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ANALYTICAL REPORT

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

Laboratory Job ID: 240-167152-1
Client Project/Site: Ford LTP - On Site

For:
ARCADIS U.S., Inc.
28550 Cabot Drive
Suite 500
Novi, Michigan 48377

Attn: Kristoffer Hinskey

Authorized for release by:
6/8/2022 9:35:14 AM

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Definitions/Glossary

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

Job ID: 240-167152-1

Qualifiers

GC/MS VOA

Qualifier	Qualifier Description
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.
U	Indicates the analyte was analyzed for but not detected.

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: 240-167152-1

Laboratory: Eurofins Canton

Narrative

Job Narrative
240-167152-1

Comments
No additional comments.

Receipt
The samples were received on 5/24/2022 10:00 AM. Unless otherwise noted below, the samples arrived in good condition, and where required, properly preserved and on ice. The temperatures of the 2 coolers at receipt time were 1.2º C and 2.2º C.

GC/MS VOA
Method 8260D: Method required MS/MSD were prepared and analyzed at required batch frequency for analytical batch 240-529115 using samples from other sites, and are not reported with this project.

Method 8260D SIM: The matrix spike/matrix spike duplicate (MS/MSD) for 240-528806 was not reported due to instrument failure.

Method 8260D SIM: The following volatiles sample was diluted due to foaming at the time of purging during the original sample analysis: MW-56_052122 (240-167152-5). Elevated reporting limits (RLs) are provided.

No additional analytical or quality issues were noted, other than those described above or 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 - On Site

Job ID: 240-167152-1

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

Protocol References:

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

Laboratory References:

TAL 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 - On Site

Job ID: 240-167152-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
240-167152-1	TRIP BLANK_41	Water	05/21/22 00:00	05/24/22 10:00
240-167152-2	MW-210S_052122	Water	05/21/22 09:25	05/24/22 10:00
240-167152-3	MW-34_052122	Water	05/21/22 13:15	05/24/22 10:00
240-167152-4	MW-43_052122	Water	05/21/22 14:15	05/24/22 10:00
240-167152-5	MW-56_052122	Water	05/21/22 15:18	05/24/22 10:00
240-167152-6	DUP-04	Water	05/21/22 00:00	05/24/22 10:00

Detection Summary

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

Job ID: 240-167152-1

Client Sample ID: TRIP BLANK_41 — Lab Sample ID: 240-167152-1

No Detections.

Client Sample ID: MW-210S_052122 — Lab Sample ID: 240-167152-2

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
cis-1,2-Dichloroethene	8.9		1.0	0.46	ug/L	1		8260D	Total/NA
trans-1,2-Dichloroethene	1.1		1.0	0.51	ug/L	1		8260D	Total/NA
Vinyl chloride	3.5		1.0	0.45	ug/L	1		8260D	Total/NA

Client Sample ID: MW-34_052122 — Lab Sample ID: 240-167152-3

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
1,4-Dioxane	4.1		2.0	0.86	ug/L	1		8260D SIM	Total/NA
cis-1,2-Dichloroethene	0.54	J	1.0	0.46	ug/L	1		8260D	Total/NA
Vinyl chloride	1.2		1.0	0.45	ug/L	1		8260D	Total/NA

Client Sample ID: MW-43_052122 — Lab Sample ID: 240-167152-4

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
1,4-Dioxane	1.9	J	2.0	0.86	ug/L	1		8260D SIM	Total/NA

Client Sample ID: MW-56_052122 — Lab Sample ID: 240-167152-5

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
cis-1,2-Dichloroethene	0.75	J	1.0	0.46	ug/L	1		8260D	Total/NA

Client Sample ID: DUP-04 — Lab Sample ID: 240-167152-6

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
1,4-Dioxane	1.6	J	2.0	0.86	ug/L	1		8260D SIM	Total/NA

This Detection Summary does not include radiochemical test results.

