

# **FREMONT ENVIRONMENTAL INC.**

January 24, 2021

Mr. Jason Davidson  
Great Western Operating Company, LLC  
1001 17<sup>th</sup> Street, Suite 2000  
Denver, CO 80202

Subject:       **Remediation System Installation Report**  
Pierce Central Station  
SESE Sec 22, T8N, R66W  
Weld County, Colorado  
Fremont Project No. C020-025  
Remediation #15435

Dear Mr. Davidson:

Enclosed please find a copy of the above referenced Remediation System Installation Report for the Pierce Central Station release site in Weld County, Colorado. The enclosed report describes the soil vapor extraction system that was installed at the site to remediate petroleum-impacted soil at the site.

Please contact me at (303) 956-8714 if you require any additional information.

Fremont appreciates the opportunity to provide this service.

Sincerely,  
**FREMONT ENVIRONMENTAL INC.**

A handwritten signature in blue ink, appearing to read "Paul V. Henahan", with a stylized flourish at the end.

Paul V. Henahan, P.E.  
Senior Consultant

Enclosure

**REMEDIATION SYSTEM INSTALLATION REPORT**

**GREAT WESTERN OPERATING COMPANY, LLC**

**PIERCE CENTRAL STATION**

**WELD COUNTY, COLORADO**

**FREMONT PROJECT NO. C020-025**

**REMEDIATION #15435**

**Prepared by:**

**Fremont Environmental Inc.  
1759 Redwing Lane  
Broomfield, CO 80020  
(303) 956-8714**

**January 24, 2021**

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# **REMEDIATION SYSTEM INSTALLATION REPORT**

**GREAT WESTERN OPERATING COMPANY, LLC**

**PIERCE CENTRAL STATION**

**WELD COUNTY, COLORADO**

**FREMONT PROJECT NO. C020-025**

**REMEDIATION #15435**

## **1.0 INTRODUCTION**

The purpose of this document is to present information describing the installation of a soil vapor extraction (SVE) system at the Great Western Operating Company, LLC (GWOC) Pierce Central Station in Weld County, Colorado. The SVE system was installed to remediate contaminated soil that was left in place following an excavation that was conducted in August 2020. The SVE system was activated on December 7, 2020; however, the system was deactivated on January 12, 2021 due to potential concerns regarding exceeding the State of Colorado's emissions standards.

## **2.0 BACKGROUND INFORMATION**

### **2.1 Site Location**

The Pierce Station site is located approximately one mile north of Pierce, Colorado in Weld County as shown on Figure 1. The site is located in an agricultural area approximately 0.1 miles west of the intersection of Highway 85 and County Road 90. The location is further described as the SE  $\frac{1}{4}$  of the SE  $\frac{1}{4}$  of Section 22, Township 8N, Range 66W.

### **2.2 Site History**

Soil impacts were identified within the bermed area following a February 2020 release at the facility. In August 2020, approximately 1,230 cubic yards of impacted soil were removed from varying depths at the facility. However, residual soil contamination was

left in place; this soil was to be remediated with an SVE system. GWOC has taken this facility completely out of service and removed all the equipment from the site.

### **3.0 REMEDIATION SYSTEM**

As a result of residual soil impacts at the former Pierce Station, GWOC installed an SVE system at the facility. Fifteen SVE wells were installed at the site in September and October 2020. Eleven of these wells were completed as “deep” wells with the SVE screen placed at an interval of 15 to 25 feet below grade. Four of these wells were completed as “shallow” wells with the SVE screen placed at an interval of 6 to 16 feet.

Each of the 15 wells is individually piped to a remediation system building using 2-inch diameter PVC pipe. Water drip legs are provided on each line to accommodate condensation in the piping. The SVE legs are tied into a manifold within the building that is piped to a 15 HP Rotron DR909 vacuum blower. This blower is capable of creating a maximum flow rate of approximately 500 cubic feet per minute (cfm). A system as-built drawing is provided as Figure 2.

The SVE system was activated on December 7, 2020. Offgas vapor samples were collected on a weekly basis and submitted to Origins Laboratory, Inc. of Denver, Colorado for the analyses of benzene, toluene, ethylbenzene and xylenes (BTEX) and total petroleum hydrocarbons – gasoline range organics (TPH-GRO) by EPA method TO-15. The laboratory reports are provided in Appendix A.

After four weeks of operation, it was determined that the offgas mass may ultimately exceed the Colorado Department of Public Health and Environment’s (CDPHE’s) unpermitted allowable emissions threshold of two tons per year (TPY). During the four week operation period, the SVE system removed approximately 0.9 tons of TPH-GRO.

The SVE system was deactivated on January 12, 2021 pending evaluation of offgas vapor treatment options.

GWOC will submit an air pollutant emission notice (APEN) and Application for Construction Permit to CDPHE. It is anticipated that a catalytic oxidizer will be installed on the SVE offgas stream to destroy petroleum vapors being emitted from the system. The timeframe for restarting the SVE system is currently unknown and is a function of CDPHE's permit review period. It is likely that the CDPHE review will require from three to six months. Upon approval of the air permit, the SVE system will be restarted.

### **5.0 REMARKS**

The discussion and conclusions contained in this report represent our professional opinions. These opinions are based on currently available information and are arrived at in accordance with currently accepted hydrogeologic and engineering practices at this time and location. Other than this, no warranty is implied or intended.

This report was prepared by **FREMONT ENVIRONMENTAL INC.**



1/24/21

Date\_\_\_\_\_

\_\_\_\_\_  
Paul V. Henehan, P.E.

