eurofins | Air Toxics

11/30/2018
Mr. Jim Tomalia
Arcadis U.S., Inc.
28550 Cabot Dr.
Suite 500
Novi MI 48377

Project Name: Ford
Project #: MI001454.0003.0001
Workorder #: 1811485

Dear Mr. Jim Tomalia

The following report includes the data for the above referenced project for sample(s) received on 11/21/2018 at Air Toxics Ltd.

The data and associated QC analyzed by TO-15 are compliant with the project requirements or laboratory criteria with the exception of the deviations noted in the attached case narrative.

Thank you for choosing Eurofins Air Toxics Inc. for your air analysis needs. Eurofins Air Toxics Inc. is committed to providing accurate data of the highest quality. Please feel free to contact the Project Manager: Ausha Scott at 916-985-1000 if you have any questions regarding the data in this report.

Regards,

Ausha Scott

Project Manager

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WORK ORDER #: 1811485

Work Order Summary

CLIENT:	Mr. Jim Tomalia Arcadis U.S., Inc. 28550 Cabot Dr. Suite 500 Novi, MI 48377	**BILL TO:**	Accounts Payable Arcadis U.S., Inc. 630 Plaza Drive Suite 600 Highlands Ranch, CO 80129
PHONE:	517-819-0356	**P.O. #**	MI001454.0003.0001
FAX:		**PROJECT #**	MI001454.0003.0001 Ford
DATE RECEIVED:	11/21/2018	**CONTACT:**	Ausha Scott
DATE COMPLETED:	11/30/2018		

FRACTION #	NAME	TEST	RECEIPT VAC./PRES.	FINAL PRESSURE
01A	SSMP-11701Belden-01_111418	TO-15	3.5 "Hg	15 psi
02A	SSMP-11701Belden-02_111418	TO-15	4.0 "Hg	15 psi
03A	SSMP-11701Belden-04_111418	TO-15	4.5 "Hg	15 psi
04A	SSMP-11701Belden-03_111418	TO-15	5.0 "Hg	15 psi
05A	SSMP-11701Belden-05_111418	TO-15	4.0 "Hg	15 psi
06A	SSMP-11701Belden-06_111418	TO-15	5.0 "Hg	15 psi
07A	SSMP-11701Belden-07_111418	TO-15	4.5 "Hg	15 psi
08A	SSMP-11701Belden-08_111418	TO-15	2.5 "Hg	15 psi
09A	SSMP-11701Belden-09_111418	TO-15	4.0 "Hg	15 psi
10A	Lab Blank	TO-15	NA	NA
11A	CCV	TO-15	NA	NA
12A	LCS	TO-15	NA	NA
12AA	LCSD	TO-15	NA	NA

CERTIFIED BY: Heidi Hayes DATE: 11/30/18

Technical Director

Certification numbers: AZ Licensure AZ0775, NJ NELAP - CA016, NY NELAP - 11291,
TX NELAP - T104704434-15-9, UT NELAP CA0093332015-6, VA NELAP - 8113, WA NELAP - C935
Name of Accreditation Body: NELAP/ORELAP (Oregon Environmental Laboratory Accreditation Program)
Accreditation number: CA300005, Effective date: 10/18/2015, Expiration date: 10/17/2016.
Eurofins Air Toxics Inc.. certifies that the test results contained in this report meet all requirements of the NELAC standards

180 BLUE RAVINE ROAD, SUITE B FOLSOM, CA - 95630
(916) 985-1000 . (800) 985-5955 . FAX (916) 985-1020

LABORATORY NARRATIVE
EPA Method TO-15
Arcadis U.S., Inc.
Workorder# 1811485

Nine 1 Liter Summa Canister samples were received on November 21, 2018. The laboratory performed analysis via EPA Method TO-15 using GC/MS in the full scan mode.

This workorder was independently validated prior to submittal using 'USEPA National Functional Guidelines' as generally applied to the analysis of volatile organic compounds in air. A rules-based, logic driven, independent validation engine was employed to assess completeness, evaluate pass/fail of relevant project quality control requirements and verification of all quantified amounts.

Receiving Notes

There were no receiving discrepancies.

Analytical Notes

As per client project requirements, the laboratory has reported estimated values for target compound hits that are below the Reporting Limit but greater than the Method Detection Limit. Concentrations that are below the level at which the canister was certified (0.2 ppbv for compounds reported at 0.5 ppbv and 0.8 ppbv for compounds reported at 2.0 ppbv) may be false positives.

Definition of Data Qualifying Flags

Ten qualifiers may have been used on the data analysis sheets and indicates as follows:

B - Compound present in laboratory blank greater than reporting limit (background subtraction not performed).

J - Estimated value.

E - Exceeds instrument calibration range.

S - Saturated peak.

Q - Exceeds quality control limits.

U - Compound analyzed for but not detected above the reporting limit, LOD, or MDL value. See data page for project specific U-flag definition.

UJ- Non-detected compound associated with low bias in the CCV

N - The identification is based on presumptive evidence.

M - Reported value may be biased due to apparent matrix interferences.

CN - See Case Narrative.

File extensions may have been used on the data analysis sheets and indicates as follows:

a-File was requantified

b-File was quantified by a second column and detector

r1-File was requantified for the purpose of reissue

EPA METHOD TO-15 GC/MS FULL SCAN
Ford

Client ID:	SSMP-11701Belden-01_111418		
Lab ID:	1811485-01A	**Date/Time Analyzed:**	11/27/18 08:29 PM
Date/Time Collected:	11/14/18 08:24 AM	**Dilution Factor:**	2.29
Media:	1 Liter Summa Canister	**Instrument/Filename:**	msd3.i / 3112717

Compound	CAS#	MDL (ug/m3)	LOD (ug/m3)	Rpt. Limit (ug/m3)	Amount (ug/m3)
1,1-Dichloroethene	75-35-4	1.6	2.7	4.5	Not Detected
1,4-Dioxane	123-91-1	1.5	8.2	16	Not Detected
cis-1,2-Dichloroethene	156-59-2	1.0	2.7	4.5	Not Detected
Tetrachloroethene	127-18-4	1.6	4.7	7.8	Not Detected
trans-1,2-Dichloroethene	156-60-5	1.4	2.7	4.5	Not Detected
Trichloroethene	79-01-6	0.98	3.7	6.2	1.0 J
Vinyl Chloride	75-01-4	1.6	1.8	2.9	Not Detected

J = Estimated value.
D: Analyte not within the DoD scope of accreditation.

