

ANALYTICAL REPORT

Eurofins TestAmerica, Canton
4101 Shuffel Street NW
North Canton, OH 44720
Tel: (330)497-9396

Laboratory Job ID: 240-144441-1
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:
2/24/2021 11:27:20 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: 240-144441-1

Qualifiers

GC/MS VOA

Qualifier	Qualifier Description
F1	MS and/or MSD recovery exceeds control limits.
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: 240-144441-1

Job ID: 240-144441-1

Laboratory: Eurofins TestAmerica, Canton

Narrative

Job Narrative
240-144441-1

Comments

No additional comments.

Receipt

The samples were received on 2/12/2021 3:54 PM. 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 0.3° C.

GC/MS VOA

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

VOA Prep

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

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Method Summary

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

Job ID: 240-144441-1

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 - On Site

Job ID: 240-144441-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received	Asset ID
240-144441-1	TRIP BLANK	Water	02/10/21 00:00	02/12/21 15:54	
240-144441-2	MW-10_021021	Water	02/10/21 09:28	02/12/21 15:54	
240-144441-3	MW-04_021021	Water	02/10/21 10:38	02/12/21 15:54	
240-144441-4	MW-05_021021	Water	02/10/21 11:53	02/12/21 15:54	
240-144441-5	MW-02_021021	Water	02/10/21 12:58	02/12/21 15:54	
240-144441-6	MW-03_021021	Water	02/10/21 14:28	02/12/21 15:54	
240-144441-7	DUP-06	Water	02/10/21 00:00	02/12/21 15:54	

Detection Summary

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

Job ID: 240-144441-1

Client Sample ID: TRIP BLANK

Lab Sample ID: 240-144441-1

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
cis-1,2-Dichloroethene	0.17	J	1.0	0.16	ug/L	1		8260B	Total/NA

Client Sample ID: MW-10_021021

Lab Sample ID: 240-144441-2

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
1,4-Dioxane	5.1		2.0	0.86	ug/L	1		8260B SIM	Total/NA
Vinyl chloride	4600		330	67	ug/L	333.33		8260B	Total/NA

Client Sample ID: MW-04_021021

Lab Sample ID: 240-144441-3

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
1,4-Dioxane	0.94	J	2.0	0.86	ug/L	1		8260B SIM	Total/NA
cis-1,2-Dichloroethene	11000		1000	160	ug/L	1000		8260B	Total/NA
trans-1,2-Dichloroethene	360	J	1000	190	ug/L	1000		8260B	Total/NA
Trichloroethene	7800		1000	100	ug/L	1000		8260B	Total/NA
Vinyl chloride	1200		1000	200	ug/L	1000		8260B	Total/NA

Client Sample ID: MW-05_021021

Lab Sample ID: 240-144441-4

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
cis-1,2-Dichloroethene	0.53	J	1.0	0.16	ug/L	1		8260B	Total/NA
Trichloroethene	0.40	J	1.0	0.10	ug/L	1		8260B	Total/NA

Client Sample ID: MW-02_021021

Lab Sample ID: 240-144441-5

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
1,4-Dioxane	3.8		2.0	0.86	ug/L	1		8260B SIM	Total/NA
cis-1,2-Dichloroethene	2600		250	40	ug/L	250		8260B	Total/NA
trans-1,2-Dichloroethene	700		250	48	ug/L	250		8260B	Total/NA
Vinyl chloride	210	J	250	50	ug/L	250		8260B	Total/NA

Client Sample ID: MW-03_021021

Lab Sample ID: 240-144441-6

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
1,4-Dioxane	1.7	J	2.0	0.86	ug/L	1		8260B SIM	Total/NA

Client Sample ID: DUP-06

Lab Sample ID: 240-144441-7

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
1,4-Dioxane	0.86	J	2.0	0.86	ug/L	1		8260B SIM	Total/NA
cis-1,2-Dichloroethene	11000		1000	160	ug/L	1000		8260B	Total/NA
trans-1,2-Dichloroethene	300	J	1000	190	ug/L	1000		8260B	Total/NA
Trichloroethene	7600		1000	100	ug/L	1000		8260B	Total/NA
Vinyl chloride	1000		1000	200	ug/L	1000		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: 240-144441-1

