

SUBJECT

RACER Pontiac North Campus Fiero Right of Way Soil Vapor Monitoring Point Installation and Sampling

TO

Jennifer Stanhope, USEPA

DATE

Draft Submittal: December 27, 2024

Final Submittal: June 2, 2025

DEPARTMENT

Environment

PROJECT NUMBER

30267726

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Introduction

This memo summarizes the field activities conducted in the right of way (ROW), west of the former Fiero Properties of the Revitalizing Auto Communities Environmental Response (RACER) Trust Pontiac North Campus Site (Site) located in Pontiac, Michigan (**Figure 1**). The *2023 Fiero Temporary Groundwater Monitoring Plan Summary* was submitted to the United States Environmental Protection Agency (USEPA) on March 22, 2024, then later resubmitted on August 14, 2024. The summary report was approved by USEPA via email transmittal on August 23, 2024. The report included recommendations to install a nested set of soil vapor monitoring points (SVMPs), one shallow and one deep, in the right-of-way (ROW) of St. Clair Street, downgradient of monitoring well MWOS-10.

Soil Vapor Monitoring Point Installation

Due to the proposed location of the SVMPs, a permit with the City of Pontiac was obtained to install the SVMPs in the ROW of St. Clair Street. Following approval of the permit, two SVMPs (SV-07-24 and SV-08-24) were installed on July 1st, 2024, at the west perimeter of the Site and within the City of Pontiac ROW near two residential properties west of the Site. It should be noted that the structure on the northern property was destroyed by fire in 2022 and the property is currently vacant (**Figure 2**). The monitoring points were installed to further assess the potential risk of vapor intrusion to the properties. One SVMP was set at a shallower depth consistent with the depth of a residential basement and one SVMP was set at a deeper depth, a few feet above the high-water table condition. Soil boring and SVMP construction logs are included as **Attachment 1**. The SVMPs were installed and constructed using the following methods:

- Each boring was advanced via direct-push drilling technology to target depths and screened with a photoionization detector (PID). Soil lithology was logged continuously.
- Target depths of the borings included a shallow boring completed to a depth consistent with a typical residential basement and a deeper boring a completed at a few feet above the high-water table condition.
- SVMP construction consisted of 6-inch stainless steel screens installed at the target depth with tubing to ground surface, finished with a protective vault. The screen had filter pack sand placed around it, and the annulus around the tubing was backfilled with bentonite.

RACER Pontiac North Campus Fiero Right of Way
Soil Vapor Monitoring Point Installation and Sampling
RACER Trust
Draft Submittal: December 23, 2024
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Soil Vapor Sampling

Soil vapor monitoring was completed during third and fourth quarter, 2024, at the two new SVMP locations (SV-07-24 and SV-08-24). The methodology for collecting soil vapor samples included completing a helium leak test to verify the seal of the sampling point and a “shut-in” test completed on the sampling train to verify that a closed system was in place prior to sampling. Following a passed helium leak test and shut-in test, a SUMMA® canister, with attached pre-set flow regulator, was used to collect the sample for laboratory analysis of the Fiero site-specific volatile organic compounds (VOCs) in accordance with the USEPA Method TO-15. Following sampling, an additional three volumes of air was purged into a Tedlar® bag. Oxygen, carbon dioxide, and methane readings were collected from the Tedlar® bag containing purged air at the sample point. Sampling took place on July 15th, 2024, about two weeks after the SVMPs were installed, and November 5th, 2024. Soil vapor collection logs are provided in **Attachment 2**.

Soil Vapor Results

Site-specific VOCs were not detected at SV-07-24 or SV-08-24 during either sampling event. Soil vapor results from SV-07-24 and SV-08-24 indicate that soil vapor risk does not extend to the offsite properties. The locations of the SVMPs and a summary of the analytical results are shown on **Figure 2**. Complete analytical results from third and fourth quarter, 2024, are provided in **Table 1** and the lab reports are provided in **Attachment 3**.

Based on the data collected and analyses completed, there is not an imminent risk of vapor intrusion to the off-site residential structure. However, to complete four quarters of sampling for the new SVMPs, soil gas sampling will be completed during the first quarter and second quarter 2025. Results of the first quarter and second quarter 2025 sampling events will be provided to USEPA during a regular scheduled monthly update call and will be included in the 2025 Fiero Groundwater Monitoring Summary Report. Following the completion of the first and second quarterly sampling events at the two new SVMPs, it is proposed the two new SVMPs will be sampled again in the third quarter of 2025 and added to the Fiero Temporary Groundwater Monitoring Plan, which is proposed to be completed on a semi-annual basis for 2025 (first and third quarters). The 2025 Fiero Temporary Groundwater Monitoring Plan was submitted to USEPA via email on March 5, 2025 and was approved by USEPA via email on March 10, 2025.

Figures:

Figure 1 – Site Location

Figure 2 – SV-07-24 and SV-08-24 Soil Vapor Results

Tables:

Table 1 – Summary of Soil Vapor Analytical Results

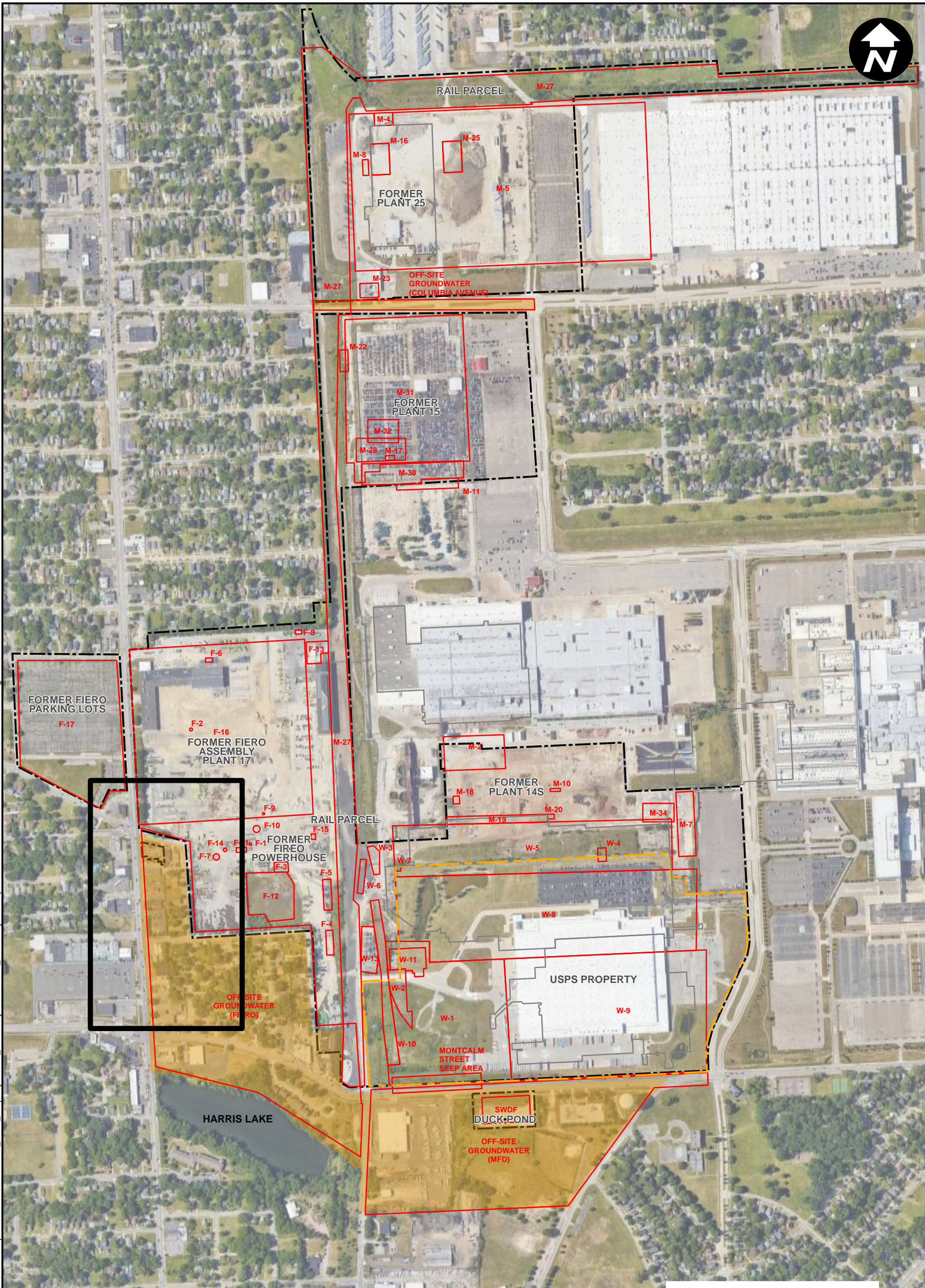
Attachments:

Attachment 1 – Soil Boring Logs and SVMP Construction Logs

Attachment 2 – Soil Vapor Collection Logs

Attachment 3 – Analytical Laboratory Reports

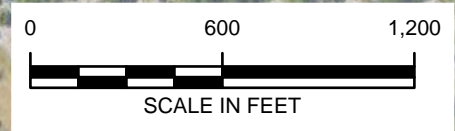
FIGURES



CITY: NOVI, MI DIV: ENV DB: TRY PIC: PM: TM: TR: PROJECT NUMBER: COORDINATE SYSTEM: NAD 1983 StatePlane Michigan South FIPS 2113 Feet Intl D:\GIS\Project Files\Motors\Liquidation\Company\Pontiac\NorthCampus\Documents\Former_Fiero_Property\FTMP_Summary2024.aprx PLOTTED: 12/18/2024 1:20 PM BY: TYarborough

- LEGEND**
- FIGURE 2 STUDY AREA
 - USPS (UNITED STATES POSTAL SERVICE) DISTRIBUTION CENTER PARCEL BOUNDARY
 - FORMER BUILDING FOOTPRINT
 - CURRENT OR FORMER RACER PROPERTY BOUNDARIES
 - AREAS OF INTEREST
 - OFF-SITE GROUNDWATER ORDINANCE EXTENT

Service Layer Credits: Tiled service layer: © OpenStreetMap (and) contributors, CC-BY-SA Aerial Date: July 29, 2022



RACER TRUST
PONTIAC NORTH CAMPUS
PONTIAC, MICHIGAN

SITE LAYOUT MAP



SV-07-24	
Sample Depth (ft. bgs):	11.5-12
Date Collected:	7/15/2024 11/5/2024
PCE	< 7.7 U < 7.2 U
TCE	< 6.1 U < 5.8 U

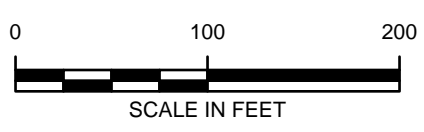
SV-08-24	
Sample Depth (ft. bgs):	22.5-23
Date Collected:	7/15/2024 11/5/2024
PCE	< 7.4 U (< 7.9 U) < 10.0 U (< 7.6 U)
TCE	< 5.9 U (< 6.2 U) < 8.0 U (< 6.0 U)

LEGEND

- MONITORING WELL
- SOIL VAPOR MONITORING POINT
- CURRENT OR FORMER RACER PROPERTY

NOTES:

- 1) ALL CONCENTRATIONS ARE PRESENTED IN MICROGRAMS PER CUBIC METER ($\mu\text{g}/\text{m}^3$)
- 2) FT. BGS - FEET BELOW GROUND SURFACE
- 3) SOG - SLAB-ON-GRADE
- 4) SSVIAC - SITE-SPECIFIC VOLATILIZATION TO INDOOR AIR CRITERIA
- 5) CRITERIA LISTED ARE FROM THE EGLE FORMER FIERO ASSEMBLY SITE-SPECIFIC CRITERIA EVALUATION DATED APRIL 21, 2020.
- 6) < - NOT DETECTED
- 7) U - COMPOUND WAS ANALYZED FOR BUT NOT DETECTED. THE ASSOCIATED VALUE IS THE COMPOUND QUANTITATION LIMIT.
- 8) DUPLICATE ANALYSES ARE PRESENTED IN ()
- 9) SAMPLES ANALYZED BY USEPA TO-15 METHODS.