Surrogates	CAS#	Limits	%Recovery
1,2-Dichloroethane-d4	17060-07-0	70-130	117
4-Bromofluorobenzene	460-00-4	70-130	98
Toluene-d8	2037-26-5	70-130	99

EPA METHOD TO-15 GC/MS FULL SCAN
Ford

Client ID:	SSMP-11701Belden-02_111418		
Lab ID:	1811485-02A	**Date/Time Analyzed:**	11/27/18 08:56 PM
Date/Time Collected:	11/14/18 09:01 AM	**Dilution Factor:**	2.33
Media:	1 Liter Summa Canister	**Instrument/Filename:**	msd3.i / 3112718

Compound	CAS#	MDL (ug/m3)	LOD (ug/m3)	Rpt. Limit (ug/m3)	Amount (ug/m3)
1,1-Dichloroethene	75-35-4	1.7	2.8	4.6	Not Detected
1,4-Dioxane	123-91-1	1.5	8.4	17	Not Detected
cis-1,2-Dichloroethene	156-59-2	1.0	2.8	4.6	Not Detected
Tetrachloroethene	127-18-4	1.6	4.7	7.9	3.1 J
trans-1,2-Dichloroethene	156-60-5	1.4	2.8	4.6	Not Detected
Trichloroethene	79-01-6	1.0	3.8	6.3	1.9 J
Vinyl Chloride	75-01-4	1.7	1.8	3.0	Not Detected

J = Estimated value.
D: Analyte not within the DoD scope of accreditation.

Surrogates	CAS#	Limits	%Recovery
1,2-Dichloroethane-d4	17060-07-0	70-130	112
4-Bromofluorobenzene	460-00-4	70-130	100
Toluene-d8	2037-26-5	70-130	95

EPA METHOD TO-15 GC/MS FULL SCAN
Ford

Client ID:	SSMP-11701Belden-04_111418		
Lab ID:	1811485-03A	**Date/Time Analyzed:**	11/27/18 09:22 PM
Date/Time Collected:	11/14/18 09:32 AM	**Dilution Factor:**	2.38
Media:	1 Liter Summa Canister	**Instrument/Filename:**	msd3.i / 3112719

Compound	CAS#	MDL (ug/m3)	LOD (ug/m3)	Rpt. Limit (ug/m3)	Amount (ug/m3)
1,1-Dichloroethene	75-35-4	1.7	2.8	4.7	Not Detected
1,4-Dioxane	123-91-1	1.5	8.6	17	Not Detected
cis-1,2-Dichloroethene	156-59-2	1.0	2.8	4.7	Not Detected
Tetrachloroethene	127-18-4	1.6	4.8	8.1	10
trans-1,2-Dichloroethene	156-60-5	1.4	2.8	4.7	Not Detected
Trichloroethene	79-01-6	1.0	3.8	6.4	Not Detected
Vinyl Chloride	75-01-4	1.7	1.8	3.0	Not Detected

D: Analyte not within the DoD scope of accreditation.

Surrogates	CAS#	Limits	%Recovery
1,2-Dichloroethane-d4	17060-07-0	70-130	111
4-Bromofluorobenzene	460-00-4	70-130	104
Toluene-d8	2037-26-5	70-130	102

EPA METHOD TO-15 GC/MS FULL SCAN
Ford

Client ID:	SSMP-11701Belden-03_111418		
Lab ID:	1811485-04A	**Date/Time Analyzed:**	11/27/18 09:48 PM
Date/Time Collected:	11/14/18 10:13 AM	**Dilution Factor:**	2.42
Media:	1 Liter Summa Canister	**Instrument/Filename:**	msd3.i / 3112720

Compound	CAS#	MDL (ug/m3)	LOD (ug/m3)	Rpt. Limit (ug/m3)	Amount (ug/m3)
1,1-Dichloroethene	75-35-4	1.7	2.9	4.8	Not Detected
1,4-Dioxane	123-91-1	1.6	8.7	17	Not Detected
cis-1,2-Dichloroethene	156-59-2	1.0	2.9	4.8	Not Detected
Tetrachloroethene	127-18-4	1.6	4.9	8.2	6.9 J
trans-1,2-Dichloroethene	156-60-5	1.4	2.9	4.8	Not Detected
Trichloroethene	79-01-6	1.0	3.9	6.5	Not Detected
Vinyl Chloride	75-01-4	1.7	1.8	3.1	Not Detected

J = Estimated value.
D: Analyte not within the DoD scope of accreditation.

Surrogates	CAS#	Limits	%Recovery
1,2-Dichloroethane-d4	17060-07-0	70-130	110
4-Bromofluorobenzene	460-00-4	70-130	101
Toluene-d8	2037-26-5	70-130	103

EPA METHOD TO-15 GC/MS FULL SCAN
Ford

Client ID:	SSMP-11701Belden-05_111418		
Lab ID:	1811485-05A	**Date/Time Analyzed:**	11/27/18 10:14 PM
Date/Time Collected:	11/14/18 10:56 AM	**Dilution Factor:**	2.33
Media:	1 Liter Summa Canister	**Instrument/Filename:**	msd3.i / 3112721

Compound	CAS#	MDL (ug/m3)	LOD (ug/m3)	Rpt. Limit (ug/m3)	Amount (ug/m3)
1,1-Dichloroethene	75-35-4	1.7	2.8	4.6	Not Detected
1,4-Dioxane	123-91-1	1.5	8.4	17	Not Detected
cis-1,2-Dichloroethene	156-59-2	1.0	2.8	4.6	Not Detected
Tetrachloroethene	127-18-4	1.6	4.7	7.9	6.5 J
trans-1,2-Dichloroethene	156-60-5	1.4	2.8	4.6	Not Detected
Trichloroethene	79-01-6	1.0	3.8	6.3	Not Detected
Vinyl Chloride	75-01-4	1.7	1.8	3.0	Not Detected

J = Estimated value.
D: Analyte not within the DoD scope of accreditation.

Surrogates	CAS#	Limits	%Recovery
1,2-Dichloroethane-d4	17060-07-0	70-130	113
4-Bromofluorobenzene	460-00-4	70-130	106
Toluene-d8	2037-26-5	70-130	103

EPA METHOD TO-15 GC/MS FULL SCAN
Ford

Client ID:	SSMP-11701Belden-06_111418		
Lab ID:	1811485-06A	**Date/Time Analyzed:**	11/27/18 10:41 PM
Date/Time Collected:	11/14/18 11:30 AM	**Dilution Factor:**	2.42
Media:	1 Liter Summa Canister	**Instrument/Filename:**	msd3.i / 3112722

Compound	CAS#	MDL (ug/m3)	LOD (ug/m3)	Rpt. Limit (ug/m3)	Amount (ug/m3)
1,1-Dichloroethene	75-35-4	1.7	2.9	4.8	Not Detected
1,4-Dioxane	123-91-1	1.6	8.7	17	Not Detected
cis-1,2-Dichloroethene	156-59-2	1.0	2.9	4.8	Not Detected
Tetrachloroethene	127-18-4	1.6	4.9	8.2	810
trans-1,2-Dichloroethene	156-60-5	1.4	2.9	4.8	Not Detected
Trichloroethene	79-01-6	1.0	3.9	6.5	1.8 J
Vinyl Chloride	75-01-4	1.7	1.8	3.1	Not Detected

J = Estimated value.
D: Analyte not within the DoD scope of accreditation.

