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By Alameda County Environmental Health 10:28 am, Sep 01, 2017

August 31, 2017

Mr. Mark Detterman  
Alameda County LOP (County)  
1131 Harbor Bay Pkwy  
Alameda, CA 94502

Re: Report #RO3155\_MISC\_2017-08-31)  
Former Four Seasons Cleaners Cleanup Program # RO0003155  
13778 Doolittle Ave., San Leandro, CA

Dear Mr. Detterman:

Attached for your review is a work plan for soil vapor plume delineation prepared by RRM, Inc. (RRM) for the referenced site in response to your August 11, 2017 letter.

I have read and acknowledge the content, recommendations and/or conclusions contained in the attached document or report submitted on my behalf to ACDEH's FTP server and the SWRCB's GeoTracker website.

If you should have any questions or comments, please do not hesitate to contact me or Julie Avanto at 831-475-8141.

Sincerely,



Mr. Ernest Lee  
Marina Faire Shopping Center  
3271 S. Highland Dr., Ste #704  
Las Vegas, Nevada 89109



August 31, 2017  
RRM Project # IA756

Mr. Mark Detterman  
Alameda County Department of Environmental Health  
1131 Harbor Bay Parkway, Suite 250  
Alameda, California 94502

Re: ***Response to August 11, 2017 Correspondence and Work Plan for Sanitary Sewer Location and Soil Vapor Plume Delineation (RO3155\_MISC\_2017-08-31)***  
Former Four Seasons Cleaners  
13778 Doolittle Drive  
San Leandro, California

Dear Mr. Detterman:

This document, prepared by RRM, Inc. on behalf of Marina Faire Shopping Center, presents a work plan to locate the sanitary sewer and further delineate the extent of the soil vapor plume at the referenced site (Figure 1). This work was requested by the Alameda County Department of Environmental Health (ACDEH) in their August 11, 2017 letter. The ACDEH letter also contained several other technical comments/requests and responses to these items are presented below.

## **RESPONSE TO AUGUST 11, 2017 ACDEH TECHNICAL COMMENTS**

**1. Dry Cleaner Site History** - Previous investigators for the property have conducted inquiries and reviewed files from the San Leandro Fire Department, San Leandro Environmental Services, and San Leandro Building Department to determine the history of the dry cleaner operations and the types of dry cleaning equipment used at the site. This information will be summarized and provided to ACDEH by the September 15, 2017 due date.

### **2. Site and Vicinity Maps**

a. Sanitary Sewer Information - The current known configuration of the sanitary sewer in the former dry cleaner space is shown on figures 2 and 3; a task to determine the pathway of the sanitary sewer from the former dry cleaner using video inspection is included in later sections of this document.

b. Preferential Pathway Locations – The locations of the sewer, water and gas lines have been requested from The City of San Leandro, East Bay Municipal Utilities District, and PG&E; preliminary maps received to date showing the sewer and water lines are included in

Attachment A. The information on these maps and from on-going inquiries will be added to site figures as warranted.

c. Tenant Space Information – Documentation of the HVAC modifications and locations, tenant occupants and hours of operation for the site property will be provided to ACDEH by the September 15, 2017 due date.

d. Adjacent Parcel Information – The type of use of parcels adjacent to the site is shown on Figure 3.

**3. Indoor and Outdoor Air, and Subslab Sampling** - Indoor and outdoor, and sub-slab sampling of the adjacent dentist suite at 13770 Doolittle Drive is scheduled for completion by the end of August 2017. The indoor/outdoor sample duration will be 24-hour and the sample locations will coincide with locations where indoor samples were previously collected. Sampling in the former dry cleaner suite is pending replacement of the slab. Procedures are included in Attachment B.

**4. Sewer Gas Sampling** - The standard operating procedure to conduct this type of work has yet to be issued by one or more relevant agencies [i.e. Department of Toxic Substances Control, Regional Water Quality Control Board (RWQCB)]. Therefore, sampling of the sewer gas will not be conducted at this time; collection of this data without an accepted protocol would risk the data to be considered invalid and/or inconclusive.

**5. Real Time Soil Vapor Plume Delineation** - A work plan to conduct soil vapor plume delineation is included in later sections of this document.

**6. Real Time Groundwater Plume Delineation** - Additional groundwater delineation utilizing cone penetrometer test (CPT) and membrane interface probe (MIP) equipment during drilling was already proposed in RRM's July 31, 2017 *Work Plan Addendum*. The MIP will provide real-time mapping of halogenated volatile organic compounds (HVOCs) in both the saturated and unsaturated zones. The July 2017 work plan included proposed investigation locations in the source area, presumed down-gradient and cross-gradient directions, and step-out locations.

