Detterman, Mark, Env. Health

From: PDKing0000@aol.com
Sent: Tuesday, March 24, 2015 2:59 PM
To: Detterman, Mark, Env. Health
Cc: Roe, Dilan, Env. Health; tom@grafcon.us; steven.carmack@pdenviro.com
Subject: RO 2468 James River Corp - 2101 Williams St - Report Transmit & Mtg Request
Attachments: 0660.R1.pdf

Categories: Red Category

Hi Mark,

You will find attached a pdf copy of the Data Transmittal Report for sub-slab soil gas investigation performed to date for the subject site (document 0660.R1.pdf).

Tom Graf and I would like to meet with you and Dilan at the end of next week (April 2 or 3), or the following week, to discuss the results and next steps.

Please let us know about your availability at your earliest convenience. Thank you!

Paul

Paul H. King
Professional Geologist

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P&D ENVIRONMENTAL, INC.

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(510) 658-6916

March 24, 2015
Report 0660.R1

Ms. Carey Andre
Jones Development Company, LLC
2228 Livingston Street
Oakland, CA 94606

SUBJECT: SUB-SLAB SOIL GAS INVESTIGATION DATA TRANSMITTAL REPORT (VP1 THROUGH VP12)
County Case # RO 2468
Former James River Corporation Site
2101 Williams Street
San Leandro, California

Dear Ms. Andre:

P&D Environmental, Inc. (P&D) has prepared this report documenting the installation of twelve Vapor Pins designated as VP1 through VP12 for evaluation of tetrachloroethene (PCE) sub-slab soil gas concentrations at the subject site. Vapor Pins VP1 through VP12 were installed and were sampled in accordance with procedures set forth in P&D's Subsurface Investigation Work Plan (document 0660.W1) dated September 4, 2014. The work plan was approved in an email from the Alameda County Department of Environmental Health (ACDEH) dated October 1, 2014. The objective of this report is to transmit the sample results to the ACDEH for discussion purposes and determination of the next steps for site investigation.

Vapor Pins VP1 through VP6 were installed on November 4, 2014 and were sampled on November 5, 2014. Based on the initial sample results Vapor Pins VP3 through VP6 were sampled a second time on December 10, 2014. Following discussions with the ACDEH regarding the sample results and approval from the ACDEH in an e-mail dated January 29, 2015 Vapor Pins VP7 through VP12 were installed on February 3, 2015 and sampled on February 16 and 17, 2015.

A Site Location Map (Figure 1), a Site Plan Aerial Photograph Showing Vapor Pin Locations and PCE sub-slab soil gas concentrations (Figure 2), and a Site Plan Aerial Photograph Detail Showing Vapor Pin Locations, Underground Utility Locations, and PCE sub-slab soil gas PCE concentrations (Figure 3) are attached with this report. All work was performed under the direct supervision of a California professional geologist.

BACKGROUND

PCE that originates from offsite and upgradient of the subject site has been detected in groundwater on the upgradient and downgradient sides of the subject site building. The presence of the PCE groundwater plume has been well-documented on the upgradient property and is recognized by the San Francisco Bay Regional Water Quality Control Board to originate from some unknown upgradient location.

FIELD ACTIVITIES

No permits were required for installation of the Vapor Pins. Prior to installing the Vapor Pins the drilling locations were marked with white paint, Underground Service Alert was notified for underground utility location, a health and safety plan was prepared, and site access was arranged with the property owner and property tenants.

Vapor Pin Installation and Sampling

Six flush-mounted Vapor Pins were installed by P&D at locations VP1 through VP6 on November 4, 2014 and an additional six Vapor Pins were installed at locations VP7 through VP12 on February 3, 2015 (see Figures 2 and 3) in accordance with manufacturer recommended methods, as described below.

At each location a rotohammer was used to drill a 1.5-inch diameter hole 1.75 inches into the concrete floor slab. A 5/8-inch diameter hole was then drilled through the center of the 1.5-inch diameter hole in the slab to two inches below the bottom of the concrete slab. The total concrete floor slab thickness was measured to be 6.0 inches at drilling locations VP1, VP2, VP5, VP6, VP7, VP11, and VP12; 6.5 inches at drilling location VP8; 7.0 inches at drilling location VP9; 8.5 inches at locations VP4 and VP10; and 12.0 inches at location VP3. Once the desired depth was reached the hole was cleaned with a vacuum and a bottle brush. The Vapor Pin was then installed in the 5/8-inch diameter hole in the concrete slab and covered with a flush-mounted stainless steel cover. Prior to placement of the flush-mounted stainless steel cover, a plastic cap was placed on the top of the Vapor Pin barb fitting.

Review of Figure 3 shows that Vapor Pins VP8, VP9 and VP10 were installed in the concrete cover of sanitary sewer trenches. Although a portion of the trench that VP8 and VP9 are installed in is identified as an open trench, each end of the open portion of the trench are sealed with concrete with the exception of where the sanitary sewer pipe penetrates the concrete at each end of the bottom of the open portion of the trench.

Vapor Pin sub-slab soil gas samples were collected by P&D personnel as described below from Vapor Pins VP1 through VP6 on November 5, 2014; from Vapor Pins VP4 through VP6 on December 10, 2014; and from Vapor Pins VP7 through VP12 on February 16 and 17, 2015. A soil gas sampling manifold with a 1-liter Summa canister as the sampling canister for each location (see Figure 4) was assembled in a shroud consisting of a 35-gallon Rubbermaid bin that had been modified by cutting viewing ports into the sides of the

shroud and covering the viewing ports with transparent polycarbonate sheets. A hole measuring approximately two inches square in the bottom of the shroud allowed the shroud to cover the Vapor Pin while still allowing access to the Vapor Pin through the bottom of the shroud. At the time that the sampling manifold was assembled, the vacuum for the sample canister was verified with a vacuum gauge and recorded.

Prior to sampling each Vapor Pin, a 10 minute shut-in test of the sampling manifold was performed by closing the valve located between the filter and the pressure gauge, opening the purge canister valve, and recording the manifold system vacuum (see Figure 4). No purge testing for purge volume determination was performed because the samples were collected using 1-liter Summa canisters, and the volume of the canisters is substantially larger than the purge volumes used for purge volume testing. Following successful verification of the manifold shut-in test, a default of three purge volumes was extracted prior to sample collection. The purge volume was calculated based on the void space below the Vapor Pin plus the volume of the tube that extends through the Vapor Pin and the volume of the 2.0-foot length of 0.187-inch diameter tubing that connected the Vapor Pin to the Summa canister. The purge time was calculated using a nominal flow rate provided by the flow controller of 150 cubic centimeters per minute.

Following completion of the purging of three volumes, a lid was placed onto the shroud and a tracer gas 1,1-Difluoroethane (DFA) was sprayed into the shroud interior for one second through a tube connected to a hole in the side of the shroud. Gloves in the lid of the shroud were then used to open the sample canister valve. After verifying that low flow conditions are not present associated with the sub-slab soil gas sample, an air sample was collected from the shroud atmosphere to quantify the shroud tracer gas concentration while the soil gas sample was being collected. The shroud atmosphere sample was collected into a Tedlar bag that was placed into a vacuum chamber with the Tedlar bag inlet connected to a new piece of polyethylene tubing that was inserted into the shroud atmosphere through a hole in the side of the shroud.

Once the vacuum for the sample canister valve had decreased to 5 inches of mercury, the gloves in the lid of the shroud were used to close the sample canister valve. The pressure gage on the inlet side of the flow controller (see Figure 4) was monitored during sample collection to ensure that the vacuum applied to the Vapor Pins did not exceed 100 inches of water.

One duplicate soil gas sample was collected into a Summa canister from one of the Vapor Pins during each sub-slab soil gas sampling event using a stainless steel sampling tee for the Summa canisters using methods described above. Following soil gas sample collection, a PID was connected to the Vapor Pin to obtain a preliminary field value for the sample collection location. The soil gas Summa canisters were stored in a box and promptly shipped to the laboratory for extraction and analysis.

Chain of custody procedures were observed for all sample handling. Vapor Pin purge volume calculations for the different floor slab thicknesses are attached with this report as Appendix A. Measurements of vacuums, purging time intervals, and post-sample

collection PID readings were recorded on Soil Gas Sampling Data Sheets, which are also attached with this report as Appendix A.

All Vapor Pin construction equipment was cleaned with an Alconox solution wash followed by a clean water rinse prior to use at each location. New Vapor Pins with new silicone sleeves were installed at each sample collection location, and clean, unused vacuum gages and stainless steel sampling manifolds were used at each sample collection location during sample collection.

GEOLOGY AND HYDROGEOLOGY

Based on review of regional geologic maps from U. S. Geological Survey Professional Paper 943, "Flatland Deposits - Their Geology and Engineering Properties and Their Importance to Comprehensive Planning," by E. J. Helley and K. R. Lajoie, 1979, the subject site is underlain by coarse-grained alluvium (Qhac). The coarse-grained alluvium is described as unconsolidated, moderately sorted permeable sand and silt with coarse sand and gravel; more abundant toward fan heads.

Based on review of the Geologic Map and Map Database of the Oakland Metropolitan Area, Alameda, Contra Costa, and San Francisco Counties, California (U.S. Geological Survey Miscellaneous Field Studies MF-2342, Version 1.0) by R.W Graymer, 2000, the site is predominantly underlain by Holocene natural levee deposits. Natural levee deposits deposits (Qhl) that are described as consisting of loose, moderately-sorted to well-sorted sandy or clayey silt grading to sandy or silty clay. These deposits are porous and permeable and provide conduits for transport of groundwater. This geologic map also shows that the southwest west corner of the property is underlain by Holocene basin deposits (Qhb). The Holocene basin deposits are described as very fine silty clay to clay deposits occupying flat-floored basins at the distal edge of alluvial fans adjacent to the bay mud (Qhbm). Review of this geologic map also shows that the unconsolidated materials are present in the vicinity of the subject site in a northeast to southwest trending distribution.

Review of the geology and groundwater flow direction at nearby sites located immediately to the north at 1958 Williams Street and immediately upgradient and to the east at 2075 Williams Street has identified subsurface materials consisting predominantly of silt, silty clay, and clay with water-bearing zones identified as the A-Zone, B-Zone, and C-Zone and a westerly to southwesterly groundwater flow direction. Groundwater is first encountered in the A-Zone, which is typically encountered when present at a depth of approximately 10 to 15 feet below the ground surface. Review of the most recent groundwater monitoring and sampling report for the subject site has identified the depth to water in groundwater monitoring wells at the subject site as typically ranging from approximately 10 to 12 feet below the ground surface. Groundwater flow direction at and near the site appears to be locally controlled by buried stream channel segments.

The San Francisco Bay is located approximately 3,800 feet to the southwest of the subject site.

WEATHER INFORMATION

Weather data, including precipitation and barometric pressure for the week preceding and following each of the three sampling events are provided with this report as Appendix B. Review of Appendix B shows that during the 5 days prior to each sampling event less than 0.5 inches of precipitation occurred, and that on the days of each sampling event no precipitation occurred.

The weather station used for the weather information is located immediatley to the west of the intersection of Aurora Drive and Williams Street in San Leandro at an elevation of 10 feet above sea level, approximately 0.4 miles to the west-northwest of the subject site. The subject site is located at an elevation of approximately 25 feet above sea level. An internet link to the weather station information is provided with this report in Appendix B.

LABORATORY ANALYSIS

All of the sub-slab soil gas samples were analyzed at Air Toxics Limited of Folsom for Volatile Organic Compounds (VOCs), including PCE and DFA (the tracer gas) using EPA Method TO-15. The analyses were performed with detection limits that equal or are less than San Francisco Bay Regional Water Quality Control Board (RWQCB) December 2013 Table E soil gas commercial/industrial Environmental Screening Level (ESL) values.

All of the shroud air Tedlar bag samples were analyzed using EPA Method TO-15 for the tracer gas DFA.

The sub-slab soil gas sample results are summarized in Table 1 and the shroud air sample results are summarized in Table 2. Copies of the laboratory analytical reports are attached with this report as Appendix C.

Review of the Table 1 Percent Shroud column shows that the tracer gas concentrations detected in the samples are less than 5 percent of the associated shroud atmosphere tracer gas concentrations (see Table 2), indicating that atmospheric dilution of the samples during sample collection is not a concern.

LIMITATIONS

This report was prepared solely for the use of Jones Development Company, LLC. The content and conclusions provided by P&D in this assessment are based on information collected during our investigation, which may include, but not be limited to, visual site inspections; interviews with the site owner, regulatory agencies and other pertinent individuals; review of available public documents; subsurface exploration and our professional judgment based on said information at the time of preparation of this document. Any subsurface sample results and observations presented herein are considered to be representative of the area of investigation; however, geological conditions may vary between borings and may not necessarily apply to the general site as a whole. If future subsurface or other conditions are revealed which vary from these findings, the newly revealed conditions must be evaluated and may invalidate the findings of this report.

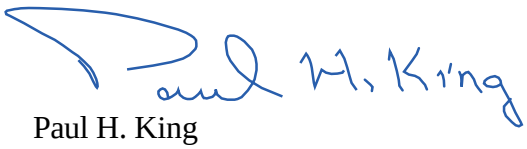
This report is issued with the understanding that it is the responsibility of the owner, or his representative, to ensure that the information contained herein is brought to the attention of the appropriate regulatory agencies, where required by law. Additionally, it is the sole responsibility of the owner to properly dispose of any hazardous materials or hazardous wastes left onsite, in accordance with existing laws and regulations.

This report has been prepared in accordance with generally accepted practices using standards of care and diligence normally practiced by recognized consulting firms performing services of a similar nature. P&D is not responsible for the accuracy or completeness of information provided by other individuals or entities which is used in this report. This report presents our professional judgment based upon data and findings identified in this report and interpretation of such data based upon our experience and background, and no warranty, either express or implied, is made. The conclusions presented are based upon the current regulatory climate and may require revision if future regulatory changes occur.

Should you have any questions, please do not hesitate to contact us at (510) 658-6916.

Sincerely,

P&D Environmental, Inc.



Paul H. King
Professional Geologist #5901
Expires: 12/31/15

Attachments:

Table 1 - Summary of Soil Gas Sample Analytical Results
Table 2 - Summary of Shroud Sample Tracer Gas Analytical Results

Figure 1 - Site Location Map
Figure 2 - Site Plan Aerial Photograph Showing Vapor Pin Locations and PCE Sub-Slab Soil Gas Concentrations
Figure 3 - Site Plan Aerial Photograph Detail Showing Vapor Pin Locations, Underground Utility Locations, and PCE Soil Gas Concentrations
Figure 4 - Typical Soil Gas Sampling Manifold

Appendix A - Purge Volume Calculations and Soil Gas Sampling Data Sheets
Appendix B - Weather Information
Appendix C - Laboratory Analytical Results and Chain of Custody Documentation

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TABLES

Table 1A
Summary of Soil Gas Sample Analytical Results

Sample ID	Land Use	Sample Date	PID Reading (PPM)	PCE	TCE	cis-1,2-DCE	trans-1,2-DCE	1,1,1-TCA	Vinyl Chloride	Chloroform	Other VOCs by TO-15	DFA	Percent Shroud
VP1	Commercial	11/5/2014	0	180	ND<6.0	ND<4.4	ND<4.4	ND<6.1	ND<2.9	69	ND, except Acetone = 96, Ethanol = 26, 2-Propanol = 20	49	0
VP2	Commercial	11/5/2014	0.7	ND<6.6	ND<5.3	ND<3.9	610	ND<5.3	ND<2.5	ND<4.8	ND, except Acetone = 34, Toluene = 9.8, Tetrahydrofuran = 6.3, Ethanol = 38, 2-Propanol = 11	3,000, a	0
VP2-DUP	Commercial	11/5/2014	0.7	ND<7.7	ND<6.1	ND<4.5	740	ND<6.2	ND<2.9	ND<5.5	ND, except Acetone = 31, Toluene = 9.9, Ethanol = 35	38,000, a	0.2
VP3	Commercial	12/10/2014	70	**320,000**	ND<2,000	ND<1,400	ND<1,400	ND<2,000	ND<940	ND<1,800	ND, except Toluene = 3,400, Ethanol = 3,600,	ND<4,000	0
VP3-DUP	Commercial	12/10/2014	NA	**310,000**	ND<990	ND<730	ND<730	ND<1,000	ND<470	ND<900	ND, except Toluene = 3,000	ND<2,000	0
VP3	Commercial	11/5/2014	119	**320,000**	ND<1,600	ND<1,200	ND<1,200	ND<1,600	ND<760	ND<1,400	ND, except Toluene = 4,000	41,000	0.2
VP4	Commercial	12/10/2014	0.5	**6,600**	ND<17	ND<13	ND<13	ND<18	ND<8.2	ND<16	ND, except 1,2,4-Trichlorobenzene = 140, Hexachlorobutadiene = 240	ND<35	0
VP4	Commercial	11/5/2014	4	**4,700**	ND<21	ND<15	ND<15	ND<21	ND<9.9	ND<19	ND, except Ethanol = 40	190,000, a	0.95
VP5	Commercial	12/10/2014	10.3	**65,000**	ND<130	ND<99	ND<99	ND<140	ND<64	ND<120	All ND	ND<270	0
VP5	Commercial	11/5/2014	18	**67,000**	ND<130	ND<97	ND<97	ND<130	ND<62	ND<120	All ND	320	0
VP6	Commercial	12/10/2014	2.9	**18,000**	ND<64	ND<47	ND<47	80	ND<30	ND<58	All ND	140	0
VP6	Commercial	11/5/2014	7	**18,000**	ND<52	ND<38	ND<38	76	ND<25	ND<47	ND, except Ethanol = 84	2,600	0
VP7	Commercial	2/16/2015	68.4	**520,000**	ND<640	ND<470	ND<470	ND<650	ND<300	ND<580	All ND	ND<1,300	0
VP8	Commercial	2/16/2015	13	**84,000**	880	ND<56	ND<56	ND<77	ND<36	ND<69	ND, except 1,2,4-Trimethylbenzene = 85	4,000	0
VP9	Commercial	2/16/2015	2.1	**3,700**	ND<92	13,000	ND<68	ND<94	ND<44	ND<84	ND, except Ethanol = 190	ND<180	0
VP10	Commercial	2/16/2015	18.6	**130,000**	ND<130	ND<98	ND<98	ND<130	ND<63	ND<120	All ND	ND<260	0
VP10- DUP	Commercial	2/16/2015	18.6	**140,000**	ND<130	ND<95	ND<95	ND<130	ND<61	ND<120	All ND	ND<260	0
VP11	Commercial	2/17/2015	43	**250,000**	ND<390	ND<280	ND<280	ND<390	ND<180	ND<350	All ND	ND<780	0
VP12	Commercial	2/17/2015	23	**150,000**	ND<210	ND<160	ND<160	ND<220	ND<100	ND<ND<190	All ND	ND<430	0
ESL				*2,100*	*3,000*	*31,000*	*260,000*	*22,000,000*	*160*	*2,300*	*Acetone = 140,000,000, Toluene = 1,300,000, 1,2,4-Trichlorobenzene = 18,000, Hexachlorobutadiene = No Value, Tetrahydrofuran = No Value, Ethanol = No Value, 2-Propanol = No Value*	*No Value*	*No Value*

Notes:
PID = Photoionization Detector.
PPM = Parts Per Million.
PCE = Tetrachloroethene.
TCE = Trichloroethene.
cis-1,2-DCE = cis-1,2-Dichloroethene.
trans-1,2-DCE = trans-1,2-Dichloroethene.
1,1,1-TCA = 1,1,1-Trichloroethane.
VOCs = Volatile Organic Compounds.
DFA = 1,1-Difluoroethane. (Tracer Gas)
ND = Not Detected.
NA = Not Analyzed.
a = Laboratory Note: exceeds instrument calibration range.
Percent Shroud = The ratio of tracer gas concentration detected in the soil gas sample to the tracer gas concentration detected in the shroud air sample, expressed as a percentage.
ESL = Environmental Screening Level, by San Francisco Bay – Regional Water Quality Control Board , updated December 2013 from Table E – Indoor Air and Soil Gas
(Vapor Intrusion Concerns) Shallow Soil Gas Screening Levels for Commerical/Industrial Land Use.
Values in bold exceed their respective ESL[1] values.
Results and ESLs reported in micrograms per cubic meter (µg/m3), unless otherwise indicated.

Table 1B

Summary of Soil Gas Shroud Sample Analytical Results - 1,1-Difluoroethane

Sample ID	Sample Date	DFA, #
VP1	11/5/2014	17,000,000, a
VP2	11/5/2014	19,000,000, a
VP3	12/10/2014	13,000,000
VP3	11/5/2014	18,000,000, a
VP4	12/10/2014	11,000,000
VP4	11/5/2014	20,000,000, a
VP5	12/10/2014	9,400,000
VP5	11/5/2014	22,000,000, a
VP6	12/10/2014	19,000,000
VP6	11/5/2014	17,000,000, a
VP7	2/16/2015	19,000,000
VP8	2/16/2015	16,000,000
VP9	2/16/2015	15,000,000
VP10	2/16/2015	18,000,000
VP11	2/17/2015	13,000,000
VP12	2/17/2015	10,000,000
Notes:		
ND = Not Detected.		
NA = Not Analyzed.		
# = 1,1-Difluoroethane (DFA) used as leak detection compound		
for TO-15 analysis.		
a = Laboratory Note: exceeds instrument calibration range.		
Results in micrograms per cubic meter ($\mu g/m^3$), unless otherwis		
indicated.		

FIGURES

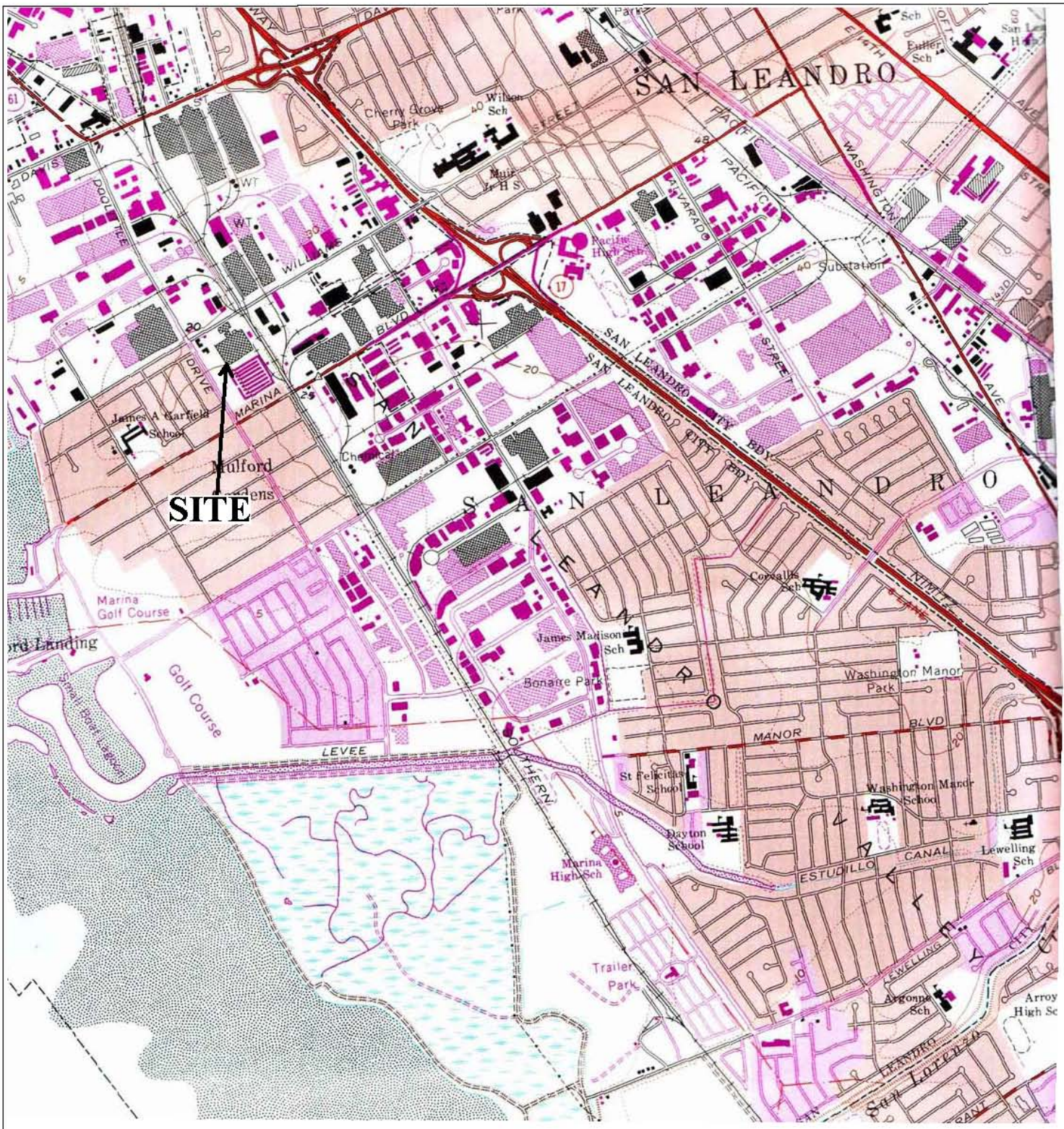

Figure 1
Site Location Map
2101 Williams Street
San Leandro, California

N

Base Map From:
US Geological Survey San Leandro, California, 7.5-Minute Quadrangles
Map Edited 1980

P&D Environmental, Inc.
55 Santa Clara Avenue
Oakland, CA 94610

0 1000 2000
Scale in Feet

Figure 2
Site Plan Aerial Photograph Showing Vapor Pin Locations, and PCE Sub-Slab Soil Gas Concentrations
2101 Williams Street
San Leandro, California

Base Map from: Google Earth, image dated August 28, 2012	P&D Environmental, Inc. 55 Santa Clara Avenue Oakland, CA 94610	0 75 150 Approximate Scale in Feet N

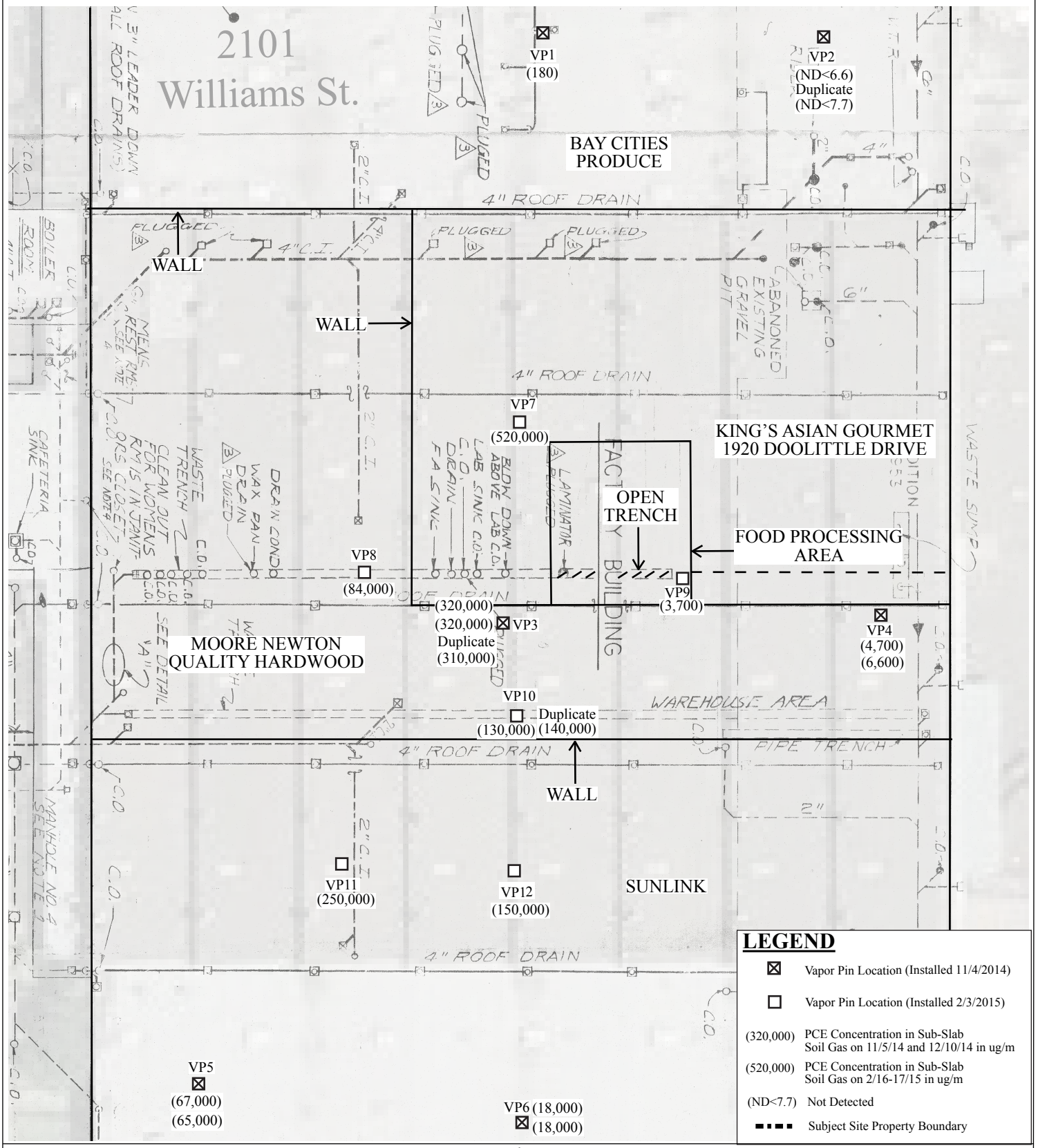

Figure 3
Site Plan Aerial Photograph Detail Showing Vapor Pin Locations, Sub-Slab Utility Locations, and PCE Sub-Slab Soil Gas Concentrations
2101 Williams Street
San Leandro, California

Base Map from: Google Earth, image dated August 28, 2012	P&D Environmental, Inc. 55 Santa Clara Avenue Oakland, CA 94610	0 25 50 Approximate Scale in Feet N

Figure 4
Typical Soil Gas Sampling Manifold
2101 Williams Street
San Leandro, California

APPENDIX A

Soil Gas Purge Volume Calculations and Soil Gas Sampling Data Sheets

Report 0660.R1
6.0 inch slab, recessed vapor pin, 2.0 feet tubing

Soil Gas Purge Volume Calculations

One Purge Volume is calculated as

1 The volume of the hole through the slab,
2 Plus the volume of the hole beneath the slab,
3 Plus the volume of the tube in the Vapor Pin,
4 Plus the volume of the tube connecting the Vapor Pin to the sample container,
5 Less the volume of the hole through the slab for any drilling for recessed Vapor Pin placement
6 Less the volume of the Vapor Pin

1 The slab borehole volume is calculated as follows:

Borehole slab dia. = 0.625 inches (this is 5/8 inch diameter)

Slab Thickness = 6 inches

V borehole = pi x (r x r) x h, where pi = 3.14, r = 0.625 in./2, and h = 6.0 in.

V borehole = 3.14 x (0.3125 x 0.3125) x (6.0 in.) = 1.84 cubic inches.

2 The sub-slab borehole volume is calculated as follows:

Borehole slab dia. = 0.625 inches (this is 5/8 inch diameter)

Depth below slab = 2 inches

V borehole = pi x (r x r) x h, where pi = 3.14, r = 0.625 in./2, and h = 2.0 in.

V borehole = 3.14 x (0.3125 x 0.3125) x (2.0 in.) = 0.61 cubic inches.

3 The Vapor Pin tube volume is calculated as follows:

Tubing diameter = 0.125 inches

Tubing Length = 2 inches

V borehole = pi x (r x r) x h, where pi = 3.14, r = 0.125 in./2, and h = 2.0 in.

V borehole = 3.14 x (0.0625 x 0.0625) x (2.0 in.) = 0.02 cubic inches.

4 The tube volume connecting the Vapor Pin to the sample container is calculated as follows:

Tubing diameter = 0.187 inches

Tubing Length = 24 inches

V borehole = pi x (r x r) x h, where pi = 3.14, r = 0.187 in./2, and h = 24.0 in.

V borehole = 3.14 x (0.0935 x 0.0935) x (24.0 in.) = 0.66 cubic inches.

5 The slab borehole volume that is removed for the recessed Vapor Pin is calculated as follows:

Borehole slab dia. = 0.625 inches (this is 5/8 inch diameter)

Slab Thickness = 1.75 inches (if Vapor Pin is recessed this is 1.75 inches)

V borehole = pi x (r x r) x h, where pi = 3.14, r = 0.625 in./2, and h = 1.8 in.

V borehole = 3.14 x (0.3125 x 0.3125) x (1.8 in.) = 0.54 cubic inches.

6 The Vapor Pin volume is calculated as follows:

Vapor Pin diameter = 0.625 inches (this is 5/8 inch diameter)

Vapor Pin Length = 2 inches

V borehole = pi x (r x r) x h, where pi = 3.14, r = 0.625 in./2, and h = 2.0 in.

V borehole = 3.14 x (0.3125 x 0.3125) x (2.0 in.) = 0.61 cubic inches.

The total volume for one purge volume is V slab borehole + V sub-slab borehole + V vapor pin tube + V tubing connecting vapor pin to sample container

.- V slab borehole for recessed vapor pin - V vapor pin

V total = 1.84 cubic inches + 0.61 cubic inches + 0.02 cubic inches +
0.66 cubic inches - 0.54 cubic inches - 0.61 cubic inches = 1.99 cubic inches.

To convert to cubic centimeters:

V total = 1.99 cubic inches x 16.39 cubic centimeters/cubic inches = 32.6 cubic centimeters.

The total volume for 3 **purge volume(s)** is calculated as follows:

V purge total = 32.6 cubic centimeters x 3 = 97.7 cubic centimeters.

The flow controller has a nominal flow rate of 150 cubic centimeters per minute.

The purge time is calculated as follows:

T purge = 98 cubic centimeters/ 150 cubic centimeters per minute = 0.65 minutes.

Converting the purge time to seconds, 0.65 minutes x 60 seconds/ minute = 39 seconds.

Notes:

Yellow hi-lite indicates data entry required.
Blue hi-lite indicates values are calculated or automatically updated.

Report 0660.R1
6.5 inch slab, recessed vapor pin, 2.0 feet tubing

Soil Gas Purge Volume Calculations

One Purge Volume is calculated as

1 The volume of the hole through the slab,
2 Plus the volume of the hole beneath the slab,
3 Plus the volume of the tube in the Vapor Pin,
4 Plus the volume of the tube connecting the Vapor Pin to the sample container,
5 Less the volume of the hole through the slab for any drilling for recessed Vapor Pin placement
6 Less the volume of the Vapor Pin

1 The slab borehole volume is calculated as follows:

Borehole slab dia. = 0.625 inches (this is 5/8 inch diameter)

Slab Thickness = 6.5 inches

V borehole = pi x (r x r) x h, where pi = 3.14, r = 0.625 in./2, and h = 6.5 in.

V borehole = 3.14 x (0.3125 x 0.3125) x (6.5 in.) = 1.99 cubic inches.

2 The sub-slab borehole volume is calculated as follows:

Borehole slab dia. = 0.625 inches (this is 5/8 inch diameter)

Depth below slab = 2 inches

V borehole = pi x (r x r) x h, where pi = 3.14, r = 0.625 in./2, and h = 2.0 in.

V borehole = 3.14 x (0.3125 x 0.3125) x (2.0 in.) = 0.61 cubic inches.

3 The Vapor Pin tube volume is calculated as follows:

Tubing diameter = 0.125 inches

Tubing Length = 2 inches

V borehole = pi x (r x r) x h, where pi = 3.14, r = 0.125 in./2, and h = 2.0 in.

