

Environment Testing

ANALYTICAL REPORT

PREPARED FOR

Attn: Kristoffer Hinskey ARCADIS US Inc 28550 Cabot Drive Suite 500 Novi, Michigan 48377 Generated 5/21/2023 8:20:51 PM

JOB DESCRIPTION

Ford LTP - Off Site

JOB NUMBER

240-185147-1

Eurofins Cleveland 180 S. Van Buren Avenue Barberton OH 44203





Eurofins Cleveland

Job Notes

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Authorization

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Qualifiers		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.	6
¤	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	8
DER	Duplicate Error Ratio (normalized absolute difference)	0
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	
TEF	Toxicity Equivalent Factor (Dioxin)	
TEQ	Toxicity Equivalent Quotient (Dioxin)	

TNTC Too Numerous To Count

Job ID: 240-185147-1

Laboratory: Eurofins Cleveland

Narrative

Job Narrative 240-185147-1

Receipt

The samples were received on 5/11/2023 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 1.0° C and 1.2° 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 EDI
8260D SIM	Volatile Organic Compounds (GC/MS)	SW846	EET EDI
5030C	Purge and Trap	SW846	EET EDI

Protocol References:

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

Laboratory References:

EET EDI = Eurofins Edison, 777 New Durham Road, Edison, NJ 08817, TEL (732)549-3900

Sample Summary

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

Lab Sample ID	Client Sample ID	Matrix	Collected	Received	
240-185147-1	TRIP BLANK_172	Water	05/08/23 00:00	05/11/23 08:00	
240-185147-2	MW-81S_050823	Water	05/08/23 11:32	05/11/23 08:00	
240-185147-3	MW-81_050823	Water	05/08/23 12:34	05/11/23 08:00	
240-185147-4	MW-134S_050823	Water	05/08/23 13:54	05/11/23 08:00	
240-185147-5	MW-133S_050823	Water	05/08/23 14:50	05/11/23 08:00	

Detection Sum	mary
Client: ARCADIS US Inc Project/Site: Ford LTP - Off Site	Job ID: 240-185147-1
Client Sample ID: TRIP BLANK_172	Lab Sample ID: 240-185147-1
No Detections.	
Client Sample ID: MW-81S_050823	Lab Sample ID: 240-185147-2
No Detections.	
Client Sample ID: MW-81_050823	Lab Sample ID: 240-185147-3
No Detections.	
Client Sample ID: MW-134S_050823	Lab Sample ID: 240-185147-4
No Detections.	
Client Sample ID: MW-133S_050823	Lab Sample ID: 240-185147-5
No Detections.	

Client Sample ID: TRIP BLANK_172

Date Collected: 05/08/23 00:00 Date Received: 05/11/23 08:00

Method: SW846 8260D - Volati	ile Organic Comp	ounds by G	C/MS						
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1-Dichloroethene	1.0	U	1.0	0.49	ug/L			05/19/23 20:33	1
cis-1,2-Dichloroethene	1.0	U	1.0	0.46	ug/L			05/19/23 20:33	1
Tetrachloroethene	1.0	U	1.0	0.44	ug/L			05/19/23 20:33	1
trans-1,2-Dichloroethene	1.0	U	1.0	0.51	ug/L			05/19/23 20:33	1
Trichloroethene	1.0	U	1.0	0.44	ug/L			05/19/23 20:33	1
Vinyl chloride	1.0	U	1.0	0.45	ug/L			05/19/23 20:33	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	116		70 - 128			-		05/19/23 20:33	1
Dibromofluoromethane (Surr)	86		77 - 124					05/19/23 20:33	1
Toluene-d8 (Surr)	103		80 - 120					05/19/23 20:33	1
4-Bromofluorobenzene	90		76 - 120					05/19/23 20:33	1

Job ID: 240-185147-1

Matrix: Water

Lab Sample ID: 240-185147-1

Eurofins Cleveland

Client Sample ID: MW-81S_050823

Date Collected: 05/08/23 11:32 Date Received: 05/11/23 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			05/19/23 11:50	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene	94		75 - 133			-		05/19/23 11:50	1
Method: SW846 8260D - Volati	ile Organic Comp	ounds by G	C/MS						
Analyte		Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1-Dichloroethene	1.0	U	1.0	0.49	ug/L			05/19/23 21:19	1
cis-1,2-Dichloroethene	1.0	U	1.0	0.46	ug/L			05/19/23 21:19	1
Tetrachloroethene	1.0	U	1.0	0.44	ug/L			05/19/23 21:19	1
trans-1,2-Dichloroethene	1.0	U	1.0	0.51	ug/L			05/19/23 21:19	1
Trichloroethene	1.0	U	1.0	0.44	ug/L			05/19/23 21:19	1
Vinyl chloride	1.0	U	1.0	0.45	ug/L			05/19/23 21:19	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	120		70 - 128			-		05/19/23 21:19	1
Dibromofluoromethane (Surr)	88		77 - 124					05/19/23 21:19	1
Toluene-d8 (Surr)	102		80 - 120					05/19/23 21:19	1
4-Bromofluorobenzene	90		76 - 120					05/19/23 21:19	1

Matrix: Water

5 6 7

Lab Sample ID: 240-185147-2

5/21/2023

Client Sample ID: MW-81_050823

Date Collected: 05/08/23 12:34 Date Received: 05/11/23 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			05/19/23 12:11	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene	97		75 - 133			-		05/19/23 12:11	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			05/20/23 00:20	1
cis-1,2-Dichloroethene	1.0	U	1.0	0.46	ug/L			05/20/23 00:20	1
Tetrachloroethene	1.0	U	1.0	0.44	ug/L			05/20/23 00:20	1
trans-1,2-Dichloroethene	1.0	U	1.0	0.51	ug/L			05/20/23 00:20	1
Trichloroethene	1.0	U	1.0	0.44	ug/L			05/20/23 00:20	1
Vinyl chloride	1.0	U	1.0	0.45	ug/L			05/20/23 00:20	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	121		70 - 128			-		05/20/23 00:20	1
Dibromofluoromethane (Surr)	87		77 - 124					05/20/23 00:20	1
Toluene-d8 (Surr)	101		80 - 120					05/20/23 00:20	1
4-Bromofluorobenzene	95		76 - 120					05/20/23 00:20	1

Job ID: 240-185147-1

Matrix: Water

Lab Sample ID: 240-185147-3

5 6 7

Client Sample ID: MW-134S_050823

Date Collected: 05/08/23 13:54 Date Received: 05/11/23 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			05/19/23 12:33	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene	96		75 - 133			-		05/19/23 12:33	1
Method: SW846 8260D - Volati	ile Organic Comp	ounds by G	C/MS						
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1-Dichloroethene	1.0	U	1.0	0.49	ug/L			05/20/23 00:43	1
cis-1,2-Dichloroethene	1.0	U	1.0	0.46	ug/L			05/20/23 00:43	1
Tetrachloroethene	1.0	U	1.0	0.44	ug/L			05/20/23 00:43	1
trans-1,2-Dichloroethene	1.0	U	1.0	0.51	ug/L			05/20/23 00:43	1
Trichloroethene	1.0	U	1.0	0.44	ug/L			05/20/23 00:43	1
Vinyl chloride	1.0	U	1.0	0.45	ug/L			05/20/23 00:43	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	118		70 - 128			-		05/20/23 00:43	1
Dibromofluoromethane (Surr)	86		77 - 124					05/20/23 00:43	1
Toluene-d8 (Surr)	102		80 - 120					05/20/23 00:43	1
4-Bromofluorobenzene	98		76 - 120					05/20/23 00:43	1

5/21/2023

Lab Sample ID: 240-185147-4 Matrix: Water

Client Sample ID: MW-133S_050823

Date Collected: 05/08/23 14:50 Date Received: 05/11/23 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			05/19/23 12:55	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene	94		75 - 133			-		05/19/23 12:55	1
Method: SW846 8260D - Vola	atile Organic Comp	ounds by G	C/MS						
Analyte		Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1-Dichloroethene	1.0	U	1.0	0.49	ug/L			05/20/23 01:06	1
cis-1,2-Dichloroethene	1.0	U	1.0	0.46	ug/L			05/20/23 01:06	1
Tetrachloroethene	1.0	U	1.0	0.44	ug/L			05/20/23 01:06	1
trans-1,2-Dichloroethene	1.0	U	1.0	0.51	ug/L			05/20/23 01:06	1
Trichloroethene	1.0	U	1.0	0.44	ug/L			05/20/23 01:06	1
Vinyl chloride	1.0	U	1.0	0.45	ug/L			05/20/23 01:06	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	119		70 - 128			-		05/20/23 01:06	1
Dibromofluoromethane (Surr)	87		77 - 124					05/20/23 01:06	1
Toluene-d8 (Surr)	101		80 - 120					05/20/23 01:06	1
4-Bromofluorobenzene	95		76 - 120					05/20/23 01:06	1
4-Bromofluorobenzene	95		76 - 120					05/20/23 01:06	

Job ID: 240-185147-1

Matrix: Water

Lab Sample ID: 240-185147-5

DBFM

(77-124)

86

88

81

82

87

86

87

84

90

TOL

(80-120)

103

102

105

103

101

102

101

105

104

DCA

(70-128)