In regard to definition of the lateral extent of contamination where RWQCB trichloroethene (TCE) trigger levels require immediate indoor air sampling in buildings, the soil vapor plume delineation work proposed in later sections of this document will provide direct measurement of vapor concentrations and is a better line of evidence than groundwater sampling for the evaluation of vapor intrusion. The vapor investigation data will determine where TCE trigger levels are exceeded and indoor air sampling is required. Therefore, no additional groundwater investigation is proposed at this time.

**7. Work Plan Submittal** – This document includes a work plan to address several of the items requested in the August 11, 2017 ACDEH letter; other items will be addressed by the September 15, 2017 due date.

a. SOPs – Standard operating procedures for the work proposed in this document are included in Attachment B.

b. Environmental Screening Level Detection Limit Goals – Laboratory procedures are included in Attachment B.

**8. Implementation of Previously Approved Scope of Work** – No response; agreed.

**9. Meeting Request** – To be determined.

**10. Geotracker Electronic Report and Data Upload Compliance** – All electronic uploads to the Geotracker website for reports prepared by RRM have been completed; RRM will work with previous consultants to upload older electronic submittals.

## **PROPOSED SCOPE OF WORK**

The objective of the scope of work presented below is to define the extent of HVOCs in soil vapor and to assess contamination along the sanitary sewer from the former dry cleaner unit. More specifically, the work is intended to delineate the extent of soil vapor concentrations that exceed RWQCB TCE trigger levels for indoor air sampling.

### **Pre-Field Activities**

Drilling permits will be obtained from the County of Alameda Public Works Department Agency, if required, and permission from the tenants will be obtained for work in each tenant suite. USA North will be notified at least 48 hours prior to the commencement of subsurface exploration work for utility clearance. Prior to conducting any fieldwork, RRM will prepare a site-specific health and safety plan (SSHSP); the SSHSP will be reviewed and signed by all field personnel and kept on site for the duration of the project. All RRM personnel involved in conducting the field activities will have satisfied the requirements of the Federal Occupational Safety and Health Administration (OSHA) 40-Hour Hazardous Waste Operations and Emergency Response Training

### **Sanitary Sewer Location**

Prior to soil vapor sampling, the pathway of the sanitary sewer from the former dry cleaner will be determined using video inspection. The locations of cleanouts, transitions, low points, and damage will be determined from the inspection and will be used to determine the final soil vapor sampling locations.


### **Soil Vapor Sampling with Mobile Laboratory**

Soil vapor samples will be collected from approximately 5 feet bgs at the 6 tentative locations shown on Figures 2 and 3. The sample locations are preliminary and will be revised based on the results of the sewer line video inspection and on the concentrations of HVOCs reported in the soil vapor samples in the field; based on the initial sample results, additional locations will be added as necessary to define the extent of PCE and TCE in soil gas beneath the building and adjacent to the existing sewer lines. The vapor sampling will be conducted using the July 2015 Department of Toxic Substances Control's guidance document *Advisory – Active Soil Gas Investigations*. Under the oversight of RRM, Optimal Technology of Thousand Oaks, California will install the

temporary shallow soil vapor probes, collect soil vapor samples, and analyze the soil vapor samples for HVOCs and the tracer compound (isobutane) using Modified EPA Method 8260B with an on-site mobile laboratory. One duplicate sample will be collected for each day of sampling. Field and analytical procedures are described in Attachment B.

