

6/4/2021

Ms. Michelle Myers  
GeoSyntec Consultants  
3043 Gold Canal Drive, Suite 100

Rancho Cordova CA 95670

Project Name: Cascade SVE

Project #:

Workorder #: 2105457

Dear Ms. Michelle Myers

The following report includes the data for the above referenced project for sample(s) received on 5/21/2021 at Eurofins Air Toxics LLC.

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 LLC. 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: Monica Tran at 916-985-1000 if you have any questions regarding the data in this report.

Regards,



Monica Tran  
Project Manager

**WORK ORDER #: 2105457**

Work Order Summary

<b>CLIENT:</b>	Ms. Michelle Myers GeoSyntec Consultants 3043 Gold Canal Drive, Suite 100 Rancho Cordova, CA 95670	<b>BILL TO:</b>	Accounts Payable Cascade Corporation 2201 NE 201st Avenue Fairview, OR 97024
<b>PHONE:</b>	916-637-8338	<b>P.O. #</b>	
<b>FAX:</b>		<b>PROJECT #</b>	Cascade SVE
<b>DATE RECEIVED:</b>	05/21/2021	<b>CONTACT:</b>	Monica Tran
<b>DATE COMPLETED:</b>	06/04/2021		

<u>FRACTION #</u>	<u>NAME</u>	<u>TEST</u>	<u>RECEIPT VAC./PRES.</u>	<u>FINAL PRESSURE</u>
01A	VMWI-052021	Modified TO-15	5.0 "Hg	10 psi
02A	VMWJ2-052021	Modified TO-15	4.0 "Hg	10 psi
03A	VMWK-052021	Modified TO-15	3.5 "Hg	10 psi
04A	VMWL-052021	Modified TO-15	3.5 "Hg	10 psi
05A	VMWM-052021	Modified TO-15	4.0 "Hg	10 psi
06A	VMWN-052021	Modified TO-15	4.5 "Hg	10 psi
07A	Lab Blank	Modified TO-15	NA	NA
07B	Lab Blank	Modified TO-15	NA	NA
08A	CCV	Modified TO-15	NA	NA
08B	CCV	Modified TO-15	NA	NA
09A	LCS	Modified TO-15	NA	NA
09AA	LCSD	Modified TO-15	NA	NA
09B	LCS	Modified TO-15	NA	NA
09BB	LCSD	Modified TO-15	NA	NA

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

DATE: 06/04/21

Certification numbers: AZ Licensure AZ0775, FL NELAP – E87680, LA NELAP – 02089, NH NELAP - 209220, NJ NELAP - CA016, NY NELAP - 11291, TX NELAP - T104704434-20-16, UT NELAP – CA009332020-12, VA NELAP - 10615, WA NELAP - C935

Name of Accreditation Body: NELAP/ORELAP (Oregon Environmental Laboratory Accreditation Program)

Accreditation number: CA300005-014, Effective date: 10/18/2020, Expiration date: 10/17/2021.

Eurofins Air Toxics, LLC certifies that the test results contained in this report meet all requirements of the NELAC standards

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**LABORATORY NARRATIVE**  
**Modified TO-15**  
**GeoSyntec Consultants**  
**Workorder# 2105457**

Six 1 Liter Summa Canister (100% Certified) samples were received on May 21, 2021. The laboratory performed analysis via modified EPA Method TO-15 using GC/MS in the full scan mode.

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

<i>Requirement</i>	<i>TO-15</i>	<i>ATL Modifications</i>
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**

There were no receiving discrepancies.

**Analytical Notes**

Dilution was performed on samples VMWJ2-052021 and VMWK-052021 due to the presence of high level 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

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

**Client Sample ID: VMWI-052021**

**Lab ID#: 2105457-01A**

No Detections Were Found.

**Client Sample ID: VMWJ2-052021**

**Lab ID#: 2105457-02A**

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
cis-1,2-Dichloroethene	1.9	14	7.7	54
Trichloroethene	1.9	320	10	1800
Tetrachloroethene	1.9	22	13	140

**Client Sample ID: VMWK-052021**

**Lab ID#: 2105457-03A**

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
cis-1,2-Dichloroethene	4.8	87	19	340
Trichloroethene	4.8	1200	26	6600
Tetrachloroethene	4.8	53	32	360

**Client Sample ID: VMWL-052021**

**Lab ID#: 2105457-04A**

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Trichloroethene	0.19	0.54	1.0	2.9

**Client Sample ID: VMWM-052021**

**Lab ID#: 2105457-05A**

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
cis-1,2-Dichloroethene	0.19	1.9	0.77	7.4
Trichloroethene	0.19	17	1.0	93
Tetrachloroethene	0.19	1.2	1.3	8.0

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

**Client Sample ID: VMWN-052021**

**Lab ID#: 2105457-06A**

<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	0.20	3.7	0.78	15
Trichloroethene	0.20	35	1.1	190
Tetrachloroethene	0.20	2.0	1.3	14