116

120

114

111

121

118

119

111

119

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

Client Sample ID

TRIP BLANK_172

MW-81S_050823

MW-81 050823

MW-134S_050823

MW-133S_050823

Lab Control Sample

Method Blank

MW-81S-MS_050823

MW-81S-MSD_050823

Matrix: Water

Lab Sample ID

240-185147-1

240-185147-2

240-185147-3

240-185147-4

240-185147-5

LCS 460-910294/3

MB 460-910294/8

Surrogate Legend

TOL = Toluene-d8 (Surr)

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

240-185147-2 MS

240-185147-2 MSD

Prep Type: Total/NA

Percent Surrogate Recovery (Acceptance Limits)

BFB

(76-120)

90

90

95

98

95

98

95

87

87

2 3 4 5 6 7 8 9 10 11

BFB = 4-Bromofluorob	enzene		
Method: 8260D SII Matrix: Water	M - Volatile Organic Comp	oounds (GC/MS	Prep Type: Total/NA
_			Percent Surrogate Recovery (Acceptance Limits)
		BFB	
Lab Sample ID	Client Sample ID	(75-133)	
240-185147-2	MW-81S_050823	94	
240-185147-2 MS	MW-81S-MS_050823	98	
240-185147-2 MSD	MW-81S-MSD_050823	95	
240-185147-3	MW-81_050823	97	
240-185147-4	MW-134S_050823	96	
240-185147-5	MW-133S_050823	94	
LCS 460-910165/3	Lab Control Sample	99	
LCSD 460-910165/4	Lab Control Sample Dup	98	
MB 460-910165/8	Method Blank	93	

Surrogate Legend

BFB = 4-Bromofluorobenzene

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

Matrix: Water Analysis Batch: 910294

MB	МВ							
Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1.0	U	1.0	0.49	ug/L			05/19/23 19:25	1
1.0	U	1.0	0.46	ug/L			05/19/23 19:25	1
1.0	U	1.0	0.44	ug/L			05/19/23 19:25	1
1.0	U	1.0	0.51	ug/L			05/19/23 19:25	1
1.0	U	1.0	0.44	ug/L			05/19/23 19:25	1
1.0	U	1.0	0.45	ug/L			05/19/23 19:25	1
	- Result 1.0 1.0 1.0 1.0 1.0 1.0	MB MB Result Qualifier 1.0 U 1.0 U	Result Qualifier RL 1.0 U 1.0 1.0 U 1.0	Result Qualifier RL MDL 1.0 U 1.0 0.49 1.0 U 1.0 0.46 1.0 U 1.0 0.44 1.0 U 1.0 0.51 1.0 U 1.0 0.44	Result Qualifier RL MDL Unit 1.0 U 1.0 0.49 ug/L 1.0 U 1.0 0.46 ug/L 1.0 U 1.0 0.44 ug/L 1.0 U 1.0 0.51 ug/L 1.0 U 1.0 0.44 ug/L	Result Qualifier RL MDL Unit D 1.0 U 1.0 0.49 ug/L - 1.0 U 1.0 0.46 ug/L - 1.0 U 1.0 0.44 ug/L - 1.0 U 1.0 0.51 ug/L - 1.0 U 1.0 0.44 ug/L -	Result Qualifier RL MDL Unit D Prepared 1.0 U 1.0 0.49 ug/L ug	Result Qualifier RL MDL Unit D Prepared Analyzed 1.0 U 1.0 0.49 ug/L 05/19/23 19:25 05/19/23 19:25 1.0 U 1.0 0.46 ug/L 05/19/23 19:25 1.0 U 1.0 0.44 ug/L 05/19/23 19:25 1.0 U 1.0 0.44 ug/L 05/19/23 19:25 1.0 U 1.0 0.51 ug/L 05/19/23 19:25 1.0 U 1.0 0.51 ug/L 05/19/23 19:25 1.0 U 1.0 0.44 ug/L 05/19/23 19:25

	MB	МВ				
Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	119		70 - 128		05/19/23 19:25	1
Dibromofluoromethane (Surr)	90		77 - 124		05/19/23 19:25	1
Toluene-d8 (Surr)	104		80 - 120		05/19/23 19:25	1
4-Bromofluorobenzene	87		76 - 120		05/19/23 19:25	1

Lab Sample ID: LCS 460-910294/3 Matrix: Water Analysis Batch: 910294

	Spike	LCS	LCS				%Rec	
Analyte	Added	Result	Qualifier	Unit	D	%Rec	Limits	
1,1-Dichloroethene	20.0	19.9		ug/L		99	68 - 133	
cis-1,2-Dichloroethene	20.0	19.6		ug/L		98	78 - 121	
Tetrachloroethene	20.0	17.4		ug/L		87	70 - 127	
trans-1,2-Dichloroethene	20.0	19.8		ug/L		99	74 - 126	
Trichloroethene	20.0	20.0		ug/L		100	71 - 121	
Vinyl chloride	20.0	23.3		ug/L		116	55 - 144	

	LCS	LCS	
Surrogate	%Recovery	Qualifier	Limits
1,2-Dichloroethane-d4 (Surr)			70 - 128
Dibromofluoromethane (Surr)	84		77 - 124
Toluene-d8 (Surr)	105		80 - 120
4-Bromofluorobenzene	87		76 - 120

105

Lab Sample ID: 240-185147-2 MS Matrix: Water Analysis Batch: 910294

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	20.0	18.9		ug/L		95	68 - 133
cis-1,2-Dichloroethene	1.0	U	20.0	18.7		ug/L		93	78 - 121
Tetrachloroethene	1.0	U	20.0	17.5		ug/L		87	70 - 127
trans-1,2-Dichloroethene	1.0	U	20.0	18.4		ug/L		92	74 - 126
Trichloroethene	1.0	U	20.0	17.5		ug/L		88	71 - 121
Vinyl chloride	1.0	U	20.0	24.0		ug/L		120	55 - 144
	MS	MS							
Surrogate	%Recovery	Qualifier	Limits						
1,2-Dichloroethane-d4 (Surr)			70 - 128						
Dibromofluoromethane (Surr)	81		77 - 124						

