
FORMER FOUR SEASONS CLEANERS
13778 Doolittle Drive, San Leandro

RO3155

1 MAY 2018

PRESENTATION OUTLINE

- Work completed since February 2018
- Path forward and schedule for upcoming work

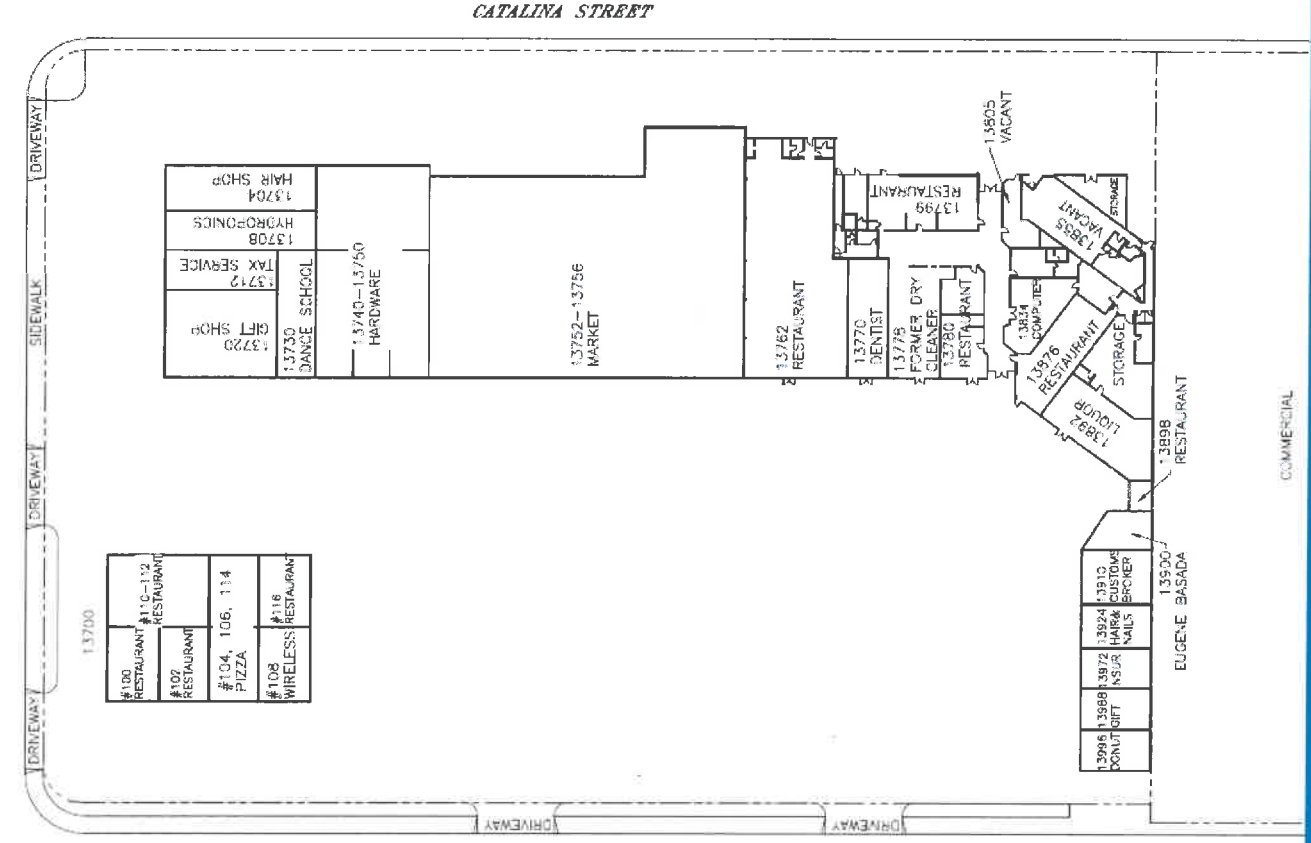


Former Four Seasons Cleaners
13778 Doolittle Drive, San Leandro
RO3155

WORK COMPLETED SINCE FEBRUARY 2018

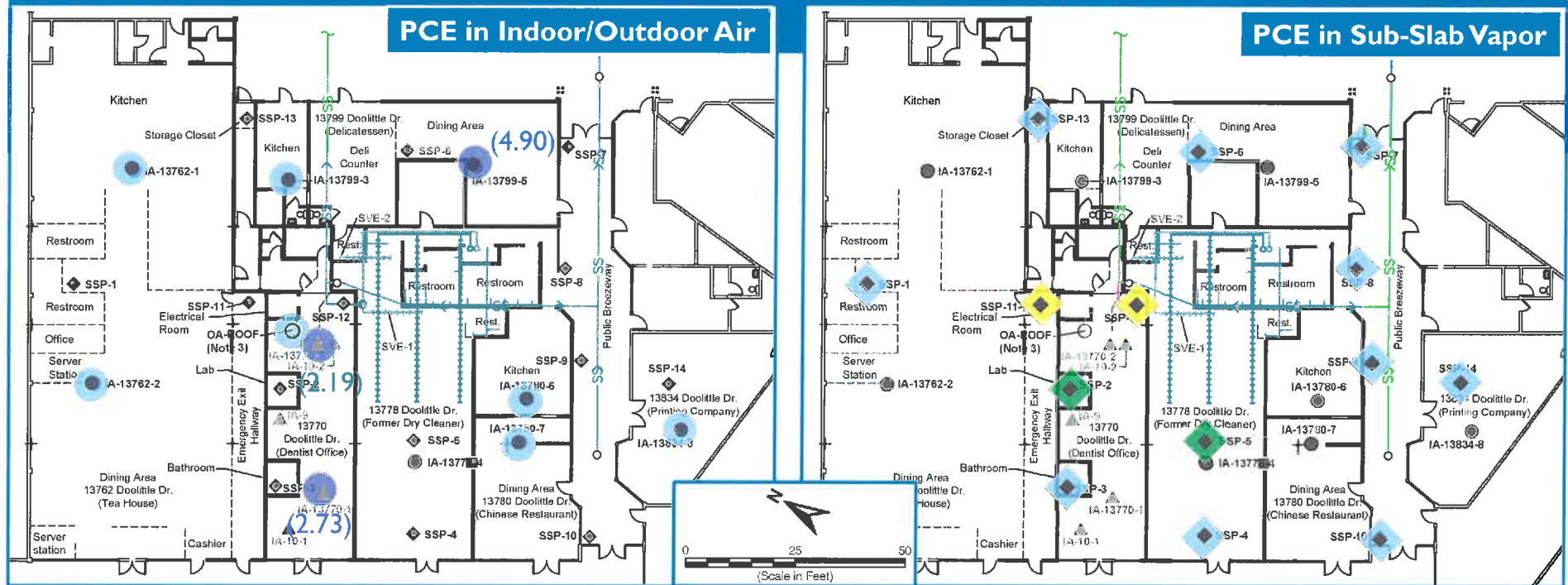
- Indoor air sampling
 - Working hours & normal HVAC conditions – Tuesday, 27 February 2018
 - Non-working hours & no HVAC – Sunday, 4 March 2018
- Subslab soil vapor sampling
 - Concurrent with indoor air sampling on Tuesday, 27 February 2018
- Passive soil vapor sampling
 - Phase 1 – 4 locations
 - Phase 2 – 15 locations
- Documents Submitted
 - Results of Indoor/Outdoor Air, Sub-Slab Soil Vapor, and Phase I Passive Soil Vapor Sampling Conducted On and In the Vicinity of 13778 Doolittle Drive, San Leandro, California
 - Work Plan for Sub-Slab Depressurization System Construction, Startup, and Monitoring

FAIRWAY DRIVE



SITE LAYOUT

PCE IN INDOOR/OUTDOOR AIR AND SUB-SLAB VAPOR (NORMAL HVAC OPERATING CONDITIONS – GENERALLY 27 FEBRUARY 2018)



PCE in Indoor/Outdoor Air ($\mu\text{g}/\text{m}^3$)

- 2.2 – 10 (Max 4.90)
- ND – 2.1

Commercial Indoor Air ESL for PCE = 2.1 $\mu\text{g}/\text{m}^3$

Note: Indoor air samples at IA-13770-1 and -2 collected in December 2017 with operational positive pressure interior ventilation.

