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By Alameda County Environmental Health 9:07 am, Sep 30, 2016

September 28, 2016

Kit Soo
Alameda County Department of Environmental Health
1131 Harbor Bay Parkway
Alameda, CA 94502-6540

Subject: Buildings 200 and 300 Indoor Air Monitoring Work Plan for the Former Pacific Electric Motors Site 1009 66th Avenue, Oakland, California (Fuel Leak Case Number RO0000411)

Dear Ms. Soo:

Enclosed is the Buildings 200 and 300 Indoor Air Monitoring Work Plan for the Former Pacific Electric Motors Site 1009 66th Avenue, Oakland, California; Alameda County Environmental Health (ACEH) Fuel Leak Case Number RO0000411 ("the Site"). This work plan was prepared in response to a request from ACEH to further evaluate potential vapor intrusion concerns related to residual volatile organic compounds that may be in soil, soil gas, and groundwater at the Site.

I certify under penalty of law that this document and all attachments are prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gathered and evaluated the information submitted. Based on my inquiry of the person or persons who managed the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

If you have any questions or comments, please call Ms. Erica Kaive of ARCADIS at (415) 491-4530 extension 22, or me at (510) 549-6879.

Sincerely,

A handwritten signature in black ink, appearing to read "Steven Greenwood", is written over a horizontal line.

Steven Greenwood
Director of Facilities, Aspire Public Schools

Enclosure

Aspire Public Schools – College for Certain, LLC

BUILDINGS 200 AND 300 INDOOR AIR MONITORING WORK PLAN

Former Pacific Electric Motors Site
1009 66th Avenue Oakland, California
(Fuel Leak Case Number RO0000411)

September 29, 2016

BUILDINGS 200 AND 300 INDOOR AIR MONITORING WORK PLAN



Angeline Tan
Staff Environmental Engineer



Erica Kalve, P.G.
Senior Geologist

Former Pacific Electric Motors Site
1009 66th Avenue Oakland, California
(Fuel Leak Case Number RO0000411)

Prepared for:
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Our Ref.:
EM009155.0017

Date:
September 29, 2016

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BUILDINGS 200 AND 300 INDOOR AIR MONITORING WORK PLAN

Certification

All hydrogeologic and geologic information, conclusions, and recommendations in this document have been prepared under the supervision of and reviewed by an Arcadis U.S., Inc. (Arcadis), California Professional Geologist.*



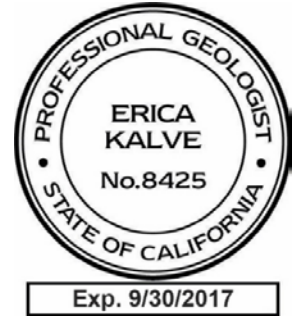
September 29, 2016

Erica Kalve, P.G.

Date

Senior Geologist

California Professional Geologist (8245)



*A professional geologist's certification of conditions comprises a declaration of his or her professional judgment. It does not constitute a warranty or guarantee, expressed or implied, nor does it relieve any other party of its responsibility to abide by contract documents, applicable codes, standards, regulations, and ordinances.

1 INTRODUCTION

Arcadis has prepared this Buildings 200 and 300 Indoor Air Monitoring Work Plan (work plan) on behalf of College for Certain, LLC (CFC) for the Former Pacific Electric Motors (PEM) Facility located at 1009 66th Avenue in Oakland, California (“the Site”; Figures 1 and 2). This work plan was developed in response to Alameda County Department of Environmental Health (ACEH) request to confirm benzene concentrations in both indoor and ambient air and to evaluate potential vapor intrusion into Buildings 200 and 300. This work plan follows applicable guidance per the *Department of Toxic Substances Control (DTSC) Final Guidance for the Evaluation and Mitigation of Subsurface Vapor Intrusion to Indoor Air* (the DTSC Vapor Intrusion Guidance Document; DTSC 2011).

2 SITE HISTORY

2.1 Project Overview

The site area is 2.51 acres and is located on the western side of 66th Avenue between East 14th Street (to the north) and San Leandro Street (to the south). The area around the Site is developed with a mixture of commercial, industrial, government, and multi-family residential buildings. The Site is bounded by a residential development to the north, Oakland Fire Department Station Number 2 to the east across 66th Avenue, Fruitvale Business Center to the south, and Northstar International Container Freight and Container Consolidation Services to the west.

The structures formerly associated with Pacific Electric Motors (and infrastructure) have all been demolished. The areas of affected soil have been removed in accordance with the Revised CAP (ARCADIS 2009a). In addition, areas of polychlorinated-biphenyl (PCB)-containing soil were remediated in accordance with the CAP, the Self-Implementing Cleanup Plan (SICP) submitted to the USEPA on October 23, 2009 (ARCADIS 2009b), the response letter from USEPA dated November 13, 2009 (USEPA 2009), and LFR Inc.’s (now ARCADIS) response letters to EPA dated November 18, 2009 and January 14, 2010. The configuration of the surface cap was presented in a letter to the USEPA by ARCADIS dated April 25, 2011 and the configuration of the cap was approved by USEPA in a letter dated June 16, 2011.

