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ANALYTICAL REPORT

Eurofins TestAmerica, Canton
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North Canton, OH 44720
Tel: (330)497-9396

Laboratory Job ID: 240-160089-1
Client Project/Site: Ford LTP - Off-Site

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

Attn: Kristoffer Hinskey

Authorized for release by:
11/29/2021 8:51:49 AM

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Definitions/Glossary

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

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Qualifiers

GC/MS VOA

Qualifier	Qualifier Description
E	Result exceeded calibration range.
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

Case Narrative

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

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Laboratory: Eurofins TestAmerica, Canton

Narrative

Job Narrative
240-160089-1

Comments
No additional comments.

Receipt
The samples were received on 11/13/2021 8:00 AM. Unless otherwise noted below, the samples arrived in good condition, and where required, properly preserved and on ice. The temperature of the cooler at receipt was 1.5º C.

GC/MS VOA
No analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

VOA Prep
No 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

Job ID: 240-160089-1

Method	Method Description	Protocol	Laboratory
8260B	Volatile Organic Compounds (GC/MS)	SW846	TAL CAN
8260B SIM	Volatile Organic Compounds (GC/MS)	SW846	TAL CAN
5030B	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 TestAmerica, Canton, 4101 Shuffel Street NW, North Canton, OH 44720, TEL (330)497-9396

Sample Summary

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

Job ID: 240-160089-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
240-160089-1	TRIP BLANK_122	Water	11/11/21 00:00	11/13/21 08:00
240-160089-2	MW-76S_111121	Water	11/11/21 09:35	11/13/21 08:00
240-160089-3	MW-76_111121	Water	11/11/21 13:30	11/13/21 08:00

Detection Summary

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

Job ID: 240-160089-1

Client Sample ID: TRIP BLANK_122 — Lab Sample ID: 240-160089-1

No Detections.

Client Sample ID: MW-76S_111121 — Lab Sample ID: 240-160089-2

No Detections.

Client Sample ID: MW-76_111121 — Lab Sample ID: 240-160089-3

No Detections.

This Detection Summary does not include radiochemical test results.

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

Job ID: 240-160089-1

Client Sample ID: TRIP BLANK_122

Lab Sample ID: 240-160089-1

Date Collected: 11/11/21 00:00

Matrix: Water

Date Received: 11/13/21 08:00

Method: 8260B - Volatile Organic Compounds (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			11/22/21 20:41	1
cis-1,2-Dichloroethene	1.0	U	1.0	0.46	ug/L			11/22/21 20:41	1
Tetrachloroethene	1.0	U	1.0	0.44	ug/L			11/22/21 20:41	1
trans-1,2-Dichloroethene	1.0	U	1.0	0.51	ug/L			11/22/21 20:41	1
Trichloroethene	1.0	U	1.0	0.44	ug/L			11/22/21 20:41	1
Vinyl chloride	1.0	U	1.0	0.45	ug/L			11/22/21 20:41	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*104*		*62 - 137*		*11/22/21 20:41*	*1*
4-Bromofluorobenzene (Surr)	*94*		*56 - 136*		*11/22/21 20:41*	*1*
Toluene-d8 (Surr)	*103*		*78 - 122*		*11/22/21 20:41*	*1*
Dibromofluoromethane (Surr)	*113*		*73 - 120*		*11/22/21 20:41*	*1*

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

Job ID: 240-160089-1

Client Sample ID: MW-76S_111121
Date Collected: 11/11/21 09:35
Date Received: 11/13/21 08:00

Lab Sample ID: 240-160089-2
Matrix: Water

Method: 8260B 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			11/19/21 01:30	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*77*		*66 - 120*		*11/19/21 01:30*	*1*

Method: 8260B - Volatile Organic Compounds (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			11/22/21 23:04	1
cis-1,2-Dichloroethene	1.0	U	1.0	0.46	ug/L			11/22/21 23:04	1
Tetrachloroethene	1.0	U	1.0	0.44	ug/L			11/22/21 23:04	1
trans-1,2-Dichloroethene	1.0	U	1.0	0.51	ug/L			11/22/21 23:04	1
Trichloroethene	1.0	U	1.0	0.44	ug/L			11/22/21 23:04	1
Vinyl chloride	1.0	U	1.0	0.45	ug/L			11/22/21 23:04	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*105*		*62 - 137*		*11/22/21 23:04*	*1*
4-Bromofluorobenzene (Surr)	*95*		*56 - 136*		*11/22/21 23:04*	*1*
Toluene-d8 (Surr)	*101*		*78 - 122*		*11/22/21 23:04*	*1*
Dibromofluoromethane (Surr)	*112*		*73 - 120*		*11/22/21 23:04*	*1*