- Indoor Air Sampling Location
- Outdoor Air Sampling Location
- ◆ Sub-Sampling Location

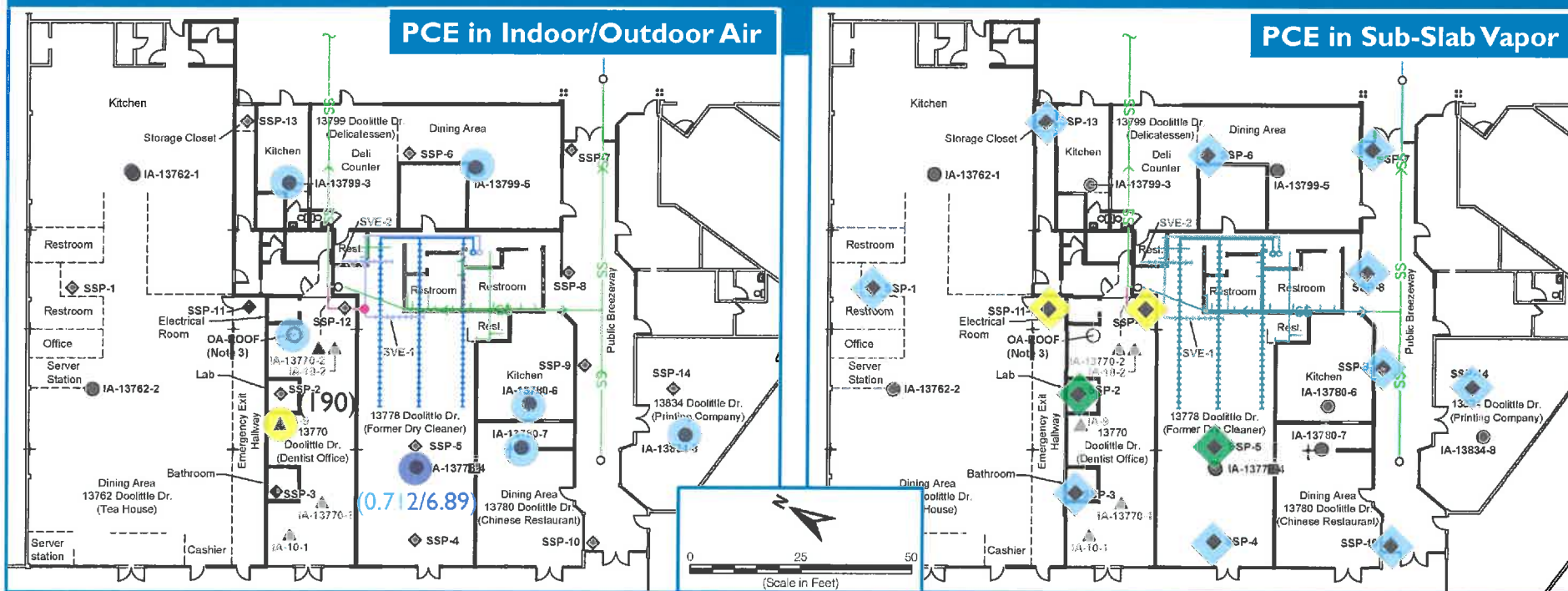
PCE in Sub-Slab Vapor ($\mu\text{g}/\text{m}^3$)

- >100,000 (Max 486,000)
- 10,001 – 100,000
- 2,101 – 10,000
- ND – 2,100

Commercial Sub-Slab ESL for PCE = 2,100 $\mu\text{g}/\text{m}^3$



PCE IN INDOOR/OUTDOOR AIR AND SUB-SLAB VAPOR (NON-WORKING HOURS WITH NO HVAC SYSTEM OPERATING – GENERALLY 4 MARCH 2018)



PCE in Indoor/Outdoor Air ($\mu\text{g}/\text{m}^3$)

- >10 (Max 190)
- 2.2 – 10
- ND – 2.1

Commercial Indoor Air ESL for PCE = 2.1 $\mu\text{g}/\text{m}^3$

Note: Indoor air sample at IA-9 collected in February 2016 with the HVAC system off.

- Indoor Air Sampling Location
- Outdoor Air Sampling Location
- ◆ Sub-Sampling Location

PCE in Sub-Slab Vapor ($\mu\text{g}/\text{m}^3$)

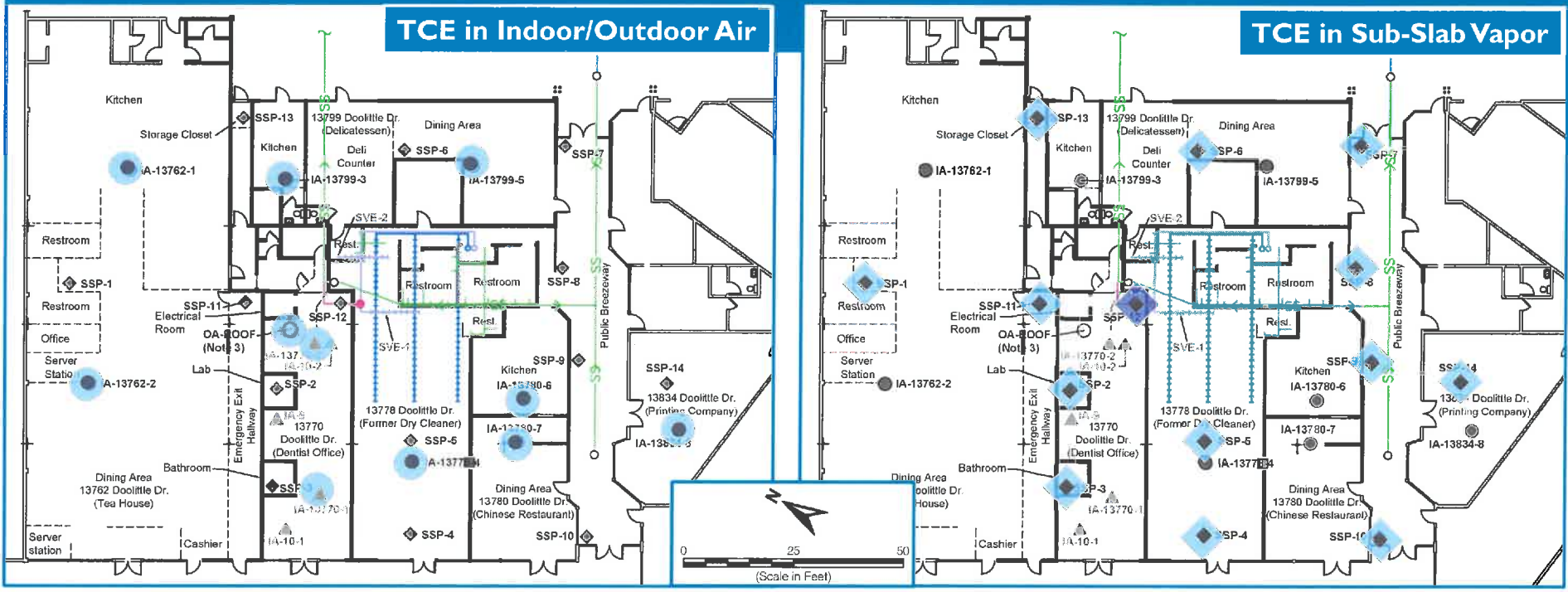
- ◆ >100,000 (Max 486,000)
- ◆ 10,001 – 100,000
- ◆ 2,101 – 10,000
- ◆ ND – 2,100