Client Sample ID: TRIP BLANK

Lab Sample ID: 240-144441-1

Date Collected: 02/10/21 00:00

Matrix: Water

Date Received: 02/12/21 15:54

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			02/18/21 14:15	1
cis-1,2-Dichloroethene	0.17	J	1.0	0.16	ug/L			02/18/21 14:15	1
Tetrachloroethene	1.0	U	1.0	0.15	ug/L			02/18/21 14:15	1
trans-1,2-Dichloroethene	1.0	U	1.0	0.19	ug/L			02/18/21 14:15	1
Trichloroethene	1.0	U	1.0	0.10	ug/L			02/18/21 14:15	1
Vinyl chloride	1.0	U	1.0	0.20	ug/L			02/18/21 14:15	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	98		75 - 130		02/18/21 14:15	1
4-Bromofluorobenzene (Surr)	88		47 - 134		02/18/21 14:15	1
Toluene-d8 (Surr)	97		69 - 122		02/18/21 14:15	1
Dibromofluoromethane (Surr)	95		78 - 129		02/18/21 14:15	1

Client Sample Results

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

Job ID: 240-144441-1

Client Sample ID: MW-10_021021

Lab Sample ID: 240-144441-2

Date Collected: 02/10/21 09:28

Matrix: Water

Date Received: 02/12/21 15:54

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,4-Dioxane	5.1		2.0	0.86	ug/L			02/17/21 17:33	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	84		70 - 133					02/17/21 17:33	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1-Dichloroethene	330	U	330	63	ug/L			02/18/21 14:37	333.33
cis-1,2-Dichloroethene	330	U	330	53	ug/L			02/18/21 14:37	333.33
Tetrachloroethene	330	U	330	50	ug/L			02/18/21 14:37	333.33
trans-1,2-Dichloroethene	330	U	330	63	ug/L			02/18/21 14:37	333.33
Trichloroethene	330	U	330	33	ug/L			02/18/21 14:37	333.33
Vinyl chloride	4600		330	67	ug/L			02/18/21 14:37	333.33
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	102		75 - 130					02/18/21 14:37	333.33
4-Bromofluorobenzene (Surr)	89		47 - 134					02/18/21 14:37	333.33
Toluene-d8 (Surr)	102		69 - 122					02/18/21 14:37	333.33
Dibromofluoromethane (Surr)	103		78 - 129					02/18/21 14:37	333.33

Client Sample Results

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

Job ID: 240-144441-1

Client Sample ID: MW-04_021021

Lab Sample ID: 240-144441-3

Date Collected: 02/10/21 10:38

Matrix: Water

Date Received: 02/12/21 15:54

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,4-Dioxane	0.94	J	2.0	0.86	ug/L			02/17/21 17:58	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	78		70 - 133					02/17/21 17:58	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1-Dichloroethene	1000	U	1000	190	ug/L			02/18/21 15:00	1000
cis-1,2-Dichloroethene	11000		1000	160	ug/L			02/18/21 15:00	1000
Tetrachloroethene	1000	U	1000	150	ug/L			02/18/21 15:00	1000
trans-1,2-Dichloroethene	360	J	1000	190	ug/L			02/18/21 15:00	1000
Trichloroethene	7800		1000	100	ug/L			02/18/21 15:00	1000
Vinyl chloride	1200		1000	200	ug/L			02/18/21 15:00	1000
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	97		75 - 130					02/18/21 15:00	1000
4-Bromofluorobenzene (Surr)	83		47 - 134					02/18/21 15:00	1000
Toluene-d8 (Surr)	93		69 - 122					02/18/21 15:00	1000
Dibromofluoromethane (Surr)	94		78 - 129					02/18/21 15:00	1000