V borehole = 3.14 x (0.0625 x 0.0625) x (2.0 in.) = 0.02 cubic inches.

4 The tube volume connecting the Vapor Pin to the sample container is calculated as follows:

Tubing diameter = 0.187 inches

Tubing Length = 24 inches

V borehole = pi x (r x r) x h, where pi = 3.14, r = 0.187 in./2, and h = 24.0 in.

V borehole = 3.14 x (0.0935 x 0.0935) x (24.0 in.) = 0.66 cubic inches.

5 The slab borehole volume that is removed for the recessed Vapor Pin is calculated as follows:

Borehole slab dia. = 0.625 inches (this is 5/8 inch diameter)

Slab Thickness = 1.75 inches (if Vapor Pin is recessed this is 1.75 inches)

V borehole = pi x (r x r) x h, where pi = 3.14, r = 0.625 in./2, and h = 1.8 in.

V borehole = 3.14 x (0.3125 x 0.3125) x (1.8 in.) = 0.54 cubic inches.

6 The Vapor Pin volume is calculated as follows:

Vapor Pin diameter = 0.625 inches (this is 5/8 inch diameter)

Vapor Pin Length = 2 inches

V borehole = pi x (r x r) x h, where pi = 3.14, r = 0.625 in./2, and h = 2.0 in.

V borehole = 3.14 x (0.3125 x 0.3125) x (2.0 in.) = 0.61 cubic inches.

The total volume for one purge volume is V slab borehole + V sub-slab borehole + V vapor pin tube + V tubing connecting vapor pin to sample container

.- V slab borehole for recessed vapor pin - V vapor pin

V total = 1.99 cubic inches + 0.61 cubic inches + 0.02 cubic inches +
0.66 cubic inches - 0.54 cubic inches - 0.61 cubic inches = 2.14 cubic inches.

To convert to cubic centimeters:

V total = 2.14 cubic inches x 16.39 cubic centimeters/cubic inches = 35.1 cubic centimeters.

The total volume for 3 **purge volume(s)** is calculated as follows:

V purge total = 35.1 cubic centimeters x 3 = 105.2 cubic centimeters.

The flow controller has a nominal flow rate of 150 cubic centimeters per minute.

The purge time is calculated as follows:

T purge = 105 cubic centimeters/ 150 cubic centimeters per minute = 0.70 minutes.

Converting the purge time to seconds, 0.70 minutes x 60 seconds/ minute = 42 seconds.

Notes:

Yellow hi-lite indicates data entry required.
Blue hi-lite indicates values are calculated or automatically updated.

Report 0660.R1
7.0 inch slab, recessed vapor pin, 2.0 feet tubing

Soil Gas Purge Volume Calculations

One Purge Volume is calculated as

1 The volume of the hole through the slab,
2 Plus the volume of the hole beneath the slab,
3 Plus the volume of the tube in the Vapor Pin,
4 Plus the volume of the tube connecting the Vapor Pin to the sample container,
5 Less the volume of the hole through the slab for any drilling for recessed Vapor Pin placement
6 Less the volume of the Vapor Pin

1 The slab borehole volume is calculated as follows:

Borehole slab dia. = 0.625 inches (this is 5/8 inch diameter)

Slab Thickness = 7 inches

V borehole = pi x (r x r) x h, where pi = 3.14, r = 0.625 in./2, and h = 7.0 in.

V borehole = 3.14 x (0.3125 x 0.3125) x (7.0 in.) = 2.15 cubic inches.

2 The sub-slab borehole volume is calculated as follows:

Borehole slab dia. = 0.625 inches (this is 5/8 inch diameter)

Depth below slab = 2 inches

V borehole = pi x (r x r) x h, where pi = 3.14, r = 0.625 in./2, and h = 2.0 in.

V borehole = 3.14 x (0.3125 x 0.3125) x (2.0 in.) = 0.61 cubic inches.

3 The Vapor Pin tube volume is calculated as follows:

Tubing diameter = 0.125 inches

Tubing Length = 2 inches

V borehole = pi x (r x r) x h, where pi = 3.14, r = 0.125 in./2, and h = 2.0 in.

V borehole = 3.14 x (0.0625 x 0.0625) x (2.0 in.) = 0.02 cubic inches.

4 The tube volume connecting the Vapor Pin to the sample container is calculated as follows:

Tubing diameter = 0.187 inches

Tubing Length = 24 inches

V borehole = pi x (r x r) x h, where pi = 3.14, r = 0.187 in./2, and h = 24.0 in.

V borehole = 3.14 x (0.0935 x 0.0935) x (24.0 in.) = 0.66 cubic inches.

5 The slab borehole volume that is removed for the recessed Vapor Pin is calculated as follows:

Borehole slab dia. = 0.625 inches (this is 5/8 inch diameter)

Slab Thickness = 1.75 inches (if Vapor Pin is recessed this is 1.75 inches)

V borehole = pi x (r x r) x h, where pi = 3.14, r = 0.625 in./2, and h = 1.8 in.

V borehole = 3.14 x (0.3125 x 0.3125) x (1.8 in.) = 0.54 cubic inches.

6 The Vapor Pin volume is calculated as follows:

Vapor Pin diameter = 0.625 inches (this is 5/8 inch diameter)

Vapor Pin Length = 2 inches

V borehole = pi x (r x r) x h, where pi = 3.14, r = 0.625 in./2, and h = 2.0 in.

V borehole = 3.14 x (0.3125 x 0.3125) x (2.0 in.) = 0.61 cubic inches.

The total volume for one purge volume is V slab borehole + V sub-slab borehole + V vapor pin tube + V tubing connecting vapor pin to sample container

.- V slab borehole for recessed vapor pin - V vapor pin

V total = 2.15 cubic inches + 0.61 cubic inches + 0.02 cubic inches +
0.66 cubic inches - 0.54 cubic inches - 0.61 cubic inches = 2.29 cubic inches.

To convert to cubic centimeters:

V total = 2.29 cubic inches x 16.39 cubic centimeters/cubic inches = 37.6 cubic centimeters.

The total volume for 3 **purge volume(s)** is calculated as follows:

V purge total = 37.6 cubic centimeters x 3 = 112.8 cubic centimeters.

The flow controller has a nominal flow rate of 150 cubic centimeters per minute.

The purge time is calculated as follows:

T purge = 113 cubic centimeters/ 150 cubic centimeters per minute = 0.75 minutes.

Converting the purge time to seconds, 0.75 minutes x 60 seconds/ minute = 45 seconds.

Notes:

Yellow hi-lite indicates data entry required.
Blue hi-lite indicates values are calculated or automatically updated.

Report 0660.R1
8.5 inch slab, recessed vapor pin, 2.0 feet tubing

Soil Gas Purge Volume Calculations

One Purge Volume is calculated as

1 The volume of the hole through the slab,
2 Plus the volume of the hole beneath the slab,
3 Plus the volume of the tube in the Vapor Pin,
4 Plus the volume of the tube connecting the Vapor Pin to the sample container,
5 Less the volume of the hole through the slab for any drilling for recessed Vapor Pin placement
6 Less the volume of the Vapor Pin

1 The slab borehole volume is calculated as follows:

Borehole slab dia. = 0.625 inches (this is 5/8 inch diameter)

Slab Thickness = 8.5 inches

V borehole = pi x (r x r) x h, where pi = 3.14, r = 0.625 in./2, and h = 8.5 in.

V borehole = 3.14 x (0.3125 x 0.3125) x (8.5 in.) = 2.61 cubic inches.

2 The sub-slab borehole volume is calculated as follows:

Borehole slab dia. = 0.625 inches (this is 5/8 inch diameter)

Depth below slab = 2 inches

V borehole = pi x (r x r) x h, where pi = 3.14, r = 0.625 in./2, and h = 2.0 in.

V borehole = 3.14 x (0.3125 x 0.3125) x (2.0 in.) = 0.61 cubic inches.

3 The Vapor Pin tube volume is calculated as follows:

Tubing diameter = 0.125 inches

Tubing Length = 2 inches

V borehole = pi x (r x r) x h, where pi = 3.14, r = 0.125 in./2, and h = 2.0 in.

V borehole = 3.14 x (0.0625 x 0.0625) x (2.0 in.) = 0.02 cubic inches.

4 The tube volume connecting the Vapor Pin to the sample container is calculated as follows:

Tubing diameter = 0.187 inches

Tubing Length = 24 inches

V borehole = pi x (r x r) x h, where pi = 3.14, r = 0.187 in./2, and h = 24.0 in.

V borehole = 3.14 x (0.0935 x 0.0935) x (24.0 in.) = 0.66 cubic inches.

5 The slab borehole volume that is removed for the recessed Vapor Pin is calculated as follows:

Borehole slab dia. = 0.625 inches (this is 5/8 inch diameter)

Slab Thickness = 1.75 inches (if Vapor Pin is recessed this is 1.75 inches)

V borehole = pi x (r x r) x h, where pi = 3.14, r = 0.625 in./2, and h = 1.8 in.

V borehole = 3.14 x (0.3125 x 0.3125) x (1.8 in.) = 0.54 cubic inches.

6 The Vapor Pin volume is calculated as follows:

Vapor Pin diameter = 0.625 inches (this is 5/8 inch diameter)

Vapor Pin Length = 2 inches

V borehole = pi x (r x r) x h, where pi = 3.14, r = 0.625 in./2, and h = 2.0 in.

V borehole = 3.14 x (0.3125 x 0.3125) x (2.0 in.) = 0.61 cubic inches.

The total volume for one purge volume is V slab borehole + V sub-slab borehole + V vapor pin tube + V tubing connecting vapor pin to sample container

.- V slab borehole for recessed vapor pin - V vapor pin

V total = 2.61 cubic inches + 0.61 cubic inches + 0.02 cubic inches +
0.66 cubic inches - 0.54 cubic inches - 0.61 cubic inches = 2.75 cubic inches.

To convert to cubic centimeters:

V total = 2.75 cubic inches x 16.39 cubic centimeters/cubic inches = 45.1 cubic centimeters.

The total volume for 3 **purge volume(s)** is calculated as follows:

V purge total = 45.1 cubic centimeters x 3 = 135.4 cubic centimeters.

The flow controller has a nominal flow rate of 150 cubic centimeters per minute.

The purge time is calculated as follows:

T purge = 135 cubic centimeters/ 150 cubic centimeters per minute = 0.90 minutes.

Converting the purge time to seconds, 0.90 minutes x 60 seconds/ minute = 54 seconds.

Notes:

Yellow hi-lite indicates data entry required.
Blue hi-lite indicates values are calculated or automatically updated.

Report 0660.R1
12.0 inch slab, recessed vapor pin, 2.0 feet tubing

Soil Gas Purge Volume Calculations

One Purge Volume is calculated as

1 The volume of the hole through the slab,
2 Plus the volume of the hole beneath the slab,
3 Plus the volume of the tube in the Vapor Pin,
4 Plus the volume of the tube connecting the Vapor Pin to the sample container,
5 Less the volume of the hole through the slab for any drilling for recessed Vapor Pin placement
6 Less the volume of the Vapor Pin

1 The slab borehole volume is calculated as follows:

Borehole slab dia. = 0.625 inches (this is 5/8 inch diameter)

Slab Thickness = 12 inches

V borehole = pi x (r x r) x h, where pi = 3.14, r = 0.625 in./2, and h = 12.0 in.

V borehole = 3.14 x (0.3125 x 0.3125) x (12.0 in.) = 3.68 cubic inches.

2 The sub-slab borehole volume is calculated as follows:

Borehole slab dia. = 0.625 inches (this is 5/8 inch diameter)

Depth below slab = 2 inches

V borehole = pi x (r x r) x h, where pi = 3.14, r = 0.625 in./2, and h = 2.0 in.

V borehole = 3.14 x (0.3125 x 0.3125) x (2.0 in.) = 0.61 cubic inches.

3 The Vapor Pin tube volume is calculated as follows:

Tubing diameter = 0.125 inches

Tubing Length = 2 inches

V borehole = pi x (r x r) x h, where pi = 3.14, r = 0.125 in./2, and h = 2.0 in.

V borehole = 3.14 x (0.0625 x 0.0625) x (2.0 in.) = 0.02 cubic inches.

4 The tube volume connecting the Vapor Pin to the sample container is calculated as follows:

Tubing diameter = 0.187 inches

Tubing Length = 24 inches

V borehole = pi x (r x r) x h, where pi = 3.14, r = 0.187 in./2, and h = 24.0 in.

V borehole = 3.14 x (0.0935 x 0.0935) x (24.0 in.) = 0.66 cubic inches.

5 The slab borehole volume that is removed for the recessed Vapor Pin is calculated as follows:

Borehole slab dia. = 0.625 inches (this is 5/8 inch diameter)

Slab Thickness = 1.75 inches (if Vapor Pin is recessed this is 1.75 inches)

V borehole = pi x (r x r) x h, where pi = 3.14, r = 0.625 in./2, and h = 1.8 in.

V borehole = 3.14 x (0.3125 x 0.3125) x (1.8 in.) = 0.54 cubic inches.

6 The Vapor Pin volume is calculated as follows:

Vapor Pin diameter = 0.625 inches (this is 5/8 inch diameter)

Vapor Pin Length = 2 inches

V borehole = pi x (r x r) x h, where pi = 3.14, r = 0.625 in./2, and h = 2.0 in.

V borehole = 3.14 x (0.3125 x 0.3125) x (2.0 in.) = 0.61 cubic inches.

The total volume for one purge volume is V slab borehole + V sub-slab borehole + V vapor pin tube + V tubing connecting vapor pin to sample container

.- V slab borehole for recessed vapor pin - V vapor pin

V total = 3.68 cubic inches + 0.61 cubic inches + 0.02 cubic inches +
0.66 cubic inches - 0.54 cubic inches - 0.61 cubic inches = 3.83 cubic inches.

To convert to cubic centimeters:

V total = 3.83 cubic inches x 16.39 cubic centimeters/cubic inches = 62.7 cubic centimeters.

The total volume for 3 purge volume(s) is calculated as follows:

V purge total = 62.7 cubic centimeters x 3 = 188.1 cubic centimeters.

The flow controller has a nominal flow rate of 150 cubic centimeters per minute.

The purge time is calculated as follows:

T purge = 188 cubic centimeters/ 150 cubic centimeters per minute = 1.25 minutes.

Converting the purge time to seconds, 1.25 minutes x 60 seconds/ minute = 75 seconds.

Notes:

Yellow hi-lite indicates data entry required.
Blue hi-lite indicates values are calculated or automatically updated.

SOIL GAS SAMPLING DATA SHEET

Address 2109 - 2141 WILLIAMS ST, SAN LEANDRO
Job # 0660
Date 11/5/14
Sampler Name MLBD
Drilling Company FAX

Probe Method (check one)
- o PRT
- o Temp Well
- o Permanent Well
- x Vapor Pin

Soil Gas Location Designation	Probe Depth (Ft.)	Time Probe Installation Completed	Canister #	Sample Canister Initial Vacuum Check (In. Hg) and time	Start leak check vacuum (In. Hg) and time	End leak check vacuum (In. Hg) and time	ADDITIONAL leak check vacuum (In. Hg) and time	Start PURGE time	End PURGE time	Start of tracer gas injection time	Begin sample collection vacuum (In. Hg) and time	End sample collection vacuum (In. Hg) and time	PID value in Teflon tube after sample collection	NOTES
VP 1	6"	11/4/14		vac -30 time 1007	vac -28 time 1130	vac -28 time 1140	vac time	time 114700	time 114739	time 1150	vac -30 time 115400	vac -5 time 120135	ppm 0 time 1202	DFA 1151
VP 2	6"	11/4/14	30831	vac -30 time 1000	vac -28 time 1010	vac -28 time 1020	vac time	time 103100	time 103139	time 1034	vac -30 time 103700	vac -5 time 105035	ppm 0.7 time 1052	DFA 103500
VP 2 DUP	6"	11/4/14	36385	vac -30 time 1005	vac -28 time 1010	vac -28 time 1020	vac time	time 103100	time 103139	time	vac -30 time 103700	vac -5 time 105035	ppm 0.7 time 1052	
VP 3	12"	11/4/14	2054	vac -30 time 1415	vac -28 time 1420	vac -28 time 1430	vac time	time 145800	time 145915	time 1459	vac -30 time 150030	vac -5 time 150550	ppm 119 time 1506	DFA 1500
VP 4	8.5"	11/4/14	34627	vac -30 time 1330	vac -28 time 1333	vac -28 time 1343	vac time	time 134500	time 135554	time 1352	vac -30 time 140000	vac -5 time 140745	ppm 4 time 1408	DFA 1353
VP 5	6"	11/4/14	3039	vac -28 time 1535	vac -28 time 1540	vac -28 time 1550	vac time	time 155330	time 155409	time 1553	vac -28 time 155500	vac -5 time 160130	ppm 18 time 1407	DFA 1554
VP 6	6"	11/4/14	1040	vac -30 time 1635	vac -28 time 1640	vac -28 time 1650	vac time	time 165100	time 165139	time 1650	vac -30 time 165200	vac -5 time 165920	ppm 7 time 165930	DFA 1551
VP				vac time	vac time	vac time	vac time	time	time	time	vac time	vac time	ppm time	
VP				vac time	vac time	vac time	vac time	time	time	time	vac time	vac time	ppm time	
VP				vac time	vac time	vac time	vac time	time	time	time	vac time	vac time	ppm time	
VP				vac time	vac time	vac time	vac time	time	time	time	vac time	vac time	ppm time	
VP				vac time	vac time	vac time	vac time	time	time	time	vac time	vac time	ppm time	
VP				vac time	vac time	vac time	vac time	time	time	time	vac time	vac time	ppm time	

SOIL GAS SAMPLING DATA SHEET

Address 2109-2141 Williams St, San Leandro
Job # 0660
Date 12/10/14
Sampler Name MLBD
Drilling Company IMX

Probe Method (check one)
o PRT
o Temp Well
o Permanent Well
☒ Vapor Pin

Soil Gas Location Designation	Probe Depth (Ft.)	Time Probe Installation Completed	Canister #	Sample Canister Initial Vacuum Check (In. Hg) and time	Start leak check vacuum (In. Hg) and time	End leak check vacuum (In. Hg) and time	ADDITIONAL leak check vacuum (In. Hg) and time	Start PURGE time	End PURGE time	Start of tracer gas injection time	Begin sample collection vacuum (In. Hg) and time	End sample collection vacuum (In. Hg) and time	PID value in Teflon tube after sample collection	NOTES
VP 3	12"	11/4/14	33723	vac -30 time 1045	vac -25 time 1055	vac -25 time 1105	vac time	time 112600	time 112715	time 1128	vac -30 time 113100	vac -5 time 114245	ppm 70 time 1143	DFA 1129
VP 3 DUP	12"	11/4/14	3002	vac -30 time 1048	vac -25 time 1055	vac -25 time 1055	vac time	time	time	time	vac time	vac time	ppm time	
VP 4	8.5"	11/4/14	37358	vac -30 time 1015	vac -26 time 1020	vac -26 time 1030	vac time	time 103100	time 103154	time 1034	vac -30 time 103600	vac -5 time 104137	ppm 0.5 time 1042	DFF 1035
VP 5	6"	11/4/14	37793	vac -28.5 time 0835	vac -27 time 0845	vac -27 time 0855	vac time	time 091400	time 091509	time 0918	vac -28 time 092100	vac -5 time 092740	ppm 16.3 time 0929	DFA 0919
VP 6	6"	11/4/14	35622	vac -30 time 0715	vac -28 time 0720	vac -28 time 0730	vac time	time 074100	time 074139	time 0746	vac -30 time 075200	vac -5 time 075805	ppm 2.9 time 0800	DFA 0747
VP				vac time	vac time	vac time	vac time	time	time	time	vac time	vac time	ppm time	
VP				vac time	vac time	vac time	vac time	time	time	time	vac time	vac time	ppm time	
VP				vac time	vac time	vac time	vac time	time	time	time	vac time	vac time	ppm time	
VP				vac time	vac time	vac time	vac time	time	time	time	vac time	vac time	ppm time	
VP				vac time	vac time	vac time	vac time	time	time	time	vac time	vac time	ppm time	
VP				vac time	vac time	vac time	vac time	time	time	time	vac time	vac time	ppm time	
VP				vac time	vac time	vac time	vac time	time	time	time	vac time	vac time	ppm time	
VP				vac time	vac time	vac time	vac time	time	time	time	vac time	vac time	ppm time	

SOIL GAS SAMPLING DATA SHEET

Address 2101 Williams St, San Leandro

Job # 0160

Date 2/16/15 and 2/17/15

Sampler Name UCBD

Drilling Company Jux

Probe Method (check one)
- o PRT
- o Temp Well
- o Permanent Well
- [x] Vapor Pin

Date	Soil Gas Location Designation	Probe Depth (Ft.)	Time Probe Installation Completed	Canister #	Sample Canister Initial Vacuum Check (In. Hg) and time	Start leak check vacuum (In. Hg) and time	End leak check vacuum (In. Hg) and time	ADDITIONAL leak check vacuum (In. Hg) and time	Start PURGE time	End PURGE time	Start of tracer gas injection time	Begin sample collection vacuum (In. Hg) and time	End sample collection vacuum (In. Hg) and time	PID value in Teflon tube after sample collection	NOTES
2/16/15	VP 7	6"	2/3/15	11441	vac -29 time 0958	vac -25 time 1015	vac -25 time 1025	vac time	time 103200	time 103339	time	vac -29 time 103700	vac -5 time 104530	ppm 68.4 time 1047	DFA 1038
2/16/15	VP 8	6.5"	2/3/15	36467	vac -29 time 1335	vac -25 time 1340	vac -25 time 1350	vac time	time 140100	time 140142	time	vac -28 time 141800	vac -5 time 142344	ppm 13 time 1424	DFA 1420
2/16/15	VP 9	7"	2/3/15	37885	vac -29 time 0837	vac -25 time 0900	vac -25 time 0910	vac time	time 091400	time 091445	time	vac -29 time 092910	vac -5 time 093450	ppm 2.1 time 0936	DFA 0930
2/16/15	VP 10	8.5"	2/3/15	33409	vac -29 time 1224	vac -25 time 1240	vac -25 time 1250	vac time	time 130100	time 130154	time	vac -29 time 130900	vac -5 time 132225	ppm 18.6 time 1323	DFA 1310
2/16/15	VP 10 DUP	8.5"	2/3/15	37671	vac -29 time 1225	vac -25 time 1240	vac -25 time 1250	vac time	time 130100	time 130154	time	vac -29 time 130900	vac -5 time 132225	ppm 18.6 time 1323	
2/17/15	VP 11	6"	2/3/15	37370	vac -30 time 0658	vac -25 time 0711	vac -25 time 0721	vac time	time 073100	time 073139	time	vac -30 time 073900	vac -5 time 074946	ppm 43 time 0751	DFA 0741
2/17/15	VP 12	6"	2/3/15	35639	vac -29 time 0805	vac -25 time 0806	vac -25 time 0816	vac time	time 082500	time 082539	time	vac -29 time 083100	vac -5 time 083925	ppm 23 time 0842	DFA 0832
	VP				vac time	vac time	vac time	vac time	time	time	time	vac time	vac time	ppm time	
	VP				vac time	vac time	vac time	vac time	time	time	time	vac time	vac time	ppm time	
	VP				vac time	vac time	vac time	vac time	time	time	time	vac time	vac time	ppm time	
	VP				vac time	vac time	vac time	vac time	time	time	time	vac time	vac time	ppm time	
	VP				vac time	vac time	vac time	vac time	time	time	time	vac time	vac time	ppm time	
	VP				vac time	vac time	vac time	vac time	time	time	time	vac time	vac time	ppm time	

APPENDIX B

Weather Information

http://www.wunderground.com/personal-weather-station/dashboard?ID=KCASANLE7#history/s20141029/e20141112/mcustom

About This Weather Station

Weather Station ID: KCASANLE7
Station Name: SL Marina
Madis ID: E2331
Latitude / Longitude: N 37 ° 42 ' 23 ", W 122 ° 11 ' 17 "
Elevation: 10
City: San Leandro
State: CA
Hardware: Davis Vantage Pro2 (Cabled)
Software: Wunderground v.1.15

October 29, 2014 - November 12, 2014

2014	Temperature			Dew Point			Humidity			Speed			Pressure			Precip. Rate.
Oct	High	Avg	Low	High	Avg	Low	High	Avg	Low	High	Avg	Gust	High	Avg	Low	Sum
29	79 °F	44 °F	63 °F	60 °F	34 °F	45 °F	82 %	39 %	31 %	12 mph	2 mph	0 mph	30.06 in	29.98 in	29.9 in	0 in
30	71 °F	66 °F	61 °F	59 °F	56 °F	51 °F	83 %	71 %	52 %	14 mph	6 mph	0 mph	29.91 in	29.86 in	29.81 in	0 in
31	78 °F	61 °F	58 °F	70 °F	56 °F	50 °F	92 %	82 %	72 %	12 mph	3 mph	0 mph	29.85 in	29.76 in	29.67 in	0.26 in

2014	Temperature			Dew Point			Humidity			Speed			Pressure			Precip. Rate.
Nov	High	Avg	Low	High	Avg	Low	High	Avg	Low	High	Avg	Gust	High	Avg	Low	Sum
1	63 °F	59 °F	54 °F	53 °F	50 °F	46 °F	84 %	72 %	56 %	20 mph	6 mph	0 mph	29.98 in	29.83 in	29.67 in	0 in
2	65 °F	56 °F	50 °F	50 °F	48 °F	42 °F	90 %	74 %	44 %	22 mph	3 mph	0 mph	30.12 in	30.05 in	29.98 in	0 in
3	67 °F	57 °F	49 °F	53 °F	48 °F	38 °F	85 %	74 %	36 %	13 mph	2 mph	0 mph	30.21 in	30.16 in	30.11 in	0 in
4	69 °F	60 °F	52 °F	57 °F	51 °F	44 °F	94 %	74 %	42 %	14 mph	2 mph	0 mph	30.26 in	30.2 in	30.15 in	0 in
5	74 °F	62 °F	53 °F	57 °F	49 °F	45 °F	76 %	64 %	43 %	8 mph	2 mph	0 mph	30.18 in	30.09 in	30 in	0 in
6	74 °F	66 °F	59 °F	59 °F	56 °F	48 °F	91 %	73 %	41 %	19 mph	4 mph	0 mph	30.16 in	30.12 in	30.08 in	0 in
7	70 °F	39 °F	58 °F	62 °F	36 °F	55 °F	96 %	54 %	59 %	13 mph	1 mph	0 mph	30.18 in	30.1 in	30.03 in	0 in
8	73 °F	62 °F	55 °F	60 °F	56 °F	52 °F	94 %	82 %	59 %	8 mph	1 mph	0 mph	30.07 in	30 in	29.93 in	0.01 in
9	72 °F	63 °F	57 °F	58 °F	56 °F	51 °F	91 %	80 %	54 %	16 mph	3 mph	0 mph	29.97 in	29.86 in	29.76 in	0 in
10	66 °F	47 °F	56 °F	60 °F	44 °F	54 °F	96 %	67 %	72 %	18 mph	3 mph	0 mph	29.8 in	29.76 in	29.73 in	0.01 in
11	65 °F	62 °F	60 °F	55 °F	50 °F	48 °F	84 %	67 %	57 %	16 mph	4 mph	0 mph	29.91 in	29.85 in	29.79 in	0 in
12	66 °F	61 °F	58 °F	52 °F	48 °F	46 °F	80 %	62 %	51 %	12 mph	3 mph	0 mph	29.97 in	29.93 in	29.9 in	0.05 in

http://www.wunderground.com/personal-weather-station/dashboard?ID=KCASANLE7#history/s20141203/e20141217/mcustom

About This Weather Station

Weather Station ID: KCASANLE7
Station Name: SL Marina
Madis ID: E2331
Latitude / Longitude: N 37 ° 42 ' 23 ", W 122 ° 11 ' 17 "
Elevation: 10
City: San Leandro
State: CA
Hardware: Davis Vantage Pro2 (Cabled)
Software: Wunderground v.1.15

December 3, 2014 - December 17, 2014

2014	Temperature			Dew Point			Humidity			Speed			Pressure			Precip. Rate.
Dec	High	Avg	Low	High	Avg	Low	High	Avg	Low	High	Avg	Gust	High	Avg	Low	Sum
3	66 °F	64 °F	62 °F	64 °F	61 °F	57 °F	94 %	90 %	77 %	27 mph	6 mph	0 mph	29.83 in	29.74 in	29.65 in	1.04 in
4	66 °F	63 °F	60 °F	62 °F	59 °F	55 °F	95 %	86 %	71 %	12 mph	2 mph	0 mph	29.96 in	29.89 in	29.82 in	0.01 in
5	68 °F	63 °F	60 °F	62 °F	59 °F	57 °F	92 %	85 %	69 %	16 mph	3 mph	0 mph	30.03 in	29.97 in	29.91 in	0.08 in
6	68 °F	64 °F	61 °F	64 °F	60 °F	57 °F	95 %	86 %	68 %	14 mph	3 mph	0 mph	30.17 in	30.1 in	30.03 in	0.08 in
7	65 °F	62 °F	59 °F	62 °F	58 °F	55 °F	94 %	87 %	72 %	14 mph	2 mph	0 mph	30.16 in	30.11 in	30.06 in	0.01 in
8	70 °F	61 °F	57 °F	57 °F	55 °F	53 °F	92 %	80 %	60 %	10 mph	1 mph	0 mph	30.13 in	30.09 in	30.05 in	0 in
9	63 °F	61 °F	59 °F	58 °F	57 °F	56 °F	91 %	87 %	82 %	11 mph	1 mph	0 mph	30.09 in	30.06 in	30.02 in	0 in
10	65 °F	62 °F	59 °F	58 °F	56 °F	53 °F	92 %	82 %	69 %	25 mph	4 mph	0 mph	30.02 in	29.85 in	29.68 in	0 in
11	65 °F	61 °F	57 °F	61 °F	56 °F	51 °F	95 %	86 %	64 %	30 mph	6 mph	0 mph	29.68 in	29.57 in	29.46 in	2.69 in
12	58 °F	56 °F	53 °F	56 °F	54 °F	48 °F	95 %	91 %	70 %	6 mph	1 mph	0 mph	30.03 in	29.82 in	29.6 in	0.44 in
13	58 °F	54 °F	50 °F	56 °F	50 °F	44 °F	96 %	85 %	69 %	8 mph	2 mph	0 mph	30.18 in	30.1 in	30.03 in	0.01 in
14	62 °F	54 °F	49 °F	51 °F	45 °F	42 °F	90 %	74 %	50 %	12 mph	4 mph	0 mph	30.1 in	30.02 in	29.94 in	0.14 in
15	58 °F	55 °F	53 °F	55 °F	51 °F	49 °F	92 %	87 %	78 %	18 mph	6 mph	0 mph	29.94 in	29.86 in	29.78 in	0.99 in
16	61 °F	57 °F	54 °F	57 °F	52 °F	48 °F	93 %	85 %	65 %	17 mph	4 mph	0 mph	29.91 in	29.84 in	29.77 in	0.84 in
17	59 °F	56 °F	55 °F	56 °F	53 °F	49 °F	94 %	88 %	72 %	14 mph	3 mph	0 mph	30.04 in	29.97 in	29.89 in	0.17 in

http://www.wunderground.com/personal-weather-station/dashboard?ID=KCASANLE7#history/s20150209/e20150224/mcustom

About This Weather Station

Weather Station ID: KCASANLE7
Station Name: SL Marina
Madis ID: E2331
Latitude / Longitude: N 37 ° 42 ' 23 '', W 122 ° 11 ' 17 ''
Elevation: 10
City: San Leandro
State: CA
Hardware: Davis Vantage Pro2 (Cabled)
Software: Wunderground v.1.15

February 9, 2015 - February 24, 2015

2015	Temperature			Dew Point			Humidity			Speed			Pressure			Precip. Rate.
Feb	High	Avg	Low	High	Avg	Low	High	Avg	Low	High	Avg	Gust	High	Avg	Low	Sum
9	64 °F	38 °F	53 °F	55 °F	33 °F	49 °F	86 %	51 %	70 %	16 mph	2 mph	0 mph	30.2 in	30.17 in	30.14 in	0 in
10	64 °F	49 °F	51 °F	53 °F	41 °F	42 °F	92 %	63 %	46 %	13 mph	2 mph	0 mph	30.18 in	30.1 in	30.03 in	0 in
11	66 °F	28 °F	48 °F	100 °F	26 °F	43 °F	87 %	38 %	48 %	142 mph	1 mph	0 mph	30.12 in	30.08 in	30.04 in	0 in
12	69 °F	15 °F	61 °F	54 °F	12 °F	50 °F	74 %	14 %	54 %	7 mph	1 mph	0 mph	30.15 in	30.1 in	30.06 in	0 in
13	72 °F	44 °F	52 °F	57 °F	35 °F	48 °F	81 %	46 %	51 %	11 mph	2 mph	0 mph	30.09 in	30.03 in	29.98 in	0 in
14	73 °F	56 °F	54 °F	58 °F	47 °F	47 °F	88 %	63 %	41 %	8 mph	2 mph	0 mph	30.06 in	30.01 in	29.95 in	0 in
15	72 °F	60 °F	49 °F	55 °F	46 °F	41 °F	80 %	61 %	36 %	8 mph	2 mph	0 mph	30 in	29.94 in	29.89 in	0 in
16	71 °F	59 °F	50 °F	56 °F	50 °F	43 °F	90 %	72 %	50 %	15 mph	4 mph	0 mph	29.98 in	29.93 in	29.88 in	0 in
17	58 °F	57 °F	55 °F	56 °F	51 °F	47 °F	93 %	82 %	73 %	11 mph	4 mph	0 mph	30.12 in	30.05 in	29.98 in	0 in
18	64 °F	58 °F	54 °F	56 °F	51 °F	46 °F	91 %	77 %	67 %	14 mph	4 mph	0 mph	30.17 in	30.1 in	30.04 in	0 in
19	64 °F	59 °F	58 °F	58 °F	55 °F	52 °F	92 %	86 %	75 %	17 mph	3 mph	0 mph	30.11 in	30.05 in	29.98 in	0 in
20	66 °F	40 °F	56 °F	57 °F	36 °F	48 °F	92 %	56 %	55 %	8 mph	2 mph	0 mph	30.03 in	29.95 in	29.87 in	0 in
21	-200 °F	0 °F	200 °F	-100 °F	0 °F	200 °F	0 %	0 %	100 %	0 mph	0 mph	0 mph	29.91 in	29.84 in	29.77 in	0 in
22	-200 °F	0 °F	200 °F	-100 °F	0 °F	200 °F	0 %	0 %	100 %	0 mph	0 mph	0 mph	29.83 in	29.8 in	29.76 in	0 in
23	62 °F	10 °F	58 °F	20 °F	3 °F	16 °F	20 %	3 %	18 %	25 mph	2 mph	0 mph	30.17 in	29.99 in	29.81 in	0 in
24	64 °F	27 °F	42 °F	48 °F	15 °F	21 °F	72 %	22 %	21 %	10 mph	2 mph	0 mph	30.31 in	30.24 in	30.17 in	0 in

APPENDIX C

Laboratory Analytical Reports and Chain of Custody Documentation

- **Air Toxics Work Order # 1411078 - Vapor Pin Soil Gas Sample VP1, VP2, VP2-DUP, and VP3 Through VP6 TO-15 Results**
- **Air Toxics Work Order # 1411068R1 - Shroud Air Sample VP1 Through VP6 DFA Results**
- **Air Toxics Work Order # 1412207 - Vapor Pin Soil Gas Sample VP3, VP3-DUP, and VP4 Through VP6 TO-15 Results**
- **Air Toxics Work Order # 1412148 - Shroud Air Sample VP3 Through VP6 DFA Results**
- **Air Toxics Work Order # 1502299 - Vapor Pin Soil Gas Sample VP7 Through VP10, VP10-DUP, VP11, and VP12 TO-15 Results**
- **Air Toxics Work Order # 1502277 - Shroud Air Sample VP7 Through VP12 DFA Results**

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11/20/2014
Mr. Paul King
P & D Environmental
55 Santa Clara
Suite 240
Oakland CA 94610

Project Name: James River Corporation 2101 Williams St
Project #: 0660
Workorder #: 1411078

Dear Mr. Paul King

The following report includes the data for the above referenced project for sample(s) received on 11/6/2014 at Air Toxics Ltd.

