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2655 Park Center Dr., Suite A  
Simi Valley, CA 93065  
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[www.alsglobal.com](http://www.alsglobal.com)

## LABORATORY REPORT

April 25, 2019

Cindy Bartlett  
GeoSyntec Consultants  
621 SW Morrison Street Suite 600  
Portland, OR 97205

**RE: Cascade Corp SVE**

Dear Cindy:

Enclosed are the results of the sample submitted to our laboratory on April 11, 2019. For your reference, this analysis has been assigned our service request number P1902025.

All analyses were performed according to our laboratory's NELAP and DoD-ELAP-approved quality assurance program. The test results meet requirements of the current NELAP and DoD-ELAP standards, where applicable, and except as noted in the laboratory case narrative provided. For a specific list of NELAP and DoD-ELAP-accredited analytes, refer to the certifications section at [www.alsglobal.com](http://www.alsglobal.com). Results are intended to be considered in their entirety and apply only to the samples analyzed and reported herein.

If you have any questions, please call me at (805) 526-7161.

Respectfully submitted,

**ALS | Environmental**

By Hayden Akers at 1:36, April 25, 2019

Hayden Akers  
Project Manager



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Client: GeoSyntec Consultants  
Project: Cascade Corp SVE

Service Request No: P1902025

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## CASE NARRATIVE

The sample was received intact under chain of custody on April 11, 2019 and was stored in accordance with the analytical method requirements. Please refer to the sample acceptance check form for additional information. The results reported herein are applicable only to the condition of the sample at the time of sample receipt.

### Volatile Organic Compound Analysis

The sample was analyzed for volatile organic compounds in accordance with EPA Method TO-15 from the Compendium of Methods for the Determination of Toxic Organic Compounds in Ambient Air, Second Edition (EPA/625/R-96/010b), January, 1999. This procedure is described in laboratory SOP VOA-TO15. The analytical system was comprised of a gas chromatograph / mass spectrometer (GC/MS) interfaced to a whole-air preconcentrator. This method is included on the laboratory's NELAP and DoD-ELAP scope of accreditation. Any analytes flagged with an X are not included on the NELAP or DoD-ELAP accreditation.

The container was cleaned, prior to sampling, down to the method reporting limit (MRL) reported for this project. For projects requiring DoD QSM 5.1 compliance canisters were cleaned to <1/2 the MRL. Please note, projects which require reporting below the MRL could have results between the MRL and method detection limit (MDL) that are biased high.

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*The results of analyses are given in the attached laboratory report. All results are intended to be considered in their entirety, and ALS Environmental (ALS) is not responsible for utilization of less than the complete report.*

*Use of ALS Environmental (ALS)'s Name. Client shall not use ALS's name or trademark in any marketing or reporting materials, press releases or in any other manner ("Materials") whatsoever and shall not attribute to ALS any test result, tolerance or specification derived from ALS's data ("Attribution") without ALS's prior written consent, which may be withheld by ALS for any reason in its sole discretion. To request ALS's consent, Client shall provide copies of the proposed Materials or Attribution and describe in writing Client's proposed use of such Materials or Attribution. If ALS has not provided written approval of the Materials or Attribution within ten (10) days of receipt from Client, Client's request to use ALS's name or trademark in any Materials or Attribution shall be deemed denied. ALS may, in its discretion, reasonably charge Client for its time in reviewing Materials or Attribution requests. Client acknowledges and agrees that the unauthorized use of ALS's name or trademark may cause ALS to incur irreparable harm for which the recovery of money damages will be inadequate. Accordingly, Client acknowledges and agrees that a violation shall justify preliminary injunctive relief. For questions contact the laboratory.*



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ALS Environmental – Simi Valley