Senior Consultant

## TABLE

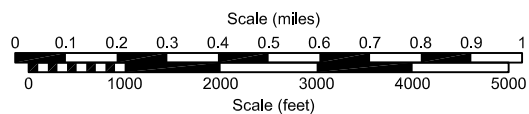
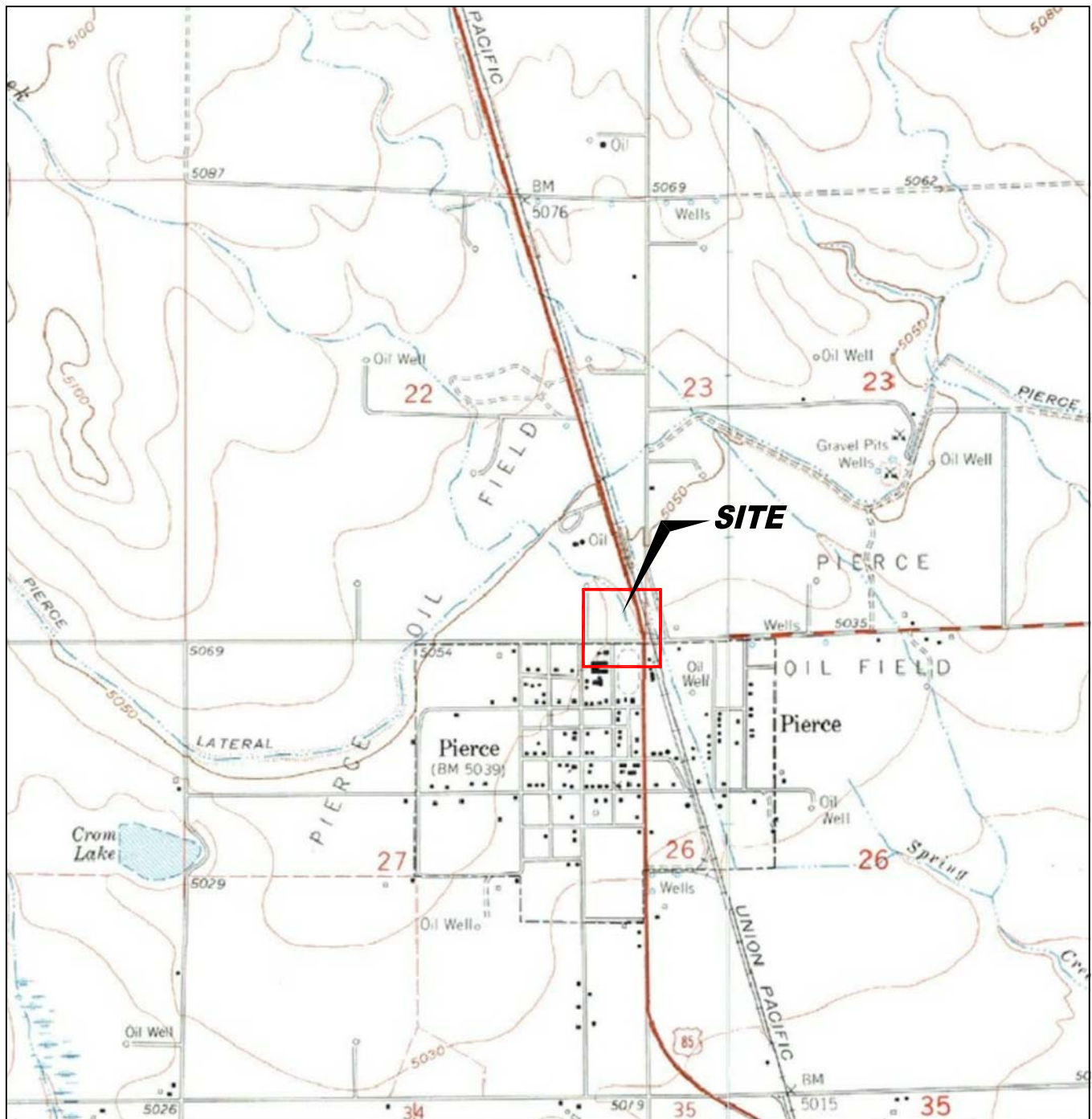
**TABLE 1**  
**SUMMARY OF SVE DISCHARGE**  
**GREAT WESTERN OPERATING COMPANY, LLC**  
**PIERCE STATION, WELD COUNTY, COLORADO**  
**FREMONT PROJECT NO. C020-025**

Date	Air Discharge (CFM)	Instantaneous Hydrocarbon Removal Rate (Lbs/Hr) (Lbs/Day)		Operational Hours	Total Pounds Removed For Period	Cumulative Pounds Removed	Cumulative Tons Removed	Benzene Lbs/Hr	Total Benzene For Period Lbs	Cumulative Pounds Benzene Removed
12/14/20	310	2.85	68.42	168	478.93	478.93	0.24	0.0002	0.04	0.04
12/22/20	310	2.50	60.08	192	480.60	959.53	0.48	0.0001	0.03	0.07
12/28/20	310	2.76	66.19	144	397.16	1,356.69	0.68	0.0001	0.01	0.08
01/04/21	280	2.68	64.31	168	450.17	1,806.86	0.90	0.0001	0.01	0.09

System started on 12/7/20



## **FIGURES**



USGS 7.5 MINUTE SERIES (TOPOGRAPHIC)