Commercial Sub-Slab ESL for PCE = 2,100 $\mu\text{g}/\text{m}^3$



TCE IN INDOOR/OUTDOOR AIR AND SUB-SLAB VAPOR

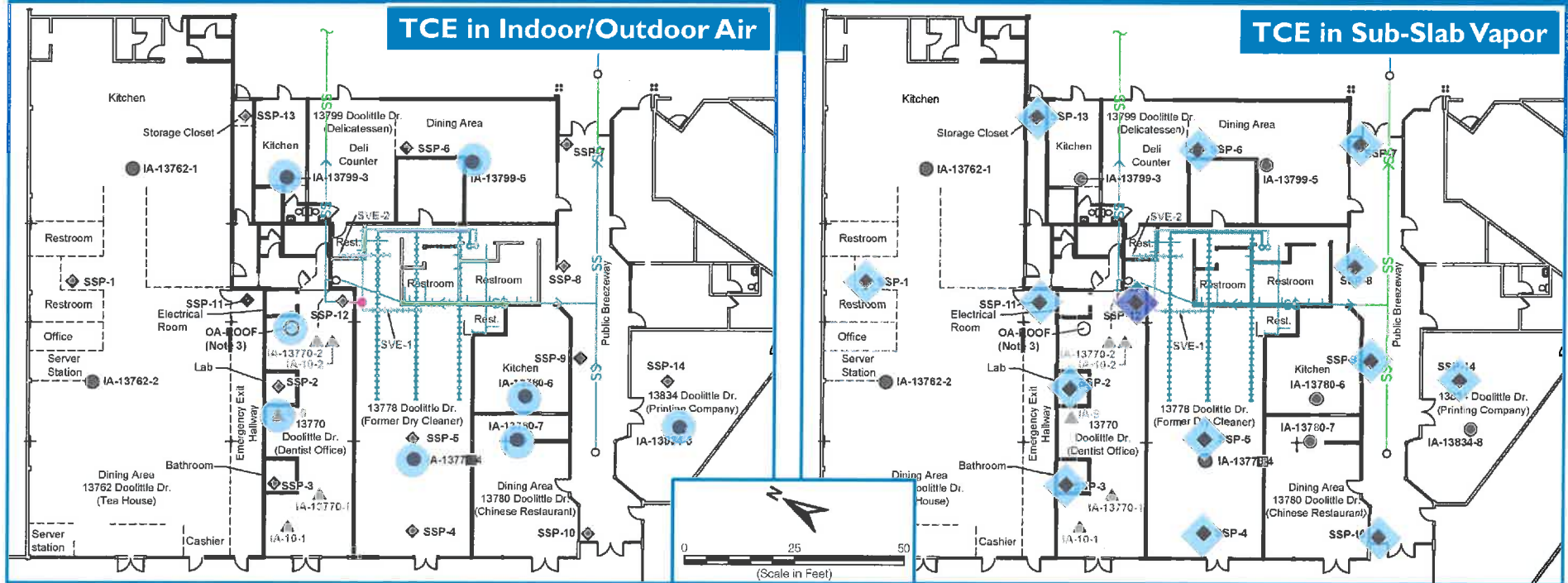
(NORMAL HVAC OPERATING CONDITIONS – GENERALLY 27 FEBRUARY 2018)



<p>TCE in Indoor/Outdoor Air ($\mu\text{g}/\text{m}^3$)</p> <ul style="list-style-type: none"> ● ND – 3 (Max 0.142) <p>Commercial Indoor Air ESL for TCE = 3 $\mu\text{g}/\text{m}^3$</p> <p>Note: Indoor air samples at IA-13770-1 and -2 collected in December 2017 with operational positive pressure interior ventilation.</p>	<ul style="list-style-type: none"> ● Indoor Air Sampling Location ○ Outdoor Air Sampling Location ◆ Sub-Sampling Location 	<p>TCE in Sub-Slab Vapor ($\mu\text{g}/\text{m}^3$)</p> <ul style="list-style-type: none"> ◆ 2,001 – 10,000 (Max 6,420) ◆ ND – 3,000 <p>Commercial Sub-Slab ESL for PCE = 3,000 $\mu\text{g}/\text{m}^3$</p>
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TCE IN INDOOR/OUTDOOR AIR AND SUB-SLAB VAPOR (NON-WORKING HOURS WITH NO HVAC SYSTEM OPERATING – GENERALLY 4 MARCH 2018)



TCE in Indoor/Outdoor Air (ug/m³)

● ND – 3 (Max 0.166)

Commercial Indoor Air ESL for TCE = 3 ug/m³

Note: Indoor air sample at IA-9 collected in February 2016 with the HVAC system off, and TCE was not detected in this sample above a reporting limit of 50 ug/m³.

○ Indoor Air Sampling Location

○ Outdoor Air Sampling Location

◆ Sub-Sampling Location

TCE in Sub-Slab Vapor (ug/m³)

◆ 2,001 – 10,000 (Max 6,420)

◆ ND – 3,000

Commercial Sub-Slab ESL for PCE = 3,000 ug/m³





Legend:

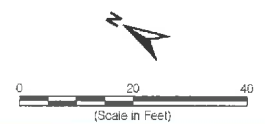
- ◆ SSP-1 SSP Location (See Note 2)
- SSD-A Vent Piping with Standpipe
- SVE-A Vent Piping with Standpipe
- ▬ Concrete Grade Beam Below Floor (See Note 3)
- - - - EKI Observed Walls and Features

Abbreviations:

- SSD = sub-slab depressurization
- SSP = sub-slab probe
- SVE = soil vapor extraction

Notes:

1. All locations are approximate.
2. Figure shows SSPs installed at the time of the SSD pilot test in November 2017.
3. A concrete grade beam is present below the floor under the wall between the Dental Office space and the former dry cleaner space based on observations from drilling holes through the concrete on 15 December 2017. The extent of the grade beam to the northeast (interior of the building) is uncertain but is presumed to end where shown.



EXISTING SUB-SLAB DEPRESSURIZATION (“SSD”) SYSTEM INFRASTRUCTURE

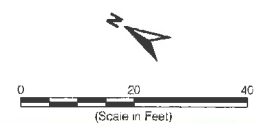




- Legend:**
- ◆ SSP-1 SSP Location
 - SSD-A Vent Piping with Standpipe
 - SVE-A Vent Piping with Standpipe
 - (0.006) Sub-Slab Vacuum (In-WC) (See Note 2)
 - Concrete Grade Beam Below Floor
 - - - EKI Observed Walls and Features