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

Job ID: 240-167152-1

Client Sample ID: TRIP BLANK_41
Date Collected: 05/21/22 00:00
Date Received: 05/24/22 10:00

Lab Sample ID: 240-167152-1
Matrix: Water

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1-Dichloroethene	1.0	U	1.0	0.49	ug/L			06/03/22 01:42	1
cis-1,2-Dichloroethene	1.0	U	1.0	0.46	ug/L			06/03/22 01:42	1
Tetrachloroethene	1.0	U	1.0	0.44	ug/L			06/03/22 01:42	1
trans-1,2-Dichloroethene	1.0	U	1.0	0.51	ug/L			06/03/22 01:42	1
Trichloroethene	1.0	U	1.0	0.44	ug/L			06/03/22 01:42	1
Vinyl chloride	1.0	U	1.0	0.45	ug/L			06/03/22 01:42	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*90*		*62 - 137*		*06/03/22 01:42*	*1*
4-Bromofluorobenzene (Surr)	*102*		*56 - 136*		*06/03/22 01:42*	*1*
Toluene-d8 (Surr)	*89*		*78 - 122*		*06/03/22 01:42*	*1*
Dibromofluoromethane (Surr)	*85*		*73 - 120*		*06/03/22 01:42*	*1*

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

Job ID: 240-167152-1

Client Sample ID: MW-210S_052122

Date Collected: 05/21/22 09:25
Date Received: 05/24/22 10:00

Lab Sample ID: 240-167152-2

Matrix: Water

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,4-Dioxane	2.0	U	2.0	0.86	ug/L			06/03/22 04:36	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*86*		*66 - 120*		*06/03/22 04:36*	*1*

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1-Dichloroethene	1.0	U	1.0	0.49	ug/L			06/03/22 02:05	1
cis-1,2-Dichloroethene	**8.9**		1.0	0.46	ug/L			06/03/22 02:05	1
Tetrachloroethene	1.0	U	1.0	0.44	ug/L			06/03/22 02:05	1
trans-1,2-Dichloroethene	**1.1**		1.0	0.51	ug/L			06/03/22 02:05	1
Trichloroethene	1.0	U	1.0	0.44	ug/L			06/03/22 02:05	1
Vinyl chloride	**3.5**		1.0	0.45	ug/L			06/03/22 02:05	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*88*		*62 - 137*		*06/03/22 02:05*	*1*
4-Bromofluorobenzene (Surr)	*103*		*56 - 136*		*06/03/22 02:05*	*1*
Toluene-d8 (Surr)	*89*		*78 - 122*		*06/03/22 02:05*	*1*
Dibromofluoromethane (Surr)	*88*		*73 - 120*		*06/03/22 02:05*	*1*

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

Job ID: 240-167152-1

Client Sample ID: MW-34_052122
Date Collected: 05/21/22 13:15
Date Received: 05/24/22 10:00

Lab Sample ID: 240-167152-3
Matrix: Water

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,4-Dioxane	**4.1**		2.0	0.86	ug/L			06/03/22 04:59	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*88*		*66 - 120*		*06/03/22 04:59*	*1*

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1-Dichloroethene	1.0	U	1.0	0.49	ug/L			06/03/22 02:28	1
cis-1,2-Dichloroethene	**0.54**	**J**	1.0	0.46	ug/L			06/03/22 02:28	1
Tetrachloroethene	1.0	U	1.0	0.44	ug/L			06/03/22 02:28	1
trans-1,2-Dichloroethene	1.0	U	1.0	0.51	ug/L			06/03/22 02:28	1
Trichloroethene	1.0	U	1.0	0.44	ug/L			06/03/22 02:28	1
Vinyl chloride	**1.2**		1.0	0.45	ug/L			06/03/22 02:28	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*96*		*62 - 137*		*06/03/22 02:28*	*1*
4-Bromofluorobenzene (Surr)	*111*		*56 - 136*		*06/03/22 02:28*	*1*
Toluene-d8 (Surr)	*100*		*78 - 122*		*06/03/22 02:28*	*1*
Dibromofluoromethane (Surr)	*91*		*73 - 120*		*06/03/22 02:28*	*1*

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

Job ID: 240-167152-1

Client Sample ID: MW-43_052122

Date Collected: 05/21/22 14:15
Date Received: 05/24/22 10:00

Lab Sample ID: 240-167152-4

Matrix: Water

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,4-Dioxane	1.9	J	2.0	0.86	ug/L			06/03/22 05:23	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*89*		*66 - 120*		*06/03/22 05:23*	*1*

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1-Dichloroethene	1.0	U	1.0	0.49	ug/L			06/03/22 19:25	1
cis-1,2-Dichloroethene	1.0	U	1.0	0.46	ug/L			06/03/22 19:25	1
Tetrachloroethene	1.0	U	1.0	0.44	ug/L			06/03/22 19:25	1
trans-1,2-Dichloroethene	1.0	U	1.0	0.51	ug/L			06/03/22 19:25	1
Trichloroethene	1.0	U	1.0	0.44	ug/L			06/03/22 19:25	1
Vinyl chloride	1.0	U	1.0	0.45	ug/L			06/03/22 19:25	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*94*		*62 - 137*		*06/03/22 19:25*	*1*
4-Bromofluorobenzene (Surr)	*111*		*56 - 136*		*06/03/22 19:25*	*1*
Toluene-d8 (Surr)	*94*		*78 - 122*		*06/03/22 19:25*	*1*
Dibromofluoromethane (Surr)	*88*		*73 - 120*		*06/03/22 19:25*	*1*