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

Client Sample ID: Lab Control Sample

Client Sample ID: MW-81S-MS_050823

Prep Type: Total/NA

Prep Type: Total/NA

Eurofins Cleveland

80 - 120

10

Project/Site: Ford LTP - Off Site

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

Lab Sample ID: 240-185147 Matrix: Water	-2 1013								Cili	int -	Sample	ID: MW-8 Pren	Type: To	
Analysis Batch: 910294												Fieb	Type. It	
····· · ······························	MS	MS												
Surrogate		Quali	ifier	Limits										
4-Bromofluorobenzene	<u>95</u>	Guun		76 - 120										
Lab Sample ID: 240-185147	-2 MSD								Clier	it S	ample II	D: MW-818		
Matrix: Water												Prep	Туре: То	otal/N
Analysis Batch: 910294														
	Sample			Spike		MSD				_	~ -	%Rec		RP
Analyte 1,1-Dichloroethene	Result 1.0		ifier	Added 20.0	19.4	Qualif	ier	Unit		D	%Rec 97	Limits 68 - 133	2	Lim
cis-1,2-Dichloroethene	1.0			20.0	19.4			ug/L			97 97	00 - 133 78 - 121	4	
Tetrachloroethene	1.0			20.0	19.5			ug/L ug/L			97 89	70 - 121 70 - 127	4	
rans-1,2-Dichloroethene	1.0			20.0	17.0			ug/L			96	74 - 126	4	
Trichloroethene	1.0			20.0	19.2			ug/L			90 92	74 - 120	4	-
Vinyl chloride	1.0			20.0	24.5			ug/L			123	55 - 144	2	
				20.0	21.0			~g, L			.20	00-117	2	
	MSD													
Surrogate		Quali	ifier	Limits										
1,2-Dichloroethane-d4 (Surr)	111			70 - 128										
Dibromofluoromethane (Surr)	82			77 - 124										
Toluene-d8 (Surr)	103			80 - 120										
ethod: 8260D SIM - Vo ab Sample ID: MB 460-910		Co	mpoun	ds (GC/MS))						Client S	ample ID: Prep	Method Type: To	
ethod: 8260D SIM - Vo .ab Sample ID: MB 460-910 /latrix: Water				ds (GC/MS))						Client S	-		
ethod: 8260D SIM - Vo _ab Sample ID: MB 460-910 Matrix: Water Analysis Batch: 910165	1165/8	мв	MB			MDI	11					Prep	Туре: То	otal/N
ethod: 8260D SIM - Vo Lab Sample ID: MB 460-910 Matrix: Water Analysis Batch: 910165 Analyte	1165/8	MB	MB Qualifier			MDL 1					Client S	Prep	Type: To	otal/N Dil Fa
lethod: 8260D SIM - Vo Lab Sample ID: MB 460-910 Matrix: Water Analysis Batch: 910165 Analyte	1165/8	мв	MB Qualifier			MDL 0.86			. <u>D</u>			Prep	Type: To	otal/N Dil Fa
lethod: 8260D SIM - Vo Lab Sample ID: MB 460-910 Matrix: Water Analysis Batch: 910165 Analyte	1165/8	MB sult 2.0	MB Qualifier						<u>D</u>			Prep	Type: To	otal/N Dil Fa
ethod: 8260D SIM - Vo Lab Sample ID: MB 460-910 Matrix: Water Analysis Batch: 910165 Analyte 1,4-Dioxane	0165/8	MB sult 2.0 MB very	MB Qualifier U						<u> </u>	Pr		Prep Analy 05/19/23 Analy	Type: To zed 08:57	Dil Fa
lethod: 8260D SIM - Vo Lab Sample ID: MB 460-910 Matrix: Water Analysis Batch: 910165 Analyte 1,4-Dioxane	0165/8	MB sult 2.0 MB	MB Qualifier U						D	Pr	epared	Prep Analy 05/19/23	Type: To zed 08:57	Dil Fa
lethod: 8260D SIM - Vo Lab Sample ID: MB 460-910 Matrix: Water Analysis Batch: 910165 Analyte 1,4-Dioxane Surrogate 4-Bromofluorobenzene	0165/8 	MB sult 2.0 MB very	MB Qualifier U						-	Pr Pr	repared repared	Analy 05/19/23 Analy 05/19/23	zed 08:57	Dil Fa Dil Fa
lethod: 8260D SIM - Vol Lab Sample ID: MB 460-910 Matrix: Water Analysis Batch: 910165 Analyte 1,4-Dioxane Surrogate 4-Bromofluorobenzene Lab Sample ID: LCS 460-91	0165/8 	MB sult 2.0 MB very	MB Qualifier U						-	Pr Pr	repared repared	Prep 	zed 08:57 208:57 08:57 308:57	otal/N Dil Fa Dil Fa
lethod: 8260D SIM - Vol Lab Sample ID: MB 460-910 Matrix: Water Analysis Batch: 910165 Analyte 1,4-Dioxane Surrogate 4-Bromofluorobenzene Lab Sample ID: LCS 460-91 Matrix: Water	0165/8 	MB sult 2.0 MB very	MB Qualifier U						-	Pr Pr	repared repared	Prep 	zed 08:57	otal/N Dil Fa Dil Fa
lethod: 8260D SIM - Vol Lab Sample ID: MB 460-910 Matrix: Water Analysis Batch: 910165 Analyte 1,4-Dioxane Surrogate 4-Bromofluorobenzene Lab Sample ID: LCS 460-91 Matrix: Water	0165/8 	MB sult 2.0 MB very	MB Qualifier U						-	Pr Pr	repared repared	Prep 	zed 08:57 208:57 08:57 308:57	otal/N Dil Fa Dil Fa
ethod: 8260D SIM - Vol Lab Sample ID: MB 460-910 Matrix: Water Analysis Batch: 910165 Analyte 1,4-Dioxane Surrogate 4-Bromofluorobenzene Lab Sample ID: LCS 460-91 Matrix: Water Analysis Batch: 910165	0165/8 	MB sult 2.0 MB very	MB Qualifier U	RI 2.0 <i>Limits</i> 75 - 133		0.86	ug/L	Unit	-	Pr Pr	repared repared	Prep 	zed 08:57 208:57 08:57 308:57	otal/N Dil Fa Dil Fa
ethod: 8260D SIM - Vol Lab Sample ID: MB 460-910 Matrix: Water Analysis Batch: 910165 Analyte 1,4-Dioxane Surrogate 4-Bromofluorobenzene Lab Sample ID: LCS 460-91 Matrix: Water Analysis Batch: 910165 Analyte	0165/8 	MB sult 2.0 MB very	MB Qualifier U	RI 2.0 Limits 75 - 133 Spike		0.86 t	ug/L	Unit ug/L	-	Pr Pr ent	repared repared Sample	Prep <u>Analy</u> 05/19/23 <u>Analy</u> 05/19/23 ID: Lab C Prep %Rec	zed 08:57 208:57 08:57 308:57	otal/N Dil Fa Dil Fa
lethod: 8260D SIM - Vol Lab Sample ID: MB 460-910 Matrix: Water Analysis Batch: 910165 Analyte 1,4-Dioxane Surrogate 4-Bromofluorobenzene Lab Sample ID: LCS 460-91 Matrix: Water Analysis Batch: 910165 Analyte	0165/8 	MB sult 2.0 MB very 93	MB Qualifier U	RI 2.0 <i>Limits</i> 75 - 133 Spike Added	LCS Result	0.86 t	ug/L		-	Pr Pr ent	repared repared Sample	Prep Analy 05/19/23 05/19/23 D5/19/23 D5/19/23 DD: Lab C Prep %Rec Limits	zed 08:57 208:57 08:57 308:57	otal/N Dil Fa Dil Fa
ethod: 8260D SIM - Vol Lab Sample ID: MB 460-910 Matrix: Water Analysis Batch: 910165 Analyte 1,4-Dioxane Surrogate 4-Bromofluorobenzene Lab Sample ID: LCS 460-91 Matrix: Water Analysis Batch: 910165 Analyte 1,4-Dioxane	0165/8 	MB sult 2.0 MB very 93	MB Qualifier U MB Qualifier	RI 2.0 	LCS Result	0.86 t	ug/L		-	Pr Pr ent	repared repared Sample	Prep Analy 05/19/23 05/19/23 D5/19/23 D5/19/23 DD: Lab C Prep %Rec Limits	zed 08:57 208:57 08:57 308:57	otal/N Dil Fa Dil Fa
ethod: 8260D SIM - Vol Lab Sample ID: MB 460-910 Matrix: Water Analysis Batch: 910165 Analyte I,4-Dioxane Surrogate 4-Bromofluorobenzene Lab Sample ID: LCS 460-91 Matrix: Water Analysis Batch: 910165 Analyte I,4-Dioxane Surrogate	D165/8 	MB sult 2.0 MB very 93	MB Qualifier U MB Qualifier	RI 2.0 	LCS Result	0.86 t	ug/L		-	Pr Pr ent	repared repared Sample	Prep Analy 05/19/23 05/19/23 D5/19/23 D5/19/23 DD: Lab C Prep %Rec Limits	zed 08:57 208:57 08:57 308:57	otal/N Dil Fa Dil Fa
lethod: 8260D SIM - Vo Lab Sample ID: MB 460-910 Matrix: Water Analysis Batch: 910165 Analyte 1,4-Dioxane Surrogate 4-Bromofluorobenzene Lab Sample ID: LCS 460-91 Matrix: Water Analysis Batch: 910165 Analyte 1,4-Dioxane Surrogate	0165/8 	MB sult 2.0 MB very 93	MB Qualifier U MB Qualifier	RI 2.0 	LCS Result	0.86 t	ug/L		-	Pr Pr ent	repared repared Sample	Prep Analy 05/19/23 05/19/23 D5/19/23 D5/19/23 DD: Lab C Prep %Rec Limits	zed 08:57 208:57 08:57 308:57	otal/N Dil Fa Dil Fa
ethod: 8260D SIM - Vol Lab Sample ID: MB 460-910 Matrix: Water Analysis Batch: 910165 Analyte 1,4-Dioxane Surrogate 4-Bromofluorobenzene Lab Sample ID: LCS 460-91 Matrix: Water Analysis Batch: 910165 Analyte 1,4-Dioxane Surrogate 4-Bromofluorobenzene	D165/8 	MB sult 2.0 MB very 93	MB Qualifier U MB Qualifier	RI 2.0 	LCS Result	0.86 t	ug/L	ug/L	Cli	Pr Pr ent	repared Sample	Prep Analy 05/19/23 05/19/23 D5/19/23 D5/19/23 DD: Lab C Prep %Rec Limits	Type: To zed 08:57 2 2ed 0 08:57 3 08:57 5 ontrol S Type: To	otal/N Dil Fa Dil Fa Sampl otal/N
ethod: 8260D SIM - Vo Lab Sample ID: MB 460-910 Matrix: Water Analysis Batch: 910165 Analyte 1,4-Dioxane Surrogate 4-Bromofluorobenzene Lab Sample ID: LCS 460-91 Matrix: Water Analysis Batch: 910165 Analyte 1,4-Dioxane Surrogate 4-Bromofluorobenzene Lab Sample ID: LCSD 460-9	D165/8 	MB sult 2.0 MB very 93	MB Qualifier U MB Qualifier	RI 2.0 	LCS Result	0.86 t	ug/L	ug/L	Cli	Pr Pr ent	repared Sample	Analy 05/19/23 Analy 05/19/23 ID: Lab C Prep %Rec Limits 57 - 124	Type: To zed 08:57 2 2ed 0 08:57 3 08:57 5 ontrol S Type: To	otal/N. Dil Fa Dil Fa Sampl otal/N.
lethod: 8260D SIM - Vol Lab Sample ID: MB 460-910 Matrix: Water Analysis Batch: 910165 Analyte 1,4-Dioxane Surrogate 4-Bromofluorobenzene Lab Sample ID: LCS 460-91 Matrix: Water Analysis Batch: 910165 Analyte 1,4-Dioxane Surrogate 4-Bromofluorobenzene Lab Sample ID: LCSD 460-9 Matrix: Water	D165/8 	MB sult 2.0 MB very 93	MB Qualifier U MB Qualifier	RI 2.0 	LCS Result	0.86 t	ug/L	ug/L	Cli	Pr Pr ent	repared Sample	Analy 05/19/23 Analy 05/19/23 ID: Lab C Prep %Rec Limits 57 - 124	Type: To zed 08:57 22ed 08:57 Sontrol S Type: To ol Samp	Dil Fa Dil Fa Dil Fa Samplo otal/N/
4-Bromofluorobenzene lethod: 8260D SIM - Vol Lab Sample ID: MB 460-910 Matrix: Water Analysis Batch: 910165 Analyte 1,4-Dioxane Surrogate 4-Bromofluorobenzene Lab Sample ID: LCS 460-91 Matrix: Water Analysis Batch: 910165 Surrogate 4-Bromofluorobenzene Lab Sample ID: LCSD 460-9 Matrix: Water Analysis Batch: 910165	D165/8 	MB sult 2.0 MB very 93	MB Qualifier U MB Qualifier	RI 2.0 	LCS Result 4.40	0.86 t	ier	ug/L	Cli	Pr Pr ent	repared Sample	Analy 05/19/23 Analy 05/19/23 ID: Lab C Prep %Rec Limits 57 - 124	Type: To zed 08:57 22ed 08:57 Sontrol S Type: To ol Samp	Dil Fa Dil Fa Dil Fa Sample otal/N/
lethod: 8260D SIM - Vo Lab Sample ID: MB 460-910 Matrix: Water Analysis Batch: 910165 Analyte 1,4-Dioxane Surrogate 4-Bromofluorobenzene Lab Sample ID: LCS 460-91 Matrix: Water Analysis Batch: 910165 Analyte 1,4-Dioxane Surrogate 4-Bromofluorobenzene Lab Sample ID: LCSD 460-9 Matrix: Water	D165/8 	MB sult 2.0 MB very 93	MB Qualifier U MB Qualifier	Ri 2.0 Limits 75 - 133 Spike Added 5.00 Limits 75 - 133	LCS LCS LCSD	LCS Qualif	iier	ug/L	Cli	Pr Pr ent	repared Sample	Prep Analy 05/19/23 05/19/23 DID: Lab C Prep %Rec Limits 57 - 124 Limer Prep	Type: To zed 08:57 22ed 08:57 Sontrol S Type: To ol Samp	Dil Fa Dil Fa Dil Fa Sample otal/N/