Figure 1  
SITE LOCATION MAP

**GREAT WESTERN OPERATING COMPANY, LLC**  
**PIERCE CENTRAL STATION**  
 SESE Sec 22, T8N, R66W ~ 40.6438°, -104.7572°  
 Weld County, Colorado

Project No.  
**CO20-025**

Prepared by

Drawn by  
**TA**

Date  
**10/16/20**

Reviewed by  
**PH**

Filename  
**20025T**





#### LEGEND










	SOIL VAPOR EXTRACTION WELL (screen 6' to 16')
	DEEP SOIL VAPOR EXTRACTION WELL (screen 15' to 25')
	ABOVE GROUND STORAGE TANK
	FORMER FACILITY
	BUILDING
	FENCE LINE
	CONTAINMENT BERM
	EXTENT OF EXCAVATION
	REMEDIATION SYSTEM TRENCH

Figure 2

#### AS-BUILT AS/SVE LAYOUT

**GREAT WESTERN OPERATING COMPANY, LLC**  
**PIERCE CENTRAL STATION**  
 SESE Sec 22, T8N, R66W ~ 40.6438°, -104.7572°  
 Weld County, Colorado

Project No.  
**CO20-025**

Prepared by

Drawn by  
**TA**

Date  
**1/4/21**

Reviewed by  
**PH**

Filename  
**20025Q**



APPENDIX A  
LABORATORY DOCUMENTATION



December 22, 2020

Fremont Environmental

Paul Henehan

8305 6th St, PO Box 1289

Wellington CO 80549

Project Name - Great Western - Pierce Station

Project Number - C020-025

Attached are your analytical results for Great Western - Pierce Station received by Origins Laboratory, Inc. December 16, 2020. This project is associated with Origins project number Y012233-01.

The analytical results in the following report were analyzed under the guidelines of EPA Methods. These methods are identified as follows; "SW" are defined in SW-846, "EPA" are defined in 40CFR part 136 and "SM" are defined in the most current revision of Standard Methods For the Examination of Water and Wastewater.

The analytical results apply specifically to the samples and analyses specified per the attached Chain of Custody. As such, this report shall not be reproduced except in full, without the written approval of Origin's laboratory.

Unless otherwise noted, the analytical results for all soil samples are reported on a wet weight basis. All analytical analyses were performed under NELAP guidelines unless noted by a data qualifier.

Any holding time exceedances, deviations from the method specifications or deviations from Origins Laboratory's Standard Operating Procedures are outlined in the case narrative.

Thank you for selecting Origins for your analytical needs. Please contact us with any questions concerning this report, or if we can help with anything at all.

Origins Laboratory, Inc.  
303.433.1322  
o-squad@oelabinc.com



1725 Elk Place, Denver, CO 80211 | Phone: 303.433.1322 | Fax: 303.265.9645

Fremont Environmental

8305 6th St, PO Box 1289

Wellington CO 80549

Paul Henehan

Project Number: C020-025

Project: Great Western - Pierce Station

### CROSS REFERENCE REPORT

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
Pierce SVE	Y012233-01	Air	December 14, 2020 11:30	12/16/2020 10:00

Origins Laboratory, Inc.



*The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.*

Jen Pellegrini For Noelle Doyle Mathis, President



Fremont Environmental  
8305 6th St, PO Box 1289  
Wellington CO 80549

Paul Henehan  
Project Number: C020-025  
Project: Great Western - Pierce Station

www.originslaboratory.com

1012233

page 1 of 1

**ORIGINS**  
LABORATORY, INC

Client: Fremont  
Address:   
Telephone Number:   
Email Address:

Project Manager: HENEHAN  
Project Name: GWOC - PIERCE STATION  
Project Number: C020-025  
Samples Collected By: HENEHAN

Fax: 303.265.9645 | Phone: 303.433.1322 | Denver, CO 80211 | 1725 Elk Place

Sample ID Description	Date Sampled	Time Sampled	# of Containers	Preservative				Matrix			Analysis	Sample Instructions	
				Unpreserved	HCl	HNO <sub>3</sub>	Other	Groundwater	Soil	Air/Sediment			Other
PIERCE SYE	12/14/20	11:30	1	<input checked="" type="checkbox"/>									1
													2
													3
													4
													5
													6
													7
													8
													9
													10

Relinquished By: <u>PAUL FE</u>	Date: <u>12/15/20</u>	Time: <u></u>	Received By: <u>PAUL FE</u>	Date: <u>12/16/20</u>	Time: <u>10:00</u>	Turnaround Time: <input checked="" type="checkbox"/> Same Day <input type="checkbox"/> 24 Hr <input type="checkbox"/> 48 Hr <input type="checkbox"/> 72 Hr <input type="checkbox"/> Standard
Relinquished By: <u></u>	Date: <u></u>	Time: <u></u>	Received By: <u></u>	Date: <u></u>	Time: <u></u>	

Date Results Needed

Origins Laboratory, Inc.

*Jefe Pellegrini*

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Fremont Environmental

8305 6th St, PO Box 1289

Wellington CO 80549

Paul Henehan

Project Number: C020-025

Project: Great Western - Pierce Station

Origins Laboratory

F-012207-01-R1

Effective Date: 01/09/12

## Sample Receipt Checklist

Origins Work Order: Y012233

Client: Fremont

Client Project ID: C020-025

Checklist Completed by: JG

Shipped Via: HD

(UPS, FedEx, Hand Delivered, Pick-up, etc.)