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

Job ID: 240-167152-1

Client Sample ID: MW-56_052122
Date Collected: 05/21/22 15:18
Date Received: 05/24/22 10:00

Lab Sample ID: 240-167152-5
Matrix: Water

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,4-Dioxane	4.0	U	4.0	1.7	ug/L			06/03/22 05:47	2

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*91*		*66 - 120*		*06/03/22 05:47*	*2*

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1-Dichloroethene	1.0	U	1.0	0.49	ug/L			06/03/22 19:48	1
cis-1,2-Dichloroethene	**0.75**	**J**	1.0	0.46	ug/L			06/03/22 19:48	1
Tetrachloroethene	1.0	U	1.0	0.44	ug/L			06/03/22 19:48	1
trans-1,2-Dichloroethene	1.0	U	1.0	0.51	ug/L			06/03/22 19:48	1
Trichloroethene	1.0	U	1.0	0.44	ug/L			06/03/22 19:48	1
Vinyl chloride	1.0	U	1.0	0.45	ug/L			06/03/22 19:48	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*86*		*62 - 137*		*06/03/22 19:48*	*1*
4-Bromofluorobenzene (Surr)	*97*		*56 - 136*		*06/03/22 19:48*	*1*
Toluene-d8 (Surr)	*84*		*78 - 122*		*06/03/22 19:48*	*1*
Dibromofluoromethane (Surr)	*82*		*73 - 120*		*06/03/22 19:48*	*1*

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

Job ID: 240-167152-1

Client Sample ID: DUP-04
Date Collected: 05/21/22 00:00
Date Received: 05/24/22 10:00

Lab Sample ID: 240-167152-6
Matrix: Water

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,4-Dioxane	1.6	J	2.0	0.86	ug/L			06/03/22 06:11	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*89*		*66 - 120*		*06/03/22 06:11*	*1*

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1-Dichloroethene	1.0	U	1.0	0.49	ug/L			06/03/22 20:12	1
cis-1,2-Dichloroethene	1.0	U	1.0	0.46	ug/L			06/03/22 20:12	1
Tetrachloroethene	1.0	U	1.0	0.44	ug/L			06/03/22 20:12	1
trans-1,2-Dichloroethene	1.0	U	1.0	0.51	ug/L			06/03/22 20:12	1
Trichloroethene	1.0	U	1.0	0.44	ug/L			06/03/22 20:12	1
Vinyl chloride	1.0	U	1.0	0.45	ug/L			06/03/22 20:12	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*90*		*62 - 137*		*06/03/22 20:12*	*1*
4-Bromofluorobenzene (Surr)	*99*		*56 - 136*		*06/03/22 20:12*	*1*
Toluene-d8 (Surr)	*84*		*78 - 122*		*06/03/22 20:12*	*1*
Dibromofluoromethane (Surr)	*82*		*73 - 120*		*06/03/22 20:12*	*1*

Surrogate Summary

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

Job ID: 240-167152-1

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

Matrix: Water **Prep Type: Total/NA**

		Percent Surrogate Recovery (Acceptance Limits)			
		DCA	BFB	TOL	DBFM
Lab Sample ID	Client Sample ID	(62-137)	(56-136)	(78-122)	(73-120)
240-167148-E-2 MS	Matrix Spike	85	107	88	87
240-167148-H-2 MSD	Matrix Spike Duplicate	78	94	81	79
240-167152-1	TRIP BLANK_41	90	102	89	85
240-167152-2	MW-210S_052122	88	103	89	88
240-167152-3	MW-34_052122	96	111	100	91
240-167152-4	MW-43_052122	94	111	94	88
240-167152-5	MW-56_052122	86	97	84	82
240-167152-6	DUP-04	90	99	84	82
LCS 240-528959/5	Lab Control Sample	83	101	85	84
LCS 240-529115/5	Lab Control Sample	84	105	88	87
MB 240-528959/8	Method Blank	85	98	85	80
MB 240-529115/8	Method Blank	83	98	85	83

Surrogate Legend

DCA = 1,2-Dichloroethane-d4 (Surr)
BFB = 4-Bromofluorobenzene (Surr)
TOL = Toluene-d8 (Surr)
DBFM = Dibromofluoromethane (Surr)

