VAPOR INTRUSION MITIGATION MEASURES STATUS REPORT

PACIFIC FOOD SYSTEMS, INC. NORTH BUILDING
5815 FOURTH AVENUE SOUTH
SEATTLE, WASHINGTON

AGREED ORDER NO. DE 10402

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For:
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ACRONYMS AND ABBREVIATIONS

Agreed Order	Agreed Order No. DE 5348 entered into by the Washington State Department of Ecology and Capital Industries, Inc. on January 24, 2008
Building	Pacific Food Systems, Inc. North Building at 5815 Fourth Avenue South in Seattle, Washington
Capital	Capital Industries, Inc.
COCs	constituents of concern
Ecology	Washington State Department of Ecology
Farallon	Farallon Consulting, L.L.C.
HVOC	halogenated volatile organic compound
IOW	inches of water
IPIMAL	Inhalation Pathway Interim Measures Action Level
µg/m^3	micrograms per cubic meter
PCE	tetrachloroethene
PFE	pressure field extension
PSCAA	Puget Sound Clean Air Agency
SCFM	standard cubic feet per minute
SSDS	subslab depressurization system
TCE	trichloroethene
VI	vapor intrusion
VIAMM	*Revised Vapor Intrusion Assessment, Monitoring, and Mitigation Plan, W4 Joint Deliverable, Seattle, Washington* dated February 2, 2015 prepared by Farallon Consulting, L.L.C.
VIIMM Work Plan	*Vapor Intrusion, Inspection, Monitoring, and Maintenance Work Plan, Pacific Seafoods, 5815 Fourth Avenue South – North Building, Seattle, Washington* dated November 2015 prepared by Farallon Consulting, L.L.C.
VIM Design Plan	*Vapor Intrusion Mitigation Design Plan, 5815 4th Avenue South – North Building, Seattle, Washington* dated November 10, 2014 prepared by Farallon Consulting, L.L.C.
VIMM Report	*Vapor Intrusion Mitigation Measures Status Report, Pacific Food Systems, Inc. North Building, 5815 Fourth Avenue South, Seattle, Washington* dated August 2017 prepared by Farallon Consulting, L.L.C. (this report)

1.0 INTRODUCTION

Farallon Consulting, L.L.C. (Farallon) has prepared this Vapor Intrusion Mitigation Measures Status Report (VIMM Report) on behalf of Capital Industries, Inc. (Capital) to present the details of the subslab depressurization system (SSDS) installation and monitoring conducted between February 2015 and July 2017 at the Pacific Food Systems, Inc. North Building at 5815 Fourth Avenue South in Seattle, Washington (herein referred to as the Building) (Figure 1). The location of the Building relative to Capital property is shown on Figure 2.

Mitigation of vapor intrusion (VI) from volatile constituents of concern (COCs) at the Building was required by the Washington State Department of Ecology (Ecology) in accordance with Exhibits B and D of Agreed Order No. DE 5348 entered into by Ecology and Capital on January 24, 2008 (Agreed Order) and with the *Revised Vapor Intrusion Assessment, Monitoring, and Mitigation Plan, W4 Joint Deliverable, Seattle, Washington* dated February 2, 2015, prepared by Farallon (2015) (VIAMM) under Agreed Order No. DE 10402 entered into by Ecology and the West of 4th Group. VI mitigation design specifications were developed in accordance with the *Vapor Intrusion Mitigation Design Plan, 5815 4th Avenue South – North Building, Seattle, Washington* dated November 10, 2014 prepared by Farallon (2014d) (VIM Design Plan). The need for VI mitigation was based on results from the Tier 3 Vapor Intrusion Assessment documented in the Farallon (2014b) *2014 Tier 3 Vapor Intrusion Assessment Report, 5815 4th Avenue South–North Building, Seattle Washington* dated August 20, 2014.

1.1 VIMM REPORT PURPOSE

The purpose of this VIMM Report is to provide a summary of the bases for the VI mitigation measures, procedures, and details relating to the SSDS installation and monitoring conducted at the Building between February 2015 and July 2017.

1.2 VAPOR INTRUSION MITIGATION MEASURES STATUS REPORT ORGANIZATION

The VIMM Report is organized as follows:

- **Section 1, Introduction,** presents the VIMM Report purpose.

- **Section 2, Site Description and System Design,** provides a description of the Capital Area of Investigation, a summary of the Building background, and a description of the VI mitigation design plan.
- **Section 3, VI Mitigation Measures,** provided the details of SSDS installation and operation.
- **Section 4, Inspection, Monitoring, and Maintenance Procedures,** discusses the procedures used for SSDS inspection, monitoring, and maintenance.
- **Section 5, Inspection, Monitoring, and Maintenance Results,** discusses the results from the SSDS inspection, monitoring, and maintenance activities conducted at the Building.
- **Section 6, Conclusions,** presents Farallon's conclusions regarding the SSDS monitoring and performance air sampling results.
- **Section 7, Planned Work,** discusses work planned for the remainder of 2017, and for 2018.
- **Section 8, Bibliography,** provides a list of the documents used in preparation of this VIMM Report.

2.0 SITE DESCRIPTION AND SYSTEM DESIGN

This section provides a description of the Capital Area of Investigation within which the Building is located, a summary of the Building background, including a discussion of the basis for the VI mitigation design plan and SSDS.

2.1 SITE DESCRIPTION

The Capital property is at 5801 Third Avenue South between South Mead Street to the north and South Fidalgo Street to the south, and between Fourth Avenue South to the east and First Avenue South to the west in Section 39, Township 24 South, Range 4 East in Seattle, King County, Washington (Figure 2). Capital is a source of halogenated volatile organic compounds (HVOCs) in the subsurface with the potential to result in a VI condition at the Capital property and at buildings within the Capital Area of Investigation. The Capital Area of Investigation initially was defined in the *Remedial Investigation Work Plan, Capital Industries, Inc., 5801 Third Avenue South, Seattle, Washington* dated September 16, 2008 prepared by Farallon (2008a), and revised in the *Revised Draft Remedial Investigation Report, 5901 4th Avenue South, Seattle, Washington* dated October 2012 prepared by Farallon (2012) as the area where concentrations of HVOCs associated with confirmed or suspected source areas at the Capital property exceed screening levels (Figure 2). The Capital Area of Investigation is within Seattle city limits in King County, Washington (2007) in an area zoned for industrial light manufacturing. Properties within the Capital Area of Investigation include a mixture of light industrial, commercial, and residential properties.

The Building is located within the Capital Area of Investigation, east of Capital Plant 4 (Figure 2), and is used by Pacific Food Systems, Inc. for warehouse storage and equipment maintenance.

2.2 BACKGROUND

The volatile HVOCs tetrachloroethene (PCE), trichloroethene (TCE), and/or cis-1,2-dichloroethene were detected at concentrations exceeding the preliminary cleanup standards used to evaluate VI risk in two subslab soil gas samples collected at the Building in April 2011. The standards used to evaluate VI risk were set forth in the *Revised Inhalation Pathway*

Interim Measures Work Plan prepared by Philip Services Corporation (2002); the Draft *Interim Vapor Intrusion Plan* prepared by Arrow Environmental et al. (2007), which is Exhibit D of the Agreed Order; and the *Updated Air and Groundwater IPIMALs* [Inhalation Pathway Interim Measures Action Levels]*/VIRLs* [Vapor Intrusion Remediation Levels] *for Residential and Commercial Scenarios for the Georgetown Site* prepared by Pioneer Technologies Corporation (2012). The subslab sample results indicated the potential for VI into the Building, and warranted indoor air analysis to further evaluate whether a VI risk exists.

The results from the assessment of indoor and outdoor ambient air conducted between 2012 and 2014 indicated that a source of volatile COCs in the subsurface was resulting in a VI condition for the Building. Results from indoor air sampling events have remained relatively consistent despite sealing the core holes in the floor slab and eliminating the contribution of COCs from potential sources in the Building.

Concentrations of TCE detected in indoor air samples have consistently exceeded the preliminary cleanup level of 1.5 micrograms per cubic meter ($\mu g/m^3$) for a carcinogenic compound. Due to the association of the TCE source with a release of HVOCs beneath or proximate to the Building with no apparent contributing operational source in the Building, Tier 4 mitigation measures were implemented in 2015.

3.0 VAPOR INTRUSION MITIGATION MEASURES

An SSDS to mitigate vapor intrusion in the Building was designed in accordance with the specifications defined in the VIM Design Plan and ASTM 2121-13. Installation of the SSDS in the Building was completed in March 2015. The basis for the SSDS design, installation details, and monitoring procedures are discussed below. As-built schematics for the SSDS installed in the Building are provided in Appendix A. Photographs of key system components and installation details, including modifications to the system vent stack, are provided in Appendix B.

3.1 VAPOR INTRUSION MITIGATION DESIGN PLAN

The VIM Design Plan provided the specifications for the SSDS developed by Farallon to mitigate intrusion of volatile COCs that have the potential to migrate from soil and/or water table zone groundwater to indoor ambient air in the Building. The mitigation measures developed are consistent with the Agreed Order. The VIM Design Plan included procedures for collecting SSDS design data; preparing the SSDS design; and installing, implementing, and performance-testing the SSDS.

3.2 SSDS DIAGNOSTIC TESTING

Subslab monitoring ports, extraction sumps, and the piping network for the SSDS were installed by Saybr Contractors, Inc. of Tacoma, Washington on January 20 and 21, 2015. In preparation for diagnostic testing of the SSDS system, cracks wider than 0.125 inch in the Building's concrete slab were cleaned and filled with polyurethane sealant.

Farallon conducted VI mitigation system diagnostic testing of the SSDS at the Building in accordance with the VIM Design Plan on February 10, 2015. The SSDS diagnostic testing was conducted using a 6.0-horsepower wet/dry vacuum connected to the SSDS piping and sump network. Diagnostic testing flow and vacuum was controlled by a combination of a gate valve near the wet-dry vacuum connection point and the SSDS air inlet. A monitoring port was installed in the piping to monitor the static flow and vacuum applied to the SSDS during diagnostic testing.

During the diagnostic testing, four different static vacuum and flow combinations were applied to the SSDS piping and sump network. Subslab differential pressures were monitored at the two

subslab monitoring ports for each diagnostic testing static vacuum and flow. The static vacuum and flow was applied to the SSDS piping and sump network until the differential pressures at the subslab monitoring ports stabilized for a minimum of 15 minutes. The location of the subslab monitoring ports and the schematic of the SSDS is presented on Sheet No. 3 in Appendix A.

The SSDS blower was selected based on the VIM Design Plan's pass/fail criteria of a minimum measured negative 0.025 inch of water (IOW) differential pressure at both subslab monitoring ports. The lowest differential pressure measured during the diagnostic testing was 0.078 and 0.038 IOW at subslab monitoring ports SSMP-1 and SSMP-2 respectively, with an SSDS vacuum of 3.8 IOW, and a flow of 17 standard cubic feet per minute (SCFM). The lowest possible measurable flow during the diagnostic testing was 17 SCFM, which restricted the diagnostic test of lower vacuum and flows. Although a flow of 17 SCFM and a vacuum of 3.8 IOW were used to select the SSDS blower, flow and vacuum was not an operating criterion for the SSDS.

3.3 SSDS INSTALLATION DETAILS

The SSDS was designed to maintain negative pressure directly beneath the Building, thereby acting as a "sink" for soil vapors in the vicinity of the Building. The SSDS was designed by Farallon, and installed by Saybr Contractors, Inc. A City of Seattle electrical permit was obtained on March 6, 2015 for the SSDS blower and electrical system installation. A copy of the closed permit and the inspection record is provided in Appendix C. The SSDS began operation on April 1, 2015. Two sump locations were installed for diagnostic testing at the Building. The locations of the two sumps were selected for incorporation in the final SSDS design, and have minimal impact on the Building tenant's operations. Results from the diagnostic testing indicated that the two sump locations connected to one exhaust blower would be adequate for depressurization at the Building. Schematics of the SSDS design and layout are provided in Appendix A.

Two sumps, each consisting of a 6-inch-diameter boring directly above a 7- to 8-gallon subslab cavity, were installed during the diagnostic testing phase. A schematic of each sump location is presented on Sheet No. 4 in Appendix A. Piping and risers connect from each sump to the exhaust blower mounted to the southern side of the Building. Risers are seated on a rubber seal in the sump, sealed with concrete; piping and risers extend from the sump at and below ground level out

the Building's southern exterior wall. The location where the pipe penetrates the Building's wall is sealed with waterproof sealant. Details for the sumps and risers are presented on Sheet No. 4 in Appendix A.

Piping connects the risers to the exhaust blower mounted on the Building's southern exterior wall. Piping, risers, and piping connections are constructed of polyvinyl chloride. The piping forms one network, with the connection to the exhaust blower at the highest point of the network, and the connection to each sump at the lowest point. Piping is angled to prevent water vapor from condensing into pools at low spots in the piping and blocking applied vacuum to the two sumps. The piping schematic and specifications are presented on Sheet No. 3 in Appendix A.

A Rotron DR101Y9M 0.33-horsepower regenerative exhaust blower manufactured by Ametek Technical and Industrial Products provides negative pressure to the sumps via the mitigation system risers and piping. The SSDS blower was selected based on performance capabilities that allow for increased flexibility in the applied vacuums beyond a typical radon-type blower. The exhaust blower is mounted to the Building's southern exterior wall with a shelf. Vibration isolators are used between the exhaust blower and the shelf to prevent vibration and excess noise. The blower is covered by an existing lean-to roof along the southern side of the Building. The location and specifications for the exhaust blower are presented on Sheet No. 3 in Appendix A. The location also is depicted in the photographs in Appendix B.

The exhaust stack is constructed of polyvinyl chloride and mounted to the Building's southern exterior wall. The stack initially extended to a height of approximately 4 feet above the roof level, but was extended to approximately 6 feet above the roof level after evaluation of outdoor air sampling indicated that the exhaust effluent may have been transported downward by ambient outdoor airflow patterns, potentially re-entering the Building. The outdoor air sampling is described in Section 5, Inspection, Monitoring, and Maintenance Results. Stack emissions are directed to the northeast, which is the prevailing downwind direction. The photographs provided in Appendix B show the vent stack modifications, and the roofs at the Capital property and on the Building.

The exhaust stack's emission point is more than 10 feet away from adjacent buildings to the south and west. The exhaust stack outlet is angled and cut on the vertical to prevent precipitation from entering the exhaust stack while still allowing the exhaust stack to exhaust emissions.

A pressure gauge was installed in the SSDS piping network to measure and confirm that negative pressure is being applied throughout the mitigation system. Previously constructed mitigation systems in the area included installation of a manometer to monitor system performance. A Magnehelic pressure gauge rather than a manometer was installed for the SSDS at the Building to monitor SSDS pressure to reduce maintenance requirements for the Building's owner and tenants. A valve system was installed to enable disconnection of pressure gauges during non-monitoring events.

The pressure gauge and valve system were mounted to the piping network with flexible tubing. A main valve was installed between the riser and the pressure gauge to regulate the pressure applied to the gauge from the riser. A relief valve was installed to control the pressure between the first valve and the pressure gauge. The relief valve allows the pressure gauge to be opened to ambient air pressure during non-monitoring events, and relieves the pressure in the tubing after the main valve has been closed. The main valve remains closed and the relief valve remains open during normal operation. During SSDS monitoring events, the main valve is opened and the relief valve is closed to activate the pressure gauge. The pressure gauge provides confirmation that negative pressure is being applied by the exhaust blower to the subsurface via each riser. The negative pressure applied by the exhaust blower does not allow soil gas removed from the subsurface to enter the Building and impact indoor air. Opening the relief valve allows indoor air to enter the tubing, thereby relieving negative pressure remaining in the pressure gauge when it is not in use.

4.0 INSPECTION, MONITORING, AND MAINTENANCE PROCEDURES

This section presents the inspection and monitoring procedures conducted by Capital at the Building, the protocols for evaluating and enhancing SSDS effectiveness, system maintenance, and guidelines to shut down the SSDS. The inspection and monitoring activities were developed based on the *Verification of Depressurization System Effectiveness and Long-Term Operation and Maintenance Plan for Inhalation Pathway Interim Measures* developed for the Philip Services Corporation (2005) Georgetown Facility, and based on the VIAMM. The details of the inspection and monitoring criteria were presented in the *Vapor Intrusion, Inspection, Monitoring, and Maintenance Work Plan, Pacific Seafoods, 5815 Fourth Avenue South – North Building, Seattle, Washington* dated November 2015 prepared by Farallon (2015b) (VIIMM Work Plan). The actual inspection and monitoring schedule conducted between April 2015 and July 2017 has deviated from what was presented in the VIIMM Work Plan due to SSDS modifications and operation adjustments made to optimize SSDS performance in response to performance air quality monitoring results, described in Section 5, Inspection, Monitoring, and Maintenance Results.

4.1 INSPECTION AND MONITORING

Periodic inspection and monitoring is conducted to confirm that the Building SSDS is operating effectively. Inspection and monitoring of the SSDS includes the following:

- General system component inspection;
- Negative pressure field extension (PFE) monitoring;
- Interviewing the tenant contact trained to confirm that the SSDS is operating in accordance with the designated parameters; and
- Periodic air quality monitoring.

4.1.1 Tenant Inspections

Inspections by Building tenants are conducted on a monthly basis at a minimum to ensure that the SSDS is operating properly. Because the Building is used on a daily basis, the manager of shop operations at the Building typically confirms daily that the SSDS is operating by checking the SSDS pressure gauge.

If the SSDS system is not operating properly, the Building tenant contacts Capital and/or Farallon. Contact information for Pacific Food Systems, Inc., Capital, and Farallon is provided below:

JSI Pacific, Inc. dba Pacific Food Systems, Inc.
Ms. Inna Guryevsky, Operations Manager
5815 Fourth Avenue South
Seattle, Washington 98108
(206) 658-0382

Capital Industries, Inc.
Mr. Ray Carr, Plant Manager
5801 Third Avenue South
Seattle, Washington 98108
(206) 762-8585

Farallon Consulting, L.L.C.
Mr. Russell Luiten, Project Engineer, or Mr. Jeffrey Kaspar, Project Principal
975 Fifth Avenue Northwest
Issaquah, Washington 98027
(425) 295-0800

4.1.2 Annual Inspections

Annual inspections are conducted to observe and document the condition of the SSDS and to record changes to the Building and surrounding area that could affect SSDS performance. The annual inspection consists of observing and documenting the condition of SSDS components, and any structural changes or modifications to the Building or adjacent buildings or structures, and recording the current SSDS pressure gauge measurement. Previously documented pressure gauge measurements are used for comparison during the inspection. Photographs are taken during the inspection if necessary to document any deterioration of materials (e.g., cracks in piping, mounting damage) or other pertinent changes in the condition of the SSDS, the Building structure, or other factors that could impact system operation or effectiveness.

The inspections conducted between April 2015 and July 2017 have been more frequent than annual. The SSDS has been periodically adjusted since review of the initial performance air sampling results obtained in June 2015. Site visits to inspect and optimize SSDS performance are discussed in Section 5, Inspection, Monitoring, and Maintenance Results.

4.1.3 Pressure Field Extension Monitoring

PFE monitoring is conducted at the Building on an annual basis during the heating season to measure the pressure differential across the Building slab while the SSDS is operating. The results from PFE monitoring are used to confirm that the negative pressure field extends to points far removed from the sump locations.

Two permanent subslab monitoring ports were installed in the Building slab during installation of the SSDS. The subslab monitoring ports are flush-mounted to the Building slab, and have a tamper-resistant cap. The subslab monitoring ports are used for PFE monitoring to determine whether a negative subslab pressure exists. A negative pressure of 0.025 IOW column or more at each of the subslab monitoring ports is considered to be sufficient to demonstrate depressurization. The tamper-resistant cap secures the subslab monitoring port closed between PFE monitoring events to maintain the integrity of the depressurization applied by the SSDS. The location and details of the subslab monitoring ports are shown on Sheet Nos. 3 and 4 in Appendix A; the locations also are shown in the photographs in Appendix B.

4.1.4 Air Quality Monitoring

Air quality monitoring is performed at the Building to provide air quality data that can be:

- Directly compared with previous VI Assessment data to evaluate the reduction in volatile COCs due to operation of the SSDS;
- Used to adjust SSDS operation parameters and reduce concentrations of volatile COCs to less that VIAMM action levels, or applicable air action levels established during the future cleanup action; and
- Used to evaluate whether further action is necessary to protect human health.

Air quality monitoring typically is conducted semiannually in accordance with the VIIMM Work Plan. Initial indoor air sampling results for June 2015 indicated that volatile COCs remained at concentrations exceeding VIAMM action levels. SSDS operations therefore were modified to increase the applied vacuum. Optimization of the SSDS and modifications to vent stack height consequently necessitated more-frequent air quality monitoring during this reporting period. Once the SSDS has been optimized, air quality monitoring will be conducted in accordance with the criteria set forth in the VIIMM Work Plan.

Air samples collected during this reporting period were collected at the approximate sampling locations used during previous investigations/sampling events using 6-liter Summa canisters with flow controllers set to collect a sample over an 8-hour duration. The indoor and outdoor air samples were analyzed for volatile COCs by U.S. Environmental Protection Agency Method TO-15 SIM. All sampling was performed in general accordance with the standard operating procedures established during completion of the Tier 3 VI Assessments (Farallon 2013) and the VIAMM.

4.2 SYSTEM RE-EVALUATION AND ENHANCEMENT

The results from the air quality, PFE, groundwater monitoring, and/or annual inspections are evaluated to determine whether modifications to the SSDS are necessary. The SSDS is re-evaluated or modified to enhance effectiveness as warranted based on inspection and monitoring results. The following criteria are used to determine whether re-evaluation of the SSDS is warranted:

- Inspection results indicate a significant structural change in the Building (e.g., remodeling that could introduce additional pathways for vapor intrusion);
- Air quality monitoring results indicate an indoor air IPIMAL exceedance; and/or
- Groundwater sampling analytical results indicate a minimum tenfold increase in cumulative VI risk/hazard in the vicinity of the Building, as defined in the VIAMM.

During this reporting period, both the indoor and outdoor air quality monitoring results mandated changes in SSDS configuration and operation. These details are provided in Section 5, Inspection, Monitoring, and Maintenance Results.

4.3 SYSTEM MAINTENANCE

After the first year of operation, SSDS maintenance was performed as needed based on conditions observed during system optimization visits. Although maintenance was not required, typical target maintenance items are described below.

Components that may require maintenance include the exhaust blower, the pressure gauge, and piping. The exhaust blower is not amenable to periodic maintenance, and is relatively easy to replace. Therefore, the blower will be operated until excessive noise, vibration, or significantly reduced pressure-gauge readings are noted, at which point the blower will be repaired or replaced. An operational failure of the blower would be indicated by the pressure gauge, which is checked during monthly tenant inspections and annual inspections.

Pressure gauges are less robust than manometers over continued use, and may fail after prolonged use. An additional monitoring port was installed on the main riser to monitor SSDS pressure and flow during annual inspections. SSDS pressure measurements collected during annual inspections will be compared to the SSDS pressure gauge readings. The SSDS pressure gauge will be replaced when a measured reading deviates from the monitored SSDS pressure by more than 25 percent. If pressure gauge failure is confirmed, a replacement pressure gauge will be installed and tested.

Replacement of cracked or otherwise damaged system piping observed during annual inspections or identified by the building tenant may be required.

5.0 INSPECTION, MONITORING, AND MAINTENANCE RESULTS

SSDS start-up occurred on April 1, 2015. The SSDS was started with the air inlet fully closed, resulting in a system vacuum of 6.8 IOW and a total flow of 19.7 SCFM. With the SSDS air inlet closed, differential pressures measured at the subslab monitoring ports were 0.117 IOW at subslab monitoring port SSMP-1, and 0.061 IOW at subslab monitoring port SSMP-2. The SSDS was initially optimized to prolong the operational life of the exhaust blower and minimize power consumption, while still depressurizing the area beneath the Building slab to mitigate volatile COCs from impacting air quality in the Building. The SSDS was optimized by adjusting the vacuum to 1.9 IOW, and the flow to less than 12.9 SCFM. The resulting differential pressure was 0.025 IOW at subslab monitoring port SSMP-1, and 0.007 IOW at subslab monitoring port SSMP-2. Operation parameters are summarized in Table 1.

5.1 INSPECTION, MONITORING, AND MAINTENANCE ACTIVITIES

Periodic inspections to monitor the SSDS and adjust operations were conducted on:

- April 1, and October 9, 2015;
- February 5, April 26, and August 31, 2016; and
- January 5 and March 30, 2017.

During each visit, the work elements cited in Section 4, Inspection, Monitoring, and Maintenance Procedures, were monitored and documented. The inspection forms completed for each site visit are provided in Appendix D. The tenant-maintained SSDS monitoring log has not been completed by the tenant.

Air quality monitoring was conducted to evaluate whether the SSDS was reducing HVOCs in indoor air. Sampling events were conducted on:

- June 1 and November 30, 2015;
- April 26 and August 31, 2016; and
- January 5 and March 30, 2017.

Each sampling event included collecting two indoor air samples and one outdoor ambient air sample. The approximate locations of the samples are depicted on Figure 3. Sampling was conducted in general accordance with the procedures described in the VIIMM Work Plan and its supporting documents. Results from the air quality monitoring were used to adjust SSDS operations to optimize system performance. Outdoor ambient air sampling data also were used to evaluate the effectiveness of the exhaust stack in dispersing emissions. The exhaust stack was extended from 4 to 6 feet above the Building roof height, with stack emissions directed in the prevailing downwind direction to the northeast. Air quality monitoring parameters and results are summarized in Tables 2 and 3. The laboratory analytical reports are provided in Appendix E.

The monitoring conducted on April 26 and August 31, 2016; and January 5 and March 30, 2017 also included sampling of the soil gas influent being extracted by the SSDS prior to discharge to the exhaust stack. The purpose of this sampling was to confirm that the discharge to outdoor ambient air would comply with Puget Sound Clean Air Agency (PSCAA) regulations, and to compare concentrations of HVOCs in influent samples to outdoor air sampling results to evaluate whether the sources are related. Samples were collected using a 6-liter Summa canister at a sampling port located prior to entry to the SSDS blower. Samples were collected while the system was operating, and consisted of instantaneous grab samples. A slight vacuum was maintained in the canister to mitigate potential loss of the sampled influent, or exchange of sampled influent with ambient air during transport to the laboratory.

Routine maintenance activities included inspection of SSDS components. The main maintenance activities required during this reporting period included the aforementioned extension of the exhaust stack, cleaning of the SSDS blower filter, and draining of water that had accumulated in SSDS piping at the blower location during the winter/spring of 2016/2017. Because the water accumulation was more significant than the routine condensate accumulation expected, troubleshooting was conducted to evaluate the cause of the water accumulation.

On January 5, 2017, Farallon collected indoor and outdoor air samples to evaluate current conditions. At that time, the SSDS was operating at an applied vacuum of less than 2 IOW, and a corresponding flow rate of 13 SCFM. This was the first inspection event in which water accumulation resulting in reduced system efficiency occurred. The origin of the water

accumulation was uncertain because the vent stack direction and angle should prohibit water from entering the system. The volume of water drained from the system was approximately 2 gallons. Farallon restarted the system and again maximized the applied vacuum. On March 30, 2017, 0.5 gallon of water was drained from the SSDS; the water in the piping had no measurable effect on SSDS performance. Since the March 30, 2017 visit, the SSDS is assumed to be operating normally since transitioning from wet and cold seasonal conditions.

The unusually wet and cold seasonal conditions are suspected to have resulted in precipitation entering the exhaust stack and other SSDS piping subject to condensate accumulation. Modifications to the SSDS exhaust pipe may be necessary to mitigate water accumulation, and to ensure that the Building remains fully depressurized. Water is not expected to accumulate during seasonally dry conditions.

5.2 INSPECTION, MONITORING, AND MAINTENANCE RESULTS

Air quality monitoring results were used as the basis for the exhaust stack modifications and adjustments to SSDS operation to optimize reduction of HVOCs present in indoor air. Results from the air quality sampling, and adjustments to SSDS operation are described below. The air quality monitoring sample locations are depicted on Figure 3. The sampling parameters and the results are summarized on Tables 2 and 3, respectively. The laboratory analytical reports are provided in Appendix E.

Initial air quality monitoring results collected in June 2015 indicated that COCs persisted in indoor air at concentrations similar to pre-start-up conditions of the SSDS (Table 3). However, TCE concentrations detected in the outdoor ambient air sample were slightly higher than those detected in indoor air. The outdoor ambient air sample location was upwind of the Building, at the corner of South Fidalgo Street and Fourth Avenue South (Figure 3).

On October 9, 2015, the SSDS was adjusted to have a minimum measured differential pressure of 0.025 IOW at both subslab monitoring ports. The SSDS flow and vacuum was adjusted to increase differential subslab pressure. The adjusted VI mitigation system vacuum was 3.6 IOW and 12.9 SCFM, resulting in a measured differential pressure of 0.050 IOW at subslab monitoring port

SSMP-1, and 0.029 IOW at subslab monitoring port SSMP-2. Table 1 provides a summary of SSDS operation parameters for each site visit.

Additional air quality monitoring was conducted on November 30, 2015 to assess SSDS performance and whether further adjustment to the SSDS was necessary. Although an overall decrease in HVOCs was noted, TCE concentrations exceeded the non-cancer IPIMAL in both indoor air samples (Table 3). The outdoor ambient air sample location was shifted farther north to the southeastern corner of the Building, which was in the upwind direction. TCE concentrations for the outdoor ambient air sample were less than laboratory reporting limits.

On February 5, 2016, the SSDS air inlet was fully closed to apply maximum vacuum to the sumps. The maximum flow and vacuum for the SSDS was 6.8 IOW and 23.5 SCFM, resulting in a measured differential pressure of 0.100 IOW at subslab monitoring port SSMP-1, and 0.062 IOW at subslab monitoring port SSMP-2 (Table 1).

Air quality monitoring was conducted again on April 26, 2016 to evaluate whether the changes to SSDS operation implemented in February 2016 resulted in improved indoor air quality. Sampling results indicated that concentrations of TCE had increased at both indoor air sampling locations, exceeding both the cancer and non-cancer IPIMALs (Table 3). A significantly higher TCE concentration of 14.8 $\mu g/m^3$ was detected in the outdoor ambient air sample, collected upwind of the Building at the corner of South Fidalgo Street and Fourth Avenue South (Figure 3). TCE has been detected at this location each time an outdoor ambient air sample was collected between 2014 and 2016. The TCE concentrations have progressively increased with each sampling event.

To evaluate potential discharge from the system, an SSDS soil gas influent sample was collected for the first time. TCE was detected at a concentration of 243 $\mu g/m^3$, and PCE at a concentration of 170 $\mu g/m^3$. Although the discharge from the exhaust stack was directed to the northwest, downwind of the Building, discharge from the SSDS appeared to be the only known potential source of TCE. The exhaust stack height subsequently was raised an additional 2 feet, and the discharge direction was shifted downwind to the northeast. This work was completed on July 6, 2016. The evaluation of potential exhaust discharge indicated that concentrations of TCE and PCE

would remain in compliance with the PSCAA criterion of less than 1,000 pounds per year total HVOCs (Table 1).

Air quality monitoring was conducted on August 31, 2016 to evaluate whether the heightened exhaust stack and discharge away from rather than across the Building resulted in a decrease in HVOCs to indoor air. SSDS operating parameters generally were consistent with April 26, 2016 operations. Outdoor ambient air sampling, which had been conducted upwind of the Building, was shifted back to the southeastern corner of the Building, closer to the direction of exhaust stack discharge, to evaluate the potential for increased HVOC concentrations resulting from the change in discharge direction. Two indoor air samples also were collected (Figure 3). Indoor air sampling results indicated that concentrations of TCE had decreased, but still exceeded cancer and non-cancer IPIMALs (Table 3). HVOC concentrations were not detected in the outdoor ambient air sample.