Date/time completed: 12-16-12

Airbill #: N/A

Matrix(s) Received: (Check all that apply): Soil/Solid Water X Other: HR (Describe)

Cooler Number/Temperature: - / - °C - / - °C - / - °C - / - °C

Thermometer ID: N/A

Requirement Description	Yes	No	N/A	Comments (if any)
If samples require cooling, was the temperature between 0°C to ≤ 6°C <sup>(1)</sup> ?			<input checked="" type="checkbox"/>	
Is there ice present (document if blue ice is used)			<input checked="" type="checkbox"/>	
Are custody seals present on cooler? (if so, document in comments if they are signed and dated, broken or intact)			<input checked="" type="checkbox"/>	
Are custody seals present on each sample container? (if so, document in comments if they are signed and dated, broken or intact)			<input checked="" type="checkbox"/>	
Were all samples received intact <sup>(1)</sup> ?	<input checked="" type="checkbox"/>			
Was adequate sample volume provided <sup>(1)</sup> ?	<input checked="" type="checkbox"/>			
Are short holding time analytes or samples with HTs due within 48 hours present <sup>(1)</sup> ?		<input checked="" type="checkbox"/>		
Is a chain-of-custody (COC) present and filled out completely <sup>(1)</sup> ?	<input checked="" type="checkbox"/>			
Does the COC agree with the number and type of sample bottles received <sup>(1)</sup> ?	<input checked="" type="checkbox"/>			
Do the sample IDs on the bottle labels match the COC <sup>(1)</sup> ?	<input checked="" type="checkbox"/>			
Is the COC properly relinquished by the client with date and time recorded <sup>(1)</sup> ?	<input checked="" type="checkbox"/>			
For volatiles in water – is there headspace (> ¼ inch bubble) present? If yes, contact client and note in narrative.			<input checked="" type="checkbox"/>	
Are samples preserved that require preservation and was it checked <sup>(1)</sup> ? (note ID of confirmation instrument used in comments) / (preservation is not confirmed for subcontracted analyses in order to insure sample integrity)/(pH < 2 for samples preserved with HNO <sub>3</sub> , HCL, H <sub>2</sub> SO <sub>4</sub> ) / (pH > 10 for samples preserved with NaAsO <sub>2</sub> +NaOH, ZnAc+NaOH)			<input checked="" type="checkbox"/>	
Additional Comments (if any):				

<sup>(1)</sup>If NO, then contact the client before proceeding with analysis and note date/time and person contacted as well as the corrective action to in the additional comments (above) and the case narrative.

Reviewed by (Project Manager) Jm

Date/Time Reviewed 12-17-12

Origins Laboratory, Inc.

*Jefe Pellegrini*

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



Fremont Environmental  
8305 6th St, PO Box 1289  
Wellington CO 80549

Paul Henehan  
Project Number: C020-025  
Project: Great Western - Pierce Station

## Pierce SVE

12/14/2020 11:30:00AM

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Analyst	Prepared	Analyzed	Notes
---------	--------	-----------------	-------	----------	-------	---------	----------	----------	-------

Origins Laboratory, Inc.  
Y012233-01 (Air)

## GBTEX by TO-15M GC/MS

T

Gasoline Range Hydrocarbons	2460000	392000	ug/m <sup>3</sup> Air	1962.1	B0L1810	DJL	12/18/2020	12/18/2020	
Benzene	212	70.0	"	25	"	DJL	"	12/18/2020	
Toluene	131	125	"	"	"	DJL	"	"	
Ethylbenzene	330	125	"	"	"	DJL	"	"	
m,p-Xylene	1420	475	"	"	"	DJL	"	"	
o-Xylene	390	118	"	"	"	DJL	"	"	
Surrogate: 1,2-Dichloroethane-d4	101 %	70-130			"	"	"	"	
Surrogate: Toluene-d8	395 %	70-130			"	"	"	"	S-04
Surrogate: 4-Bromofluorobenzene	119 %	70-130			"	"	"	"	

Origins Laboratory, Inc.



The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Fremont Environmental  
8305 6th St, PO Box 1289  
Wellington CO 80549

Paul Henehan  
Project Number: C020-025  
Project: Great Western - Pierce Station

## Volatile Organic Compounds by TO-15 in Air - Quality Control Origins Laboratory, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
<b>Batch B0L1810 - Default Prep - Air</b>										
<b>Blank (B0L1810-BLK1)</b>					Prepared: 12/17/2020 Analyzed: 12/18/2020					T
Gasoline Range Hydrocarbons	ND	200	ug/m <sup>3</sup> Air							U
Benzene	ND	2.80	"							U
Toluene	ND	5.00	"							U
Ethylbenzene	ND	5.00	"							U
m,p-Xylene	ND	19.0	"							U
o-Xylene	ND	4.70	"							U
Surrogate: 1,2-Dichloroethane-d4	11.0		ppbv	10.0		110	70-130			
Surrogate: Toluene-d8	10.4		"	10.0		104	70-130			
Surrogate: 4-Bromofluorobenzene	12.4		"	10.0		124	70-130			
<b>LCS (B0L1810-BS1)</b>					Prepared: 12/17/2020 Analyzed: 12/17/2020					T
Benzene	31.8	2.80	ug/m <sup>3</sup> Air	31.9		99.5	70-130			
Toluene	33.1	5.00	"	37.7		87.8	70-130			
Ethylbenzene	40.4	5.00	"	43.4		93.0	70-130			
m,p-Xylene	180	19.0	"	174		103	70-130			
o-Xylene	39.8	4.70	"	43.4		91.6	70-130			
Surrogate: 1,2-Dichloroethane-d4	9.04		ppbv	10.0		90.4	70-130			
Surrogate: Toluene-d8	9.02		"	10.0		90.2	70-130			
Surrogate: 4-Bromofluorobenzene	8.43		"	10.0		84.3	70-130			
<b>LCS Dup (B0L1810-BSD1)</b>					Prepared: 12/17/2020 Analyzed: 12/17/2020					T
Benzene	30.7	2.80	ug/m <sup>3</sup> Air	31.9		96.1	70-130	3.48	25	
Toluene	32.7	5.00	"	37.7		86.9	70-130	1.03	25	
Ethylbenzene	40.1	5.00	"	43.4		92.3	70-130	0.756	25	
m,p-Xylene	177	19.0	"	174		102	70-130	1.41	25	
o-Xylene	39.9	4.70	"	43.4		92.0	70-130	0.436	25	
Surrogate: 1,2-Dichloroethane-d4	8.94		ppbv	10.0		89.4	70-130			

