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Environment Testing America

ANALYTICAL REPORT

Eurofins Canton 180 S. Van Buren Avenue Barberton, OH 44203 Tel: (330)497-9396

Laboratory Job ID: 240-171936-1

Client Project/Site: Ford LTP - Off Site

For:

..... Links

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Attn: Kristoffer Hinskey

Mole Del your

Authorized for release by: 9/2/2022 9:07:36 AM

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

This report has been electronically signed and authorized by the signatory. Electronic signature is intended to be the legally binding equivalent of a traditionally handwritten signature.

Results relate only to the items tested and the sample(s) as received by the laboratory.

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Qualifiers

GC/MS VOA	Qualifier Description
Qualifier	Qualifier Description Indicates the analyte was analyzed for but not detected.
0	
Glossary	
Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CFU	Colony Forming Unit
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MCL	EPA recommended "Maximum Contaminant Level"
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
MPN	Most Probable Number
MQL	Method Quantitation Limit
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
NEG	Negative / Absent
POS	Positive / Present
PQL	Practical Quantitation Limit
PRES	Presumptive
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)

- TEQ Toxicity Equivalent Quotient (Dioxin)
- TNTC Too Numerous To Count

Job ID: 240-171936-1

Laboratory: Eurofins Canton

Narrative

Job Narrative 240-171936-1

Case Narrative

Comments

No additional comments.

Receipt

The samples were received on 8/23/2022 9:30 AM. Unless otherwise noted below, the samples arrived in good condition, and where required, properly preserved and on ice. The temperatures of the 4 coolers at receipt time were 2.7° C, 3.9° C, 3.9° C and 4.1° C.

GC/MS VOA

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

VOA Prep

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

Method Summary

Client: ARCADIS U.S., Inc. Project/Site: Ford LTP - Off Site

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

Protocol References:

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

Laboratory References:

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

Sample Summary

Client: ARCADIS U.S., Inc. Project/Site: Ford LTP - Off Site

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
240-171936-1	TRIP BLANK_162	Water	08/19/22 00:00	08/23/22 09:30
240-171936-2	MW-150S_081922	Water	08/19/22 12:35	08/23/22 09:30

Detection Summary

Client: ARCADIS U.S., Inc. Project/Site: Ford LTP - Off Site

Client Sample ID: TRIP BLANK_162

No Detections.

Client Sample ID: MW-150S_081922

No Detections.

Job ID: 240-171936-1

Lab Sample ID: 240-171936-1

Lab Sample ID: 240-171936-2

This Detection Summary does not include radiochemical test results.

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Client Sample ID: TRIP BLANK_162 Date Collected: 08/19/22 00:00 Date Received: 08/23/22 09:30

Lab Sample ID: 240-171936-1

Matrix: Water

5

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1-Dichloroethene	1.0	U	1.0	0.49	ug/L			08/24/22 14:51	1
cis-1,2-Dichloroethene	1.0	U	1.0	0.46	ug/L			08/24/22 14:51	1
Tetrachloroethene	1.0	U	1.0	0.44	ug/L			08/24/22 14:51	1
trans-1,2-Dichloroethene	1.0	U	1.0	0.51	ug/L			08/24/22 14:51	1
Trichloroethene	1.0	U	1.0	0.44	ug/L			08/24/22 14:51	1
Vinyl chloride	1.0	U	1.0	0.45	ug/L			08/24/22 14:51	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	100		62 - 137			-		08/24/22 14:51	1
4-Bromofluorobenzene (Surr)	96		56 - 136					08/24/22 14:51	1
Toluene-d8 (Surr)	101		78 - 122					08/24/22 14:51	1
Dibromofluoromethane (Surr)	103		73 - 120					08/24/22 14:51	

Client Sample ID: MW-150S_081922 Date Collected: 08/19/22 12:35 Date Received: 08/23/22 09:30

Job ID: 240-171936-1

Lab Sample ID: 240-171936-2 Matrix: Water

Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac	
1,4-Dioxane	2.0	U	2.0	0.86	ug/L			08/27/22 04:14	1	÷.
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac	
1,2-Dichloroethane-d4 (Surr)	86		66 - 120			-		08/27/22 04:14	1	
Method: 8260D - Volatile O	rganic Compo	unds 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			08/24/22 18:23	1	F
cis-1,2-Dichloroethene	1.0	U	1.0	0.46	ug/L			08/24/22 18:23	1	
Tetrachloroethene	1.0	U	1.0	0.44	ug/L			08/24/22 18:23	1	1
trans-1,2-Dichloroethene	1.0	U	1.0	0.51	ug/L			08/24/22 18:23	1	
Trichloroethene	1.0	U	1.0	0.44	ug/L			08/24/22 18:23	1	
Vinyl chloride	1.0	U	1.0	0.45	ug/L			08/24/22 18:23	1	
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac	
1,2-Dichloroethane-d4 (Surr)	95		62 - 137			-		08/24/22 18:23	1	
4-Bromofluorobenzene (Surr)	91		56 - 136					08/24/22 18:23	1	
Toluene-d8 (Surr)	97		78 - 122					08/24/22 18:23	1	
Dibromofluoromethane (Surr)	100		73 - 120					08/24/22 18:23	1	