Client Sample Results

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

Job ID: 240-144441-1

Client Sample ID: MW-05_021021

Lab Sample ID: 240-144441-4

Date Collected: 02/10/21 11:53

Matrix: Water

Date Received: 02/12/21 15:54

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			02/17/21 18:24	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	81		70 - 133					02/17/21 18:24	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			02/18/21 15:22	1
cis-1,2-Dichloroethene	0.53	J	1.0	0.16	ug/L			02/18/21 15:22	1
Tetrachloroethene	1.0	U	1.0	0.15	ug/L			02/18/21 15:22	1
trans-1,2-Dichloroethene	1.0	U	1.0	0.19	ug/L			02/18/21 15:22	1
Trichloroethene	0.40	J	1.0	0.10	ug/L			02/18/21 15:22	1
Vinyl chloride	1.0	U	1.0	0.20	ug/L			02/18/21 15:22	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	108		75 - 130					02/18/21 15:22	1
4-Bromofluorobenzene (Surr)	95		47 - 134					02/18/21 15:22	1
Toluene-d8 (Surr)	110		69 - 122					02/18/21 15:22	1
Dibromofluoromethane (Surr)	108		78 - 129					02/18/21 15:22	1

Client Sample Results

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

Job ID: 240-144441-1

Client Sample ID: MW-02_021021

Lab Sample ID: 240-144441-5

Date Collected: 02/10/21 12:58

Matrix: Water

Date Received: 02/12/21 15:54

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,4-Dioxane	3.8		2.0	0.86	ug/L			02/17/21 18:49	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	79		70 - 133					02/17/21 18:49	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1-Dichloroethene	250	U	250	48	ug/L			02/18/21 15:44	250
cis-1,2-Dichloroethene	2600		250	40	ug/L			02/18/21 15:44	250
Tetrachloroethene	250	U	250	38	ug/L			02/18/21 15:44	250
trans-1,2-Dichloroethene	700		250	48	ug/L			02/18/21 15:44	250
Trichloroethene	250	U	250	25	ug/L			02/18/21 15:44	250
Vinyl chloride	210	J	250	50	ug/L			02/18/21 15:44	250
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	95		75 - 130					02/18/21 15:44	250
4-Bromofluorobenzene (Surr)	85		47 - 134					02/18/21 15:44	250
Toluene-d8 (Surr)	90		69 - 122					02/18/21 15:44	250
Dibromofluoromethane (Surr)	97		78 - 129					02/18/21 15:44	250

Client Sample Results

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

Job ID: 240-144441-1

Client Sample ID: MW-03_021021

Lab Sample ID: 240-144441-6

Date Collected: 02/10/21 14:28

Matrix: Water

Date Received: 02/12/21 15:54

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,4-Dioxane	1.7	J	2.0	0.86	ug/L			02/17/21 19:14	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	80		70 - 133		02/17/21 19:14	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			02/18/21 16:06	1
cis-1,2-Dichloroethene	1.0	U	1.0	0.16	ug/L			02/18/21 16:06	1
Tetrachloroethene	1.0	U	1.0	0.15	ug/L			02/18/21 16:06	1
trans-1,2-Dichloroethene	1.0	U	1.0	0.19	ug/L			02/18/21 16:06	1
Trichloroethene	1.0	U	1.0	0.10	ug/L			02/18/21 16:06	1
Vinyl chloride	1.0	U	1.0	0.20	ug/L			02/18/21 16:06	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	97		75 - 130		02/18/21 16:06	1
4-Bromofluorobenzene (Surr)	85		47 - 134		02/18/21 16:06	1
Toluene-d8 (Surr)	94		69 - 122		02/18/21 16:06	1
Dibromofluoromethane (Surr)	96		78 - 129		02/18/21 16:06	1

Client Sample Results

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

Job ID: 240-144441-1

Client Sample ID: DUP-06
Date Collected: 02/10/21 00:00
Date Received: 02/12/21 15:54