CERTIFICATIONS, ACCREDITATIONS, AND REGISTRATIONS

Agency	Web Site	Number
Alaska DEC	<a href="http://dec.alaska.gov/eh/lab.aspx">http://dec.alaska.gov/eh/lab.aspx</a>	17-019
Arizona DHS	<a href="http://www.azdhs.gov/preparedness/state-laboratory/lab-licensure-certification/index.php#laboratory-licensure-home">http://www.azdhs.gov/preparedness/state-laboratory/lab-licensure-certification/index.php#laboratory-licensure-home</a>	AZ0694
Florida DOH (NELAP)	<a href="http://www.floridahealth.gov/licensing-and-regulation/environmental-laboratories/index.html">http://www.floridahealth.gov/licensing-and-regulation/environmental-laboratories/index.html</a>	E871020
Louisiana DEQ (NELAP)	<a href="http://www.deq.louisiana.gov/page/la-lab-accreditation">http://www.deq.louisiana.gov/page/la-lab-accreditation</a>	05071
Maine DHHS	<a href="http://www.maine.gov/dhhs/mecdc/environmental-health/dwp/professionals/labCert.shtml">http://www.maine.gov/dhhs/mecdc/environmental-health/dwp/professionals/labCert.shtml</a>	2018027
Minnesota DOH (NELAP)	<a href="http://www.health.state.mn.us/accreditation">http://www.health.state.mn.us/accreditation</a>	1521096
New Jersey DEP (NELAP)	<a href="http://www.nj.gov/dep/enforcement/oqa.html">http://www.nj.gov/dep/enforcement/oqa.html</a>	CA009
New York DOH (NELAP)	<a href="http://www.wadsworth.org/labcert/elap/elap.html">http://www.wadsworth.org/labcert/elap/elap.html</a>	11221
Oregon PHD (NELAP)	<a href="http://www.oregon.gov/oha/ph/LaboratoryServices/EnvironmentalLaboratoryAccreditation/Pages/index.aspx">http://www.oregon.gov/oha/ph/LaboratoryServices/EnvironmentalLaboratoryAccreditation/Pages/index.aspx</a>	4068-006
Pennsylvania DEP	<a href="http://www.dep.pa.gov/Business/OtherPrograms/Labs/Pages/Laboratory-Accreditation-Program.aspx">http://www.dep.pa.gov/Business/OtherPrograms/Labs/Pages/Laboratory-Accreditation-Program.aspx</a>	68-03307 (Registration)
PJLA (DoD ELAP)	<a href="http://www.pjlabs.com/search-accredited-labs">http://www.pjlabs.com/search-accredited-labs</a>	65818 (Testing)
Texas CEQ (NELAP)	<a href="http://www.tceq.texas.gov/agency/qa/env_lab_accreditation.html">http://www.tceq.texas.gov/agency/qa/env_lab_accreditation.html</a>	T104704413-18-9
Utah DOH (NELAP)	<a href="http://health.utah.gov/lab/lab_cert_env">http://health.utah.gov/lab/lab_cert_env</a>	CA01627201 8-9
Washington DOE	<a href="http://www.ecy.wa.gov/programs/eap/labs/lab-accreditation.html">http://www.ecy.wa.gov/programs/eap/labs/lab-accreditation.html</a>	C946

Analyses were performed according to our laboratory's NELAP and DoD-ELAP approved quality assurance program. A complete listing of specific NELAP and DoD-ELAP certified analytes can be found in the certifications section at [www.alsglobal.com](http://www.alsglobal.com), or at the accreditation body's website.

Each of the certifications listed above have an explicit Scope of Accreditation that applies to specific matrices/methods/analytes; therefore, please contact the laboratory for information corresponding to a particular certification.

# ALS ENVIRONMENTAL

## DETAIL SUMMARY REPORT

Client: GeoSyntec Consultants  
Project ID: Cascade Corp SVE

Service Request: P1902025

Date Received: 4/11/2019  
Time Received: 09:30

TO-15 - VOC Cans

Client Sample ID	Lab Code	Matrix	Date Collected	Time Collected	Container ID	Pi1 (psig)	Pf1 (psig)	
SVE-EFF-040919	P1902025-001	Air	4/9/2019	11:35	1SS00918	-0.24	5.09	X