2.2 Current Conditions

The Site has been redeveloped into the Aspire Golden State College Preparatory Academy, which serves grades 6 through 12 and has capacity for 570 students; the school opened in August 2011 (see Figure 2). The school occupies approximately 1.4 acres and consists of:

- two-story buildings (approximately 41,430 square feet total including 24 full-sized classrooms, 4 labs, 3 girl’s and 3 boy’s restrooms, and 4 staff restrooms);
- a proposed one-story building that will serve as a gym and recreation facility;
- an asphalt-paved parking area with access via two driveways on 66th Avenue (one for ingress and one for egress);

BUILDINGS 200 AND 300 INDOOR AIR MONITORING WORK PLAN

- an asphalt-paved area for basketball; and
- several planter areas

As part of the redevelopment of the Site, the ground surface comprised of roadways, sidewalks, parking areas, buildings, and planter areas is serving as a cap to mitigate potential exposure to remaining polychlorinated biphenyls (PCBs) containing soil at the Site. Additionally, a new building (Building 300) was constructed in 2015 and a vapor intrusion mitigation (VIM) system was installed on April 7 and 8, 2015 by Advanced Construction Technologies (ACT).

3 WORK PLAN OBJECTIVES

The objective of this vapor intrusion evaluation is to further evaluate potential vapor intrusion concerns at Building 200 and Building 300, and assess the potential contribution of outdoor air on indoor air quality. Two rounds of indoor air, crawl space and riser pipe samples will be collected from Buildings 200 and 300: 1) one during normal school hours when the parking lot is actively utilized; and 2) during a holiday weekend when there is minimal use of the parking area.

4 FIELD SAMPLING PLAN

This section presents the field sampling activities for this project. Field sampling activities will be conducted by field personnel from Arcadis. Prior to initiating the field sampling activities, Arcadis will conduct a building survey and the results will be documented on the building survey form provided in the DTSC Vapor Intrusion Guidance Document (DTSC 2011) and included as Appendix A. The purpose of the building survey is to document relevant building information (e.g. normal HVAC operation), potential chemical storage and usage, inspect the building floor to identify potential preferential pathways such as utility conduits, floor cracks, or other penetrations in the building floor. If preferential pathways are identified, they will be sealed prior to initiating indoor air sampling activities.

Following completion of the building survey, sample locations will be selected for Building 200. Sample locations were previously identified for Building 300 and are shown on Figure 3. Proposed sample locations and information regarding normal HVAC operation will be documented and sent to ACEH for comment prior to initiating the sample event. Following concurrence, indoor air, crawl space, and outdoor air samples will be collected from Buildings 200 and 300 in accordance with the DTSC Vapor Intrusion Guidance Document (DTSC 2011). Indoor air, crawl space, and vent riser samples will be collected (as appropriate) to evaluate indoor air quality and to assess if vapor intrusion is occurring in either Building 200 and/or Building 300. The indoor air samples will be taken with the HVAC system operated normally for the season and time of day. During each sample event, one background/outdoor sample will be collected from the roof of building 200, one background/outdoor sample will be collected from the roof of Building 300, and two background/outdoor samples will be collected from ground level (but at least 6-feet above ground surface) outside of Buildings 200 and 300 and analyzed to assess ambient air quality that could be affecting indoor air quality.

Two additional activities will be conducted to further document site conditions at the time of sampling. First, depth to groundwater readings will be obtained from onsite shallow groundwater monitoring wells. Measurements will be taken on the same day as the air sampling to provide data regarding shallow

groundwater conditions at the time of sampling. Additionally, a photo log and observation log of the parking lot will be collected to document the level of activity at the property on the day of sampling.

4.1 Air Sampling Equipment

Air samples will be collected in 6-liter stainless steel certified clean Summa canisters designed specifically for collecting indoor and outdoor ambient air samples. Each 6-liter Summa canister will be equipped with a flow controller and flow restrictor that use a critical orifice to regulate the flow of air into the canister. The flow controllers will be checked by the laboratory to verify air flow for each canister is set at the appropriate rate for the collection of 8-hour indoor and outdoor air samples (assumed typical onsite receptor scenario; to be confirmed during the building walkthrough), before a canister is deployed to the field. The orifice is designed to allow for regulated flow of air between an 8-hour to 24-hour sample period. No flow checks will be performed in the field. The canister will be pre-evacuated by the laboratory to approximately -30 inches of mercury (Hg). Grab samples will be collected over a 30-minute period from the effluent sampling ports.

To ensure that the collected samples will meet the planned end use for this study, the following sample guidelines will be followed:

- If the initial vacuum gauge reads less than 26 inches of Hg, the canister will be replaced prior to sample collection.
- If the canister is not under vacuum, the sample will be considered a grab sample.
- If the final vacuum gauge reads greater than 20 inches of Hg, the sample will be rejected.