Analyte	Fiero SSVIAC Soil Vapor Residential SOG Criteria	Fiero SSVIAC Soil Vapor Residential Basement Criteria
Tetrachloroethene (PCE)	1,400	1,400
Trichloroethene (TCE)	67	67

RACER TRUST
PONTIAC NORTH CAMPUS
PONTIAC, MICHIGAN

SUMMARY OF SOIL VAPOR RESULTS

CITY: NOVI, MI; DIV: ENV; DB: TRY; PIC: J. BARRETT; PM: T. LINDER; TM: L. CRISP; TR: PROJECT NUMBER: COORDINATE SYSTEM: NAD 1983 StatePlane Michigan South FIPS 2113 Feet Int; DIGIS/Project Files/Motors/Liquidation/Company/PontiacNorthCampus/Documents/Former_Fiero_Property/FTMP_Summary/2024.aprx; PLOTTED: 12/18/2024 12:55 PM; BY: TYABROUGH

TABLES

Table 1
Summary of Soil Gas Analytical Results
RACER Trust Pontiac North Campus
Former Fiero Properties
Pontiac, Michigan



Location ID: Sample Depth (ft. bgs): Date Collected:	Fiero SSVIAC Soil Gas Residential SOG Criteria	Fiero SSVIAC Soil Gas Residential Basement Criteria	Units	SV-07-24 11.5-12 7/15/2024	SV-07-24 11.5-12 11/5/2024	SV-08-24 22.5-23 7/15/2024	SV-08-24 22.5-23 11/5/2024
Analyte							
1,1-Dichloroethene	7,000	7,000	ug/m ³	< 4.5 U	< 4.2 U	< 4.3 U (< 4.6 U)	< 5.9 U (< 4.4 U)
cis-1,2-Dichloroethene	280	280	ug/m ³	< 4.5 U	< 4.2 U	< 4.3 U (< 4.6 U)	< 5.9 U (< 4.4 U)
trans-1,2-Dichloroethene	2,800	2,800	ug/m ³	< 4.5 U	< 4.2 U	< 4.3 U (< 4.6 U)	< 5.9 U (< 4.4 U)
Tetrachloroethene	1,400	1,400	ug/m ³	< 7.7 U	< 7.2 U	< 7.4 U (< 7.9 U)	< 10.0 U (< 7.6 U)
Trichloroethene	67	67	ug/m ³	< 6.1 U	< 5.8 U	< 5.9 U (< 6.2 U)	< 8.0 U (< 6.0 U)
Vinyl Chloride	54	54	ug/m ³	< 2.9 U	< 2.7 U	< 2.8 U (< 3.0 U)	< 3.8 U (< 2.9 U)

NOTES:

- 1) Criteria listed are from the EGLE Former Fiero Assembly Site-Specific Criteria Evaluation dated April 21, 2020.
- 2) Values in bold denote exceedance and/or equal to Residential Site-Specific Volatilization to Indoor Air soil gas SOG criteria.
- 3) Values in red type denote exceedance and/or equal to Residential Site-Specific Volatilization to Indoor Air soil gas basement criteria.
- 4) Duplicate analyses are presented in parenthesis next to parent sample.
- 5) Samples analyzed by USEPA TO-15 Methods

Abbreviations:


- µg/m³ - Micrograms per cubic meter
- < - Not detected
- ft. bgs - feet below ground surface
- U - Compound analyzed for but not detected above the reporting limit, LOD, or MDL value.
- SOG - Slab-On-Grade
- SSVIAC - Site-Specific Volatilization to Indoor Air Criteria

Attachment 1

Soil Boring Logs and SVMP Construction Logs


Date Start: 7/1/2024 Date Finish: 7/1/2024 Drilling Company: Metiri Group Driller's Name: Nick Wiseman Drilling Method: HA/Direct Push Sampling Method: Macrocore Rig Type: Geoprobe Water Level Start (ft. bgs.): NA Water Level Finish (ft. btoc.): NA	Northing: 13410560.10 Easting: 424430.65 Casing Elevation: NA Borehole Depth (ft. bgs.): 12' bgs Surface Elevation: 975.18 Descriptions By: G. Link	Well/Boring ID: SV-07-24 Client: RACER Trust Location: RACER Pontiac North Campus Weather Conditions: Upper 70 F
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DEPTH (feet bgl.)	ELEVATION	Sample Run Number	Sample/Int/Type	Recovery (feet)	PID Headspace (ppm)	Analytical Sample	Geologic Column	Stratigraphic Description	Water Level (ft. bgs.)	Well/Boring Construction
0	0							(0.0-0.3') TOPSOIL; organics.		5" Flush mount vault
		1	0-5	5.0	0.4			(0.3-3.8') SAND, very fine to coarse, subangular to subrounded; some clay; little granules to medium pebbles, subangular to subrounded; trace small cobble; poorly sorted; dry; yellowish brown (10YR 5/4). NOTE: concrete fragments; hard plastic, slag; fill at 3.0' bgs.		Quickcrete (0-0.5' bgs) Sand (0.5-1.5' bgs)
		2	5-10	4.8	0.0			(3.8-11.0') CLAY and SILT, medium plasticity, slow dilatancy; some very fine to medium sand, subangular to subrounded; trace granules to small pebbles, subangular to subrounded; dry; dark greyish brown (10YR 4/2). NOTE: color transition to gray (10YR 5/1) from 3.0 to 4.0' bgs.		1/4" teflon tube (0-11.5' bgs). Granular Bentonite (1.5-11' bgs)
		3	10-12	2.7	0.0			(11.0-12.0') SAND, very fine, subangular to subrounded, and SILT; trace small pebbles, subangular to subrounded; dry; well sorted; yellowish brown (10YR 5/6). NOTE: rich clay 2" layer at 11.5' bgs.		Sand (11-12' bgs)
								End of boring at 12' bgs.		1/2" stainless steel screen (11.5-12' bgs)
-15	-15									

