

**Environment Testing** 

# **ANALYTICAL REPORT**

### PREPARED FOR

Attn: Kristoffer Hinskey ARCADIS US Inc 28550 Cabot Drive Suite 500 Novi, Michigan 48377 Generated 11/13/2023 4:46:33 AM

### JOB DESCRIPTION

Ford LTP - Off Site

### **JOB NUMBER**

240-194764-1

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

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Authorized for release by Michael DelMonico, Project Manager I <u>Michael.DelMonico@et.eurofinsus.com</u> (330)497-9396

## **Table of Contents**

Cover Page	1
Table of Contents	3
Definitions/Glossary	4
Case Narrative	5
Method Summary	6
Sample Summary	7
Detection Summary	8
Client Sample Results	9
Surrogate Summary	11
QC Sample Results	12
QC Association Summary	15
Lab Chronicle	16
Certification Summary	17
Chain of Custody	18

QC

RER

RPD

TEF

TEQ

TNTC

RL

Quality Control

Relative Error Ratio (Radiochemistry)

Toxicity Equivalent Factor (Dioxin)

Too Numerous To Count

Toxicity Equivalent Quotient (Dioxin)

Reporting Limit or Requested Limit (Radiochemistry)

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

Qualifiers		3
GC/MS VOA Qualifier	Qualifier Description	4
U	Indicates the analyte was analyzed for but not detected.	
Glossary		5
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	0
CNF	Contains No Free Liquid	0
DER	Duplicate Error Ratio (normalized absolute difference)	
Dil Fac	Dilution Factor	9
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)	13
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	

### Job ID: 240-194764-1

#### Laboratory: Eurofins Cleveland

#### Narrative

Job Narrative 240-194764-1

Analytical test results meet all requirements of the associated regulatory program listed on the Accreditation/Certification Summary Page unless otherwise noted under the individual analysis. Data qualifiers are applied to indicate exceptions. Noncompliant quality control (QC) is further explained in narrative comments.

Matrix QC may not be reported if insufficient sample or site-specific QC samples were not submitted. In these situations, to demonstrate precision and accuracy at a batch level, a LCS/LCSD may be performed, unless otherwise specified in the method. Surrogate and/or isotope dilution analyte recoveries (if applicable) which are outside of the QC window are confirmed unless attributed to a dilution or otherwise noted in the narrative.

Regulated compliance samples (e.g. SDWA, NPDES) must comply with the associated agency requirements/permits.

#### Receipt

The samples were received on 11/3/2023 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 3 coolers at receipt time were 1.8°C, 2.2°C and 2.9°C

#### GC/MS VOA

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

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

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
240-194764-1	TRIP BLANK_9	Water	11/01/23 00:00	11/03/23 08:00
240-194764-2	MW-125_110123	Water	11/01/23 13:20	11/03/23 08:00

### **Detection Summary**

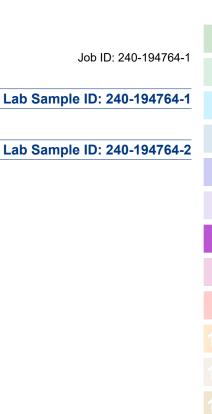
Client: ARCADIS US Inc Project/Site: Ford LTP - Off Site

### Client Sample ID: TRIP BLANK\_9

No Detections.

### Client Sample ID: MW-125\_110123

No Detections.



### Client Sample ID: TRIP BLANK\_9

Date Collected: 11/01/23 00:00 Date Received: 11/03/23 08:00

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			11/09/23 18:26	1
cis-1,2-Dichloroethene	1.0	U	1.0	0.46	ug/L			11/09/23 18:26	1
Tetrachloroethene	1.0	U	1.0	0.44	ug/L			11/09/23 18:26	1
trans-1,2-Dichloroethene	1.0	U	1.0	0.51	ug/L			11/09/23 18:26	1
Trichloroethene	1.0	U	1.0	0.44	ug/L			11/09/23 18:26	1
Vinyl chloride	1.0	U	1.0	0.45	ug/L			11/09/23 18:26	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	108		62 - 137			-		11/09/23 18:26	1
4-Bromofluorobenzene (Surr)	106		56 - 136					11/09/23 18:26	1
Toluene-d8 (Surr)	107		78 - 122					11/09/23 18:26	1
Dibromofluoromethane (Surr)	108		73 - 120					11/09/23 18:26	1

Job ID: 240-194764-1

### Lab Sample ID: 240-194764-1

Matrix: Water

**Eurofins Cleveland** 

### Client Sample ID: MW-125\_110123

Date Collected: 11/01/23 13:20 Date Received: 11/03/23 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			11/09/23 18:18	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	79		66 - 120			-		11/09/23 18:18	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			11/09/23 21:13	1
cis-1,2-Dichloroethene	1.0	U	1.0	0.46	ug/L			11/09/23 21:13	1
Tetrachloroethene	1.0	U	1.0	0.44	ug/L			11/09/23 21:13	1
trans-1,2-Dichloroethene	1.0	U	1.0	0.51	ug/L			11/09/23 21:13	1
Trichloroethene	1.0	U	1.0	0.44	ug/L			11/09/23 21:13	1
Vinyl chloride	1.0	U	1.0	0.45	ug/L			11/09/23 21:13	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	108		62 - 137			-		11/09/23 21:13	1
4-Bromofluorobenzene (Surr)	103		56 - 136					11/09/23 21:13	1
Toluene-d8 (Surr)	105		78 - 122					11/09/23 21:13	1
Dibromofluoromethane (Surr)	106		73 - 120					11/09/23 21:13	1

11/13/2023

Matrix: Water

Lab Sample ID: 240-194764-2

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

#### Percent Surrogate Recovery (Acceptance Limits) DCA BFB TOL DBFM Client Sample ID (62-137) (56-136) (78-122) (73-120) Lab Sample ID 240-194764-1 TRIP BLANK\_9 108 106 108 107 MW-125\_110123 240-194764-2 108 103 105 106 240-194769-H-1 MS Matrix Spike 100 101 100 101 240-194769-I-1 MSD Matrix Spike Duplicate 99 99 98 101 LCS 240-594104/5 Lab Control Sample 111 114 111 110 MB 240-594104/8 Method Blank 111 108 110 110 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)	
240-194630-D-4 MS	Matrix Spike	84	
240-194630-D-4 MSD	Matrix Spike Duplicate	75	
240-194764-2	MW-125_110123	79	
LCS 240-594018/4	Lab Control Sample	82	
MB 240-594018/6	Method Blank	93	

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

Prep Type: Total/NA

5

9

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

#### Matrix: Water Analysis Batch: 594104

	MB	MB							
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1-Dichloroethene	1.0	U	1.0	0.49	ug/L			11/09/23 18:02	1
cis-1,2-Dichloroethe	ne 1.0	U	1.0	0.46	ug/L			11/09/23 18:02	1
Tetrachloroethene	1.0	U	1.0	0.44	ug/L			11/09/23 18:02	1
trans-1,2-Dichloroeth	hene 1.0	U	1.0	0.51	ug/L			11/09/23 18:02	1
Trichloroethene	1.0	U	1.0	0.44	ug/L			11/09/23 18:02	1
Vinyl chloride	1.0	U	1.0	0.45	ug/L			11/09/23 18:02	1

	МВ	МВ				
Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	111		62 - 137		11/09/23 18:02	1
4-Bromofluorobenzene (Surr)	108		56 - 136		11/09/23 18:02	1
Toluene-d8 (Surr)	110		78 - 122		11/09/23 18:02	1
Dibromofluoromethane (Surr)	110		73 - 120		11/09/23 18:02	1

#### Lab Sample ID: LCS 240-594104/5 Matrix: Water Analysis Batch: 594104

	Spike	LCS	LCS				%Rec	
Analyte	Added	Result	Qualifier	Unit	D	%Rec	Limits	
1,1-Dichloroethene	25.0	27.3		ug/L		109	63 - 134	
cis-1,2-Dichloroethene	25.0	25.4		ug/L		102	77 - 123	
Tetrachloroethene	25.0	26.9		ug/L		108	76 - 123	
trans-1,2-Dichloroethene	25.0	26.0		ug/L		104	75 - 124	
Trichloroethene	25.0	25.9		ug/L		103	70 - 122	
Vinyl chloride	12.5	12.1		ug/L		97	60 - 144	

	LCS	LCS	
Surrogate	%Recovery	Qualifier	Limits
1,2-Dichloroethane-d4 (Surr)			62 - 137
4-Bromofluorobenzene (Surr)	114		56 - 136
Toluene-d8 (Surr)	111		78 - 122
Dibromofluoromethane (Surr)	110		73 - 120

### Lab Sample ID: 240-194769-H-1 MS Matrix: Water Analysis Batch: 594104

#### Sample Sample Spike MS MS %Rec Result Qualifier Added Analyte **Result Qualifier** %Rec Limits Unit D 1.0 U 25.0 1,1-Dichloroethene 24.6 ug/L 98 56 - 135 cis-1,2-Dichloroethene 25.0 96 66 - 128 1.5 25.5 ug/L 23.0 Tetrachloroethene 0.46 J 25.0 ug/L 90 62 - 131 trans-1,2-Dichloroethene 1.0 U 25.0 24.5 ug/L 98 56 - 136 Trichloroethene 25.0 91 61 - 124 0.90 J 23.6 ug/L Vinyl chloride 0.78 J 12.5 12.3 ug/L 92 43 - 157 MS MS

Surrogate	%Recovery Q	ualifier	Limits
1,2-Dichloroethane-d4 (Surr)	100		62 _ 137
4-Bromofluorobenzene (Surr)	101		56 - 136
Toluene-d8 (Surr)	100		78 - 122

Prep Type: Total/NA

**Client Sample ID: Method Blank** 

### Client Sample ID: Lab Control Sample Prep Type: Total/NA

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

Matrix: Water

Lab Sample ID: 240-194769-H-1 MS

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

10

Analysis Batch: 594104									· · · ·		
	MS	MS									
Surrogate	%Recovery	Qualifier	Limits								
Dibromofluoromethane (Surr)	101		73 - 120								
- Lab Sample ID: 240-194769-	I-1 MSD						Client Sa	ample IC	): Matrix Sp	oike Dup	olicate
Matrix: Water										ype: To	
Analysis Batch: 594104											
-	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	25.0		ug/L		100	56 - 135	2	26
cis-1,2-Dichloroethene	1.5		25.0	26.4		ug/L		100	66 - 128	4	14
Tetrachloroethene	0.46	J	25.0	23.4		ug/L		92	62 - 131	2	20
trans-1,2-Dichloroethene	1.0	U	25.0	24.4		ug/L		98	56 - 136	0	15
Trichloroethene	0.90	J	25.0	24.0		ug/L		93	61 - 124	2	15
Vinyl chloride	0.78	J	12.5	12.3		ug/L		92	43 - 157	0	24
	MSD	MSD									
Surrogate	%Recovery	Qualifier	Limits								
1,2-Dichloroethane-d4 (Surr)	99		62 - 137								
4-Bromofluorobenzene (Surr)	101		56 - 136								
Toluene-d8 (Surr)	99		78 - 122								
Dibromofluoromethane (Surr)	98		73 - 120								

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

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

Lab Sample ID: MB 240-594018/6 Matrix: Water										CI	lient S	ample ID: Metho Prep Type: 1	
Analysis Batch: 594018													
		мв	мв										
Analyte	Re	esult	Qualifier	RL		MDL	Unit		D	Prep	ared	Analyzed	Dil Fac
1,4-Dioxane	·	2.0	U	2.0		0.86	ug/L					11/09/23 11:33	
•	~~ <b>-</b>		MB							_			
Surrogate	%Reco	-	Qualifier	Limits						Prep	ared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)		93		66 - 120								11/09/23 11:33	
- Lab Sample ID: LCS 240-594018/4	4								Clie	nt S	amnlo	ID: Lab Control	Sample
Matrix: Water									one		umpic	Prep Type: 1	
Analysis Batch: 594018													otainti
				Spike	LCS	LCS						%Rec	
Analyte				Added	Result	Qual	ifier	Unit	0	<b>)</b> %	6Rec	Limits	
1.4-Dioxane				10.0	10.8			ug/L			108	80 - 122	
,				10.0	10.8								
,	LCS	LCS		10.0	10.8								
Surrogate	LCS %Recovery		ifier	Limits	10.8								
Surrogate			ifier		10.8								
1,2-Dichloroethane-d4 (Surr)	% <b>Recovery</b> 82		ifier	Limits	10.8						Client	Sample ID: Matri	x Spike
	% <b>Recovery</b> 82		ifier	Limits	10.8					(	Client	Sample ID: Matri Prep Type: 1	
1,2-Dichloroethane-d4 (Surr) Lab Sample ID: 240-194630-D-4 M Matrix: Water	% <b>Recovery</b> 82		ifier	Limits	10.8					(	Client	Sample ID: Matri Prep Type: 1	
1,2-Dichloroethane-d4 (Surr) Lab Sample ID: 240-194630-D-4 M	% <b>Recovery</b> 82	Quali		Limits		MS				(	Client		
1,2-Dichloroethane-d4 (Surr) Lab Sample ID: 240-194630-D-4 M Matrix: Water	%Recovery 82	<u>Quali</u> Samp	ble	Limits 66 - 120			ifier	Unit	E		Client 6Rec	Prep Type: 1	

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

	MS	MS									
Surrogate	%Recovery	Qualifier	Limits								
1,2-Dichloroethane-d4 (Surr)	84		66 - 120								
- Lab Sample ID: 240-194630-	D-4 MSD					c	lient Sa	ample IC	): Matrix Sp	oike Dup	olicate
Matrix: Water									Prep T	ype: To	tal/NA
Analysis Batch: 594018											
	Sample	Sample	Spike	MSD	MSD				%Rec		RPD
Analyte	Result	Qualifier	Added	Result	Qualifier	Unit	D	%Rec	Limits	RPD	Limit
1,4-Dioxane	2.0	U	10.0	10.3		ug/L		103	51 - 153	4	16
	MSD	MSD									
Surrogate	%Recovery	Qualifier	Limits								
1,2-Dichloroethane-d4 (Surr)	75		66 - 120								

10

### GC/MS VOA Analysis Batch: 594018

MB 240-594104/8

LCS 240-594104/5

240-194769-H-1 MS

240-194769-I-1 MSD

Method Blank

Matrix Spike

Lab Control Sample

Matrix Spike Duplicate

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-194764-2	MW-125_110123	Total/NA	Water	8260D SIM	
MB 240-594018/6	Method Blank	Total/NA	Water	8260D SIM	
LCS 240-594018/4	Lab Control Sample	Total/NA	Water	8260D SIM	
240-194630-D-4 MS	Matrix Spike	Total/NA	Water	8260D SIM	
240-194630-D-4 MSD	Matrix Spike Duplicate	Total/NA	Water	8260D SIM	
nalysis Batch: 59410	4				
Lab Sample ID	Client Sample ID	Ргер Туре	Matrix	Method	Prep Batch
240-194764-1	TRIP BLANK_9	Total/NA	Water	8260D	-
240-194764-2	MW-125 110123	Total/NA	Water	8260D	