The data and associated QC analyzed by TO-15 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: Kyle Vagadori at 916-985-1000 if you have any questions regarding the data in this report.

Regards,

Kyle Vagadori

Project Manager

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WORK ORDER #: 1411078

Work Order Summary

CLIENT:	Mr. Paul King P & D Environmental 55 Santa Clara Suite 240 Oakland, CA 94610	**BILL TO:**	Mr. Paul King P & D Environmental 55 Santa Clara Suite 240 Oakland, CA 94610
PHONE:	510-658-6916	**P.O. #**	
FAX:	510-834-0772	**PROJECT #**	0660 James River Corporation 2101 Williams St
DATE RECEIVED:	11/06/2014	**CONTACT:**	Kyle Vagadori
DATE COMPLETED:	11/20/2014		

FRACTION #	NAME	TEST	RECEIPT VAC./PRES.	FINAL PRESSURE
01A	VP1	TO-15	2.8 "Hg	15.1 psi
02A	VP2	TO-15	0.3 psi	14.7 psi
03A	VP2-DUP	TO-15	3.7 "Hg	14.5 psi
04A	VP3	TO-15	4.7 "Hg	14.9 psi
05A	VP4	TO-15	3.9 "Hg	15 psi
06A	VP5	TO-15	5.5 "Hg	14.6 psi
07A	VP6	TO-15	5.3 "Hg	14.6 psi
08A	Lab Blank	TO-15	NA	NA
09A	CCV	TO-15	NA	NA
10A	LCS	TO-15	NA	NA
10AA	LCSD	TO-15	NA	NA

CERTIFIED BY: Heidi Hayes DATE: 11/20/14

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
EPA Method TO-15
P & D Environmental
Workorder# 1411078

Seven 1 Liter Summa Canister samples were received on November 06, 2014. The laboratory performed analysis via EPA Method TO-15 using GC/MS in the full scan 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.

Receiving Notes

There was a significant difference (greater than 5.0" Hg) between the measured canister receipt vacuum and that which was reported on the Chain of Custody (COC) OR the canister tag for sample VP2.

The Summa canister for sample VP2 was leaking upon arrival. The client was notified and the analysis proceeded. Reported analyte concentrations are considered to be estimated.

Analytical Notes

All Quality Control Limit exceedances and affected sample results are noted by flags. Each flag is defined at the bottom of this Case Narrative and on each Sample Result Summary page.

Dilution was performed on samples VP3, VP4, VP5 and VP6 due to the presence of high level target species.

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
EPA METHOD TO-15 GC/MS FULL SCAN

Client Sample ID: VP1

Lab ID#: 1411078-01A

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Ethanol	4.5	14	8.4	26
Acetone	11	40	27	96
2-Propanol	4.5	8.0	11	20
Chloroform	1.1	14	5.5	69
Tetrachloroethene	1.1	27	7.6	180
1,1-Difluoroethane	4.5	18	12	49

Client Sample ID: VP2

Lab ID#: 1411078-02A

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Ethanol	3.9	20	7.4	38
Acetone	9.8	14	23	34
2-Propanol	3.9	4.6	9.6	11
trans-1,2-Dichloroethene	0.98	150	3.9	610
Tetrahydrofuran	0.98	2.1	2.9	6.3
Toluene	0.98	2.6	3.7	9.8
1,1-Difluoroethane	3.9	1100 E	10	3000 E

Client Sample ID: VP2-DUP

Lab ID#: 1411078-03A

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Ethanol	4.5	19	8.5	35
Acetone	11	13	27	31
trans-1,2-Dichloroethene	1.1	180	4.5	740
Toluene	1.1	2.6	4.2	9.9
1,1-Difluoroethane	4.5	14000 E	12	38000 E

Client Sample ID: VP3

Lab ID#: 1411078-04A

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Summary of Detected Compounds
EPA METHOD TO-15 GC/MS FULL SCAN

Client Sample ID: VP3

Lab ID#: 1411078-04A

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Toluene	300	1000	1100	4000
Tetrachloroethene	300	46000	2000	320000
1,1-Difluoroethane	1200	15000	3200	41000

Client Sample ID: VP4

Lab ID#: 1411078-05A

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Ethanol	15	21	29	40
Tetrachloroethene	3.9	700	26	4700
1,1-Difluoroethane	15	69000 E	42	190000 E

Client Sample ID: VP5

Lab ID#: 1411078-06A

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Tetrachloroethene	24	9900	160	67000
1,1-Difluoroethane	98	120	260	320

Client Sample ID: VP6

Lab ID#: 1411078-07A

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Ethanol	39	44	73	84
1,1,1-Trichloroethane	9.7	14	53	76
Tetrachloroethene	9.7	2600	66	18000
1,1-Difluoroethane	39	970	100	2600

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Client Sample ID: VP1

Lab ID#: 1411078-01A

EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	**17111921**	**Date of Collection:**	**11/5/14 12:01:00 PM**
Dil. Factor:	**2.24**	**Date of Analysis:**	**11/19/14 10:04 PM**

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Freon 12	1.1	Not Detected	5.5	Not Detected
Freon 114	1.1	Not Detected	7.8	Not Detected
Chloromethane	11	Not Detected	23	Not Detected
Vinyl Chloride	1.1	Not Detected	2.9	Not Detected
1,3-Butadiene	1.1	Not Detected	2.5	Not Detected
Bromomethane	11	Not Detected	43	Not Detected
Chloroethane	4.5	Not Detected	12	Not Detected
Freon 11	1.1	Not Detected	6.3	Not Detected
Ethanol	4.5	14	8.4	26
Freon 113	1.1	Not Detected	8.6	Not Detected
1,1-Dichloroethene	1.1	Not Detected	4.4	Not Detected
Acetone	11	40	27	96
2-Propanol	4.5	8.0	11	20
Carbon Disulfide	4.5	Not Detected	14	Not Detected
3-Chloropropene	4.5	Not Detected	14	Not Detected
Methylene Chloride	11	Not Detected	39	Not Detected
Methyl tert-butyl ether	1.1	Not Detected	4.0	Not Detected
trans-1,2-Dichloroethene	1.1	Not Detected	4.4	Not Detected
Hexane	1.1	Not Detected	3.9	Not Detected
1,1-Dichloroethane	1.1	Not Detected	4.5	Not Detected
2-Butanone (Methyl Ethyl Ketone)	4.5	Not Detected	13	Not Detected
cis-1,2-Dichloroethene	1.1	Not Detected	4.4	Not Detected
Tetrahydrofuran	1.1	Not Detected	3.3	Not Detected
Chloroform	1.1	14	5.5	69
1,1,1-Trichloroethane	1.1	Not Detected	6.1	Not Detected
Cyclohexane	1.1	Not Detected	3.8	Not Detected
Carbon Tetrachloride	1.1	Not Detected	7.0	Not Detected
2,2,4-Trimethylpentane	1.1	Not Detected	5.2	Not Detected
Benzene	1.1	Not Detected	3.6	Not Detected
1,2-Dichloroethane	1.1	Not Detected	4.5	Not Detected
Heptane	1.1	Not Detected	4.6	Not Detected
Trichloroethene	1.1	Not Detected	6.0	Not Detected
1,2-Dichloropropane	1.1	Not Detected	5.2	Not Detected
1,4-Dioxane	4.5	Not Detected	16	Not Detected
Bromodichloromethane	1.1	Not Detected	7.5	Not Detected
cis-1,3-Dichloropropene	1.1	Not Detected	5.1	Not Detected
4-Methyl-2-pentanone	1.1	Not Detected	4.6	Not Detected
Toluene	1.1	Not Detected	4.2	Not Detected
trans-1,3-Dichloropropene	1.1	Not Detected	5.1	Not Detected
1,1,2-Trichloroethane	1.1	Not Detected	6.1	Not Detected
Tetrachloroethene	1.1	27	7.6	180
2-Hexanone	4.5	Not Detected	18	Not Detected

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Client Sample ID: VP1

Lab ID#: 1411078-01A

EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	**17111921**	**Date of Collection: 11/5/14 12:01:00 PM**	
Dil. Factor:	**2.24**	**Date of Analysis: 11/19/14 10:04 PM**	

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Dibromochloromethane	1.1	Not Detected	9.5	Not Detected
1,2-Dibromoethane (EDB)	1.1	Not Detected	8.6	Not Detected
Chlorobenzene	1.1	Not Detected	5.2	Not Detected
Ethyl Benzene	1.1	Not Detected	4.9	Not Detected
m,p-Xylene	1.1	Not Detected	4.9	Not Detected
o-Xylene	1.1	Not Detected	4.9	Not Detected
Styrene	1.1	Not Detected	4.8	Not Detected
Bromoform	1.1	Not Detected	12	Not Detected
Cumene	1.1	Not Detected	5.5	Not Detected
1,1,2,2-Tetrachloroethane	1.1	Not Detected	7.7	Not Detected
Propylbenzene	1.1	Not Detected	5.5	Not Detected
4-Ethyltoluene	1.1	Not Detected	5.5	Not Detected
1,3,5-Trimethylbenzene	1.1	Not Detected	5.5	Not Detected
1,2,4-Trimethylbenzene	1.1	Not Detected	5.5	Not Detected
1,3-Dichlorobenzene	1.1	Not Detected	6.7	Not Detected
1,4-Dichlorobenzene	1.1	Not Detected	6.7	Not Detected
alpha-Chlorotoluene	1.1	Not Detected	5.8	Not Detected
1,2-Dichlorobenzene	1.1	Not Detected	6.7	Not Detected
1,2,4-Trichlorobenzene	4.5	Not Detected	33	Not Detected
Hexachlorobutadiene	4.5	Not Detected	48	Not Detected
1,1-Difluoroethane	4.5	18	12	49

Container Type: 1 Liter Summa Canister

Surrogates	%Recovery	Method Limits
Toluene-d8	97	70-130
1,2-Dichloroethane-d4	101	70-130
4-Bromofluorobenzene	114	70-130

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Client Sample ID: VP2

Lab ID#: 1411078-02A

EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	**17111922**	**Date of Collection:**	**11/5/14 10:50:00 AM**
Dil. Factor:	**1.96**	**Date of Analysis:**	**11/19/14 10:27 PM**

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Freon 12	0.98	Not Detected	4.8	Not Detected
Freon 114	0.98	Not Detected	6.8	Not Detected
Chloromethane	9.8	Not Detected	20	Not Detected
Vinyl Chloride	0.98	Not Detected	2.5	Not Detected
1,3-Butadiene	0.98	Not Detected	2.2	Not Detected
Bromomethane	9.8	Not Detected	38	Not Detected
Chloroethane	3.9	Not Detected	10	Not Detected
Freon 11	0.98	Not Detected	5.5	Not Detected
Ethanol	3.9	20	7.4	38
Freon 113	0.98	Not Detected	7.5	Not Detected
1,1-Dichloroethene	0.98	Not Detected	3.9	Not Detected
Acetone	9.8	14	23	34
2-Propanol	3.9	4.6	9.6	11
Carbon Disulfide	3.9	Not Detected	12	Not Detected
3-Chloropropene	3.9	Not Detected	12	Not Detected
Methylene Chloride	9.8	Not Detected	34	Not Detected
Methyl tert-butyl ether	0.98	Not Detected	3.5	Not Detected
trans-1,2-Dichloroethene	0.98	150	3.9	610
Hexane	0.98	Not Detected	3.4	Not Detected
1,1-Dichloroethane	0.98	Not Detected	4.0	Not Detected
2-Butanone (Methyl Ethyl Ketone)	3.9	Not Detected	12	Not Detected
cis-1,2-Dichloroethene	0.98	Not Detected	3.9	Not Detected
Tetrahydrofuran	0.98	2.1	2.9	6.3
Chloroform	0.98	Not Detected	4.8	Not Detected
1,1,1-Trichloroethane	0.98	Not Detected	5.3	Not Detected
Cyclohexane	0.98	Not Detected	3.4	Not Detected
Carbon Tetrachloride	0.98	Not Detected	6.2	Not Detected
2,2,4-Trimethylpentane	0.98	Not Detected	4.6	Not Detected
Benzene	0.98	Not Detected	3.1	Not Detected
1,2-Dichloroethane	0.98	Not Detected	4.0	Not Detected
Heptane	0.98	Not Detected	4.0	Not Detected
Trichloroethene	0.98	Not Detected	5.3	Not Detected
1,2-Dichloropropane	0.98	Not Detected	4.5	Not Detected
1,4-Dioxane	3.9	Not Detected	14	Not Detected
Bromodichloromethane	0.98	Not Detected	6.6	Not Detected
cis-1,3-Dichloropropene	0.98	Not Detected	4.4	Not Detected
4-Methyl-2-pentanone	0.98	Not Detected	4.0	Not Detected
Toluene	0.98	2.6	3.7	9.8
trans-1,3-Dichloropropene	0.98	Not Detected	4.4	Not Detected
1,1,2-Trichloroethane	0.98	Not Detected	5.3	Not Detected
Tetrachloroethene	0.98	Not Detected	6.6	Not Detected
2-Hexanone	3.9	Not Detected	16	Not Detected

eurofins | Air Toxics

Client Sample ID: VP2

Lab ID#: 1411078-02A

EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	**17111922**	**Date of Collection: 11/5/14 10:50:00 AM**	
Dil. Factor:	**1.96**	**Date of Analysis: 11/19/14 10:27 PM**	

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Dibromochloromethane	0.98	Not Detected	8.3	Not Detected
1,2-Dibromoethane (EDB)	0.98	Not Detected	7.5	Not Detected
Chlorobenzene	0.98	Not Detected	4.5	Not Detected
Ethyl Benzene	0.98	Not Detected	4.2	Not Detected
m,p-Xylene	0.98	Not Detected	4.2	Not Detected
o-Xylene	0.98	Not Detected	4.2	Not Detected
Styrene	0.98	Not Detected	4.2	Not Detected
Bromoform	0.98	Not Detected	10	Not Detected
Cumene	0.98	Not Detected	4.8	Not Detected
1,1,2,2-Tetrachloroethane	0.98	Not Detected	6.7	Not Detected
Propylbenzene	0.98	Not Detected	4.8	Not Detected
4-Ethyltoluene	0.98	Not Detected	4.8	Not Detected
1,3,5-Trimethylbenzene	0.98	Not Detected	4.8	Not Detected
1,2,4-Trimethylbenzene	0.98	Not Detected	4.8	Not Detected
1,3-Dichlorobenzene	0.98	Not Detected	5.9	Not Detected
1,4-Dichlorobenzene	0.98	Not Detected	5.9	Not Detected
alpha-Chlorotoluene	0.98	Not Detected	5.1	Not Detected
1,2-Dichlorobenzene	0.98	Not Detected	5.9	Not Detected
1,2,4-Trichlorobenzene	3.9	Not Detected	29	Not Detected
Hexachlorobutadiene	3.9	Not Detected	42	Not Detected
1,1-Difluoroethane	3.9	1100 E	10	3000 E

E = Exceeds instrument calibration range.

Container Type: 1 Liter Summa Canister

Surrogates	%Recovery	Method Limits
Toluene-d8	95	70-130
1,2-Dichloroethane-d4	100	70-130
4-Bromofluorobenzene	112	70-130

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Client Sample ID: VP2-DUP

Lab ID#: 1411078-03A

EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	**17111923**	**Date of Collection:**	**11/5/14 10:50:00 AM**
Dil. Factor:	**2.26**	**Date of Analysis:**	**11/19/14 10:50 PM**

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Freon 12	1.1	Not Detected	5.6	Not Detected
Freon 114	1.1	Not Detected	7.9	Not Detected
Chloromethane	11	Not Detected	23	Not Detected
Vinyl Chloride	1.1	Not Detected	2.9	Not Detected
1,3-Butadiene	1.1	Not Detected	2.5	Not Detected
Bromomethane	11	Not Detected	44	Not Detected
Chloroethane	4.5	Not Detected	12	Not Detected
Freon 11	1.1	Not Detected	6.3	Not Detected
Ethanol	4.5	19	8.5	35
Freon 113	1.1	Not Detected	8.7	Not Detected
1,1-Dichloroethene	1.1	Not Detected	4.5	Not Detected
Acetone	11	13	27	31
2-Propanol	4.5	Not Detected	11	Not Detected
Carbon Disulfide	4.5	Not Detected	14	Not Detected
3-Chloropropene	4.5	Not Detected	14	Not Detected
Methylene Chloride	11	Not Detected	39	Not Detected
Methyl tert-butyl ether	1.1	Not Detected	4.1	Not Detected
trans-1,2-Dichloroethene	1.1	180	4.5	740
Hexane	1.1	Not Detected	4.0	Not Detected
1,1-Dichloroethane	1.1	Not Detected	4.6	Not Detected
2-Butanone (Methyl Ethyl Ketone)	4.5	Not Detected	13	Not Detected
cis-1,2-Dichloroethene	1.1	Not Detected	4.5	Not Detected
Tetrahydrofuran	1.1	Not Detected	3.3	Not Detected
Chloroform	1.1	Not Detected	5.5	Not Detected
1,1,1-Trichloroethane	1.1	Not Detected	6.2	Not Detected
Cyclohexane	1.1	Not Detected	3.9	Not Detected
Carbon Tetrachloride	1.1	Not Detected	7.1	Not Detected
2,2,4-Trimethylpentane	1.1	Not Detected	5.3	Not Detected
Benzene	1.1	Not Detected	3.6	Not Detected
1,2-Dichloroethane	1.1	Not Detected	4.6	Not Detected
Heptane	1.1	Not Detected	4.6	Not Detected
Trichloroethene	1.1	Not Detected	6.1	Not Detected
1,2-Dichloropropane	1.1	Not Detected	5.2	Not Detected
1,4-Dioxane	4.5	Not Detected	16	Not Detected
Bromodichloromethane	1.1	Not Detected	7.6	Not Detected
cis-1,3-Dichloropropene	1.1	Not Detected	5.1	Not Detected
4-Methyl-2-pentanone	1.1	Not Detected	4.6	Not Detected
Toluene	1.1	2.6	4.2	9.9
trans-1,3-Dichloropropene	1.1	Not Detected	5.1	Not Detected
1,1,2-Trichloroethane	1.1	Not Detected	6.2	Not Detected
Tetrachloroethene	1.1	Not Detected	7.7	Not Detected
2-Hexanone	4.5	Not Detected	18	Not Detected

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Client Sample ID: VP2-DUP

Lab ID#: 1411078-03A

EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	**17111923**	**Date of Collection: 11/5/14 10:50:00 AM**	
Dil. Factor:	**2.26**	**Date of Analysis: 11/19/14 10:50 PM**	

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Dibromochloromethane	1.1	Not Detected	9.6	Not Detected
1,2-Dibromoethane (EDB)	1.1	Not Detected	8.7	Not Detected
Chlorobenzene	1.1	Not Detected	5.2	Not Detected
Ethyl Benzene	1.1	Not Detected	4.9	Not Detected
m,p-Xylene	1.1	Not Detected	4.9	Not Detected
o-Xylene	1.1	Not Detected	4.9	Not Detected
Styrene	1.1	Not Detected	4.8	Not Detected
Bromoform	1.1	Not Detected	12	Not Detected
Cumene	1.1	Not Detected	5.6	Not Detected
1,1,2,2-Tetrachloroethane	1.1	Not Detected	7.8	Not Detected
Propylbenzene	1.1	Not Detected	5.6	Not Detected
4-Ethyltoluene	1.1	Not Detected	5.6	Not Detected
1,3,5-Trimethylbenzene	1.1	Not Detected	5.6	Not Detected
1,2,4-Trimethylbenzene	1.1	Not Detected	5.6	Not Detected
1,3-Dichlorobenzene	1.1	Not Detected	6.8	Not Detected
1,4-Dichlorobenzene	1.1	Not Detected	6.8	Not Detected
alpha-Chlorotoluene	1.1	Not Detected	5.8	Not Detected
1,2-Dichlorobenzene	1.1	Not Detected	6.8	Not Detected
1,2,4-Trichlorobenzene	4.5	Not Detected	34	Not Detected
Hexachlorobutadiene	4.5	Not Detected	48	Not Detected
1,1-Difluoroethane	4.5	14000 E	12	38000 E

E = Exceeds instrument calibration range.

Container Type: 1 Liter Summa Canister

Surrogates	%Recovery	Method Limits
Toluene-d8	96	70-130
1,2-Dichloroethane-d4	100	70-130
4-Bromofluorobenzene	111	70-130

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Client Sample ID: VP3

Lab ID#: 1411078-04A

EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	**17111924**	**Date of Collection:**	**11/5/14 3:05:00 PM**
Dil. Factor:	**597**	**Date of Analysis:**	**11/19/14 11:11 PM**

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Freon 12	300	Not Detected	1500	Not Detected
Freon 114	300	Not Detected	2100	Not Detected
Chloromethane	3000	Not Detected	6200	Not Detected
Vinyl Chloride	300	Not Detected	760	Not Detected
1,3-Butadiene	300	Not Detected	660	Not Detected
Bromomethane	3000	Not Detected	12000	Not Detected
Chloroethane	1200	Not Detected	3200	Not Detected
Freon 11	300	Not Detected	1700	Not Detected
Ethanol	1200	Not Detected	2200	Not Detected
Freon 113	300	Not Detected	2300	Not Detected
1,1-Dichloroethene	300	Not Detected	1200	Not Detected
Acetone	3000	Not Detected	7100	Not Detected
2-Propanol	1200	Not Detected	2900	Not Detected
Carbon Disulfide	1200	Not Detected	3700	Not Detected
3-Chloropropene	1200	Not Detected	3700	Not Detected
Methylene Chloride	3000	Not Detected	10000	Not Detected
Methyl tert-butyl ether	300	Not Detected	1100	Not Detected
trans-1,2-Dichloroethene	300	Not Detected	1200	Not Detected
Hexane	300	Not Detected	1000	Not Detected
1,1-Dichloroethane	300	Not Detected	1200	Not Detected
2-Butanone (Methyl Ethyl Ketone)	1200	Not Detected	3500	Not Detected
cis-1,2-Dichloroethene	300	Not Detected	1200	Not Detected
Tetrahydrofuran	300	Not Detected	880	Not Detected
Chloroform	300	Not Detected	1400	Not Detected
1,1,1-Trichloroethane	300	Not Detected	1600	Not Detected
Cyclohexane	300	Not Detected	1000	Not Detected
Carbon Tetrachloride	300	Not Detected	1900	Not Detected
2,2,4-Trimethylpentane	300	Not Detected	1400	Not Detected
Benzene	300	Not Detected	950	Not Detected
1,2-Dichloroethane	300	Not Detected	1200	Not Detected
Heptane	300	Not Detected	1200	Not Detected
Trichloroethene	300	Not Detected	1600	Not Detected
1,2-Dichloropropane	300	Not Detected	1400	Not Detected
1,4-Dioxane	1200	Not Detected	4300	Not Detected
Bromodichloromethane	300	Not Detected	2000	Not Detected
cis-1,3-Dichloropropene	300	Not Detected	1400	Not Detected
4-Methyl-2-pentanone	300	Not Detected	1200	Not Detected
Toluene	300	1000	1100	4000
trans-1,3-Dichloropropene	300	Not Detected	1400	Not Detected
1,1,2-Trichloroethane	300	Not Detected	1600	Not Detected
Tetrachloroethene	300	46000	2000	320000
2-Hexanone	1200	Not Detected	4900	Not Detected

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Client Sample ID: VP3

Lab ID#: 1411078-04A

EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	**17111924**	**Date of Collection: 11/5/14 3:05:00 PM**	
Dil. Factor:	**597**	**Date of Analysis: 11/19/14 11:11 PM**	

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Dibromochloromethane	300	Not Detected	2500	Not Detected
1,2-Dibromoethane (EDB)	300	Not Detected	2300	Not Detected
Chlorobenzene	300	Not Detected	1400	Not Detected
Ethyl Benzene	300	Not Detected	1300	Not Detected
m,p-Xylene	300	Not Detected	1300	Not Detected
o-Xylene	300	Not Detected	1300	Not Detected
Styrene	300	Not Detected	1300	Not Detected
Bromoform	300	Not Detected	3100	Not Detected
Cumene	300	Not Detected	1500	Not Detected
1,1,2,2-Tetrachloroethane	300	Not Detected	2000	Not Detected
Propylbenzene	300	Not Detected	1500	Not Detected
4-Ethyltoluene	300	Not Detected	1500	Not Detected
1,3,5-Trimethylbenzene	300	Not Detected	1500	Not Detected
1,2,4-Trimethylbenzene	300	Not Detected	1500	Not Detected
1,3-Dichlorobenzene	300	Not Detected	1800	Not Detected
1,4-Dichlorobenzene	300	Not Detected	1800	Not Detected
alpha-Chlorotoluene	300	Not Detected	1500	Not Detected
1,2-Dichlorobenzene	300	Not Detected	1800	Not Detected
1,2,4-Trichlorobenzene	1200	Not Detected	8900	Not Detected
Hexachlorobutadiene	1200	Not Detected	13000	Not Detected
1,1-Difluoroethane	1200	15000	3200	41000

Container Type: 1 Liter Summa Canister

Surrogates	%Recovery	Method Limits
Toluene-d8	93	70-130
1,2-Dichloroethane-d4	102	70-130
4-Bromofluorobenzene	123	70-130

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Client Sample ID: VP4

Lab ID#: 1411078-05A

EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	**17111925**	**Date of Collection: 11/5/14 2:07:00 PM**	
Dil. Factor:	**7.74**	**Date of Analysis: 11/19/14 11:34 PM**	

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Freon 12	3.9	Not Detected	19	Not Detected
Freon 114	3.9	Not Detected	27	Not Detected
Chloromethane	39	Not Detected	80	Not Detected
Vinyl Chloride	3.9	Not Detected	9.9	Not Detected
1,3-Butadiene	3.9	Not Detected	8.6	Not Detected
Bromomethane	39	Not Detected	150	Not Detected
Chloroethane	15	Not Detected	41	Not Detected
Freon 11	3.9	Not Detected	22	Not Detected
Ethanol	15	21	29	40
Freon 113	3.9	Not Detected	30	Not Detected
1,1-Dichloroethene	3.9	Not Detected	15	Not Detected
Acetone	39	Not Detected	92	Not Detected
2-Propanol	15	Not Detected	38	Not Detected
Carbon Disulfide	15	Not Detected	48	Not Detected
3-Chloropropene	15	Not Detected	48	Not Detected
Methylene Chloride	39	Not Detected	130	Not Detected
Methyl tert-butyl ether	3.9	Not Detected	14	Not Detected
trans-1,2-Dichloroethene	3.9	Not Detected	15	Not Detected
Hexane	3.9	Not Detected	14	Not Detected
1,1-Dichloroethane	3.9	Not Detected	16	Not Detected
2-Butanone (Methyl Ethyl Ketone)	15	Not Detected	46	Not Detected
cis-1,2-Dichloroethene	3.9	Not Detected	15	Not Detected
Tetrahydrofuran	3.9	Not Detected	11	Not Detected
Chloroform	3.9	Not Detected	19	Not Detected
1,1,1-Trichloroethane	3.9	Not Detected	21	Not Detected
Cyclohexane	3.9	Not Detected	13	Not Detected
Carbon Tetrachloride	3.9	Not Detected	24	Not Detected
2,2,4-Trimethylpentane	3.9	Not Detected	18	Not Detected
Benzene	3.9	Not Detected	12	Not Detected
1,2-Dichloroethane	3.9	Not Detected	16	Not Detected
Heptane	3.9	Not Detected	16	Not Detected
Trichloroethene	3.9	Not Detected	21	Not Detected
1,2-Dichloropropane	3.9	Not Detected	18	Not Detected
1,4-Dioxane	15	Not Detected	56	Not Detected
Bromodichloromethane	3.9	Not Detected	26	Not Detected
cis-1,3-Dichloropropene	3.9	Not Detected	18	Not Detected
4-Methyl-2-pentanone	3.9	Not Detected	16	Not Detected
Toluene	3.9	Not Detected	14	Not Detected
trans-1,3-Dichloropropene	3.9	Not Detected	18	Not Detected
1,1,2-Trichloroethane	3.9	Not Detected	21	Not Detected
Tetrachloroethene	3.9	700	26	4700
2-Hexanone	15	Not Detected	63	Not Detected

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Client Sample ID: VP4

Lab ID#: 1411078-05A

EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	**17111925**	**Date of Collection: 11/5/14 2:07:00 PM**	
Dil. Factor:	**7.74**	**Date of Analysis: 11/19/14 11:34 PM**	

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Dibromochloromethane	3.9	Not Detected	33	Not Detected
1,2-Dibromoethane (EDB)	3.9	Not Detected	30	Not Detected
Chlorobenzene	3.9	Not Detected	18	Not Detected
Ethyl Benzene	3.9	Not Detected	17	Not Detected
m,p-Xylene	3.9	Not Detected	17	Not Detected
o-Xylene	3.9	Not Detected	17	Not Detected
Styrene	3.9	Not Detected	16	Not Detected
Bromoform	3.9	Not Detected	40	Not Detected
Cumene	3.9	Not Detected	19	Not Detected
1,1,2,2-Tetrachloroethane	3.9	Not Detected	26	Not Detected
Propylbenzene	3.9	Not Detected	19	Not Detected
4-Ethyltoluene	3.9	Not Detected	19	Not Detected
1,3,5-Trimethylbenzene	3.9	Not Detected	19	Not Detected
1,2,4-Trimethylbenzene	3.9	Not Detected	19	Not Detected
1,3-Dichlorobenzene	3.9	Not Detected	23	Not Detected
1,4-Dichlorobenzene	3.9	Not Detected	23	Not Detected
alpha-Chlorotoluene	3.9	Not Detected	20	Not Detected
1,2-Dichlorobenzene	3.9	Not Detected	23	Not Detected
1,2,4-Trichlorobenzene	15	Not Detected	110	Not Detected
Hexachlorobutadiene	15	Not Detected	160	Not Detected
1,1-Difluoroethane	15	69000 E	42	190000 E

E = Exceeds instrument calibration range.