 <small>Design & Consultancy for natural and built assets</small>	Remarks: bgs = below ground surface HA = Hand Auger Hand auger from 0-5' bgs 3.75" borehole diameter
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Date Start: 7/1/2024 Date Finish: 7/1/2024 Drilling Company: Metiri Group Driller's Name: Nick Wiseman Drilling Method: HA/Direct Push Sampling Method: Macrocore Rig Type: Geoprobe Water Level Start (ft. bgs.): NA Water Level Finish (ft. btoc.): NA	Northing: 13410560.33 Easting: 424429.22 Casing Elevation: NA Borehole Depth (ft. bgs.): 23' bgs Surface Elevation: 975.14 Descriptions By: G. Link	Well/Boring ID: SV-08-24 Client: RACER Trust Location: RACER Pontiac North Campus Weather Conditions: Mid 70 F
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DEPTH (feet bgl.)	ELEVATION	Sample Run Number	Sample/Int/Type	Recovery (feet)	PID Headspace (ppm)	Analytical Sample	Geologic Column	Stratigraphic Description	Water Level (ft. bgs.)	Well/Boring Construction
0	0							(0.0-0.3') TOPSOIL; organics.		
		1	0-5	5.0	6.0			(0.3-3.5') SAND, very fine to coarse, subangular to subrounded; some clay; some silt; little granules to medium pebbles, angular to subrounded; dry; poorly sorted; dark grayish brown (10YR 4/2).		0.5' Flush mount vault Quickcrete (0-0.5' bgs) Sand (0.5-1.5' bgs)
					4.9			(3.5-10.3') CLAY and SILT, medium plasticity, slow dilatancy; some very fine to medium sand; trace granules to medium pebbles, subangular to subrounded; dry; very stiff; dark grayish brown (10YR 4/2).		Bentonite chip (0.5-7' bgs)
					4.5					
-5	-5	2	5-10	4.8	4.0					
					4.1					
					2.7					
-10	-10	3	10-15	3.0	3.9			(10.3-17.5') SAND, very fine, subangular to subrounded, and SILT; dry; well sorted; yellowish brown (10YR 5/6).		1/4" teflon tube (0-22.5' bgs).
					4.5					Granular bentonite (7-22' bgs)
					5.8			NOTE: moist from 15.0 to 17.5' bgs.		
					3.4					
		4	15-20	2.95	1.6			(17.5-23.0') SAND, fine to medium, subangular to subrounded; trace silt; dry; well sorted; light yellowish brown (10YR 6/4).		
					4.7					
					7.1					
-20	-20	5	20-23	2.08	5.3			NOTE: color transition to yellowish brown (10YR 5/6) at 21.5' bgs.		Sand (22-23' bgs)
					6.2					1/2" stainless steel screen (22.5-23' bgs)
					2.6					
								End of boring at 23' bgs.		

	Remarks: bgs = below ground surface HA = Hand auger Hand auger 0-5' bgs 3.75" borehole diameter

Attachment 2

Soil Vapor Collection Logs

Office Name & Address (Reporting Information): Novi 28550 Cabot Dr. Novi MI										Project Name: RACER Pontiac North Campus 2024					
Field Manager: Lexi Nickerson										Project Number: 30214041					
Phone: 614-985-9163			Special Instructions: NA							Site Address: 806 Baldwin Ave Pontiac MI 48340 US					
Email Address for Result Reporting: Lexi.nickerson@arcadis.com										Sampler Name: Garrett Link			Phone Number: 248-571-3360		
										Email: Lexi.nickerson@arcadis.com					
Helium Detector Used: Dielectric					Helium Leak Method: Helium Tracer Test					Summa Canister Size (1L, 2.7 L, 6L): 1 L				Lab: Eurofins	
Sample ID	Sample Location Description	Date	Leak/Tracer Test completed prior to sample collection						Canister Number	Flow Controller Number	Sample Collection Start Time	Beginning Canister Pressure (in. Hg)	Sample Collection End Time	Ending Canister Pressure (in. Hg)	Notes
			Shut in Test Pass/Fail?	Purge Reading (ppm)	Shroud Helium Concentration (%)	Helium Test Pass/Fail?	Purge Volume (mL)	Purge Rate (mL/min)							
SV-07-24_SG-071524	St Clair ROW	07/15/2024	Pass	0	40.7	Pass	160.74	200	Soil	23203	12:44	-29	12:50	-6	NA
SV-08-24_SG-071524	St. Clair ROW	07/12/2024	Pass	0	42.4	Pass	321.45001	200	Soil	23697, 23955	13:59	-28.25	14:04	-6.5	DUP starting and ending pressures are -27.5 and -7.25 respo

Meteorological Data						General Notes or Observations	
Date	Time	Temp		Relative Humidity (%)	Barometric Pressure (in.Hg)	Weather source	
		Indoor	Outdoor				
							Duplicate collected at SV-08-24

Air Parameters (completed after sample collection)					
Location ID	CH4 %	CH4 LEL %	O2 %	PID (ppm)	Differential Pressure (in. Water Column)
SV-07-24	0	NM	13.3	NM	NM
SV-08-24	0	NM	11.1	NM	NM

