

ANALYTICAL REPORT

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

Laboratory Job ID: 240-148879-1
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:
5/21/2021 11:07:03 AM

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



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Definitions/Glossary

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

Job ID: 240-148879-1

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.
α	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 - On Site

Job ID: 240-148879-1

Job ID: 240-148879-1

Laboratory: Eurofins TestAmerica, Canton

Narrative

Job Narrative 240-148879-1

Comments

No additional comments.

Receipt

The samples were received on 5/7/2021 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 2.4° C.

GC/MS VOA

Method 8260B: No MS/MSD in batch 486030 due to another analysis needed on the parent sample. Internal standard area fell: TRIP BLANK_05 (240-148879-1), MW-63_050521 (240-148879-2), MW-48_050521 (240-148879-3), MW-67_050521 (240-148879-4), MW-47_050521 (240-148879-6) and MW-68_050521 (240-148879-7).

Method 8260B SIM: The following volatiles sample was diluted due to foaming at the time of purging during the original sample analysis: MW-48_050521 (240-148879-3). 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 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: 240-148879-1

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

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- 13
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Sample Summary

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

Job ID: 240-148879-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received	Asset ID
240-148879-1	TRIP BLANK_05	Water	05/05/21 00:00	05/07/21 08:00	
240-148879-2	MW-63_050521	Water	05/05/21 10:20	05/07/21 08:00	
240-148879-3	MW-48_050521	Water	05/05/21 12:00	05/07/21 08:00	
240-148879-4	MW-67_050521	Water	05/05/21 14:15	05/07/21 08:00	
240-148879-5	DUP-03	Water	05/05/21 00:00	05/07/21 08:00	
240-148879-6	MW-47_050521	Water	05/05/21 15:40	05/07/21 08:00	
240-148879-7	MW-68_050521	Water	05/05/21 16:45	05/07/21 08:00	

Detection Summary

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

Job ID: 240-148879-1

Client Sample ID: TRIP BLANK_05

Lab Sample ID: 240-148879-1

No Detections.

Client Sample ID: MW-63_050521

Lab Sample ID: 240-148879-2

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
cis-1,2-Dichloroethene	0.38	J	1.0	0.16	ug/L	1		8260B	Total/NA

Client Sample ID: MW-48_050521

Lab Sample ID: 240-148879-3

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
1,4-Dioxane	3.6	J	4.0	1.7	ug/L	2		8260B SIM	Total/NA
Vinyl chloride	0.22	J	1.0	0.20	ug/L	1		8260B	Total/NA

Client Sample ID: MW-67_050521

Lab Sample ID: 240-148879-4

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
cis-1,2-Dichloroethene	5.8		2.5	0.40	ug/L	2.5		8260B	Total/NA
trans-1,2-Dichloroethene	1.1	J	2.5	0.48	ug/L	2.5		8260B	Total/NA
Trichloroethene	52		2.5	0.25	ug/L	2.5		8260B	Total/NA
Vinyl chloride	0.99	J	2.5	0.50	ug/L	2.5		8260B	Total/NA

Client Sample ID: DUP-03

Lab Sample ID: 240-148879-5

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
cis-1,2-Dichloroethene	4.9	J	6.7	1.1	ug/L	6.67		8260B	Total/NA
trans-1,2-Dichloroethene	1.5	J	6.7	1.3	ug/L	6.67		8260B	Total/NA
Vinyl chloride	65		6.7	1.3	ug/L	6.67		8260B	Total/NA

Client Sample ID: MW-47_050521

Lab Sample ID: 240-148879-6

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
cis-1,2-Dichloroethene	4.0		4.0	0.64	ug/L	4		8260B	Total/NA
trans-1,2-Dichloroethene	1.7	J	4.0	0.76	ug/L	4		8260B	Total/NA
Vinyl chloride	120		4.0	0.80	ug/L	4		8260B	Total/NA

Client Sample ID: MW-68_050521

Lab Sample ID: 240-148879-7

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
cis-1,2-Dichloroethene	37		2.0	0.32	ug/L	2		8260B	Total/NA
trans-1,2-Dichloroethene	4.9		2.0	0.38	ug/L	2		8260B	Total/NA
Vinyl chloride	2.7		2.0	0.40	ug/L	2		8260B	Total/NA

This Detection Summary does not include radiochemical test results.