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

Job ID: 240-160089-1

Client Sample ID: MW-76_111121
Date Collected: 11/11/21 13:30
Date Received: 11/13/21 08:00

Lab Sample ID: 240-160089-3
Matrix: Water

Method: 8260B 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			11/19/21 01:54	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*92*		*66 - 120*		*11/19/21 01:54*	*1*

Method: 8260B - Volatile Organic Compounds (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			11/23/21 17:58	1
cis-1,2-Dichloroethene	1.0	U	1.0	0.46	ug/L			11/23/21 17:58	1
Tetrachloroethene	1.0	U	1.0	0.44	ug/L			11/23/21 17:58	1
trans-1,2-Dichloroethene	1.0	U	1.0	0.51	ug/L			11/23/21 17:58	1
Trichloroethene	1.0	U	1.0	0.44	ug/L			11/23/21 17:58	1
Vinyl chloride	1.0	U	1.0	0.45	ug/L			11/23/21 17:58	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*93*		*62 - 137*		*11/23/21 17:58*	*1*
4-Bromofluorobenzene (Surr)	*88*		*56 - 136*		*11/23/21 17:58*	*1*
Toluene-d8 (Surr)	*93*		*78 - 122*		*11/23/21 17:58*	*1*
Dibromofluoromethane (Surr)	*98*		*73 - 120*		*11/23/21 17:58*	*1*

Surrogate Summary

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

Job ID: 240-160089-1

Method: 8260B - Volatile Organic Compounds (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)
240-159807-B-1 MS	Matrix Spike	101	100	109	115
240-159807-B-1 MSD	Matrix Spike Duplicate	98	99	109	112
240-160089-1	TRIP BLANK_122	104	94	103	113
240-160089-2	MW-76S_111121	105	95	101	112
240-160089-3	MW-76_111121	93	88	93	98
240-160551-B-10 MS	Matrix Spike	95	95	104	104
240-160551-B-10 MSD	Matrix Spike Duplicate	93	98	106	103
LCS 240-514100/5	Lab Control Sample	105	102	109	115
LCS 240-514335/5	Lab Control Sample	90	94	98	103
MB 240-514100/8	Method Blank	103	98	109	114
MB 240-514335/8	Method Blank	92	89	95	101

Surrogate Legend

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

Method: 8260B 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)
240-159739-G-3 MS	Matrix Spike	74
240-159739-M-3 MSD	Matrix Spike Duplicate	75
240-160089-2	MW-76S_111121	77
240-160089-3	MW-76_111121	92
LCS 240-513700/4	Lab Control Sample	75
MB 240-513700/5	Method Blank	77

Surrogate Legend

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

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

Lab Sample ID: MB 240-514100/8
Matrix: Water
Analysis Batch: 514100

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			11/22/21 13:57	1
cis-1,2-Dichloroethene	1.0	U	1.0	0.46	ug/L			11/22/21 13:57	1
Tetrachloroethene	1.0	U	1.0	0.44	ug/L			11/22/21 13:57	1
trans-1,2-Dichloroethene	1.0	U	1.0	0.51	ug/L			11/22/21 13:57	1
Trichloroethene	1.0	U	1.0	0.44	ug/L			11/22/21 13:57	1
Vinyl chloride	1.0	U	1.0	0.45	ug/L			11/22/21 13:57	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*103*		*62 - 137*		*11/22/21 13:57*	*1*
4-Bromofluorobenzene (Surr)	*98*		*56 - 136*		*11/22/21 13:57*	*1*
Toluene-d8 (Surr)	*109*		*78 - 122*		*11/22/21 13:57*	*1*
Dibromofluoromethane (Surr)	*114*		*73 - 120*		*11/22/21 13:57*	*1*

Lab Sample ID: LCS 240-514100/5
Matrix: Water
Analysis Batch: 514100

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	25.0	27.2		ug/L		109	63 - 134
cis-1,2-Dichloroethene	25.0	24.6		ug/L		98	77 - 123
Tetrachloroethene	25.0	26.8		ug/L		107	76 - 123
trans-1,2-Dichloroethene	25.0	25.7		ug/L		103	75 - 124
Trichloroethene	25.0	26.2		ug/L		105	70 - 122
Vinyl chloride	25.0	21.7		ug/L		87	60 - 144