Lab Sample ID: 240-144441-7
Matrix: Water

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,4-Dioxane	0.86	J	2.0	0.86	ug/L			02/18/21 14:33	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	75		70 - 133					02/18/21 14:33	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1-Dichloroethene	1000	U	1000	190	ug/L			02/18/21 16:28	1000
cis-1,2-Dichloroethene	11000		1000	160	ug/L			02/18/21 16:28	1000
Tetrachloroethene	1000	U	1000	150	ug/L			02/18/21 16:28	1000
trans-1,2-Dichloroethene	300	J	1000	190	ug/L			02/18/21 16:28	1000
Trichloroethene	7600		1000	100	ug/L			02/18/21 16:28	1000
Vinyl chloride	1000		1000	200	ug/L			02/18/21 16:28	1000
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	91		75 - 130					02/18/21 16:28	1000
4-Bromofluorobenzene (Surr)	80		47 - 134					02/18/21 16:28	1000
Toluene-d8 (Surr)	91		69 - 122					02/18/21 16:28	1000
Dibromofluoromethane (Surr)	91		78 - 129					02/18/21 16:28	1000

Surrogate Summary

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

Job ID: 240-144441-1

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

Matrix: Water

Prep Type: Total/NA

Lab Sample ID	Client Sample ID	Percent Surrogate Recovery (Acceptance Limits)			
		DCA (75-130)	BFB (47-134)	TOL (69-122)	DBFM (78-129)
240-144429-B-3 MS	Matrix Spike	92	89	95	94
240-144429-B-3 MSD	Matrix Spike Duplicate	98	93	99	98
240-144441-1	TRIP BLANK	98	88	97	95
240-144441-2	MW-10_021021	102	89	102	103
240-144441-3	MW-04_021021	97	83	93	94
240-144441-4	MW-05_021021	108	95	110	108
240-144441-5	MW-02_021021	95	85	90	97
240-144441-6	MW-03_021021	97	85	94	96
240-144441-7	DUP-06	91	80	91	91
LCS 240-473551/4	Lab Control Sample	86	87	93	91
MB 240-473551/6	Method Blank	96	92	98	95

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

Lab Sample ID	Client Sample ID	Percent Surrogate Recovery (Acceptance Limits)
		DCA (70-133)
240-144425-C-2 MS	Matrix Spike	82
240-144425-C-2 MSD	Matrix Spike Duplicate	81
240-144439-A-3 MS	Matrix Spike	84
240-144439-A-3 MSD	Matrix Spike Duplicate	85
240-144441-2	MW-10_021021	84
240-144441-3	MW-04_021021	78
240-144441-4	MW-05_021021	81
240-144441-5	MW-02_021021	79
240-144441-6	MW-03_021021	80
240-144441-7	DUP-06	75
LCS 240-473381/4	Lab Control Sample	80
LCS 240-473604/4	Lab Control Sample	81
MB 240-473381/5	Method Blank	81
MB 240-473604/5	Method Blank	80

Surrogate Legend

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

QC Sample Results

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

Job ID: 240-144441-1

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

Lab Sample ID: MB 240-473551/6
Matrix: Water
Analysis Batch: 473551

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

Analyte	MB MB		RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier							
1,1-Dichloroethene	1.0	U	1.0	0.19	ug/L			02/18/21 10:54	1
cis-1,2-Dichloroethene	1.0	U	1.0	0.16	ug/L			02/18/21 10:54	1
Tetrachloroethene	1.0	U	1.0	0.15	ug/L			02/18/21 10:54	1
trans-1,2-Dichloroethene	1.0	U	1.0	0.19	ug/L			02/18/21 10:54	1
Trichloroethene	1.0	U	1.0	0.10	ug/L			02/18/21 10:54	1
Vinyl chloride	1.0	U	1.0	0.20	ug/L			02/18/21 10:54	1

Surrogate	MB MB		Limits	Prepared	Analyzed	Dil Fac
	%Recovery	Qualifier				
1,2-Dichloroethane-d4 (Surr)	96		75 - 130		02/18/21 10:54	1
4-Bromofluorobenzene (Surr)	92		47 - 134		02/18/21 10:54	1
Toluene-d8 (Surr)	98		69 - 122		02/18/21 10:54	1
Dibromofluoromethane (Surr)	95		78 - 129		02/18/21 10:54	1