# Air - Chain of Custody Record & Analytical Service Request

2655 Park Center Drive, Suite A  
 Simi Valley, California 93065  
 Phone (805) 526-7161  
 Fax (805) 526-7270

Company Name & Address (Reporting Information) <b>GeoSYNTEC</b> 920 SW 6 <sup>TH</sup> AVENUE (Suite 600) Portland OR. 97204		Project Name <b>Cascade Corp SVE</b>		Requested Turnaround Time in Business Days (Surcharges) please circle 1 Day (100%) 2 Day (75%) 3 Day (50%) 4 Day (35%) 5 Day (25%) 10 Day-Standard		ALS Project No. <b>102021</b>	
Project Manager <b>Blent Miller</b>		P.O. # / Billing Information <b>70-15</b>		ALS Contact:		Analysis Method	
Phone (971) 271-5895 Fax (971) 271-5884		Sampler (Print & Sign) <b>PAT YADON</b>		Chain of Custody Seal (Circle) INTACT <input type="checkbox"/> BROKEN <input checked="" type="checkbox"/> ABSENT <input type="checkbox"/>		Project Requirements (MRLs, QAPP)	
Email Address for Result Reporting <b>B.Miller@Geosyntec.com</b>		Canister ID (Bar code # - AC, SC, etc.) <b>1SS00918</b>		Canister Start Pressure "Hg <b>-28.0</b>		Project Requirements (MRLs, QAPP)	
Laboratory ID Number <b>0</b>		Flow Controller ID (Bar code # - FC #) <b>0A02020</b>		Canister End Pressure "Hg/psig <b>-4</b>		Project Requirements (MRLs, QAPP)	
Client Sample ID <b>SVE-EFF-040919</b>		Time Collected <b>11:35</b>		Sample Volume <b>1</b>		Project Requirements (MRLs, QAPP)	
Date Collected <b>4-9-19</b>		EDD required Yes / No Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>		Units:		Project Requirements (MRLs, QAPP)	
Relinquished by: (Signature) <b>Patricia E. Yodon</b>		Received by: (Signature) <b>FED EX</b>		Date: <b>4-9-19</b> Time: <b>14:40</b>		Project Requirements (MRLs, QAPP)	
Relinquished by: (Signature)		Received by: (Signature)		Date: <b>4/11/19</b> Time: <b>0930</b>		Project Requirements (MRLs, QAPP)	

### Report Tier Levels - please select

Tier I - Results (Default if not specified) \_\_\_\_\_ Tier III (Results + QC & Calibration Summaries) \_\_\_\_\_  
 Tier II (Results + QC Summaries) X \_\_\_\_\_ Tier IV (Data Validation Package) 10% Surcharge \_\_\_\_\_



# ALS ENVIRONMENTAL

## RESULTS OF ANALYSIS

Page 1 of 1

**Client:** GeoSyntec Consultants

**Client Sample ID:** SVE-EFF-040919

**Client Project ID:** Cascade Corp SVE

ALS Project ID: P1902025

ALS Sample ID: P1902025-001

Test Code: EPA TO-15

Instrument ID: Tekmar AUTOCAN/Agilent 5975Cinert/6890N/MS16

Analyst: Lusine Hakobyan

Sample Type: 1.0 L Silonite Summa Canister

Test Notes:

Container ID: 1SS00918

Date Collected: 4/9/19

Date Received: 4/11/19

Date Analyzed: 4/19/19

Volume(s) Analyzed: 0.40 Liter(s)

0.040 Liter(s)

Initial Pressure (psig): -0.24      Final Pressure (psig): 5.09

Container Dilution Factor: 1.37

CAS #	Compound	Result µg/m <sup>3</sup>	MRL µg/m <sup>3</sup>	Result ppbV	MRL ppbV	Data Qualifier
75-01-4	Vinyl Chloride	ND	1.8	ND	0.71	
75-35-4	1,1-Dichloroethene	ND	1.8	ND	0.47	
156-59-2	cis-1,2-Dichloroethene	<b>79</b>	1.8	<b>20</b>	0.46	
79-01-6	Trichloroethene	<b>560</b>	18	<b>100</b>	3.4	<b>D</b>
127-18-4	Tetrachloroethene	<b>40</b>	1.8	<b>5.9</b>	0.27	

ND = Compound was analyzed for, but not detected above the laboratory reporting limit.

MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.

D = The reported result is from a dilution.