Container Type: 1 Liter Summa Canister

Surrogates	%Recovery	Method Limits
Toluene-d8	95	70-130
1,2-Dichloroethane-d4	96	70-130
4-Bromofluorobenzene	113	70-130

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Client Sample ID: VP5

Lab ID#: 1411078-06A

EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	**17111927**	**Date of Collection: 11/5/14 4:01:00 PM**	
Dil. Factor:	**48.8**	**Date of Analysis: 11/20/14 12:20 AM**	

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Freon 12	24	Not Detected	120	Not Detected
Freon 114	24	Not Detected	170	Not Detected
Chloromethane	240	Not Detected	500	Not Detected
Vinyl Chloride	24	Not Detected	62	Not Detected
1,3-Butadiene	24	Not Detected	54	Not Detected
Bromomethane	240	Not Detected	950	Not Detected
Chloroethane	98	Not Detected	260	Not Detected
Freon 11	24	Not Detected	140	Not Detected
Ethanol	98	Not Detected	180	Not Detected
Freon 113	24	Not Detected	190	Not Detected
1,1-Dichloroethene	24	Not Detected	97	Not Detected
Acetone	240	Not Detected	580	Not Detected
2-Propanol	98	Not Detected	240	Not Detected
Carbon Disulfide	98	Not Detected	300	Not Detected
3-Chloropropene	98	Not Detected	300	Not Detected
Methylene Chloride	240	Not Detected	850	Not Detected
Methyl tert-butyl ether	24	Not Detected	88	Not Detected
trans-1,2-Dichloroethene	24	Not Detected	97	Not Detected
Hexane	24	Not Detected	86	Not Detected
1,1-Dichloroethane	24	Not Detected	99	Not Detected
2-Butanone (Methyl Ethyl Ketone)	98	Not Detected	290	Not Detected
cis-1,2-Dichloroethene	24	Not Detected	97	Not Detected
Tetrahydrofuran	24	Not Detected	72	Not Detected
Chloroform	24	Not Detected	120	Not Detected
1,1,1-Trichloroethane	24	Not Detected	130	Not Detected
Cyclohexane	24	Not Detected	84	Not Detected
Carbon Tetrachloride	24	Not Detected	150	Not Detected
2,2,4-Trimethylpentane	24	Not Detected	110	Not Detected
Benzene	24	Not Detected	78	Not Detected
1,2-Dichloroethane	24	Not Detected	99	Not Detected
Heptane	24	Not Detected	100	Not Detected
Trichloroethene	24	Not Detected	130	Not Detected
1,2-Dichloropropane	24	Not Detected	110	Not Detected
1,4-Dioxane	98	Not Detected	350	Not Detected
Bromodichloromethane	24	Not Detected	160	Not Detected
cis-1,3-Dichloropropene	24	Not Detected	110	Not Detected
4-Methyl-2-pentanone	24	Not Detected	100	Not Detected
Toluene	24	Not Detected	92	Not Detected
trans-1,3-Dichloropropene	24	Not Detected	110	Not Detected
1,1,2-Trichloroethane	24	Not Detected	130	Not Detected
Tetrachloroethene	24	9900	160	67000
2-Hexanone	98	Not Detected	400	Not Detected

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Client Sample ID: VP5

Lab ID#: 1411078-06A

EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	**17111927**	**Date of Collection: 11/5/14 4:01:00 PM**	
Dil. Factor:	**48.8**	**Date of Analysis: 11/20/14 12:20 AM**	

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Dibromochloromethane	24	Not Detected	210	Not Detected
1,2-Dibromoethane (EDB)	24	Not Detected	190	Not Detected
Chlorobenzene	24	Not Detected	110	Not Detected
Ethyl Benzene	24	Not Detected	100	Not Detected
m,p-Xylene	24	Not Detected	100	Not Detected
o-Xylene	24	Not Detected	100	Not Detected
Styrene	24	Not Detected	100	Not Detected
Bromoform	24	Not Detected	250	Not Detected
Cumene	24	Not Detected	120	Not Detected
1,1,2,2-Tetrachloroethane	24	Not Detected	170	Not Detected
Propylbenzene	24	Not Detected	120	Not Detected
4-Ethyltoluene	24	Not Detected	120	Not Detected
1,3,5-Trimethylbenzene	24	Not Detected	120	Not Detected
1,2,4-Trimethylbenzene	24	Not Detected	120	Not Detected
1,3-Dichlorobenzene	24	Not Detected	150	Not Detected
1,4-Dichlorobenzene	24	Not Detected	150	Not Detected
alpha-Chlorotoluene	24	Not Detected	130	Not Detected
1,2-Dichlorobenzene	24	Not Detected	150	Not Detected
1,2,4-Trichlorobenzene	98	Not Detected	720	Not Detected
Hexachlorobutadiene	98	Not Detected	1000	Not Detected
1,1-Difluoroethane	98	120	260	320

Container Type: 1 Liter Summa Canister

Surrogates	%Recovery	Method Limits
Toluene-d8	97	70-130
1,2-Dichloroethane-d4	96	70-130
4-Bromofluorobenzene	101	70-130

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Client Sample ID: VP6

Lab ID#: 1411078-07A

EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	**17111926**	**Date of Collection: 11/5/14 4:59:00 PM**	
Dil. Factor:	**19.4**	**Date of Analysis: 11/19/14 11:56 PM**	

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Freon 12	9.7	Not Detected	48	Not Detected
Freon 114	9.7	Not Detected	68	Not Detected
Chloromethane	97	Not Detected	200	Not Detected
Vinyl Chloride	9.7	Not Detected	25	Not Detected
1,3-Butadiene	9.7	Not Detected	21	Not Detected
Bromomethane	97	Not Detected	380	Not Detected
Chloroethane	39	Not Detected	100	Not Detected
Freon 11	9.7	Not Detected	54	Not Detected
Ethanol	39	44	73	84
Freon 113	9.7	Not Detected	74	Not Detected
1,1-Dichloroethene	9.7	Not Detected	38	Not Detected
Acetone	97	Not Detected	230	Not Detected
2-Propanol	39	Not Detected	95	Not Detected
Carbon Disulfide	39	Not Detected	120	Not Detected
3-Chloropropene	39	Not Detected	120	Not Detected
Methylene Chloride	97	Not Detected	340	Not Detected
Methyl tert-butyl ether	9.7	Not Detected	35	Not Detected
trans-1,2-Dichloroethene	9.7	Not Detected	38	Not Detected
Hexane	9.7	Not Detected	34	Not Detected
1,1-Dichloroethane	9.7	Not Detected	39	Not Detected
2-Butanone (Methyl Ethyl Ketone)	39	Not Detected	110	Not Detected
cis-1,2-Dichloroethene	9.7	Not Detected	38	Not Detected
Tetrahydrofuran	9.7	Not Detected	29	Not Detected
Chloroform	9.7	Not Detected	47	Not Detected
1,1,1-Trichloroethane	9.7	14	53	76
Cyclohexane	9.7	Not Detected	33	Not Detected
Carbon Tetrachloride	9.7	Not Detected	61	Not Detected
2,2,4-Trimethylpentane	9.7	Not Detected	45	Not Detected
Benzene	9.7	Not Detected	31	Not Detected
1,2-Dichloroethane	9.7	Not Detected	39	Not Detected
Heptane	9.7	Not Detected	40	Not Detected
Trichloroethene	9.7	Not Detected	52	Not Detected
1,2-Dichloropropane	9.7	Not Detected	45	Not Detected
1,4-Dioxane	39	Not Detected	140	Not Detected
Bromodichloromethane	9.7	Not Detected	65	Not Detected
cis-1,3-Dichloropropene	9.7	Not Detected	44	Not Detected
4-Methyl-2-pentanone	9.7	Not Detected	40	Not Detected
Toluene	9.7	Not Detected	36	Not Detected
trans-1,3-Dichloropropene	9.7	Not Detected	44	Not Detected
1,1,2-Trichloroethane	9.7	Not Detected	53	Not Detected
Tetrachloroethene	9.7	2600	66	18000
2-Hexanone	39	Not Detected	160	Not Detected

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Client Sample ID: VP6

Lab ID#: 1411078-07A

EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	**17111926**	**Date of Collection: 11/5/14 4:59:00 PM**	
Dil. Factor:	**19.4**	**Date of Analysis: 11/19/14 11:56 PM**	

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Dibromochloromethane	9.7	Not Detected	83	Not Detected
1,2-Dibromoethane (EDB)	9.7	Not Detected	74	Not Detected
Chlorobenzene	9.7	Not Detected	45	Not Detected
Ethyl Benzene	9.7	Not Detected	42	Not Detected
m,p-Xylene	9.7	Not Detected	42	Not Detected
o-Xylene	9.7	Not Detected	42	Not Detected
Styrene	9.7	Not Detected	41	Not Detected
Bromoform	9.7	Not Detected	100	Not Detected
Cumene	9.7	Not Detected	48	Not Detected
1,1,2,2-Tetrachloroethane	9.7	Not Detected	66	Not Detected
Propylbenzene	9.7	Not Detected	48	Not Detected
4-Ethyltoluene	9.7	Not Detected	48	Not Detected
1,3,5-Trimethylbenzene	9.7	Not Detected	48	Not Detected
1,2,4-Trimethylbenzene	9.7	Not Detected	48	Not Detected
1,3-Dichlorobenzene	9.7	Not Detected	58	Not Detected
1,4-Dichlorobenzene	9.7	Not Detected	58	Not Detected
alpha-Chlorotoluene	9.7	Not Detected	50	Not Detected
1,2-Dichlorobenzene	9.7	Not Detected	58	Not Detected
1,2,4-Trichlorobenzene	39	Not Detected	290	Not Detected
Hexachlorobutadiene	39	Not Detected	410	Not Detected
1,1-Difluoroethane	39	970	100	2600

Container Type: 1 Liter Summa Canister

Surrogates	%Recovery	Method Limits
Toluene-d8	98	70-130
1,2-Dichloroethane-d4	98	70-130
4-Bromofluorobenzene	109	70-130

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Client Sample ID: Lab Blank

Lab ID#: 1411078-08A

EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	**17111906c**	**Date of Collection: NA**	
Dil. Factor:	**1.00**	**Date of Analysis: 11/19/14 12:45 PM**	

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Freon 12	0.50	Not Detected	2.5	Not Detected
Freon 114	0.50	Not Detected	3.5	Not Detected
Chloromethane	5.0	Not Detected	10	Not Detected
Vinyl Chloride	0.50	Not Detected	1.3	Not Detected
1,3-Butadiene	0.50	Not Detected	1.1	Not Detected
Bromomethane	5.0	Not Detected	19	Not Detected
Chloroethane	2.0	Not Detected	5.3	Not Detected
Freon 11	0.50	Not Detected	2.8	Not Detected
Ethanol	2.0	Not Detected	3.8	Not Detected
Freon 113	0.50	Not Detected	3.8	Not Detected
1,1-Dichloroethene	0.50	Not Detected	2.0	Not Detected
Acetone	5.0	Not Detected	12	Not Detected
2-Propanol	2.0	Not Detected	4.9	Not Detected
Carbon Disulfide	2.0	Not Detected	6.2	Not Detected
3-Chloropropene	2.0	Not Detected	6.3	Not Detected
Methylene Chloride	5.0	Not Detected	17	Not Detected
Methyl tert-butyl ether	0.50	Not Detected	1.8	Not Detected
trans-1,2-Dichloroethene	0.50	Not Detected	2.0	Not Detected
Hexane	0.50	Not Detected	1.8	Not Detected
1,1-Dichloroethane	0.50	Not Detected	2.0	Not Detected
2-Butanone (Methyl Ethyl Ketone)	2.0	Not Detected	5.9	Not Detected
cis-1,2-Dichloroethene	0.50	Not Detected	2.0	Not Detected
Tetrahydrofuran	0.50	Not Detected	1.5	Not Detected
Chloroform	0.50	Not Detected	2.4	Not Detected
1,1,1-Trichloroethane	0.50	Not Detected	2.7	Not Detected
Cyclohexane	0.50	Not Detected	1.7	Not Detected
Carbon Tetrachloride	0.50	Not Detected	3.1	Not Detected
2,2,4-Trimethylpentane	0.50	Not Detected	2.3	Not Detected
Benzene	0.50	Not Detected	1.6	Not Detected
1,2-Dichloroethane	0.50	Not Detected	2.0	Not Detected
Heptane	0.50	Not Detected	2.0	Not Detected
Trichloroethene	0.50	Not Detected	2.7	Not Detected
1,2-Dichloropropane	0.50	Not Detected	2.3	Not Detected
1,4-Dioxane	2.0	Not Detected	7.2	Not Detected
Bromodichloromethane	0.50	Not Detected	3.4	Not Detected
cis-1,3-Dichloropropene	0.50	Not Detected	2.3	Not Detected
4-Methyl-2-pentanone	0.50	Not Detected	2.0	Not Detected
Toluene	0.50	Not Detected	1.9	Not Detected
trans-1,3-Dichloropropene	0.50	Not Detected	2.3	Not Detected
1,1,2-Trichloroethane	0.50	Not Detected	2.7	Not Detected
Tetrachloroethene	0.50	Not Detected	3.4	Not Detected
2-Hexanone	2.0	Not Detected	8.2	Not Detected

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Client Sample ID: Lab Blank

Lab ID#: 1411078-08A

EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	**17111906c**	**Date of Collection: NA**	
Dil. Factor:	**1.00**	**Date of Analysis: 11/19/14 12:45 PM**	

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Dibromochloromethane	0.50	Not Detected	4.2	Not Detected
1,2-Dibromoethane (EDB)	0.50	Not Detected	3.8	Not Detected
Chlorobenzene	0.50	Not Detected	2.3	Not Detected
Ethyl Benzene	0.50	Not Detected	2.2	Not Detected
m,p-Xylene	0.50	Not Detected	2.2	Not Detected
o-Xylene	0.50	Not Detected	2.2	Not Detected
Styrene	0.50	Not Detected	2.1	Not Detected
Bromoform	0.50	Not Detected	5.2	Not Detected
Cumene	0.50	Not Detected	2.4	Not Detected
1,1,2,2-Tetrachloroethane	0.50	Not Detected	3.4	Not Detected
Propylbenzene	0.50	Not Detected	2.4	Not Detected
4-Ethyltoluene	0.50	Not Detected	2.4	Not Detected
1,3,5-Trimethylbenzene	0.50	Not Detected	2.4	Not Detected
1,2,4-Trimethylbenzene	0.50	Not Detected	2.4	Not Detected
1,3-Dichlorobenzene	0.50	Not Detected	3.0	Not Detected
1,4-Dichlorobenzene	0.50	Not Detected	3.0	Not Detected
alpha-Chlorotoluene	0.50	Not Detected	2.6	Not Detected
1,2-Dichlorobenzene	0.50	Not Detected	3.0	Not Detected
1,2,4-Trichlorobenzene	2.0	Not Detected	15	Not Detected
Hexachlorobutadiene	2.0	Not Detected	21	Not Detected
1,1-Difluoroethane	2.0	Not Detected	5.4	Not Detected

Container Type: NA - Not Applicable

Surrogates	%Recovery	Method Limits
Toluene-d8	94	70-130
1,2-Dichloroethane-d4	102	70-130
4-Bromofluorobenzene	88	70-130

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Client Sample ID: CCV

Lab ID#: 1411078-09A

EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	**17111902**	**Date of Collection: NA**
Dil. Factor:	**1.00**	**Date of Analysis: 11/19/14 10:26 AM**

Compound	%Recovery
Freon 12	96
Freon 114	94
Chloromethane	94
Vinyl Chloride	96
1,3-Butadiene	92
Bromomethane	95
Chloroethane	94
Freon 11	94
Ethanol	85
Freon 113	94
1,1-Dichloroethene	95
Acetone	93
2-Propanol	88
Carbon Disulfide	92
3-Chloropropene	93
Methylene Chloride	97
Methyl tert-butyl ether	99
trans-1,2-Dichloroethene	100
Hexane	99
1,1-Dichloroethane	95
2-Butanone (Methyl Ethyl Ketone)	95
cis-1,2-Dichloroethene	96
Tetrahydrofuran	98
Chloroform	94
1,1,1-Trichloroethane	95
Cyclohexane	103
Carbon Tetrachloride	95
2,2,4-Trimethylpentane	100
Benzene	102
1,2-Dichloroethane	100
Heptane	109
Trichloroethene	91
1,2-Dichloropropane	93
1,4-Dioxane	96
Bromodichloromethane	94
cis-1,3-Dichloropropene	94
4-Methyl-2-pentanone	103
Toluene	100
trans-1,3-Dichloropropene	98
1,1,2-Trichloroethane	99
Tetrachloroethene	99
2-Hexanone	102

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Client Sample ID: CCV

Lab ID#: 1411078-09A

EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	**17111902**	**Date of Collection: NA**	
Dil. Factor:	**1.00**	**Date of Analysis: 11/19/14 10:26 AM**	

Compound	%Recovery
Dibromochloromethane	98
1,2-Dibromoethane (EDB)	99
Chlorobenzene	94
Ethyl Benzene	108
m,p-Xylene	109
o-Xylene	106
Styrene	113
Bromoform	98
Cumene	111
1,1,2,2-Tetrachloroethane	98
Propylbenzene	106
4-Ethyltoluene	107
1,3,5-Trimethylbenzene	109
1,2,4-Trimethylbenzene	110
1,3-Dichlorobenzene	101
1,4-Dichlorobenzene	104
alpha-Chlorotoluene	102
1,2-Dichlorobenzene	101
1,2,4-Trichlorobenzene	80
Hexachlorobutadiene	84
1,1-Difluoroethane	101

Container Type: NA - Not Applicable

Surrogates	%Recovery	Method Limits
Toluene-d8	105	70-130
1,2-Dichloroethane-d4	103	70-130
4-Bromofluorobenzene	104	70-130

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Client Sample ID: LCS

Lab ID#: 1411078-10A

EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	**17111903**	**Date of Collection: NA**	
Dil. Factor:	**1.00**	**Date of Analysis: 11/19/14 10:49 AM**	

Compound	%Recovery	Method Limits
Freon 12	83	70-130
Freon 114	80	70-130
Chloromethane	78	70-130
Vinyl Chloride	79	70-130
1,3-Butadiene	73	70-130
Bromomethane	78	70-130
Chloroethane	76	70-130
Freon 11	77	70-130
Ethanol	77	70-130
Freon 113	80	70-130
1,1-Dichloroethene	77	70-130
Acetone	74	70-130
2-Propanol	80	70-130
Carbon Disulfide	69 Q	70-130
3-Chloropropene	74	70-130
Methylene Chloride	82	70-130
Methyl tert-butyl ether	72	70-130
trans-1,2-Dichloroethene	76	70-130
Hexane	76	70-130
1,1-Dichloroethane	75	70-130
2-Butanone (Methyl Ethyl Ketone)	73	70-130
cis-1,2-Dichloroethene	75	70-130
Tetrahydrofuran	75	70-130
Chloroform	76	70-130
1,1,1-Trichloroethane	76	70-130
Cyclohexane	81	70-130
Carbon Tetrachloride	77	70-130
2,2,4-Trimethylpentane	76	70-130
Benzene	80	70-130
1,2-Dichloroethane	78	70-130
Heptane	82	70-130
Trichloroethene	73	70-130
1,2-Dichloropropane	74	70-130
1,4-Dioxane	78	70-130
Bromodichloromethane	73	70-130
cis-1,3-Dichloropropene	78	70-130
4-Methyl-2-pentanone	82	70-130
Toluene	77	70-130
trans-1,3-Dichloropropene	73	70-130
1,1,2-Trichloroethane	76	70-130
Tetrachloroethene	78	70-130
2-Hexanone	80	70-130

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Client Sample ID: LCS

Lab ID#: 1411078-10A

EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	**17111903**	**Date of Collection: NA**	
Dil. Factor:	**1.00**	**Date of Analysis: 11/19/14 10:49 AM**	

Compound	%Recovery	Method Limits
Dibromochloromethane	78	70-130
1,2-Dibromoethane (EDB)	77	70-130
Chlorobenzene	73	70-130
Ethyl Benzene	82	70-130
m,p-Xylene	85	70-130
o-Xylene	82	70-130
Styrene	94	70-130
Bromoform	79	70-130
Cumene	86	70-130
1,1,2,2-Tetrachloroethane	77	70-130
Propylbenzene	85	70-130
4-Ethyltoluene	89	70-130
1,3,5-Trimethylbenzene	98	70-130
1,2,4-Trimethylbenzene	93	70-130
1,3-Dichlorobenzene	83	70-130
1,4-Dichlorobenzene	85	70-130
alpha-Chlorotoluene	133 Q	70-130
1,2-Dichlorobenzene	85	70-130
1,2,4-Trichlorobenzene	81	70-130
Hexachlorobutadiene	82	70-130
1,1-Difluoroethane	Not Spiked	

Q = Exceeds Quality Control limits.

Container Type: NA - Not Applicable

Surrogates	%Recovery	Method Limits
Toluene-d8	104	70-130
1,2-Dichloroethane-d4	102	70-130
4-Bromofluorobenzene	102	70-130

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Client Sample ID: LCSD

Lab ID#: 1411078-10AA

EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	**17111904**	**Date of Collection: NA**	
Dil. Factor:	**1.00**	**Date of Analysis: 11/19/14 11:13 AM**	

Compound	%Recovery	Method Limits
Freon 12	81	70-130
Freon 114	81	70-130
Chloromethane	78	70-130
Vinyl Chloride	81	70-130
1,3-Butadiene	74	70-130
Bromomethane	79	70-130
Chloroethane	77	70-130
Freon 11	78	70-130
Ethanol	79	70-130
Freon 113	81	70-130
1,1-Dichloroethene	81	70-130
Acetone	74	70-130
2-Propanol	80	70-130
Carbon Disulfide	71	70-130
3-Chloropropene	74	70-130
Methylene Chloride	82	70-130
Methyl tert-butyl ether	74	70-130
trans-1,2-Dichloroethene	78	70-130
Hexane	79	70-130
1,1-Dichloroethane	76	70-130
2-Butanone (Methyl Ethyl Ketone)	76	70-130
cis-1,2-Dichloroethene	77	70-130
Tetrahydrofuran	78	70-130
Chloroform	77	70-130
1,1,1-Trichloroethane	76	70-130
Cyclohexane	80	70-130
Carbon Tetrachloride	78	70-130
2,2,4-Trimethylpentane	77	70-130
Benzene	81	70-130
1,2-Dichloroethane	80	70-130
Heptane	82	70-130
Trichloroethene	74	70-130
1,2-Dichloropropane	76	70-130
1,4-Dioxane	79	70-130
Bromodichloromethane	75	70-130
cis-1,3-Dichloropropene	80	70-130
4-Methyl-2-pentanone	82	70-130
Toluene	78	70-130
trans-1,3-Dichloropropene	75	70-130
1,1,2-Trichloroethane	77	70-130
Tetrachloroethene	78	70-130
2-Hexanone	80	70-130

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Client Sample ID: LCSD

Lab ID#: 1411078-10AA

EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	**17111904**	**Date of Collection: NA**	
Dil. Factor:	**1.00**	**Date of Analysis: 11/19/14 11:13 AM**	

Compound	%Recovery	Method Limits
Dibromochloromethane	79	70-130
1,2-Dibromoethane (EDB)	78	70-130
Chlorobenzene	74	70-130
Ethyl Benzene	85	70-130
m,p-Xylene	87	70-130
o-Xylene	84	70-130
Styrene	95	70-130
Bromoform	80	70-130
Cumene	88	70-130
1,1,2,2-Tetrachloroethane	78	70-130
Propylbenzene	87	70-130
4-Ethyltoluene	89	70-130
1,3,5-Trimethylbenzene	101	70-130
1,2,4-Trimethylbenzene	96	70-130
1,3-Dichlorobenzene	84	70-130
1,4-Dichlorobenzene	88	70-130
alpha-Chlorotoluene	138 Q	70-130
1,2-Dichlorobenzene	88	70-130
1,2,4-Trichlorobenzene	103	70-130
Hexachlorobutadiene	102	70-130
1,1-Difluoroethane	Not Spiked	

Q = Exceeds Quality Control limits.

Container Type: NA - Not Applicable

Surrogates	%Recovery	Method Limits
Toluene-d8	105	70-130
1,2-Dichloroethane-d4	103	70-130
4-Bromofluorobenzene	102	70-130

CHAIN OF CUSTODY RECORD

PAGE 1 OF 1

P&D ENVIRONMENTAL, INC.

55 Santa Clara Ave., Suite 240
Oakland, CA 94610
(510) 658-6916

PROJECT NUMBER: 0660

PROJECT NAME: James River Corporation, 2101 Williams St, San Leandro, CA

SAMPLED BY: (PRINTED & SIGNATURE) MICHAEL BASS-DESCHENES Michael Bass-Deschenes

	SAMPLE NUMBER	DATE	TIME	TYPE	SAMPLE LOCATION INIT VAC	SAMPLE LOCATION FINAL VAC	SAMPLE LOCATION PID (ppm)	NUMBER OF CONTAINERS	ANALYSIS(ES): Request for EPA TO-15 including DFA	PRESERVATIVE	REMARKS
01A	VP1	11/5/14	11:54 12:03	Soil Gas	-30	-5	0	1	X	None	Normal TAT
02A	VP2		10:37 10:52		-30	-5	0.7	1	X		
03A	VP2-DUP		10:57 10:52		-30	-5	0.7	1	X		
04A	VP3		15:22 15:35		-30	-5	119	1	X		
05A	VP4		14:00 14:07		-30	-5	4	1	X		
06A	VP5		15:55 16:03		-28	-5	18	1	X		
07A	VP6		16:50 16:57		-30	-5	7	1	X		

Custody Seal Intact?
Y N None Temp NA
EDA Dropoff

RELINQUISHED BY: (SIGNATURE) Michael Bass-Deschenes	DATE 11-6-14	TIME 11:30	RECEIVED BY: (SIGNATURE)	Total No. of Samples (This Shipment): 7 Total No. of Containers (This Shipment): 7	LABORATORY: EUROFINS/AIR TOXICS, INC
RELINQUISHED BY: (SIGNATURE)	DATE	TIME	RECEIVED BY: (SIGNATURE)	LABORATORY CONTACT: KYLE VAGARDI	LABORATORY PHONE NUMBER: (916) 605-3339
RELINQUISHED BY: (SIGNATURE)	DATE	TIME	RECEIVED FOR LABORATORY BY: (SIGNATURE)	SAMPLE ANALYSIS REQUEST SHEET ATTACHED: ( ) YES (X) NO	

Results and billing to:
P&D Environmental, Inc.
lab@pdenviro.com

REMARKS: DFA used as Tracer Gas.
1 LITER SUMMA.

1411078

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12/2/2014
Mr. Paul King
P & D Environmental
55 Santa Clara
Suite 240
Oakland CA 94610

Project Name: Janus River Corporation
Project #: 0660
Workorder #: 1411068R1

Dear Mr. Paul King

The following report includes the data for the above referenced project for sample(s) received on 11/6/2014 at Air Toxics Ltd.

The data and associated QC analyzed by Modified TO-15 (5&20 ppbv) 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: Kyle Vagadori at 916-985-1000 if you have any questions regarding the data in this report.

Regards,

Kyle Vagadori

Project Manager

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WORK ORDER #: 1411068R1

Work Order Summary

CLIENT:	Mr. Paul King P & D Environmental 55 Santa Clara Suite 240 Oakland, CA 94610	**BILL TO:**	Mr. Paul King P & D Environmental 55 Santa Clara Suite 240 Oakland, CA 94610
PHONE:	510-658-6916	**P.O. #**	
FAX:	510-834-0772	**PROJECT #**	0660 Janus River Corporation
DATE RECEIVED:	11/06/2014	**CONTACT:**	Kyle Vagadori
DATE COMPLETED:	11/20/2014		
DATE REISSUED:	12/02/2014		

FRACTION #	NAME	TEST	RECEIPT VAC./PRES.	FINAL PRESSURE
01A	VP1	Modified TO-15 (5&20 ppbv	Tedlar Bag	Tedlar Bag
02A	VP2	Modified TO-15 (5&20 ppbv	Tedlar Bag	Tedlar Bag
03A	VP3	Modified TO-15 (5&20 ppbv	Tedlar Bag	Tedlar Bag
04A	VP4	Modified TO-15 (5&20 ppbv	Tedlar Bag	Tedlar Bag
05A	VP5	Modified TO-15 (5&20 ppbv	Tedlar Bag	Tedlar Bag
06A	VP6	Modified TO-15 (5&20 ppbv	Tedlar Bag	Tedlar Bag
07A	Lab Blank	Modified TO-15 (5&20 ppbv	NA	NA
08A	CCV	Modified TO-15 (5&20 ppbv	NA	NA

CERTIFIED BY: Heidi Hayes DATE: 12/02/14

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
EPA Method TO-15 Soil Gas
P & D Environmental
Workorder# 1411068R1

Six 1 Liter Tedlar Bag samples were received on November 06, 2014. The laboratory performed analysis via EPA Method TO-15 using GC/MS in the full scan mode. The method involves concentrating up to 50 mLs of air. The concentrated aliquot is then flash vaporized and swept through a water management system to remove water vapor. Following dehumidification, the sample passes directly into the GC/MS for analysis.

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.

Receiving Notes

There were no receiving discrepancies.

Analytical Notes

Method TO-15 is validated for samples collected in specially treated canisters. As such, the use of Tedlar bags for sample collection is outside the scope of the method and not recommended for ambient or indoor air samples. It is the responsibility of the data user to determine the usability of TO-15 results generated from Tedlar bags.

Samples VP1, VP2, VP3, VP4, VP5 and VP6 were transferred from Tedlar bags into summa canisters to extend the hold time from 72 hours to 30 days. Canister pressurization resulted in a dilution factor which was applied to all analytical results.

Dilution was performed on samples VP1, VP2, VP3, VP4, VP5 and VP6 due to the presence of high level target species.

THE WORK ORDER WAS REISSUED ON 12/2/14 TO AMEND THE TARGET COMPOUND LIST AS REQUIRED BY THE SPECIFIC CLIENT OR PROJECT. CHANGING THE COMPOUND LIST CAUSED SOME PREVIOUSLY REPORTED COMPOUNDS TO BECOME NOT REPORTED.

WHILE THE INITIAL REPORT MET THE LABORATORY DATA QUALITY REQUIREMENTS FOR THE ORIGINAL LIST OF COMPOUNDS, ALL SAMPLES HAD 1,1-DIFLUOROETHANE LEVELS EXCEEDING THE CALIBRATION RANGE AND RESULTS WERE REPORTED WITH 'E' FLAGS.

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
EPA METHOD TO-15 GC/MS

Client Sample ID: VP1

Lab ID#: 1411068R1-01A

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
1,1-Difluoroethane	20000	6400000 E	54000	17000000 E

Client Sample ID: VP2

Lab ID#: 1411068R1-02A

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
1,1-Difluoroethane	20000	7200000 E	54000	19000000 E

Client Sample ID: VP3

Lab ID#: 1411068R1-03A

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
1,1-Difluoroethane	20000	6800000 E	54000	18000000 E

Client Sample ID: VP4

Lab ID#: 1411068R1-04A

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
1,1-Difluoroethane	20000	7500000 E	54000	20000000 E

Client Sample ID: VP5

Lab ID#: 1411068R1-05A

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
1,1-Difluoroethane	20000	8000000 E	54000	22000000 E

Client Sample ID: VP6

Lab ID#: 1411068R1-06A

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
1,1-Difluoroethane	13000	6300000 E	36000	17000000 E

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Client Sample ID: VP1

Lab ID#: 1411068R1-01A

EPA METHOD TO-15 GC/MS

File Name:	**j111822**	**Date of Collection: 11/5/14 11:51:00 AM**	
Dil. Factor:	**1000**	**Date of Analysis: 11/19/14 12:58 AM**	

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
1,1-Difluoroethane	20000	6400000 E	54000	17000000 E

E = Exceeds instrument calibration range.

Container Type: 1 Liter Tedlar Bag

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	97	70-130
Toluene-d8	97	70-130
4-Bromofluorobenzene	117	70-130

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Client Sample ID: VP2

Lab ID#: 1411068R1-02A

EPA METHOD TO-15 GC/MS

File Name:	**j111808**	**Date of Collection: 11/5/14 10:35:00 AM**	
Dil. Factor:	**995**	**Date of Analysis: 11/18/14 05:07 PM**	

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
1,1-Difluoroethane	20000	7200000 E	54000	19000000 E

E = Exceeds instrument calibration range.

Container Type: 1 Liter Tedlar Bag

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	99	70-130
Toluene-d8	96	70-130
4-Bromofluorobenzene	108	70-130

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Client Sample ID: VP3

Lab ID#: 1411068R1-03A

EPA METHOD TO-15 GC/MS

File Name:	**j111809**	**Date of Collection: 11/5/14 3:00:00 PM**	
Dil. Factor:	**1000**	**Date of Analysis: 11/18/14 05:30 PM**	

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
1,1-Difluoroethane	20000	6800000 E	54000	18000000 E

E = Exceeds instrument calibration range.

Container Type: 1 Liter Tedlar Bag

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	101	70-130
Toluene-d8	98	70-130
4-Bromofluorobenzene	111	70-130

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Client Sample ID: VP4

Lab ID#: 1411068R1-04A

EPA METHOD TO-15 GC/MS

File Name:	**j111823**	**Date of Collection: 11/5/14 1:53:00 PM**	
Dil. Factor:	**995**	**Date of Analysis: 11/19/14 01:23 AM**	

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
1,1-Difluoroethane	20000	7500000 E	54000	20000000 E

E = Exceeds instrument calibration range.

Container Type: 1 Liter Tedlar Bag

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	99	70-130
Toluene-d8	96	70-130
4-Bromofluorobenzene	122	70-130

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Client Sample ID: VP5

Lab ID#: 1411068R1-05A

EPA METHOD TO-15 GC/MS

File Name:	**j111811**	**Date of Collection: 11/5/14 3:54:00 PM**	
Dil. Factor:	**1000**	**Date of Analysis: 11/18/14 06:23 PM**	

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
1,1-Difluoroethane	20000	8000000 E	54000	22000000 E

E = Exceeds instrument calibration range.

Container Type: 1 Liter Tedlar Bag

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	102	70-130
Toluene-d8	97	70-130
4-Bromofluorobenzene	111	70-130

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Client Sample ID: VP6

Lab ID#: 1411068R1-06A

EPA METHOD TO-15 GC/MS

File Name:	**j111812**	**Date of Collection: 11/5/14 4:51:00 PM**	
Dil. Factor:	**667**	**Date of Analysis: 11/18/14 06:47 PM**	

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
1,1-Difluoroethane	13000	6300000 E	36000	17000000 E

E = Exceeds instrument calibration range.

Container Type: 1 Liter Tedlar Bag

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

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Client Sample ID: Lab Blank

Lab ID#: 1411068R1-07A

EPA METHOD TO-15 GC/MS

File Name:	**j111806c**	**Date of Collection: NA**	
Dil. Factor:	**1.00**	**Date of Analysis: 11/18/14 02:05 PM**	

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
1,1-Difluoroethane	20	Not Detected	54	Not Detected

Container Type: NA - Not Applicable

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	100	70-130
Toluene-d8	98	70-130
4-Bromofluorobenzene	99	70-130

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Client Sample ID: CCV
Lab ID#: 1411068R1-08A
EPA METHOD TO-15 GC/MS

File Name:	**j111805**	**Date of Collection: NA**	
Dil. Factor:	**1.00**	**Date of Analysis: 11/18/14 01:41 PM**	

Compound	%Recovery
1,1-Difluoroethane	106

Container Type: NA - Not Applicable

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	102	70-130
Toluene-d8	97	70-130
4-Bromofluorobenzene	103	70-130

CHAIN OF CUSTODY RECORD

PAGE 1 OF 1

P&D ENVIRONMENTAL, INC.

55 Santa Clara Ave., Suite 240
Oakland, CA 94610
(510) 658-6916

PROJECT NUMBER: 0660

PROJECT NAME: James Rives Corporation, 2101 Williams St., San Leandro, CA

SAMPLED BY: (PRINTED & SIGNATURE)
MICHAEL BASS-DESCHENES Michael Bass-Deschenes

	SAMPLE NUMBER	DATE	TIME	TYPE	SAMPLE LOCATION	NUMBER OF CONTAINERS	ANALYSIS(ES): TO-15	PRESERVATIVE	REMARKS
01A	VP1	11/5/14	1151	AIR		1	X	NONE	NORMAL TAT
02A	VP2		1035			1	X		
03A	VP3		1500			1	X		
04A	VP4		1353			1	X		
05A	VP5		1554			1	X		
06A	VP6		1651			1	X		

Custody Seal
Y N None Temp NA
Delivered

RELINQUISHED BY: (SIGNATURE) Michael Bass-Deschenes	DATE 11-6-14	TIME 1130	RECEIVED BY: (SIGNATURE)	Total No. of Samples (This Shipment) 6 / Total No. of Containers (This Shipment) 6	LABORATORY: EUROFINS/AIR TOXICS, INC.
RELINQUISHED BY: (SIGNATURE)	DATE	TIME	RECEIVED BY: (SIGNATURE)	LABORATORY CONTACT: Kyle Vasquez	LABORATORY PHONE NUMBER: (916) 605-3339
RELINQUISHED BY: (SIGNATURE)	DATE	TIME	RECEIVED FOR LABORATORY BY: (SIGNATURE)	SAMPLE ANALYSIS REQUEST SHEET ATTACHED: ( ) YES ( ) NO	

Results and billing to:
P&D Environmental, Inc.
lab@pdenviro.com

REMARKS: 1-LITER TEDLAR BAGS

1411068

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12/23/2014
Mr. Paul King
P & D Environmental
55 Santa Clara
Suite 240
Oakland CA 94610

Project Name: James River Corporation 2101 Williams St
Project #: 0660
Workorder #: 1412207

Dear Mr. Paul King

The following report includes the data for the above referenced project for sample(s) received on 12/10/2014 at Air Toxics Ltd.

The data and associated QC analyzed by TO-15 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: Kyle Vagadori at 916-985-1000 if you have any questions regarding the data in this report.

Regards,

Kyle Vagadori

Project Manager

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WORK ORDER #: 1412207

Work Order Summary

CLIENT:	Mr. Paul King P & D Environmental 55 Santa Clara Suite 240 Oakland, CA 94610	**BILL TO:**	Mr. Paul King P & D Environmental 55 Santa Clara Suite 240 Oakland, CA 94610
PHONE:	510-658-6916	**P.O. #**	
FAX:	510-834-0772	**PROJECT #**	0660 James River Corporation 2101 Williams St
DATE RECEIVED:	12/10/2014	**CONTACT:**	Kyle Vagadori
DATE COMPLETED:	12/23/2014		

FRACTION #	NAME	TEST	RECEIPT VAC./PRES.	FINAL PRESSURE
01A	VP3	TO-15	9.4 "Hg	15 psi
02A	VP3-DUP	TO-15	9.4 "Hg	15 psi
03A	VP4	TO-15	5.1 "Hg	14.8 psi
04A	VP5	TO-15	5.9 "Hg	14.7 psi
05A	VP6	TO-15	4.7 "Hg	14.7 psi
06A	Lab Blank	TO-15	NA	NA
06B	Lab Blank	TO-15	NA	NA
07A	CCV	TO-15	NA	NA
07B	CCV	TO-15	NA	NA
08A	LCS	TO-15	NA	NA
08AA	LCSD	TO-15	NA	NA
08B	LCS	TO-15	NA	NA
08BB	LCSD	TO-15	NA	NA

CERTIFIED BY: Heidi Hayes DATE: 12/23/14

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
EPA Method TO-15
P & D Environmental
Workorder# 1412207

Five 1 Liter Summa Canister samples were received on December 10, 2014. The laboratory performed analysis via EPA Method TO-15 using GC/MS in the full scan 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.

Receiving Notes

There were no receiving discrepancies.

Analytical Notes

The reported CCV for each daily batch may be derived from more than one analytical file due to the client's request for non-standard compounds.

Non-standard compounds may have different acceptance criteria than the standard TO-14A/TO-15 compound list as per contract or verbal agreement.

All Quality Control Limit exceedances and affected sample results are noted by flags. Each flag is defined at the bottom of this Case Narrative and on each Sample Result Summary page.

Dilution was performed on samples VP3, VP3-DUP, VP4, VP5 and VP6 due to the presence of high level target species.

