

**Environment Testing** 

# **ANALYTICAL REPORT**

## PREPARED FOR

Attn: Kristoffer Hinskey ARCADIS US Inc 28550 Cabot Drive Suite 500 Novi, Michigan 48377 Generated 8/17/2023 8:42:27 AM

## JOB DESCRIPTION

Ford LTP - Off Site

## **JOB NUMBER**

240-189865-1

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

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RL

RPD

TEF

TEQ

TNTC

Reporting Limit or Requested Limit (Radiochemistry)

Toxicity Equivalent Factor (Dioxin)

Too Numerous To Count

Toxicity Equivalent Quotient (Dioxin)

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

<b>,</b>		
Qualifiers		3
GC/MS VOA		
Qualifier	Qualifier Description	
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	•
CNF	Contains No Free Liquid	Ö
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)	

#### Job ID: 240-189865-1

#### Laboratory: Eurofins Cleveland

#### Narrative

Job Narrative 240-189865-1

#### Receipt

The samples were received on 8/10/2023 8:00 AM. Unless otherwise noted below, the samples arrived in good condition, and, where required, properly preserved and on ice. The temperatures of the 2 coolers at receipt time were 0.2°C and 0.4°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
240-189865-1	TRIP BLANK_43	Water	08/08/23 00:00	08/10/23 08:00
240-189865-2	MW-149S_080823	Water	08/08/23 13:46	08/10/23 08:00

### **Detection Summary**

#### No Detections.

Client Sample ID: MW-149S_080823 Lab Sample IE						mple ID:	240-189865-2		
Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	DM	ethod	Prep Type
Vinyl chloride	1.6		1.0	0.45	ug/L	1	82	260D	Total/NA

Job ID: 240-189865-1

Lab Sample ID: 240-189865-1

## Client Sample ID: TRIP BLANK\_43

### Client Sample ID: TRIP BLANK\_43

Date Collected: 08/08/23 00:00 Date Received: 08/10/23 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			08/14/23 17:58	1
cis-1,2-Dichloroethene	1.0	U	1.0	0.46	ug/L			08/14/23 17:58	1
Tetrachloroethene	1.0	U	1.0	0.44	ug/L			08/14/23 17:58	1
trans-1,2-Dichloroethene	1.0	U	1.0	0.51	ug/L			08/14/23 17:58	1
Trichloroethene	1.0	U	1.0	0.44	ug/L			08/14/23 17:58	1
Vinyl chloride	1.0	U	1.0	0.45	ug/L			08/14/23 17:58	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	98		62 - 137			-		08/14/23 17:58	1
4-Bromofluorobenzene (Surr)	98		56 - 136					08/14/23 17:58	1
Toluene-d8 (Surr)	98		78 - 122					08/14/23 17:58	1
Dibromofluoromethane (Surr)	99		73 - 120					08/14/23 17:58	1

Job ID: 240-189865-1

### Lab Sample ID: 240-189865-1

Matrix: Water

5

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**Eurofins Cleveland** 

#### Client Sample ID: MW-149S\_080823

Date Collected: 08/08/23 13:46 Date Received: 08/10/23 08:00

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
I,4-Dioxane	2.0	U	2.0	0.86	ug/L			08/15/23 18:16	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	86		66 - 120			-		08/15/23 18:16	1
Method: SW846 8260D - Volati	ile Organic Comn	ounds by C	C/MS						
Analyte		Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1-Dichloroethene	1.0	U	1.0	0.49	ug/L			08/14/23 18:23	1
cis-1,2-Dichloroethene	1.0	U	1.0	0.46	ug/L			08/14/23 18:23	1
Tetrachloroethene	1.0	U	1.0	0.44	ug/L			08/14/23 18:23	1
trans-1,2-Dichloroethene	1.0	U	1.0	0.51	ug/L			08/14/23 18:23	1
Trichloroethene	1.0	U	1.0	0.44	ug/L			08/14/23 18:23	1
Vinyl chloride	1.6		1.0	0.45	ug/L			08/14/23 18:23	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	99		62 - 137			-		08/14/23 18:23	1
4-Bromofluorobenzene (Surr)	98		56 - 136					08/14/23 18:23	1
Toluene-d8 (Surr)	97		78 - 122					08/14/23 18:23	1
Dibromofluoromethane (Surr)	100		73 - 120					08/14/23 18:23	1

8/17/2023

#### Lab Sample ID: 240-189865-2 Matrix: Water

5 6

BFB

(56-136)

98

98

101

103

100

99

TOL

(78-122)

98

97

97

97

100

97

DCA

(62-137)

98

99

97

96

98

100

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

**Client Sample ID** 

TRIP BLANK\_43

Matrix Spike

Method Blank

MW-149S\_080823

Matrix Spike Duplicate

Lab Control Sample

#### Matrix: Water

Lab Sample ID

240-189865-1

240-189865-2

240-189869-B-2 MS

LCS 240-583797/5

MB 240-583797/8

240-189869-C-2 MSD

Surrogate Legend

TOL = Toluene-d8 (Surr)

DCA = 1,2-Dichloroethane-d4 (Surr) BFB = 4-Bromofluorobenzene (Surr)

DBFM = Dibromofluoromethane (Surr)

Prep Type: Total/NA

Percent Surrogate Recovery (Acceptance Limits)

DBFM

(73-120)

99

100

101

102

101

102

lethod: 8260D SIM atrix: Water	I - Volatile Organic Com	pounds (GC/MS)	Prep Type: Total/NA
			Percent Surrogate Recovery (Acceptance Limits)
		DCA	
Lab Sample ID	Client Sample ID	(66-120)	
240-189771-F-3 MS	Matrix Spike	97	
240-189771-F-3 MSD	Matrix Spike Duplicate	87	
240-189865-2	MW-149S_080823	86	
LCS 240-583887/5	Lab Control Sample	93	
MB 240-583887/7	Method Blank	92	

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

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

### Lab Sample ID: MB 240-583797/8

#### Matrix: Water Analysis Batch: 583797

	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			08/14/23 13:23	1
cis-1,2-Dichloroethene	1.0	U	1.0	0.46	ug/L			08/14/23 13:23	1
Tetrachloroethene	1.0	U	1.0	0.44	ug/L			08/14/23 13:23	1
trans-1,2-Dichloroethene	1.0	U	1.0	0.51	ug/L			08/14/23 13:23	1
Trichloroethene	1.0	U	1.0	0.44	ug/L			08/14/23 13:23	1
Vinyl chloride	1.0	U	1.0	0.45	ug/L			08/14/23 13:23	1

	МВ	МВ				
Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	100		62 - 137		08/14/23 13:23	1
4-Bromofluorobenzene (Surr)	99		56 - 136		08/14/23 13:23	1
Toluene-d8 (Surr)	97		78 - 122		08/14/23 13:23	1
Dibromofluoromethane (Surr)	102		73 - 120		08/14/23 13:23	1