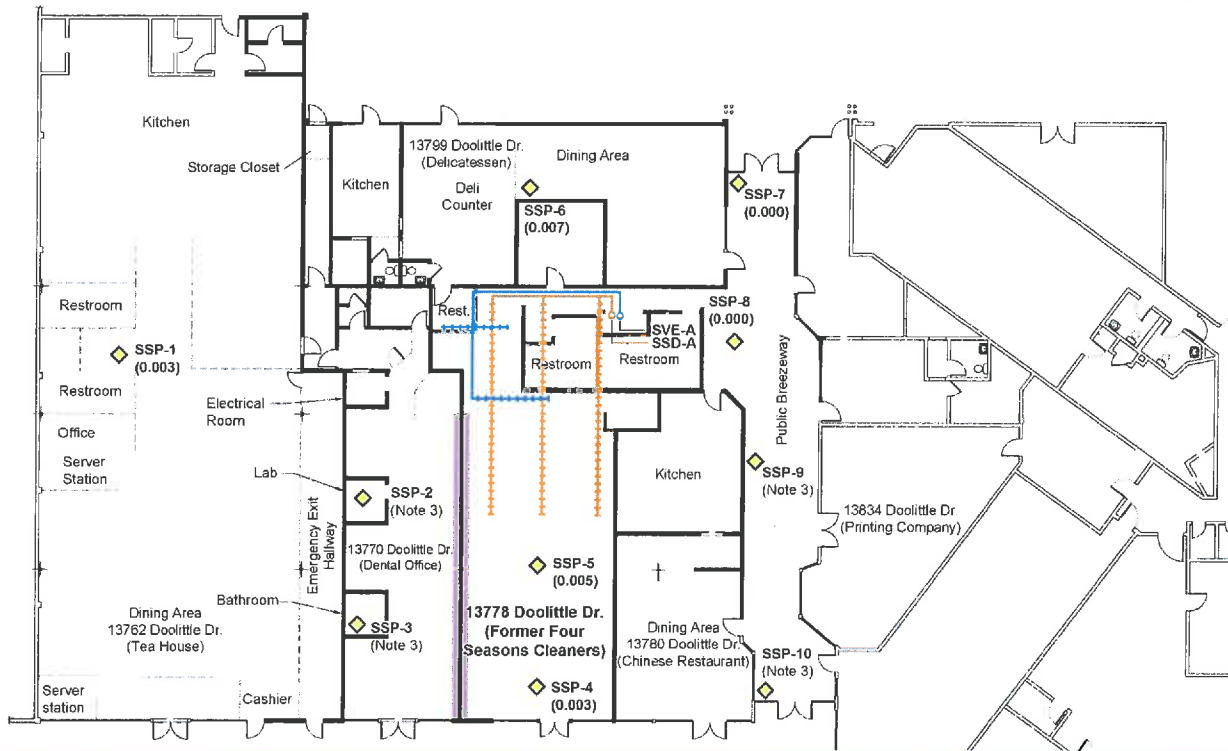
- Abbreviations:**
- SSD = sub-slab depressurization
 - SSP = sub-slab probe
 - SVE = soil vapor extraction
 - In-WC = inches water column

- Notes:**
1. All locations are approximate.
 2. The sub-slab vacuum measured at approximately 15:10 during testing at SSD-A on 11/21/2017 is shown for each SSP.
 3. At SSP-2 and SSP-3, slightly vacuums recorded were not confirmed as caused by SSD testing so they are not listed. See



EXTRACTION FROM SSD VENT PIPE – TEST RESULTS

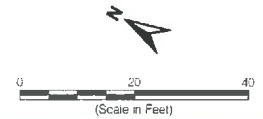




- Legend:**
- ◆ SSP-1 SSP Location
 - SVE-A Vent Piping with Standpipe
 - SVE-A Vent Piping with Standpipe
 - (0.006) Sub-Slab Vacuum (In-WC) (See Note 2)
 - Concrete Grade Beam Below Floor
 - EKI Observed Walls and Features

- Abbreviations:**
- SSD = sub-slab depressurization
 - SSP = sub-slab probe
 - SVE = soil vapor extraction
 - In-WC = inches water column

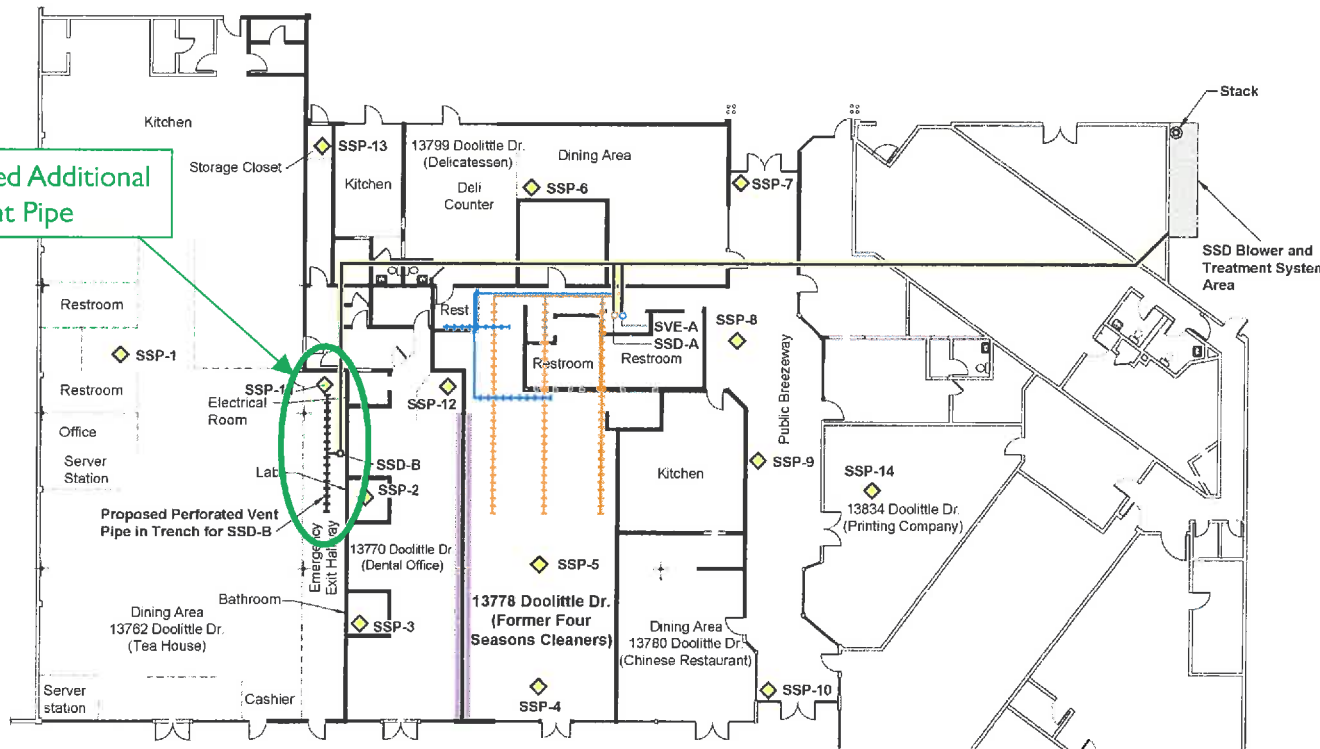
- Notes:**
1. All locations are approximate.
 2. The sub-slab vacuum during testing at SVE-A on 11/21/2017 is shown for each SSP.
 3. At SSP-2, SSP-3, and SSP-9 slight vacuums recorded were not confirmed as caused by SSD testing so they are not listed. At SSP-10 a slight positive pressure was recorded. See text for



EXTRACTION FROM SVE VENT PIPE – TEST RESULTS



Proposed Additional
SSD Vent Pipe



Legend:

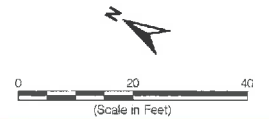
- SSP-1** SSP Location (See Note 3)
- SSD-A Vent Piping with Standpipe**
- SVE-A Vent Piping with Standpipe**
- SSD Conveyance Piping (On Roof) (Preliminary Routing)**
- Concrete Grade Beam Below Floor**
- EKI Observed Walls and Features**

Abbreviations:

- SSD = sub-slab depressurization
- SSP = sub-slab probe
- SVE = soil vapor extraction

Notes:

1. All locations are approximate.
2. Layout shown is preliminary and may be revised during final design.
3. This figure includes SSP-11 through SSP-14, which were installed in February 2018 (after the SSD pilot test).



