

12/2/2017

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

Project Name: FORD LTP
Project #: MI001386.0001.00002
Workorder #: 1711414

Dear Mr. Gustan Taylor

The following report includes the data for the above referenced project for sample(s) received on 11/22/2017 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 #: 1711414

Work Order Summary

CLIENT:	Mr. Gustan Taylor 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:	248.994.2294	P.O. #	MI001386.0001_AT_WA08
FAX:		PROJECT #	MI001386.0001.00002 FORD LTP
DATE RECEIVED:	11/22/2017	CONTACT:	Ausha Scott
DATE COMPLETED:	12/02/2017		

<u>FRACTION #</u>	<u>NAME</u>	<u>TEST</u>	<u>RECEIPT VAC./PRES.</u>	<u>FINAL PRESSURE</u>
01A	SVMP-25S-3(112117)	TO-15	3.5 "Hg	14.9 psi
02A	SVMP-25D-6(112117)	TO-15	4.7 "Hg	14.9 psi
03A	SVMP-14-2(112117)	TO-15	0.8 "Hg	15.1 psi
04A	SVMP-13-2(112117)	TO-15	3.7 "Hg	15 psi
05A	SVMP-12-3.5(112117)	TO-15	4.1 "Hg	15.3 psi
06A	SVMP-10-3(112117)	TO-15	2.6 "Hg	14.8 psi
07A	SVMP-26-4(112117)	TO-15	2.8 "Hg	15.2 psi
08A	SVMP-27-4.5(112117)	TO-15	2.4 "Hg	15 psi
09A	SVMP-28-3(112117)	TO-15	4.1 "Hg	15 psi
10A	SVMP-15-2(112017)	TO-15	2.8 "Hg	15.1 psi
11A	Lab Blank	TO-15	NA	NA
12A	CCV	TO-15	NA	NA
13A	LCS	TO-15	NA	NA
13AA	LCSD	TO-15	NA	NA

CERTIFIED BY: 

 Technical Director

DATE: 12/02/17

Certification numbers: AZ Licensure AZ0775, NJ NELAP - CA016, NY NELAP - 11291,
 TX NELAP - T104704434-16-11, UT NELAP CA0093332016-7, VA NELAP - 8113, WA NELAP - C935
 Name of Accreditation Body: NELAP/ORELAP (Oregon Environmental Laboratory Accreditation Program)
 Accreditation number: CA300005, Effective date: 10/18/2016, Expiration date: 10/17/2017.

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# 1711414

Nine 1 Liter Summa Canister samples were received on November 22, 2017. 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) information for samples SVMP-25S-3(112117) and SVMP-25D-6(112117) did not match the entries on the sample tags with regard to sample identification. Therefore the information on the COC was used to process and report the samples.

The number of samples received did not match the information on the Chain of Custody (COC). Sample SVMP-15-2(112017) was added to the analytical request.

Sample identification for sample SVMP-28-3(112117) was not provided on the sample tag. Therefore the information on the Chain of Custody was used to process and report the sample.

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-25S-3(112117)

Lab ID#: 1711414-01A

No Detections Were Found.

Client Sample ID: SVMP-25D-6(112117)

Lab ID#: 1711414-02A

No Detections Were Found.

Client Sample ID: SVMP-14-2(112117)

Lab ID#: 1711414-03A

No Detections Were Found.

Client Sample ID: SVMP-13-2(112117)

Lab ID#: 1711414-04A

No Detections Were Found.

Client Sample ID: SVMP-12-3.5(112117)

Lab ID#: 1711414-05A

No Detections Were Found.

Client Sample ID: SVMP-10-3(112117)

Lab ID#: 1711414-06A

No Detections Were Found.

Client Sample ID: SVMP-26-4(112117)

Lab ID#: 1711414-07A

No Detections Were Found.

Client Sample ID: SVMP-27-4.5(112117)

Lab ID#: 1711414-08A

No Detections Were Found.

Client Sample ID: SVMP-28-3(112117)

Lab ID#: 1711414-09A

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

Client Sample ID: SVMP-28-3(112117)

Lab ID#: 1711414-09A

No Detections Were Found.

Client Sample ID: SVMP-15-2(112017)

Lab ID#: 1711414-10A

No Detections Were Found.