Eurofins TestAmerica, Canton

Client Sample Results

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

Job ID: 240-148879-1

Client Sample ID: TRIP BLANK_05

Lab Sample ID: 240-148879-1

Date Collected: 05/05/21 00:00

Matrix: Water

Date Received: 05/07/21 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	0.19	ug/L			05/17/21 12:41	1
cis-1,2-Dichloroethene	1.0	U	1.0	0.16	ug/L			05/17/21 12:41	1
Tetrachloroethene	1.0	U	1.0	0.15	ug/L			05/17/21 12:41	1
trans-1,2-Dichloroethene	1.0	U	1.0	0.19	ug/L			05/17/21 12:41	1
Trichloroethene	1.0	U	1.0	0.10	ug/L			05/17/21 12:41	1
Vinyl chloride	1.0	U	1.0	0.20	ug/L			05/17/21 12:41	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	112		75 - 130		05/17/21 12:41	1
4-Bromofluorobenzene (Surr)	66		47 - 134		05/17/21 12:41	1
Toluene-d8 (Surr)	82		69 - 122		05/17/21 12:41	1
Dibromofluoromethane (Surr)	109		78 - 129		05/17/21 12:41	1

Client Sample Results

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

Job ID: 240-148879-1

Client Sample ID: MW-63_050521

Lab Sample ID: 240-148879-2

Date Collected: 05/05/21 10:20

Matrix: Water

Date Received: 05/07/21 08:00

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			05/11/21 13:59	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	93		70 - 133					05/11/21 13:59	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	0.19	ug/L			05/17/21 13:03	1
cis-1,2-Dichloroethene	0.38	J	1.0	0.16	ug/L			05/17/21 13:03	1
Tetrachloroethene	1.0	U	1.0	0.15	ug/L			05/17/21 13:03	1
trans-1,2-Dichloroethene	1.0	U	1.0	0.19	ug/L			05/17/21 13:03	1
Trichloroethene	1.0	U	1.0	0.10	ug/L			05/17/21 13:03	1
Vinyl chloride	1.0	U	1.0	0.20	ug/L			05/17/21 13:03	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	113		75 - 130					05/17/21 13:03	1
4-Bromofluorobenzene (Surr)	65		47 - 134					05/17/21 13:03	1
Toluene-d8 (Surr)	82		69 - 122					05/17/21 13:03	1
Dibromofluoromethane (Surr)	105		78 - 129					05/17/21 13:03	1

Client Sample Results

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

Job ID: 240-148879-1

Client Sample ID: MW-48_050521

Lab Sample ID: 240-148879-3

Date Collected: 05/05/21 12:00

Matrix: Water

Date Received: 05/07/21 08:00

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,4-Dioxane	3.6	J	4.0	1.7	ug/L			05/11/21 14:25	2
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	89		70 - 133					05/11/21 14:25	2

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	0.19	ug/L			05/17/21 13:25	1
cis-1,2-Dichloroethene	1.0	U	1.0	0.16	ug/L			05/17/21 13:25	1
Tetrachloroethene	1.0	U	1.0	0.15	ug/L			05/17/21 13:25	1
trans-1,2-Dichloroethene	1.0	U	1.0	0.19	ug/L			05/17/21 13:25	1
Trichloroethene	1.0	U	1.0	0.10	ug/L			05/17/21 13:25	1
Vinyl chloride	0.22	J	1.0	0.20	ug/L			05/17/21 13:25	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	115		75 - 130					05/17/21 13:25	1
4-Bromofluorobenzene (Surr)	65		47 - 134					05/17/21 13:25	1
Toluene-d8 (Surr)	83		69 - 122					05/17/21 13:25	1
Dibromofluoromethane (Surr)	107		78 - 129					05/17/21 13:25	1

