

Environment Testing

ANALYTICAL REPORT

PREPARED FOR

Attn: Kristoffer Hinskey ARCADIS US Inc 28550 Cabot Drive Suite 500 Novi, Michigan 48377 Generated 5/26/2023 12:04:11 AM

JOB DESCRIPTION

Ford LTP - Off Site

JOB NUMBER

240-185531-1

Eurofins Cleveland 180 S. Van Buren Avenue Barberton OH 44203





Eurofins Cleveland

Job Notes

This report may not be reproduced except in full, and with written approval from the laboratory. The results relate only to the samples tested. For questions please contact the Project Manager at the e-mail address or telephone number listed on this page.

The test results in this report relate only to the samples as received by the laboratory and will meet all requirements of the methodology, with any exceptions noted. This report shall not be reproduced except in full, without the express written approval of the laboratory. All questions should be directed to the Eurofins Environment Testing North Central, LLC Project Manager.

Authorization

low

Generated 5/26/2023 12:04:11 AM

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

5

Table of Contents

Cover Page	1
Table of Contents	3
Definitions/Glossary	4
Case Narrative	5
Method Summary	6
Sample Summary	7
Detection Summary	8
Client Sample Results	9
Surrogate Summary	11
QC Sample Results	12
QC Association Summary	15
Lab Chronicle	16
Certification Summary	17
Chain of Custody	18
Receipt Checklists	22

Qualifiers

Qualifiers		3
GC/MS VOA Qualifier	Qualifier Description	4
F1	MS and/or MSD recovery exceeds control limits.	
U	Indicates the analyte was analyzed for but not detected.	5
Glossary		6
Abbreviation	These commonly used abbreviations may or may not be present in this report.	
¤	Listed under the "D" column to designate that the result is reported on a dry weight basis	
%R	Percent Recovery	
CFL	Contains Free Liquid	0
CFU	Colony Forming Unit	0
CNF	Contains No Free Liquid	
DER	Duplicate Error Ratio (normalized absolute difference)	9
Dil Fac	Dilution Factor	
DL	Detection Limit (DoD/DOE)	
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample	
DLC	Decision Level Concentration (Radiochemistry)	
EDL	Estimated Detection Limit (Dioxin)	
LOD	Limit of Detection (DoD/DOE)	
LOQ	Limit of Quantitation (DoD/DOE)	
MCL	EPA recommended "Maximum Contaminant Level"	13
MDA	Minimum Detectable Activity (Radiochemistry)	
MDC	Minimum Detectable Concentration (Radiochemistry)	
MDL	Method Detection Limit	
ML	Minimum Level (Dioxin)	
MPN	Most Probable Number	

Glossary

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

Job ID: 240-185531-1

Laboratory: Eurofins Cleveland

Narrative

Job Narrative 240-185531-1

Receipt

The samples were received on 5/18/2023 8:00 AM. Unless otherwise noted below, the samples arrived in good condition, and, where required, properly preserved and on ice. The temperatures of the 2 coolers at receipt time were 0.4°C and 0.6°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
240-185531-1	TRIP BLANK_61	Water	05/15/23 00:00	05/18/23 08:00
240-185531-2	MW-95S_051523	Water	05/15/23 14:00	05/18/23 08:00

Detection Summary

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

Client Sample ID: TRIP BLANK_61

No Detections.

Client Sample ID: MW-95S_051523

No Detections.

5/26/2023



Job ID: 240-185531-1

Lab Sample ID: 240-185531-1

Lab Sample ID: 240-185531-2

Client Sample ID: TRIP BLANK_61

Date Collected: 05/15/23 00:00 Date Received: 05/18/23 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			05/24/23 22:07	1
cis-1,2-Dichloroethene	1.0	U	1.0	0.46	ug/L			05/24/23 22:07	1
Tetrachloroethene	1.0	U	1.0	0.44	ug/L			05/24/23 22:07	1
trans-1,2-Dichloroethene	1.0	U	1.0	0.51	ug/L			05/24/23 22:07	1
Trichloroethene	1.0	U	1.0	0.44	ug/L			05/24/23 22:07	1
Vinyl chloride	1.0	U	1.0	0.45	ug/L			05/24/23 22:07	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	95		70 - 128			-		05/24/23 22:07	1
Dibromofluoromethane (Surr)	101		77 _ 124					05/24/23 22:07	1
Toluene-d8 (Surr)	85		80 - 120					05/24/23 22:07	1
4-Bromofluorobenzene	85		76 - 120					05/24/23 22:07	1

Job ID: 240-185531-1

Lab Sample ID: 240-185531-1

Matrix: Water

5

8 9

Eurofins Cleveland

Client Sample ID: MW-95S_051523

Date Collected: 05/15/23 14:00 Date Received: 05/18/23 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			05/23/23 10:00	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene	106		75 - 133			-		05/23/23 10:00	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			05/25/23 00:50	1
cis-1,2-Dichloroethene	1.0	U	1.0	0.46	ug/L			05/25/23 00:50	1
Tetrachloroethene	1.0	U	1.0	0.44	ug/L			05/25/23 00:50	1
trans-1,2-Dichloroethene	1.0	U	1.0	0.51	ug/L			05/25/23 00:50	1
Trichloroethene	1.0	U	1.0	0.44	ug/L			05/25/23 00:50	1
Vinyl chloride	1.0	U	1.0	0.45	ug/L			05/25/23 00:50	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	99		70 - 128			-		05/25/23 00:50	1
Dibromofluoromethane (Surr)	103		77 - 124					05/25/23 00:50	1
Toluene-d8 (Surr)	85		80 - 120					05/25/23 00:50	1
4-Bromofluorobenzene	81		76 - 120					05/25/23 00:50	1