# ALS ENVIRONMENTAL

## RESULTS OF ANALYSIS

Page 1 of 1

**Client:** GeoSyntec Consultants

**Client Sample ID:** Method Blank

**Client Project ID:** Cascade Corp SVE

ALS Project ID: P1902025

ALS Sample ID: P190419-MB

Test Code: EPA TO-15

Instrument ID: Tekmar AUTOCAN/Agilent 5975Cinert/6890N/MS16

Analyst: Lusine Hakobyan

Sample Type: 1.0 L Silonite Summa Canister

Test Notes:

Date Collected: NA

Date Received: NA

Date Analyzed: 4/19/19

Volume(s) Analyzed: 1.00 Liter(s)

Container Dilution Factor: 1.00

CAS #	Compound	Result µg/m <sup>3</sup>	MRL µg/m <sup>3</sup>	Result ppbV	MRL ppbV	Data Qualifier
75-01-4	Vinyl Chloride	ND	0.53	ND	0.21	
75-35-4	1,1-Dichloroethene	ND	0.54	ND	0.14	
156-59-2	cis-1,2-Dichloroethene	ND	0.53	ND	0.13	
79-01-6	Trichloroethene	ND	0.53	ND	0.099	
127-18-4	Tetrachloroethene	ND	0.53	ND	0.078	

ND = Compound was analyzed for, but not detected above the laboratory reporting limit.

MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.

# ALS ENVIRONMENTAL

## SURROGATE SPIKE RECOVERY RESULTS

Page 1 of 1

**Client:** GeoSyntec Consultants  
**Client Project ID:** Cascade Corp SVE

ALS Project ID: P1902025

Test Code: EPA TO-15  
 Instrument ID: Tekmar AUTOCAN/Agilent 5975Cinert/6890N/MS16  
 Analyst: Lusine Hakobyan  
 Sample Type: 1.0 L Silonite Summa Canister(s)  
 Test Notes:

Date(s) Collected: 4/9/19  
 Date(s) Received: 4/11/19  
 Date(s) Analyzed: 4/19/19

Client Sample ID	ALS Sample ID	1,2-Dichloroethane-d4	Toluene-d8	Bromofluorobenzene	Acceptance Limits	Data Qualifier
		Percent Recovered	Percent Recovered	Percent Recovered		
Method Blank	P190419-MB	<b>106</b>	<b>99</b>	<b>90</b>	70-130	
Lab Control Sample	P190419-LCS	<b>105</b>	<b>96</b>	<b>93</b>	70-130	
SVE-EFF-040919	P1902025-001	<b>106</b>	<b>97</b>	<b>93</b>	70-130	

Surrogate percent recovery is verified and accepted based on the on-column result.

Reported results are shown in concentration units and as a result of the calculation, may vary slightly from the on-column percent recovery.

**ALS ENVIRONMENTAL**

LABORATORY CONTROL SAMPLE SUMMARY

Page 1 of 1

**Client:** GeoSyntec Consultants

**Client Sample ID:** Lab Control Sample

**Client Project ID:** Cascade Corp SVE

ALS Project ID: P1902025

ALS Sample ID: P190419-LCS

Test Code: EPA TO-15

Date Collected: NA

Instrument ID: Tekmar AUTOCAN/Agilent 5975Cinert/6890N/MS16

Date Received: NA

Analyst: Lusine Hakobyan

Date Analyzed: 4/19/19

Sample Type: 1.0 L Silonite Summa Canister

Volume(s) Analyzed: 0.125 Liter(s)

Test Notes:

CAS #	Compound	Spike Amount µg/m <sup>3</sup>	Result µg/m <sup>3</sup>	% Recovery	ALS	Data Qualifier
					Acceptance Limits	
75-01-4	Vinyl Chloride	214	<b>222</b>	<b>104</b>	57-117	
75-35-4	1,1-Dichloroethene	218	<b>218</b>	<b>100</b>	68-107	
156-59-2	cis-1,2-Dichloroethene	211	<b>226</b>	<b>107</b>	67-110	
79-01-6	Trichloroethene	213	<b>202</b>	<b>95</b>	66-108	
127-18-4	Tetrachloroethene	213	<b>190</b>	<b>89</b>	55-120	

Laboratory Control Sample percent recovery is verified and accepted based on the on-column result.  
Reported results are shown in concentration units and as a result of the calculation, may vary slightly.