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
EPA METHOD TO-15 GC/MS FULL SCAN

Client Sample ID: VP3

Lab ID#: 1412207-01A

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Ethanol	1500	1900	2800	3600
Toluene	370	900	1400	3400
Tetrachloroethene	370	47000	2500	320000

Client Sample ID: VP3-DUP

Lab ID#: 1412207-02A

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Toluene	180	800	690	3000
Tetrachloroethene	180	45000	1200	310000

Client Sample ID: VP4

Lab ID#: 1412207-03A

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Tetrachloroethene	3.2	980	22	6600
1,2,4-Trichlorobenzene	13	18	96	140
Hexachlorobutadiene	13	23	140	240

Client Sample ID: VP5

Lab ID#: 1412207-04A

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Tetrachloroethene	25	9600	170	65000

Client Sample ID: VP6

Lab ID#: 1412207-05A

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
1,1,1-Trichloroethane	12	15	65	80
Tetrachloroethene	12	2700	80	18000
1,1-Difluoroethane	47	53	130	140

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Client Sample ID: VP3

Lab ID#: 1412207-01A

EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	**3121828**	**Date of Collection:**	**12/10/14 11:42:00 A**
Dil. Factor:	**736**	**Date of Analysis:**	**12/19/14 01:21 AM**

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Freon 12	370	Not Detected	1800	Not Detected
Freon 114	370	Not Detected	2600	Not Detected
Chloromethane	3700	Not Detected	7600	Not Detected
Vinyl Chloride	370	Not Detected	940	Not Detected
1,3-Butadiene	370	Not Detected	810	Not Detected
Bromomethane	3700	Not Detected	14000	Not Detected
Chloroethane	1500	Not Detected	3900	Not Detected
Freon 11	370	Not Detected	2100	Not Detected
Ethanol	1500	1900	2800	3600
Freon 113	370	Not Detected	2800	Not Detected
1,1-Dichloroethene	370	Not Detected	1400	Not Detected
Acetone	3700	Not Detected	8700	Not Detected
2-Propanol	1500	Not Detected	3600	Not Detected
Carbon Disulfide	1500	Not Detected	4600	Not Detected
3-Chloropropene	1500	Not Detected	4600	Not Detected
Methylene Chloride	3700	Not Detected	13000	Not Detected
Methyl tert-butyl ether	370	Not Detected	1300	Not Detected
trans-1,2-Dichloroethene	370	Not Detected	1400	Not Detected
Hexane	370	Not Detected	1300	Not Detected
1,1-Dichloroethane	370	Not Detected	1500	Not Detected
2-Butanone (Methyl Ethyl Ketone)	1500	Not Detected	4300	Not Detected
cis-1,2-Dichloroethene	370	Not Detected	1400	Not Detected
Tetrahydrofuran	370	Not Detected	1100	Not Detected
Chloroform	370	Not Detected	1800	Not Detected
1,1,1-Trichloroethane	370	Not Detected	2000	Not Detected
Cyclohexane	370	Not Detected	1300	Not Detected
Carbon Tetrachloride	370	Not Detected	2300	Not Detected
2,2,4-Trimethylpentane	370	Not Detected	1700	Not Detected
Benzene	370	Not Detected	1200	Not Detected
1,2-Dichloroethane	370	Not Detected	1500	Not Detected
Heptane	370	Not Detected	1500	Not Detected
Trichloroethene	370	Not Detected	2000	Not Detected
1,2-Dichloropropane	370	Not Detected	1700	Not Detected
1,4-Dioxane	1500	Not Detected	5300	Not Detected
Bromodichloromethane	370	Not Detected	2500	Not Detected
cis-1,3-Dichloropropene	370	Not Detected	1700	Not Detected
4-Methyl-2-pentanone	370	Not Detected	1500	Not Detected
Toluene	370	900	1400	3400
trans-1,3-Dichloropropene	370	Not Detected	1700	Not Detected
1,1,2-Trichloroethane	370	Not Detected	2000	Not Detected
Tetrachloroethene	370	47000	2500	320000
2-Hexanone	1500	Not Detected	6000	Not Detected

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Client Sample ID: VP3

Lab ID#: 1412207-01A

EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	**3121828**	**Date of Collection: 12/10/14 11:42:00 A**	
Dil. Factor:	**736**	**Date of Analysis: 12/19/14 01:21 AM**	

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Dibromochloromethane	370	Not Detected	3100	Not Detected
1,2-Dibromoethane (EDB)	370	Not Detected	2800	Not Detected
Chlorobenzene	370	Not Detected	1700	Not Detected
Ethyl Benzene	370	Not Detected	1600	Not Detected
m,p-Xylene	370	Not Detected	1600	Not Detected
o-Xylene	370	Not Detected	1600	Not Detected
Styrene	370	Not Detected	1600	Not Detected
Bromoform	370	Not Detected	3800	Not Detected
Cumene	370	Not Detected	1800	Not Detected
1,1,2,2-Tetrachloroethane	370	Not Detected	2500	Not Detected
Propylbenzene	370	Not Detected	1800	Not Detected
4-Ethyltoluene	370	Not Detected	1800	Not Detected
1,3,5-Trimethylbenzene	370	Not Detected	1800	Not Detected
1,2,4-Trimethylbenzene	370	Not Detected	1800	Not Detected
1,3-Dichlorobenzene	370	Not Detected	2200	Not Detected
1,4-Dichlorobenzene	370	Not Detected	2200	Not Detected
alpha-Chlorotoluene	370	Not Detected	1900	Not Detected
1,2-Dichlorobenzene	370	Not Detected	2200	Not Detected
1,2,4-Trichlorobenzene	1500	Not Detected	11000	Not Detected
Hexachlorobutadiene	1500	Not Detected	16000	Not Detected
1,1-Difluoroethane	1500	Not Detected	4000	Not Detected

Container Type: 1 Liter Summa Canister

Surrogates	%Recovery	Method Limits
Toluene-d8	103	70-130
1,2-Dichloroethane-d4	102	70-130
4-Bromofluorobenzene	106	70-130

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Client Sample ID: VP3-DUP

Lab ID#: 1412207-02A

EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	**3121913**	**Date of Collection:**	**12/10/14 11:42:00 A**
Dil. Factor:	**368**	**Date of Analysis:**	**12/19/14 06:16 PM**

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Freon 12	180	Not Detected	910	Not Detected
Freon 114	180	Not Detected	1300	Not Detected
Chloromethane	1800	Not Detected	3800	Not Detected
Vinyl Chloride	180	Not Detected	470	Not Detected
1,3-Butadiene	180	Not Detected	410	Not Detected
Bromomethane	1800	Not Detected	7100	Not Detected
Chloroethane	740	Not Detected	1900	Not Detected
Freon 11	180	Not Detected	1000	Not Detected
Ethanol	740	Not Detected	1400	Not Detected
Freon 113	180	Not Detected	1400	Not Detected
1,1-Dichloroethene	180	Not Detected	730	Not Detected
Acetone	1800	Not Detected	4400	Not Detected
2-Propanol	740	Not Detected	1800	Not Detected
Carbon Disulfide	740	Not Detected	2300	Not Detected
3-Chloropropene	740	Not Detected	2300	Not Detected
Methylene Chloride	1800	Not Detected	6400	Not Detected
Methyl tert-butyl ether	180	Not Detected	660	Not Detected
trans-1,2-Dichloroethene	180	Not Detected	730	Not Detected
Hexane	180	Not Detected	650	Not Detected
1,1-Dichloroethane	180	Not Detected	740	Not Detected
2-Butanone (Methyl Ethyl Ketone)	740	Not Detected	2200	Not Detected
cis-1,2-Dichloroethene	180	Not Detected	730	Not Detected
Tetrahydrofuran	180	Not Detected	540	Not Detected
Chloroform	180	Not Detected	900	Not Detected
1,1,1-Trichloroethane	180	Not Detected	1000	Not Detected
Cyclohexane	180	Not Detected	630	Not Detected
Carbon Tetrachloride	180	Not Detected	1200	Not Detected
2,2,4-Trimethylpentane	180	Not Detected	860	Not Detected
Benzene	180	Not Detected	590	Not Detected
1,2-Dichloroethane	180	Not Detected	740	Not Detected
Heptane	180	Not Detected	750	Not Detected
Trichloroethene	180	Not Detected	990	Not Detected
1,2-Dichloropropane	180	Not Detected	850	Not Detected
1,4-Dioxane	740	Not Detected	2600	Not Detected
Bromodichloromethane	180	Not Detected	1200	Not Detected
cis-1,3-Dichloropropene	180	Not Detected	840	Not Detected
4-Methyl-2-pentanone	180	Not Detected	750	Not Detected
Toluene	180	800	690	3000
trans-1,3-Dichloropropene	180	Not Detected	840	Not Detected
1,1,2-Trichloroethane	180	Not Detected	1000	Not Detected
Tetrachloroethene	180	45000	1200	310000
2-Hexanone	740	Not Detected	3000	Not Detected

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Client Sample ID: VP3-DUP

Lab ID#: 1412207-02A

EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	**3121913**	**Date of Collection:**	**12/10/14 11:42:00 A**
Dil. Factor:	**368**	**Date of Analysis:**	**12/19/14 06:16 PM**

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Dibromochloromethane	180	Not Detected	1600	Not Detected
1,2-Dibromoethane (EDB)	180	Not Detected	1400	Not Detected
Chlorobenzene	180	Not Detected	850	Not Detected
Ethyl Benzene	180	Not Detected	800	Not Detected
m,p-Xylene	180	Not Detected	800	Not Detected
o-Xylene	180	Not Detected	800	Not Detected
Styrene	180	Not Detected	780	Not Detected
Bromoform	180	Not Detected	1900	Not Detected
Cumene	180	Not Detected	900	Not Detected
1,1,2,2-Tetrachloroethane	180	Not Detected	1300	Not Detected
Propylbenzene	180	Not Detected	900	Not Detected
4-Ethyltoluene	180	Not Detected	900	Not Detected
1,3,5-Trimethylbenzene	180	Not Detected	900	Not Detected
1,2,4-Trimethylbenzene	180	Not Detected	900	Not Detected
1,3-Dichlorobenzene	180	Not Detected	1100	Not Detected
1,4-Dichlorobenzene	180	Not Detected	1100	Not Detected
alpha-Chlorotoluene	180	Not Detected	950	Not Detected
1,2-Dichlorobenzene	180	Not Detected	1100	Not Detected
1,2,4-Trichlorobenzene	740	Not Detected	5500	Not Detected
Hexachlorobutadiene	740	Not Detected	7800	Not Detected
1,1-Difluoroethane	740	Not Detected	2000	Not Detected

Container Type: 1 Liter Summa Canister

Surrogates	%Recovery	Method Limits
Toluene-d8	102	70-130
1,2-Dichloroethane-d4	101	70-130
4-Bromofluorobenzene	108	70-130

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Client Sample ID: VP4

Lab ID#: 1412207-03A

EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	**3121830**	**Date of Collection:**	**12/10/14 10:41:00 A**
Dil. Factor:	**6.45**	**Date of Analysis:**	**12/19/14 02:12 AM**

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Freon 12	3.2	Not Detected	16	Not Detected
Freon 114	3.2	Not Detected	22	Not Detected
Chloromethane	32	Not Detected	66	Not Detected
Vinyl Chloride	3.2	Not Detected	8.2	Not Detected
1,3-Butadiene	3.2	Not Detected	7.1	Not Detected
Bromomethane	32	Not Detected	120	Not Detected
Chloroethane	13	Not Detected	34	Not Detected
Freon 11	3.2	Not Detected	18	Not Detected
Ethanol	13	Not Detected	24	Not Detected
Freon 113	3.2	Not Detected	25	Not Detected
1,1-Dichloroethene	3.2	Not Detected	13	Not Detected
Acetone	32	Not Detected	77	Not Detected
2-Propanol	13	Not Detected	32	Not Detected
Carbon Disulfide	13	Not Detected	40	Not Detected
3-Chloropropene	13	Not Detected	40	Not Detected
Methylene Chloride	32	Not Detected	110	Not Detected
Methyl tert-butyl ether	3.2	Not Detected	12	Not Detected
trans-1,2-Dichloroethene	3.2	Not Detected	13	Not Detected
Hexane	3.2	Not Detected	11	Not Detected
1,1-Dichloroethane	3.2	Not Detected	13	Not Detected
2-Butanone (Methyl Ethyl Ketone)	13	Not Detected	38	Not Detected
cis-1,2-Dichloroethene	3.2	Not Detected	13	Not Detected
Tetrahydrofuran	3.2	Not Detected	9.5	Not Detected
Chloroform	3.2	Not Detected	16	Not Detected
1,1,1-Trichloroethane	3.2	Not Detected	18	Not Detected
Cyclohexane	3.2	Not Detected	11	Not Detected
Carbon Tetrachloride	3.2	Not Detected	20	Not Detected
2,2,4-Trimethylpentane	3.2	Not Detected	15	Not Detected
Benzene	3.2	Not Detected	10	Not Detected
1,2-Dichloroethane	3.2	Not Detected	13	Not Detected
Heptane	3.2	Not Detected	13	Not Detected
Trichloroethene	3.2	Not Detected	17	Not Detected
1,2-Dichloropropane	3.2	Not Detected	15	Not Detected
1,4-Dioxane	13	Not Detected	46	Not Detected
Bromodichloromethane	3.2	Not Detected	22	Not Detected
cis-1,3-Dichloropropene	3.2	Not Detected	15	Not Detected
4-Methyl-2-pentanone	3.2	Not Detected	13	Not Detected
Toluene	3.2	Not Detected	12	Not Detected
trans-1,3-Dichloropropene	3.2	Not Detected	15	Not Detected
1,1,2-Trichloroethane	3.2	Not Detected	18	Not Detected
Tetrachloroethene	3.2	980	22	6600
2-Hexanone	13	Not Detected	53	Not Detected

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Client Sample ID: VP4

Lab ID#: 1412207-03A

EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	**3121830**	**Date of Collection:**	**12/10/14 10:41:00 A**
Dil. Factor:	**6.45**	**Date of Analysis:**	**12/19/14 02:12 AM**

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Dibromochloromethane	3.2	Not Detected	27	Not Detected
1,2-Dibromoethane (EDB)	3.2	Not Detected	25	Not Detected
Chlorobenzene	3.2	Not Detected	15	Not Detected
Ethyl Benzene	3.2	Not Detected	14	Not Detected
m,p-Xylene	3.2	Not Detected	14	Not Detected
o-Xylene	3.2	Not Detected	14	Not Detected
Styrene	3.2	Not Detected	14	Not Detected
Bromoform	3.2	Not Detected	33	Not Detected
Cumene	3.2	Not Detected	16	Not Detected
1,1,2,2-Tetrachloroethane	3.2	Not Detected	22	Not Detected
Propylbenzene	3.2	Not Detected	16	Not Detected
4-Ethyltoluene	3.2	Not Detected	16	Not Detected
1,3,5-Trimethylbenzene	3.2	Not Detected	16	Not Detected
1,2,4-Trimethylbenzene	3.2	Not Detected	16	Not Detected
1,3-Dichlorobenzene	3.2	Not Detected	19	Not Detected
1,4-Dichlorobenzene	3.2	Not Detected	19	Not Detected
alpha-Chlorotoluene	3.2	Not Detected	17	Not Detected
1,2-Dichlorobenzene	3.2	Not Detected	19	Not Detected
1,2,4-Trichlorobenzene	13	18	96	140
Hexachlorobutadiene	13	23	140	240
1,1-Difluoroethane	13	Not Detected	35	Not Detected

Container Type: 1 Liter Summa Canister

Surrogates	%Recovery	Method Limits
Toluene-d8	103	70-130
1,2-Dichloroethane-d4	103	70-130
4-Bromofluorobenzene	106	70-130

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Client Sample ID: VP5

Lab ID#: 1412207-04A

EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	**3121832**	**Date of Collection:**	**12/10/14 9:27:00 AM**
Dil. Factor:	**49.8**	**Date of Analysis:**	**12/19/14 03:02 AM**

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Freon 12	25	Not Detected	120	Not Detected
Freon 114	25	Not Detected	170	Not Detected
Chloromethane	250	Not Detected	510	Not Detected
Vinyl Chloride	25	Not Detected	64	Not Detected
1,3-Butadiene	25	Not Detected	55	Not Detected
Bromomethane	250	Not Detected	970	Not Detected
Chloroethane	100	Not Detected	260	Not Detected
Freon 11	25	Not Detected	140	Not Detected
Ethanol	100	Not Detected	190	Not Detected
Freon 113	25	Not Detected	190	Not Detected
1,1-Dichloroethene	25	Not Detected	99	Not Detected
Acetone	250	Not Detected	590	Not Detected
2-Propanol	100	Not Detected	240	Not Detected
Carbon Disulfide	100	Not Detected	310	Not Detected
3-Chloropropene	100	Not Detected	310	Not Detected
Methylene Chloride	250	Not Detected	860	Not Detected
Methyl tert-butyl ether	25	Not Detected	90	Not Detected
trans-1,2-Dichloroethene	25	Not Detected	99	Not Detected
Hexane	25	Not Detected	88	Not Detected
1,1-Dichloroethane	25	Not Detected	100	Not Detected
2-Butanone (Methyl Ethyl Ketone)	100	Not Detected	290	Not Detected
cis-1,2-Dichloroethene	25	Not Detected	99	Not Detected
Tetrahydrofuran	25	Not Detected	73	Not Detected
Chloroform	25	Not Detected	120	Not Detected
1,1,1-Trichloroethane	25	Not Detected	140	Not Detected
Cyclohexane	25	Not Detected	86	Not Detected
Carbon Tetrachloride	25	Not Detected	160	Not Detected
2,2,4-Trimethylpentane	25	Not Detected	120	Not Detected
Benzene	25	Not Detected	80	Not Detected
1,2-Dichloroethane	25	Not Detected	100	Not Detected
Heptane	25	Not Detected	100	Not Detected
Trichloroethene	25	Not Detected	130	Not Detected
1,2-Dichloropropane	25	Not Detected	120	Not Detected
1,4-Dioxane	100	Not Detected	360	Not Detected
Bromodichloromethane	25	Not Detected	170	Not Detected
cis-1,3-Dichloropropene	25	Not Detected	110	Not Detected
4-Methyl-2-pentanone	25	Not Detected	100	Not Detected
Toluene	25	Not Detected	94	Not Detected
trans-1,3-Dichloropropene	25	Not Detected	110	Not Detected
1,1,2-Trichloroethane	25	Not Detected	140	Not Detected
Tetrachloroethene	25	9600	170	65000
2-Hexanone	100	Not Detected	410	Not Detected

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Client Sample ID: VP5

Lab ID#: 1412207-04A

EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	**3121832**	**Date of Collection:**	**12/10/14 9:27:00 AM**
Dil. Factor:	**49.8**	**Date of Analysis:**	**12/19/14 03:02 AM**

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Dibromochloromethane	25	Not Detected	210	Not Detected
1,2-Dibromoethane (EDB)	25	Not Detected	190	Not Detected
Chlorobenzene	25	Not Detected	110	Not Detected
Ethyl Benzene	25	Not Detected	110	Not Detected
m,p-Xylene	25	Not Detected	110	Not Detected
o-Xylene	25	Not Detected	110	Not Detected
Styrene	25	Not Detected	110	Not Detected
Bromoform	25	Not Detected	260	Not Detected
Cumene	25	Not Detected	120	Not Detected
1,1,2,2-Tetrachloroethane	25	Not Detected	170	Not Detected
Propylbenzene	25	Not Detected	120	Not Detected
4-Ethyltoluene	25	Not Detected	120	Not Detected
1,3,5-Trimethylbenzene	25	Not Detected	120	Not Detected
1,2,4-Trimethylbenzene	25	Not Detected	120	Not Detected
1,3-Dichlorobenzene	25	Not Detected	150	Not Detected
1,4-Dichlorobenzene	25	Not Detected	150	Not Detected
alpha-Chlorotoluene	25	Not Detected	130	Not Detected
1,2-Dichlorobenzene	25	Not Detected	150	Not Detected
1,2,4-Trichlorobenzene	100	Not Detected	740	Not Detected
Hexachlorobutadiene	100	Not Detected	1100	Not Detected
1,1-Difluoroethane	100	Not Detected	270	Not Detected

Container Type: 1 Liter Summa Canister

Surrogates	%Recovery	Method Limits
Toluene-d8	102	70-130
1,2-Dichloroethane-d4	98	70-130
4-Bromofluorobenzene	98	70-130

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Client Sample ID: VP6

Lab ID#: 1412207-05A

EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	**3121831**	**Date of Collection:**	**12/10/14 7:58:00 AM**
Dil. Factor:	**23.7**	**Date of Analysis:**	**12/19/14 02:37 AM**

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Freon 12	12	Not Detected	59	Not Detected
Freon 114	12	Not Detected	83	Not Detected
Chloromethane	120	Not Detected	240	Not Detected
Vinyl Chloride	12	Not Detected	30	Not Detected
1,3-Butadiene	12	Not Detected	26	Not Detected
Bromomethane	120	Not Detected	460	Not Detected
Chloroethane	47	Not Detected	120	Not Detected
Freon 11	12	Not Detected	66	Not Detected
Ethanol	47	Not Detected	89	Not Detected
Freon 113	12	Not Detected	91	Not Detected
1,1-Dichloroethene	12	Not Detected	47	Not Detected
Acetone	120	Not Detected	280	Not Detected
2-Propanol	47	Not Detected	120	Not Detected
Carbon Disulfide	47	Not Detected	150	Not Detected
3-Chloropropene	47	Not Detected	150	Not Detected
Methylene Chloride	120	Not Detected	410	Not Detected
Methyl tert-butyl ether	12	Not Detected	43	Not Detected
trans-1,2-Dichloroethene	12	Not Detected	47	Not Detected
Hexane	12	Not Detected	42	Not Detected
1,1-Dichloroethane	12	Not Detected	48	Not Detected
2-Butanone (Methyl Ethyl Ketone)	47	Not Detected	140	Not Detected
cis-1,2-Dichloroethene	12	Not Detected	47	Not Detected
Tetrahydrofuran	12	Not Detected	35	Not Detected
Chloroform	12	Not Detected	58	Not Detected
1,1,1-Trichloroethane	12	15	65	80
Cyclohexane	12	Not Detected	41	Not Detected
Carbon Tetrachloride	12	Not Detected	74	Not Detected
2,2,4-Trimethylpentane	12	Not Detected	55	Not Detected
Benzene	12	Not Detected	38	Not Detected
1,2-Dichloroethane	12	Not Detected	48	Not Detected
Heptane	12	Not Detected	48	Not Detected
Trichloroethene	12	Not Detected	64	Not Detected
1,2-Dichloropropane	12	Not Detected	55	Not Detected
1,4-Dioxane	47	Not Detected	170	Not Detected
Bromodichloromethane	12	Not Detected	79	Not Detected
cis-1,3-Dichloropropene	12	Not Detected	54	Not Detected
4-Methyl-2-pentanone	12	Not Detected	48	Not Detected
Toluene	12	Not Detected	45	Not Detected
trans-1,3-Dichloropropene	12	Not Detected	54	Not Detected
1,1,2-Trichloroethane	12	Not Detected	65	Not Detected
Tetrachloroethene	12	2700	80	18000
2-Hexanone	47	Not Detected	190	Not Detected

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Client Sample ID: VP6

Lab ID#: 1412207-05A

EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	**3121831**	**Date of Collection:**	**12/10/14 7:58:00 AM**
Dil. Factor:	**23.7**	**Date of Analysis:**	**12/19/14 02:37 AM**

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Dibromochloromethane	12	Not Detected	100	Not Detected
1,2-Dibromoethane (EDB)	12	Not Detected	91	Not Detected
Chlorobenzene	12	Not Detected	54	Not Detected
Ethyl Benzene	12	Not Detected	51	Not Detected
m,p-Xylene	12	Not Detected	51	Not Detected
o-Xylene	12	Not Detected	51	Not Detected
Styrene	12	Not Detected	50	Not Detected
Bromoform	12	Not Detected	120	Not Detected
Cumene	12	Not Detected	58	Not Detected
1,1,2,2-Tetrachloroethane	12	Not Detected	81	Not Detected
Propylbenzene	12	Not Detected	58	Not Detected
4-Ethyltoluene	12	Not Detected	58	Not Detected
1,3,5-Trimethylbenzene	12	Not Detected	58	Not Detected
1,2,4-Trimethylbenzene	12	Not Detected	58	Not Detected
1,3-Dichlorobenzene	12	Not Detected	71	Not Detected
1,4-Dichlorobenzene	12	Not Detected	71	Not Detected
alpha-Chlorotoluene	12	Not Detected	61	Not Detected
1,2-Dichlorobenzene	12	Not Detected	71	Not Detected
1,2,4-Trichlorobenzene	47	Not Detected	350	Not Detected
Hexachlorobutadiene	47	Not Detected	500	Not Detected
1,1-Difluoroethane	47	53	130	140

Container Type: 1 Liter Summa Canister

Surrogates	%Recovery	Method Limits
Toluene-d8	106	70-130
1,2-Dichloroethane-d4	103	70-130
4-Bromofluorobenzene	104	70-130

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Client Sample ID: Lab Blank

Lab ID#: 1412207-06A

EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	**3121808d**	**Date of Collection: NA**	
Dil. Factor:	**1.00**	**Date of Analysis: 12/18/14 01:07 PM**	

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Freon 12	0.50	Not Detected	2.5	Not Detected
Freon 114	0.50	Not Detected	3.5	Not Detected
Chloromethane	5.0	Not Detected	10	Not Detected
Vinyl Chloride	0.50	Not Detected	1.3	Not Detected
1,3-Butadiene	0.50	Not Detected	1.1	Not Detected
Bromomethane	5.0	Not Detected	19	Not Detected
Chloroethane	2.0	Not Detected	5.3	Not Detected
Freon 11	0.50	Not Detected	2.8	Not Detected
Ethanol	2.0	Not Detected	3.8	Not Detected
Freon 113	0.50	Not Detected	3.8	Not Detected
1,1-Dichloroethene	0.50	Not Detected	2.0	Not Detected
Acetone	5.0	Not Detected	12	Not Detected
2-Propanol	2.0	Not Detected	4.9	Not Detected
Carbon Disulfide	2.0	Not Detected	6.2	Not Detected
3-Chloropropene	2.0	Not Detected	6.3	Not Detected
Methylene Chloride	5.0	Not Detected	17	Not Detected
Methyl tert-butyl ether	0.50	Not Detected	1.8	Not Detected
trans-1,2-Dichloroethene	0.50	Not Detected	2.0	Not Detected
Hexane	0.50	Not Detected	1.8	Not Detected
1,1-Dichloroethane	0.50	Not Detected	2.0	Not Detected
2-Butanone (Methyl Ethyl Ketone)	2.0	Not Detected	5.9	Not Detected
cis-1,2-Dichloroethene	0.50	Not Detected	2.0	Not Detected
Tetrahydrofuran	0.50	Not Detected	1.5	Not Detected
Chloroform	0.50	Not Detected	2.4	Not Detected
1,1,1-Trichloroethane	0.50	Not Detected	2.7	Not Detected
Cyclohexane	0.50	Not Detected	1.7	Not Detected
Carbon Tetrachloride	0.50	Not Detected	3.1	Not Detected
2,2,4-Trimethylpentane	0.50	Not Detected	2.3	Not Detected
Benzene	0.50	Not Detected	1.6	Not Detected
1,2-Dichloroethane	0.50	Not Detected	2.0	Not Detected
Heptane	0.50	Not Detected	2.0	Not Detected
Trichloroethene	0.50	Not Detected	2.7	Not Detected
1,2-Dichloropropane	0.50	Not Detected	2.3	Not Detected
1,4-Dioxane	2.0	Not Detected	7.2	Not Detected
Bromodichloromethane	0.50	Not Detected	3.4	Not Detected
cis-1,3-Dichloropropene	0.50	Not Detected	2.3	Not Detected
4-Methyl-2-pentanone	0.50	Not Detected	2.0	Not Detected
Toluene	0.50	Not Detected	1.9	Not Detected
trans-1,3-Dichloropropene	0.50	Not Detected	2.3	Not Detected
1,1,2-Trichloroethane	0.50	Not Detected	2.7	Not Detected
Tetrachloroethene	0.50	Not Detected	3.4	Not Detected
2-Hexanone	2.0	Not Detected	8.2	Not Detected

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Client Sample ID: Lab Blank

Lab ID#: 1412207-06A

EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	**3121808d**	**Date of Collection: NA**	
Dil. Factor:	**1.00**	**Date of Analysis: 12/18/14 01:07 PM**	

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Dibromochloromethane	0.50	Not Detected	4.2	Not Detected
1,2-Dibromoethane (EDB)	0.50	Not Detected	3.8	Not Detected
Chlorobenzene	0.50	Not Detected	2.3	Not Detected
Ethyl Benzene	0.50	Not Detected	2.2	Not Detected
m,p-Xylene	0.50	Not Detected	2.2	Not Detected
o-Xylene	0.50	Not Detected	2.2	Not Detected
Styrene	0.50	Not Detected	2.1	Not Detected
Bromoform	0.50	Not Detected	5.2	Not Detected
Cumene	0.50	Not Detected	2.4	Not Detected
1,1,2,2-Tetrachloroethane	0.50	Not Detected	3.4	Not Detected
Propylbenzene	0.50	Not Detected	2.4	Not Detected
4-Ethyltoluene	0.50	Not Detected	2.4	Not Detected
1,3,5-Trimethylbenzene	0.50	Not Detected	2.4	Not Detected
1,2,4-Trimethylbenzene	0.50	Not Detected	2.4	Not Detected
1,3-Dichlorobenzene	0.50	Not Detected	3.0	Not Detected
1,4-Dichlorobenzene	0.50	Not Detected	3.0	Not Detected
alpha-Chlorotoluene	0.50	Not Detected	2.6	Not Detected
1,2-Dichlorobenzene	0.50	Not Detected	3.0	Not Detected
1,2,4-Trichlorobenzene	2.0	Not Detected	15	Not Detected
Hexachlorobutadiene	2.0	Not Detected	21	Not Detected
1,1-Difluoroethane	2.0	Not Detected	5.4	Not Detected

Container Type: NA - Not Applicable

Surrogates	%Recovery	Method Limits
Toluene-d8	104	70-130
1,2-Dichloroethane-d4	100	70-130
4-Bromofluorobenzene	95	70-130

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Client Sample ID: Lab Blank

Lab ID#: 1412207-06B

EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	**3121908e**	**Date of Collection: NA**	
Dil. Factor:	**1.00**	**Date of Analysis: 12/19/14 02:28 PM**	

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Freon 12	0.50	Not Detected	2.5	Not Detected
Freon 114	0.50	Not Detected	3.5	Not Detected
Chloromethane	5.0	Not Detected	10	Not Detected
Vinyl Chloride	0.50	Not Detected	1.3	Not Detected
1,3-Butadiene	0.50	Not Detected	1.1	Not Detected
Bromomethane	5.0	Not Detected	19	Not Detected
Chloroethane	2.0	Not Detected	5.3	Not Detected
Freon 11	0.50	Not Detected	2.8	Not Detected
Ethanol	2.0	Not Detected	3.8	Not Detected
Freon 113	0.50	Not Detected	3.8	Not Detected
1,1-Dichloroethene	0.50	Not Detected	2.0	Not Detected
Acetone	5.0	Not Detected	12	Not Detected
2-Propanol	2.0	Not Detected	4.9	Not Detected
Carbon Disulfide	2.0	Not Detected	6.2	Not Detected
3-Chloropropene	2.0	Not Detected	6.3	Not Detected
Methylene Chloride	5.0	Not Detected	17	Not Detected
Methyl tert-butyl ether	0.50	Not Detected	1.8	Not Detected
trans-1,2-Dichloroethene	0.50	Not Detected	2.0	Not Detected
Hexane	0.50	Not Detected	1.8	Not Detected
1,1-Dichloroethane	0.50	Not Detected	2.0	Not Detected
2-Butanone (Methyl Ethyl Ketone)	2.0	Not Detected	5.9	Not Detected
cis-1,2-Dichloroethene	0.50	Not Detected	2.0	Not Detected
Tetrahydrofuran	0.50	Not Detected	1.5	Not Detected
Chloroform	0.50	Not Detected	2.4	Not Detected
1,1,1-Trichloroethane	0.50	Not Detected	2.7	Not Detected
Cyclohexane	0.50	Not Detected	1.7	Not Detected
Carbon Tetrachloride	0.50	Not Detected	3.1	Not Detected
2,2,4-Trimethylpentane	0.50	Not Detected	2.3	Not Detected
Benzene	0.50	Not Detected	1.6	Not Detected
1,2-Dichloroethane	0.50	Not Detected	2.0	Not Detected
Heptane	0.50	Not Detected	2.0	Not Detected
Trichloroethene	0.50	Not Detected	2.7	Not Detected
1,2-Dichloropropane	0.50	Not Detected	2.3	Not Detected
1,4-Dioxane	2.0	Not Detected	7.2	Not Detected
Bromodichloromethane	0.50	Not Detected	3.4	Not Detected
cis-1,3-Dichloropropene	0.50	Not Detected	2.3	Not Detected
4-Methyl-2-pentanone	0.50	Not Detected	2.0	Not Detected
Toluene	0.50	Not Detected	1.9	Not Detected
trans-1,3-Dichloropropene	0.50	Not Detected	2.3	Not Detected
1,1,2-Trichloroethane	0.50	Not Detected	2.7	Not Detected
Tetrachloroethene	0.50	Not Detected	3.4	Not Detected
2-Hexanone	2.0	Not Detected	8.2	Not Detected

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Client Sample ID: Lab Blank

Lab ID#: 1412207-06B

EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	**3121908e**	**Date of Collection: NA**	
Dil. Factor:	**1.00**	**Date of Analysis: 12/19/14 02:28 PM**	

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Dibromochloromethane	0.50	Not Detected	4.2	Not Detected
1,2-Dibromoethane (EDB)	0.50	Not Detected	3.8	Not Detected
Chlorobenzene	0.50	Not Detected	2.3	Not Detected
Ethyl Benzene	0.50	Not Detected	2.2	Not Detected
m,p-Xylene	0.50	Not Detected	2.2	Not Detected
o-Xylene	0.50	Not Detected	2.2	Not Detected
Styrene	0.50	Not Detected	2.1	Not Detected
Bromoform	0.50	Not Detected	5.2	Not Detected
Cumene	0.50	Not Detected	2.4	Not Detected
1,1,2,2-Tetrachloroethane	0.50	Not Detected	3.4	Not Detected
Propylbenzene	0.50	Not Detected	2.4	Not Detected
4-Ethyltoluene	0.50	Not Detected	2.4	Not Detected
1,3,5-Trimethylbenzene	0.50	Not Detected	2.4	Not Detected
1,2,4-Trimethylbenzene	0.50	Not Detected	2.4	Not Detected
1,3-Dichlorobenzene	0.50	Not Detected	3.0	Not Detected
1,4-Dichlorobenzene	0.50	Not Detected	3.0	Not Detected
alpha-Chlorotoluene	0.50	Not Detected	2.6	Not Detected
1,2-Dichlorobenzene	0.50	Not Detected	3.0	Not Detected
1,2,4-Trichlorobenzene	2.0	Not Detected	15	Not Detected
Hexachlorobutadiene	2.0	Not Detected	21	Not Detected
1,1-Difluoroethane	2.0	Not Detected	5.4	Not Detected

Container Type: NA - Not Applicable

Surrogates	%Recovery	Method Limits
Toluene-d8	102	70-130
1,2-Dichloroethane-d4	101	70-130
4-Bromofluorobenzene	94	70-130

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Client Sample ID: CCV

Lab ID#: 1412207-07A

EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	**3121802**	**Date of Collection: NA**	
Dil. Factor:	**1.00**	**Date of Analysis: 12/18/14 10:18 AM**	