Total/NA

Total/NA

Total/NA

Total/NA

Water

Water

Water

Water

8260D

8260D

8260D

8260D

Factor

1

Date Received: 11/03/23 08:00

Prep Type

Total/NA

Matrix: Water

### Client Sample ID: TRIP BLANK\_9 Date Collected: 11/01/23 00:00

Dilution	Batch	Prepared	- 4
		Lab Sample ID: 240-194764 Matrix: Wat	

Lab

EET CLE

or Analyzed

Lab Sample ID: 240-194764-2

11/09/23 18:26

Number Analyst

594104 CDG

Client Sample ID: MW-125_110123
Date Collected: 11/01/23 13:20

Batch

Туре

Analysis

Batch Method

8260D

Date Received: 11/03/23 08:00

	Batch	Batch		Dilution	Batch			Prepared
Prep Туре	Туре	Method	Run	Factor	Number	Analyst	Lab	or Analyzed
Total/NA	Analysis	8260D		1	594104	CDG	EET CLE	11/09/23 21:13
Total/NA	Analysis	8260D SIM		1	594018	MRL	EET CLE	11/09/23 18:18

Run

#### 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

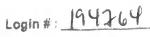
aboratory: Eurofins Clevel accreditations/certifications held by the		ons/certifications are applicable to this report		
Authority	Program	Identification Number	Expiration Date	
California	State	2927	02-27-24	
Georgia	State	4062	02-27-24	
llinois	NELAP	200004	07-31-24	
owa	State	421	06-01-25	
Kentucky (UST)	State	112225	02-28-24	
Kentucky (WW)	State	KY98016	12-31-23	
Лichigan	State	9135	02-27-24	
<i>M</i> innesota	NELAP	039-999-348	12-31-23	
/linnesota (Petrofund)	State	3506	08-01-23 *	
New Jersey	NELAP	OH001	07-01-24	
New York	NELAP	10975	04-02-24	
Dhio	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	T104704517-22-19	08-31-24	
Virginia	NELAP	460175	09-14-24	
West Virginia DEP	State	210	12-31-23	

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

MICHIGAN	<b>Chain</b> 0 TestAmerica Laboratory location: Brighton 10448 Citation I	Chain of Custody Record 1048 Citation Drive, Suite 200 / Brighton, MI 48116 / 810-229-2763		nica
	-	NPDES RCRA Other		
Company Name: Arcadis	Client Project Manager Kris Hindlay.	Sin Contrast: Christian Wommer		itories, Inc.
Address: 28550 Cabot Drive, Suite 500				
City/State/Zip: Novi, MI, 48377		Telephone: 248-994-2240 [Telephone: 330-497-9396		cocs
Phone: 248-994-224()	Email: kristoffer.hinskey@arcadis.com	Analysis Turnaround Time	Analyses For lab use only	
Project Name: Ford LTP Off-Site	Sampler Name:	TAT it different from below 3 works 10 day - 2 works	Walk-in chent	
Project Number: 30167538.402.04		T week ()		1.000
PO#30167538.402,04	Shipping/Tracking Nu:	8560D 0D 2 \ Chap bic (X \		
Sample Identification	Sample Date Solid Airth	Procession Procession	Sumple Specific Notes Symple Specific Notes Special Instructions:	Notes / tions:
I TRIP BLANK_0		×	╢───	
MW-125_110123	11/1/23/3220 6	UGXXXX>	×××× 3 VOAs for 8260D 3 VOAs for 8260D 3 VOAs for 8260D	DD SIM
Page 18 of 20		240-194764 Chain of Custody	in of Custody	
Possible Hazard Identification Von-Hazard Skin   Skin	Skin Irritant Poison B Unknown	Sample Disposal ( A fee muy be assessed if samples are retained longer than 1 month) Return to Client & Disposal By Lab	r than I month) Months	
Special Instructions/OC Requirements & Comments: Sample Address: 35 601 VeronnLa St Submit all results through Cadena at Jomalia@cadenaco.com. Cadena #E203631 Level IV Reporting requested.				
Relinquished by Relinquished by	Company Coches 11,123 151 Company Coches 11,123 151 Company Coches 11,23 151	5 Received by Cold Storade	Preadus marchine 11 11/1/23 15	1515
Relinquished by A. H. M.	Company CC77 11/2/23 10	025 Reviet din Laboratory by:	Land Ine	860
02				

11/13/2023

Eurofins - Cleveland Sample Receipt Form/Narrative Login # : 64764
Barberton Facility
Client ArcadiS Site Name Cooler unpacked by:
Cooler Received on 11-3-23 Opened on 11-3-23 Vary Legal
FedEx: 1 <sup>st</sup> Grd Exp UPS FAS Waypoint Client Drop Off Eurofins Courier Other
Receipt After-hours: Drop-off Date/TheeStorage Location
Eurofins Cooler # Eoam Box Client Cooler Box 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
IR GUN # $AA$ (CF + 1. 1 °C) Observed Cooler Temp. °C Corrected Cooler Temp. °C
2. Were tamper/custody seals on the outside of the cooler(s)? If Yes Quantity EQC Yes No -Were the seals on the outside of the cooler(s) signed & dated?
We show that the second secon
-Were tamper/custody seals on the bottle(s) or bottle kits (LLHg/MeHg)? Yes o Receiving: -Were tamper/custody seals intact and uncompromised? Yes No NA
3. Shippers' packing slip attached to the cooler(s)? Yes No. VOAs
4. Did custody papers accompany the sample(s)? (Yes) No Oil and Grease TOC
5. Were the custody papers relinquished & signed in the appropriate place?
6. Was/were the person(s) who collected the samples clearly identified on the COC? (Yes) No
<ul> <li>7. Did all bottles arrive in good condition (Unbroken)?</li> <li>8. Could all bottle labels (ID/Date/Time) be reconciled with the COC?</li> </ul>
<ol> <li>Could all bottle labels (ID/Date/Time) be reconciled with the COC?</li> <li>For each sample, does the COC specify preservatives (Y/N), # of containers (Y/N), and sample type of grab/comp(Y/N)?</li> </ol>
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? Yes No
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? 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 #
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)       were further preserved in the laboratory.         Time preserved:       Preservative(s) added/Lot number(s):
VOA Sample Preservation - Date/Time VOAs Frozen:



	Eurofins - Cantor	Sample Receipt Mui	tiple Cooler Form	
Cooler Description (Circle)	IR Gun # (Circle)	Observed Temp °C	Corrected Temp °C	Coolant (Circle)
(EC) Client Box Off		1.)	2.2	Wet Ice Blue Ice Dry Water None
EG Client Box Off		1.81	19	Wet Ice Blue Ice Dry
(EC Client Box Off	IR GUN A: DO	07	TX-	(Wet Ice)' Blue Ice Dry
EC Client Box Ott	IR GUN #		<u> </u>	Wellice Bluelice Dry
EC Client Box Off	IR GUN #			Wet ice Dive ice Dry i
EC Client Box Off	B GUN #			Wet ice Sive ice Dry I
EC Client Box Off				Water None Wet ice Blue ice Dry i
EC Client Box Ott				Water None Wet ice Stue ice Dry I
EC Client Box Off	IR GUN A			Weter None Wetice Blue ice Dry i
EC Client Box Off	IP CITAL A.			Weter None Wetice Sive Ice Dry 1
EC Client Box Of	IP GIM A-			Water None Wet Ice Blue Ice Dry I
SC Client Box Of				Water None Wet ice Dive ice Dry i
EC Client Box Of				Water None Wet Ice Sive Ice Dry I
BC Client Box Of				Wet Ice Blue Ice Dry I
BC Client Box Oil	IP GINA			Wet Ice Blue Ice Dry I
BC Client Box Of	In Clink A-			Water None Wet Ice Blue Ice Dry I
EC Client Box Of				Water None Watice Sive Ice Dry I
EC Client Box Oil				Water None Wet Ice Blue Ice Dry I
EC Client Box OI				Water None Wet Ice Blue Ice Dry I
EC Client Box Ol	I GIN A			Water None Wetice Blue ice Dry i Water None
EC Client Box Oil	P GUM A			Wet ice Bue ice Dry i Water None
EC Client Box Of	P GUM A			Wet ice Blue ice Dry is Water None
EC Client Box Of	R GUN e			Wet ice Blue ice Dry la
EC Client Box Of				Water None Wet Ice Blue Ice Dry Ic
EC Client Box Oil	In Gilli A			Water None Wet Ice Nue Ice Dry Ic
EC Client Box Of	IR GUN A.			Water None Wet ice Dive ice Dry ic
EC Client Box Of	D CUM A			Wet ice Nue ice Dry ic
EC Client Box Off	D CHN 4			Water None Wet ice Blue ice Dry ic
EC Client Box Of				Water None Watice Silve Ice Dry Ic
EC Client Box Off				Water None Wet ice Sive ice Dry ice
	R GUM A:			Water None Wet Ice Blue Ice Dry Ice
	IN CHNA:			Water None Wet Ice Bive Ice Dry Ice
				Water None Wet Ice Blue Ice Dry Ice
EC Client Box Oth				Water None Wellice Bluelice Drylice
EC Client Box Oth	N		See Tem	Water None perature Excursion Form

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

### **DATA VERIFICATION REPORT**



November 16, 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: 194764-1 Sample date: 2023-11-01 Report received by CADENA: 2023-11-16 Initial Data Verification completed by CADENA: 2023-11-16 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 <u>http://clms.cadenaco.com/index.cfm</u>.

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: E203631

Laboratory: Eurofins Environment Testing LLC - Cleveland Laboratory Submittal: 194764-1

		Sample Name: Lab Sample ID: Sample Date:	TRIP BLANK_9 2401947641 11/1/2023		MW-125_110123 2401947642 11/1/2023					
	Australia		Decult	Report	11	Valid	Desult	Report	11	Valid
	Analyte	Cas No.	Result	Limit	Units	Qualifier	Result	Limit	Units	Qualifier
GC/MS VOC										
<u>OSW-826</u>	<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	
<u>OSW-826</u>	<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 # 240-194764-1 CADENA Verification Report: 2023-11-16

Analyses Performed By: Eurofins Cleveland Barberton, Ohio

Report # 52108R Review Level: Tier III Project: 30167538.402.02

### **SUMMARY**

This data quality assessment summarizes the review of Sample Delivery Group (SDG) # 240-194764-1 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		Matrix	Collection Date	lection Date VOC	VOC	VOC SIM
TRIP BLANK_9	240-194764-1	Water	11/01/2023		Х	
MW-125_110123	240-194764-2	Water	11/01/2023		Х	Х

### DATA REVIEW

### ANALYTICAL DATA PACKAGE DOCUMENTATION

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

	Items Reviewed	Rep	orted		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		X	
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 HCI

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.

#### DATA REVIEW

### 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 REVIEW

### DATA VALIDATION CHECKLIST FOR VOCs

VOCs: 8260D/8260D-SIM		orted	Perfo Acce	Not Required	
	No	Yes	No	Yes	Nequireu
GAS CHROMATOGRAPHY/MASS SPECTROMETRY (G	C/MS)				
Tier II Validation					
Holding times/Preservation		Х		X	
Tier III Validation		1		-	
System performance and column resolution		Х		X	
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		X	
C. RT of sample compounds within the established RT windows		Х		Х	
D. Transcription/calculation errors present		Х		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:	Bindu Sree M B
SIGNATURE:	BASHMB
DATE:	December 13, 2023

PEER REVIEW: Andrew Korycinski

DATE: December 13, 2023

## NO CORRECTIONS/QUALIFERS ADDED TO SAMPLE ANALYSIS DATA SHEETS



# CHAIN OF CUSTODY CORRECTED SAMPLE ANALYSIS DATA SHEETS



<b>MICHIGAN</b>
160

**Chain of Custody Record** 



TestAmerica Laboratory location: Brighton --- 10448 Citation Drive, Suite 200 / Brighton, MI 48116 / 810-229-2763 190 THE LEADER IN ENVIRONMENTAL FEBTIN **Client Contact Regulatory program:** DW NPDES RCRA Other **Company Name: Arcadis** TestAmerica Laboratories, Inc. **Client Project Manager: Kris Hinskey** Site Contact: Christina Weaver Lab Contact: Mike DelMonico COC No: Address: 28550 Cabot Drive, Suite 500 Telephone: 248-994-2240 Telephone: 248-994-2240 Telephone: 330-497-9396 City/State/Zip: Novi, MI, 48377 1 of 1 COCs Analysis Turnaround Time Email: kristoffer.hinskev@arcadis.com Analyses For lab use only Phone: 248-994-2240 Walk-in client AT if different from below Sampler Manie: Project Name: Ford LTP Off-Site 3 weeks ommer Guu ✓ 2 weeks 10 day Lab sampling Project Number: 30167538.402.04 Method of Shipment/Carrier: I week SIM Filtered Sample (Y / N) 8260D 2 days Chloride 8260D 8260D 8260D PO#30167538.402.04 Shipping/Tracking No: I day Job/SDG No: S 1,1-DCE 8260D **Irans-1,2-DCE** Matrix **Containers & Preservatives** cis-1.2-DCE 4-Dioxane PCE 8260D TCE 8260D Unpres Sample Specific Notes / Other: H2SO4 **EONH** NaOH Other: Vinyl Solid CnAcl NaOH Aque Sedin BCI Special Instructions: 5 Sample Identification Sample Date Sample Time e TRIP BLANK 1 1 G Х Ν X Х Х Х ----Х 1 Trip Blank MW-125\_110123 3 VOAs for 8260D 11/123 320 6 N G X X 6 X X X X X 3 VOAs for 8260D SIM Page 360 of 36 240-194764 Chain of Custod **Possible Hazard Identification** Sample Disposal ( A fee may be assessed if samples are retained longer than 1 month) Non-Hazard Flammable Skin Irritant Poison B Unknown Return to Client Disposal By Lab Archive For Months Special Instructions/QC Requirements & Comments: Sample Address: 35601 VPYONICA ST Submit all results through Cadena at jtomalia@cadenaco.com. Cadena #E203631 Level IV Reporting requested. Relinquished by Date/Tur Received by omnai Company Date//Tin Storage Hrcades 1515 Arcadus 23 1515 uh ommer 2 old 11/11 Relinquished by Company Date/Time; Received by Company: Date/Time: 11/2 02 mean 23 2/23 1023 Relinquished by Date/Time: Company: in Laboratory by: Date Time No 223 1025 to 5 111/2023 , TestAmenca Laboratories, Inc. All rights reserved. nerica & Design <sup>14</sup> are trademarks of TestAmenca Laboratories, Inc.