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*105*		*62 - 137*
4-Bromofluorobenzene (Surr)	*102*		*56 - 136*
Toluene-d8 (Surr)	*109*		*78 - 122*
Dibromofluoromethane (Surr)	*115*		*73 - 120*

Lab Sample ID: 240-159807-B-1 MS
Matrix: Water
Analysis Batch: 514100

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
cis-1,2-Dichloroethene	130		83.3	200		ug/L		90	66 - 128
Tetrachloroethene	120		83.3	212	E	ug/L		105	62 - 131
trans-1,2-Dichloroethene	4.3		83.3	89.0		ug/L		102	56 - 136
Trichloroethene	7.8		83.3	94.6		ug/L		104	61 - 124
Vinyl chloride	3.3	U	83.3	68.5		ug/L		82	43 - 157

Surrogate	*MS %Recovery*	*MS Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*101*		*62 - 137*
4-Bromofluorobenzene (Surr)	*100*		*56 - 136*
Toluene-d8 (Surr)	*109*		*78 - 122*
Dibromofluoromethane (Surr)	*115*		*73 - 120*

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

Lab Sample ID: 240-159807-B-1 MSD
Matrix: Water
Analysis Batch: 514100

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
cis-1,2-Dichloroethene	130		83.3	197		ug/L		86	66 - 128	1	14
Tetrachloroethene	120		83.3	211	E	ug/L		104	62 - 131	0	20
trans-1,2-Dichloroethene	4.3		83.3	85.6		ug/L		98	56 - 136	4	15
Trichloroethene	7.8		83.3	92.6		ug/L		102	61 - 124	2	15
Vinyl chloride	3.3	U	83.3	69.8		ug/L		84	43 - 157	2	24

Surrogate	*MSD %Recovery*	*MSD Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*98*		*62 - 137*
4-Bromofluorobenzene (Surr)	*99*		*56 - 136*
Toluene-d8 (Surr)	*109*		*78 - 122*
Dibromofluoromethane (Surr)	*112*		*73 - 120*

Lab Sample ID: MB 240-514335/8
Matrix: Water
Analysis Batch: 514335

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			11/23/21 15:59	1
cis-1,2-Dichloroethene	1.0	U	1.0	0.46	ug/L			11/23/21 15:59	1
Tetrachloroethene	1.0	U	1.0	0.44	ug/L			11/23/21 15:59	1
trans-1,2-Dichloroethene	1.0	U	1.0	0.51	ug/L			11/23/21 15:59	1
Trichloroethene	1.0	U	1.0	0.44	ug/L			11/23/21 15:59	1
Vinyl chloride	1.0	U	1.0	0.45	ug/L			11/23/21 15:59	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*92*		*62 - 137*		*11/23/21 15:59*	*1*
4-Bromofluorobenzene (Surr)	*89*		*56 - 136*		*11/23/21 15:59*	*1*
Toluene-d8 (Surr)	*95*		*78 - 122*		*11/23/21 15:59*	*1*
Dibromofluoromethane (Surr)	*101*		*73 - 120*		*11/23/21 15:59*	*1*

Lab Sample ID: LCS 240-514335/5
Matrix: Water
Analysis Batch: 514335

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	25.0	25.7		ug/L		103	63 - 134
cis-1,2-Dichloroethene	25.0	23.8		ug/L		95	77 - 123
Tetrachloroethene	25.0	26.5		ug/L		106	76 - 123
trans-1,2-Dichloroethene	25.0	24.4		ug/L		98	75 - 124
Trichloroethene	25.0	25.1		ug/L		101	70 - 122
Vinyl chloride	25.0	20.3		ug/L		81	60 - 144

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*90*		*62 - 137*
4-Bromofluorobenzene (Surr)	*94*		*56 - 136*
Toluene-d8 (Surr)	*98*		*78 - 122*
Dibromofluoromethane (Surr)	*103*		*73 - 120*

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

Lab Sample ID: 240-160551-B-10 MS
Matrix: Water
Analysis Batch: 514335

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	250	U	6250	6360		ug/L		102	56 - 135
cis-1,2-Dichloroethene	250	U	6250	5850		ug/L		94	66 - 128
Tetrachloroethene	250	U	6250	6810		ug/L		109	62 - 131
trans-1,2-Dichloroethene	250	U	6250	6190		ug/L		99	56 - 136
Trichloroethene	250	U	6250	6660		ug/L		107	61 - 124
Vinyl chloride	250	U	6250	5070		ug/L		81	43 - 157

