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# **ANALYTICAL REPORT**

# PREPARED FOR

Attn: Ms. Megan Meckley Arcadis US Inc. 28550 Cabot Drive Suite 500 Novi, Michigan 48377 Generated 8/14/2025 12:58:28 AM

# **JOB DESCRIPTION**

Ford LTP

# **JOB NUMBER**

240-230519-1

Eurofins Cleveland 180 S. Van Buren Avenue Barberton OH 44203



# **Eurofins Cleveland**

# **Job Notes**

This report may not be reproduced except in full, and with written approval from the laboratory. The results relate only to the samples tested. For questions please contact the Project Manager at the e-mail address or telephone number listed on this page.

The test results in this report relate only to the samples as received by the laboratory and will meet all requirements of the methodology, with any exceptions noted. This report shall not be reproduced except in full, without the express written approval of the laboratory. All questions should be directed to the Eurofins Environment Testing North Central, LLC Project Manager.

# Authorization

Generated 8/14/2025 12:58:28 AM

Authorized for release by Michael DelMonico, Project Manager I Michael.DelMonico@et.eurofinsus.com (330)966-9783 Client: Arcadis US Inc. Project/Site: Ford LTP

Laboratory Job ID: 240-230519-1

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# **Definitions/Glossary**

Client: Arcadis US Inc. Job ID: 240-230519-1

Project/Site: Ford LTP

**Qualifiers GC/MS VOA** 

Qualifier **Qualifier Description** 

Indicates the analyte was analyzed for but not detected.

**Glossary** 

Abbreviation These commonly used abbreviations may or may not be present in this report.

Listed under the "D" column to designate that the result is reported on a dry weight basis

Percent Recovery %R CFL Contains Free Liquid CFU Colony Forming Unit **CNF** Contains No Free Liquid

DER Duplicate Error Ratio (normalized absolute difference)

Dil Fac **Dilution Factor** 

Detection Limit (DoD/DOE) DL

DL, RA, RE, IN Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample

DLC Decision Level Concentration (Radiochemistry)

Estimated Detection Limit (Dioxin) EDL LOD Limit of Detection (DoD/DOE) Limit of Quantitation (DoD/DOE) LOQ

EPA recommended "Maximum Contaminant Level" MCL MDA Minimum Detectable Activity (Radiochemistry) MDC Minimum Detectable Concentration (Radiochemistry)

MDL Method Detection Limit ML Minimum Level (Dioxin) MPN Most Probable Number MQL Method Quantitation Limit

NC Not Calculated

ND Not Detected at the reporting limit (or MDL or EDL if shown)

NEG Negative / Absent POS Positive / Present

PQL Practical Quantitation Limit

**PRES** Presumptive **Quality Control** 

RER Relative Error Ratio (Radiochemistry)

RL Reporting Limit or Requested Limit (Radiochemistry)

RPD Relative Percent Difference, a measure of the relative difference between two points

TEF Toxicity Equivalent Factor (Dioxin) **TEQ** Toxicity Equivalent Quotient (Dioxin)

**TNTC** Too Numerous To Count

# **Case Narrative**

Client: Arcadis US Inc. Project: Ford LTP

Job ID: 240-230519-1 Eurofins Cleveland

Job Narrative 240-230519-1

The analytical test results presented in this report meet all requirements of the associated regulatory program listed on the Accreditation/Certification Summary Page, unless otherwise noted. Data qualifiers and/or narrative comments are included to explain any exceptions, if applicable. Regulated compliance samples (e.g. SDWA, NPDES) must comply with associated agency requirements/permits.

- Matrix-specific batch QC (e.g., MS, MSD, SD) may not be reported when insufficient sample volume is available or when site-specific QC samples are not submitted. In such cases, a Laboratory Control Sample Duplicate (LCSD) may be analyzed to provide precision data for the batch.
- For samples analyzed using surrogate and/or isotope dilution analytes, any recoveries falling outside of established acceptance criteria are re-prepared and/or re-analyzed to confirm results, unless the deviation is due to sample dilution or otherwise explained in the case narrative.

### Receipt

The samples were received on 8/9/2025 8:00 AM. Unless otherwise noted below, the samples arrived in good condition, and, where required, properly preserved and on ice. The temperatures of the 2 coolers at receipt time were 2.7°C and 2.8°C.

### GC/MS VOA

No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

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Job ID: 240-230519-1

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# **Method Summary**

Client: Arcadis US Inc.

Project/Site: Ford LTP

Job ID: 240-230519-1

Method	Method Description	Protocol	Laboratory
8260D	Volatile Organic Compounds by GC/MS	SW846	EET CLE
8260D SIM	Volatile Organic Compounds (GC/MS)	SW846	EET CLE
5030C	Purge and Trap	SW846	EET CLE

### Protocol References:

SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

### Laboratory References:

EET CLE = Eurofins Cleveland, 180 S. Van Buren Avenue, Barberton, OH 44203, TEL (330)497-9396

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# **Sample Summary**

Client: Arcadis US Inc.

Project/Site: Ford LTP

Job ID: 240-230519-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received	Sample Origin
240-230519-1	TRIP BLANK_47	Water	08/07/25 00:00	08/09/25 08:00	Michigan
240-230519-2	MW-177S_080725	Water	08/07/25 12:35	08/09/25 08:00	Michigan

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# **Detection Summary**

Client: Arcadis US Inc.

Project/Site: Ford LTP

Job ID: 240-230519-1

Client Sample ID: TRIP BLANK\_47 Lab Sample ID: 240-230519-1

No Detections.

Client Sample ID: MW-177S\_080725 Lab Sample ID: 240-230519-2

No Detections.