Client Sample Results

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

Job ID: 240-148879-1

Client Sample ID: MW-67_050521

Lab Sample ID: 240-148879-4

Date Collected: 05/05/21 14:15

Matrix: Water

Date Received: 05/07/21 08:00

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			05/11/21 14:49	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	93		70 - 133		05/11/21 14:49	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1-Dichloroethene	2.5	U	2.5	0.48	ug/L			05/17/21 13:46	2.5
cis-1,2-Dichloroethene	5.8		2.5	0.40	ug/L			05/17/21 13:46	2.5
Tetrachloroethene	2.5	U	2.5	0.38	ug/L			05/17/21 13:46	2.5
trans-1,2-Dichloroethene	1.1	J	2.5	0.48	ug/L			05/17/21 13:46	2.5
Trichloroethene	52		2.5	0.25	ug/L			05/17/21 13:46	2.5
Vinyl chloride	0.99	J	2.5	0.50	ug/L			05/17/21 13:46	2.5

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	111		75 - 130		05/17/21 13:46	2.5
4-Bromofluorobenzene (Surr)	67		47 - 134		05/17/21 13:46	2.5
Toluene-d8 (Surr)	83		69 - 122		05/17/21 13:46	2.5
Dibromofluoromethane (Surr)	108		78 - 129		05/17/21 13:46	2.5

Client Sample Results

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

Job ID: 240-148879-1

Client Sample ID: DUP-03

Lab Sample ID: 240-148879-5

Date Collected: 05/05/21 00:00

Matrix: Water

Date Received: 05/07/21 08:00

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			05/11/21 15:14	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	95		70 - 133		05/11/21 15:14	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1-Dichloroethene	6.7	U	6.7	1.3	ug/L			05/18/21 12:16	6.67
cis-1,2-Dichloroethene	4.9	J	6.7	1.1	ug/L			05/18/21 12:16	6.67
Tetrachloroethene	6.7	U	6.7	1.0	ug/L			05/18/21 12:16	6.67
trans-1,2-Dichloroethene	1.5	J	6.7	1.3	ug/L			05/18/21 12:16	6.67
Trichloroethene	6.7	U	6.7	0.67	ug/L			05/18/21 12:16	6.67
Vinyl chloride	65		6.7	1.3	ug/L			05/18/21 12:16	6.67

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	88		75 - 130		05/18/21 12:16	6.67
4-Bromofluorobenzene (Surr)	97		47 - 134		05/18/21 12:16	6.67
Toluene-d8 (Surr)	104		69 - 122		05/18/21 12:16	6.67
Dibromofluoromethane (Surr)	103		78 - 129		05/18/21 12:16	6.67

Client Sample Results

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

Job ID: 240-148879-1

Client Sample ID: MW-47_050521

Lab Sample ID: 240-148879-6

Date Collected: 05/05/21 15:40

Matrix: Water

Date Received: 05/07/21 08:00

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			05/11/21 15:39	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	92		70 - 133		05/11/21 15:39	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1-Dichloroethene	4.0	U	4.0	0.76	ug/L			05/17/21 14:30	4
cis-1,2-Dichloroethene	4.0		4.0	0.64	ug/L			05/17/21 14:30	4
Tetrachloroethene	4.0	U	4.0	0.60	ug/L			05/17/21 14:30	4
trans-1,2-Dichloroethene	1.7	J	4.0	0.76	ug/L			05/17/21 14:30	4
Trichloroethene	4.0	U	4.0	0.40	ug/L			05/17/21 14:30	4
Vinyl chloride	120		4.0	0.80	ug/L			05/17/21 14:30	4

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	111		75 - 130		05/17/21 14:30	4
4-Bromofluorobenzene (Surr)	66		47 - 134		05/17/21 14:30	4
Toluene-d8 (Surr)	83		69 - 122		05/17/21 14:30	4
Dibromofluoromethane (Surr)	109		78 - 129		05/17/21 14:30	4