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

Matrix: Water **Prep Type: Total/NA**

		Percent Surrogate Recovery (Acceptance Limits)
		DCA
Lab Sample ID	Client Sample ID	(66-120)
240-167152-2	MW-210S_052122	86
240-167152-3	MW-34_052122	88
240-167152-4	MW-43_052122	89
240-167152-5	MW-56_052122	91
240-167152-6	DUP-04	89
LCS 240-528806/3	Lab Control Sample	85
MB 240-528806/4	Method Blank	88

Surrogate Legend

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

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

Lab Sample ID: MB 240-528959/8
Matrix: Water
Analysis Batch: 528959

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1-Dichloroethene	1.0	U	1.0	0.49	ug/L			06/02/22 17:29	1
cis-1,2-Dichloroethene	1.0	U	1.0	0.46	ug/L			06/02/22 17:29	1
Tetrachloroethene	1.0	U	1.0	0.44	ug/L			06/02/22 17:29	1
trans-1,2-Dichloroethene	1.0	U	1.0	0.51	ug/L			06/02/22 17:29	1
Trichloroethene	1.0	U	1.0	0.44	ug/L			06/02/22 17:29	1
Vinyl chloride	1.0	U	1.0	0.45	ug/L			06/02/22 17:29	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*85*		*62 - 137*		*06/02/22 17:29*	*1*
4-Bromofluorobenzene (Surr)	*98*		*56 - 136*		*06/02/22 17:29*	*1*
Toluene-d8 (Surr)	*85*		*78 - 122*		*06/02/22 17:29*	*1*
Dibromofluoromethane (Surr)	*80*		*73 - 120*		*06/02/22 17:29*	*1*

Lab Sample ID: LCS 240-528959/5
Matrix: Water
Analysis Batch: 528959

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
1,1-Dichloroethene	20.0	19.5		ug/L		97	63 - 134
cis-1,2-Dichloroethene	20.0	18.7		ug/L		94	77 - 123
Tetrachloroethene	20.0	18.2		ug/L		91	76 - 123
trans-1,2-Dichloroethene	20.0	18.1		ug/L		90	75 - 124
Trichloroethene	20.0	19.0		ug/L		95	70 - 122
Vinyl chloride	20.0	21.3		ug/L		107	60 - 144

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*83*		*62 - 137*
4-Bromofluorobenzene (Surr)	*101*		*56 - 136*
Toluene-d8 (Surr)	*85*		*78 - 122*
Dibromofluoromethane (Surr)	*84*		*73 - 120*

Lab Sample ID: 240-167148-E-2 MS
Matrix: Water
Analysis Batch: 528959

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

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
1,1-Dichloroethene	1.0	U	20.0	19.6		ug/L		98	56 - 135
cis-1,2-Dichloroethene	1.0	U	20.0	18.9		ug/L		95	66 - 128
Tetrachloroethene	1.0	U	20.0	17.6		ug/L		88	62 - 131
trans-1,2-Dichloroethene	1.0	U	20.0	17.8		ug/L		89	56 - 136
Trichloroethene	1.0	U	20.0	18.2		ug/L		91	61 - 124
Vinyl chloride	1.6		20.0	23.1		ug/L		107	43 - 157

Surrogate	*MS %Recovery*	*MS Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*85*		*62 - 137*
4-Bromofluorobenzene (Surr)	*107*		*56 - 136*
Toluene-d8 (Surr)	*88*		*78 - 122*

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

Lab Sample ID: 240-167148-E-2 MS
Matrix: Water
Analysis Batch: 528959

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

Surrogate	MS %Recovery	MS Qualifier	Limits
Dibromofluoromethane (Surr)	87		73 - 120

Lab Sample ID: 240-167148-H-2 MSD
Matrix: Water
Analysis Batch: 528959

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

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
1,1-Dichloroethene	1.0	U	20.0	18.3		ug/L		91	56 - 135	7	26
cis-1,2-Dichloroethene	1.0	U	20.0	17.7		ug/L		88	66 - 128	7	14
Tetrachloroethene	1.0	U	20.0	17.3		ug/L		86	62 - 131	2	20
trans-1,2-Dichloroethene	1.0	U	20.0	16.9		ug/L		84	56 - 136	5	15
Trichloroethene	1.0	U	20.0	18.0		ug/L		90	61 - 124	1	15
Vinyl chloride	1.6		20.0	22.1		ug/L		102	43 - 157	4	24