Origins Laboratory, Inc.



The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Fremont Environmental  
8305 6th St, PO Box 1289  
Wellington CO 80549

Paul Henehan  
Project Number: C020-025  
Project: Great Western - Pierce Station

**Volatile Organic Compounds by TO-15 in Air - Quality Control**  
**Origins Laboratory, Inc.**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
---------	--------	-----------------	-------	-------------	---------------	------	-------------	-----	-----------	-------

Batch B0L1810 - Default Prep - Air

LCS Dup (B0L1810-BSD1)

Prepared: 12/17/2020 Analyzed: 12/17/2020

T

Surrogate: Toluene-d8	9.15		ppbv	10.0		91.5	70-130			
Surrogate: 4-Bromofluorobenzene	8.16		"	10.0		81.6	70-130			

Origins Laboratory, Inc.



The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Jen Pellegrini For Noelle Doyle Mathis, President

Fremont Environmental  
8305 6th St, PO Box 1289  
Wellington CO 80549

Paul Henehan  
Project Number: C020-025  
Project: Great Western - Pierce Station

### Notes and Definitions

- U Sample is Non-Detect.
- T The TO-15 analysis is not part of the NELAC accreditation
- S-04 The surrogate recovery for this sample is outside of established control limits due to a sample matrix effect.
- ND Analyte NOT DETECTED at or above the reporting limit
- RPD Relative Percent Difference
- All soil results are reported at a wet weight basis.

Origins Laboratory, Inc.



*The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.*



December 31, 2020

Fremont Environmental

Paul Henehan

8305 6th St, PO Box 1289

Wellington CO 80549

Project Name - GWOC - Pierce

Project Number - [none]

Attached are your analytical results for GWOC - Pierce received by Origins Laboratory, Inc. December 23, 2020. This project is associated with Origins project number Y012368-01.

The analytical results in the following report were analyzed under the guidelines of EPA Methods. These methods are identified as follows; "SW" are defined in SW-846, "EPA" are defined in 40CFR part 136 and "SM" are defined in the most current revision of Standard Methods For the Examination of Water and Wastewater.

The analytical results apply specifically to the samples and analyses specified per the attached Chain of Custody. As such, this report shall not be reproduced except in full, without the written approval of Origin's laboratory.

Unless otherwise noted, the analytical results for all soil samples are reported on a wet weight basis. All analytical analyses were performed under NELAP guidelines unless noted by a data qualifier.

Any holding time exceedances, deviations from the method specifications or deviations from Origins Laboratory's Standard Operating Procedures are outlined in the case narrative.

Thank you for selecting Origins for your analytical needs. Please contact us with any questions concerning this report, or if we can help with anything at all.

Origins Laboratory, Inc.  
303.433.1322  
o-squad@oelabinc.com



1725 Elk Place, Denver, CO 80211 | Phone: 303.433.1322 | Fax: 303.265.9645

Fremont Environmental

8305 6th St, PO Box 1289

Wellington CO 80549

Paul Henehan

Project Number: [none]

Project: GWOC - Pierce

### CROSS REFERENCE REPORT

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
Pierce SVE	Y012368-01	Air	December 22, 2020 10:30	12/23/2020 12:15

Origins Laboratory, Inc.



*The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.*

Paul Henehan  
Project Number: [none]  
Project: GWOC - Pierce

ORIGINS

LABORATORY, INC

Client:

FREMONT

Address:

Telephone Number:

Email Address:

www.originslaboratory.com

7012368

page 1 of 1

Project Manager:

HENEHAN

Project Name:

GWOC - PIERCE STATION

Project Number:

1020-025

Samples Collected By:

HENEHAN

Sample ID Description	Date Sampled	Time Sampled	# of Containers	Preservative					Matrix				Analysis	Sample Instructions	
				Unpreserved	HCl	HNO <sub>3</sub>	Other	Groundwater	Soil	Air Summa Canister #	Other				
PIERCE SVE	12/22/20	1030	1	✓					✓			✓	✓	1	Sample Instructions
														2	
														3	
														4	
														5	
														6	
														7	
														8	
														9	
														10	
Relinquished By: <i>[Signature]</i>	Date: 12/23/20		Time:	Received By: <i>[Signature]</i>	Date: 12/23/20	Time: 12:15									Turnaround Time: Same Day <input type="checkbox"/> 24 Hr <input type="checkbox"/> 48 Hr <input type="checkbox"/> 72 Hr <input type="checkbox"/> Standard <input checked="" type="checkbox"/>
Relinquished By:	Date:		Time:	Received By:	Date:	Time:									

Date Results Needed

Origins Laboratory, Inc.