### Client Sample ID: TRIP BLANK\_9

### Date Collected: 11/01/23 00:00

Date Received: 11/03/23 08:00

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1-Dichloroethene	1.0	U	1.0	0.49	ug/L			11/09/23 18:26	1
cis-1,2-Dichloroethene	1.0	U	1.0	0.46	ug/L			11/09/23 18:26	1
Tetrachloroethene	1.0	U	1.0	0.44	ug/L			11/09/23 18:26	1
trans-1,2-Dichloroethene	1.0	U	1.0	0.51	ug/L			11/09/23 18:26	1
Trichloroethene	1.0	U	1.0	0.44	ug/L			11/09/23 18:26	1
Vinyl chloride	1.0	U	1.0	0.45	ug/L			11/09/23 18:26	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	108		62 - 137	1	11/09/23 18:26	1
4-Bromofluorobenzene (Surr)	106		56 - 136	1	11/09/23 18:26	1
Toluene-d8 (Surr)	107		78 - 122	1	11/09/23 18:26	1
Dibromofluoromethane (Surr)	108		73 - 120	1	11/09/23 18:26	1

### Client Sample ID: MW-125\_110123 Date Collected: 11/01/23 13:20 Date Received: 11/03/23 08:00

Lab Sample ID: 240-194764-2

**Matrix: Water** 

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,4-Dioxane	2.0	U	2.0	0.86	ug/L			11/09/23 18:18	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	79		66 - 120			-		11/09/23 18:18	1

#### Method: SW846 8260D - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1-Dichloroethene	1.0	U	1.0	0.49	ug/L			11/09/23 21:13	1
cis-1,2-Dichloroethene	1.0	U	1.0	0.46	ug/L			11/09/23 21:13	1
Tetrachloroethene	1.0	U	1.0	0.44	ug/L			11/09/23 21:13	1
trans-1,2-Dichloroethene	1.0	U	1.0	0.51	ug/L			11/09/23 21:13	1
Trichloroethene	1.0	U	1.0	0.44	ug/L			11/09/23 21:13	1
Vinyl chloride	1.0	U	1.0	0.45	ug/L			11/09/23 21:13	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	108		62 - 137		11/09/23 21:13	1
4-Bromofluorobenzene (Surr)	103		56 - 136		11/09/23 21:13	1
Toluene-d8 (Surr)	105		78 - 122		11/09/23 21:13	1
Dibromofluoromethane (Surr)	106		73 - 120		11/09/23 21:13	1

### Lab Sample ID: 240-194764-1 Matrix: Water



**Environment Testing** 

# **ANALYTICAL REPORT**

### PREPARED FOR

Attn: Kristoffer Hinskey ARCADIS US Inc 28550 Cabot Drive Suite 500 Novi, Michigan 48377 Generated 11/27/2023 4:57:50 AM

## JOB DESCRIPTION

Ford LTP - Off Site

### **JOB NUMBER**

240-195671-1

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

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Generated 11/27/2023 4:57:50 AM 1

5 6 7

Authorized for release by Michael DelMonico, Project Manager I <u>Michael.DelMonico@et.eurofinsus.com</u> (330)497-9396

## **Table of Contents**

Cover Page	1
Table of Contents	3
Definitions/Glossary	4
Case Narrative	5
Method Summary	6
Sample Summary	7
Detection Summary	8
Client Sample Results	9
Surrogate Summary	12
QC Sample Results	13
QC Association Summary	17
Lab Chronicle	18
Certification Summary	19
Chain of Custody	20
-	20

#### Qualifiers

Qualifiers		3
GC/MS VOA		
Qualifier	Qualifier Description	
F1	MS and/or MSD recovery exceeds control limits.	
U	Indicates the analyte was analyzed for but not detected.	5
Glossary		6
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	0
CFU	Colony Forming Unit	0
CNF	Contains No Free Liquid	
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: 240-195671-1

#### Laboratory: Eurofins Cleveland

#### Narrative

Job Narrative 240-195671-1

Analytical test results meet all requirements of the associated regulatory program listed on the Accreditation/Certification Summary Page unless otherwise noted under the individual analysis. Data qualifiers are applied to indicate exceptions. Noncompliant quality control (QC) is further explained in narrative comments.

Matrix QC may not be reported if insufficient sample or site-specific QC samples were not submitted. In these situations, to demonstrate precision and accuracy at a batch level, a LCS/LCSD may be performed, unless otherwise specified in the method. Surrogate and/or isotope dilution analyte recoveries (if applicable) which are outside of the QC window are confirmed unless attributed to a dilution or otherwise noted in the narrative.

Regulated compliance samples (e.g. SDWA, NPDES) must comply with the associated agency requirements/permits.

#### Receipt

The samples were received on 11/17/2023 9:40 AM. Unless otherwise noted below, the samples arrived in good condition, and, where required, properly preserved and on ice. The temperatures of the 3 coolers at receipt time were 2.7°C, 2.9°C and 3.5°C

#### GC/MS VOA

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

#### Sample Summary

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

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
240-195671-1	TRIP BLANK_135	Water	11/13/23 00:00	11/17/23 09:40
240-195671-2	MW-129_111323	Water	11/13/23 14:35	11/17/23 09:40
240-195671-3	MW-129S_111323	Water	11/13/23 15:55	11/17/23 09:40

Detection Summary	,	1
Client: ARCADIS US Inc Project/Site: Ford LTP - Off Site	Job ID: 240-195671-1	2
Client Sample ID: TRIP BLANK_135	Lab Sample ID: 240-195671-1	
No Detections.		
Client Sample ID: MW-129_111323	Lab Sample ID: 240-195671-2	4
No Detections.		5
Client Sample ID: MW-129S_111323	Lab Sample ID: 240-195671-3	
No Detections.		7
		8
		9
		1

### Client Sample ID: TRIP BLANK\_135

Date Collected: 11/13/23 00:00 Date Received: 11/17/23 09:40

	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			11/22/23 20:17	1
cis-1,2-Dichloroethene	1.0	U	1.0	0.46	ug/L			11/22/23 20:17	1
Tetrachloroethene	1.0	U	1.0	0.44	ug/L			11/22/23 20:17	1
trans-1,2-Dichloroethene	1.0	U	1.0	0.51	ug/L			11/22/23 20:17	1
Trichloroethene	1.0	U	1.0	0.44	ug/L			11/22/23 20:17	1
Vinyl chloride	1.0	U	1.0	0.45	ug/L			11/22/23 20:17	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	111		62 - 137			-		11/22/23 20:17	1
4-Bromofluorobenzene (Surr)	99		56 - 136					11/22/23 20:17	1
Toluene-d8 (Surr)	101		78 - 122					11/22/23 20:17	1
Dibromofluoromethane (Surr)	97		73 - 120					11/22/23 20:17	1

Job ID: 240-195671-1

# Lab Sample ID: 240-195671-1

Matrix: Water

5

**8** 9

**Eurofins Cleveland** 

#### Client Sample ID: MW-129\_111323

Date Collected: 11/13/23 14:35 Date Received: 11/17/23 09:40

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac	
1,4-Dioxane	2.0	U	2.0	0.86	ug/L			11/25/23 06:42	1	
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac	
1,2-Dichloroethane-d4 (Surr)	97		66 - 120			-		11/25/23 06:42	1	
Method: SW846 8260D - Volatil	e 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			11/22/23 07:54	1	Ē
cis-1,2-Dichloroethene	1.0	U	1.0	0.46	ug/L			11/22/23 07:54	1	
Tetrachloroethene	1.0	U	1.0	0.44	ug/L			11/22/23 07:54	1	
trans-1,2-Dichloroethene	1.0	U	1.0	0.51	ug/L			11/22/23 07:54	1	
Trichloroethene	1.0	U	1.0	0.44	ug/L			11/22/23 07:54	1	
Vinyl chloride	1.0	U	1.0	0.45	ug/L			11/22/23 07:54	1	
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac	
1,2-Dichloroethane-d4 (Surr)			62 - 137			-		11/22/23 07:54	1	
4-Bromofluorobenzene (Surr)	98		56 - 136					11/22/23 07:54	1	
Toluene-d8 (Surr)	99		78 - 122					11/22/23 07:54	1	
Dibromofluoromethane (Surr)	99		73 - 120					11/22/23 07:54	1	÷,

#### Lab Sample ID: 240-195671-2 Matrix: Water

#### Client Sample ID: MW-129S\_111323

Date Collected: 11/13/23 15:55 Date Received: 11/17/23 09:40

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,4-Dioxane	2.0	U	2.0	0.86	ug/L			11/25/23 07:06	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	95		66 - 120			-		11/25/23 07:06	1
Method: SW846 8260D - Volat	ile Organic Comr	ounds by (	C/MS						
Analyte	• •	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1-Dichloroethene	1.0	U	1.0	0.49	ug/L			11/22/23 12:52	1
cis-1,2-Dichloroethene	1.0	U	1.0	0.46	ug/L			11/22/23 12:52	1
Tetrachloroethene	1.0	U	1.0	0.44	ug/L			11/22/23 12:52	1
trans-1,2-Dichloroethene	1.0	U	1.0	0.51	ug/L			11/22/23 12:52	1
Trichloroethene	1.0	U	1.0	0.44	ug/L			11/22/23 12:52	1
Vinyl chloride	1.0	U	1.0	0.45	ug/L			11/22/23 12:52	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	108		62 - 137			-		11/22/23 12:52	1
4-Bromofluorobenzene (Surr)	97		56 - 136					11/22/23 12:52	1
Toluene-d8 (Surr)	98		78 - 122					11/22/23 12:52	1
Dibromofluoromethane (Surr)	94		73 - 120					11/22/23 12:52	1

11/27/2023

Job ID: 240-195671-1

Lab Sample ID: 240-195671-3 Matrix: Water 4

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

				Percent Sur	rogate Recovery (Acce	otance Limits)
		DCA	BFB	TOL	DBFM	
ab Sample ID	Client Sample ID	(62-137)	(56-136)	(78-122)	(73-120)	
40-195499-C-1 MS	Matrix Spike	110	100	99	102	
40-195499-C-1 MSD	Matrix Spike Duplicate	111	101	100	104	
40-195662-E-2 MS	Matrix Spike	110	100	101	101	
0-195662-F-2 MSD	Matrix Spike Duplicate	111	100	100	101	
0-195671-1	TRIP BLANK_135	111	99	101	97	
0-195671-2	MW-129_111323	111	98	99	99	
0-195671-3	MW-129S_111323	108	97	98	94	
CS 240-595468/4	Lab Control Sample	107	100	100	102	
S 240-595559/4	Lab Control Sample	110	98	98	107	
B 240-595468/7	Method Blank	108	96	101	99	
3 240-595559/7	Method Blank	111	100	103	98	
Surrogate Legend						
DCA = 1,2-Dichloroetha	ne-d4 (Surr)					
BFB = 4-Bromofluorobe	nzene (Surr)					
TOL = Toluene-d8 (Surr	)					
DBFM = Dibromofluoror	nethane (Surr)					
	I - Volatile Organic Com					

			Percent Surrogate Recovery (Acceptance Limits)
		DCA	
Lab Sample ID	Client Sample ID	(66-120)	
240-195671-2	MW-129_111323	97	
240-195671-3	MW-129S_111323	95	
500-242543-C-3 MS	Matrix Spike	99	
500-242543-C-3 MSD	Matrix Spike Duplicate	100	
LCS 240-595687/4	Lab Control Sample	97	
MB 240-595687/6	Method Blank	97	

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

11/27/2023

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

#### Matrix: Water Analysis Batch: 595468

	MB	МВ							
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1-Dichloroethene	1.0	U	1.0	0.49	ug/L			11/22/23 00:07	1
cis-1,2-Dichloroethene	1.0	U	1.0	0.46	ug/L			11/22/23 00:07	1
Tetrachloroethene	1.0	U	1.0	0.44	ug/L			11/22/23 00:07	1
trans-1,2-Dichloroethene	1.0	U	1.0	0.51	ug/L			11/22/23 00:07	1
Trichloroethene	1.0	U	1.0	0.44	ug/L			11/22/23 00:07	1
Vinyl chloride	1.0	U	1.0	0.45	ug/L			11/22/23 00:07	1

	MB	МВ				
Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	108		62 - 137		11/22/23 00:07	1
4-Bromofluorobenzene (Surr)	96		56 - 136		11/22/23 00:07	1
Toluene-d8 (Surr)	101		78 - 122		11/22/23 00:07	1
Dibromofluoromethane (Surr)	99		73 - 120		11/22/23 00:07	1

#### Lab Sample ID: LCS 240-595468/4 Matrix: Water Analysis Batch: 595468

	Spike	LCS	LCS				%Rec	
Analyte	Added	Result	Qualifier	Unit	D	%Rec	Limits	
1,1-Dichloroethene	25.0	24.4		ug/L		98	63 - 134	
cis-1,2-Dichloroethene	25.0	25.7		ug/L		103	77 - 123	
Tetrachloroethene	25.0	22.5		ug/L		90	76 - 123	
trans-1,2-Dichloroethene	25.0	24.9		ug/L		99	75 - 124	
Trichloroethene	25.0	25.0		ug/L		100	70 - 122	
Vinyl chloride	12.5	11.1		ug/L		89	60 - 144	

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

101

#### Lab Sample ID: 240-195662-E-2 MS Matrix: Water

#### Analysis Batch: 595468

Toluene-d8 (Surr)

	Sample	Sample	Spike	MS	MS				%Rec	
Analyte	Result	Qualifier	Added	Result	Qualifier	Unit	D	%Rec	Limits	
1,1-Dichloroethene	1.0	U	25.0	22.2		ug/L		89	56 - 135	
cis-1,2-Dichloroethene	1.0	U	25.0	22.9		ug/L		92	66 - 128	
Tetrachloroethene	1.0	U	25.0	20.7		ug/L		83	62 _ 131	
trans-1,2-Dichloroethene	1.0	U	25.0	22.5		ug/L		90	56 - 136	
Trichloroethene	1.0	U	25.0	21.4		ug/L		86	61 - 124	
Vinyl chloride	1.0	U	12.5	9.71		ug/L		78	43 - 157	
	MS	MS								
Surrogate	%Recovery	Qualifier	Limits							
1,2-Dichloroethane-d4 (Surr)	110		62 - 137							
4-Bromofluorobenzene (Surr)	100		56 - 136							

Job ID: 240-195671-1	

#### Client Sample ID: Method Blank Prep Type: Total/NA

Client Sample ID: Lab Control Sample

**Client Sample ID: Matrix Spike** 

Prep Type: Total/NA

Prep Type: Total/NA

**Eurofins Cleveland** 

78 - 122

Matrix: Water

Surrogate

Analysis Batch: 595468

Dibromofluoromethane (Surr)

Lab Sample ID: 240-195662-E-2 MS

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

MS MS

%Recovery Qualifier

101

## Job ID: 240-195671-1 **Client Sample ID: Matrix Spike**

Prep Type: Total/NA

5
8
9

10

Lab Sample ID: 240-195662- Matrix: Water	F-2 MSD						Client Sa	ample IE	): Matrix Sp Prep 1	oike Dup Type: To	
Analysis Batch: 595468	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	20.4		ug/L		82	56 - 135	9	26
cis-1,2-Dichloroethene	1.0	U	25.0	20.6		ug/L		82	66 - 128	10	14
Tetrachloroethene	1.0	U	25.0	20.1		ug/L		80	62 - 131	3	20
trans-1,2-Dichloroethene	1.0	U	25.0	20.8		ug/L		83	56 - 136	7	15
Trichloroethene	1.0	U	25.0	20.5		ug/L		82	61 - 124	5	15
Vinyl chloride	1.0	U	12.5	8.92		ug/L		71	43 - 157	8	24
	MSD	MSD									
Surrogate	%Recovery	Qualifier	Limits								
1,2-Dichloroethane-d4 (Surr)	111		62 - 137								
4-Bromofluorobenzene (Surr)	100		56 - 136								
Toluene-d8 (Surr)	100		78 - 122								
Dibromofluoromethane (Surr)	101		73 - 120								

**QC Sample Results** 

Limits

73 - 120

#### Lab Sample ID: MB 240-595559/7 Matrix: Water Analysis Batch: 595559

#### MB MB Result Qualifier MDL Unit Dil Fac Analyte RL D Prepared Analyzed 1,1-Dichloroethene 1.0 U 1.0 11/22/23 12:02 0.49 ug/L cis-1,2-Dichloroethene 1.0 U 1.0 0.46 ug/L 11/22/23 12:02 1.0 U Tetrachloroethene 0.44 ug/L 11/22/23 12:02 1.0 trans-1,2-Dichloroethene 1.0 U 1.0 0.51 ug/L 11/22/23 12:02 Trichloroethene 1.0 U 1.0 11/22/23 12:02 0.44 ug/L Vinyl chloride 1.0 U 1.0 0.45 ug/L 11/22/23 12:02 MB MB Surrogate %Recovery Qualifier Limits Prepared Analyzed Dil Fac

canegate	,,	quanner			, <b>,</b>	2	
1,2-Dichloroethane-d4 (Surr)	111		62 - 137		11/22/23 12:02	1	
4-Bromofluorobenzene (Surr)	100		56 - 136		11/22/23 12:02	1	
Toluene-d8 (Surr)	103		78 - 122		11/22/23 12:02	1	
Dibromofluoromethane (Surr)	98		73 - 120		11/22/23 12:02	1	