An SSDS soil gas influent sample was collected in August 2016 to evaluate whether the discharge likely was still compliant with PSCAA regulations, and to confirm that TCE was still present in the discharge at concentrations that likely would influence indoor and/or outdoor ambient air sampling results. TCE had increased from a concentration of 243 to 482 $\mu g/m^3$ (Table 3). The concentration of PCE also had increased from 170 to 497 $\mu g/m^3$.

The SSDS applied vacuum has been maximized at the Building since the third quarter of 2016 to assess whether concentrations of TCE could be reduced below IPIMALs. The average applied vacuum was between 6 and 7 IOW. On January 5, 2017, air quality monitoring was conducted again to evaluate TCE concentrations in indoor air during the winter heating season, when vapor intrusion potential is greatest. Two indoor air samples and one outdoor ambient air sample were collected (Figure 3; Table 2). The outdoor air sample location was upwind, and shifted back to the corner of South Fidalgo Street and Fourth Avenue South. An SSDS influent sample also was collected.

The results from the indoor air sampling indicated that both TCE and PCE concentrations had increased since the August 2016 sampling event. TCE was detected at a concentration of 39.5 $\mu g/m^3$ in the sample collected inside the office portion of the Building, which is the highest

concentration detected inside the Building, including prior to SSDS installation. The laboratory data were validated; the quality of the data is acceptable. SSDS operation was reviewed, and the applied vacuum was reduced to less than 2 IOW, resulting in a decrease in depressurization across the Building slab area. The reason for the loss of vacuum was an unexpected accumulation of water in the SSDS piping at the blower location, which was discovered during a second operation and maintenance visit on January 19, 2017 to troubleshoot the low-vacuum issue. The SSDS was shut down, and the air inlet was opened and the filter removed when approximately 1 gallon of water spilled from the piping. The elbow location prior to the exhaust stack was tapped with a drill to check for water at this likely accumulation point; approximately 1 gallon of water was drained from this location. The water accumulation was speculated to be due to precipitation entering the exhaust stack.

The SSDS was restarted after the water had been drained from the piping. The applied vacuum increased to approximately 7.3 IOW. The tenant was reminded to monitor the applied vacuum at the gauge location daily, and to contact Farallon if the applied vacuum decreased. On March 23, 2017, Farallon returned to conduct an air quality monitoring event, and again found the applied vacuum reduced to less than 2 IOW. Approximately 5 gallons of water was drained from system piping through drain valves installed during the January 5, 2017 site visit. SSDS operation was optimized again to maximize the applied vacuum to between 6 and 7 IOW. Air quality monitoring was not conducted at this time.

On March 30, 2017, Farallon returned to the Site to conduct an air quality monitoring event. The applied vacuum was approximately 6.7 IOW, and the SSDS appeared to be operating efficiently. Two indoor air samples and one outdoor ambient air sample were collected (Figure 3). The outdoor ambient air sampling was conducted upwind of the Building, but was shifted back to the southeastern corner of the Building. The SSDS was inspected for water accumulation. Approximately 0.5 gallon of water was drained from SSDS piping at the elbow leading to the exhaust stack, suggesting that precipitation may be entering the exhaust stack.

TCE concentrations had decreased since the January 5, 2017 sampling event, but still exceeded cancer and non-cancer IPIMALs (Table 3). The outdoor ambient air sample did not contain detectable concentrations of HVOCs. An SSDS influent sample also was collected. TCE

concentrations decreased from 266 to 169 µg/m^3, and PCE concentrations decreased from 153 to 138 µg/m^3 (Table 3).

No inspections or air quality monitoring was conducted between March 30 and July 31, 2017. During warmer seasonal conditions, the building typically is ventilated during the day when workers are present by opening rollup doors and other doors. Air quality monitoring under high barometric pressure, and spring/summer ventilation of the building is anticipated to yield low concentrations of HVOCs that cannot be directly compared to prior results.

6.0 CONCLUSIONS

Air quality monitoring results for PCE and TCE have fluctuated, with TCE concentrations continuing to exceed cancer and non-cancer IPIMALs, despite maximizing the applied vacuum of the SSDS (Table 3; Figures 4 through 6). SSDS soil gas influent sampling results indicate that the SSDS is effectively capturing PCE and TCE vapors from beneath the Building slab (Table 3). Depressurization of the area beneath the Building slab is confirmed by pressure field monitoring data, which confirm that depressurization of the slab is occurring, and exceeding the criteria established for the SSDS in the VIIMM Work Plan (Table 1).

Building inspections conducted prior to each air quality monitoring event have not identified products containing PCE or TCE in the Building, consistent with prior Tier 3 VI Assessment results. Cracks and penetrations in the concrete floor slab were identified and sealed before the SSDS was installed. Post-installation inspection and monitoring visits have not identified cracks or penetrations in the floor slab, although a significant amount of machinery and materials present in the Building may be obscuring areas where soil gas may enter indoor air. It also is possible that the building materials contain a source of TCE that has not been identified.

Outdoor ambient air sampling results for the samples collected at the corner of South Fidalgo Street and Fourth Avenue South suggest that a source of TCE is present in outdoor ambient air. The initial conclusion was that SSDS discharge from the exhaust stack may have affected outdoor ambient air samples. However, the prevailing wind direction has been to the north/northeast, which should not result in dispersal of discharge to the south. HVOC concentrations in the outdoor ambient air samples collected closer to the Building have been consistently less than laboratory reporting limits. Insufficient data exist to determine whether SSDS discharge is affecting outdoor ambient air sampling results at the corner of South Fidalgo Street and Fourth Avenue South, or whether a source of TCE exists in outdoor ambient air. Outdoor ambient air results for samples collected adjacent to the Building suggest that whatever the source of TCE at the corner of South Fidalgo Street and Fourth Avenue South, it does not appear to affect outdoor ambient air at the Building location. Therefore, indoor air samples likely are not biased high due to potential influence from outdoor ambient air being exchanged with indoor ambient air.

The water accumulation that has occurred in the piping prior to entry to the blower and after the blower may be due to condensation in the piping leading to the blower, or to a combination of condensation and precipitation entering the exhaust stack. The cause was not confirmed prior to the start of dry seasonal conditions, and will need to be re-evaluated in the fall/winter. Air quality monitoring results for January 5, 2017, when the vacuum decreased to 1.8 IOW, indicated a direct correlation between a decrease in SSDS performance and an increase in PCE and TCE concentrations present in indoor air (Figures 5 and 6).

Similarly, air quality monitoring results for PCE and TCE correlated well with changes in SSDS operation. Maximizing the SSDS vacuum resulted in decreasing concentration trends in PCE and TCE (Figures 5 and 6). These results confirm that the SSDS is mitigating vapor intrusion risk. However, reducing TCE concentrations below IPIMALs may require modifications to the SSDS and/or further investigation of the Building slab and building materials to identify where soil gas is entering the Building. If the source is a crack or slab penetration that can be sealed, the SSDS should achieve VI mitigation objectives. Applying a higher vacuum appears to be another feasible alternative based on the decrease in PCE and TCE concentrations in direct response to maximizing the capabilities of the current blower.

7.0 PLANNED WORK

SSDS operation will continue at the maximum applied vacuum. A portable gas chromatography unit may be used to inspect the Building and evaluate whether a slab penetration, crack, and/or indoor source of HVOCs exists that has not yet been identified. If this approach is successful, continued operation of the SSDS should result in achieving IPIMALs and mitigating VI risk.

If a penetration or crack cannot be identified and sealed, a blower with a higher capacity can be installed. Air quality monitoring will be conducted quarterly to continue to evaluate PCE and TCE trends. The results from performance air sampling will be used to determine whether additional modification to the SSDS is required.

If water continues to collect in the SSDS system, vent stack discharge will be modified further to prevent rain from entering the stack. Piping sumps also may be installed to collect water in the piping system without blocking flow, thereby optimizing the applied vacuum to the Building subslab. The piping sumps would be installed with drains to empty water that collects in the piping network.

The staff at Pacific Food Systems, Inc. will be reminded to monitor the applied vacuum more closely, and to notify Farallon if the vacuum falls to 5 IOW or below until the source of TCE in the Building has been identified and mitigated. Maintaining the maximum vacuum that the current blower is capable of will minimize VI risk. Farallon will work with Pacific Food Systems, Inc. employees to identify the best practices to facilitate documenting monthly tenant inspections, and to maintain a log with monthly entries of vacuum readings of the pressure gauge. Installing an alarm with a visual and/or audible notification of loss of vacuum also is being evaluated.

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FIGURES

VAPOR INTRUSION MITIGATION MEASURES
STATUS REPORT
Pacific Food Systems, Inc. North Building
5815 Fourth Avenue South
Seattle, Washington

Farallon PN: 457-007

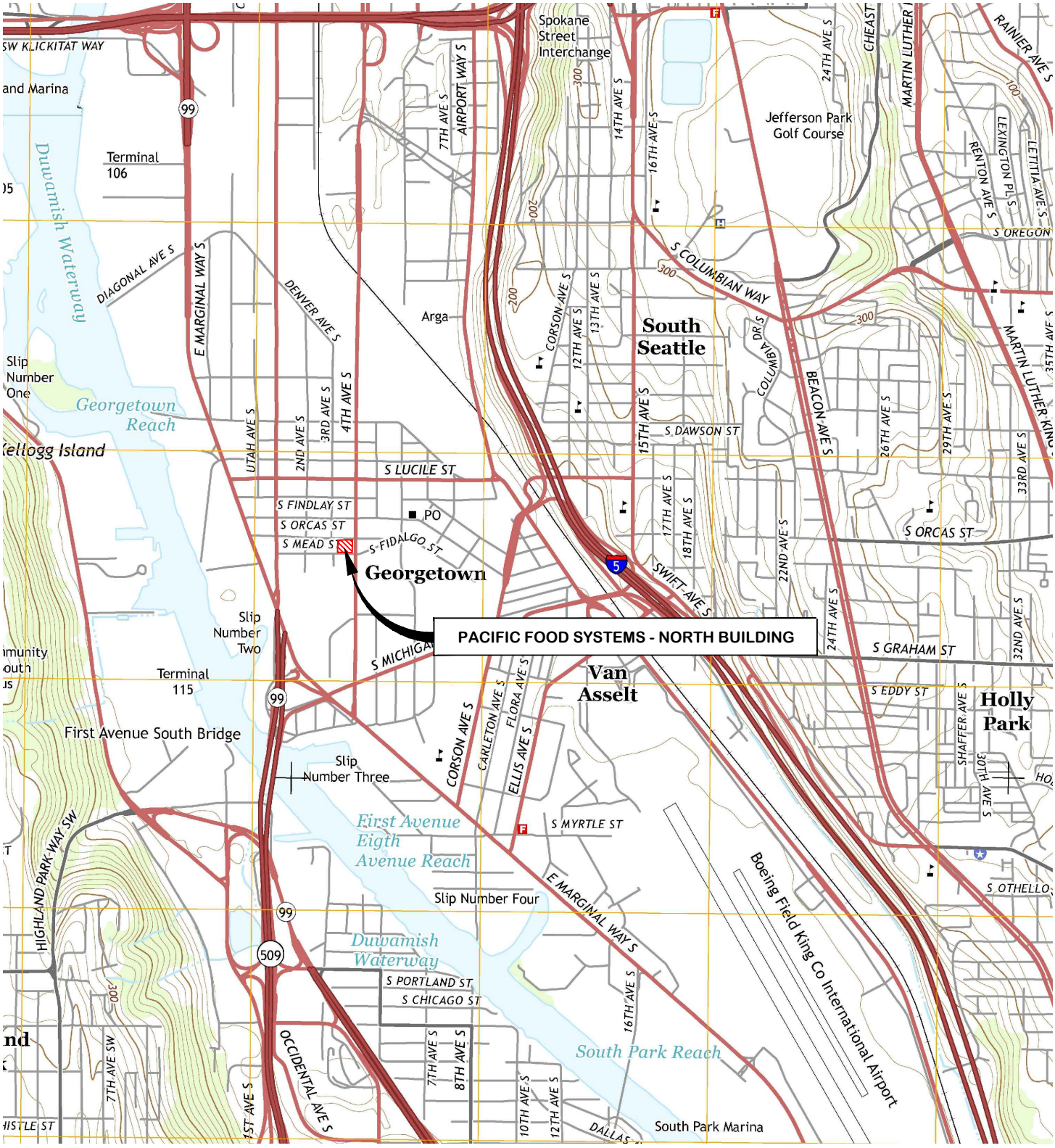

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FIGURE 1

VICINITY MAP
PACIFIC FOOD SYSTEMS, INC. NORTH BUILDING
5815 FOURTH AVENUE SOUTH
SEATTLE, WASHINGTON

FARALLON PN: 457-007

Drawn By: JJ | Checked By: JK | Date: 08/07/2017 | Disk Reference: 457-007_air_Figs1-2

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MARTIN SIGN FABRICATION
NORTHWEST SALES GROUP
STONE CRAFT
CITY LIGHT ELECTRICAL SUPPLY
COMMERCIAL BUILDING
MEAD BUILDING
BLASER DIE CASTING FACILITY
BLASER DIE CASTING (BDC) FACILITY
CAPITAL PROPERTY
CAPITAL PROPERTY
VACANT HOUSE
CHINESE RESTAURANT 5807 4th AVE SOUTH
PFS-NORTHERN BUILDING 5815 4th AVE SOUTH
PFS-SOUTHERN BUILDING 5815 4th AVE SOUTH
2nd AVENUE SOUTH
3rd AVENUE SOUTH
SOUTH MEAD STREET
SOUTH FIDALGO STREET
SOUTH ORCAS STREET
SOUTH FIDALGO STREET
1st AVENUE SOUTH
6th AVENUE SOUTH
4th AVENUE SOUTH
PLANT 5
5801 3rd AVE SOUTH
SHIPPING OFFICE
PLANT 1
PLANT 2 CANOPY
5801 3rd AVE SOUTH
QC AND LASER OFFICE
PLANT 2
PLANT 3
PLANT 4 CANOPY
PLANT 4
FRAY EQUIPMENT COMPANY
OTT REAL ESTATE PROPERTY (JACK IN THE BOX)
EAST MARGINAL WAY
SOUTH FIDALGO STREET
LONGVIEW FIBRE AND PACK
CERTAIN TEED GYPSUM
CAL PORTLAND
SLIP 2
OLYMPIC MEDICAL BUILDING
5900 1th AVE SOUTH
MOBILE CRANE OFFICE BUILDING
5914 4th AVE SOUTH
MOBILE CRANE COMPANY
GULL INDUSTRIES BUILDING/ AM INTERNATIONAL
5901 4th AVE SOUTH
KUFFEL BUILDING
5930 1st AVE SOUTH
BUCKNER WEATHERBY BUILDING
PACIFIC LAMP SUPPLY
B & OI
ALEVTIANS CONSTRUCTORS
CHRISTIERSON RADER & KIEF BUILDING
MULTI-TENANT WAREHOUSE
MULTI-TENANT WAREHOUSE
MULTI-TENANT WAREHOUSE
FITTINGS INC. COMPANY
CAPITAL AREA OF INVESTIGATION

DRAFT

LEGEND

BUILDING IDENTIFIED FOR CONTINUED TIER 3 VAPOR INTRUSION ASSESSMENT

BUILDING WITH TIER 4 VAPOR INTRUSION INTRUSION MITIGATION IMPLEMENTED

0 200
Scale in feet

N

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FIGURE 2

SITE PLAN SHOWING VAPOR INTRUSION
AIR QUALITY SAMPLING BUILDINGS
PACIFIC FOOD SYSTEMS, INC. NORTH BUILDING
5815 FOURTH AVENUE SOUTH
SEATTLE, WASHINGTON

FARALLON PN: 457-007

Drawn By: JJ Checked By: JK Date: 08/07/2017 Disk Reference: 457-007 VIIMM

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STORAGE YARD

CAPITAL INDUSTRIES, INC. PROPERTY
5801 3rd AVENUE SOUTH

4th AVENUE SOUTH

CHINESE RESTAURANT

FLOOR DRAIN
SUMP
STOVE HOODS
DINNING AREA
KITCHEN
AQUARIUM
OIL/WATER SEPARATOR
STORAGE
MENS RESTROOM
WOMENS RESTROOM

06/01/2015 - IA6-22497-060115
11/30/2015 - IA5-15899-113015
04/26/2016 - IA2-042616-WAREHOUSE
08/31/2016 - IA2-083116-WAREHOUSE
01/05/2017 - IA2-010517-WAREHOUSE
03/30/2017 - IA-2-033017

PACIFIC FOOD SYSTEMS - NORTH BUILDING

POWER TOOL WORK AREA
MACHINE WORK AREA
ROLLUP DOOR
PARTS ROOM 2 LEVELS
TOOL BOX
SUMP 1
SUMP 2
WORK BENCHES
PARTS CLEANER
RESTROOM
OFFICE
OFFICE

06/01/2015 - IA7-34758-060115

11/30/2015 - IA4-17646-113015
08/31/2016 - IA1-083116-OFFICE

11/30/2015 - AA1-15423-113015
08/31/2016 - AA1-083116-DW
03/30/2017 - OA-1-033017

CAPITAL INDUSTRIES PLANT 4

AIR INLET 2" GATE VALVE AND FILTER

4" DIAMETER VENT STACK EXTENDED 6' ABOVE ROOF

SSDS BLOWER MOUNTED TO OUTSIDE WALL IN COVERED AREA

04/26/2016 - IA2-042616-OFFICE
01/05/2017 - IA2-010517-OFFICE
03/30/2017 - IA-1-033017

OFFICE
HALLWAY
OFFICE
OFFICE
OFFICE
OFFICE

PACIFIC FOOD SYSTEMS - SOUTH BUILDING

STORAGE YARD

06/01/2015 - AA3-96113-060115
04/26/2016 - AA1-042616-UW
01/05/2017 - OA1-010517-UW

SOUTH FIDALGO STREET

LEGEND

- AIR QUALITY MONITORING LOCATION
- TYPICAL PREVAILING WIND DIRECTION AT TIME OF SAMPLING

SSDS = SUBSLAB DEPRESSURIZATION SYSTEM

0 20
APPROXIMATE SCALE IN FEET

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California
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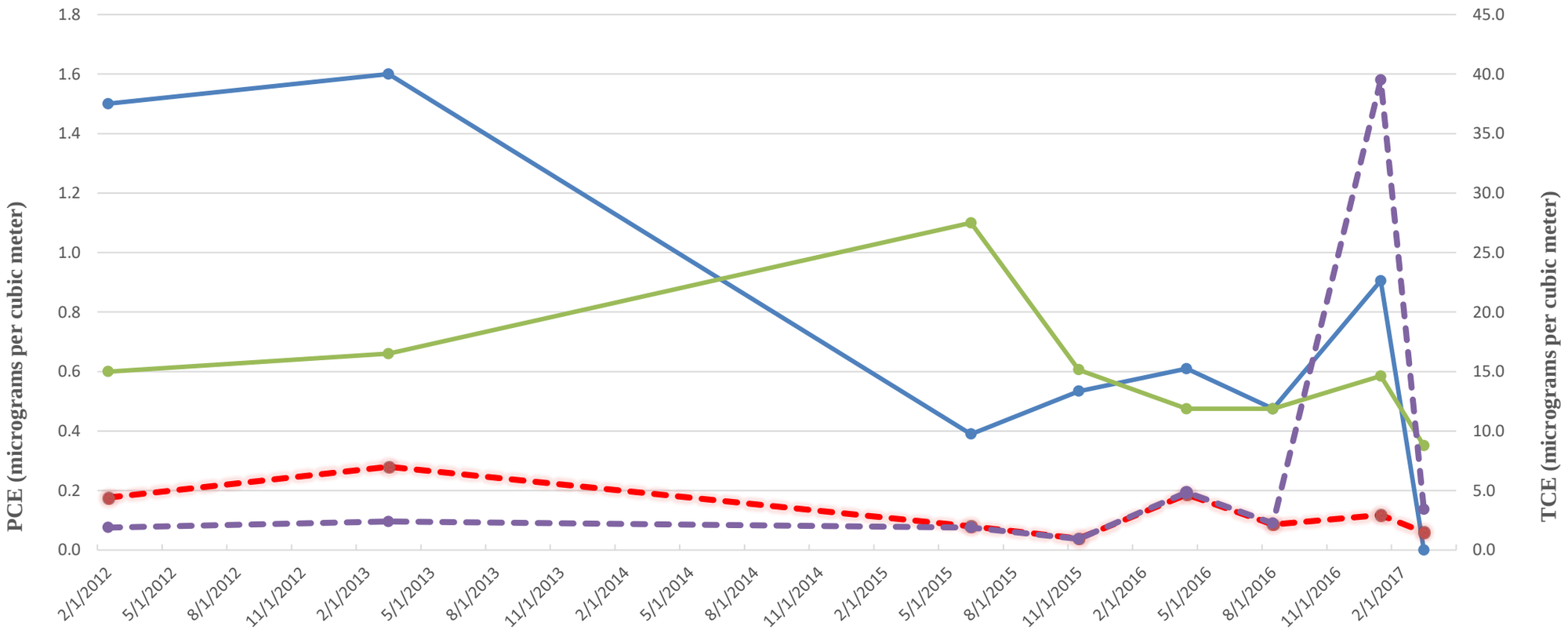
FIGURE 3

AIR QUALITY MONITORING LOCATIONS
PACIFIC FOOD SYSTEMS, INC. NORTH BUILDING
5815 FOURTH AVENUE SOUTH
SEATTLE, WASHINGTON

FARALLON PN: 457-007

Drawn By: JJ Checked By: JK Date: 08/07/2017 Disk Reference: 457007_air

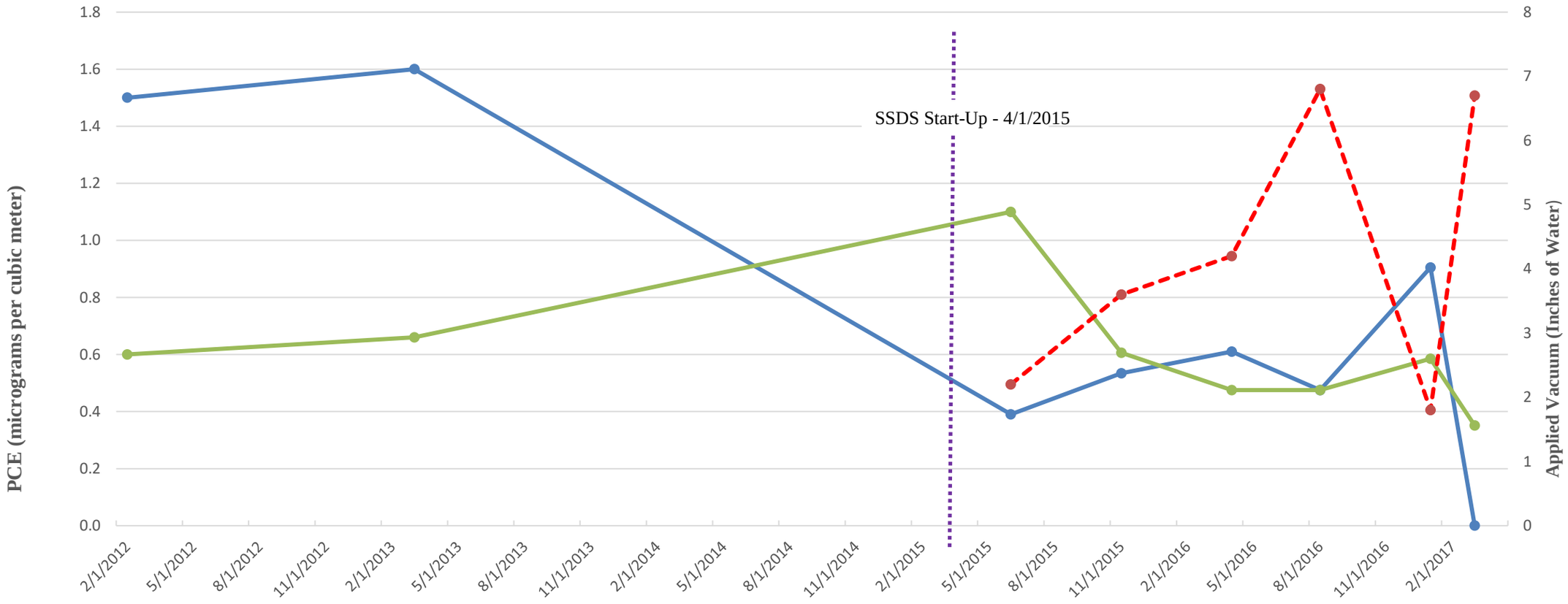
Figure 4
PCE and TCE Air Quality Monitoring Trends
Pacific Food Systems, Inc. North Building
Seattle, Washington
Farallon PN: 457-007



	2/21/2012	3/20/2013	6/1/2015	11/30/2015	4/26/2016	8/31/2016	1/5/2017	3/30/2017
PCE - Shop Area	1.5	1.6	0.39	0.534	0.61	0.475	0.905	0
PCE - Office Areas	0.60	0.66	1.1	0.606	0.475	0.475	0.585	0.351
TCE - Shop Area	4.4	7.0	2.0	0.971	4.68	2.15	2.95	1.51
TCE - Office Areas	1.9	2.4	1.9	0.938	4.84	2.26	39.5	3.42

PCE = tetrachloroethene
TCE = trichloroethene

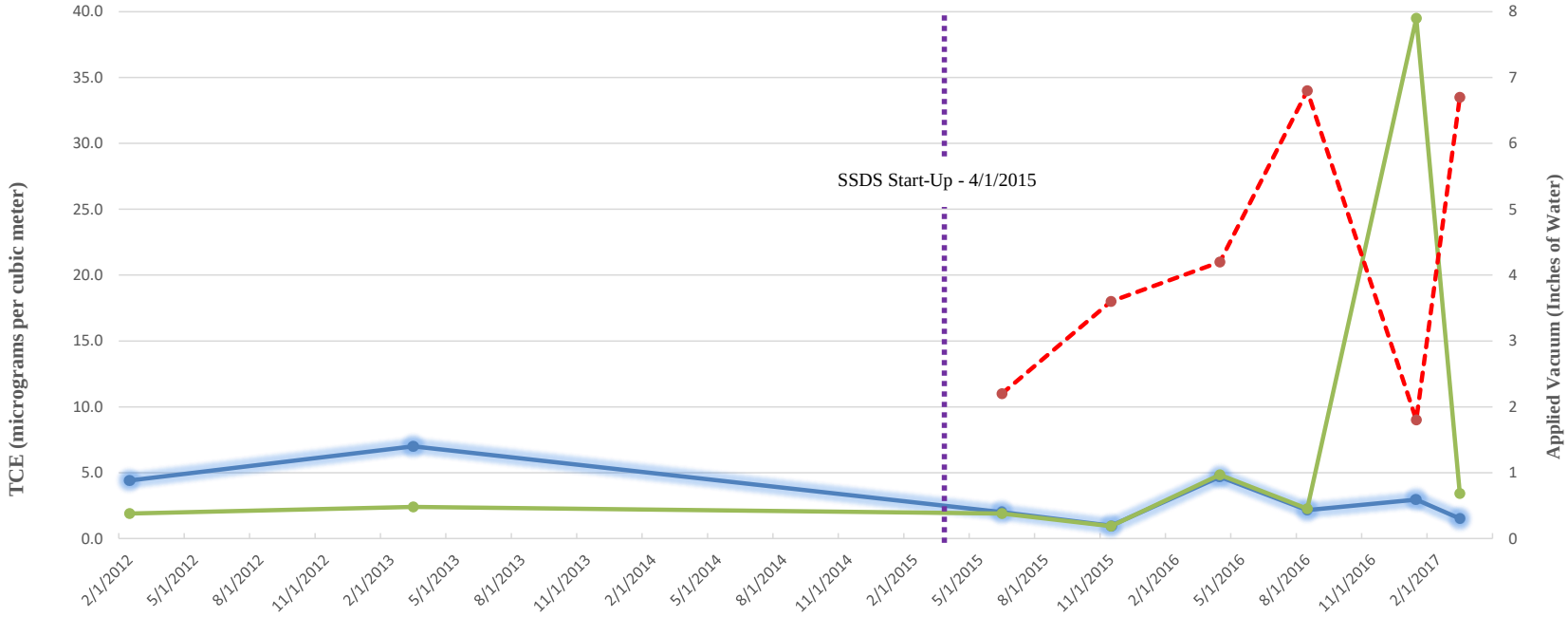
Figure 5
Air Quality Monitoring Trends: PCE
Pacific Food Systems, Inc. North Building
Seattle, Washington
Farallon PN: 457-007



	2/21/2012	3/20/2013	6/1/2015	11/30/2015	4/26/2016	8/31/2016	1/5/2017	3/30/2017
PCE - Shop Area	1.5	1.6	0.39	0.534	0.61	0.475	0.905	0
PCE - Office Areas	0.60	0.66	1.1	0.606	0.475	0.475	0.585	0.351
Applied Vacuum			2.2	3.6	4.2	6.8	1.8	6.7

PCE = tetrachloroethene
SSDS = subslab depressurization system

Figure 6
Air Quality Monitoring Trends: TCE
Pacific Food Systems, Inc. North Building
Seattle, Washington
Farallon PN: 457-007



	2/21/2012	3/20/2013	6/1/2015	11/30/2015	4/26/2016	8/31/2016	1/5/2017	3/30/2017
TCE - Shop Area	4.4	7.0	2.0	0.971	4.68	2.15	2.95	1.51
TCE - Office Areas	1.9	2.4	1.9	0.938	4.84	2.26	39.5	3.42
Applied Vacuum			2.2	3.6	4.2	6.8	1.8	6.7

SSDS = subslab depressurization system
TCE = trichloroethene

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TABLES

VAPOR INTRUSION MITIGATION MEASURES
STATUS REPORT
Pacific Food Systems, Inc. North Building
5815 Fourth Avenue South
Seattle, Washington

Farallon PN: 457-007

Table 1
Summary of Air Quality Monitoring Parameters
Pacific Food Systems, Inc. North Building
Seattle, Washington
Farallon PN: 457-007

Sample Type	Sample Location	Location Description	Sample Identification	Sample Date	Sample Start Time	Sample End Time	Sample Duration	Initial Pressure (inches of mercury)	Final Pressure (inches of mercury)	Sampling Shroud Helium Concentration (percent)	Leak Test Helium Concentration (percent)
Subslab	SS-2	Western side of Pacific Foods North Building Shop Area	5815N-Warehouse1-041311	4/13/2011	11:10	12:02	0:52	29.5	4.5	22.5	Not Applicable
	SS-3	Central part of Pacific Foods North Building Shop Area	5815N-Warehouse2-041311	4/13/2011	14:09	14:54	0:45	29.5	6.5	13.3	Not Applicable
Indoor Air	IA-3/IA2/ PacN_Shop_W	Western side of Pacific Foods North Building Shop Area	FAR-36029-022112	2/21/2012	8:17	16:17	8:00	30	7.0	Not Applicable	Not Applicable
			IA-3-1565-032013	3/20/2013	8:30	16:30	8:00	28.5	6.5		
			IA6-22497-060115	6/1/2015	9:14	17:00	7:46	30	6.0		
			IA5-15899-113015	11/30/2015	8:36	14:35	5:59	28	6.0		
			IA2-1042616-Warehouse	4/26/2016	9:46	16:59	7:13	30	6.0		
			IA2-083116-Warehouse	8/31/2016	8:38	15:58	7:20	30	5.0		
			IA2-010517-Warehouse	1/5/2017	8:45	16:45	8:00	30	6.0		
			IA-2-033017	3/30/2017	9:00	16:30	7:30	30	5.0		
	IA-4/IA1/ PacN_Office	Pacific Foods North Building Front Office	FAR-25243-022112	2/21/2012	8:10	16:10	8:00	30	7.5	Not Applicable	Not Applicable
			IA-4-34193-032013	3/20/2013	8:35	16:35	8:00	29.5	7.5		
			IA7-34758-060115	6/1/2015	9:16	16:12	6:56	26	5.0		
			IA4-17646-113015	11/30/2015	8:32	14:37	6:05	30	7.0		
			IA1-1042616-Office	4/26/2016	9:45	16:58	7:13	30	5.0		
			IA1-083116-Office	8/31/2016	8:36	15:58	7:22	30	5.0		
			IA2-010517-Office	1/5/2017	8:40	15:40	7:00	30	5.0		
			IA-1-033017	3/30/2017	9:02	16:40	7:38	30	5.0		
	IA-5	Pacific Foods North Building Parts Cleaner Area in Shop	IA-5-13844-042414	4/24/2014	8:26	16:06	7:40	30	6.0	Not Applicable	Not Applicable
	IA-6		IA-6-33970-050514	5/5/2014	9:15	17:10	7:55	30	6.0		

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Table 1
Summary of Air Quality Monitoring Parameters
Pacific Food Systems, Inc. North Building
Seattle, Washington
Farallon PN: 457-007

Sample Type	Sample Location	Location Description	Sample Identification	Sample Date	Sample Start Time	Sample End Time	Sample Duration	Initial Pressure (inches of mercury)	Final Pressure (inches of mercury)	Sampling Shroud Helium Concentration (percent)	Leak Test Helium Concentration (percent)
Outdoor Air	OA-1	Outside south of Pacific Foods South Building	FAR-5659-022112	2/21/2012	8:46	16:46	8:00	30	5.0	Not Applicable	Not Applicable
			IA-5-931-032013	3/20/2013	9:00	17:00	8:00	30	7.5		
	OA-2/OA-1/ Pac_Out_S_Pole	Outside Pacific Foods South Building at southeastern corner on telephone pole	OA-2-34748-042414	4/24/2014	8:41	16:46	8:05	30	6.0	Not Applicable	Not Applicable
			AA3-96113-060115	6/1/2015	9:26	17:26	8:00	26	5.0		
			AA1-042616-UW	4/26/2016	10:25	18:26	8:01	30	5.0		
			AA1-010517-UW	1/5/2017	8:50	16:55	8:05	30	8.0		
	Pac_Out_E_Pole	Outside east of Pacific Foods buildings on telephone pole	AA1-15423-113015	11/30/2015	9:04	16:31	7:27	30	6.0	Not Applicable	Not Applicable
			AA1-083116-DW	8/31/2016	8:48	16:00	7:12	30	8.0		
			OA-1-033017	3/30/2017	9:05	15:37	6:32	29	4.0		
SSDS	SSDS Influent	SSDS influent sample port	SYSTEMINFLUENT-042616	4/26/2016	9:55	9:56	0:01	30	NM	Not Applicable	Not Applicable
			SYSTEM-083116	8/31/2016	9:01	9:06	0:05	30	6.0		
			PFS-INF-010517	1/5/2017	9:40	9:41	0:01	30	6.0		
			PFS-Influent-033017	3/30/2017	9:20	9:20	0:00	30	6.0		

NOTES:

Pacific Foods = Pacific Food Systems, Inc.

