

Environment Testing

ANALYTICAL REPORT

PREPARED FOR

Attn: Kristoffer Hinskey ARCADIS US Inc 28550 Cabot Drive Suite 500 Novi, Michigan 48377 Generated 8/21/2023 4:34:57 AM

JOB DESCRIPTION

Ford LTP - Off Site

JOB NUMBER

240-189779-1

Eurofins Cleveland 180 S. Van Buren Avenue Barberton OH 44203





Eurofins Cleveland

Job Notes

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Authorization

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Qualifiers

Qualifiers		3
GC/MS VOA		
Qualifier	Qualifier Description	
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.	_
U	Indicates the analyte was analyzed for but not detected.	5
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	7
%R	Percent Recovery	
CFL	Contains Free Liquid	0
CFU	Colony Forming Unit	0
CNF	Contains No Free Liquid	0
DER	Duplicate Error Ratio (normalized absolute difference)	9
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"	13
MDA	Minimum Detectable Activity (Radiochemistry)	
MDC	Minimum Detectable Concentration (Radiochemistry)	
MDL	Method Detection Limit	

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"
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
QC	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

Job ID: 240-189779-1

Laboratory: Eurofins Cleveland

Narrative

Job Narrative 240-189779-1

Receipt

The samples were received on 8/9/2023 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 4.4°C

GC/MS VOA

Method 8260D: The continuing calibration verification (CCV) associated with batch 584194 recovered above the upper control limit for 1,1-Dichloroethene. The samples associated with this CCV were non-detects for the affected analytes; therefore, the data have been reported. The associated samples are impacted: TRIP BLANK_23 (240-189779-1), MW-73D_080723 (240-189779-2), MW-101S_080723 (240-189779-3), MW-76_080723 (240-189779-4), MW-76S_080723 (240-189779-5) and DUP-12 (240-189779-6).

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

Client: ARCADIS US Inc Project/Site: Ford LTP - Off Site

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

Eurofins Cleveland

Sample Summary

Client: ARCADIS US Inc Project/Site: Ford LTP - Off Site

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
240-189779-1	TRIP BLANK_23	Water	08/07/23 00:00	08/09/23 08:00
240-189779-2	MW-73D_080723	Water	08/07/23 10:17	08/09/23 08:00
240-189779-3	MW-101S_080723	Water	08/07/23 12:20	08/09/23 08:00
240-189779-4	MW-76_080723	Water	08/07/23 14:41	08/09/23 08:00
240-189779-5	MW-76S_080723	Water	08/07/23 16:25	08/09/23 08:00
240-189779-6	DUP-12	Water	08/07/23 00:00	08/09/23 08:00

Detection Summary

Client: ARCADIS US Inc Project/Site: Ford LTP - Off Site

Job ID: 240-189779-1

Lab Sample ID: 240-189779-1

Client Sample ID: TRIP BLANK_2

No Detections.

Client Sample ID: MW-73D_080723							Sample ID:	: 240-189779	
_ Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac D	Method	Prep Type	
1,4-Dioxane	2.2		2.0	0.86	ug/L	11	8260D SIM	Total/NA	
Client Sample ID: MW-101	Lab S	Sample ID:	240-189779-						
No Detections.									
Client Sample ID: MW-76_	Lab S	Sample ID:	240-189779-						
- Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac D	Method	Prep Type	
cis-1,2-Dichloroethene	0.57	J	1.0	0.46	ug/L	1	8260D	Total/NA	
Client Sample ID: MW-768		Lab S	Sample ID:	240-189779-					
No Detections.									
Client Sample ID: DUP-12						Lab S	Sample ID:	240-189779-	
Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac D	Method	Prep Type	
cis-1,2-Dichloroethene	0.56	J	1.0	0.46	ua/l		8260D	Total/NA	

Client Sample ID: TRIP BLANK_23

Date Collected: 08/07/23 00:00 Date Received: 08/09/23 08:00

Method: SW846 8260D - Volati	le Organic Comp	ounds by G	iC/MS						
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1-Dichloroethene	1.0	U	1.0	0.49	ug/L			08/17/23 16:17	1
cis-1,2-Dichloroethene	1.0	U	1.0	0.46	ug/L			08/17/23 16:17	1
Tetrachloroethene	1.0	U	1.0	0.44	ug/L			08/17/23 16:17	1
trans-1,2-Dichloroethene	1.0	U	1.0	0.51	ug/L			08/17/23 16:17	1
Trichloroethene	1.0	U	1.0	0.44	ug/L			08/17/23 16:17	1
Vinyl chloride	1.0	U	1.0	0.45	ug/L			08/17/23 16:17	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	94		62 - 137			-		08/17/23 16:17	1
4-Bromofluorobenzene (Surr)	93		56 - 136					08/17/23 16:17	1
Toluene-d8 (Surr)	93		78 - 122					08/17/23 16:17	1
Dibromofluoromethane (Surr)	102		73 - 120					08/17/23 16:17	1

Job ID: 240-189779-1

Lab Sample ID: 240-189779-1

Matrix: Water

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Client Sample ID: MW-73D_080723

Date Collected: 08/07/23 10:17 Date Received: 08/09/23 08:00

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,4-Dioxane	2.2		2.0	0.86	ug/L			08/10/23 18:06	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	91		66 - 120			-		08/10/23 18:06	1
Method: SW846 8260D - Volati	le Organic Comp	ounds by G	C/MS						
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1-Dichloroethene	1.0	U	1.0	0.49	ug/L			08/17/23 16:41	1
cis-1,2-Dichloroethene	1.0	U	1.0	0.46	ug/L			08/17/23 16:41	1
Tetrachloroethene	1.0	U	1.0	0.44	ug/L			08/17/23 16:41	1
trans-1,2-Dichloroethene	1.0	U	1.0	0.51	ug/L			08/17/23 16:41	1
Trichloroethene	1.0	U	1.0	0.44	ug/L			08/17/23 16:41	1
Vinyl chloride	1.0	U	1.0	0.45	ug/L			08/17/23 16:41	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	95		62 - 137			-		08/17/23 16:41	1
4-Bromofluorobenzene (Surr)	99		56 - 136					08/17/23 16:41	1
Toluene-d8 (Surr)	97		78 - 122					08/17/23 16:41	1
Dibromofluoromethane (Surr)	96		73 - 120					08/17/23 16:41	1

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Job ID: 240-189779-1

Lab Sample ID: 240-189779-2 Matrix: Water

Client Sample ID: MW-101S_080723

Date Collected: 08/07/23 12:20 Date Received: 08/09/23 08:00

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,4-Dioxane	2.0	U	2.0	0.86	ug/L			08/10/23 18:38	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	87		66 - 120			-		08/10/23 18:38	1
Method: SW846 8260D - Volati	le Organic Comp	ounds by G	C/MS						
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1-Dichloroethene	1.0	U	1.0	0.49	ug/L			08/17/23 17:04	1
cis-1,2-Dichloroethene	1.0	U	1.0	0.46	ug/L			08/17/23 17:04	1
Tetrachloroethene	1.0	U	1.0	0.44	ug/L			08/17/23 17:04	1
trans-1,2-Dichloroethene	1.0	U	1.0	0.51	ug/L			08/17/23 17:04	1
Trichloroethene	1.0	U	1.0	0.44	ug/L			08/17/23 17:04	1
Vinyl chloride	1.0	U	1.0	0.45	ug/L			08/17/23 17:04	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	92		62 - 137			-		08/17/23 17:04	1
4-Bromofluorobenzene (Surr)	90		56 - 136					08/17/23 17:04	1
Toluene-d8 (Surr)	93		78 - 122					08/17/23 17:04	1
Dibromofluoromethane (Surr)	96		73 - 120					08/17/23 17:04	1