Surrogates	CAS#	Limits	%Recovery
1,2-Dichloroethane-d4	17060-07-0	70-130	115
4-Bromofluorobenzene	460-00-4	70-130	104
Toluene-d8	2037-26-5	70-130	100

EPA METHOD TO-15 GC/MS FULL SCAN
Ford

Client ID:	SSMP-11701Belden-07_111418		
Lab ID:	1811485-07A	**Date/Time Analyzed:**	11/27/18 11:07 PM
Date/Time Collected:	11/14/18 11:42 AM	**Dilution Factor:**	2.38
Media:	1 Liter Summa Canister	**Instrument/Filename:**	msd3.i / 3112723

Compound	CAS#	MDL (ug/m3)	LOD (ug/m3)	Rpt. Limit (ug/m3)	Amount (ug/m3)
1,1-Dichloroethene	75-35-4	1.7	2.8	4.7	Not Detected
1,4-Dioxane	123-91-1	1.5	8.6	17	Not Detected
cis-1,2-Dichloroethene	156-59-2	1.0	2.8	4.7	Not Detected
Tetrachloroethene	127-18-4	1.6	4.8	8.1	200
trans-1,2-Dichloroethene	156-60-5	1.4	2.8	4.7	Not Detected
Trichloroethene	79-01-6	1.0	3.8	6.4	1.5 J
Vinyl Chloride	75-01-4	1.7	1.8	3.0	Not Detected

J = Estimated value.
D: Analyte not within the DoD scope of accreditation.

Surrogates	CAS#	Limits	%Recovery
1,2-Dichloroethane-d4	17060-07-0	70-130	115
4-Bromofluorobenzene	460-00-4	70-130	104
Toluene-d8	2037-26-5	70-130	101

EPA METHOD TO-15 GC/MS FULL SCAN
Ford

Client ID:	SSMP-11701Belden-08_111418		
Lab ID:	1811485-08A	**Date/Time Analyzed:**	11/27/18 11:33 PM
Date/Time Collected:	11/14/18 12:08 PM	**Dilution Factor:**	2.20
Media:	1 Liter Summa Canister	**Instrument/Filename:**	msd3.i / 3112724

Compound	CAS#	MDL (ug/m3)	LOD (ug/m3)	Rpt. Limit (ug/m3)	Amount (ug/m3)
1,1-Dichloroethene	75-35-4	1.6	2.6	4.4	Not Detected
1,4-Dioxane	123-91-1	1.4	7.9	16	Not Detected
cis-1,2-Dichloroethene	156-59-2	0.96	2.6	4.4	Not Detected
Tetrachloroethene	127-18-4	1.5	4.5	7.5	2100
trans-1,2-Dichloroethene	156-60-5	1.3	2.6	4.4	Not Detected
Trichloroethene	79-01-6	0.94	3.5	5.9	8.7
Vinyl Chloride	75-01-4	1.6	1.7	2.8	Not Detected

D: Analyte not within the DoD scope of accreditation.

Surrogates	CAS#	Limits	%Recovery
1,2-Dichloroethane-d4	17060-07-0	70-130	116
4-Bromofluorobenzene	460-00-4	70-130	106
Toluene-d8	2037-26-5	70-130	100

EPA METHOD TO-15 GC/MS FULL SCAN
Ford

Client ID:	SSMP-11701Belden-09_111418		
Lab ID:	1811485-09A	**Date/Time Analyzed:**	11/28/18 12:00 AM
Date/Time Collected:	11/14/18 12:14 PM	**Dilution Factor:**	2.33
Media:	1 Liter Summa Canister	**Instrument/Filename:**	msd3.i / 3112725

Compound	CAS#	MDL (ug/m3)	LOD (ug/m3)	Rpt. Limit (ug/m3)	Amount (ug/m3)
1,1-Dichloroethene	75-35-4	1.7	2.8	4.6	Not Detected
1,4-Dioxane	123-91-1	1.5	8.4	17	Not Detected
cis-1,2-Dichloroethene	156-59-2	1.0	2.8	4.6	Not Detected
Tetrachloroethene	127-18-4	1.6	4.7	7.9	43
trans-1,2-Dichloroethene	156-60-5	1.4	2.8	4.6	Not Detected
Trichloroethene	79-01-6	1.0	3.8	6.3	Not Detected
Vinyl Chloride	75-01-4	1.7	1.8	3.0	Not Detected

D: Analyte not within the DoD scope of accreditation.

Surrogates	CAS#	Limits	%Recovery
1,2-Dichloroethane-d4	17060-07-0	70-130	117
4-Bromofluorobenzene	460-00-4	70-130	103
Toluene-d8	2037-26-5	70-130	102

EPA METHOD TO-15 GC/MS FULL SCAN
Ford

Client ID:	Lab Blank		
Lab ID:	1811485-10A	**Date/Time Analyzed:**	11/27/18 01:43 PM
Date/Time Collected:	NA - Not Applicable	**Dilution Factor:**	1.00
Media:	NA - Not Applicable	**Instrument/Filename:**	msd3.i / 3112707a

Compound	CAS#	MDL (ug/m3)	LOD (ug/m3)	Rpt. Limit (ug/m3)	Amount (ug/m3)
1,1-Dichloroethene	75-35-4	0.71	1.2	2.0	Not Detected
1,4-Dioxane	123-91-1	0.65	3.6	7.2	Not Detected
cis-1,2-Dichloroethene	156-59-2	0.44	1.2	2.0	Not Detected
Tetrachloroethene	127-18-4	0.68	2.0	3.4	Not Detected
trans-1,2-Dichloroethene	156-60-5	0.59	1.2	2.0	Not Detected
Trichloroethene	79-01-6	0.43	1.6	2.7	Not Detected
Vinyl Chloride	75-01-4	0.72	0.77	1.3	Not Detected

D: Analyte not within the DoD scope of accreditation.

Surrogates	CAS#	Limits	%Recovery
1,2-Dichloroethane-d4	17060-07-0	70-130	111
4-Bromofluorobenzene	460-00-4	70-130	96
Toluene-d8	2037-26-5	70-130	102

EPA METHOD TO-15 GC/MS FULL SCAN
Ford

Client ID:	CCV		
Lab ID:	1811485-11A	**Date/Time Analyzed:**	11/27/18 12:02 PM
Date/Time Collected:	NA - Not Applicable	**Dilution Factor:**	1.00
Media:	NA - Not Applicable	**Instrument/Filename:**	msd3.i / 3112704

Compound	CAS#	%Recovery
1,1-Dichloroethene	75-35-4	99
1,4-Dioxane	123-91-1	94
cis-1,2-Dichloroethene	156-59-2	101
Tetrachloroethene	127-18-4	102
trans-1,2-Dichloroethene	156-60-5	104
Trichloroethene	79-01-6	109
Vinyl Chloride	75-01-4	103

D: Analyte not within the DoD scope of accreditation.