SSDS = subslab depressurization system

Table 2
SSDS Operations Parameters
Pacific Food Systems, Inc. North Building
Seattle, Washington
Farallon PN: 457-007

Date	Pressure Gauge Vacuum Reading (IOW)	Field-Measured Operating Vacuum (IOW)	Subslab Monitoring Port (IOW)		SVE System Flow (scfm)	Pressure Gauge/Field-Measured Pressure Differential (percent)	Lab-measured[1] (µg/m^3)		Removal Rate[2] (µg/minute)		Projected Annual Discharge[3] (lbs/year)	
			SSMP-1 (West)	SSMP-2 (East)			PCE	TCE	PCE	TCE	PCE	TCE
4/1/2015	1.9	1.7	0.025	**0.007**	>12.88	92%	NM	NM	NM	NM	NM	NM
6/1/2015	2.2	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM
10/9/2015	3.6	3.3	0.050	0.029	12.88	92%	NM	NM	NM	NM	NM	NM
2/5/2016	4.2	3.9	0.057	0.035	16.63	93%	NM	NM	NM	NM	NM	NM
	6.8	6.7	0.100	0.062	23.52	99%	NM	NM	NM	NM	NM	NM
4/26/2016	6.8	7.2	0.1	0.058	NM	106%	170	243	113.2	161.9	0.131	0.188
8/31/2016	NM	NM	NM	NM	NM	NM	497	482	331.1	321.1	0.384	0.372
1/5/2017	1.8	2.2	**0.015**	**0.006**	12.88	122%	153	266	55.8	97.0	0.065	0.113
3/23/2017	1.5	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM
3/30/2017	6.7	NM	NM	NM	19.68	NM	138	169	76.9	94.2	0.089	0.109
VIMMWP SSDS Operations Goals	**Not Applicable**		**<0.025**	**<0.025**	**Not Applicable**	**75 - 125 percent**	**Not Applicable**				**1,000 lbs/year[3]**	

NOTES:

[1]Laborary analytical data used when available.

[2]Removal Rate (µg/min) = SVE flow (scfm)*(1 meter^3/35.29 feet^3)*Measured PCE or TCE (µg/m^3)

[3]Projected Annual Discharge (lbs) = (24 hr/day)*(60 min/hr)*(365.25 days/yr)*(removal rate (µg/min))*(1 mg/1,000 µg)*(1 g/1,000 mg)*(1 lb/453.54 g)

[3]Puget Sound Clean Air Agency Regulation 1.6.03 C.94 annual discharge = 1,000 pounds cumulative total of PCE and TCE.

g = grams

hr = hour

IOW = inches of water

lbs = pounds

µg = micrograms

µg/minutes = micrograms per minute

µg/m^3 = micrograms per cubic meter

min = minute

NM = not measured

PCE = tetrachloroethene

ppmv = parts per million volume

psi = pounds per square inch

scfm = standard cubic feet per minute

SSDS = subslab depressurization system

SVE = soil vapor extraction

TCE = trichloroethene

VIMMWP = Vapor Intrusion, Inspection, Monitoring, and Maintenance Work Plan

yr = year

Table 3
Summary of Air Quality Monitoring Results
Pacific Food Systems, Inc. North Building
Seattle, Washington
Farallon PN: 457-007

Sample Type	Location	Location Description	Sample Identification	Sample Date	Analytical Results (micrograms per cubic meter)					
					PCE[1]	TCE[1]	cis-1,2-Dichloroethene[1]	trans-1,2-Dichloroethene[1]	1,1-Dichloroethene[1]	Vinyl Chloride[1]
Indoor Air	IA-3/ PacN_Shop_W	Western side of Pacific Foods North Building Shop Area	FAR-36029-022112	2/21/2012	1.5	**4.4**	0.98	<0.67	<0.067	<0.043
			IA-3-1565-032013	3/20/2013	1.6	**7.0**	1.6	<0.68	<0.068	<0.044
			IA6-22497-060115	6/1/2015	0.39	**2.0**	<0.12	<0.63	<0.063	<0.040
			IA5-15899-113015	11/30/2015	0.534	**0.971**	<0.0793	<0.0238	<0.0357	<0.217
			IA2-1042616-Warehouse	4/26/2016	0.61	**4.68**	<0.0793	<0.0238	NM	<0.217
			IA2-083116-Warehouse	8/31/2016	0.475	**2.15**	<0.0793	<0.0238	<0.0357	<0.217
			IA2-010517-Warehouse	1/5/2017	0.905	**2.95**	0.201	<0.0238	<0.0357	<0.217
			IA-2-033017	3/30/2017	<0.339	**1.51**	<0.0793	<0.0238	<0.0357	<0.217
	IA-4/ PacN_Office	Pacific Foods North Building Front Office	FAR-25243-022112	2/21/2012	0.60	**1.9**	0.32	<0.68	<0.068	<0.044
			IA-4-34193-032013	3/20/2013	0.66	**2.4**	0.43	<0.67	<0.067	<0.043
			IA7-34758-060115	6/1/2015	1.1	**1.9**	<0.12	<0.62	<0.062	<0.040
			IA4-17646-113015	11/30/2015	0.606	**0.938**	<0.0793	<0.0238	<0.0357	<0.217
			IA1-1042616-Office	4/26/2016	0.475	**4.84**	<0.0793	<0.0238	NM	<0.217
			IA1-083116-Office	8/31/2016	0.475	**2.26**	<0.0793	<0.0238	<0.0357	<0.217
			IA2-010517-Office	1/5/2017	0.585	**39.5**	<0.0793	<0.0238	<0.0357	<0.217
			IA-1-033017	3/30/2017	0.351	**3.42**	<0.0793	<0.0238	<0.0357	<0.217
	IA-5	Pacific Foods North Building Parts Cleaner Area in Shop	IA-5-13844-042414	4/24/2014	1.1	**3.4**	0.49	<0.65	<0.065	<0.042
	IA-6		IA-6-33970-050514	5/5/2014	0.95	**3.6**	0.34	<0.65	<0.065	<0.042
Outdoor Air	OA-1	Outside south of Pacific Foods South Building	FAR-5659-022112	2/21/2012	<0.22	<0.17	<0.13	<0.64	<0.064	<0.041
			OA-1-35995-032013	3/20/2013	<0.23	<0.18	<0.13	<0.66	<0.066	<0.043
	OA-2/ Pac_Out_S_Pole	Outside Pacific Foods South Building at southeastern corner on telephone pole	OA-2-34748-040214	4/24/2014	<0.21	0.27	<0.12	<0.61	<0.061	<0.039
			AA3-96113-060115	6/1/2015	<0.21	**2.9**	<0.12	<0.61	<0.061	<0.039
			AA1-042616-UW	4/26/2016	<0.339	**14.8**	<0.0793	<0.0238	NM	<0.217
			OA1-010517-UW	1/5/2017	0.573	**4.96**	<0.0793	<0.0238	<0.0357	<0.217
	Pac_Out_E_Pole	Outside east of Pacific Foods buildings on telephone pole	AA1-15423-113015	11/30/2015	<0.339	<0.0914	<0.0793	<0.0238	<0.0357	<0.217
			AA1-083116-DO	8/31/2016	<0.339	<0.0914	<0.0793	<0.038	<0.0357	<0.217
			OA-1-033017	3/30/2017	<0.339	<0.0914	<0.0793	<0.0238	<0.357	<0.217

DRAFT -- Issued for Ecology Review

Table 3
Summary of Air Quality Monitoring Results
Pacific Food Systems, Inc. North Building
Seattle, Washington
Farallon PN: 457-007

Sample Type	Location	Location Description	Sample Identification	Sample Date	Analytical Results (micrograms per cubic meter)					
					PCE[1]	TCE[1]	cis-1,2-Dichloroethene[1]	trans-1,2-Dichloroethene[1]	1,1-Dichloroethene[1]	Vinyl Chloride[1]
SSDS	SSDS Influent	SSDS Influent sample port	SYSTEMINFLUENT-042616	4/26/2016	170	243	12.9	0.238	NM	<0.217
			SYSTEM-083116	8/31/2016	497	482	23.9	0.278	<0.0357	<0.217
			PFS-Influent-010517	1/5/2017	153	266	5.95	0.211	<0.0357	<0.217
			PFS-Influent-033017	3/30/2017	138	169	9.95	0.264	<0.0357	<0.217
Commercial Indoor Air IPIMAL - Cancer[2]					**22**	**1.5**	**Not Applicable[3]**	**Not Applicable[3]**	**Not Applicable[3]**	**0.66**
Commercial Indoor Air IPIMAL - Non-cancer[2]					**7.5**	**0.39**				**19**

NOTES:

Results in **bold** denote concentrations exceeding an IPIMAL.

< denotes analyte not detected at or exceeding the reporting limit listed.

[1] Samples analyzed by U.S. Environmental Protection Agency (EPA) Method Modified TO-15 Selective Ion Mode.

[2] Interim action levels presented from Updated Air and Groundwater IPIMALS/VIRLs for Residential and Commercial Scenarios for the Georgetown Site dated October 19, 2012. Note that only compounds representing a vapor intrusion risk are listed.

[3] "Not Applicable" is used where the constituent of concern will not affect the medium of potential concern due to an incomplete pathway or no pertinent standard exists.

IPIMAL = inhalation pathway interim measure action level
NA = not analyzed
Pacific Foods = Pacific Food Systems, Inc.
PCE = tetrachloroethene
SSDS = subslab depressurization system
TCE = trichloroethene
VIRLS = vapor intrusion remediation levels

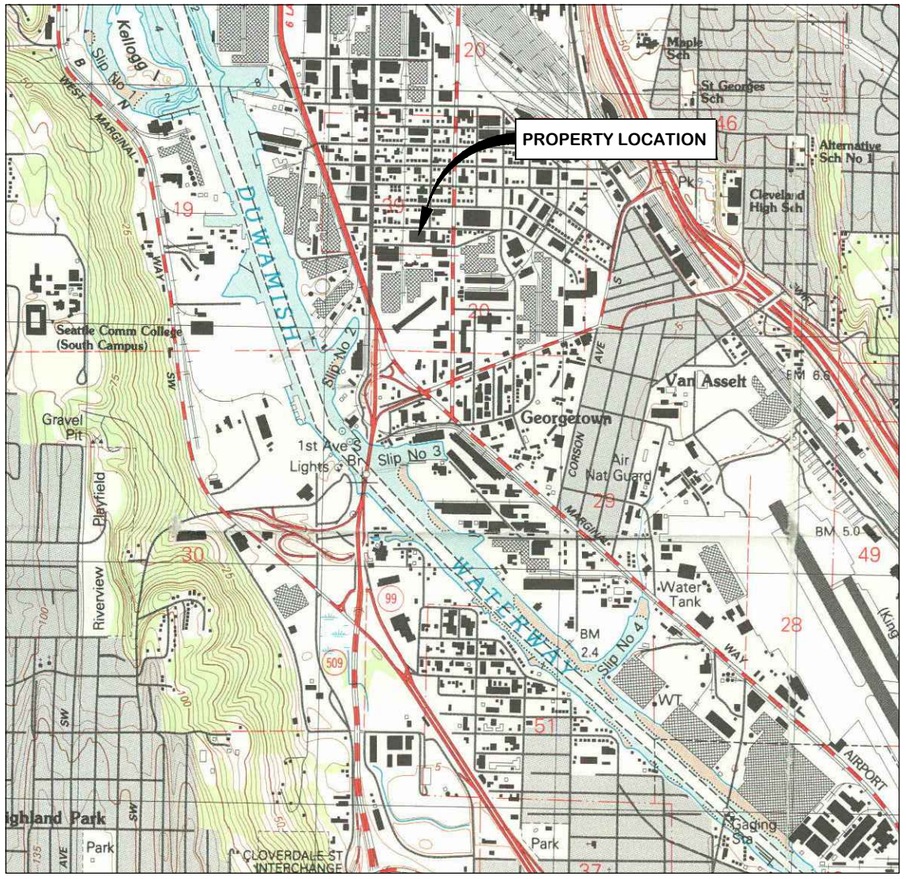
APPENDIX A
SUBSLAB DEPRESSURIZATION SYSTEM SCHEMATICS

VAPOR INTRUSION MITIGATION MEASURES
STATUS REPORT
Pacific Food Systems, Inc. North Building
5815 Fourth Avenue South
Seattle, Washington

Farallon PN: 457-007

SUB-SLAB DEPRESSURIZATION SYSTEM

PACIFIC FOOD SYSTEMS - NORTH BUILDING
5815 4TH AVE SOUTH
SEATTLE, WA 98108



REFERENCE: 7.5 MINUTE USGS QUADRANGLE SOUTH SEATTLE, WASHINGTON. DATED 1983

0 500

APPROXIMATE SCALE IN METERS

SITE LOCATION MAP

(NOT TO SCALE)

WASHINGTON

DRAWING INDEX

CLYDE N. MOORE
STATE OF WASHINGTON
14087
REGISTERED
PROFESSIONAL ENGINEER

	9/25/14	ISSUED FOR CLIENT REVIEW	CM/DEW	CM	
	DATE	DESCRIPTION	BY	CKD.	APP.

FARALLON CONSULTING
Quality Service for Environmental Solutions | farallonconsulting.com
Washington: Issaquah | Bellingham | Seattle
Oregon: Portland | Bend
California: Oakland | Sacramento | Irvine

PREPARED FOR

CAPITAL INDUSTRIES,INC.
5801 3RD AVE. SOUTH
SEATTLE, WA 98108

SUB-SLAB DEPRESSURIZATION SYSTEM

TITLE SHEET,
SITE LOCATION MAP, AND
DRAWING INDEX

SCALE: AS SHOWN
PROJECT NO.: 457-007
FILE NAME: SYSTEM.dwg
SHEET NO.: 1 OF 4

ELECTRICAL ABBREVIATIONS

A/AMP	AMP
AC	ALTERNATING CURRENT
BD	BUS DUCT
C	CURRENT
CB	CIRCUIT BREAKER
CLG	CEILING
DC	DIRECT CURRENT
DIS	DISCONNECT
DP	DOUBLE POLE
DT	DOUBLE THROW
EG	ENCLOSED AND GASKETED
E(OH)	ELECTRICAL (OVERHEAD)
E(UG)	ELECTRICAL (UNDERGROUND)
EMER	EMERGENCY
EPO	EMERGENCY POWER OFF
EMT	ELECTRICAL METALLIC TUBING
EXP	EXPOSED
FBO	FURNISHED BY OTHERS
FLEX	FLEXIBLE METAL CONDUIT
FRN	DUAL ELEMENT FUSE
GEN	GENERATOR
GFIC	GROUND FAULT INTERRUPTER
GND	GROUND
GRC	GALVANIZED RIGID CONDUIT
HOA	HAND-OFF-AUTO SWITCH
IRD	INFRARED DETECTOR
HP	HORSE POWER
HZ	CYCLES PER SECOND
JB	JUNCTION BOX
LFMC	LIQUID TIGHT FLEXIBLE METAL CONDUIT
M	MOTOR/MOTOR STARTER COIL
MCC	MOTOR CONTROL CENTER
MCP	MOTOR CIRCUIT PROTECTOR
NC	NORMALLY CLOSED
NEC	NATIONAL ELECTRIC CODE
NEMA	NATIONAL ELECTRICAL MANUFACTURERS ASSOCIATION
NF	NON-FUSED
NO	NORMALLY OPEN
OL	OVERLOADS
PBS	PUSHBUTTON
PF	POWER FACTOR
PL	PILOT LIGHT
PLC	PROGRAMMABLE LOGIC CONTROLLER
RC	RIGID CONDUIT
RCPT	RECEPTACLE
SN	SOLID NEUTRAL
SP	SINGLE POLE
ST	SINGLE THROW
SW	SWITCH
TF/TRAN	TRANSFORMER
UF	UNDERFLOOR
UG	UNDERGROUND
V	VOLTS
VFD	VARIABLE FREQUENCY DRIVE
VP	VAPOR PROOF
WHT	WHITE
WP	WEATHER PROOF
XP	EXPLOSION PROOF

STANDARD ABBREVIATIONS

AF	AIR FILTER
AB	AGGREGATE BASE
AC	ASPHALTIC CONCRETE
APPROX	APPROXIMATELY
AF	AIR FILTER
AS	AIR SPARGE
BF	BLIND FLANGE
B.G.S.	BELOW GROUND SURFACE
BLDG	BUILDING
BOP	BOTTOM OF PIPE
BV	BALL VALVE
CONC	CONCRETE
CPLG	COUPLING
℄ /CL	CENTERLINE
CV	CONTROL VALVE/CHECK VALVE
DC	DOUBLE CONTAINED
/DIA	DIAMETER
DWG	DRAWING
DP	DUAL PHASE
DPI	DIFFERENTIAL PRESSURE INDICATOR
EF	EACH FACE
EL/ELEV	ELEVATION
ELEC	ELECTRICAL
ELB	ELBOW
EPDM	ETHYLENE PROPYLENE RUBBER
EXIST/(E)	EXISTING
EXP	EXPANSION
EW	EACH WAY
EA	EACH
FC	FAIL CLOSE
FO	FAIL OPEN
FLXC	FLEXIBLE CONNECTION
FM	FLOW METER
FL	FLOW LINE
FT	FOOT
FUT	FUTURE
FIN GR	FINISHED GRADE
FE	FLANGED END
FNPT	FEMALE NATIONAL PIPE THREAD
GA	GAUGE
GAC	GRANULAR ACTIVATED CARBON
GALV	GALVANIZED
GI	GALVANIZED IRON
GPM	GALLONS PER MINUTE
GR	GRADE
GND	GROUND
GSKT	GASKET
GW	GROUNDWATER
GV	GATE VALVE
HDPE	HIGH DENSITY POLYETHYLENE
HORIZ	HORIZONTAL
HP	HORSEPOWER/HIGH PRESSURE
HR	HOUR
HS	HOSE
HYD	HYDRANT
HOA	HAND OFF AUTOMATIC
ID	INSIDE DIAMETER
IN	INCHES
INV	INVERT
IPS	IRON PIPE SIZE
JT	JOINT
JB	JUNCTION BOX
KO	KNOCK OUT
LSHH	LEVEL SWITCH
M	MOTOR
MAX	MAXIMUM
MH	MANHOLE
MJ	MECHANICAL JOINT
MIN	MINUTE/MINIMUM
MISC	MISCELLANEOUS
MNPT	MALE NATIONAL PIPE THREAD
MP	METER PUMP
MON.PORT	MONITORING PORT
MW	MONITORING WELL
NC	NORMALLY CLOSED
NIC	NOT IN CONTRACT
NO	NORMALLY OPEN
NO.	NUMBER
N	NEW
NTS	NOT TO SCALE
NPDES	NATIONAL POLLUTION DISCHARGE ELIMINATION SYSTEM
OC	ON CENTER
OD	OUTSIDE DIAMETER
OSHA	OCCUPATIONAL SAFETY AND HEALTH ADMINISTRATION
OVHD	OVERHEAD
#/LB	POUND
PB	PULL BOX
PBF	PROVIDED BY FARALLON
PC	PORTLAND CEMENT
PCC	PORTLAND CEMENT CONCRETE
PG	PRESSURE GAS
PL	PROPERTY LINE/PIPE LINE
PO	PUMP OUT
P	PRESSURE
PRV	PRESSURE RELEASE VALVE
PSI	POUNDS PER SQUARE INCH
PSIA	POUNDS PER SQUARE INCH, ABSOLUTE
PSIG	POUNDS PER SQUARE INCH, GAUGE
PTW	PRESSURE TREATMENT
PVC	POLYVINYL CHLORIDE
PV	PROCESS VARIABLE
PR	PAIR
PUE	PUBLIC UTILITY EASEMENT
R	RADIUS/RISER
RC	REINFORCED CONCRETE
REQ	REQUIRED
REF	REFERENCE
SCH	SCHEDULE
SDR	STANDARD DIMENSION RATIO
SECT	SECTION
SHT	SHEET
SPEC	SPECIFICATION
SQ	SQUARE
STA	STATION
STD	STANDARD
STL	STEEL
SBO	SUPPLIED BY OWNER
ST	SAMPLE TAP
STR	STRAINER
SS	STAINLESS STEEL
STL	STEEL
SVE	SOIL VAPOR EXTRACTION
SW	SWITCH
TYP	TYPICAL
TOC	TOP OF CASING/CURB
TOS	TOP OF STEEL
TOW	TOP OF WALL
UBC	UNIFORM BUILDING CODE
UGPS	UNDERGROUND PULL SECTION
UTIL	UTILITY
V	VALVE/VENT/VOLTS
VAC	VACUUM
VAR	VARIES/VARIABLE
VERT	VERTICAL
VP	VAPOR
VRV	VACUUM RELIEF VALVE
W/	WITH
W/O	WITHOUT
WS	WATER SURFACE/WATER STOP

INSTRUMENTATION ABBREVIATIONS AND SYMBOLS

INSTRUMENT LEGEND

FIRST LETTER INITIATING VARIABLE		SUCCEEDING LETTERS OUTPUT FUNCTIONS
A	ANALYSIS	ALARM
B	BURNER	
C	CONDUCTIVITY	CONTROL
D	DENSITY	DIFFERENTIAL
E	POTENTIAL (VOLTS)	PRIMARY ELEMENT
F	FLOW RATE	RATIO (FRACTION)
G	FIRE ALARM	GLASS (SIGHT GAUGE)
H	HAND (MANUALLY)	HIGH
I	CURRENT (AMPERES)	INDICATE
J	POWER	
K	TIME	
L	LEVEL	LEAK, LOW
M	MOISTURE/HUMIDITY	LIGHT (PILOT)
N	EQUIPMENT STATUS	
P	PRESSURE/VACUUM	POINT (TEST CONNECTION)
Q	QUANTITY	INTEGRATE (TOTALIZE)
R		RECORD/PRINT
S	SPEED	SWITCH
T	TEMPERATURE	TRANSMIT
U	MULTIVARIABLE	MULTIFUNCTION
V	VIBRATION/VOLUME	VALVE/DAMPER
W	WEIGHT/FORCE/TORQUE	
X	UNCLASSIFIED	UNCLASSIFIED
Y		RELAY/COMPUTE
Z	POSITION	DRIVE/ACTUATE

INSTRUMENT SYMBOLS

SYMBOL	DESCRIPTION
M	MOTOR
HOA	HAND-OFF-AUTO SELECTOR SWITCH
	LOCALLY MOUNTED INSTRUMENT
	CONTROL PANEL MOUNTED INSTRUMENT
I	INTERLOCK
-10	PLC SHUTDOWN ALARM

STANDARD SYMBOLS

SECTION — 4 / 3 | 6 — DETAIL NUMBER; REFERENCED

CURRENT

PIPING, ELECTRICAL AND EQUIPMENT SYMBOLS

GATE VALVE
GLOBE VALVE
BALL VALVE
BUTTERFLY VALVE
CHECK VALVE
DIAPHRAGM OPERATED VALVE
S — SOLENOID VALVE
M — MOTOR OPERATED VALVE
PRESSURE REGULATING VALVE
D — DRAIN
WELD CAP
SCREWED CAP
SCREWED PLUG
FLANGE
BLIND FLANGE
REDUCER/INCREASER
DIRECTION OF FLOW
UNION
FLEXIBLE PIPE COUPLING
BLOWER OR FAN
CENTRIFUGAL PUMP
PITOT TUBE
STRAINER
TRAP
AF — FILTER
DIAMETER

FEMALE ADAPTER
S — SILENCER
NEEDLE VALVE
FLOW METER
HOSE BIB
SAMPLE TAP/MONITORING PORT
HEAT EXCHANGER
PRESSURE RELIEF OR AIR RELIEF
VACUUM RELIEF
NO — NORMALLY OPEN
NC — NORMALLY CLOSED
MAGNETIC STARTER
DUPLEX RECEPTACLE, 15A; WP-WEATHER PROOF
ETM — ELAPSED TIME METER
FUSE
FUSED DISCONNECT
CAMLOCK CONNECTION
VERTICAL PIPERUN

GROUND
GROUND ROD (3/4" COPPER WELD)
HEATER STRIP
J — JUNCTION BOX, PB-PULLBOX
KWH — KILOWATT HOUR METER
M — MOTOR
MOTOR OVERLOAD
NON-FUSABLE DISCONNECT SWITCH
PILOT LIGHT, R=RED, W=WHITE, G=GREEN
SELECTOR SWITCH AO=AUTO OFF, HOA=HAND OFF AUTO
S2 — SWITCH, 120-277V, 2-2POLE, 20A
T — THERMOSTAT
TD — TIME DELAY RELAY, CR=CONTROL RELAY
TRANSFORMER
UNDERGROUND PULLBOX
W.P. — WEATHER PROTECTED
120/208V PANEL
277/480V PANEL
*HIGH LIGHT STANDARD
X — REVISION TO PLANS

GENERAL NOTES

1. A COPY OF THE PROJECT DESIGN DRAWINGS AND SPECIFICATIONS SHALL BE MAINTAINED ON THE JOB SITE AT ALL TIMES.
2. COPIES OF ALL PERMITS SHALL BE MAINTAINED ON THE JOB SITE AT ALL TIMES. THE CONTRACTOR SHALL COMPLY WITH ALL PERMIT REQUIREMENTS.
3. CONTRACTOR SHALL BE RESPONSIBLE FOR VERIFYING ALL DIMENSIONS.
4. BURIED UTILITIES SHOWN ON THE DRAWINGS ARE FOR GENERAL INFORMATION ONLY. UTILITY LOCATIONS ARE APPROXIMATE AND MAY NOT BE INCLUSIVE OF ALL UTILITIES THAT EXIST ON THE PROPERTY.
5. THE CONTRACTOR SHALL HAVE A PRIVATE UTILITY LOCATE SERVICE VERIFY ALL UTILITIES AND MARK THEIR LOCATIONS ON THE GROUND PRIOR TO STARTING CONSTRUCTION. FARALLON SHALL BE CONTACTED IMMEDIATELY IF A CONFLICT IS FOUND BETWEEN EXISTING UTILITIES AND THE PROJECT DESIGN.
6. FARALLON SHALL BE NOTIFIED OF DISCREPANCIES BETWEEN CONTRACT DRAWINGS AND ACTUAL SITE CONDITIONS.
7. THE CONTRACTOR SHALL ASSUME RESPONSIBILITY FOR THE JOB SITE CONDITIONS AND ENSURE THE SAFETY OF ALL PERSONS AND PROPERTY FOR THE DURATION OF ON SITE PROJECT WORK. THE CONTRACTOR SHALL PROTECT STRUCTURES, UTILITIES, AND PAVING FROM DAMAGE, DIRECT OR INDIRECT, RESULTING FROM THE WORK. THIS REQUIREMENT SHALL APPLY CONTINUOUSLY OVER THE DURATION OF ON SITE ACTIVITIES AND NOT BE LIMITED TO NORMAL WORKING HOURS.
8. ALL EXCAVATIONS SHALL BE PERFORMED IN STRICT ACCORDANCE WITH APPLICABLE U.S. DEPARTMENT OF LABOR OCCUPATIONAL SAFETY AND HEALTH ADMINISTRATION (OSHA) AND THE WASHINGTON INDUSTRIAL SAFETY AND HEALTH ACT (WISHA) REGULATIONS. THE CONTRACTOR ASSUMES FULL RESPONSIBILITY FOR THE SAFETY OF ALL CONSTRUCTION OPERATIONS.
9. NO TRENCHES SHALL BE LEFT OPEN WHEN WORK IS NOT IN PROGRESS. ALL OPEN EXCAVATIONS SHALL BE FENCED.