Air Toxics

Client Sample ID: VMWI-052021

Lab ID#: 2105457-01A

MODIFIED EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	20052718	Date of Collection:	5/20/21 10:30:00 AM
Dil. Factor:	2.02	Date of Analysis:	5/27/21 11:28 PM

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Vinyl Chloride	0.20	Not Detected	0.52	Not Detected
1,1-Dichloroethene	0.20	Not Detected	0.80	Not Detected
cis-1,2-Dichloroethene	0.20	Not Detected	0.80	Not Detected
Trichloroethene	0.20	Not Detected	1.1	Not Detected
Tetrachloroethene	0.20	Not Detected	1.4	Not Detected

Container Type: 1 Liter Summa Canister (100% Certified)

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	106	70-130
Toluene-d8	98	70-130
4-Bromofluorobenzene	99	70-130

Client Sample ID: VMWJ2-052021

Lab ID#: 2105457-02A

MODIFIED EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	20052719	Date of Collection:	5/20/21 11:10:00 AM
Dil. Factor:	19.4	Date of Analysis:	5/28/21 12:09 AM

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Vinyl Chloride	1.9	Not Detected	5.0	Not Detected
1,1-Dichloroethene	1.9	Not Detected	7.7	Not Detected
cis-1,2-Dichloroethene	1.9	14	7.7	54
Trichloroethene	1.9	320	10	1800
Tetrachloroethene	1.9	22	13	140

Container Type: 1 Liter Summa Canister (100% Certified)

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	102	70-130
Toluene-d8	103	70-130
4-Bromofluorobenzene	96	70-130

Client Sample ID: VMWK-052021

Lab ID#: 2105457-03A

EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	a060123	Date of Collection:	5/20/21 11:40:00 AM
Dil. Factor:	9.51	Date of Analysis:	6/2/21 02:38 AM

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Vinyl Chloride	4.8	Not Detected	12	Not Detected
1,1-Dichloroethene	4.8	Not Detected	19	Not Detected
cis-1,2-Dichloroethene	4.8	87	19	340
Trichloroethene	4.8	1200	26	6600
Tetrachloroethene	4.8	53	32	360

Container Type: 1 Liter Summa Canister (100% Certified)

Surrogates	%Recovery	Method Limits
Toluene-d8	110	70-130
1,2-Dichloroethane-d4	92	70-130
4-Bromofluorobenzene	99	70-130

Client Sample ID: VMWL-052021

Lab ID#: 2105457-04A

MODIFIED EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	20052720	Date of Collection:	5/20/21 12:05:00 PM
Dil. Factor:	1.90	Date of Analysis:	5/28/21 06:58 AM

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Vinyl Chloride	0.19	Not Detected	0.48	Not Detected
1,1-Dichloroethene	0.19	Not Detected	0.75	Not Detected
cis-1,2-Dichloroethene	0.19	Not Detected	0.75	Not Detected
Trichloroethene	0.19	0.54	1.0	2.9
Tetrachloroethene	0.19	Not Detected	1.3	Not Detected

Container Type: 1 Liter Summa Canister (100% Certified)

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	108	70-130
Toluene-d8	99	70-130
4-Bromofluorobenzene	93	70-130

Client Sample ID: VMWM-052021

Lab ID#: 2105457-05A

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

<b>File Name:</b>	20052721	<b>Date of Collection:</b> 5/20/21 12:35:00 PM
<b>Dil. Factor:</b>	1.94	<b>Date of Analysis:</b> 5/28/21 07:38 AM

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Vinyl Chloride	0.19	Not Detected	0.50	Not Detected
1,1-Dichloroethene	0.19	Not Detected	0.77	Not Detected
cis-1,2-Dichloroethene	0.19	1.9	0.77	7.4
Trichloroethene	0.19	17	1.0	93
Tetrachloroethene	0.19	1.2	1.3	8.0

Container Type: 1 Liter Summa Canister (100% Certified)

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	109	70-130
Toluene-d8	99	70-130
4-Bromofluorobenzene	99	70-130

Client Sample ID: VMWN-052021

Lab ID#: 2105457-06A

MODIFIED EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	20052722	Date of Collection:	5/20/21 1:05:00 PM
Dil. Factor:	1.98	Date of Analysis:	5/28/21 08:18 AM

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Vinyl Chloride	0.20	Not Detected	0.51	Not Detected
1,1-Dichloroethene	0.20	Not Detected	0.78	Not Detected
cis-1,2-Dichloroethene	0.20	3.7	0.78	15
Trichloroethene	0.20	35	1.1	190
Tetrachloroethene	0.20	2.0	1.3	14

Container Type: 1 Liter Summa Canister (100% Certified)

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

Client Sample ID: Lab Blank

Lab ID#: 2105457-07A

MODIFIED EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	20052706	Date of Collection:	NA
Dil. Factor:	1.00	Date of Analysis:	5/27/21 02:35 PM