#### Lab Sample ID: LCS 240-595559/4 Matrix: Water

#### Analysis Batch: 595559

	Spike	LCS	LCS				%Rec	
Analyte	Added	Result	Qualifier	Unit	D	%Rec	Limits	
1,1-Dichloroethene	25.0	23.4		ug/L		94	63 - 134	
cis-1,2-Dichloroethene	25.0	25.1		ug/L		100	77 - 123	
Tetrachloroethene	25.0	21.9		ug/L		88	76 - 123	
trans-1,2-Dichloroethene	25.0	25.4		ug/L		102	75 - 124	
Trichloroethene	25.0	24.6		ug/L		98	70 - 122	

**Eurofins Cleveland** 

#### **Client Sample ID: Lab Control Sample** Prep Type: Total/NA

**Client Sample ID: Method Blank** 

Prep Type: Total/NA

1

1

1

1

1

#### **QC Sample Results**

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

Lab Sample ID: LCS 240-59 Matrix: Water Analysis Batch: 595559	5559/4						Clien	t Sample	e ID: Lab Control Sample Prep Type: Total/NA
Analysis Datch. 555555			Spike	LCS	LCS				%Rec
Analyte			Added	Result	Qualifier	Unit	D	%Rec	Limits
Vinyl chloride			12.5	10.9		ug/L		87	60 - 144
	LCS	LCS							
Surrogate	%Recovery	Qualifier	Limits						
1,2-Dichloroethane-d4 (Surr)			62 _ 137						
4-Bromofluorobenzene (Surr)	98		56 _ 136						
Toluene-d8 (Surr)	98		78 - 122						
Dibromofluoromethane (Surr)	107		73 _ 120						

#### Lab Sample ID: 240-195499-C-1 MS Matrix: Water

Analysis Batch: 595559

,	Sample	Sample	Spike	MS	MS				%Rec	
Analyte	Result	Qualifier	Added	Result	Qualifier	Unit	D	%Rec	Limits	
1,1-Dichloroethene	10	U	250	220		ug/L		88	56 - 135	
cis-1,2-Dichloroethene	250		250	499		ug/L		98	66 - 128	
Tetrachloroethene	10	U	250	208		ug/L		83	62 _ 131	
trans-1,2-Dichloroethene	20		250	245		ug/L		90	56 _ 136	
Trichloroethene	21		250	246		ug/L		90	61 - 124	
Vinyl chloride	30		125	133		ug/L		83	43 - 157	

	MS	MS	
Surrogate	%Recovery	Qualifier	Limits
1,2-Dichloroethane-d4 (Surr)	110		62 - 137
4-Bromofluorobenzene (Surr)	100		56 - 136
Toluene-d8 (Surr)	99		78 - 122
Dibromofluoromethane (Surr)	102		73 - 120

#### Lab Sample ID: 240-195499-C-1 MSD Matrix: Water

Analysis Batch: 595559

Analysis Baton. 000000												
	Sample	Sample	Spike	MSD	MSD				%Rec		RPD	
Analyte	Result	Qualifier	Added	Result	Qualifier	Unit	D	%Rec	Limits	RPD	Limit	
1,1-Dichloroethene	10	U	250	231		ug/L		93	56 - 135	5	26	
cis-1,2-Dichloroethene	250		250	484		ug/L		92	66 - 128	3	14	
Tetrachloroethene	10	U	250	226		ug/L		91	62 - 131	8	20	
trans-1,2-Dichloroethene	20		250	258		ug/L		95	56 - 136	5	15	
Trichloroethene	21		250	250		ug/L		92	61 - 124	2	15	
Vinyl chloride	30		125	125		ug/L		77	43 - 157	6	24	

	MSD	MSD	
Surrogate	%Recovery	Qualifier	Limits
1,2-Dichloroethane-d4 (Surr)			62 - 137
4-Bromofluorobenzene (Surr)	101		56 _ 136
Toluene-d8 (Surr)	100		78 - 122
Dibromofluoromethane (Surr)	104		73 - 120

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

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

Job ID: 240-195671-1

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

Lab Sample ID: MB 240-595 Matrix: Water											Sherit O	ample ID:	Type: To	
												Prep	rype: i	otal/N/
Analysis Batch: 595687		мв	MD											
Analyta	Ba		Qualifier	RL		мы	Unit		D	Б	ropored	Analyz	a d	Dil Fa
Analyte 1,4-Dioxane	Ke	2.0	U			0.86	ug/L		<u> </u>	P	repared	_ Analyz 11/25/23		DIIFa
1,4-Dioxane		2.0	0	2.0		0.00	ug/L					11/23/23	02.10	
		MВ	МВ											
Surrogate	%Reco	very	Qualifier	Limits						P	repared	Analyz	zed	Dil Fa
1,2-Dichloroethane-d4 (Surr)		97		66 - 120								11/25/23	02:18	
Lab Sample ID: LCS 240-59	5687/4								Clie	ent	Sample	ID: Lab Co	ontrol	Sample
Matrix: Water											-		Type: To	
Analysis Batch: 595687														
				Spike	LCS	LCS						%Rec		
Analyte				Added	Result	Qua	lifier	Unit		D	%Rec	Limits		
1,4-Dioxane				10.0	10.1			ug/L		_	101	80 - 122		
	LCS	LCS												
Surrogate	%Recovery	Qua	lifier	Limits										
1,2-Dichloroethane-d4 (Surr)	97			66 - 120										
- Lab Sample ID: 500-242543	-C-3 MS										Client	Sample ID	: Matrix	k Spike
Matrix: Water												Prep 1	Type: To	otal/NA
Analysis Batch: 595687														
	Sample	Sam	ple	Spike	MS	MS						%Rec		
Analyte	Result	Qual	ifier	Added	Result	Qua	lifier	Unit		D	%Rec	Limits		
1,4-Dioxane	0.90	JF1		30.0	11.7	F1		ug/L			36	51 - 153		
	MS	мs												
Surrogate	%Recovery	Qual	lifier	Limits										
1,2-Dichloroethane-d4 (Surr)	99			66 - 120										
- Lab Sample ID: 500-242543	-C-3 MSD								Client	Sa	ample ID	: Matrix S	oike Du	plicate
Matrix: Water													Гуре: Т	
Analysis Batch: 595687													20 T	
	Sample	Sam	ple	Spike	MSD	MSD	)					%Rec		RPD
Analyte	Result	Qual	ifier	Added	Result	Qua	lifier	Unit		D	%Rec	Limits	RPD	Limi
1,4-Dioxane	0.90	J F1		30.0	11.1	F1		ug/L		_	34	51 - 153	5	16
	MSD	MSD	1											
Surrogate	%Recovery			Limits										
<u> </u>														

 1,2-Dichloroethane-d4 (Surr)
 100
 66 - 120

#### Analysis Batch: 595468

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-195671-2	MW-129_111323	Total/NA	Water	8260D	
MB 240-595468/7	Method Blank	Total/NA	Water	8260D	
LCS 240-595468/4	Lab Control Sample	Total/NA	Water	8260D	
240-195662-E-2 MS	Matrix Spike	Total/NA	Water	8260D	
240-195662-F-2 MSD	Matrix Spike Duplicate	Total/NA	Water	8260D	
Lab Sample ID	Client Sample ID	Ргер Туре	Matrix	Method	Prep Batch
Lab Sample ID 240-195671-1	Client Sample ID TRIP BLANK_135	Prep Type Total/NA	Matrix Water	Method 8260D	Prep Batch
•					Prep Batch
240-195671-1	TRIP BLANK_135	Total/NA	Water	8260D	Prep Batch
240-195671-1 240-195671-3	TRIP BLANK_135 MW-129S_111323	Total/NA Total/NA	Water Water	8260D 8260D	Prep Batch
240-195671-1 240-195671-3 MB 240-595559/7	TRIP BLANK_135 MW-129S_111323 Method Blank	Total/NA Total/NA Total/NA	Water Water Water	8260D 8260D 8260D	Prep Batch

#### Analysis Batch: 595687

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-195671-2	MW-129_111323	Total/NA	Water	8260D SIM	
240-195671-3	MW-129S_111323	Total/NA	Water	8260D SIM	
MB 240-595687/6	Method Blank	Total/NA	Water	8260D SIM	
LCS 240-595687/4	Lab Control Sample	Total/NA	Water	8260D SIM	
500-242543-C-3 MS	Matrix Spike	Total/NA	Water	8260D SIM	
500-242543-C-3 MSD	Matrix Spike Duplicate	Total/NA	Water	8260D SIM	

Client Samp	le ID: TRIP E	BLANK_135						Lab Sample ID	: 240-195671-1
ate Collected	: 11/13/23 00:0	0							Matrix: Water
Date Received	: 11/17/23 09:40	0							
-	Batch	Batch		Dilution	Batch			Prepared	
Prep Type	Туре	Method	Run	Factor	Number	Analyst	Lab	or Analyzed	
Total/NA	Analysis	8260D		1	595559	LEE	EET CLE	11/22/23 20:17	
Client Samp	le ID: MW-12	29_111323						Lab Sample ID	: 240-195671-2
Date Collected	: 11/13/23 14:3	5							Matrix: Water
Date Received	: 11/17/23 09:40	0							
-									
	Batch	Batch		Dilution	Batch			Prepared	
Prep Type	Туре	Method	Run	Factor	Number	Analyst	Lab	or Analyzed	
Total/NA	Analysis	8260D		1	595468	LEE	EET CLE	11/22/23 07:54	
Total/NA	Analysis	8260D SIM		1	595687	CS	EET CLE	11/25/23 06:42	
Client Samp	le ID: MW-12	295_111323						Lab Sample ID	: 240-195671-3
Date Collected	: 11/13/23 15:5	5							Matrix: Water
Date Received	: 11/17/23 09:40	D							
_	Batch	Batch		Dilution	Batch			Prepared	
								•	
Prep Type	Туре	Method	Run	Factor	Number	Analyst	Lab	or Analyzed	

1

595687 CS

EET CLE

11/25/23 07:06

Laboratory References:

Analysis

Total/NA

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

8260D SIM

**Eurofins Cleveland** 

#### **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
Dhio	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	T104704517-22-19	08-31-24
Virginia	NELAP	460175	09-14-24
West Virginia DEP	State	210	12-31-23

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

Te	<b>Chain</b> TestAmerica Laboratory location: Brighton 10448 Citatic	Chain of Custody Record 10448 Citation Drive. Suite 200 / Brighton, MI 48116 / 810-229-2763		TestAmerica
Client Contact	Regulatory program:	NPDES RCRA - Other		*
Company Name: Arcadis		Arome		TestAmerica   ahoratorias las-
Address: 28550 Cabot Drive, Suite 500	Client Project Manager: Kris Hinskey	Site Contact: Christina Weaver	Lab Contact: Mike DelMonico	COC No:
City/State/Zap: Novi, MI, 48377	Telephone: 248-994-2240	Telephone: 248-994-2240	Telephone: 330-497-9396	
	Email: kristoffer.hinskey@arcadis.com	Analysis Turnaround Time	Analyses	for 1 of 1 COCs
r none: 248-994-2240				
Project Name: Ford LTP Off-Site	Sampler Name,	ant from l		Walk-in client
Project Number: 30167538.402.04	Method of Shipment/Carrier:	6		Lab sampling
PO#30167538.402.04	Shipping/Fracking No:	-dr1D	560D 8560D	Job/SDG No:
	Matrix	)))=	iqe g ) ) ) ) CCE	
Sample Identification	Sample Date Sample Time Air	1/1-DCE 82 Composite Filtered Sa Other: Napoli Napoli HCI HCC H2SO4	1,4-D01,2,1-D01 Trans-1,2-L PCE 8260 Tinyi Chlori Tinyi Chlori Anyi Chlori	Sample Specific Notes / Special Instructions:
TRIP BLANK_ 135			× × ×	1 Trip Blank
MW-129-111323	11/13/24 1435 6	2 NG X	x x x x x x	3 VOAs for 8260D
mw-1295-11 1323	11/13/2 1555 6	6 N G X		
Pa				
ge 2				
20 0				
f 22				
		240-195671 Chain of Custody	Custody	
Possible Hazard Identification		Samole Disposal ( A fee may be ascessed if samula	este retained longe than 1 month.	
<ul> <li>V Non-Hazard Flammable Skin Irritant</li> <li>Sheeial Instructions/OC Bosonicommute &amp; Communication</li> </ul>	ritant Poison B Unknown	Return to Client	Archive For Months	1 V
Sumple Address: $3560i$ $4000000000000000000000000000000000000$	<b>パレー S</b> 1.00.com. Cadena 4,E203631			
Relinquished by: KPOF KuSDE	Company: Company: Date/Time: 1	1715 Received by: CLIC	Compary /	Date/Time: / 1.7.
Relinquished by:			OU OG VINCUCIO Company:	11/13/25 1715 Date/Time:
Relinquictiscoby:	TA Date/Time:	Received in Laboratory by:	Company: 6	Date/Time: Date/Time:
02000, TestAmerca Laborations, Inc. Al robit reserved				0X1 [X.1.1]
Taskineiss & Dasign <sup>14</sup> are trademake of Taskinenta: Laboratures, Inc. L				
1/2				