Limits

75 - 133

Spike

Added

Limits

75 - 133

5.00

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

98

LCSD LCSD %Recovery Qualifier

Sample Sample

2.0 U

MS MS

98

Qualifier

%Recovery

Result Qualifier

Lab Sample ID: 240-185147-2 MS

Lab Sample ID: 240-185147-2 MSD

Surrogate

Analyte

1,4-Dioxane

Surrogate

4-Bromofluorobenzene

Matrix: Water

4-Bromofluorobenzene

Analysis Batch: 910165

Matrix: Water

Client Sample ID: MW-81S-MS_050823 Prep Type: Total/NA

	5

%Rec MS MS **Result Qualifier** Unit D %Rec Limits 5.58 112 ug/L 57 - 124 10 Client Sample ID: MW-81S-MSD_050823 Prep Type: Total/NA

Analysis Batch: 910165											
	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	5.00	6.09		ug/L		122	57 - 124	9	30
	MSD	MSD									
Surrogate	%Recovery	Qualifier	Limits								
4-Bromofluorobenzene	95		75 - 133								

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GC/MS VOA

Analysis Batch: 910165

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-185147-2	MW-81S_050823	Total/NA	Water	8260D SIM	
240-185147-3	MW-81_050823	Total/NA	Water	8260D SIM	
240-185147-4	MW-134S_050823	Total/NA	Water	8260D SIM	
240-185147-5	MW-133S_050823	Total/NA	Water	8260D SIM	
MB 460-910165/8	Method Blank	Total/NA	Water	8260D SIM	
LCS 460-910165/3	Lab Control Sample	Total/NA	Water	8260D SIM	
LCSD 460-910165/4	Lab Control Sample Dup	Total/NA	Water	8260D SIM	
240-185147-2 MS	MW-81S-MS_050823	Total/NA	Water	8260D SIM	
240-185147-2 MSD	MW-81S-MSD_050823	Total/NA	Water	8260D SIM	
Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
Lab Sample ID 240-185147-1	Client Sample ID TRIP BLANK_172	Total/NA	Water	8260D	Prep Batch
Lab Sample ID 240-185147-1 240-185147-2	Client Sample ID TRIP BLANK_172 MW-81S_050823	Total/NA Total/NA	Water Water	8260D 8260D	Prep Batch
Lab Sample ID 240-185147-1 240-185147-2	Client Sample ID TRIP BLANK_172	Total/NA	Water	8260D	Prep Batch
Lab Sample ID 240-185147-1 240-185147-2 240-185147-3	Client Sample ID TRIP BLANK_172 MW-81S_050823	Total/NA Total/NA	Water Water	8260D 8260D	Prep Batch
Lab Sample ID 240-185147-1 240-185147-2 240-185147-3 240-185147-4	Client Sample ID TRIP BLANK_172 MW-81S_050823 MW-81_050823	Total/NA Total/NA Total/NA	Water Water Water	8260D 8260D 8260D	Prep Batch
Lab Sample ID 240-185147-1 240-185147-2 240-185147-3 240-185147-4 240-185147-5	Client Sample ID TRIP BLANK_172 MW-81S_050823 MW-81_050823 MW-134S_050823	Total/NA Total/NA Total/NA Total/NA	Water Water Water Water	8260D 8260D 8260D 8260D	Prep Batch
Lab Sample ID 240-185147-1 240-185147-2 240-185147-3 240-185147-4 240-185147-5 MB 460-910294/8	Client Sample ID TRIP BLANK_172 MW-81S_050823 MW-81_050823 MW-134S_050823 MW-133S_050823	Total/NA Total/NA Total/NA Total/NA Total/NA	Water Water Water Water Water	8260D 8260D 8260D 8260D 8260D 8260D	Prep Batch
Lab Sample ID 240-185147-1 240-185147-2 240-185147-3 240-185147-4 240-185147-5 MB 460-910294/8 LCS 460-910294/3 240-185147-2 MS	Client Sample ID TRIP BLANK_172 MW-81S_050823 MW-81_050823 MW-134S_050823 MW-133S_050823 MW-133S_050823 Method Blank	Total/NA Total/NA Total/NA Total/NA Total/NA Total/NA	Water Water Water Water Water Water	8260D 8260D 8260D 8260D 8260D 8260D 8260D	Prep Batch

				Lab Chro	nicle				
lient: ARCADI	-							Job I	D: 240-185147-1
-	ord LTP - Off Site								
	le ID: TRIP B							Lab Sample ID:	240-185147-1
	1: 05/08/23 00:00								Matrix: Water
Date Received	: 05/11/23 08:00								
_	Batch	Batch		Dilution	Batch			Prepared	
Prep Type	Туре	Method	Run	Factor	Number	Analyst	Lab	or Analyzed	
Total/NA	Analysis	8260D		1	910294	SZD	EET EDI	05/19/23 20:33	
Client Samp	le ID: MW-81	S_050823						Lab Sample ID:	240-185147-2
	I: 05/08/23 11:32								Matrix: Water
Date Received	: 05/11/23 08:00								
_	Batch	Batch		Dilution	Batch			Prepared	
Prep Type	Туре	Method	Run	Factor		Analyst	Lab	or Analyzed	
Total/NA	Analysis	8260D		1	910294	SZD	EET EDI	05/19/23 21:19	
Total/NA	Analysis	8260D SIM		1	910165	SZD	EET EDI	05/19/23 11:50	
- Client Samn	le ID: MW-81	050823						Lab Sample ID:	240-185147-3
	1: 05/08/23 12:34							Lab Gample ID.	Matrix: Water
	: 05/11/23 08:00	-							
_	Batch	Batch		Dilution	Batch			Prepared	
Prep Type	Туре	Method	Run	Factor		Analyst	Lab	or Analyzed	
Total/NA	Analysis	8260D		1	910294	SZD	EET EDI	05/20/23 00:20	
Total/NA	Analysis	8260D SIM		1	910165	SZD	EET EDI	05/19/23 12:11	
_ Client Samp	le ID: MW-13	4S 050823						Lab Sample ID:	240-185147-4
	1: 05/08/23 13:54	_							Matrix: Water
	: 05/11/23 08:00								
_	Batch	Batch		Dilution	Batch			Prepared	
Prep Type	Туре	Method	Run	Factor		Analyst	Lab	or Analyzed	
Total/NA	Analysis	8260D		1	910294	SZD	EET EDI	05/20/23 00:43	
Total/NA	Analysis	8260D SIM		1	910165	SZD	EET EDI	05/19/23 12:33	
- Client Samn	le ID: MW-13	35 050823						Lab Sample ID:	240-185147-5
	1: 05/08/23 14:50	_							Matrix: Water
	: 05/08/23 14.50 : 05/11/23 08:00								watrix. water
_				Dilution	Batch			Prepared	
	Batch	Batch	D			A	Lak	au Au - I I	
Prep Type	Туре	Method	Run	Factor	Number	Analyst		or Analyzed	
Total/NA	Analysis	Method 8260D	Run	Factor	Number 910294	SZD	EET EDI	05/20/23 01:06	
	Туре	Method	Run	Factor	Number	SZD			

Laboratory References:

EET EDI = Eurofins Edison, 777 New Durham Road, Edison, NJ 08817, TEL (732)549-3900