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# **Client Sample Results**

Client: Arcadis US Inc. Job ID: 240-230519-1

Project/Site: Ford LTP

Client Sample ID: TRIP BLANK\_47

Date Received: 08/09/25 08:00

Lab Sample ID: 240-230519-1 Date Collected: 08/07/25 00:00

**Matrix: Water** 

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1-Dichloroethene	1.0	U	1.0	0.49	ug/L			08/12/25 11:13	1
cis-1,2-Dichloroethene	1.0	U	1.0	0.46	ug/L			08/12/25 11:13	1
Tetrachloroethene	1.0	U	1.0	0.44	ug/L			08/12/25 11:13	1
trans-1,2-Dichloroethene	1.0	U	1.0	0.51	ug/L			08/12/25 11:13	1
Trichloroethene	1.0	U	1.0	0.44	ug/L			08/12/25 11:13	1
Vinyl chloride	1.0	U	1.0	0.45	ug/L			08/12/25 11:13	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	106		62 - 137			-		08/12/25 11:13	1
4-Bromofluorobenzene (Surr)	89		56 <sub>-</sub> 136					08/12/25 11:13	1
Toluene-d8 (Surr)	95		78 - 122					08/12/25 11:13	1
Dibromofluoromethane (Surr)	106		73 - 120					08/12/25 11:13	1

**Eurofins Cleveland** 

# **Client Sample Results**

Client: Arcadis US Inc. Job ID: 240-230519-1

Project/Site: Ford LTP

trans-1,2-Dichloroethene

Trichloroethene

Date Received: 08/09/25 08:00

**Client Sample ID: MW-177S\_080725** 

Lab Sample ID: 240-230519-2 Date Collected: 08/07/25 12:35

1.0 U

1.0 U

Matrix: Water

08/12/25 14:47

08/12/25 14:47

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,4-Dioxane	2.0	U	2.0	0.86	ug/L			08/12/25 15:23	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	100		68 - 127					08/12/25 15:23	1
- Method: SW846 8260D - Volat	ile Organic Comp	ounds by G	C/MS						
						_	D	A II	
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Analyte 1,1-Dichloroethene	Result 1.0		RL	0.49		в	Prepared	08/12/25 14:47	Dil Fac
		U			ug/L		Prepared		1 1

Vinyl chloride	1.0 U	1.0	0.45 ug/L		08/12/25 14:47	1
Surrogate	%Recovery Qua	alifier Limits		Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	113	62 - 137			08/12/25 14:47	1
4-Bromofluorobenzene (Surr)	93	56 - 136			08/12/25 14:47	1
Toluene-d8 (Surr)	97	78 - 122			08/12/25 14:47	1
Dibromofluoromethane (Surr)	111	73 - 120			08/12/25 14:47	1

1.0

1.0

0.51 ug/L

0.44 ug/L

# **Surrogate Summary**

Client: Arcadis US Inc.

Job ID: 240-230519-1

Project/Site: Ford LTP

Method: 8260D - Volatile Organic Compounds by GC/MS

Matrix: Water Prep Type: Total/NA

				Percent Sur	rrogate Reco
		DCA	BFB	TOL	DBFM
Lab Sample ID	Client Sample ID	(62-137)	(56-136)	(78-122)	(73-120)
240-230519-1	TRIP BLANK_47	106	89	95	106
240-230519-2	MW-177S_080725	113	93	97	111
240-230527-E-2 MS	Matrix Spike	96	97	95	97
240-230527-F-2 MSD	Matrix Spike Duplicate	94	98	95	94
LCS 240-667245/5	Lab Control Sample	94	99	97	97
MB 240-667245/9	Method Blank	106	88	93	105

# Surrogate Legend

DCA = 1,2-Dichloroethane-d4 (Surr)

BFB = 4-Bromofluorobenzene (Surr)

TOL = Toluene-d8 (Surr)

DBFM = Dibromofluoromethane (Surr)

Method: 8260D SIM - Volatile Organic Compounds (GC/MS)

Matrix: Water Prep Type: Total/NA

			Percent Surrogate Recovery (Acceptance Limits)
		DCA	
Lab Sample ID	Client Sample ID	(68-127)	
240-230512-E-5 MS	Matrix Spike	101	
240-230512-E-5 MSD	Matrix Spike Duplicate	99	
240-230519-2	MW-177S_080725	100	
LCS 240-667253/5	Lab Control Sample	94	
MB 240-667253/7	Method Blank	97	
Surrogate Legend			
DCA = 1,2-Dichloroetha	ne-d4 (Surr)		

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Client: Arcadis US Inc. Job ID: 240-230519-1

Method: 8260D - Volatile Organic Compounds by GC/MS

Lab Sample ID: MB 240-667245/9

**Matrix: Water** 

Project/Site: Ford LTP

Analysis Batch: 667245

<b>Client Sam</b>	ple ID:	Method	Blank
	Pren '	Type: To	tal/NA

MB MB Dil Fac Analyte Result Qualifier RLMDL Unit Prepared Analyzed 1,1-Dichloroethene 1.0 U 1.0 0.49 ug/L 08/12/25 10:49 cis-1,2-Dichloroethene 1.0 U 1.0 0.46 ug/L 08/12/25 10:49 1.0 U 1.0 0.44 ug/L 08/12/25 10:49 Tetrachloroethene trans-1,2-Dichloroethene 1.0 U 08/12/25 10:49 1.0 0.51 ug/L Trichloroethene 1.0 U 1.0 0.44 ug/L 08/12/25 10:49 Vinyl chloride 1.0 U 1.0 0.45 ug/L 08/12/25 10:49

MB MB

Surrogate	%Recovery	Qualifier	Limits	Prepared	l Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	106		62 - 137		08/12/25 10:49	1
4-Bromofluorobenzene (Surr)	88		56 - 136		08/12/25 10:49	1
Toluene-d8 (Surr)	93		78 - 122		08/12/25 10:49	1
Dibromofluoromethane (Surr)	105		73 - 120		08/12/25 10:49	1