Intent

*The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.*



Fremont Environmental

8305 6th St, PO Box 1289

Wellington CO 80549

Paul Henehan

Project Number: [none]

Project: GWOC - Pierce

Origins Laboratory

F-012207-01-R1  
Effective Date: 01/09/12

## Sample Receipt Checklist

Origins Work Order: 7012368

Client: Fremont

Client Project ID: Pierce Station

Checklist Completed by: JS

Shipped Via: 14

(UPS, FedEx, Hand Delivered, Pick-up, etc.)

Date/time completed: 12/23/20

Airbill #: N/A

Matrix(s) Received: (Check all that apply): Soil/Solid Water ☒ Other: Air

Cooler Number/Temperature: 1 °C 1 °C 1 °C (Describe) 1 °C

Thermometer ID: W115

Requirement Description	Yes	No	N/A	Comments (if any)
If samples require cooling, was the temperature between 0°C to ≤ 6°C <sup>(1)</sup> ?			<input checked="" type="checkbox"/>	
Is there ice present (document if blue ice is used)			<input checked="" type="checkbox"/>	
Are custody seals present on cooler? (if so, document in comments if they are signed and dated, broken or intact)			<input checked="" type="checkbox"/>	
Are custody seals present on each sample container? (if so, document in comments if they are signed and dated, broken or intact)			<input checked="" type="checkbox"/>	
Were all samples received intact <sup>(1)</sup> ?	<input checked="" type="checkbox"/>			
Was adequate sample volume provided <sup>(1)</sup> ?	<input checked="" type="checkbox"/>			
Are short holding time analytes or samples with HTs due within 48 hours present <sup>(1)</sup> ?		<input checked="" type="checkbox"/>		
Is a chain-of-custody (COC) present and filled out completely <sup>(1)</sup> ?	<input checked="" type="checkbox"/>			
Does the COC agree with the number and type of sample bottles received <sup>(1)</sup> ?	<input checked="" type="checkbox"/>			
Do the sample IDs on the bottle labels match the COC <sup>(1)</sup> ?	<input checked="" type="checkbox"/>			
Is the COC properly relinquished by the client with date and time recorded <sup>(1)</sup> ?	<input checked="" type="checkbox"/>			
For volatiles in water – is there headspace (> ¼ inch bubble) present? If yes, contact client and note in narrative.			<input checked="" type="checkbox"/>	
Are samples preserved that require preservation and was it checked <sup>(1)</sup> ? (note ID of confirmation instrument used in comments) / (preservation is not confirmed for subcontracted analyses in order to insure sample integrity)(pH <2 for samples preserved with HNO <sub>3</sub> , HCL, H <sub>2</sub> SO <sub>4</sub> ) / (pH >10 for samples preserved with NaAsO <sub>2</sub> +NaOH, ZnAc+NaOH)			<input checked="" type="checkbox"/>	
Additional Comments (if any):				

<sup>(1)</sup>If NO, then contact the client before proceeding with analysis and note date/time and person contacted as well as the corrective action to in the additional comments (above) and the case narrative.

Reviewed by: (Project Manager)

12/23/20  
Date/Time Reviewed

Origins Laboratory, Inc.

*Jordan A. Merrill*

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



Fremont Environmental  
8305 6th St, PO Box 1289  
Wellington CO 80549

Paul Henehan  
Project Number: [none]  
Project: GWOC - Pierce

**Pierce SVE**  
**12/22/2020 10:30:00AM**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Analyst	Prepared	Analyzed	Notes
---------	--------	-----------------	-------	----------	-------	---------	----------	----------	-------

**Origins Laboratory, Inc.**  
**Y012368-01 (Air)**

**GBTEX by TO-15M GC/MS**

<b>T</b>									
Gasoline Range Hydrocarbons	<b>2160000</b>	423000	ug/m <sup>3</sup> Air	2112.9	B0L2110	DJL	12/22/2020	12/29/2020	
Benzene	<b>116</b>	70.0	"	25	"	DJL	"	12/29/2020	
Toluene	ND	125	"	"	"	DJL	"	"	R-01, U
Ethylbenzene	<b>269</b>	125	"	"	"	DJL	"	"	
m,p-Xylene	<b>1200</b>	475	"	"	"	DJL	"	"	
o-Xylene	<b>404</b>	118	"	"	"	DJL	"	"	
Surrogate: 1,2-Dichloroethane-d4	96.1 %	70-130			"	"	"	"	
Surrogate: Toluene-d8	330 %	70-130			"	"	"	"	S-04
Surrogate: 4-Bromofluorobenzene	123 %	70-130			"	"	"	"	

Origins Laboratory, Inc.