Accreditation/Certification Summary

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

Laboratory: Eurofins Edison

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

Authority	Program	Identification Number	Expiration Date
Connecticut	State	PH-0818	01-30-24
DE Haz. Subst. Cleanup Act (HSCA)	State	N/A	01-01-24
Georgia	State	12028 (NJ)	06-30-23
Massachusetts	State	M-NJ312	06-30-23
New Jersey	NELAP	12028	06-30-23
New York	NELAP	11452	04-01-24
Pennsylvania	NELAP	68-00522	03-01-24
Rhode Island	State	LAO00376	12-30-23
USDA	US Federal Programs	P330-20-00244	11-03-23

13 14

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	165	TestAmerica Laboratory location: <u>Brighton</u> -	Chain (- 10448 Citation	Chain of Custody Record 10448 Citation Drive, Suite 2007 Brighton, MI 48116 / 810-229-2763	d 1 48116 / 810-229	-2763		I	
	Client Contact	Regulatory program:	MQ	C NPDES C RCRA	Other				
<u> </u>	Company Name: Arcadis Addama: 19660.Cabat Daira Suita 600.	Client Project Manager: Kris Hinskey		Site Contact: Christina M eaver		Lab Contact: Mike DetMonico	ke DetMonic		TestAmerica Laboratories, Inc COC No:
8 18		Telephone: 248-994-2240		l'elephone: 248-994-2240		Telephone: 330-497-9396	9616-261		
5 ;	CUL/SSERCE/CHP: NON4, NH. 48377	Email: kristoffer.hinskey@arcadis.com		Analysis Turnaround Tine			Analyses	8	1 of 1 COCS For lab use only
£	Phone: 248-994-2240	Sampler Name:		LAT it different from helow					Walk-in client
ž	Project Name: Ford LTP Off-Site	LETICIA FERREIR	£	10 day P 2 weeks					Lab sampling
É	Project Number: 34167558,442.04	Netbud of Shipuwat/Carrier:		2 days	-	80	8	WIS	
24	PO# 30167538.402.04	Shippiug/Fracking No:		l day	PEND /		0928	80928	Job/SDG No:
	Sample Identification	Sample Date Sanuple Time Antonna	Matrix bilos :1960:	Outpet: Gutetiners & Preservatives Zance HOCH HOCH HOCH HOCH HOCH	Filtered Sam	PCE 8260B	Vinyl Chloride TCE 8260B	3 ənsxoiQ-4. P	Sample Specific Notes / Special Instructions:
اا م	TRIP BLANK_ 172				X D Z	× × ×	××		1 Trip Blank
ø	MW - 815_ 050823	5/8/23 1132 6		9	NGX	X X X	X X	×	3 VOAs for 8260B 3 VOAs for 8260B SIM
	WW-815-MS_050823	5/8/23 1132 6		9	N G X	X X X	х ×	×	/ RUN MS
	MW-815-MSD_050823	5/8/23 1132 6		9	NGX	X X X	X X	×	RUN MSD
21°of	MW-81_050823	5/8/23 1234 6		9	S G X	XXX	X	×	
	MW-1345_050823	5/8/23 1354 6		6	NGX	XXX	X	×	
a	MW-1335_650823	5/8/23 1450 6		9	NGX	X X X	××		>
I	David h. H. same 1. Jac st G. astron		_						
13	Possime nazard identitication V. Non-Hazard Flammable 5kin Irritant k - Non-Hazard	tant 📄 Poisen B 👘 Unknown		Sample Disposal (A fee may be assessed if samples are retained longer the Return to Client > Disposal By Lab Archive For	be assessed if sam Disposal By Lat	ples are retained le	e For	240-185147 Chain of Custory	of custody
Le Se Se S	special Instructions OC Requirements & Comments: Sample Address: 5万円名A ROW Submit all results through Cadena at jtomalia@cadenaco.com. Cadena #E203631 Level IV Reporting requested.	o.com. Cadena #E203631							
Rc	Relinquished by LEULCIA FERRERIA	Company ARCA DES 5	18/3 /	650 Received by:	COUN	TCRACE	Company:	ARCANTS	Date/Time
<u>ଅ</u> ଅ	Relinquished by: Relinq	Date Date	Tune 23		M M M		Company:	EENA	23 /1
5/21	אר אין	1))		
/20									

IC.C. IA
Eurofins - Canton Sample Receipt Form/Narrative Login # : 80144
Client Arcadis Site Name Cooler unpacked by
FedEx: 1 st Grd Exp UPS FAS Clipper Client Drop Off Eurofins Courier Other
Receipt After-hours: Drop-off Date/Time Storage Location Eurofins Cooler # Foam Box Client Cooler Box Other
COOLANT: Wet Ice Blue Ice Dry Ice Water None 1. Cooler temperature upon receipt See Multiple Cooler Form
 2. Were tamper/custody seals on the outside of the cooler(s)? If Yes Quantity Cody Yes No -Were the seals on the outside of the cooler(s) signed & dated? -Were tamper/custody seals on the bottle(s) or bottle kits (LLHg/MeHg)? -Were tamper/custody seals intact and uncompromised? 3. Shippers' packing slip attached to the cooler(s)? 4. Did custody papers accompany the sample(s)? 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? 7. Did all bottles arrive in good condition (Unbroken)? 8. Could all bottle labels (ID/Date/Time) be reconciled with the COC? 9. For each sample, does the COC specify preservatives (YNN), # of containers (YNN), and sample type of grab/comp(Y/N)? 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? 15. Were air bubbles >6 mm in any VOA vials? 15. Were air bubbles >6 mm in any VOA vials? 16. Were VOAs on the COC? 17. Were air bubbles >6 mm in any VOA vials? 17. Were air bubbles >6 mm in any VOA vials? 18. Were VOAs on the COC? 19. Were air bubbles >6 mm in any VOA vials? 19. Were air bubbles >6 mm in any VOA vials? 10. Were air bubbles >6 mm in any VOA vials? 10. Were air bubbles >6 mm in any VOA vials? 10. Were voas on the COC? 10. Were air bubbles >6 mm in any VOA vials? 10. Were voas on the COC? 10. Were voas on the COC? 11. Sufficient quantity received to perform indicated analyses? 12. Are these work share samples and all listed on the COC? 13. Were air bubbles >6 mm in any VOA vials? 14. Were VOAs on the COC? 15. Were air bubbles >6 mm in any VOA vials? 15. Were air bubbles >6 mm in any VOA vials? 15. Were voas on the COC? 15. Were voas on the complex voas on the complex voas on the complex voas on the complex voas o
16. Was a VOA trip blank present in the cooler(s)? Trip Blank Lot # VOUCTON (Yes) Ve
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)
Sample(s) were received in a broken container.
Sample(s) were received with bubble >6 mm in diameter. (Notify PM)
20. SAMPLE PRESERVATION
Sample(s) were further preserved in the laboratory.
Sample(s)
VOA Sample Preservation - Date/Time VOAs Frozen:

Cooler Description	IR Gun #	Observed	Corrected	Coolant
(Circle)	(Circle)	Temp °C	Temp °C	(Circle)
EC Client Box Other		1.0	10	Wet Ice Blue Ice Dry I Water None
EC) Client Box Other	IR GUN #: dd	1.2	1.2	Wet Ice Blue Ice Dry k Water None
EC Client Box Other	IR GUN #:			Wet Ice Blue Ice Dry k Water None
EC Client Box Other	IR GUN #:			Wet Ice Blue Ice Dry Ic Water None
EC Client Box Other	IR GUN #:			Wet ice Blue ice Dry k Woter None
EC Client Box Other	IR GUN #:			Wet Ice Blue Ice Dry k Water None
EC Client Box Other	IR GUN #:			Wet ice Blue Ice Dry Ic Water None
EC Client Box Other	IR GUN #:			Wet ice Blue ice Dry ic Water None
EC Client Box Other	IR GUN 4:			Wet ice Blue ice Dry ic Water None
EC Client Box Other	IR GUN #:			Wet Ice Blue Ice Dry Ic Water None
EC Client Box Other	IR GUN #:			Wet Ice Blue Ice Dry Ic Water None
EC Client Box Other	IR GUN #:			Wet Ice Blue Ice Dry Ic Water None
EC Client Box Other	IR GUN #:			Wet Ice Blue Ice Dry Ic Water None
EC Client Box Other	IR GUN #:			Wefice Blue ice Dry ic Water None
EC Client Box Other	IR GUN #:			Wet Ice Blue Ice Dry Ic Water None
EC Client Box Other	IR GUN #:			Wefice Blue ice Dry ic Water None
EC Client Box Other	IR GUN #:			Wet Ice Blue Ice Dry Ice Water None
EC Client Box Other	IR GUN #:			Wellice Bluelice Drylos Water None
EC Client Box Other	IR GUN #:			Wet Ice Blue Ice Dry Ice Water None
EC Client Box Other	IR GUN #:			Wet Ice Blue Ice Dry Ice Water None
EC Client Box Other	IR GUN #:			Wet ice tive ice Dry ice Water None
EC Client Box Other	IR GUN #:			Wet ice Blue ice Dry ice Water None
EC Client Box Other	IR GUN #:			Wet ice Blue ice Dry ice Water None
EC Client Box Other	IR GUN #:			Wet ice Blue ice Dry ice Water None
EC Client Box Other	IR GUN #:			Wet ice Blue ice Dry ice Water None
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EC Client Box Other	IR GUN #:			Wet Ice Blue Ice Dry Ice Water None
EC Client Box Other	IR GUN #:			Wet ice Blue ice Dry ice Water None