Office Name & Address (Reporting Information): Novi 28550 Cabot dr ste 500										Project Name: RACER Pontiac North Campus 2024						
Field Manager: Lexi Nickerson										Project Number: 30214041						
Phone: 614-985-9163			Special Instructions: 1,1-DCE; cis-1,2-DCE; trans-1,2-DCE; PCE; TCE; Vinyl Chloride							Site Address: 795 St. Clair St. Pontiac Michigan 48340 US						
Email Address for Result Reporting: Alexis.nickerson@arcadis.com										Sampler Name: Garrett Link				Phone Number: 248-571-3360		
										Email: Alexis.nickerson@arcadis.com						
Helium Detector Used: Dielectric					Helium Leak Method: Helium Tracer Test					Summa Canister Size (1L, 2.7 L, 6L): 1 L				Lab: Eurofins		
Sample ID	Sample Location Description	Date	Leak/Tracer Test completed prior to sample collection						Canister Number	Flow Controller Number	Sample Collection Start Time	Beginning Canister Pressure (in. Hg)	Sample Collection End Time	Ending Canister Pressure (in. Hg)	Notes	
			Shut in Test Pass/Fail?	Purge Reading (ppm)	Shroud Helium Concentration (%)	Helium Test Pass/Fail?	Purge Volume (mL)	Purge Rate (mL/min)								
DUP-01_SG-110524	West St. Clair St. ROW	11/05/2024	Pass	0	49.5	Pass	195.51	200	1L5166	23799	10:40	-26.5	10:45	-6	NA	
SV-07-24_SG-110524	West side St. Clair St ROW	11/05/2024	Pass	0	49.5	Pass	195.51	200	1L4546	23797	10:40	-28	10:45	-6	NA	
SV-08-24_SG-110524	West side ROW Saint Clair St.	11/05/2024	Pass	0	53.4	Pass	374.73	200	1L1704	23202	11:30	-29	11:35	-6	NA	

Meteorological Data						General Notes or Observations	
Date	Time	Temp		Relative Humidity (%)	Barometric Pressure (in.Hg)	Weather source	
		Indoor	Outdoor				
							NA

Air Parameters (completed after sample collection)					
Location ID	CH4 %	CH4 LEL %	O2 %	PID (ppm)	Differential Pressure (in. Water Column)
--	0	NM	13.7	NM	NM
SV-07-24	0	NM	13.7	NM	NM
SV-08-24	0	NM	11.3	NM	NM

Attachment 3

Analytical Laboratory Reports

7/22/2024

Ms. Lexi Crisp
Arcadis U.S., Inc.
7575 Huntington Park Drive
Suite 130
Columbus OH 43235

Project Name: Racer - PNC
Project #: 30214041.00004
Workorder #: 2407383

Dear Ms. Lexi Crisp

The following report includes the data for the above referenced project for sample(s) received on 7/17/2024 at Eurofins Air Toxics LLC.

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 Eurofins Air Toxics LLC. for your air analysis needs. Eurofins Air Toxics Inc. is committed to providing accurate data of the highest quality. Please feel free to contact the Project Manager: Jade White at 916-985-1000 if you have any questions regarding the data in this report.

Regards,



Jade White
Project Manager

WORK ORDER #: 2407383

Work Order Summary

CLIENT:	Ms. Lexi Crisp Arcadis U.S., Inc. 7575 Huntington Park Drive Suite 130 Columbus, OH 43235	BILL TO:	Accounts Payable Arcadis U.S., Inc. 630 Plaza Drive Suite 600 Highlands Ranch, CO 80129
PHONE:		P.O. #	30214041.00004
FAX:		PROJECT #	30214041.00004 Racer - PNC
DATE RECEIVED:	07/17/2024	CONTACT:	Jade White
DATE COMPLETED:	07/22/2024		

<u>FRACTION #</u>	<u>NAME</u>	<u>TEST</u>	<u>RECEIPT VAC./PRES.</u>	<u>FINAL PRESSURE</u>
01A	SV-07-24_SG-071524	TO-15	8 "Hg	9.9 psi
02A	SV-08-24_SG-071524	TO-15	7.3 "Hg	9.7 psi
03A	DUP-01_SG-071524	TO-15	8.4 "Hg	9.9 psi
04A	Lab Blank	TO-15	NA	NA
05A	CCV	TO-15	NA	NA
06A	LCS	TO-15	NA	NA
06AA	LCSD	TO-15	NA	NA

CERTIFIED BY: 

 Technical Director

DATE: 07/22/24

Certification numbers: AZ Licensure AZ0775, FL NELAP – E87680, LA NELAP – 02089, NH NELAP – 209222, NJ NELAP - CA016, NY NELAP - 11291, TX NELAP – T104704434-22-18, UT NELAP – CA009332022-14, VA NELAP - 12240, WA ELAP - C935
 Name of Accreditation Body: NELAP/ORELAP (Oregon Environmental Laboratory Accreditation Program) CA300005-017
 Eurofins Environment Testing Northern California, LLC certifies that the test results contained in this report meet all requirements of the 2016 TNI Standard.

This report shall not be reproduced, except in full, without the written approval of Eurofins Air Toxics, LLC.
 180 BLUE RAVINE ROAD, SUITE B FOLSOM, CA - 95630
 (916) 985-1000

LABORATORY NARRATIVE
EPA Method TO-15
Arcadis U.S., Inc.
Workorder# 2407383

Three 1 Liter Summa Canister samples were received on July 17, 2024. The laboratory performed analysis via EPA Method TO-15 using GC/MS in the full scan mode.

Receiving Notes

There were no receiving discrepancies.

Analytical Notes

There were no analytical discrepancies.

Definition of Data Qualifying Flags

Ten 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.

M - Reported value may be biased due to apparent matrix interferences.

CN - See Case Narrative.

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



| Air Toxics

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

Client Sample ID: SV-07-24_SG-071524

Lab ID#: 2407383-01A

No Detections Were Found.

Client Sample ID: SV-08-24_SG-071524

Lab ID#: 2407383-02A

No Detections Were Found.

Client Sample ID: DUP-01_SG-071524

Lab ID#: 2407383-03A

No Detections Were Found.