Lab Sample ID: LCS 240-473551/4
Matrix: Water
Analysis Batch: 473551

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

Analyte	Spike Added	LCS LCS		Unit	D	%Rec	%Rec. Limits
		Result	Qualifier				
1,1-Dichloroethene	10.0	9.70		ug/L		97	73 - 129
cis-1,2-Dichloroethene	10.0	9.41		ug/L		94	75 - 124
Tetrachloroethene	10.0	10.4		ug/L		104	70 - 125
trans-1,2-Dichloroethene	10.0	9.39		ug/L		94	74 - 130
Trichloroethene	10.0	9.55		ug/L		95	71 - 121
Vinyl chloride	10.0	9.63		ug/L		96	61 - 134

Surrogate	LCS LCS		Limits
	%Recovery	Qualifier	
1,2-Dichloroethane-d4 (Surr)	86		75 - 130
4-Bromofluorobenzene (Surr)	87		47 - 134
Toluene-d8 (Surr)	93		69 - 122
Dibromofluoromethane (Surr)	91		78 - 129

Lab Sample ID: 240-144429-B-3 MS
Matrix: Water
Analysis Batch: 473551

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

Analyte	Sample Sample		Spike Added	MS MS		Unit	D	%Rec	%Rec. Limits
	Result	Qualifier		Result	Qualifier				
1,1-Dichloroethene	2000	U	20000	18800		ug/L		94	64 - 132
cis-1,2-Dichloroethene	15000		20000	32400		ug/L		86	68 - 121
Tetrachloroethene	59000	F1	20000	68500	F1	ug/L		46	52 - 129
trans-1,2-Dichloroethene	1800	J	20000	21200		ug/L		97	69 - 126
Trichloroethene	37000		20000	49400		ug/L		62	56 - 124
Vinyl chloride	2000	U	20000	20100		ug/L		100	49 - 136

Surrogate	MS MS		Limits
	%Recovery	Qualifier	
1,2-Dichloroethane-d4 (Surr)	92		75 - 130
4-Bromofluorobenzene (Surr)	89		47 - 134
Toluene-d8 (Surr)	95		69 - 122

QC Sample Results

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

Job ID: 240-144441-1

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

Lab Sample ID: 240-144429-B-3 MS
Matrix: Water
Analysis Batch: 473551

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

Surrogate	MS %Recovery	MS Qualifier	Limits
Dibromofluoromethane (Surr)	94		78 - 129

Lab Sample ID: 240-144429-B-3 MSD
Matrix: Water
Analysis Batch: 473551

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	2000	U	20000	19000		ug/L		95	64 - 132	1	35
cis-1,2-Dichloroethene	15000		20000	32900		ug/L		88	68 - 121	1	35
Tetrachloroethene	59000	F1	20000	73100		ug/L		70	52 - 129	7	35
trans-1,2-Dichloroethene	1800	J	20000	20600		ug/L		94	69 - 126	3	35
Trichloroethene	37000		20000	51500		ug/L		73	56 - 124	4	35
Vinyl chloride	2000	U	20000	20700		ug/L		104	49 - 136	3	35

Surrogate	MSD %Recovery	MSD Qualifier	Limits
1,2-Dichloroethane-d4 (Surr)	98		75 - 130
4-Bromofluorobenzene (Surr)	93		47 - 134
Toluene-d8 (Surr)	99		69 - 122
Dibromofluoromethane (Surr)	98		78 - 129

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

Lab Sample ID: MB 240-473381/5
Matrix: Water
Analysis Batch: 473381

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			02/17/21 09:33	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	81		70 - 133		02/17/21 09:33	1