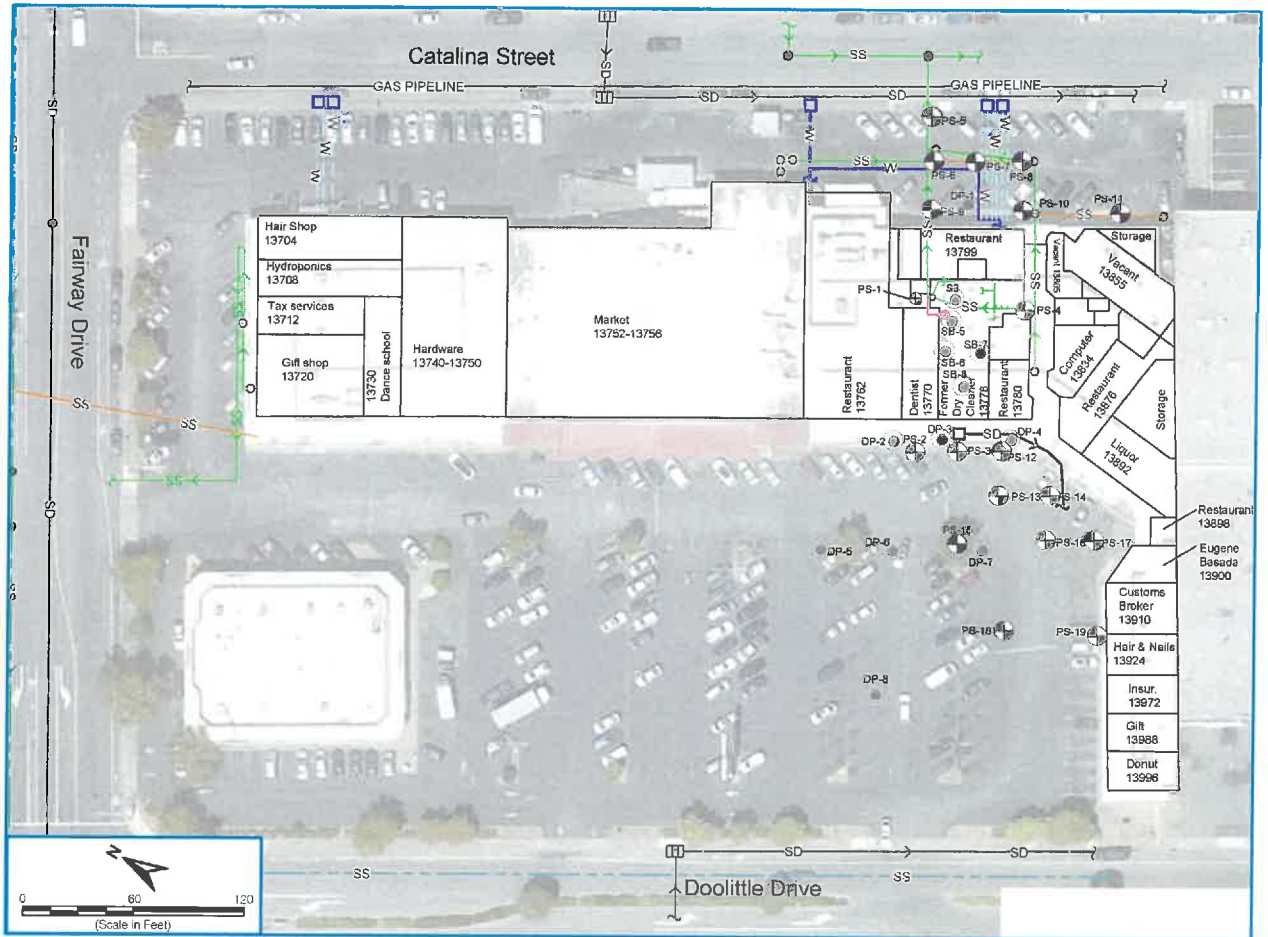
PROPOSED LAYOUT OF UPDATED SSD SYSTEM



PASSIVE SOIL VAPOR SAMPLING LOCATIONS

Legend:

- SS — EKI Observed Sanitary Sewer Line
- SS — Former Sanitary Sewer Line (plugged)
- SS — Current Sanitary Sewer Layout as shown on City of San Leandro GIS Map dated 23 August 2017
- SS — Current Force Main Layout as Shown on City of San Leandro GIS Map dated 23 August 2017
- SS — Existing Layout as Provided by BKF, 2017
- W — Current Water Line Layout as Provided by BKF, 2017
- SD — EKI Observed Storm Drain Line
- SD — Current Storm Drain Layout as Shown on City of San Leandro GIS Mmap dated 23 August 2017
- W — Existing Water Line as Provided by BKF, 2017
- W — Proposed Water Line as Provided by BKF, 2017
- SD — Current Alameda County Storm Drain as Shown on City of San Leandro GIS Map dated 23 August 2017
- Passive Soil Vapor Sampling Location
- Previous Groundwater Sampling Location
- Alameda County Storm Drain Manhole Cleanout (plugged)
- Cleanout
- Manhole
- Downspout Observed by EKI
- Water Meter Box
- Storm Drain Catch Basin



PCE IN SOIL VAPOR AND GROUNDWATER

Legend

- Passive Soil Vapor Sampling Location
- (77) Detected PCE Concentration in Passive Soil Vapor in $\mu\text{g}/\text{m}^3$
- Previous Grab Groundwater Sampling Location

PCE in Soil Vapor ($\mu\text{g}/\text{m}^3$)

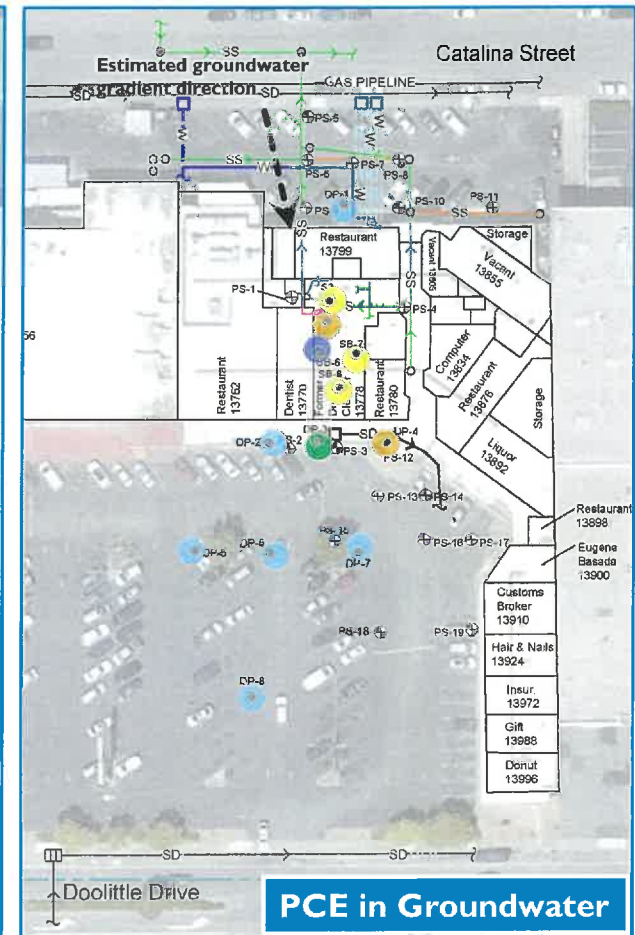
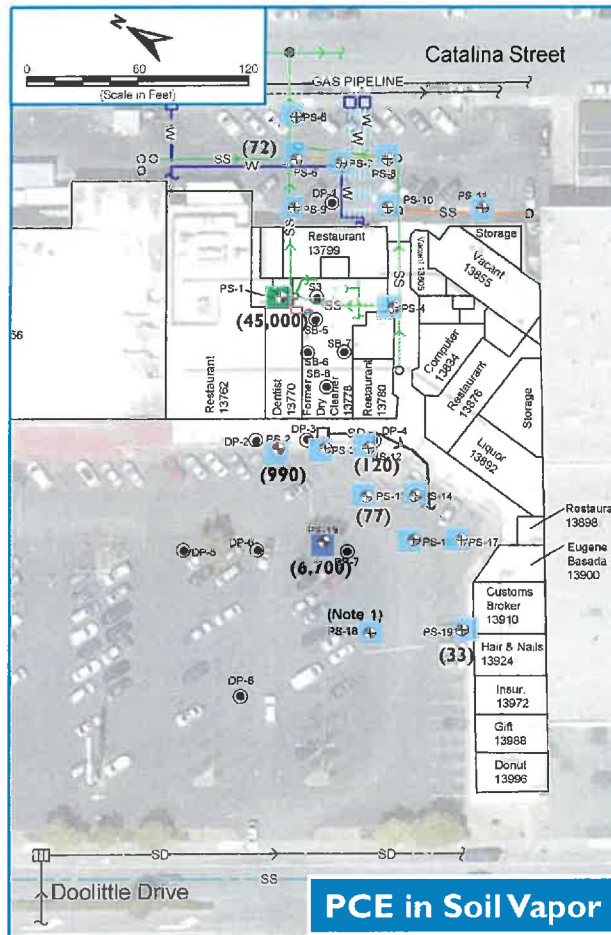
- >10,000 (Max 45,000)
- 2,101 – 10,000
- ND – 2,100