Air Toxics

Client Sample ID: SV-07-24_SG-071524

Lab ID#: 2407383-01A

EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	a071807	Date of Collection:	7/15/24 12:50:00 PM
Dil. Factor:	2.28	Date of Analysis:	7/18/24 02:02 PM

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Vinyl Chloride	1.1	Not Detected	2.9	Not Detected
1,1-Dichloroethene	1.1	Not Detected	4.5	Not Detected
cis-1,2-Dichloroethene	1.1	Not Detected	4.5	Not Detected
Trichloroethene	1.1	Not Detected	6.1	Not Detected
trans-1,2-Dichloroethene	1.1	Not Detected	4.5	Not Detected
Tetrachloroethene	1.1	Not Detected	7.7	Not Detected

Container Type: 1 Liter Summa Canister

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



Air Toxics

Client Sample ID: SV-08-24_SG-071524

Lab ID#: 2407383-02A

EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	a071808	Date of Collection:	7/15/24 2:04:00 PM
Dil. Factor:	2.19	Date of Analysis:	7/18/24 02:40 PM

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Vinyl Chloride	1.1	Not Detected	2.8	Not Detected
1,1-Dichloroethene	1.1	Not Detected	4.3	Not Detected
cis-1,2-Dichloroethene	1.1	Not Detected	4.3	Not Detected
Trichloroethene	1.1	Not Detected	5.9	Not Detected
trans-1,2-Dichloroethene	1.1	Not Detected	4.3	Not Detected
Tetrachloroethene	1.1	Not Detected	7.4	Not Detected

Container Type: 1 Liter Summa Canister

Surrogates	%Recovery	Method Limits
Toluene-d8	99	70-130
1,2-Dichloroethane-d4	101	70-130
4-Bromofluorobenzene	102	70-130



Air Toxics

Client Sample ID: DUP-01_SG-071524

Lab ID#: 2407383-03A

EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	a071809	Date of Collection:	7/15/24
Dil. Factor:	2.32	Date of Analysis:	7/18/24 03:17 PM

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Vinyl Chloride	1.2	Not Detected	3.0	Not Detected
1,1-Dichloroethene	1.2	Not Detected	4.6	Not Detected
cis-1,2-Dichloroethene	1.2	Not Detected	4.6	Not Detected
Trichloroethene	1.2	Not Detected	6.2	Not Detected
trans-1,2-Dichloroethene	1.2	Not Detected	4.6	Not Detected
Tetrachloroethene	1.2	Not Detected	7.9	Not Detected

Container Type: 1 Liter Summa Canister

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

Client Sample ID: Lab Blank

Lab ID#: 2407383-04A

EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	a071806d	Date of Collection: NA
Dil. Factor:	1.00	Date of Analysis: 7/18/24 10:31 AM

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Vinyl Chloride	0.50	Not Detected	1.3	Not Detected
1,1-Dichloroethene	0.50	Not Detected	2.0	Not Detected
cis-1,2-Dichloroethene	0.50	Not Detected	2.0	Not Detected
Trichloroethene	0.50	Not Detected	2.7	Not Detected
trans-1,2-Dichloroethene	0.50	Not Detected	2.0	Not Detected
Tetrachloroethene	0.50	Not Detected	3.4	Not Detected

Container Type: NA - Not Applicable

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

Client Sample ID: CCV

Lab ID#: 2407383-05A

EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	a071803	Date of Collection: NA
Dil. Factor:	1.00	Date of Analysis: 7/18/24 08:44 AM

Compound	%Recovery
Vinyl Chloride	106
1,1-Dichloroethene	90
cis-1,2-Dichloroethene	90
Trichloroethene	99
trans-1,2-Dichloroethene	96
Tetrachloroethene	98

Container Type: NA - Not Applicable

Surrogates	%Recovery	Method Limits
Toluene-d8	99	70-130
1,2-Dichloroethane-d4	101	70-130
4-Bromofluorobenzene	100	70-130

Client Sample ID: LCS

Lab ID#: 2407383-06A

EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	a071804	Date of Collection: NA
Dil. Factor:	1.00	Date of Analysis: 7/18/24 09:19 AM

Compound	%Recovery	Method Limits
Vinyl Chloride	104	70-130
1,1-Dichloroethene	86	70-130
cis-1,2-Dichloroethene	91	70-130
Trichloroethene	98	70-130
trans-1,2-Dichloroethene	93	70-130
Tetrachloroethene	97	70-130

Container Type: NA - Not Applicable

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

Client Sample ID: LCSD

Lab ID#: 2407383-06AA

EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	a071805	Date of Collection: NA
Dil. Factor:	1.00	Date of Analysis: 7/18/24 09:54 AM

Compound	%Recovery	Method Limits
Vinyl Chloride	106	70-130
1,1-Dichloroethene	87	70-130
cis-1,2-Dichloroethene	94	70-130
Trichloroethene	99	70-130
trans-1,2-Dichloroethene	97	70-130
Tetrachloroethene	97	70-130

Container Type: NA - Not Applicable

Surrogates	%Recovery	Method Limits
Toluene-d8	101	70-130
1,2-Dichloroethane-d4	104	70-130
4-Bromofluorobenzene	99	70-130

Method : TO-15 (Sh)-1,1-DCE, c/t-1,2-DCE, PCE, TCE & VC

CAS Number	Compound	Rpt. Limit (ppbv)
75-01-4	Vinyl Chloride	0.50
75-35-4	1,1-Dichloroethene	0.50
156-59-2	cis-1,2-Dichloroethene	0.50
79-01-6	Trichloroethene	0.50
156-60-5	trans-1,2-Dichloroethene	0.50
127-18-4	Tetrachloroethene	0.50

	Surrogate	Method Limits
2037-26-5	Toluene-d8	70-130
17060-07-0	1,2-Dichloroethane-d4	70-130
460-00-4	4-Bromofluorobenzene	70-130



Air Toxics

Eurofins Environment Testing Northern California, LLC
180 Blue Ravine Rd, Suite B, Folsom, CA 95630
Phone (800) 985-5955; Fax (916) 351-8279

Analysis Request / Canister Chain of Custody

Workorder #: 2407383

Project Name: RACER - PNC

Client: Arcadis

Site Name: RACER - Pontiac North Campus
Project Manager: Tiffany Linder/Levi Crisp
Sampler: Garrett Link