5/26/2023

Lab Sample ID: 240-185531-2 Matrix: Water

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

Matrix: Water

Prep Type: Total/NA

Prep Type: Total/NA

2 3 4 5 6 7 8 9

0 11 13

				Percent Sul	ogate Recovery (Acceptance	Limits)
		DCA	DBFM	TOL	BFB	
Lab Sample ID	Client Sample ID	(70-128)	(77-124)	(80-120)	(76-120)	
240-185460-A-4 MS	Matrix Spike	98	93	94	93	
240-185460-J-4 MSD	Matrix Spike Duplicate	94	95	92	91	
240-185531-1	TRIP BLANK_61	95	101	85	85	
240-185531-2	MW-95S_051523	99	103	85	81	
LCS 460-911191/4	Lab Control Sample	91	92	93	94	
MB 460-911191/9	Method Blank	92	97	86	84	
Surrogate Legend						

DBFM = Dibromofluoromethane (Surr)

TOL = Toluene-d8 (Surr)

BFB = 4-Bromofluorobenzene

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

Matrix: Water

			Percent Surrogate Recovery (Acceptance Limits)
		BFB	
Sample ID	Client Sample ID	(75-133)	
85531-2	MW-95S_051523	106	
460-910852/3	Lab Control Sample	99	
D 460-910852/4	Lab Control Sample Dup	99	
460-910852/7	Method Blank	96	

Surrogate Legend

BFB = 4-Bromofluorobenzene

Eurofins Cleveland

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

Lab Sample ID: MB 460-911191/9

Matrix: Water Analysis Batch: 911191

	MB	MB							
Ana	alyte Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1-	Dichloroethene 1.0	U	1.0	0.49	ug/L			05/24/23 20:25	1
cis-	1,2-Dichloroethene 1.0	U	1.0	0.46	ug/L			05/24/23 20:25	1
Teti	achloroethene 1.0	U	1.0	0.44	ug/L			05/24/23 20:25	1
trar	s-1,2-Dichloroethene 1.0	U	1.0	0.51	ug/L			05/24/23 20:25	1
Tric	hloroethene 1.0	U	1.0	0.44	ug/L			05/24/23 20:25	1
Vin	yl chloride 1.0	U	1.0	0.45	ug/L			05/24/23 20:25	1
1,1· cis- Tetr trar Tric	Dichloroethene1.01,2-Dichloroethene1.01,2-Dichloroethene1.0rachloroethene1.0is-1,2-Dichloroethene1.0hloroethene1.0	U U U U U	1.0 1.0 1.0 1.0 1.0	0.49 0.46 0.44 0.51 0.44	ug/L ug/L ug/L ug/L ug/L	<u>D</u>	Prepared	05/24/23 20:25 05/24/23 20:25 05/24/23 20:25 05/24/23 20:25 05/24/23 20:25	

	MB	МВ				
Surrogate	%Recovery	Qualifier	Limits	Prepar	ed Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	92		70 - 128		05/24/23 20:25	1
Dibromofluoromethane (Surr)	97		77 - 124		05/24/23 20:25	1
Toluene-d8 (Surr)	86		80 - 120		05/24/23 20:25	1
4-Bromofluorobenzene	84		76 - 120		05/24/23 20:25	1

Lab Sample ID: LCS 460-911191/4 Matrix: Water Analysis Batch: 911191

	Spike	LCS	LCS			%Rec	
Analyte	Added	Result	Qualifier	Unit	D %Rec	Limits	
1,1-Dichloroethene	20.0	22.7		ug/L	113	68 - 133	
cis-1,2-Dichloroethene	20.0	21.4		ug/L	107	78 - 121	
Tetrachloroethene	20.0	24.9		ug/L	125	70 _ 127	
trans-1,2-Dichloroethene	20.0	22.2		ug/L	111	74 - 126	
Trichloroethene	20.0	22.3		ug/L	112	71 _ 121	
Vinyl chloride	20.0	22.4		ug/L	112	55 _ 144	

	LCS	LCS	
Surrogate	%Recovery	Qualifier	Limits
1,2-Dichloroethane-d4 (Surr)	91		70 - 128
Dibromofluoromethane (Surr)	92		77 - 124
Toluene-d8 (Surr)	93		80 - 120
4-Bromofluorobenzene	94		76 - 120

Lab Sample ID: 240-185460-A-4 MS Matrix: Water Analysis Batch: 911191

	Sample	Sample	Spike	MS	MS				%Rec
Analyte	Result	Qualifier	Added	Result	Qualifier	Unit	D	%Rec	Limits
1,1-Dichloroethene	1.0	U	20.0	21.1		ug/L		105	68 - 133
cis-1,2-Dichloroethene	1.0		20.0	20.7		ug/L		98	78 - 121
Tetrachloroethene	1.0	U	20.0	22.7		ug/L		114	70 - 127
trans-1,2-Dichloroethene	1.0	U	20.0	20.6		ug/L		103	74 - 126
Trichloroethene	1.0	U	20.0	19.2		ug/L		96	71 - 121
Vinyl chloride	1.0	U F1	20.0	30.0	F1	ug/L		150	55 - 144
	MS	MS							
Surrogate	%Recovery	Qualifier	Limits						

Surrogate	%Recovery (Qualifier	Limits
1,2-Dichloroethane-d4 (Surr)	98		70 - 128
Dibromofluoromethane (Surr)	93		77 - 124
Toluene-d8 (Surr)	94		80 - 120