Surrogate	MSD %Recovery	MSD Qualifier	Limits
1,2-Dichloroethane-d4 (Surr)	78		62 - 137
4-Bromofluorobenzene (Surr)	94		56 - 136
Toluene-d8 (Surr)	81		78 - 122
Dibromofluoromethane (Surr)	79		73 - 120

Lab Sample ID: MB 240-529115/8
Matrix: Water
Analysis Batch: 529115

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1-Dichloroethene	1.0	U	1.0	0.49	ug/L			06/03/22 13:55	1
cis-1,2-Dichloroethene	1.0	U	1.0	0.46	ug/L			06/03/22 13:55	1
Tetrachloroethene	1.0	U	1.0	0.44	ug/L			06/03/22 13:55	1
trans-1,2-Dichloroethene	1.0	U	1.0	0.51	ug/L			06/03/22 13:55	1
Trichloroethene	1.0	U	1.0	0.44	ug/L			06/03/22 13:55	1
Vinyl chloride	1.0	U	1.0	0.45	ug/L			06/03/22 13:55	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	83		62 - 137		06/03/22 13:55	1
4-Bromofluorobenzene (Surr)	98		56 - 136		06/03/22 13:55	1
Toluene-d8 (Surr)	85		78 - 122		06/03/22 13:55	1
Dibromofluoromethane (Surr)	83		73 - 120		06/03/22 13:55	1

Lab Sample ID: LCS 240-529115/5
Matrix: Water
Analysis Batch: 529115

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
1,1-Dichloroethene	20.0	19.6		ug/L		98	63 - 134
cis-1,2-Dichloroethene	20.0	18.7		ug/L		93	77 - 123
Tetrachloroethene	20.0	18.7		ug/L		94	76 - 123
trans-1,2-Dichloroethene	20.0	17.9		ug/L		90	75 - 124
Trichloroethene	20.0	19.4		ug/L		97	70 - 122

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

Lab Sample ID: LCS 240-529115/5
Matrix: Water
Analysis Batch: 529115

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

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Vinyl chloride			20.0	21.3		ug/L		106	60 - 144		

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*84*		*62 - 137*
4-Bromofluorobenzene (Surr)	*105*		*56 - 136*
Toluene-d8 (Surr)	*88*		*78 - 122*
Dibromofluoromethane (Surr)	*87*		*73 - 120*

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

Lab Sample ID: MB 240-528806/4
Matrix: Water
Analysis Batch: 528806

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,4-Dioxane	2.0	U	2.0	0.86	ug/L			06/02/22 19:25	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*88*		*66 - 120*		*06/02/22 19:25*	*1*

Lab Sample ID: LCS 240-528806/3
Matrix: Water
Analysis Batch: 528806

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

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
1,4-Dioxane			10.0	11.0		ug/L		110	80 - 122		

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*85*		*66 - 120*

QC Association Summary

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

Job ID: 240-167152-1

GC/MS VOA

Analysis Batch: 528806

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-167152-2	MW-210S_052122	Total/NA	Water	8260D SIM	
240-167152-3	MW-34_052122	Total/NA	Water	8260D SIM	
240-167152-4	MW-43_052122	Total/NA	Water	8260D SIM	
240-167152-5	MW-56_052122	Total/NA	Water	8260D SIM	
240-167152-6	DUP-04	Total/NA	Water	8260D SIM	
MB 240-528806/4	Method Blank	Total/NA	Water	8260D SIM	
LCS 240-528806/3	Lab Control Sample	Total/NA	Water	8260D SIM	

Analysis Batch: 528959

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-167152-1	TRIP BLANK_41	Total/NA	Water	8260D	
240-167152-2	MW-210S_052122	Total/NA	Water	8260D	
240-167152-3	MW-34_052122	Total/NA	Water	8260D	
MB 240-528959/8	Method Blank	Total/NA	Water	8260D	
LCS 240-528959/5	Lab Control Sample	Total/NA	Water	8260D	
240-167148-E-2 MS	Matrix Spike	Total/NA	Water	8260D	
240-167148-H-2 MSD	Matrix Spike Duplicate	Total/NA	Water	8260D	

Analysis Batch: 529115

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-167152-4	MW-43_052122	Total/NA	Water	8260D	
240-167152-5	MW-56_052122	Total/NA	Water	8260D	
240-167152-6	DUP-04	Total/NA	Water	8260D	
MB 240-529115/8	Method Blank	Total/NA	Water	8260D	
LCS 240-529115/5	Lab Control Sample	Total/NA	Water	8260D	