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Vinyl Chloride	0.10	Not Detected	0.26	Not Detected
1,1-Dichloroethene	0.10	Not Detected	0.40	Not Detected
cis-1,2-Dichloroethene	0.10	Not Detected	0.40	Not Detected
Trichloroethene	0.10	Not Detected	0.54	Not Detected
Tetrachloroethene	0.10	Not Detected	0.68	Not Detected

Container Type: NA - Not Applicable

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	112	70-130
Toluene-d8	99	70-130
4-Bromofluorobenzene	99	70-130

Client Sample ID: Lab Blank

Lab ID#: 2105457-07B

EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	a060114	Date of Collection:	NA
Dil. Factor:	1.00	Date of Analysis:	6/1/21 06:38 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
Tetrachloroethene	0.50	Not Detected	3.4	Not Detected

Container Type: NA - Not Applicable

Surrogates	%Recovery	Method Limits
Toluene-d8	109	70-130
1,2-Dichloroethane-d4	95	70-130
4-Bromofluorobenzene	98	70-130

Client Sample ID: CCV

Lab ID#: 2105457-08A

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

<b>File Name:</b>	<b>20052702</b>	<b>Date of Collection: NA</b>
<b>Dil. Factor:</b>	<b>1.00</b>	<b>Date of Analysis: 5/27/21 11:34 AM</b>

<b>Compound</b>	<b>%Recovery</b>
Vinyl Chloride	111
1,1-Dichloroethene	114
cis-1,2-Dichloroethene	102
Trichloroethene	116
Tetrachloroethene	103

Container Type: NA - Not Applicable

<b>Surrogates</b>	<b>%Recovery</b>	<b>Method Limits</b>
1,2-Dichloroethane-d4	95	70-130
Toluene-d8	105	70-130
4-Bromofluorobenzene	98	70-130

Client Sample ID: CCV

Lab ID#: 2105457-08B

EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	a060110	Date of Collection: NA
Dil. Factor:	1.00	Date of Analysis: 6/1/21 03:38 PM

Compound	%Recovery
Vinyl Chloride	94
1,1-Dichloroethene	92
cis-1,2-Dichloroethene	105
Trichloroethene	103
Tetrachloroethene	95

Container Type: NA - Not Applicable

Surrogates	%Recovery	Method Limits
Toluene-d8	111	70-130
1,2-Dichloroethane-d4	93	70-130
4-Bromofluorobenzene	100	70-130

Client Sample ID: LCS

Lab ID#: 2105457-09A

MODIFIED EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	20052703	Date of Collection: NA
Dil. Factor:	1.00	Date of Analysis: 5/27/21 12:14 PM

Compound	%Recovery	Method Limits
Vinyl Chloride	117	70-130
1,1-Dichloroethene	119	70-130
cis-1,2-Dichloroethene	106	70-130
Trichloroethene	117	70-130
Tetrachloroethene	103	70-130

Container Type: NA - Not Applicable

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	96	70-130
Toluene-d8	103	70-130
4-Bromofluorobenzene	95	70-130

Client Sample ID: LCSD

Lab ID#: 2105457-09AA

MODIFIED EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	20052704	Date of Collection: NA
Dil. Factor:	1.00	Date of Analysis: 5/27/21 01:09 PM

Compound	%Recovery	Method Limits
Vinyl Chloride	118	70-130
1,1-Dichloroethene	120	70-130
cis-1,2-Dichloroethene	106	70-130
Trichloroethene	116	70-130
Tetrachloroethene	103	70-130

Container Type: NA - Not Applicable

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	95	70-130
Toluene-d8	103	70-130
4-Bromofluorobenzene	97	70-130

Client Sample ID: LCS

Lab ID#: 2105457-09B

EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	a060111	Date of Collection: NA
Dil. Factor:	1.00	Date of Analysis: 6/1/21 04:03 PM

Compound	%Recovery	Method Limits
Vinyl Chloride	90	70-130
1,1-Dichloroethene	90	70-130
cis-1,2-Dichloroethene	103	70-130
Trichloroethene	98	70-130
Tetrachloroethene	96	70-130

Container Type: NA - Not Applicable

Surrogates	%Recovery	Method Limits
Toluene-d8	109	70-130
1,2-Dichloroethane-d4	94	70-130
4-Bromofluorobenzene	100	70-130

Client Sample ID: LCSD

Lab ID#: 2105457-09BB

EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	a060112	Date of Collection: NA
Dil. Factor:	1.00	Date of Analysis: 6/1/21 04:28 PM

Compound	%Recovery	Method Limits
Vinyl Chloride	89	70-130
1,1-Dichloroethene	89	70-130
cis-1,2-Dichloroethene	100	70-130
Trichloroethene	99	70-130
Tetrachloroethene	97	70-130

Container Type: NA - Not Applicable

Surrogates	%Recovery	Method Limits
Toluene-d8	108	70-130
1,2-Dichloroethane-d4	94	70-130
4-Bromofluorobenzene	102	70-130