Darkover D. Hu	d Sample Receipt F	form/Narrative	Logi	n#:_19	5671
Barberton Facility					1 11
Client Arcad		Site Name		Cooler u	npacked by:
Cooler Received on	11-17-23	Opened on 1/-17-2	73		
FedEx: 1 <sup>st</sup> Grd Exp	UPS FAS Way	ypoint Client Drop Off Euro	fins Courier	Other	
Receipt After-hours: I		Sto	orage Location		
Eurofins Cooler #	Foam Box	x Client Cooler Box	Other		
Packing material u	ised: Bubble Wrap		e Other		
COOLANT:	Weilce Blue I				
1. Cooler temperature	upon receipt	2 See 3	Multiple Cooler F	om	
		<sup>7</sup> <sup>°</sup> C) Observed Cooler Temp.			ler Temp
2. Were tamper/custod	dy seals on the outside	e of the cooler(s)? If Yes Quantit	ty_ <u>3</u> ~70	No No	Tests that are not
		ooler(s) signed & dated?	 	s No NA	checked for pH by
-Were tamper/cus	tody seals on the bott	tle(s) or bottle kits (LLHg/MeHg)		s No MIS	Receiving:
-	stody seals intact and u	-	Ye	No No No 18	27 .
<ol><li>Shippers' packing sli</li></ol>			No	No T	VOAs Official Creation
1. Did custody papers a	accompany the sample	e(s)?	Ye	B No	Oil and Grease TOC
. Were the custody pa	pers relinquished & si	signed in the appropriate place?	Č.	No	100
-		samples clearly identified on the	COC? No	d No	
Did all bottles arrive		•	Ye	8 No	
		reconciled with the COC?		) No	<u>A.</u>
. For each sample, doe	es the COC specify pr	reservatives (Y/N), # of container	$s(\mathcal{Y}/N)$ , and $s$	umple type of g	rab/comp(Y/N)?
0. Were correct bottle(s			(Ye	No	
1. Sufficient quantity re	•	•	Yes	No	
2. Are these work share	•		Yes	No	
		d at the originating laboratory.		_	
3. Were all preserved s	•	t pH upon receipt?	Yes	No (NA) pł	Strip Lot# HC31671
4. Were VOAs on the				No	
5. Were air bubbles >6			_	NO NA	
		er(s)? Trip Blank Lot #	$\sim$		
		ſ	Yes	NO	•
	Hg trip blank present				r
7. Was a LL Hg or Me		by	via Verbal Vo		
7. Was a LL Hg or Me Contacted PM		by	via Verbal Vo	DICE MBII UUK	
7. Was a LL Hg or Me Contacted PM		by	via Verbal Vo		
7. Was a LL Hg or Me Contacted PM Concerning	Date			Samples proce	
7. Was a LL Hg or Me Contacted PM	Date				
7. Was a LL Hg or Me Contacted PM Concerning	Date				
7. Was a LL Hg or Me Contacted PM Concerning	Date		next page	Samples proce	essed by:
<ol> <li>7. Was a LL Hg or Me</li> <li>Contacted PM</li> <li>Concerning</li> <li>8. CHAIN OF CUSTO</li> </ol>	Date		next page		essed by:
<ol> <li>7. Was a LL Hg or Me</li> <li>Contacted PM</li> <li>Concerning</li> <li>8. CHAIN OF CUSTO</li> <li>8. CHAIN OF CUSTO</li> <li>9. SAMPLE CONDIT</li> </ol>	Date	SCREPANCIES additional	next page	Samples proce	essed by:
<ul> <li>7. Was a LL Hg or Me</li> <li>Contacted PM</li> <li>Concerning</li> <li>8. CHAIN OF CUSTO</li> <li>9. SAMPLE CONDITIAngle(s)</li> </ul>	Date	SCREPANCIES additional	next page	Samples proce	red.
<ol> <li>Was a LL Hg or Me</li> <li>Contacted PM</li> <li>Concerning</li> <li>CHAIN OF CUST(</li> <li>SAMPLE CONDIT</li> <li>simple(s)</li> <li>simple(s)</li> </ol>	Date DDY & SAMPLE DIS	SCREPANCIES additional	I next page	Samples proce	red.
<ol> <li>Was a LL Hg or Me</li> <li>Contacted PM</li> <li>Concerning</li> <li>CHAIN OF CUSTO</li> <li>SAMPLE CONDIT</li> <li>ample(s)</li> <li>ample(s)</li> <li>ample(s)</li> </ol>	Date	SCREPANCIES additional additional were received after the recomm	I next page	Samples proce	red.
7. Was a LL Hg or Me         Contacted PM         Concerning         B. CHAIN OF CUSTO         9. SAMPLE CONDIT         ample(s)         ample(s)         ample(s)         D. SAMPLE PRESERV	Date DDY & SAMPLE DIS	SCREPANCIES additional	I next page	Samples proce	red. ainer. fy PM)
<ol> <li>Was a LL Hg or Me</li> <li>Contacted PM</li> <li>Concerning</li> <li>CHAIN OF CUSTO</li> <li>SAMPLE CONDIT</li> <li>ample(s)</li> <li>ample(s)</li> <li>ample(s)</li> </ol>	Date DDY & SAMPLE DIS	SCREPANCIES additional	I next page	Samples proce	red.

£

Login#: 195671

Eurofins - Canto	on Sample Receipt Mi	ultiple Cooler Form	
IR Gun #	Observed	Corrected	
(Circle)	Temp °C	Temp °C	10
ir gun ø; <u>}</u>	1.8	2.9	Welke
IR GUN #: 99	1. (0.	2.7	Welke
R GUN #:	2.4	3.5	Weike
R GUN #:			Wet ice We
R GUN #:			Wet Ice We
R GUN #:		,	Wel ice Wa
R GUN 4:			Wet ice Wa
R GUN #:			Wet ice We
R GUN #:			Wel ice . We
R GVN 1:			Wet ice Wet
R GUN J:			Wellice Well
R GUN J:			Wet ico Wet
GUN 7:			Wet Ice

				Eurofins - Canto	n Sample Receipt	Multiple Cooler Form	
C	ooler D	escri	ption	IR Gun #	Observed	Corrected	Coolant
$\square$	(Ci	rcie)		(Circle)	Temp °C	Temp °C	(Circle)
ic	Client	lox	Other	IR GUN #;	1.8	2.9	Welke Blueke Dyke
er	Client	Box	Other	IR GUN #: 277	(°. (°.	27	Wet ice Blue ice Dy ice Water None
(K)	Client	lox	Other	IR GUN #:	2.4	3.5	Welke Blue Ice Dy ice Weler None
к	Client	Box	Ölher	IR GUN #:	<u> </u>		Wet ice Blue ice Bry ice Weter None
ю	Client	Box	Other	IR GUN #:			Wellice Sheelice Dryice Woler None
IC	Client	łox	Other	R GUN #:			Wellice Blue ice Dyke Water None
Ю	Client	łox	Other	IR GUN 4:			Wet ice Sive ice Dy ke Water None
ю	Client	łox	Ölher	IR GUN #:			Wellice Blue Sce Bylce Water Name
Ж	Client	łox	Other	IR GVN #:			Welice Blue Sce Bylce Weley Blane
ĸ	Client	łox	Other	1 GUN #:			Wellice Slue Sce Bylice Weller Bloce
8C	Clent	Jox	Other	IR GUN #:			Welice Blue lice Brylee Weller None
ĸ	Clent	iox	Other	# GUN #:			Wellice Blue Sce Bylce Water Mane
ĸ	Client	łox	<b>Other</b>	IR GUN #:			Wet Ice Blue Icie Bylce Water Mane
28	Clent	iox	Other	# GIN #:			Wellice She Ice Bylee Weller Blane
BC .	Clent	Jox	Other	IR GIN #:			Wellice Blue lice Bryte Weler Mene Wellice Blue lice Bryte
5C	Clent	łox	Other	X CON #:			Water Mone
K	Clent	lox	Other	IR GUN #:			Wat ice Sive ice by ice Water Name Wat ice Sive ice by ice
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38	Cleat	łox	Other	R GWI #:			Weler None Welice She ice Byte
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EC.	Clini	<b>Jo</b> x	Ölher	R GUN #:			Weter None Wette Dive Ice Dyte
5C	Clent	Jox	Ölher	X GWI F:		hallanna a fairigeacha fairle (canàisteoireanna ann an 1987). Tha	Weler None Welice Bluelice Dylo
EC	Client	Jox	Olher	R GWI F:			Water None Water None Water Dyta
<u>EC</u>	Client	·		# GVN #:			Water None Wet ice Blue ice Dry is
<u> </u>			Other	# GUN #:			Water Hone Watice Shuelce Dryks
<u>к</u>			Other	R GUN #:		an a	Water None Wet ice Blue ice Dy ite
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			Other	x GWI f:			Water None Wat Ice Sive Ice Dry Ice
			Olher Öhor	IR GUN #:			Water None Wet ice Sive ice Dry ice
К			Ölher Ölher	IR GUN #:			Water None Wet ice Sive ice Dry ice
K (			Other	R GUN #:			Water None Wellice Bluelice Drylce
IC (			Diher	IR GUN #:			Water None Wetice Blue Ice Dry Ice
							Water None Prature Excursion Form
						See Tempi	

14

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

## **DATA VERIFICATION REPORT**



November 28, 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: 195671-1 Sample date: 2023-11-13 Report received by CADENA: 2023-11-27 Initial Data Verification completed by CADENA: 2023-11-28 Number of Samples:3 Sample Matrices:Water and trip blank 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:

MS/MSD recovery outliers or sample duplicate RPD outliers were not determined using a client sample from this submittal for the test and QC batch noted so qualification was not required based on these sample-specific QC outliers: GCMS VOC QC batch 595687.

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

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: E203631

Laboratory: Eurofins Environment Testing LLC - Cleveland Laboratory Submittal: 195671-1

		Sample Name: Lab Sample ID: Sample Date:	-				MW-129_111323 2401956712 11/13/2023			MW-129S_111323 2401956713 11/13/2023				
				Report		Valid		Report		Valid		Report		Valid
	Analyte	Cas No.	Result	Limit	Units	Qualifier	Result	Limit	Units	Qualifier	Result	Limit	Units	Qualifier
GC/MS VOC														
<u>OSW-826</u>	50D													
	1,1-Dichloroethene	75-35-4	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	
	Tetrachloroethene	127-18-4	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	
	Trichloroethene	79-01-6	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	
<u>OSW-826</u>	<u>50DSIM</u>													
	1,4-Dioxane	123-91-1					ND	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 # 240-195671-1 CADENA Verification Report: 2023-11-28

Analyses Performed By: Eurofins Cleveland Barberton, Ohio

Report # 52164R Review Level: Tier III Project: 30167538.402.02

### **SUMMARY**

This data quality assessment summarizes the review of Sample Delivery Group (SDG) # 240-195671-1 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	nple ID Lab ID		Matrix Sample P		Analysis		
Sample ID		Matrix	Collection Date	Parent Sample	VOC	VOC SIM	
TRIP BLANK_135	240-195671-1	Water	11/13/2023		Х		
MW-129_111323	240-195671-2	Water	11/13/2023		Х	Х	
MW-129S_111323	240-195671-3	Water	11/13/2023		Х	Х	

#### DATA REVIEW

#### ANALYTICAL DATA PACKAGE DOCUMENTATION

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

	Items Reviewed	Rep	orted		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		X	
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 HCI

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

#### DATA REVIEW

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 REVIEW

#### DATA VALIDATION CHECKLIST FOR VOCs

VOCs: 8260D/8260D-SIM		orted		rmance ptable	Not Required
	No	Yes	No	Yes	Nequireu
GAS CHROMATOGRAPHY/MASS SPECTROMETRY (G	C/MS)				
Tier II Validation					
Holding times/Preservation		Х		X	
Tier III Validation		1		-	
System performance and column resolution		Х		X	
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		Х		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:	Dilip Kumar
SIGNATURE:	Dinter
DATE:	December 15, 2023

PEER REVIEW: Andrew Korycinski

DATE: December 18, 2023

## NO CORRECTIONS/QUALIFERS ADDED TO SAMPLE ANALYSIS DATA SHEETS



# CHAIN OF CUSTODY CORRECTED SAMPLE ANALYSIS DATA SHEETS



### Chain of Custody Record



TestAmerica Laboratory location: Brighton 10448 Citation Drive, Suite 200 / Brighton, MI 48116 / 810-229-2763	
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Client Contact	Regula	ory program:	DW	NPDES RCRA Othe		* * ,
Company Name: Arcadis	Client Project	Manager: Kris Hins	skev	Site Contact: Christina Weaver		TestAmerica Laboratories, Inc.
Address: 28550 Cabot Drive, Suite 500		-	sncy		Lab Contact: Mike DelMonico	COC No:
City/State/Zip: Novi, MI, 48377	Telephone: 248	-994-2240		Telephone: 248-994-2240	Telephone: 330-497-9396	4 -6 - 4 - 600
Phone: 248-994-2240	Email: kristoff	er.hinskey@arcadi	is.com	Analysis Turnaround Time	Analyses	1 of 1 COCs For lab use only
Project Name: Ford LTP Off-Site	Sampler Name	÷ / ).	1	TAT if different from below		Walk-in client
	16.	ent Il	USPEr	3 weeks 10 day ~ 2 weeks		
Project Number: 30167538.402.04	Method of Ship	ment/Carrier:	9	l week 2 days		Lab sampling
PO # 30167538.402.04	Shipping/Tracl	ting No:		l day l day	000 82600 6 82600 82600 SIN	Job/SDG No:
			Matrix		8260D CE 826 2-DCE 8 2-DCE 82 0D 0D 0D 0D 0D 0D 0D 0D 0D 0D 0D 0D 0D	
Sample Identification	Sample Date	Sample Time 🗟	Aqueous Sediment Solid Other:	H2S04 H1N03 HCI Nath Nath Nath Nath Nath Nath Nath Nath	1,1-DCE 8260D cis-1,2-DCE 8260D Trans-1,2-DCE 82600 PCE 8260D TCE 8260D TCE 8260D Trans-1,2-DCE 8260D Trans-1,2-DCE 8260D Trans-1,2-DCE 8260D T,1,4-Dioxane 8260D S	Sample Specific Notes / Special Instructions:
TRIP BLANK_ /35			1		X X X X X X X	1 Trip Blank
	11/11	110				3 VOAs for 8260D
MW-129-111323	11/13/2	31435	6	6 WG	XXXXXX	3 VOAs for 8260D 3 VOAs for 8260D SIM
MW-1295-111323	11/13/2	1555	6	6 86	XXXXXXX	₩.
P						
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4 <u>N</u>						
0						
420 of 1422			++++			
Ň						
				240-195671 Cha	in of Custody	
				╉┽┼┼┼╷╴┲╌┍╴╻		
Possible Hazard Identification ~ Non-Hazard Flammable Skin Irri	tant Poise	m B Um	nknown	Sample Disposal ( A fee may be assessed if Return to Client - Disposal By		
Special Instructions/QC Requirements & Comments:				Tatan to chent Disposal Dy	Lab Archive For Months	
Sample Address: 35601 Verchi Submit all results turough Cadena at jtomalia@cadenac	CG St o.com. Cadèna i	E203631				7 e -
Level IV Reporting require u.d.					•	10.
Relinquished by: Kent Kasper	Company:	clis	Date/Time:	1715 Received by: 1715 NOVI Cold	Storage Company:	Date/Time: 11/13/23 1715
Relinquished by:	Company: Ane	dis	Date/Time:	Received by:	Company:	Date/Time:
Relinquishedby:	Company;	1	Date/Time:	Received in Laboratory by:	N EE(H	11/16/23 107
- ON MADO	LEF(	H	11/16/23	(0)20	Company: EC	Date/Time: 11-17-17 940
©2008. TestAmenca Laborationes, Inc. TestAmenca & Design <sup>114</sup> are tratemarks of TestAmenca Laborationes, Inc.					1/	IIIIAS ITO

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#### Client Sample ID: TRIP BLANK\_135

#### Date Collected: 11/13/23 00:00

Date Received: 11/17/23 09:40

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1-Dichloroethene	1.0	U	1.0	0.49	ug/L			11/22/23 20:17	1
cis-1,2-Dichloroethene	1.0	U	1.0	0.46	ug/L			11/22/23 20:17	1
Tetrachloroethene	1.0	U	1.0	0.44	ug/L			11/22/23 20:17	1
trans-1,2-Dichloroethene	1.0	U	1.0	0.51	ug/L			11/22/23 20:17	1
Trichloroethene	1.0	U	1.0	0.44	ug/L			11/22/23 20:17	1
Vinyl chloride	1.0	U	1.0	0.45	ug/L			11/22/23 20:17	1
0	0/ 🗖	<b>O</b>	1				D	A I	D:/ E

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	111		62 - 137		11/22/23 20:17	1
4-Bromofluorobenzene (Surr)	99		56 - 136		11/22/23 20:17	1
Toluene-d8 (Surr)	101		78 - 122		11/22/23 20:17	1
Dibromofluoromethane (Surr)	97		73 - 120		11/22/23 20:17	1

#### Client Sample ID: MW-129 111323 Date Collected: 11/13/23 14:35 Date Received: 11/17/23 09:40

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,4-Dioxane	2.0	U	2.0	0.86	ug/L			11/25/23 06:42	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	97		66 - 120			-		11/25/23 06:42	1
-									
_ Method: SW846 8260D - Vo	olatile Organic	Compoun	ds by GC/MS						
Method: SW846 8260D - Vo Analyte	•	Compoun Qualifier	ds by GC/MS <sub>RL</sub>	MDL	Unit	D	Prepared	Analyzed	Dil Fac
	•	Qualifier	-	MDL	Unit ug/L	<u> </u>	Prepared	Analyzed	Dil Fac
Analyte	Result	Qualifier		MDL	ug/L	<u> </u>	Prepared	- <u> </u>	<b>Dil Fac</b> 1
Analyte 1,1-Dichloroethene	Result 1.0	Qualifier U U	RL 1.0	MDL 0.49 0.46	ug/L	<u> </u>	Prepared	11/22/23 07:54	<b>Dil Fac</b> 1 1 1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	111		62 - 137		11/22/23 07:54	1
4-Bromofluorobenzene (Surr)	98		56 - 136		11/22/23 07:54	1
Toluene-d8 (Surr)	99		78 - 122		11/22/23 07:54	1
Dibromofluoromethane (Surr)	99		73 - 120		11/22/23 07:54	1