Lab Sample ID: LCS 240-667245/5

**Matrix: Water** 

Analysis Batch: 667245

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

	Spike	LCS	LCS			%Rec	
Analyte	Added	Result	Qualifier Ur	nit D	%Rec	Limits	
1,1-Dichloroethene	25.0	26.6	ug	/L	106	63 - 134	
cis-1,2-Dichloroethene	25.0	25.0	ug	/L	100	77 - 123	
Tetrachloroethene	25.0	25.8	ug	/L	103	76 - 123	
trans-1,2-Dichloroethene	25.0	24.7	ug	/L	99	75 - 124	
Trichloroethene	25.0	24.4	ug	/L	97	70 - 122	
Vinyl chloride	25.0	19.3	ug	/L	77	60 - 144	

LCS LCS

Surrogate	%Recovery	Qualifier	Limits
1,2-Dichloroethane-d4 (Surr)	94		62 - 137
4-Bromofluorobenzene (Surr)	99		56 <sub>-</sub> 136
Toluene-d8 (Surr)	97		78 - 122
Dibromofluoromethane (Surr)	97		73 - 120

Lab Sample ID: 240-230527-E-2 MS

**Matrix: Water** 

Analysis Batch: 667245

Client Sample ID: Matrix Spike Prep Type: Total/NA

	Sample	Sample	Spike	MS	MS				%Rec	
Analyte	Result	Qualifier	Added	Result	Qualifier	Unit	D	%Rec	Limits	
1,1-Dichloroethene	1.0	U	25.0	20.8		ug/L		83	56 - 135	
cis-1,2-Dichloroethene	1.0	U	25.0	21.5		ug/L		86	66 - 128	
Tetrachloroethene	1.0	U	25.0	18.5		ug/L		74	62 - 131	
trans-1,2-Dichloroethene	1.0	U	25.0	20.2		ug/L		81	56 - 136	
Trichloroethene	1.0	U	25.0	19.5		ug/L		78	61 - 124	
Vinyl chloride	1.0	U	25.0	16.7		ug/L		67	43 - 157	

MS MS

Surrogate	%Recovery Qualific	er Limits
1,2-Dichloroethane-d4 (Surr)	96	62 - 137
4-Bromofluorobenzene (Surr)	97	56 - 136
Toluene-d8 (Surr)	95	78 - 122

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Client: Arcadis US Inc. Project/Site: Ford LTP

Job ID: 240-230519-1

# Method: 8260D - Volatile Organic Compounds by GC/MS (Continued)

Lab Sample ID: 240-230527-E-2 MS

Lab Sample ID: 240-230527-F-2 MSD

**Matrix: Water** 

Analysis Batch: 667245

Client Sample ID: Matrix Spike

Prep Type: Total/NA

MS MS Surrogate

%Recovery Qualifier

Limits Dibromofluoromethane (Surr) 97 73 - 120

Client Sample ID: Matrix Spike Duplicate

Prep Type: Total/NA

**Matrix: Water** 

Analysis Batch: 667245

	Sample	Sample	Spike	MSD	MSD				%Rec		RPD
Analyte	Result	Qualifier	Added	Result	Qualifier	Unit	D	%Rec	Limits	RPD	Limit
1,1-Dichloroethene	1.0	U	25.0	23.0		ug/L		92	56 - 135	10	26
cis-1,2-Dichloroethene	1.0	U	25.0	23.9		ug/L		96	66 - 128	10	14
Tetrachloroethene	1.0	U	25.0	21.0		ug/L		84	62 - 131	13	20
trans-1,2-Dichloroethene	1.0	U	25.0	22.8		ug/L		91	56 - 136	12	15
Trichloroethene	1.0	U	25.0	21.6		ug/L		87	61 - 124	10	15
Vinyl chloride	1.0	U	25.0	18.2		ug/L		73	43 - 157	9	24

MSD MSD

MR MR

Surrogate	%Recovery	Qualifier	Limits
1,2-Dichloroethane-d4 (Surr)	94		62 - 137
4-Bromofluorobenzene (Surr)	98		56 - 136
Toluene-d8 (Surr)	95		78 - 122
Dibromofluoromethane (Surr)	94		73 - 120

# Method: 8260D SIM - Volatile Organic Compounds (GC/MS)

Lab Sample ID: MB 240-667253/7

**Matrix: Water** 

Analysis Batch: 667253

Client Sample ID: Method Blank

Client Sample ID: Lab Control Sample

Limits

75 - 121

Limits

20 - 180

Client Sample ID: Matrix Spike

Prep Type: Total/NA

Analyte	Result	Qualifier	RL	MDL	Unit	D	)	Prepared	Analyzed	Dil Fac
1,4-Dioxane	2.0	U	2.0	0.86	ug/L				08/12/25 10:18	1
	МВ	MB								

Surrogate %Recovery Qualifier Limits Prepared Analyzed Dil Fac 1,2-Dichloroethane-d4 (Surr) 97 68 - 127 08/12/25 10:18

Lab Sample ID: LCS 240-667253/5

Analyte

Analyte

1,4-Dioxane

Matrix: Water			•	Prep Type: Total/NA
Analysis Batch: 667253				
	Spike	LCS LCS	o,	%Rec

Added

Added

10.0

1,4-Dioxane 10.0 9.61 ug/L LCS LCS

Result Qualifier

2.0 U

%Recovery Qualifier Surrogate Limits 1,2-Dichloroethane-d4 (Surr) 68 - 127 94

Lab Sample ID: 240-230512-E-5 MS

**Matrix: Wat** 

**Analysis Ba** 

ater				Prep Type: Total/NA
Batch: 667253				
	Sample Sample	Spike	MS MS	%Rec

9.02

Result Qualifier

Result Qualifier

Unit

Unit

ug/L

D

%Rec

%Rec

90

**Eurofins Cleveland** 

# **QC Sample Results**

Client: Arcadis US Inc. Job ID: 240-230519-1

Project/Site: Ford LTP

# Method: 8260D SIM - Volatile Organic Compounds (GC/MS) (Continued)

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1,2-Dichloroethane-d4 (Surr)

	MS	MS										
Surrogate	%Recovery	Qualifier	Limits									
1,2-Dichloroethane-d4 (Surr)	101		68 - 127									
Lab Sample ID: 240-230512	P-E-5 MSD						Clien	t Sa	mple ID	: Matrix S	pike Dur	olicate
Matrix: Water										Prep	Type: To	tal/NA
Analysis Batch: 667253												
	Sample	Sample	Spike	MSD	MSD					%Rec		RPD
Analyte	Result	Qualifier	Added	Result	Qualifier	Unit		D	%Rec	Limits	RPD	Limit

Analyte	Result	Qualifier	Added	Result	Qualifier	Unit	D	%Rec	Limits	RPD	Limit
1,4-Dioxane	2.0	U	10.0	9.02		ug/L		90	20 - 180	0	20
	MSD	MSD									
Surrogate	%Recovery	Qualifier	Limits								

68 - 127

# **QC Association Summary**

Client: Arcadis US Inc.