Surrogate Summary

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

		Percent Surrogate Recovery (Acceptance Limits)							
		DCA	BFB	TOL	DBFM				
Lab Sample ID	Client Sample ID	(62-137)	(56-136)	(78-122)	(73-120)				
240-171854-C-5 MS	Matrix Spike	87	92	95	92				
240-171854-C-5 MSD	Matrix Spike Duplicate	89	94	96	93				
240-171936-1	TRIP BLANK_162	100	96	101	103				
240-171936-2	MW-150S_081922	95	91	97	100				
LCS 240-539996/5	Lab Control Sample	95	102	106	99				
MB 240-539996/8	Method Blank	98	97	102	103				
Surrogate Legend									
DCA = 1,2-Dichloroeth	ane-d4 (Surr)								
BFB = 4-Bromofluorob	enzene (Surr)								
TOL = Toluene-d8 (Sur	r)								
DBFM = Dibromofluoro	omethane (Surr)								
lethod: 8260D S	IM - Volatile Organic	Compoun	ds (GC/	MS)					
latrix: Water						Prep Type: Total/			
			_						
			D/	rcont Surr		(Acceptance Limits)			

		DCA			
Lab Sample ID	Client Sample ID	(66-120)			
240-171936-2	MW-150S_081922	86	 		
240-171972-G-3 MS	Matrix Spike	88			
240-171972-M-3 MSD	Matrix Spike Duplicate	87			
LCS 240-540388/3	Lab Control Sample	92			
MB 240-540388/4	Method Blank	92			
WD 240 040000/4		52			
Surrogate Legend					

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

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Job ID: 240-171936-1

Prep Type: Total/NA

Prep Type: Total/NA

Client Sample ID: Method Blank

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

Lab Sample ID: MB 240-539996/8

Matrix: Water Analysis Batch: 539996

MB MB Analyte **Result Qualifier** RL MDL Unit D Prepared Analyzed Dil Fac 1,1-Dichloroethene 1.0 U 1.0 0.49 ug/L 08/24/22 13:39 1 cis-1,2-Dichloroethene 1.0 U 1.0 0.46 ug/L 08/24/22 13:39 1 Tetrachloroethene 1.0 U 0.44 ug/L 1.0 08/24/22 13:39 1 trans-1,2-Dichloroethene 1.0 U 1.0 0.51 ug/L 08/24/22 13:39 1 Trichloroethene 1.0 U 1.0 0.44 ug/L 08/24/22 13:39 1 Vinyl chloride 1.0 U 1.0 0.45 ug/L 08/24/22 13:39 1

	MB	MB				
Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	98		62 - 137		08/24/22 13:39	1
4-Bromofluorobenzene (Surr)	97		56 - 136		08/24/22 13:39	1
Toluene-d8 (Surr)	102		78 - 122		08/24/22 13:39	1
Dibromofluoromethane (Surr)	103		73 - 120		08/24/22 13:39	1

Lab Sample ID: LCS 240-539996/5 Matrix: Water Analysis Batch: 539996

	Spike	LCS	LCS				%Rec	
Analyte	Added	Result	Qualifier	Unit	D	%Rec	Limits	
1,1-Dichloroethene	25.0	24.1		ug/L		96	63 - 134	
cis-1,2-Dichloroethene	25.0	22.9		ug/L		91	77 - 123	
Tetrachloroethene	25.0	28.6		ug/L		114	76 - 123	
trans-1,2-Dichloroethene	25.0	23.1		ug/L		93	75 - 124	
Trichloroethene	25.0	25.9		ug/L		104	70 - 122	
Vinyl chloride	25.0	20.7		ug/L		83	60 - 144	

	LCS	LCS	
Surrogate	%Recovery	Qualifier	Limits
1,2-Dichloroethane-d4 (Surr)	95		62 - 137
4-Bromofluorobenzene (Surr)	102		56 - 136
Toluene-d8 (Surr)	106		78 - 122
Dibromofluoromethane (Surr)	99		73 - 120

95

Lab Sample ID: 240-171854-C-5 MS Matrix: Water Analysis Batch: 539996

Toluene-d8 (Surr)

	Sample	Sample	Spike	MS	MS				%Rec
Analyte	Result	Qualifier	Added	Result	Qualifier	Unit	D	%Rec	Limits
1,1-Dichloroethene	13	U	313	285		ug/L		91	56 - 135
cis-1,2-Dichloroethene	120		313	391		ug/L		87	66 - 128
Tetrachloroethene	13	U	313	345		ug/L		110	62 - 131
trans-1,2-Dichloroethene	13	U	313	275		ug/L		88	56 - 136
Trichloroethene	13	U	313	300		ug/L		96	61 - 124
Vinyl chloride	280		313	501		ug/L		71	43 - 157
	MS	MS							
Surrogate	%Recovery	Qualifier	Limits						
1,2-Dichloroethane-d4 (Surr)	87		62 - 137						
4-Bromofluorobenzene (Surr)	92		56 - 136						