Surrogate	*MS %Recovery*	*MS Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*95*		*62 - 137*
4-Bromofluorobenzene (Surr)	*95*		*56 - 136*
Toluene-d8 (Surr)	*104*		*78 - 122*
Dibromofluoromethane (Surr)	*104*		*73 - 120*

Lab Sample ID: 240-160551-B-10 MSD
Matrix: Water
Analysis Batch: 514335

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	250	U	6250	6130		ug/L		98	56 - 135	4	26
cis-1,2-Dichloroethene	250	U	6250	5840		ug/L		93	66 - 128	0	14
Tetrachloroethene	250	U	6250	6750		ug/L		108	62 - 131	1	20
trans-1,2-Dichloroethene	250	U	6250	6000		ug/L		96	56 - 136	3	15
Trichloroethene	250	U	6250	6420		ug/L		103	61 - 124	4	15
Vinyl chloride	250	U	6250	4950		ug/L		79	43 - 157	2	24

Surrogate	*MSD %Recovery*	*MSD Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*93*		*62 - 137*
4-Bromofluorobenzene (Surr)	*98*		*56 - 136*
Toluene-d8 (Surr)	*106*		*78 - 122*
Dibromofluoromethane (Surr)	*103*		*73 - 120*

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

Lab Sample ID: MB 240-513700/5
Matrix: Water
Analysis Batch: 513700

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			11/18/21 19:41	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*77*		*66 - 120*		*11/18/21 19:41*	*1*

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

Lab Sample ID: LCS 240-513700/4
Matrix: Water
Analysis Batch: 513700

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	10.4		ug/L		104	80 - 122		

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*75*		*66 - 120*

Lab Sample ID: 240-159739-G-3 MS
Matrix: Water
Analysis Batch: 513700

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		
1,4-Dioxane	2.0	U F1	10.0	10.4		ug/L		104	51 - 153		

Surrogate	*MS %Recovery*	*MS Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*74*		*66 - 120*

Lab Sample ID: 240-159739-M-3 MSD
Matrix: Water
Analysis Batch: 513700

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
1,4-Dioxane	2.0	U F1	10.0	10.6		ug/L		106	51 - 153	2	16

Surrogate	*MSD %Recovery*	*MSD Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*75*		*66 - 120*

QC Association Summary

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

Job ID: 240-160089-1

GC/MS VOA

Analysis Batch: 513700

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-160089-2	MW-76S_111121	Total/NA	Water	8260B SIM	
240-160089-3	MW-76_111121	Total/NA	Water	8260B SIM	
MB 240-513700/5	Method Blank	Total/NA	Water	8260B SIM	
LCS 240-513700/4	Lab Control Sample	Total/NA	Water	8260B SIM	
240-159739-G-3 MS	Matrix Spike	Total/NA	Water	8260B SIM	
240-159739-M-3 MSD	Matrix Spike Duplicate	Total/NA	Water	8260B SIM	

Analysis Batch: 514100

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-160089-1	TRIP BLANK_122	Total/NA	Water	8260B	
240-160089-2	MW-76S_111121	Total/NA	Water	8260B	
MB 240-514100/8	Method Blank	Total/NA	Water	8260B	
LCS 240-514100/5	Lab Control Sample	Total/NA	Water	8260B	
240-159807-B-1 MS	Matrix Spike	Total/NA	Water	8260B	
240-159807-B-1 MSD	Matrix Spike Duplicate	Total/NA	Water	8260B	

Analysis Batch: 514335

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-160089-3	MW-76_111121	Total/NA	Water	8260B	
MB 240-514335/8	Method Blank	Total/NA	Water	8260B	
LCS 240-514335/5	Lab Control Sample	Total/NA	Water	8260B	
240-160551-B-10 MS	Matrix Spike	Total/NA	Water	8260B	
240-160551-B-10 MSD	Matrix Spike Duplicate	Total/NA	Water	8260B	

Lab Chronicle

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

Job ID: 240-160089-1

Client Sample ID: TRIP BLANK_122

Lab Sample ID: 240-160089-1
Date Collected: 11/11/21 00:00
Matrix: Water
Date Received: 11/13/21 08:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	514100	11/22/21 20:41	SAM	TAL CAN

Client Sample ID: MW-76S_111121

Lab Sample ID: 240-160089-2
Date Collected: 11/11/21 09:35
Matrix: Water
Date Received: 11/13/21 08:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	514100	11/22/21 23:04	SAM	TAL CAN
Total/NA	Analysis	8260B SIM		1	513700	11/19/21 01:30	CS	TAL CAN