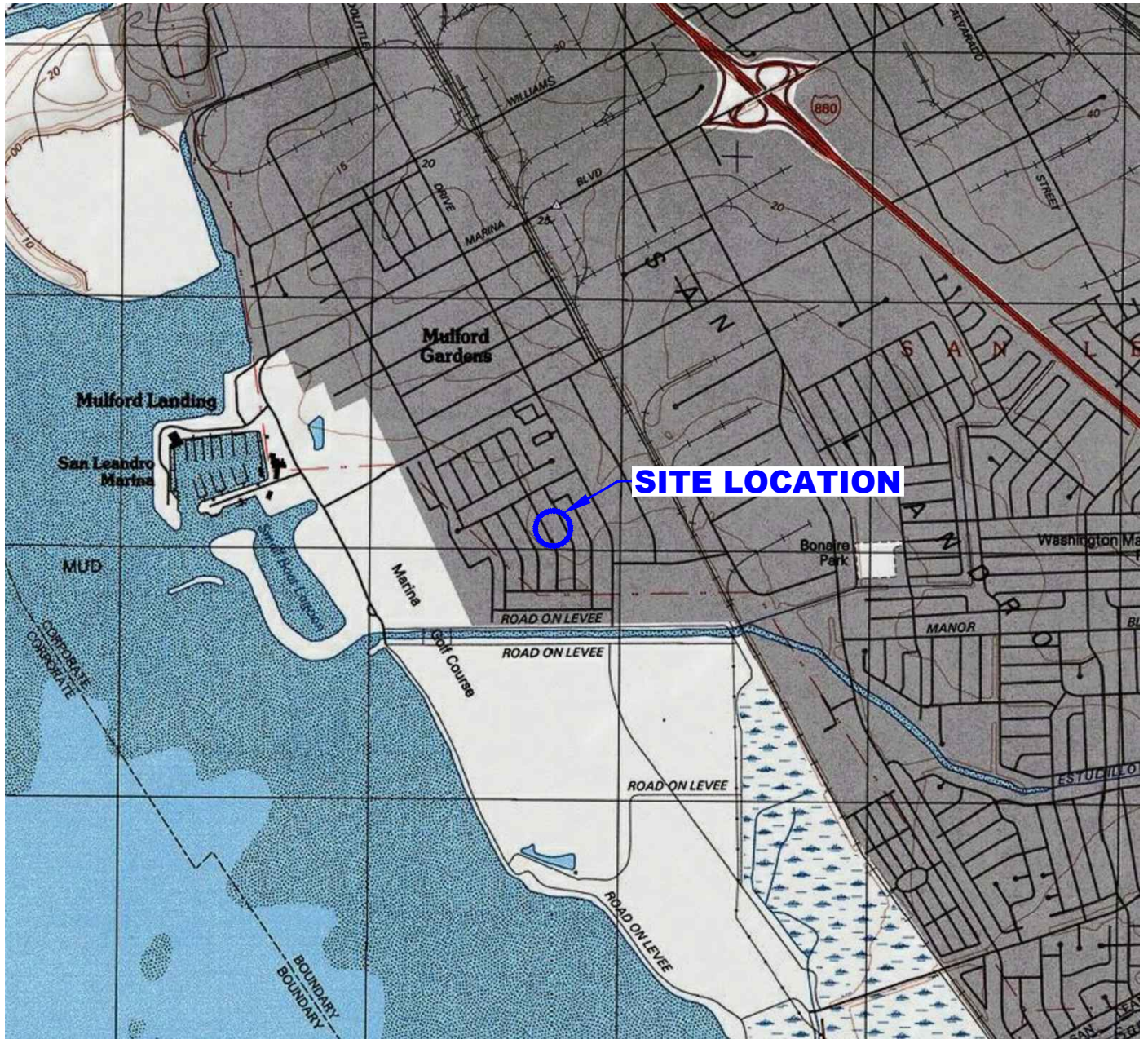
Should you have any questions regarding the contents of this document, please call RRM at (831) 475-8141.

Sincerely,  
**RRM, Inc.**

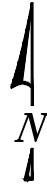
  
Julie Ann Avanto  
Project Engineer  
RCE 77741



- Attachments: Figure 1 – Site Location Map  
Figure 2 – Site Map  
Figure 3 – Extended Site Map  
Attachment A – Utility Maps  
Attachment B – Field and Analytical Procedures