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

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

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78 - 122

QC Sample Results

5 6 7

10

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

Matrix: Water Analysis Batch: 539996	54-C-5 MS									mple ID: M Prep Typ		tal/N/
	MS	мs										
Surrogate	%Recovery	Qua	lifier	Limits								
Dibromofluoromethane (Surr)	92			73 - 120								
Lab Sample ID: 240-1718 Matrix: Water Analysis Batch: 539996	54-C-5 MSD						Clien	t Samı	ole ID: N	Aatrix Spike Prep Typ		
Allalysis Balch. 559990	Sample	Sam	nlo	Spike	MSD	MSD				%Rec		RP
Analyte	Result			Added	-	Qualifier	Unit	D	%Rec	Limits	RPD	Lim
1,1-Dichloroethene	13			313	269	Quaimer	ug/L	Ľ	86	56 - 135	6	2
cis-1,2-Dichloroethene	120	0		313	386		ug/L		86	66 - 128	1	1
Tetrachloroethene	120	LL.		313	344		ug/L		110	62 - 128	0	2
											0	
trans-1,2-Dichloroethene	13 13			313 313	276 297		ug/L		88	56 - 136 61 - 124	0 1	1
Trichloroethene		U					ug/L		95 60	••••••	-	1
Vinyl chloride	280			313	494		ug/L		69	43 - 157	1	2
	MSD	MSD)									
Surrogate	%Recovery	Qua	lifier	Limits								
1,2-Dichloroethane-d4 (Surr)	89			62 - 137								
4-Bromofluorobenzene (Surr)	94			56 - 136								
Toluene-d8 (Surr)	96			78 - 122								
Dibromofluoromethane (Surr)	93			73 - 120								
lethod: 8260D SIM - \ Lab Sample ID: MB 240-5		gani	ic Com	pounds	(GC/M	S)		Cli	ent San	nple ID: Me		
lethod: 8260D SIM - V				pounds	(GC/M	S)		Cli	ent Sar	nple ID: Me Prep Typ		
lethod: 8260D SIM - V Lab Sample ID: MB 240-5 Matrix: Water Analysis Batch: 540388	40388/4	мв	МВ	-		-				Prep Typ	e: Tot	tal/N
lethod: 8260D SIM - V Lab Sample ID: MB 240-5 Matrix: Water Analysis Batch: 540388 Analyte	40388/4	MB	MB Qualifier		RL	MDL Unit			ent San Prepared	Prep Typ Analyze	e: Tot	tal/N/ Dil Fa
lethod: 8260D SIM - V Lab Sample ID: MB 240-5 Matrix: Water Analysis Batch: 540388	40388/4	мв	MB Qualifier		RL	-				Prep Typ	e: Tot	t <mark>al/N/</mark> Dil Fa
Iethod: 8260D SIM - V Lab Sample ID: MB 240-5 Matrix: Water Analysis Batch: 540388 Analyte 1,4-Dioxane	40388/4 Re	MB sult 2.0 MB	MB Qualifier U MB		RL	MDL Unit				Prep Typ Analyze 08/26/22 1	e: Tot d 3:32	Dil Fa
Iethod: 8260D SIM - V Lab Sample ID: MB 240-5 Matrix: Water Analysis Batch: 540388 Analyte 1,4-Dioxane	40388/4 Re	MB sult 2.0 MB	MB Qualifier U		RL	MDL Unit		<u>D</u>		Prep Typ Analyze	e: Tot d 3:32	Dil Fa
Iethod: 8260D SIM - V Lab Sample ID: MB 240-5 Matrix: Water Analysis Batch: 540388 Analyte 1,4-Dioxane	40388/4 Re	MB sult 2.0 MB	MB Qualifier U MB		RL	MDL Unit		<u>D</u>	Prepared	Prep Typ Analyze 08/26/22 1	e: Tot d 3:32 -	Dil Fa Dil Fa
Iethod: 8260D SIM - V Lab Sample ID: MB 240-5 Matrix: Water Analysis Batch: 540388 Analyte 1,4-Dioxane	40388/4 Re %Reco	MB sult 2.0 MB very	MB Qualifier U MB	<u>Limits</u> 66 - 12	RL 2.0 3 20	MDL Unit 0.86 ug/L			Prepared Prepared	Analyze 08/26/22 1 Analyze 08/26/22 1 08/26/22 1 08/26/22 1 0: Lab Contt Prep Typ	e: Tot d 3:32 - d 3:32 - rol Sa	Dil Fa Dil Fa Dil Fa
Iethod: 8260D SIM - V Lab Sample ID: MB 240-5 Matrix: Water Analysis Batch: 540388 Analyte 1,4-Dioxane Surrogate 1,2-Dichloroethane-d4 (Surr) Lab Sample ID: LCS 240-4 Matrix: Water Analysis Batch: 540388	40388/4 Re %Reco	MB sult 2.0 MB very	MB Qualifier U MB	<u>Limits</u> 66 - 12	RL 2.0 3 20 LCS	MDL Unit 0.86 ug/L LCS	Cli	D I	Prepared Prepared	Analyze 08/26/22 1 Analyze 08/26/22 1 08/26/26/26 08/26/27 08/26/27 08/26/27 08/26/27 08/26/27 08/26/27 08/26/27 08/26/27 08/26/27 08/26/27	e: Tot d 3:32 - d 3:32 - rol Sa	Dil Fa Dil Fa
Iethod: 8260D SIM - V Lab Sample ID: MB 240-5 Matrix: Water Analysis Batch: 540388 Analyte 1,4-Dioxane Surrogate 1,2-Dichloroethane-d4 (Surr) Lab Sample ID: LCS 240-4 Matrix: Water Analysis Batch: 540388	40388/4 Re %Reco	MB sult 2.0 MB very	MB Qualifier U MB	 66 - 12 Spike Added	RL 2.0 20 LCS Result	MDL Unit 0.86 ug/L	Cli		Prepared Prepared Imple IE	Prep Typ Analyze 08/26/22 1 Analyze 08/26/22 1 Characology Analyze 08/26/22 1 Analyze 08/26/22 1 Analyze OB/26/22 1 Analyze OB/26/22 1 Analyze A	e: Tot d 3:32 - d 3:32 - rol Sa	Dil Fa Dil Fa Dil Fa