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Job ID: 240-189779-1

Lab Sample ID: 240-189779-3 Matrix: Water

Client Sample ID: MW-76_080723

Date Collected: 08/07/23 14:41 Date Received: 08/09/23 08:00

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac	
1,4-Dioxane	2.0	U	2.0	0.86	ug/L			08/10/23 19:02	1	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac	
1,2-Dichloroethane-d4 (Surr)	88		66 - 120			-		08/10/23 19:02	1	
Method: SW846 8260D - Volati	e Organic Comp	ounds by G	C/MS							ŝ
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac	
1,1-Dichloroethene	1.0	U	1.0	0.49	ug/L			08/17/23 17:27	1	÷.
cis-1,2-Dichloroethene	0.57	J	1.0	0.46	ug/L			08/17/23 17:27	1	
Tetrachloroethene	1.0	U	1.0	0.44	ug/L			08/17/23 17:27	1	1
trans-1,2-Dichloroethene	1.0	U	1.0	0.51	ug/L			08/17/23 17:27	1	
Trichloroethene	1.0	U	1.0	0.44	ug/L			08/17/23 17:27	1	
Vinyl chloride	1.0	U	1.0	0.45	ug/L			08/17/23 17:27	1	
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac	
1,2-Dichloroethane-d4 (Surr)	95		62 - 137			-		08/17/23 17:27	1	
4-Bromofluorobenzene (Surr)	90		56 - 136					08/17/23 17:27	1	
Toluene-d8 (Surr)	95		78 - 122					08/17/23 17:27	1	
Dibromofluoromethane (Surr)	102		73 - 120					08/17/23 17:27	1	÷,

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Job ID: 240-189779-1

Lab Sample ID: 240-189779-4 Matrix: Water

Client Sample ID: MW-76S_080723

Date Collected: 08/07/23 16:25 Date Received: 08/09/23 08:00

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac	
1,4-Dioxane	2.0	U	2.0	0.86	ug/L			08/10/23 19:26	1	
Surrogate	%Recovery	Qualifiar	Limits				Prepared	Analyzed	Dil Fac	
		Quaimer				-	Prepareu		DII Fac	
1,2-Dichloroethane-d4 (Surr)	91		66 - 120					08/10/23 19:26	1	
Method: SW846 8260D - Volat	ile Organic Comp	ounds by G	C/MS							
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac	
1,1-Dichloroethene	1.0	U	1.0	0.49	ug/L			08/17/23 17:51	1	
cis-1,2-Dichloroethene	1.0	U	1.0	0.46	ug/L			08/17/23 17:51	1	
Tetrachloroethene	1.0	U	1.0	0.44	ug/L			08/17/23 17:51	1	
trans-1,2-Dichloroethene	1.0	U	1.0	0.51	ug/L			08/17/23 17:51	1	
Trichloroethene	1.0	U	1.0	0.44	ug/L			08/17/23 17:51	1	
Vinyl chloride	1.0	U	1.0	0.45	ug/L			08/17/23 17:51	1	
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac	
1,2-Dichloroethane-d4 (Surr)	96		62 - 137			-		08/17/23 17:51	1	
4-Bromofluorobenzene (Surr)	93		56 - 136					08/17/23 17:51	1	
Toluene-d8 (Surr)	92		78 - 122					08/17/23 17:51	1	
Dibromofluoromethane (Surr)	96		73 - 120					08/17/23 17:51	1	

Lab Sample ID: 240-189779-5 Matrix: Water

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Client Sample ID: DUP-12 Date Collected: 08/07/23 00:00

Date Received: 08/09/23 08:00

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,4-Dioxane	2.0	U	2.0	0.86	ug/L			08/10/23 19:50	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	92		66 - 120			-		08/10/23 19:50	1
Method: SW846 8260D - Volat	ile Organic Comp	ounds by G	C/MS						
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1-Dichloroethene	1.0	U	1.0	0.49	ug/L			08/17/23 18:14	1
cis-1,2-Dichloroethene	0.56	J	1.0	0.46	ug/L			08/17/23 18:14	1
Tetrachloroethene	1.0	U	1.0	0.44	ug/L			08/17/23 18:14	1
trans-1,2-Dichloroethene	1.0	U	1.0	0.51	ug/L			08/17/23 18:14	
Trichloroethene	1.0	U	1.0	0.44	ug/L			08/17/23 18:14	
Vinyl chloride	1.0	U	1.0	0.45	ug/L			08/17/23 18:14	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	93		62 - 137			-		08/17/23 18:14	
4-Bromofluorobenzene (Surr)	89		56 - 136					08/17/23 18:14	-
Toluene-d8 (Surr)	95		78 - 122					08/17/23 18:14	-
Dibromofluoromethane (Surr)	98		73 - 120					08/17/23 18:14	

Job ID: 240-189779-1

Lab Sample ID: 240-189779-6 Matrix: Water

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

Prep Type: Total/NA Percent Surrogate Recovery (Acceptance Limits) DCA BFB TOL DBFM Client Sample ID (62-137) (56-136) (78-122) (73-120) Lab Sample ID TRIP BLANK_23 240-189779-1 94 102 93 93 MW-73D_080723 240-189779-2 95 99 97 96 240-189779-3 MW-101S_080723 92 90 93 96 MW-76_080723 240-189779-4 95 90 95 102 240-189779-5 MW-76S 080723 96 93 92 96 DUP-12 240-189779-6 93 89 95 98 240-190140-A-30 MSD Matrix Spike Duplicate 95 100 100 93 240-190140-I-30 MS 88 97 89 Matrix Spike 98 LCS 240-584194/4 Lab Control Sample 102 95 100 107 MB 240-584194/7 Method Blank 105 92 96 109 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

			Percent Surrogate Recovery (Acceptance Limits)
		DCA	
Lab Sample ID	Client Sample ID	(66-120)	
240-189779-2	MW-73D_080723	91	
240-189779-3	MW-101S_080723	87	
240-189779-4	MW-76_080723	88	
240-189779-5	MW-76S_080723	91	
240-189779-6	DUP-12	92	
_CS 240-583475/5	Lab Control Sample	97	
MB 240-583475/7	Method Blank	91	