PCE in Groundwater ($\mu\text{g}/\text{L}$)

- 10,001 – 100,000 (Max 100,000)
- 1,001 – 10,000
- 101 – 1,000
- 5.1 – 100
- ND - 5

Notes:

- (1) cDCE and tDCE also detected in PS-18 at concentrations of 4,200 $\mu\text{g}/\text{m}^3$ and 3,000 $\mu\text{g}/\text{m}^3$, respectively.
- (2) Vinyl chloride not detected in any passive soil vapor samples above reporting limits ranging from 230 to 380 $\mu\text{g}/\text{m}^3$. The commercial soil vapor ESL for vinyl chloride is 160 $\mu\text{g}/\text{m}^3$.



Commercial Soil Vapor ESL for PCE = 2,100 $\mu\text{g}/\text{m}^3$

TCE IN SOIL VAPOR AND GROUNDWATER

Legend

- ⊕ Passive Soil Vapor Sampling Location
- (82) Detected PCE Concentration in Passive Soil Vapor in $\mu\text{g}/\text{m}^3$
- ⊙ Previous Grab Groundwater Sampling Location

TCE in Soil Vapor ($\mu\text{g}/\text{m}^3$)

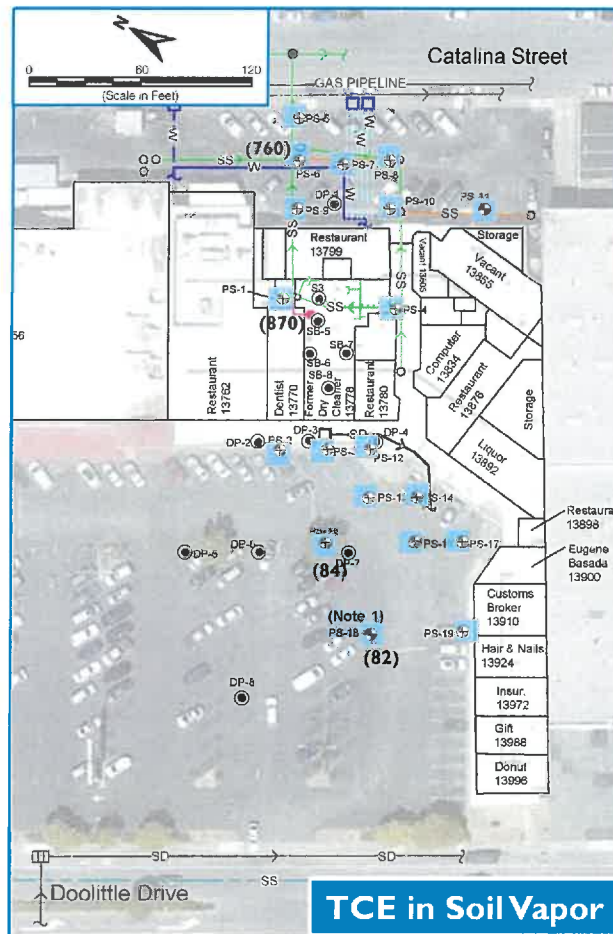
- ND – 3,000 (Max 870)

TCE in Groundwater ($\mu\text{g}/\text{L}$)

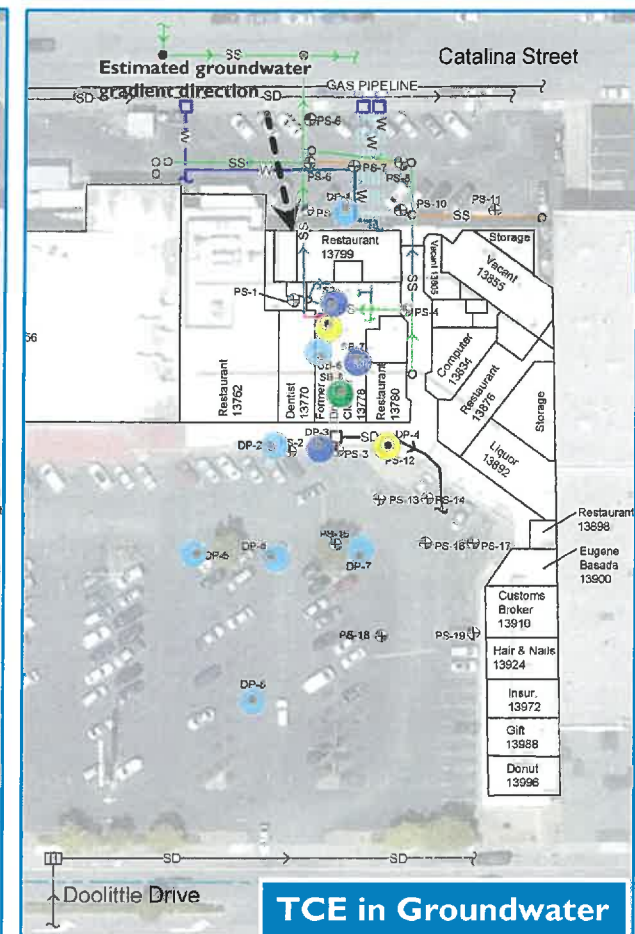
- 1,001 – 10,000 (Max 3,700)
- 101 – 1,000
- 5.1 – 100
- ND - 5

Notes:

- (1) cDCE and tDCE also detected in PS-18 at concentrations of 4,200 $\mu\text{g}/\text{m}^3$ and 3,000 $\mu\text{g}/\text{m}^3$, respectively.
- (2) Vinyl chloride not detected in any passive soil vapor samples above reporting limits ranging from 230 to 380 $\mu\text{g}/\text{m}^3$. The commercial soil vapor ESL for vinyl chloride is 160 $\mu\text{g}/\text{m}^3$.