5

10

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

	00/24/20 20.20	'
Client Sample ID	: Lab Control Sa	ample
	Pron Type: Tot	

Prep Type: Total/NA

Client Sample ID: Matrix Spike	e
Prep Type: Total/N	A
%Rec	

Method: 8260D - Volatile Organic Compounds by GC/MS (Continued) Lab Sample ID: 240-185460-A-4 MS **Client Sample ID: Matrix Spike** Matrix: Water Prep Type: Total/NA Analysis Batch: 911191 MS MS Surrogate %Recovery Qualifier Limits 4-Bromofluorobenzene 93 76 - 120 Lab Sample ID: 240-185460-J-4 MSD **Client Sample ID: Matrix Spike Duplicate** Matrix: Water Prep Type: Total/NA Analysis Batch: 911191 MSD MSD %Rec RPD Sample Sample Spike Analyte Result Qualifier Added Result Qualifier Unit D %Rec Limits RPD Limit 1,1-Dichloroethene 1.0 U 20.0 24.6 ug/L 123 68 - 133 15 30 cis-1,2-Dichloroethene 1.0 20.0 23.7 78 - 121 30 ug/L 113 14 Tetrachloroethene 1.0 U 20.0 25.2 ug/L 126 70 - 127 10 30 1.0 U trans-1,2-Dichloroethene 20.0 23.9 ug/L 120 74 - 126 15 30 Trichloroethene 1.0 U 20.0 22.0 ug/L 110 71 - 121 14 30 Vinyl chloride 1.0 UF1 20.0 33.3 F1 ug/L 167 55 - 144 11 30

	MSD	MSD	
Surrogate	%Recovery	Qualifier	Limits
1,2-Dichloroethane-d4 (Surr)	94		70 - 128
Dibromofluoromethane (Surr)	95		77 - 124
Toluene-d8 (Surr)	92		80 - 120
4-Bromofluorobenzene	91		76 - 120

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

Lab Sample ID: MB 460-910852/7 Matrix: Water											Client S	ample ID: Meth Prep Type		
Analysis Batch: 910852														
-		мв	МВ											
Analyte	R	esult	Qualifier	RL		MDL	Unit		D	P	repared	Analyzed		Dil Fac
1,4-Dioxane		2.0	U	2.0		0.86	ug/L					05/23/23 09:17		1
		ΜВ	МВ											
Surrogate	%Reco	overy	Qualifier	Limits						P	repared	Analyzed		Dil Fac
4-Bromofluorobenzene		96		75 - 133					_			05/23/23 09:17		1
- Lab Sample ID: LCS 460-910852/	3								Cli	ent	Sample	ID: Lab Contro	ol Sa	ample
Matrix: Water												Prep Type		
Analysis Batch: 910852														
				Spike	LCS	LCS						%Rec		
Analyte				Added	Result	Qual	lifier	Unit		D	%Rec	Limits		
1,4-Dioxane				5.00	4.78			ug/L		_	96	57 - 124		
	LCS	LCS												
Surrogate	%Recovery	Qua	lifier	Limits										
4-Bromofluorobenzene	99			75 - 133										
- Lab Sample ID: LCSD 460-910852	2/4							С	lient S	am	ple ID:	Lab Control Sa	mple	e Dup
Matrix: Water												Prep Type	Tot	tal/NA
Analysis Batch: 910852														
-				Spike	LCSD	LCS	D					%Rec		RPD
Analyte				Added	Result	Qual	lifier	Unit		D	%Rec	Limits R	PD	Limit

Eurofins Cleveland

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

	LCSD	LCSD	
Surrogate	%Recovery	Qualifier	Limits
4-Bromofluorobenzene	99		75 - 133

Eurofins Cleveland

GC/MS VOA

Analysis Batch: 910852

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-185531-2	MW-95S_051523	Total/NA	Water	8260D SIM	
MB 460-910852/7	Method Blank	Total/NA	Water	8260D SIM	
LCS 460-910852/3	Lab Control Sample	Total/NA	Water	8260D SIM	
LCSD 460-910852/4	Lab Control Sample Dup	Total/NA	Water	8260D SIM	
Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batc
	Client Sample ID TRIP BLANK 61	Prep Type Total/NA	Matrix Water	Method 8260D	Prep Batcl
240-185531-1		· · · ·			Prep Batcl
240-185531-1 240-185531-2	TRIP BLANK_61	Total/NA	Water	8260D	Prep Batcl
240-185531-1 240-185531-2 MB 460-911191/9	TRIP BLANK_61 MW-95S_051523	Total/NA Total/NA	Water Water	8260D 8260D	Prep Batc
Lab Sample ID 240-185531-1 240-185531-2 MB 460-911191/9 LCS 460-911191/4 240-185460-A-4 MS	TRIP BLANK_61 MW-95S_051523 Method Blank	Total/NA Total/NA Total/NA	Water Water Water	8260D 8260D 8260D	Prep Batc

Matrix: Water

Matrix: Water

Lab Sample ID: 240-185531-1

Lab Sample ID: 240-185531-2

Client Sample ID: TRIP BLANK_61 Date Collected: 05/15/23 00:00

Duic	ooncetteu.	00/10/20 00.00	
Date	Received:	05/18/23 08:00)

		•						
	Batch	Batch		Dilution	Batch			Prepared
Prep Type	Туре	Method	Run	Factor	Number	Analyst	Lab	or Analyzed
Total/NA	Analysis	8260D		1	911191	CJM	EET EDI	05/24/23 22:07