Compound	%Recovery
Freon 12	106
Freon 114	105
Chloromethane	84
Vinyl Chloride	95
1,3-Butadiene	102
Bromomethane	102
Chloroethane	105
Freon 11	106
Ethanol	102
Freon 113	102
1,1-Dichloroethene	93
Acetone	99
2-Propanol	99
Carbon Disulfide	98
3-Chloropropene	99
Methylene Chloride	106
Methyl tert-butyl ether	100
trans-1,2-Dichloroethene	101
Hexane	102
1,1-Dichloroethane	104
2-Butanone (Methyl Ethyl Ketone)	106
cis-1,2-Dichloroethene	102
Tetrahydrofuran	106
Chloroform	106
1,1,1-Trichloroethane	105
Cyclohexane	104
Carbon Tetrachloride	105
2,2,4-Trimethylpentane	109
Benzene	103
1,2-Dichloroethane	104
Heptane	105
Trichloroethene	102
1,2-Dichloropropane	99
1,4-Dioxane	98
Bromodichloromethane	101
cis-1,3-Dichloropropene	102
4-Methyl-2-pentanone	106
Toluene	106
trans-1,3-Dichloropropene	102
1,1,2-Trichloroethane	102
Tetrachloroethene	105
2-Hexanone	108

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Client Sample ID: CCV

Lab ID#: 1412207-07A

EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	**3121802**	**Date of Collection: NA**	
Dil. Factor:	**1.00**	**Date of Analysis: 12/18/14 10:18 AM**	

Compound	%Recovery
Dibromochloromethane	105
1,2-Dibromoethane (EDB)	102
Chlorobenzene	102
Ethyl Benzene	104
m,p-Xylene	109
o-Xylene	105
Styrene	105
Bromoform	101
Cumene	107
1,1,2,2-Tetrachloroethane	101
Propylbenzene	103
4-Ethyltoluene	101
1,3,5-Trimethylbenzene	103
1,2,4-Trimethylbenzene	97
1,3-Dichlorobenzene	97
1,4-Dichlorobenzene	99
alpha-Chlorotoluene	95
1,2-Dichlorobenzene	96
1,2,4-Trichlorobenzene	85
Hexachlorobutadiene	88
1,1-Difluoroethane	107

Container Type: NA - Not Applicable

Surrogates	%Recovery	Method Limits
Toluene-d8	104	70-130
1,2-Dichloroethane-d4	96	70-130
4-Bromofluorobenzene	101	70-130

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Client Sample ID: CCV

Lab ID#: 1412207-07B

EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	**3121902**	**Date of Collection: NA**
Dil. Factor:	**1.00**	**Date of Analysis: 12/19/14 10:16 AM**

Compound	%Recovery
Freon 12	107
Freon 114	105
Chloromethane	84
Vinyl Chloride	97
1,3-Butadiene	105
Bromomethane	100
Chloroethane	108
Freon 11	105
Ethanol	102
Freon 113	103
1,1-Dichloroethene	97
Acetone	103
2-Propanol	102
Carbon Disulfide	100
3-Chloropropene	103
Methylene Chloride	107
Methyl tert-butyl ether	101
trans-1,2-Dichloroethene	105
Hexane	105
1,1-Dichloroethane	105
2-Butanone (Methyl Ethyl Ketone)	108
cis-1,2-Dichloroethene	103
Tetrahydrofuran	108
Chloroform	106
1,1,1-Trichloroethane	106
Cyclohexane	107
Carbon Tetrachloride	105
2,2,4-Trimethylpentane	112
Benzene	103
1,2-Dichloroethane	103
Heptane	107
Trichloroethene	102
1,2-Dichloropropane	100
1,4-Dioxane	100
Bromodichloromethane	102
cis-1,3-Dichloropropene	103
4-Methyl-2-pentanone	106
Toluene	107
trans-1,3-Dichloropropene	103
1,1,2-Trichloroethane	102
Tetrachloroethene	103
2-Hexanone	107

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Client Sample ID: CCV

Lab ID#: 1412207-07B

EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	**3121902**	**Date of Collection: NA**	
Dil. Factor:	**1.00**	**Date of Analysis: 12/19/14 10:16 AM**	

Compound	%Recovery
Dibromochloromethane	103
1,2-Dibromoethane (EDB)	102
Chlorobenzene	101
Ethyl Benzene	105
m,p-Xylene	108
o-Xylene	106
Styrene	104
Bromoform	102
Cumene	108
1,1,2,2-Tetrachloroethane	102
Propylbenzene	103
4-Ethyltoluene	101
1,3,5-Trimethylbenzene	103
1,2,4-Trimethylbenzene	95
1,3-Dichlorobenzene	97
1,4-Dichlorobenzene	98
alpha-Chlorotoluene	95
1,2-Dichlorobenzene	95
1,2,4-Trichlorobenzene	85
Hexachlorobutadiene	87
1,1-Difluoroethane	108

Container Type: NA - Not Applicable

Surrogates	%Recovery	Method Limits
Toluene-d8	104	70-130
1,2-Dichloroethane-d4	99	70-130
4-Bromofluorobenzene	100	70-130

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Client Sample ID: LCS

Lab ID#: 1412207-08A

EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	**3121803**	**Date of Collection: NA**	
Dil. Factor:	**1.00**	**Date of Analysis: 12/18/14 10:43 AM**	

Compound	%Recovery	Method Limits
Freon 12	103	70-130
Freon 114	100	70-130
Chloromethane	95	70-130
Vinyl Chloride	94	70-130
1,3-Butadiene	94	70-130
Bromomethane	100	70-130
Chloroethane	104	70-130
Freon 11	100	70-130
Ethanol	114	70-130
Freon 113	100	70-130
1,1-Dichloroethene	95	70-130
Acetone	92	70-130
2-Propanol	106	70-130
Carbon Disulfide	87	70-130
3-Chloropropene	95	70-130
Methylene Chloride	104	70-130
Methyl tert-butyl ether	91	70-130
trans-1,2-Dichloroethene	93	70-130
Hexane	96	70-130
1,1-Dichloroethane	98	70-130
2-Butanone (Methyl Ethyl Ketone)	96	70-130
cis-1,2-Dichloroethene	96	70-130
Tetrahydrofuran	102	70-130
Chloroform	100	70-130
1,1,1-Trichloroethane	101	70-130
Cyclohexane	100	70-130
Carbon Tetrachloride	101	70-130
2,2,4-Trimethylpentane	102	70-130
Benzene	98	70-130
1,2-Dichloroethane	97	70-130
Heptane	99	70-130
Trichloroethene	98	70-130
1,2-Dichloropropane	95	70-130
1,4-Dioxane	104	70-130
Bromodichloromethane	96	70-130
cis-1,3-Dichloropropene	105	70-130
4-Methyl-2-pentanone	104	70-130
Toluene	102	70-130
trans-1,3-Dichloropropene	97	70-130
1,1,2-Trichloroethane	97	70-130
Tetrachloroethene	102	70-130
2-Hexanone	113	70-130

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Client Sample ID: LCS

Lab ID#: 1412207-08A

EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	**3121803**	**Date of Collection: NA**	
Dil. Factor:	**1.00**	**Date of Analysis: 12/18/14 10:43 AM**	

Compound	%Recovery	Method Limits
Dibromochloromethane	103	70-130
1,2-Dibromoethane (EDB)	100	70-130
Chlorobenzene	99	70-130
Ethyl Benzene	103	70-130
m,p-Xylene	108	70-130
o-Xylene	106	70-130
Styrene	119	70-130
Bromoform	104	70-130
Cumene	109	70-130
1,1,2,2-Tetrachloroethane	102	70-130
Propylbenzene	108	70-130
4-Ethyltoluene	108	70-130
1,3,5-Trimethylbenzene	125	70-130
1,2,4-Trimethylbenzene	112	70-130
1,3-Dichlorobenzene	106	70-130
1,4-Dichlorobenzene	109	70-130
alpha-Chlorotoluene	176 Q	70-130
1,2-Dichlorobenzene	109	70-130
1,2,4-Trichlorobenzene	101	70-130
Hexachlorobutadiene	105	70-130
1,1-Difluoroethane	Not Spiked	

Q = Exceeds Quality Control limits.

Container Type: NA - Not Applicable

Surrogates	%Recovery	Method Limits
Toluene-d8	104	70-130
1,2-Dichloroethane-d4	98	70-130
4-Bromofluorobenzene	103	70-130

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Client Sample ID: LCSD

Lab ID#: 1412207-08AA

EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	**3121804**	**Date of Collection: NA**	
Dil. Factor:	**1.00**	**Date of Analysis: 12/18/14 11:08 AM**	

Compound	%Recovery	Method Limits
Freon 12	100	70-130
Freon 114	97	70-130
Chloromethane	96	70-130
Vinyl Chloride	90	70-130
1,3-Butadiene	93	70-130
Bromomethane	98	70-130
Chloroethane	97	70-130
Freon 11	97	70-130
Ethanol	110	70-130
Freon 113	99	70-130
1,1-Dichloroethene	93	70-130
Acetone	91	70-130
2-Propanol	103	70-130
Carbon Disulfide	85	70-130
3-Chloropropene	94	70-130
Methylene Chloride	102	70-130
Methyl tert-butyl ether	89	70-130
trans-1,2-Dichloroethene	92	70-130
Hexane	94	70-130
1,1-Dichloroethane	96	70-130
2-Butanone (Methyl Ethyl Ketone)	96	70-130
cis-1,2-Dichloroethene	94	70-130
Tetrahydrofuran	99	70-130
Chloroform	98	70-130
1,1,1-Trichloroethane	99	70-130
Cyclohexane	97	70-130
Carbon Tetrachloride	99	70-130
2,2,4-Trimethylpentane	101	70-130
Benzene	97	70-130
1,2-Dichloroethane	97	70-130
Heptane	100	70-130
Trichloroethene	97	70-130
1,2-Dichloropropane	93	70-130
1,4-Dioxane	103	70-130
Bromodichloromethane	96	70-130
cis-1,3-Dichloropropene	104	70-130
4-Methyl-2-pentanone	103	70-130
Toluene	102	70-130
trans-1,3-Dichloropropene	95	70-130
1,1,2-Trichloroethane	95	70-130
Tetrachloroethene	99	70-130
2-Hexanone	113	70-130

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Client Sample ID: LCSD

Lab ID#: 1412207-08AA

EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	**3121804**	**Date of Collection: NA**	
Dil. Factor:	**1.00**	**Date of Analysis: 12/18/14 11:08 AM**	

Compound	%Recovery	Method Limits
Dibromochloromethane	101	70-130
1,2-Dibromoethane (EDB)	99	70-130
Chlorobenzene	98	70-130
Ethyl Benzene	102	70-130
m,p-Xylene	106	70-130
o-Xylene	104	70-130
Styrene	118	70-130
Bromoform	103	70-130
Cumene	107	70-130
1,1,2,2-Tetrachloroethane	100	70-130
Propylbenzene	106	70-130
4-Ethyltoluene	107	70-130
1,3,5-Trimethylbenzene	124	70-130
1,2,4-Trimethylbenzene	112	70-130
1,3-Dichlorobenzene	104	70-130
1,4-Dichlorobenzene	108	70-130
alpha-Chlorotoluene	176 Q	70-130
1,2-Dichlorobenzene	108	70-130
1,2,4-Trichlorobenzene	118	70-130
Hexachlorobutadiene	119	70-130
1,1-Difluoroethane	Not Spiked	

Q = Exceeds Quality Control limits.

Container Type: NA - Not Applicable

Surrogates	%Recovery	Method Limits
Toluene-d8	104	70-130
1,2-Dichloroethane-d4	97	70-130
4-Bromofluorobenzene	101	70-130

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Client Sample ID: LCS

Lab ID#: 1412207-08B

EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	**3121904**	**Date of Collection: NA**	
Dil. Factor:	**1.00**	**Date of Analysis: 12/19/14 11:17 AM**	

Compound	%Recovery	Method Limits
Freon 12	101	70-130
Freon 114	98	70-130
Chloromethane	96	70-130
Vinyl Chloride	92	70-130
1,3-Butadiene	95	70-130
Bromomethane	98	70-130
Chloroethane	102	70-130
Freon 11	98	70-130
Ethanol	116	70-130
Freon 113	99	70-130
1,1-Dichloroethene	94	70-130
Acetone	91	70-130
2-Propanol	107	70-130
Carbon Disulfide	87	70-130
3-Chloropropene	95	70-130
Methylene Chloride	103	70-130
Methyl tert-butyl ether	91	70-130
trans-1,2-Dichloroethene	91	70-130
Hexane	96	70-130
1,1-Dichloroethane	99	70-130
2-Butanone (Methyl Ethyl Ketone)	100	70-130
cis-1,2-Dichloroethene	96	70-130
Tetrahydrofuran	102	70-130
Chloroform	99	70-130
1,1,1-Trichloroethane	98	70-130
Cyclohexane	100	70-130
Carbon Tetrachloride	99	70-130
2,2,4-Trimethylpentane	102	70-130
Benzene	98	70-130
1,2-Dichloroethane	98	70-130
Heptane	100	70-130
Trichloroethene	99	70-130
1,2-Dichloropropane	96	70-130
1,4-Dioxane	106	70-130
Bromodichloromethane	96	70-130
cis-1,3-Dichloropropene	104	70-130
4-Methyl-2-pentanone	105	70-130
Toluene	101	70-130
trans-1,3-Dichloropropene	98	70-130
1,1,2-Trichloroethane	97	70-130
Tetrachloroethene	100	70-130
2-Hexanone	114	70-130

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Client Sample ID: LCS

Lab ID#: 1412207-08B

EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	**3121904**	**Date of Collection: NA**	
Dil. Factor:	**1.00**	**Date of Analysis: 12/19/14 11:17 AM**	

Compound	%Recovery	Method Limits
Dibromochloromethane	101	70-130
1,2-Dibromoethane (EDB)	100	70-130
Chlorobenzene	99	70-130
Ethyl Benzene	102	70-130
m,p-Xylene	108	70-130
o-Xylene	105	70-130
Styrene	118	70-130
Bromoform	103	70-130
Cumene	108	70-130
1,1,2,2-Tetrachloroethane	101	70-130
Propylbenzene	108	70-130
4-Ethyltoluene	109	70-130
1,3,5-Trimethylbenzene	122	70-130
1,2,4-Trimethylbenzene	112	70-130
1,3-Dichlorobenzene	105	70-130
1,4-Dichlorobenzene	108	70-130
alpha-Chlorotoluene	178 Q	70-130
1,2-Dichlorobenzene	108	70-130
1,2,4-Trichlorobenzene	104	70-130
Hexachlorobutadiene	108	70-130
1,1-Difluoroethane	Not Spiked	

Q = Exceeds Quality Control limits.

Container Type: NA - Not Applicable

Surrogates	%Recovery	Method Limits
Toluene-d8	103	70-130
1,2-Dichloroethane-d4	96	70-130
4-Bromofluorobenzene	101	70-130

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Client Sample ID: LCSD

Lab ID#: 1412207-08BB

EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	**3121907**	**Date of Collection: NA**	
Dil. Factor:	**1.00**	**Date of Analysis: 12/19/14 01:21 PM**	

Compound	%Recovery	Method Limits
Freon 12	104	70-130
Freon 114	101	70-130
Chloromethane	100	70-130
Vinyl Chloride	95	70-130
1,3-Butadiene	100	70-130
Bromomethane	100	70-130
Chloroethane	106	70-130
Freon 11	100	70-130
Ethanol	122	70-130
Freon 113	101	70-130
1,1-Dichloroethene	98	70-130
Acetone	96	70-130
2-Propanol	112	70-130
Carbon Disulfide	90	70-130
3-Chloropropene	98	70-130
Methylene Chloride	106	70-130
Methyl tert-butyl ether	94	70-130
trans-1,2-Dichloroethene	93	70-130
Hexane	100	70-130
1,1-Dichloroethane	100	70-130
2-Butanone (Methyl Ethyl Ketone)	98	70-130
cis-1,2-Dichloroethene	98	70-130
Tetrahydrofuran	103	70-130
Chloroform	101	70-130
1,1,1-Trichloroethane	99	70-130
Cyclohexane	101	70-130
Carbon Tetrachloride	100	70-130
2,2,4-Trimethylpentane	104	70-130
Benzene	102	70-130
1,2-Dichloroethane	98	70-130
Heptane	103	70-130
Trichloroethene	101	70-130
1,2-Dichloropropane	97	70-130
1,4-Dioxane	110	70-130
Bromodichloromethane	98	70-130
cis-1,3-Dichloropropene	107	70-130
4-Methyl-2-pentanone	106	70-130
Toluene	103	70-130
trans-1,3-Dichloropropene	100	70-130
1,1,2-Trichloroethane	100	70-130
Tetrachloroethene	102	70-130
2-Hexanone	118	70-130

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Client Sample ID: LCSD

Lab ID#: 1412207-08BB

EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	**3121907**	**Date of Collection: NA**	
Dil. Factor:	**1.00**	**Date of Analysis: 12/19/14 01:21 PM**	

Compound	%Recovery	Method Limits
Dibromochloromethane	103	70-130
1,2-Dibromoethane (EDB)	101	70-130
Chlorobenzene	102	70-130
Ethyl Benzene	105	70-130
m,p-Xylene	110	70-130
o-Xylene	107	70-130
Styrene	121	70-130
Bromoform	105	70-130
Cumene	110	70-130
1,1,2,2-Tetrachloroethane	103	70-130
Propylbenzene	109	70-130
4-Ethyltoluene	109	70-130
1,3,5-Trimethylbenzene	124	70-130
1,2,4-Trimethylbenzene	114	70-130
1,3-Dichlorobenzene	106	70-130
1,4-Dichlorobenzene	108	70-130
alpha-Chlorotoluene	179 Q	70-130
1,2-Dichlorobenzene	110	70-130
1,2,4-Trichlorobenzene	112	70-130
Hexachlorobutadiene	115	70-130
1,1-Difluoroethane	Not Spiked	

Q = Exceeds Quality Control limits.

Container Type: NA - Not Applicable

Surrogates	%Recovery	Method Limits
Toluene-d8	103	70-130
1,2-Dichloroethane-d4	94	70-130
4-Bromofluorobenzene	100	70-130

CHAIN OF CUSTODY RECORD

P&D ENVIRONMENTAL, INC.
55 Santa Clara Ave., Suite 240
Oakland, CA 94610
(510) 658-6916

PROJECT NUMBER: 0660

PROJECT NAME: James River Corporation 2101 Williams St. San Leandro, CA

SAMPLED BY: (PRINTED & SIGNATURE) MICHAEL BASS-DESCHENES *Michael Bass-Deschenes*

SAMPLE NUMBER	DATE	TIME	TYPE	SAMPLE LOCATION: INIT VAC	FINAL VAC	PID (ppm)	NUMBER OF CONTAINERS	ANALYSIS(ES): EPA TO-15 including DFA	PRESERVATIVE	REMARKS
01A VP3	12/10/14	113100 114245	SIL/GAS	-30	-5	70	1	X	NONE	NORMAL TAT
02A VP3-DUP	↓	113100 114245	↓	-30	-5	70	1	X	↓	↓
03A VP4	↓	103600 104137	↓	-30	-5	0.5	1	X	↓	↓
04A VP5	↓	092100 092740	↓	-28	-5	10.3	1	X	↓	↓
05A VP6	↓	075200 075205	↓	-30	-5	2.9	1	X	↓	↓

Custody Seal Intact?
Y N (None) Temp NA
HD

RELINQUISHED BY: (SIGNATURE)	DATE	TIME	RECEIVED BY: (SIGNATURE)
Michael Bass-Deschenes	12-10-14	1353	*[signature]*
RELINQUISHED BY: (SIGNATURE)	DATE	TIME	RECEIVED BY: (SIGNATURE)
RELINQUISHED BY: (SIGNATURE)	DATE	TIME	RECEIVED FOR LABORATORY BY: (SIGNATURE)

Total No. of Samples (This Shipment): 5
Total No. of Containers (This Shipment): 5

LABORATORY: EUROFINS/AIR TOXICS LIMITED

LABORATORY CONTACT: KYLE VAGADORI

LABORATORY PHONE NUMBER: (916) 605-3339

SAMPLE ANALYSIS REQUEST SHEET ATTACHED: ( ) YES (X) NO

Results and billing to:
P&D Environmental, Inc.
lab@pdenviro.com

REMARKS: 1L LITER SUMMA
DFA USED AS TRACER GAS

1412207

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12/23/2014
Mr. Paul King
P & D Environmental
55 Santa Clara
Suite 240
Oakland CA 94610

Project Name: James River Corporation 2101 Williams St
Project #: 0660
Workorder #: 1412148

Dear Mr. Paul King

The following report includes the data for the above referenced project for sample(s) received on 12/10/2014 at Air Toxics Ltd.

The data and associated QC analyzed by Modified TO-15 (5&20 ppbv) 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: Kyle Vagadori at 916-985-1000 if you have any questions regarding the data in this report.

Regards,

Kyle Vagadori

Project Manager

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WORK ORDER #: 1412148

Work Order Summary

CLIENT:	Mr. Paul King P & D Environmental 55 Santa Clara Suite 240 Oakland, CA 94610	**BILL TO:**	Mr. Paul King P & D Environmental 55 Santa Clara Suite 240 Oakland, CA 94610
PHONE:	510-658-6916	**P.O. #**	
FAX:	510-834-0772	**PROJECT #**	0660 James River Corporation 2101 Williams St
DATE RECEIVED:	12/10/2014	**CONTACT:**	Kyle Vagadori
DATE COMPLETED:	12/23/2014		

FRACTION #	NAME	TEST	RECEIPT VAC./PRES.	FINAL PRESSURE
01A	VP3	Modified TO-15 (5&20 ppbv	Tedlar Bag	Tedlar Bag
02A	VP4	Modified TO-15 (5&20 ppbv	Tedlar Bag	Tedlar Bag
03A	VP5	Modified TO-15 (5&20 ppbv	Tedlar Bag	Tedlar Bag
04A	VP6	Modified TO-15 (5&20 ppbv	Tedlar Bag	Tedlar Bag
05A	Lab Blank	Modified TO-15 (5&20 ppbv	NA	NA
06A	CCV	Modified TO-15 (5&20 ppbv	NA	NA

CERTIFIED BY: Heidi Hayes DATE: 12/23/14

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
EPA Method TO-15 Soil Gas
P & D Environmental
Workorder# 1412148

Four 1 Liter Tedlar Bag samples were received on December 10, 2014. The laboratory performed analysis via EPA Method TO-15 using GC/MS in the full scan mode. The method involves concentrating up to 50 mLs of air. The concentrated aliquot is then flash vaporized and swept through a water management system to remove water vapor. Following dehumidification, the sample passes directly into the GC/MS for analysis.

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.

Receiving Notes

There were no receiving discrepancies.

Analytical Notes

Method TO-15 is validated for samples collected in specially treated canisters. As such, the use of Tedlar bags for sample collection is outside the scope of the method and not recommended for ambient or indoor air samples. It is the responsibility of the data user to determine the usability of TO-15 results generated from Tedlar bags.

Samples VP3, VP4, VP5 and VP6 were transferred from Tedlar bags into summa canisters to extend the hold time from 3 days to 30 days. Canister pressurization resulted in a dilution factor which was applied to all analytical results.

Dilution was performed on samples VP3, VP4, VP5 and VP6 due to the presence of high level target species.

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
EPA METHOD TO-15 GC/MS

Client Sample ID: VP3

Lab ID#: 1412148-01A

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
1,1-Difluoroethane	530000	5000000	1400000	13000000

Client Sample ID: VP4

Lab ID#: 1412148-02A

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
1,1-Difluoroethane	570000	4100000	1500000	11000000

Client Sample ID: VP5

Lab ID#: 1412148-03A

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
1,1-Difluoroethane	520000	3500000	1400000	9400000

Client Sample ID: VP6

Lab ID#: 1412148-04A

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
1,1-Difluoroethane	520000	7000000	1400000	19000000

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Client Sample ID: VP3

Lab ID#: 1412148-01A

EPA METHOD TO-15 GC/MS

File Name:	**14121528**	**Date of Collection:**	**12/10/14 11:29:00 A**
Dil. Factor:	**26600**	**Date of Analysis:**	**12/15/14 09:41 PM**

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
1,1-Difluoroethane	530000	5000000	1400000	13000000

Container Type: 1 Liter Tedlar Bag

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	100	70-130
Toluene-d8	98	70-130
4-Bromofluorobenzene	87	70-130

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Client Sample ID: VP4

Lab ID#: 1412148-02A

EPA METHOD TO-15 GC/MS

File Name:	**14121529**	**Date of Collection:**	**12/10/14 10:35:00 A**
Dil. Factor:	**28400**	**Date of Analysis:**	**12/15/14 10:03 PM**

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
1,1-Difluoroethane	570000	4100000	1500000	11000000

Container Type: 1 Liter Tedlar Bag

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	96	70-130
Toluene-d8	99	70-130
4-Bromofluorobenzene	90	70-130

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Client Sample ID: VP5

Lab ID#: 1412148-03A

EPA METHOD TO-15 GC/MS

File Name:	**14121530**	**Date of Collection: 12/10/14 9:19:00 AM**	
Dil. Factor:	**26100**	**Date of Analysis: 12/15/14 10:44 PM**	

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
1,1-Difluoroethane	520000	3500000	1400000	9400000

Container Type: 1 Liter Tedlar Bag

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	100	70-130
Toluene-d8	100	70-130
4-Bromofluorobenzene	89	70-130

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Client Sample ID: VP6

Lab ID#: 1412148-04A

EPA METHOD TO-15 GC/MS

File Name:	**14121531**	**Date of Collection: 12/10/14 7:47:00 AM**	
Dil. Factor:	**26100**	**Date of Analysis: 12/15/14 11:05 PM**	

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
1,1-Difluoroethane	520000	7000000	1400000	19000000

Container Type: 1 Liter Tedlar Bag

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	99	70-130
Toluene-d8	101	70-130
4-Bromofluorobenzene	90	70-130

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Client Sample ID: Lab Blank

Lab ID#: 1412148-05A

EPA METHOD TO-15 GC/MS

File Name:	**14121506d**	**Date of Collection: NA**	
Dil. Factor:	**1.00**	**Date of Analysis: 12/15/14 08:59 AM**	

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
1,1-Difluoroethane	20	Not Detected	54	Not Detected

Container Type: NA - Not Applicable

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	96	70-130
Toluene-d8	101	70-130
4-Bromofluorobenzene	91	70-130

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Client Sample ID: CCV

Lab ID#: 1412148-06A

EPA METHOD TO-15 GC/MS

File Name:	**14121505**	**Date of Collection: NA**	
Dil. Factor:	**1.00**	**Date of Analysis: 12/15/14 08:26 AM**	

Compound	%Recovery
1,1-Difluoroethane	120

Container Type: NA - Not Applicable

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	95	70-130
Toluene-d8	97	70-130
4-Bromofluorobenzene	96	70-130

CHAIN OF CUSTODY RECORD

PAGE 1 OF 1

P&D ENVIRONMENTAL, INC.
55 Santa Clara Ave., Suite 240
Oakland, CA 94610
(510) 658-6916

PROJECT NUMBER: 0660

PROJECT NAME: James River Corporation, 2101 Williams St., San Leandro, CA

SAMPLED BY: (PRINTED & SIGNATURE) Michael BASS-DESCOURS

	SAMPLE NUMBER	DATE	TIME	TYPE	SAMPLE LOCATION	NUMBER OF CONTAINERS	ANALYSIS(ES): TO-15 by EPA	PRESERVATIVE	REMARKS
01A	VP3	12/10/14	1129	AIR		1	X	NONE	NORMAL TAT
02A	VP4		1035			1	X		
03A	VP5		0919			1	X		
04A	VP6		0747			1	X		

Custody Seal Intact?
Y N None Temp NA
HD

RELINQUISHED BY: (SIGNATURE)	DATE	TIME	RECEIVED BY: (SIGNATURE)	Total No. of Samples (This Shipment): 4 / Total No. of Containers (This Shipment): 4	LABORATORY: EUROFINS/AIRTOXICS, LIMITED
	12-10-14	1353			
RELINQUISHED BY: (SIGNATURE)	DATE	TIME	RECEIVED BY: (SIGNATURE)	LABORATORY CONTACT: KYLE JAGADORI	LABORATORY PHONE NUMBER: (916) 605-3339
RELINQUISHED BY: (SIGNATURE)	DATE	TIME	RECEIVED FOR LABORATORY BY: (SIGNATURE)	SAMPLE ANALYSIS REQUEST SHEET ATTACHED: ( ) YES (X) NO	

Results and billing to:
P&D Environmental, Inc.
lab@pdenviro.com

REMARKS: 1-LITER TEDLAR BAG

14122148

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3/2/2015
Mr. Paul King
P & D Environmental
55 Santa Clara
Suite 240
Oakland CA 94610

Project Name: 2101 WILLIAMS St. SAN LEANDRO, CA
Project #: 0660
Workorder #: 1502299

Dear Mr. Paul King

The following report includes the data for the above referenced project for sample(s) received on 2/17/2015 at Air Toxics Ltd.

The data and associated QC analyzed by TO-15 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: Kyle Vagadori at 916-985-1000 if you have any questions regarding the data in this report.

Regards,

Kyle Vagadori

Project Manager

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WORK ORDER #: 1502299

Work Order Summary

CLIENT:	Mr. Paul King P & D Environmental 55 Santa Clara Suite 240 Oakland, CA 94610	**BILL TO:**	Mr. Paul King P & D Environmental 55 Santa Clara Suite 240 Oakland, CA 94610
PHONE:	510-658-6916	**P.O. #**	
FAX:	510-834-0772	**PROJECT #**	0660 2101 WILLIAMS St. SAN LEANDRO, CA
DATE RECEIVED:	02/17/2015	**CONTACT:**	Kyle Vagadori
DATE COMPLETED:	03/02/2015		

FRACTION #	NAME	TEST	RECEIPT VAC./PRES.	FINAL PRESSURE
01A	VP7	TO-15	4.5 "Hg	15.2 psi
02A	VP8	TO-15	8.8 "Hg	14.6 psi
03A	VP9	TO-15	6.5 "Hg	14.9 psi
04A	VP10	TO-15	5.1 "Hg	15.3 psi
05A	VP10-DUP	TO-15	4.7 "Hg	14.9 psi
06A	VP11	TO-15	3.5 "Hg	15.2 psi
07A	PP12	TO-15	4.7 "Hg	14.7 psi
08A	Lab Blank	TO-15	NA	NA
08B	Lab Blank	TO-15	NA	NA
09A	CCV	TO-15	NA	NA
09B	CCV	TO-15	NA	NA
10A	LCS	TO-15	NA	NA
10AA	LCSD	TO-15	NA	NA
10B	LCS	TO-15	NA	NA
10BB	LCSD	TO-15	NA	NA

CERTIFIED BY: Heidi Mayo DATE: 03/02/15

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
EPA Method TO-15
P & D Environmental
Workorder# 1502299

Seven 1 Liter Summa Canister samples were received on February 17, 2015. The laboratory performed analysis via EPA Method TO-15 using GC/MS in the full scan 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.

Receiving Notes

There were no receiving discrepancies.

Analytical Notes

The reported CCV for each daily batch may be derived from more than one analytical file due to the client's request for non-standard compounds. Non-standard compounds may have different acceptance criteria than the standard TO-14A/TO-15 compound list as per contract or verbal agreement.

Dilution was performed on samples VP7, VP9, VP10, VP-10-DUP, VP11, and PP12 due to the presence of high level target species.

All Quality Control Limit exceedances and affected sample results are noted by flags. Each flag is defined at the bottom of this Case Narrative and on each Sample Result Summary page. Target compound non-detects in the samples that are associated with high bias in QC analyses have not been flagged.

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
EPA METHOD TO-15 GC/MS

Client Sample ID: VP7

Lab ID#: 1502299-01A

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Tetrachloroethene	120	77000	810	520000

Client Sample ID: VP8

Lab ID#: 1502299-02A

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Trichloroethene	14	160	76	880
Tetrachloroethene	14	12000	96	84000
1,2,4-Trimethylbenzene	14	17	69	85
1,1-Difluoroethane	56	1500	150	4000

Client Sample ID: VP9

Lab ID#: 1502299-03A

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Ethanol	69	99	130	190
cis-1,2-Dichloroethene	17	3400	68	13000
Tetrachloroethene	17	540	120	3700

Client Sample ID: VP10

Lab ID#: 1502299-04A

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Tetrachloroethene	25	20000	170	130000

Client Sample ID: VP10-DUP

Lab ID#: 1502299-05A

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Tetrachloroethene	24	21000	160	140000

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

Client Sample ID: VP11

Lab ID#: 1502299-06A

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Tetrachloroethene	72	37000	490	250000

Client Sample ID: PP12

Lab ID#: 1502299-07A

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Tetrachloroethene	40	22000	270	150000

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Client Sample ID: VP7

Lab ID#: 1502299-01A

EPA METHOD TO-15 GC/MS

File Name:	**14022516**	**Date of Collection:**	**2/16/15 10:45:00 AM**
Dil. Factor:	**23.9**	**Date of Analysis:**	**2/25/15 03:51 PM**

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Freon 12	120	Not Detected	590	Not Detected
Freon 114	120	Not Detected	840	Not Detected
Chloromethane	480	Not Detected	990	Not Detected
Vinyl Chloride	120	Not Detected	300	Not Detected
1,3-Butadiene	120	Not Detected	260	Not Detected
Bromomethane	120	Not Detected	460	Not Detected
Chloroethane	480	Not Detected	1300	Not Detected
Freon 11	120	Not Detected	670	Not Detected
Ethanol	480	Not Detected UJ	900	Not Detected UJ
Freon 113	120	Not Detected	920	Not Detected
1,1-Dichloroethene	120	Not Detected	470	Not Detected
Acetone	480	Not Detected	1100	Not Detected
2-Propanol	480	Not Detected	1200	Not Detected
Carbon Disulfide	120	Not Detected	370	Not Detected
3-Chloropropene	480	Not Detected	1500	Not Detected
Methylene Chloride	120	Not Detected	420	Not Detected
Methyl tert-butyl ether	120	Not Detected	430	Not Detected
trans-1,2-Dichloroethene	120	Not Detected	470	Not Detected
Hexane	120	Not Detected	420	Not Detected
1,1-Dichloroethane	120	Not Detected	480	Not Detected
2-Butanone (Methyl Ethyl Ketone)	480	Not Detected	1400	Not Detected
cis-1,2-Dichloroethene	120	Not Detected	470	Not Detected
Tetrahydrofuran	120	Not Detected	350	Not Detected
Chloroform	120	Not Detected	580	Not Detected
1,1,1-Trichloroethane	120	Not Detected	650	Not Detected
Cyclohexane	120	Not Detected	410	Not Detected
Carbon Tetrachloride	120	Not Detected	750	Not Detected
2,2,4-Trimethylpentane	120	Not Detected	560	Not Detected
Benzene	120	Not Detected	380	Not Detected
1,2-Dichloroethane	120	Not Detected	480	Not Detected
Heptane	120	Not Detected	490	Not Detected
Trichloroethene	120	Not Detected	640	Not Detected
1,2-Dichloropropane	120	Not Detected	550	Not Detected
1,4-Dioxane	480	Not Detected	1700	Not Detected
Bromodichloromethane	120	Not Detected	800	Not Detected
cis-1,3-Dichloropropene	120	Not Detected	540	Not Detected
4-Methyl-2-pentanone	120	Not Detected	490	Not Detected
Toluene	120	Not Detected	450	Not Detected
trans-1,3-Dichloropropene	120	Not Detected	540	Not Detected
1,1,2-Trichloroethane	120	Not Detected	650	Not Detected
Tetrachloroethene	120	77000	810	520000
2-Hexanone	480	Not Detected	2000	Not Detected

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Client Sample ID: VP7

Lab ID#: 1502299-01A

EPA METHOD TO-15 GC/MS

File Name:	**14022516**	**Date of Collection:**	**2/16/15 10:45:00 AM**
Dil. Factor:	**23.9**	**Date of Analysis:**	**2/25/15 03:51 PM**

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Dibromochloromethane	120	Not Detected	1000	Not Detected
1,2-Dibromoethane (EDB)	120	Not Detected	920	Not Detected
Chlorobenzene	120	Not Detected	550	Not Detected
Ethyl Benzene	120	Not Detected	520	Not Detected
m,p-Xylene	120	Not Detected	520	Not Detected
o-Xylene	120	Not Detected	520	Not Detected
Styrene	120	Not Detected	510	Not Detected
Bromoform	120	Not Detected	1200	Not Detected
Cumene	120	Not Detected	590	Not Detected
1,1,2,2-Tetrachloroethane	120	Not Detected	820	Not Detected
Propylbenzene	120	Not Detected	590	Not Detected
4-Ethyltoluene	120	Not Detected	590	Not Detected
1,3,5-Trimethylbenzene	120	Not Detected	590	Not Detected
1,2,4-Trimethylbenzene	120	Not Detected	590	Not Detected
1,3-Dichlorobenzene	120	Not Detected	720	Not Detected
1,4-Dichlorobenzene	120	Not Detected	720	Not Detected
alpha-Chlorotoluene	120	Not Detected	620	Not Detected
1,2-Dichlorobenzene	120	Not Detected	720	Not Detected
1,2,4-Trichlorobenzene	480	Not Detected	3500	Not Detected
Hexachlorobutadiene	480	Not Detected	5100	Not Detected
1,1-Difluoroethane	480	Not Detected	1300	Not Detected

UJ = Analyte associated with low bias in the CCV and/or LCS.

