

9/4/2018

Mr. Gustan Taylor  
Arcadis U.S., Inc.  
28550 Cabot Dr.  
Suite 500  
Novi MI 48377

Project Name: FORD LTP  
Project #: MI001454.0004.00003  
Workorder #: 1808628

Dear Mr. Gustan Taylor

The following report includes the data for the above referenced project for sample(s) received on 8/27/2018 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

**WORK ORDER #: 1808628**

Work Order Summary

<b>CLIENT:</b>	Mr. Gustan Taylor Arcadis U.S., Inc. 28550 Cabot Dr. Suite 500 Novi, MI 48377	<b>BILL TO:</b>	Accounts Payable Arcadis U.S., Inc. 630 Plaza Drive Suite 600 Highlands Ranch, CO 80129
<b>PHONE:</b>	248.994.2294	<b>P.O. #</b>	MI001454.0004.0001B
<b>FAX:</b>		<b>PROJECT #</b>	MI001454.0004.00003 FORD LTP
<b>DATE RECEIVED:</b>	08/27/2018	<b>CONTACT:</b>	Ausha Scott
<b>DATE COMPLETED:</b>	09/04/2018		

<u>FRACTION #</u>	<u>NAME</u>	<u>TEST</u>	<u>RECEIPT VAC./PRES.</u>	<u>FINAL PRESSURE</u>
01A	SVMP-26-4(082318)	TO-15	3.9 "Hg	15.4 psi
02A	SVMP-27-4.5(082318)	TO-15	6.3 "Hg	14.4 psi
03A	SVMP-28-3.0(082318)	TO-15	4.7 "Hg	14.6 psi
04A	SVMP-12.3.5(082318)	TO-15	4.7 "Hg	14.7 psi
05A	DUP-02(082318)	TO-15	4.1 "Hg	14.9 psi
06A	Lab Blank	TO-15	NA	NA
06B	Lab Blank	TO-15	NA	NA
07A	CCV	TO-15	NA	NA
07B	CCV	TO-15	NA	NA
08A	LCS	TO-15	NA	NA
08AA	LCSD	TO-15	NA	NA
08B	LCS	TO-15	NA	NA
08BB	LCSD	TO-15	NA	NA

CERTIFIED BY:   
 \_\_\_\_\_  
 Technical Director

DATE: 09/04/18

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

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**LABORATORY NARRATIVE**  
**EPA Method TO-15**  
**Arcadis U.S., Inc.**  
**Workorder# 1808628**

Five 1 Liter Summa Canister samples were received on August 27, 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**

There were no analytical discrepancies.

**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

**Summary of Detected Compounds  
EPA METHOD TO-15 GC/MS FULL SCAN**

**Client Sample ID: SVMP-26-4(082318)**

**Lab ID#: 1808628-01A**

<b>Compound</b>	<b>Rpt. Limit (ppbv)</b>	<b>Amount (ppbv)</b>	<b>Rpt. Limit (ug/m3)</b>	<b>Amount (ug/m3)</b>
cis-1,2-Dichloroethene	1.2	3.4	4.6	14
Trichloroethene	1.2	4.4	6.3	24

**Client Sample ID: SVMP-27-4.5(082318)**

**Lab ID#: 1808628-02A**

No Detections Were Found.

**Client Sample ID: SVMP-28-3.0(082318)**

**Lab ID#: 1808628-03A**

<b>Compound</b>	<b>Rpt. Limit (ppbv)</b>	<b>Amount (ppbv)</b>	<b>Rpt. Limit (ug/m3)</b>	<b>Amount (ug/m3)</b>
Tetrachloroethene	1.2	1.3	8.0	8.9

**Client Sample ID: SVMP-12.3.5(082318)**

**Lab ID#: 1808628-04A**

No Detections Were Found.