TCE in Soil Vapor



TCE in Groundwater

Commercial Soil Vapor ESL for TCE = 3,000 $\mu\text{g}/\text{m}^3$

PROPOSED DATA GAP INVESTIGATION

Legend

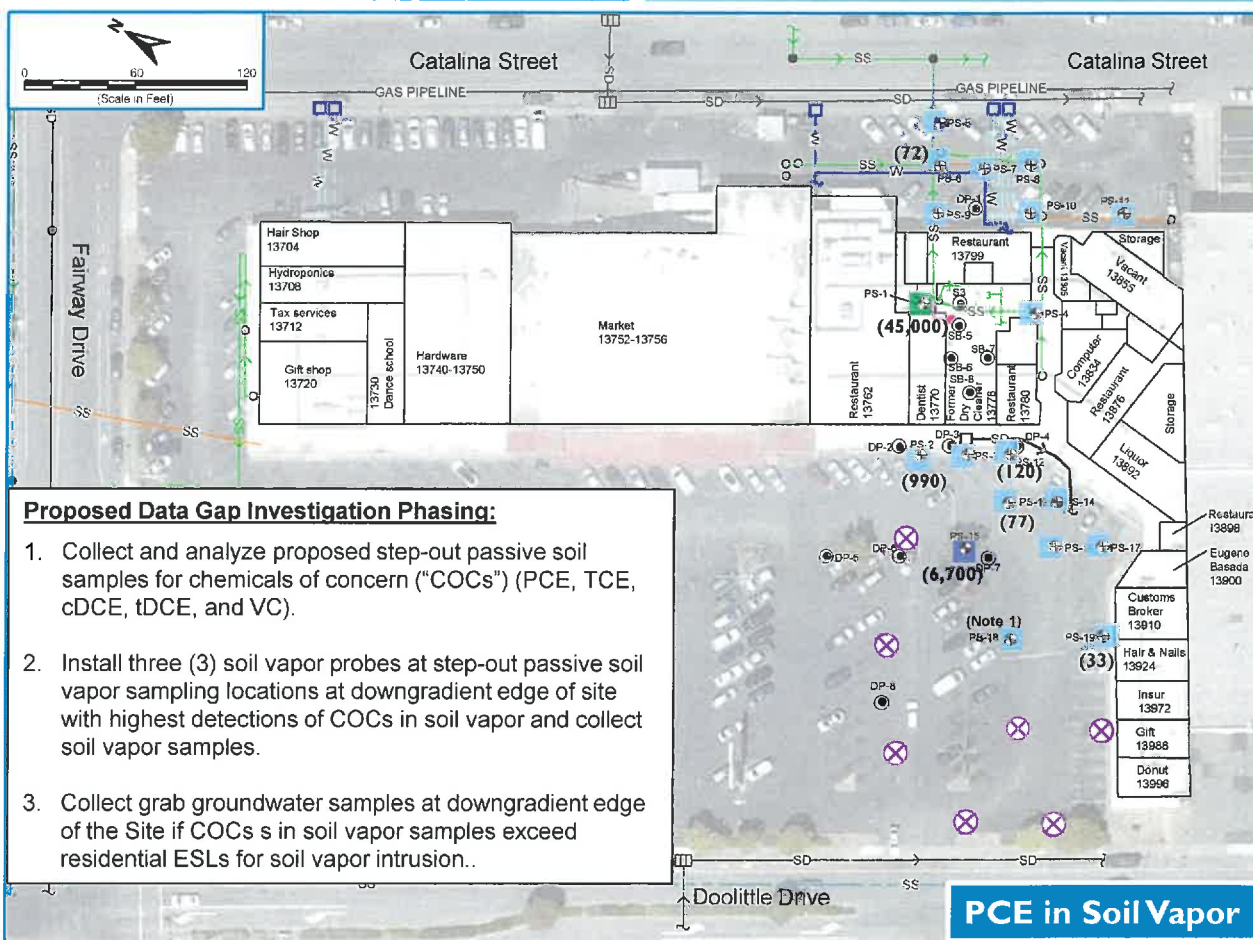
- ⊕ Passive Soil Vapor Sampling Location
- (77) Detected PCE Concentration in Passive Soil Vapor in $\mu\text{g}/\text{m}^3$
- ⊙ Previous Grab Groundwater Sampling Location
- ⊗ Proposed Step-Out Passive Soil Vapor Sampling Location

PCE in Soil Vapor ($\mu\text{g}/\text{m}^3$)

- >10,000 (Max 45,000)
- 2,101 – 10,000
- ND – 2,100

Notes:

- (1) cDCE and tDCE also detected in PS-18 at concentrations of 4,200 $\mu\text{g}/\text{m}^3$ and 3,000 $\mu\text{g}/\text{m}^3$, respectively.
- (2) Vinyl chloride ("VC") not detected in any passive soil vapor samples above reporting limits ranging from 230 to 380 $\mu\text{g}/\text{m}^3$. The commercial soil vapor ESL for vinyl chloride is 160 $\mu\text{g}/\text{m}^3$.



PATH FORWARD

TASK 1: DESIGN/PERMIT/INSTALL SUB-SLAB DEPRESSURIZATION (“SSD”) SYSTEM

- Design/Permit/Install SSD System
 - ACDEH Approval of Workplan for SSD Design/Implementation
 - Complete permit application process with BAAQMD
 - Complete Design of SSD system
 - Install SSD system
 - Start-Up SSD System
 - Resample Indoor Air During Non-Working Hours and No HVAC
 - Submit Implementation Report to ACDEH
 - Ongoing Routine System Monitoring

PATH FORWARD

TASK 2: DATA GAP WORKPLAN

- Prepare/submit/implement data gap workplan:
 - Submit Phase 2 passive soil vapor sampling results and data gap workplan
 - Conduct step-out passive soil vapor sampling in front parking lot
 - Install 3 soil vapor probes at passive soil vapor sampling locations at downgradient edge of site with the highest detections of COCs in soil vapor.
 - Collect grab groundwater samples at these locations if COC concentrations in soil vapor exceed residential ESLs for vapor intrusion
- Submit data gap report to ACDEH

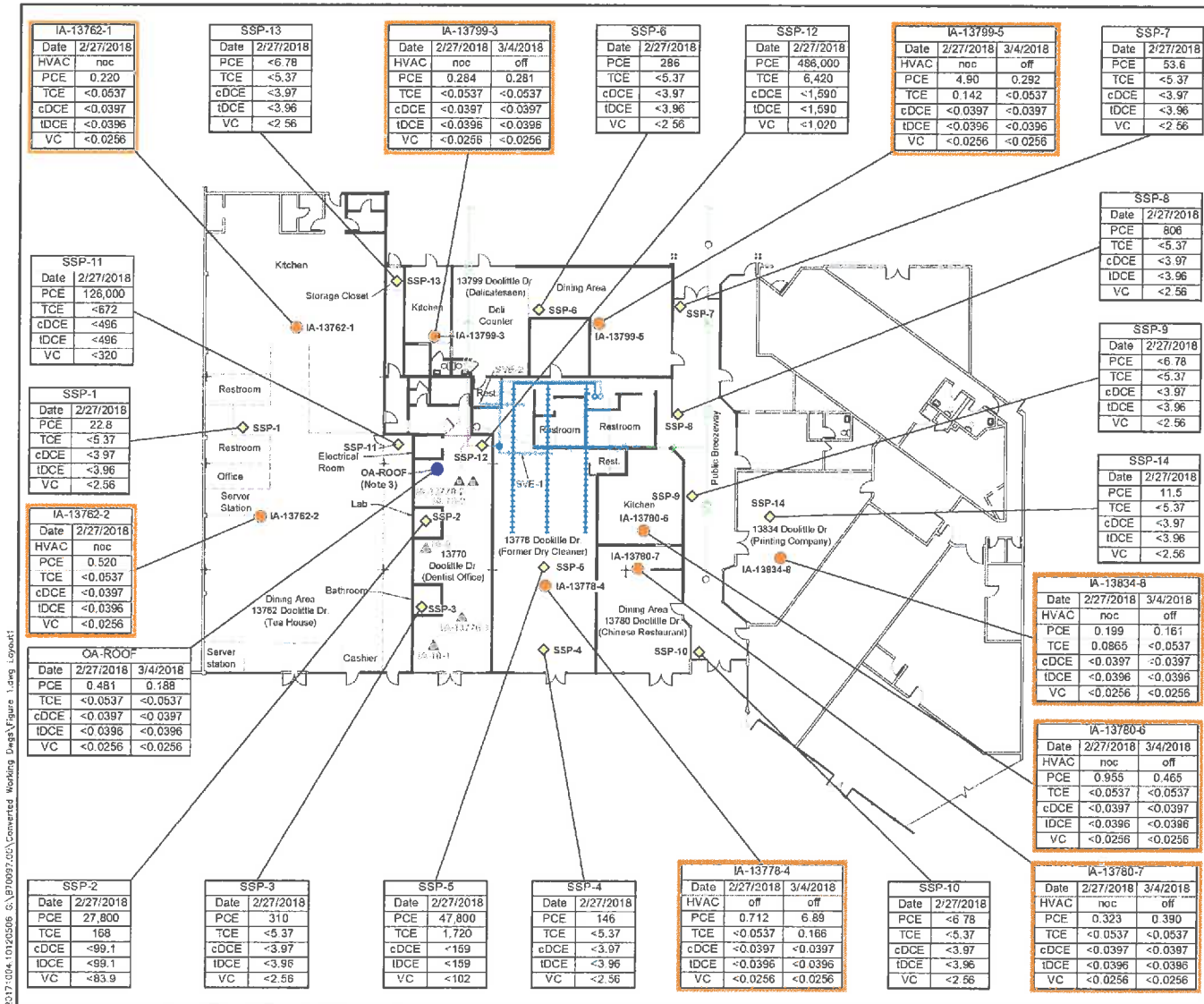
PATH FORWARD

TASK 3. PREPARE REMEDIAL ACTION PLAN

- Submit draft to ACDEH
- Submit for public comment
- Implement RAP
- Site Closure / NFA