#### Lab Sample ID: LCS 240-583797/5 Matrix: Water Analysis Batch: 583797

	Spike	LCS	LCS				%Rec	
Analyte	Added	Result	Qualifier	Unit	D	%Rec	Limits	
1,1-Dichloroethene	25.0	26.1		ug/L		105	63 - 134	
cis-1,2-Dichloroethene	25.0	24.5		ug/L		98	77 - 123	
Tetrachloroethene	25.0	24.8		ug/L		99	76 - 123	
trans-1,2-Dichloroethene	25.0	23.5		ug/L		94	75 - 124	
Trichloroethene	25.0	23.9		ug/L		96	70 - 122	
Vinyl chloride	12.5	10.8		ug/L		86	60 - 144	

	LCS	LCS	
Surrogate	%Recovery	Qualifier	Limits
1,2-Dichloroethane-d4 (Surr)	98		62 - 137
4-Bromofluorobenzene (Surr)	100		56 - 136
Toluene-d8 (Surr)	100		78 - 122
Dibromofluoromethane (Surr)	101		73 - 120

#### Lab Sample ID: 240-189869-B-2 MS Matrix: Water Analysis Batch: 583797

	Sample	Sample	Spike	MS	MS				%Rec
Analyte	Result	Qualifier	Added	Result	Qualifier	Unit	D	%Rec	Limits
1,1-Dichloroethene	1.0	U	25.0	24.0		ug/L		96	56 - 135
cis-1,2-Dichloroethene	1.0	U	25.0	24.4		ug/L		98	66 - 128
Tetrachloroethene	1.0	U	25.0	23.4		ug/L		94	62 - 131
trans-1,2-Dichloroethene	1.0	U	25.0	22.9		ug/L		92	56 - 136
Trichloroethene	1.0	U	25.0	23.2		ug/L		93	61 - 124
Vinyl chloride	1.0	U	12.5	9.35		ug/L		75	43 - 157
	MS	MS							
Surrogate	%Recovery	Qualifier	Limits						

Surrogate	%Recovery Qualifier	Limits
1,2-Dichloroethane-d4 (Surr)	97	62 - 137
4-Bromofluorobenzene (Surr)	101	56 - 136
Toluene-d8 (Surr)	97	78 - 122

#### **Client Sample ID: Method Blank**

Job ID: 240-189865-1

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

5

### **Eurofins Cleveland**

**Client Sample ID: Matrix Spike** 

Prep Type: Total/NA

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

2 3 Spike otal/NA 6 plicate otal/NA 8

10

Lab Sample ID: 240-189869-B- Matrix: Water	-2 1413											Cilent	Sample ID Prep <sup>-</sup>	гиант Гуре: Т	
Analysis Batch: 583797													· · · ·		
	MS	мs													
Surrogate	%Recovery	Qua	lifier	Limits											
Dibromofluoromethane (Surr)	101			73 - 120											
Lab Sample ID: 240-189869-C	2 MGD									Client	6.		: Matrix S	aiko Du	unligat
Matrix: Water	-2 10130									Chem	30			Type: T	-
Analysis Batch: 583797													Пер	iype. i	otain
Analysis Datch. 303737	Sample	Sam	nle	Spike		MSD	MSD						%Rec		RP
Analyte	Result			Added			Qualifi	er	Unit	г	5	%Rec	Limits	RPD	Lim
1,1-Dichloroethene	1.0			25.0		25.1	Quann		ug/L		-	100	56 - 135	5	
cis-1,2-Dichloroethene	1.0			25.0		25.3			ug/L			101	66 - 128	4	
Tetrachloroethene	1.0			25.0		23.4			ug/L			93	62 - 131	0	
trans-1,2-Dichloroethene	1.0			25.0		23.6			ug/L			94	56 - 136	3	
Trichloroethene	1.0			25.0		23.8			ug/L			95	61 - 124	3	
Vinyl chloride	1.0			12.5		10.3			ug/L			82	43 - 157	10	
									0						
	MSD														
Surrogate	%Recovery	Qua	lifier	Limits											
1,2-Dichloroethane-d4 (Surr)	96			62 - 137											
4-Bromofluorobenzene (Surr)	103			56 - 136											
Toluene-d8 (Surr)	97			78 - 122											
Dibromofluoromethane (Surr)	102			73 - 120											
lethod: 8260D SIM - Volat	ile Organic	Co	mpoun	ds (GC/N	IS)										
Lab Sample ID: MB 240-58388	7/7											Client S	ample ID:		
Matrix: Water													Prep	Type: T	otal/N/
Analysis Batch: 583887															
	_	MB	MB							_	_	<u>.</u>		-	
Analyte	Re		Qualifier		RL		MDL U			D	PI	repared	Analyz		Dil Fa
1,4-Dioxane		2.0	U		2.0		0.86 u	g/L					08/15/23	10:44	
		ΜВ	МВ												
Surrogate	%Reco	very	Qualifier	Limit	s						PI	repared	Analyz	zed	Dil Fa
1,2-Dichloroethane-d4 (Surr)		92		66 - 1	20								08/15/23	10:44	
Lab Sample ID: LCS 240-5838	87/5									Clie	nt	Sample	ID: Lab C	ontrol 9	Sample
Matrix: Water	•									••		Campio		Type: T	
Analysis Batch: 583887														.,	
				Spike		LCS	LCS						%Rec		
				-								a. <b>-</b>			
Analyte				Added		Result	Qualifi	er	Unit	L	כ	%Rec	Limits		

1,2-Dichloroethane-d4 (Surr)	93		66 - 120								
Lab Sample ID: 240-189771-F-3 Matrix: Water Analysis Batch: 583887	3 <b>MS</b>							Client		D: Matrix Spike Type: Total/NA	
	Sample	Sample	Spike	MS	MS				%Rec		
Analyte	Result	Qualifier	Added	Result	Qualifier	Unit	D	%Rec	Limits		
1,4-Dioxane	2.0	U	10.0	9.71		ug/L		97	51 - 153		

Limits

%Recovery Qualifier

Surrogate

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10

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

	MS	MS									
Surrogate	%Recovery	Qualifier	Limits								
1,2-Dichloroethane-d4 (Surr)	97		66 - 120								
Lab Sample ID: 240-189771-	F-3 MSD					C	Client Sa	ample IC	): Matrix Sp	oike Dup	olicate
Matrix: Water									Prep 1	Type: To	tal/NA
Analysis Batch: 583887											
	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	9.42		ug/L		94	51 _ 153	3	16
	MSD	MSD									
Surrogate	%Recovery	Qualifier	Limits								
1,2-Dichloroethane-d4 (Surr)	87		66 - 120								

### GC/MS VOA

#### Analysis Batch: 583797

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-189865-1	TRIP BLANK_43	Total/NA	Water	8260D	
240-189865-2	MW-149S_080823	Total/NA	Water	8260D	
MB 240-583797/8	Method Blank	Total/NA	Water	8260D	
_CS 240-583797/5	Lab Control Sample	Total/NA	Water	8260D	
240-189869-B-2 MS	Matrix Spike	Total/NA	Water	8260D	
240-189869-C-2 MSD	Matrix Spike Duplicate	Total/NA	Water	8260D	
nalysis Batch: 583887	7				
		Pren Type	Matrix	Method	Prep Batch
Lab Sample ID	Client Sample ID 	Prep Type Total/NA	Matrix Water	Method 8260D SIM	Prep Batch
Lab Sample ID 240-189865-2	Client Sample ID				Prep Batch
Lab Sample ID 240-189865-2 MB 240-583887/7	Client Sample ID MW-149S_080823	Total/NA	Water	8260D SIM	Prep Batch
nalysis Batch: 583887 Lab Sample ID 240-189865-2 MB 240-583887/7 LCS 240-583887/5 240-189771-F-3 MS	Client Sample ID MW-149S_080823 Method Blank	Total/NA Total/NA	Water Water	8260D SIM 8260D SIM	Prep Batch