Each outdoor air sampling collection device will be positioned at the height deemed representative (e.g., on the roof of each building and outside on the downwind and upwind side of the buildings at approximately 6 feet above ground surface). Weather conditions (i.e., temperature, wind conditions) will be documented at the time of sampling.

4.2 Crawl Space and Vent Riser Sampling

Crawl space and vent riser samples will be collected into 6-liter, 100%-certified clean SUMMA™ canisters. Crawl space samples will be fitted a flow controller set to collect the samples over an 8-hour period. Arcadis will collect crawl space samples from both of the 4 feet by 2 feet crawl space access points under Building 200, where the openings better accommodate the sampling apparatus (see Figure 3). Two representative crawl space air samples (to be labelled CS-1 and CS-2) will be placed by Arcadis personnel. Crawl space air sampling will be stopped when the canister vacuum has dropped to no less than 5 inches of mercury (inHg). Each SUMMA™ canister will be fitted with 0.25-inch outer diameter (OD) Teflon tubing cut long enough to reach into the middle of the crawl space.

Grab vapor samples will be collected from the effluent sampling port on the three vent riser pipes in Building 300 as follows:

- Grab vapor samples will be collected from the effluent sampling port on the three vent riser pipes.

- Differential pressure measurements will be taken on each riser pipe using a micro-manometer prior to sample collection to document conditions at the time of sampling.

4.3 Indoor Air Field Sampling Procedures

Indoor sources of chemicals of concern and other VOCs may exist within the onsite building. Some significant impacts on indoor air quality may come from the use of consumer products, building materials, and personal activities. For example, VOCs can be found in cleaning agents, glues, deodorizers, dry-cleaned clothing, cigarette smoke, paints, varnishes, vehicle maintenance compounds, and vehicle exhaust. A building walkthrough will be conducted prior to implementation of the sample event to identify potential indoor air sources of chemicals of concern. A Building Survey Form (Appendix L or the Guidance Document; included as Appendix A) will be filled in by the field personnel during the building walk-through for each building.

Eight-hour integrated and grab sample will be collected at the proposed sample locations shown on Figure 3 for Building 300. For Building 200, at least 6 indoor samples will be collected, as described below.

Sampling Procedure

To start the sampling event:

1. Place the canister in the proper location (i.e., 3 to 5 feet above ground surface for breathing zone samples and ground surface for pathways samples).
2. Record the initial vacuum (approximately -30 inches of mercury [Hg]) of the canister on the air sampling log.
3. Using a wrench, remove the closing bolt on the top of the canister and attach the flow controller device, tighten with a wrench (with filter in-line), open the canister bellows valve, and note the start time. Start any co-located canisters at the same time.

To complete the sampling event:

1. Close the canister bellows valve and note the stop time on the air sampling log.
2. Using a wrench, detach the flow controller.
3. Replace the closing bolt on top of the canister and tighten with a wrench. Record the final vacuum of the canister on the air sampling log.

The outdoor ambient air sample collection will begin within one hour of the start of indoor air sampling. Following sample collection, samples will be analyzed using a low-level TO-15 Selected Ion Monitoring (SIM) analytical method for VOCs.

Meteorological data for this investigation will be obtained from a nearby weather station located in Oakland, California. Data will be collected for the time period corresponding to the sampling period. Data collected will include maximum and minimum temperatures, precipitation accumulation, and a summary of

hourly wind speed and direction. The meteorological data will be cross-checked with field observations documented in the field sampling logs

4.4 Sample Analyses

All Summa canisters will be individually certified cleaned, rather than batch certified, by the laboratory prior to sample collection. Air samples will be transferred under strict chain-of-custody procedures to a California-certified laboratory and analyzed for a site-specific list of VOCs by USEPA Method TO-15 (SIM). Low-level selective ion monitoring (SIM) methods will be utilized to meet the necessary reporting limits for the data evaluation process.

The samples will be analyzed for low-level analysis; however, the actual analytical reporting limits for each sample may vary based on actual sample volume collected and any sample dilution required in the laboratory for canister pressurization and sample analysis pursuant to the laboratory analytical method.

4.5 Sample Documentation

Field notes will be maintained in an air sampling log. As noted, project name/project number, sample ID, start date, start time, stop date, stop time, weather, start temperature, stop temperature, start barometric pressure, stop barometric pressure, start vacuum, stop vacuum, sample canister number, and sampler name will be recorded in the Air Sampling Log. The log will be kept on file at the Arcadis office and will be available for review by authorized personnel. Sample tags will also be attached to each canister as a backup for the log entries.

A digital image of each sampling location will be acquired at the time of sampling. Where possible, a detailed photo log will be maintained throughout the project documenting, at a minimum, the photo file name, building identification, sample date, and description of sample location.

5 PROPOSED SCHEDULE, DATA EVALUATION, AND REPORTING

5.1 Sample Schedule

The proposed scope of work will be conducted in two events. One event will be conducted during a holiday weekend (or regular weekend, if needed) where there is no school and one event will be conducted during regular school hours. Notification will be provided to the ACEH prior to the sampling event.