Client Sample Results

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

Job ID: 240-148879-1

Client Sample ID: MW-68_050521

Lab Sample ID: 240-148879-7

Date Collected: 05/05/21 16:45

Matrix: Water

Date Received: 05/07/21 08:00

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			05/11/21 16:04	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	97		70 - 133					05/11/21 16:04	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1-Dichloroethene	2.0	U	2.0	0.38	ug/L			05/17/21 14:52	2
cis-1,2-Dichloroethene	37		2.0	0.32	ug/L			05/17/21 14:52	2
Tetrachloroethene	2.0	U	2.0	0.30	ug/L			05/17/21 14:52	2
trans-1,2-Dichloroethene	4.9		2.0	0.38	ug/L			05/17/21 14:52	2
Trichloroethene	2.0	U	2.0	0.20	ug/L			05/17/21 14:52	2
Vinyl chloride	2.7		2.0	0.40	ug/L			05/17/21 14:52	2
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	110		75 - 130					05/17/21 14:52	2
4-Bromofluorobenzene (Surr)	65		47 - 134					05/17/21 14:52	2
Toluene-d8 (Surr)	79		69 - 122					05/17/21 14:52	2
Dibromofluoromethane (Surr)	108		78 - 129					05/17/21 14:52	2

Surrogate Summary

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

Job ID: 240-148879-1

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

Matrix: Water

Prep Type: Total/NA

Percent Surrogate Recovery (Acceptance Limits)

Lab Sample ID	Client Sample ID	Percent Surrogate Recovery (Acceptance Limits)			
		DCA (75-130)	BFB (47-134)	TOL (69-122)	DBFM (78-129)
240-148879-1	TRIP BLANK_05	112	66	82	109
240-148879-2	MW-63_050521	113	65	82	105
240-148879-3	MW-48_050521	115	65	83	107
240-148879-4	MW-67_050521	111	67	83	108
240-148879-5	DUP-03	88	97	104	103
240-148879-6	MW-47_050521	111	66	83	109
240-148879-7	MW-68_050521	110	65	79	108
240-149061-F-5 MS	Matrix Spike	82	86	91	97
240-149061-I-5 MSD	Matrix Spike Duplicate	81	87	92	97
LCS 240-486030/4	Lab Control Sample	90	96	92	89
LCS 240-486296/4	Lab Control Sample	84	86	94	100
MB 240-486030/7	Method Blank	106	69	81	101
MB 240-486296/6	Method Blank	85	85	95	97

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)

Lab Sample ID	Client Sample ID	DCA
		(70-133)
240-148666-H-5 MS	Matrix Spike	96
240-148666-K-5 MSD	Matrix Spike Duplicate	97
240-148879-2	MW-63_050521	93
240-148879-3	MW-48_050521	89
240-148879-4	MW-67_050521	93
240-148879-5	DUP-03	95
240-148879-6	MW-47_050521	92
240-148879-7	MW-68_050521	97
LCS 240-485137/4	Lab Control Sample	91
MB 240-485137/5	Method Blank	95

Surrogate Legend

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

QC Sample Results

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

Job ID: 240-148879-1

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

Lab Sample ID: MB 240-486030/7
Matrix: Water
Analysis Batch: 486030

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	0.19	ug/L			05/17/21 09:46	1
cis-1,2-Dichloroethene	1.0	U	1.0	0.16	ug/L			05/17/21 09:46	1
Tetrachloroethene	1.0	U	1.0	0.15	ug/L			05/17/21 09:46	1
trans-1,2-Dichloroethene	1.0	U	1.0	0.19	ug/L			05/17/21 09:46	1
Trichloroethene	1.0	U	1.0	0.10	ug/L			05/17/21 09:46	1
Vinyl chloride	1.0	U	1.0	0.20	ug/L			05/17/21 09:46	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	106		75 - 130		05/17/21 09:46	1
4-Bromofluorobenzene (Surr)	69		47 - 134		05/17/21 09:46	1
Toluene-d8 (Surr)	81		69 - 122		05/17/21 09:46	1
Dibromofluoromethane (Surr)	101		78 - 129		05/17/21 09:46	1

Lab Sample ID: LCS 240-486030/4
Matrix: Water
Analysis Batch: 486030

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	10.0	9.38		ug/L		94	73 - 129
cis-1,2-Dichloroethene	10.0	9.75		ug/L		98	75 - 124
Tetrachloroethene	10.0	9.85		ug/L		98	70 - 125
trans-1,2-Dichloroethene	10.0	10.3		ug/L		103	74 - 130
Trichloroethene	10.0	9.20		ug/L		92	71 - 121
Vinyl chloride	10.0	10.9		ug/L		109	61 - 134