Matrix: Water

Lab Sample ID: 240-189865-2

### Client Sample ID: TRIP BLANK\_43 Date Collected: 08/08

<b>Client Samp</b>	le ID: TRIP E	BLANK_43					I	Lab Sample ID:	240-189865-1
Date Collected	I: 08/08/23 00:0	0							Matrix: Water
Date Received	: 08/10/23 08:0	0							
	Batch	Batch		Dilution	Batch			Prepared	
Prep Type	Туре	Method	Run	Factor	Number	Analyst	Lab	or Analyzed	
Total/NA	Analysis	8260D		1	583797	LEE	EET CLE	08/14/23 17:58	

### Client Sample ID: MW-149S\_080823 Date Collected: 08/08/23 13:46

	Batch	Batch		Dilution	Batch			Prepared
Prep Type	Туре	Method	Run	Factor	Number	Analyst	Lab	or Analyzed
Total/NA	Analysis	8260D		1	583797	LEE	EET CLE	08/14/23 18:23
Total/NA	Analysis	8260D SIM		1	583887	MRL	EET CLE	08/15/23 18:16

#### Laboratory References:

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

### **Accreditation/Certification Summary**

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

#### Laboratory: Eurofins Cleveland

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

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

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

Control         Control <t< th=""><th>Client Contact</th><th>Regulatory program: DW</th><th>NPDES RCRA Other</th><th></th><th></th></t<>	Client Contact	Regulatory program: DW	NPDES RCRA Other		
защие:         Полнов (мар)         Полнов (Map)	Company Name: Arcadis	(Think Project Manager & do Hindow)		- 1401 - 15 144	TestAmerica Laboratories, Inc.
Optimulation         Conductor	Address: 28550 Cabot Drive, Suite 500			act: Mike DelMonico	COC No:
Teal:         Latti chendri alla signification         Constration         Constratind         Constratend         Constra	City/State/Zip: Novi, MI, 48377	Telephone: 248-994-2240		:: 330-497-9396	.
нали совена совена         совена <t< td=""><td></td><td>Email: kristoffer.hinskey@arcadis.com</td><td>Analysis Turnaround Time</td><td>Analyses</td><td></td></t<>		Email: kristoffer.hinskey@arcadis.com	Analysis Turnaround Time	Analyses	
Table Contract         Data         Contract         Data         Contract         Contract <thcontract< th=""> <thcontre< th=""> <thco< td=""><td>Phone: 248-994-2240 Deviated Nation: Exect 1 TD OIC Star</td><td></td><td>TAT of different from below</td><td></td><td>Walk-in client</td></thco<></thcontre<></thcontract<>	Phone: 248-994-2240 Deviated Nation: Exect 1 TD OIC Star		TAT of different from below		Walk-in client
Планити и проводут         Защи проводут         Проводут         Проводут         Проводут <td>Project Number: 30167538.402.04</td> <td>y (08)</td> <td>2 weeks</td> <td>W</td> <td>Lab sampling</td>	Project Number: 30167538.402.04	y (08)	2 weeks	W	Lab sampling
Multi-litely         Constant & Termination         Constanting         Constant & Terminating         Cons	PO#30167538.402.04	Shipping/Tracking No:	560D 6 (X / N		Job/SDG No:
windle term         series total         3 mage total         series total         2 mage total </td <td></td> <td>Matrix</td> <td>S-DCE 82 Constrainers &amp; Levenson CCE 82600 Levenson Leven</td> <td>Chloride S260D</td> <td>Sample Specific Notes /</td>		Matrix	S-DCE 82 Constrainers & Levenson CCE 82600 Levenson Leven	Chloride S260D	Sample Specific Notes /
TRP BLANK_LIG          1         1         NG K X X X X X X         X X X         X X <td>Sample Identification</td> <td>Sample Time Auto Air Auto Sedim</td> <td>Com L]1-D L]1-D Com L]1co L]1co L]1co L]1co L]1co L]1co L]1-D L]1co L]1-D</td> <td></td> <td>Special Instructions:</td>	Sample Identification	Sample Time Auto Air Auto Sedim	Com L]1-D L]1-D Com L]1co L]1co L]1co L]1co L]1co L]1co L]1-D L]1co L]1-D		Special Instructions:
MW-1L47S-080823         S18/123         1/3-4/0         6         1         10         1/1         X <thx< th="">         X</thx<>			X X D N	×	1 Trip Blank
Michael     Michael       Michael     Served Manales       Michael     Michael		1346	N U X X	X X X X	3 VOAs for 8260D 3 VOAs for 8260D SIM
Unknown     Sample Bisposal (A fee muy be assessed if samples are retained longer than 1 month)       Jaue/Time:     Recurved by:       Date/Time:     Novi Cold Gonger than 1 month)       Bale/Time:     S [3/23] (UH1       Received by:     Cold Gonger than 1 month)       Bale/Time:     S [3/23] (S [23] (	an 18 of 27		240-189865 Chain of Custody		MICHIGAN 190
Unknown     Return to Client     Disposal By Lab     Archive For     Months       Date/Time:     2     3     10     1     Received by     00     00     20     20     23     1       Bare/Time:     3     1305     Received by     00     00     20     20     23     1       Bare/Time:     3     1305     Received by     00     20     20     23     1       Bare/Time:     3     1305     Received by     00     20     20     23     1       Bare/Time:     3     1305     Received by     00     20     23     1       Bare/Time:     3     13     13     13     23     1			Sample Disposal ( A fee may be assessed if samples are reta	ined longer than 1 month)	
Reberrar Cariftana Company. Derromoer Aug Com	<ul> <li>Non-Hazard Flammoble Skii</li> <li>Special Instructions/OC Requirements: Semple Address: 34(4)50 Be0.000</li> <li>Submit all results through Cadena at jtomalia@cad</li> <li>Level IV Reporting requested.</li> </ul>		Return to Client 💌 Disposal By Lab	Archive For J Months	
Denamer Stury Arcadus 899/23 1305 NULL COMPANY FOR 89/23 13 Menter 2012 13:05 Received in Jahon 1000 1000 1000 1000 1000 1000 1000 10	$  \rangle <$	Date/Time: 8/8/ Date/Time:	Received by NOUL	Company: Arcadis	52
	2167	8 9 23 Date Time:		7	9/23 19

