

9/1/2018

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

Project Name: FORD LTP  
Project #: MI001454.0004.00003  
Workorder #: 1808627

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 #: 1808627**

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>	09/01/2018		

<u>FRACTION #</u>	<u>NAME</u>	<u>TEST</u>	<u>RECEIPT VAC./PRES.</u>	<u>FINAL PRESSURE</u>
01A	SVMP-01D-7(082218)	TO-15	4.3 "Hg	15.3 psi
02A	SVMP-01S-3.5(082218)	TO-15	5.5 "Hg	14.6 psi
03A	SVMP-02S-4.5(082218)	TO-15	5.9 "Hg	15.1 psi
04A	SVMP-02D-8.5(082218)	TO-15	5.1 "Hg	15.4 psi
05A	SVMP-03S-3.5(082218)	TO-15	3.9 "Hg	14.8 psi
06A	SVMP-03D-7(082218)	TO-15	4.1 "Hg	14.6 psi
07A	SVMP-25S-3(082318)	TO-15	5.9 "Hg	14.9 psi
08A	SVMP-25D-6(082318)	TO-15	4.5 "Hg	15.1 psi
09A	Lab Blank	TO-15	NA	NA
10A	CCV	TO-15	NA	NA
11A	LCS	TO-15	NA	NA
11AA	LCSD	TO-15	NA	NA

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

DATE: 09/01/18

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# 1808627**

Eight 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**

The Chain of Custody (COC) was not relinquished properly. A signature, date and time were not provided by the field sampler.

**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-01D-7(082218)**

**Lab ID#: 1808627-01A**

No Detections Were Found.

**Client Sample ID: SVMP-01S-3.5(082218)**

**Lab ID#: 1808627-02A**

No Detections Were Found.

**Client Sample ID: SVMP-02S-4.5(082218)**

**Lab ID#: 1808627-03A**

No Detections Were Found.

**Client Sample ID: SVMP-02D-8.5(082218)**

**Lab ID#: 1808627-04A**

No Detections Were Found.

**Client Sample ID: SVMP-03S-3.5(082218)**

**Lab ID#: 1808627-05A**

No Detections Were Found.

**Client Sample ID: SVMP-03D-7(082218)**

**Lab ID#: 1808627-06A**

No Detections Were Found.

**Client Sample ID: SVMP-25S-3(082318)**

**Lab ID#: 1808627-07A**

No Detections Were Found.

**Client Sample ID: SVMP-25D-6(082318)**

**Lab ID#: 1808627-08A**

No Detections Were Found.



Air Toxics

Client Sample ID: SVMP-01D-7(082218)

Lab ID#: 1808627-01A

EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	a082920	Date of Collection:	8/22/18 2:19:00 PM
Dil. Factor:	2.38	Date of Analysis:	8/29/18 11:58 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	4.7	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	8.1	Not Detected
1,4-Dioxane	4.8	Not Detected	17	Not Detected

Container Type: 1 Liter Summa Canister

Surrogates	%Recovery	Method Limits
Toluene-d8	102	70-130
1,2-Dichloroethane-d4	98	70-130
4-Bromofluorobenzene	103	70-130



Air Toxics

Client Sample ID: SVMP-01S-3.5(082218)

Lab ID#: 1808627-02A

EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	a082921	Date of Collection:	8/22/18 3:04:00 PM
Dil. Factor:	2.44	Date of Analysis:	8/30/18 12:24 AM

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Vinyl Chloride	1.2	Not Detected	3.1	Not Detected
1,1-Dichloroethene	1.2	Not Detected	4.8	Not Detected
cis-1,2-Dichloroethene	1.2	Not Detected	4.8	Not Detected
Trichloroethene	1.2	Not Detected	6.6	Not Detected
trans-1,2-Dichloroethene	1.2	Not Detected	4.8	Not Detected
Tetrachloroethene	1.2	Not Detected	8.3	Not Detected
1,4-Dioxane	4.9	Not Detected	18	Not Detected

Container Type: 1 Liter Summa Canister

Surrogates	%Recovery	Method Limits
Toluene-d8	99	70-130
1,2-Dichloroethane-d4	100	70-130
4-Bromofluorobenzene	103	70-130



Air Toxics

Client Sample ID: SVMP-02S-4.5(082218)

Lab ID#: 1808627-03A

EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	a082922	Date of Collection:	8/22/18 3:47:00 PM
Dil. Factor:	2.52	Date of Analysis:	8/30/18 12:50 AM

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Vinyl Chloride	1.3	Not Detected	3.2	Not Detected
1,1-Dichloroethene	1.3	Not Detected	5.0	Not Detected
cis-1,2-Dichloroethene	1.3	Not Detected	5.0	Not Detected
Trichloroethene	1.3	Not Detected	6.8	Not Detected
trans-1,2-Dichloroethene	1.3	Not Detected	5.0	Not Detected
Tetrachloroethene	1.3	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	99	70-130
1,2-Dichloroethane-d4	101	70-130
4-Bromofluorobenzene	103	70-130



Air Toxics

Client Sample ID: SVMP-02D-8.5(082218)

Lab ID#: 1808627-04A

EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	a082923	Date of Collection:	8/22/18 3:52:00 PM
Dil. Factor:	2.47	Date of Analysis:	8/30/18 01:16 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	4.9	Not Detected
cis-1,2-Dichloroethene	1.2	Not Detected	4.9	Not Detected
Trichloroethene	1.2	Not Detected	6.6	Not Detected
trans-1,2-Dichloroethene	1.2	Not Detected	4.9	Not Detected
Tetrachloroethene	1.2	Not Detected	8.4	Not Detected
1,4-Dioxane	4.9	Not Detected	18	Not Detected