Surrogate Legend

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

9

Prep Type: Total/NA

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

Lab Sample ID: MB 240-584194/7

Matrix: Water Analysis Batch: 584194

MB	МВ							
Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1.0	U	1.0	0.49	ug/L			08/17/23 12:16	1
1.0	U	1.0	0.46	ug/L			08/17/23 12:16	1
1.0	U	1.0	0.44	ug/L			08/17/23 12:16	1
1.0	U	1.0	0.51	ug/L			08/17/23 12:16	1
1.0	U	1.0	0.44	ug/L			08/17/23 12:16	1
1.0	U	1.0	0.45	ug/L			08/17/23 12:16	1
	Result 1.0 1.0 1.0 1.0 1.0	MB MB Result Qualifier 1.0 U 1.0 U	Result Qualifier RL 1.0 U 1.0 1.0 U 1.0	Result Qualifier RL MDL 1.0 U 1.0 0.49 1.0 U 1.0 0.49 1.0 U 1.0 0.44 1.0 U 1.0 0.44 1.0 U 1.0 0.51 1.0 U 1.0 0.44	Result Qualifier RL MDL Unit 1.0 U 1.0 0.49 ug/L 1.0 U 1.0 0.46 ug/L 1.0 U 1.0 0.44 ug/L 1.0 U 1.0 0.51 ug/L 1.0 U 1.0 0.44 ug/L	Result Qualifier RL MDL Unit D 1.0 U 1.0 0.49 ug/L ug/L 1.0 U 1.0 0.46 ug/L 1.0 U 1.0 0.44 ug/L 1.0 U 1.0 0.51 ug/L 1.0 U 1.0 0.44 ug/L	Result Qualifier RL MDL Unit D Prepared 1.0 U 1.0 0.49 ug/L ug	Result Qualifier RL MDL Unit D Prepared Analyzed 1.0 U 1.0 0.49 ug/L 08/17/23 12:16 1.0 U 1.0 0.46 ug/L 08/17/23 12:16 1.0 U 1.0 0.44 ug/L 08/17/23 12:16 1.0 U 1.0 0.44 ug/L 08/17/23 12:16 1.0 U 1.0 0.51 ug/L 08/17/23 12:16 1.0 U 1.0 0.44 ug/L 08/17/23 12:16 1.0 U 1.0 0.44 ug/L 08/17/23 12:16

	MB	МВ				
Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	105		62 - 137		08/17/23 12:16	1
4-Bromofluorobenzene (Surr)	92		56 - 136		08/17/23 12:16	1
Toluene-d8 (Surr)	96		78 - 122		08/17/23 12:16	1
Dibromofluoromethane (Surr)	109		73 - 120		08/17/23 12:16	1

Lab Sample ID: LCS 240-584194/4 Matrix: Water Analysis Batch: 584194

	Spike	LCS	LCS				%Rec	
Analyte	Added	Result	Qualifier	Unit	D	%Rec	Limits	
1,1-Dichloroethene	25.0	31.1		ug/L		124	63 - 134	
cis-1,2-Dichloroethene	25.0	27.3		ug/L		109	77 - 123	
Tetrachloroethene	25.0	27.0		ug/L		108	76 - 123	
trans-1,2-Dichloroethene	25.0	28.6		ug/L		114	75 - 124	
Trichloroethene	25.0	29.1		ug/L		117	70 _ 122	
Vinyl chloride	12.5	12.6		ug/L		101	60 - 144	

	LCS	LCS	
Surrogate	%Recovery	Qualifier	Limits
1,2-Dichloroethane-d4 (Surr)	102		62 - 137
4-Bromofluorobenzene (Surr)	95		56 - 136
Toluene-d8 (Surr)	100		78 - 122
Dibromofluoromethane (Surr)	107		73 - 120

Lab Sample ID: 240-190140-A-30 MSD Matrix: Water Analysis Batch: 584194

·····,····	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	25.5		ug/L		102	56 - 135	7	26
cis-1,2-Dichloroethene	1.0	U	25.0	22.9		ug/L		92	66 - 128	4	14
Tetrachloroethene	1.0	U	25.0	28.1		ug/L		112	62 - 131	6	20
trans-1,2-Dichloroethene	1.0	U	25.0	23.6		ug/L		94	56 - 136	8	15
Trichloroethene	1.0	U	25.0	24.0		ug/L		96	61 - 124	0	15
Vinyl chloride	3.0		12.5	13.3		ug/L		82	43 - 157	10	24
	MED	MOD									

	MSD	MSD	
Surrogate	%Recovery	Qualifier	Limits
1,2-Dichloroethane-d4 (Surr)	95		62 - 137
4-Bromofluorobenzene (Surr)	100		56 - 136
Toluene-d8 (Surr)	100		78 - 122

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

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

Eurofins Cleveland

Job ID: 240-189779-1

Client Sample ID: Matrix Spike Duplicate

Prep Type: Total/NA	١

Analysis Batch: 584194			
	MSD	MSD	
Surrogate	%Recovery	Qualifier	Limits
Dibromofluoromethane (Surr)	93		73 - 120

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

Lab Sample ID: 240-190140-I-30 MS Matrix: Water

Lab Sample ID: 240-190140-A-30 MSD

Analysis Batch: 584194

Matrix: Water

	Sample	Sample	Spike	MS	MS				%Rec
Analyte	Result	Qualifier	Added	Result	Qualifier	Unit	D	%Rec	Limits
1,1-Dichloroethene	1.0	U	25.0	23.9		ug/L		96	56 - 135
cis-1,2-Dichloroethene	1.0	U	25.0	22.0		ug/L		88	66 - 128
Tetrachloroethene	1.0	U	25.0	26.5		ug/L		106	62 - 131
trans-1,2-Dichloroethene	1.0	U	25.0	21.8		ug/L		87	56 - 136
Trichloroethene	1.0	U	25.0	24.0		ug/L		96	61 - 124
Vinyl chloride	3.0		12.5	12.0		ug/L		72	43 - 157
	MS	MS							
Surrogate	%Recovery	Qualifier	Limits						
1,2-Dichloroethane-d4 (Surr)	88		62 - 137						
4-Bromofluorobenzene (Surr)	98		56 - 136						
Toluene-d8 (Surr)	97		78 - 122						
Dibromofluoromethane (Surr)	89		73 - 120						

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

Lab Sample ID: MB 240-583475/7										Client S	ample ID: Metho	d Blank
Matrix: Water											Prep Type:	Total/NA
Analysis Batch: 583475												
-	M	В МВ										
Analyte	Resu	t Qualifier	RL		MDL	Unit		D	P	repared	Analyzed	Dil Fac
1,4-Dioxane	2.	D U	2.0		0.86	ug/L					08/10/23 10:41	1
	М	B MB										
Surrogate	%Recover	Qualifier	Limits						P	repared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	9	1	66 - 120					-			08/10/23 10:41	1
- Lab Sample ID: LCS 240-583475/5								CI	iont	Sample	ID: Lab Control	Sample
Lab Sample 1D. 200 240-30347 3/3								0	ient	Jampie	D. Lab Control	
Matrix: Wator											Pron Type:	
Matrix: Water Analysis Batch: 583475											Prep Type:	
			Spike	LCS	LCS						Prep Type: ` %Rec	
			Spike Added	LCS Result		ifier	Unit		D	%Rec		
Analysis Batch: 583475			•			ifier	Unit ug/L		<u>D</u>	%Rec 99	%Rec	
Analysis Batch: 583475 Analyte	LCS LC		Added	Result		ifier			<u>D</u>		%Rec Limits	
Analysis Batch: 583475 Analyte 1,4-Dioxane	LCS LC %Recovery Qu		Added	Result		ifier			<u>D</u>		%Rec Limits	