8/17/2023

Chain of Custody Record

TestAmerica

Eurofins - Cleveland Sample	e Receipt Form/Narrative	Login	#:	
Barberton Facility			Cooler un	packed by:
Client Arcaclis	Site Name	17		and by
Cooler Received on 8/10/2	3 Opened on <u>8/10/2</u>	-3		VIT
	FAS Clipper Client Drop Off Euro		ther	
Receipt After-hours: Drop-off		Storage Location	المحمد والموادي المع	
Eurofins Cooler #				
	Blue Ice Dry Ice Water N			
1. Cooler temperature upon re		See Multiple Cooler Fo	orm	
$IR GUN # _22()$	-			er Temp °C
		-		~ T cmp 0
	on the outside of the cooler(s)? If Yes Qua	intity	s No	Tests that are not
	side of the cooler(s) signed & dated?	(Ye	No NA	checked for pH by
	ls on the bottle(s) or bottle kits (LLHg/Mel	(Ye	s No NA	Receiving:
3. Shippers' packing slip attach	ls intact and uncompromised?	Ye		VOAs
4. Did custody papers accompa		Ye		Oil and Grease
	nquished & signed in the appropriate place		×	TOC
	collected the samples clearly identified on			
7. Did all bottles arrive in good			No	
8. Could all bottle labels (ID/Da	ate/Time) be reconciled with the COC?	Ye		
9. For each sample, does the CO	DC specify preservatives (Y(N), # of contai	iners (22N), and s	ample type of g	rab/comp()/N)?
10. Were correct bottle(s) used for		(Ye	No	
11. Sufficient quantity received t	-	Ye	No	
12. Are these work share sample			s No	
	been checked at the originating laboratory			Strip Lot# 10BDH4921
<ul><li>13. Were all preserved sample(s)</li><li>14. Were VOAs on the COC?</li></ul>	at the correct pri upon receipt?		No NA PH	HC312502
15. Were air bubbles >6 mm in a	any VOA vials? 🛑 🖕 Larger than thi		ĸ	HC3120 VA
16. Was a VOA trip blank prese	nt in the cooler(s)? Trip Blank Lot # 627		s)No	
17. Was a LL Hg or Me Hg trip	· · · · ·		s No	
Contacted PM	Date by	via Verbal V	voice Mail Othe	r
Concerning				
18. CHAIN OF CUSTODY &	SAMPLE DISCREPANCIES D additi	ional next page	Samples proce	essed by:
Aic toubles up	Samples: Mou 102-	080823 (	4 bottle	4 Jone
	Property	13 bot		18-10-23
			······································	
19. SAMPLE CONDITION		commended held	na time had an-	irad
	were received after the rec		ing time had exp	
	were received with			
Sampic(s)	were received with		u unamierer. (1401	, , , , , , , , , , , , , , , , , , ,
20. SAMPLE PRESERVATIO	N			
Sample(s)		were fur	ther preserved in	the laboratory.
Time preserved:P	reservative(s) added/Lot number(s):			
VOA Sample Preservation - Date	/Time VOAs Frozen:			

	Chair TestAmerica Laboratory location: Brighton 10448 Citati	Chain of Custody Record 10448 Citation Drive. Suite 2007 Brighton, MI 48116 7810-229-2763	29-2763	
Client Contact	Regulatory program:	NPDES RCRA Other		
Company Name: Arcadis	Olimet Duritors Museum, Keile Hindow.	en control di alla		TestAmerica Laboratories, Inc.
Address: 28550 Cabot Drive, Suite 500				
City/State/Zip: Novi, MI, 48377	I cicbuoue: 248-554-240	l elepnone: 248-994-2240	l elephone: 330-497-9396	1 of 1 COCs
Phone: 248-994-2240	Email: kristoffer.hinskey@arcadis.com	Analysis Turnaround Time	Analyses	For lab use only
Project Name: Ford LTP Off-Site	Sampler Name: Roberto Costion	TAT if different from below		Walk-in client
Project Number: 30167538.402.04	5	(N	(	Lab sampling
PO# 30167538.402.04	Shipping/Tracking No:	/ Grab	8560C E 8560 5560D	Job/SDG No:
Sample Identification	Sample Date Sample Time Air Other:	Composite=C Biltered Samp Capter: Asour Asour Asour Haron Haron Haron Haron Haron	1,1-DCE 8260 cis-1,2-DCE 8 PCE 8260D TCE 8260D Vinyl Chloride Vinyl Chloride 8 msane 8	Sample Specific Notes / Special Instructions:
V TRIP BLANK_43		N C		1 Trip Blank
~ MW-1495-080823	8/8/23 12410 6	(0 N (3	X X X X X X	3 VOAs for 8260D
1 1	<u> </u>			
je 20 o				
f 27				
		240-189865 Chain of Custody		MICHIGAN
				n61
فمعدناهم المعمط المستقلمينا				
<ul> <li>Non-Hazard</li> <li>Flammable</li> <li>Skir</li> </ul>	Skin Irritant Poison B Unknown	Return to Chent > Disposal (A fee may be assessed if samples are retained longer than 1 month)	ab Archive For Month) Months	
Special Instructions/OC Requirements & Comments: Sample Address: ろリリけテワ Beacoom Submit all results through Cadena at jtomalia@cadenaco.com. Cadena #E203631 Level IV Reporting requested.				
Relinquished by Relation Carlington		1641 Received by OULI COLD STOTAGE		1)atc/jime 8/8/23 11041
Relinquished by Dynamics Huy	Date/Time:	1305 Received by Rule		Date ( Ime: 8/9/23 13 - 02
Relinquished by: Mutth	9 23	13705 Received in Laboratory by:	Company: 67	Bate/uni: B/10/23 8:00
2018 Testimenca & Congo, the All galaxie and a factoriant factoriant to the factoriant factoriant for the All and				

8/17/2023

		*	
Eurofins – Cleveland Sample Rece Barberton Facility	ipt Form/Narrative	Login # :_	
Client Arcaclis	Site Name		Cooler unpacked by:
Cooler Received on 8/10/23	Opened on 8/10/2	23	CMH
FedEx: 1 <sup>st</sup> Grd Exp UPS FAS	Clipper Client Drop Off Euro	ofins Courier Other	
Receipt After-hours: Drop-off Date/T		Storage Location	
Eurofins Cooler # Eoa		Other	
Packing material used: Bubble V	Vrap Foarh Plastic Bag N	one Other	
COOLANT: Wet Ice H	Blue Ice Dry Ice Water N		
1. Cooler temperature upon receipt	, pa :	See Multiple Cooler Form	
IR GUN # 22 (CF - C)	°C) Observed Cooler Ten	пр°С Согте	cted Cooler Temp°C
<ul> <li>-Were tamper/custody seals intact</li> <li>3. Shippers' packing slip attached to th</li> <li>4. Did custody papers accompany the set</li> <li>5. Were the custody papers relinquished</li> <li>6. Was/were the person(s) who collected</li> <li>7. Did all bottles arrive in good conditi</li> <li>8. Could all bottle labels (ID/Date/Time</li> <li>9. For each sample, does the COC spect</li> <li>10. Were correct bottle(s) used for the text</li> <li>11. Sufficient quantity received to perfor</li> <li>12. Are these work share samples and all If yes, Questions 13-17 have been centered</li> <li>13. Were all preserved sample(s) at the centered</li> <li>14. Were VOAs on the COC?</li> <li>15. Were air bubbles &gt;6 mm in any VO</li> <li>16. Was a VOA trip blank present in the</li> </ul>	the cooler(s) signed & dated? te bottle(s) or bottle kits (LLHg/Me) t and uncompromised? te cooler(s)? sample(s)? ad & signed in the appropriate place ed the samples clearly identified on ion (Unbroken)? te) be reconciled with the COC? cify preservatives (Y(N), # of containerst(s) indicated? rrm indicated analyses? Il listed on the COC? thecked at the originating laboratory correct pH upon receipt? A vials? (a) Larger than this e cooler(s)? Trip Blank Lot # <u>672</u>	Hg)? Hg)? Yes No Yes No Yes No iners (NN), and sample Yes No Yes No	NA NA NA Tests that are not checked for pH by Receiving: VOAs Oil and Grease TOC
17. Was a LL Hg or Me Hg trip blank p Contacted PM Date			) Mail Other
	09		
Concerning			
· · · · · · · · · · · · · · · · · · ·			
18. CHAIN OF CUSTODY & SAMPI	LE DISCREPANCIES addition		ples processed by: Dottles - 10-23
		•	
19. SAMPLE CONDITION			
Sample(s)	were received after the rea	commended holding tin	he had expired.
Sample(s)		were received in a b	- 1
Sample(s)			
20. SAMPLE PRESERVATION			
Sample(s)		were further p	reserved in the laboratory.
Sample(s) Preservat	ive(s) added/Lot number(s):		
VOA Sample Preservation - Date/Time V			