Project/Site: Ford LTP

Job ID: 240-230519-1

# **GC/MS VOA**

# Analysis Batch: 667245

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batcl
240-230519-1	TRIP BLANK_47	Total/NA	Water	8260D	
240-230519-2	MW-177S_080725	Total/NA	Water	8260D	
MB 240-667245/9	Method Blank	Total/NA	Water	8260D	
LCS 240-667245/5	Lab Control Sample	Total/NA	Water	8260D	
240-230527-E-2 MS	Matrix Spike	Total/NA	Water	8260D	
240-230527-F-2 MSD	Matrix Spike Duplicate	Total/NA	Water	8260D	

# Analysis Batch: 667253

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-230519-2	MW-177S_080725	Total/NA	Water	8260D SIM	
MB 240-667253/7	Method Blank	Total/NA	Water	8260D SIM	
LCS 240-667253/5	Lab Control Sample	Total/NA	Water	8260D SIM	
240-230512-E-5 MS	Matrix Spike	Total/NA	Water	8260D SIM	
240-230512-E-5 MSD	Matrix Spike Duplicate	Total/NA	Water	8260D SIM	

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# **Lab Chronicle**

Client: Arcadis US Inc. Job ID: 240-230519-1

Project/Site: Ford LTP

Client Sample ID: TRIP BLANK\_47

Lab Sample ID: 240-230519-1 Date Collected: 08/07/25 00:00

Matrix: Water

Dilution Batch Batch Batch Prepared Method Prep Type Туре Run Factor **Number Analyst** Lab or Analyzed Total/NA 8260D 667245 R5XG EET CLE 08/12/25 11:13 Analysis

Client Sample ID: MW-177S\_080725 Lab Sample ID: 240-230519-2

Date Collected: 08/07/25 12:35 **Matrix: Water** 

Date Received: 08/09/25 08:00

Date Received: 08/09/25 08:00

	Batch	Batch		Dilution	Batch			Prepared
Prep Type	Type	Method	Run	Factor	Number	Analyst	Lab	or Analyzed
Total/NA	Analysis	8260D		1	667245	R5XG	EET CLE	08/12/25 14:47
Total/NA	Analysis	8260D SIM		1	667253	R5XG	EET CLE	08/12/25 15:23

Laboratory References:

EET CLE = Eurofins Cleveland, 180 S. Van Buren Avenue, Barberton, OH 44203, TEL (330)497-9396

# **Accreditation/Certification Summary**

Client: Arcadis US Inc.

Project/Site: Ford LTP

Job ID: 240-230519-1

# **Laboratory: Eurofins Cleveland**

All accreditations/certifications held by this laboratory are listed. Not all accreditations/certifications are applicable to this report.

Authority	Program	Identification Number	Expiration Date
Connecticut	State	PH-0806	12-31-26
Georgia	State	4062	02-27-26
Illinois	NELAP	200004	08-31-26
lowa	State	421	06-01-27
Kansas	NELAP	E-10336	01-31-26
Kentucky (UST)	State	112225	02-28-26
Kentucky (WW)	State	KY98016	12-31-25
Minnesota	NELAP	039-999-348	12-31-25
New Hampshire	NELAP	225024	09-30-25
New Jersey	NELAP	OH001	06-30-26
New York	NELAP	10975	04-01-26
North Dakota	State	R-244	02-27-26
Ohio	State	8303	11-04-25
Ohio VAP	State	ORELAP 4062	02-28-26
Oregon	NELAP	4062	02-27-26
Pennsylvania	NELAP	68-00340	08-31-26
Texas	NELAP	T104704517-22-19	08-31-25
US Fish & Wildlife	US Federal Programs	A26406	02-28-26
USDA	US Federal Programs	P330-18-00281	01-05-27
Virginia	NELAP	460175	09-15-25
West Virginia DEP	State	210	12-31-25
Wisconsin	State	399167560	08-31-25

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**Chain of Custody Record** TestAmerica Laboratory location: Farmington Hills — 38855 Hills Tech Drive, Suite 600, Farmington Hills 48331