QUADRANGLE LOCATION



SCALE IN FEET



Ref. IA756/IA756-SLM.DWG  
Base Map from TOPOI NGH

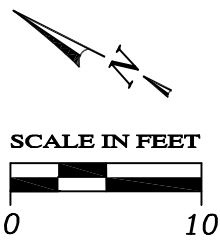
**SITE LOCATION MAP**

**FORMER FOUR SEASONS CLEANERS**

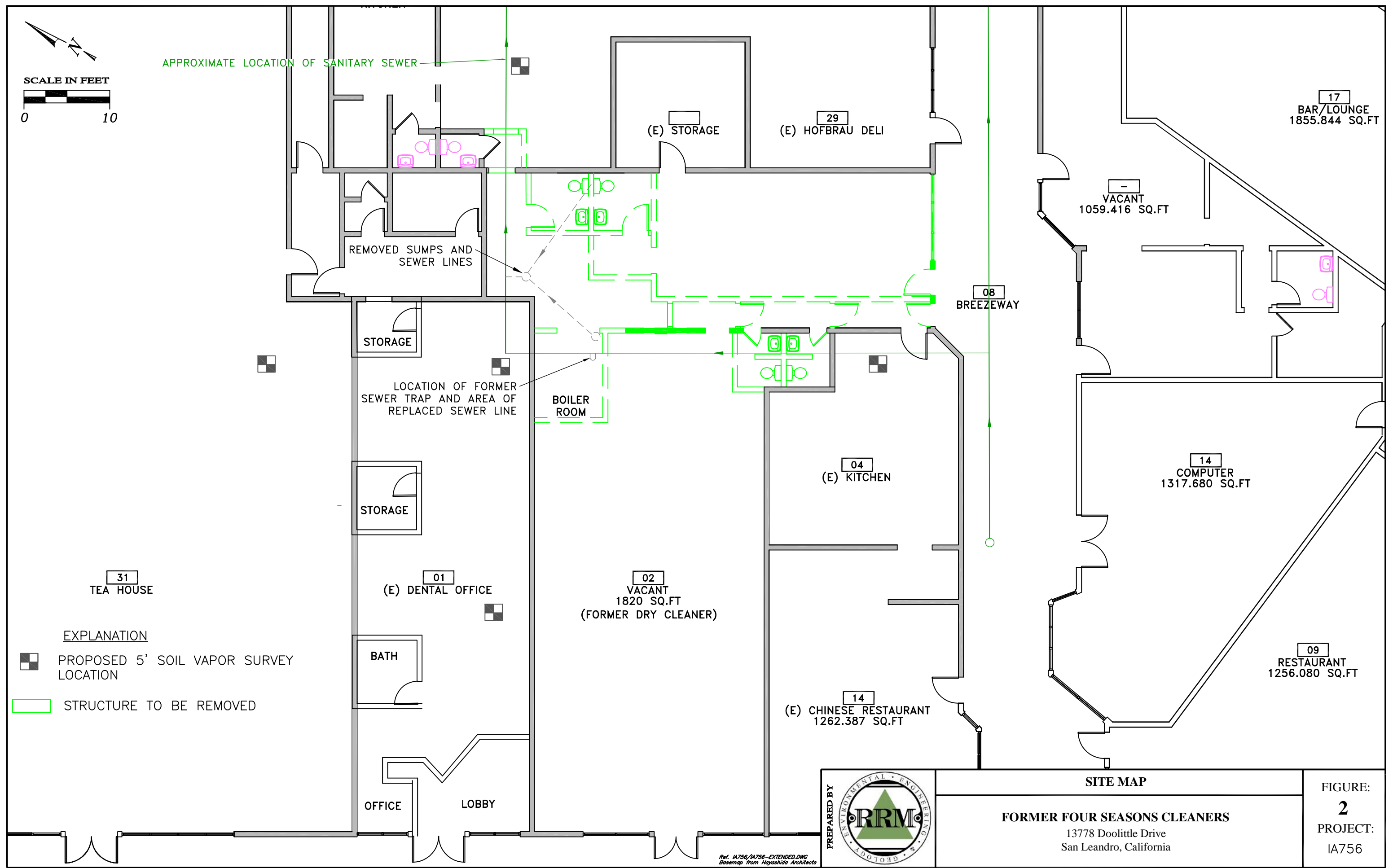
13778 Doolittle Drive  
San Leandro, California