Login #:\_

<b>Cooler Description</b>	Eurofins - Canton IR Gun #	Observed	Corrected	Coolant
(Circle)	(Circle)	Temp °C	Temp °C	(Velice) Blue ice Dy ic
Client Box Other		0.5	0,4	Water None
EC Clent Box Other	IR GUN #: _22	0.3	0,2	Wellice) Blue Ice By Ic Water None
EC Client Box Other	IR GUN #:			Wellice Bluelice Bylic Weller None
EC Client Box Other	IR GUN #:			Wet ice dive ice by ice Water None
EC Client Box Other	IR GUN #:			Wet ice Dive Ice Dy ice Weter None
EC Client Box Other	IR GUN #:			Wellice Blue Ice By Ice Weller Mone
EC Client Box Other	IR GUN #:	, ,		Wellice Blue Ice By Ice Water None
C Client Bex Other	R GUN F:			Wet ice Sive ice By ice
EC Client Box Other	IR GUN #:			Wellice Blue Ice Bylce
EC Client Box Other	IR GUN #:			Weiter None Weiter She ice Byte
BC Client Bex Other	R GON 6:			Weller None Wellee Blue Ice Byte
C Client Box Other	IR CON #:			Wellice Blue Sce Bylce
EC Client Ben Other	IR GUN #:			Weller Ness Byte
C Client Bax Other	IR GUN #:		· · · · · · · · · · · · · · · · · · ·	Welles Nes Ico by to
EC Client Bex Other	IR CON #:			Wette Sheeles Byles
IC Client Ben Other	IR GON #:			Welte the fee Byte
BC Client Ben Other	IR GUN #:			Welles She les Byles
EC Client Box Other	IR GUN #:		· · · · · · · · · · · · · · · · · · ·	Wet ice Blue Ice Bry ice
EC Client Bex Other	IR GIN #:			Wellice Blue Ice Brylte
BC Client Bax Other	R GIN #:			Wellice Sheelice Bryles
BC Client Box Other	IR GIN #:			Wellice Sive Ice Byle
IC Client Sex Other	IR GUN #:			Wellice Bluelice Byles
IC Client Ben Other	R GWI #:			Weller Note Wellice Sheelice Byle
IC Client Box Other	IR GUN 5:			Welice She ice Bryte
IC Client Ben Other	R GUN #:			Weiter Mana Weites Sheetes Byte
IC Client Sex Other	IR QUIN #:			Water Nene Wet Ice Blue Ice Bry Ice
IC Client Box Other	IR GUN 0:			Welse New Oryks
IC Client Ben Other	R GUN #:			Water Hone Wellice Shielice Drytes
	IR GUN #:			Wellice Blue Ice Dry ice
C Client Box Other	IR GUN #:			Weller Name Wellce Sheelce Brylco
C Clerk Ben Other	IR GUN #:			Water None Weitze Sheetze Brytze
C Clent Ben Other	IR GUN #:			Welse Nees Welse She teo Brytes
C Client Box Other	R GUN #:			Weler Nees Wellce Blue Ice Bry Ice
C Client Sex Other				Water Nees
C Client Box Other	IR GUN #:			Wellice Blue Ice Bry Ice Water Name

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

	Chai TestAmerica Laboratory location: Brighton 10448 Cita	Chain of Custody Record 1048 Citation Drive, Suite 2007 Brighton, MI 48116 / 810-229-2763	-2763 -2763	
Client Contact	Regulatory program:	NPDES RCRA Other		
Company Name: Arcadis	Client Protect Manager: Kris Hinskey	Site Contact: Christina Weaver	l ah Cantoot: Mike DelManico.	TestAmerica Laboratories, Inc.
Address: 28550 Cabot Drive, Suite 500				
City/State/Zip: Novi, MI, 48377	I elephone: 248-994-2240	Telephone: 248-994-2240	Telephone: 330-497-9396	1 of 1 COCs
Phone: 248-994-2240	Email: kristoffer.hinskey@arcadis.com	Anarysis Jurnaround Jime	Analyses	For lab use only
Project Name: Ford LTP Off-Site	Sampler Name: Roberta Cashidan	TAT if different from telow		Walk-in client
Project Number: 30167538.402.04	50	(N	(	Lab sampling
PO#30167538.402.04	Shipping/Tracking No:	/ Crab	8560C 8560C 8560D 560D	Job/SDG No:
		Containers & Preser	560D 4'5-DCE 5DCE 8:	
Sample Identification	Sample Date Sample Time A Province Solid	Compo	Vinyl C TCE 82 PCE 82 Trans-'	Sample Specific Notes / Special Instructions:
V TRIP BLANK_H3			x x x x x	1 Trip Blank
× MW-1495-080823	8/8/23 13410 6	N C X	X X X X X X	3 VOAs for 8260D 3 VOAs for 8260D SIM
Page 23 of 27		240-189865 Chain of Custody		MICHIGAN 190
Possible Hazard Identification	Skin Irritant - Poisson R - Hahavun	Sample Disposal ( A fee may be assessed if samples are retained tonger than 1 month) Destine to Clima	ples are retained longer than 1 month)	
ACC Requirements & Comments           344450         BEACON           544450         BEACON           6 through Cadena at Itomalia@         g requested.		wearn to criterit is Disposal by Lao	Archive For Months	
Relinquished by: Rebeling Carlinger	Company Arcodis Date/Time	Jour Cold	Storage company Arcadis	BlaceTime, 1041
Relinquished by Dona weak Keinquished by Manual	Company: HT Caclu S Bale Time: Company: Bale Time: A 9123			Date Time: 8 9/23 13 : 00 Date Mult: 12 800
2010 Tentimera & Duan "s are trademera. Inc. Al 1996, memoral 400 dorses. Inc. Feeldmenera & Duan "s are trademera. In feeldmenera ( contor es. Inc. 8/11/500	-			