Client Contact	Regula	tory program	:	□ DV	<i>t</i>	□ NP	DES		T RO	CRA	_ C	Other												
Company Name: Arcadis	Client Project	Manager: Meg	an Meck	ey		Site Co	ntact: S	Sam	antha S	zpaichle	r		Lab	Conta	ct: Mil	ke Del	Monic	0				estAmerica OC No:	Laborato	ries, l
ddress: 28550 Cabot Drive, Suite 500	Telephone: 24	-994-2240			_	Telepho	ne: 24	8-99	94-2240				Tele	phone:	330-4	97-93	96				+		_	
ity/State/Zip: Novi, MI, 48377	Email: megan.					-			minima Terma	Lime							nalys	08				1 of		Cs
none: 248-994-2240			igis.com								1					7	Патуз					or lab use only		
roject Name: Ford LTP	Sampler Name		0			TAT ifd	ifferent fr		3 weeks												W	alk-in client		
oject Number: 30251157.401.04	Kay Method of Ship	el Ve	400			10 d	ay		2 weeks	:								5			L	ab sampling	Mo.	
									2 days		2			009			9	IS O						
0 # US3460025888	Shipping/Traci	ding No:							1 day		e e	و اق	8260	E 82			9 826	8260			Je	ob/SDG No:		
				Matrix		C	utalacr	3 &	Preserve	tives	Se II		l iii	200	9	8	lorid	ane				ERICE		
Sample Identification	Sample Date	Sample Time	Air	Sediment	Other:	H2SO4 HNO3	HCI	NaOH	ZaAc/ NaOH Unpres	Other:	Filtered Sample (Y / N)	Composite—C/ Grab-	cis-1,2-DCE 8260D	Trans-1,2-DCE 8260D	PCE 8260D	TCE 8260D	Vinyl Chloride 8260D	1,4-Dioxane 8260D SIM					pecific No Instruction	
TRIP BLANK_ 47			1				1				N	3 ×	ίx	Х	Х	Х	Х					1 Trip Bl	ank	
		10.75				+	1				4	( )								+ +	_	3 VOAs fo		
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Eurofins - Cleveland Sample Receipt Form/Narrative Login#
Cooler unpacked by
aved on 8/9/25 Opened on 8/9/25
Receipt After-hours Drop-off Date/Time  Storage Location
ox Client Cooler Box
Foam Plastic Bag None Other  By Ice Water None  We See Multiple Cooler Form
Were tamper/custody seals on the outside of the cooler(s)? If Yes Quantity  Were the seals on the outside of the cooler(s) signed & dated?  Were tamper/custody seals on the bottle(s) or bottle kits (LLHg/MeHg)?  Yes No  Receiving
Were the custody papers relinquished & signed in the appropriate place?  Were the custody papers relinquished & signed in the appropriate place?  Were the custody papers relinquished & signed in the appropriate place?
7 Did all bottles arrive in good condition (Unbroken)? 8 Could all bottle labels (ID/Date/Time) be reconciled with the COC? 9 For each sample, does the COC specify preservatives (XN), # of containers (XN), and sample type of grab/comp (XN)? 10 Were correct bottle(s) used for the test(s) indicated? 11 Sufficient quantity received to perform indicated analyses?
12 Are these work share samples and all listed on the COC?  If yes, Questions 13-17 have been checked at the originating laboratory  13 Were all preserved sample(s) at the correct pH upon receipt?  14 Were VOAs on the COC?  Yes No (NA) pH Strip Lo# HC463162
15 Were air bubbles >6 mm in any VOA vials? Larger than this Yes NO NA 16 Was a VOA trip blank present in the cooler(s)? Trip Blank Lot # Yes NO 17 Was a LL Hg or Me Hg trip blank present? Yes No
Contacted PM Date by via Verbal Voice Mail Other  Concerning
18. CHAIN OF CUSTODY & SAMPLE DISCREPANCIES   additional next page   Labeled by   Labels Venfied by
19 SAMPLE CONDITION  Sample(s)  were received after the recommended holding time had expired.  were received in a broken container
20. SAMPLE PRESERVATION
Sample(s)were further preserved in the laboratory Time preservedPreservative(s) added/Lot number(s)were further preserved in the laboratory
VOA Sample Preservation Date/Time VOAs Frozen.

Page 19 of 21

Clean   Box Other   R GIN#	Wellice Bluelice Drylice			IX GUN #		
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ption IR Gun # Observed Corrected (	Coolant (Circle)	Corrected Femp °C	Observéd Temp °C	IR Gun # (Circle)	scription c <del>le)</del>	Cooler De (Ciro

# **Login Container Summary Report**

240-230519

Temperature readings		Auditory - representation of the second of t	8/
Client Sample ID	<u>Lab ID</u>	Container Type	Container Preservation Preservation pH Temp Added Lot Number
TRIP BLANK 47	240-230519 A 1	Voa Vıal 40ml - Hydrochloric Acid	
MW 177S_080725	240-230519-A-2	Voa Vial 40ml - Hydrochloric Acid	
MW-177S_080725	240-230519-B-2	Voa Vial 40ml Hydrochloric Acid	
MW-177S_080725	240-230519-C-2	Voa Vial 40ml - Hydrochloric Acid	
MW 177S_080725	240-230519-D-2	Voa Vial 40ml Hydrochloric Acid	
MW 177S_080725	240-230519-E-2	Voa Vial 40ml - Hydrochloric Acid	
MW 177S_080725	240-230519-F 2	Voa Vial 40ml Hydrochloric Acid	

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# DATA VERIFICATION REPORT



August 14, 2025

Megan Meckley Arcadis 28550 Cabot Drive Suite 500 Novi, MI US 48377

CADENA project ID: E203728

Project: Ford Livonia Transmission Plant - ON-SITE Soil Gas, Ground Water and Soil

Project number: 30251157.401.04 LTP

Event Specific Scope of Work References: Sample COC Laboratory: Eurofins Environment Testing LLC - Cleveland

Laboratory submittal: 230519-1 Sample date: 2025-08-07

Report received by CADENA: 2025-08-14

Initial Data Verification completed by CADENA: 2025-08-14

Number of Samples:2 Sample Matrices:Water Test Categories:GCMS VOC

Please see attached criteria report or sample result/qualified analytical result summary for qualifier flags assigned to sample data.

There were no significant QC anomalies or exceptions to report.

Sample/MS/MSD Surrogate Recovery, Blank/LCS Surrogate Recovery, LCS/LCD Recovery, Blank Contamination and Hold Time Exception were reviewed as part of our verification.

Data verification for the report specified above was completed using the Ford Motor Company Environmental Laboratory Technical Specification, the CADENA Standard Operating Procedure for the Verification of Environmental Analytical Data and the associated analytical methods as references for evaluating the batch QC, sample data and report content. The EPA National Functional Guidelines for validating organic and inorganic data were used as guidance when addressing out of control QC results and the associated data qualifiers.

The definitions of the qualifiers used for this data package are defined in the analytical report. CADENA valid qualifiers are defined in the table below. To view and download a PDF copy of the laboratory analytical report access the CADENA CLMS at <a href="http://clms.cadenaco.com/index.cfm">http://clms.cadenaco.com/index.cfm</a>.

Please contact me if you have any questions.