*The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.*

Fremont Environmental

8305 6th St, PO Box 1289

Wellington CO 80549

Paul Henehan

Project Number: [none]

Project: GWOC - Pierce

## Volatile Organic Compounds by TO-15 in Air - Quality Control

### Origins Laboratory, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
<b>Batch B0L2110 - Default Prep - Air</b>										
<b>Blank (B0L2110-BLK1)</b>					Prepared: 12/21/2020 Analyzed: 12/21/2020					T
Gasoline Range Hydrocarbons	ND	200	ug/m <sup>3</sup> Air							U
Benzene	ND	2.80	"							U
Toluene	ND	5.00	"							U
Ethylbenzene	ND	5.00	"							U
m,p-Xylene	ND	19.0	"							U
o-Xylene	ND	4.70	"							U
Surrogate: 1,2-Dichloroethane-d4	10.5		ppbv	10.0		105	70-130			
Surrogate: Toluene-d8	10.0		"	10.0		100	70-130			
Surrogate: 4-Bromofluorobenzene	12.9		"	10.0		129	70-130			
<b>LCS (B0L2110-BS1)</b>					Prepared: 12/21/2020 Analyzed: 12/21/2020					T
Benzene	34.0	2.80	ug/m <sup>3</sup> Air	31.9		106	70-130			
Toluene	35.6	5.00	"	37.7		94.5	70-130			
Ethylbenzene	43.7	5.00	"	43.4		101	70-130			
m,p-Xylene	189	19.0	"	174		109	70-130			
o-Xylene	42.8	4.70	"	43.4		98.6	70-130			
Surrogate: 1,2-Dichloroethane-d4	9.88		ppbv	10.0		98.8	70-130			
Surrogate: Toluene-d8	9.17		"	10.0		91.7	70-130			
Surrogate: 4-Bromofluorobenzene	8.23		"	10.0		82.3	70-130			
<b>LCS Dup (B0L2110-BSD1)</b>					Prepared: 12/21/2020 Analyzed: 12/21/2020					T
Benzene	32.1	2.80	ug/m <sup>3</sup> Air	31.9		100	70-130	5.61	25	
Toluene	33.7	5.00	"	37.7		89.3	70-130	5.66	25	
Ethylbenzene	42.5	5.00	"	43.4		97.9	70-130	2.72	25	
m,p-Xylene	183	19.0	"	174		105	70-130	3.40	25	
o-Xylene	42.9	4.70	"	43.4		98.9	70-130	0.304	25	
Surrogate: 1,2-Dichloroethane-d4	9.39		ppbv	10.0		93.9	70-130			

Origins Laboratory, Inc.

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Fremont Environmental  
8305 6th St, PO Box 1289  
Wellington CO 80549

Paul Henehan  
Project Number: [none]  
Project: GWOC - Pierce

**Volatile Organic Compounds by TO-15 in Air - Quality Control**  
**Origins Laboratory, Inc.**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch B0L2110 - Default Prep - Air

LCS Dup (B0L2110-BSD1)

Prepared: 12/21/2020 Analyzed: 12/21/2020

T

Surrogate: Toluene-d8	9.10		ppbv	10.0		91.0	70-130			
Surrogate: 4-Bromofluorobenzene	8.52		"	10.0		85.2	70-130			

Origins Laboratory, Inc.



The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Fremont Environmental  
8305 6th St, PO Box 1289  
Wellington CO 80549

Paul Henehan  
Project Number: [none]  
Project: GWOC - Pierce

### Notes and Definitions

- U Sample is Non-Detect.
- T The TO-15 analysis is not part of the NELAC accreditation
- S-04 The surrogate recovery for this sample is outside of established control limits due to a sample matrix effect.
- R-01 The Reporting Limit for this analyte has been raised to account for matrix interference.
- ND Analyte NOT DETECTED at or above the reporting limit
- RPD Relative Percent Difference
- All soil results are reported at a wet weight basis.

Origins Laboratory, Inc.



*The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.*



January 07, 2021

**Fremont Environmental**

**Paul Henehan**

**8305 6th St, PO Box 1289**

**Wellington CO 80549**

**Project Name - GWOC - Pierce**

**Project Number - C020-025**

Attached are your analytical results for GWOC - Pierce received by Origins Laboratory, Inc. December 30, 2020. This project is associated with Origins project number Y012417-01.

The analytical results in the following report were analyzed under the guidelines of EPA Methods. These methods are identified as follows; "SW" are defined in SW-846, "EPA" are defined in 40CFR part 136 and "SM" are defined in the most current revision of Standard Methods For the Examination of Water and Wastewater.

The analytical results apply specifically to the samples and analyses specified per the attached Chain of Custody. As such, this report shall not be reproduced except in full, without the written approval of Origin's laboratory.

Unless otherwise noted, the analytical results for all soil samples are reported on a wet weight basis. All analytical analyses were performed under NELAP guidelines unless noted by a data qualifier.

Any holding time exceedances, deviations from the method specifications or deviations from Origins Laboratory's Standard Operating Procedures are outlined in the case narrative.

Thank you for selecting Origins for your analytical needs. Please contact us with any questions concerning this report, or if we can help with anything at all.

Origins Laboratory, Inc.  
303.433.1322  
o-squad@oelabinc.com



1725 Elk Place, Denver, CO 80211 | Phone: 303.433.1322 | Fax: 303.265.9645

Fremont Environmental

8305 6th St, PO Box 1289

Wellington CO 80549

Paul Henehan

Project Number: C020-025

Project: GWOC - Pierce

### CROSS REFERENCE REPORT

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
Pierce SVE	Y012417-01	Air	December 28, 2020 10:00	12/30/2020 09:10

Origins Laboratory, Inc.