SCHEDULE

Task No.	Task Description	Schedule
1	SSD Permitting, Design, and Implementation	May – September 2018
2	Prepare/submit/implement data gap workplan	
2a	Prepare and submit data gap workplan	April - 25 May 2018
2b	ACDEH approval of data gap work plan	Mid-June 2018
2c	Conduct data gap investigation	July – August 2018
2d	Prepare and submit site investigations and data gap report	September – October 2018
2e	Conduct one round of sampling from soil vapor probes during wet season. Submit data summary.	April 2019
3	Remedial Action Plan	December 2018 – May 2019



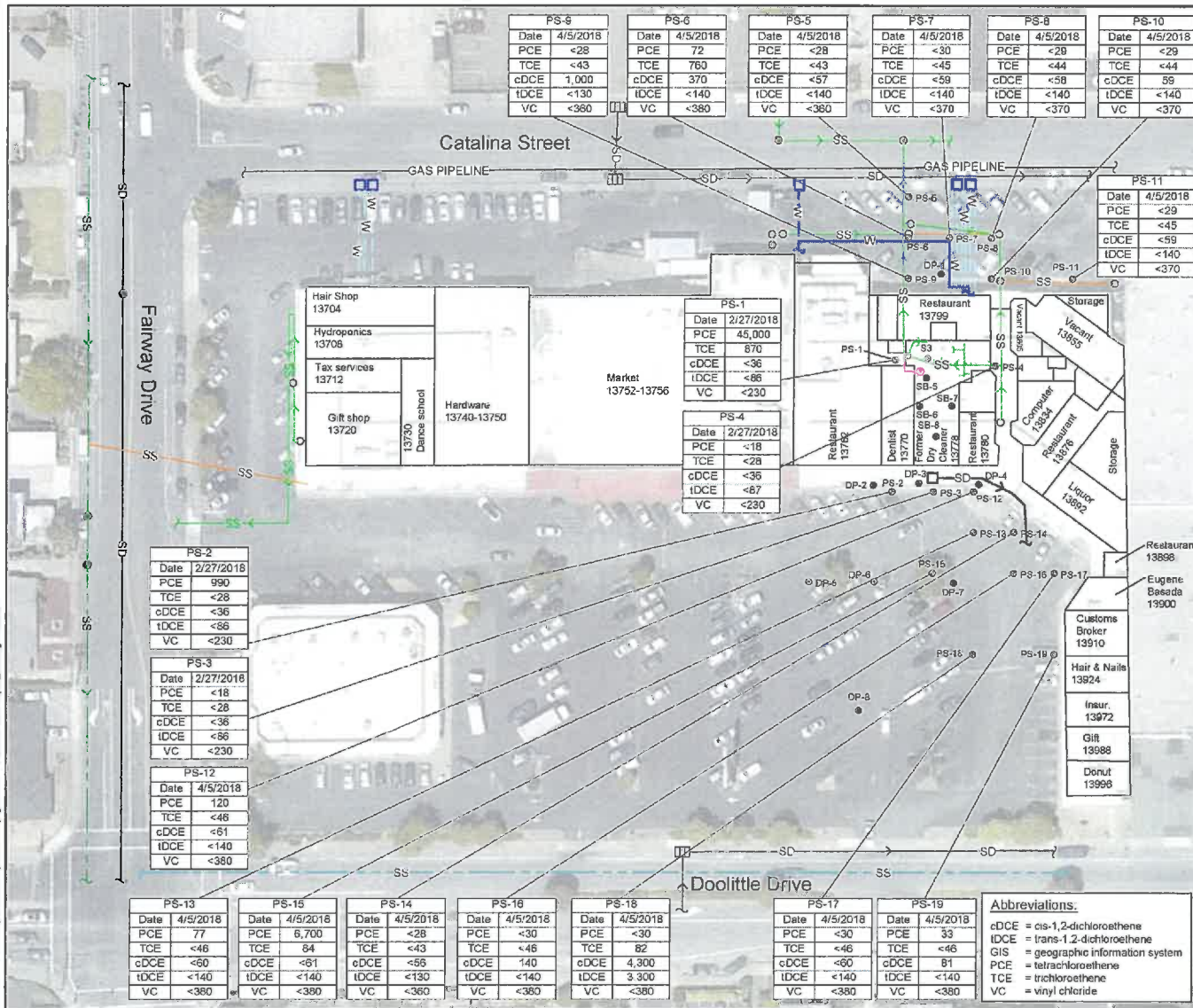
Indoor/Outdoor Air and Sub Slab Vapor Results

13778 Doolittle Drive
San Leandro CA
March 2018
FKI R70097 00

Figure 2

2017-1004-10225096 G:\P\0097-00\Connected Working Design\Figure 1.dwg Layout

20180420_1237 G:\707077\00\2018-04\Figure 1 - Passive Soil Vapor_03.dwg P:\BURE 1



Legend:

- SS (green line) EKI Observed Sanitary Sewer Line
- SS (pink line) Former Sanitary Sewer Line (plugged)
- SS (blue line) Current Sanitary Sewer Layout as shown on City of San Leandro GIS Map dated 23 August 2017
- SS (yellow line) Current Force Main Layout as Shown on City of San Leandro GIS Map dated 23 August 2017
- SS (orange line) Existing Layout as Provided by BKF, 2017
- W (black line) Current Water Line Layout as Provided by BKF, 2017
- SD (black line) EKI Observed Storm Drain Line
- SD (grey line) Current Storm Drain Layout as Shown on City of San Leandro GIS Mmap dated 23 August 2017
- W (blue dashed line) Existing Water Line as Provided by BKF, 2017
- W (red dashed line) Proposed Water Line as Provided by BKF, 2017
- SD (grey dashed line) Current Alameda County Storm Drain as Shown on City of San Leandro GIS Map dated 23 August 2017
- (grey) Previous Grab Groundwater Sampling Location
- (black) Completed Passive Soil Vapor Sampling Locations
- (grey) Alameda County Storm Drain Manhole
- (pink) Cleanout (plugged)
- (black) Cleanout
- (grey) Manhole
- (blue) Downspout Observed by EKI
- (white) Water Meter Box
- (grey) Storm Drain Catch Basin

Notes:

- All locations are approximate
- Actual passive soil vapor sampling locations may be adjusted in field based on access.

Sources:

- Base drawing is from Google Earth, dated 14 June 2017.
- Sanitary sewer lines as identified by Subdynamic on 3 October 2017.
- BKF domestic water point of connections C2.0 dated 31 March 2017.
- City of San Leandro GIS SLAM map dated 23 August 2017
- BKF conceptual parking exhibit dated 25 January 2017.
- Concentrations in micrograms per cubic meter (ug/m³).

Scale: 0 60 120 (Scale in Feet)

Passive Soil Vapor Results

13778 Doolittle Drive
San Leandro, CA
April 2018
EKI B70697.00

Figure 1

Abbreviations:

- cDCE = cis-1,2-dichloroethene
- tDCE = trans-1,2-dichloroethene
- GIS = geographic information system
- cDCE = cis-1,2-dichloroethene
- TCE = trichloroethene
- VC = vinyl chloride