Sincerely,

Jim Tomalia

Project Scientist

# **CADENA Valid Qualifiers**

Valid Qualifiers	Description
<	Less than the reported concentration.
>	Greater than the reported concentration.
В	The analyte / compound was detected in the associated blank. For Organic methods the sample concentration was greater than the RDL and less than 5x (or 10x for common lab contaminates) the blank concentration and is considered non-detect at the reported concentration. For Inorganic methods the sample concentration was greater than the RDL and less than 10x the blank concentration and is considered non-detect at the reported concentration.
Е	The analyte / Compound reported exceeds the calibration range and is considered estimated.
EMPC	Estimated Minimum Potential Contamination - Dioxin/Furan analyses only.
J	Indicates an estimated value. This flag is used either when estimating a concentration for a tentatively identified compound or when the data indicates the presence of an analyte / compound but the result is less than the sample Quantitation limit, but greater than zero. The flag is also used in data validation to indicate a reported value should be considered estimated due to associated quality assurance deficiencies.
J-	The result is an estimated quantity, but the result may be biased low.
JB	NON-DETECT AT THE CONCENTRATION REPORTED AND ESTIMATED
JH	The sample result is considered estimated and is potentially biased high.
JL	The sample result is considered estimated and is potentially biased low.
JUB	NON-DETECT AT THE REPORTING LIMIT AND ESTIMATED
NJ	Tentatively identified compound with approximated concentration.
R	Indicates the value is considered to be unusable. (Note: The analyte / compound may or may not be present.)
TNTC	Too Numerous to Count - Asbestos and Microbiological Results.
U	Indicates that the analyte / compound was analyzed for, but not detected.
UB	The analyte / compound was detected in the associated blank. For Organic methods the sample concentration was less than the RDL and less than 5x (or 10x for common lab contaminates) the blank concentration and is considered non-detect at the RDL. For Inorganic methods the sample concentration was less than the RDL and less than 10x the blank concentration and is considered non-detect at the RDL.
UJ	The analyte / compound was not detected above the reported sample Quantitation limit. However, the Quantitation limit is considered to be approximate due to associated quality assurance results and may or may not represent the actual limit of Quantitation to accurately and precisely report the analyte in the sample.

# **Analytical Results Summary**

**CADENA Project ID:** E203728

**Laboratory:** Eurofins Environment Testing LLC - Cleveland

Laboratory Submittal: 230519-1

		Sample Name:	TRIP BL	ANK_47			MW-177	7S_0807	25	
		Lab Sample ID:	240230	5191			240230	5192		
		Sample Date:	8/7/202	5			8/7/202	.5		
				Report		Valid		Report		Valid
	Analyte	Cas No.	Result	Limit	Units	Qualifier	Result	Limit	Units	Qualifier
GC/MS VOC										
OSW-8260	<u>0D</u>									
	1,1-Dichloroethene	75-35-4	ND	1.0	ug/l		ND	1.0	ug/l	
	cis-1,2-Dichloroethene	156-59-2	ND	1.0	ug/l		ND	1.0	ug/l	
	Tetrachloroethene	127-18-4	ND	1.0	ug/l		ND	1.0	ug/l	
	trans-1,2-Dichloroethene	156-60-5	ND	1.0	ug/l		ND	1.0	ug/l	
	Trichloroethene	79-01-6	ND	1.0	ug/l		ND	1.0	ug/l	
	Vinyl chloride	75-01-4	ND	1.0	ug/l		ND	1.0	ug/l	
OSW-8260	<u>ODSIM</u>									
	1,4-Dioxane	123-91-1					ND	2.0	ug/l	



# Ford Motor Company – Livonia Transmission Project

# **Data Review**

# Livonia, Michigan

Volatile Organic Compounds (VOC) Analysis

SDG # 240-230519-1

CADENA Verification Report: 2025-08-14

Analyses Performed By: Eurofins Cleveland Barberton, Ohio

Report # 60663R Review Level: Tier III Project: 30251157.401.02

# **SUMMARY**

This data quality assessment summarizes the review of Sample Delivery Group (SDG) # 240-230519-1 for samples collected in association with the Ford – Livonia, Michigan site. The review was conducted as a Tier III validation in addition to a verification/Tier II validation review performed by CADENA Inc. and included review of level IV laboratory data package completeness. Only elements of a Tier III validation effort (Tier III) include a detailed review of laboratory raw data to check for errors in calculation, calibration review, internal standard review and compound identification) and omitted deviations from the CADENA verification/Tier II report are documented in this report. Only analytical data associated with constituents of concern were reviewed for this validation. Field documentation was not included in this review. Included with this assessment are the validation annotated sample result sheets, and chain of custody. Analyses were performed on the following samples:

Sample ID	Lab ID	Matrix	Sample	Parent Sample	Ana	lysis
Sample ID	Labib	Watrix	Collection Date	raient Sample	voc	VOC SIM
TRIP BLANK_47	240-230519-1	Water	08/07/2025		Х	
MW-177S_080725	240-230519-2	Water	08/07/2025		X	X

# **ANALYTICAL DATA PACKAGE DOCUMENTATION**

The table below is the evaluation of the data package completeness.

Items Reviewed	Rep	orted	Perfori Accep		Not
	No	Yes	No	Yes	Required
Sample receipt condition		X		Х	
2. Requested analyses and sample results		Х		Х	
Master tracking list		Х		Х	
4. Methods of analysis		Х		Х	
5. Reporting limits		Х		Х	
6. Sample collection date		Х		Х	
7. Laboratory sample received date		Х		Х	
8. Sample preservation verification (as applicable)		Х		Х	
9. Sample preparation/extraction/analysis dates		Х		Х	
10. Fully executed Chain-of-Custody (COC) form		Х		Х	
Narrative summary of Quality Assurance or sample problems provided		Х		Х	
12. Data Package Completeness and Compliance		Х		Х	

### ORGANIC ANALYSIS INTRODUCTION

Analyses were performed according to United States Environmental Protection Agency (USEPA) SW-846 Method 8260D and 8260D SIM. Data were reviewed in accordance with USEPA National Functional Guidelines for Organic Superfund Methods Data Review, EPA 540-R-20-005, November 2020 (with reference to the historical USEPA Contract Laboratory Program National Functional Guidelines for Organic Data Review, OSWER 9240.1-05A-P, October 1999), as appropriate.