Lab Chronicle

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

Job ID: 240-167152-1

Client Sample ID: TRIP BLANK_41
Date Collected: 05/21/22 00:00
Date Received: 05/24/22 10:00

Lab Sample ID: 240-167152-1
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260D		1	528959	06/03/22 01:42	TJL1	TAL CAN

Client Sample ID: MW-210S_052122
Date Collected: 05/21/22 09:25
Date Received: 05/24/22 10:00

Lab Sample ID: 240-167152-2
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260D		1	528959	06/03/22 02:05	TJL1	TAL CAN
Total/NA	Analysis	8260D SIM		1	528806	06/03/22 04:36	CS	TAL CAN

Client Sample ID: MW-34_052122
Date Collected: 05/21/22 13:15
Date Received: 05/24/22 10:00

Lab Sample ID: 240-167152-3
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260D		1	528959	06/03/22 02:28	TJL1	TAL CAN
Total/NA	Analysis	8260D SIM		1	528806	06/03/22 04:59	CS	TAL CAN

Client Sample ID: MW-43_052122
Date Collected: 05/21/22 14:15
Date Received: 05/24/22 10:00

Lab Sample ID: 240-167152-4
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260D		1	529115	06/03/22 19:25	TJL1	TAL CAN
Total/NA	Analysis	8260D SIM		1	528806	06/03/22 05:23	CS	TAL CAN

Client Sample ID: MW-56_052122
Date Collected: 05/21/22 15:18
Date Received: 05/24/22 10:00

Lab Sample ID: 240-167152-5
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260D		1	529115	06/03/22 19:48	TJL1	TAL CAN
Total/NA	Analysis	8260D SIM		2	528806	06/03/22 05:47	CS	TAL CAN

Client Sample ID: DUP-04
Date Collected: 05/21/22 00:00
Date Received: 05/24/22 10:00

Lab Sample ID: 240-167152-6
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260D		1	529115	06/03/22 20:12	TJL1	TAL CAN
Total/NA	Analysis	8260D SIM		1	528806	06/03/22 06:11	CS	TAL CAN

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

Accreditation/Certification Summary

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

Job ID: 240-167152-1

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	06-30-22
Georgia	State	4062	02-23-22 *
Illinois	NELAP	200004	07-31-22
Iowa	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	06-30-22
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	08-31-22
Texas	NELAP	T104704517-22-16	08-31-22
Virginia	NELAP	11570	09-14-22
Washington	State	C971	01-12-23
West Virginia DEP	State	210	12-31-22

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

MICHIGAN 190

Chain of Custody Record

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

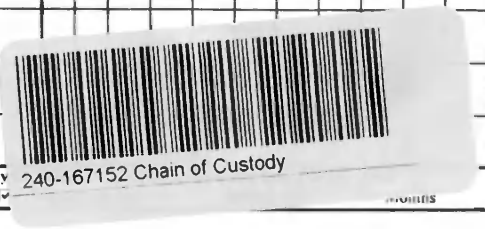
TestAmerica Laboratory location: Brighton – 10448 Citation Drive, Suite 200 / Brighton, MI 48116 / 810-229-2763

Regulatory program: ☐ DW ☐ NPDES ☐ RCRA ☐ Other

TestAmerica Laboratories, Inc.

Client Contact	Client Project Manager: Kris Hinskey	Site Contact: Christina Weaver	Lab Contact: Mike DelMonico	COC No:
Company Name: Arcadis				
Address: 28550 Cabot Drive, Suite 500	Telephone: 269-832-7478	Telephone: 248-994-2329	Telephone: 330-966-9783	1 of 1 COCs
City/State/Zip: Novi, MI, 48377	Email: Kristoffer.Hinskey@arcadis.com	Analysis Turnaround Time		For lab use only
Phone: 248-994-2240	Sampler Name: Sommer Guy	TAT if different from below: ☐ 3 weeks ☑ 2 weeks ☐ 1 week ☐ 2 days ☐ 1 day; 10 day		Walk-in client
Project Name: Ford LTP On-Site	Method of Shipment/Carrier:			Lab sampling
Project Number: 30080642.401.03	Shipping/Tracking No:			Job/SDG No:
PO # 30080642.401.03				