Surrogates	CAS#	Limits	%Recovery
1,2-Dichloroethane-d4	17060-07-0	70-130	108
4-Bromofluorobenzene	460-00-4	70-130	102
Toluene-d8	2037-26-5	70-130	104

EPA METHOD TO-15 GC/MS FULL SCAN
Ford

Client ID:	LCS		
Lab ID:	1811485-12A	**Date/Time Analyzed:**	11/27/18 12:25 PM
Date/Time Collected:	NA - Not Applicable	**Dilution Factor:**	1.00
Media:	NA - Not Applicable	**Instrument/Filename:**	msd3.i / 3112705

Compound	CAS#	%Recovery
1,1-Dichloroethene	75-35-4	102
1,4-Dioxane	123-91-1	104
cis-1,2-Dichloroethene	156-59-2	98
Tetrachloroethene	127-18-4	98
trans-1,2-Dichloroethene	156-60-5	118
Trichloroethene	79-01-6	109
Vinyl Chloride	75-01-4	114

D: Analyte not within the DoD scope of accreditation.

Surrogates	CAS#	Limits	%Recovery
1,2-Dichloroethane-d4	17060-07-0	70-130	112
4-Bromofluorobenzene	460-00-4	70-130	98
Toluene-d8	2037-26-5	70-130	100

* % Recovery is calculated using unrounded analytical results.

EPA METHOD TO-15 GC/MS FULL SCAN
Ford

Client ID:	LCSD		
Lab ID:	1811485-12AA	**Date/Time Analyzed:**	11/27/18 01:05 PM
Date/Time Collected:	NA - Not Applicable	**Dilution Factor:**	1.00
Media:	NA - Not Applicable	**Instrument/Filename:**	msd3.i / 3112706

Compound	CAS#	%Recovery
1,1-Dichloroethene	75-35-4	102
1,4-Dioxane	123-91-1	108
cis-1,2-Dichloroethene	156-59-2	97
Tetrachloroethene	127-18-4	103
trans-1,2-Dichloroethene	156-60-5	117
Trichloroethene	79-01-6	109
Vinyl Chloride	75-01-4	112

D: Analyte not within the DoD scope of accreditation.

Surrogates	CAS#	Limits	%Recovery
1,2-Dichloroethane-d4	17060-07-0	70-130	109
4-Bromofluorobenzene	460-00-4	70-130	102
Toluene-d8	2037-26-5	70-130	102

* % Recovery is calculated using unrounded analytical results.

November 30, 2018

Kris Hinskey
Arcadis Inc
10559 Citation Ave
Suite 100
Brighton, MI 48116

CADENA project ID: E203631
Project: Ford Livonia Transmission Project - OFF-SITE - Soil Gas and Groundwater
Project number: MI001454.0002/3/4.00002/2B/3B
Client project scope reference: Sample COC only was used to define project analytical requirements.
Laboratory: Eurofins Air Toxics - Folsom
Laboratory submittal: 1811485
Sample date: 2018-11-14
Report received by CADENA: 2018-11-30
Initial Data Verification completed by CADENA: 2018-11-30

9 Air samples were analyzed for TO-15 parameters.

There were no significant QC anomalies or exceptions to report.

Data verification for the report specified above was completed using the Ford Motor Company Environmental Laboratory Technical Specification, the CADENA Standard Operating Procedure for the Verification of Environmental Analytical Data and the associated analytical methods as references for evaluating the batch QC, sample data and report content. The EPA National Functional Guidelines for validating organic and inorganic data were used as guidance when addressing out of control QC results and the associated data qualifiers.

Analytical results reported between RDL and MDL are flagged 'J' and considered estimated values.

The definitions of the qualifiers used for this data package are defined in the analytical report. CADENA valid qualifiers are defined in the table below. To view and download a PDF copy of the laboratory analytical report access the CADENA CLMS at http://clms.cadenaco.com/index.cfm.

Please contact me if you have any questions.

Sincerely,

Jim Tomalia

Project Scientist

CADENA Valid Qualifiers

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

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11/30/2018
Mr. Jim Tomalia
Arcadis U.S., Inc.
28550 Cabot Dr.
Suite 500
Novi MI 48377

Project Name: Ford
Project #: MI001454.0003.0001
Workorder #: 1811486

Dear Mr. Jim Tomalia

The following report includes the data for the above referenced project for sample(s) received on 11/21/2018 at Air Toxics Ltd.

The data and associated QC analyzed by Modified TO-15 are compliant with the project requirements or laboratory criteria with the exception of the deviations noted in the attached case narrative.

Thank you for choosing Eurofins Air Toxics Inc. for your air analysis needs. Eurofins Air Toxics Inc. is committed to providing accurate data of the highest quality. Please feel free to contact the Project Manager: Ausha Scott at 916-985-1000 if you have any questions regarding the data in this report.

Regards,

Ausha Scott

Project Manager

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WORK ORDER #: 1811486

Work Order Summary

CLIENT:	Mr. Jim Tomalia Arcadis U.S., Inc. 28550 Cabot Dr. Suite 500 Novi, MI 48377	**BILL TO:**	Accounts Payable Arcadis U.S., Inc. 630 Plaza Drive Suite 600 Highlands Ranch, CO 80129
PHONE:	517-819-0356	**P.O. #**	MI001454.0004.0001
FAX:		**PROJECT #**	MI001454.0003.0001 Ford
DATE RECEIVED:	11/21/2018	**CONTACT:**	Ausha Scott
DATE COMPLETED:	11/30/2018		

FRACTION #	NAME	TEST	RECEIPT VAC./PRES.	FINAL PRESSURE
01A	IA-11701Belden-05_111418	Modified TO-15	4.5 "Hg	4.8 psi
02A	IA-11701Belden-06_111418	Modified TO-15	6.1 "Hg	5.2 psi
03A	IA-11701Belden-07_111418	Modified TO-15	6.1 "Hg	4.8 psi
04A	IA-11701Belden-08_111418	Modified TO-15	7.6 "Hg	5 psi
05A	IA-11701Belden-01_111418	Modified TO-15	5.5 "Hg	5 psi
06A	IA-11701Belden-02_111418	Modified TO-15	6.7 "Hg	5 psi
07A	IA-11701Belden-03_111418	Modified TO-15	4.9 "Hg	4.8 psi
08A	IA-11701Belden-04_111418	Modified TO-15	5.5 "Hg	5.2 psi
09A	AA-11701Belden-01_111418	Modified TO-15	1.6 "Hg	4.9 psi
10A	Lab Blank	Modified TO-15	NA	NA
10B	Lab Blank	Modified TO-15	NA	NA
11A	CCV	Modified TO-15	NA	NA
11B	CCV	Modified TO-15	NA	NA
12A	LCS	Modified TO-15	NA	NA
12AA	LCSD	Modified TO-15	NA	NA
12B	LCS	Modified TO-15	NA	NA
12BB	LCSD	Modified TO-15	NA	NA