Air Toxics

Client Sample ID: SVMP-25S-3(112117)

Lab ID#: 1711414-01A

EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	3112810	Date of Collection:	11/21/17 8:55:00 AM
Dil. Factor:	2.28	Date of Analysis:	11/28/17 03:42 PM

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Vinyl Chloride	1.1	Not Detected	2.9	Not Detected
1,1-Dichloroethene	1.1	Not Detected	4.5	Not Detected
cis-1,2-Dichloroethene	1.1	Not Detected	4.5	Not Detected
Trichloroethene	1.1	Not Detected	6.1	Not Detected
trans-1,2-Dichloroethene	1.1	Not Detected	4.5	Not Detected
Tetrachloroethene	1.1	Not Detected	7.7	Not Detected
1,4-Dioxane	4.6	Not Detected	16	Not Detected

Container Type: 1 Liter Summa Canister

Surrogates	%Recovery	Method Limits
Toluene-d8	90	70-130
1,2-Dichloroethane-d4	87	70-130
4-Bromofluorobenzene	101	70-130



Air Toxics

Client Sample ID: SVMP-25D-6(112117)

Lab ID#: 1711414-02A

EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	3112811	Date of Collection:	11/21/17 9:50:00 AM
Dil. Factor:	2.39	Date of Analysis:	11/28/17 04:08 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	94	70-130
1,2-Dichloroethane-d4	91	70-130
4-Bromofluorobenzene	101	70-130



Air Toxics

Client Sample ID: SVMP-14-2(112117)

Lab ID#: 1711414-03A

EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	3112812	Date of Collection:	11/21/17 9:02:00 AM
Dil. Factor:	2.08	Date of Analysis:	11/28/17 04:34 PM

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Vinyl Chloride	1.0	Not Detected	2.6	Not Detected
1,1-Dichloroethene	1.0	Not Detected	4.1	Not Detected
cis-1,2-Dichloroethene	1.0	Not Detected	4.1	Not Detected
Trichloroethene	1.0	Not Detected	5.6	Not Detected
trans-1,2-Dichloroethene	1.0	Not Detected	4.1	Not Detected
Tetrachloroethene	1.0	Not Detected	7.0	Not Detected
1,4-Dioxane	4.2	Not Detected	15	Not Detected

Container Type: 1 Liter Summa Canister

Surrogates	%Recovery	Method Limits
Toluene-d8	94	70-130
1,2-Dichloroethane-d4	89	70-130
4-Bromofluorobenzene	108	70-130



Air Toxics

Client Sample ID: SVMP-13-2(112117)

Lab ID#: 1711414-04A

EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	3112813	Date of Collection:	11/21/17 10:30:00 A
Dil. Factor:	2.30	Date of Analysis:	11/28/17 05:00 PM

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Vinyl Chloride	1.2	Not Detected	2.9	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	16	Not Detected

Container Type: 1 Liter Summa Canister

Surrogates	%Recovery	Method Limits
Toluene-d8	104	70-130
1,2-Dichloroethane-d4	88	70-130
4-Bromofluorobenzene	99	70-130



Air Toxics

Client Sample ID: SVMP-12-3.5(112117)

Lab ID#: 1711414-05A

EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	3112814	Date of Collection:	11/21/17 1:34:00 PM
Dil. Factor:	2.36	Date of Analysis:	11/28/17 05:27 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	6.3	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	85	70-130
4-Bromofluorobenzene	96	70-130



Air Toxics

Client Sample ID: SVMP-10-3(112117)

Lab ID#: 1711414-06A

EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	3112815	Date of Collection:	11/21/17 11:45:00 A
Dil. Factor:	2.20	Date of Analysis:	11/28/17 05:53 PM

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Vinyl Chloride	1.1	Not Detected	2.8	Not Detected
1,1-Dichloroethene	1.1	Not Detected	4.4	Not Detected
cis-1,2-Dichloroethene	1.1	Not Detected	4.4	Not Detected
Trichloroethene	1.1	Not Detected	5.9	Not Detected
trans-1,2-Dichloroethene	1.1	Not Detected	4.4	Not Detected
Tetrachloroethene	1.1	Not Detected	7.5	Not Detected
1,4-Dioxane	4.4	Not Detected	16	Not Detected

Container Type: 1 Liter Summa Canister

Surrogates	%Recovery	Method Limits
Toluene-d8	105	70-130
1,2-Dichloroethane-d4	87	70-130
4-Bromofluorobenzene	100	70-130



Air Toxics

Client Sample ID: SVMP-26-4(112117)

Lab ID#: 1711414-07A

EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	3112816	Date of Collection:	11/21/17 11:40:00 A
Dil. Factor:	2.24	Date of Analysis:	11/28/17 06:19 PM

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Vinyl Chloride	1.1	Not Detected	2.9	Not Detected
1,1-Dichloroethene	1.1	Not Detected	4.4	Not Detected
cis-1,2-Dichloroethene	1.1	Not Detected	4.4	Not Detected
Trichloroethene	1.1	Not Detected	6.0	Not Detected
trans-1,2-Dichloroethene	1.1	Not Detected	4.4	Not Detected
Tetrachloroethene	1.1	Not Detected	7.6	Not Detected
1,4-Dioxane	4.5	Not Detected	16	Not Detected

Container Type: 1 Liter Summa Canister

Surrogates	%Recovery	Method Limits
Toluene-d8	103	70-130
1,2-Dichloroethane-d4	85	70-130
4-Bromofluorobenzene	100	70-130



Air Toxics

Client Sample ID: SVMP-27-4.5(112117)