FIGURE:  
**1**  
PROJECT:  
IA756







APPROXIMATE LOCATION OF SANITARY SEWER



**EXPLANATION**

-  PROPOSED 5' SOIL VAPOR SURVEY LOCATION
-  STRUCTURE TO BE REMOVED

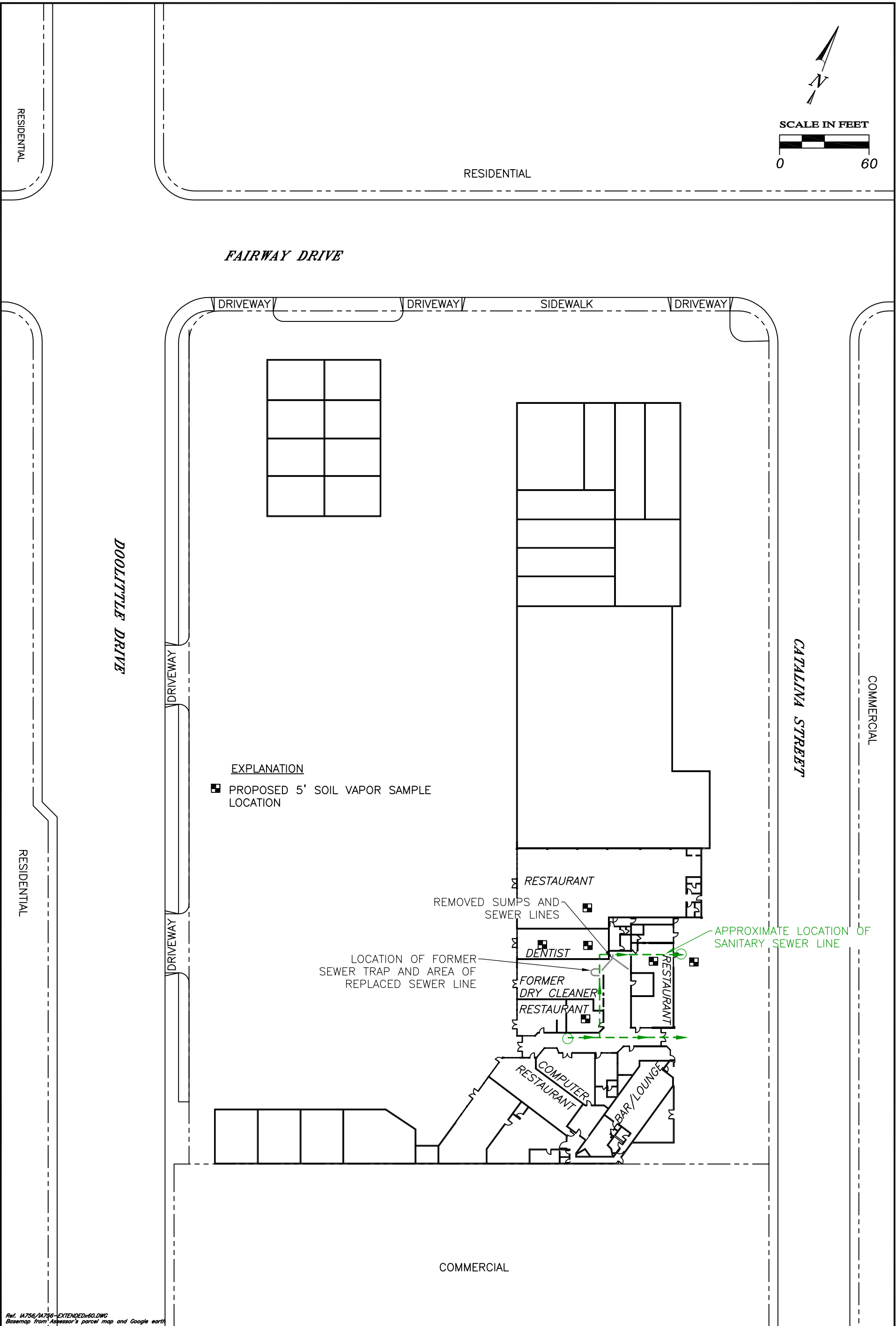


PREPARED BY


**SITE MAP**  
**FORMER FOUR SEASONS CLEANERS**  
 13778 Doolittle Drive  
 San Leandro, California

FIGURE:  
**2**  
 PROJECT:  
 IA756

Ref. IA756/IA756-EXTENDED.DWG  
 Base map from Hayashida Architects



Ref. IA756/IA756-EXTENDED.dwg  
 Basemap from Assessor's parcel map and Google earth

	<b>EXTENDED SITE MAP</b>	<b>FIGURE:</b> <b>3</b> <b>PROJECT:</b> IA756
	<b>FORMER FOUR SEASONS CLEANERS</b> 13778 Doolittle Drive San Leandro, California	