Iethod: 8260D SIM - V Lab Sample ID: MB 240-5 Matrix: Water Analysis Batch: 540388 Analyte 1,4-Dioxane Surrogate 1,2-Dichloroethane-d4 (Surr) Lab Sample ID: LCS 240-4 Matrix: Water Analysis Batch: 540388	40388/4 Re %Reco	MB sult 2.0 MB very	MB Qualifier U MB	<u>Limits</u> 66 - 12	RL 2.0 3 20 LCS	MDL Unit 0.86 ug/L LCS	Cli	D I	Prepared Prepared	Analyze 08/26/22 1 Analyze 08/26/22 1 08/26/26/26 08/26/27 08/26/27 08/26/27 08/26/27 08/26/27 08/26/27 08/26/27 08/26/27 08/26/27 08/26/27	e: Tot d 3:32 - d 3:32 - rol Sa	Dil Fa Dil Fa Dil Fa
Iethod: 8260D SIM - V Lab Sample ID: MB 240-5 Matrix: Water Analysis Batch: 540388 Analyte 1,4-Dioxane Surrogate 1,2-Dichloroethane-d4 (Surr) Lab Sample ID: LCS 240-4 Matrix: Water Analysis Batch: 540388	40388/4 Re %Reco	MB sult 2.0 MB very 92	MB Qualifier U MB Qualifier	 66 - 12 Spike Added	RL 2.0 20 LCS Result	MDL Unit 0.86 ug/L LCS	Cli	D I	Prepared Prepared Imple IE	Prep Typ Analyze 08/26/22 1 Analyze 08/26/22 1 Characology Analyze 08/26/22 1 Characology Charac	e: Tot d 3:32 - d 3:32 - rol Sa	Dil Fa Dil Fa
Iethod: 8260D SIM - V Lab Sample ID: MB 240-5 Matrix: Water Analysis Batch: 540388 Analyte 1,4-Dioxane Surrogate 1,2-Dichloroethane-d4 (Surr) Lab Sample ID: LCS 240-4 Matrix: Water Analysis Batch: 540388 Analysis Batch: 540388 Analysis Batch: 540388 Analysis Batch: 540388	40388/4 Re 540388/3 	MB sult 2.0 MB very 92	MB Qualifier U MB Qualifier	 66 - 12 Spike Added	RL 2.0 20 LCS Result	MDL Unit 0.86 ug/L LCS	Cli	D I	Prepared Prepared Imple IE	Prep Typ Analyze 08/26/22 1 Analyze 08/26/22 1 Characology Analyze 08/26/22 1 Characology Charac	e: Tot d 3:32 - d 3:32 - rol Sa	Dil Fa Dil Fa
Iethod: 8260D SIM - V Lab Sample ID: MB 240-5 Matrix: Water Analysis Batch: 540388 Analyte 1,4-Dioxane Surrogate 1,2-Dichloroethane-d4 (Surr) Lab Sample ID: LCS 240-4 Matrix: Water Analysis Batch: 540388	40388/4 Reco 540388/3	MB sult 2.0 MB very 92	MB Qualifier U MB Qualifier		RL 2.0 20 LCS Result	MDL Unit 0.86 ug/L LCS	Cli	D I	Prepared Prepared Imple IE	Prep Typ Analyze 08/26/22 1 Analyze 08/26/22 1 Characology Analyze 08/26/22 1 Characology Charac	e: Tot d 3:32 - d 3:32 - rol Sa	Dil Fa Dil Fa Dil Fa
Iethod: 8260D SIM - V Lab Sample ID: MB 240-5 Matrix: Water Analysis Batch: 540388 Analyte 1,4-Dioxane Surrogate 1,2-Dichloroethane-d4 (Surr) Lab Sample ID: LCS 240-4 Matrix: Water Analysis Batch: 540388 Analysis Batch: 540388 Analysis Batch: 540388 Analysis Batch: 540388 Surrogate 1,4-Dioxane Surrogate	40388/4 	MB sult 2.0 MB very 92	MB Qualifier U MB Qualifier		RL	MDL Unit 0.86 ug/L LCS Qualifier	Cli	D I	Prepared Prepared ample IC <u>%Rec</u> 110	Prep Typ Analyze 08/26/22 1 Analyze 08/26/22 1 C Lab Cont Prep Typ %Rec Limits 80 - 122 Analyze Market Cont Prep Typ Market Cont Prep Typ Prep Typ Pr	e: Tot d 3:32	tal/N. Dil Fa Dil Fa ampl tal/N.
Iethod: 8260D SIM - V Lab Sample ID: MB 240-5 Matrix: Water Analysis Batch: 540388 Analyte 1,4-Dioxane Surrogate 1,2-Dichloroethane-d4 (Surr) Lab Sample ID: LCS 240-4 Matrix: Water Analysis Batch: 540388 Analysis Batch: 540388 Analyte 1,4-Dioxane Surrogate 1,2-Dichloroethane-d4 (Surr) Lab Sample ID: 240-1719 Matrix: Water Analyte 1,2-Dichloroethane-d4 (Surr) Lab Sample ID: 240-1719 Matrix: Water	40388/4 Recon 540388/3 LCS %Recovery 92	MB sult 2.0 MB very 92	MB Qualifier U MB Qualifier	Limits 66 - 12 Spike Added 10.0 Limits	RL	MDL Unit 0.86 ug/L LCS	Cli	D I	Prepared Prepared ample IC <u>%Rec</u> 110	Prep Typ Analyze 08/26/22 1 Analyze 08/26/22 1 Calculate Calculate Analyze 08/26/22 1 Calculate	e: Tot d 3:32	Dil Fa Dil Fa ample tal/N/
Iethod: 8260D SIM - V Lab Sample ID: MB 240-5 Matrix: Water Analysis Batch: 540388 Analyte 1,4-Dioxane Surrogate 1,2-Dichloroethane-d4 (Surr) Lab Sample ID: LCS 240-4 Matrix: Water Analysis Batch: 540388 Analysis Batch: 540388 Analyte 1,4-Dioxane Surrogate 1,2-Dichloroethane-d4 (Surr) Lab Sample ID: 240-1719 Matrix: Water Analyte 1,2-Dichloroethane-d4 (Surr) Lab Sample ID: 240-1719 Matrix: Water	40388/4 	MB sult 2.0 MB very 92 LCS Qua	MB Qualifier U MB Qualifier		RL 2.0 20 20 Ecsult 11.0 MS	MDL Unit 0.86 ug/L LCS Qualifier	Cli	D I	Prepared Prepared Imple IE <u>%Rec</u> 110	Prep Typ Analyze 08/26/22 1 Analyze 08/26/22 1 C Lab Cont Prep Typ %Rec Limits 80 - 122 Analyze Market Cont Prep Typ Market Cont Prep Typ Prep Typ Pr	e: Tot d 3:32	Dil Fa Dil Fa ample tal/N/