8/17/2023

Eurofins - Cleveland Sample Receip	pt Form/Narrative	Login # :	
Barberton Facility Client Arcacli S	Site Name	Cool	er unpacked by:
	Opened on 8/10/23		CMH 1
Cooler Received on 8/10/23 FedEx: 1st Grd Exp UPS FAS	Client Drop Off Eurofin	Courier Other	
Receipt After-hours: Drop-off Date/Tin		rage Location	
Eurofins Cooler #Eoan		Other	
Packing material used: Bubble W			
	lue Ice Dry Ice Water None	8	
1. Cooler temperature upon receipt	See ]	Multiple Cooler Form	
IR GUN # 22 (CF $-$ ().			Cooler Temp. °C
		0	
2. Were tamper/custody seals on the ou- Were the seals on the outside of the seals on the outside of the seals on the outside of the seals of the se		ty fes No Yes No N	A Tests that are not
	e bottle(s) or bottle kits (LLHg/MeHg)		cnecked for pH by
-Were tamper/custody seals intact		Yes No N	A Receiving:
3. Shippers' packing slip attached to the	-	Yes (No)	VOAs
4. Did custody papers accompany the s		Yes No	Oil and Grease
5. Were the custody papers relinquished		Ves No	TOC
6. Was/were the person(s) who collecte			
7. Did all bottles arrive in good condition		Yes No	
<ol> <li>8. Could all bottle labels (ID/Date/Time</li> <li>9. For each sample, does the COC species</li> </ol>		Yes No	a of amply and RAD?
10. Were correct bottle(s) used for the ter	· · ·	Yes No	e of grad/compto/N)?
11. Sufficient quantity received to perfor		Yes No	
12. Are these work share samples and all		Yes (No)	
If yes, Questions 13-17 have been ch		0	
13. Were all preserved sample(s) at the c	orrect pH upon receipt?	Dayes No NA	pH Strip Lot# 10BDH4321
14. Were VOAs on the COC?		My S Yes No	HC312502
15. Were air bubbles >6 mm in any VOA 16. Was a VOA trip blank present in the		< GIV CEND N/	A
17. Was a LL Hg or Me Hg trip blank pr			
Contacted PM Date	by	via Verbal Voice Mail	Other
Concerning			
18. CHAIN OF CUSTODY & SAMPL	E DISCREPANCIES addition	al next page Samples	s processed by:
Ar buibles in sam	VOICS: M50-102-06	10223 /4 h	ttest Tome
the looid of suit	Buo-09 (	3 bottles	8-10-23
		5 Domest	
	•		
		· · · · · · · · · · · · · · · · · · ·	
19. SAMPLE CONDITION			
Sample(s)			
Sample(s)		were received in a broke	
Sample(s)	were received with bu	ibble >6 mm in diameter	(Notify PM)
20. SAMPLE PRESERVATION	······	······	
Sample(s)		were further preser	rved in the laboratory.
Sample(s) Preservati	ive(s) added/Lot number(s):		
VOA Sample Preservation - Date/Time V	OAs Frozen:		

Login #:\_

(Circle) Clent Box Othe EC Clent Box Othe	IR GUN 0:	Temp °C 0.5 0.3	Temp *C 0, 4 0, 2	(Circle)       Welice     Blue Ice     Dri       Welice     Blue Ice     Dri       Welice     Blue Ice     Bri       Welice     Blue Ice     Brie
EC Clent Box Othe EC Clent Box Othe	IR GUN 0:			Wellics Blue Ice By I Byder Blues Wellice Blue Ice By I Wellice Blue Ice By I <u>Wellice Blue Ice</u> By I <u>Wellice Blue Ice</u> By It <u>Wellice Blue Ice</u> By It
EC Client Box Othe EC Client Box Othe	IR GUN #:         IR GUN #:		0,2	Webr         Mass           Webr         Bloot         Brown
EC Client Box Othe EC Client Box Othe	IR GUN 6:			Weiler         Mass           Weiler         Mass         Mass
EC Client Box Othe EC Client Box Othe EC Client Box Othe EC Client Box Othe EC Client Box Othe	IR GUN #: IR GUN #: IR GUN #: IR GUN #: IR GUN #: IR GUN #:			Weber         Mode           Weber         None         None
BC Client Bax Othe BC Client Bax Othe BC Client Bax Othe BC Client Bax Othe	IR GUN 6:	,		Welter New Welter New Ten Welter New Welter New Welter New Welter New Welter New Welter New
EC Client Box Othe EC Client Box Othe EC Client Box Othe	IR GUN 4: IR GUN 4: IR GUN 6: IR GUN 6:			Welter None Welter None Byle Welter None Welter None Welter None
EC Client Box Othe EC Client Box Othe	IR GUN #:			Wellice Shoe has by the Wellice Shoe has by the Wellice Shoe has by the Wellice Shoe has been
EC Client Jax Othe EC Client Jax Othe	IR GUN (:			Water Hone
BC Client Sex Othe	R CHN 4:			
		1		Wellice Blue Ice Byk
BC Client Box Othe	· · · · · · · · · · · · · · · · · · ·			Weter Hone Weter She to Byte
				Weler Nege
BC Client Box Othe				Wellice Blue Ice Bylo Water Hone
EC Client Box Othe	r R GWN #:			Wellice Blue Ice Bylc Water Blane
EC Client Box Othe	IR GUN 4:			Wellice Sheelice Byte Water Mane
EC Clent Box Othe	R GIN #:			Wellice She lice Byla Malar Mane
SC Client Ben Othe	IR OWN #:			Wet ice She lee By b
SC Client Box Othe				Wellice Sheelice Byla
				Wellice She Ice By to
	ID CITY A			Weier Nene Weise Stue Ice Byla
BC Client Box Othe				Water Hone Water Star De Byte
EC Client Bex Olhe				Water Mann
BC Client Box Olhe				Water_Mane
EC Clent Box Othe				Wet Ice She Ice Dy Ice Weter Hone
EC Clent Box Othe	IR GUN #:			Wellce Blue Ice Byla Water None
EC Client Box Othe	R GUN 8:			Welto She Ice Bryte Water Mana
EC Client Box Othe				Wet ice She ice Dry ice
EC Client Box Othe				Weilice Blue Ice Bry Ice
				Weller None Wellice Blue Ice Dry Ice
BC Client Box Other				Wet ice She ice Dry ice
EC Client Box Other				Weler None Welto She Ice By te
IC Client Bex Other				Water Mann
IC Client Best Other	IR GUN #:			Wellice Blue lice Bry ice Weller Bland
C Clent Box Other	IR GUN #:			Wellice She ice Bryles Welse Name
C Client Box Other	IR GUN #:			Weilze Blue toe Brylos Weise Blace
C Client Ben Other	IR GUN #:			Weilice Bluelice Dryles
	R \$111 #:			Wellice Blue Ice Bry Ice
C Client Box Other	IR GUN #:			Weller Henr Weller Divelce Dryte