**Client Sample ID: DUP-02(082318)**

**Lab ID#: 1808628-05A**

<b>Compound</b>	<b>Rpt. Limit (ppbv)</b>	<b>Amount (ppbv)</b>	<b>Rpt. Limit (ug/m3)</b>	<b>Amount (ug/m3)</b>
Tetrachloroethene	1.2	1.7	7.9	12

Client Sample ID: SVMP-26-4(082318)

Lab ID#: 1808628-01A

EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	3083010	Date of Collection: 8/23/18 10:55:00 AM
Dil. Factor:	2.35	Date of Analysis: 8/30/18 08:28 PM

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Vinyl Chloride	1.2	Not Detected	3.0	Not Detected
1,1-Dichloroethene	1.2	Not Detected	4.6	Not Detected
cis-1,2-Dichloroethene	1.2	3.4	4.6	14
Trichloroethene	1.2	4.4	6.3	24
trans-1,2-Dichloroethene	1.2	Not Detected	4.6	Not Detected
Tetrachloroethene	1.2	Not Detected	8.0	Not Detected
1,4-Dioxane	4.7	Not Detected	17	Not Detected

Container Type: 1 Liter Summa Canister

Surrogates	%Recovery	Method Limits
Toluene-d8	98	70-130
1,2-Dichloroethane-d4	102	70-130
4-Bromofluorobenzene	104	70-130



Air Toxics

Client Sample ID: SVMP-27-4.5(082318)

Lab ID#: 1808628-02A

EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	3082924	Date of Collection:	8/23/18 11:49:00 AM
Dil. Factor:	2.50	Date of Analysis:	8/30/18 01:47 AM

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Vinyl Chloride	1.2	Not Detected	3.2	Not Detected
1,1-Dichloroethene	1.2	Not Detected	5.0	Not Detected
cis-1,2-Dichloroethene	1.2	Not Detected	5.0	Not Detected
Trichloroethene	1.2	Not Detected	6.7	Not Detected
trans-1,2-Dichloroethene	1.2	Not Detected	5.0	Not Detected
Tetrachloroethene	1.2	Not Detected	8.5	Not Detected
1,4-Dioxane	5.0	Not Detected	18	Not Detected

Container Type: 1 Liter Summa Canister

Surrogates	%Recovery	Method Limits
Toluene-d8	101	70-130
1,2-Dichloroethane-d4	97	70-130
4-Bromofluorobenzene	103	70-130



Air Toxics

Client Sample ID: SVMP-28-3.0(082318)

Lab ID#: 1808628-03A

EPA METHOD TO-15 GC/MS FULL SCAN

<b>File Name:</b>	<b>3082925</b>	<b>Date of Collection:</b> 8/23/18 1:27:00 PM
<b>Dil. Factor:</b>	<b>2.36</b>	<b>Date of Analysis:</b> 8/30/18 02:14 AM

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Vinyl Chloride	1.2	Not Detected	3.0	Not Detected
1,1-Dichloroethene	1.2	Not Detected	4.7	Not Detected
cis-1,2-Dichloroethene	1.2	Not Detected	4.7	Not Detected
Trichloroethene	1.2	Not Detected	6.3	Not Detected
trans-1,2-Dichloroethene	1.2	Not Detected	4.7	Not Detected
Tetrachloroethene	1.2	1.3	8.0	8.9
1,4-Dioxane	4.7	Not Detected	17	Not Detected

Container Type: 1 Liter Summa Canister

Surrogates	%Recovery	Method Limits
Toluene-d8	103	70-130
1,2-Dichloroethane-d4	98	70-130
4-Bromofluorobenzene	103	70-130



Air Toxics

Client Sample ID: SVMP-12.3.5(082318)

Lab ID#: 1808628-04A

EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	3082926	Date of Collection:	8/23/18 3:22:00 PM
Dil. Factor:	2.37	Date of Analysis:	8/30/18 02:40 AM

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Vinyl Chloride	1.2	Not Detected	3.0	Not Detected
1,1-Dichloroethene	1.2	Not Detected	4.7	Not Detected
cis-1,2-Dichloroethene	1.2	Not Detected	4.7	Not Detected
Trichloroethene	1.2	Not Detected	6.4	Not Detected
trans-1,2-Dichloroethene	1.2	Not Detected	4.7	Not Detected
Tetrachloroethene	1.2	Not Detected	8.0	Not Detected
1,4-Dioxane	4.7	Not Detected	17	Not Detected