CLYDE N. MOORE — STATE OF WASHINGTON — 14087 — REGISTERED PROFESSIONAL ENGINEER

	DATE	DESCRIPTION	BY	CKD.	APP.
	9/25/14	ISSUED FOR CLIENT REVIEW	CM/DEW	CM	

FARALLON CONSULTING
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Washington: Issaquah | Bellingham | Seattle
Oregon: Portland | Bend
California: Oakland | Sacramento | Irvine

PREPARED FOR
CAPITAL INDUSTRIES,INC.
5801 3RD AVE. SOUTH
SEATTLE, WA 98108

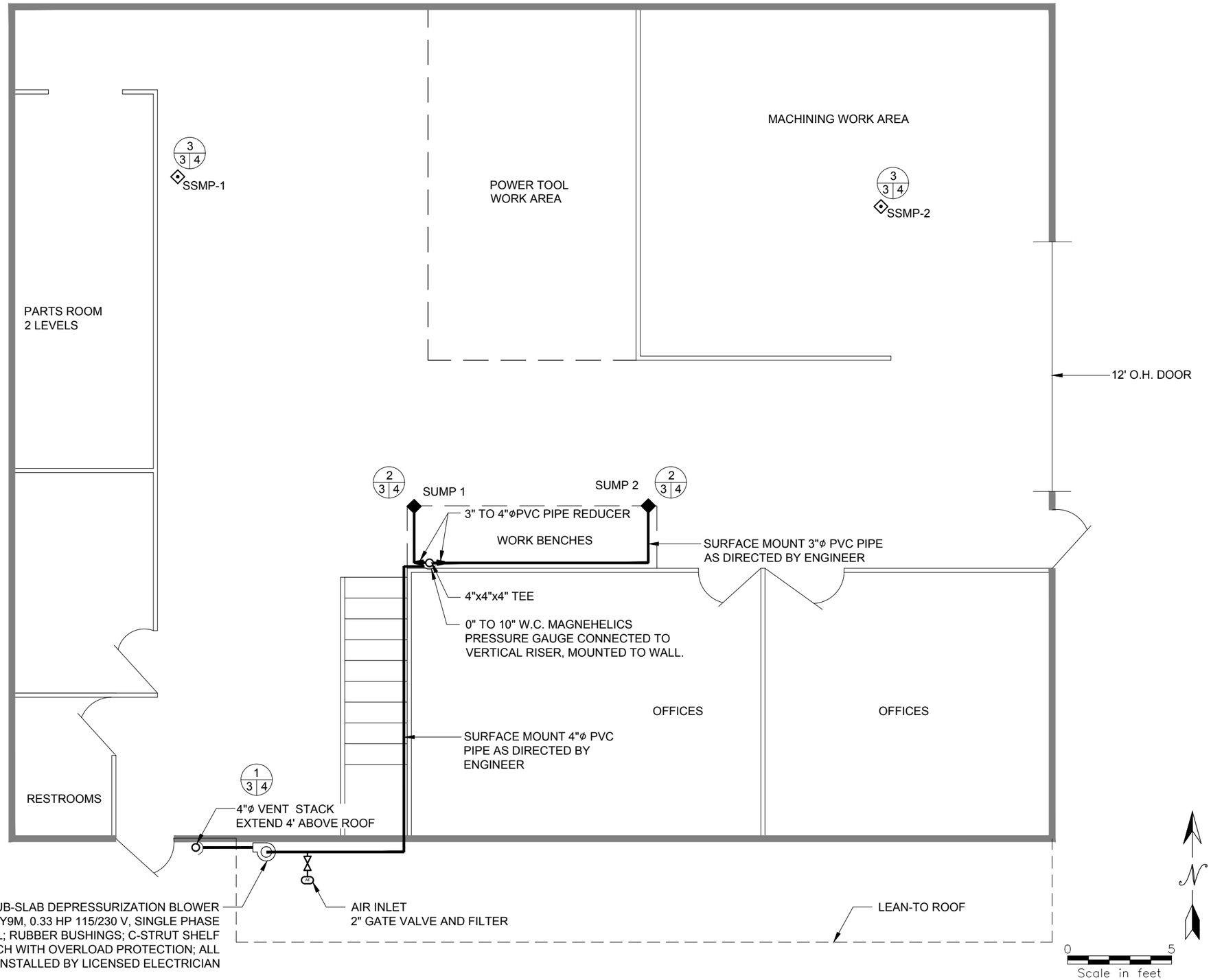
SUB-SLAB DEPRESSURIZATION SYSTEM

GENERAL NOTES, LEGEND,SYMBOLS, AND ABBREVIATIONS

SCALE: AS SHOWN
PROJECT NO.: 457-007
FILE NAME: SYSTEM.dwg
SHEET NO.: 2 OF 4

NOTES:

1. SEAL ALL CONCRETE FLOOR CRACKS, LARGER THAN HAIRLINE CRACKS, WITH THOROSEAL WATERPROOF CEMENT-BASED COATING, (www.thoroproducts.com) MIXED WITH ACRYL-60 AT MFG. RECOMMEND RATE. CRACKS TO BE THOROUGHLY CLEANED WITH HIGH-PRESSURE (2,500 psi min) WATER SPRAY INCORPORATING OIL-GREASE REMOVING DETERGENT AND BRUSH TO COMPLETELY REMOVE OIL, GREASE, AND PAINT FROM CONCRETE SURFACE WITHIN 1-INCH OF THE CRACKS TO BE SEALED.
2. ALL EXPOSED PIPE TO BE PERMANENTLY LABELED "DEPRESSURIZATION SYSTEM PIPE FOR INDOOR AIR PROTECTION", TWO PLACES INSIDE, AND NEXT TO BLOWER AS DIRECTED BY ENGINEER.



CLYDE N. MOORE
STATE OF WASHINGTON
14087
REGISTERED
PROFESSIONAL ENGINEER

	11/3/14	REISSUED FOR CLIENT REVIEW	ROL/DEW	CM	
	9/25/14	ISSUED FOR CLIENT REVIEW	CM/DEW	RM	
	DATE	DESCRIPTION	BY	CKD.	APP.

FARALLON CONSULTING
Quality Service for Environmental Solutions | farallonconsulting.com
Washington
Issaquah | Bellingham | Seattle
Oregon
Portland | Bend
California
Oakland | Sacramento | Irvine

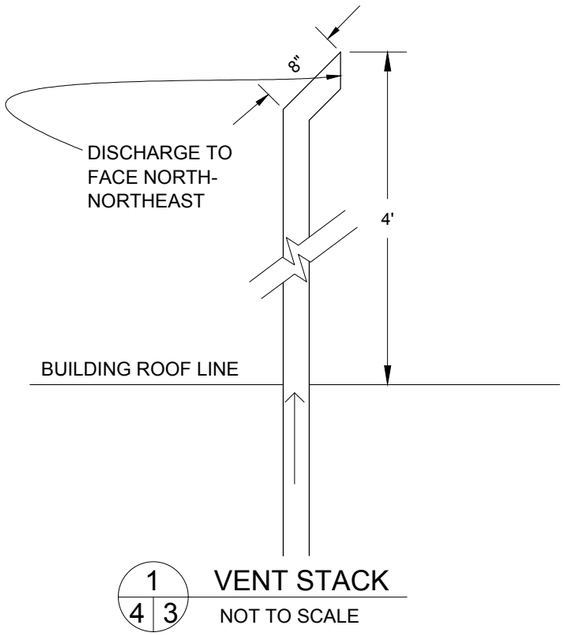
PREPARED FOR

CAPITAL INDUSTRIES,INC.
5801 3RD AVE. SOUTH
SEATTLE, WA 98108

SUB-SLAB DEPRESSURIZATION SYSTEM

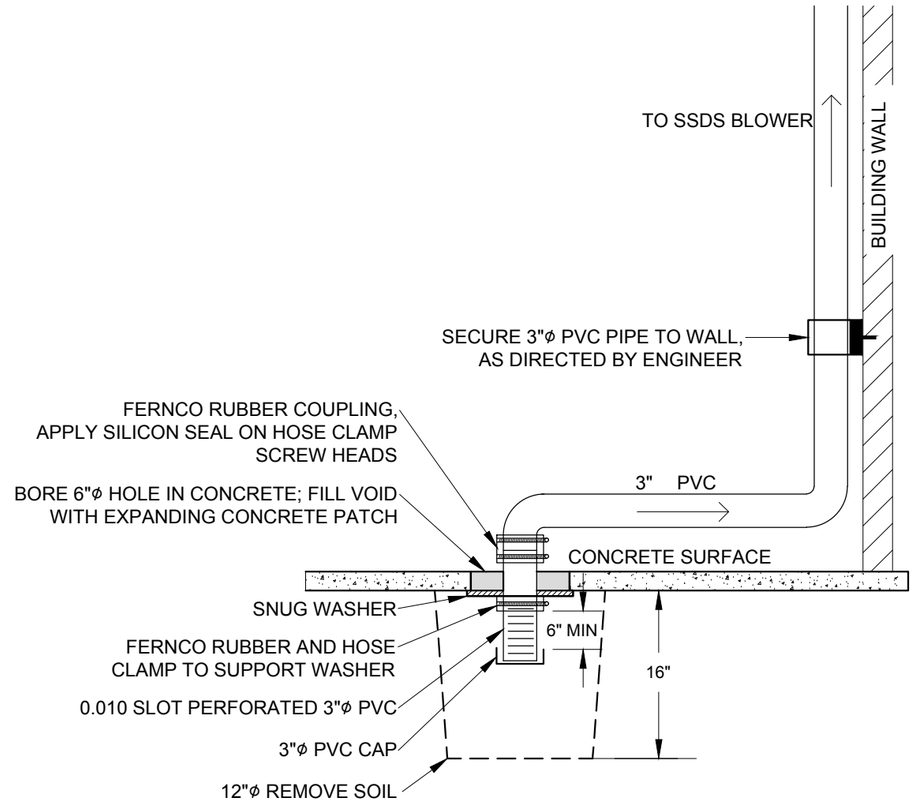
SITE PLAN WITH SUB-SLAB DEPRESSURIZATION SYSTEM

SCALE	AS SHOWN
PROJECT NO.	457-007
FILE NAME:	SYSTEM.dwg
SHEET NO.	3
OF	4

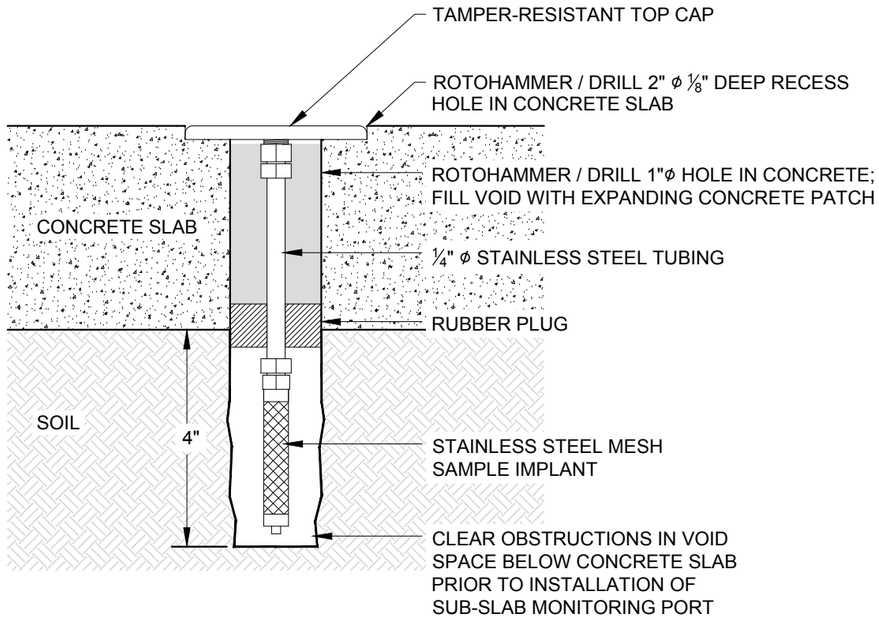


1 / 4 | 3 VENT STACK
NOT TO SCALE

NOTE:
1. VENT STACK TO BUILDING SUPPORT CONNECTIONS TO BE APPROVED BY ENGINEER
2. VENT TO BE LOCATED AT LEAST 10 FT FROM CLOSEST SIDE OF ANY DOOR, WINDOW, OR OTHER OPENING INTO BUILDING INTERIOR, AND TO HVAC/VENTILATION INLET.



2 / 4 | 3 SUMP DETAIL
NOT TO SCALE



3 / 4 | 3 SUB-SLAB MONITORING PORT
NOT TO SCALE

NOTE:
1. AMS SUB-SLAB GAS VAPOR PROBE INSTALLED FOR SUB-SLAB MONITORING PORT. INSTALLED TO VENDOR SPECIFICATIONS.
2. INSTALL SUB-SLAB MONITORING PORT WHERE IT WILL BE PROTECTED FROM DAMAGE AND ACCESSIBLE DURING SUB-SLAB MONITORING EVENTS.
3. DO NOT INSTALL NEAR DOOR, EXTERIOR WALL NOR NEAR CRACK IN SLAB.

	DATE	DESCRIPTION	BY	CKD.	APP.
	11/3/14	REISSUED FOR CLIENT REVIEW	ROL/DEW	CM	
	9/25/14	ISSUED FOR CLIENT REVIEW	CM/DEW	RM	

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California: Oakland | Sacramento | Irvine

PREPARED FOR
CAPITAL INDUSTRIES,INC.
5801 3RD AVE. SOUTH
SEATTLE, WA 98108

SUB-SLAB DEPRESSURIZATION SYSTEM

DETAILS

SCALE: AS SHOWN
PROJECT NO.: 457-007
FILE NAME: SYSTEM.dwg
SHEET NO.: 4 OF 4

APPENDIX B
PHOTOGRAPHS

VAPOR INTRUSION MITIGATION MEASURES
STATUS REPORT
Pacific Food Systems, Inc. North Building
5815 Fourth Avenue South
Seattle, Washington

Farallon PN: 457-007

PHOTOGRAPHS

Vapor Intrusion Mitigation Measures Status Report
Pacific Food Systems, Inc. North Building
Seattle, Washington
Farallon PN: 457-007

Photograph 1: Subslab depressurization system (SSDS) blower with air inlet valve and filter, and outdoor piping.

Photograph 2: SSDS pressure gauge and indoor piping.

Photograph 3: SSDS sump connection (east sump).

Photograph 4: Subslab monitoring port, in differential pressure monitoring configuration.

Photograph 5: Subslab monitoring port, in secured configuration.

Photograph 6: SSDS vent stack.

Photograph 7: Roof of Capital Industries, Inc. Plant 4, southwest of SSDS vent stack.

Photograph 8: Roof of Capital Industries, Inc. Plant 4, west of SSDS vent stack.

Photograph 9: Sewer vent on roof of Pacific Food Systems, Inc. North Building (1 of 2).

Photograph 10: Sewer vent on roof of Pacific Food Systems, Inc. North Building (2 of 2).

Photograph 11: Roof of Pacific Food Systems, Inc. North Building with SSDS vent stack.

Photograph 12: SSDS vent stack height above roof of Pacific Food Systems, Inc. North Building.

Photograph 1: Subslab depressurization system (SSDS) blower with air inlet valve and filter, and outdoor piping.

Photograph 2: SSDS pressure gauge and indoor piping.

Photograph 3: SSDS sump connection (east sump).

Photograph 4: Subslab monitoring port, in differential pressure monitoring configuration.

Photograph 5: Subslab monitoring port, in secured configuration.

Photograph 6: SSDS vent stack.

Photograph 7: Roof of Capital Industries, Inc. Plant 4, southwest of SSDS vent stack.

Photograph 8: Roof of Capital Industries, Inc. Plant 4, west of SSDS vent stack.

Photograph 9: Sewer vent on roof of Pacific Food Systems, Inc. North Building (1 of 2).

Photograph 10: Sewer vent on roof of Pacific Food Systems, Inc. North Building (2 of 2).

Photograph 11: Roof of Pacific Food Systems, Inc. North Building with SSDS vent stack.

Photograph 12: SSDS vent stack height above roof of Pacific Food Systems, Inc. North Building.

APPENDIX C
CITY OF SEATTLE ELECTRICAL PERMIT

VAPOR INTRUSION MITIGATION MEASURES
STATUS REPORT
Pacific Food Systems, Inc. North Building
5815 Fourth Avenue South
Seattle, Washington

Farallon PN: 457-007

Project # 6462876

Address	5815 4th Ave S	**Permit Number**	**6462876**
Location	WAREHOUSE AREA	**Permit Status**	Permit Closed
Records Filed At		**Application Date**	Mar 06, 2015
Application Type	ELECTRICAL	**Issue Date**	Mar 06, 2015
Work Type	FIELD REVIEW	**Expiration Date**	Mar 05, 2016
Category	COMMERCIAL	**Finaled Date**	Apr 01, 2015
King Co. Assessor's #			
Zone/Overlays and ECA			
Legal Description		**Contractor**	**ALLIED ELECTRIC SERVICE INC** P O BOX 3855 LACEY, WA 98509 **ELECTRICAL CONTRACTOR LICENSE:** ALLIEES145BC
Description of Work	INSTALL CIRCUIT FOR SINGLE PHASE BLOWER. 3/27/15 JCB; ADDRESS CHANGED FROM 5801 3RD AVE S.	**Permit Remarks**	

Low Voltage and Communication Systems

Type	# Control Units	# of Devices
-		

Transformers

Qty	Size
-	

Services

Qty	Size
-	

Electric Heaters

Qty	Size
-	

Feeders

Qty	Size
-	

Motors

Qty	Size
-	

Connections

Receptacles	0	**Light Outlets**	0	**Switches**	0	**Fixtures**	0
Residential Fans	0	**Track Lighting**	0	**Multi-Outlet Assy (ft)**	0	**Smoke Detectors**	0

Devices and Branch Circuits

Floodlights	0	**Dimmers (Comrcl 2000W+)**	0	**Dedicated Appliances 15-25 Amp**	1
Furnaces (non-elec)	0	**Sign Circuits**	0	**Dedicated Appliances 30-50 Amp**	0

Fire Alarm Info

Fire Alarm Devices	0	**Fire Alarm Control Units**	0

Renewable Energy

Range	Qty

0-6 KW	0
7-26 KW	0

Project # 6462876

Inspections

Required Inspections - Not Yet Scheduled

Type				Comments
None				

Required Inspections - Scheduled

Type	Date		Inspector	Comments
None				

Completed Inspections

(Multiple same-type inspections may be required to complete a project)

Type	Date	Result	Inspector	Comments
FINAL	Mar 10, 2015	Failed	ZOOKR	03/09/2015 WEBUSR Contact : Steve Koster - 360-789-1888 3-10-15 BZ Not at this address - called contact number left voice message to call me at 206-233-7864
FINAL	Mar 23, 2015	Partial Pass	ZOOKR	03/20/2015 WEBUSR Contact : Steve Koster - 360-789-1888 3-23-15 BZ (1) need address correction to 5815 4Th Ave. S (2) need phenolic lable on disconect
FINAL	Apr 01, 2015	Passed	ZOOKR	

Waived Inspections

Type				Comments
COVER				3-23-15 BZ not required = surface

Definition of Terms

COVER	This inspection type is performed for all installations which require approval before closing walls, ceilings, floors or underground.
FINAL	All permits require a final inspection to certify that the work performed is in compliance with applicable codes.
PARTIAL PASS	Area of work inspected passed and additional inspections of this type are required - move ahead with corrections/conditions

APPENDIX D
SUBSLAB DEPRESSURIZATION SYSTEM INSPECTION FORMS

VAPOR INTRUSION MITIGATION MEASURES
STATUS REPORT
Pacific Food Systems, Inc. North Building
5815 Fourth Avenue South
Seattle, Washington

Farallon PN: 457-007

Subslab Depressurization System Inspection Form

Date and Time: 4/1/2015 @ 1035

Location: PFS-NORTH BUILDING

PART 1 - DOCUMENTATION OF CONDITION OF SYSTEM COMPONENTS

Manometer/Pressure Gauge Readings				
Location	System Manometer	System Vacuum	SSMP-1	SSMP-2
Pressure (IOW)	1.7	1.85	0.025	0.007

Exterior Pipe Free of Cracks	(Y)	N	N/A
Blower Running Appropriately (no excess vibration or noise)	(Y)	N	N/A
Manometer in Good Condition	(Y)	N	N/A
Caulk on Floor Penetrations in Good Condition	(Y)	N	N/A
Significant Floor Cracks or Penetrations Observed	Y	(N)	N/A
Subslab Monitoring Ports Cap Secured	(Y)	N	N/A
Tenant Log Book Properly Completed (make copy of form)	Y	N	(N/A)

PART 2 - DOCUMENTATION OF STRUCTURAL CHANGES

Any Significant Changes to the Building's HVAC System?	Y	(N)	N/A
Any new vents or openings in the roof/walls less than 10' away from the stack?	Y	(N)	N/A
Any new buildings near the mitigated building close enough that stack gasses could contaminate indoor air?	Y	(N)	N/A
Have there been any significant earthquake events?	Y	(N)	N/A

PART 3 - OTHER OBSERVATIONS/COMMENTS

Comments: SYSTEM STARTUP

Sub-Slab Depressurization System Inspection Form

Date and Time: 2/5/16 @ 920

Location: PACIFIC SEAFOODS

PART 1 - DOCUMENTATION OF CONDITION OF SYSTEM COMPONENTS

Manometer/Pressure Gauge Readings					SYSTEM
Location	System Manometer	System Vacuum	SSMP-1	SSMP-2	ΔP
Pressure (IOW)	4.2	3.9	0.057	0.035	0.005
	6.8	6.7	0.100	0.067	0.010

FLOW

16.63 SCFM

23.52 SCFM

Exterior Pipe Free of Cracks	(Y)	N	N/A
Blower Running Appropriately (no excess vibration or no	(Y)	N	N/A
Manometer in Good Condition	(Y)	N	N/A
Caulk on Floor Penetrations in Good Condition	(Y)	N	N/A
Significant Floor Cracks or Penetrations Observed	Y	(N)	N/A
Sub-Slab Monitoring Ports Cap Secured	(Y)	N	N/A

PART 2 - DOCUMENTATION OF STRUCTURAL CHANGES

Any Significant Changes to the Building's HVAC System	Y	(N)	N/A
Any new vents or openings in the roof/walls less than 10' away from the stack	Y	(N)	N/A
Any new buildings near the mitigated building close enough that stack gasses could contaminate their indoor	Y	(N)	N/A
Have there been any significant earthquake events	Y	(N)	N/A

PART 3 - OTHER OBSERVATIONS/COMMENTS

Comments: OBSERVED INTERIOR PIPING PAINTED TO MATCH WALL COLOR. ADJUST SYSTEM TO HAVE AT FULLY CLOSED, WAIT 10 MIN BEFORE READING PRESSURES

Subslab Depressurization System Inspection Form

Date and Time: 4/26/16 @ 1000

Location: 457-007

PART 1 - DOCUMENTATION OF CONDITION OF SYSTEM COMPONENTS

Manometer/Pressure Gauge Readings			Shed	Door
Location	System Manometer	System Vacuum	SSMP-1	SSMP-2
Pressure (IOW)	6.8	7.210	-0.100	-0.058

Exterior Pipe Free of Cracks	(Y)	N	N/A
Blower Running Appropriately (no excess vibration or noise)	(Y)	N	N/A
Manometer in Good Condition	(Y)	N	N/A
Caulk on Floor Penetrations in Good Condition	(Y)	N	N/A
Significant Floor Cracks or Penetrations Observed	Y	(N)	N/A
Subslab Monitoring Ports Cap Secured	(Y)	N	N/A
Tenant Log Book Properly Completed (make copy of form)	Y	(N)	N/A

PART 2 - DOCUMENTATION OF STRUCTURAL CHANGES

Any Significant Changes to the Building's HVAC System?	Y	(N)	N/A
Any new vents or openings in the roof/walls less than 10' away from the stack?	Y	(N)	N/A
Any new buildings near the mitigated building close enough that stack gasses could contaminate indoor air?	Y	(N)	N/A
Have there been any significant earthquake events?	Y	(N)	N/A

PART 3 - OTHER OBSERVATIONS/COMMENTS

Comments:

Bleed in dir filter dirty

Subslab Depressurization System Inspection Form

Date and Time: 1/5/2017

Location: Pacific Food Systems - North building

PART 1 - DOCUMENTATION OF CONDITION OF SYSTEM COMPONENTS

Manometer/Pressure Gauge Readings				
Location	System Manometer	System Vacuum	SSMP-1	SSMP-2
Pressure (IOW)	1.8 bouncing - 1.6 - 2.2	2.177 bouncing between - 1.1 - 2.6	0.015 DP - 0.000	0.006

Exterior Pipe Free of Cracks	(Y)	N	N/A
Blower Running Appropriately (no excess vibration or noise	(Y)	N	N/A
Manometer in Good Condition	(Y)	N	N/A
Caulk on Floor Penetrations in Good Condition	(Y)	N	N/A
Significant Floor Cracks or Penetrations Observed	Y	(N)	N/A
Subslab Monitoring Ports Cap Secured	(Y)	N	N/A
Tenant Log Book Properly Completed (make copy of form)	Y	N	N/A

PART 2 - DOCUMENTATION OF STRUCTURAL CHANGES

Any Significant Changes to the Building's HVAC System?	Y	(N)	N/A
Any new vents or openings in the roof/walls less than 10' away from the stack?	Y	(N)	N/A
Any new buildings near the mitigated building close enough that stack gasses could contaminate indoor air?	Y	(N)	N/A
Have there been any significant earthquake events?	Y	(N)	N/A

PART 3 - OTHER OBSERVATIONS/COMMENTS

Comments: Metal shavings were cleaned out of SSMP-2. Filter for compressor dirty.

APPENDIX E
LABORATORY ANALYTICAL REPORTS

VAPOR INTRUSION MITIGATION MEASURES
STATUS REPORT
Pacific Food Systems, Inc. North Building
5815 Fourth Avenue South
Seattle, Washington

Farallon PN: 457-007

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6/22/2015

Mr. Jeffrey Kaspar
Farallon Consulting, LLC
975 Fifth Avenue NW

Issaquah WA 98027-3333

Project Name: CAPITAL
Project #: 457-007
Workorder #: 1506185A

Dear Mr. Jeffrey Kaspar

The following report includes the data for the above referenced project for sample(s) received on 6/9/2015 at Air Toxics Ltd.

The data and associated QC analyzed by Modified TO-15 SIM are compliant with the project requirements or laboratory criteria with the exception of the deviations noted in the attached case narrative.

Thank you for choosing Air Toxics Ltd. for your air analysis needs. Air Toxics Ltd. is committed to providing accurate data of the highest quality. Please feel free to contact the Project Manager: Kelly Buettner at 916-985-1000 if you have any questions regarding the data in this report.

Regards,

Kelly Buettner

Project Manager

eurofins | Air Toxics

WORK ORDER #: 1506185A

Work Order Summary

CLIENT:	Mr. Jeffrey Kaspar Farallon Consulting, LLC 975 Fifth Avenue NW Issaquah, WA 98027-3333	**BILL TO:**	Mr. Jeffrey Kaspar Farallon Consulting, LLC 975 Fifth Avenue NW Issaquah, WA 98027-3333
PHONE:	425-295-0808	**P.O. #**	
FAX:	425-427-0067	**PROJECT #**	457-007 CAPITAL
DATE RECEIVED:	06/09/2015	**CONTACT:**	Kelly Buettner
DATE COMPLETED:	06/22/2015		

FRACTION #	NAME	TEST	RECEIPT VAC./PRES.	FINAL PRESSURE
01A	IA1-34406-060115	Modified TO-15 SIM	4.3 "Hg	4.9 psi
02A	IA2-9419-060115	Modified TO-15 SIM	4.1 "Hg	5.1 psi
03A	IA3-R-18-060115	Modified TO-15 SIM	4.9 "Hg	5 psi
04A	AA1-33541-060115	Modified TO-15 SIM	3.9 "Hg	4.9 psi
05A	AA2-4383-060115	Modified TO-15 SIM	0.6 "Hg	5.1 psi
06A	IA4-9561-060115	Modified TO-15 SIM	4.5 "Hg	4.9 psi
07A	IA5-34741-060115	Modified TO-15 SIM	3.3 "Hg	4.6 psi
08A	IA6-22497-060115	Modified TO-15 SIM	4.7 "Hg	4.9 psi
09A	IA7-34758-060115	Modified TO-15 SIM	4.3 "Hg	5.1 psi
10A	AA3-96113-060115	Modified TO-15 SIM	4.1 "Hg	4.8 psi
11A	IA8-33937-060215	Modified TO-15 SIM	5.1 "Hg	4.8 psi
12A	IA9-34348-060215	Modified TO-15 SIM	4.5 "Hg	4.9 psi
13A	AA4-34322-060215	Modified TO-15 SIM	3.9 "Hg	5 psi
14A	Lab Blank	Modified TO-15 SIM	NA	NA
15A	CCV	Modified TO-15 SIM	NA	NA
16A	LCS	Modified TO-15 SIM	NA	NA
16AA	LCSD	Modified TO-15 SIM	NA	NA

CERTIFIED BY: Heidi Hayes DATE: 06/22/15

Technical Director

Certification numbers: AZ Licensure AZ0775, NJ NELAP - CA016, NY NELAP - 11291,
TX NELAP - T104704343-14-7, UT NELAP CA009332014-5, VA NELAP - 460197, WA NELAP - C935
Name of Accreditation Body: NELAP/ORELAP (Oregon Environmental Laboratory Accreditation Program)
Accreditation number: CA300005, Effective date: 10/18/2014, Expiration date: 10/17/2015.
Eurofins Air Toxics Inc.. certifies that the test results contained in this report meet all requirements of the NELAC standards

180 BLUE RAVINE ROAD, SUITE B FOLSOM, CA - 9563
(916) 985-1000 . (800) 985-5955 . FAX (916) 985-1020

LABORATORY NARRATIVE
Modified TO-15 SIM
Farallon Consulting, LLC
Workorder# 1506185A

Thirteen 6 Liter Summa Canister (SIM Certified) samples were received on June 09, 2015. The laboratory performed analysis via modified EPA Method TO-15 using GC/MS in the SIM acquisition mode.

This workorder was independently validated prior to submittal using 'USEPA National Functional Guidelines' as generally applied to the analysis of volatile organic compounds in air. A rules-based, logic driven, independent validation engine was employed to assess completeness, evaluate pass/fail of relevant project quality control requirements and verification of all quantified amounts.

Method modifications taken to run these samples are summarized in the table below. Specific project requirements may over-ride the ATL modifications.

Requirement	***TO-15***	***ATL Modifications***
ICAL %RSD acceptance criteria	</=30% RSD with 2 compounds allowed out to < 40% RSD	Project specific; default criteria is </=30% RSD with 10% of compounds allowed out to < 40% RSD
Daily Calibration	+- 30% Difference	Project specific; default criteria is </= 30% Difference with 10% of compounds allowed out up to </=40%.; flag and narrate outliers
Blank and standards	Zero air	Nitrogen
Method Detection Limit	Follow 40CFR Pt.136 App. B	The MDL met all relevant requirements in Method TO-15 (statistical MDL less than the LOQ). The concentration of the spiked replicate may have exceeded 10X the calculated MDL in some cases

Receiving Notes

There were no receiving discrepancies.

Analytical Notes

There were no analytical discrepancies.

Definition of Data Qualifying Flags

Eight qualifiers may have been used on the data analysis sheets and indicates as follows:

B - Compound present in laboratory blank greater than reporting limit (background subtraction not performed).

J - Estimated value.

E - Exceeds instrument calibration range.

S - Saturated peak.

Q - Exceeds quality control limits.

U - Compound analyzed for but not detected above the reporting limit, LOD, or MDL value. See data page for project specific U-flag definition.

UJ- Non-detected compound associated with low bias in the CCV

N - The identification is based on presumptive evidence.

File extensions may have been used on the data analysis sheets and indicates as follows:

a-File was requantified
b-File was quantified by a second column and detector
r1-File was requantified for the purpose of reissue

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Summary of Detected Compounds
MODIFIED EPA METHOD TO-15 GC/MS SIM

Client Sample ID: IA1-34406-060115

Lab ID#: 1506185A-01A

No Detections Were Found.

Client Sample ID: IA2-9419-060115

Lab ID#: 1506185A-02A

No Detections Were Found.

Client Sample ID: IA3-R-18-060115

Lab ID#: 1506185A-03A

No Detections Were Found.

Client Sample ID: AA1-33541-060115

Lab ID#: 1506185A-04A

No Detections Were Found.

Client Sample ID: AA2-4383-060115

Lab ID#: 1506185A-05A

No Detections Were Found.

Client Sample ID: IA4-9561-060115

Lab ID#: 1506185A-06A

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Trichloroethene	0.031	0.64	0.17	3.5
Tetrachloroethene	0.031	0.073	0.21	0.49

Client Sample ID: IA5-34741-060115

Lab ID#: 1506185A-07A

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Trichloroethene	0.029	0.42	0.16	2.2
Tetrachloroethene	0.029	0.063	0.20	0.43

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Summary of Detected Compounds
MODIFIED EPA METHOD TO-15 GC/MS SIM

Client Sample ID: IA6-22497-060115

Lab ID#: 1506185A-08A

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Trichloroethene	0.032	0.37	0.17	2.0
Tetrachloroethene	0.032	0.057	0.21	0.39

Client Sample ID: IA7-34758-060115

Lab ID#: 1506185A-09A

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Trichloroethene	0.031	0.36	0.17	1.9
Tetrachloroethene	0.031	0.16	0.21	1.1

Client Sample ID: AA3-96113-060115

Lab ID#: 1506185A-10A

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Trichloroethene	0.031	0.54	0.16	2.9

Client Sample ID: IA8-33937-060215

Lab ID#: 1506185A-11A

No Detections Were Found.