Lab ID#: 1711414-08A

EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	3112817	Date of Collection:	11/21/17 1:00:00 PM
Dil. Factor:	2.20	Date of Analysis:	11/28/17 06:45 PM

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Vinyl Chloride	1.1	Not Detected	2.8	Not Detected
1,1-Dichloroethene	1.1	Not Detected	4.4	Not Detected
cis-1,2-Dichloroethene	1.1	Not Detected	4.4	Not Detected
Trichloroethene	1.1	Not Detected	5.9	Not Detected
trans-1,2-Dichloroethene	1.1	Not Detected	4.4	Not Detected
Tetrachloroethene	1.1	Not Detected	7.5	Not Detected
1,4-Dioxane	4.4	Not Detected	16	Not Detected

Container Type: 1 Liter Summa Canister

Surrogates	%Recovery	Method Limits
Toluene-d8	101	70-130
1,2-Dichloroethane-d4	85	70-130
4-Bromofluorobenzene	94	70-130



Air Toxics

Client Sample ID: SVMP-28-3(112117)

Lab ID#: 1711414-09A

EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	3112818	Date of Collection:	11/21/17 2:55:00 PM
Dil. Factor:	2.34	Date of Analysis:	11/28/17 07:12 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	Not Detected	7.9	Not Detected
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	86	70-130
4-Bromofluorobenzene	95	70-130



Air Toxics

Client Sample ID: SVMP-15-2(112017)

Lab ID#: 1711414-10A

EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	3112819	Date of Collection:	11/20/17 3:11:00 PM
Dil. Factor:	2.24	Date of Analysis:	11/28/17 09:37 PM

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Vinyl Chloride	1.1	Not Detected	2.9	Not Detected
1,1-Dichloroethene	1.1	Not Detected	4.4	Not Detected
cis-1,2-Dichloroethene	1.1	Not Detected	4.4	Not Detected
Trichloroethene	1.1	Not Detected	6.0	Not Detected
trans-1,2-Dichloroethene	1.1	Not Detected	4.4	Not Detected
Tetrachloroethene	1.1	Not Detected	7.6	Not Detected
1,4-Dioxane	4.5	Not Detected	16	Not Detected

Container Type: 1 Liter Summa Canister

Surrogates	%Recovery	Method Limits
Toluene-d8	93	70-130
1,2-Dichloroethane-d4	89	70-130
4-Bromofluorobenzene	99	70-130



Air Toxics

Client Sample ID: Lab Blank

Lab ID#: 1711414-11A

EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	3112809	Date of Collection:	NA
Dil. Factor:	1.00	Date of Analysis:	11/28/17 02:51 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	100	70-130
1,2-Dichloroethane-d4	88	70-130
4-Bromofluorobenzene	103	70-130



Air Toxics

Client Sample ID: CCV

Lab ID#: 1711414-12A

EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	3112802	Date of Collection: NA
Dil. Factor:	1.00	Date of Analysis: 11/28/17 10:42 AM

Compound	%Recovery
Vinyl Chloride	80
1,1-Dichloroethene	79
cis-1,2-Dichloroethene	81
Trichloroethene	99
trans-1,2-Dichloroethene	97
Tetrachloroethene	102
1,4-Dioxane	96

Container Type: NA - Not Applicable

Surrogates	%Recovery	Method Limits
Toluene-d8	110	70-130
1,2-Dichloroethane-d4	84	70-130
4-Bromofluorobenzene	99	70-130



Air Toxics

Client Sample ID: LCS

Lab ID#: 1711414-13A

EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	3112803	Date of Collection: NA
Dil. Factor:	1.00	Date of Analysis: 11/28/17 11:05 AM

Compound	%Recovery	Method Limits
Vinyl Chloride	84	70-130
1,1-Dichloroethene	81	70-130
cis-1,2-Dichloroethene	91	70-130
Trichloroethene	99	70-130
trans-1,2-Dichloroethene	84	70-130
Tetrachloroethene	100	70-130
1,4-Dioxane	95	70-130

Container Type: NA - Not Applicable

Surrogates	%Recovery	Method Limits
Toluene-d8	103	70-130
1,2-Dichloroethane-d4	80	70-130
4-Bromofluorobenzene	104	70-130



Air Toxics

Client Sample ID: LCSD

Lab ID#: 1711414-13AA

EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	3112804	Date of Collection: NA
Dil. Factor:	1.00	Date of Analysis: 11/28/17 11:28 AM

Compound	%Recovery	Method Limits
Vinyl Chloride	83	70-130
1,1-Dichloroethene	82	70-130
cis-1,2-Dichloroethene	89	70-130
Trichloroethene	100	70-130
trans-1,2-Dichloroethene	86	70-130
Tetrachloroethene	103	70-130
1,4-Dioxane	96	70-130

Container Type: NA - Not Applicable

Surrogates	%Recovery	Method Limits
Toluene-d8	103	70-130
1,2-Dichloroethane-d4	82	70-130
4-Bromofluorobenzene	106	70-130