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

Eurofins - Cleveland Sample Recei	nt Form/Narrative	Login # :
Barberton Facility	pr 1 01 110 1 101 1 011 1 0	
Client Arcaclis	Site Name	Cooler unpacked by:
Cooler Received on 8/10/23	Opened on 8/10/23	CMH
FedEx: 1 <sup>st</sup> Grd Exp UPS FAS	Clipper Client Drop Off Eurofin	as Courier Other
Receipt After-hours: Drop-off Date/Ti		rage Location
	Box Client Cooler Box	Other
Packing material used: Bubble W		Other
	Blue Ice Dry Ice Water None	e
1. Cooler temperature upon receipt	See 1	Multiple Cooler Form
1R GUN # 22 (CF - ()	°C) Observed Cooler Temp	°C Corrected Cooler Temp°C
-Were tamper/custody seals intact 3. Shippers' packing slip attached to th 4. Did custody papers accompany the s 5. Were the custody papers relinquishe 6. Was/were the person(s) who collecte 7. Did all bottles arrive in good conditi 8. Could all bottle labels (ID/Date/Tim	the cooler(s) signed & dated? e bottle(s) or bottle kits (LLHg/MeHg) t and uncompromised? e cooler(s)? sample(s)? ed & signed in the appropriate place? ed the samples clearly identified on the ion (Unbroken)? e) be reconciled with the COC? tify preservatives (Y(N), # of container est(s) indicated? rm indicated analyses? Il listed on the COC? hecked at the originating laboratory. correct pH upon receipt? A vials? A vials? Larger than this. e cooler(s)? Trip Blank Lot # <u>62222</u>	Yes No NA Yes No NA Yes No NA Yes No NA Yes No Yes No
Contacted PM Date		
Contacted PM Date	by	_ via verbai voice maii Other
Concerning		
18. CHAIN OF CUSTODY & SAMPI	pies: mou-102-06 Dup-09 (	<u>3 bottles</u> <u>8-10-</u>
	1	
<b>19. SAMPLE CONDITION</b>		
Sample(s)		
Sample(s)		
Sample(s)	were received with by	ubble >6 mm in diameter. (Notify PM)
20. SAMPLE PRESERVATION		, , , , , , , , , , , , , , , , , , , ,
Sample(s)		were further preserved in the laboratory.
Sample(s) Preservat	tive(s) added/Lot number(s):	
VOA Sample Preservation - Date/Time V	OAs Frozen:	

Login #:\_\_\_

Cooler Description	IR Gun #	Observed	Corrected	Coolant (Circle)
(Circle)	(Circle)	Temp °C	Temp °C	(Welke) Blue ke M
Client Box Other	IR GUN 0; _22_	0.5	0,4	Water None
EC Client Box Other	IR GUN #:22	0,3	0,2	Wellice Blue Ice Br
EC Client Box Other	IR GUN #:			Wet Ice Blue Ice In Water None
EC Client Box Other	IR GUN #:			Welice Sive Ice In Weler None
EC Client Box Other	IR GUN #:			Wellice Sivelice by
EC Client Box Other	R GWN #:			Weter None Wetco Studico In
	IR GUN #:	· · · · · · · · · · · · · · · · · · ·		Water None Wet ice Blue Ice By
	IR GUN #:			Water Name Wet ice Sive ice by
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EC Client Box Other	IR GUN #:			Water Name
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BC Client Bax Other	IR GUN #:			Wellice Sheelice By Water Hane
BC Client Box Other	IR GUN #:			Wellice Sheelice By Water Mane
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BC Client Box Other	IR GUN #:			Wellice Nee Ice By Water Neee
BC Client Box Other	IR GUN #:			Wellice Shielice By Water Mane
EC Clent Bex Other	IR GUN #:			Wellice Sheelice Divi
BC Client Box Other	IR GUN #:			Wettee Steelee Byl
BC Clent Box Other	IR GIN #:			Wettee Blue Ice Bryt
BC Clent Box Other	IR GWN #:			Wellce She ice Dyl
BC Client Box Other	IR GUN #:			Weller Blue Ice By I
	IR GUN #:			Welter Nete Dyk
	IR GUN #:			Weler None Welice She ice Dryk
BC Client Box Other	IR GWN #:			Weiter Mane Weiter Sheeter Dryk
BC Client Box Other	IR GUN #:			Weter Note Weter Note Dyk
BC Client Bax Other				Weler None Welce She ice Dryk
EC Client Box Other	R GUN 8:			Water None
EC Client Box Other	IR GUN 0:			Wellice Sive Ice Dry Ic Water Mane
EC Client Box Other	IR GUN #:			Wellice Blue Ice Dry Ici Weller Mape
C Clent Box Other	R GUN #:			Wet Ice Blue Ice Bry Ice Water Mane
C Clent Box Ölher	R GUN #:			Wet ice Stue ice Bry ice Water Bland
RC Client Box Other	IR GUN #:			Wet Ice Blue Ice Dry Ice Water Ness
IC Client Sox Other	R GUN 6:			Wellice Sive ice Dry ice
C Clent Box Other	IR GUN #:			Wellice Blue Ice Dry Ice

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

## **DATA VERIFICATION REPORT**



August 18, 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: 189865-1 Sample date: 2023-08-08 Report received by CADENA: 2023-08-18 Initial Data Verification completed by CADENA: 2023-08-18 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: 189865-1

		Sample Name: Lab Sample ID: Sample Date:	TRIP BLA 2401898 8/8/202				MW-149 2401898 8/8/202		23	
				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		1.6	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 # 240-189865-1 CADENA Verification Report: 2023-08-18

Analyses Performed By: Eurofins Cleveland Barberton, Ohio

Report # 51117R Review Level: Tier III Project: 30167538.402.02

### **SUMMARY**

This data quality assessment summarizes the review of Sample Delivery Group (SDG) # 240-189865-1 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	Parant Sampla	Ana	ysis
Sample ID		IVIALITA	Collection Date	Parent Sample	VOC	VOC SIM
TRIP BLANK_43	240-189865-1	Water	08/08/2023		Х	
MW-149S_080823	240-189865-2	Water	08/08/2023		Х	Х

### DATA REVIEW

#### ANALYTICAL DATA PACKAGE DOCUMENTATION

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

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

#### **ORGANIC ANALYSIS INTRODUCTION**

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

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

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

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

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

#### VOLATILE ORGANIC COMPOUND (VOC) ANALYSES

#### 1. Holding Times

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

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

All samples were analyzed within the specified holding time criteria.

#### 2. Mass Spectrometer Tuning

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

System performance and column resolution were acceptable.

#### 3. Calibration

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

#### 3.1 Initial Calibration

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

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

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

#### 3.2 Continuing Calibration

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

All compounds associated with the 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.

All identified compounds met the specified criteria.