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

	MS	MS										
Surrogate	%Recovery	Qualifier	Limits									
1,2-Dichloroethane-d4 (Surr)	88		66 - 120									
Lab Sample ID: 240-1719	72-M-3 MSD					Client	Samp	le ID: N	latrix Spi	ke Dup	licate	
Matrix: Water									Prep Ty			
Analysis Batch: 540388												
	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	11.5		ug/L		115	51 - 153	2	16	
	MSD	MSD										Ē
Surrogate	%Recovery	Qualifier	Limits									
1,2-Dichloroethane-d4 (Surr)	87		66 - 120									-

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GC/MS VOA

Analysis Batch: 539996

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-171936-1	TRIP BLANK_162	Total/NA	Water	8260D	
240-171936-2	MW-150S_081922	Total/NA	Water	8260D	
MB 240-539996/8	Method Blank	Total/NA	Water	8260D	
LCS 240-539996/5	Lab Control Sample	Total/NA	Water	8260D	
240-171854-C-5 MS	Matrix Spike	Total/NA	Water	8260D	
240-171854-C-5 MSD	Matrix Spike Duplicate	Total/NA	Water	8260D	

Analysis Batch: 540388

Lab Sample ID 240-171936-2	Client Sample ID MW-150S_081922	Prep Type Total/NA	Matrix Water	Method 8260D SIM	Prep Batch
MB 240-540388/4	Method Blank	Total/NA	Water	8260D SIM	
LCS 240-540388/3	Lab Control Sample	Total/NA	Water	8260D SIM	
240-171972-G-3 MS	Matrix Spike	Total/NA	Water	8260D SIM	
240-171972-M-3 MSD	Matrix Spike Duplicate	Total/NA	Water	8260D SIM	

Matrix: Water

Lab Sample ID: 240-171936-1

Client Sample ID: TRIP BLANK_162 Date Collected: 08/19/22 00:00 Date Received: 08/23/22 09:30

	Batch	Batch		Dilution	Batch			Prepared	
Prep Type	Туре	Method	Run	Factor	Number	Analyst	Lab	or Analyzed	
Total/NA	Analysis	8260D		1	539996	BAJ	EET CAN	08/24/22 14:51	
lient Sam	ple ID: MW	-150S 08192	2				Lab	Sample ID: 240-171	936-2
ate Collecte	•							Matrix	
		2.00						Widthix	. wate
Date Receive	d: 08/23/22 0							WidthX	vvate
ate Receive				Dilution	Batch			Prepared	
-	d: 08/23/22 0	9:30	Run	Dilution Factor		Analyst	Lab		
Prep Type Total/NA	d: 08/23/22 0 Batch	9:30 Batch	Run		Number	Analyst BAJ	Lab EET CAN	Prepared	

Laboratory References:

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

12 13

Eurofins Canton

Client: ARCADIS U.S., Inc. Project/Site: Ford LTP - Off Site

Laboratory: Eurofins Canton

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	02-27-23	
Connecticut	State	PH-0590	12-31-23	
Florida	NELAP	E87225	06-30-23	
Georgia	State	4062	02-27-23	
Illinois	NELAP	200004	07-31-23	
owa	State	421	06-01-23	
Kentucky (UST)	State	112225	02-27-23	
Kentucky (WW)	State	KY98016	12-31-22	
Minnesota	NELAP	039-999-348	12-31-22	
Minnesota (Petrofund)	State	3506	08-01-23	
New Jersey	NELAP	OH001	06-30-23	
New York	NELAP	10975	04-01-23	
Ohio	State	8303	02-23-23	
Ohio VAP	State	CL0024	02-27-23	
Oregon	NELAP	4062	02-27-23	
Pennsylvania	NELAP	68-00340	08-31-23	
Texas	NELAP	T104704517-22-17	08-31-22	
Virginia	NELAP	11570	09-14-22	
Washington	State	C971	01-12-23	
West Virginia DEP	State	210	12-31-22	