Project #: 30214041.00004

PO#: 30214041.00004

Standard Rush Turnaround Time (Specify Below)
(Surcharges will apply per availability)

Requested Date (mm/dd/yy): 1
Requested Date (mm/dd/yy):
QR Number of Days:



If no TAT is marked, EATL will proceed with Standard TAT

page 1 of 1

Requested Analyses

Canister Vacuum/Pressure

Lab Use Only

Lab ID	Field Sample Identification (Location)	Canister Barcode #	Flow Controller Barcode #	Start Sampling Information		Stop Sampling Information		Initial (in "Hg)	Final (in "Hg)	Receipt (in "Hg)	Final (in psi) Gas: N2 / He
				Date	Time	Date	Time				

01A	SV-07-24 SG-071524	112952	23203	7/15/24	12:44	7/15/24	12:50				
004	SV-08-24 SG-071524	113879	23697	7/15/24	13:59	7/15/24	14:04				
034	DUP-01-57-071524	112982	23955	7/15/24	-	7/15/24	-				

Special Instructions/Notes: * select VOCs to be analyzed: 1,1-DCE, CIS-1,2-DCE, trans-1,2-DCE, PCE, TCE, Vinyl chloride

Relinquished by: (Signature/Affiliation)	Date	Time	Received by: (Signature/Affiliation)	Date	Time
[Signature] / ARCADIS	7/15/24	15:55	FDEX	7/15/24	15:55
[Signature]			[Signature]	7/17/24	09:40

Shipper Name: Keol OR Custody Seals Intact? Yes No Condition: None

Sample Transportation Notice: Relinquishing signature on this document indicates that samples are shipped in compliance with all applicable local, State, Federal, and international laws, regulations, and ordinances of any kind. Relinquishing signature also indicates agreement to hold harmless, defend, and indemnify Eurofins Air Toxics against any claim, demand, or action, of any kind, related to the collection, handling, or shipping of samples. D.O.T. Hotline (800) 467-4922

11/19/2024

Ms. Lexi Crisp

Arcadis U.S., Inc.

7575 Huntington Park Drive

Suite 130

Columbus OH 43235

Project Name: Racer PNC

Project #: 30214041.00004

Workorder #: 2411216

Dear Ms. Lexi Crisp

The following report includes the data for the above referenced project for sample(s) received on 11/8/2024 at Eurofins Air Toxics LLC.

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 Eurofins Air Toxics LLC. for your air analysis needs. Eurofins Air Toxics Inc. is committed to providing accurate data of the highest quality. Please feel free to contact the Project Manager: Jade White at 916-985-1000 if you have any questions regarding the data in this report.

Regards,



Jade White

Project Manager

WORK ORDER #: 2411216

Work Order Summary

CLIENT:	Ms. Lexi Crisp Arcadis U.S., Inc. 7575 Huntington Park Drive Suite 130 Columbus, OH 43235	BILL TO:	Accounts Payable Arcadis U.S., Inc. 630 Plaza Drive Suite 200 Highlands Ranch, CO 80129
PHONE:		P.O. #	30214041.00004
FAX:		PROJECT #	30214041.00004 Racer PNC
DATE RECEIVED:	11/08/2024	CONTACT:	Jade White
DATE COMPLETED:	11/19/2024		

<u>FRACTION #</u>	<u>NAME</u>	<u>TEST</u>	<u>RECEIPT VAC./PRES.</u>	<u>FINAL PRESSURE</u>
01A	SV-07-24_SG-110524	TO-15	6.5 "Hg	9.9 psi
02A	SV-08-24_SG-110524	TO-15	13.3 "Hg	9.8 psi
03A	DUP-01-SG-110524	TO-15	7.6 "Hg	9.9 psi
04A	Lab Blank	TO-15	NA	NA
05A	CCV	TO-15	NA	NA
06A	LCS	TO-15	NA	NA
06AA	LCSD	TO-15	NA	NA

CERTIFIED BY: 

 Technical Director

DATE: 11/19/24

Cert. No.: AZ Licensure-AZ0775, FL NELAP-E87680, LA NELAP-02089, MN NELAP-2703122, NH NELAP-209223-B, NJ NELAP-CA016, NY NELAP-11291, TX NELAP-T104704434, UT NELAP-CA009332023-16, VA NELAP-12695, WA NELAP-C935
 Name of Accreditation Body: NELAP/ORELAP (Oregon Environmental Laboratory Accreditation Program) CA300005-20
 Eurofins Environment Testing Northern California, LLC certifies that the test results contained in this report meet all requirements of the 2016 TNI Standard.

This report shall not be reproduced, except in full, without the written approval of Eurofins Air Toxics, LLC.
 180 BLUE RAVINE ROAD, SUITE B FOLSOM, CA - 95630
 (916) 985-1000

LABORATORY NARRATIVE
EPA Method TO-15
Arcadis U.S., Inc.
Workorder# 2411216

Three 1 Liter Summa Canister samples were received on November 08, 2024. The laboratory performed analysis via EPA Method TO-15 using GC/MS in the full scan mode.

Receiving Notes

There were no receiving discrepancies.

Analytical Notes

There were no analytical discrepancies.

Definition of Data Qualifying Flags

Ten 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.

M - Reported value may be biased due to apparent matrix interferences.

CN - See Case Narrative.

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



| Air Toxics

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

Client Sample ID: SV-07-24_SG-110524

Lab ID#: 2411216-01A

No Detections Were Found.

Client Sample ID: SV-08-24_SG-110524

Lab ID#: 2411216-02A

No Detections Were Found.

Client Sample ID: DUP-01-SG-110524

Lab ID#: 2411216-03A

No Detections Were Found.