GC/MS VOA

Analysis Batch: 583475

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-189779-2	MW-73D_080723	Total/NA	Water	8260D SIM	
240-189779-3	MW-101S_080723	Total/NA	Water	8260D SIM	
240-189779-4	MW-76_080723	Total/NA	Water	8260D SIM	
240-189779-5	MW-76S_080723	Total/NA	Water	8260D SIM	
240-189779-6	DUP-12	Total/NA	Water	8260D SIM	
MB 240-583475/7	Method Blank	Total/NA	Water	8260D SIM	
LCS 240-583475/5	Lab Control Sample	Total/NA	Water	8260D SIM	
Lab Sample ID 240-189779-1	Client Sample ID TRIP BLANK 23	Prep Type Total/NA	Matrix Water	Method	Prep Batc
nalysis Batch: 584194					
	—				
240-189779-2	MW-73D_080723	Total/NA	Water	8260D	
240-189779-3	MW-101S_080723	Total/NA	Water	8260D	
240-189779-4	MW-76_080723	Total/NA	Water	8260D	
240-189779-5	MW-76S_080723	Total/NA	Water	8260D	
240-189779-6	DUP-12	Total/NA	Water	8260D	
MB 240-584194/7	Method Blank	Total/NA	Water	8260D	
LCS 240-584194/4	Lab Control Sample	Total/NA	Water	8260D	
240-190140-A-30 MSD	Matrix Spike Duplicate	Total/NA	Water	8260D	
240-190140-I-30 MS	Matrix Spike	Total/NA	Water	8260D	

ment Samp	e ID: TRIP E	SLANK_23						Lab Sample ID	240-189779-
	08/07/23 00:0								Matrix: Wate
ate Received:	08/09/23 08:00	0							
_	Batch	Batch		Dilution	Batch			Prepared	
Prep Type	Туре	Method	Run	Factor	Number	Analyst	Lab	or Analyzed	
Total/NA	Analysis	8260D		1	584194	LEE	EET CLE	08/17/23 16:17	
Client Sampl	e ID: MW-73	3D 080723						Lab Sample ID	240-189779
Date Collected:		_						Lub Gumpio ID	Matrix: Wate
Date Received:									
-									
	Batch	Batch		Dilution	Batch			Prepared	
Prep Type	Туре	Method	Run	Factor		Analyst	Lab	or Analyzed	
Total/NA	Analysis	8260D		1	584194	LEE	EET CLE	08/17/23 16:41	
Total/NA	Analysis	8260D SIM		1	583475	MRL	EET CLE	08/10/23 18:06	
Client Sampl	e ID: MW-10	1S 080723						Lab Sample ID	240-189779
Date Collected:		_							Matrix: Wat
Date Received:									
-	Batch	Batch		Dilution	Batch			Proposed	
			Due			Amabiat	Lah	Prepared	
Prep Type Total/NA	Analysis	8260D	Run	_ Factor	584194	Analyst LEE	EET CLE	or Analyzed 08/17/23 17:04	
		0200D		1	304194	LEE	EET CLE	00/11/23 11:04	
	-								
Total/NA	Analysis	8260D SIM		1	583475	MRL	EET CLE	08/10/23 18:38	
Total/NA	Analysis			1	583475	MRL			: 240-189779-
Total/NA	Analysis	6_080723		1	583475	MRL		08/10/23 18:38	
Total/NA Client Sampl Date Collected:	Analysis e ID: MW-76 08/07/23 14:4	6_080723 1		1	583475	MRL			
Total/NA Client Sampl Date Collected:	Analysis e ID: MW-76 08/07/23 14:4 08/09/23 08:00	5_080723 1 0				MRL		Lab Sample ID	
Total/NA Client Sampl Date Collected: Date Received:	Analysis e ID: MW-76 08/07/23 14:4 08/09/23 08:00 Batch	5_080723 1 0 Batch	Pup	Dilution	Batch			Lab Sample ID Prepared	
Total/NA Client Sampl Date Collected: Date Received: Prep Type	Analysis e ID: MW-76 08/07/23 14:4 08/09/23 08:00 Batch Type	5_080723 1 D Batch Method	<u>Run</u>	Dilution Factor	Batch Number	Analyst	Lab	Lab Sample ID Prepared or Analyzed	
Total/NA Client Sampl Date Collected: Date Received: Prep Type Total/NA	Analysis e ID: MW-76 08/07/23 14:4 08/09/23 08:00 Batch Type Analysis	5_080723 1 0 Batch <u>Method</u> 8260D	Run	Dilution Factor 1	Batch Number 584194	Analyst LEE	_ Lab EET CLE	Lab Sample ID Prepared or Analyzed 08/17/23 17:27	
Total/NA Client Sampl Date Collected: Date Received: Prep Type	Analysis e ID: MW-76 08/07/23 14:4 08/09/23 08:00 Batch Type	5_080723 1 D Batch Method	Run	Dilution Factor	Batch Number	Analyst LEE	Lab	Lab Sample ID Prepared or Analyzed	: 240-189779- Matrix: Wate
Total/NA Client Sampl Date Collected: Date Received: Prep Type Total/NA	Analysis e ID: MW-76 08/07/23 14:4 08/09/23 08:00 Batch Type Analysis Analysis	5_080723 1 5 6 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7	Run	Dilution Factor 1	Batch Number 584194	Analyst LEE	EET CLE	Lab Sample ID Prepared or Analyzed 08/17/23 17:27	Matrix: Wate
Total/NA Client Sampl Date Collected: Date Received: Prep Type Total/NA Total/NA	Analysis e ID: MW-76 08/07/23 14:4 08/09/23 08:00 Batch Type Analysis Analysis e ID: MW-76	5_080723 1 0 Batch Method 8260D 8260D SIM 5S_080723	Run	Dilution Factor 1	Batch Number 584194	Analyst LEE	EET CLE	Lab Sample ID Prepared or Analyzed 08/17/23 17:27 08/10/23 19:02	Matrix: Wate
Total/NA Client Sampl Date Collected: Date Received: Prep Type Total/NA Total/NA Client Sampl Date Collected:	Analysis e ID: MW-76 08/07/23 14:4 08/09/23 08:00 Batch Type Analysis Analysis e ID: MW-76 08/07/23 16:2	5_080723 1 0 Batch <u>Method</u> 8260D 8260D SIM 5 5	Run	Dilution Factor 1	Batch Number 584194	Analyst LEE	EET CLE	Lab Sample ID Prepared or Analyzed 08/17/23 17:27 08/10/23 19:02	Matrix: Wate
Total/NA Client Sampl Date Collected: Date Received: Prep Type Total/NA Total/NA Client Sampl Date Collected:	Analysis e ID: MW-76 08/07/23 14:4 08/09/23 08:00 Batch Type Analysis Analysis e ID: MW-76 08/07/23 16:2 08/09/23 08:00	5_080723 1 0 Batch Method 8260D 8260D SIM 5 0	Run	Dilution Factor 1	Batch Number 584194 583475	Analyst LEE	EET CLE	Lab Sample ID Prepared or Analyzed 08/17/23 17:27 08/10/23 19:02 Lab Sample ID	Matrix: Wate
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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 - Off Site

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
California	State	2927	02-27-24
Georgia	State	4062	02-27-24
Illinois	NELAP	200004	07-31-24
lowa	State	421	06-01-25
Kentucky (UST)	State	112225	02-28-24
Kentucky (WW)	State	KY98016	12-31-23
Michigan	State	9135	02-27-24
Minnesota	NELAP	039-999-348	12-31-23
Minnesota (Petrofund)	State	3506	08-01-23 *
New Jersey	NELAP	OH001	07-01-24
New York	NELAP	10975	04-02-24
Ohio	State	8303	02-27-24
Ohio VAP	State	ORELAP 4062	02-27-24
Oregon	NELAP	4062	02-27-24
Pennsylvania	NELAP	68-00340	08-31-24
Texas	NELAP	T104704517-22-17	08-31-23
Virginia	NELAP	460175	09-14-23
West Virginia DEP	State	210	12-31-23

* Accreditation/Certification renewal pending - accreditation/certification considered valid.