Client Sample ID: IA9-34348-060215

Lab ID#: 1506185A-12A

No Detections Were Found.

Client Sample ID: AA4-34322-060215

Lab ID#: 1506185A-13A

No Detections Were Found.

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Client Sample ID: IA1-34406-060115

Lab ID#: 1506185A-01A

MODIFIED EPA METHOD TO-15 GC/MS SIM

File Name:	**v061522sim**	**Date of Collection: 6/1/15 8:19:00 AM**	
Dil. Factor:	**1.56**	**Date of Analysis: 6/16/15 08:29 AM**	

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Vinyl Chloride	0.016	Not Detected	0.040	Not Detected
1,1-Dichloroethene	0.016	Not Detected	0.062	Not Detected
cis-1,2-Dichloroethene	0.031	Not Detected	0.12	Not Detected
Trichloroethene	0.031	Not Detected	0.17	Not Detected
Tetrachloroethene	0.031	Not Detected	0.21	Not Detected
trans-1,2-Dichloroethene	0.16	Not Detected	0.62	Not Detected

Container Type: 6 Liter Summa Canister (SIM Certified)

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	115	70-130
Toluene-d8	102	70-130
4-Bromofluorobenzene	94	70-130

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Client Sample ID: IA2-9419-060115

Lab ID#: 1506185A-02A

MODIFIED EPA METHOD TO-15 GC/MS SIM

File Name:	**v061509sim**	**Date of Collection: 6/1/15 8:26:00 AM**	
Dil. Factor:	**1.56**	**Date of Analysis: 6/15/15 03:57 PM**	

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Vinyl Chloride	0.016	Not Detected	0.040	Not Detected
1,1-Dichloroethene	0.016	Not Detected	0.062	Not Detected
cis-1,2-Dichloroethene	0.031	Not Detected	0.12	Not Detected
Trichloroethene	0.031	Not Detected	0.17	Not Detected
Tetrachloroethene	0.031	Not Detected	0.21	Not Detected
trans-1,2-Dichloroethene	0.16	Not Detected	0.62	Not Detected

Container Type: 6 Liter Summa Canister (SIM Certified)

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	116	70-130
Toluene-d8	103	70-130
4-Bromofluorobenzene	92	70-130

eurofins | Air Toxics

Client Sample ID: IA3-R-18-060115

Lab ID#: 1506185A-03A

MODIFIED EPA METHOD TO-15 GC/MS SIM

File Name:	**v061510sim**	**Date of Collection: 6/1/15 8:31:00 AM**	
Dil. Factor:	**1.60**	**Date of Analysis: 6/15/15 04:34 PM**	

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Vinyl Chloride	0.016	Not Detected	0.041	Not Detected
1,1-Dichloroethene	0.016	Not Detected	0.063	Not Detected
cis-1,2-Dichloroethene	0.032	Not Detected	0.13	Not Detected
Trichloroethene	0.032	Not Detected	0.17	Not Detected
Tetrachloroethene	0.032	Not Detected	0.22	Not Detected
trans-1,2-Dichloroethene	0.16	Not Detected	0.63	Not Detected

Container Type: 6 Liter Summa Canister (SIM Certified)

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	115	70-130
Toluene-d8	102	70-130
4-Bromofluorobenzene	91	70-130

eurofins | Air Toxics

Client Sample ID: AA1-33541-060115

Lab ID#: 1506185A-04A

MODIFIED EPA METHOD TO-15 GC/MS SIM

File Name:	**v061507sim**	**Date of Collection: 6/1/15 8:40:00 AM**	
Dil. Factor:	**1.53**	**Date of Analysis: 6/15/15 02:14 PM**	

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Vinyl Chloride	0.015	Not Detected	0.039	Not Detected
1,1-Dichloroethene	0.015	Not Detected	0.061	Not Detected
cis-1,2-Dichloroethene	0.031	Not Detected	0.12	Not Detected
Trichloroethene	0.031	Not Detected	0.16	Not Detected
Tetrachloroethene	0.031	Not Detected	0.21	Not Detected
trans-1,2-Dichloroethene	0.15	Not Detected	0.61	Not Detected

Container Type: 6 Liter Summa Canister (SIM Certified)

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	114	70-130
Toluene-d8	103	70-130
4-Bromofluorobenzene	99	70-130

eurofins | Air Toxics

Client Sample ID: AA2-4383-060115

Lab ID#: 1506185A-05A

MODIFIED EPA METHOD TO-15 GC/MS SIM

File Name:	**v061511sim**	**Date of Collection: 6/1/15 8:45:00 AM**	
Dil. Factor:	**1.38**	**Date of Analysis: 6/15/15 05:23 PM**	

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Vinyl Chloride	0.014	Not Detected	0.035	Not Detected
1,1-Dichloroethene	0.014	Not Detected	0.055	Not Detected
cis-1,2-Dichloroethene	0.028	Not Detected	0.11	Not Detected
Trichloroethene	0.028	Not Detected	0.15	Not Detected
Tetrachloroethene	0.028	Not Detected	0.19	Not Detected
trans-1,2-Dichloroethene	0.14	Not Detected	0.55	Not Detected

Container Type: 6 Liter Summa Canister (SIM Certified)

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	117	70-130
Toluene-d8	102	70-130
4-Bromofluorobenzene	95	70-130

eurofins | Air Toxics

Client Sample ID: IA4-9561-060115

Lab ID#: 1506185A-06A

MODIFIED EPA METHOD TO-15 GC/MS SIM

File Name:	**v061512sim**	**Date of Collection: 6/1/15 9:00:00 AM**	
Dil. Factor:	**1.57**	**Date of Analysis: 6/15/15 05:59 PM**	

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Vinyl Chloride	0.016	Not Detected	0.040	Not Detected
1,1-Dichloroethene	0.016	Not Detected	0.062	Not Detected
cis-1,2-Dichloroethene	0.031	Not Detected	0.12	Not Detected
Trichloroethene	0.031	0.64	0.17	3.5
Tetrachloroethene	0.031	0.073	0.21	0.49
trans-1,2-Dichloroethene	0.16	Not Detected	0.62	Not Detected

Container Type: 6 Liter Summa Canister (SIM Certified)

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	116	70-130
Toluene-d8	102	70-130
4-Bromofluorobenzene	96	70-130

eurofins | Air Toxics

Client Sample ID: IA5-34741-060115

Lab ID#: 1506185A-07A

MODIFIED EPA METHOD TO-15 GC/MS SIM

File Name:	**v061513sim**	**Date of Collection: 6/1/15 9:05:00 AM**	
Dil. Factor:	**1.47**	**Date of Analysis: 6/15/15 06:34 PM**	

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Vinyl Chloride	0.015	Not Detected	0.038	Not Detected
1,1-Dichloroethene	0.015	Not Detected	0.058	Not Detected
cis-1,2-Dichloroethene	0.029	Not Detected	0.12	Not Detected
Trichloroethene	0.029	0.42	0.16	2.2
Tetrachloroethene	0.029	0.063	0.20	0.43
trans-1,2-Dichloroethene	0.15	Not Detected	0.58	Not Detected

Container Type: 6 Liter Summa Canister (SIM Certified)

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	116	70-130
Toluene-d8	102	70-130
4-Bromofluorobenzene	97	70-130

eurofins | Air Toxics

Client Sample ID: IA6-22497-060115

Lab ID#: 1506185A-08A

MODIFIED EPA METHOD TO-15 GC/MS SIM

File Name:	**v061514sim**	**Date of Collection: 6/1/15 9:14:00 AM**	
Dil. Factor:	**1.58**	**Date of Analysis: 6/15/15 07:20 PM**	

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Vinyl Chloride	0.016	Not Detected	0.040	Not Detected
1,1-Dichloroethene	0.016	Not Detected	0.063	Not Detected
cis-1,2-Dichloroethene	0.032	Not Detected	0.12	Not Detected
Trichloroethene	0.032	0.37	0.17	2.0
Tetrachloroethene	0.032	0.057	0.21	0.39
trans-1,2-Dichloroethene	0.16	Not Detected	0.63	Not Detected

Container Type: 6 Liter Summa Canister (SIM Certified)

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	116	70-130
Toluene-d8	103	70-130
4-Bromofluorobenzene	103	70-130

eurofins | Air Toxics

Client Sample ID: IA7-34758-060115

Lab ID#: 1506185A-09A

MODIFIED EPA METHOD TO-15 GC/MS SIM

File Name:	**v061515sim**	**Date of Collection: 6/1/15 9:16:00 AM**	
Dil. Factor:	**1.57**	**Date of Analysis: 6/15/15 08:22 PM**	

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Vinyl Chloride	0.016	Not Detected	0.040	Not Detected
1,1-Dichloroethene	0.016	Not Detected	0.062	Not Detected
cis-1,2-Dichloroethene	0.031	Not Detected	0.12	Not Detected
Trichloroethene	0.031	0.36	0.17	1.9
Tetrachloroethene	0.031	0.16	0.21	1.1
trans-1,2-Dichloroethene	0.16	Not Detected	0.62	Not Detected

Container Type: 6 Liter Summa Canister (SIM Certified)

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	117	70-130
Toluene-d8	102	70-130
4-Bromofluorobenzene	103	70-130

eurofins | Air Toxics

Client Sample ID: AA3-96113-060115

Lab ID#: 1506185A-10A

MODIFIED EPA METHOD TO-15 GC/MS SIM

File Name:	**v061516sim**	**Date of Collection: 6/1/15 9:26:00 AM**	
Dil. Factor:	**1.54**	**Date of Analysis: 6/15/15 09:12 PM**	

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Vinyl Chloride	0.015	Not Detected	0.039	Not Detected
1,1-Dichloroethene	0.015	Not Detected	0.061	Not Detected
cis-1,2-Dichloroethene	0.031	Not Detected	0.12	Not Detected
Trichloroethene	0.031	0.54	0.16	2.9
Tetrachloroethene	0.031	Not Detected	0.21	Not Detected
trans-1,2-Dichloroethene	0.15	Not Detected	0.61	Not Detected

Container Type: 6 Liter Summa Canister (SIM Certified)

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	117	70-130
Toluene-d8	103	70-130
4-Bromofluorobenzene	94	70-130

eurofins | Air Toxics

Client Sample ID: IA8-33937-060215

Lab ID#: 1506185A-11A

MODIFIED EPA METHOD TO-15 GC/MS SIM

File Name:	**v061517sim**	**Date of Collection: 6/2/15 7:50:00 AM**	
Dil. Factor:	**1.60**	**Date of Analysis: 6/15/15 10:04 PM**	

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Vinyl Chloride	0.016	Not Detected	0.041	Not Detected
1,1-Dichloroethene	0.016	Not Detected	0.063	Not Detected
cis-1,2-Dichloroethene	0.032	Not Detected	0.13	Not Detected
Trichloroethene	0.032	Not Detected	0.17	Not Detected
Tetrachloroethene	0.032	Not Detected	0.22	Not Detected
trans-1,2-Dichloroethene	0.16	Not Detected	0.63	Not Detected

Container Type: 6 Liter Summa Canister (SIM Certified)

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	114	70-130
Toluene-d8	102	70-130
4-Bromofluorobenzene	94	70-130

eurofins | Air Toxics

Client Sample ID: IA9-34348-060215

Lab ID#: 1506185A-12A

MODIFIED EPA METHOD TO-15 GC/MS SIM

File Name:	**v061518sim**	**Date of Collection: 6/2/15 7:58:00 AM**	
Dil. Factor:	**1.57**	**Date of Analysis: 6/15/15 10:41 PM**	

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Vinyl Chloride	0.016	Not Detected	0.040	Not Detected
1,1-Dichloroethene	0.016	Not Detected	0.062	Not Detected
cis-1,2-Dichloroethene	0.031	Not Detected	0.12	Not Detected
Trichloroethene	0.031	Not Detected	0.17	Not Detected
Tetrachloroethene	0.031	Not Detected	0.21	Not Detected
trans-1,2-Dichloroethene	0.16	Not Detected	0.62	Not Detected

Container Type: 6 Liter Summa Canister (SIM Certified)

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	112	70-130
Toluene-d8	112	70-130
4-Bromofluorobenzene	103	70-130

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Client Sample ID: AA4-34322-060215

Lab ID#: 1506185A-13A

MODIFIED EPA METHOD TO-15 GC/MS SIM

File Name:	**v061508sim**	**Date of Collection: 6/2/15 8:05:00 AM**	
Dil. Factor:	**1.54**	**Date of Analysis: 6/15/15 02:52 PM**	

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Vinyl Chloride	0.015	Not Detected	0.039	Not Detected
1,1-Dichloroethene	0.015	Not Detected	0.061	Not Detected
cis-1,2-Dichloroethene	0.031	Not Detected	0.12	Not Detected
Trichloroethene	0.031	Not Detected	0.16	Not Detected
Tetrachloroethene	0.031	Not Detected	0.21	Not Detected
trans-1,2-Dichloroethene	0.15	Not Detected	0.61	Not Detected

Container Type: 6 Liter Summa Canister (SIM Certified)

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	116	70-130
Toluene-d8	103	70-130
4-Bromofluorobenzene	94	70-130

eurofins | Air Toxics

Client Sample ID: Lab Blank

Lab ID#: 1506185A-14A

MODIFIED EPA METHOD TO-15 GC/MS SIM

File Name:	**v061506sim**	**Date of Collection: NA**	
Dil. Factor:	**1.00**	**Date of Analysis: 6/15/15 12:23 PM**	

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Vinyl Chloride	0.010	Not Detected	0.026	Not Detected
1,1-Dichloroethene	0.010	Not Detected	0.040	Not Detected
cis-1,2-Dichloroethene	0.020	Not Detected	0.079	Not Detected
Trichloroethene	0.020	Not Detected	0.11	Not Detected
Tetrachloroethene	0.020	Not Detected	0.14	Not Detected
trans-1,2-Dichloroethene	0.10	Not Detected	0.40	Not Detected

Container Type: NA - Not Applicable

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	113	70-130
Toluene-d8	103	70-130
4-Bromofluorobenzene	96	70-130

eurofins | Air Toxics

Client Sample ID: CCV

Lab ID#: 1506185A-15A

MODIFIED EPA METHOD TO-15 GC/MS SIM

File Name:	**v061503sim**	**Date of Collection: NA**	
Dil. Factor:	**1.00**	**Date of Analysis: 6/15/15 10:09 AM**	

Compound	%Recovery
Vinyl Chloride	85
1,1-Dichloroethene	108
cis-1,2-Dichloroethene	109
Trichloroethene	95
Tetrachloroethene	93
trans-1,2-Dichloroethene	110

Container Type: NA - Not Applicable

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	114	70-130
Toluene-d8	103	70-130
4-Bromofluorobenzene	98	70-130

eurofins | Air Toxics

Client Sample ID: LCS

Lab ID#: 1506185A-16A

MODIFIED EPA METHOD TO-15 GC/MS SIM

File Name:	**v061504sim**	**Date of Collection: NA**	
Dil. Factor:	**1.00**	**Date of Analysis: 6/15/15 10:51 AM**	

Compound	%Recovery	Method Limits
Vinyl Chloride	84	70-130
1,1-Dichloroethene	108	70-130
cis-1,2-Dichloroethene	119	70-130
Trichloroethene	92	70-130
Tetrachloroethene	92	70-130
trans-1,2-Dichloroethene	94	70-130

Container Type: NA - Not Applicable

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	114	70-130
Toluene-d8	101	70-130
4-Bromofluorobenzene	96	70-130

eurofins | Air Toxics

Client Sample ID: LCSD

Lab ID#: 1506185A-16AA

MODIFIED EPA METHOD TO-15 GC/MS SIM

File Name:	**v061505sim**	**Date of Collection: NA**	
Dil. Factor:	**1.00**	**Date of Analysis: 6/15/15 11:34 AM**	

Compound	%Recovery	Method Limits
Vinyl Chloride	89	70-130
1,1-Dichloroethene	100	70-130
cis-1,2-Dichloroethene	116	70-130
Trichloroethene	94	70-130
Tetrachloroethene	90	70-130
trans-1,2-Dichloroethene	89	70-130

Container Type: NA - Not Applicable

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	112	70-130
Toluene-d8	106	70-130
4-Bromofluorobenzene	99	70-130

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Farallon Consulting
Jeff Kaspar
975 5th Ave NW
Issaquah, WA 98027

RE: Capital Industries
Lab ID: 1512007

December 07, 2015

Attention Jeff Kaspar:

Fremont Analytical, Inc. received 10 sample(s) on 12/1/2015 for the analyses presented in the following report.

Volatile Organic Compounds-EPA Method TO-15 (SIM)

This report consists of the following:

- Case Narrative
- Analytical Results
- Applicable Quality Control Summary Reports
- Chain of Custody

All analyses were performed consistent with the Quality Assurance program of Fremont Analytical, Inc. Please contact the laboratory if you should have any questions about the results.

Thank you for using Fremont Analytical.

Sincerely,

Mike Ridgeway
President

Date: *12/07/2015*

CLIENT: Farallon Consulting
Project: Capital Industries
Lab Order: 1512007

Work Order Sample Summary

Lab Sample ID	Client Sample ID	Date/Time Collected	Date/Time Received
1512007-001	AA1-15423-113015	11/30/2015 9:04 AM	12/01/2015 2:00 PM
1512007-002	IA5-15899-113015	11/30/2015 8:36 AM	12/01/2015 2:00 PM
1512007-003	AA2-17234-113015	11/30/2015 9:16 AM	12/01/2015 2:00 PM
1512007-004	IA2-17241-113015	11/30/2015 8:04 AM	12/01/2015 2:00 PM
1512007-005	IA3-17244-113015	11/30/2015 8:09 AM	12/01/2015 2:00 PM
1512007-006	AA3-17638-113015	11/30/2015 9:23 AM	12/01/2015 2:00 PM
1512007-007	IA1-17641-113015	11/30/2015 7:58 AM	12/01/2015 2:00 PM
1512007-008	IA7-17643-113015	11/30/2015 8:44 AM	12/01/2015 2:00 PM
1512007-009	IA4-17646-113015	11/30/2015 8:32 AM	12/01/2015 2:00 PM
1512007-010	IA6-17647-113015	11/30/2015 8:41 AM	12/01/2015 2:00 PM

Note: If no "Time Collected" is supplied, a default of 12:00AM is assigned

Case Narrative

WO#: **1512007**
Date: **12/7/2015**

CLIENT: Farallon Consulting
Project: Capital Industries

WorkOrder Narrative:
I. SAMPLE RECEIPT:
Samples receipt information is recorded on the attached Sample Receipt Checklist.

II. GENERAL REPORTING COMMENTS:
Air samples are reported in ppbv and ug/m3.

The validity of the analytical procedures for which data is reported in this analytical report is determined by the Laboratory Control Sample (LCS) and the Method Blank (MB). The LCS and the MB are processed with the samples to ensure method criteria are achieved throughout the entire analytical process.

III. ANALYSES AND EXCEPTIONS:
Exceptions associated with this report will be footnoted in the analytical results page(s) or the quality control summary page(s) and/or noted below.

Standard temperature and pressure assumes 24.45 = (25C and 1 atm).

Qualifiers:

* - Flagged value is not within established control limits
B - Analyte detected in the associated Method Blank
D - Dilution was required
E - Value above quantitation range
H - Holding times for preparation or analysis exceeded
I - Analyte with an internal standard that does not meet established acceptance criteria
J - Analyte detected below Reporting Limit
N - Tentatively Identified Compound (TIC)
Q - Analyte with an initial or continuing calibration that does not meet established acceptance criteria (<20%RSD, <20% Drift or minimum RRF)
S - Spike recovery outside accepted recovery limits
ND - Not detected at the Reporting Limit
R - High relative percent difference observed

Acronyms:

%Rec - Percent Recovery
CCB - Continued Calibration Blank
CCV - Continued Calibration Verification
DF - Dilution Factor
HEM - Hexane Extractable Material
ICV - Initial Calibration Verification
LCS/LCSD - Laboratory Control Sample / Laboratory Control Sample Duplicate
MB or MBLANK - Method Blank
MDL - Method Detection Limit
MS/MSD - Matrix Spike / Matrix Spike Duplicate
PDS - Post Digestion Spike
Ref Val - Reference Value
RL - Reporting Limit
RPD - Relative Percent Difference
SD - Serial Dilution
SGT - Silica Gel Treatment
SPK - Spike
Surr - Surrogate

Client: **Farallon Consulting**
WorkOrder: 1512007
Project: Capital Industries

Client Sample ID: AA1-15423-113015
Lab ID: 1512007-001A
Sample Type: Summa Canister

Date Sampled: 11/30/2015
Date Received: 12/1/2015

Volatile Organic Compounds-EPA Method TO-15 (SIM)

Analyte	Concentration (ppbv)	Concentration (ug/m³)	Reporting Limit (ppbv)	Reporting Limit (ug/m³)	Qual	Method	Date/Analyst	
1,1-Dichloroethene (DCE)	<0.00900	<0.0357	0.00900	0.0357		EPA-TO-15SIM	12/04/2015	JY
cis-1,2-Dichloroethene	<0.0200	<0.0793	0.0200	0.0793		EPA-TO-15SIM	12/04/2015	JY
Tetrachloroethene (PCE)	<0.0500	<0.339	0.0500	0.339		EPA-TO-15SIM	12/04/2015	JY
trans-1,2-Dichloroethene	<0.00600	<0.0238	0.00600	0.0238		EPA-TO-15SIM	12/04/2015	JY
Trichloroethene (TCE)	<0.0170	<0.0914	0.0170	0.0914		EPA-TO-15SIM	12/04/2015	JY
Vinyl chloride	<0.0850	<0.217	0.0850	0.217		EPA-TO-15SIM	12/04/2015	JY
Surr: 4-Bromofluorobenzene	89.6 %Rec	--	70-130	--		EPA-TO-15SIM	12/04/2015	JY

Client: **Farallon Consulting**
WorkOrder: 1512007
Project: Capital Industries

Client Sample ID: IA5-15899-113015
Lab ID: 1512007-002A
Sample Type: Summa Canister

Date Sampled: 11/30/2015
Date Received: 12/1/2015

Volatile Organic Compounds-EPA Method TO-15 (SIM)

Analyte	Concentration (ppbv)	Concentration (ug/m³)	Reporting Limit (ppbv)	Reporting Limit (ug/m³)	Qual	Method	Date/Analyst	
1,1-Dichloroethene (DCE)	<0.00900	<0.0357	0.00900	0.0357		EPA-TO-15SIM	12/04/2015	JY
cis-1,2-Dichloroethene	<0.0200	<0.0793	0.0200	0.0793		EPA-TO-15SIM	12/04/2015	JY
Tetrachloroethene (PCE)	0.0787	0.534	0.0500	0.339		EPA-TO-15SIM	12/04/2015	JY
trans-1,2-Dichloroethene	<0.00600	<0.0238	0.00600	0.0238		EPA-TO-15SIM	12/04/2015	JY
Trichloroethene (TCE)	0.181	0.971	0.0170	0.0914		EPA-TO-15SIM	12/04/2015	JY
Vinyl chloride	<0.0850	<0.217	0.0850	0.217		EPA-TO-15SIM	12/04/2015	JY
Surr: 4-Bromofluorobenzene	88.9 %Rec	--	70-130	--		EPA-TO-15SIM	12/04/2015	JY

Client: **Farallon Consulting**
WorkOrder: 1512007
Project: Capital Industries

Client Sample ID: AA2-17234-113015
Lab ID: 1512007-003A
Sample Type: Summa Canister

Date Sampled: 11/30/2015
Date Received: 12/1/2015

Volatile Organic Compounds-EPA Method TO-15 (SIM)

Analyte	Concentration (ppbv)	Concentration (ug/m³)	Reporting Limit (ppbv)	Reporting Limit (ug/m³)	Qual	Method	Date/Analyst	
1,1-Dichloroethene (DCE)	<0.00900	<0.0357	0.00900	0.0357		EPA-TO-15SIM	12/04/2015	JY
cis-1,2-Dichloroethene	<0.0200	<0.0793	0.0200	0.0793		EPA-TO-15SIM	12/04/2015	JY
Tetrachloroethene (PCE)	<0.0500	<0.339	0.0500	0.339		EPA-TO-15SIM	12/04/2015	JY
trans-1,2-Dichloroethene	<0.00600	<0.0238	0.00600	0.0238		EPA-TO-15SIM	12/04/2015	JY
Trichloroethene (TCE)	<0.0170	<0.0914	0.0170	0.0914		EPA-TO-15SIM	12/04/2015	JY
Vinyl chloride	<0.0850	<0.217	0.0850	0.217		EPA-TO-15SIM	12/04/2015	JY
Surr: 4-Bromofluorobenzene	88.9 %Rec	--	70-130	--		EPA-TO-15SIM	12/04/2015	JY

Client: **Farallon Consulting**
WorkOrder: 1512007
Project: Capital Industries

Client Sample ID: IA2-17241-113015
Lab ID: 1512007-004A
Sample Type: Summa Canister

Date Sampled: 11/30/2015
Date Received: 12/1/2015

Volatile Organic Compounds-EPA Method TO-15 (SIM)

Analyte	Concentration (ppbv)	Concentration (ug/m³)	Reporting Limit (ppbv)	Reporting Limit (ug/m³)	Qual	Method	Date/Analyst	
1,1-Dichloroethene (DCE)	<0.00900	<0.0357	0.00900	0.0357		EPA-TO-15SIM	12/04/2015	JY
cis-1,2-Dichloroethene	<0.0200	<0.0793	0.0200	0.0793		EPA-TO-15SIM	12/04/2015	JY
Tetrachloroethene (PCE)	0.0712	0.483	0.0500	0.339		EPA-TO-15SIM	12/04/2015	JY
trans-1,2-Dichloroethene	<0.00600	<0.0238	0.00600	0.0238		EPA-TO-15SIM	12/04/2015	JY
Trichloroethene (TCE)	<0.0170	<0.0914	0.0170	0.0914		EPA-TO-15SIM	12/04/2015	JY
Vinyl chloride	<0.0850	<0.217	0.0850	0.217		EPA-TO-15SIM	12/04/2015	JY
Surr: 4-Bromofluorobenzene	93.9 %Rec	--	70-130	--		EPA-TO-15SIM	12/04/2015	JY

Client: **Farallon Consulting**
WorkOrder: 1512007
Project: Capital Industries

Client Sample ID: IA3-17244-113015
Lab ID: 1512007-005A
Sample Type: Summa Canister

Date Sampled: 11/30/2015
Date Received: 12/1/2015

Volatile Organic Compounds-EPA Method TO-15 (SIM)

Analyte	Concentration (ppbv)	Concentration (ug/m³)	Reporting Limit (ppbv)	Reporting Limit (ug/m³)	Qual	Method	Date/Analyst	
1,1-Dichloroethene (DCE)	<0.00900	<0.0357	0.00900	0.0357		EPA-TO-15SIM	12/04/2015	JY
cis-1,2-Dichloroethene	<0.0200	<0.0793	0.0200	0.0793		EPA-TO-15SIM	12/04/2015	JY
Tetrachloroethene (PCE)	0.0660	0.448	0.0500	0.339		EPA-TO-15SIM	12/04/2015	JY
trans-1,2-Dichloroethene	<0.00600	<0.0238	0.00600	0.0238		EPA-TO-15SIM	12/04/2015	JY
Trichloroethene (TCE)	<0.0170	<0.0914	0.0170	0.0914		EPA-TO-15SIM	12/04/2015	JY
Vinyl chloride	<0.0850	<0.217	0.0850	0.217		EPA-TO-15SIM	12/04/2015	JY
Surr: 4-Bromofluorobenzene	91.0 %Rec	--	70-130	--		EPA-TO-15SIM	12/04/2015	JY

Client: **Farallon Consulting**
WorkOrder: 1512007
Project: Capital Industries

Client Sample ID: AA3-17638-113015
Lab ID: 1512007-006A
Sample Type: Summa Canister

Date Sampled: 11/30/2015
Date Received: 12/1/2015

Volatile Organic Compounds-EPA Method TO-15 (SIM)

Analyte	Concentration (ppbv)	Concentration (ug/m³)	Reporting Limit (ppbv)	Reporting Limit (ug/m³)	Qual	Method	Date/Analyst	
1,1-Dichloroethene (DCE)	<0.00900	<0.0357	0.00900	0.0357		EPA-TO-15SIM	12/05/2015	JY
cis-1,2-Dichloroethene	<0.0200	<0.0793	0.0200	0.0793		EPA-TO-15SIM	12/05/2015	JY
Tetrachloroethene (PCE)	0.0521	0.353	0.0500	0.339		EPA-TO-15SIM	12/05/2015	JY
trans-1,2-Dichloroethene	<0.00600	<0.0238	0.00600	0.0238		EPA-TO-15SIM	12/05/2015	JY
Trichloroethene (TCE)	<0.0170	<0.0914	0.0170	0.0914		EPA-TO-15SIM	12/05/2015	JY
Vinyl chloride	<0.0850	<0.217	0.0850	0.217		EPA-TO-15SIM	12/05/2015	JY
Surr: 4-Bromofluorobenzene	90.3 %Rec	--	70-130	--		EPA-TO-15SIM	12/05/2015	JY

Client: **Farallon Consulting**
WorkOrder: 1512007
Project: Capital Industries

Client Sample ID: IA1-17641-113015
Lab ID: 1512007-007A
Sample Type: Summa Canister

Date Sampled: 11/30/2015
Date Received: 12/1/2015

Volatile Organic Compounds-EPA Method TO-15 (SIM)

Analyte	Concentration (ppbv)	Concentration (ug/m³)	Reporting Limit (ppbv)	Reporting Limit (ug/m³)	Qual	Method	Date/Analyst	
1,1-Dichloroethene (DCE)	<0.00900	<0.0357	0.00900	0.0357		EPA-TO-15SIM	12/05/2015	JY
cis-1,2-Dichloroethene	<0.0200	<0.0793	0.0200	0.0793		EPA-TO-15SIM	12/05/2015	JY
Tetrachloroethene (PCE)	0.0602	0.408	0.0500	0.339		EPA-TO-15SIM	12/05/2015	JY
trans-1,2-Dichloroethene	<0.00600	<0.0238	0.00600	0.0238		EPA-TO-15SIM	12/05/2015	JY
Trichloroethene (TCE)	<0.0170	<0.0914	0.0170	0.0914		EPA-TO-15SIM	12/05/2015	JY
Vinyl chloride	<0.0850	<0.217	0.0850	0.217		EPA-TO-15SIM	12/05/2015	JY
Surr: 4-Bromofluorobenzene	89.4 %Rec	--	70-130	--		EPA-TO-15SIM	12/05/2015	JY

Client: **Farallon Consulting**
WorkOrder: 1512007
Project: Capital Industries

Client Sample ID: IA7-17643-113015
Lab ID: 1512007-008A
Sample Type: Summa Canister

Date Sampled: 11/30/2015
Date Received: 12/1/2015

Volatile Organic Compounds-EPA Method TO-15 (SIM)

Analyte	Concentration (ppbv)	Concentration (ug/m³)	Reporting Limit (ppbv)	Reporting Limit (ug/m³)	Qual	Method	Date/Analyst	
1,1-Dichloroethene (DCE)	<0.00900	<0.0357	0.00900	0.0357		EPA-TO-15SIM	12/05/2015	JY
cis-1,2-Dichloroethene	<0.0200	<0.0793	0.0200	0.0793		EPA-TO-15SIM	12/05/2015	JY
Tetrachloroethene (PCE)	0.130	0.880	0.0500	0.339		EPA-TO-15SIM	12/05/2015	JY
trans-1,2-Dichloroethene	<0.00600	<0.0238	0.00600	0.0238		EPA-TO-15SIM	12/05/2015	JY
Trichloroethene (TCE)	<0.0170	<0.0914	0.0170	0.0914		EPA-TO-15SIM	12/05/2015	JY
Vinyl chloride	<0.0850	<0.217	0.0850	0.217		EPA-TO-15SIM	12/05/2015	JY
Surr: 4-Bromofluorobenzene	71.4 %Rec	--	70-130	--		EPA-TO-15SIM	12/05/2015	JY