Surrogate	LCS %Recovery	LCS Qualifier	Limits
1,2-Dichloroethane-d4 (Surr)	90		75 - 130
4-Bromofluorobenzene (Surr)	96		47 - 134
Toluene-d8 (Surr)	92		69 - 122
Dibromofluoromethane (Surr)	89		78 - 129

Lab Sample ID: MB 240-486296/6
Matrix: Water
Analysis Batch: 486296

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	0.19	ug/L			05/18/21 11:32	1
cis-1,2-Dichloroethene	1.0	U	1.0	0.16	ug/L			05/18/21 11:32	1
Tetrachloroethene	1.0	U	1.0	0.15	ug/L			05/18/21 11:32	1
trans-1,2-Dichloroethene	1.0	U	1.0	0.19	ug/L			05/18/21 11:32	1
Trichloroethene	1.0	U	1.0	0.10	ug/L			05/18/21 11:32	1
Vinyl chloride	1.0	U	1.0	0.20	ug/L			05/18/21 11:32	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	85		75 - 130		05/18/21 11:32	1
4-Bromofluorobenzene (Surr)	85		47 - 134		05/18/21 11:32	1
Toluene-d8 (Surr)	95		69 - 122		05/18/21 11:32	1

Eurofins TestAmerica, Canton

QC Sample Results

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

Job ID: 240-148879-1

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

Lab Sample ID: MB 240-486296/6
Matrix: Water
Analysis Batch: 486296

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

Surrogate	MB MB		Limits	Prepared	Analyzed	Dil Fac
	%Recovery	Qualifier				
Dibromofluoromethane (Surr)	97		78 - 129		05/18/21 11:32	1

Lab Sample ID: LCS 240-486296/4
Matrix: Water
Analysis Batch: 486296

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	10.0	8.42		ug/L		84	73 - 129	
cis-1,2-Dichloroethene	10.0	10.0		ug/L		100	75 - 124	
Tetrachloroethene	10.0	8.09		ug/L		81	70 - 125	
trans-1,2-Dichloroethene	10.0	9.42		ug/L		94	74 - 130	
Trichloroethene	10.0	8.45		ug/L		85	71 - 121	
Vinyl chloride	10.0	8.27		ug/L		83	61 - 134	

Surrogate	LCS LCS		Limits
	%Recovery	Qualifier	
1,2-Dichloroethane-d4 (Surr)	84		75 - 130
4-Bromofluorobenzene (Surr)	86		47 - 134
Toluene-d8 (Surr)	94		69 - 122
Dibromofluoromethane (Surr)	100		78 - 129

Lab Sample ID: 240-149061-F-5 MS
Matrix: Water
Analysis Batch: 486296

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	10.0	9.58		ug/L		96	64 - 132	
cis-1,2-Dichloroethene	4.6		10.0	14.6		ug/L		100	68 - 121	
Tetrachloroethene	1.0	U	10.0	8.74		ug/L		87	52 - 129	
Trichloroethene	1.0	U	10.0	8.34		ug/L		83	56 - 124	
Vinyl chloride	1.5		10.0	8.81		ug/L		73	49 - 136	

Surrogate	MS MS		Limits
	%Recovery	Qualifier	
1,2-Dichloroethane-d4 (Surr)	82		75 - 130
4-Bromofluorobenzene (Surr)	86		47 - 134
Toluene-d8 (Surr)	91		69 - 122
Dibromofluoromethane (Surr)	97		78 - 129

Lab Sample ID: 240-149061-I-5 MSD
Matrix: Water
Analysis Batch: 486296

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	10.0	9.80		ug/L		98	64 - 132	2	35	
cis-1,2-Dichloroethene	4.6		10.0	14.2		ug/L		96	68 - 121	3	35	
Tetrachloroethene	1.0	U	10.0	8.34		ug/L		83	52 - 129	5	35	
Trichloroethene	1.0	U	10.0	8.45		ug/L		85	56 - 124	1	35	
Vinyl chloride	1.5		10.0	9.23		ug/L		77	49 - 136	5	35	