1.0

1.0

0.44 ug/L

0.45 ug/L

1.0 U

1.0 U

#### Client Sample ID: MW-129S 111323 Date Collected: 11/13/23 15:55 Date Received: 11/17/23 09:40

Trichloroethene

Vinyl chloride

Method: SW846 8260D SIM - V	/olatile 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			11/25/23 07:06	1
Surrogate 1,2-Dichloroethane-d4 (Surr)	%Recovery 95	Qualifier	Limits 66 - 120			-	Prepared	Analyzed 11/25/23 07:06	Dil Fac

#### Lab Sample ID: 240-195671-1 Matrix: Water

Lab Sample ID: 240-195671-2

11/22/23 07:54

11/22/23 07:54

Lab Sample ID: 240-195671-3

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**Matrix: Water** 

11/27/2023

**Matrix: Water** 

### Client Sample ID: MW-129S\_111323 Date Collected: 11/13/23 15:55

Date Received: 11/17/23 09:40

### Lab Sample ID: 240-195671-3 Matrix: Water

Method: SW846 8260D - Vo	latile Organic	Compoun	ds by GC/MS						
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1-Dichloroethene	1.0	U	1.0	0.49	ug/L			11/22/23 12:52	1
cis-1,2-Dichloroethene	1.0	U	1.0	0.46	ug/L			11/22/23 12:52	1
Tetrachloroethene	1.0	U	1.0	0.44	ug/L			11/22/23 12:52	1
trans-1,2-Dichloroethene	1.0	U	1.0	0.51	ug/L			11/22/23 12:52	1
Trichloroethene	1.0	U	1.0	0.44	ug/L			11/22/23 12:52	1
Vinyl chloride	1.0	U	1.0	0.45	ug/L			11/22/23 12:52	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	108		62 - 137					11/22/23 12:52	1
4-Bromofluorobenzene (Surr)	97		56 - 136					11/22/23 12:52	1
Toluene-d8 (Surr)	98		78 - 122					11/22/23 12:52	1
Dibromofluoromethane (Surr)	94		73 - 120					11/22/23 12:52	1



**Environment Testing** 

# **ANALYTICAL REPORT**

## PREPARED FOR

Attn: Kristoffer Hinskey ARCADIS US Inc 28550 Cabot Drive Suite 500 Novi, Michigan 48377 Generated 12/1/2023 11:13:22 AM

### JOB DESCRIPTION

Ford LTP - Off Site

### **JOB NUMBER**

240-195665-1

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

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Generated 12/1/2023 11:13:22 AM

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Authorized for release by Michael DelMonico, Project Manager I Michael.DelMonico@et.eurofinsus.com (330)497-9396

# **Table of Contents**

Cover Page	1
Table of Contents	3
Definitions/Glossary	4
Case Narrative	5
Method Summary	6
Sample Summary	7
Detection Summary	8
Client Sample Results	9
Surrogate Summary	11
QC Sample Results	12
QC Association Summary	15
Lab Chronicle	16
Certification Summary	17
Chain of Custody	18

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Qualifiers		- 3
GC/MS VOA		
Qualifier	Qualifier Description	_ 4
U	Indicates the analyte was analyzed for but not detected.	
Glossary		5
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	0
CNF	Contains No Free Liquid	0
DER	Duplicate Error Ratio (normalized absolute difference)	
Dil Fac	Dilution Factor	9
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)	13
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	

- Relative Percent Difference, a measure of the relative difference between two points RPD
- TEF Toxicity Equivalent Factor (Dioxin)
- TEQ Toxicity Equivalent Quotient (Dioxin)
- TNTC Too Numerous To Count

### Job ID: 240-195665-1

#### Laboratory: Eurofins Cleveland

#### Narrative

Job Narrative 240-195665-1

Analytical test results meet all requirements of the associated regulatory program listed on the Accreditation/Certification Summary Page unless otherwise noted under the individual analysis. Data qualifiers are applied to indicate exceptions. Noncompliant quality control (QC) is further explained in narrative comments.

Matrix QC may not be reported if insufficient sample or site-specific QC samples were not submitted. In these situations, to demonstrate precision and accuracy at a batch level, a LCS/LCSD may be performed, unless otherwise specified in the method. Surrogate and/or isotope dilution analyte recoveries (if applicable) which are outside of the QC window are confirmed unless attributed to a dilution or otherwise noted in the narrative.

Regulated compliance samples (e.g. SDWA, NPDES) must comply with the associated agency requirements/permits.

#### Receipt

The samples were received on 11/17/2023 9:40 AM. Unless otherwise noted below, the samples arrived in good condition, and, where required, properly preserved and on ice. The temperatures of the 3 coolers at receipt time were 2.7°C, 2.9°C and 3.5°C

#### GC/MS VOA

Method 8260D: The continuing calibration verification (CCV) analyzed in batch 595564 was outside the method criteria for the following analyte(s): Vinyl chloride. A CCV standard at or below the reporting limit (RL) was analyzed with the affected samples and found to be acceptable. As indicated in the reference method, sample analysis may proceed; however, any detection for the affected analyte(s) is considered estimated.

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** 

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

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
240-195665-1	TRIP BLANK_128	Water	11/15/23 00:00	11/17/23 09:40
240-195665-2	MW-125S_111523	Water	11/15/23 12:35	11/17/23 09:40

**Detection Summary** 

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

### Client Sample ID: TRIP BLANK\_128

No Detections.

### Client Sample ID: MW-125S\_111523

No Detections.

**Eurofins Cleveland** 

Lab Sample ID: 240-195665-1

Lab Sample ID: 240-195665-2

Job ID: 240-195665-1

### Client Sample ID: TRIP BLANK\_128 Date Collected: 11/15/23 00:00

Date Received: 11/17/23 09:40

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			11/22/23 20:39	1
cis-1,2-Dichloroethene	1.0	U	1.0	0.46	ug/L			11/22/23 20:39	1
Tetrachloroethene	1.0	U	1.0	0.44	ug/L			11/22/23 20:39	1
trans-1,2-Dichloroethene	1.0	U	1.0	0.51	ug/L			11/22/23 20:39	1
Trichloroethene	1.0	U	1.0	0.44	ug/L			11/22/23 20:39	1
Vinyl chloride	1.0	U	1.0	0.45	ug/L			11/22/23 20:39	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	101		62 - 137			-		11/22/23 20:39	1
4-Bromofluorobenzene (Surr)	96		56 - 136					11/22/23 20:39	1
Toluene-d8 (Surr)	104		78 - 122					11/22/23 20:39	1
Dibromofluoromethane (Surr)	90		73 - 120					11/22/23 20:39	1

Job ID: 240-195665-1

### Lab Sample ID: 240-195665-1

Matrix: Water

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**Eurofins Cleveland** 

### Client Sample ID: MW-125S\_111523

Date Collected: 11/15/23 12:35 Date Received: 11/17/23 09:40

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac	
1,4-Dioxane	2.0	U	2.0	0.86	ug/L			11/28/23 14:11	1	
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac	
1,2-Dichloroethane-d4 (Surr)	95		66 - 120			-		11/28/23 14:11	1	
Method: SW846 8260D - Volat	ile Organic Comr	ounds by (	C/MS							
Analyte	• •	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac	
1,1-Dichloroethene	1.0	U	1.0	0.49	ug/L			11/22/23 21:04	1	1
cis-1,2-Dichloroethene	1.0	U	1.0	0.46	ug/L			11/22/23 21:04	1	
Tetrachloroethene	1.0	U	1.0	0.44	ug/L			11/22/23 21:04	1	
trans-1,2-Dichloroethene	1.0	U	1.0	0.51	ug/L			11/22/23 21:04	1	
Trichloroethene	1.0	U	1.0	0.44	ug/L			11/22/23 21:04	1	
Vinyl chloride	1.0	U	1.0	0.45	ug/L			11/22/23 21:04	1	
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac	
1,2-Dichloroethane-d4 (Surr)	96		62 - 137			-		11/22/23 21:04	1	
4-Bromofluorobenzene (Surr)	89		56 - 136					11/22/23 21:04	1	
Toluene-d8 (Surr)	100		78 - 122					11/22/23 21:04	1	
Dibromofluoromethane (Surr)	88		73 - 120					11/22/23 21:04	1	

12/1/2023

Job ID: 240-195665-1

Matrix: Water

Lab Sample ID: 240-195665-2

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

### Matrix: Water

				Percent Sur	rogate Recovery (Acce	ptance Limits)	
		DCA	BFB	TOL	DBFM		
ab Sample ID	Client Sample ID	(62-137)	(56-136)	(78-122)	(73-120)		
40-195494-F-27 MSD	Matrix Spike Duplicate	92	92	103	90		5
40-195494-I-27 MS	Matrix Spike	85	93	102	84		
40-195665-1	TRIP BLANK_128	101	96	104	90		
40-195665-2	MW-125S_111523	96	89	100	88		
CS 240-595564/4	Lab Control Sample	90	98	110	91		2
IB 240-595564/7	Method Blank	95	100	107	87		
Surrogate Legend	ne-d4 (Surr)						Ī
BFB = 4-Bromofluorobe							5
TOL = Toluene-d8 (Surr							
DBFM = Dibromofluoror	nethane (Surr)						
()	I - Volatile Organic Com						

#### Matrix: Water

		Percent Surrogate Recovery (Acceptance Limits)							
		DCA							
Lab Sample ID	Client Sample ID	(66-120)							
240-195665-2	MW-125S_111523	95							
500-242620-C-12 MS	Matrix Spike	95							
500-242620-C-12 MSD	Matrix Spike Duplicate	94							
LCS 240-595853/4	Lab Control Sample	93							
MB 240-595853/6	Method Blank	95							

#### Surrogate Legend

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

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

### Lab Sample ID: MB 240-595564/7

#### Matrix: Water Analysis Batch: 595564

	MB	МВ							
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1-Dichloroethene	1.0	U	1.0	0.49	ug/L			11/22/23 12:54	1
cis-1,2-Dichloroethene	1.0	U	1.0	0.46	ug/L			11/22/23 12:54	1
Tetrachloroethene	1.0	U	1.0	0.44	ug/L			11/22/23 12:54	1
trans-1,2-Dichloroethene	1.0	U	1.0	0.51	ug/L			11/22/23 12:54	1
Trichloroethene	1.0	U	1.0	0.44	ug/L			11/22/23 12:54	1
Vinyl chloride	1.0	U	1.0	0.45	ug/L			11/22/23 12:54	1

	MB	МВ				
Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	95		62 - 137		11/22/23 12:54	1
4-Bromofluorobenzene (Surr)	100		56 - 136		11/22/23 12:54	1
Toluene-d8 (Surr)	107		78 - 122		11/22/23 12:54	1
Dibromofluoromethane (Surr)	87		73 - 120		11/22/23 12:54	1

### Lab Sample ID: LCS 240-595564/4 Matrix: Water Analysis Batch: 595564

	Spike	LCS	LCS				%Rec	
Analyte	Added	Result	Qualifier	Unit	D	%Rec	Limits	
1,1-Dichloroethene	25.0	29.5		ug/L		118	63 - 134	
cis-1,2-Dichloroethene	25.0	28.4		ug/L		114	77 - 123	
Tetrachloroethene	25.0	27.2		ug/L		109	76 - 123	
trans-1,2-Dichloroethene	25.0	29.9		ug/L		119	75 - 124	
Trichloroethene	25.0	23.9		ug/L		95	70 - 122	
Vinyl chloride	12.5	13.0		ug/L		104	60 - 144	

	LCS	LCS	
Surrogate	%Recovery	Qualifier	Limits
1,2-Dichloroethane-d4 (Surr)	90		62 - 137
4-Bromofluorobenzene (Surr)	98		56 - 136
Toluene-d8 (Surr)	110		78 - 122
Dibromofluoromethane (Surr)	91		73 - 120

### Lab Sample ID: 240-195494-F-27 MSD Matrix: Water Analysis Batch: 595564

-	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	24.5		ug/L		98	56 - 135	12	26
cis-1,2-Dichloroethene	1.0	U	25.0	26.4		ug/L		105	66 - 128	10	14
Tetrachloroethene	1.0	U	25.0	27.6		ug/L		110	62 - 131	2	20
trans-1,2-Dichloroethene	1.0	U	25.0	24.0		ug/L		96	56 - 136	2	15
Trichloroethene	1.0	U	25.0	24.1		ug/L		97	61 - 124	4	15
Vinyl chloride	1.0	U	12.5	12.0		ug/L		96	43 - 157	8	24

	MSD	MSD	
Surrogate	%Recovery	Qualifier	Limits
1,2-Dichloroethane-d4 (Surr)	92		62 - 137
4-Bromofluorobenzene (Surr)	92		56 - 136
Toluene-d8 (Surr)	103		78 - 122