Client: **Farallon Consulting**
WorkOrder: 1512007
Project: Capital Industries

Client Sample ID: IA4-17646-113015
Lab ID: 1512007-009A
Sample Type: Summa Canister

Date Sampled: 11/30/2015
Date Received: 12/1/2015

Volatile Organic Compounds-EPA Method TO-15 (SIM)

Analyte	Concentration (ppbv)	Concentration (ug/m³)	Reporting Limit (ppbv)	Reporting Limit (ug/m³)	Qual	Method	Date/Analyst	
1,1-Dichloroethene (DCE)	<0.00900	<0.0357	0.00900	0.0357		EPA-TO-15SIM	12/05/2015	JY
cis-1,2-Dichloroethene	<0.0200	<0.0793	0.0200	0.0793		EPA-TO-15SIM	12/05/2015	JY
Tetrachloroethene (PCE)	0.0893	0.606	0.0500	0.339		EPA-TO-15SIM	12/05/2015	JY
trans-1,2-Dichloroethene	<0.00600	<0.0238	0.00600	0.0238		EPA-TO-15SIM	12/05/2015	JY
Trichloroethene (TCE)	0.175	0.938	0.0170	0.0914		EPA-TO-15SIM	12/05/2015	JY
Vinyl chloride	<0.0850	<0.217	0.0850	0.217		EPA-TO-15SIM	12/05/2015	JY
Surr: 4-Bromofluorobenzene	87.7 %Rec	--	70-130	--		EPA-TO-15SIM	12/05/2015	JY

Client: **Farallon Consulting**
WorkOrder: 1512007
Project: Capital Industries

Client Sample ID: IA6-17647-113015
Lab ID: 1512007-010A
Sample Type: Summa Canister

Date Sampled: 11/30/2015
Date Received: 12/1/2015

Volatile Organic Compounds-EPA Method TO-15 (SIM)

Analyte	Concentration (ppbv)	Concentration (ug/m³)	Reporting Limit (ppbv)	Reporting Limit (ug/m³)	Qual	Method	Date/Analyst	
1,1-Dichloroethene (DCE)	<0.00900	<0.0357	0.00900	0.0357		EPA-TO-15SIM	12/05/2015	JY
cis-1,2-Dichloroethene	<0.0200	<0.0793	0.0200	0.0793		EPA-TO-15SIM	12/05/2015	JY
Tetrachloroethene (PCE)	0.123	0.832	0.0500	0.339		EPA-TO-15SIM	12/05/2015	JY
trans-1,2-Dichloroethene	<0.00600	<0.0238	0.00600	0.0238		EPA-TO-15SIM	12/05/2015	JY
Trichloroethene (TCE)	<0.0170	<0.0914	0.0170	0.0914		EPA-TO-15SIM	12/05/2015	JY
Vinyl chloride	<0.0850	<0.217	0.0850	0.217		EPA-TO-15SIM	12/05/2015	JY
Surr: 4-Bromofluorobenzene	79.7 %Rec	--	70-130	--		EPA-TO-15SIM	12/05/2015	JY

Work Order: 1512007
CLIENT: Farallon Consulting
Project: Capital Industries

QC SUMMARY REPORT

Volatile Organic Compounds-EPA Method TO-15 (SIM)

Sample ID **LCS-R26431** SampType: **LCS** Units: **ppbv** Prep Date: **12/4/2015** RunNo: **26431**
Client ID: **LCSW** Batch ID: **R26431** Analysis Date: **12/4/2015** SeqNo: **498868**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Vinyl chloride	1.82	0.0850	2.500	0	72.8	70	130				
1,1-Dichloroethene (DCE)	3.18	0.00900	2.500	0	127	70	130				
trans-1,2-Dichloroethene	3.20	0.00600	2.500	0	128	70	130				
cis-1,2-Dichloroethene	3.04	0.0200	2.500	0	122	70	130				
Trichloroethene (TCE)	2.45	0.0170	2.500	0	98.0	70	130				
Tetrachloroethene (PCE)	2.52	0.0500	2.500	0	101	70	130				
Surr: 4-Bromofluorobenzene	9.49		10.00		94.9	70	130				

Sample ID **MB-R26431** SampType: **MBLK** Units: **ppbv** Prep Date: **12/4/2015** RunNo: **26431**
Client ID: **MBLKW** Batch ID: **R26431** Analysis Date: **12/4/2015** SeqNo: **498869**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Vinyl chloride	ND	0.0850									
1,1-Dichloroethene (DCE)	ND	0.00900									
trans-1,2-Dichloroethene	ND	0.00600									
cis-1,2-Dichloroethene	ND	0.0200									
Trichloroethene (TCE)	ND	0.0170									
Tetrachloroethene (PCE)	ND	0.0500									
Surr: 4-Bromofluorobenzene	8.76		10.00		87.6	70	130				

Sample ID **1512007-001AREP** SampType: **REP** Units: **ppbv** Prep Date: **12/4/2015** RunNo: **26431**
Client ID: **AA1-15423-113015** Batch ID: **R26431** Analysis Date: **12/4/2015** SeqNo: **498858**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Vinyl chloride	ND	0.0850						0		30	
1,1-Dichloroethene (DCE)	ND	0.00900						0		30	
trans-1,2-Dichloroethene	ND	0.00600						0		30	
cis-1,2-Dichloroethene	ND	0.0200						0		30	
Trichloroethene (TCE)	ND	0.0170						0		30	
Tetrachloroethene (PCE)	ND	0.0500						0		30	

Work Order: 1512007
CLIENT: Farallon Consulting
Project: Capital Industries

QC SUMMARY REPORT

Volatile Organic Compounds-EPA Method TO-15 (SIM)

Sample ID **1512007-001AREP** SampType: **REP** Units: **ppbv** Prep Date: **12/4/2015** RunNo: **26431**
Client ID: **AA1-15423-113015** Batch ID: **R26431** Analysis Date: **12/4/2015** SeqNo: **498858**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Surr: 4-Bromofluorobenzene	8.83		10.00		88.3	70	130		0		

Sample Log-In Check List

Client Name:	**FARA**	Work Order Number:	**1512007**
Logged by:	**Clare Griggs**	Date Received:	**12/1/2015 2:00:00 PM**

Chain of Custody

1.	Is Chain of Custody complete?	Yes ☑	No ☐	Not Present ☐
2.	How was the sample delivered?	Courier		

Log In

3.	Coolers are present?	Yes ☐	No ☑	NA ☐
		Air Samples		
4.	Shipping container/cooler in good condition?	Yes ☑	No ☐	
5.	Custody Seals present on shipping container/cooler? (Refer to comments for Custody Seals not intact)	Yes ☐	No ☐	Not Required ☑
6.	Was an attempt made to cool the samples?	Yes ☐	No ☐	NA ☑
7.	Were all items received at a temperature of >0°C to 10.0°C *	Yes ☐	No ☐	NA ☑
8.	Sample(s) in proper container(s)?	Yes ☑	No ☐	
9.	Sufficient sample volume for indicated test(s)?	Yes ☑	No ☐	
10.	Are samples properly preserved?	Yes ☑	No ☐	
11.	Was preservative added to bottles?	Yes ☐	No ☑	NA ☐
12.	Is there headspace in the VOA vials?	Yes ☐	No ☐	NA ☑
13.	Did all samples containers arrive in good condition(unbroken)?	Yes ☑	No ☐	
14.	Does paperwork match bottle labels?	Yes ☑	No ☐	
15.	Are matrices correctly identified on Chain of Custody?	Yes ☑	No ☐	
16.	Is it clear what analyses were requested?	Yes ☑	No ☐	
17.	Were all holding times able to be met?	Yes ☑	No ☐	

Special Handling (if applicable)

18.	Was client notified of all discrepancies with this order?	Yes ☐	No ☐	NA ☑

Person Notified:		Date	
By Whom:		Via:	☐ eMail ☐ Phone ☐ Fax ☐ In Person
Regarding:			
Client Instructions:			

19. Additional remarks:

Item Information

* Note: DoD/ELAP and TNI require items to be received at 4°C +/- 2°C

Fremont Analytical

Air Chain of Custody Record - Whole Air Sample

3600 Fremont Ave N.
Seattle, WA 98103
Tel: 206-352-3790
Fax: 206-352-7178

Laboratory Project No (internal): 1512007

Date: 11/30/15

Page: 1 of: 2

Client: Farallon Consulting
Address: 975 5TH AVE NW
City, State, Zip: ISSAQUAH, WA 98027
Telephone: 425-295-0800 Fax:

Project Name: CAPITAL INDUSTRIES
Project No: 457-007 Collected by: ANDREW TAYLOR
Location: CAPITAL
Reports To (PM): JEFF KASPAR
Email (PM): JKASPAR@FARALLONCONSULTING.COM

* Gas Matrix Codes: I = Indoor SS = Subslab L = Landfill SG = Soil Gas M = Plume Mapping Q = Fuel Gas Quality L = LEED (Consult Client Services)

** Container Codes: 6L = Six Liter Canister (Summa) TB = Tedlar Bag BV = 1 Liter Bottle Vac MC = 1 Liter MiniCan HP = High Pressure Cylinder HJ = Glass Headspace Jar

	Sample Name	Canister / Flow Reg Serial #	Sample Date & Time	Gas Matrix Code *	Anticipated Fill Time	Sample Volume	Container Type **	Internal: Evacuation Pressure (mtorr)	Internal: Pressure at Time of Pick-up (" Hg)	Internal: Equipment Certificaton Code	Field Initial Sample Pressure (" Hg)	Field Final Sample Pressure (" Hg)	Analysis Requested	Internal: Receipt Date	Internal: Final Pressure ("Hg)
1	AA1-15423-113015	15423 / FR8-04	11/30/15 9:04		8 hr	6L	Summa	10 mtorr / 11/11/15 16:00			-30 / 9:04	-6 / 16:31	TO-15 (SIM)	12/1	-5
2	IA5-15899-113015	15899 / FR8-08	11/30/15 8:36		8 hr	6L	Summa	10 mtorr / 11/11/15 16:00			-28 / 8:36	-6 / 14:35		12/1	-6
3	AA2-17234-113015	17234 / FR8-11	11/30/15 9:16		8 hr	6L	Summa	10 mtorr / 11/11/15 16:00			-29 / 9:16	-6 / 16:09		12/1	-6
4	IA2-17241-113015	17241 / FR8-12	11/30/15 8:04		8 hr	6L	Summa	10 mtorr / 11/11/15 16:00			-30 / 8:04	-6 / 14:59		12/1	-5
5	IA3-17244-113015	17244 / FR8-20	11/30/15 8:09		8 hr	6L	Summa	10 mtorr / 11/11/15 16:00			-31 / 8:09	-5 / 15:02		12/1	-5

Rental Equipment (Circle all that apply): Manifold Mini-Pump Fittings Tedlar Bags Canisters Flow Controllers Helium Cylinder Flouridated Tubing (Wrench)

Condition:

Seals Intact: Y N N/A

Turn-around times for samples received after 4:00pm will begin on the following business day.

Special Remarks: ONLY NEED RESULTS FOR PCE, TCE, DCE, AND VINYL CHLORIDE

Relinquished	Date/Time	Received	Date/Time
x [signature]	11/30/15 18:00	x [signature]	12/1/15 1400
x		x	

TAT --> STD Rush (specify)

Air Chain of Custody Record - Whole Air Sample

Fremont Analytical

3600 Fremont Ave N.
Seattle, WA 98103
Tel: 206-352-3790
Fax: 206-352-7178

Laboratory Project No (Internal): 1512007

Date: 11/30/15

Page: 2 of: 2

Client: Farallon Consulting
Address: 975 5TH AVE NW
City, State, Zip: ISSAQUAH, WA 98027
Telephone: 425-295-0800 Fax:

Project Name: CAPITAL INDUSTRIES
Project No: 457-007 Collected by: ANDREW TAYLOR
Location: CAPITAL
Reports To (PM): JEFF KASPAR
Email (PM): JKASPAR@FARALLONCONSULTING.COM

* Gas Matrix Codes: I = Indoor SS = Subslab L = Landfill SG = Soil Gas M = Plume Mapping Q = Fuel Gas Quality L = LEED (Consult Client Services)

** Container Codes: 6L = Six Liter Canister (Summa) TB = Tedlar Bag BV = 1 Liter Bottle Vac MC = 1 Liter MiniCan HP = High Pressure Cylinder HJ = Glass Headspace Jar

	Sample Name	Canister / Flow Reg Serial #	Sample Date & Time	Gas Matrix Code *	Anticipated Fill Time	Sample Volume	Container Type **	Internal: Evacuation Pressure (mtorr)	Internal: Pressure at Time of Pick-up (" Hg)	Internal: Equipment Certificaton Code	Field Initial Sample Pressure (" Hg)	Field Final Sample Pressure (" Hg)	Analysis Requested	Internal: Receipt Date	Internal: Final Pressure ("Hg)
1	~~AT IA1-17638-113015~~ AA3-17638-113015	17638 / FR8-22	11/30/15 9:23		8 hr	6L	Summa	10 mtorr / 11/11/15 16:00			-30 / 9:23	-7 / 15:53	TO-15 (SIM)	12/1	-6
2	IA1-17641-113015	17641 / FR8-23	11/30/15 7:58		8 hr	6L	Summa	10 mtorr / 11/11/15 16:00			-32 / 7:58	-6 / 14:54		12/1	-4
3	IA7-17643-113015	17643 / FR8-24	11/30/15 8:44		8 hr	6L	Summa	10 mtorr / 11/11/15 16:00			-30 / 8:44	-6 / 15:45		12/1	-6
4	IA4-17646-113015	17646 / FV1	11/30/15 8:32		8 hr	6L	Summa	10 mtorr / 11/11/15 16:00			-30 / 8:32	-7 / 14:37		12/1	-7
5	IA6-17647-113015	17647 / FV2	11/30/15 8:41		8 hr	6L	Summa	10 mtorr / 11/11/15 16:00			-31 / 8:41	-8 / 16:34		12/1	-9

Rental Equipment (Circle all that apply): Manifold Mini-Pump Fittings Tedlar Bags Canisters Flow Controllers Helium Cylinder Flouridated Tubing (Wrench)

Condition:

Seals Intact: Y N N/A

Turn-around times for samples received after 4:00pm will begin on the following business day.

Special Remarks: ONLY NEED RESULTS FOR PCE, TCE, DCE, AND VINYL CHLORIDE

Relinquished	Date/Time	Received	Date/Time
x	11/30/15 18:00	x	12/1/15 1400
x		x	

TAT --> STD Rush (specify)

3600 Fremont Ave. N.
Seattle, WA 98103
T: (206) 352-3790
F: (206) 352-7178
info@fremontanalytical.com

Farallon Consulting
Jeff Kaspar
975 5th Ave NW
Issaquah, WA 98027

RE: Capital Industries
Lab ID: 1604437

May 04, 2016

Attention Jeff Kaspar:

Fremont Analytical, Inc. received 4 sample(s) on 4/29/2016 for the analyses presented in the following report.

Volatile Organic Compounds-EPA Method TO-15 (SIM)

This report consists of the following:

- Case Narrative
- Analytical Results
- Applicable Quality Control Summary Reports
- Chain of Custody

All analyses were performed consistent with the Quality Assurance program of Fremont Analytical, Inc. Please contact the laboratory if you should have any questions about the results.

Thank you for using Fremont Analytical.

Sincerely,

Mike Ridgeway
President

Date: *05/04/2016*

CLIENT: Farallon Consulting
Project: Capital Industries
Lab Order: 1604437

Work Order Sample Summary

Lab Sample ID	Client Sample ID	Date/Time Collected	Date/Time Received
1604437-001	AA1-042616-UW	04/26/2016 5:26 PM	04/29/2016 2:00 PM
1604437-002	IA1-1042616-Office	04/26/2016 4:58 PM	04/29/2016 2:00 PM
1604437-003	IA2-1042616-Warehouse	04/26/2016 4:59 PM	04/29/2016 2:00 PM
1604437-004	SYSTEMINFLUENT-042616	04/26/2016 9:56 AM	04/29/2016 2:00 PM

Case Narrative

WO#: **1604437**
Date: **5/4/2016**

CLIENT: Farallon Consulting
Project: Capital Industries

WorkOrder Narrative:
I. SAMPLE RECEIPT:
Samples receipt information is recorded on the attached Sample Receipt Checklist.

II. GENERAL REPORTING COMMENTS:
Air samples are reported in ppbv and ug/m3.

The validity of the analytical procedures for which data is reported in this analytical report is determined by the Laboratory Control Sample (LCS) and the Method Blank (MB). The LCS and the MB are processed with the samples to ensure method criteria are achieved throughout the entire analytical process.

III. ANALYSES AND EXCEPTIONS:
Exceptions associated with this report will be footnoted in the analytical results page(s) or the quality control summary page(s) and/or noted below.

Standard temperature and pressure assumes 24.45 = (25C and 1 atm).

Qualifiers:

* - Flagged value is not within established control limits
B - Analyte detected in the associated Method Blank
D - Dilution was required
E - Value above quantitation range
H - Holding times for preparation or analysis exceeded
I - Analyte with an internal standard that does not meet established acceptance criteria
J - Analyte detected below Reporting Limit
N - Tentatively Identified Compound (TIC)
Q - Analyte with an initial or continuing calibration that does not meet established acceptance criteria (<20%RSD, <20% Drift or minimum RRF)
S - Spike recovery outside accepted recovery limits
ND - Not detected at the Reporting Limit
R - High relative percent difference observed

Acronyms:

%Rec - Percent Recovery
CCB - Continued Calibration Blank
CCV - Continued Calibration Verification
DF - Dilution Factor
HEM - Hexane Extractable Material
ICV - Initial Calibration Verification
LCS/LCSD - Laboratory Control Sample / Laboratory Control Sample Duplicate
MB or MBLANK - Method Blank
MDL - Method Detection Limit
MS/MSD - Matrix Spike / Matrix Spike Duplicate
PDS - Post Digestion Spike
Ref Val - Reference Value
RL - Reporting Limit
RPD - Relative Percent Difference
SD - Serial Dilution
SGT - Silica Gel Treatment
SPK - Spike
Surr - Surrogate

Client: **Farallon Consulting**
WorkOrder: 1604437
Project: Capital Industries

Client Sample ID: AA1-042616-UW
Lab ID: 1604437-001A
Sample Type:

Date Sampled: 4/26/2016
Date Received: 4/29/2016

Analyte	Concentration		Reporting Limit		Qual	Method	Date/Analyst	
Volatile Organic Compounds-EPA Method TO-15 (SIM)								
	(ppbv)	(ug/m³)	(ppbv)	(ug/m³)				
cis-1,2-Dichloroethene	<0.0200	<0.0793	0.0200	0.0793		EPA-TO-15SIM	05/01/2016	BC
Tetrachloroethene (PCE)	<0.0500	<0.339	0.0500	0.339		EPA-TO-15SIM	05/01/2016	BC
trans-1,2-Dichloroethene	<0.00600	<0.0238	0.00600	0.0238		EPA-TO-15SIM	05/01/2016	BC
Trichloroethene (TCE)	2.75	14.8	0.0170	0.0914		EPA-TO-15SIM	05/01/2016	BC
Vinyl chloride	<0.0850	<0.217	0.0850	0.217		EPA-TO-15SIM	05/01/2016	BC
Surr: 4-Bromofluorobenzene	94.0 %Rec	--	70-130	--		EPA-TO-15SIM	05/01/2016	BC

Client: **Farallon Consulting**
WorkOrder: 1604437
Project: Capital Industries

Client Sample ID: IA1-1042616-Office
Lab ID: 1604437-002A
Sample Type:

Date Sampled: 4/26/2016
Date Received: 4/29/2016

Analyte	Concentration		Reporting Limit		Qual	Method	Date/Analyst	
Volatile Organic Compounds-EPA Method TO-15 (SIM)								
	(ppbv)	(ug/m³)	(ppbv)	(ug/m³)				
cis-1,2-Dichloroethene	<0.0200	<0.0793	0.0200	0.0793		EPA-TO-15SIM	05/01/2016	BC
Tetrachloroethene (PCE)	0.0700	0.475	0.0500	0.339		EPA-TO-15SIM	05/01/2016	BC
trans-1,2-Dichloroethene	<0.00600	<0.0238	0.00600	0.0238		EPA-TO-15SIM	05/01/2016	BC
Trichloroethene (TCE)	0.900	4.84	0.0170	0.0914		EPA-TO-15SIM	05/01/2016	BC
Vinyl chloride	<0.0850	<0.217	0.0850	0.217		EPA-TO-15SIM	05/01/2016	BC
Surr: 4-Bromofluorobenzene	95.6 %Rec	--	70-130	--		EPA-TO-15SIM	05/01/2016	BC

Client: **Farallon Consulting**
WorkOrder: 1604437
Project: Capital Industries

Client Sample ID: IA2-1042616-Warehouse
Lab ID: 1604437-003A
Sample Type:

Date Sampled: 4/26/2016
Date Received: 4/29/2016

Analyte	Concentration		Reporting Limit		Qual	Method	Date/Analyst	
Volatile Organic Compounds-EPA Method TO-15 (SIM)								
	(ppbv)	(ug/m³)	(ppbv)	(ug/m³)				
cis-1,2-Dichloroethene	<0.0200	<0.0793	0.0200	0.0793		EPA-TO-15SIM	05/01/2016	BC
Tetrachloroethene (PCE)	0.0900	0.610	0.0500	0.339		EPA-TO-15SIM	05/01/2016	BC
trans-1,2-Dichloroethene	<0.00600	<0.0238	0.00600	0.0238		EPA-TO-15SIM	05/01/2016	BC
Trichloroethene (TCE)	0.870	4.68	0.0170	0.0914		EPA-TO-15SIM	05/01/2016	BC
Vinyl chloride	<0.0850	<0.217	0.0850	0.217		EPA-TO-15SIM	05/01/2016	BC
Surr: 4-Bromofluorobenzene	96.4 %Rec	--	70-130	--		EPA-TO-15SIM	05/01/2016	BC

Client: **Farallon Consulting**
WorkOrder: 1604437
Project: Capital Industries

Client Sample ID: SYSTEMINFLUENT-042616
Lab ID: 1604437-004A
Sample Type:

Date Sampled: 4/26/2016
Date Received: 4/29/2016

Analyte	Concentration		Reporting Limit		Qual	Method	Date/Analyst	
Volatile Organic Compounds-EPA Method TO-15 (SIM)								
	(ppbv)	(ug/m³)	(ppbv)	(ug/m³)				
cis-1,2-Dichloroethene	3.25	12.9	0.0200	0.0793		EPA-TO-15SIM	05/01/2016	BC
Tetrachloroethene (PCE)	25.1	170	0.800	5.43		EPA-TO-15SIM	05/03/2016	BC
trans-1,2-Dichloroethene	0.0600	0.238	0.00600	0.0238		EPA-TO-15SIM	05/01/2016	BC
Trichloroethene (TCE)	45.3	243	0.272	1.46		EPA-TO-15SIM	05/03/2016	BC
Vinyl chloride	<0.0850	<0.217	0.0850	0.217		EPA-TO-15SIM	05/01/2016	BC
Surr: 4-Bromofluorobenzene	94.4 %Rec	--	70-130	--		EPA-TO-15SIM	05/01/2016	BC

Work Order: 1604437
CLIENT: Farallon Consulting
Project: Capital Industries

QC SUMMARY REPORT

Volatile Organic Compounds-EPA Method TO-15 (SIM)

Sample ID **LCS-R29094** SampType: **LCS** Units: **ppbv** Prep Date: **5/1/2016** RunNo: **29094**
Client ID: **LCSW** Batch ID: **R29094** Analysis Date: **5/1/2016** SeqNo: **548066**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Vinyl chloride	2.44	0.0850	2.500	0	97.6	70	130				
trans-1,2-Dichloroethene	2.42	0.00600	2.500	0	96.8	70	130				
cis-1,2-Dichloroethene	2.38	0.0200	2.500	0	95.2	70	130				
Trichloroethene (TCE)	2.40	0.0170	2.500	0	96.0	70	130				
Tetrachloroethene (PCE)	2.49	0.0500	2.500	0	99.6	70	130				
Surr: 4-Bromofluorobenzene	9.74		10.00		97.4	70	130				

Sample ID **MB-R29094** SampType: **MBLK** Units: **ppbv** Prep Date: **5/1/2016** RunNo: **29094**
Client ID: **MBLKW** Batch ID: **R29094** Analysis Date: **5/1/2016** SeqNo: **548067**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Vinyl chloride	ND	0.0850									
trans-1,2-Dichloroethene	ND	0.00600									
cis-1,2-Dichloroethene	ND	0.0200									
Trichloroethene (TCE)	ND	0.0170									
Tetrachloroethene (PCE)	ND	0.0500									
Surr: 4-Bromofluorobenzene	9.49		10.00		94.9	70	130				

Sample ID **1604423-001AREP** SampType: **REP** Units: **ppbv** Prep Date: **5/1/2016** RunNo: **29094**
Client ID: **BATCH** Batch ID: **R29094** Analysis Date: **5/1/2016** SeqNo: **548059**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Vinyl chloride	ND	0.0850						0		30	
trans-1,2-Dichloroethene	ND	0.00600						0		30	
cis-1,2-Dichloroethene	ND	0.0200						0		30	
Trichloroethene (TCE)	ND	0.0170						0		30	
Tetrachloroethene (PCE)	ND	0.0500						0		30	
Surr: 4-Bromofluorobenzene	9.60		10.00		96.0	70	130		0		

Work Order: 1604437
CLIENT: Farallon Consulting
Project: Capital Industries

QC SUMMARY REPORT

Volatile Organic Compounds-EPA Method TO-15 (SIM)

Sample ID **LCS-B-R29094** SampType: **LCS** Units: **ppbv** Prep Date: **5/2/2016** RunNo: **29094**
Client ID: **LCSW** Batch ID: **R29094** Analysis Date: **5/2/2016** SeqNo: **548467**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Trichloroethene (TCE)	2.15	0.0170	2.500	0	86.0	70	130				
Tetrachloroethene (PCE)	2.28	0.0500	2.500	0	91.2	70	130				
Surr: 4-Bromofluorobenzene	9.92		10.00		99.2	70	130				

Sample Log-In Check List

Client Name:	**FARA**	Work Order Number:	**1604437**
Logged by:	**Clare Griggs**	Date Received:	**4/29/2016 2:00:00 PM**

Chain of Custody

1.	Is Chain of Custody complete?	Yes	☐	No	☑	Not Present ☐
2.	How was the sample delivered?	Courier				

Log In

3.	Coolers are present?	Yes	☐	No	☑	NA ☐
		Air Samples				
4.	Shipping container/cooler in good condition?	Yes	☑	No	☐	
5.	Custody Seals present on shipping container/cooler? (Refer to comments for Custody Seals not intact)	Yes	☐	No	☐	Not Required ☑
6.	Was an attempt made to cool the samples?	Yes	☐	No	☐	NA ☑
7.	Were all items received at a temperature of >0°C to 10.0°C*	Yes	☐	No	☐	NA ☑
8.	Sample(s) in proper container(s)?	Yes	☑	No	☐	
9.	Sufficient sample volume for indicated test(s)?	Yes	☑	No	☐	
10.	Are samples properly preserved?	Yes	☑	No	☐	
11.	Was preservative added to bottles?	Yes	☐	No	☑	NA ☐
12.	Is there headspace in the VOA vials?	Yes	☐	No	☐	NA ☑
13.	Did all samples containers arrive in good condition(unbroken)?	Yes	☑	No	☐	
14.	Does paperwork match bottle labels?	Yes	☑	No	☐	
15.	Are matrices correctly identified on Chain of Custody?	Yes	☑	No	☐	
16.	Is it clear what analyses were requested?	Yes	☑	No	☐	
17.	Were all holding times able to be met?	Yes	☑	No	☐	

Special Handling (if applicable)

18.	Was client notified of all discrepancies with this order?	Yes	☐	No	☐	NA ☑

Person Notified: _____ Date _____

By Whom: _____ Via: ☐ eMail ☐ Phone ☐ Fax ☐ In Person

Regarding: _____

Client Instructions: _____

19. Additional remarks:

Client did not relinquish chain of custody

Item Information

* Note: DoD/ELAP and TNI require items to be received at 4°C +/- 2°C

Air Chain of Custody Record - Whole Air Sample

Fremont Analytical
3600 Fremont Ave N.
Seattle, WA 98103
Tel: 206-352-3790
Fax: 206-352-7178

Laboratory Project No (Internal): 1604437

Date: 4/26/16

Page: 1 of: 1

Client: Farallon Consulting
Address: 975 5th AVE NW
City, State, Zip: Issaquah, WA, 98027
Telephone: 425 295 0800 Fax: 425 295 0850

Project Name: Capital Industries
Project No: 457-007 Collected by: Ryan Ostrom
Location: Seattle, WA
Reports To (PM): Jeff Kaspar
Email (PM): Jkaspar@FarallonConsulting.Com

* Gas Matrix Codes: I = Indoor SS = Subslab L = Landfill SG = Soil Gas M = Plume Mapping Q = Fuel Gas Quality L = LEED (Consult Client Services)

** Container Codes: 6L = Six Liter Canister (Summa) TB = Tedlar Bag BV = 1 Liter Bottle Vac MC = 1 Liter MiniCan HP = High Pressure Cylinder HJ = Glass Headspace Jar

	Sample Name	Canister / Flow Reg Serial #	Sample Date & Time	Gas Matrix Code *	Anticipated Fill Time	Sample Volume	Container Type **	Internal: Evacuation Pressure (mtorr)	Internal: Pressure at Time of Pick-up (" Hg)	Internal: Equipment Certificaton Code	Field Initial Sample Pressure (" Hg)	Field Final Sample Pressure (" Hg)	Analysis Requested	Internal: Receipt Date	Internal: Final Pressure ("Hg)
1	AA1-042616-UW	Canister: 13967 / Flow Reg: FR8-08	Date: 4/26/16 / Time: 1726	I	8 Hr	6L	Summa	10 mtorr / 4/25/16 15:30			+30.0 / 1025	6.0 / 1726	TO15 SIM	4/29/16	-5
2	IA1-042616-OFFICE	Canister: 13968 / Flow Reg: FR8-15	Date: 4/26/16 / Time: 1658	I	8 Hr	6L	Summa	10 mtorr / 4/25/16 15:30			+30.0 / 0945	5.0 / 1658	TO15 SIM		-5
3	IA2-042616-WAREHOUSE	Canister: 13972 / Flow Reg: FR8-25	Date: 4/26/16 / Time: 1659	I	8 Hr	6L	Summa	10 mtorr / 4/25/16 15:30			+30.0 / 0946	6.0 / 1659	TO15 SIM		-5
4	SYSTEMINFLUENT-042616	Canister: 13973 / Flow Reg:	Date: 4/26/16 / Time: 0956	SS		6L	Summa	10 mtorr / 4/25/16 15:30			28.0 / 0955	5.0 / 0956	TO15 SIM	↓	-4
5		Canister: / Flow Reg:	Date: / Time:					Pressure: / Date:	Pressure: / Date/Time:	Container: / Regulator:	Pressure: / Time:	Pressure: / Time:			

Rental Equipment (Circle all that apply): Manifold Mini-Pump Fittings Tedlar Bags Canisters Flow Controllers Helium Cylinder Flouridated Tubing Wrench

Condition:

Seals Intact: Y N N/A

Turn-around times for samples received after 4:00pm will begin on the following business day.

Special Remarks: Only analyze for. PCE, TCE, cis-1,2 DCE, TRANS-1,2 DCE, VC

Relinquished	Date/Time	Received	Date/Time
x		x	4/29/16 14:00
x		x	

TAT --> STD Rush (specify)

3600 Fremont Ave. N.
Seattle, WA 98103
T: (206) 352-3790
F: (206) 352-7178
info@fremontanalytical.com

Farallon Consulting
Jeff Kaspar
975 5th Ave NW
Issaquah, WA 98027

RE: 457-007
Lab ID: 1609020

September 09, 2016

Attention Jeff Kaspar:

Fremont Analytical, Inc. received 4 sample(s) on 9/1/2016 for the analyses presented in the following report.