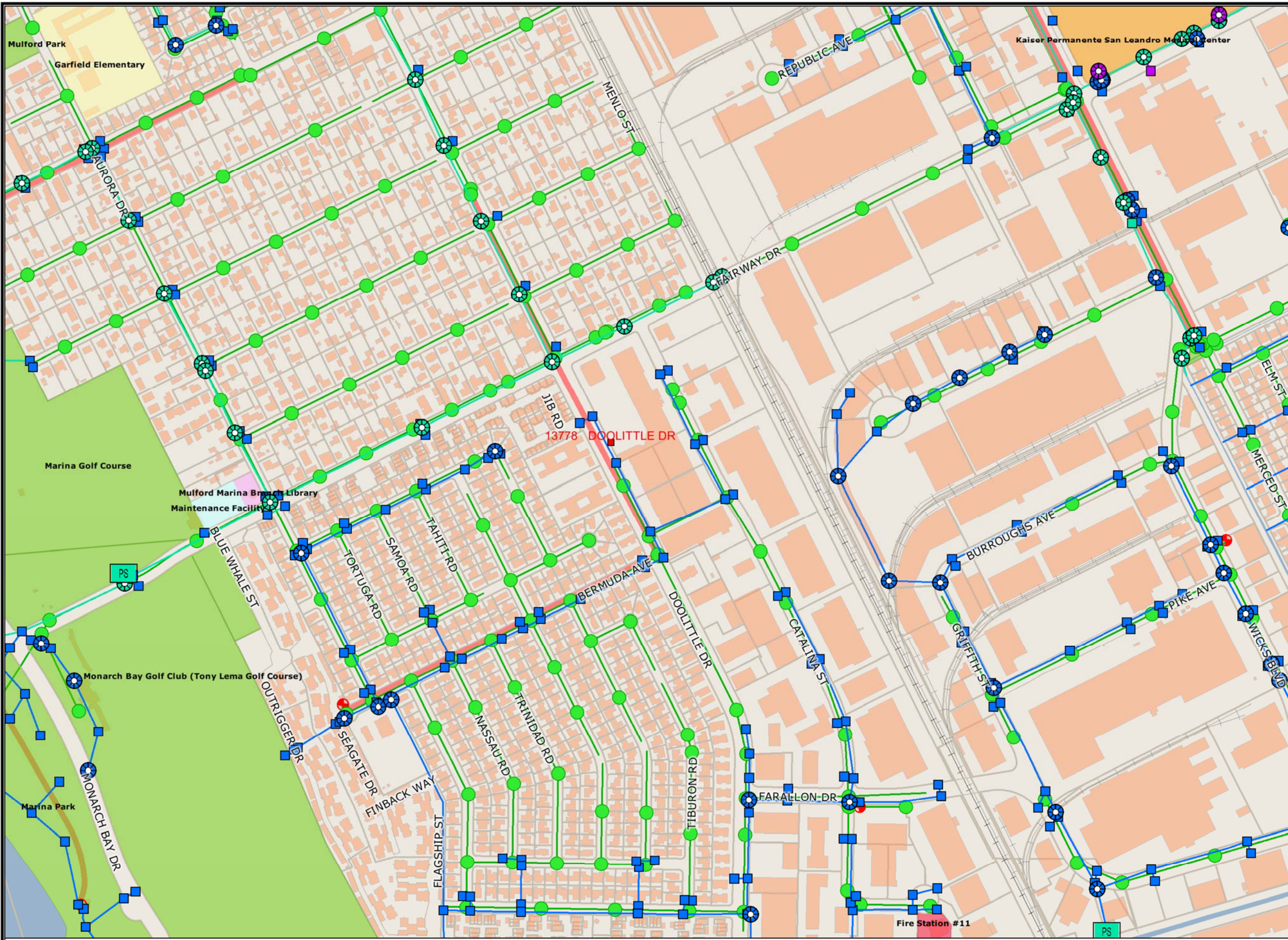


**A**

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**UTILITY MAPS**

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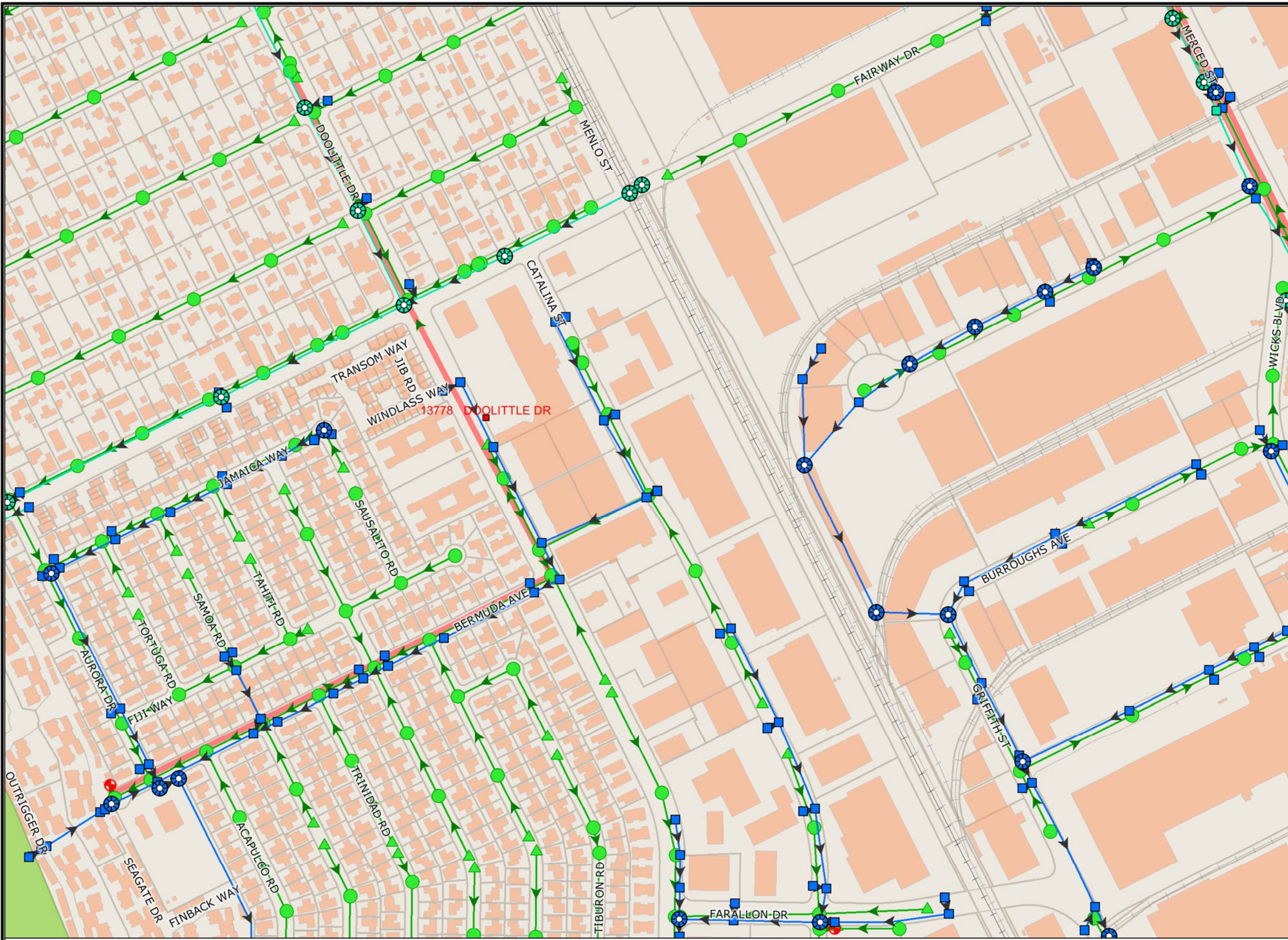