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

8	
levelan	en Avenue
ofins C	. Van Burer
Eur	180 S

Chain of Custody Record



🛟 eurofins

Barberton, OH 44203 Phone: 330-497-9396 Fax: 330-497-0772))						Environment Testing
Client Information (Sub Contract Lab)	Sampler:			Lab PI DelM	Lab PM: DelMonico, Michael	chael		Carrier Tracking No(s):		COC No: 240-167972.1	
Client Contact: Shipping/Receiving	Phone:			E-Mail Micha	ael.DelMc	onico@et	E-Mail: Michael.DelMonico@et.eurofinsus.com	State of Origin: Michigan		Page: Page 1 of 1	
Company: Eurofins Environment Testing Northeast,					Accreditatio	ns Require	Accreditations Required (See note):			Job #: 240-185147-1	
Address: 777 New Durtham Road,	Due Date Requested: 5/24/2023	:pe					Analysis Requested	quested		Preservation Codes:	1 Ö
City: Edison State, Zp: NJ 10847	TAT Requested (d	ays):								A - HUL B - NaOH C - Zn Acetate D - Nitric Acid E - NaHSO4	
Phone: 732-549-3900(Tel) 732-549-3679(Fax)	#Od				124					F - MeOH G - Amchlor	R - Na2S203 S - H2SO4 T - TSP Dodecahydrate
	# OM				(0)					H - Ascorbic Acid - Ice J - DI Water	
Project Name: Ford LTP - Off Site	Project #: 24015353				120				1enist	K - EDTA L - EDA	W - pH 4-5 Y - Trizma Z - other (snecifu)
Site:	SSOW#:				e o (Other:	
, Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=comp, G=grab)	MAUTX (W=water, S=solid, O=waste/oli, BT=Tesue, A=Ak)	8560D/5030C (W Low WS/W Joid Filterod	8560D_SIM/5030			Total Number	Special In	Special Instructions/Note:
	X	X		tion Code:	X				X		
TRIP BLANK_172 (240-185147-1)	5/8/23	Eastern		Water	×				-		
MW-81S_050823 (240-185147-2)	5/8/23	11:32 Eastern		Water	×	×			18		
0 MW-81S-MS_050823 (240-185147-2MS)	5/8/23	11:32 Eastern	WS	Water	×	×			+		
MW-81S-MSD_050823 (240-185147-2MSD)	5/8/23	11:32 Eastern	MSD	Water	×	×			+		
MW-81_050823 (240-185147-3)	5/8/23	12:34 Eastern		Water	×	×			Q		
MW-134S_050823 (240-185147-4)	5/8/23	13:54 Eastern		Water	×	×			8		
MW-133S_050823 (240-185147-5)	5/8/23	14:50 Eastern		Water	×	×			9		
Note: Since laboratory accreditations are subject to change. Eurofins Environment Testing North Central, LLC places the ownership of method, analyte & accreditation compliance upon our subcontract laboratories. This sample shipment is forwarded under chain-of-custody. If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/tests/matrix being analyzad, the samples must be shipped back to the Eurofins Environment Testing North Central, LLC laboratory or other instructions will be provided. Any changes to accreditation status should be brought to Eurofins Environment Testing North Central, LLC attention immediately. If all requested accreditations are current to date, return the signed Chain of Custody attesting North Central, LLC aboratory or other instructions will be provided. Any changes to accreditation status should be brought to Eurofins Environment Testing North Central, LLC attention immediately. If all requested accreditations are current to date, return the signed Chain of Custody attesting North Central, LLC attention immediately. If all requested accreditations are current to date, return the signed Chain of Custody attesting to said compliance to Eurofins Environment Testing North Central, LLC	nment Testing North Cen ad above for analysis/test h Central, LLC attention i	s/matrix being mmediately. If	s the ownership analyzed, the s all requested a	o of method, ana amples must be iccreditations are	lyte & accre shipped ba	iditation co ck to the E date, return	mpliance upon our subco urofins Environment Test the signed Chain of Cus	ntract laboratories. This : ing North Central, LLC la tody attesting to said con	sample shipmen boratory or other npliance to Euro	it is forwarded under r instructions will be fins Environment Te	chain-of-custody. If the provided. Any changes to sting North Central, LLC.
Possible Hazard Identification Unconfirmed					Samp	le Disposal (A f Return To Client	sal (A fee may be a	Sample Disposal (A fee may be assessed if samples are retained longer than 1 month) Return To Client Discosal By I ab Annio Eor Mono	s are retaine	tained longer than 1 Archive For	1 month) Months
Deliverable Requested: I, II, IV, Other (specify)	Primary Deliverable	able Rank: 2	N		Specia	al Instruc	Requirem	ints:			
Empty Kit Relinquished by:		Date:			Time:			Method of Shipment:	Ľ	CLEV	
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Custody Seals Intact: Custody Seal No.: △ Yes △ No					3 \	ooler Tempe	ture(s) °C and Other I	Remarks:			
					114 3 15	513) 11 12	9 10	7	- 5 6	2 3 4

5/21/2023

Client: ARCADIS US Inc

Login Number: 185147 List Number: 2

Creator: Armbruster, Chris

Question	Answer	Comment
Radioactivity wasn't checked or is = background as measured by a survey meter.</td <td>N/A</td> <td></td>	N/A	
The cooler's custody seal, if present, is intact.	N/A	
Sample custody seals, if present, are intact.	N/A	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

Job Number: 240-185147-1

List Source: Eurofins Edison

List Creation: 05/12/23 03:15 PM

DATA VERIFICATION REPORT



May 25, 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: 185147-1 Sample date: 2023-05-08 Report received by CADENA: 2023-05-25 Initial Data Verification completed by CADENA: 2023-05-25 Number of Samples:5 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, LCS/LCD RPD, MS/MSD Recovery, MS/MSD RPD, 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: 185147-1

		Sample Name: Lab Sample ID: Sample Date:	TRIP BLA 2401851 5/8/202	 1471 3			MW-819 2401851 5/8/202	3	3		MW-81 240185 5/8/202	3			MW-13 240185 5/8/202	3	23		MW-133 2401851 5/8/202	 1475 3	23	
	Analyte	Cas No.	Result	Report Limit	Units	Valid Qualifier	Result	Report Limit	Units	Valid Qualifier	Result	Report Limit	Units	Valid Qualifier	Result	Report Limit	Units	Valid Qualifier	Result	Report Limit	Units	Valid Qualifier
GC/MS VOC OSW-8260	D																					
	1,1-Dichloroethene cis-1,2-Dichloroethene Tetrachloroethene	75-35-4 156-59-2 127-18-4	ND ND ND	1.0 1.0 1.0	ug/l ug/l ug/l		ND ND ND	1.0 1.0 1.0	ug/l ug/l ug/l		ND ND ND	1.0 1.0 1.0	ug/l ug/l ug/l		ND ND ND	1.0 1.0 1.0	ug/l ug/l ug/l		ND ND ND	1.0 1.0 1.0	ug/l ug/l ug/l	
	trans-1,2-Dichloroethene Trichloroethene Vinyl chloride	156-60-5 79-01-6 75-01-4	ND ND ND	1.0 1.0 1.0	ug/l ug/l		ND ND ND	1.0 1.0 1.0	ug/l ug/l ug/l		ND ND ND	1.0 1.0 1.0	ug/l ug/l		ND ND ND	1.0 1.0 1.0	ug/l ug/l ug/l		ND ND ND	1.0 1.0 1.0	ug/l ug/l	
<u>OSW-8260</u>	,	123-91-1	ND	1.0	ug/l		ND	2.0	ug/I		ND	2.0	ug/l ug/l		ND	2.0	ug/l		ND	2.0	ug/l ug/l	



Ford Motor Company – Livonia Transmission Project

Data Review

Livonia, Michigan

Volatile Organic Compounds (VOC) Analysis

SDG # 240-185147-1 CADENA Verification Report: 2023-05-25

Analyses Performed By: Eurofins North Canton, Ohio

Report # 49933R Review Level: Tier III Project: 30167538.402.02

SUMMARY

This data quality assessment summarizes the review of Sample Delivery Group (SDG) # 240-185147-1 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 Collection		Ana	lysis
Sample ID	Lab ID	Matrix	Date	Parent Sample	voc	VOC SIM
TRIP BLANK_172	240-185147-1	Water	05/08/23		Х	
MW-81S_050823	240-185147-2	Water	05/08/23		Х	Х
MW-81_050823	240-185147-3	Water	05/08/23		Х	Х
MW-134S_050823	240-185147-4	Water	05/08/23		Х	Х
MW-133S_050823	240-185147-5	Water	05/08/23		Х	Х

ANALYTICAL DATA PACKAGE DOCUMENTATION

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

	Items Reviewed	Rep	orted		mance ptable	Not
		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		Х	
8.	Sample preservation verification (as applicable)		Х		Х	
9.	Sample preparation/extraction/analysis dates		Х		Х	
10.	Fully executed Chain-of-Custody (COC) form		Х		Х	
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 calibrations were within the specified control limits, with the exception of the compounds presented in the following table.

Sample ID	Initial / Continuing	Compound	Criteria
MW-81S_050823 MW-81_050823 MW-134S_050823 MW-133S_050823	Initial Calibration Verification %D	1,4-Dioxane	+28.1%

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

DATA REVIEW

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

Note:

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

4. Internal Standard Performance

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

All internal standard responses were within control limits.