CERTIFIED BY: Heidi Hayes DATE: 11/30/18

Technical Director

Certification numbers: AZ Licensure AZ0775, NJ NELAP - CA016, NY NELAP - 11291,
TX NELAP - T104704434-15-9, UT NELAP CA0093332015-6, VA NELAP - 8113, WA NELAP - C935
Name of Accreditation Body: NELAP/ORELAP (Oregon Environmental Laboratory Accreditation Program)
Accreditation number: CA300005, Effective date: 10/18/2015, Expiration date: 10/17/2016.
Eurofins Air Toxics Inc.. certifies that the test results contained in this report meet all requirements of the NELAC standards

180 BLUE RAVINE ROAD, SUITE B FOLSOM, CA - 95630
(916) 985-1000 . (800) 985-5955 . FAX (916) 985-1020

LABORATORY NARRATIVE
Modified TO-15
Arcadis U.S., Inc.
Workorder# 1811486

Nine 6 Liter Summa Canister (100% Certified) samples were received on November 21, 2018. The laboratory performed analysis via modified EPA Method TO-15 using GC/MS in the full scan mode.

This workorder was independently validated prior to submittal using 'USEPA National Functional Guidelines' as generally applied to the analysis of volatile organic compounds in air. A rules-based, logic driven, independent validation engine was employed to assess completeness, evaluate pass/fail of relevant project quality control requirements and verification of all quantified amounts.

Method modifications taken to run these samples are summarized in the table below. Specific project requirements may over-ride the ATL modifications.

Requirement	***TO-15***	***ATL Modifications***
Initial Calibration	</=30% RSD with 2 compounds allowed out to < 40% RSD	</=30% RSD with 4 compounds allowed out to < 40% RSD
Blank and standards	Zero Air	UHP Nitrogen provides a higher purity gas matrix than zero air

Receiving Notes

The Chain of Custody (COC) information for sample 08A did not match the entry on the sample tag with regard to sample identification. The information on the COC was used to process and report the sample.

Analytical Notes

As per project specific client request the laboratory has reported estimated values for target compound hits that are below the Reporting Limit but greater than the Method Detection Limit. All The canisters used for this project have been certified to the Reporting Limit for the target analytes included in this workorder. Concentrations that are below the level at which the canister was certified may be false positives.

Dilution was performed on sample(s) IA-11701Belden-05_111418, IA-11701Belden-06_111418, IA-11701Belden-07_111418, IA-11701Belden-08_111418, IA-11701Belden-01_111418, IA-11701Belden-02_111418, IA-11701Belden-03_111418 and IA-11701Belden-04_111418 due to the presence of high level non-target species.

Definition of Data Qualifying Flags

Eight qualifiers may have been used on the data analysis sheets and indicates as follows:

B - Compound present in laboratory blank greater than reporting limit (background subtraction not performed).

J - Estimated value.

E - Exceeds instrument calibration range.

S - Saturated peak.

Q - Exceeds quality control limits.

U - Compound analyzed for but not detected above the reporting limit, LOD, or MDL value. See data page for project specific U-flag definition.

UJ- Non-detected compound associated with low bias in the CCV

N - The identification is based on presumptive evidence.

File extensions may have been used on the data analysis sheets and indicates as follows:

a-File was requantified

b-File was quantified by a second column and detector

r1-File was requantified for the purpose of reissue

MODIFIED EPA METHOD TO-15 GC/MS FULL SCAN
Ford

Client ID:	IA-11701Belden-05_111418		
Lab ID:	1811486-01A	**Date/Time Analyzed:**	11/27/18 04:20 PM
Date/Time Collected:	11/14/18 03:08 PM	**Dilution Factor:**	7.80
Media:	6 Liter Summa Canister (100% Certified)	**Instrument/Filename:**	msd20.i / 20112710

Compound	CAS#	MDL (ug/m3)	LOD (ug/m3)	Rpt. Limit (ug/m3)	Amount (ug/m3)
1,1-Dichloroethene	75-35-4	1.6	2.8	3.1	Not Detected
1,4-Dioxane	123-91-1	2.1	2.5	2.8	Not Detected
cis-1,2-Dichloroethene	156-59-2	1.3	2.8	3.1	Not Detected
Tetrachloroethene	127-18-4	3.0	4.8	5.3	Not Detected
trans-1,2-Dichloroethene	156-60-5	2.0	2.8	3.1	Not Detected
Trichloroethene	79-01-6	1.6	3.8	4.2	Not Detected
Vinyl Chloride	75-01-4	1.2	1.8	2.0	Not Detected

D: Analyte not within the DoD scope of accreditation.

Surrogates	CAS#	Limits	%Recovery
1,2-Dichloroethane-d4	17060-07-0	70-130	82
4-Bromofluorobenzene	460-00-4	70-130	111
Toluene-d8	2037-26-5	70-130	94

MODIFIED EPA METHOD TO-15 GC/MS FULL SCAN
Ford

Client ID:	IA-11701Belden-06_111418		
Lab ID:	1811486-02A	**Date/Time Analyzed:**	11/27/18 03:36 PM
Date/Time Collected:	11/14/18 03:09 PM	**Dilution Factor:**	5.67
Media:	6 Liter Summa Canister (100% Certified)	**Instrument/Filename:**	msd20.i / 20112709

Compound	CAS#	MDL (ug/m3)	LOD (ug/m3)	Rpt. Limit (ug/m3)	Amount (ug/m3)
1,1-Dichloroethene	75-35-4	1.2	2.0	2.2	Not Detected
1,4-Dioxane	123-91-1	1.6	1.8	2.0	Not Detected
cis-1,2-Dichloroethene	156-59-2	0.92	2.0	2.2	Not Detected
Tetrachloroethene	127-18-4	2.2	3.5	3.8	Not Detected
trans-1,2-Dichloroethene	156-60-5	1.4	2.0	2.2	Not Detected
Trichloroethene	79-01-6	1.2	2.7	3.0	Not Detected
Vinyl Chloride	75-01-4	0.84	1.3	1.4	Not Detected

D: Analyte not within the DoD scope of accreditation.