5.2 Data Evaluation

Sample results will be compared with the following criteria:

- USEPA Regional Screening Levels (RSLs) (USEPA 2016) for residential air quality criteria with exceptions for specific compounds as noted by Human Health Risk Assessment (HHRA) Note Number 3 (DTSC 2013).

BUILDINGS 200 AND 300 INDOOR AIR MONITORING WORK PLAN

- San Francisco Bay Regional Water Quality Control Board's environmental screening levels (ESLs) for direct exposure human health risk levels for indoor air.
- Outdoor air concentrations to evaluate whether indoor air quality may be affected by sources unassociated with vapor intrusion,
- Site-specific indoor air criteria will be calculated based on actual building occupancy duration (as opposed to the residential scenario).

The screening levels are updated regularly. As such, the most recent published values will be incorporated into the evaluation. If data suggest that vapor intrusion is not a concern at the Site but that ambient conditions contribute to indoor air quality above levels of concern, no further action will be necessary. If the indoor air criteria are exceeded in indoor air and the contributions do not appear to correlate with ambient air, then additional actions may be necessary to prevent potential exposure to subsurface vapors in indoor air.

6 REFERENCES

California Department of Toxic Substances Control (DTSC). 2011. Guidance for the Evaluation and Mitigation of Subsurface Vapor Intrusion to Indoor Air (Vapor Intrusion Guidance). October.

———. 2013. Office of Human and Ecological Risk (HERO), Human Health Risk Assessment (HHRA) Note, HERO HHRA Note Number: 3. May 21.

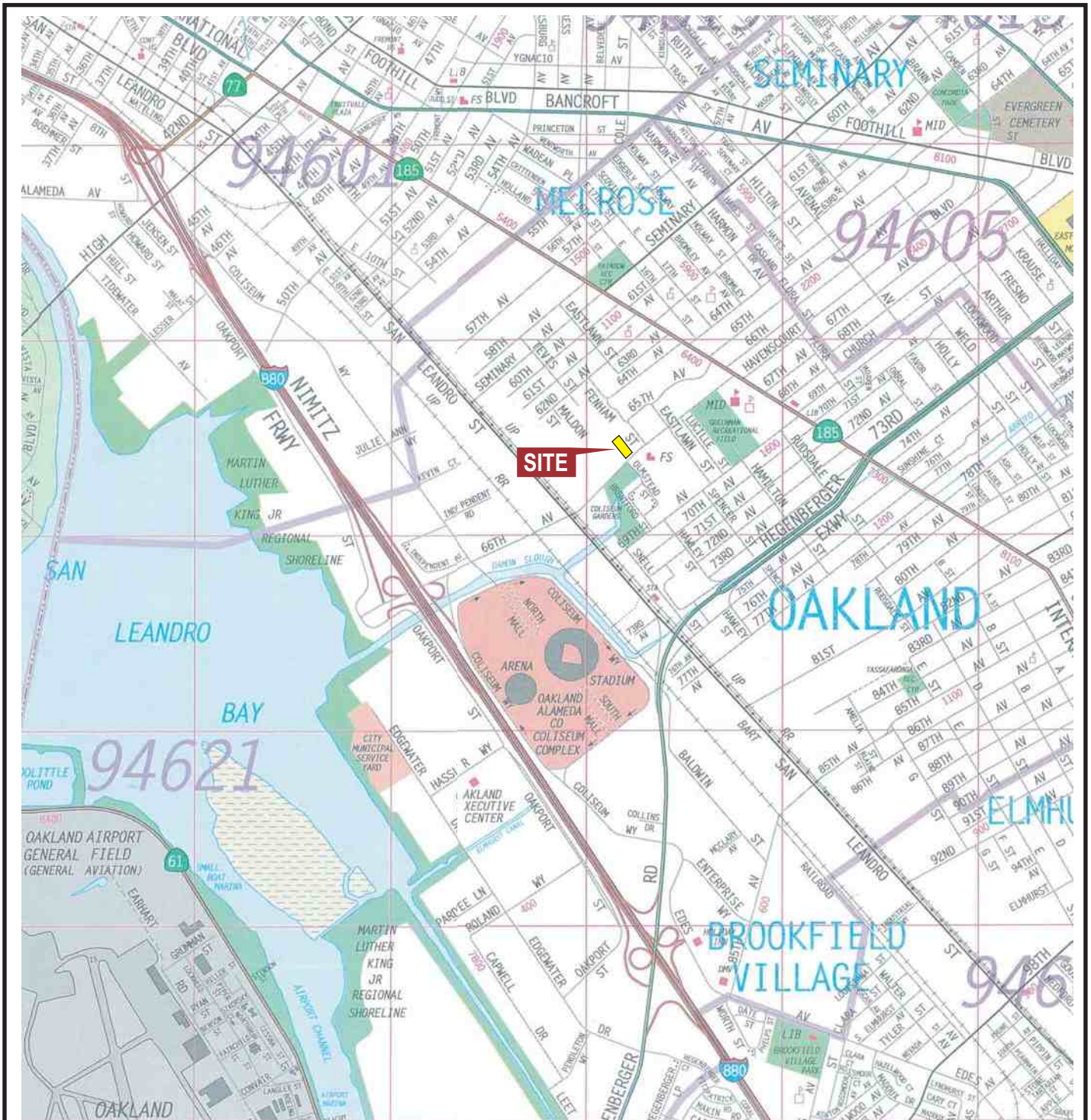
San Francisco Bay Regional Water Quality Control Board. 2016. Environmental Screening Levels. Available at: http://www.waterboards.ca.gov/sanfranciscobay/water_issues/programs/esl.shtml. February.