- Storm Pump Station**
- PS Alameda County
- PS Caltrans
- PS City of San Leandro
- PS Private
- PS Unknown
- Storm Manhole**
- Alameda County
- Caltrans
- City of San Leandro
- Private
- Unknown
- Storm Catch Basin**
- Alameda County
- Caltrans
- City of San Leandro
- Private
- Unknown
- Storm Line**
- Alameda County
- City of San Leandro
- Private
- Unknown
- Sewer Manhole**
- Sewer Lift Station**
- Public Land**
- CITY FACILITY
- FIRE STATION
- HOSPITAL
- LIBRARY
- OPEN SPACE
- PARKING
- POST OFFICE
- RESOLUTION
- SCHOOL
- Sewer Line**
- Access
- Active
- Private
- Sewer Force Mains**



SLAM Map





- Storm Pump Station**
- PS Alameda County
  - PS Caltrans
  - PS City of San Leandro
  - PS Private
  - PS Unknown
- Storm Manhole**
- Alameda County
  - Caltrans
  - City of San Leandro
  - Private
  - Unknown
- Storm Catch Basin**
- Alameda County
  - Caltrans
  - City of San Leandro
  - Private
  - Unknown
- Storm Line**
- Alameda County
  - City of San Leandro
  - Private
  - Unknown
- Sewer Manhole**
- Sewer Manhole
  - Sewer Lift Station
  - Sewer Cleanout
- Public Land**
- CITY FACILITY
  - FIRE STATION
  - HOSPITAL
  - LIBRARY
  - OPEN SPACE
  - PARKING
  - POST OFFICE
  - RESOLUTION
  - SCHOOL
- Sewer Line**
- Access
  - Active
  - Private
  - Sewer Force Mains



### SLAM Map

Scale 1:4,207  
 City of San Leandro GIS  
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1517 000 440 000 438 000

1516 000 440 000 438 000

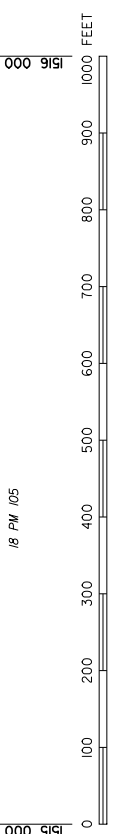
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NOT MAPPED  
1515 B 436



18 PM 105

NOT MAPPED

25-FEB-2008  
EAST BAY MUNICIPAL UTILITY DISTRICT  
DATE ISSUED  
DEC 2003

CITY	SAN LEANDRO	STRUCTURE	DESIGNATION	NAME
COUNTY	ALAMEDA			
USGS	SAN LEANDRO			
PRESSURE ZONE	GOA	CAP. IN M.G.		
	CENTRAL			
ELEV.	202			

1515B438

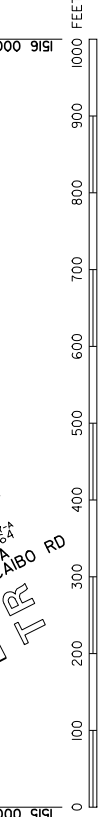
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08-JUL-2009

EAST BAY MUNICIPAL UTILITY DISTRICT	
DATE ISSUED	DEC 2003
FILE NO.	202
STRUCTURE DESIGNATION	GOA
PRESSURE ZONE	CENTRAL
CITY	SAN LEANDRO
COUNTY	ALAMEDA
UTILITIES	SAN LEANDRO

1515B440

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**B**

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**FIELD PROCEDURES AND LABORATORY  
METHODS**

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## **ATTACHMENT B**

### **FIELD PROCEDURES AND LABORATORY METHODS**

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#### **Soil Vapor Sampling with Mobile Laboratory**

Soil vapor sampling using a mobile laboratory is performed by Optimal Technology (Thousand Oaks, CA). To collect the soil gas samples, soil gas probes are hydraulically driven to depths of approximately 5 feet bgs. Where required, a rotary hammer drill is used to drill a 1-inch diameter hole through the overlying surface to allow probe placement. Hydrated bentonite is placed at the surface for a proper seal.