### Eurofins Cleveland

Job ID: 240-195665-1

Prep Type: Total/NA

**Client Sample ID: Method Blank** 

### Client Sample ID: Lab Control Sample Prep Type: Total/NA

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

10

Project/Site: Ford LTP - Off Site

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

Matrix: Water Analysis Batch: 595564	-F-27 MSD						Cheft	Sample IL	): Matrix Spike D Prep Type:	
Surrogate	MSD M %Recovery C		Limits							
Dibromofluoromethane (Surr)	90		73 - 120							
Lab Sample ID: 240-195494 Matrix: Water	-I-27 MS							Client	Sample ID: Mati Prep Type:	
Analysis Batch: 595564										
	Sample S	ample	Spike	MS	MS				%Rec	
Analyte	Result		Added	Result	Qualifier	Unit		D %Rec	Limits	
1,1-Dichloroethene	1.0 L		25.0	27.5		ug/L		110	56 - 135	
cis-1,2-Dichloroethene	1.0 L		25.0	23.7		ug/L		95	66 - 128	
Tetrachloroethene	1.0 L		25.0	28.1		ug/L		113	62 - 131	
trans-1,2-Dichloroethene	1.0 L		25.0	23.4		ug/L		94	56 - 136	
Trichloroethene	1.0 L	I	25.0	23.2		ug/L		93	61 - 124	
Vinyl chloride	1.0 L	I	12.5	11.1		ug/L		89	43 - 157	
	MS M	IS								
Surrogate	%Recovery 0	ualifier	Limits							
1,2-Dichloroethane-d4 (Surr)	85		62 - 137							
4-Bromofluorobenzene (Surr)	93		56 - 136							
Toluene-d8 (Surr)	102		78 - 122							
Lab Sample ID: MB 240-595		Compou	nds (GC/MS)					Client S	ample ID: Metho	
Lab Sample ID: MB 240-595 Matrix: Water	5853/6		nds (GC/MS)					Client S	ample ID: Metho Prep Type:	
Lab Sample ID: MB 240-595 Matrix: Water Analysis Batch: 595853	5853/6	1B MB			MDL Unit		D		Prep Type:	Total/N
Lab Sample ID: MB 240-595 Matrix: Water Analysis Batch: 595853 <sup>Analyte</sup>	5853/6				MDL Unit 0.86 ug/L		D	Client S Prepared		Total/N
Lab Sample ID: MB 240-595 Matrix: Water Analysis Batch: 595853 Analyte	5853/6 Res	<b>IB MB</b> ult Qualifien 2.0 U			MDL Unit 0.86 ug/L		_ <u>D</u>		Prep Type: Analyzed	Total/N
Lab Sample ID: MB 240-595 Matrix: Water Analysis Batch: 595853 Analyte 1,4-Dioxane	5853/6 <u>Res</u>	IB MB ult Qualifier 2.0 U IB MB	RL 2.0				_ <u>D</u>	Prepared	Analyzed           11/28/23 05:23	Total/N
Lab Sample ID: MB 240-595 Matrix: Water Analysis Batch: 595853 Analyte 1,4-Dioxane Surrogate	5853/6 Res //	IB MB ult Qualifier 2.0 U IB MB ery Qualifier					_ D		Analyzed 11/28/23 05:23 Analyzed	Dil Fa
Lab Sample ID: MB 240-595 Matrix: Water Analysis Batch: 595853 Analyte 1,4-Dioxane Surrogate	5853/6 Res //	IB MB ult Qualifier 2.0 U IB MB	RL 2.0				_ <u>D</u>	Prepared	Analyzed           11/28/23 05:23	Dil Fa
Lab Sample ID: MB 240-595 Matrix: Water Analysis Batch: 595853 Analyte 1,4-Dioxane Surrogate 1,2-Dichloroethane-d4 (Surr)	5853/6 Res / / %Recover	IB MB ult Qualifier 2.0 U IB MB ery Qualifier						Prepared Prepared	Analyzed           11/28/23 05:23           Analyzed           11/28/23 05:23	Total/N Dil Fa Dil Fa
Lab Sample ID: MB 240-595 Matrix: Water Analysis Batch: 595853 Analyte 1,4-Dioxane Surrogate 1,2-Dichloroethane-d4 (Surr) Lab Sample ID: LCS 240-59	5853/6 Res / / %Recover	IB MB ult Qualifier 2.0 U IB MB ery Qualifier						Prepared Prepared	Analyzed           11/28/23 05:23           Analyzed           11/28/23 05:23           Analyzed           11/28/23 05:23           EID: Lab Control	Total/N. Dil Fa Dil Fa
Lab Sample ID: MB 240-595 Matrix: Water Analysis Batch: 595853 Analyte 1,4-Dioxane Surrogate 1,2-Dichloroethane-d4 (Surr) Lab Sample ID: LCS 240-59 Matrix: Water	5853/6 Res / / %Recover	IB MB ult Qualifier 2.0 U IB MB ery Qualifier						Prepared Prepared	Analyzed           11/28/23 05:23           Analyzed           11/28/23 05:23	Total/N Dil Fa Dil Fa
Lab Sample ID: MB 240-595 Matrix: Water Analysis Batch: 595853 Analyte 1,4-Dioxane Surrogate 1,2-Dichloroethane-d4 (Surr) Lab Sample ID: LCS 240-59 Matrix: Water	5853/6 Res / / %Recover	IB MB ult Qualifier 2.0 U IB MB ery Qualifier	RL 2.0 Limits 66 - 120	LCS	0.86 ug/L			Prepared Prepared	Analyzed           11/28/23 05:23           Analyzed           11/28/23 05:23           11/28/23 05:23           ElD: Lab Control Prep Type:	Total/N Dil Fa Dil Fa
Lab Sample ID: MB 240-595 Matrix: Water Analysis Batch: 595853 Analyte 1,4-Dioxane Surrogate 1,2-Dichloroethane-d4 (Surr) Lab Sample ID: LCS 240-59 Matrix: Water Analysis Batch: 595853	5853/6 Res / / %Recover	IB MB ult Qualifier 2.0 U IB MB ery Qualifier	RL           2.0		0.86 ug/L	Unit	Clie	Prepared Prepared ent Sample	Analyzed           11/28/23 05:23           Analyzed           11/28/23 05:23           ID: Lab Control Prep Type:           %Rec	Total/N, Dil Fa Dil Fa
Lab Sample ID: MB 240-595 Matrix: Water Analysis Batch: 595853 Analyte 1,4-Dioxane <i>Surrogate</i> 1,2-Dichloroethane-d4 (Surr) Lab Sample ID: LCS 240-59 Matrix: Water Analysis Batch: 595853 Analyte	5853/6 Res / / %Recover	IB MB ult Qualifier 2.0 U IB MB ery Qualifier	RL 2.0 <i>Limits</i> 66 - 120		0.86 ug/L	- Unit ug/L	Clie	Prepared Prepared	Analyzed           11/28/23 05:23           Analyzed           11/28/23 05:23           11/28/23 05:23           ElD: Lab Control Prep Type:	Total/N, Dil Fa Dil Fa
Lab Sample ID: MB 240-595 Matrix: Water Analysis Batch: 595853 Analyte 1,4-Dioxane <i>Surrogate</i> 1,2-Dichloroethane-d4 (Surr) Lab Sample ID: LCS 240-59 Matrix: Water Analysis Batch: 595853 Analyte	5853/6 	IB MB ult Qualifien 2.0 U IB MB ery Qualifien 95	RL           2.0           Limits           66 - 120           Spike           Added	Result	0.86 ug/L	- Unit ug/L	Clie	Prepared Prepared ent Sample	Prep Type: Analyzed 11/28/23 05:23 Analyzed 11/28/23 05:23 D: Lab Control Prep Type: %Rec Limits	Total/N, Dil Fa Dil Fa
Lab Sample ID: MB 240-595 Matrix: Water Analysis Batch: 595853 Analyte 1,4-Dioxane <i>Surrogate</i> 1,2-Dichloroethane-d4 (Surr) Lab Sample ID: LCS 240-59 Matrix: Water Analysis Batch: 595853 Analyte 1,4-Dioxane	5853/6 Res // // // // // // // // // /	AB MB ult Qualifien 2.0 U AB MB my Qualifien 95	RL           2.0           Limits           66 - 120           Spike           Added           10.0	Result	0.86 ug/L		Clie	Prepared Prepared ent Sample	Prep Type: Analyzed 11/28/23 05:23 Analyzed 11/28/23 05:23 D: Lab Control Prep Type: %Rec Limits	Total/N/ Dil Fa Dil Fa
Lab Sample ID: MB 240-595 Matrix: Water Analysis Batch: 595853 Analyte 1,4-Dioxane <i>Surrogate</i> 1,2-Dichloroethane-d4 (Surr) Lab Sample ID: LCS 240-59 Matrix: Water Analysis Batch: 595853 Analyte 1,4-Dioxane Surrogate	5853/6 Res %Recove 5853/4 LCS L %Recovery C	IB MB ult Qualifien 2.0 U IB MB ery Qualifien 95	RL           2.0           Limits           66 - 120           Spike           Added           10.0           Limits	Result	0.86 ug/L		Clie	Prepared Prepared ent Sample	Prep Type: Analyzed 11/28/23 05:23 Analyzed 11/28/23 05:23 D: Lab Control Prep Type: %Rec Limits	Total/N, Dil Fa Dil Fa
Lab Sample ID: MB 240-595 Matrix: Water Analysis Batch: 595853 Analyte 1,4-Dioxane <i>Surrogate</i> 1,2-Dichloroethane-d4 (Surr) Lab Sample ID: LCS 240-59 Matrix: Water Analysis Batch: 595853 Analyte 1,4-Dioxane Surrogate	5853/6 Res // // // // // // // // // /	AB MB ult Qualifien 2.0 U AB MB my Qualifien 95	RL           2.0           Limits           66 - 120           Spike           Added           10.0	Result	0.86 ug/L		Clie	Prepared Prepared ent Sample	Prep Type: Analyzed 11/28/23 05:23 Analyzed 11/28/23 05:23 D: Lab Control Prep Type: %Rec Limits	Total/N, Dil Fa Dil Fa
Lab Sample ID: MB 240-595 Matrix: Water Analysis Batch: 595853 Analyte 1,4-Dioxane <i>Surrogate</i> 1,2-Dichloroethane-d4 (Surr) Lab Sample ID: LCS 240-59 Matrix: Water Analysis Batch: 595853 Analyte 1,4-Dioxane <i>Surrogate</i> 1,2-Dichloroethane-d4 (Surr)	5853/6 Res // // // // // // // // // /	AB MB ult Qualifien 2.0 U AB MB my Qualifien 95	RL           2.0           Limits           66 - 120           Spike           Added           10.0           Limits	Result	0.86 ug/L		Clie	Prepared Prepared ent Sample D %Rec 104	Analyzed           11/28/23 05:23           Analyzed           11/28/23 05:23           ID: Lab Control           Prep Type:           %Rec           Limits           80 - 122	Total/N,   Dil Fa ] Sampl Total/N,
Lab Sample ID: MB 240-595 Matrix: Water Analysis Batch: 595853 Analyte 1,4-Dioxane <i>Surrogate</i> 1,2-Dichloroethane-d4 (Surr) Lab Sample ID: LCS 240-59 Matrix: Water Analysis Batch: 595853 Analyte 1,4-Dioxane <i>Surrogate</i> 1,2-Dichloroethane-d4 (Surr) Lab Sample ID: 500-242620	5853/6 Res // // // // // // // // // /	AB MB ult Qualifien 2.0 U AB MB my Qualifien 95	RL           2.0           Limits           66 - 120           Spike           Added           10.0           Limits	Result	0.86 ug/L		Clie	Prepared Prepared ent Sample D %Rec 104	Analyzed           11/28/23 05:23           Analyzed           11/28/23 05:23           ID: Lab Control           Prep Type:           %Rec           Limits           80 - 122           Sample ID: Math	Total/N, Dil Fa Dil Fa I Sampl Total/N,
Lab Sample ID: MB 240-595 Matrix: Water Analysis Batch: 595853 Analyte 1,4-Dioxane <i>Surrogate</i> 1,2-Dichloroethane-d4 (Surr) Lab Sample ID: LCS 240-59 Matrix: Water Analysis Batch: 595853 Analyte 1,4-Dioxane <i>Surrogate</i> 1,2-Dichloroethane-d4 (Surr) Lab Sample ID: 500-242620 Matrix: Water	5853/6 Res // // // // // // // // // /	AB MB ult Qualifien 2.0 U AB MB my Qualifien 95	RL           2.0           Limits           66 - 120           Spike           Added           10.0           Limits	Result	0.86 ug/L		Clie	Prepared Prepared ent Sample D %Rec 104	Analyzed           11/28/23 05:23           Analyzed           11/28/23 05:23           ID: Lab Control           Prep Type:           %Rec           Limits           80 - 122	Total/N/ Dil Fa Dil Fa I Sample Total/N/
Lab Sample ID: MB 240-595 Matrix: Water Analysis Batch: 595853 Analyte 1,4-Dioxane <i>Surrogate</i> 1,2-Dichloroethane-d4 (Surr) Lab Sample ID: LCS 240-59 Matrix: Water Analysis Batch: 595853 Analyte 1,4-Dioxane <i>Surrogate</i> 1,2-Dichloroethane-d4 (Surr) Lab Sample ID: 500-242620 Matrix: Water	5853/6 Res // // // // // // // // // /	AB MB ult Qualifien 2.0 U AB MB ery Qualifien 95 CS Qualifier	RL           2.0           Limits           66 - 120           Spike           Added           10.0           Limits           66 - 120	Result 10.4	0.86 ug/L LCS Qualifier		Clie	Prepared Prepared ent Sample D %Rec 104	Prep Type: Analyzed 11/28/23 05:23 Analyzed 11/28/23 05:23 D: Lab Control Prep Type: %Rec Limits 80 - 122 Sample ID: Matu Prep Type:	Total/N/ Dil Fa Dil Fa I Sample Total/N/
Analysis Batch: 595853 Analyte 1,4-Dioxane Surrogate 1,2-Dichloroethane-d4 (Surr) Lab Sample ID: LCS 240-59 Matrix: Water Analysis Batch: 595853 Analyte 1,4-Dioxane Surrogate 1,2-Dichloroethane-d4 (Surr) Lab Sample ID: 500-242620	5853/6 Res // // // // // // // // // /	AB MB ult Qualifier AB MB ery Qualifier 95 CS Qualifier ample	RL           2.0           Limits           66 - 120           Spike           Added           10.0           Limits	Result 10.4	0.86 ug/L		Clie	Prepared Prepared ent Sample D %Rec 104	Analyzed           11/28/23 05:23           Analyzed           11/28/23 05:23           ID: Lab Control           Prep Type:           %Rec           Limits           80 - 122           Sample ID: Math	Total/N/ Dil Fa Dil Fa I Sample Total/N/

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

	MS	MS									
Surrogate	%Recovery	Qualifier	Limits								
1,2-Dichloroethane-d4 (Surr)	95		66 - 120								
Lab Sample ID: 500-242620-	C-12 MSD					c	lient Sa	ample IC	): Matrix Sp	oike Dur	olicate
Matrix: Water									Prep 1	Type: To	tal/NA
Analysis Batch: 595853											
	Sample	Sample	Spike	MSD	MSD				%Rec		RPD
Analyte	Result	Qualifier	Added	Result	Qualifier	Unit	D	%Rec	Limits	RPD	Limit
1,4-Dioxane	40		10.0	52.8		ug/L		133	51 - 153	7	16
	MSD	MSD									
Surrogate	%Recovery	Qualifier	Limits								
1,2-Dichloroethane-d4 (Surr)	94		66 - 120								

### GC/MS VOA

### Analysis Batch: 595564

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-195665-1	TRIP BLANK_128	Total/NA	Water	8260D	
240-195665-2	MW-125S_111523	Total/NA	Water	8260D	
MB 240-595564/7	Method Blank	Total/NA	Water	8260D	
_CS 240-595564/4	Lab Control Sample	Total/NA	Water	8260D	
240-195494-F-27 MSD	Matrix Spike Duplicate	Total/NA	Water	8260D	
240-195494-I-27 MS	Matrix Spike	Total/NA	Water	8260D	
nalysis Batch: 595853	ł				
Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
Lab Sample ID 240-195665-2	Client Sample ID MW-125S_111523	Total/NA	Water	8260D SIM	Prep Batch
Lab Sample ID 240-195665-2 MB 240-595853/6	Client Sample ID				Prep Batch
nalysis Batch: 595853 Lab Sample ID 240-195665-2 MB 240-595853/6 LCS 240-595853/4 500-242620-C-12 MS	Client Sample ID MW-125S_111523 Method Blank	Total/NA Total/NA	Water Water	8260D SIM 8260D SIM	Prep Batch

**12** 13

#### Client Sample ID: TRIP BLANK\_128 Lab Sample ID: 240-195665-1 Date Collected: 11/15/23 00:00 Matrix: Water Date Received: 11/17/23 09:40 Dilution Batch Batch Batch Prepared Prep Type Туре Method Run Factor Number Analyst Lab or Analyzed Total/NA 8260D 595564 LEE EET CLE 11/22/23 20:39 Analysis 1 Client Sample ID: MW-125S\_111523 Lab Sample ID: 240-195665-2 Date Collected: 11/15/23 12:35 Matrix: Water Date Received: 11/17/23 09:40

	Batch	Batch		Dilution	Batch			Prepared
Ргер Туре	Туре	Method	Run	Factor	Number	Analyst	Lab	or Analyzed
Total/NA	Analysis	8260D		1	595564	LEE	EET CLE	11/22/23 21:04
Total/NA	Analysis	8260D SIM		1	595853	CS	EET CLE	11/28/23 14:11

#### Laboratory References:

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

Eurofins Cleveland

### **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	T104704517-22-19	08-31-24
Virginia	NELAP	460175	09-14-24
West Virginia DEP	State	210	12-31-23