Container Type: 1 Liter Summa Canister

Surrogates	%Recovery	Method Limits
Toluene-d8	104	70-130
1,2-Dichloroethane-d4	98	70-130
4-Bromofluorobenzene	104	70-130





Air Toxics

Client Sample ID: DUP-02(082318)

Lab ID#: 1808628-05A

EPA METHOD TO-15 GC/MS FULL SCAN

<b>File Name:</b>	<b>3083011</b>	<b>Date of Collection:</b> 8/23/18
<b>Dil. Factor:</b>	<b>2.33</b>	<b>Date of Analysis:</b> 8/30/18 08:54 PM

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Vinyl Chloride	1.2	Not Detected	3.0	Not Detected
1,1-Dichloroethene	1.2	Not Detected	4.6	Not Detected
cis-1,2-Dichloroethene	1.2	Not Detected	4.6	Not Detected
Trichloroethene	1.2	Not Detected	6.3	Not Detected
trans-1,2-Dichloroethene	1.2	Not Detected	4.6	Not Detected
Tetrachloroethene	1.2	1.7	7.9	12
1,4-Dioxane	4.7	Not Detected	17	Not Detected

Container Type: 1 Liter Summa Canister

Surrogates	%Recovery	Method Limits
Toluene-d8	99	70-130
1,2-Dichloroethane-d4	102	70-130
4-Bromofluorobenzene	105	70-130

Client Sample ID: Lab Blank

Lab ID#: 1808628-06A

EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	3082906	Date of Collection: NA
Dil. Factor:	1.00	Date of Analysis: 8/29/18 11:44 AM

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Vinyl Chloride	0.50	Not Detected	1.3	Not Detected
1,1-Dichloroethene	0.50	Not Detected	2.0	Not Detected
cis-1,2-Dichloroethene	0.50	Not Detected	2.0	Not Detected
Trichloroethene	0.50	Not Detected	2.7	Not Detected
trans-1,2-Dichloroethene	0.50	Not Detected	2.0	Not Detected
Tetrachloroethene	0.50	Not Detected	3.4	Not Detected
1,4-Dioxane	2.0	Not Detected	7.2	Not Detected

Container Type: NA - Not Applicable

Surrogates	%Recovery	Method Limits
Toluene-d8	104	70-130
1,2-Dichloroethane-d4	106	70-130
4-Bromofluorobenzene	97	70-130

Client Sample ID: Lab Blank

Lab ID#: 1808628-06B

EPA METHOD TO-15 GC/MS FULL SCAN

<b>File Name:</b>	<b>3083008</b>	<b>Date of Collection: NA</b>
<b>Dil. Factor:</b>	<b>1.00</b>	<b>Date of Analysis: 8/30/18 05:43 PM</b>

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Vinyl Chloride	0.50	Not Detected	1.3	Not Detected
1,1-Dichloroethene	0.50	Not Detected	2.0	Not Detected
cis-1,2-Dichloroethene	0.50	Not Detected	2.0	Not Detected
Trichloroethene	0.50	Not Detected	2.7	Not Detected
trans-1,2-Dichloroethene	0.50	Not Detected	2.0	Not Detected
Tetrachloroethene	0.50	Not Detected	3.4	Not Detected
1,4-Dioxane	2.0	Not Detected	7.2	Not Detected

Container Type: NA - Not Applicable

Surrogates	%Recovery	Method Limits
Toluene-d8	103	70-130
1,2-Dichloroethane-d4	95	70-130
4-Bromofluorobenzene	99	70-130

Client Sample ID: CCV

Lab ID#: 1808628-07A

EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	3082902	Date of Collection: NA
Dil. Factor:	1.00	Date of Analysis: 8/29/18 09:50 AM

Compound	%Recovery
Vinyl Chloride	98
1,1-Dichloroethene	98
cis-1,2-Dichloroethene	103
Trichloroethene	104
trans-1,2-Dichloroethene	102
Tetrachloroethene	101
1,4-Dioxane	100

Container Type: NA - Not Applicable

Surrogates	%Recovery	Method Limits
Toluene-d8	100	70-130
1,2-Dichloroethane-d4	103	70-130
4-Bromofluorobenzene	103	70-130