Lab Sample ID: LCS 240-473381/4
Matrix: Water
Analysis Batch: 473381

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	10.8		ug/L		108	80 - 135

Surrogate	LCS %Recovery	LCS Qualifier	Limits
1,2-Dichloroethane-d4 (Surr)	80		70 - 133

Lab Sample ID: 240-144439-A-3 MS
Matrix: Water
Analysis Batch: 473381

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	34		10.0	43.3		ug/L		91	46 - 170

Eurofins TestAmerica, Canton

QC Sample Results

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

Job ID: 240-144441-1

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

	<i>MS</i>	<i>MS</i>	
<i>Surrogate</i>	<i>%Recovery</i>	<i>Qualifier</i>	<i>Limits</i>
1,2-Dichloroethane-d4 (Surr)	84		70 - 133

Lab Sample ID: 240-144439-A-3 MSD
Matrix: Water
Analysis Batch: 473381

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

<i>Analyte</i>	<i>Sample Result</i>	<i>Sample Qualifier</i>	<i>Spike Added</i>	<i>MSD Result</i>	<i>MSD Qualifier</i>	<i>Unit</i>	<i>D</i>	<i>%Rec</i>	<i>%Rec. Limits</i>	<i>RPD</i>	<i>RPD Limit</i>
1,4-Dioxane	34		10.0	42.6		ug/L		83	46 - 170	2	26

	<i>MSD</i>	<i>MSD</i>	
<i>Surrogate</i>	<i>%Recovery</i>	<i>Qualifier</i>	<i>Limits</i>
1,2-Dichloroethane-d4 (Surr)	85		70 - 133

Lab Sample ID: MB 240-473604/5
Matrix: Water
Analysis Batch: 473604

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

<i>Analyte</i>	<i>MB Result</i>	<i>MB Qualifier</i>	<i>RL</i>	<i>MDL</i>	<i>Unit</i>	<i>D</i>	<i>Prepared</i>	<i>Analyzed</i>	<i>Dil Fac</i>
1,4-Dioxane	2.0	U	2.0	0.86	ug/L			02/18/21 12:27	1

	<i>MB</i>	<i>MB</i>		<i>Prepared</i>	<i>Analyzed</i>	<i>Dil Fac</i>
<i>Surrogate</i>	<i>%Recovery</i>	<i>Qualifier</i>	<i>Limits</i>			
1,2-Dichloroethane-d4 (Surr)	80		70 - 133		02/18/21 12:27	1

Lab Sample ID: LCS 240-473604/4
Matrix: Water
Analysis Batch: 473604

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

<i>Analyte</i>	<i>Spike Added</i>	<i>LCS Result</i>	<i>LCS Qualifier</i>	<i>Unit</i>	<i>D</i>	<i>%Rec</i>	<i>%Rec. Limits</i>
1,4-Dioxane	10.0	10.5		ug/L		105	80 - 135

	<i>LCS</i>	<i>LCS</i>	
<i>Surrogate</i>	<i>%Recovery</i>	<i>Qualifier</i>	<i>Limits</i>
1,2-Dichloroethane-d4 (Surr)	81		70 - 133

Lab Sample ID: 240-144425-C-2 MS
Matrix: Water
Analysis Batch: 473604

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

<i>Analyte</i>	<i>Sample Result</i>	<i>Sample Qualifier</i>	<i>Spike Added</i>	<i>MS Result</i>	<i>MS Qualifier</i>	<i>Unit</i>	<i>D</i>	<i>%Rec</i>	<i>%Rec. Limits</i>
1,4-Dioxane	2.0	U	10.0	11.1		ug/L		111	46 - 170

	<i>MS</i>	<i>MS</i>	
<i>Surrogate</i>	<i>%Recovery</i>	<i>Qualifier</i>	<i>Limits</i>
1,2-Dichloroethane-d4 (Surr)	82		70 - 133