Eurofins TestAmerica, Canton

QC Sample Results

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

Job ID: 240-148879-1

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

Lab Sample ID: 240-149061-I-5 MSD
Matrix: Water
Analysis Batch: 486296

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

Surrogate	MSD %Recovery	MSD Qualifier	Limits
1,2-Dichloroethane-d4 (Surr)	81		75 - 130
4-Bromofluorobenzene (Surr)	87		47 - 134
Toluene-d8 (Surr)	92		69 - 122
Dibromofluoromethane (Surr)	97		78 - 129

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

Lab Sample ID: MB 240-485137/5
Matrix: Water
Analysis Batch: 485137

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			05/11/21 13:09	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	95		70 - 133		05/11/21 13:09	1

Lab Sample ID: LCS 240-485137/4
Matrix: Water
Analysis Batch: 485137

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	10.6		ug/L		106	80 - 135

Surrogate	LCS %Recovery	LCS Qualifier	Limits
1,2-Dichloroethane-d4 (Surr)	91		70 - 133

Lab Sample ID: 240-148666-H-5 MS
Matrix: Water
Analysis Batch: 485137

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	10.0	11.0		ug/L		110	46 - 170

Surrogate	MS %Recovery	MS Qualifier	Limits
1,2-Dichloroethane-d4 (Surr)	96		70 - 133

Lab Sample ID: 240-148666-K-5 MSD
Matrix: Water
Analysis Batch: 485137

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	10.0	12.6		ug/L		126	46 - 170	14	26

Surrogate	MSD %Recovery	MSD Qualifier	Limits
1,2-Dichloroethane-d4 (Surr)	97		70 - 133

Eurofins TestAmerica, Canton

QC Association Summary

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

Job ID: 240-148879-1

GC/MS VOA

Analysis Batch: 485137

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-148879-2	MW-63_050521	Total/NA	Water	8260B SIM	
240-148879-3	MW-48_050521	Total/NA	Water	8260B SIM	
240-148879-4	MW-67_050521	Total/NA	Water	8260B SIM	
240-148879-5	DUP-03	Total/NA	Water	8260B SIM	
240-148879-6	MW-47_050521	Total/NA	Water	8260B SIM	
240-148879-7	MW-68_050521	Total/NA	Water	8260B SIM	
MB 240-485137/5	Method Blank	Total/NA	Water	8260B SIM	
LCS 240-485137/4	Lab Control Sample	Total/NA	Water	8260B SIM	
240-148666-H-5 MS	Matrix Spike	Total/NA	Water	8260B SIM	
240-148666-K-5 MSD	Matrix Spike Duplicate	Total/NA	Water	8260B SIM	

Analysis Batch: 486030

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-148879-1	TRIP BLANK_05	Total/NA	Water	8260B	
240-148879-2	MW-63_050521	Total/NA	Water	8260B	
240-148879-3	MW-48_050521	Total/NA	Water	8260B	
240-148879-4	MW-67_050521	Total/NA	Water	8260B	
240-148879-6	MW-47_050521	Total/NA	Water	8260B	
240-148879-7	MW-68_050521	Total/NA	Water	8260B	
MB 240-486030/7	Method Blank	Total/NA	Water	8260B	
LCS 240-486030/4	Lab Control Sample	Total/NA	Water	8260B	

Analysis Batch: 486296

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-148879-5	DUP-03	Total/NA	Water	8260B	
MB 240-486296/6	Method Blank	Total/NA	Water	8260B	
LCS 240-486296/4	Lab Control Sample	Total/NA	Water	8260B	
240-149061-F-5 MS	Matrix Spike	Total/NA	Water	8260B	
240-149061-I-5 MSD	Matrix Spike Duplicate	Total/NA	Water	8260B	

Lab Chronicle

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

Job ID: 240-148879-1

Client Sample ID: TRIP BLANK_05

Lab Sample ID: 240-148879-1

Date Collected: 05/05/21 00:00

Matrix: Water

Date Received: 05/07/21 08:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	486030	05/17/21 12:41	LEE	TAL CAN