The sampling procedure entails drawing soil gas through the probe using an electric vacuum pump set to draw at 200 milliliters per minute, purging three volumes of soil gas, and obtaining a soil gas sample in SGE gas-tight syringes by drawing the sample through a Luer-Lock connection which joins the probe and the vacuum pump with Teflon™ tubing. Samples are immediately injected into the gas chromatograph/purge and trap after collection. New tubing is used at each sampling point to prevent cross-contamination.

A shut-in test is conducted prior to purging or sampling each location to check for leaks. A tracer gas is applied to the soil gas probes at each point of connection where ambient air could enter the sampling system. These points include the top of the sampling probe where the tubing meets the probe connection and the surface bentonite seals. Isobutane is used as the tracer gas.

No material is placed in the subsurface surrounding the probe, so sampling is conducted after probe placement and testing and purging.

#### **Sub-Slab and Soil Vapor Sampling**

Sub-Slab and Soil vapor sampling are conducted using the October 2011, *Vapor Intrusion Guidance Document* prepared by the State of California Department of Toxic Substances Control (DTSC) and July 2015, *Advisory – Active Soil Gas Investigations* prepared by DTSC and Regional Water Quality Control Board – Los Angeles.

To collect sub-slab and soil vapor samples, soil vapor monitoring points are driven to depths approximately 12 inches and 5 feet below the surface of the concrete slab. A brass vapor probe with a permeable probe tip attached to Teflon™ tubing is placed in the hole at the target sampling depth and sand pack is placed around and above the permeable probe tip. An approximate 6-inch to 1-foot thick layer of dry bentonite chips is placed in the annular space above the sand pack or to above the base of the slab for sub-slab samples; hydrated bentonite is placed above the dry bentonite and water is added at

the surface for a proper seal. The probes are constructed with a gas-tight fitting that is flush to the slab. For sub-slab samples, Entech Slab-Tight™ sub-slab samplers may also be used. Sampling occurs at least two hours after probe installation.

The sampling procedure entails drawing a soil vapor sample through the probe, Teflon™ tubing, and into a sample manifold. The sample manifold is outfitted with Swagelok-type valves, vacuum pressure gauges, a one-liter Summa™ sample canister, and six-liter Summa™ purge canister. A default of three purge volumes is used. The sampling flow rate is maintained at a rate between 100 millimeters/minute and 200 milliliters/minute. During sampling, helium is used as a tracer to test for leaks. This is accomplished by placing a shroud over the wellhead and sampling manifold, and filling the enclosed space with a mixture of helium and air. The helium concentration will be measured and recorded in the field using a hand held meter.

### **Indoor Air Sampling**

Indoor air sampling is conducted using the Department of Toxic Substances Control October 2011 *Guidance for the Evaluation and Mitigation of Subsurface Vapor Intrusion to Indoor Air (Vapor Intrusion Guidance)*. Indoor air samples are collected over an 8-hour period during daytime hours. The samples are collected in the center of the room away from doors and at heights similar to the breathing zone (approximately 3 to 5 feet above the floor), to the extent practical. One ambient outdoor background sample is collected concurrently with the indoor samples in an upwind location, from a height of approximately 6 feet from the ground surface, at a distance equal to at least approximately twice the height of the building, and away from any potential contamination sources or trees.

The indoor air samples are collected using 6-liter evacuated Summa® canisters that are pre-cleaned and supplied by a California-certified analytical laboratory; each of the canisters are equipped with a flow controller, particulate filter, and vacuum gauge. The flow controller on the canister is preset by the laboratory to collect an integrated 5-liter air sample at standard atmospheric conditions over a period of approximately 24 hours. After placement of the canister in the sampling location, air sampling is initiated by opening the valve on the canister. Sample collection times, vacuum readings, and gauge numbers are recorded in the field.

### **Laboratory Methods**

Soil vapor samples analyzed in the field by a California state-certified mobile laboratory are analyzed for HVOCs, including PCE, TCE, cis- and trans-1,2-DCE, vinyl chloride, and the tracer compound (isobutane) using EPA Method 8260.

Sub-slab soil vapor samples are analyzed for HVOCs using EPA Method TO-15 Modified, and for helium, oxygen, carbon dioxide, and methane using American Society for Testing and Materials (ASTM) Modified D-1946. Indoor air samples are analyzed for HVOCs using EPA Method TO-15 Modified SIM.