Client Sample ID: MW-95S_051523 Date Collected: 05/15/23 14:00

Date Received: 05/18/23 08:00

	Batch	Batch		Dilution	Batch			Prepared
Prep Type	Туре	Method	Run	Factor	Number	Analyst	Lab	or Analyzed
Total/NA	Analysis	8260D		1	911191	CJM	EET EDI	05/25/23 00:50
Total/NA	Analysis	8260D SIM		1	910852	SZD	EET EDI	05/23/23 10:00

Laboratory References:

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

Eurofins Cleveland

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

Eurofins Cleveland

	TestAmerica Laboratory location: Brighton — 10448 (10448 Citation Drive. Suite 200 / Brighton, MI 48116 / 810-229-2763	6 / 810-229-2763		The states in Chromosomerica, 11.1 two
Client Contact	Regulatory program: DW	NPDES RCRA	Other		(fastAmarica a horatorias no
Company Italie: Arcaus Adaces: 19660 Cabo Drive Suite 600	Client Project Manager: Kris Hinskey	Site Contact: Christina Weaver	Lab Contact: Mike DelMonico	nico	COC No:
Augustas, source carde starte out	Telephone: 248-994-2240	Telephone: 248-994-2240	Telephone: 330-497-9396		1 of 1 COCe
LIIY/SIRE/ZIP: NUV; MII, 40377	Email: kristoffer.hinskey@arcadis.com	Analysis I urnaround Time	Aua	Analyses	Ąu
r 2006: 240-794-2240 Project Name: Ford L.TP Off-Site Project Number: 30167538.402.04 PO # 30167538.402.04	Sampler Name: 5@47 TWF MCF Method of Shipment/Carrier: Shipping/Tracking No:	TAT if different from helow 3 works 10 day ~ 2 weeks 1 weeks 2 days 1 day	د 25608 1608 3 3 2		Walk-in client Lab sampling Job/SDG No:
Sample Identification	Sample Date Sample Time Alt	Filtered Sample	CE 85608 bCE 85608 cla-1,2-DCE 85 t1,1-DCE 85608 cla-1,2-DCE 85	Vinyi Chloride 8 1,4-Dioxane 82	Sample Specific Notes / Special Instructions:
TRIP BLANK_61	-	-	G X X X X X	×	1 Trip Blank
525 021233 Page	9 Qohi T	9	6 × × × × × × × ×	X	3 VOAs for 8260B SIM 3 VOAs for 8260B SIM
18 of 22					
		240-1855	240-185531 Chain of Custody		
Possible Hazard Identification Flammable Skin Irritant Poison B > Non-Hazard Flammable Skin Irritant Poison B Special Instructions/OC Requirements & Communts Social Instructions/OC Requirements & Communts Social Instructions/OC Requirements & Communts Sumple Address: 1,3,1,3 Soc 5+ or Po 5+ Sumple Address: 1,3,1,3 Soc 5+ or Po 5+	tiant - Poison B Unknown eo.com. Cadena #E203631	Sample Disposal (A fer may be asse Return to Chent (Disp	Sample Disposal (A fee may be assessed if samples are retained longer than 1 month) Return to Client & Disposal By 1.ab Archive For [Mo	1 month) Months	
Relinquished by: Relinquished by: Relinq	Company: Company: Company: Company: Company: Date/Inc. 7/17/23 Company: Date/Inc. 7/17/23 Company: Dete/Ince: 7/17/23	1750 Received by Col NOVI Col Received by Loc 435 Level in Laboration	d Storage	Company: Company: Company: Company: Company:	Datertime: 3756 5/17/23/756 5/17/23/0935 01647ime: 23 00 05-18-23 800

10/67
Eurofins - Canton Sample Receipt Form/Narrative Login # :L5555
Cooler Received on 05-18-23 Opened on 05-18-23 Lash M. Amith
FedEx: 1st Grd Exp UPS FAS Clipper Client Drop Off Eurofins Courier Other
Receipt After-hours: Drop-off Date/Time Storage Location
Eurofins Cooler # EC Foam Box Client Cooler Box Other
Packing material used: Bubble Wrap Foam Plastic Bag None Other
COOLANT: Wet Lee Blue Ice Dry Ice Water None
1. Cooler temperature upon receipt See Multiple Cooler Form
IR GUN # <u>22</u> (CF <u>+O</u> , <u>O</u> °C) Observed Cooler Temp. <u>°</u> C Corrected Cooler Temp. <u>°</u> C
2. Were tamper/custody seals on the outside of the cooler(s)? If Yes Quantity 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)? Yes No Receiving:
-Were tamper/custody seals intact and uncompromised? Yes No NA
3. Shippers' packing slip attached to the cooler(s)? 4. Did sustedy pagers accompany the comple(s)? VOAs Oil and Grease
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)?
 Did all bottles arrive in good condition (Unbroken)? Could all bottle labels (ID/Date/Time) be reconciled with the COC? Ves No
9. For each sample, does the COC specify preservatives (V/N), # of containers (V/N), 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? Yes No
If yes, Questions 13-17 have been checked at the originating laboratory.
13. Were all preserved sample(s) at the correct pH upon receipt? Yes No (NA) pH Strip Lot# HC208070
 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? Larger than this. 16. Was a VOA trip blank present in the cooler(s)? Trip Blank Lot # 62112 (See No
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:
Samples processed by.
19. SAMPLE CONDITION
Sample(s) were received after the recommended holding time had expired.
Sample(s) were received in a broken container.
Sample(s) were received with bubble >6 mm in diameter. (Notify PM)
20. SAMPLE PRESERVATION
Sample(s)
Time preserved: Preservative(s) added/Lot number(s):
VOA Sample Preservation - Date/Time VOAs Frozen:

Login #: 85531

	5
	8
	9
	3
1	4

			Sample Receipt Mu		
	escription	IR Gun #	Observed	Corrected	Coolant
(Ci	rcle)	(Circle)	Temp °C	Temp °C	(Circle)
EC Client	Box Other	IR GUN #: 20	0.4	0.4	Wet Ide Blue Ice Dry Water None
EC) Client	Box Other		0.6	0.6	Wet ice' Blue ice Dry Water None
EC Client	Box Other	IR GUN #:			Wetice Blue Ice Dry
		IR GUN #:			Water None Wet ice Blue ice Dry
EC Client	Box Other	IR GUN #:			Water None Welice Blue Ice Dry
EC Client	Box Other				Water None
EC Client	Box Other	IR GUN #:			Wetice Blue ice Dry Water None
EC Client	Box Other	IR GUN 4:			Wetice Blue ice Dry Water None
EC Client	Box Other	IR GUN #:			Wet ice Blue ice Dry Water None
EC Client	Box Other	IR GUN #:			Wellce Bluelce Dry
EC Client	Box Other	IR GUN #:		·····	Water None Wetice Blue Ice Dry
EC Client		IR GUN #:			Water None Wetice Blue ice Dry
	Box Other	IR GUN #:			Water None Watice Silve Ice Dry
EC Client	Box Other	IR GUN #:			Water None Wet ice Blue ice Dry
EC Client	Box Other				Water None
EC Client	Bax Other	IR GUN #:			Wet ice Blue ice Dry Water None
EC Client	Box Other	IR GUN #:			Wet Ice Blue Ice Dry I Water None
EC Client	Box Other	IR GUN #:			Wet Ice Blue Ice Dry I Water None
EC Client	Box Other	IR GUN #:			Wet Ice Blue Ice Dry I Water None
EC Client	Box Other	IR GUN #:			Wet ice Blue ice Dry i Water None
EC Client	Box Other	IR GUN #:			Wellice Sivelice Dry i
EC Client	Box Other	IR GUN #:	and the second s		Water None Wet Ice Blue Ice Dry i
EC Client		IR GUN #:			Water None Wet ice Blue ice Dry i
	Box Other	IR GUN #:			Water None Wet ice Blue ice Dry k
EC Client	Box Other				Water None Wet ice Blue ice Dry k
EC Client	Box Other				Water None
EC Client	Box Other	IR GUN #:			Wet ice Blue ice Dry is 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 k Water None
EC Client	Box Other	R GUN #:			Wet ice Blue ice Dry k Water None
EC Client	Box Other	IR GUN #:			Wefice Blueice Dry Ic
EC Client	Box Other	IR GUN #:			Water None Wet Ice Blue Ice Dry Ic
EC Client	Box Other	IR GUN #:			Water None Wet ice Blue ice Dry ic
		IR GUN #:			Water None Wet Ice Blue Ice Dry Ic
EC Client	Box Other	IR GUN #:			Water None Wet Ice Blue Ice Dry Ic
EC Client	Box Other				Water None
EC Client	Sox 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
				See Tem	perature Excursion Form