Sample Identification	Sample Date	Sample Time	Matrix: Air	Aqueous	Sediment	Solid	Other:	Containers & Preservatives: H2SO4	HNO3	HCl	NaOH	ZnAc/NaOH	Unpres	Other:	Filtered Sample (Y / N)	Composite=C / Grab=G	Analyses: 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:
TRIP BLANK_41	5/21/22	—		1						1					N	G	X	X	X	X	X	X		1 Trip Blank
MW-21OS-052122	5/21/22	925		6						6					N	G	X	X	X	X	X	X	X	3 VOAs for 8260D 3 VOAs for 8260D SIM
MW-34-052122	5/21/22	1315		6						6					N	G	X	X	X	X	X	X	X	" "
MW-43-052122	5/21/22	1415		6						6					N	G	X	X	X	X	X	X	X	" "
MW-56-052122	5/21/22	1518		6						6					N	G	X	X	X	X	X	X	X	" "
DUP-04	5/21/22	—		6						6					N	G	X	X	X	X	X	X	X	" "
~~X~~ 56	5/21																							



Possible Hazard Identification: ☑ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown

Sample Disposal (A fee may ☐ Return to Client ☑ Months

Special Instructions/QC Requirements & Comments:

Submit all results through Cadena at jtomalia@cadenaco.com. Cadena #E203728
Level IV Reporting requested.

Relinquished by:	Company:	Date/Time:	Received by:	Company:	Date/Time:
Sommer Guy	Arcadis	5/21/22 1645	Novi Cold storage	Arcadis	5/21/22 1645
Relinquished by:	Company:	Date/Time:	Received by:	Company:	Date/Time:
	ARCADIS	5/23/22 0850		EEtA	5/23/22 0850
Relinquished by:	Company:	Date/Time:	Received in Laboratory by:	Company:	Date/Time:
	EEtA	5/23/22 854	M. D.	EETNC	5/24/22 10:00

6/8/2022

Eurofins TestAmerica Canton Sample Receipt Form/Narrative **Login # : 167152**
Canton Facility

Client ARCADIS Site Name

Cooler unpacked by: M. A. A.

Cooler Received on 5/24/22 Opened on 5/24/22

FedEx: 1st Grd (Exp) UPS FAS Clipper Client Drop Off TestAmerica Courier Other

Receipt After-hours: Drop-off Date/Time Storage Location

TestAmerica Cooler # TA Foam Box Client Cooler Box Other

Packing material used: (Bubble Wrap) Foam Plastic Bag None Other

COOLANT: (Wet Ice) Blue Ice Dry Ice Water None

1. Cooler temperature upon receipt ☒ See Multiple Cooler Form
   IR GUN# IR-13 (CF **0.0** °C) Observed Cooler Temp._____°C Corrected Cooler Temp._____°C
   IR GUN #IR-15 (CF **-0.7**°C) Observed Cooler Temp._____°C Corrected Cooler Temp._____°C

2. Were tamper/custody seals on the outside of the cooler(s)? If Yes Quantity 1	(Yes)	No
-Were the seals on the outside of the cooler(s) signed & dated?	(Yes)	No NA
-Were tamper/custody seals on the bottle(s) or bottle kits (LLHg/MeHg)?	Yes	(No)
-Were tamper/custody seals intact and uncompromised?	(Yes)	No NA
3. Shippers' packing slip attached to the cooler(s)?	(Yes)	No
4. Did custody papers accompany the sample(s)?	(Yes)	No
5. Were the custody papers relinquished & signed in the appropriate place?	(Yes)	No
6. Was/were the person(s) who collected the samples clearly identified on the COC?	(Yes)	No
7. Did all bottles arrive in good condition (Unbroken)?	(Yes)	No
8. Could all bottle labels (ID/Date/Time) be reconciled with the COC?	(Yes)	No
9. For each sample, does the COC specify preservatives (Y/N), # of containers (Y/N), and sample type of grab/comp (Y/N)?		
10. Were correct bottle(s) used for the test(s) indicated?	(Yes)	No
11. Sufficient quantity received to perform indicated analyses?	(Yes)	No
12. Are these work share samples and all listed on the COC?	Yes	(No)
If yes, Questions 13-17 have been checked at the originating laboratory.		
13. Were all preserved sample(s) at the correct pH upon receipt?	Yes	No (NA) pH Strip Lot# HC157842
14. Were VOAs on the COC?	(Yes)	No
15. Were air bubbles >6 mm in any VOA vials? ● ⬅ Larger than this.	Yes	(No) NA
16. Was a VOA trip blank present in the cooler(s)? Trip Blank Lot # N/A	(Yes)	No
17. Was a LL Hg or Me Hg trip blank present? _____	Yes	(No)