Client Sample ID: CCV

Lab ID#: 1808628-07B

EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	3083002	Date of Collection: NA
Dil. Factor:	1.00	Date of Analysis: 8/30/18 12:27 PM

Compound	%Recovery
Vinyl Chloride	102
1,1-Dichloroethene	100
cis-1,2-Dichloroethene	103
Trichloroethene	104
trans-1,2-Dichloroethene	103
Tetrachloroethene	99
1,4-Dioxane	103

Container Type: NA - Not Applicable

Surrogates	%Recovery	Method Limits
Toluene-d8	101	70-130
1,2-Dichloroethane-d4	98	70-130
4-Bromofluorobenzene	101	70-130

Client Sample ID: LCS

Lab ID#: 1808628-08A

EPA METHOD TO-15 GC/MS FULL SCAN

<b>File Name:</b>	<b>3082903</b>	<b>Date of Collection: NA</b>
<b>Dil. Factor:</b>	<b>1.00</b>	<b>Date of Analysis: 8/29/18 10:15 AM</b>

<b>Compound</b>	<b>%Recovery</b>	<b>Method Limits</b>
Vinyl Chloride	99	70-130
1,1-Dichloroethene	93	70-130
cis-1,2-Dichloroethene	90	70-130
Trichloroethene	101	70-130
trans-1,2-Dichloroethene	105	70-130
Tetrachloroethene	97	70-130
1,4-Dioxane	99	70-130

Container Type: NA - Not Applicable

<b>Surrogates</b>	<b>%Recovery</b>	<b>Method Limits</b>
Toluene-d8	101	70-130
1,2-Dichloroethane-d4	104	70-130
4-Bromofluorobenzene	102	70-130

Client Sample ID: LCSD

Lab ID#: 1808628-08AA

EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	3082904	Date of Collection: NA
Dil. Factor:	1.00	Date of Analysis: 8/29/18 10:40 AM

Compound	%Recovery	Method Limits
Vinyl Chloride	98	70-130
1,1-Dichloroethene	95	70-130
cis-1,2-Dichloroethene	87	70-130
Trichloroethene	104	70-130
trans-1,2-Dichloroethene	108	70-130
Tetrachloroethene	98	70-130
1,4-Dioxane	102	70-130

Container Type: NA - Not Applicable

Surrogates	%Recovery	Method Limits
Toluene-d8	102	70-130
1,2-Dichloroethane-d4	99	70-130
4-Bromofluorobenzene	102	70-130

Client Sample ID: LCS

Lab ID#: 1808628-08B

EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	3083003	Date of Collection: NA
Dil. Factor:	1.00	Date of Analysis: 8/30/18 12:52 PM

Compound	%Recovery	Method Limits
Vinyl Chloride	98	70-130
1,1-Dichloroethene	97	70-130
cis-1,2-Dichloroethene	92	70-130
Trichloroethene	105	70-130
trans-1,2-Dichloroethene	111	70-130
Tetrachloroethene	99	70-130
1,4-Dioxane	102	70-130

Container Type: NA - Not Applicable

Surrogates	%Recovery	Method Limits
Toluene-d8	102	70-130
1,2-Dichloroethane-d4	102	70-130
4-Bromofluorobenzene	102	70-130



Client Sample ID: LCSD

Lab ID#: 1808628-08BB

EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	3083004	Date of Collection: NA
Dil. Factor:	1.00	Date of Analysis: 8/30/18 01:17 PM

Compound	%Recovery	Method Limits
Vinyl Chloride	101	70-130
1,1-Dichloroethene	98	70-130
cis-1,2-Dichloroethene	94	70-130
Trichloroethene	101	70-130
trans-1,2-Dichloroethene	114	70-130
Tetrachloroethene	98	70-130
1,4-Dioxane	100	70-130

Container Type: NA - Not Applicable

Surrogates	%Recovery	Method Limits
Toluene-d8	99	70-130
1,2-Dichloroethane-d4	97	70-130
4-Bromofluorobenzene	102	70-130