Volatile Organic Compounds-EPA Method TO-15 (SIM)

This report consists of the following:

- Case Narrative
- Analytical Results
- Applicable Quality Control Summary Reports
- Chain of Custody

All analyses were performed consistent with the Quality Assurance program of Fremont Analytical, Inc. Please contact the laboratory if you should have any questions about the results.

Thank you for using Fremont Analytical.

Sincerely,

Mike Ridgeway
Laboratory Director

CC:
Russell Luiten

Date: *09/09/2016*

CLIENT: Farallon Consulting
Project: 457-007
Lab Order: 1609020

Work Order Sample Summary

Lab Sample ID	Client Sample ID	Date/Time Collected	Date/Time Received
1609020-001	IA1-083116-OFFICE	08/31/2016 12:00 AM	09/01/2016 2:23 PM
1609020-002	IA2-083116-WAREHOUSE	08/31/2016 12:00 AM	09/01/2016 2:23 PM
1609020-003	AA1-083116-DO	08/31/2016 12:00 AM	09/01/2016 2:23 PM
1609020-004	SYSTEM-083116	08/31/2016 12:00 AM	09/01/2016 2:23 PM

Case Narrative

WO#: **1609020**
Date: **9/9/2016**

CLIENT: Farallon Consulting
Project: 457-007

WorkOrder Narrative:
I. SAMPLE RECEIPT:
Samples receipt information is recorded on the attached Sample Receipt Checklist.

II. GENERAL REPORTING COMMENTS:
Air samples are reported in ppbv and ug/m3.

The validity of the analytical procedures for which data is reported in this analytical report is determined by the Laboratory Control Sample (LCS) and the Method Blank (MB). The LCS and the MB are processed with the samples to ensure method criteria are achieved throughout the entire analytical process.

III. ANALYSES AND EXCEPTIONS:
Exceptions associated with this report will be footnoted in the analytical results page(s) or the quality control summary page(s) and/or noted below.

Standard temperature and pressure assumes 24.45 = (25C and 1 atm).

Qualifiers:

* - Flagged value is not within established control limits
B - Analyte detected in the associated Method Blank
D - Dilution was required
E - Value above quantitation range
H - Holding times for preparation or analysis exceeded
I - Analyte with an internal standard that does not meet established acceptance criteria
J - Analyte detected below Reporting Limit
N - Tentatively Identified Compound (TIC)
Q - Analyte with an initial or continuing calibration that does not meet established acceptance criteria (<20%RSD, <20% Drift or minimum RRF)
S - Spike recovery outside accepted recovery limits
ND - Not detected at the Reporting Limit
R - High relative percent difference observed

Acronyms:

%Rec - Percent Recovery
CCB - Continued Calibration Blank
CCV - Continued Calibration Verification
DF - Dilution Factor
HEM - Hexane Extractable Material
ICV - Initial Calibration Verification
LCS/LCSD - Laboratory Control Sample / Laboratory Control Sample Duplicate
MB or MBLANK - Method Blank
MDL - Method Detection Limit
MS/MSD - Matrix Spike / Matrix Spike Duplicate
PDS - Post Digestion Spike
Ref Val - Reference Value
RL - Reporting Limit
RPD - Relative Percent Difference
SD - Serial Dilution
SGT - Silica Gel Treatment
SPK - Spike
Surr - Surrogate

Client: **Farallon Consulting**
WorkOrder: 1609020
Project: 457-007

Client Sample ID: IA1-083116-OFFICE
Lab ID: 1609020-001A
Sample Type: Summa Canister

Date Sampled: 8/31/2016
Date Received: 9/1/2016

Analyte	Concentration		Reporting Limit		Qual	Method	Date/Analyst	
Volatile Organic Compounds-EPA Method TO-15 (SIM)								
	(ppbv)	(ug/m³)	(ppbv)	(ug/m³)				
1,1-Dichloroethene (DCE)	<0.00900	<0.0357	0.00900	0.0357		EPA-TO-15SIM	09/08/2016	BC
cis-1,2-Dichloroethene	<0.0200	<0.0793	0.0200	0.0793		EPA-TO-15SIM	09/08/2016	BC
Tetrachloroethene (PCE)	0.0700	0.475	0.0500	0.339		EPA-TO-15SIM	09/08/2016	BC
trans-1,2-Dichloroethene	<0.00600	<0.0238	0.00600	0.0238		EPA-TO-15SIM	09/08/2016	BC
Trichloroethene (TCE)	0.420	2.26	0.0170	0.0914		EPA-TO-15SIM	09/08/2016	BC
Vinyl chloride	<0.0850	<0.217	0.0850	0.217		EPA-TO-15SIM	09/08/2016	BC
Surr: 4-Bromofluorobenzene	90.9 %Rec	--	70-130	--		EPA-TO-15SIM	09/08/2016	BC

Client: **Farallon Consulting**
WorkOrder: 1609020
Project: 457-007

Client Sample ID: IA2-083116-WAREHOUSE
Lab ID: 1609020-002A
Sample Type: Summa Canister

Date Sampled: 8/31/2016
Date Received: 9/1/2016

Analyte	Concentration		Reporting Limit		Qual	Method	Date/Analyst	
Volatile Organic Compounds-EPA Method TO-15 (SIM)								
	(ppbv)	(ug/m³)	(ppbv)	(ug/m³)				
1,1-Dichloroethene (DCE)	<0.00900	<0.0357	0.00900	0.0357		EPA-TO-15SIM	09/08/2016	BC
cis-1,2-Dichloroethene	<0.0200	<0.0793	0.0200	0.0793		EPA-TO-15SIM	09/08/2016	BC
Tetrachloroethene (PCE)	0.0700	0.475	0.0500	0.339		EPA-TO-15SIM	09/08/2016	BC
trans-1,2-Dichloroethene	<0.00600	<0.0238	0.00600	0.0238		EPA-TO-15SIM	09/08/2016	BC
Trichloroethene (TCE)	0.400	2.15	0.0170	0.0914		EPA-TO-15SIM	09/08/2016	BC
Vinyl chloride	<0.0850	<0.217	0.0850	0.217		EPA-TO-15SIM	09/08/2016	BC
Surr: 4-Bromofluorobenzene	91.1 %Rec	--	70-130	--		EPA-TO-15SIM	09/08/2016	BC

Client: **Farallon Consulting**
WorkOrder: 1609020
Project: 457-007

Client Sample ID: AA1-083116-DO
Lab ID: 1609020-003A
Sample Type: Summa Canister

Date Sampled: 8/31/2016
Date Received: 9/1/2016

Analyte	Concentration		Reporting Limit		Qual	Method	Date/Analyst	
Volatile Organic Compounds-EPA Method TO-15 (SIM)								
	(ppbv)	(ug/m³)	(ppbv)	(ug/m³)				
1,1-Dichloroethene (DCE)	<0.00900	<0.0357	0.00900	0.0357		EPA-TO-15SIM	09/08/2016	BC
cis-1,2-Dichloroethene	<0.0200	<0.0793	0.0200	0.0793		EPA-TO-15SIM	09/08/2016	BC
Tetrachloroethene (PCE)	<0.0500	<0.339	0.0500	0.339		EPA-TO-15SIM	09/08/2016	BC
trans-1,2-Dichloroethene	<0.00600	<0.0238	0.00600	0.0238		EPA-TO-15SIM	09/08/2016	BC
Trichloroethene (TCE)	<0.0170	<0.0914	0.0170	0.0914		EPA-TO-15SIM	09/08/2016	BC
Vinyl chloride	<0.0850	<0.217	0.0850	0.217		EPA-TO-15SIM	09/08/2016	BC
Surr: 4-Bromofluorobenzene	93.4 %Rec	--	70-130	--		EPA-TO-15SIM	09/08/2016	BC

Client: **Farallon Consulting**
WorkOrder: 1609020
Project: 457-007

Client Sample ID: SYSTEM-083116
Lab ID: 1609020-004A
Sample Type: Summa Canister

Date Sampled: 8/31/2016
Date Received: 9/1/2016

Analyte	Concentration		Reporting Limit		Qual	Method	Date/Analyst	
Volatile Organic Compounds-EPA Method TO-15 (SIM)								
	(ppbv)	(ug/m³)	(ppbv)	(ug/m³)				
1,1-Dichloroethene (DCE)	<0.00900	<0.0357	0.00900	0.0357		EPA-TO-15SIM	09/08/2016	BC
cis-1,2-Dichloroethene	6.03	23.9	0.0200	0.0793		EPA-TO-15SIM	09/08/2016	BC
Tetrachloroethene (PCE)	73.3	497	0.800	5.43		EPA-TO-15SIM	09/07/2016	BC
trans-1,2-Dichloroethene	0.0700	0.278	0.00600	0.0238		EPA-TO-15SIM	09/08/2016	BC
Trichloroethene (TCE)	89.8	482	0.272	1.46		EPA-TO-15SIM	09/07/2016	BC
Vinyl chloride	<0.0850	<0.217	0.0850	0.217		EPA-TO-15SIM	09/08/2016	BC
Surr: 4-Bromofluorobenzene	96.9 %Rec	--	70-130	--		EPA-TO-15SIM	09/08/2016	BC

Work Order: 1609020
CLIENT: Farallon Consulting
Project: 457-007

QC SUMMARY REPORT

Volatile Organic Compounds-EPA Method TO-15 (SIM)

Sample ID **LCS-R31603** SampType: **LCS** Units: **ppbv** Prep Date: **9/7/2016** RunNo: **31603**
Client ID: **LCSW** Batch ID: **R31603** Analysis Date: **9/7/2016** SeqNo: **596829**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Vinyl chloride	2.65	0.0850	2.500	0	106	70	130				
1,1-Dichloroethene (DCE)	2.39	0.00900	2.500	0	95.6	70	130				
trans-1,2-Dichloroethene	1.96	0.00600	2.500	0	78.4	70	130				
cis-1,2-Dichloroethene	2.26	0.0200	2.500	0	90.4	70	130				
Trichloroethene (TCE)	2.39	0.0170	2.500	0	95.6	70	130				
Tetrachloroethene (PCE)	2.70	0.0500	2.500	0	108	70	130				
Surr: 4-Bromofluorobenzene	10.2		10.00		102	70	130				

Sample ID **MB-R31603** SampType: **MBLK** Units: **ppbv** Prep Date: **9/7/2016** RunNo: **31603**
Client ID: **MBLKW** Batch ID: **R31603** Analysis Date: **9/7/2016** SeqNo: **596830**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Vinyl chloride	ND	0.0850									
1,1-Dichloroethene (DCE)	ND	0.00900									
trans-1,2-Dichloroethene	ND	0.00600									
cis-1,2-Dichloroethene	ND	0.0200									
Trichloroethene (TCE)	ND	0.0170									
Tetrachloroethene (PCE)	ND	0.0500									
Surr: 4-Bromofluorobenzene	9.54		10.00		95.4	70	130				

Sample ID **1609020-004AREP** SampType: **REP** Units: **ppbv** Prep Date: **9/8/2016** RunNo: **31603**
Client ID: **SYSTEM-083116** Batch ID: **R31603** Analysis Date: **9/8/2016** SeqNo: **596828**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Vinyl chloride	ND	0.0850						0		30	
1,1-Dichloroethene (DCE)	ND	0.00900						0		30	
trans-1,2-Dichloroethene	0.0800	0.00600						0.07000	13.3	30	
cis-1,2-Dichloroethene	6.30	0.0200						6.030	4.38	30	
Trichloroethene (TCE)	233	0.0170						222.6	4.48	30	E
Tetrachloroethene (PCE)	212	0.0500						195.1	8.46	30	E

Work Order: 1609020
CLIENT: Farallon Consulting
Project: 457-007

QC SUMMARY REPORT

Volatile Organic Compounds-EPA Method TO-15 (SIM)

Sample ID **1609020-004AREP** SampType: **REP** Units: **ppbv** Prep Date: **9/8/2016** RunNo: **31603**
Client ID: **SYSTEM-083116** Batch ID: **R31603** Analysis Date: **9/8/2016** SeqNo: **596828**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Surr: 4-Bromofluorobenzene	9.76		10.00		97.6	70	130		0		

Sample Log-In Check List

Client Name:	**FARA**	Work Order Number:	**1609020**
Logged by:	**Clare Griggs**	Date Received:	**9/1/2016 2:23:00 PM**

Chain of Custody

1.	Is Chain of Custody complete?	Yes ☑	No ☐	Not Present ☐
2.	How was the sample delivered?	Client		

Log In

3.	Coolers are present?	Yes ☐	No ☑	NA ☐
		Air Samples		
4.	Shipping container/cooler in good condition?	Yes ☑	No ☐	
5.	Custody Seals present on shipping container/cooler? (Refer to comments for Custody Seals not intact)	Yes ☐	No ☐	Not Required ☑
6.	Was an attempt made to cool the samples?	Yes ☐	No ☐	NA ☑
7.	Were all items received at a temperature of >0°C to 10.0°C*	Yes ☐	No ☐	NA ☑
8.	Sample(s) in proper container(s)?	Yes ☑	No ☐	
9.	Sufficient sample volume for indicated test(s)?	Yes ☑	No ☐	
10.	Are samples properly preserved?	Yes ☑	No ☐	
11.	Was preservative added to bottles?	Yes ☐	No ☑	NA ☐
12.	Is there headspace in the VOA vials?	Yes ☐	No ☐	NA ☑
13.	Did all samples containers arrive in good condition(unbroken)?	Yes ☑	No ☐	
14.	Does paperwork match bottle labels?	Yes ☑	No ☐	
15.	Are matrices correctly identified on Chain of Custody?	Yes ☑	No ☐	
16.	Is it clear what analyses were requested?	Yes ☑	No ☐	
17.	Were all holding times able to be met?	Yes ☑	No ☐	

Special Handling (if applicable)

18.	Was client notified of all discrepancies with this order?	Yes ☐	No ☐	NA ☑

Person Notified: _____ Date _____

By Whom: _____ Via: ☐ eMail ☐ Phone ☐ Fax ☐ In Person

Regarding: _____

Client Instructions: _____

19. Additional remarks:

Item Information

* Note: DoD/ELAP and TNI require items to be received at 4°C +/- 2°C

Air Chain of Custody Record & Laboratory Services Agreement

Fremont Analytical
3600 Fremont Ave N.
Seattle, WA 98103
Tel: 206-352-3790
Fax: 206-352-7178

Laboratory Project No (Internal): 1609020

Date: 9/1/16 Page: 1 of: 1

Client: Farallon Consulting
Address: 975 5th Ave NW
City, State, Zip: Issaquah, WA 98027
Telephone: (425) 295-0800 Fax:

Project Name:
Project No: 457-007 Collected by: RL
Location:
Reports To (PM): Jeff Kasper, Russell Lwiten
Email (PM): JKasper@farallonconsulting.com RLwiten@farallonconsulting.com

* Gas Matrix Codes: I = Indoor SS = Subslab L = Landfill SG = Soil Gas M = Plume Mapping Q = Fuel Gas Quality L = LEED (Consult Client Services)

** Container Codes: 6L = Six Liter Canister (Summa) TB = Tedlar Bag BV = 1 Liter Bottle Vac MC = 1 Liter MiniCan HP = High Pressure Cylinder HJ = Glass Headspace Jar

	Sample Name	Canister / Flow Reg Serial #	Sample Date & Time	Gas Matrix Code *	Anticipated Fill Time	Sample Volume	Container Type **	Internal: Evacuation Pressure (mtorr)	Internal: Pressure at Time of Pick-up (" Hg)	Internal: Equipment Certificaton Code	Field Initial Sample Pressure (" Hg)	Field Final Sample Pressure (" Hg)	Analysis Requested	Internal: Receipt Date	Internal: Final Pressure ("Hg)
1	IA1-083116-OFFICE	15424 / FRB-31	8/31/16	AA		6L	Summa						TO-15 SIM PCE; TCE;	9/1/16	-4
4	IA2-083116-WAREHOUSE	15902 / FRB-29	8/31/16	AA		6L	↓						CIS-1,2 DCE; TRANS-1,2 DCE;	9/1/16	-4
4	AA1-083116-DO	13968 / FRB-18	8/31/16	AA		6L	↓						1,1 DCE, VC	9/1/16	-4
4	SYSTEM-083116	17644	8/31/16			6L	↓							9/1/16	-4
5															

Condition:

Seals Intact: Y N N/A

Turn-around times for samples received after 4:00pm will begin on the following business day.

Special Remarks:

I represent that I am authorized to enter into this Agreement with Fremont Analytical on behalf of the Client named above, that I have verified Client's agreement to each of the terms on the front and backside of this Agreement.

Relinquished	Date/Time	Received	Date/Time
x	9/1/16 1420	x	9/1/16 14:23
x		x	

TAT --> STD Rush (specify)

ADDRESS
Fremont Analytical, Inc.
3600 Fremont Ave N.
Seattle, WA 98103
TEL: 206-352-3790
FAX: 206-352-7178
Website: www.fremontanalytical.com

Certificate of Analysis

Batch ID: 126 **Start Date:** 8/30/2016 9:34:55 PM
Comment: R31462

Cleaning Batch Members:

Canister ID	Lot# / Serial#	Canister Type	Volume (Liters)
12670	12670	Summa w/FR	6
13968	13968	Summa w/FR	6
15424	15424	Summa w/FR	6
15902	15902	Summa w/FR	6
17240	17240	Summa w/FR	6
17644	17644	Summa w/FR	6

Canisters from batch cleaning verification results:

Canister ID: 13968 **Test Code:** A-CNCL-SIM **SeqNo:** 593832
Expiration Date: **Method No:** EPA-TO-15 **Analysis Date:** 8/30/2016 4:03:58 PM

Analyte	Unit	Result	Analyte	Unit	Result	Analyte	Unit	Result
4-Bromofluorobenzene	%REC	9.24	Chloromethane	ppbv	< 0.400	Vinyl chloride	ppbv	< 0.085
Chloroethane	ppbv	< 0.098	1,1-Dichloroethene	ppbv	< 0.009	Methylene chloride	ppbv	< 0.060
trans-1,2-Dichloroethene	ppbv	< 0.006	tert-Butyl Methyl Ether	ppbv	< 0.009	n-Hexane	ppbv	< 0.070
1,1-Dichloroethane	ppbv	< 0.008	cis-1,2-Dichloroethene	ppbv	< 0.020	Chloroform	ppbv	< 0.020
1,1,1-Trichloroethane	ppbv	< 0.005	Carbon tetrachloride	ppbv	< 0.020	1,2-Dichloroethane	ppbv	< 0.020
Benzene	ppbv	< 0.040	Trichloroethene	ppbv	< 0.017	Toluene	ppbv	< 0.050
1,1,2-Trichloroethane	ppbv	< 0.020	Tetrachloroethene	ppbv	< 0.050	1,2-Dibromoethane	ppbv	< 0.020
Chlorobenzene	ppbv	< 0.070	Ethylbenzene	ppbv	< 0.050	m,p-Xylene	ppbv	< 0.060
o-Xylene	ppbv	< 0.040	1,1,2,2-Tetrachloroethane	ppbv	< 0.006	1,2,4-Trimethylbenzene	ppbv	< 0.073
1,2,4-Trichlorobenzene	ppbv	< 0.050	Hexachlorobutadiene	ppbv	< 0.017	Naphthalene	ppbv	< 0.300

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Certificate of Analysis

Batch ID: 126 **Start Date:** 8/30/2016 9:34:55 PM
Comment: R31462

Cleaning Batch Members:

Canister ID	Lot# / Serial#	Canister Type	Volume (Liters)
12670	12670	Summa w/FR	6
13968	13968	Summa w/FR	6
15424	15424	Summa w/FR	6
15902	15902	Summa w/FR	6
17240	17240	Summa w/FR	6
17644	17644	Summa w/FR	6

Canisters from batch cleaning verification results:

Canister ID: 15424 **Test Code:** A-CNCL-SIM **SeqNo:** 593833
Expiration Date: **Method No:** EPA-TO-15 **Analysis Date:** 8/30/2016 4:44:53 PM

Analyte	Unit	Result	Analyte	Unit	Result	Analyte	Unit	Result
4-Bromofluorobenzene	%REC	9.14	Chloromethane	ppbv	< 0.400	Vinyl chloride	ppbv	< 0.085
Chloroethane	ppbv	< 0.098	1,1-Dichloroethene	ppbv	< 0.009	Methylene chloride	ppbv	< 0.060
trans-1,2-Dichloroethene	ppbv	< 0.006	tert-Butyl Methyl Ether	ppbv	< 0.009	n-Hexane	ppbv	< 0.070
1,1-Dichloroethane	ppbv	< 0.008	cis-1,2-Dichloroethene	ppbv	< 0.020	Chloroform	ppbv	< 0.020
1,1,1-Trichloroethane	ppbv	< 0.005	Carbon tetrachloride	ppbv	< 0.020	1,2-Dichloroethane	ppbv	< 0.020
Benzene	ppbv	< 0.040	Trichloroethene	ppbv	< 0.017	Toluene	ppbv	< 0.050
1,1,2-Trichloroethane	ppbv	< 0.020	Tetrachloroethene	ppbv	< 0.050	1,2-Dibromoethane	ppbv	< 0.020
Chlorobenzene	ppbv	< 0.070	Ethylbenzene	ppbv	< 0.050	m,p-Xylene	ppbv	< 0.060
o-Xylene	ppbv	< 0.040	1,1,2,2-Tetrachloroethane	ppbv	< 0.006	1,2,4-Trimethylbenzene	ppbv	< 0.073
1,2,4-Trichlorobenzene	ppbv	< 0.050	Hexachlorobutadiene	ppbv	< 0.017	Naphthalene	ppbv	< 0.300

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Certificate of Analysis

Batch ID: 126 **Start Date:** 8/30/2016 9:34:55 PM
Comment: R31462

Cleaning Batch Members:

Canister ID	Lot# / Serial#	Canister Type	Volume (Liters)
12670	12670	Summa w/FR	6
13968	13968	Summa w/FR	6
15424	15424	Summa w/FR	6
15902	15902	Summa w/FR	6
17240	17240	Summa w/FR	6
17644	17644	Summa w/FR	6

Canisters from batch cleaning verification results:

Canister ID: 15902 **Test Code:** A-CNCL-SIM **SeqNo:** 593834
Expiration Date: **Method No:** EPA-TO-15 **Analysis Date:** 8/30/2016 5:26:07 PM

Analyte	Unit	Result	Analyte	Unit	Result	Analyte	Unit	Result
4-Bromofluorobenzene	%REC	9.15	Chloromethane	ppbv	< 0.400	Vinyl chloride	ppbv	< 0.085
Chloroethane	ppbv	< 0.098	1,1-Dichloroethene	ppbv	< 0.009	Methylene chloride	ppbv	< 0.060
trans-1,2-Dichloroethene	ppbv	< 0.006	tert-Butyl Methyl Ether	ppbv	< 0.009	n-Hexane	ppbv	< 0.070
1,1-Dichloroethane	ppbv	< 0.008	cis-1,2-Dichloroethene	ppbv	< 0.020	Chloroform	ppbv	< 0.020
1,1,1-Trichloroethane	ppbv	< 0.005	Carbon tetrachloride	ppbv	< 0.020	1,2-Dichloroethane	ppbv	< 0.020
Benzene	ppbv	< 0.040	Trichloroethene	ppbv	< 0.017	Toluene	ppbv	< 0.050
1,1,2-Trichloroethane	ppbv	< 0.020	Tetrachloroethene	ppbv	< 0.050	1,2-Dibromoethane	ppbv	< 0.020
Chlorobenzene	ppbv	< 0.070	Ethylbenzene	ppbv	< 0.050	m,p-Xylene	ppbv	< 0.060
o-Xylene	ppbv	< 0.040	1,1,2,2-Tetrachloroethane	ppbv	< 0.006	1,2,4-Trimethylbenzene	ppbv	< 0.073
1,2,4-Trichlorobenzene	ppbv	< 0.050	Hexachlorobutadiene	ppbv	< 0.017	Naphthalene	ppbv	< 0.300

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Seattle, WA 98103
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FAX: 206-352-7178
Website: www.fremontanalytical.com

Certificate of Analysis

Batch ID: 126 **Start Date:** 8/30/2016 9:34:55 PM
Comment: R31462

Cleaning Batch Members:

Canister ID	Lot# / Serial#	Canister Type	Volume (Liters)
12670	12670	Summa w/FR	6
13968	13968	Summa w/FR	6
15424	15424	Summa w/FR	6
15902	15902	Summa w/FR	6
17240	17240	Summa w/FR	6
17644	17644	Summa w/FR	6

Canisters from batch cleaning verification results:

Canister ID: 17644 **Test Code:** A-CNCL-SIM **SeqNo:** 593836
Expiration Date: **Method No:** EPA-TO-15 **Analysis Date:** 8/30/2016 6:07:20 PM

Analyte	Unit	Result	Analyte	Unit	Result	Analyte	Unit	Result
4-Bromofluorobenzene	%REC	9.12	Chloromethane	ppbv	< 0.400	Vinyl chloride	ppbv	< 0.085
Chloroethane	ppbv	< 0.098	1,1-Dichloroethene	ppbv	< 0.009	Methylene chloride	ppbv	< 0.060
trans-1,2-Dichloroethene	ppbv	< 0.006	tert-Butyl Methyl Ether	ppbv	< 0.009	n-Hexane	ppbv	< 0.070
1,1-Dichloroethane	ppbv	< 0.008	cis-1,2-Dichloroethene	ppbv	< 0.020	Chloroform	ppbv	< 0.020
1,1,1-Trichloroethane	ppbv	< 0.005	Carbon tetrachloride	ppbv	< 0.020	1,2-Dichloroethane	ppbv	< 0.020
Benzene	ppbv	< 0.040	Trichloroethene	ppbv	< 0.017	Toluene	ppbv	< 0.050
1,1,2-Trichloroethane	ppbv	< 0.020	Tetrachloroethene	ppbv	< 0.050	1,2-Dibromoethane	ppbv	< 0.020
Chlorobenzene	ppbv	< 0.070	Ethylbenzene	ppbv	< 0.050	m,p-Xylene	ppbv	< 0.060
o-Xylene	ppbv	< 0.040	1,1,2,2-Tetrachloroethane	ppbv	< 0.006	1,2,4-Trimethylbenzene	ppbv	< 0.073
1,2,4-Trichlorobenzene	ppbv	< 0.050	Hexachlorobutadiene	ppbv	< 0.017	Naphthalene	ppbv	< 0.300

Sincerely,

Chelsea Ward
Project Manager

3600 Fremont Ave. N.
Seattle, WA 98103
T: (206) 352-3790
F: (206) 352-7178
info@fremontanalytical.com

Farallon Consulting
Jeff Kaspar
975 5th Ave NW
Issaquah, WA 98027

RE: 457-007
Work Order Number: 1701058

January 13, 2017

Attention Jeff Kaspar:

Fremont Analytical, Inc. received 5 sample(s) on 1/9/2017 for the analyses presented in the following report.

Volatile Organic Compounds-EPA Method TO-15 (SIM)

This report consists of the following:

- Case Narrative
- Analytical Results
- Applicable Quality Control Summary Reports
- Chain of Custody

All analyses were performed consistent with the Quality Assurance program of Fremont Analytical, Inc. Please contact the laboratory if you should have any questions about the results.

Thank you for using Fremont Analytical.

Sincerely,

Mike Ridgeway
Laboratory Director

Date: *01/13/2017*

CLIENT: Farallon Consulting
Project: 457-007
Work Order: 1701058

Work Order Sample Summary

Lab Sample ID	Client Sample ID	Date/Time Collected	Date/Time Received
1701058-001	PFS-Influent-010517	01/05/2017 9:40 AM	01/09/2017 2:36 PM
1701058-002	OLY-Influent-010517	01/05/2017 11:10 AM	01/09/2017 2:36 PM
1701058-003	IA2-010517-Warehouse	01/05/2017 3:40 PM	01/09/2017 2:36 PM
1701058-004	IA2-010717-Office	01/05/2017 4:45 PM	01/09/2017 2:36 PM
1701058-005	OA1-010517-UW	01/05/2017 4:55 PM	01/09/2017 2:36 PM

Case Narrative

WO#: **1701058**
Date: **1/13/2017**

CLIENT: Farallon Consulting
Project: 457-007

WorkOrder Narrative:
I. SAMPLE RECEIPT:
Samples receipt information is recorded on the attached Sample Receipt Checklist.

II. GENERAL REPORTING COMMENTS:
Air samples are reported in ppbv and ug/m3.

The validity of the analytical procedures for which data is reported in this analytical report is determined by the Laboratory Control Sample (LCS) and the Method Blank (MB). The LCS and the MB are processed with the samples to ensure method criteria are achieved throughout the entire analytical process.

III. ANALYSES AND EXCEPTIONS:
Exceptions associated with this report will be footnoted in the analytical results page(s) or the quality control summary page(s) and/or noted below.

Standard temperature and pressure assumes 24.45 = (25C and 1 atm).