Client Sample ID: MW-76_111121

Lab Sample ID: 240-160089-3
Date Collected: 11/11/21 13:30
Matrix: Water
Date Received: 11/13/21 08:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	514335	11/23/21 17:58	SAM	TAL CAN
Total/NA	Analysis	8260B SIM		1	513700	11/19/21 01:54	CS	TAL CAN

Laboratory References:

TAL CAN = Eurofins TestAmerica, Canton, 4101 Shuffel Street NW, North Canton, OH 44720, TEL (330)497-9396

Accreditation/Certification Summary

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

Job ID: 240-160089-1

Laboratory: Eurofins TestAmerica, 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	02-23-22
Connecticut	State	PH-0590	12-31-21
Florida	NELAP	E87225	06-30-22
Georgia	State	4062	02-23-22
Illinois	NELAP	200004	07-31-22
Iowa	State	421	06-01-23
Kansas	NELAP	E-10336	04-30-22
Kentucky (UST)	State	112225	02-23-22
Kentucky (WW)	State	KY98016	12-31-21
Minnesota	NELAP	OH00048	12-31-21
Minnesota (Petrofund)	State	3506	08-01-23
New Jersey	NELAP	OH001	06-30-22
New York	NELAP	10975	03-31-22
Ohio VAP	State	CL0024	12-21-23
Oregon	NELAP	4062	02-23-22
Pennsylvania	NELAP	68-00340	08-31-22
Texas	NELAP	T104704517-18-10	08-31-22
Virginia	NELAP	11570	09-14-22
Washington	State	C971	01-12-22
West Virginia DEP	State	210	12-31-21

MICHIGAN 190

1.4/1.5

Chain of Custody Record

TestAmerica

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: Julia McClafferty	Lab Contact: Mike DelMonico	COC No:
Company Name: Arcadis				
Address: 28550 Cabot Drive, Suite 500	Telephone: 248-994-2240	Telephone: 734-644-5131	Telephone: 330-497-9396	1 of 1 COCs
City/State/Zip: Novi, MI, 48377	Email: kristoffer.hinskey@arcadis.com	Analysis Turnaround Time	Analyses	For lab use only
Phone: 248-994-2240	Sampler Name: Sommer Guy	TAT if different from below: 10 day; 3 weeks; 2 weeks (✓); 1 week; 2 days; 1 day		Walk-in client; Lab sampling
Project Name: Ford LTP Off-Site	Method of Shipment/Carrier:			Job/SDG No:
Project Number: 30080642.402.04	Shipping/Tracking No:			
PO # 30080642.402.04				

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	1,1-DCE 8260B	cis-1,2-DCE 8260B	Trans-1,2-DCE 8260B	PCE 8260B	TCE 8260B	Vinyl Chloride 8260B	1,4-Dioxane 8260B SIM	Sample Specific Notes / Special Instructions:
TRIP BLANK_122	—	—		X						1					N	G	X	X	X	X	X	X	X	1 Trip Blank
MW-765-111121	11/11/21	9:35		X						6					N	G	X	X	X	X	X	X	X	3 VOAs for 8260B; 3 VOAs for 8260B SIM
MW-76-111121	11/11/21	13:30		X						6					N	G	X	X	X	X	X	X	X	↓

240-160089 Chain of Custody

Possible Hazard Identification: ✓ Non-Hazard; Flammable; Skin Irritant; Poison B; Unknown

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month): Return to Client; ✓ Disposal By Lab; Archive For ____ Months

Special Instructions/QC Requirements & Comments:

Submit all results through Cadena at jtomalia@cadenaco.com. Cadena #E203631
Level IV Reporting requested.

Relinquished by:	Company:	Date/Time:	Received by:	Company:	Date/Time:
Sommer Guy	Arcadis	11/11/21 14:30	Novi Cold Storage	Arcadis	11/11/21 14:30
[signature]	ARCADIS	11/12/21 1000	[signature]	GS	11/12/21 1000
[signature]	GS	11/12/21 1001	Received in Laboratory by: [signature]	EDA	11-13-21 0830

11/29/2021

Eurofins TestAmerica Canton Sample Receipt Form/Narrative **Login # : 160089**
Canton Facility

Client Arcadis Site Name _____ Cooler unpacked by: Adam Garrett

Cooler Received on 11-13-21 Opened on 11-13-21

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-14 (CF +0.1 °C) Observed Cooler Temp. 1.4 °C Corrected Cooler Temp. 1.5 °C
   IR GUN #IR-15 (CF +0.2°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 # _____ (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:

No SIM on TB per corrected CoC.

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: _____

WI-NC-099