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

1 est/ Commany Name: Arcadic	LESIAMERICA LABORATORY IOCATION: DIVUNUT 10440 CHAUGO LUTVE, SUITE 2UV / BIGFITON, MI 48116 / 810-229-2763	n Urive, suite 2007 Brighton, MI 48116 / 810-229-	2/63	HOHAA WARA IN HIGH
Company Manc, At Caulo	Client Project Manager: Kris Hinskey	Site Contact: Christina Weaver	ll ah Contact: Milia DalMonico.	TestAmerica Lab
Address: 28550 Cabot Drive, Suite 500			Lab Contact, Minke Delivibilico	
City/State/Zip: Novi, MI, 48377	Telephone: 248-994-2240	Telephone: 248-994-2240	Telephone: 330-497-9396	
Phone: 248-994-2240	Email: kristoffer.hinskey@arcadis.com	Anarysis Turnaround Time	Analyses	For lab use only
Project Name: Ford LTP Off-Site	Sampler Name: MCIMC Dillord	ent from b		Walk-in chent
Project Number: 30167538.402.04	Method of Shipment/Carrier:	6		Lab sampling
PO# 30167538.402.04	Shipping/Tracking No:	Grab	8260D	Job/SDG No:
	Marrix	( <b>)_</b> m	ouiqe i 0D 55-DCE	
Sample Identification	Sample Date Sample Time Air Air	4 <sup>1</sup> <sup>1</sup> -DCE Couboat Milfered Dipet: N <sup>a</sup> OH N <sup>a</sup> OH HCI HCJ HZO <del>4</del>	cis-1,2-D Trans-1,2 PCE 8266 Vinyl Chle Vinyl Chle 1,4-Dioxa	Sample Spect Spectal Insti
				1 Trip Blan
* MW-755-111523	11/15/23/2255 6	C NGX	XXXXXX	3 VOAs for 8: 3 VOAs for 8:
Pag				
e 18				
of 2				
0				
		240-195665 Chain of Custody		
				N. VELL JUN
Possible Hazard Identification	Pc	Sample Disposal ( A fee may be assessed if samples are retained longer than 1 month) Return to Client iv Disnosel Bv J ah	les are retained longer than 1 month)	AVAN AVAN
Special Instructions/QC Requirements & Comments: Sample Address:	≯	お		
Submit all results through Cadena at jtomalia@cadenaco.com. Cadena #E203631 Level IV Reporting requested.				
Relinquished by alerium Porter	CARENT CGOLS PARE/INE 123 1330	Received by: COLO	STORON CARONIC	Date/Time:
Relinquished by:	S Date/	Received by Received by	Company:	Date/Time
Relinquished by:	Time:	Received in Laboratory by:	Company:	10
20008. Testkrendia Laboratrias, hrv. Ali tytika reasrvat. Testkrendia 5. Diagn. 14. an betermatis of Testkrenda Laboratories, Inc.				
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LESTAMETICA LABORATORY IOCATION: DIIJUIUI ---- 10440 UIGIUON DIIVE, SUITE ZUU / BIIGITON, MI 48116 / 810-229-2/63

/2023

Eurofins - Cleveland Sample Receipt Form/Narrative	Login # :_ 195/065
Barberton Facility	
Client Arcadi's Site Name	Cooler unpacked by:
Cooler Received on $1/-17-23$ Opened on $1/-17-23$	
FedEx: 1 <sup>st</sup> Grd Exp UPS FAS Waypoint Client Drop Off Eurofins Con	urier Other
Receipt After-hours: Drop-off Date/Time Storage Lo	
Eurofins Cooler # /= C Foam Box Client Cooler Box Other	
Packing material used: Bubble Wrap Foam Plastic Bag None Of	her
COOLANT: Weilce Blue Ice Dry Ice Water None	
1. Cooler temperature upon receipt	Cooler Form
IR GUN # $2/$ (CF $+0.2$ °C) Observed Cooler Temp.	C Corrected Cooler Temp°C
2. Were tamper/custody seals on the outside of the cooler(s)? If Yes Quantity	Yes No Trate that are not
-Were the seals on the outside of the cooler(s) r in res quantity	
-Were tamper/custody seals on the bottle(s) or bottle kits (LLHg/MeHg)?	Yes No NA checked for pH by Yes No MT Receiving:
-Were tamper/custody seals intact and uncompromised?	Yes No No 12 22
3. Shippers' packing slip attached to the cooler(s)?	Yes No TI-18 VOAs
4. Did custody papers accompany the sample(s)?	Yes No Oll and Grease
<ol> <li>Were the custody papers relinquished &amp; signed in the appropriate place?</li> </ol>	TOC TOC
<ol> <li>Was/were the person(s) who collected the samples clearly identified on the COC?</li> </ol>	Ye No
7. Did all bottles arrive in good condition (Unbroken)?	Yes No
8. Could all bottle labels (ID/Date/Time) be reconciled with the COC?	Ner No
9. For each sample, does the COC specify preservatives (Y/N), # of containers (Y/N),	and sample type of grab/comp(Y/N)?
10. Were correct bottle(s) used for the test(s) indicated?	Yes No
11. Sufficient quantity received to perform indicated analyses?	Yes) No
12. Are these work share samples and all listed on the COC?	Yes No
If yes, Questions 13-17 have been checked at the originating laboratory.	•
13. Were all preserved sample(s) at the correct pH upon receipt?	Yes No (NA) pH Strip Lot# HC316719
14. Were VOAs on the COC?	Xes No
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 Ver	bal Voice Mail Other
Concerning	
18. CHAIN OF CUSTODY & SAMPLE DISCREPANCIES  additional next pa	age Samples processed by:
	Be Dampies protecter - ,
· · · · · · · · · · · · · · · · · · ·	
19. SAMPLE CONDITION	
Sample(s) were received after the recommended	holding time had expired.
Sample(s) were rece	eived in a broken container.
Sample(s) were received with bubble >6 m	
20. SAMPLE PRESERVATION	
	a a a la l
Sample(s)	e further preserved in the laboratory.
reserved:rreservative(s) added/Lot number(s):	
VOA Sample Preservation - Date/Time VOAs Frozen:	
-	

			19561	5
Login	雾	;	1-1301	<u></u>

	Eurofins - Canton			1 A- 1-1
Cooler Description	IR Gun # (Circle)	Observed	Corrected	Coolant (Circle)
(Circle)		Temp °C	Temp °C	Welke Blue ke Dyl
EC) Client Box Other	IR GUN #;	<u> </u>		Water None
EC Client Box Other	IR GUN #: 222	(o	2.7	Wellice Blue Ice Dy k
IC Client Box Other		D'EIT	3.5	Welke Blue Ice Dyk Woler None
tC Clent Box Other	IR GUN 8:			Welke Blue Ice Byk
	IR GUN #:			Water None Wet ice Blue ice Dylc
tC Client Box Other		and a state of the s		Water None
EC Client Box Other	IR GUN #:			Wellice Blue ice Dylc Water None
EC Client Box Other	IR GUN 4:	1		Wellice Blue Ice Dy Ice Water None
BC Client Box Other	IR GUN 4:			Welice Sive ice by ice Water None
IC Client Box Other	IR GUN #:			Wellice Blue lice By Ice
	1 GUN #:			Water None Wette She tee Ayles
	R GUN #:			Weler Hone Welice Blue ice Bylce
EC Client Box Other				Weber Hene Weber Blue Sce Bylce
BC Client Box Other	ir cun f:			Water None
BC Client Box Other	IR GUN #:			Wellice Dive Ice Byle Water None
EC Clent Box Other	# GUN #:			Welice Sive Ice Byles Weler None
EC Clent Box Other	1 CON 5:			Wellice Blue Ice Byke Water Hone
BC Client Box Other	X GIN #:			Wellice Dive Ice Dylce
BC Client Box Other	# GUN #:			Welte Sive Ice Byte
	R GUN #:			Water None Wellice Divelice Dyke
EC Client Box Other	R GWI f:			Weter None Wettee Sive Ice Byke
BC Client Box Other				Weler None
BC Client Box Other	1 GUN #:			Wellice Blue Ice Dryke Weller Mone
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BC Client Box Other	IR GWN F:			Weler None
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ic client Box Other	IR GUN #:			Wet ice Bive ice Dry ice
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C Client Box Other	R GVN #:			Water None
C Client Box Other	R GUN #:		1	fel ice dive ice Dry ice Water None
C Clent Box Other	# GUN #:		1	lel ice Blue ice Dry ice Water None

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

### **DATA VERIFICATION REPORT**



December 04, 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: 195665-1 Sample date: 2023-11-15 Report received by CADENA: 2023-12-04 Initial Data Verification completed by CADENA: 2023-12-04 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.

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.

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: 195665-1

		Sample Name: Lab Sample ID: Sample Date:	TRIP BLA 2401956 11/15/2	- 6651	3		MW-125 2401956 11/15/2			
				Report		Valid		Report		Valid
	Analyte	Cas No.	Result	Limit	Units	Qualifier	Result	Limit	Units	Qualifier
GC/MS VOC										
<u>OSW-826</u>	<u>DC</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	
<u>OSW-826</u>	DDSIM									
	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 # 240-195665-1 CADENA Verification Report: 2023-12-04

Analyses Performed By: Eurofins Cleveland Barberton, Ohio

Report # 52314R Review Level: Tier III Project: 30167538.402.02

### **SUMMARY**

This data quality assessment summarizes the review of Sample Delivery Group (SDG) # 240-195665-1 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	Barant Sampla	Ana	lysis
Sample ID		Matrix	Collection Date	Parent Sample	VOC	VOC SIM
TRIP BLANK_128	240-195665-1	Water	11/15/2023		Х	
MW-125S_111523	240-195665-2	Water	11/15/2023		Х	Х

### DATA REVIEW

### ANALYTICAL DATA PACKAGE DOCUMENTATION

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

	Items Reviewed	Rep	orted		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		X	
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_128 MW-125S_111523	Continuing Calibration Verification %D	Vinyl chloride	+27.4%

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		
	KKF <0.05	Detect	J		
Initial and Continuing	RRF <0.01 <sup>1</sup>	Non-detect	R		
Calibration	KKF <0.01	Detect	J		
	RRF >0.05 or RRF >0.01 <sup>1</sup>	Non-detect	No. Action		
		Detect	No Action		

### DATA REVIEW

Initial/Continuing	Criteria	Sample Result	Qualification
	% DCD 20% as a correlation coofficient	Non-detect	UJ
Initial Calibratian	%RSD > 20% or a correlation coefficient <0.99	Detect	J
Initial Calibration	itial Calibration		
	%RSD > 90%	Detect	J
		Non-detect	UJ
	%D >20% (increase in sensitivity)	Detect	J
		Non-detect	UJ
Continuing Calibration	%D >20% (decrease in sensitivity)	Detect	J
		Non-detect	R
	%D > 90% (increase/decrease in sensitivity)	Detect	J

Note:

<sup>1</sup>RRF 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.

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 REVIEW

### DATA VALIDATION CHECKLIST FOR VOCs

VOCs: 8260D/8260D-SIM	Rep	orted		rmance ptable	Not Required
	No	Yes	No	Yes	Nequireu
GAS CHROMATOGRAPHY/MASS SPECTROMETRY (G	C/MS)				
Tier II Validation					
Holding times/Preservation		Х		X	
Tier III Validation		1			
System performance and column resolution		Х		X	
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		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:	December 19, 2023

PEER REVIEW: Andrew Korycinski

DATE: December 20, 2023

# CHAIN OF CUSTODY CORRECTED SAMPLE ANALYSIS DATA SHEETS



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Address: 28550 Cabot Drive, Suite 500	Client Project	Manager: Kris	Hinsk	ley			Site	te Contact: Christina Weaver La					Lat	Lab Contact: Mike DelMonico									DC No;				
Autress, 20550 Cabor Drive, Suite 500	Telephone: 248	-994-2240					Tele	elephone: 248-994-2240 Telepho					T. J						-		1						
City/State/Zip: Novi, MI, 48377													1 ei	Telephone: 330-497-9396							$\vdash$	1 of 1	;				
Phone: 248-994-2240	Email: kristofi	er.hinskey@ar	cadis.	com				Analys	is Tur	narou	nd TI	lme		See.		Analyses									For lab use only		
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•				Aqueous	Sediment Solid	Other:	H2SO4	HN03	NaOH	E	Unpres	er:	l ĉ	Compositi	3   5	-su	E 82	82	A C	l iệ					Sample Speci		
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Sample Address: Submit all results through Cadena at jtomalia@cadenac	SOLEL	ハッ	U	U	V V (	ca	1	۲.																			
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Geoges, TestAmerica, Laboratories, Inc. All rights reserved. TestAmerica & Design <sup>16</sup> are trademerics of TestAmerica Laboratories, Inc.													6														

### Client Sample ID: TRIP BLANK\_128

Date Collected: 11/15/23 00:00

Date Received: 11/17/23 09:40

Method: SW846 8260D - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1-Dichloroethene	1.0	U	1.0	0.49	ug/L			11/22/23 20:39	1
cis-1,2-Dichloroethene	1.0	U	1.0	0.46	ug/L			11/22/23 20:39	1
Tetrachloroethene	1.0	U	1.0	0.44	ug/L			11/22/23 20:39	1
trans-1,2-Dichloroethene	1.0	U	1.0	0.51	ug/L			11/22/23 20:39	1
Trichloroethene	1.0	U	1.0	0.44	ug/L			11/22/23 20:39	1
Vinyl chloride	1.0	N NI	1.0	0.45	ug/L			11/22/23 20:39	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac

Gunogute	//////////////////////////////////////	Quanner	Linits	ricpurcu	Analyzea	Diriu	-
1,2-Dichloroethane-d4 (Surr)	101		62 - 137		11/22/23 20:39		Ī
4-Bromofluorobenzene (Surr)	96		56 - 136		11/22/23 20:39		1
Toluene-d8 (Surr)	104		78 - 122		11/22/23 20:39	÷	1
Dibromofluoromethane (Surr)	90		73 - 120		11/22/23 20:39		1

### Client Sample ID: MW-125S\_111523 Date Collected: 11/15/23 12:35 Date Received: 11/17/23 09:40

Lab Sample ID: 240-195665-2

Matrix: Water

_ Method: SW846 8260D SIN	I - Volatile Orga	anic Comp	ounds (GC/N	IS)					
Analyte		Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
1,4-Dioxane	2.0	U	2.0	0.86	ug/L			11/28/23 14:11	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	95		66 - 120					11/28/23 14:11	1

#### Method: SW846 8260D - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1-Dichloroethene	1.0	U	1.0	0.49	ug/L			11/22/23 21:04	1
cis-1,2-Dichloroethene	1.0	U	1.0	0.46	ug/L			11/22/23 21:04	1
Tetrachloroethene	1.0	U	1.0	0.44	ug/L			11/22/23 21:04	1
trans-1,2-Dichloroethene	1.0	U	1.0	0.51	ug/L			11/22/23 21:04	1
Trichloroethene	1.0	U	1.0	0.44	ug/L			11/22/23 21:04	1
Vinyl chloride	1.0	μUJ	1.0	0.45	ug/L			11/22/23 21:04	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	96		62 - 137					11/22/23 21:04	1

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1,2-Dichloroethane-d4 (Surr)	96	62 - 137		11/22	2/23 21:04	1	
4-Bromofluorobenzene (Surr)	89	56 - 136		11/22	2/23 21:04	1	
Toluene-d8 (Surr)	100	78 - 122		11/22	2/23 21:04	1	
Dibromofluoromethane (Surr)	88	73 - 120		11/22	2/23 21:04	1	

### Lab Sample ID: 240-195665-1 Matrix: Water