N GAN 90 Te	Chain TestAmerica Laboratory location: Brighton 10448 Citati Regulatory program: DW	Chain of Custody Record 10448 Citation Drive. Suite 200 / Brighton. MI 48116 / 810-229-2763 DW PDES RCRA Other	/ 810-229-2763 Other	
Company Name: Arcadis		КСКА	her	TestAmerica Laboratories. Inc.
Address: 28550 Cabot Drive. Suite 500	Client Project Manager: Kris Hinskey	Site Contact: Christina Weaver	Lab Contact: Mike DelMonico	COC No:
	Telephone: 269-832-7478	Telephone: 248-994-2329	Telephone: 330-966-9783	-
City/State/Zip: Novi, MI, 48377	Email: Kristoffer.Hinskey@arcadis.com	Analysis Turnaround Time	Analyses	1 of 1 COCs For lab use only
Phone: 248-994-2240	Samplet Name:	TAT if different from below		Walk-in client
Project name: Ford LJP OII-Site Project Number: 30080642 402.04	Sci M Su Fill A			Lab sampling
PO # 30080642.402.04	Shipping/Tracking No:	(N / A)	560D 8560D 60D	Job/SDG No:
		Containers & Preser	560D 4'5-DCE -DCE 856 5E 8560D	
Sample Identification	Sample Date Sample Time Advect:		Vinyl C cis-1.2 PCE 8: PCE 8: PCE 8: 1.1-DC	Sample Special Instructions:
TRIP BLANK_ KC	8/19/22 - 1/	NC 11 10		1 Trip Blank
T226180-5051-WW	8/1/12/1235 62	NG NG	XXXXXX	3 VOAs for 8260D 3 VOAs for 8260D SIM
		240-171936 Chain of Custody		
Possible Hazard Identification	Poicon B	Sample Disposal (A fee may be assessed	Sample Disposal (A fee may be assessed if samples are retained longer than 1 month) Demonstrations of the second of the samples are retained on the second second second second second second second	
	m. Gaden # # 203631	Return to Client 🐱 Disposal	3y Lab 🛛 Archive For 🗍 Months	
Term SACIACIA	Company Company ARCHOTS BARA122	11400 Micodis Col	2 Storages Company	Date Time: Date T
Adat	Company Date Times	Received in Laboratory by:	DINELO COMPANY	BatorTine: 8-3333 9.3
2019 Teachmena Lubrarowski, Allyna kananeka, kanan 1944 - Hardina Banayi 'a at tanànana di kakimana Lananana, ini				

	ple Receipt Form/Narrati	ve	Login # :	-
Barberton Facility	and the second		Cooler unpacked	har
liendes		e Name		
cooler Received on 8	23-22 Op	ened on 8 23-22	KAchelle	HAIDEL
	UPS FAS Clipper Clies	nt Drop Off Eurofins Con		
Receipt After-bours: Dro		Storage 1	Location	
Eurofins Cooler #			er	
Packing material used			Other	
		ice Water None		
. Cooler temperature up		See Multip		
	0.0 °C) Observed Cooler			
	-0.7°C) Observed Cooler		Cooker Temp	
	seals on the outside of the co			that are sot
	he outside of the cooler(s) sig			ted for pH by
	ty seals on the bottle(s) or bo			lving:
	ly seals intact and uncompro	mised?	Yes No NA VOA	
3. Shippers' packing slip			Yes NO Oila	d Grease
4. Did custody papers acc			Yes No TOC	
	rs relinquished & signed in the		Yes No	
) who collected the samples (
	good condition (Unbroken)		No No	
	(ID/Date/Time) be reconciled		Yes No N), and sample type of grab/cor	ND?
9. For each sample, does	the COC specify preservative	is (Y real # of containers (Y)		
10. Were correct bottle(s)	used for the test(s) indicated?	JH 8-30-22	Yes No	
	eived to perform indicated an	-	No	
	amples and all listed on the C		TEL NO	286797
	7 have been checked at the or		Yes No (NA) pH Strip I	of HCann-
13. Were all preserved sam 14. Were VOAs on the CO	nple(s) at the correct pH upor	receipt?	Yes No UNA prisuit.	
 Were vOAs on the CC Were air bubbles >6 m 		Larger than this.	YES NO NA	
	present in the cooler(s)? Tr		Yes No.	
17. Was a LL Hg or Me H		p Dialik Lot #	Yes No	
Contacted PM	Date	byvia '	Verbal Voice Mail Other	
Concerning				-
18 CHAIN OF CUSTO	DY & SAMPLE DISCREP	NCIES additional nex	at page Samples processed t	iy:
in claim of costor			our puge	
	-			
		· · · · · · · · · · · · · · · · · · ·		
-				
19. SAMPLE CONDITIO			ded holding time had expired.	
Sample(s)	were	received after the recommend		
Sample(s) Sample(s)	were	were	received in a broken container.	
Sample(s) Sample(s)	were	were	received in a broken container. >6 mm in diameter. (Notify PM	n)
Sample(s) Sample(s) Sample(s)	were	were	 received in a broken container. >6 mm in diameter. (Notify PM) 	
Sample(s) Sample(s)	were	were	received in a broken container.	
Sample(s) Sample(s) Sample(s) 20. SAMPLE PRESERV	were	were received with bubble	received in a broken container. >6 mm in diameter. (Notify PM	ž - 5.4
Sample(s) Sample(s) Sample(s) 20. SAMPLE PRESERV	were	were received with bubble	 received in a broken container. >6 mm in diameter. (Notify PM) 	ž - 5.4
Sample(s) Sample(s) Sample(s) 20. SAMPLE PRESERV	were	were received with bubble	received in a broken container. >6 mm in diameter. (Notify PM	ž - 5.4
Sample(s) Sample(s) Sample(s) 20. SAMPLE PRESERV Sample(s) Fime preserved:	were	were received with bubble ot number(s):	vere further preserved in the la	ž - 5.4