W1-NC-099 Cooler Receipt Form Page 2 - Multiple Coolers

Chain of Custody Record



😵 eurofins | Environment Testing

Barberton, OH 44203 Phone: 330-497-9396 Fax: 330-497-0772				•					44		111						6	
Client Information (Sub Contract Lab)	Sampler			Lab PM: DelMoi	Lab PM: DelMonico, Michael	chael				Carrier Tracking No(s):	racking I	Vo(s):		<u>8</u> 8	COC No: 240-168292.1			
1	Phone:			E-Mail: Micha	E-Mail: Michael.DelMonico@et.eurofinsus.com	nico@e	et.eurofir	ISUS.COI		State of Origin: Michigan	Origin: an			Page: Page	Pager of 1		/	
Company: Eurofins Environment Testing Northeast,				₹	Accreditations Required (See note):	ns Requir	ed (See n	ote):						Job # 240-1	Job #: 240-185531 ·	_	/	
Address: 777 New Durham Road,	Due Date Requested: 5/31/2023	d:					A	Analysis Requested	: Req	leste	p			<u> </u>	Preservation Codes A HCL	••		
City: Edison State, Zip: N.1 084-7	TAT Requested (da	ys):		<u> </u>		<u>-</u>								<u>ພດດຫ</u>	NaOH Zn Acetate Nitric Acid NaHSO4	N NORE O ASNAO2 P Na2045 R Na2203 R Na22203		
rvs, voor / Phone. 1732-549-3679(Fax)	# 0d													μОΙ	MeOH Amchlor Ascorbic Acid	. ω ⊢ Ξ	H2SO4 TSP Dodecahydrate Acetore	
Email:	¥ OM				(on									2	lce DI Water EDTA	V MCAA W pH 4-5		
Project Name: Ford LTP Off Site	Project #. 24015353				10 80/								·	, ட	EDA		scify)	
Site:	SSOW#:				() () ()							<u></u>		r of co	er			
Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=comp, G=grab)	MATTIX (w=water, S=solid, O=wasteroli, BT=Tasue, A=Atr)	sseop/2030C (F Berform MS/N Fleid Filfered	8260D_SIM/503								ədmuN istoT	Specia	Special Instructions/Note:	Note:	
	N	X	Preservation Code:	n Code: 🕽	X							v - 30 m		X				
TRIP BLANK_61 (240-185531-1)	5/15/23	Eastern		Water	×									-				
MW-95S_051523 (240-185531-2)	5/15/23	14:00 Eastern		Water	×	×	-							9				
										-				- 1 - 24 1				
												_						
										\rightarrow								
											_		_					
Note: Since laboratory accreditations are subject to change. Eurofins Environment Testing North Central, LLC laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/lests/matrix accreditation status should be brought to Eurofins Environment Testing North Central, LLC attention immediat	ent Testing North Centr above for analysis/tests central, LLC attention in	al, LLC places /matrix being a mediately. If a	the ownership (nalyzed, the sai	of method, anal mples must be preditations are	te & accre shipped ba current to	date, retu	ompliance Eurofins E m the sign	upon our nvironme led Chain	subcont at Testin of Custo	ract labo g North 1 dy attes	statories. Central, ting to si	This st LLC labo	ample st oratory o bliance tr	ipment is r other ins o Eurofins	forwarded ur tructions will Environmeni	i places the ownership of method, analyte & accreditation compliance upon our subcontract laboratories. This sample shipment is forwarded under chain-of-custody. If the being analyzed, the samples must be shipped back to the Eurofins Environment Testing North Central, LLC laboratory or other instructions will be provided. Any changes to tely. 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.	dy. If the changes to ntral, LLC.	
Possible Hazard Identification					Samp	le Dispi Return	le Disposal (A I Return To Client	fee ma	Å Å ₽	assessed if san Disposal By Lab	id if sa I By La	mples b	are l	stained fong Archive For	longer tha For	Sample Disposal (A fee may be assessed if samples are retained fonger than 1 month)		
Deliverable Requested. I, II, IV Other (specify)	Primary Deliverable Rank: 2	tble Rank: 2			Specia	al Instru	Special Instructions/QC Requirements.	C Requ	iremen	ts:								
Eperty-Kit Relinquished by		Date:			Tìme:	K				We	Method of Shipment:	Shipmen	ų					
Refinements			З Э	Company		Seived by	Ĵ		A.		1			- 73	500)	Q	\mathcal{F}	
Reinguistried by:	Date/Time:		0	Company / 1	B B	Received by	5					Date/Time:)	Company		
Relinquished by:	Date/Time:		Ŭ.	Company	8 8	Received by:					1	Date/Time:	me: /	-	_	Company		
Custody Seals Intact: Custody Seal No.					<u>රි</u>	oler Temp	Cooler Temperature(s) °C and Other Remarks:	°C and C	ther Rer	larks:	1	.1	C C	7				
					14	13	12			9		8	7	- 6	5		1	

Client: ARCADIS US Inc

Login Number: 185531 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>	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: 240-185531-1

List Source: Eurofins Edison

List Creation: 05/19/23 12:22 PM

DATA VERIFICATION REPORT



May 31, 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: 185531-1 Sample date: 2023-05-15 Report received by CADENA: 2023-05-31 Initial Data Verification completed by CADENA: 2023-05-31 Number of Samples:2 Sample Matrices:Water Test Categories:GCMS VOC Please see attached criteria report or sample result/qualified analytical result summary for qualifier flags assigned to sample data.

The following minor QC exceptions or missing information were noted:

GCMS VOC QC batch MS/MSD recovery outliers were not determined using a client sample so qualification was not required based on these sample-specific QC outliers.

Sample/MS/MSD Surrogate Recovery, Blank/LCS Surrogate Recovery, LCS/LCD Recovery, 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 Inc, 1099 Highland Drive, Suite E, Ann Arbor, MI 48108 517-819-0356

CADENA Valid Qualifiers

Valid Qualifiers	Description
<	Less than the reported concentration.
>	Greater than the reported concentration.
В	The analyte / compound was detected in the associated blank. For Organic methods the sample concentration was greater than the RDL and less than 5x (or 10x for common lab contaminates) the blank concentration and is considered non-detect at the reported concentration. For Inorganic methods the sample concentration was greater than the RDL and less than 10x the blank concentration and is considered non-detect at the reported concentration.
Е	The analyte / Compound reported exceeds the calibration range and is considered estimated.
EMPC	Estimated Minimum Potential Contamination - Dioxin/Furan analyses only.
J	Indicates an estimated value. This flag is used either when estimating a concentration for a tentatively identified compound or when the data indicates the presence of an analyte / compound but the result is less than the sample Quantitation limit, but greater than zero. The flag is also used in data validation to indicate a reported value should be considered estimated due to associated quality assurance deficiencies.
J-	The result is an estimated quantity, but the result may be biased low.
JB	NON-DETECT AT THE CONCENTRATION REPORTED AND ESTIMATED
JH	The sample result is considered estimated and is potentially biased high.
JL	The sample result is considered estimated and is potentially biased low.
JUB	NON-DETECT AT THE REPORTING LIMIT AND ESTIMATED
NJ	Tentatively identified compound with approximated concentration.
R	Indicates the value is considered to be unusable. (Note: The analyte / compound may or may not be present.)
TNTC	Too Numerous to Count - Asbestos and Microbiological Results.
U	Indicates that the analyte / compound was analyzed for, but not detected.
UB	The analyte / compound was detected in the associated blank. For Organic methods the sample concentration was less than the RDL and less than 5x (or 10x for common lab contaminates) the blank concentration and is considered non-detect at the RDL. For Inorganic methods the sample concentration was less than the RDL and less than 10x the blank concentration and is considered non-detect at the RDL.
UJ	The analyte / compound was not detected above the reported sample Quantitation limit. However, the Quantitation limit is considered to be approximate due to associated quality assurance results and may or may not represent the actual limit of Quantitation to accurately and precisely report the analyte in the sample.