Lab Sample ID: 240-144425-C-2 MSD
Matrix: Water
Analysis Batch: 473604

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

<i>Analyte</i>	<i>Sample Result</i>	<i>Sample Qualifier</i>	<i>Spike Added</i>	<i>MSD Result</i>	<i>MSD Qualifier</i>	<i>Unit</i>	<i>D</i>	<i>%Rec</i>	<i>%Rec. Limits</i>	<i>RPD</i>	<i>RPD Limit</i>
1,4-Dioxane	2.0	U	10.0	10.7		ug/L		107	46 - 170	3	26

QC Sample Results

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

Job ID: 240-144441-1

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

Lab Sample ID: 240-144425-C-2 MSD
Matrix: Water
Analysis Batch: 473604

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

<i>Surrogate</i>	<i>MSD</i> <i>%Recovery</i>	<i>MSD</i> <i>Qualifier</i>	<i>Limits</i>
1,2-Dichloroethane-d4 (Surr)	81		70 - 133

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QC Association Summary

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

Job ID: 240-144441-1

GC/MS VOA

Analysis Batch: 473381

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-144441-2	MW-10_021021	Total/NA	Water	8260B SIM	
240-144441-3	MW-04_021021	Total/NA	Water	8260B SIM	
240-144441-4	MW-05_021021	Total/NA	Water	8260B SIM	
240-144441-5	MW-02_021021	Total/NA	Water	8260B SIM	
240-144441-6	MW-03_021021	Total/NA	Water	8260B SIM	
MB 240-473381/5	Method Blank	Total/NA	Water	8260B SIM	
LCS 240-473381/4	Lab Control Sample	Total/NA	Water	8260B SIM	
240-144439-A-3 MS	Matrix Spike	Total/NA	Water	8260B SIM	
240-144439-A-3 MSD	Matrix Spike Duplicate	Total/NA	Water	8260B SIM	

Analysis Batch: 473551

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-144441-1	TRIP BLANK	Total/NA	Water	8260B	
240-144441-2	MW-10_021021	Total/NA	Water	8260B	
240-144441-3	MW-04_021021	Total/NA	Water	8260B	
240-144441-4	MW-05_021021	Total/NA	Water	8260B	
240-144441-5	MW-02_021021	Total/NA	Water	8260B	
240-144441-6	MW-03_021021	Total/NA	Water	8260B	
240-144441-7	DUP-06	Total/NA	Water	8260B	
MB 240-473551/6	Method Blank	Total/NA	Water	8260B	
LCS 240-473551/4	Lab Control Sample	Total/NA	Water	8260B	
240-144429-B-3 MS	Matrix Spike	Total/NA	Water	8260B	
240-144429-B-3 MSD	Matrix Spike Duplicate	Total/NA	Water	8260B	

Analysis Batch: 473604

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-144441-7	DUP-06	Total/NA	Water	8260B SIM	
MB 240-473604/5	Method Blank	Total/NA	Water	8260B SIM	
LCS 240-473604/4	Lab Control Sample	Total/NA	Water	8260B SIM	
240-144425-C-2 MS	Matrix Spike	Total/NA	Water	8260B SIM	
240-144425-C-2 MSD	Matrix Spike Duplicate	Total/NA	Water	8260B SIM	

Lab Chronicle

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

Job ID: 240-144441-1

Client Sample ID: TRIP BLANK

Lab Sample ID: 240-144441-1

Date Collected: 02/10/21 00:00

Matrix: Water

Date Received: 02/12/21 15:54

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	473551	02/18/21 14:15	LEE	TAL CAN

Client Sample ID: MW-10_021021

Lab Sample ID: 240-144441-2

Date Collected: 02/10/21 09:28

Matrix: Water

Date Received: 02/12/21 15:54

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		333.33	473551	02/18/21 14:37	LEE	TAL CAN
Total/NA	Analysis	8260B SIM		1	473381	02/17/21 17:33	SAM	TAL CAN

Client Sample ID: MW-04_021021

Lab Sample ID: 240-144441-3

Date Collected: 02/10/21 10:38

Matrix: Water

Date Received: 02/12/21 15:54

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1000	473551	02/18/21 15:00	LEE	TAL CAN
Total/NA	Analysis	8260B SIM		1	473381	02/17/21 17:58	SAM	TAL CAN