Surrogates	CAS#	Limits	%Recovery
1,2-Dichloroethane-d4	17060-07-0	70-130	87
4-Bromofluorobenzene	460-00-4	70-130	115
Toluene-d8	2037-26-5	70-130	92

MODIFIED EPA METHOD TO-15 GC/MS FULL SCAN
Ford

Client ID:	IA-11701Belden-07_111418		
Lab ID:	1811486-03A	**Date/Time Analyzed:**	11/27/18 02:56 PM
Date/Time Collected:	11/14/18 03:10 PM	**Dilution Factor:**	4.18
Media:	6 Liter Summa Canister (100% Certified)	**Instrument/Filename:**	msd20.i / 20112708

Compound	CAS#	MDL (ug/m3)	LOD (ug/m3)	Rpt. Limit (ug/m3)	Amount (ug/m3)
1,1-Dichloroethene	75-35-4	0.87	1.5	1.6	Not Detected
1,4-Dioxane	123-91-1	1.1	1.4	1.5	Not Detected
cis-1,2-Dichloroethene	156-59-2	0.68	1.5	1.6	Not Detected
Tetrachloroethene	127-18-4	1.6	2.6	2.8	Not Detected
trans-1,2-Dichloroethene	156-60-5	1.0	1.5	1.6	Not Detected
Trichloroethene	79-01-6	0.88	2.0	2.2	Not Detected
Vinyl Chloride	75-01-4	0.62	0.96	1.1	Not Detected

D: Analyte not within the DoD scope of accreditation.

Surrogates	CAS#	Limits	%Recovery
1,2-Dichloroethane-d4	17060-07-0	70-130	76
4-Bromofluorobenzene	460-00-4	70-130	107
Toluene-d8	2037-26-5	70-130	95

MODIFIED EPA METHOD TO-15 GC/MS FULL SCAN
Ford

Client ID:	IA-11701Belden-08_111418		
Lab ID:	1811486-04A	**Date/Time Analyzed:**	11/27/18 02:17 PM
Date/Time Collected:	11/14/18 03:11 PM	**Dilution Factor:**	4.48
Media:	6 Liter Summa Canister (100% Certified)	**Instrument/Filename:**	msd20.i / 20112707

Compound	CAS#	MDL (ug/m3)	LOD (ug/m3)	Rpt. Limit (ug/m3)	Amount (ug/m3)
1,1-Dichloroethene	75-35-4	0.93	1.6	1.8	Not Detected
1,4-Dioxane	123-91-1	1.2	1.4	1.6	Not Detected
cis-1,2-Dichloroethene	156-59-2	0.72	1.6	1.8	Not Detected
Tetrachloroethene	127-18-4	1.7	2.7	3.0	Not Detected
trans-1,2-Dichloroethene	156-60-5	1.1	1.6	1.8	Not Detected
Trichloroethene	79-01-6	0.94	2.2	2.4	Not Detected
Vinyl Chloride	75-01-4	0.66	1.0	1.1	Not Detected

D: Analyte not within the DoD scope of accreditation.

Surrogates	CAS#	Limits	%Recovery
1,2-Dichloroethane-d4	17060-07-0	70-130	82
4-Bromofluorobenzene	460-00-4	70-130	109
Toluene-d8	2037-26-5	70-130	99

EPA METHOD TO-15 GC/MS FULL SCAN
Ford

Client ID:	IA-11701Belden-01_111418		
Lab ID:	1811486-05A	**Date/Time Analyzed:**	11/29/18 03:46 PM
Date/Time Collected:	11/14/18 07:03 PM	**Dilution Factor:**	32.8
Media:	6 Liter Summa Canister (100% Certified)	**Instrument/Filename:**	msd17.i / 17112907

Compound	CAS#	MDL (ug/m3)	LOD (ug/m3)	Rpt. Limit (ug/m3)	Amount (ug/m3)
1,1-Dichloroethene	75-35-4	29	52	65	Not Detected
1,4-Dioxane	123-91-1	52	180	240	Not Detected
cis-1,2-Dichloroethene	156-59-2	10	52	65	Not Detected
Tetrachloroethene	127-18-4	16	89	110	Not Detected
trans-1,2-Dichloroethene	156-60-5	20	52	65	Not Detected
Trichloroethene	79-01-6	33	70	88	Not Detected
Vinyl Chloride	75-01-4	10	34	42	Not Detected

D: Analyte not within the DoD scope of accreditation.

Surrogates	CAS#	Limits	%Recovery
1,2-Dichloroethane-d4	17060-07-0	70-130	93
4-Bromofluorobenzene	460-00-4	70-130	97
Toluene-d8	2037-26-5	70-130	113

EPA METHOD TO-15 GC/MS FULL SCAN
Ford

Client ID:	IA-11701Belden-02_111418		
Lab ID:	1811486-06A	**Date/Time Analyzed:**	11/29/18 04:14 PM
Date/Time Collected:	11/14/18 06:24 PM	**Dilution Factor:**	34.5
Media:	6 Liter Summa Canister (100% Certified)	**Instrument/Filename:**	msd17.i / 17112908

Compound	CAS#	MDL (ug/m3)	LOD (ug/m3)	Rpt. Limit (ug/m3)	Amount (ug/m3)
1,1-Dichloroethene	75-35-4	30	55	68	Not Detected
1,4-Dioxane	123-91-1	55	190	250	Not Detected
cis-1,2-Dichloroethene	156-59-2	11	55	68	Not Detected
Tetrachloroethene	127-18-4	16	94	120	Not Detected
trans-1,2-Dichloroethene	156-60-5	20	55	68	Not Detected
Trichloroethene	79-01-6	35	74	93	Not Detected
Vinyl Chloride	75-01-4	10	35	44	Not Detected

D: Analyte not within the DoD scope of accreditation.

Surrogates	CAS#	Limits	%Recovery
1,2-Dichloroethane-d4	17060-07-0	70-130	91
4-Bromofluorobenzene	460-00-4	70-130	96
Toluene-d8	2037-26-5	70-130	114

EPA METHOD TO-15 GC/MS FULL SCAN
Ford

Client ID:	IA-11701Belden-03_111418		
Lab ID:	1811486-07A	**Date/Time Analyzed:**	11/29/18 04:42 PM
Date/Time Collected:	11/14/18 07:00 PM	**Dilution Factor:**	31.7
Media:	6 Liter Summa Canister (100% Certified)	**Instrument/Filename:**	msd17.i / 17112909

Compound	CAS#	MDL (ug/m3)	LOD (ug/m3)	Rpt. Limit (ug/m3)	Amount (ug/m3)
1,1-Dichloroethene	75-35-4	28	50	63	Not Detected
1,4-Dioxane	123-91-1	50	170	230	Not Detected
cis-1,2-Dichloroethene	156-59-2	10	50	63	Not Detected
Tetrachloroethene	127-18-4	15	86	110	Not Detected
trans-1,2-Dichloroethene	156-60-5	19	50	63	Not Detected
Trichloroethene	79-01-6	32	68	85	Not Detected
Vinyl Chloride	75-01-4	9.7	32	40	Not Detected

D: Analyte not within the DoD scope of accreditation.