5. Field Duplicate Analysis

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

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.

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 ptable	Not Required
	No	Yes	No	Yes	Requireu
GAS CHROMATOGRAPHY/MASS SPECTROMETRY (G	C/MS)				
Tier II Validation					
Holding times/Preservation		Х		X	
Tier III Validation					
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	
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	
Notes:					

%RSD Relative standard deviation

%R Percent recovery

RPD Relative percent difference

%D Percent difference

VALIDATION PERFORMED BY:	Dilip Kumar
SIGNATURE:	Pertmit
DATE:	June 16, 2023

PEER REVIEW: Andrew Korycinski

DATE: June 19, 2023

NO CORRECTIONS/QUALIFERS ADDED TO SAMPLE ANALYSIS DATA SHEETS



CHAIN OF CUSTODY CORRECTED SAMPLE ANALYSIS DATA SHEETS



Chain of Custody Record



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

Ċe	oject Name: Ford LTP Off-Site oject Number: 30167538.402.04) # 30167538.402.04 Sample Identification TRIP BLANK_ \72 MW - 8\S_050823 MW - 8\S-MS_050823 MW - 8\S_050823 MW - 134 S_050823	٦																								т	estAme	rica Laboratories,
-	derase: 19550 Cabai Driva Suita 500	Client Project N	Manager: Kris F	linsko	ey -			Site	Con	tact: C	hristi	w an	eaver				Lab C	ontac	t: Mik	e Del	Monic	0					OC No:	
_		Telephone: 248	-994-2240					Tel	epho	ne: 24	8-994-	2240				_	Telep	hone:	330-4	97-93	96							
_		Email: kristoff	er.hinskey@arc	adis.c	om			6.23	Anal	ysis T	urnar	ound	Time			_		-	_	A	nalys	es				F		
Pł	hone: 248-994-2240	Sampler Name						TA	Tirda	crent lis	om helo	w	1	-												v	Valk-in c	lient
Pr	roject Name: Ford LTP Off-Site			Analysis Turnaround Tine For lab use only Value only TAT undiferent inem below Total use only Value only																								
Pr	roject Number: 30167538.402.04	Method of Ship		100	APK I	1			10 08		F 1	week		7	y			8				N				ľ	ab sampi	ling
PO	() # 30167538.402.04	Shipping/Track	ing No:					1						N.	Grab		50B	8260			2608	SOB S				J	ob/SDG I	No:
-					М	atrix			Con	tainer	s & Pro	eserval	tives	- The	1.	260B	E 82(DCE		~	de 8	e 82(
					5			7	_		_			red St	pesite	CE 8	2-DC	-1,2-	92601	3260	Chlori	oxan				Sample Specific N	unle Specifie Notes /	
_	Sample Identification	Sample Date	Sample Time	Air	Aqueo	Solid	Other	H2SO	ONH	ΗC	NaOF ZhAc	Unpro	Other	Filter	Com	1.1-0	cis-1	Trans	PCE	TCE	Vinyl	1.4-D						
_	TRIP BLANK_ 172	518/23			1					1				N	G	Х	Х	Х	Х	х	X						1 Tri	p Blank
	MW-815_050823	5/8/23	1132		6					6				N	G	X	\times	\times	X	X	X	×						
_	MW-815-MS_050823	5/8/23	1132		6					6				N	G	Х	X	X	x	\times	X	\times						/ RUN MS
	MW-815-MSD_050823	5/8/23	1132		6					6				N	G	X	x	K	Х	x	X	X						RUN MS
	MW-81_050823	5/8/23	1234		6					1/ 1				N	G	Х	X	Х	X	×	X	X						
	MW-1345_050823	5/8/23	1354		6					6				Ň	G	X	Х	\succ	X	X	X	X						
_	MW-1335_050823	5/8/23	1450		6					6				N	G	Х	X	X	Х	X	X	×					a	
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-	Possible Hazard Identification							╞	Samo	Le Disr	nosali	A (00	may b	0.9800	tod if		00 0 00	rotai	nod lo	10051							stody	IN DIGHT LEDIT SEAL
-	🔄 Non-Hazard 🛛 🔽 Flammable 🔤 Skin Irri	tant 🔽 Poisc	m B 🔽	Unkr	ww.n					Retur				Dispo			ics are		rchive			240	-1851	4/ 0	Chain O	1 0 0		
	pecial Instructions QC Requirements & Comments: ample Address: STARK ROW																											
S	Submit all results through Cadena at jtomalia@cadenac evel IV Reporting requested.	o.com. Cadena #	E203631																									
_	telinquished by:	Company:	RCADES		Date/T	ime: C. I-	n	14.	50		Receiv					0	B().	2.0	-	Com	pany	A	200	~	<		$\frac{Date/Time}{5/8}$	127 / 11-
R	telinquished by:	Company: A	RUADITS		$\frac{5}{5/6}$		22/		55	I	Receiv			Th	1	11	DPI 2	16	5	Com	pany:		E/				5/0 Date/Time 5/10/	<u> 23 165</u> 23 153
R	telinquished by: 1/1/1/ MA	Company:	EEM		Date T	ime			25		Recen		Labers	atory b	y:	n		<u> </u>		Cony		7	D	14			Date Lim	R:
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Eurofins Cleveland

180 S. Van Buren Avenue Barberton, OH 44203 Phone: 330-497-9396 Fax: 330-497-0772

Chain of Custody Record



eurofins Environment Testing

Client Information (Sub Contract Lab)	Sampler:			Lab Dell	PM: Monico	, Mic	hael					Carrie	Trackin	g No(s):			COC No: 240-167972.1	
Client Contact: Shipping/Receiving	Phone:			E-Ma Mic	iil: nael.Do	alMo	nico@		rofins		m	State of Michi	of Origin				Page: Page 1 of 1	
Company:				INICI					See not			IVICII	yan			_	Job #:	
Eurofins Environment Testing Northeast, Address:	Due Date Request	ad.			<u> </u>					_							240-185147-1	
777 New Durham Road, ,	5/24/2023								Ana	alysi	s Re	quest	ed			- 1	Preservation Co A - HCL	M - Hexane
City: Edison	TAT Requested (da	ays):														20	B - NaOH	N - None O - AsNaO2
State, Zip:																	C - Zn Acetate D - Nitric Acid	P - Na2O4S Q - Na2SO3
NJ, 08817 Phone:	PO #:																E - NaHSO4 F - MeOH	R - Na2S2O3 S - H2SO4
732-549-3900(Tel) 732-549-3679(Fax)	10 #.				3	lst)											G - Amchlor H - Ascorbic Acid	T - TSP Dodecahydra
Email:	WO #:				s or No)	hort L										And in case of the local division of the loc	I - Ice J - DI Water	U - Acetone V - MCAA
Project Name: Ford LTP - Off Site	Project #: 24015353					8260D/5030C (MOD) VOCs (Short List)										Ē	K - EDTA L - EDA	W - pH 4-5 Y - Trizma Z - other (specify)
Site:	SSOW#:				Saring SD(s (0 10											Other:	Z - other (specify)
				Matrix	SMIS	(MO	SIM/5030C									ber of		
			Sample Type	(W=water, S=solid,	Titter The M	5030	SIM/									Ium		
Sample Identification - Client ID (Lab ID)	Comb Date	Sample	(C=comp,	O=waste/oil, BT=Tissue,	R	10092	8260D									Total !		
Sample identification - Client ID (Lab ID)	Sample Date	Time	G=grab)	A=A+)		.8	8									E.	Special Ir	structions/Note:
TRIP BLANK_172 (240-185147-1)	5/8/23	Eastern		Water		X										1		
MW-81S_050823 (240-185147-2)	5/8/23	11:32 Eastern		Water		x	X									18		
MW-81S-MS_050823 (240-185147-2MS)	5/8/23	11:32 Eastern	MS	Water		x	X			+	1	\square				1		
MW-81S-MSD_050823 (240-185147-2MSD)	5/8/23	11:32 Eastern	MSD	Water		x	X				1				\uparrow	1		
MW-81_050823 (240-185147-3)	5/8/23	12:34 Eastern		Water	Π	X	X									6		
MW-134S_050823 (240-185147-4)	5/8/23	13:54 Eastern		Water	Π	X	X								Π	6		
MW-133S_050823 (240-185147-5)	5/8/23	14:50 Eastern		Water	Π	X	X				T					6		
Note: Since laboratory accreditations are subject to change, Eurofins Env laboratory does not currently maintain accreditation in the State of Origin accreditation status should be brought to Eurofins Environment Testing N	ISTED ADOVE TOP ANALYSIS/TESTS	s/matrix being	analyzed the	samnles must h	o chinne	nd hac	k to the	a Euro	fine Env	imm	ant Taci	ing Mort	Contra	I I I C John	ratan ar	c othor	instantions will be	manufale of the state
Possible Hazard Identification		-						_	_								d longer than	
Unconfirmed							Return					Dispos					ive For	Months
Deliverable Requested: I, II, III, IV, Other (specify)	Primary Delivera	able Rank:	2		Sp	ecial	Instr	uction	ns/QC	Requ	uireme	nts:						
Empty Kit Relinquished by:		Date:			Time:					_		M	lethod o	f Shipment	: T-	-0	dex	
Relinguished by:	Date/Time:	17	D	Company BETT	10	Rec	eived b	51	0	ñ e	1~			Date/Tim		2	10:30	Company
Relinquisted by:	Date/Time:			Company			eived b			<u>.</u>				Date/Tim	1212	<u> </u>		Company
Relinquished by:	Date/Time:			Company		Rec	eived b	y:						Date/Tim	10:			Company
Custody Seals Intact: Custody Seal No.:						Cool	er Terr	peratu	ure(s) °C	C and (Other R	emarks:	_	Ļ				
Δ Yes Δ No					-	to a		~	(- (-	2' 1		.5	- 0				