United States Environmental Protection Agency (USEPA). 2009 response letter from USEPA dated November 13, 2009.

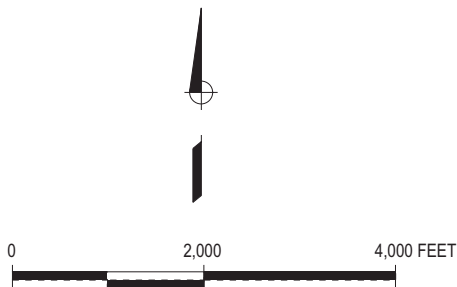
———. 2016. Regional Screening Levels. Available at: <https://www.epa.gov/risk/regional-screening-levels-rsls-generic-tables-may-2016>. May


FIGURES



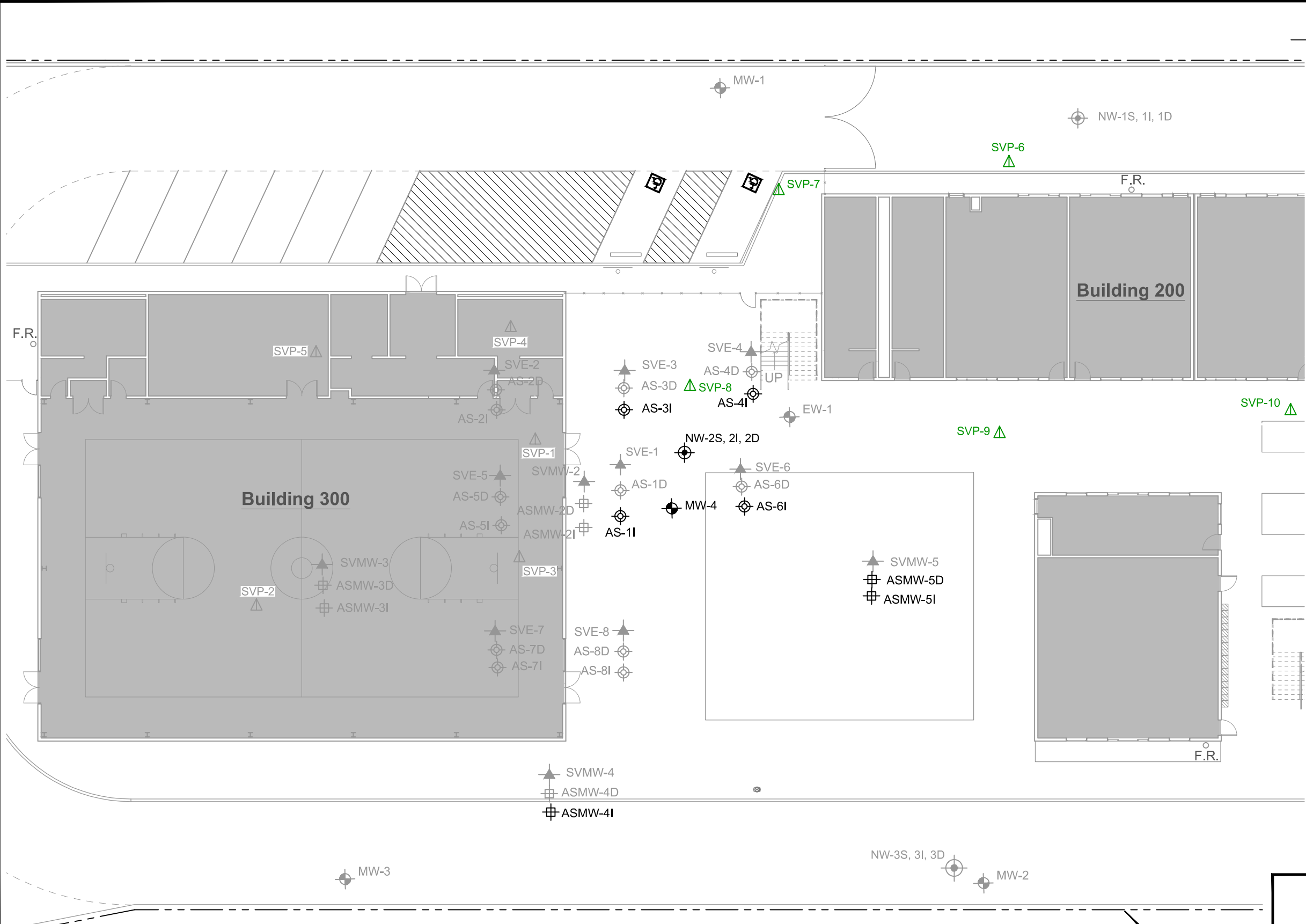


MAP SOURCE: Copyright 1995, Thomas Bros. Map ALAMEDA COUNTY 2002 Edition



PROPOSED CHARTER SCHOOL SITE 1009 66TH AVENUE OAKLAND, CALIFORNIA	
SITE VICINITY MAP	
	Design & Consultancy for natural and built assets
FIGURE 1	

CITY: EMERYVILLE, CA DIV: GROUP: ENV/CAD DB: A. BEYES, J. HARRIS
 G:\ENV\CAD\San Rafael\RETURN TO EMERYVILLE-CA\EM009155\001700001\AS-BUILT\DWG\REPORT BORDER\EM009155 2.dwg LAYOUT: 2 SAVED: 9/27/2016 3:14 PM ACADVER: 18.1S (LIMS TECH) PAGES: 18 PLOTSTYLETABLE: ARCADIS.CTB PLOTTED: 9/27/2016 3:27 PM BY: HARRIS, JESSICA

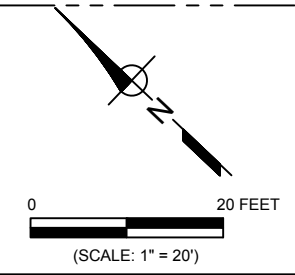


- LEGEND:**
- Property Line
 - MW-4 Monitoring Well
 - NW-2S Nested Monitoring Well
 - AS-6I Air Injection Well
 - ASMW-5D Air Injection Monitoring Well
 - SVE-1 SVE or SVE Monitoring Well
 - SVP-9 Soil Vapor Point Location
 - SVP-4 Abandoned Soil Vapor Point Location

NOTES:

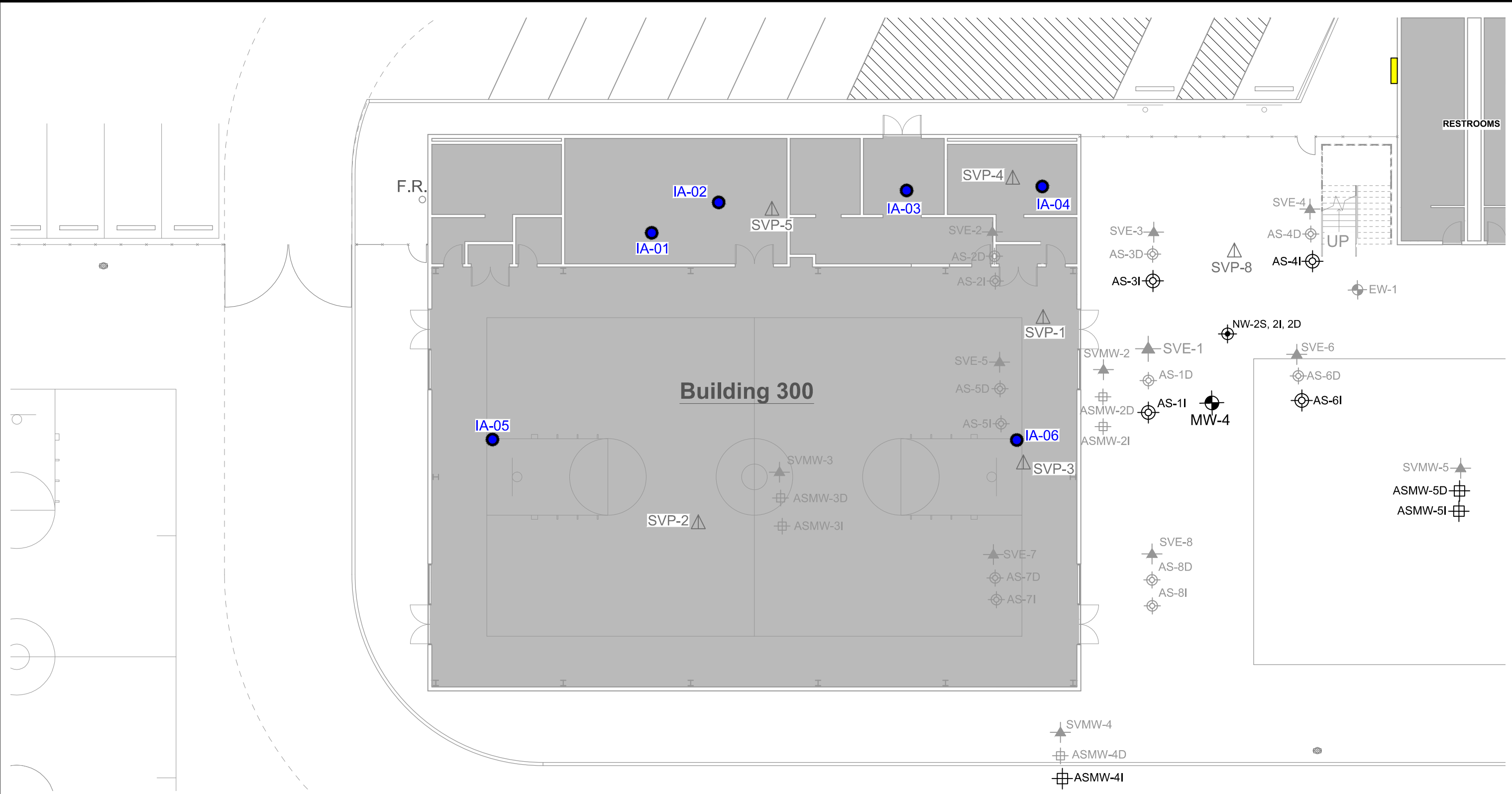
SVE = Soil Vapor Extraction

GREY symbols represent abandoned well locations



PROPOSED CHARTER SCHOOL SITE 1009 66TH AVENUE OAKLAND, CALIFORNIA	
<h2 style="margin: 0;">SITE PLAN</h2>	
	FIGURE <h1 style="margin: 0;">2</h1>

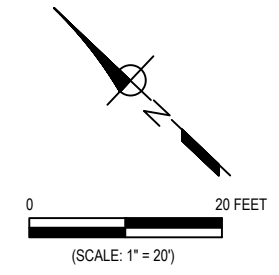
CITY: EMERYVILLE, CA DIV: GROUP: ENV: CAD DB: A. REYES, J. HARRIS LAYOUT: 3 SAVED: 9/27/2016 3:16 PM ACAD: VER: 19.1S (LMS TECH) PAGES: 3 PLOT: 9/27/2016 3:48 PM BY: HARRIS, JESSICA



LEGEND:

- MW-4 Monitoring Well
- NW-2S, 2I, 2D Nested Monitoring Well
- AS-7I Air Injection Well
- ASMW-5D Air Injection Monitoring Well
- SVE-1 SVE or SVE Monitoring Well

- SVP-1 Soil Vapor Point Location
- IA-01 Indoor Air Sampling Location
- 1 ft x 4 ft Vent
- GREY symbols represent abandoned well locations
- SVE = Soil Vapor Extraction



PROPOSED CHARTER SCHOOL SITE
1009 66TH AVENUE
OAKLAND, CALIFORNIA

**INDOOR AIR LOCATIONS FOR
BUILDING 300**

ARCADIS | Design & Consultancy
for natural and built assets

FIGURE
3

APPENDIX A

BUILDING SURVEY FORM



APPENDIX L - BUILDING SURVEY FORM

Preparer's Name: _____ Date/Time Prepared: _____
Affiliation: _____ Phone Number: _____

Occupant Information

Occupant Name: _____ Interviewed: Yes No
Mailing Address: _____
City: _____ State: _____ Zip Code: _____
Phone: _____ Email: _____

Owner/Landlord Information (Check if same as occupant)

Occupant Name: _____ Interviewed: Yes No
Mailing Address: _____
City: _____ State: _____ Zip Code: _____
Phone: _____ Email: _____

Building Type (Check appropriate boxes)

Residential Residential Duplex Apartment Building Mobile Home Commercial (office)
 Commercial (warehouse) Industrial Strip Mall Split Level Church School

Building Characteristics

Approximate Building Age (years): _____ Number of Stories: _____
Approximate Building Area (square feet): _____ Number of Elevators: _____

Foundation Type (Check appropriate boxes)

Slab-on-Grade Crawl Space Basement

Basement Characteristics (Check appropriate boxes)