Container Type: 1 Liter Summa Canister

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	87	70-130
Toluene-d8	97	70-130
4-Bromofluorobenzene	99	70-130

eurofins | Air Toxics

Client Sample ID: VP8

Lab ID#: 1502299-02A

EPA METHOD TO-15 GC/MS

File Name:	**14022511**	**Date of Collection:**	**2/16/15 7:23:00 PM**
Dil. Factor:	**2.82**	**Date of Analysis:**	**2/25/15 02:11 PM**

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Freon 12	14	Not Detected	70	Not Detected
Freon 114	14	Not Detected	98	Not Detected
Chloromethane	56	Not Detected	120	Not Detected
Vinyl Chloride	14	Not Detected	36	Not Detected
1,3-Butadiene	14	Not Detected	31	Not Detected
Bromomethane	14	Not Detected	55	Not Detected
Chloroethane	56	Not Detected	150	Not Detected
Freon 11	14	Not Detected	79	Not Detected
Ethanol	56	Not Detected UJ	110	Not Detected UJ
Freon 113	14	Not Detected	110	Not Detected
1,1-Dichloroethene	14	Not Detected	56	Not Detected
Acetone	56	Not Detected	130	Not Detected
2-Propanol	56	Not Detected	140	Not Detected
Carbon Disulfide	14	Not Detected	44	Not Detected
3-Chloropropene	56	Not Detected	180	Not Detected
Methylene Chloride	14	Not Detected	49	Not Detected
Methyl tert-butyl ether	14	Not Detected	51	Not Detected
trans-1,2-Dichloroethene	14	Not Detected	56	Not Detected
Hexane	14	Not Detected	50	Not Detected
1,1-Dichloroethane	14	Not Detected	57	Not Detected
2-Butanone (Methyl Ethyl Ketone)	56	Not Detected	170	Not Detected
cis-1,2-Dichloroethene	14	Not Detected	56	Not Detected
Tetrahydrofuran	14	Not Detected	42	Not Detected
Chloroform	14	Not Detected	69	Not Detected
1,1,1-Trichloroethane	14	Not Detected	77	Not Detected
Cyclohexane	14	Not Detected	48	Not Detected
Carbon Tetrachloride	14	Not Detected	89	Not Detected
2,2,4-Trimethylpentane	14	Not Detected	66	Not Detected
Benzene	14	Not Detected	45	Not Detected
1,2-Dichloroethane	14	Not Detected	57	Not Detected
Heptane	14	Not Detected	58	Not Detected
Trichloroethene	14	160	76	880
1,2-Dichloropropane	14	Not Detected	65	Not Detected
1,4-Dioxane	56	Not Detected	200	Not Detected
Bromodichloromethane	14	Not Detected	94	Not Detected
cis-1,3-Dichloropropene	14	Not Detected	64	Not Detected
4-Methyl-2-pentanone	14	Not Detected	58	Not Detected
Toluene	14	Not Detected	53	Not Detected
trans-1,3-Dichloropropene	14	Not Detected	64	Not Detected
1,1,2-Trichloroethane	14	Not Detected	77	Not Detected
Tetrachloroethene	14	12000	96	84000
2-Hexanone	56	Not Detected	230	Not Detected

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Client Sample ID: VP8

Lab ID#: 1502299-02A

EPA METHOD TO-15 GC/MS

File Name:	**14022511**	**Date of Collection: 2/16/15 7:23:00 PM**	
Dil. Factor:	**2.82**	**Date of Analysis: 2/25/15 02:11 PM**	

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Dibromochloromethane	14	Not Detected	120	Not Detected
1,2-Dibromoethane (EDB)	14	Not Detected	110	Not Detected
Chlorobenzene	14	Not Detected	65	Not Detected
Ethyl Benzene	14	Not Detected	61	Not Detected
m,p-Xylene	14	Not Detected	61	Not Detected
o-Xylene	14	Not Detected	61	Not Detected
Styrene	14	Not Detected	60	Not Detected
Bromoform	14	Not Detected	140	Not Detected
Cumene	14	Not Detected	69	Not Detected
1,1,2,2-Tetrachloroethane	14	Not Detected	97	Not Detected
Propylbenzene	14	Not Detected	69	Not Detected
4-Ethyltoluene	14	Not Detected	69	Not Detected
1,3,5-Trimethylbenzene	14	Not Detected	69	Not Detected
1,2,4-Trimethylbenzene	14	17	69	85
1,3-Dichlorobenzene	14	Not Detected	85	Not Detected
1,4-Dichlorobenzene	14	Not Detected	85	Not Detected
alpha-Chlorotoluene	14	Not Detected	73	Not Detected
1,2-Dichlorobenzene	14	Not Detected	85	Not Detected
1,2,4-Trichlorobenzene	56	Not Detected	420	Not Detected
Hexachlorobutadiene	56	Not Detected	600	Not Detected
1,1-Difluoroethane	56	1500	150	4000

UJ = Analyte associated with low bias in the CCV and/or LCS.

Container Type: 1 Liter Summa Canister

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	90	70-130
Toluene-d8	99	70-130
4-Bromofluorobenzene	98	70-130

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Client Sample ID: VP9

Lab ID#: 1502299-03A

EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	**3022315**	**Date of Collection:**	**2/16/15 9:34:00 AM**
Dil. Factor:	**34.3**	**Date of Analysis:**	**2/23/15 03:44 PM**

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Freon 12	17	Not Detected	85	Not Detected
Freon 114	17	Not Detected	120	Not Detected
Chloromethane	170	Not Detected	350	Not Detected
Vinyl Chloride	17	Not Detected	44	Not Detected
1,3-Butadiene	17	Not Detected	38	Not Detected
Bromomethane	170	Not Detected	670	Not Detected
Chloroethane	69	Not Detected	180	Not Detected
Freon 11	17	Not Detected	96	Not Detected
Ethanol	69	99	130	190
Freon 113	17	Not Detected	130	Not Detected
1,1-Dichloroethene	17	Not Detected	68	Not Detected
Acetone	170	Not Detected	410	Not Detected
2-Propanol	69	Not Detected	170	Not Detected
Carbon Disulfide	69	Not Detected	210	Not Detected
3-Chloropropene	69	Not Detected	210	Not Detected
Methylene Chloride	170	Not Detected	600	Not Detected
Methyl tert-butyl ether	17	Not Detected	62	Not Detected
trans-1,2-Dichloroethene	17	Not Detected	68	Not Detected
Hexane	17	Not Detected	60	Not Detected
1,1-Dichloroethane	17	Not Detected	69	Not Detected
2-Butanone (Methyl Ethyl Ketone)	69	Not Detected	200	Not Detected
cis-1,2-Dichloroethene	17	3400	68	13000
Tetrahydrofuran	17	Not Detected	50	Not Detected
Chloroform	17	Not Detected	84	Not Detected
1,1,1-Trichloroethane	17	Not Detected	94	Not Detected
Cyclohexane	17	Not Detected	59	Not Detected
Carbon Tetrachloride	17	Not Detected	110	Not Detected
2,2,4-Trimethylpentane	17	Not Detected	80	Not Detected
Benzene	17	Not Detected	55	Not Detected
1,2-Dichloroethane	17	Not Detected	69	Not Detected
Heptane	17	Not Detected	70	Not Detected
Trichloroethene	17	Not Detected	92	Not Detected
1,2-Dichloropropane	17	Not Detected	79	Not Detected
1,4-Dioxane	69	Not Detected	250	Not Detected
Bromodichloromethane	17	Not Detected	110	Not Detected
cis-1,3-Dichloropropene	17	Not Detected	78	Not Detected
4-Methyl-2-pentanone	17	Not Detected	70	Not Detected
Toluene	17	Not Detected	65	Not Detected
trans-1,3-Dichloropropene	17	Not Detected	78	Not Detected
1,1,2-Trichloroethane	17	Not Detected	94	Not Detected
Tetrachloroethene	17	540	120	3700
2-Hexanone	69	Not Detected	280	Not Detected

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Client Sample ID: VP9

Lab ID#: 1502299-03A

EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	**3022315**	**Date of Collection:**	**2/16/15 9:34:00 AM**
Dil. Factor:	**34.3**	**Date of Analysis:**	**2/23/15 03:44 PM**

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Dibromochloromethane	17	Not Detected	150	Not Detected
1,2-Dibromoethane (EDB)	17	Not Detected	130	Not Detected
Chlorobenzene	17	Not Detected	79	Not Detected
Ethyl Benzene	17	Not Detected	74	Not Detected
m,p-Xylene	17	Not Detected	74	Not Detected
o-Xylene	17	Not Detected	74	Not Detected
Styrene	17	Not Detected	73	Not Detected
Bromoform	17	Not Detected	180	Not Detected
Cumene	17	Not Detected	84	Not Detected
1,1,2,2-Tetrachloroethane	17	Not Detected	120	Not Detected
Propylbenzene	17	Not Detected	84	Not Detected
4-Ethyltoluene	17	Not Detected	84	Not Detected
1,3,5-Trimethylbenzene	17	Not Detected	84	Not Detected
1,2,4-Trimethylbenzene	17	Not Detected	84	Not Detected
1,3-Dichlorobenzene	17	Not Detected	100	Not Detected
1,4-Dichlorobenzene	17	Not Detected	100	Not Detected
alpha-Chlorotoluene	17	Not Detected	89	Not Detected
1,2-Dichlorobenzene	17	Not Detected	100	Not Detected
1,2,4-Trichlorobenzene	69	Not Detected	510	Not Detected
Hexachlorobutadiene	69	Not Detected	730	Not Detected
1,1-Difluoroethane	69	Not Detected	180	Not Detected

Container Type: 1 Liter Summa Canister

Surrogates	%Recovery	Method Limits
Toluene-d8	100	70-130
1,2-Dichloroethane-d4	98	70-130
4-Bromofluorobenzene	100	70-130

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Client Sample ID: VP10

Lab ID#: 1502299-04A

EPA METHOD TO-15 GC/MS

File Name:	**14022513**	**Date of Collection:**	**2/16/15 1:22:00 PM**
Dil. Factor:	**4.92**	**Date of Analysis:**	**2/25/15 02:49 PM**

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Freon 12	25	Not Detected	120	Not Detected
Freon 114	25	Not Detected	170	Not Detected
Chloromethane	98	Not Detected	200	Not Detected
Vinyl Chloride	25	Not Detected	63	Not Detected
1,3-Butadiene	25	Not Detected	54	Not Detected
Bromomethane	25	Not Detected	96	Not Detected
Chloroethane	98	Not Detected	260	Not Detected
Freon 11	25	Not Detected	140	Not Detected
Ethanol	98	Not Detected UJ	180	Not Detected UJ
Freon 113	25	Not Detected	190	Not Detected
1,1-Dichloroethene	25	Not Detected	98	Not Detected
Acetone	98	Not Detected	230	Not Detected
2-Propanol	98	Not Detected	240	Not Detected
Carbon Disulfide	25	Not Detected	77	Not Detected
3-Chloropropene	98	Not Detected	310	Not Detected
Methylene Chloride	25	Not Detected	85	Not Detected
Methyl tert-butyl ether	25	Not Detected	89	Not Detected
trans-1,2-Dichloroethene	25	Not Detected	98	Not Detected
Hexane	25	Not Detected	87	Not Detected
1,1-Dichloroethane	25	Not Detected	100	Not Detected
2-Butanone (Methyl Ethyl Ketone)	98	Not Detected	290	Not Detected
cis-1,2-Dichloroethene	25	Not Detected	98	Not Detected
Tetrahydrofuran	25	Not Detected	72	Not Detected
Chloroform	25	Not Detected	120	Not Detected
1,1,1-Trichloroethane	25	Not Detected	130	Not Detected
Cyclohexane	25	Not Detected	85	Not Detected
Carbon Tetrachloride	25	Not Detected	150	Not Detected
2,2,4-Trimethylpentane	25	Not Detected	110	Not Detected
Benzene	25	Not Detected	78	Not Detected
1,2-Dichloroethane	25	Not Detected	100	Not Detected
Heptane	25	Not Detected	100	Not Detected
Trichloroethene	25	Not Detected	130	Not Detected
1,2-Dichloropropane	25	Not Detected	110	Not Detected
1,4-Dioxane	98	Not Detected	350	Not Detected
Bromodichloromethane	25	Not Detected	160	Not Detected
cis-1,3-Dichloropropene	25	Not Detected	110	Not Detected
4-Methyl-2-pentanone	25	Not Detected	100	Not Detected
Toluene	25	Not Detected	93	Not Detected
trans-1,3-Dichloropropene	25	Not Detected	110	Not Detected
1,1,2-Trichloroethane	25	Not Detected	130	Not Detected
Tetrachloroethene	25	20000	170	130000
2-Hexanone	98	Not Detected	400	Not Detected

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Client Sample ID: VP10

Lab ID#: 1502299-04A

EPA METHOD TO-15 GC/MS

File Name:	**14022513**	**Date of Collection:**	**2/16/15 1:22:00 PM**
Dil. Factor:	**4.92**	**Date of Analysis:**	**2/25/15 02:49 PM**

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Dibromochloromethane	25	Not Detected	210	Not Detected
1,2-Dibromoethane (EDB)	25	Not Detected	190	Not Detected
Chlorobenzene	25	Not Detected	110	Not Detected
Ethyl Benzene	25	Not Detected	110	Not Detected
m,p-Xylene	25	Not Detected	110	Not Detected
o-Xylene	25	Not Detected	110	Not Detected
Styrene	25	Not Detected	100	Not Detected
Bromoform	25	Not Detected	250	Not Detected
Cumene	25	Not Detected	120	Not Detected
1,1,2,2-Tetrachloroethane	25	Not Detected	170	Not Detected
Propylbenzene	25	Not Detected	120	Not Detected
4-Ethyltoluene	25	Not Detected	120	Not Detected
1,3,5-Trimethylbenzene	25	Not Detected	120	Not Detected
1,2,4-Trimethylbenzene	25	Not Detected	120	Not Detected
1,3-Dichlorobenzene	25	Not Detected	150	Not Detected
1,4-Dichlorobenzene	25	Not Detected	150	Not Detected
alpha-Chlorotoluene	25	Not Detected	130	Not Detected
1,2-Dichlorobenzene	25	Not Detected	150	Not Detected
1,2,4-Trichlorobenzene	98	Not Detected	730	Not Detected
Hexachlorobutadiene	98	Not Detected	1000	Not Detected
1,1-Difluoroethane	98	Not Detected	260	Not Detected

UJ = Analyte associated with low bias in the CCV and/or LCS.

Container Type: 1 Liter Summa Canister

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	88	70-130
Toluene-d8	100	70-130
4-Bromofluorobenzene	100	70-130

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Client Sample ID: VP10-DUP

Lab ID#: 1502299-05A

EPA METHOD TO-15 GC/MS

File Name:	**14022512**	**Date of Collection:**	**2/16/15 1:22:00 PM**
Dil. Factor:	**4.78**	**Date of Analysis:**	**2/25/15 02:31 PM**

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Freon 12	24	Not Detected	120	Not Detected
Freon 114	24	Not Detected	170	Not Detected
Chloromethane	96	Not Detected	200	Not Detected
Vinyl Chloride	24	Not Detected	61	Not Detected
1,3-Butadiene	24	Not Detected	53	Not Detected
Bromomethane	24	Not Detected	93	Not Detected
Chloroethane	96	Not Detected	250	Not Detected
Freon 11	24	Not Detected	130	Not Detected
Ethanol	96	Not Detected UJ	180	Not Detected UJ
Freon 113	24	Not Detected	180	Not Detected
1,1-Dichloroethene	24	Not Detected	95	Not Detected
Acetone	96	Not Detected	230	Not Detected
2-Propanol	96	Not Detected	230	Not Detected
Carbon Disulfide	24	Not Detected	74	Not Detected
3-Chloropropene	96	Not Detected	300	Not Detected
Methylene Chloride	24	Not Detected	83	Not Detected
Methyl tert-butyl ether	24	Not Detected	86	Not Detected
trans-1,2-Dichloroethene	24	Not Detected	95	Not Detected
Hexane	24	Not Detected	84	Not Detected
1,1-Dichloroethane	24	Not Detected	97	Not Detected
2-Butanone (Methyl Ethyl Ketone)	96	Not Detected	280	Not Detected
cis-1,2-Dichloroethene	24	Not Detected	95	Not Detected
Tetrahydrofuran	24	Not Detected	70	Not Detected
Chloroform	24	Not Detected	120	Not Detected
1,1,1-Trichloroethane	24	Not Detected	130	Not Detected
Cyclohexane	24	Not Detected	82	Not Detected
Carbon Tetrachloride	24	Not Detected	150	Not Detected
2,2,4-Trimethylpentane	24	Not Detected	110	Not Detected
Benzene	24	Not Detected	76	Not Detected
1,2-Dichloroethane	24	Not Detected	97	Not Detected
Heptane	24	Not Detected	98	Not Detected
Trichloroethene	24	Not Detected	130	Not Detected
1,2-Dichloropropane	24	Not Detected	110	Not Detected
1,4-Dioxane	96	Not Detected	340	Not Detected
Bromodichloromethane	24	Not Detected	160	Not Detected
cis-1,3-Dichloropropene	24	Not Detected	110	Not Detected
4-Methyl-2-pentanone	24	Not Detected	98	Not Detected
Toluene	24	Not Detected	90	Not Detected
trans-1,3-Dichloropropene	24	Not Detected	110	Not Detected
1,1,2-Trichloroethane	24	Not Detected	130	Not Detected
Tetrachloroethene	24	21000	160	140000
2-Hexanone	96	Not Detected	390	Not Detected

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Client Sample ID: VP10-DUP

Lab ID#: 1502299-05A

EPA METHOD TO-15 GC/MS

File Name:	**14022512**	**Date of Collection: 2/16/15 1:22:00 PM**	
Dil. Factor:	**4.78**	**Date of Analysis: 2/25/15 02:31 PM**	

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Dibromochloromethane	24	Not Detected	200	Not Detected
1,2-Dibromoethane (EDB)	24	Not Detected	180	Not Detected
Chlorobenzene	24	Not Detected	110	Not Detected
Ethyl Benzene	24	Not Detected	100	Not Detected
m,p-Xylene	24	Not Detected	100	Not Detected
o-Xylene	24	Not Detected	100	Not Detected
Styrene	24	Not Detected	100	Not Detected
Bromoform	24	Not Detected	250	Not Detected
Cumene	24	Not Detected	120	Not Detected
1,1,2,2-Tetrachloroethane	24	Not Detected	160	Not Detected
Propylbenzene	24	Not Detected	120	Not Detected
4-Ethyltoluene	24	Not Detected	120	Not Detected
1,3,5-Trimethylbenzene	24	Not Detected	120	Not Detected
1,2,4-Trimethylbenzene	24	Not Detected	120	Not Detected
1,3-Dichlorobenzene	24	Not Detected	140	Not Detected
1,4-Dichlorobenzene	24	Not Detected	140	Not Detected
alpha-Chlorotoluene	24	Not Detected	120	Not Detected
1,2-Dichlorobenzene	24	Not Detected	140	Not Detected
1,2,4-Trichlorobenzene	96	Not Detected	710	Not Detected
Hexachlorobutadiene	96	Not Detected	1000	Not Detected
1,1-Difluoroethane	96	Not Detected	260	Not Detected

UJ = Analyte associated with low bias in the CCV and/or LCS.

Container Type: 1 Liter Summa Canister

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	86	70-130
Toluene-d8	99	70-130
4-Bromofluorobenzene	102	70-130

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Client Sample ID: VP11

Lab ID#: 1502299-06A

EPA METHOD TO-15 GC/MS

File Name:	**14022515**	**Date of Collection:**	**2/17/15 7:49:00 AM**
Dil. Factor:	**14.4**	**Date of Analysis:**	**2/25/15 03:31 PM**

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Freon 12	72	Not Detected	360	Not Detected
Freon 114	72	Not Detected	500	Not Detected
Chloromethane	290	Not Detected	590	Not Detected
Vinyl Chloride	72	Not Detected	180	Not Detected
1,3-Butadiene	72	Not Detected	160	Not Detected
Bromomethane	72	Not Detected	280	Not Detected
Chloroethane	290	Not Detected	760	Not Detected
Freon 11	72	Not Detected	400	Not Detected
Ethanol	290	Not Detected UJ	540	Not Detected UJ
Freon 113	72	Not Detected	550	Not Detected
1,1-Dichloroethene	72	Not Detected	280	Not Detected
Acetone	290	Not Detected	680	Not Detected
2-Propanol	290	Not Detected	710	Not Detected
Carbon Disulfide	72	Not Detected	220	Not Detected
3-Chloropropene	290	Not Detected	900	Not Detected
Methylene Chloride	72	Not Detected	250	Not Detected
Methyl tert-butyl ether	72	Not Detected	260	Not Detected
trans-1,2-Dichloroethene	72	Not Detected	280	Not Detected
Hexane	72	Not Detected	250	Not Detected
1,1-Dichloroethane	72	Not Detected	290	Not Detected
2-Butanone (Methyl Ethyl Ketone)	290	Not Detected	850	Not Detected
cis-1,2-Dichloroethene	72	Not Detected	280	Not Detected
Tetrahydrofuran	72	Not Detected	210	Not Detected
Chloroform	72	Not Detected	350	Not Detected
1,1,1-Trichloroethane	72	Not Detected	390	Not Detected
Cyclohexane	72	Not Detected	250	Not Detected
Carbon Tetrachloride	72	Not Detected	450	Not Detected
2,2,4-Trimethylpentane	72	Not Detected	340	Not Detected
Benzene	72	Not Detected	230	Not Detected
1,2-Dichloroethane	72	Not Detected	290	Not Detected
Heptane	72	Not Detected	300	Not Detected
Trichloroethene	72	Not Detected	390	Not Detected
1,2-Dichloropropane	72	Not Detected	330	Not Detected
1,4-Dioxane	290	Not Detected	1000	Not Detected
Bromodichloromethane	72	Not Detected	480	Not Detected
cis-1,3-Dichloropropene	72	Not Detected	330	Not Detected
4-Methyl-2-pentanone	72	Not Detected	290	Not Detected
Toluene	72	Not Detected	270	Not Detected
trans-1,3-Dichloropropene	72	Not Detected	330	Not Detected
1,1,2-Trichloroethane	72	Not Detected	390	Not Detected
Tetrachloroethene	72	37000	490	250000
2-Hexanone	290	Not Detected	1200	Not Detected

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Client Sample ID: VP11

Lab ID#: 1502299-06A

EPA METHOD TO-15 GC/MS

File Name:	**14022515**	**Date of Collection: 2/17/15 7:49:00 AM**	
Dil. Factor:	**14.4**	**Date of Analysis: 2/25/15 03:31 PM**	

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Dibromochloromethane	72	Not Detected	610	Not Detected
1,2-Dibromoethane (EDB)	72	Not Detected	550	Not Detected
Chlorobenzene	72	Not Detected	330	Not Detected
Ethyl Benzene	72	Not Detected	310	Not Detected
m,p-Xylene	72	Not Detected	310	Not Detected
o-Xylene	72	Not Detected	310	Not Detected
Styrene	72	Not Detected	310	Not Detected
Bromoform	72	Not Detected	740	Not Detected
Cumene	72	Not Detected	350	Not Detected
1,1,2,2-Tetrachloroethane	72	Not Detected	490	Not Detected
Propylbenzene	72	Not Detected	350	Not Detected
4-Ethyltoluene	72	Not Detected	350	Not Detected
1,3,5-Trimethylbenzene	72	Not Detected	350	Not Detected
1,2,4-Trimethylbenzene	72	Not Detected	350	Not Detected
1,3-Dichlorobenzene	72	Not Detected	430	Not Detected
1,4-Dichlorobenzene	72	Not Detected	430	Not Detected
alpha-Chlorotoluene	72	Not Detected	370	Not Detected
1,2-Dichlorobenzene	72	Not Detected	430	Not Detected
1,2,4-Trichlorobenzene	290	Not Detected	2100	Not Detected
Hexachlorobutadiene	290	Not Detected	3100	Not Detected
1,1-Difluoroethane	290	Not Detected	780	Not Detected

UJ = Analyte associated with low bias in the CCV and/or LCS.

Container Type: 1 Liter Summa Canister

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	86	70-130
Toluene-d8	97	70-130
4-Bromofluorobenzene	98	70-130

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Client Sample ID: PP12

Lab ID#: 1502299-07A

EPA METHOD TO-15 GC/MS

File Name:	**14022514**	**Date of Collection:**	**2/17/15 8:39:00 AM**
Dil. Factor:	**7.90**	**Date of Analysis:**	**2/25/15 03:09 PM**

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Freon 12	40	Not Detected	200	Not Detected
Freon 114	40	Not Detected	280	Not Detected
Chloromethane	160	Not Detected	330	Not Detected
Vinyl Chloride	40	Not Detected	100	Not Detected
1,3-Butadiene	40	Not Detected	87	Not Detected
Bromomethane	40	Not Detected	150	Not Detected
Chloroethane	160	Not Detected	420	Not Detected
Freon 11	40	Not Detected	220	Not Detected
Ethanol	160	Not Detected UJ	300	Not Detected UJ
Freon 113	40	Not Detected	300	Not Detected
1,1-Dichloroethene	40	Not Detected	160	Not Detected
Acetone	160	Not Detected	380	Not Detected
2-Propanol	160	Not Detected	390	Not Detected
Carbon Disulfide	40	Not Detected	120	Not Detected
3-Chloropropene	160	Not Detected	490	Not Detected
Methylene Chloride	40	Not Detected	140	Not Detected
Methyl tert-butyl ether	40	Not Detected	140	Not Detected
trans-1,2-Dichloroethene	40	Not Detected	160	Not Detected
Hexane	40	Not Detected	140	Not Detected
1,1-Dichloroethane	40	Not Detected	160	Not Detected
2-Butanone (Methyl Ethyl Ketone)	160	Not Detected	460	Not Detected
cis-1,2-Dichloroethene	40	Not Detected	160	Not Detected
Tetrahydrofuran	40	Not Detected	120	Not Detected
Chloroform	40	Not Detected	190	Not Detected
1,1,1-Trichloroethane	40	Not Detected	220	Not Detected
Cyclohexane	40	Not Detected	140	Not Detected
Carbon Tetrachloride	40	Not Detected	250	Not Detected
2,2,4-Trimethylpentane	40	Not Detected	180	Not Detected
Benzene	40	Not Detected	130	Not Detected
1,2-Dichloroethane	40	Not Detected	160	Not Detected
Heptane	40	Not Detected	160	Not Detected
Trichloroethene	40	Not Detected	210	Not Detected
1,2-Dichloropropane	40	Not Detected	180	Not Detected
1,4-Dioxane	160	Not Detected	570	Not Detected
Bromodichloromethane	40	Not Detected	260	Not Detected
cis-1,3-Dichloropropene	40	Not Detected	180	Not Detected
4-Methyl-2-pentanone	40	Not Detected	160	Not Detected
Toluene	40	Not Detected	150	Not Detected
trans-1,3-Dichloropropene	40	Not Detected	180	Not Detected
1,1,2-Trichloroethane	40	Not Detected	220	Not Detected
Tetrachloroethene	40	22000	270	150000
2-Hexanone	160	Not Detected	650	Not Detected

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Client Sample ID: PP12

Lab ID#: 1502299-07A

EPA METHOD TO-15 GC/MS

File Name:	**14022514**	**Date of Collection:**	**2/17/15 8:39:00 AM**
Dil. Factor:	**7.90**	**Date of Analysis:**	**2/25/15 03:09 PM**

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Dibromochloromethane	40	Not Detected	340	Not Detected
1,2-Dibromoethane (EDB)	40	Not Detected	300	Not Detected
Chlorobenzene	40	Not Detected	180	Not Detected
Ethyl Benzene	40	Not Detected	170	Not Detected
m,p-Xylene	40	Not Detected	170	Not Detected
o-Xylene	40	Not Detected	170	Not Detected
Styrene	40	Not Detected	170	Not Detected
Bromoform	40	Not Detected	410	Not Detected
Cumene	40	Not Detected	190	Not Detected
1,1,2,2-Tetrachloroethane	40	Not Detected	270	Not Detected
Propylbenzene	40	Not Detected	190	Not Detected
4-Ethyltoluene	40	Not Detected	190	Not Detected
1,3,5-Trimethylbenzene	40	Not Detected	190	Not Detected
1,2,4-Trimethylbenzene	40	Not Detected	190	Not Detected
1,3-Dichlorobenzene	40	Not Detected	240	Not Detected
1,4-Dichlorobenzene	40	Not Detected	240	Not Detected
alpha-Chlorotoluene	40	Not Detected	200	Not Detected
1,2-Dichlorobenzene	40	Not Detected	240	Not Detected
1,2,4-Trichlorobenzene	160	Not Detected	1200	Not Detected
Hexachlorobutadiene	160	Not Detected	1700	Not Detected
1,1-Difluoroethane	160	Not Detected	430	Not Detected

UJ = Analyte associated with low bias in the CCV and/or LCS.

Container Type: 1 Liter Summa Canister

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	86	70-130
Toluene-d8	97	70-130
4-Bromofluorobenzene	99	70-130

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Client Sample ID: Lab Blank

Lab ID#: 1502299-08A

EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	**3022308d**	**Date of Collection: NA**	
Dil. Factor:	**1.00**	**Date of Analysis: 2/23/15 12:22 PM**	

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Freon 12	0.50	Not Detected	2.5	Not Detected
Freon 114	0.50	Not Detected	3.5	Not Detected
Chloromethane	5.0	Not Detected	10	Not Detected
Vinyl Chloride	0.50	Not Detected	1.3	Not Detected
1,3-Butadiene	0.50	Not Detected	1.1	Not Detected
Bromomethane	5.0	Not Detected	19	Not Detected
Chloroethane	2.0	Not Detected	5.3	Not Detected
Freon 11	0.50	Not Detected	2.8	Not Detected
Ethanol	2.0	Not Detected	3.8	Not Detected
Freon 113	0.50	Not Detected	3.8	Not Detected
1,1-Dichloroethene	0.50	Not Detected	2.0	Not Detected
Acetone	5.0	Not Detected	12	Not Detected
2-Propanol	2.0	Not Detected	4.9	Not Detected
Carbon Disulfide	2.0	Not Detected	6.2	Not Detected
3-Chloropropene	2.0	Not Detected	6.3	Not Detected
Methylene Chloride	5.0	Not Detected	17	Not Detected
Methyl tert-butyl ether	0.50	Not Detected	1.8	Not Detected
trans-1,2-Dichloroethene	0.50	Not Detected	2.0	Not Detected
Hexane	0.50	Not Detected	1.8	Not Detected
1,1-Dichloroethane	0.50	Not Detected	2.0	Not Detected
2-Butanone (Methyl Ethyl Ketone)	2.0	Not Detected	5.9	Not Detected
cis-1,2-Dichloroethene	0.50	Not Detected	2.0	Not Detected
Tetrahydrofuran	0.50	Not Detected	1.5	Not Detected
Chloroform	0.50	Not Detected	2.4	Not Detected
1,1,1-Trichloroethane	0.50	Not Detected	2.7	Not Detected
Cyclohexane	0.50	Not Detected	1.7	Not Detected
Carbon Tetrachloride	0.50	Not Detected	3.1	Not Detected
2,2,4-Trimethylpentane	0.50	Not Detected	2.3	Not Detected
Benzene	0.50	Not Detected	1.6	Not Detected
1,2-Dichloroethane	0.50	Not Detected	2.0	Not Detected
Heptane	0.50	Not Detected	2.0	Not Detected
Trichloroethene	0.50	Not Detected	2.7	Not Detected
1,2-Dichloropropane	0.50	Not Detected	2.3	Not Detected
1,4-Dioxane	2.0	Not Detected	7.2	Not Detected
Bromodichloromethane	0.50	Not Detected	3.4	Not Detected
cis-1,3-Dichloropropene	0.50	Not Detected	2.3	Not Detected
4-Methyl-2-pentanone	0.50	Not Detected	2.0	Not Detected
Toluene	0.50	Not Detected	1.9	Not Detected
trans-1,3-Dichloropropene	0.50	Not Detected	2.3	Not Detected
1,1,2-Trichloroethane	0.50	Not Detected	2.7	Not Detected
Tetrachloroethene	0.50	Not Detected	3.4	Not Detected
2-Hexanone	2.0	Not Detected	8.2	Not Detected

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Client Sample ID: Lab Blank

Lab ID#: 1502299-08A

EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	**3022308d**	**Date of Collection: NA**	
Dil. Factor:	**1.00**	**Date of Analysis: 2/23/15 12:22 PM**	

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Dibromochloromethane	0.50	Not Detected	4.2	Not Detected
1,2-Dibromoethane (EDB)	0.50	Not Detected	3.8	Not Detected
Chlorobenzene	0.50	Not Detected	2.3	Not Detected
Ethyl Benzene	0.50	Not Detected	2.2	Not Detected
m,p-Xylene	0.50	Not Detected	2.2	Not Detected
o-Xylene	0.50	Not Detected	2.2	Not Detected
Styrene	0.50	Not Detected	2.1	Not Detected
Bromoform	0.50	Not Detected	5.2	Not Detected
Cumene	0.50	Not Detected	2.4	Not Detected
1,1,2,2-Tetrachloroethane	0.50	Not Detected	3.4	Not Detected
Propylbenzene	0.50	Not Detected	2.4	Not Detected
4-Ethyltoluene	0.50	Not Detected	2.4	Not Detected
1,3,5-Trimethylbenzene	0.50	Not Detected	2.4	Not Detected
1,2,4-Trimethylbenzene	0.50	Not Detected	2.4	Not Detected
1,3-Dichlorobenzene	0.50	Not Detected	3.0	Not Detected
1,4-Dichlorobenzene	0.50	Not Detected	3.0	Not Detected
alpha-Chlorotoluene	0.50	Not Detected	2.6	Not Detected
1,2-Dichlorobenzene	0.50	Not Detected	3.0	Not Detected
1,2,4-Trichlorobenzene	2.0	Not Detected	15	Not Detected
Hexachlorobutadiene	2.0	Not Detected	21	Not Detected
1,1-Difluoroethane	2.0	Not Detected	5.4	Not Detected

Container Type: NA - Not Applicable

Surrogates	%Recovery	Method Limits
Toluene-d8	107	70-130
1,2-Dichloroethane-d4	102	70-130
4-Bromofluorobenzene	99	70-130

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Client Sample ID: Lab Blank

Lab ID#: 1502299-08B

EPA METHOD TO-15 GC/MS

File Name:	**14022507a**	**Date of Collection: NA**	
Dil. Factor:	**1.00**	**Date of Analysis: 2/25/15 12:24 PM**	

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Freon 12	5.0	Not Detected	25	Not Detected
Freon 114	5.0	Not Detected	35	Not Detected
Chloromethane	20	Not Detected	41	Not Detected
Vinyl Chloride	5.0	Not Detected	13	Not Detected
1,3-Butadiene	5.0	Not Detected	11	Not Detected
Bromomethane	5.0	Not Detected	19	Not Detected
Chloroethane	20	Not Detected	53	Not Detected
Freon 11	5.0	Not Detected	28	Not Detected
Ethanol	20	Not Detected UJ	38	Not Detected UJ
Freon 113	5.0	Not Detected	38	Not Detected
1,1-Dichloroethene	5.0	Not Detected	20	Not Detected
Acetone	20	Not Detected	48	Not Detected
2-Propanol	20	Not Detected	49	Not Detected
Carbon Disulfide	5.0	Not Detected	16	Not Detected
3-Chloropropene	20	Not Detected	63	Not Detected
Methylene Chloride	5.0	Not Detected	17	Not Detected
Methyl tert-butyl ether	5.0	Not Detected	18	Not Detected
trans-1,2-Dichloroethene	5.0	Not Detected	20	Not Detected
Hexane	5.0	Not Detected	18	Not Detected
1,1-Dichloroethane	5.0	Not Detected	20	Not Detected
2-Butanone (Methyl Ethyl Ketone)	20	Not Detected	59	Not Detected
cis-1,2-Dichloroethene	5.0	Not Detected	20	Not Detected
Tetrahydrofuran	5.0	Not Detected	15	Not Detected
Chloroform	5.0	Not Detected	24	Not Detected
1,1,1-Trichloroethane	5.0	Not Detected	27	Not Detected
Cyclohexane	5.0	Not Detected	17	Not Detected
Carbon Tetrachloride	5.0	Not Detected	31	Not Detected
2,2,4-Trimethylpentane	5.0	Not Detected	23	Not Detected
Benzene	5.0	Not Detected	16	Not Detected
1,2-Dichloroethane	5.0	Not Detected	20	Not Detected
Heptane	5.0	Not Detected	20	Not Detected
Trichloroethene	5.0	Not Detected	27	Not Detected
1,2-Dichloropropane	5.0	Not Detected	23	Not Detected
1,4-Dioxane	20	Not Detected	72	Not Detected
Bromodichloromethane	5.0	Not Detected	34	Not Detected
cis-1,3-Dichloropropene	5.0	Not Detected	23	Not Detected
4-Methyl-2-pentanone	5.0	Not Detected	20	Not Detected
Toluene	5.0	Not Detected	19	Not Detected
trans-1,3-Dichloropropene	5.0	Not Detected	23	Not Detected
1,1,2-Trichloroethane	5.0	Not Detected	27	Not Detected
Tetrachloroethene	5.0	Not Detected	34	Not Detected
2-Hexanone	20	Not Detected	82	Not Detected

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Client Sample ID: Lab Blank

Lab ID#: 1502299-08B

EPA METHOD TO-15 GC/MS

File Name:	**14022507a**	**Date of Collection: NA**	
Dil. Factor:	**1.00**	**Date of Analysis: 2/25/15 12:24 PM**	

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Dibromochloromethane	5.0	Not Detected	42	Not Detected
1,2-Dibromoethane (EDB)	5.0	Not Detected	38	Not Detected
Chlorobenzene	5.0	Not Detected	23	Not Detected
Ethyl Benzene	5.0	Not Detected	22	Not Detected
m,p-Xylene	5.0	Not Detected	22	Not Detected
o-Xylene	5.0	Not Detected	22	Not Detected
Styrene	5.0	Not Detected	21	Not Detected
Bromoform	5.0	Not Detected	52	Not Detected
Cumene	5.0	Not Detected	24	Not Detected
1,1,2,2-Tetrachloroethane	5.0	Not Detected	34	Not Detected
Propylbenzene	5.0	Not Detected	24	Not Detected
4-Ethyltoluene	5.0	Not Detected	24	Not Detected
1,3,5-Trimethylbenzene	5.0	Not Detected	24	Not Detected
1,2,4-Trimethylbenzene	5.0	Not Detected	24	Not Detected
1,3-Dichlorobenzene	5.0	Not Detected	30	Not Detected
1,4-Dichlorobenzene	5.0	Not Detected	30	Not Detected
alpha-Chlorotoluene	5.0	Not Detected	26	Not Detected
1,2-Dichlorobenzene	5.0	Not Detected	30	Not Detected
1,2,4-Trichlorobenzene	20	Not Detected	150	Not Detected
Hexachlorobutadiene	20	Not Detected	210	Not Detected
1,1-Difluoroethane	20	Not Detected	54	Not Detected

UJ = Analyte associated with low bias in the CCV and/or LCS.