Surrogates	CAS#	Limits	%Recovery
1,2-Dichloroethane-d4	17060-07-0	70-130	93
4-Bromofluorobenzene	460-00-4	70-130	95
Toluene-d8	2037-26-5	70-130	114

EPA METHOD TO-15 GC/MS FULL SCAN
Ford

Client ID:	IA-11701Belden-04_111418		
Lab ID:	1811486-08A	**Date/Time Analyzed:**	11/29/18 05:10 PM
Date/Time Collected:	11/14/18 07:00 PM	**Dilution Factor:**	33.2
Media:	6 Liter Summa Canister (100% Certified)	**Instrument/Filename:**	msd17.i / 17112910

Compound	CAS#	MDL (ug/m3)	LOD (ug/m3)	Rpt. Limit (ug/m3)	Amount (ug/m3)
1,1-Dichloroethene	75-35-4	29	53	66	Not Detected
1,4-Dioxane	123-91-1	53	180	240	Not Detected
cis-1,2-Dichloroethene	156-59-2	10	53	66	Not Detected
Tetrachloroethene	127-18-4	16	90	110	Not Detected
trans-1,2-Dichloroethene	156-60-5	20	53	66	Not Detected
Trichloroethene	79-01-6	34	71	89	Not Detected
Vinyl Chloride	75-01-4	10	34	42	Not Detected

D: Analyte not within the DoD scope of accreditation.

Surrogates	CAS#	Limits	%Recovery
1,2-Dichloroethane-d4	17060-07-0	70-130	92
4-Bromofluorobenzene	460-00-4	70-130	96
Toluene-d8	2037-26-5	70-130	113

MODIFIED EPA METHOD TO-15 GC/MS FULL SCAN
Ford

Client ID:	AA-11701Belden-01_111418		
Lab ID:	1811486-09A	**Date/Time Analyzed:**	11/27/18 01:20 PM
Date/Time Collected:	11/14/18 06:28 PM	**Dilution Factor:**	1.41
Media:	6 Liter Summa Canister (100% Certified)	**Instrument/Filename:**	msd20.i / 20112706

Compound	CAS#	MDL (ug/m3)	LOD (ug/m3)	Rpt. Limit (ug/m3)	Amount (ug/m3)
1,1-Dichloroethene	75-35-4	0.29	0.50	0.56	Not Detected
1,4-Dioxane	123-91-1	0.39	0.46	0.51	Not Detected
cis-1,2-Dichloroethene	156-59-2	0.23	0.50	0.56	Not Detected
Tetrachloroethene	127-18-4	0.54	0.86	0.96	Not Detected
trans-1,2-Dichloroethene	156-60-5	0.36	0.50	0.56	Not Detected
Trichloroethene	79-01-6	0.30	0.68	0.76	1.2
Vinyl Chloride	75-01-4	0.21	0.32	0.36	Not Detected

D: Analyte not within the DoD scope of accreditation.

Surrogates	CAS#	Limits	%Recovery
1,2-Dichloroethane-d4	17060-07-0	70-130	87
4-Bromofluorobenzene	460-00-4	70-130	110
Toluene-d8	2037-26-5	70-130	96

MODIFIED EPA METHOD TO-15 GC/MS FULL SCAN
Ford

Client ID:	Lab Blank		
Lab ID:	1811486-10A	**Date/Time Analyzed:**	11/27/18 12:07 PM
Date/Time Collected:	NA - Not Applicable	**Dilution Factor:**	1.00
Media:	NA - Not Applicable	**Instrument/Filename:**	msd20.i / 20112705a

Compound	CAS#	MDL (ug/m3)	LOD (ug/m3)	Rpt. Limit (ug/m3)	Amount (ug/m3)
1,1-Dichloroethene	75-35-4	0.21	0.36	0.40	Not Detected
1,4-Dioxane	123-91-1	0.27	0.32	0.36	Not Detected
cis-1,2-Dichloroethene	156-59-2	0.16	0.36	0.40	Not Detected
Tetrachloroethene	127-18-4	0.38	0.61	0.68	Not Detected
trans-1,2-Dichloroethene	156-60-5	0.25	0.36	0.40	Not Detected
Trichloroethene	79-01-6	0.21	0.48	0.54	Not Detected
Vinyl Chloride	75-01-4	0.15	0.23	0.26	Not Detected

D: Analyte not within the DoD scope of accreditation.

Surrogates	CAS#	Limits	%Recovery
1,2-Dichloroethane-d4	17060-07-0	70-130	87
4-Bromofluorobenzene	460-00-4	70-130	110
Toluene-d8	2037-26-5	70-130	94

EPA METHOD TO-15 GC/MS FULL SCAN
Ford

Client ID:	Lab Blank		
Lab ID:	1811486-10B	**Date/Time Analyzed:**	11/29/18 02:24 PM
Date/Time Collected:	NA - Not Applicable	**Dilution Factor:**	1.00
Media:	NA - Not Applicable	**Instrument/Filename:**	msd17.i / 17112906

Compound	CAS#	MDL (ug/m3)	LOD (ug/m3)	Rpt. Limit (ug/m3)	Amount (ug/m3)
1,1-Dichloroethene	75-35-4	0.87	1.6	2.0	Not Detected
1,4-Dioxane	123-91-1	1.6	5.4	7.2	Not Detected
cis-1,2-Dichloroethene	156-59-2	0.32	1.6	2.0	Not Detected
Tetrachloroethene	127-18-4	0.47	2.7	3.4	Not Detected
trans-1,2-Dichloroethene	156-60-5	0.59	1.6	2.0	Not Detected
Trichloroethene	79-01-6	1.0	2.1	2.7	Not Detected
Vinyl Chloride	75-01-4	0.31	1.0	1.3	Not Detected

D: Analyte not within the DoD scope of accreditation.

Surrogates	CAS#	Limits	%Recovery
1,2-Dichloroethane-d4	17060-07-0	70-130	95
4-Bromofluorobenzene	460-00-4	70-130	96
Toluene-d8	2037-26-5	70-130	115

MODIFIED EPA METHOD TO-15 GC/MS FULL SCAN
Ford

Client ID:	CCV		
Lab ID:	1811486-11A	**Date/Time Analyzed:**	11/27/18 08:56 AM
Date/Time Collected:	NA - Not Applicable	**Dilution Factor:**	1.00
Media:	NA - Not Applicable	**Instrument/Filename:**	msd20.i / 20112702

Compound	CAS#	%Recovery
1,1-Dichloroethene	75-35-4	85
1,4-Dioxane	123-91-1	92
cis-1,2-Dichloroethene	156-59-2	88
Tetrachloroethene	127-18-4	107
trans-1,2-Dichloroethene	156-60-5	91
Trichloroethene	79-01-6	104
Vinyl Chloride	75-01-4	78

D: Analyte not within the DoD scope of accreditation.