The data review process is an evaluation of data on a technical basis rather than a determination of contract compliance. As such, the standards against which the data are being weighed may differ from those specified in the analytical method. It is assumed that the data package represents the best efforts of the laboratory and had already been subjected to adequate and sufficient quality review prior to submission.

During the review process, laboratory qualified and unqualified data are verified against the supporting documentation. Based on this evaluation, qualifier codes may be added, deleted, or modified by the data reviewer. Results are qualified with the following codes in accordance with USEPA National Functional Guidelines:

- Concentration (C) Qualifiers
  - U The analyte was analyzed for but was not detected above the level of the reported sample quantitation limit.
  - B The compound has been found in the sample as well as its associated blank, its presence in the sample may be suspect.
- Quantitation (Q) Qualifiers
  - E The compound was quantitated above the calibration range.
  - D Concentration is based on a diluted sample analysis.
- Validation Qualifiers
  - J The result is an estimated quantity. The associated numerical value is the approximate concentration of the analyte in the sample.
  - UJ The analyte was analyzed for but was not detected. The reported quantitation limit is approximate and may be inaccurate or imprecise.
  - UB Analyte considered non-detect at the listed value due to associated blank contamination.
  - R The sample results are rejected.

Two facts should be noted by all data users. First, the "R" flag means that the associated value is unusable. In other words, due to significant quality control (QC) problems, the analysis is invalid and provides no information as to whether the compound is present or not. "R" values should not appear on data tables because they cannot be relied upon, even as a last resort. The second fact to keep in mind is that no compound concentration, even if it has passed all QC tests, is guaranteed to be accurate. Strict QC serves to increase confidence in data but any value potentially contains error.

# **VOLATILE ORGANIC COMPOUND (VOC) ANALYSES**

## 1. Holding Times

The specified holding times for the following methods are presented in the following table.

Method	Matrix	Holding Time	Preservation
SW-846 8260D/8260D-SIM	Water	14 days from collection to analysis	Cool to < 6 °C; pH < 2 with HCl

All samples were analyzed within the specified holding time criteria.

# 2. Mass Spectrometer Tuning

Mass spectrometer performance was acceptable, and all analyses were performed within a 12-hour tune clock.

System performance and column resolution were acceptable.

### 3. Calibration

Satisfactory instrument calibration is established to ensure that the instrument is capable of producing acceptable quantitative data. An initial calibration demonstrates that the instrument is capable of acceptable performance at the beginning of an experimental sequence. The continuing calibration verifies that the instrument daily performance is satisfactory.

### 3.1 Initial Calibration

The method specifies percent relative standard deviation (%RSD) and relative response factor (RRF) limits for select compounds only. A technical review of the data applies limits to all compounds with no exceptions.

All target compounds associated with the initial calibration standards must exhibit a %RSD less than the control limit (20%) or a correlation coefficient greater than 0.99 and an RRF value greater than control limit (0.05).

All compounds associated with the initial calibrations were within the specified control limits.

# 3.2 Continuing Calibration

All target compounds associated with the continuing calibration standard must exhibit a percent difference (%D) less than the control limit (20%) and RRF value greater than control limit (0.05).

All compounds associated with the continuing calibrations were within the specified control limits.

# 4. Internal Standard Performance

Internal standard performance criteria ensure that the GC/MS sensitivity and response are stable during every sample analysis. The criteria require the internal standard compounds associated with the VOC exhibit area counts that are not greater than two times (+100%) or less than one-half (-50%) of the area counts of the associated continuing calibration standard.

All internal standard responses were within control limits.

# 5. Field Duplicate Analysis

Field duplicate analysis is used to assess the overall precision of the field sampling procedures and analytical method. A control limit of 30% for water matrices is applied to the RPD between the parent sample and the field duplicate. In the instance when the parent and/or duplicate sample concentrations are less than or equal to 5 times the RL, a control limit of two times the RL is applied for water matrices.

A field duplicate sample was not collected for samples from this SDG.

# 6. Compound Identification

Compounds are identified on the GC/MS by using the analytes relative retention time and ion spectra.

No compounds were detected in the samples within this SDG.

# 7. System Performance and Overall Assessment

Overall system performance was acceptable. Other than for those deviations specifically mentioned in this review, the overall data quality is within the guidelines specified in the method.

# **DATA VALIDATION CHECKLIST FOR VOCs**

VOCs: 8260D/8260D-SIM	Rep	orted		rmance ptable	Not Required
	No	Yes	No	Yes	Required
GAS CHROMATOGRAPHY/MASS SPECTROMETRY (G	C/MS)				
Tier II Validation					
Holding times/Preservation		Х		Х	
Tier III Validation			'	'	
System performance and column resolution		Х		Х	
Initial calibration %RSDs		Х		Х	
Continuing calibration RRFs		Х		Х	
Continuing calibration %Ds		Х		Х	
Instrument tune and performance check		Х		Х	
Ion abundance criteria for each instrument used		Х		Х	
Field Duplicate RPD	Х				Х
Internal standard		Х		Х	
Compound identification and quantitation					
A. Reconstructed ion chromatograms		Х		Х	
B. Quantitation Reports		Х		Х	
C. RT of sample compounds within the established RT windows		Х		Х	
D. Transcription/calculation errors present		X		X	
E. Reporting limits adjusted to reflect sample dilutions		Х		Х	

# Notes:

%RSD Relative standard deviation

%R Percent recovery

RPD Relative percent difference

%D Percent difference

VALIDATION PERFORMED BY: Febin J S

SIGNATURE:

DATE: August 25, 2025

PEER REVIEW: Andrew Korycinski

DATE: September 5, 2025

# NO CORRECTIONS/QUALIFERS ADDED TO SAMPLE ANALYSIS DATA SHEETS

**Chain of Custody Record** TestAmerica Laboratory location: Farmington Hills — 38855 Hills Tech Drive, Suite 600, Farmington Hills 48331

Client Contact	Regula	tory program	:	□ DV	<i>t</i>	□ NP	DES		T RO	CRA	_ C	Other												
Company Name: Arcadis	Client Project	Manager: Meg	an Meck	ey		Site Co	ntact: S	Sam	antha S	zpaichle	r		Lab	Conta	ct: Mil	ke Del	Monic	0				estAmerica OC No:	Laborato	ries, l
ddress: 28550 Cabot Drive, Suite 500	Telephone: 24	-994-2240			_	Telepho	ne: 24	8-99	94-2240				Tele	phone:	330-4	97-93	96				+		_	
ity/State/Zip: Novi, MI, 48377	Email: megan.					-			minima Terma	Lime							nalys	08				1 of		Cs
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Sample Identification	Sample Date	Sample Time	Air	Sediment	Other:	H2SO4 HNO3	HCI	NaOH	ZaAc/ NaOH Unpres	Other:	Filtered Sample (Y / N)	Composite—C/ Grab-	cis-1,2-DCE 8260D	Trans-1,2-DCE 8260D	PCE 8260D	TCE 8260D	Vinyl Chloride 8260D	1,4-Dioxane 8260D SIM					pecific No Instruction	
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# **Definitions/Glossary**

Client: Arcadis US Inc. Job ID: 240-230519-1

Project/Site: Ford LTP

# **Qualifiers**

**GC/MS VOA** 

Qualifier **Qualifier Description** 

Indicates the analyte was analyzed for but not detected.

# **Glossary**

Abbreviation	These commonly used abbreviations may or may not be present in this report.
₩	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CFU	Colony Forming Unit
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL. RA. RE. IN	Indicates a Dilution. Re-analysis. Re-extraction. or additional Initial metals/anion analysis of the sample

DLC Decision Level Concentration (Radiochemistry) EDL Estimated Detection Limit (Dioxin)

LOD Limit of Detection (DoD/DOE) LOQ Limit of Quantitation (DoD/DOE) MCL EPA recommended "Maximum Contaminant Level"

Minimum Detectable Activity (Radiochemistry) MDA MDC Minimum Detectable Concentration (Radiochemistry)

MDL Method Detection Limit ML Minimum Level (Dioxin) MPN Most Probable Number MQL Method Quantitation Limit

NC Not Calculated

ND Not Detected at the reporting limit (or MDL or EDL if shown)

NEG Negative / Absent POS Positive / Present

PQL Practical Quantitation Limit

PRES Presumptive **Quality Control** 

RER Relative Error Ratio (Radiochemistry)

RL Reporting Limit or Requested Limit (Radiochemistry)

RPD Relative Percent Difference, a measure of the relative difference between two points

TEF Toxicity Equivalent Factor (Dioxin) Toxicity Equivalent Quotient (Dioxin) **TEQ** 

**TNTC** Too Numerous To Count

**Eurofins Cleveland** 

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8/14/2025

# **Client Sample Results**

Client: Arcadis US Inc. Job ID: 240-230519-1

Project/Site: Ford LTP

Client Sample ID: TRIP BLANK\_47

Date Received: 08/09/25 08:00

Lab Sample ID: 240-230519-1 Date Collected: 08/07/25 00:00

**Matrix: Water** 

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1-Dichloroethene	1.0	U	1.0	0.49	ug/L			08/12/25 11:13	1
cis-1,2-Dichloroethene	1.0	U	1.0	0.46	ug/L			08/12/25 11:13	1
Tetrachloroethene	1.0	U	1.0	0.44	ug/L			08/12/25 11:13	1
trans-1,2-Dichloroethene	1.0	U	1.0	0.51	ug/L			08/12/25 11:13	1
Trichloroethene	1.0	U	1.0	0.44	ug/L			08/12/25 11:13	1
Vinyl chloride	1.0	U	1.0	0.45	ug/L			08/12/25 11:13	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	106		62 - 137			-		08/12/25 11:13	1
4-Bromofluorobenzene (Surr)	89		56 <sub>-</sub> 136					08/12/25 11:13	1
Toluene-d8 (Surr)	95		78 - 122					08/12/25 11:13	1
Dibromofluoromethane (Surr)	106		73 - 120					08/12/25 11:13	1

**Eurofins Cleveland** 

# **Client Sample Results**

Client: Arcadis US Inc. Job ID: 240-230519-1

Project/Site: Ford LTP

trans-1,2-Dichloroethene

Trichloroethene

Date Received: 08/09/25 08:00

**Client Sample ID: MW-177S\_080725** 

Lab Sample ID: 240-230519-2 Date Collected: 08/07/25 12:35

1.0 U

1.0 U

Matrix: Water

08/12/25 14:47

08/12/25 14:47

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,4-Dioxane	2.0	U	2.0	0.86	ug/L			08/12/25 15:23	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	100		68 - 127	<del>38 - 127</del>		-		08/12/25 15:23	1
- Method: SW846 8260D - Volat	ile Organic Comp	ounds by G	C/MS						
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Analyte 1,1-Dichloroethene	Result 1.0		RL		Unit ug/L	D	Prepared	Analyzed 08/12/25 14:47	Dil Fac
		U			ug/L	<u>D</u> -	Prepared		Dil Fac

Vinyl chloride	1.0 U	1.0	0.45 ug/L		08/12/25 14:47	1
Surrogate	%Recovery Qua	lifier Limits		Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	113	62 - 137			08/12/25 14:47	1
4-Bromofluorobenzene (Surr)	93	56 - 136			08/12/25 14:47	1
Toluene-d8 (Surr)	97	78 - 122			08/12/25 14:47	1
Dibromofluoromethane (Surr)	111	73 - 120			08/12/25 14:47	1

1.0

1.0

0.51 ug/L

0.44 ug/L