Container Type: NA - Not Applicable

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	86	70-130
Toluene-d8	98	70-130
4-Bromofluorobenzene	99	70-130

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Client Sample ID: CCV

Lab ID#: 1502299-09A

EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	**3022302**	**Date of Collection: NA**	
Dil. Factor:	**1.00**	**Date of Analysis: 2/23/15 08:30 AM**	

Compound	%Recovery
Freon 12	107
Freon 114	106
Chloromethane	101
Vinyl Chloride	97
1,3-Butadiene	86
Bromomethane	101
Chloroethane	91
Freon 11	104
Ethanol	72
Freon 113	101
1,1-Dichloroethene	97
Acetone	82
2-Propanol	81
Carbon Disulfide	93
3-Chloropropene	96
Methylene Chloride	82
Methyl tert-butyl ether	99
trans-1,2-Dichloroethene	98
Hexane	89
1,1-Dichloroethane	91
2-Butanone (Methyl Ethyl Ketone)	92
cis-1,2-Dichloroethene	96
Tetrahydrofuran	81
Chloroform	97
1,1,1-Trichloroethane	103
Cyclohexane	96
Carbon Tetrachloride	105
2,2,4-Trimethylpentane	98
Benzene	94
1,2-Dichloroethane	104
Heptane	103
Trichloroethene	97
1,2-Dichloropropane	84
1,4-Dioxane	90
Bromodichloromethane	99
cis-1,3-Dichloropropene	97
4-Methyl-2-pentanone	82
Toluene	95
trans-1,3-Dichloropropene	98
1,1,2-Trichloroethane	94
Tetrachloroethene	104
2-Hexanone	87

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Client Sample ID: CCV

Lab ID#: 1502299-09A

EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	**3022302**	**Date of Collection: NA**	
Dil. Factor:	**1.00**	**Date of Analysis: 2/23/15 08:30 AM**	

Compound	%Recovery
Dibromochloromethane	102
1,2-Dibromoethane (EDB)	97
Chlorobenzene	95
Ethyl Benzene	98
m,p-Xylene	100
o-Xylene	100
Styrene	109
Bromoform	104
Cumene	103
1,1,2,2-Tetrachloroethane	85
Propylbenzene	93
4-Ethyltoluene	101
1,3,5-Trimethylbenzene	106
1,2,4-Trimethylbenzene	102
1,3-Dichlorobenzene	96
1,4-Dichlorobenzene	98
alpha-Chlorotoluene	133 Q
1,2-Dichlorobenzene	97
1,2,4-Trichlorobenzene	130
Hexachlorobutadiene	130
1,1-Difluoroethane	69

Q = Exceeds Quality Control limits.

Container Type: NA - Not Applicable

Surrogates	%Recovery	Method Limits
Toluene-d8	103	70-130
1,2-Dichloroethane-d4	97	70-130
4-Bromofluorobenzene	105	70-130

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Client Sample ID: CCV

Lab ID#: 1502299-09B

EPA METHOD TO-15 GC/MS

File Name:	**14022502**	**Date of Collection: NA**	
Dil. Factor:	**1.00**	**Date of Analysis: 2/25/15 10:35 AM**	

Compound	%Recovery
Freon 12	81
Freon 114	87
Chloromethane	76
Vinyl Chloride	89
1,3-Butadiene	88
Bromomethane	77
Chloroethane	83
Freon 11	84
Ethanol	66 Q
Freon 113	91
1,1-Dichloroethene	81
Acetone	86
2-Propanol	78
Carbon Disulfide	88
3-Chloropropene	84
Methylene Chloride	80
Methyl tert-butyl ether	115
trans-1,2-Dichloroethene	89
Hexane	82
1,1-Dichloroethane	87
2-Butanone (Methyl Ethyl Ketone)	90
cis-1,2-Dichloroethene	80
Tetrahydrofuran	79
Chloroform	84
1,1,1-Trichloroethane	83
Cyclohexane	90
Carbon Tetrachloride	86
2,2,4-Trimethylpentane	81
Benzene	89
1,2-Dichloroethane	76
Heptane	87
Trichloroethene	75
1,2-Dichloropropane	86
1,4-Dioxane	84
Bromodichloromethane	79
cis-1,3-Dichloropropene	86
4-Methyl-2-pentanone	82
Toluene	86
trans-1,3-Dichloropropene	84
1,1,2-Trichloroethane	87
Tetrachloroethene	88
2-Hexanone	78

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Client Sample ID: CCV

Lab ID#: 1502299-09B

EPA METHOD TO-15 GC/MS

File Name:	**14022502**	**Date of Collection: NA**	
Dil. Factor:	**1.00**	**Date of Analysis: 2/25/15 10:35 AM**	

Compound	%Recovery
Dibromochloromethane	84
1,2-Dibromoethane (EDB)	85
Chlorobenzene	88
Ethyl Benzene	85
m,p-Xylene	88
o-Xylene	87
Styrene	94
Bromoform	88
Cumene	89
1,1,2,2-Tetrachloroethane	101
Propylbenzene	90
4-Ethyltoluene	91
1,3,5-Trimethylbenzene	96
1,2,4-Trimethylbenzene	91
1,3-Dichlorobenzene	91
1,4-Dichlorobenzene	93
alpha-Chlorotoluene	88
1,2-Dichlorobenzene	94
1,2,4-Trichlorobenzene	100
Hexachlorobutadiene	114
1,1-Difluoroethane	101

Q = Exceeds Quality Control limits.

Container Type: NA - Not Applicable

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	90	70-130
Toluene-d8	99	70-130
4-Bromofluorobenzene	101	70-130

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Client Sample ID: LCS

Lab ID#: 1502299-10A

EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	**3022303**	**Date of Collection: NA**	
Dil. Factor:	**1.00**	**Date of Analysis: 2/23/15 08:55 AM**	

Compound	%Recovery	Method Limits
Freon 12	100	70-130
Freon 114	101	70-130
Chloromethane	94	70-130
Vinyl Chloride	91	70-130
1,3-Butadiene	78	70-130
Bromomethane	98	70-130
Chloroethane	88	70-130
Freon 11	98	70-130
Ethanol	75	70-130
Freon 113	95	70-130
1,1-Dichloroethene	89	70-130
Acetone	76	70-130
2-Propanol	83	70-130
Carbon Disulfide	76	70-130
3-Chloropropene	84	70-130
Methylene Chloride	78	70-130
Methyl tert-butyl ether	91	70-130
trans-1,2-Dichloroethene	76	70-130
Hexane	83	70-130
1,1-Dichloroethane	85	70-130
2-Butanone (Methyl Ethyl Ketone)	83	70-130
cis-1,2-Dichloroethene	97	70-130
Tetrahydrofuran	76	70-130
Chloroform	90	70-130
1,1,1-Trichloroethane	97	70-130
Cyclohexane	92	70-130
Carbon Tetrachloride	99	70-130
2,2,4-Trimethylpentane	92	70-130
Benzene	91	70-130
1,2-Dichloroethane	99	70-130
Heptane	99	70-130
Trichloroethene	93	70-130
1,2-Dichloropropane	83	70-130
1,4-Dioxane	93	70-130
Bromodichloromethane	99	70-130
cis-1,3-Dichloropropene	90	70-130
4-Methyl-2-pentanone	85	70-130
Toluene	93	70-130
trans-1,3-Dichloropropene	94	70-130
1,1,2-Trichloroethane	89	70-130
Tetrachloroethene	99	70-130
2-Hexanone	89	70-130

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Client Sample ID: LCS

Lab ID#: 1502299-10A

EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	**3022303**	**Date of Collection: NA**	
Dil. Factor:	**1.00**	**Date of Analysis: 2/23/15 08:55 AM**	

Compound	%Recovery	Method Limits
Dibromochloromethane	98	70-130
1,2-Dibromoethane (EDB)	94	70-130
Chlorobenzene	90	70-130
Ethyl Benzene	94	70-130
m,p-Xylene	96	70-130
o-Xylene	97	70-130
Styrene	109	70-130
Bromoform	100	70-130
Cumene	100	70-130
1,1,2,2-Tetrachloroethane	83	70-130
Propylbenzene	93	70-130
4-Ethyltoluene	98	70-130
1,3,5-Trimethylbenzene	103	70-130
1,2,4-Trimethylbenzene	101	70-130
1,3-Dichlorobenzene	94	70-130
1,4-Dichlorobenzene	95	70-130
alpha-Chlorotoluene	136 Q	70-130
1,2-Dichlorobenzene	94	70-130
1,2,4-Trichlorobenzene	118	70-130
Hexachlorobutadiene	121	70-130
1,1-Difluoroethane	Not Spiked	

Q = Exceeds Quality Control limits.

Container Type: NA - Not Applicable

Surrogates	%Recovery	Method Limits
Toluene-d8	104	70-130
1,2-Dichloroethane-d4	96	70-130
4-Bromofluorobenzene	103	70-130

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Client Sample ID: LCSD

Lab ID#: 1502299-10AA

EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	**3022304**	**Date of Collection: NA**	
Dil. Factor:	**1.00**	**Date of Analysis: 2/23/15 09:20 AM**	

Compound	%Recovery	Method Limits
Freon 12	104	70-130
Freon 114	102	70-130
Chloromethane	88	70-130
Vinyl Chloride	93	70-130
1,3-Butadiene	79	70-130
Bromomethane	100	70-130
Chloroethane	90	70-130
Freon 11	99	70-130
Ethanol	75	70-130
Freon 113	96	70-130
1,1-Dichloroethene	95	70-130
Acetone	77	70-130
2-Propanol	83	70-130
Carbon Disulfide	79	70-130
3-Chloropropene	88	70-130
Methylene Chloride	78	70-130
Methyl tert-butyl ether	93	70-130
trans-1,2-Dichloroethene	81	70-130
Hexane	85	70-130
1,1-Dichloroethane	86	70-130
2-Butanone (Methyl Ethyl Ketone)	85	70-130
cis-1,2-Dichloroethene	101	70-130
Tetrahydrofuran	75	70-130
Chloroform	93	70-130
1,1,1-Trichloroethane	99	70-130
Cyclohexane	93	70-130
Carbon Tetrachloride	101	70-130
2,2,4-Trimethylpentane	94	70-130
Benzene	92	70-130
1,2-Dichloroethane	99	70-130
Heptane	100	70-130
Trichloroethene	96	70-130
1,2-Dichloropropane	83	70-130
1,4-Dioxane	93	70-130
Bromodichloromethane	99	70-130
cis-1,3-Dichloropropene	90	70-130
4-Methyl-2-pentanone	85	70-130
Toluene	94	70-130
trans-1,3-Dichloropropene	97	70-130
1,1,2-Trichloroethane	91	70-130
Tetrachloroethene	100	70-130
2-Hexanone	91	70-130

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Client Sample ID: LCSD

Lab ID#: 1502299-10AA

EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	**3022304**	**Date of Collection: NA**	
Dil. Factor:	**1.00**	**Date of Analysis: 2/23/15 09:20 AM**	

Compound	%Recovery	Method Limits
Dibromochloromethane	101	70-130
1,2-Dibromoethane (EDB)	97	70-130
Chlorobenzene	91	70-130
Ethyl Benzene	95	70-130
m,p-Xylene	99	70-130
o-Xylene	101	70-130
Styrene	111	70-130
Bromoform	102	70-130
Cumene	102	70-130
1,1,2,2-Tetrachloroethane	85	70-130
Propylbenzene	94	70-130
4-Ethyltoluene	100	70-130
1,3,5-Trimethylbenzene	107	70-130
1,2,4-Trimethylbenzene	103	70-130
1,3-Dichlorobenzene	96	70-130
1,4-Dichlorobenzene	97	70-130
alpha-Chlorotoluene	141 Q	70-130
1,2-Dichlorobenzene	96	70-130
1,2,4-Trichlorobenzene	123	70-130
Hexachlorobutadiene	125	70-130
1,1-Difluoroethane	Not Spiked	

Q = Exceeds Quality Control limits.

Container Type: NA - Not Applicable

Surrogates	%Recovery	Method Limits
Toluene-d8	103	70-130
1,2-Dichloroethane-d4	96	70-130
4-Bromofluorobenzene	105	70-130

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Client Sample ID: LCS

Lab ID#: 1502299-10B

EPA METHOD TO-15 GC/MS

File Name:	**14022503**	**Date of Collection: NA**	
Dil. Factor:	**1.00**	**Date of Analysis: 2/25/15 10:58 AM**	

Compound	%Recovery	Method Limits
Freon 12	84	70-130
Freon 114	91	70-130
Chloromethane	74	70-130
Vinyl Chloride	94	70-130
1,3-Butadiene	82	70-130
Bromomethane	80	70-130
Chloroethane	83	70-130
Freon 11	85	70-130
Ethanol	68 Q	70-130
Freon 113	91	70-130
1,1-Dichloroethene	84	70-130
Acetone	86	70-130
2-Propanol	82	70-130
Carbon Disulfide	80	70-130
3-Chloropropene	80	70-130
Methylene Chloride	81	70-130
Methyl tert-butyl ether	113	70-130
trans-1,2-Dichloroethene	79	70-130
Hexane	81	70-130
1,1-Dichloroethane	87	70-130
2-Butanone (Methyl Ethyl Ketone)	93	70-130
cis-1,2-Dichloroethene	88	70-130
Tetrahydrofuran	79	70-130
Chloroform	85	70-130
1,1,1-Trichloroethane	83	70-130
Cyclohexane	90	70-130
Carbon Tetrachloride	86	70-130
2,2,4-Trimethylpentane	84	70-130
Benzene	88	70-130
1,2-Dichloroethane	78	70-130
Heptane	84	70-130
Trichloroethene	76	70-130
1,2-Dichloropropane	86	70-130
1,4-Dioxane	87	70-130
Bromodichloromethane	82	70-130
cis-1,3-Dichloropropene	80	70-130
4-Methyl-2-pentanone	82	70-130
Toluene	87	70-130
trans-1,3-Dichloropropene	85	70-130
1,1,2-Trichloroethane	87	70-130
Tetrachloroethene	91	70-130
2-Hexanone	81	70-130

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Client Sample ID: LCS

Lab ID#: 1502299-10B

EPA METHOD TO-15 GC/MS

File Name:	**14022503**	**Date of Collection: NA**	
Dil. Factor:	**1.00**	**Date of Analysis: 2/25/15 10:58 AM**	

Compound	%Recovery	Method Limits
Dibromochloromethane	86	70-130
1,2-Dibromoethane (EDB)	88	70-130
Chlorobenzene	86	70-130
Ethyl Benzene	88	70-130
m,p-Xylene	88	70-130
o-Xylene	91	70-130
Styrene	96	70-130
Bromoform	91	70-130
Cumene	88	70-130
1,1,2,2-Tetrachloroethane	108	70-130
Propylbenzene	93	70-130
4-Ethyltoluene	92	70-130
1,3,5-Trimethylbenzene	95	70-130
1,2,4-Trimethylbenzene	92	70-130
1,3-Dichlorobenzene	90	70-130
1,4-Dichlorobenzene	93	70-130
alpha-Chlorotoluene	96	70-130
1,2-Dichlorobenzene	94	70-130
1,2,4-Trichlorobenzene	94	70-130
Hexachlorobutadiene	110	70-130
1,1-Difluoroethane	Not Spiked	

Q = Exceeds Quality Control limits.

Container Type: NA - Not Applicable

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	88	70-130
Toluene-d8	100	70-130
4-Bromofluorobenzene	99	70-130

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Client Sample ID: LCSD

Lab ID#: 1502299-10BB

EPA METHOD TO-15 GC/MS

File Name:	**14022504**	**Date of Collection: NA**	
Dil. Factor:	**1.00**	**Date of Analysis: 2/25/15 11:17 AM**	

Compound	%Recovery	Method Limits
Freon 12	81	70-130
Freon 114	86	70-130
Chloromethane	72	70-130
Vinyl Chloride	89	70-130
1,3-Butadiene	80	70-130
Bromomethane	74	70-130
Chloroethane	80	70-130
Freon 11	82	70-130
Ethanol	66 Q	70-130
Freon 113	88	70-130
1,1-Dichloroethene	81	70-130
Acetone	83	70-130
2-Propanol	77	70-130
Carbon Disulfide	75	70-130
3-Chloropropene	77	70-130
Methylene Chloride	75	70-130
Methyl tert-butyl ether	109	70-130
trans-1,2-Dichloroethene	76	70-130
Hexane	80	70-130
1,1-Dichloroethane	82	70-130
2-Butanone (Methyl Ethyl Ketone)	86	70-130
cis-1,2-Dichloroethene	85	70-130
Tetrahydrofuran	76	70-130
Chloroform	82	70-130
1,1,1-Trichloroethane	80	70-130
Cyclohexane	87	70-130
Carbon Tetrachloride	82	70-130
2,2,4-Trimethylpentane	82	70-130
Benzene	86	70-130
1,2-Dichloroethane	74	70-130
Heptane	82	70-130
Trichloroethene	75	70-130
1,2-Dichloropropane	83	70-130
1,4-Dioxane	84	70-130
Bromodichloromethane	79	70-130
cis-1,3-Dichloropropene	79	70-130
4-Methyl-2-pentanone	77	70-130
Toluene	84	70-130
trans-1,3-Dichloropropene	84	70-130
1,1,2-Trichloroethane	86	70-130
Tetrachloroethene	89	70-130
2-Hexanone	80	70-130

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Client Sample ID: LCSD

Lab ID#: 1502299-10BB

EPA METHOD TO-15 GC/MS

File Name:	**14022504**	**Date of Collection: NA**	
Dil. Factor:	**1.00**	**Date of Analysis: 2/25/15 11:17 AM**	

Compound	%Recovery	Method Limits
Dibromochloromethane	85	70-130
1,2-Dibromoethane (EDB)	88	70-130
Chlorobenzene	86	70-130
Ethyl Benzene	86	70-130
m,p-Xylene	88	70-130
o-Xylene	87	70-130
Styrene	95	70-130
Bromoform	90	70-130
Cumene	87	70-130
1,1,2,2-Tetrachloroethane	105	70-130
Propylbenzene	91	70-130
4-Ethyltoluene	90	70-130
1,3,5-Trimethylbenzene	92	70-130
1,2,4-Trimethylbenzene	89	70-130
1,3-Dichlorobenzene	88	70-130
1,4-Dichlorobenzene	90	70-130
alpha-Chlorotoluene	89	70-130
1,2-Dichlorobenzene	90	70-130
1,2,4-Trichlorobenzene	83	70-130
Hexachlorobutadiene	94	70-130
1,1-Difluoroethane	Not Spiked	

Q = Exceeds Quality Control limits.

Container Type: NA - Not Applicable

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	86	70-130
Toluene-d8	99	70-130
4-Bromofluorobenzene	103	70-130

CHAIN OF CUSTODY RECORD

PAGE 1 OF 1

P&D ENVIRONMENTAL, INC.
55 Santa Clara Ave., Suite 240
Oakland, CA 94610
(510) 658-6916

PROJECT NUMBER: 0660

PROJECT NAME: 2101 WILLIAMS ST. SAN LEANDRO, CA

SAMPLED BY: (PRINTED & SIGNATURE) MICHAEL BASS-DESCHENES Michael Bass-Deschenes

	SAMPLE NUMBER	DATE	TIME	TYPE	SAMPLE LOCATION (INIT. VAC / FINAL VAC / PID: PPM)	NUMBER OF CONTAINERS	ANALYSIS(ES): EPA TO-15 INCLUDING DFA	PRESERVATIVE	REMARKS
01A	VP7	2/16/15	1037 / 1045	SV/GAS	-29 / -5 / 68.4	1	X	NONE	NORMAL TAT
02A	VP8	2/16/15	1418 / 1433		-28 / -5 / 13	1	X		
03A	VP9	2/16/15	0939 / 0934		-29 / -5 / 2.1	1	X		
04A	VP10	1304 / 1333			-29 / -5 / 18.6	1	X		
05A	VP10-DUP	2/16/15	1304 / 1333		-29 / -5 / 18.6	1	X		
06A	VP11	2/17/15	0731 / 0749		-30 / -5 / 43	1	X		
07A	PP12	2/17/15	0831 / 0837	↓	-29 / -5 / 23	1	X	↓	↓

Custody Seal Intact?
Y N None Temp NA
EAR Drop off - Ron

RELINQUISHED BY: (SIGNATURE) Michael Bass-Deschenes	DATE 2-17-15	TIME 1324	RECEIVED BY: (SIGNATURE)	Total No. of Samples (This Shipment) 7	LABORATORY: EUROFINS/AIR TOXICS, LTD.	
RELINQUISHED BY: (SIGNATURE)	DATE	TIME	RECEIVED BY: (SIGNATURE)	Total No. of Containers (This Shipment) 7		
RELINQUISHED BY: (SIGNATURE)	DATE	TIME	RECEIVED FOR LABORATORY BY: (SIGNATURE)	LABORATORY CONTACT: KYLE VAGADORI	LABORATORY PHONE NUMBER: (916) 605-3339	
				SAMPLE ANALYSIS REQUEST SHEET ATTACHED: ( ) YES (X) NO		

Results and billing to:
P&D Environmental, Inc.
lab@pdenviro.com

REMARKS: 1-LITER SUMMA DFA USED AS TRACER GAS.

1502299

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2/26/2015
Mr. Paul King
P & D Environmental
55 Santa Clara
Suite 240
Oakland CA 94610

Project Name: 2101 WILLIAMS ST. SAN LEANDRO, CA
Project #: 0660
Workorder #: 1502277

Dear Mr. Paul King

The following report includes the data for the above referenced project for sample(s) received on 2/17/2015 at Air Toxics Ltd.

The data and associated QC analyzed by Modified TO-15 (5&20 ppbv) 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: Kyle Vagadori at 916-985-1000 if you have any questions regarding the data in this report.

Regards,

Kyle Vagadori

Project Manager

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WORK ORDER #: 1502277

Work Order Summary

CLIENT:	Mr. Paul King P & D Environmental 55 Santa Clara Suite 240 Oakland, CA 94610	**BILL TO:**	Mr. Paul King P & D Environmental 55 Santa Clara Suite 240 Oakland, CA 94610
PHONE:	510-658-6916	**P.O. #**	
FAX:	510-834-0772	**PROJECT #**	0660 2101 WILLIAMS ST. SAN LEANDRO, CA
DATE RECEIVED:	02/17/2015	**CONTACT:**	Kyle Vagadori
DATE COMPLETED:	02/26/2015		

FRACTION #	NAME	TEST	RECEIPT VAC./PRES.	FINAL PRESSURE
01A	VP7	Modified TO-15 (5&20 ppbv	Tedlar Bag	Tedlar Bag
02A	VP8	Modified TO-15 (5&20 ppbv	Tedlar Bag	Tedlar Bag
03A	VP9	Modified TO-15 (5&20 ppbv	Tedlar Bag	Tedlar Bag
04A	VP10	Modified TO-15 (5&20 ppbv	Tedlar Bag	Tedlar Bag
05A	VP11	Modified TO-15 (5&20 ppbv	Tedlar Bag	Tedlar Bag
06A	VP12	Modified TO-15 (5&20 ppbv	Tedlar Bag	Tedlar Bag
07A	Lab Blank	Modified TO-15 (5&20 ppbv	NA	NA
08A	CCV	Modified TO-15 (5&20 ppbv	NA	NA

CERTIFIED BY: Heidi Mayo DATE: 02/26/15

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
EPA Method TO-15 Soil Gas
P & D Environmental
Workorder# 1502277

Six 1 Liter Tedlar Bag samples were received on February 17, 2015. The laboratory performed analysis via EPA Method TO-15 using GC/MS in the full scan mode. The method involves concentrating up to 50 mLs of air. The concentrated aliquot is then flash vaporized and swept through a water management system to remove water vapor. Following dehumidification, the sample passes directly into the GC/MS for analysis.

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.

Receiving Notes

There were no receiving discrepancies.

Analytical Notes

Dilution was performed on all of the samples due to the presence of high level target species.

Method TO-15 is validated for samples collected in specially treated canisters. As such, the use of Tedlar bags for sample collection is outside the scope of the method and not recommended for ambient or indoor air samples. It is the responsibility of the data user to determine the usability of TO-15 results generated from Tedlar bags.

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
EPA METHOD TO-15 GC/MS

Client Sample ID: VP7

Lab ID#: 1502277-01A

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
1,1-Difluoroethane	200000	7100000	540000	19000000

Client Sample ID: VP8

Lab ID#: 1502277-02A

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
1,1-Difluoroethane	200000	6000000	540000	16000000

Client Sample ID: VP9

Lab ID#: 1502277-03A

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
1,1-Difluoroethane	200000	5600000	540000	15000000

Client Sample ID: VP10

Lab ID#: 1502277-04A

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
1,1-Difluoroethane	200000	6500000	540000	18000000

Client Sample ID: VP11

Lab ID#: 1502277-05A

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
1,1-Difluoroethane	200000	5000000	540000	13000000

Client Sample ID: VP12

Lab ID#: 1502277-06A

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
1,1-Difluoroethane	200000	3800000	540000	10000000

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Client Sample ID: VP7

Lab ID#: 1502277-01A

EPA METHOD TO-15 GC/MS

File Name:	**14021913**	**Date of Collection: 2/16/15 10:38:00 AM**	
Dil. Factor:	**10000**	**Date of Analysis: 2/18/15 09:40 PM**	

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
1,1-Difluoroethane	200000	7100000	540000	19000000

Container Type: 1 Liter Tedlar Bag

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	91	70-130
Toluene-d8	99	70-130
4-Bromofluorobenzene	100	70-130

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Client Sample ID: VP8

Lab ID#: 1502277-02A

EPA METHOD TO-15 GC/MS

File Name:	**14021914**	**Date of Collection: 2/16/15 2:20:00 PM**	
Dil. Factor:	**10000**	**Date of Analysis: 2/18/15 10:05 PM**	

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
1,1-Difluoroethane	200000	6000000	540000	16000000

Container Type: 1 Liter Tedlar Bag

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	89	70-130
Toluene-d8	98	70-130
4-Bromofluorobenzene	100	70-130

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Client Sample ID: VP9

Lab ID#: 1502277-03A

EPA METHOD TO-15 GC/MS

File Name:	**14021915**	**Date of Collection: 2/16/15 9:30:00 AM**	
Dil. Factor:	**10000**	**Date of Analysis: 2/19/15 08:26 AM**	

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
1,1-Difluoroethane	200000	5600000	540000	15000000

Container Type: 1 Liter Tedlar Bag

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	91	70-130
Toluene-d8	98	70-130
4-Bromofluorobenzene	100	70-130

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Client Sample ID: VP10

Lab ID#: 1502277-04A

EPA METHOD TO-15 GC/MS

File Name:	**14021916**	**Date of Collection: 2/16/15 1:10:00 PM**	
Dil. Factor:	**10000**	**Date of Analysis: 2/19/15 08:45 AM**	

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
1,1-Difluoroethane	200000	6500000	540000	18000000

Container Type: 1 Liter Tedlar Bag

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	88	70-130
Toluene-d8	98	70-130
4-Bromofluorobenzene	100	70-130

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Client Sample ID: VP11

Lab ID#: 1502277-05A

EPA METHOD TO-15 GC/MS

File Name:	**14021917**	**Date of Collection: 2/17/15 7:51:00 AM**	
Dil. Factor:	**10000**	**Date of Analysis: 2/19/15 09:05 AM**	

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
1,1-Difluoroethane	200000	5000000	540000	13000000

Container Type: 1 Liter Tedlar Bag

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	88	70-130
Toluene-d8	97	70-130
4-Bromofluorobenzene	100	70-130

eurofins | Air Toxics

Client Sample ID: VP12

Lab ID#: 1502277-06A

EPA METHOD TO-15 GC/MS

File Name:	**14021918**	**Date of Collection: 2/17/15 8:42:00 AM**	
Dil. Factor:	**10000**	**Date of Analysis: 2/19/15 09:24 AM**	

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
1,1-Difluoroethane	200000	3800000	540000	10000000

Container Type: 1 Liter Tedlar Bag

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	88	70-130
Toluene-d8	99	70-130
4-Bromofluorobenzene	102	70-130

eurofins | Air Toxics

Client Sample ID: Lab Blank

Lab ID#: 1502277-07A

EPA METHOD TO-15 GC/MS

File Name:	**14021906a**	**Date of Collection: NA**	
Dil. Factor:	**1.00**	**Date of Analysis: 2/18/15 06:16 PM**	

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
1,1-Difluoroethane	20	Not Detected	54	Not Detected

Container Type: NA - Not Applicable

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	90	70-130
Toluene-d8	98	70-130
4-Bromofluorobenzene	98	70-130

eurofins | Air Toxics

Client Sample ID: CCV

Lab ID#: 1502277-08A

EPA METHOD TO-15 GC/MS

File Name:	**14021905**	**Date of Collection: NA**	
Dil. Factor:	**1.00**	**Date of Analysis: 2/18/15 05:07 PM**	

Compound	%Recovery
1,1-Difluoroethane	101

Container Type: NA - Not Applicable

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	92	70-130
Toluene-d8	98	70-130
4-Bromofluorobenzene	102	70-130

CHAIN OF CUSTODY RECORD

P&D ENVIRONMENTAL, INC.
55 Santa Clara Ave., Suite 240
Oakland, CA 94610
(510) 658-6916

PROJECT NUMBER: 0660

PROJECT NAME: 2101 WILLIAMS ST. SAN LEANDRO, CA

SAMPLED BY: (PRINTED & SIGNATURE) MICHAEL BASS-DESCHENES [signature]

	SAMPLE NUMBER	DATE	TIME	TYPE	SAMPLE LOCATION	NUMBER OF CONTAINERS	ANALYSIS(ES): DFA BY EPA TO-15	PRESERVATIVE	REMARKS
01A	VP7	2/16/15	1038	AIR		1	X	NONE	NORMAL TAT
02A	VP8	2/16/15	1420	↓		1	X	↓	↓
03A	VP9	2/16/15	0930	↓		1	X	↓	↓
04A	VP10	2/16/15	1310	↓		1	X	↓	↓
05A	VP11	2/17/15	0751	↓		1	X	↓	↓
06A	VP12	2/17/15	0842	↓		1	X	↓	↓

Custody Seal Intact?
Y N (None) Temp NA
EATL Dropoff Ron

RELINQUISHED BY: (SIGNATURE)	DATE	TIME	RECEIVED BY: (SIGNATURE)		
[signature]	2-19-15	1324	[signature]	Total No. of Samples (This Shipment): 6 Total No. of Containers (This Shipment): 6	LABORATORY: EUROFINS/AIR TOXICS, LTD.
RELINQUISHED BY: (SIGNATURE)	DATE	TIME	RECEIVED BY: (SIGNATURE)	LABORATORY CONTACT: KYLE VAGADORI	LABORATORY PHONE NUMBER: (916) 605-3339
RELINQUISHED BY: (SIGNATURE)	DATE	TIME	RECEIVED FOR LABORATORY BY: (SIGNATURE)	SAMPLE ANALYSIS REQUEST SHEET ATTACHED: ( ) YES (✓) NO	

Results and billing to:
P&D Environmental, Inc.
lab@pdenviro.com

REMARKS: 1-LITER TEDLAR BAG.

1502277