Login #:_

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14

Cooler Description	IR Gun #	Observed	Corrected	Coolant
(Circle)	(Circle)	Temp °C	Temp °C	(Circle)
A Client Box Other	H-13 48-19	39	3.9	Wet ICe Blue Ice Dry Water None
(A) Client Box Other	IR-13 18-15	Hal	4.1	Water None
A Client Box Other	IR-13 (-15)	3.9	3.9	Wefice Sive Ice Dry Water None
A Client Box Other	18-13 18-15	2.7	2.7	Water None
A Client Box Other	IR-13 IR-15			Wet Ice Blue Ice Dry Water None
A Client Box Other	IR-13 IR-15			Wellice Bluelice Dry Water None
A Client Box Other	IR-13 IR-15			Wet Ice Blue Ice Dry Water None
A Client Box Other	IR-13 IR-15			Wet ice Blue Ice Dry Water None
A Client Box Other	iR-13 IR-15			Wet Ice Blue Ice Dry Water None
A Client Box Other	IR-13 IR-15			Wet Ice Blue Ice Dry Water None
A Client Box Other	IR-13 IR-15			Wet Ice Silve Ice Dry Water None
A Client Box Other	IR-13 IR-15			Wet Ice Blue Ice Dry Water None
A Client Box Other	ik-13 ik-15			Wet Ice Blue Ice Dry Water None
A Client Box Other	IR-13 IR-15			Wet ice Blue ice Dry Water None
A Client Box Other	iR-13 IR-15			Wet Ice Blue Ice Dry I Water None
A Client Box Other	IR-13 IR-15			Wet ice Blue ice Dry I Water None
A Client Box Other	IR-13 IR-15			Wet ice Sive ice Dry I Water None
A Client Sox Other	IR-13 IR-15			Wet Ice Sive Ice Dry I Water None
A Client Box Other	IR-13 IR-15			Wet ice Blue ice Dry I Water None
A Client Box Other	iR-13 IR-15			Wellice - Bluelice Dry I Water None
A Client Box Other	IR-13 IR-15			Wet Ice Blue Ice Dry I Water None
A Client Box Other	IR-13 IR-15			Wet Ice Sive Ice Dry I Water None
A Client Box Other	IR-13 IR-15			Wellice Bluelice Dry I Water None
A Client Box Other	IR-13 IR-15			Wellice Bluelice Dry li Water None
A Client Box Other	IR-13 IR-15			Wet Ice Blue Ice Dry k Water None
A Client Box Other	IR-13 IR-15			Wet Ice Blue Ice Dry k Water None
A Client Box Other	IR-13 IR-15			Wellice Bluelice Dry k Water None
A Client Box Other	IR-13 IR-15			Wet Ice Blue Ice Dry k Water None
A Client Box Other	IR-13 IR-15			Wet Ice Blue Ice Dry k Water None
A Client Box Other	IR-13 IR-15			Wet Ice Blue Ice Dry k Water None
A Client Box Other	IR-13 IR-15			Wet Ice Sive Ice Dry Ic Water None
Client Box Other	IR-13 IR-15			Wei Ice Sive Ice Dry Ic Water None
A Client Box Other	IR-13 IR-15			Wellice Bluelice Drylo Water None
Client Box Other	IR-13 IR-16			Wet Ice Blue Ice Dry Ic Water None

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

DATA VERIFICATION REPORT



September 04, 2022

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: 30080642.402.04 Event Specific Scope of Work References: Sample COC Laboratory: Eurofins Environment Testing LLC - Barberton Laboratory submittal: 171936-1 Sample date: 2022-08-19 Report received by CADENA: 2022-09-02 Initial Data Verification completed by CADENA: 2022-09-04 Number of Samples:2 Sample Matrices:Water Test Categories:GCMS VOC Please see attached criteria report or sample result/qualified analytical result summary for qualifier flags assigned to sample data.

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 - Barberton Laboratory Submittal: 171936-1

		Sample Name: Lab Sample ID: Sample Date:	TRIP BLANK_162 2401719361 8/19/2022				MW-150 2401719 8/19/20					
				Report		•		Valid		Report		Valid
	Analyte	Cas No.	Result	Limit	Units	Qualifier	Result	Limit	Units	Qualifier		
GC/MS VOC												
<u>OSW-826</u>	<u>DC</u>											
	1,1-Dichloroethene	75-35-4	ND	1.0	ug/l		ND	1.0	ug/l			
	cis-1,2-Dichloroethene	156-59-2	ND	1.0	ug/l		ND	1.0	ug/l			
	Tetrachloroethene	127-18-4	ND	1.0	ug/l		ND	1.0	ug/l			
	trans-1,2-Dichloroethene	156-60-5	ND	1.0	ug/l		ND	1.0	ug/l			
	Trichloroethene	79-01-6	ND	1.0	ug/l		ND	1.0	ug/l			
	Vinyl chloride	75-01-4	ND	1.0	ug/l		ND	1.0	ug/l			
<u>OSW-826</u>	DDSIM											
	1,4-Dioxane	123-91-1					ND	2.0	ug/l			



Ford Motor Company – Livonia Transmission Project

DATA REVIEW

Livonia, Michigan

Volatile Organic Compounds (VOC) Analysis

SDG # 240-171936-1

CADENA Verification Report: 2022-09-04

Analyses Performed By: TestAmerica North Canton, Ohio

Report # 46952R Review Level: Tier III Project: 30146655.402.02

SUMMARY

This data quality assessment summarizes the review of Sample Delivery Group (SDG) # 240-171936-1 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_162	240-171936-1	Water	08/19/22		Х	
MW-150S_081922	240-171936-2	Water	08/19/22		Х	Х

ANALYTICAL DATA PACKAGE DOCUMENTATION

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

Items Reviewed	Rep	orted		rmance 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 of October 1999.

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.
 - J+ The result is an estimated quantity, but the result may be biased high.
 - J- The result is an estimated quantity, but the result may be biased low.
 - UB Analyte considered non-detect at the listed value due to associated blank contamination.
 - N The analysis indicates the presence of a compound for which there is presumptive evidence to make a tentative identification.
 - R The sample results are rejected.

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

VOLATILE ORGANIC COMPOUND (VOC) ANALYSES

1. Holding Times

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

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

All samples were analyzed within the specified holding time criteria.

2. Mass Spectrometer Tuning

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

System performance and column resolution were acceptable.