*The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.*

Fremont Environmental  
8305 6th St, PO Box 1289  
Wellington CO 80549

Paul Henehan  
Project Number: C020-025  
Project: GWOC - Pierce

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4012417

page 1 of 1

**ORIGINS**  
LABORATORY, INC

Client: FREMONT  
Address:  
Telephone Number:  
Email Address:

Project Manager: HENEHAN  
Project Name: GWOC - PIERCE STATION  
Project Number: C020-025  
Samples Collected By: HENEHAN

Fax: 303.265.9645

Sample ID Description	Date Sampled	Time Sampled	# of Containers	Preservative				Matrix			Analysis	Sample Instructions
				Unpreserved	HCl	HNO <sub>3</sub>	Groundwater	Soil	Air Summa Canister #	Other		
PIERCE SYE	12/28/20	1000	1	✓						✓	GISTEX	1
												2
												3
												4
												5
												6
												7
												8
												9
												10

Relinquished By:	Date:	Time:	Received By:	Date:	Time:	Turnaround Time:
BLAKE	12/30/20	910	[Signature]	12/30/20	910	Same Day <input type="checkbox"/> 24 Hr <input type="checkbox"/> 48 Hr <input type="checkbox"/> 72 Hr <input checked="" type="checkbox"/> Standard

Date Results Needed

Origins Laboratory, Inc.

*Jordan A. Merrill*

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



Fremont Environmental

8305 6th St, PO Box 1289

Wellington CO 80549

Paul Henehan

Project Number: C020-025

Project: GWOC - Pierce

Origins Laboratory

F-012207-01-R1  
Effective Date: 01/09/12

## Sample Receipt Checklist

Origins Work Order: 7012417

Client: Fremont Env.

Client Project ID: GWOC - Pierce

Checklist Completed by: DM

Shipped Via: Ack-MP  
(UPS, FedEx, Hand Delivered, Pick-up, etc.)

Date/time completed: 12-30-20

Airbill #: NA

Matrix(s) Received: (Check all that apply): Soil/Solid Water Other: A.F.

Cooler Number/Temperature: 1 °C 1 °C 1 °C (Describe) 1 °C

Thermometer ID: 1

Requirement Description	Yes	No	N/A	Comments (if any)
If samples require cooling, was the temperature between 0°C to ≤ 6°C <sup>(1)</sup> ?			<input checked="" type="checkbox"/>	<u>A.F.</u>
Is there ice present (document if blue ice is used)			<input checked="" type="checkbox"/>	
Are custody seals present on cooler? (if so, document in comments if they are signed and dated, broken or intact)		<input checked="" type="checkbox"/>		
Are custody seals present on each sample container? (if so, document in comments if they are signed and dated, broken or intact)		<input checked="" type="checkbox"/>		
Were all samples received intact <sup>(1)</sup> ?	<input checked="" type="checkbox"/>			
Was adequate sample volume provided <sup>(1)</sup> ?	<input checked="" type="checkbox"/>			
Are short holding time analytes or samples with HTs due within 48 hours present <sup>(1)</sup> ?		<input checked="" type="checkbox"/>		
Is a chain-of-custody (COC) present and filled out completely <sup>(1)</sup> ?	<input checked="" type="checkbox"/>			
Does the COC agree with the number and type of sample bottles received <sup>(1)</sup> ?	<input checked="" type="checkbox"/>			
Do the sample IDs on the bottle labels match the COC <sup>(1)</sup> ?	<input checked="" type="checkbox"/>			
Is the COC properly relinquished by the client with date and time recorded <sup>(1)</sup> ?	<input checked="" type="checkbox"/>			
For volatiles in water – is there headspace (> ¼ inch bubble) present? If yes, contact client and note in narrative.			<input checked="" type="checkbox"/>	
Are samples preserved that require preservation and was it checked <sup>(1)</sup> ? (note ID of confirmation instrument used in comments) / (preservation is not confirmed for subcontracted analyses in order to insure sample integrity)/(pH <2 for samples preserved with HNO <sub>3</sub> , HCL, H <sub>2</sub> SO <sub>4</sub> ) / (pH >10 for samples preserved with NaAsO <sub>2</sub> +NaOH, ZnAc+NaOH)			<input checked="" type="checkbox"/>	
Additional Comments (if any):				

<sup>(1)</sup>If NO, then contact the client before proceeding with analysis and note date/time and person contacted as well as the corrective action to in the additional comments (above) and the case narrative.

Reviewed by DM (Project Manager)

12-31-20  
Date/Time Reviewed

Origins Laboratory, Inc.

Jordan A. Merrill

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



Fremont Environmental  
8305 6th St, PO Box 1289  
Wellington CO 80549

Paul Henehan  
Project Number: C020-025  
Project: GWOC - Pierce

**Pierce SVE**  
**12/28/2020 10:00:00AM**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Analyst	Prepared	Analyzed	Notes
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**Origins Laboratory, Inc.**  
**Y012417-01 (Air)**

**GBTEX by TO-15M GC/MS**

									T
Gasoline Range Hydrocarbons	2380000	406000	ug/m <sup>3</sup> Air	2030.9	B0L3014	DJL	12/30/2020	01/05/2021	
Benzene	72.7	70.0	"	25	"	DJL	"	12/30/2020	
Toluene	ND	125	"	"	"	DJL	"	"	U
Ethylbenzene	264	125	"	"	"	DJL	"	"	
m,p-Xylene	1240	475	"	"	"	DJL	"	"	
o-Xylene	403	118	"	"	"	DJL	"	"	
Surrogate: 1,2-Dichloroethane-d4	95.6 %	70-130			"	"	"	"	
Surrogate: Toluene-d8	370 %	70-130			"	"	"	"	S-04
Surrogate: 4-Bromofluorobenzene	116 %	70-130			"	"	"	"	

Origins Laboratory, