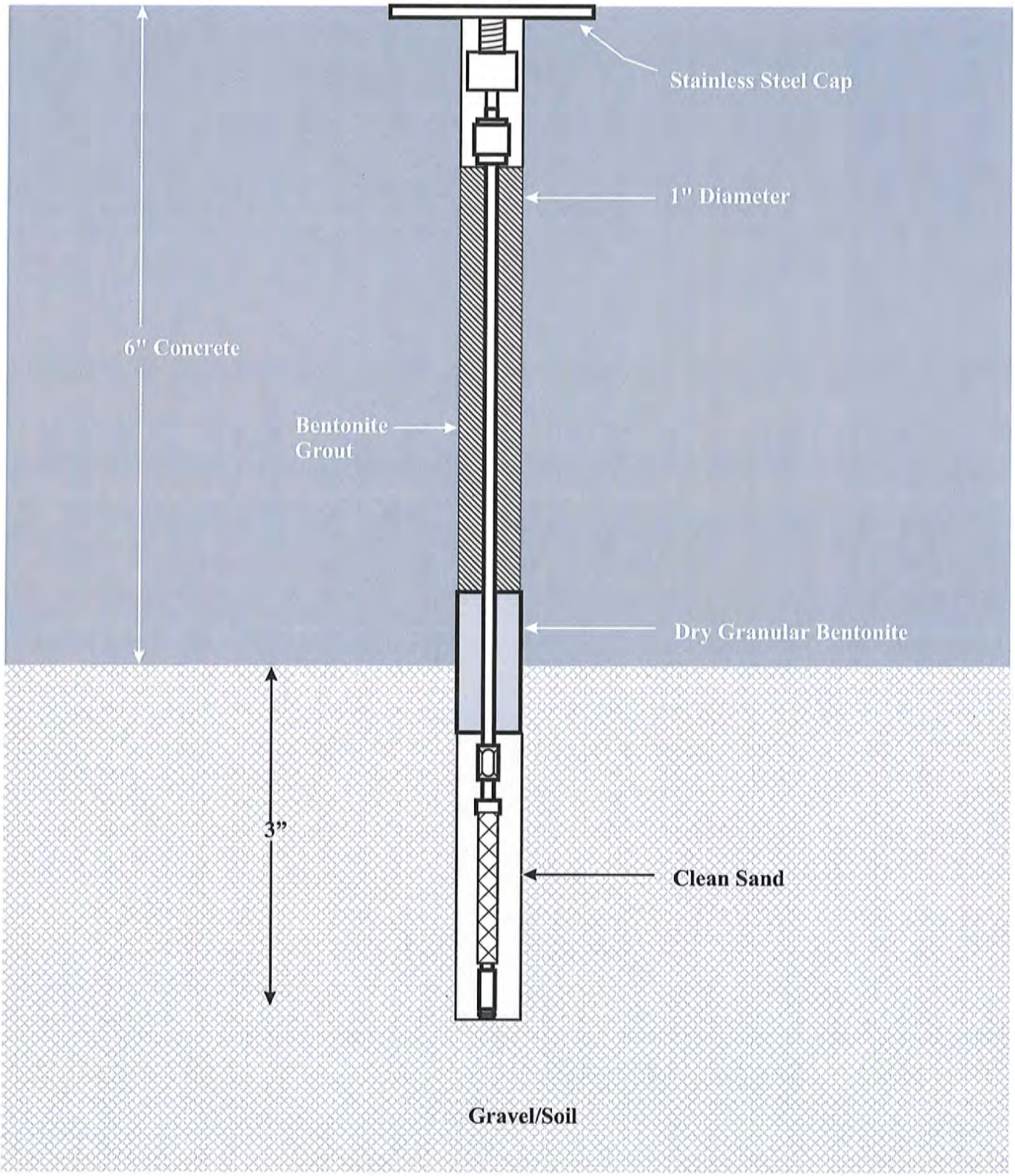
0 20 Feet

BASELINE

Y0323-05.01944.Fig-3,5.cdr 09/21/12

SUB-SLAB VAPOR PROBE CONSTRUCTION DIAGRAM

Figure 6



785 Seventh Street
Oakland, California

BASELINE

Y0323-05.01944.Fig6.cdr 09/21/12

TABLES

Table 1: Soil Gas Survey Analytical Results (µg/m^3)
751-785 7th Street
Oakland, CA

SAMPLE NUMBER:	SG-01@ 4	SG-01@ 8	SG-02 @ 5	SG-02 @ 9	SG-03 @ 4.5	SG-03 @ 8	SG-04@ 4	SG-04@ 8	SG-05@ 5	SG-05@ 10	SG-06@ 5	SG-06@ 8	Soil Gas Residential ESL [1]	Soil Gas Commercial/ Industrial ESL [1]
Dichlorodifluoromethane	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	NE	NE
Vinyl Chloride	<100	<100	<100	<100	<100	<100	<100	**3,000**	<100	<100	<100	<100	31	100
Chloroethane	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	21,000	58,000
Trichlorofluoromethane	<100	<100	<100	<100	<100	<100	**160**	<100	<100	<100	<100	<100	NE	NE
1,l-Dichloroethene	**270**	<100	<100	<100	<100	<100	<100	**3,300**	<100	**260**	<100	**680**	42,000	120,000
1,1,2-Trichloro-trifluoroethane	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	NE	NE
Methylene Chloride	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	5,200	17,000
trans-1,2-Dichloroethene	<100	<100	<100	<100	<100	<100	**110**	**12,000**	<100	<100	<100	<100	15,000	41,000
1,1-Dichloroethane	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	1,500	5,100
cis-1,2-Dichloroethene	<100	<100	<100	<100	<100	<100	**1,900**	**150,000**	<100	<100	<100	<100	7,300	20,000
Chloroform	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	1,500	1,500
1,1,1-Trichloroethane	**510**	**270**	<100	<100	**780**	**130**	<100	<100	**250**	**470**	**490**	**690**	460,000	1,300,000
Carbon Tetrachloride	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	19	63
1,2-Dichloroethane	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	94	310
Benzene	<80	**120**	<80	<80	<80	**100**	<80	<80	<80	<80	<80	**120**	84	280
Trichloroethene	**7,200**	**320**	**420**	<100	**1,300**	**1,000**	**23,000**	**160,000**	**1,400**	**6,800**	<100	**1,400**	1,200	4,100
Toluene	<200	<200	<200	<200	<200	<200	<200	<200	<200	<200	<200	<200	63,000	180,000
1,1,2-Trichloroethane	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	150	510
Tetrachloroethene	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	410	1,400
Ethylbenzene	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	980	3,300
1,1,1,2-Tetrachloroethane	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	320	1,100
m,p-Xylene	<200	<200	<200	<200	<200	<200	<200	<200	<200	<200	<200	<200	21,000	58,000
o-Xylene	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	21,000	58,000
1,1,2,2-Tetrachloroethane	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	42	140
1,1-Difluoroethane (leak check)	<10,000	<10,000	<10,000	<10,000	<10,000	<10,000	<10,000	<10,000	<10,000	<10,000	<10,000	<10,000	NA	NA

Notes:
Soil gas samples collected on 29 November 2011.
µg/m^3 = micrograms per cubic meter.
Soil gas sample locations are shown on Figure 3.
For shallow samples, probe advanced to 5 feet below ground surface and then pulled back to the depth indicated in the sample number until exposed soil permeability allowed collection of soil gas sample.
For deep samples, probe advanced to 10 feet below ground surface and then pulled back to the depth indicated in the sample number until exposed soil permeability allowed collection of soil gas sample.
<x.x = Compound was not identified above laboratory reporting limit of x.x.
Values reported above the laboratory reporting limits are shown in **bold font.**
Results shaded yellow are shallow samples that exceed residential ESLs.
Results underlined are shallow samples that exceed commercial ESLs.
ESL = Environmental Screening Levels
NA = not applicable

[1] California Regional Water Quality Control Board, San Francisco Bay Region, 2008,*Screening for Environmental Concerns at Sites with Contaminated Soil and Groundwater, Interim Final, May, Table E-2, Shallow Soil Gas Screening Levels for Evaluation of Potential Vapor Intrusion Concerns.*

Table 2: Sub-Slab Vapor Analytical Results (µg/m^3)
751-785 7th Street
Oakland, CA

Analyte	Sub-Slab Sample Results		Estimated Indoor Air Concentration		Indoor Air ESL [2]	
	Sub-Slab 1a	Sub-Slab 1b	Sub-Slab 1a [1]	Sub-Slab 1b [1]	Residential Ambient and Indoor Air	Industrial Ambient and Indoor Air
Vinyl Chloride	<0.040	<0.40	<0.0020	<0.020	0.031	0.052
1,1-Dichloroethene	<0.062	<0.62	<0.0031	<0.031	42	58
1,1-Dichloroethane	<0.13	<1.3	<0.0065	<0.065	1.5	2.6
cis-1,2-Dichloroethene	<0.12	<1.2	<0.0060	<0.060	7.3	10
1,1,1-Trichloroethane	**19**	**18**	**0.95**	**0.90**	460	640
Benzene	<0.25	<2.5	<0.013	<0.13	0.084	0.14
1,2-Dichloroethane	<0.13	<1.3	<0.0065	<0.065	0.094	0.16
Trichloroethene	**18**	**19**	**0.90**	**0.95**	1.2	2.0
Toluene	**0.91**	**1.4**	**0.046**	**0.070**	63	88
1,1,2-Trichloroethane	<0.17	<1.7	<0.0085	<0.085	0.15	0.26
Tetrachloroethene	**0.79**	<2.1	0.040	<0.11	0.41	0.69
Ethylbenzene	<0.14	<1.4	<0.0070	<0.070	0.98	1.6
m,p-Xylene	**0.36**	<2.7	**0.018**	<0.14	21 [3]	29 [3]
o-Xylene	**0.20**	<1.4	**0.010**	<0.070	21 [3]	29 [3]
1,1,2,2-Tetrachloroethane	<0.22	<2.1	<0.011	<0.11	0.042	0.070
trans-1,2-Dichloroethene	<0.62	<6.2	<0.031	<0.31	15	20
Methyl tert-butyl ether	<0.57	<5.6	<0.029	<0.28	9.4	16
1,1-Difluoroethane (leak check)	**1,300 E**	**1,100 E**	NA	NA	NA	NA

Notes:
µg/m^3 = micrograms per cubic meter.
Vapor samples collected on 2 February 2012.
Sample location shown on Figure 3.
Samples were collected simultaneously with Summa canisters arranged in parallel.
ESLs = Environmental Screening Levels.
NA = not applicable since analyte is tracer compound.
<x.x = Compound was not identified above laboratory reporting limit of x.x.
Values reported above the laboratory reporting limits are shown in bold font.
E = Concentration exceeded instrument calibration range.

[1] Results multiplied by 0.05 attenuation factor as recommended by the Cal/EPA Department of Toxic Substances Control.
Department of Toxic Substances Control California Environmental Protection Agency, 2011, Final Guidance for the Evaluation And Mitigation Of Subsurface Vapor Intrusion to Indoor Air (Vapor Intrusion Guidance). Available on the internet at:http://www.dtsc.ca.gov/SiteCleanup/Vapor_Intrusion.cfm

[2] California Regional Water Quality Control Board, San Francisco Bay Region, 2008,*Screening for Environmental Concerns at Sites with Contaminated Soil and Groundwater, Interim Final, May, Table E-3, Ambient and Indoor Air Screening Levels.*

[3] Based on ESL for total xylenes.

Table 3: Curtis & Tompkins TO-15 Reporting Limits for Chemicals of Concern (µg/m^3)
751-785 7th Street
Oakland, CA

Analyte	Curtis & Tompkins Reporting Limit	Commercial/ Industrial Soil Gas ESL [1]	Equivalent Indoor Air Concentration[2]	Commercial/ Industrial Ambient and Indoor Air ESL [3]
1,1,1-Trichloroethane	2.7	1,300,000	0.14	640
1,1-Dichloroethene	2.0	120,000	0.10	58
cis-1,2-Dichloroethene	2.3	20,000	0.12	10
trans-1,2-Dichloroethene	2.0	41,000	0.10	20
Trichloroethene	2.7	4,100	0.14	2.0
Vinyl Chloride	1.3	100	0.065	0.052

Notes:
µg/m^3 = micrograms per cubic meter.
Samples were collected simultaneously with Summa canisters arranged in parallel.
ESLs = Environmental Screening Levels.

[1] California Regional Water Quality Control Board, San Francisco Bay Region, 2008, *Screening for Environmental Concerns at Sites with Contaminated Soil and Groundwater, Interim Final, May, Table E-2, Shallow Soil Gas Screening Levels.*

[2] Reporting Limits multiplied by 0.05 attenuation factor for comparison to account for sub-slab to indoor air attenuation as recommended by the Cal/EPA Department of Toxic Substances Control.

Department of Toxic Substances Control California Environmental Protection Agency, 2011, *Final Guidance for the Evaluation And Mitigation Of Subsurface Vapor Intrusion to Indoor Air (Vapor Intrusion Guidance).*

[3] California Regional Water Quality Control Board, San Francisco Bay Region, 2008, *Screening for Environmental Concerns at Sites with Contaminated Soil and Groundwater, Interim Final, May, Table E-3, Ambient and Indoor Air Screening Levels.*

APPENDICES

APPENDIX A
CURTIS & TOMPKINS TO-15 ANALYTE LIST AND REPORTING LIMITS

VOLATILE ORGANICS
STANDARD REPORTING LIMITS

Curtis & Tompkins, Ltd.

Volatile Organics in Air
TO-15

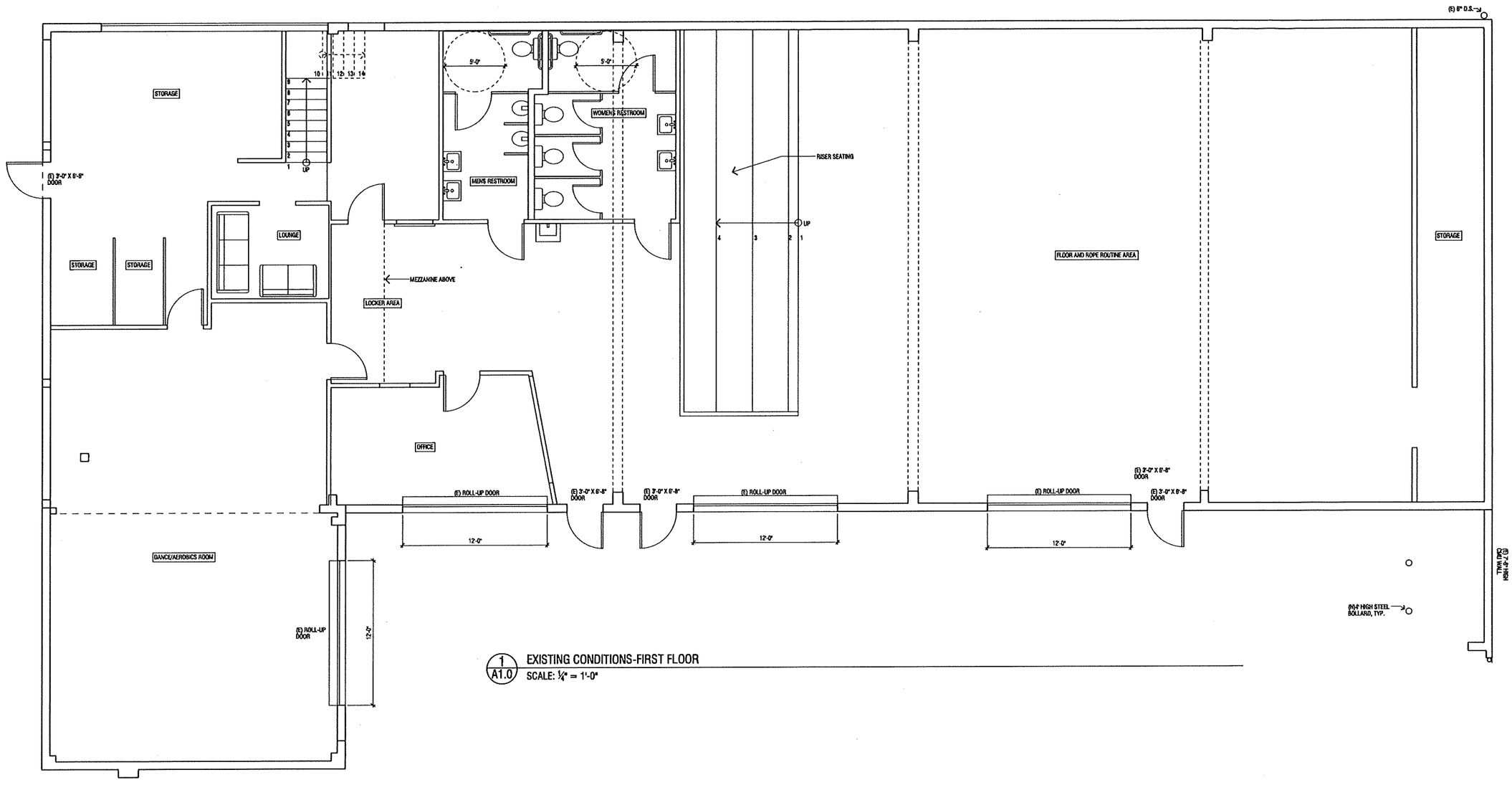
CAS #	Compound	RL ppv	RL ug/m^3
71-55-6	1,1,1-Trichloroethane	0.5	2.7
79-34-5	1,1,2,2-Tetrachloroethane	0.5	3.4
79-00-5	1,1,2-Trichloroethane	0.5	2.7
75-34-3	1,1-Dichloroethane	0.5	2
75-35-4	1,1-Dichloroethene	0.5	2
120-82-1	1,2,4-Trichlorobenzene	0.5	3.4
95-63-6	1,2,4-Trimethylbenzene	0.5	2.5
106-93-4	1,2-Dibromoethane	0.5	3.8
95-50-1	1,2-Dichlorobenzene	0.5	3
107-06-2	1,2-Dichloroethane	0.5	2
78-87-5	1,2-Dichloropropane	0.5	2.3
108-67-8	1,3,5-Trimethylbenzene	0.5	2.5
106-99-0	1,3-Butadiene	0.5	1.1
541-73-1	1,3-Dichlorobenzene	0.5	3
106-46-7	1,4-Dichlorobenzene	0.5	3
78-93-3	2-Butanone	0.5	1.5
591-78-6	2-Hexanone	0.5	2
622-96-8	4-Ethyltoluene	0.5	2.5
108-10-1	4-Methyl-2-Pentanone	0.5	2
67-64-1	Acetone	2	4
107-02-8	Acrolein	0.5	1.1
71-43-2	Benzene	0.5	1.6
100-44-7	Benzyl chloride	0.5	2.6
75-27-4	Bromodichloromethane	0.5	3.4
75-25-2	Bromoform	0.5	5.2
74-83-9	Bromomethane	0.5	1.9
75-15-0	Carbon Disulfide	0.5	1.6
56-23-5	Carbon Tetrachloride	0.5	3.1
108-90-7	Chlorobenzene	0.5	2.3
75-00-3	Chloroethane	0.5	1.3
67-66-3	Chloroform	0.5	2.4
74-87-3	Chloromethane	0.5	1
110-82-7	Cyclohexane	0.5	1.7
124-48-1	Dibromochloromethane	0.5	4.3
141-78-6	Ethyl Acetate	0.5	1.8
100-41-4	Ethylbenzene	0.5	2.2
76-13-1	Freon 113	0.5	3.8
76-14-2	Freon 114	0.5	3.5
75-71-8	Freon 12	0.5	2.5
87-68-3	Hexachlorobutadiene	0.5	5.3
1634-04-4	MTBE	0.5	1.8
75-09-2	Methylene Chloride	0.5	1.7
115-07-1	Propylene	0.5	0.86
100-42-5	Styrene	0.5	2.1
127-18-4	Tetrachloroethene	0.5	3.4
109-99-9	Tetrahydrofuran	0.5	1.5
108-88-3	Toluene	0.5	1.9
79-01-6	Trichloroethene	0.5	2.7
75-69-4	Trichlorofluoromethane	0.5	2.8
108-05-4	Vinyl Acetate	0.5	1.8
75-01-4	Vinyl Chloride	0.5	1.3
156-59-2	cis-1,2-Dichloroethene	0.5	2

10061-01-5	cis-1,3-Dichloropropene	0.5	2.3
1330-20-7	m,p-Xylenes	0.5	2.2
142-82-5	n-Heptane	0.5	2
110-54-3	n-Hexane	0.5	1.8
95-47-6	o-Xylene	0.5	2.2
156-60-5	trans-1,2-Dichloroethene	0.5	2
10061-02-6	trans-1,3-Dichloropropene	0.5	2.3

APPENDIX B
FLOOR PLAN
785 SEVENTH STREET, OAKLAND, CA

BDG
Blank Design Group
995 Guerrero Street, San Francisco, CA 94110
brian@blankDG.com

7TH STREET



1 / A1.0 EXISTING CONDITIONS-FIRST FLOOR
SCALE: ¼" = 1'-0"

EXISTING CONDITIONS:

785 SEVENTH ST.
OAKLAND, CA

Rev #	Description	Date:

Sheet Title:

EXISTING CONDITIONS

Date:	9-11-12
Scale	AS NOTED
Drawn	BB
Job	
Sheet	A1.0
of	Sheets