Container Type: 1 Liter Summa Canister

Surrogates	%Recovery	Method Limits
Toluene-d8	100	70-130
1,2-Dichloroethane-d4	98	70-130
4-Bromofluorobenzene	102	70-130





Air Toxics

Client Sample ID: SVMP-03S-3.5(082218)

Lab ID#: 1808627-05A

EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	a082924	Date of Collection:	8/22/18 4:44:00 PM
Dil. Factor:	2.31	Date of Analysis:	8/30/18 01:43 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	4.6	Not Detected
cis-1,2-Dichloroethene	1.2	Not Detected	4.6	Not Detected
Trichloroethene	1.2	Not Detected	6.2	Not Detected
trans-1,2-Dichloroethene	1.2	Not Detected	4.6	Not Detected
Tetrachloroethene	1.2	Not Detected	7.8	Not Detected
1,4-Dioxane	4.6	Not Detected	17	Not Detected

Container Type: 1 Liter Summa Canister

Surrogates	%Recovery	Method Limits
Toluene-d8	99	70-130
1,2-Dichloroethane-d4	98	70-130
4-Bromofluorobenzene	102	70-130



Air Toxics

Client Sample ID: SVMP-03D-7(082218)

Lab ID#: 1808627-06A

EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	a082925	Date of Collection:	8/22/18 4:46:00 PM
Dil. Factor:	2.31	Date of Analysis:	8/30/18 02:09 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	4.6	Not Detected
cis-1,2-Dichloroethene	1.2	Not Detected	4.6	Not Detected
Trichloroethene	1.2	Not Detected	6.2	Not Detected
trans-1,2-Dichloroethene	1.2	Not Detected	4.6	Not Detected
Tetrachloroethene	1.2	Not Detected	7.8	Not Detected
1,4-Dioxane	4.6	Not Detected	17	Not Detected

Container Type: 1 Liter Summa Canister

Surrogates	%Recovery	Method Limits
Toluene-d8	100	70-130
1,2-Dichloroethane-d4	102	70-130
4-Bromofluorobenzene	103	70-130



Air Toxics

Client Sample ID: SVMP-25S-3(082318)

Lab ID#: 1808627-07A

EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	a082927	Date of Collection:	8/23/18 9:02:00 AM
Dil. Factor:	2.51	Date of Analysis:	8/30/18 03:02 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	97	70-130
1,2-Dichloroethane-d4	96	70-130
4-Bromofluorobenzene	101	70-130



Air Toxics

Client Sample ID: SVMP-25D-6(082318)

Lab ID#: 1808627-08A

EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	a082926	Date of Collection:	8/23/18 9:11:00 AM
Dil. Factor:	2.38	Date of Analysis:	8/30/18 02:36 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	8.1	Not Detected
1,4-Dioxane	4.8	Not Detected	17	Not Detected

Container Type: 1 Liter Summa Canister

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



Air Toxics

Client Sample ID: Lab Blank

Lab ID#: 1808627-09A

EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	a082905	Date of Collection:	NA
Dil. Factor:	1.00	Date of Analysis:	8/29/18 12:03 PM

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	99	70-130
1,2-Dichloroethane-d4	96	70-130
4-Bromofluorobenzene	105	70-130

Client Sample ID: CCV

Lab ID#: 1808627-10A

EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	a082902	Date of Collection: NA
Dil. Factor:	1.00	Date of Analysis: 8/29/18 09:50 AM

Compound	%Recovery
Vinyl Chloride	112
1,1-Dichloroethene	111
cis-1,2-Dichloroethene	111
Trichloroethene	107
trans-1,2-Dichloroethene	113
Tetrachloroethene	103
1,4-Dioxane	100

Container Type: NA - Not Applicable

Surrogates	%Recovery	Method Limits
Toluene-d8	102	70-130
1,2-Dichloroethane-d4	99	70-130
4-Bromofluorobenzene	106	70-130

Client Sample ID: LCS

Lab ID#: 1808627-11A

EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	a082903	Date of Collection: NA
Dil. Factor:	1.00	Date of Analysis: 8/29/18 10:43 AM

Compound	%Recovery	Method Limits
Vinyl Chloride	111	70-130
1,1-Dichloroethene	105	70-130
cis-1,2-Dichloroethene	100	70-130
Trichloroethene	107	70-130
trans-1,2-Dichloroethene	119	70-130
Tetrachloroethene	100	70-130
1,4-Dioxane	93	70-130

Container Type: NA - Not Applicable

Surrogates	%Recovery	Method Limits
Toluene-d8	100	70-130
1,2-Dichloroethane-d4	97	70-130
4-Bromofluorobenzene	105	70-130

Client Sample ID: LCSD

Lab ID#: 1808627-11AA

EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	a082904	Date of Collection: NA
Dil. Factor:	1.00	Date of Analysis: 8/29/18 11:10 AM

Compound	%Recovery	Method Limits
Vinyl Chloride	110	70-130
1,1-Dichloroethene	107	70-130
cis-1,2-Dichloroethene	100	70-130
Trichloroethene	107	70-130
trans-1,2-Dichloroethene	117	70-130
Tetrachloroethene	101	70-130
1,4-Dioxane	100	70-130

Container Type: NA - Not Applicable

Surrogates	%Recovery	Method Limits
Toluene-d8	101	70-130
1,2-Dichloroethane-d4	98	70-130
4-Bromofluorobenzene	106	70-130