Client Sample ID: MW-05_021021

Lab Sample ID: 240-144441-4

Date Collected: 02/10/21 11:53

Matrix: Water

Date Received: 02/12/21 15:54

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	473551	02/18/21 15:22	LEE	TAL CAN
Total/NA	Analysis	8260B SIM		1	473381	02/17/21 18:24	SAM	TAL CAN

Client Sample ID: MW-02_021021

Lab Sample ID: 240-144441-5

Date Collected: 02/10/21 12:58

Matrix: Water

Date Received: 02/12/21 15:54

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		250	473551	02/18/21 15:44	LEE	TAL CAN
Total/NA	Analysis	8260B SIM		1	473381	02/17/21 18:49	SAM	TAL CAN

Client Sample ID: MW-03_021021

Lab Sample ID: 240-144441-6

Date Collected: 02/10/21 14:28

Matrix: Water

Date Received: 02/12/21 15:54

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	473551	02/18/21 16:06	LEE	TAL CAN
Total/NA	Analysis	8260B SIM		1	473381	02/17/21 19:14	SAM	TAL CAN

Lab Chronicle

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

Job ID: 240-144441-1

Client Sample ID: DUP-06

Lab Sample ID: 240-144441-7

Date Collected: 02/10/21 00:00

Matrix: Water

Date Received: 02/12/21 15:54

<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		1000	473551	02/18/21 16:28	LEE	TAL CAN
Total/NA	Analysis	8260B SIM		1	473604	02/18/21 14:33	SAM	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: 240-144441-1

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	02-23-21
Connecticut	State	PH-0590	12-31-21
Florida	NELAP	E87225	06-30-21
Georgia	State	4062	02-23-21
Illinois	NELAP	004498	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	03-31-21
Ohio VAP	State	CL0024	12-21-23
Oregon	NELAP	4062	02-24-21
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



Chain of Custody Record

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

Regulatory program: DW NPDES RCRA Other

TestAmerica Laboratories, Inc.
COC No:

Lab Contact: Mike DeMonico
Telephone: 330-497-9396

Site Contact: Julia McClafferty
Telephone: 734-644-5131

Client Project Manager: Kris Hinskey
Telephone: 248-994-2240
Email: kris@hinskey.com

Sampler Name: *Kristina Dandrea*
Method of Shipment/Carrier:

Shipping/Tracking No:

Company Name: Arcadis	City/State/Zip: Novi, MI, 48377	Phone: 248-994-2240	Project Name: Ford LTP On-Site	Project Number: 30050315.401.03	PO # 30050315.401.03
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Analysis Turnaround Time	Containers & Preservatives	Matrix	Sample Date	Sample Time
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TAT if different from below	HCl	HNO3	H2SO4	Other:
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10 day	Acid	Sediment	Solid	Other:
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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
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Sample Identification	Sample Date	Sample Time	Analysis	Special Specific Notes / Special Instructions:
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TRIP BLANK			X	1 Trip Blank
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MW-10-021021	2/10/21	0928	X	3VQAS for 8260B 3VQAS for 8260B SIM
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MW-04-021021	2/10/21	1038	X	
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MW-05-021021	2/10/21	1153	X	
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MW-02-021021	2/10/21	1253	X	
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MW-03-021021	2/10/21	1428	X	
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Dup-06	2/10/21		X	
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240-144441 Chain of Custody



Eurofins TestAmerica Canton Sample Receipt Form/Narrative
Canton Facility

Login # : 144441

Client Arcadis Site Name _____
 Cooler Received on 2-12-21 Opened on 2-12-21 800

Cooler unpacked by:
Ryan C

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-11 (CF +0.1 °C) Observed Cooler Temp. _____ °C Corrected Cooler Temp. _____ °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 3 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

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

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 NA
 6. Was/were the person(s) who collected the samples clearly identified on the COC? Yes No NA 2.12-21
 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# HC907861
 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 # 59072 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 _____

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: _____