Analytical Results Summary

CADENA Project ID: E203631

Laboratory: Eurofins Environment Testing LLC - Cleveland Laboratory Submittal: 185531-1

		Sample Name: Lab Sample ID: Sample Date:	TRIP BLA 2401855 5/15/20	- 5311			MW-959 2401859 5/15/20	_ 5312	3	
				Report		Valid		Report		Valid
	Analyte	Cas No.	Result	Limit	Units	Qualifier	Result	Limit	Units	Qualifier
GC/MS VOC										
<u>OSW-8260</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-8260</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 # 240-185531-1 CADENA Verification Report: 2023-05-31

Analyses Performed By: Eurofins North Canton, Ohio

Report # 50145R Review Level: Tier III Project: 30167538.402.02

SUMMARY

This data quality assessment summarizes the review of Sample Delivery Group (SDG) # 240-185531-1 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:

Semale ID	Lab ID	Matrix	Sample	Derent Comple	Ana	lysis
Sample ID	Lab ID	Matrix	Collection Date	Parent Sample	VOC	VOC SIM
TRIP BLANK_61	240-185531-1	Water	05/15/23		Х	
MW-95S_051523	240-185531-2	Water	05/15/23		Х	Х

DATA REVIEW

ANALYTICAL DATA PACKAGE DOCUMENTATION

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

	Items Reviewed	Rep	orted	Perfori Accep		Not Required
		No	Yes	No	Yes	Required
1.	Sample receipt condition		Х		Х	
2.	Requested analyses and sample results		Х		Х	
3.	Master tracking list		Х		Х	
4.	Methods of analysis		Х		Х	
5.	Reporting limits		Х		Х	
6.	Sample collection date		Х		Х	
7.	Laboratory sample received date		Х		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	

DATA REVIEW

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
-	TRIP BLANK_61 MW-95S_05152	Initial Calibration Verification %D	Vinyl chloride	+25.9%

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	
	RRF <0.05	Detect	J	
Initial and Continuing	RRF <0.01 ¹	Non-detect	R	
Calibration	RRF \$0.01	Detect	J	
	RRF >0.05 or RRF >0.01 ¹	Non-detect	No. Action	
	RRF 20.03 01 RRF 20.01	Detect	No Action	

DATA REVIEW

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

Note:

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.

No compounds were detected in the samples within this SDG.

7. System Performance and Overall Assessment

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

DATA REVIEW

DATA VALIDATION CHECKLIST FOR VOCs

VOCs: 8260D/8260D-SIM	Rep	orted		rmance ptable	Not Required	
	No	Yes	No	Yes	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

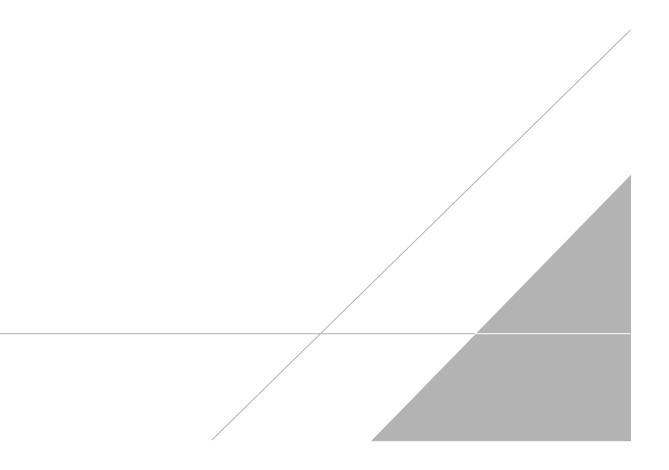
VALIDATION PERFORMED BY:	Hrishikesh Upadhyaya
SIGNATURE:	Curindialued -