### 7. System Performance and Overall Assessment

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

#### DATA REVIEW

#### DATA VALIDATION CHECKLIST FOR VOCs

VOCs: 8260D/8260D-SIM	Rep	orted		rmance eptable	Not
	No	Yes	No	Yes	Required
GAS CHROMATOGRAPHY/MASS SPECTROMETRY (G	iC/MS)				
Tier II Validation					
Holding times/Preservation		Х		Х	
Tier III Validation					1
System performance and column resolution		Х		Х	
Initial calibration %RSDs		Х		Х	
Continuing calibration RRFs		Х		Х	
Continuing calibration %Ds		Х		Х	
Instrument tune and performance check		Х		Х	
lon abundance criteria for each instrument used		Х		Х	
Field Duplicate RPD	Х				Х
Internal standard		Х		Х	
Compound identification and quantitation					
A. Reconstructed ion chromatograms		Х		Х	
B. Quantitation Reports		Х		Х	
C. RT of sample compounds within the established RT windows		Х		Х	
D. Transcription/calculation errors present		Х		Х	
E. Reporting limits adjusted to reflect sample dilutions		Х		Х	

%RSD Relative standard deviation

%R Percent recovery

RPD Relative percent difference

%D Percent difference

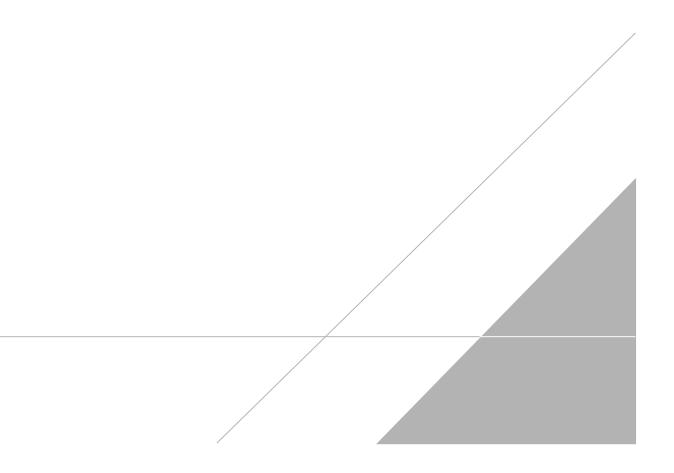
VALIDATION PERFORMED BY:	Bindu Sree M B
SIGNATURE:	BASHMB
DATE:	September 12, 2023

PEER REVIEW: Andrew Korycinski

DATE: September 14, 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

Client Contact Company Name: Arcadis	Regula	tory program	:		DW		NP	DES		R	CRA	1	Othe	r										
	Client Project	Manager: Kris	Hinsk	ey		s	ite Co	itact: (	Christ	lina V	eaver				Lab C	ontac	t: Mik	e Del	Monic	0			TestAmerica Laboratorie COC No:	
Address: 28550 Cabot Drive, Suite 500	Telephone: 248	004.2240		_			Telephone: 248-994-2240 Telephone: 3					Jankann, 170, 407, 0204												
City/State/Zip: Novi, MI, 48377						ľ	Analysis Turnaround Time				Telephone: 330-497-9396					1 of 1 COCs								
Phone: 248-994-2240	Email: kristoff	fer.hinskey@ar	cadis.	com			Ana	lysis T	urna	round	Time	-		1	Analyses					For lab use only				
	Sampler Name					1	AT if d	ifferent fr													Walk-in client			
Project Name: Ford LTP Off-Site	1	repecco	26	sti	gan		10 d	av		week													Lab sampling	
Project Number: 30167538.402.04	Method of Ship	ment/Carrier:			,		I week						M			Lao sampling								
PO # 30167538.402.04	Shipping/Track	Shipping/Tracking No:						day		1x	C / Grab		8	8260D			260D	QO		-	Job/SDG No:			
					atrix		Co	ntainer	A Pr	-	thus	aple	Š	600	826	CE			de 8	826				
Sample Identification	Samala Data	Sample Time	Air		Sediment Solid		H2SO4 HN03		NaOH ZaAci	Т	T	Filtered Sa	Composite=	1,1-DCE 8260D	cis-1,2-DCE 8260D	Trans-1,2-DCE	PCE 8260D	TCE 8260D	Vinyl Chloride 8260D	1,4-Dioxane 8260D SIM			Sample Specific Notes Special Instructions:	
					3 8 5		= =		ZS	2 -	0	+		1		_		-		-				
TRIP BLANK_43				1	++		-	'				+	G		Х	Х	Х	Х	X				1 Trip Blank	
MW-1495-080823	818123	1346		6				6				N	6	X	X	X	K	X	X	X			3 VOAs for 8260D 3 VOAs for 8260D S	
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		L										1												
Possible Hazard Identification	Irritant Poise	on B	Unk	nown			Samp	le Dis Retur	posal (	( A fee lient	may be	assess	sed if	sample	es are		ned lo		han 1					
Special Instructions/QC Requirements & Comments:			Onic		-			Return	n to ci	nem		inspo:	sartsy	1.40			cnive	FOI 3		M	onths			
Sample Address: 34450 Beacon Submit all results through Cadena at jtomalia@caden	nana ann Cadana t	E202624																						
Level IV Reporting requested.	naco.com. Gadena «	FE203031																						
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Relinquished by:	Company: HrCac	al c		Date/1	ima-			- 11	Receiv	red by	2	0	.0	1	y			Comp			V13		8/8/23 1/04 Date/Jime:	
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Species TestAmenca Laboratories, Inc. Af rights rearred. MestAmenca & Discipi <sup>16</sup> are bademarks of TestAmenca Laboratores. Inc. 8/2023

 $\checkmark$ 

### Client Sample ID: TRIP BLANK\_43

#### Date Collected: 08/08/23 00:00

Date Received: 08/10/23 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			08/14/23 17:58	1
cis-1,2-Dichloroethene	1.0	U	1.0	0.46	ug/L			08/14/23 17:58	1
Tetrachloroethene	1.0	U	1.0	0.44	ug/L			08/14/23 17:58	1
trans-1,2-Dichloroethene	1.0	U	1.0	0.51	ug/L			08/14/23 17:58	1
Trichloroethene	1.0	U	1.0	0.44	ug/L			08/14/23 17:58	1
Vinyl chloride	1.0	U	1.0	0.45	ug/L			08/14/23 17:58	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	98		62 - 137			-		08/14/23 17:58	1

1,2-Dichloroethane-d4 (Surr)	98	62 - 137	 08/14/23 17:58	-
4-Bromofluorobenzene (Surr)	98	56 - 136	08/14/23 17:58	
Toluene-d8 (Surr)	98	78 - 122	08/14/23 17:58	ŗ
Dibromofluoromethane (Surr)	99	73 - 120	08/14/23 17:58	

#### Client Sample ID: MW-149S\_080823 Date Collected: 08/08/23 13:46 Date Received: 08/10/23 08:00

Lab Sample ID: 240-189865-2

Lab Sample ID: 240-189865-1

**Matrix: Water** 

1 1 1

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,4-Dioxane	2.0	U	2.0	0.86	ug/L			08/15/23 18:16	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	86		66 - 120					08/15/23 18:16	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			08/14/23 18:23	1
cis-1,2-Dichloroethene	1.0	U	1.0	0.46	ug/L			08/14/23 18:23	1
Tetrachloroethene	1.0	U	1.0	0.44	ug/L			08/14/23 18:23	1
trans-1,2-Dichloroethene	1.0	U	1.0	0.51	ug/L			08/14/23 18:23	1
Trichloroethene	1.0	U	1.0	0.44	ug/L			08/14/23 18:23	1
Vinyl chloride	1.6		1.0	0.45	ug/L			08/14/23 18:23	1
Surrogate	%Recovery	Qualifier	l imits				Prepared	Analyzed	Dil Fac

Surrogate	%Recovery Q	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	99		62 - 137		08/14/23 18:23	1
4-Bromofluorobenzene (Surr)	98		56 - 136		08/14/23 18:23	1
Toluene-d8 (Surr)	97		78_122		08/14/23 18:23	1
Dibromofluoromethane (Surr)	100		73-120		08/14/23 18:23	1

**Matrix: Water**