-

Client Sample ID: TRIP BLANK_172

Date Collected: 05/08/23 00:00 Date Received: 05/11/23 08:00

Method: SW846 8260D - Volati	ile Organic Comp	ounds by G	C/MS						
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1-Dichloroethene	1.0	U	1.0	0.49	ug/L			05/19/23 20:33	1
cis-1,2-Dichloroethene	1.0	U	1.0	0.46	ug/L			05/19/23 20:33	1
Tetrachloroethene	1.0	U	1.0	0.44	ug/L			05/19/23 20:33	1
trans-1,2-Dichloroethene	1.0	U	1.0	0.51	ug/L			05/19/23 20:33	1
Trichloroethene	1.0	U	1.0	0.44	ug/L			05/19/23 20:33	1
Vinyl chloride	1.0	U	1.0	0.45	ug/L			05/19/23 20:33	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	116		70 - 128			-		05/19/23 20:33	1
Dibromofluoromethane (Surr)	86		77 _ 124					05/19/23 20:33	1
Toluene-d8 (Surr)	103		80 - 120					05/19/23 20:33	1
4-Bromofluorobenzene	90		76 - 120					05/19/23 20:33	1

Job ID: 240-185147-1

Matrix: Water

Lab Sample ID: 240-185147-1

Eurofins Cleveland

Client Sample ID: MW-81S_050823

Date Collected: 05/08/23 11:32 Date Received: 05/11/23 08:00

Analyte		Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,4-Dioxane	2.0	θ <mark>UJ</mark>	2.0	0.86	ug/L			05/19/23 11:50	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene	94		75 - 133			-		05/19/23 11:50	1
Method: SW846 8260D - Vola	tile Organic Comr	ounds by C	SC/MS						
Analyte		Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1-Dichloroethene	1.0	U	1.0	0.49	ug/L			05/19/23 21:19	1
cis-1,2-Dichloroethene	1.0	U	1.0	0.46	ug/L			05/19/23 21:19	1
Tetrachloroethene	1.0	U	1.0	0.44	ug/L			05/19/23 21:19	1
trans-1,2-Dichloroethene	1.0	U	1.0	0.51	ug/L			05/19/23 21:19	1
Trichloroethene	1.0	U	1.0	0.44	ug/L			05/19/23 21:19	1
Vinyl chloride	1.0	U	1.0	0.45	ug/L			05/19/23 21:19	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	120		70 - 128			-		05/19/23 21:19	1
Dibromofluoromethane (Surr)	88		77 _ 124					05/19/23 21:19	1
Toluene-d8 (Surr)	102		80 - 120					05/19/23 21:19	1
4-Bromofluorobenzene	90		76 - 120					05/19/23 21:19	1
-			/0-/20					00,10,20 20	

Job ID: 240-185147-1

Lab Sample ID: 240-185147-2

Matrix: Water 5 6 7

Eurofins Cleveland

Client Sample ID: MW-81_050823

Date Collected: 05/08/23 12:34 Date Received: 05/11/23 08:00

Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
2.0	A NN	2.0	0.86	ug/L			05/19/23 12:11	1
%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
97		75 - 133			-		05/19/23 12:11	1
le Organic Comp	ounds by G	C/MS						
Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1.0	U	1.0	0.49	ug/L			05/20/23 00:20	1
1.0	U	1.0	0.46	ug/L			05/20/23 00:20	1
1.0	U	1.0	0.44	ug/L			05/20/23 00:20	1
1.0	U	1.0	0.51	ug/L			05/20/23 00:20	1
1.0	U	1.0	0.44	ug/L			05/20/23 00:20	1
1.0	U	1.0	0.45	ug/L			05/20/23 00:20	1
%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
121		70 - 128			-		05/20/23 00:20	1
87		77 - 124					05/20/23 00:20	1
101		80 - 120					05/20/23 00:20	1
95		76 - 120					05/20/23 00:20	
	2.0 %Recovery 97 le Organic Comp Result 1.0 1.0 1.0 1.0 1.0 1.0 1.0 2.0 87	%Recovery Qualifier 97 97 le Organic Compounds by G Qualifier 1.0 U 87 87	2.0 U 2.0 %Recovery Qualifier Limits 97 75-133 le Organic Compounds by GC/MS Result Qualifier RL 1.0 U 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 <t< td=""><td>$\begin{array}{c c c c c c c c c c c c c c c c c c c$</td><td>$2.0 \ \forall \ \forall \ \forall \ dotsin$</td><td>$2.0$ UJ 2.0 0.86 ug/L %Recovery Qualifier Limits 97 $75 \cdot 133$ $1000000000000000000000000000000000000$</td><td>$2.0 \ \forall \ \bigcup$ $2.0 \ 0.86 \ ug/L$ $Prepared$ %Recovery Qualifier Limits Prepared $97 \ 75.133$ MDL Unit D Prepared le Organic Compounds by GC/MS MDL Unit D Prepared $1.0 \ U$ $1.0 \ U$ $0.49 \ ug/L$ D Prepared $1.0 \ U$ $1.0 \ 0.44 \ ug/L$ $0.44 \ ug/L$ D Prepared $1.0 \ U$ $1.0 \ 0.44 \ ug/L$ $0.44 \ ug$</td><td>$\begin{array}{c c c c c c c c c c c c c c c c c c c$</td></t<>	$\begin{array}{c c c c c c c c c c c c c c c c c c c $	$2.0 \ \forall \ \forall \ \forall \ dotsin $	2.0 UJ 2.0 0.86 ug/L %Recovery Qualifier Limits 97 $75 \cdot 133$ $1000000000000000000000000000000000000$	$2.0 \ \forall \ \bigcup$ $2.0 \ 0.86 \ ug/L$ $Prepared$ %Recovery Qualifier Limits Prepared $97 \ 75.133$ MDL Unit D Prepared le Organic Compounds by GC/MS MDL Unit D Prepared $1.0 \ U$ $1.0 \ U$ $0.49 \ ug/L$ D Prepared $1.0 \ U$ $1.0 \ 0.44 \ ug/L$ $0.44 \ ug/L$ D Prepared $1.0 \ U$ $1.0 \ 0.44 \ ug/L$ $0.44 \ ug$	$\begin{array}{c c c c c c c c c c c c c c c c c c c $

Job ID: 240-185147-1

Eurofins Cleveland

Lab Sample ID: 240-185147-3 Matrix: Water 5 6 7

Client Sample ID: MW-134S_050823

Date Collected: 05/08/23 13:54 Date Received: 05/11/23 08:00

Analyte		Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,4-Dioxane	2.0	ե <mark>Ո</mark>	2.0	0.86	ug/L			05/19/23 12:33	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene	96		75 - 133			-		05/19/23 12:33	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			05/20/23 00:43	1
cis-1,2-Dichloroethene	1.0	U	1.0	0.46	ug/L			05/20/23 00:43	1
Tetrachloroethene	1.0	U	1.0	0.44	ug/L			05/20/23 00:43	1
trans-1,2-Dichloroethene	1.0	U	1.0	0.51	ug/L			05/20/23 00:43	1
Trichloroethene	1.0	U	1.0	0.44	ug/L			05/20/23 00:43	1
Vinyl chloride	1.0	U	1.0	0.45	ug/L			05/20/23 00:43	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)			70 - 128			-		05/20/23 00:43	1
Dibromofluoromethane (Surr)	86		77 - 124					05/20/23 00:43	1
Toluene-d8 (Surr)	102		80 - 120					05/20/23 00:43	1
4-Bromofluorobenzene	98		76 - 120					05/20/23 00:43	1

Job ID: 240-185147-1

5 6 7

Eurofins Cleveland

Client Sample ID: MW-133S_050823

Date Collected: 05/08/23 14:50 Date Received: 05/11/23 08:00

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,4-Dioxane	2.0	A NN	2.0	0.86	ug/L			05/19/23 12:55	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene	94		75 - 133			-		05/19/23 12:55	1
Method: SW846 8260D - Vol	atile Organic Comr	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			05/20/23 01:06	1
cis-1,2-Dichloroethene	1.0	U	1.0	0.46	ug/L			05/20/23 01:06	1
Tetrachloroethene	1.0	U	1.0	0.44	ug/L			05/20/23 01:06	1
trans-1,2-Dichloroethene	1.0	U	1.0	0.51	ug/L			05/20/23 01:06	1
Trichloroethene	1.0	U	1.0	0.44	ug/L			05/20/23 01:06	1
Vinyl chloride	1.0	U	1.0	0.45	ug/L			05/20/23 01:06	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)			70 - 128			-		05/20/23 01:06	1
Dibromofluoromethane (Surr)	87		77 _ 124					05/20/23 01:06	1
Toluene-d8 (Surr)	101		80 - 120					05/20/23 01:06	1
4-Bromofluorobenzene	95		76 - 120					05/20/23 01:06	1

Job ID: 240-185147-1