Tests that are not checked for pH by Receiving:
VOAs
Oil and Grease
TOC

Contacted PM _____ Date _____ by _____ via Verbal Voice Mail Other

Concerning _____

18. CHAIN OF CUSTODY & SAMPLE DISCREPANCIES ☐ additional next page

Samples processed by:

19. SAMPLE CONDITION

Sample(s) _____ were received after the recommended holding time had expired.
Sample(s) _____ were received in a broken container.
Sample(s) _____ were received with bubble >6 mm in diameter. (Notify PM)

20. SAMPLE PRESERVATION

Sample(s) _____ were further preserved in the laboratory.
Time preserved: _____ Preservative(s) added/Lot number(s): _____

VOA Sample Preservation - Date/Time VOAs Frozen: _____

Login # : 167152

Eurofins - Canton Sample Receipt Multiple Cooler Form

Cooler Description (Circle)	IR Gun # (Circle)	Observed Temp °C	Corrected Temp °C	Coolant (Circle)
(TA) Client Box Other	(IR-13) IR-15	1.2	1.2	(Wet Ice) Blue Ice Dry Ice Water None
(TA) Client Box Other	(IR-13) IR-15	2.2	2.2	(Wet Ice) Blue Ice Dry Ice Water None
TA Client Box Other	IR-13 IR-15			Wet Ice Blue Ice Dry Ice Water None
TA Client Box Other	IR-13 IR-15			Wet Ice Blue Ice Dry Ice Water None
TA Client Box Other	IR-13 IR-15			Wet Ice Blue Ice Dry Ice Water None
TA Client Box Other	IR-13 IR-15			Wet Ice Blue Ice Dry Ice Water None
TA Client Box Other	IR-13 IR-15			Wet Ice Blue Ice Dry Ice Water None
TA Client Box Other	IR-13 IR-15			Wet Ice Blue Ice Dry Ice Water None
TA Client Box Other	IR-13 IR-15			Wet Ice Blue Ice Dry Ice Water None
TA Client Box Other	IR-13 IR-15			Wet Ice Blue Ice Dry Ice Water None
TA Client Box Other	IR-13 IR-15			Wet Ice Blue Ice Dry Ice Water None
TA Client Box Other	IR-13 IR-15			Wet Ice Blue Ice Dry Ice Water None
TA Client Box Other	IR-13 IR-15			Wet Ice Blue Ice Dry Ice Water None
TA Client Box Other	IR-13 IR-15			Wet Ice Blue Ice Dry Ice Water None
TA Client Box Other	IR-13 IR-15			Wet Ice Blue Ice Dry Ice Water None
TA Client Box Other	IR-13 IR-15			Wet Ice Blue Ice Dry Ice Water None
TA Client Box Other	IR-13 IR-15			Wet Ice Blue Ice Dry Ice Water None
TA Client Box Other	IR-13 IR-15			Wet Ice Blue Ice Dry Ice Water None
TA Client Box Other	IR-13 IR-15			Wet Ice Blue Ice Dry Ice Water None
TA Client Box Other	IR-13 IR-15			Wet Ice Blue Ice Dry Ice Water None
TA Client Box Other	IR-13 IR-15			Wet Ice Blue Ice Dry Ice Water None
TA Client Box Other	IR-13 IR-15			Wet Ice Blue Ice Dry Ice Water None
TA Client Box Other	IR-13 IR-15			Wet Ice Blue Ice Dry Ice Water None
TA Client Box Other	IR-13 IR-15			Wet Ice Blue Ice Dry Ice Water None
TA Client Box Other	IR-13 IR-15			Wet Ice Blue Ice Dry Ice Water None
TA Client Box Other	IR-13 IR-15			Wet Ice Blue Ice Dry Ice Water None
TA Client Box Other	IR-13 IR-15			Wet Ice Blue Ice Dry Ice Water None
TA Client Box Other	IR-13 IR-15			Wet Ice Blue Ice Dry Ice Water None
TA Client Box Other	IR-13 IR-15			Wet Ice Blue Ice Dry Ice Water None
TA Client Box Other	IR-13 IR-15			Wet Ice Blue Ice Dry Ice Water None
TA Client Box Other	IR-13 IR-15			Wet Ice Blue Ice Dry Ice Water None
TA Client Box Other	IR-13 IR-15			Wet Ice Blue Ice Dry Ice Water None
TA Client Box Other	IR-13 IR-15			Wet Ice Blue Ice Dry Ice Water None
TA Client Box Other	IR-13 IR-15			Wet Ice Blue Ice Dry Ice Water None

☐ See Temperature Excursion Form

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