	1 810-229.27
Chain of Custody Record	aretery location. Brighton 10448 Citation Drive Suite 200 / Brichton MI 48116 / J
	de l e

Client Contact	Regulatory program: DW	NPDES RCRA Other		
Company Name: Arcadis				TestAmerica Laboratories, Inc.
Address: 28550 Cabut Drive. Suite 500	Client Project Manager: Kris Hinskey	Site Contact: Christina Weaver	Lab Contact: Mike DelMonico	COC No:
Chr/State/Zin-Novi MI 48177	Telephone: 248-994-2240	Telephone: 248-994-2240	Telephone: 330-497-9396	
	Email: kristoffer.hinskey@arcadis.com	Analysis Turnaround Time	Analyses	For lah use calv
Phone: 248-994-2240				
Project Name: Ford LTP Off-Site	Sampler Name: MEQAN LEC	1AT if different from below 3 weeks 10 day 5 2 weeks		Walk-in client
Project Number: 301675.38.402.04	arrier:	I week X)	(Lab sampling
PO# 30167538.402.04	Shipping/Tracking No:	(۲ / ۶	8560C 8560C 8560D	Job/SDG No:
	Matrix		D D D D C E S E S	The substance of the su
Sample Identification	Sample Date Sample Time Air Air	Comboatt Efficted S Diber: Zaver Haoh Haof Haof Haod Haod	1,1-DCE 8 cis-1,2-DC PCE 8260 PCE 8260 Vinyl Chlo 7,4-Dioxar	Sample Specific Notes / Special Instructions:
/ TRIP BLANK_ 23	-	1 NG		1 Trip Blank
J MW-73 P_0807 23	0 L101 67/L0/80	0 NG	XXXXXXX	3 VOAs for 8260D 3 VOAs for 8260D SIM
~ MW-10192080723	08/47/23 12.20 6	10 N C1		
as MW-70_080723	08/07/124141 10	0 N G		
62 LO 80 - 080123	0 520162/20100	6 NG	X X X X X X X	
45 422 090 - 71 - dnd ~ 23	08001/23 - 10	10 NG	$\times \times \times \times \times \times$	*
		240-189779 Chain of Custody		
Possible Hazard Identification Possible Hazard Possible Hazard Possible Hazard	tant Poison B Unknown	Sampte Lisposal (A fee may be assessed if samples are retained longer than 1 Serium to Client D Discoved Roll As Archive Early	Ē	_
ions/OC Bequiremants & Commen iss: Del Color & A ults through Cadena at Itomalia rting requested.	Mouth ROW	when to create the Disposal by	Lab Archive For Months	
Refinquished by MEGAM LEE NUGAM UL	151	Now Cond by	0	Dave/Time: Dav/07/23 175
mo	sudus	1115 Receivedby	C Park Company	But Time Date Time 23 11:15
Kelinquished by:	Company: CPAA 81823	II 220 Rebond in Laboratory by:	Company:	Bald/Time: B19122 8:00
2008. Teulmens Laporatores, Inc. All 1994, reaswed feolymens & Deson "are balanted of Teologiness to:				

8/21/2023

Eurofins - Cleveland Sample Receipt Form/Narrative Login # : Barberton Facility
Cheft She Hame She Hame
Cooler Received on 8/9/23 Opened on 8/9/25 CMH
FedEx: 1 st Grd Exp UPS FAS Clipper Client Drop Off Eurofins Courier Other
Receipt After-hours: Drop-off Date/Time Storage Location
Eurofins Cooler # Foam Box Client Cooler Box Other Packing material used: Bubble Wrap Foam Plastic Bag None Other
Packing material used: Bubble Wrap Foam Plastic Bag None Other COOLANT: Wet Ice Blue Ice Dry Ice Water None
1. Cooler temperature upon receipt See Multiple Cooler Form
IR GUN # (CF°C) Observed Cooler Temp°C Corrected Cooler Temp°C
 2. Were tamper/custody seals on the outside of the cooler(s)? If Yes Quantity
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 Samples processed by:
•
19. SAMPLE CONDITION
Sample(s) were received after the recommended holding time had expired.
Sample(s) were received in a broken container.
Sample(s) were received with bubble >6 mm in diameter. (Notify PM)
20. SAMPLE PRESERVATION
Sample(s) were further preserved in the laboratory.
Sample(s)
VOA Sample Preservation - Date/Time VOAs Frozen:

Login # :

(Circle) IR GUN #: 20 IR GUN #: 20	<u>Temp °C</u>	Corrected Temp °C	Coolant (Circle)
	38		
		AA	Wet Ice Blue Ice Dry I
· · · · · · · · · · · · · · · · · · ·	2.1	2.7	Wet Ice Blue Ice Dry is Woter None
IR GUN #:			Wet Ice Blue Ice Dry k Water None
IR GUN #:			Wet ice Sive ice Dy k Water None
IR GUN #:			Wet ice Sive ice Dry ic Water None
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IR GUN #:			Wet Ice Blue Ice Dry Ic Water None
IR GUN #:			Wet Ice Blue Ice Dry Ic Water None
IR GUN #:			Wet ice Blue ice Dry ice Water None
IR GUN #:			Wet ice Blue ice Dry ice
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IR GUN #:			Wet ice Blue ice Dry ice Water None
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IR GUN #:			Wet Ice Blue Ice Dry Ice Water None
IR GUN #:			Wet ice Blue ice Dry ice Water None
IR GUN #:			Wet Ice Blue Ice Dry Ice
IR GUN #:			Water None Wet Ice Blue Ice Dry Ice
IR GUN #:			Water None Wet Ice Blue Ice Dry Ice
IR GUN #:			Water None Wet Ice Blue Ice Dry Ice
IR GUN #:			Water None Wet Ice Blue Ice Dry Ice Water None
	IR GUN #: I IR	IR GUN #:	IR GUN #:

WI-NC-099 Cooler Receipt Form Page 2 - Multiple Coolers

DATA VERIFICATION REPORT



August 21, 2023

Kris Hinskey Arcadis Inc 10559 Citation Ave Suite 100 Brighton, MI 48116

CADENA project ID: E203631 Project: Ford Livonia Transmission Project - OFF-SITE - Soil Gas and Groundwater Project number: 30167538.402.04 off-site Event Specific Scope of Work References: Sample COC Laboratory: Eurofins Environment Testing LLC - Cleveland Laboratory submittal: 189779-1 Sample date: 2023-08-07 Report received by CADENA: 2023-08-21 Initial Data Verification completed by CADENA: 2023-08-21 Number of Samples:6 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.

The following minor QC exceptions or missing information were noted:

GCMS VOC QC batch CCV response outliers as noted in the laboratory submittal case narrative were not used to qualify client sample results as part of this level 2 data package verification review.

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.

Analytical results reported between RDL and MDL are flagged 'J' and considered estimated values.