Client Sample ID: MW-63_050521

Lab Sample ID: 240-148879-2

Date Collected: 05/05/21 10:20

Matrix: Water

Date Received: 05/07/21 08:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	486030	05/17/21 13:03	LEE	TAL CAN
Total/NA	Analysis	8260B SIM		1	485137	05/11/21 13:59	CS	TAL CAN

Client Sample ID: MW-48_050521

Lab Sample ID: 240-148879-3

Date Collected: 05/05/21 12:00

Matrix: Water

Date Received: 05/07/21 08:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	486030	05/17/21 13:25	LEE	TAL CAN
Total/NA	Analysis	8260B SIM		2	485137	05/11/21 14:25	CS	TAL CAN

Client Sample ID: MW-67_050521

Lab Sample ID: 240-148879-4

Date Collected: 05/05/21 14:15

Matrix: Water

Date Received: 05/07/21 08:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		2.5	486030	05/17/21 13:46	LEE	TAL CAN
Total/NA	Analysis	8260B SIM		1	485137	05/11/21 14:49	CS	TAL CAN

Client Sample ID: DUP-03

Lab Sample ID: 240-148879-5

Date Collected: 05/05/21 00:00

Matrix: Water

Date Received: 05/07/21 08:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		6.67	486296	05/18/21 12:16	LEE	TAL CAN
Total/NA	Analysis	8260B SIM		1	485137	05/11/21 15:14	CS	TAL CAN

Client Sample ID: MW-47_050521

Lab Sample ID: 240-148879-6

Date Collected: 05/05/21 15:40

Matrix: Water

Date Received: 05/07/21 08:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		4	486030	05/17/21 14:30	LEE	TAL CAN
Total/NA	Analysis	8260B SIM		1	485137	05/11/21 15:39	CS	TAL CAN

Lab Chronicle

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

Job ID: 240-148879-1

Client Sample ID: MW-68_050521

Lab Sample ID: 240-148879-7

Date Collected: 05/05/21 16:45

Matrix: Water

Date Received: 05/07/21 08:00

<u>Prep Type</u>	<u>Batch Type</u>	<u>Batch Method</u>	<u>Run</u>	<u>Dilution Factor</u>	<u>Batch Number</u>	<u>Prepared or Analyzed</u>	<u>Analyst</u>	<u>Lab</u>
Total/NA	Analysis	8260B		2	486030	05/17/21 14:52	LEE	TAL CAN
Total/NA	Analysis	8260B SIM		1	485137	05/11/21 16:04	CS	TAL CAN

Laboratory References:

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

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Accreditation/Certification Summary

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

Job ID: 240-148879-1

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	06-30-21
Georgia	State	4062	02-23-22
Illinois	NELAP	200004	07-31-21
Iowa	State	421	06-01-21
Kansas	NELAP	E-10336	04-30-21 *
Kentucky (UST)	State	112225	02-23-21 *
Kentucky (WW)	State	KY98016	12-31-21
Minnesota	NELAP	OH00048	12-31-21
Minnesota (Petrofund)	State	3506	08-01-21
New Jersey	NELAP	OH001	06-30-21
New York	NELAP	10975	03-31-22
Ohio VAP	State	CL0024	12-21-23
Oregon	NELAP	4062	02-23-22
Pennsylvania	NELAP	68-00340	08-31-21
Texas	NELAP	T104704517-18-10	08-31-21
USDA	US Federal Programs	P330-18-00281	09-17-21
Virginia	NELAP	010101	09-14-21
Washington	State	C971	01-12-22
West Virginia DEP	State	210	12-31-21

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



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

Client ARCADIS Site Name _____ Cooler unpacked by: _____
Cooler Received on 5-7-21 Opened on 5-7-21
FedEx: 1st Grd Exp UPS FAS Chopper 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-11 (CF +0.1 °C) Observed Cooler Temp. 23 °C Corrected Cooler Temp. 2.4 °C
IR GUN #IR-12 (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# HC022887
14. Were VOAs on the COC? Yes No
15. Were air bubbles >6 mm in any VOA vials? Yes No NA **➔ Larger than this.**
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

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

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

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: _____