DATE: June 20, 2023

PEER REVIEW: Andrew Korycinski

DATE: June 21, 2023

CHAIN OF CUSTODY CORRECTED SAMPLE ANALYSIS DATA SHEETS





Chain of Custody Record



IN LEADER IN CRUM

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

Client Contact	Regulat	ory program:			D	w		NPD	ES		RC	RA		Oth	er									TestAm	erica Laboratories
Company Name: Arcadis	Client Project N	fanager: Kris !	Hinsk	ey			Site	Cont	act: Cl	hristi	na W	eaver				Lab (Contac	t: Mi	ke De	Moni	00			COC No	
ddress: 28550 Cabot Drive, Suite 500	Telephone: 248-	-991-7740					Tel	enhon	e: 248	-994-	77.40					Teler	hone	330-	107.01	96					
City/State/Zip: Novi, MI, 48377											1					Telephone: 330-497-9396						of 1 COCs			
Phone: 248-994-2240	Email: kristoffe	er.hinskey@are	cadis.e	com			-	Analy	ysis Tu	irnar	ound	Time	-			Analyses					For lab us	se only			
'hone: 248-999-2240	Sampler Name:	:					TA	F ir diffi	crent from			T	-										Walk-in c	lient	
Project Name: Ford LTP Off-Site		Turn	16					10 dav			w <mark>e ek</mark> s we eks											Lab anon			
Project Number: 30167538.402.04	Method of Shipi		No. 1					10 day		1.	week			0							SIM		Lab sampling		oung
PC	Shinping/Track	ing No.					-				days		VIN	4		6	82608			82608	B SI			T.L.CDO N.	
PO # 30167538.402.04	2 days 2 days Shipping/Tracking No: 1 day Matrix Containers & Preservatives				B	8260B	8			a 82(8260B			Job/SDG No:	NO:										
				N	Matrix	1		Com	ident)	& Pre	SCEVE!	tives	- Interest	T	8260B	Ш.	2-00	8	8	oridi	ane			-	
Sample Identification	Sample Date	Sample Time	AIr	Aqueous	Sediment	Others	H2SO4	HIN03	HCI	And A	Uapres	Other:	Filtered	Composi	1,1-DCE	cis-1,2-DCE	Trans-1,2-DCE	PCE 8260B	TCE 8260B	Vinyl Chloride	1,4-Dioxane				mple Specific Notes / pecial Instructions:
TRIP BLANK_ 61	5/15/23			1	1	1	T		1	T			-	G		x	X	X	X	X			T	1 Tr	ip Blank
		11106		1	+		+	+	7	+	+			+	-					-	1			3.40	DAs for 8260B
MW-955_051523		1400		6					6				4	G	X	X	X	X	X	X	KI				DAs for 8260B SI
							T						T						T						
			+		+		-	$\left \right $		+	+	-	+	+-						-			++		
0 0 0 0																									
			+		+		+	$\left \right $	+	+-		+	+	+		-				+	+-+	-+			
<u>o</u> f											1		1	1	1	I	1	I	1	1	11				
of 689							T																		
			\downarrow		+		+		_	-	-														
				+	+		+		-+-	+	- 2	240-1	8553	1 Ch	IIIIIIII	f Cur	HII M	II NICHT					++		
											-		0000	1 01	anne	il Cu.	stou				-				
												1	1	1	1	1	1	I	1	1	1 [
				_	_			\square		_			-												
Possible Hazard Identification		L					S	Sample	e Dispo	osal (A fee	may b	e asses	ssed if	l I samp	les ar	e retai	nedl	onger	than 1	month)				
	kin Irritant Poiso	n B	Unkn	nown					Return				Dispo					rchiv				nths			
pecial Instructions/QC Requirements & Comments:	0																								
Sample Address: 12.131 Boston Submit all results through Cadens at itomalia@cs	idenaco.com. Cadena #	E203631																							
evel IV Reporting requested.					_																				
Relinquisted by:	Company:	-1-2	T	Date/I	lime:	123/	25	0	R	eccive	ed by:	~	. 1	1	C		. 0	,	Com	pany:		~		Date/Tin 5/1	
Sthe Turner	Company:	adi5		Date/1	1/ / [1		R,		ed by:	L	old	1	STC	4a	ge	•		pany:	cad	12		Date/Tin	
TAMA T	> AF	CAOIS	ľ	Date/1	Lime:	m.	10	RZ	5		er.	: d	H.						Com	EF	ETA			S/1=	7/23/09
Relinquished by	Company			Date/	Time:/	Tur	0		R	eceiv	ed in l	Labora	toryb	y:					Com	Danv:				Date/Tir	11 -1
g Jeighal	EE1A	-	- 1	51	171	23	430	2		14	h	M	X	mit	H	/			IE	E	TNU	/		05-	18-23 800

Cools, TestAngrica Lagonitores, Inc., All rights reserved, TestAnnenco & Design ⁴are testiments of TestAnnence Laboratories, Inc. 2023

Client Sample ID: TRIP BLANK_61

Date Collected: 05/15/23 00:00

Date Received: 05/18/23 08:00

Toluene-d8 (Surr)

4-Bromofluorobenzene

4-Bromofluorobenzene

85

85

81

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1-Dichloroethene	1.0	U	1.0	0.49	ug/L			05/24/23 22:07	1
cis-1,2-Dichloroethene	1.0	U	1.0	0.46	ug/L			05/24/23 22:07	1
Tetrachloroethene	1.0	U	1.0	0.44	ug/L			05/24/23 22:07	1
trans-1,2-Dichloroethene	1.0	U	1.0	0.51	ug/L			05/24/23 22:07	1
Trichloroethene	1.0	U	1.0	0.44	ug/L			05/24/23 22:07	1
Vinyl chloride	1.0	N UJ	1.0	0.45	ug/L			05/24/23 22:07	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	95		70 - 128			-		05/24/23 22:07	1
Dibromofluoromethane (Surr)	101		77 - 124					05/24/23 22:07	1

80 - 120

76 - 120

Client Sample ID: MW-95S_051523 Date Collected: 05/15/23 14:00 Date Received: 05/18/23 08:00

Lab Sample ID: 240-185531-2

05/24/23 22:07

05/24/23 22:07

Matrix: Water

1

1

1

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,4-Dioxane	2.0	U	2.0	0.86	ug/L			05/23/23 10:00	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene	106		75 - 133			-		05/23/23 10:00	1

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1-Dichloroethene	1.0	U	1.0	0.49	ug/L			05/25/23 00:50	1
cis-1,2-Dichloroethene	1.0	U	1.0	0.46	ug/L			05/25/23 00:50	1
Tetrachloroethene	1.0	U	1.0	0.44	ug/L			05/25/23 00:50	1
trans-1,2-Dichloroethene	1.0	U	1.0	0.51	ug/L			05/25/23 00:50	1
Trichloroethene	1.0	U	1.0	0.44	ug/L			05/25/23 00:50	1
Vinyl chloride	1.0	K UJ	1.0	0.45	ug/L			05/25/23 00:50	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	99		70 - 128			-		05/25/23 00:50	1
Dibromofluoromethane (Surr)	103		77 - 124					05/25/23 00:50	1
Toluene-d8 (Surr)	85		80 - 120					05/25/23 00:50	1

76 - 120

05/25/23 00:50

Lab Sample ID: 240-185531-1 Matrix: Water