Qualifiers:

* - Flagged value is not within established control limits
B - Analyte detected in the associated Method Blank
D - Dilution was required
E - Value above quantitation range
H - Holding times for preparation or analysis exceeded
I - Analyte with an internal standard that does not meet established acceptance criteria
J - Analyte detected below Reporting Limit
N - Tentatively Identified Compound (TIC)
Q - Analyte with an initial or continuing calibration that does not meet established acceptance criteria (<20%RSD, <20% Drift or minimum RRF)
S - Spike recovery outside accepted recovery limits
ND - Not detected at the Reporting Limit
R - High relative percent difference observed

Acronyms:

%Rec - Percent Recovery
CCB - Continued Calibration Blank
CCV - Continued Calibration Verification
DF - Dilution Factor
HEM - Hexane Extractable Material
ICV - Initial Calibration Verification
LCS/LCSD - Laboratory Control Sample / Laboratory Control Sample Duplicate
MB or MBLANK - Method Blank
MDL - Method Detection Limit
MS/MSD - Matrix Spike / Matrix Spike Duplicate
PDS - Post Digestion Spike
Ref Val - Reference Value
RL - Reporting Limit
RPD - Relative Percent Difference
SD - Serial Dilution
SGT - Silica Gel Treatment
SPK - Spike
Surr - Surrogate

Client: **Farallon Consulting**
WorkOrder: 1701058
Project: 457-007

Client Sample ID: PFS-Influent-010517
Lab ID: 1701058-001A
Sample Type: Summa Canister

Date Sampled: 1/5/2017
Date Received: 1/9/2017

Analyte	Concentration		Reporting Limit		Qual	Method	Date/Analyst	
Volatile Organic Compounds-EPA Method TO-15 (SIM)								
	(ppbv)	(ug/m³)	(ppbv)	(ug/m³)				
1,1-Dichloroethene (DCE)	<0.00900	<0.0357	0.00900	0.0357		EPA-TO-15SIM	01/11/2017	BC
cis-1,2-Dichloroethene	1.50	5.95	0.0200	0.0793		EPA-TO-15SIM	01/11/2017	BC
Tetrachloroethene (PCE)	22.5	153	0.800	5.43		EPA-TO-15SIM	01/11/2017	BC
trans-1,2-Dichloroethene	0.0532	0.211	0.00600	0.0238		EPA-TO-15SIM	01/11/2017	BC
Trichloroethene (TCE)	49.5	266	0.272	1.46		EPA-TO-15SIM	01/11/2017	BC
Vinyl chloride	<0.0850	<0.217	0.0850	0.217		EPA-TO-15SIM	01/11/2017	BC
Surr: 4-Bromofluorobenzene	87.9 %Rec	--	70-130	--		EPA-TO-15SIM	01/11/2017	BC

Client: **Farallon Consulting**
WorkOrder: 1701058
Project: 457-007

Client Sample ID: OLY-Influent-010517
Lab ID: 1701058-002A
Sample Type: Summa Canister

Date Sampled: 1/5/2017
Date Received: 1/9/2017

Analyte	Concentration (ppbv)	Concentration (ug/m³)	Reporting Limit (ppbv)	Reporting Limit (ug/m³)	Qual	Method	Date/Analyst	
Volatile Organic Compounds-EPA Method TO-15 (SIM)								
1,1-Dichloroethene (DCE)	0.0247	0.0979	0.00900	0.0357		EPA-TO-15SIM	01/11/2017	BC
cis-1,2-Dichloroethene	0.558	2.21	0.0200	0.0793		EPA-TO-15SIM	01/11/2017	BC
Tetrachloroethene (PCE)	0.220	1.49	0.0500	0.339		EPA-TO-15SIM	01/11/2017	BC
trans-1,2-Dichloroethene	0.129	0.511	0.00600	0.0238		EPA-TO-15SIM	01/11/2017	BC
Trichloroethene (TCE)	1.76	9.47	0.0170	0.0914		EPA-TO-15SIM	01/11/2017	BC
Vinyl chloride	<0.0850	<0.217	0.0850	0.217		EPA-TO-15SIM	01/11/2017	BC
Surr: 4-Bromofluorobenzene	88.7 %Rec	--	70-130	--		EPA-TO-15SIM	01/11/2017	BC

Client: **Farallon Consulting**
WorkOrder: 1701058
Project: 457-007

Client Sample ID: IA2-010517-Warehouse
Lab ID: 1701058-003A
Sample Type: Summa Canister

Date Sampled: 1/5/2017
Date Received: 1/9/2017

Analyte	Concentration		Reporting Limit		Qual	Method	Date/Analyst	
Volatile Organic Compounds-EPA Method TO-15 (SIM)								
	(ppbv)	(ug/m³)	(ppbv)	(ug/m³)				
1,1-Dichloroethene (DCE)	<0.00900	<0.0357	0.00900	0.0357		EPA-TO-15SIM	01/11/2017	BC
cis-1,2-Dichloroethene	0.0506	0.201	0.0200	0.0793		EPA-TO-15SIM	01/11/2017	BC
Tetrachloroethene (PCE)	0.133	0.905	0.0500	0.339		EPA-TO-15SIM	01/11/2017	BC
trans-1,2-Dichloroethene	<0.00600	<0.0238	0.00600	0.0238		EPA-TO-15SIM	01/11/2017	BC
Trichloroethene (TCE)	0.549	2.95	0.0170	0.0914		EPA-TO-15SIM	01/11/2017	BC
Vinyl chloride	<0.0850	<0.217	0.0850	0.217		EPA-TO-15SIM	01/11/2017	BC
Surr: 4-Bromofluorobenzene	91.2 %Rec	--	70-130	--		EPA-TO-15SIM	01/11/2017	BC

Client: **Farallon Consulting**
WorkOrder: 1701058
Project: 457-007

Client Sample ID: IA2-010717-Office
Lab ID: 1701058-004A
Sample Type: Summa Canister

Date Sampled: 1/5/2017
Date Received: 1/9/2017

Analyte	Concentration		Reporting Limit		Qual	Method	Date/Analyst	
Volatile Organic Compounds-EPA Method TO-15 (SIM)								
	(ppbv)	(ug/m³)	(ppbv)	(ug/m³)				
1,1-Dichloroethene (DCE)	<0.00900	<0.0357	0.00900	0.0357		EPA-TO-15SIM	01/11/2017	BC
cis-1,2-Dichloroethene	<0.0200	<0.0793	0.0200	0.0793		EPA-TO-15SIM	01/11/2017	BC
Tetrachloroethene (PCE)	0.0863	0.585	0.0500	0.339		EPA-TO-15SIM	01/11/2017	BC
trans-1,2-Dichloroethene	<0.00600	<0.0238	0.00600	0.0238		EPA-TO-15SIM	01/11/2017	BC
Trichloroethene (TCE)	7.35	39.5	0.272	1.46		EPA-TO-15SIM	01/11/2017	BC
Vinyl chloride	<0.0850	<0.217	0.0850	0.217		EPA-TO-15SIM	01/11/2017	BC
Surr: 4-Bromofluorobenzene	91.4 %Rec	--	70-130	--		EPA-TO-15SIM	01/11/2017	BC

Client: **Farallon Consulting**
WorkOrder: 1701058
Project: 457-007

Client Sample ID: OA1-010517-UW
Lab ID: 1701058-005A
Sample Type: Summa Canister

Date Sampled: 1/5/2017
Date Received: 1/9/2017

Analyte	Concentration		Reporting Limit		Qual	Method	Date/Analyst	
	(ppbv)	(ug/m³)	(ppbv)	(ug/m³)				
Volatile Organic Compounds-EPA Method TO-15 (SIM)								
1,1-Dichloroethene (DCE)	<0.00900	<0.0357	0.00900	0.0357		EPA-TO-15SIM	01/12/2017	BC
cis-1,2-Dichloroethene	<0.0200	<0.0793	0.0200	0.0793		EPA-TO-15SIM	01/12/2017	BC
Tetrachloroethene (PCE)	0.0844	0.573	0.0500	0.339		EPA-TO-15SIM	01/12/2017	BC
trans-1,2-Dichloroethene	<0.00600	<0.0238	0.00600	0.0238		EPA-TO-15SIM	01/12/2017	BC
Trichloroethene (TCE)	0.923	4.96	0.0170	0.0914		EPA-TO-15SIM	01/12/2017	BC
Vinyl chloride	<0.0850	<0.217	0.0850	0.217		EPA-TO-15SIM	01/12/2017	BC
Surr: 4-Bromofluorobenzene	93.2 %Rec	--	70-130	--		EPA-TO-15SIM	01/12/2017	BC

Work Order: 1701058
CLIENT: Farallon Consulting
Project: 457-007

QC SUMMARY REPORT

Volatile Organic Compounds-EPA Method TO-15 (SIM)

Sample ID **LCS-R33852** SampType: **LCS** Units: **ppbv** Prep Date: **1/11/2017** RunNo: **33852**
Client ID: **LCSW** Batch ID: **R33852** Analysis Date: **1/11/2017** SeqNo: **643166**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Vinyl chloride	2.76	0.0850	2.500	0	110	70	130				
1,1-Dichloroethene (DCE)	2.95	0.00900	2.500	0	118	70	130				
trans-1,2-Dichloroethene	2.60	0.00600	2.500	0	104	70	130				
cis-1,2-Dichloroethene	2.27	0.0200	2.500	0	90.8	70	130				
Trichloroethene (TCE)	2.74	0.0170	2.500	0	109	70	130				
Tetrachloroethene (PCE)	2.61	0.0500	2.500	0	104	70	130				
Surr: 4-Bromofluorobenzene	7.99		10.00		79.9	70	130				

Sample ID **MB-R33852** SampType: **MBLK** Units: **ppbv** Prep Date: **1/11/2017** RunNo: **33852**
Client ID: **MBLKW** Batch ID: **R33852** Analysis Date: **1/11/2017** SeqNo: **643167**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Vinyl chloride	ND	0.0850									
1,1-Dichloroethene (DCE)	ND	0.00900									
trans-1,2-Dichloroethene	ND	0.00600									
cis-1,2-Dichloroethene	ND	0.0200									
Trichloroethene (TCE)	ND	0.0170									
Tetrachloroethene (PCE)	ND	0.0500									
Surr: 4-Bromofluorobenzene	7.77		10.00		77.7	70	130				

Sample ID **1701058-005AREP** SampType: **REP** Units: **ppbv** Prep Date: **1/12/2017** RunNo: **33852**
Client ID: **OA1-010517-UW** Batch ID: **R33852** Analysis Date: **1/12/2017** SeqNo: **643165**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Vinyl chloride	ND	0.0850						0		30	
1,1-Dichloroethene (DCE)	ND	0.00900						0		30	
trans-1,2-Dichloroethene	ND	0.00600						0		30	
cis-1,2-Dichloroethene	ND	0.0200						0		30	
Trichloroethene (TCE)	0.925	0.0170						0.9234	0.141	30	
Tetrachloroethene (PCE)	0.0754	0.0500						0.08440	11.3	30	

Work Order: 1701058
CLIENT: Farallon Consulting
Project: 457-007

QC SUMMARY REPORT

Volatile Organic Compounds-EPA Method TO-15 (SIM)

Sample ID **1701058-005AREP** SampType: **REP** Units: **ppbv** Prep Date: **1/12/2017** RunNo: **33852**
Client ID: **OA1-010517-UW** Batch ID: **R33852** Analysis Date: **1/12/2017** SeqNo: **643165**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Surr: 4-Bromofluorobenzene	9.43		10.00		94.3	70	130		0		

Sample Log-In Check List

Client Name:	**FARA**	Work Order Number:	**1701058**
Logged by:	**Clare Griggs**	Date Received:	**1/9/2017 2:36:00 PM**

Chain of Custody

1.	Is Chain of Custody complete?	Yes ☑	No ☐	Not Present ☐
2.	How was the sample delivered?	Courier		

Log In

3.	Coolers are present?	Yes ☐	No ☑	NA ☐
		Air Samples		
4.	Shipping container/cooler in good condition?	Yes ☑	No ☐	
5.	Custody Seals present on shipping container/cooler? (Refer to comments for Custody Seals not intact)	Yes ☐	No ☐	Not Required ☑
6.	Was an attempt made to cool the samples?	Yes ☐	No ☐	NA ☑
7.	Were all items received at a temperature of >0°C to 10.0°C*	Yes ☐	No ☐	NA ☑
8.	Sample(s) in proper container(s)?	Yes ☑	No ☐	
9.	Sufficient sample volume for indicated test(s)?	Yes ☑	No ☐	
10.	Are samples properly preserved?	Yes ☑	No ☐	
11.	Was preservative added to bottles?	Yes ☐	No ☑	NA ☐
12.	Is there headspace in the VOA vials?	Yes ☐	No ☐	NA ☑
13.	Did all samples containers arrive in good condition(unbroken)?	Yes ☑	No ☐	
14.	Does paperwork match bottle labels?	Yes ☑	No ☐	
15.	Are matrices correctly identified on Chain of Custody?	Yes ☑	No ☐	
16.	Is it clear what analyses were requested?	Yes ☑	No ☐	
17.	Were all holding times able to be met?	Yes ☑	No ☐	

Special Handling (if applicable)

18.	Was client notified of all discrepancies with this order?	Yes ☐	No ☐	NA ☑

Person Notified: _____ Date _____

By Whom: _____ Via: ☐ eMail ☐ Phone ☐ Fax ☐ In Person

Regarding: _____

Client Instructions: _____

19. Additional remarks:

Item Information

* Note: DoD/ELAP and TNI require items to be received at 4°C +/- 2°C

Air Chain of Custody Record & Laboratory Services Agreement

Fremont Analytical
3600 Fremont Ave N.
Seattle, WA 98103
Tel: 206-352-3790
Fax: 206-352-7178

Laboratory Project No (Internal): 1701058

Date: 1/5/2017 Page: 1 of: 1

Client: Farallon Consulting
Address: 975 - 5th Ave NW
City, State, Zip: Issaquah, WA 98027
Telephone: 425-295-0800 Fax: —

Project Name:
Project No: 457-007 Collected by: D. Aguilar
Location:
Reports To (PM): Jeff Kasper
Email (PM): JKasper@farallonconsulting.com

* Gas Matrix Codes: I = Indoor SS = Subslab L = Landfill SG = Soil Gas M = Plume Mapping Q = Fuel Gas Quality L = LEED (Consult Client Services)

** Container Codes: 6L = Six Liter Canister (Summa) TB = Tedlar Bag BV = 1 Liter Bottle Vac MC = 1 Liter MiniCan HP = High Pressure Cylinder HJ = Glass Headspace Jar

	Sample Name	Canister / Flow Reg Serial #	Sample Date & Time	Gas Matrix Code *	Anticipated Fill Time	Sample Volume	Container Type **	Internal: Evacuation Pressure (mtorr)	Internal: Pressure at Time of Pick-up (" Hg)	Internal: Equipment Certificaton Code	Field Initial Sample Pressure (" Hg)	Field Final Sample Pressure (" Hg)	Analysis Requested	Internal: Receipt Date	Internal: Final Pressure ("Hg)
1	PFS-Influent-010517	17648 Canister / Grab Flow Reg	1/5/2017 Date / 940 Time	AA	8hr	6L	Suma	10 mTorr Pressure / 12/30/16 9:30 Date	30 psi Pressure / 1/4/2017 Date/Time	Container / Regulator	30 psi Pressure / 940 Time	6 Pressure / 941 Time	TO-15 SIM PCE, TCE, CIS-1,2-dichloroethene Trans-1,2-DCE 1,1 DCE VC	1/9	-6
2	OLY-Influent-010517	17637 Canister / Grab Flow Reg	1/5/2017 Date / 1110 Time	AA	8hr	6L	Suma	10 mTorr Pressure / 12/30/16 9:30 Date	30 psi Pressure / 1/4/2017 Date/Time	Container / Regulator	30 psi Pressure / 1109 Time	6 Pressure / 1110 Time		1/9	-5
3	IA2-010517-Warehouse	15423 Canister / FR8-29 Flow Reg	1/5/2017 Date / 1540 Time	AA	8hr	6L	Suma	10 mTorr Pressure / 12/30/16 9:30 Date	30 psi Pressure / 1/4/2017 Date/Time	Container / Regulator	30 psi Pressure / 845 Time	6 Pressure / 1645 Time		1/9	-4
4	IA1-010517-Office	12667 Canister / FR8-14 Flow Reg	1/5/2017 Date / 1645 Time	AA	8hr	6L	Suma	10 mTorr Pressure / 12/30/16 9:30 Date	30 psi Pressure / 1/4/2017 Date/Time	Container / Regulator	30 psi Pressure / 840 Time	5 Pressure / 1540 Time		1/9	-5
5	OA1-010517-UW	17235 Canister / FR8-03 Flow Reg	1/5/2017 Date / 1655 Time	AA	8hr	6L	Suma	10 mTorr Pressure / 12/30/16 9:30 Date	30 psi Pressure / 1/4/2017 Date/Time	Container / Regulator	30 psi Pressure / 850 Time	8 Pressure / 1655 Time		1/9	-6

Condition:

Seals Intact: Y N N/A

Turn-around times for samples received after 4:00pm will begin on the following business day.

Special Remarks:

I represent that I am authorized to enter into this Agreement with Fremont Analytical on behalf of the Client named above, that I have verified Client's agreement to each of the terms on the front and backside of this Agreement.

Relinquished	Date/Time	Received	Date/Time
x [signature]	1/6/2017 1538	x [signature]	1/9/17 1436
x		x	

TAT --> (STD) Rush (specify)

3600 Fremont Ave. N.
Seattle, WA 98103
T: (206) 352-3790
F: (206) 352-7178
info@fremontanalytical.com

Farallon Consulting
Jeff Kaspar
975 5th Ave NW
Issaquah, WA 98027

RE: Capital
Work Order Number: 1703360

April 05, 2017

Attention Jeff Kaspar:

Fremont Analytical, Inc. received 4 sample(s) on 3/31/2017 for the analyses presented in the following report.

Volatile Organic Compounds-EPA Method TO-15 (SIM)

This report consists of the following:

- Case Narrative
- Analytical Results
- Applicable Quality Control Summary Reports
- Chain of Custody

All analyses were performed consistent with the Quality Assurance program of Fremont Analytical, Inc. Please contact the laboratory if you should have any questions about the results.

Thank you for using Fremont Analytical.

Sincerely,

Mike Ridgeway
Laboratory Director

Date: *04/05/2017*

CLIENT: Farallon Consulting
Project: Capital
Work Order: 1703360

Work Order Sample Summary

Lab Sample ID	Client Sample ID	Date/Time Collected	Date/Time Received
1703360-001	OA-1-033017	03/30/2017 3:37 PM	03/31/2017 12:49 PM
1703360-002	IA-2-033017	03/30/2017 4:40 PM	03/31/2017 12:49 PM
1703360-003	IA-1-033017	03/30/2017 4:30 PM	03/31/2017 12:49 PM
1703360-004	PFS-Influent-033017	03/30/2017 3:37 PM	03/31/2017 12:49 PM

Case Narrative

WO#: **1703360**
Date: **4/5/2017**

CLIENT: Farallon Consulting
Project: Capital

WorkOrder Narrative:
I. SAMPLE RECEIPT:
Samples receipt information is recorded on the attached Sample Receipt Checklist.

II. GENERAL REPORTING COMMENTS:
Air samples are reported in ppbv and ug/m3.

The validity of the analytical procedures for which data is reported in this analytical report is determined by the Laboratory Control Sample (LCS) and the Method Blank (MB). The LCS and the MB are processed with the samples to ensure method criteria are achieved throughout the entire analytical process.

III. ANALYSES AND EXCEPTIONS:
Exceptions associated with this report will be footnoted in the analytical results page(s) or the quality control summary page(s) and/or noted below.

Standard temperature and pressure assumes 24.45 = (25C and 1 atm).

Qualifiers:

* - Flagged value is not within established control limits
B - Analyte detected in the associated Method Blank
D - Dilution was required
E - Value above quantitation range
H - Holding times for preparation or analysis exceeded
I - Analyte with an internal standard that does not meet established acceptance criteria
J - Analyte detected below Reporting Limit
N - Tentatively Identified Compound (TIC)
Q - Analyte with an initial or continuing calibration that does not meet established acceptance criteria (<20%RSD, <20% Drift or minimum RRF)
S - Spike recovery outside accepted recovery limits
ND - Not detected at the Reporting Limit
R - High relative percent difference observed

Acronyms:

%Rec - Percent Recovery
CCB - Continued Calibration Blank
CCV - Continued Calibration Verification
DF - Dilution Factor
HEM - Hexane Extractable Material
ICV - Initial Calibration Verification
LCS/LCSD - Laboratory Control Sample / Laboratory Control Sample Duplicate
MB or MBLANK - Method Blank
MDL - Method Detection Limit
MS/MSD - Matrix Spike / Matrix Spike Duplicate
PDS - Post Digestion Spike
Ref Val - Reference Value
RL - Reporting Limit
RPD - Relative Percent Difference
SD - Serial Dilution
SGT - Silica Gel Treatment
SPK - Spike
Surr - Surrogate

Client: **Farallon Consulting**
WorkOrder: 1703360
Project: Capital

Client Sample ID: OA-1-033017
Lab ID: 1703360-001A
Sample Type: Summa Canister

Date Sampled: 3/30/2017
Date Received: 3/31/2017

Volatile Organic Compounds-EPA Method TO-15 (SIM)

Analyte	Concentration (ppbv)	Concentration (ug/m³)	Reporting Limit (ppbv)	Reporting Limit (ug/m³)	Qual	Method	Date/Analyst	
1,1-Dichloroethene (DCE)	<0.00900	<0.0357	0.00900	0.0357		EPA-TO-15SIM	04/04/2017	BC
cis-1,2-Dichloroethene	<0.0200	<0.0793	0.0200	0.0793		EPA-TO-15SIM	04/04/2017	BC
Tetrachloroethene (PCE)	<0.0500	<0.339	0.0500	0.339		EPA-TO-15SIM	04/04/2017	BC
trans-1,2-Dichloroethene	<0.00600	<0.0238	0.00600	0.0238		EPA-TO-15SIM	04/04/2017	BC
Trichloroethene (TCE)	<0.0170	<0.0914	0.0170	0.0914		EPA-TO-15SIM	04/04/2017	BC
Vinyl chloride	<0.0850	<0.217	0.0850	0.217		EPA-TO-15SIM	04/04/2017	BC
Surr: 4-Bromofluorobenzene	106 %Rec	--	70-130	--		EPA-TO-15SIM	04/04/2017	BC

Client: **Farallon Consulting**
WorkOrder: 1703360
Project: Capital

Client Sample ID: IA-2-033017
Lab ID: 1703360-002A
Sample Type: Summa Canister

Date Sampled: 3/30/2017
Date Received: 3/31/2017

Volatile Organic Compounds-EPA Method TO-15 (SIM)

Analyte	Concentration (ppbv)	Concentration (ug/m³)	Reporting Limit (ppbv)	Reporting Limit (ug/m³)	Qual	Method	Date/Analyst	
1,1-Dichloroethene (DCE)	<0.00900	<0.0357	0.00900	0.0357		EPA-TO-15SIM	04/04/2017	BC
cis-1,2-Dichloroethene	<0.0200	<0.0793	0.0200	0.0793		EPA-TO-15SIM	04/04/2017	BC
Tetrachloroethene (PCE)	0.0518	0.351	0.0500	0.339		EPA-TO-15SIM	04/04/2017	BC
trans-1,2-Dichloroethene	<0.00600	<0.0238	0.00600	0.0238		EPA-TO-15SIM	04/04/2017	BC
Trichloroethene (TCE)	0.637	3.42	0.0170	0.0914		EPA-TO-15SIM	04/04/2017	BC
Vinyl chloride	<0.0850	<0.217	0.0850	0.217		EPA-TO-15SIM	04/04/2017	BC
Surr: 4-Bromofluorobenzene	106 %Rec	--	70-130	--		EPA-TO-15SIM	04/04/2017	BC

Client: **Farallon Consulting**
WorkOrder: 1703360
Project: Capital

Client Sample ID: IA-1-033017
Lab ID: 1703360-003A
Sample Type: Summa Canister

Date Sampled: 3/30/2017
Date Received: 3/31/2017

Volatile Organic Compounds-EPA Method TO-15 (SIM)

Analyte	Concentration (ppbv)	Concentration (ug/m³)	Reporting Limit (ppbv)	Reporting Limit (ug/m³)	Qual	Method	Date/Analyst	
1,1-Dichloroethene (DCE)	<0.00900	<0.0357	0.00900	0.0357		EPA-TO-15SIM	04/04/2017	BC
cis-1,2-Dichloroethene	<0.0200	<0.0793	0.0200	0.0793		EPA-TO-15SIM	04/04/2017	BC
Tetrachloroethene (PCE)	<0.0500	<0.339	0.0500	0.339		EPA-TO-15SIM	04/04/2017	BC
trans-1,2-Dichloroethene	<0.00600	<0.0238	0.00600	0.0238		EPA-TO-15SIM	04/04/2017	BC
Trichloroethene (TCE)	0.280	1.51	0.0170	0.0914		EPA-TO-15SIM	04/04/2017	BC
Vinyl chloride	<0.0850	<0.217	0.0850	0.217		EPA-TO-15SIM	04/04/2017	BC
Surr: 4-Bromofluorobenzene	112 %Rec	--	70-130	--		EPA-TO-15SIM	04/04/2017	BC

Client: **Farallon Consulting**
WorkOrder: 1703360
Project: Capital

Client Sample ID: PFS-Influent-033017
Lab ID: 1703360-004A
Sample Type: Summa Canister

Date Sampled: 3/30/2017
Date Received: 3/31/2017

Analyte	Concentration		Reporting Limit		Qual	Method	Date/Analyst	
Volatile Organic Compounds-EPA Method TO-15 (SIM)								
	(ppbv)	(ug/m³)	(ppbv)	(ug/m³)				
1,1-Dichloroethene (DCE)	<0.00900	<0.0357	0.00900	0.0357		EPA-TO-15SIM	04/04/2017	BC
cis-1,2-Dichloroethene	2.51	9.95	0.0200	0.0793		EPA-TO-15SIM	04/04/2017	BC
Tetrachloroethene (PCE)	20.4	138	0.0800	0.543		EPA-TO-15SIM	04/04/2017	BC
trans-1,2-Dichloroethene	0.0666	0.264	0.00600	0.0238		EPA-TO-15SIM	04/04/2017	BC
Trichloroethene (TCE)	31.4	169	0.0272	0.146		EPA-TO-15SIM	04/04/2017	BC
Vinyl chloride	<0.0850	<0.217	0.0850	0.217		EPA-TO-15SIM	04/04/2017	BC
Surr: 4-Bromofluorobenzene	104 %Rec	--	70-130	--		EPA-TO-15SIM	04/04/2017	BC

Work Order: 1703360
CLIENT: Farallon Consulting
Project: Capital

QC SUMMARY REPORT

Volatile Organic Compounds-EPA Method TO-15 (SIM)

Sample ID: **LCS-R35340** SampType: **LCS** Units: **ppbv** Prep Date: **4/4/2017** RunNo: **35340**
Client ID: **LCSW** Batch ID: **R35340** Analysis Date: **4/4/2017** SeqNo: **676390**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Vinyl chloride	1.80	0.0850	2.500	0	72.2	70	130				
1,1-Dichloroethene (DCE)	2.35	0.00900	2.500	0	94.0	70	130				
trans-1,2-Dichloroethene	2.35	0.00600	2.500	0	93.8	70	130				
cis-1,2-Dichloroethene	2.51	0.0200	2.500	0	100	70	130				
Trichloroethene (TCE)	2.39	0.0170	2.500	0	95.7	70	130				
Tetrachloroethene (PCE)	3.18	0.0500	2.500	0	127	70	130				
Surr: 4-Bromofluorobenzene	11.4		10.00		114	70	130				

Sample ID: **MB-R35340** SampType: **MBLK** Units: **ppbv** Prep Date: **4/4/2017** RunNo: **35340**
Client ID: **MBLKW** Batch ID: **R35340** Analysis Date: **4/4/2017** SeqNo: **676391**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Vinyl chloride	ND	0.0850									
1,1-Dichloroethene (DCE)	ND	0.00900									
trans-1,2-Dichloroethene	ND	0.00600									
cis-1,2-Dichloroethene	ND	0.0200									
Trichloroethene (TCE)	ND	0.0170									
Tetrachloroethene (PCE)	ND	0.0500									
Surr: 4-Bromofluorobenzene	10.2		10.00		102	70	130				

Sample ID: **1703360-004AREP** SampType: **REP** Units: **ppbv** Prep Date: **4/5/2017** RunNo: **35340**
Client ID: **PFS-Influent-033017** Batch ID: **R35340** Analysis Date: **4/5/2017** SeqNo: **676389**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Vinyl chloride	ND	0.0850						0		30	
1,1-Dichloroethene (DCE)	ND	0.00900						0		30	
trans-1,2-Dichloroethene	0.0681	0.00600						0.06660	2.24	30	
cis-1,2-Dichloroethene	2.30	0.0200						2.511	8.74	30	
Trichloroethene (TCE)	46.4	0.0170						42.84	7.90	30	E
Tetrachloroethene (PCE)	27.9	0.0500						27.79	0.303	30	E

Work Order: 1703360
CLIENT: Farallon Consulting
Project: Capital

QC SUMMARY REPORT

Volatile Organic Compounds-EPA Method TO-15 (SIM)

Sample ID: **1703360-004AREP** SampType: **REP** Units: **ppbv** Prep Date: **4/5/2017** RunNo: **35340**
Client ID: **PFS-Influent-033017** Batch ID: **R35340** Analysis Date: **4/5/2017** SeqNo: **676389**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Surr: 4-Bromofluorobenzene	8.07		10.00		80.7	70	130		0		

NOTES:
E - Estimated value. The amount exceeds the linear working range of the instrument.

Sample Log-In Check List

Client Name:	**FARA**	Work Order Number:	**1703360**
Logged by:	**Erica Silva**	Date Received:	**3/31/2017 12:49:00 PM**

Chain of Custody

1.	Is Chain of Custody complete?	Yes ☑	No ☐	Not Present ☐
2.	How was the sample delivered?	Courier		

Log In

3.	Coolers are present?	Yes ☐	No ☑	NA ☐
		Air samples		
4.	Shipping container/cooler in good condition?	Yes ☑	No ☐	
5.	Custody Seals present on shipping container/cooler? (Refer to comments for Custody Seals not intact)	Yes ☐	No ☐	Not Required ☑
6.	Was an attempt made to cool the samples?	Yes ☐	No ☐	NA ☑
7.	Were all items received at a temperature of >0°C to 10.0°C *	Yes ☐	No ☐	NA ☑
8.	Sample(s) in proper container(s)?	Yes ☑	No ☐	
9.	Sufficient sample volume for indicated test(s)?	Yes ☑	No ☐	
10.	Are samples properly preserved?	Yes ☑	No ☐	
11.	Was preservative added to bottles?	Yes ☐	No ☑	NA ☐
12.	Is there headspace in the VOA vials?	Yes ☐	No ☐	NA ☑
13.	Did all samples containers arrive in good condition(unbroken)?	Yes ☑	No ☐	
14.	Does paperwork match bottle labels?	Yes ☑	No ☐	
15.	Are matrices correctly identified on Chain of Custody?	Yes ☑	No ☐	
16.	Is it clear what analyses were requested?	Yes ☑	No ☐	
17.	Were all holding times able to be met?	Yes ☑	No ☐	

Special Handling (if applicable)

18.	Was client notified of all discrepancies with this order?	Yes ☐	No ☐	NA ☑

Person Notified: _____ Date: _____

By Whom: _____ Via: ☐ eMail ☐ Phone ☐ Fax ☐ In Person

Regarding: _____

Client Instructions: _____

19. Additional remarks:

Item Information

* Note: DoD/ELAP and TNI require items to be received at 4°C +/- 2°C

Air Chain of Custody Record & Laboratory Services Agreement

Fremont Analytical
3600 Fremont Ave N.
Seattle, WA 98103
Tel: 206-352-3790
Fax: 206-352-7178

Date: 3/30/17 Page: 1 of: 1

Laboratory Project No (Internal): 1703360

Special Remarks:

Client: Farallon Consulting

Address: 975 8th Ave NW

City, State, Zip: Issaquah, WA 98027

Telephone: 425-394-4414

Fax:

Project Name: Capital

Project No: 457-007

Location: Seattle, WA

Collected by: Daniel Aguilar

Reports to (PM): Jeff Kaspar

Email (PM): JKaspar@farallonconsulting.com

	Sample Name	Canister / Flow Reg Serial #	Sample Date & Time	Sample Type (Matrix) *	Container Type **	Sample Volume	Fill Time	Flow Rate	Internal Initial Evacuation Pressure (mtorr)	Field Initial Sample Pressure (" Hg)	Field Final Sample Pressure (" Hg)	Analysis Requested	Internal Receipt Date	Internal Final Pressure ("Hg)
1	OA-1-033017	12665 Canister FV1 Flow Reg	3/30/17 Date 1537 Time	AA	CAN	6L	8hr		10 mTorr Pressure 3/14/17 12:00 Date	Pressure Time	Pressure Time	~~TO-15 SIM~~ PCE, TCE	3/31	-4
2	IA-2-033017 workspace	12667 Canister FR8-11 Flow Reg	3/30/17 Date 1640 Time	IA	CAN	6L	8hr		10 mTorr Pressure 1/30/17 12:00 Date	Pressure Time	Pressure Time	cis-1,2-DCE 1,1-DCE	3/31	-6
3	IA-1-033017 office	15895 Canister FR8-15 Flow Reg	3/30/17 Date 1630 Time	IA	CAN	6L	8hr		10 mTorr Pressure 3/1/17 15:00 Date	Pressure Time	Pressure Time	VC by TO-15 SIM trans 1,2-DCE	3/31	-5
4	PFS-Influent-033017	17648 Canister Flow Reg	3/30/17 Date 1537 Time		CAN	6L	Grab		10 mTorr Pressure 3/14/17 12:00 Date	Pressure Time	Pressure Time		3/31	-5
5		Canister Flow Reg	Date Time						Pressure Date	Pressure Time	Pressure Time			

* Matrix Codes: AA = Ambient Air IA = Indoor Air L = Landfill S = Subslab / Soil Gas

** Container Codes: BV = 1 Liter Bottle Vac CAN = Canister CYL = High Pressure Cylinder F = Filter S = Sorbent Tube TB = Tedlar Bag

I represent that I am authorized to enter into this Agreement with Fremont Analytical on behalf of the Client named above and that I have verified Client's agreement to each of the terms on the front and backside of this Agreement.

Relinquished	Date/Time	Received	Date/Time
x [signature]	3/30/17 1700	x [signature]	3/31/2017 1249
Relinquished	Date/Time	Received	Date/Time
x		x	

Turn-Around Time:

- [x] Standard
- [ ] 3 Day
- [ ] 2 Day
- [ ] Next Day
- Same Day _____ (specify)