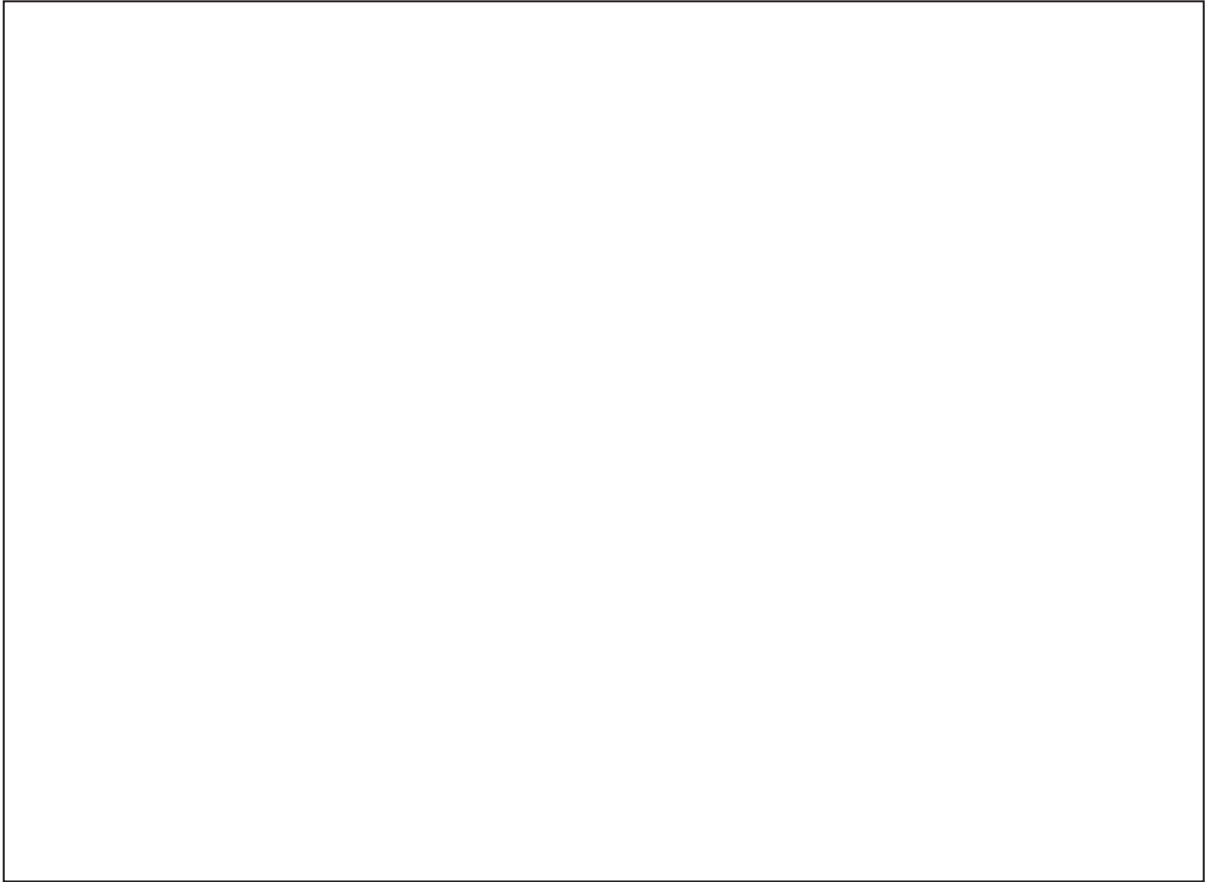
Dirt Floor Sealed Wet Surfaces Sump Pump Concrete Cracks Floor Drains

Factors Influencing Indoor Air Quality

Is there an attached garage?	<input type="checkbox"/> Yes <input type="checkbox"/> No
Is there smoking in the building?	<input type="checkbox"/> Yes <input type="checkbox"/> No
Is there new carpet or furniture?	<input type="checkbox"/> Yes <input type="checkbox"/> No Describe: _____
Have clothes or drapes been recently dry cleaned?	<input type="checkbox"/> Yes <input type="checkbox"/> No Describe: _____
Has painting or staining been done with the last six months?	<input type="checkbox"/> Yes <input type="checkbox"/> No Describe: _____
Has the building been recently remodeled?	<input type="checkbox"/> Yes <input type="checkbox"/> No Describe: _____
Has the building ever had a fire?	<input type="checkbox"/> Yes <input type="checkbox"/> No
Is there a hobby or craft area in the building?	<input type="checkbox"/> Yes <input type="checkbox"/> No Describe: _____
Is gun cleaner stored in the building?	<input type="checkbox"/> Yes <input type="checkbox"/> No
Is there a fuel oil tank on the property?	<input type="checkbox"/> Yes <input type="checkbox"/> No
Is there a septic tank on the property?	<input type="checkbox"/> Yes <input type="checkbox"/> No
Has the building been fumigated or sprayed for pests recently?	<input type="checkbox"/> Yes <input type="checkbox"/> No Describe: _____
Do any building occupants use solvents at work?	<input type="checkbox"/> Yes <input type="checkbox"/> No Describe: _____

Sampling Locations

Draw the general floor plan of the building and denote locations of sample collection. Indicate locations of doors, windows, indoor air contaminant sources and field instrument readings.



Primary Type of Energy Used (Check appropriate boxes)

Natural Gas Fuel Oil Propane Electricity Wood Kerosene

Meteorological Conditions

Describe the general weather conditions during the indoor air sampling event.

General Comments

Provide any other information that may be of importance in understanding the indoor air quality of this building.

Arcadis U.S., Inc.

100 Smith Ranch Road

Suite 329

San Rafael, California 94903

Tel 415 491 4530

Fax 415 491 4532

www.arcadis.com

A decorative graphic consisting of three thin orange lines. One line is horizontal, extending across the bottom of the page. Two other lines are diagonal, starting from the bottom left and extending towards the top right, crossing the horizontal line.