Client Sample ID: SV-07-24_SG-110524

Lab ID#: 2411216-01A

EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	a111823	Date of Collection: 11/5/24 10:40:00 AM
Dil. Factor:	2.14	Date of Analysis: 11/19/24 01:10 AM

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Vinyl Chloride	1.1	Not Detected	2.7	Not Detected
1,1-Dichloroethene	1.1	Not Detected	4.2	Not Detected
cis-1,2-Dichloroethene	1.1	Not Detected	4.2	Not Detected
Trichloroethene	1.1	Not Detected	5.8	Not Detected
trans-1,2-Dichloroethene	1.1	Not Detected	4.2	Not Detected
Tetrachloroethene	1.1	Not Detected	7.2	Not Detected

Container Type: 1 Liter Summa Canister

Surrogates	%Recovery	Method Limits
Toluene-d8	115	70-130
1,2-Dichloroethane-d4	90	70-130
4-Bromofluorobenzene	95	70-130



Air Toxics

Client Sample ID: SV-08-24_SG-110524

Lab ID#: 2411216-02A

EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	a111824	Date of Collection:	11/5/24 11:30:00 AM
Dil. Factor:	2.99	Date of Analysis:	11/19/24 01:47 AM

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Vinyl Chloride	1.5	Not Detected	3.8	Not Detected
1,1-Dichloroethene	1.5	Not Detected	5.9	Not Detected
cis-1,2-Dichloroethene	1.5	Not Detected	5.9	Not Detected
Trichloroethene	1.5	Not Detected	8.0	Not Detected
trans-1,2-Dichloroethene	1.5	Not Detected	5.9	Not Detected
Tetrachloroethene	1.5	Not Detected	10	Not Detected

Container Type: 1 Liter Summa Canister

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

Client Sample ID: DUP-01-SG-110524

Lab ID#: 2411216-03A

EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	a111825	Date of Collection: 11/5/24
Dil. Factor:	2.24	Date of Analysis: 11/19/24 02:24 AM

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Vinyl Chloride	1.1	Not Detected	2.9	Not Detected
1,1-Dichloroethene	1.1	Not Detected	4.4	Not Detected
cis-1,2-Dichloroethene	1.1	Not Detected	4.4	Not Detected
Trichloroethene	1.1	Not Detected	6.0	Not Detected
trans-1,2-Dichloroethene	1.1	Not Detected	4.4	Not Detected
Tetrachloroethene	1.1	Not Detected	7.6	Not Detected

Container Type: 1 Liter Summa Canister

Surrogates	%Recovery	Method Limits
Toluene-d8	98	70-130
1,2-Dichloroethane-d4	105	70-130
4-Bromofluorobenzene	102	70-130

Client Sample ID: Lab Blank

Lab ID#: 2411216-04A

EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	a111807d	Date of Collection: NA
Dil. Factor:	1.00	Date of Analysis: 11/18/24 01:16 PM

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Vinyl Chloride	0.50	Not Detected	1.3	Not Detected
1,1-Dichloroethene	0.50	Not Detected	2.0	Not Detected
cis-1,2-Dichloroethene	0.50	Not Detected	2.0	Not Detected
Trichloroethene	0.50	Not Detected	2.7	Not Detected
trans-1,2-Dichloroethene	0.50	Not Detected	2.0	Not Detected
Tetrachloroethene	0.50	Not Detected	3.4	Not Detected

Container Type: NA - Not Applicable

Surrogates	%Recovery	Method Limits
Toluene-d8	112	70-130
1,2-Dichloroethane-d4	101	70-130
4-Bromofluorobenzene	96	70-130

Client Sample ID: CCV

Lab ID#: 2411216-05A

EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	a111803	Date of Collection: NA
Dil. Factor:	1.00	Date of Analysis: 11/18/24 10:33 AM

Compound	%Recovery
Vinyl Chloride	94
1,1-Dichloroethene	78
cis-1,2-Dichloroethene	103
Trichloroethene	94
trans-1,2-Dichloroethene	79
Tetrachloroethene	115

Container Type: NA - Not Applicable

Surrogates	%Recovery	Method Limits
Toluene-d8	106	70-130
1,2-Dichloroethane-d4	93	70-130
4-Bromofluorobenzene	105	70-130

Client Sample ID: LCS

Lab ID#: 2411216-06A

EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	a111805	Date of Collection: NA
Dil. Factor:	1.00	Date of Analysis: 11/18/24 11:46 AM

Compound	%Recovery	Method Limits
Vinyl Chloride	100	70-130
1,1-Dichloroethene	80	70-130
cis-1,2-Dichloroethene	102	70-130
Trichloroethene	98	70-130
trans-1,2-Dichloroethene	92	70-130
Tetrachloroethene	94	70-130

Container Type: NA - Not Applicable

Surrogates	%Recovery	Method Limits
Toluene-d8	95	70-130
1,2-Dichloroethane-d4	105	70-130
4-Bromofluorobenzene	104	70-130

Client Sample ID: LCSD

Lab ID#: 2411216-06AA

EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	a111806	Date of Collection: NA
Dil. Factor:	1.00	Date of Analysis: 11/18/24 12:28 PM

Compound	%Recovery	Method Limits
Vinyl Chloride	92	70-130
1,1-Dichloroethene	75	70-130
cis-1,2-Dichloroethene	103	70-130
Trichloroethene	96	70-130
trans-1,2-Dichloroethene	80	70-130
Tetrachloroethene	95	70-130

Container Type: NA - Not Applicable

Surrogates	%Recovery	Method Limits
Toluene-d8	92	70-130
1,2-Dichloroethane-d4	98	70-130
4-Bromofluorobenzene	101	70-130

Method : TO-15 (Sh)-1,1-DCE, c/t-1,2-DCE, PCE, TCE & VC

CAS Number	Compound	Rpt. Limit (ppbv)
75-01-4	Vinyl Chloride	0.50
75-35-4	1,1-Dichloroethene	0.50
156-59-2	cis-1,2-Dichloroethene	0.50
79-01-6	Trichloroethene	0.50
156-60-5	trans-1,2-Dichloroethene	0.50
127-18-4	Tetrachloroethene	0.50

	Surrogate	Method Limits
2037-26-5	Toluene-d8	70-130
17060-07-0	1,2-Dichloroethane-d4	70-130
460-00-4	4-Bromofluorobenzene	70-130