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 <u>http://clms.cadenaco.com/index.cfm</u>.

Please contact me if you have any questions.

Sincerely,

Jim Tomalia

Project Scientist

CADENA Inc, 1099 Highland Drive, Suite E, Ann Arbor, MI 48108 517-819-0356

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: E203631 Laboratory: Eurofins Environment Testing LLC - Cleveland Laboratory Submittal: 189779-1

		Sample Name: Lab Sample ID: Sample Date:	2401897 8/7/2023	791 3			MW-73 240189 8/7/202	23	3		MW-10 240189 8/7/202	3	23		MW-76 240189 8/7/202				MW-76 240189 8/7/202	3	3		DUP-12 240189 8/7/202	7796 3		
	Analyte	Cas No.		Report Limit	Units	Valid Qualifier	Result	Report Limit	Units	Valid Qualifier	Pocult	Report Limit	Units	Valid Qualifier	Result	Report Limit	Unite	Valid Qualifier	Pocult	Report Limit	Units	Valid Qualifier		Report Limit	Unite	Valid Qualifier
	Analyte	cas No.	Nesun	2	Units	Quanner	Nesun	Linit	Onits	Quanner	Result	Linin	onits	Quanner	Nesun	Linit	Onits	Quanner	Result	Linit	Units	Quanner	Nesun		Units	Quanner
GC/MS VOC																										
OSW-826	<u>0D</u>																									
	1,1-Dichloroethene	75-35-4	ND	1.0	ug/l		ND	1.0	ug/l		ND	1.0	ug/l		ND	1.0	ug/l		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		ND	1.0	ug/l		0.57	1.0	ug/l	J	ND	1.0	ug/l		0.56	1.0	ug/l	J
	Tetrachloroethene	127-18-4	ND	1.0	ug/l		ND	1.0	ug/l		ND	1.0	ug/l		ND	1.0	ug/l		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		ND	1.0	ug/l		ND	1.0	ug/l		ND	1.0	ug/l		ND	1.0	ug/l	
	Trichloroethene	79-01-6	ND	1.0	ug/l		ND	1.0	ug/l		ND	1.0	ug/l		ND	1.0	ug/l		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		ND	1.0	ug/l		ND	1.0	ug/l		ND	1.0	ug/l		ND	1.0	ug/l	
OSW-826	ODSIM																									
	1,4-Dioxane	123-91-1					2.2	2.0	ug/l		ND	2.0	ug/l													



Ford Motor Company – Livonia Transmission Project

Data Review

Livonia, Michigan

Volatile Organic Compounds (VOC) Analysis

SDG # 240-189779-1

CADENA Verification Report: 2023-08-21

Analyses Performed By: Eurofins Cleveland Barberton, Ohio

Report # 51108R Review Level: Tier III Project: 30167538.402.02

SUMMARY

This data quality assessment summarizes the review of Sample Delivery Group (SDG) # 240-189779-1 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	Analysis			
Sample ID	Labib	Matrix	Collection Date	Parent Sample	VOC	VOC SIM		
TRIP BLANK_23	240-189779-1	Water	08/07/2023		Х			
MW-73D_080723	240-189779-2	Water	08/07/2023		Х	Х		
MW-101S_080723	240-189779-3	Water	08/07/2023		Х	X		
MW-76_080723	240-189779-4	Water	08/07/2023		Х	Х		
MW-76S_080723	240-189779-5	Water	08/07/2023		Х	Х		
DUP-12	240-189779-6	Water	08/07/2023	MW-76_080723	Х	X		

DATA REVIEW

ANALYTICAL DATA PACKAGE DOCUMENTATION

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

	Items Reviewed	Rep	orted	Perfor Accep	mance otable	Not Required
		No	Yes	No	Yes	Required
1.	Sample receipt condition		Х		Х	
2.	Requested analyses and sample results		Х		Х	
3.	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		X	
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	
11.	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 calibrations were within the specified control limits, with the exception of the compounds presented in the following table.

Sample ID	Initial / Continuing	Compound	Criteria
TRIP BLANK_23 MW-73D_080723 MW-101S_080723 MW-76_080723 MW-76S_080723 DUP-12	Continuous Calibration Verification %D	1,1-Dichloroethene	+27.6%

The criteria used to evaluate the initial and continuing calibration are presented in the following table. In the case of a calibration deviation, the sample results are qualified.

Initial/Continuing	Criteria	Sample Result	Qualification
	RRF <0.05	Non-detect	R
Initial and Continuing Calibration	RRF <0.05	Detect	J
Cambradon	RRF <0.01 ¹	Non-detect	R

DATA REVIEW

Initial/Continuing	Criteria	Sample Result	Qualification
		Detect	J
		Non-detect	No. Action
	RRF >0.05 or RRF >0.01 ¹	Detect	No Action
		Non-detect	UJ
	%RSD > 20% or a correlation coefficient <0.99	Detect	J
Initial Calibration		Non-detect	R
	%RSD > 90%	Detect	J
		Non-detect	UJ
O su tinuin a O slib astis a	%D >20% (increase/decrease in sensitivity)	Detect	J
Continuing Calibration		Non-detect	R
	%D > 90% (increase/decrease in sensitivity)	Detect	J

Note:

¹RRF of 0.01 only applies to compounds which are typically poor responding compounds

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.

Results for duplicate samples are summarized in the following table.

Sample ID/Duplicate ID	Compound	Sample Result (µg/L)	Duplicate Result (µg/L)	RPD
MW-76_080723 / DUP-12	cis-1,2-Dichloroethene	0.57 J	0.56 J	AC

Note:

AC Acceptable

The results between the parent sample and field duplicate were acceptable.

6. Compound Identification

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

All identified compounds met the specified criteria.

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 REVIEW

DATA VALIDATION CHECKLIST FOR VOCs

VOCs: 8260D/8260D-SIM		orted	Perfo Acce	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	
lon 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		X	
D. Transcription/calculation errors present		Х		Х	
E. Reporting limits adjusted to reflect sample dilutions		Х		Х	
Notes:					

%RSD Relative standard deviation

%R Percent recovery

RPD Relative percent difference

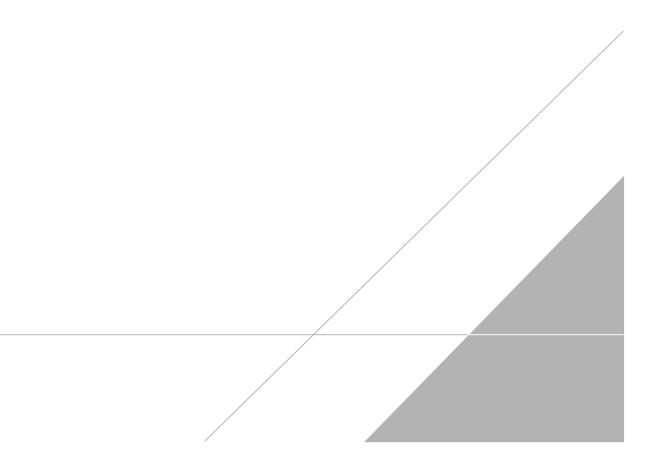
%D Percent difference

VALIDATION PERFORMED BY:	Bindu Sree M B
SIGNATURE:	BASHMB
DATE:	September 19, 2023