3. Calibration

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

3.1 Initial Calibration

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

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

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

3.2 Continuing Calibration

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

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

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.

DATA REVIEW

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

6. Compound Identification

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

No compounds were detected in the samples within this SDG.

7. System Performance and Overall Assessment

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

DATA REVIEW

DATA VALIDATION CHECKLIST FOR VOCs

VOCs: 8260D/8260D-SIM	Rep	orted	Perfo Acce	Not Required	
	No	Yes	No	Yes	Required
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		X	
Field Duplicate RPD	X				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: Vinayak Hegde
SIGNATURE:
DATE: September 26, 2022

PEER REVIEW: Andrew Korycinski

DATE: September 28, 2022

NO CORRECTIONS/QUALIFERS ADDED TO SAMPLE ANALYSIS DATA SHEETS



CHAIN OF CUSTODY CORRECTED SAMPLE ANALYSIS DATA SHEETS



M GAN

Chain of Custody Record



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

Client Contact Company Name: Arcadis	Regulat	ory program:		-	DW	1	NPDI	ES		RC	RA	Г	Other	r									TestAmerica Laboratories, I
Address: 28550 Cabot Drive, Suite 500	Client Project N	roject Manager: Kris Hinskey Site Contact: Christina Weaver Lab Contact: Mike DelMonico COC N						Site Contact: Christina Weaver Lab Contact: Mike DelMonico						COC No:									
City/State/Zip: Novi, MI, 48377	Telephone: 269	9-832-7478				Telephone: 248-994-2329							Telephone: 330-966-9783										
	Email: Kristof	fer.Hinskey@a	rcadis.	com			Analy	sis Tu	irnaro	und 1	ime					Analyses			ies			1 of 1 COCs For lab use only	
Phone: 248-994-2240	Samplet Name	amplet Name:)	_	TAT if different from below															Walk-in client		
Project Name: Ford LTP Off-Site	Sal		, S. Karla		10 day vecks																		
Project Number: 30080642.402.04	Method of Ship	ment/Carrier:			1	1	ro uay	Г	1 w	veek		2	ç			۵				M			Lab sampling
PO # 30080642.402.04	Shipping/Track	ding No:				1			2 d			(X /]	Grab		00	8260			2600	000			Job/SDG No:
				Ma	trix	+	Cont	ainers	& Pres	servati	ives	mple	Ú.	200D	E 826	OCE			de 8	e 826			
Sample Identification	Sample Date	Sample Time	Air	Aqueous Sediment	Solid Other:	H2SO4	HN03	HCI	ZaAc/	Unpres	Other:	Filtered Sample (Y / N)	Composite=C / Grab=G	1,1-DCE 8260D	cis-1.2-DCE 8260D	Trans-1,2-DCE 8260D	PCE 8260D	TCE 8260D	Vinyl Chloride 8260D	1,4-Dioxane 8260D SIM			Sample Specific Notes / Special Instructions:
	8/19/22	-		1		T		1					G	X	X	X	X	X	X		+-+-	+	1 Trip Blank
TRIP BLANK_ 162 MW-1505-081922	S/19/12	1235		1		T		2				N	G	X	X	K	x	X	X	X			3 VOAs for 8260D 3 VOAs for 8260D SIM
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				+		+	ΤI	1	-		usto .	ody				-	-		-		++		
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			\square	-	+	+	+	+	+	-				-		_			-		+ +		
Possible Hazard Identification Image: Non-Hazard Image: Flammable Image: Skin Irrita	int 🔽 Poisc	on B	Unkn	own				e Dispe Return			may be a				les are		ned lo		than 1	month) Mont	ns		
Special Instructions/QC Requirements & Comments: Sample Address: Submit all results through Catlena of itomalia@cadenaco	Con Cadena	PICK	Yo	nd																			
Level IV Reporting requested.	Comment		1	2.4. TT				In	_									La.					
Sam Sucarin	Arcad	is		08/	19/22	10	100	2 *	A	1 Co	olis	Ú	old	5	to	ra	42	Z	VC	ndi	9		Date/Time: 08/19/27 /14
Relinquished by:	Company;	AOTS	I	BH	me: 9/22	1	1/20		Å	Ŵ	K	it	J.	<		U		Com	P	not	2-8		Date Time: BIZZZT 112
Refinguished by n (m)	Company:	A		Date/Tin					ecoly	d im	aborate	ary by	v:11			,		<u> </u>	pany:				Date/Time:

C211 TestAmerica Laboratories, Inc. All rights reserved. TestAmerica Laboratories, Inc. 4-Bromofluorobenzene (Surr)

Dibromofluoromethane (Surr)

Toluene-d8 (Surr)

Client Sample ID: TRIP BLANK_162 Date Collected: 08/19/22 00:00 Date Received: 08/23/22 09:30

_ Method: 8260D - Volatile O	rganic Compo	unds 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			08/24/22 14:51	1
cis-1,2-Dichloroethene	1.0	U	1.0	0.46	ug/L			08/24/22 14:51	1
Tetrachloroethene	1.0	U	1.0	0.44	ug/L			08/24/22 14:51	1
trans-1,2-Dichloroethene	1.0	U	1.0	0.51	ug/L			08/24/22 14:51	1
Trichloroethene	1.0	U	1.0	0.44	ug/L			08/24/22 14:51	1
Vinyl chloride	1.0	U	1.0	0.45	ug/L			08/24/22 14:51	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	100		62 - 137					08/24/22 14:51	1

56 - 136

78 - 122

73 - 120

96

101

103

Job	ID:	240-1	719	936-1
000				

Lab Sample ID: 240-171936-1

08/24/22 14:51

08/24/22 14:51

08/24/22 14:51

Matrix: Water

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Eurofins Canton