Surrogates	CAS#	Limits	%Recovery
1,2-Dichloroethane-d4	17060-07-0	70-130	82
4-Bromofluorobenzene	460-00-4	70-130	114
Toluene-d8	2037-26-5	70-130	99

EPA METHOD TO-15 GC/MS FULL SCAN
Ford

Client ID:	CCV		
Lab ID:	1811486-11B	**Date/Time Analyzed:**	11/29/18 11:21 AM
Date/Time Collected:	NA - Not Applicable	**Dilution Factor:**	1.00
Media:	NA - Not Applicable	**Instrument/Filename:**	msd17.i / 17112902

Compound	CAS#	%Recovery
1,1-Dichloroethene	75-35-4	77
1,4-Dioxane	123-91-1	110
cis-1,2-Dichloroethene	156-59-2	97
Tetrachloroethene	127-18-4	97
trans-1,2-Dichloroethene	156-60-5	85
Trichloroethene	79-01-6	108
Vinyl Chloride	75-01-4	72

D: Analyte not within the DoD scope of accreditation.

Surrogates	CAS#	Limits	%Recovery
1,2-Dichloroethane-d4	17060-07-0	70-130	96
4-Bromofluorobenzene	460-00-4	70-130	97
Toluene-d8	2037-26-5	70-130	112

MODIFIED EPA METHOD TO-15 GC/MS FULL SCAN
Ford

Client ID:	LCS		
Lab ID:	1811486-12A	**Date/Time Analyzed:**	11/27/18 09:59 AM
Date/Time Collected:	NA - Not Applicable	**Dilution Factor:**	1.00
Media:	NA - Not Applicable	**Instrument/Filename:**	msd20.i / 20112703

Compound	CAS#	%Recovery
1,1-Dichloroethene	75-35-4	81
1,4-Dioxane	123-91-1	94
cis-1,2-Dichloroethene	156-59-2	78
Tetrachloroethene	127-18-4	107
trans-1,2-Dichloroethene	156-60-5	99
Trichloroethene	79-01-6	103
Vinyl Chloride	75-01-4	81

D: Analyte not within the DoD scope of accreditation.

Surrogates	CAS#	Limits	%Recovery
1,2-Dichloroethane-d4	17060-07-0	70-130	79
4-Bromofluorobenzene	460-00-4	70-130	113
Toluene-d8	2037-26-5	70-130	99

* % Recovery is calculated using unrounded analytical results.

MODIFIED EPA METHOD TO-15 GC/MS FULL SCAN
Ford

Client ID:	LCSD		
Lab ID:	1811486-12AA	**Date/Time Analyzed:**	11/27/18 10:57 AM
Date/Time Collected:	NA - Not Applicable	**Dilution Factor:**	1.00
Media:	NA - Not Applicable	**Instrument/Filename:**	msd20.i / 20112704

Compound	CAS#	%Recovery
1,1-Dichloroethene	75-35-4	79
1,4-Dioxane	123-91-1	93
cis-1,2-Dichloroethene	156-59-2	78
Tetrachloroethene	127-18-4	110
trans-1,2-Dichloroethene	156-60-5	95
Trichloroethene	79-01-6	106
Vinyl Chloride	75-01-4	78

D: Analyte not within the DoD scope of accreditation.

Surrogates	CAS#	Limits	%Recovery
1,2-Dichloroethane-d4	17060-07-0	70-130	77
4-Bromofluorobenzene	460-00-4	70-130	115
Toluene-d8	2037-26-5	70-130	99

* % Recovery is calculated using unrounded analytical results.

EPA METHOD TO-15 GC/MS FULL SCAN
Ford

Client ID:	LCS		
Lab ID:	1811486-12B	**Date/Time Analyzed:**	11/29/18 12:02 PM
Date/Time Collected:	NA - Not Applicable	**Dilution Factor:**	1.00
Media:	NA - Not Applicable	**Instrument/Filename:**	msd17.i / 17112903

Compound	CAS#	%Recovery
1,1-Dichloroethene	75-35-4	78
1,4-Dioxane	123-91-1	118
cis-1,2-Dichloroethene	156-59-2	92
Tetrachloroethene	127-18-4	100
trans-1,2-Dichloroethene	156-60-5	94
Trichloroethene	79-01-6	115
Vinyl Chloride	75-01-4	78

D: Analyte not within the DoD scope of accreditation.

Surrogates	CAS#	Limits	%Recovery
1,2-Dichloroethane-d4	17060-07-0	70-130	94
4-Bromofluorobenzene	460-00-4	70-130	98
Toluene-d8	2037-26-5	70-130	113

* % Recovery is calculated using unrounded analytical results.

EPA METHOD TO-15 GC/MS FULL SCAN
Ford

Client ID:	LCSD		
Lab ID:	1811486-12BB	**Date/Time Analyzed:**	11/29/18 12:28 PM
Date/Time Collected:	NA - Not Applicable	**Dilution Factor:**	1.00
Media:	NA - Not Applicable	**Instrument/Filename:**	msd17.i / 17112904

Compound	CAS#	%Recovery
1,1-Dichloroethene	75-35-4	78
1,4-Dioxane	123-91-1	117
cis-1,2-Dichloroethene	156-59-2	92
Tetrachloroethene	127-18-4	99
trans-1,2-Dichloroethene	156-60-5	94
Trichloroethene	79-01-6	113
Vinyl Chloride	75-01-4	77

D: Analyte not within the DoD scope of accreditation.

Surrogates	CAS#	Limits	%Recovery
1,2-Dichloroethane-d4	17060-07-0	70-130	94
4-Bromofluorobenzene	460-00-4	70-130	96
Toluene-d8	2037-26-5	70-130	113

* % Recovery is calculated using unrounded analytical results.

November 30, 2018

Kris Hinskey
Arcadis Inc
10559 Citation Ave
Suite 100
Brighton, MI 48116

CADENA project ID: E203631
Project: Ford Livonia Transmission Project - OFF-SITE - Soil Gas and Groundwater
Project number: MI001454.0002/3/4.00002/2B/3B
Client project scope reference: Sample COC only was used to define project analytical requirements.
Laboratory: Eurofins Air Toxics - Folsom
Laboratory submittal: 1811486
Sample date: 2018-11-14
Report received by CADENA: 2018-11-30
Initial Data Verification completed by CADENA: 2018-11-30

9 Air samples were analyzed for TO-15 parameters.

There were no significant QC anomalies or exceptions to report.

Data verification for the report specified above was completed using the Ford Motor Company Environmental Laboratory Technical Specification, the CADENA Standard Operating Procedure for the Verification of Environmental Analytical Data and the associated analytical methods as references for evaluating the batch QC, sample data and report content. The EPA National Functional Guidelines for validating organic and inorganic data were used as guidance when addressing out of control QC results and the associated data qualifiers.

Analytical results reported between RDL and MDL are flagged 'J' and considered estimated values.

The definitions of the qualifiers used for this data package are defined in the analytical report. CADENA valid qualifiers are defined in the table below. To view and download a PDF copy of the laboratory analytical report access the CADENA CLMS at http://clms.cadenaco.com/index.cfm.

Please contact me if you have any questions.

Sincerely,

Jim Tomalia

Project Scientist

CADENA Valid Qualifiers

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