PEER REVIEW: Andrew Korycinski

DATE: September 20, 2023

CHAIN OF CUSTODY CORRECTED SAMPLE ANALYSIS DATA SHEETS



Chain of Custody Record

<u>TestAmerica</u>

THE LEADER IN ENVIRONMENTAL

TestAmerica Laboratory location: Brighton --- 10448 Citation Drive, Suite 200 / Brighton, MI 48116 / 810-229-2763

Client Contact Company Name: Arcadis	Regulat	ory program:		Г	DW	r r	NPDE:	5	Т.	RC	RA	Г	Othe	r									Trust Association 1	
Address: 28550 Cabot Drive, Suite 500	Client Project Manager: Kris Hinskey					Site C	ontac	t: Ch	hristin	a We	aver				Lab C	onta	t: Mi	ce De	Moni	:0			TestAmerica L COC No:	aboratories, i
	Telephone: 248	-994-2240				Telephone: 248-994-2240						Telephone: 330-497-9396												
City/State/Zip: Novi, MI, 48377	Email: kristoff	er.hinskev@ar	cadis.co)m									Analyses					1 of 1 COCs For lab use only						
Phone: 248-994-2240					_	TAT		-			1												REAL STREET, STREET,	
Project Name: Ford LTP Off-Site	Sampler Name: <u>Megom</u> Lee Method of Shipment/Carrier: Shipping/Tracking No:					TAT if different from below 3 weeks														Walk-in client				
Project Number: 30167538.402.04					1 10	day	-	I w			6	Q			60D 8260D				SIM			Lab sampling		
PO # 30167538.402.04					-		e	2 da I da	-		Sample (Y / N)	-C / Grab=G		E 8260D				8260D	8260D S			Job/SDG No:		
	Matrix				Contai	ners d	& Pres	ervati	ves	mple	1	260D	DCE			~	ide 8	e 826			Concernation of the			
Sample Identification	Sample Date	Sample Time	Air	Aqueous Sediment	Solid Other:	H2SO4	HN03	NaOH	ZaAci N-OH	Unpres	Other:	Filtered Sa	Composite	1.1-DCE 8260D	cis-1,2-DCE	Trans-1,2-DCE	PCE 8260D	TCE 8260D	Vinyl Chloride	1.4-Dioxane			Sample Specific Special Instruc	
TRIP BLANK_ 23				1			1					Ν	G	Х	Х	Х	Х	х	X				1 Trip Bla	nk
MW-73P-080723	08/07/23	1017	(0			1	D				N	G	X	X	X	X	X	X	X			3 VOAs for 3 VOAs for	
MW-1015=080723	08/07/23	1220		0			4)				N	51	X	X	×	X	X	X	X			1	02002 0111
MW-70_080723	08/07/12	1441	I	0			V)				N	9	X	X	Х	X	Х	X	χ				
MW-1015=080723 MW-70_080723 MW-705_080723 PUP-12_080723	00/07/2	1025	(٥			U	>				N	4	X	X	×	Х	Х	X	X				
PUP-12 000723 56	08/07/22	-		0			0	0				N	9	X	Х	X	X	X	X	X			V	
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Possible Hazard Identification						5																		
 Non-Hazard Flammable Skin Irri 	tant 🔽 Poise	on B	Unkne	wn		34			to Clie		may be a				es are		ned lo rchive		han I		nths			
Special Instructions/QC Requirements & Comments: Sample Address: Submit all results through Cadena at jtomalia@cadenac	MOUT	ROV	\checkmark																					
Level IV Reporting requested. Relinquished by:	Company:			ate/Tin	ne	~		Re	ceived	t hv:		_						Com	-				ID	
Megan Lee Illetan UP.	Arcides	5 175		<u> 1/80</u>	7/23	S.					ord	95	101	70	R			A		dr	3		Date/Time:	3 179
Relinquished by: on mer Buy	Company: Arcal	dis		ate/Tir	23	11	15	Re	ceive	ADY:	20	0	1		P	A	K	Com	bany:	57	4		Date/Time:	11:11
Relinquished by:	Company:	1	D	ate/Tir	ne:			Re	ciegna		aborato	ry by			10				pany:	- []	-		Date/Time:	
nauto	EEAT	(5	54	23	11:5	0		~	/		_						6	67				8/9/23	3 8:00

O ©2008, TestAmenica Laboratories, Inc. All rights reserved. TestAmerica & Design ¹⁴ are trademarks of TestAmerica Laboratories, Inc.

2023 3:36 PM

Client Sample ID: TRIP BLANK_23

Date Collected: 08/07/23 00:00

Date Received: 08/09/23 08:00

Method: SW846 8260D - Volatile Or	rganic Compounds by GC/MS
Welliou. 30040 0200D - Volalie O	game compounds by Germo

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1-Dichloroethene	1.0	N UJ	1.0	0.49	ug/L			08/17/23 16:17	1
cis-1,2-Dichloroethene	1.0	U	1.0	0.46	ug/L			08/17/23 16:17	1
Tetrachloroethene	1.0	U	1.0	0.44	ug/L			08/17/23 16:17	1
trans-1,2-Dichloroethene	1.0	U	1.0	0.51	ug/L			08/17/23 16:17	1
Trichloroethene	1.0	U	1.0	0.44	ug/L			08/17/23 16:17	1
Vinyl chloride	1.0	U	1.0	0.45	ug/L			08/17/23 16:17	1
Surrogato	% Pacavary	Qualifior	Limite				Proparad	Analyzod	Dil Eso

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	94		62 - 137		08/17/23 16:17	1
4-Bromofluorobenzene (Surr)	93		56 - 136	(08/17/23 16:17	1
Toluene-d8 (Surr)	93		78 - 122	(08/17/23 16:17	1
Dibromofluoromethane (Surr)	102		73 - 120	(08/17/23 16:17	1

Client Sample ID: MW-73D_080723 Date Collected: 08/07/23 10:17 Date Received: 08/09/23 08:00

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,4-Dioxane	2.2		2.0	0.86	ug/L			08/10/23 18:06	
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fa
1,2-Dichloroethane-d4 (Surr)	91		66 - 120			-		08/10/23 18:06	
Method: SW846 8260D - Vo	olatile Organic	Compound	ds by GC/MS						
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fa
1,1-Dichloroethene	1.0	V UJ	1.0	0.49	ug/L			08/17/23 16:41	
	1.0		1.0	0.40				08/17/23 16:41	
cis-1,2-Dichloroethene	1.0	U	1.0	0.46	ug/L			08/17/23 16:41	

Surrogate	%Recovery Quali	fier Limits		Prepared	Analyzed	Dil Fac
Vinyl chloride	1.0 U	1.0	0.45 ug/L		08/17/23 16:41	1
Trichloroethene	1.0 U	1.0	0.44 ug/L		08/17/23 16:41	1
trans-1,2-Dichloroethene	1.0 U	1.0	0.51 ug/L		08/17/23 16:41	1
Tetrachloroethene	1.0 U	1.0	0.44 ug/L		08/17/23 16:41	1

Surroyate	/Minecovery	Quanner	Liiiits	riepaieu	Analyzeu	Dirrac
1,2-Dichloroethane-d4 (Surr)	95		62 - 137		08/17/23 16:41	1
4-Bromofluorobenzene (Surr)	99		56 - 136		08/17/23 16:41	1
Toluene-d8 (Surr)	97		78 - 122		08/17/23 16:41	1
Dibromofluoromethane (Surr)	96		73 - 120		08/17/23 16:41	1

Client Sample ID: MW-101S_080723 Date Collected: 08/07/23 12:20 Date Received: 08/09/23 08:00

Method: SW846 8260D SIM -	Volatile Orga	anic Comp	ounds (GC/N	IS)				
Analyte	Result	Qualifier	RL	MDL Unit	D	Prepared	Analyzed	Dil Fac
1,4-Dioxane	2.0	U	2.0	0.86 ug/L			08/10/23 18:38	1
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	87		66 - 120		-		08/10/23 18:38	1

Matrix: Water

Lab Sample ID: 240-189779-1 Matrix: Water

Lab Sample ID: 240-189779-2

Lab Sample ID: 240-189779-3

Matrix: Water

Client Sample ID: MW-101S_080723

Date Collected: 08/07/23 12:20

Date Received: 08/09/23 08:00

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Method: SW846 8260D - Volatile Organic Compounds by G	C/1VIS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1-Dichloroethene	1.0	X UJ	1.0	0.49	ug/L			08/17/23 17:04	1
cis-1,2-Dichloroethene	1.0	U	1.0	0.46	ug/L			08/17/23 17:04	1
Tetrachloroethene	1.0	U	1.0	0.44	ug/L			08/17/23 17:04	1
trans-1,2-Dichloroethene	1.0	U	1.0	0.51	ug/L			08/17/23 17:04	1
Trichloroethene	1.0	U	1.0	0.44	ug/L			08/17/23 17:04	1
Vinyl chloride	1.0	U	1.0	0.45	ug/L			08/17/23 17:04	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac

Surroyale	/%Recovery	Quaimer	LIIIIIIS	Prepareu	Analyzeu	DIIFac
1,2-Dichloroethane-d4 (Surr)	92		62 - 137		08/17/23 17:04	1
4-Bromofluorobenzene (Surr)	90		56 - 136		08/17/23 17:04	1
Toluene-d8 (Surr)	93		78 - 122		08/17/23 17:04	1
Dibromofluoromethane (Surr)	96		73 - 120		08/17/23 17:04	1

Client Sample ID: MW-76_080723 Date Collected: 08/07/23 14:41 Date Received: 08/09/23 08:00

Method: SW846 8260D SIN			ounds (GC/N	IS)					
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,4-Dioxane	2.0	U	2.0	0.86	ug/L			08/10/23 19:02	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1.2-Dichloroethane-d4 (Surr)	88		66 - 120			-		08/10/23 19:02	1
	00		00-720					00/10/20 10.02	
The section of the se		Compoun						00,70,20 70.02	
	olatile Organic	Compoun Qualifier		MDL	Unit	D	Prepared	Analyzed	Dil Fac
 Method: SW846 8260D - Vo	Diatile Organic Result		ds by GC/MS	MDL	Unit ug/L	<u>D</u> .	Prepared		Dil Fac
Method: SW846 8260D - Vo Analyte	Diatile Organic Result	Qualifier	ds by GC/MS	MDL 0.49		<u> </u>	Prepared	Analyzed	Dil Fac
Method: SW846 8260D - Vo Analyte 1,1-Dichloroethene	Diatile Organic Result	Qualifier	ds by GC/MS 	MDL 0.49 0.46	ug/L	<u> </u>	Prepared	Analyzed 08/17/23 17:27	Dil Fac 1 1 1

0.44 ug/L

0.45 ug/L

Surrogate	%Recovery Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	95	62 - 137		08/17/23 17:27	1
4-Bromofluorobenzene (Surr)	90	56 - 136		08/17/23 17:27	1
Toluene-d8 (Surr)	95	78 - 122		08/17/23 17:27	1
Dibromofluoromethane (Surr)	102	73 - 120		08/17/23 17:27	1

1.0

1.0

1.0 U

1.0 U

Client Sample ID: MW-76S_080723 Date Collected: 08/07/23 16:25 Date Received: 08/09/23 08:00

Trichloroethene

Vinyl chloride

Method: SW846 8260D SIM	- Volatile Orga	anic Comp	ounds (GC/N	IS)				
Analyte	Result	Qualifier	RL	MDL Unit	D	Prepared	Analyzed	Dil Fac
1,4-Dioxane	2.0	U	2.0	0.86 ug/L			08/10/23 19:26	1
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	91		66 - 120		-		08/10/23 19:26	1

Matrix: Water

Lab Sample ID: 240-189779-3 Matrix: Water

Lab Sample ID: 240-189779-4

08/17/23 17:27

08/17/23 17:27

Lab Sample ID: 240-189779-5

1

1

Matrix: Water

Client Sample ID: MW-76S_080723

Date Collected: 08/07/23 16:25

Date Received: 08/09/23 08:00

Method: SW846 8260D - Volatile C	Organic Compounds by GC/MS
	Sigame compounds by comis

Analyte	Result Qualifier	RL	MDL Un	nit D	Prepared	Analyzed	Dil Fac
1,1-Dichloroethene	1.0 × UJ	1.0	0.49 ug/	g/L		08/17/23 17:51	1
cis-1,2-Dichloroethene	1.0 U	1.0	0.46 ug/	g/L		08/17/23 17:51	1
Tetrachloroethene	1.0 U	1.0	0.44 ug/	g/L		08/17/23 17:51	1
trans-1,2-Dichloroethene	1.0 U	1.0	0.51 ug/	g∕L		08/17/23 17:51	1
Trichloroethene	1.0 U	1.0	0.44 ug/	g/L		08/17/23 17:51	1
Vinyl chloride	1.0 U	1.0	0.45 ug/	g/L		08/17/23 17:51	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	96		62 - 137		08/17/23 17:51	1
4-Bromofluorobenzene (Surr)	93		56 - 136		08/17/23 17:51	1
Toluene-d8 (Surr)	92		78 - 122		08/17/23 17:51	1
Dibromofluoromethane (Surr)	96		73 - 120		08/17/23 17:51	1

Client Sample ID: DUP-12

Date Collected: 08/07/23 00:00 Date Received: 08/09/23 08:00

Dibromofluoromethane (Surr)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,4-Dioxane	2.0	U	2.0	0.86	ug/L			08/10/23 19:50	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	92		66 - 120			-		08/10/23 19:50	1

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1-Dichloroethene	1.0	<u>N</u> UJ	1.0	0.49	ug/L			08/17/23 18:14	1
cis-1,2-Dichloroethene	0.56	J	1.0	0.46	ug/L			08/17/23 18:14	1
Tetrachloroethene	1.0	U	1.0	0.44	ug/L			08/17/23 18:14	1
trans-1,2-Dichloroethene	1.0	U	1.0	0.51	ug/L			08/17/23 18:14	1
Trichloroethene	1.0	U	1.0	0.44	ug/L			08/17/23 18:14	1
Vinyl chloride	1.0	U	1.0	0.45	ug/L			08/17/23 18:14	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	93		62 - 137			-		08/17/23 18:14	1
4-Bromofluorobenzene (Surr)	89		56 - 136					08/17/23 18:14	1
Toluene-d8 (Surr)	95		78 - 122					08/17/23 18:14	1

73 - 120

98

Lab Sample ID: 240-189779-5 **Matrix: Water**

Lab Sample ID: 240-189779-6

Matrix: Water

08/17/23 18:14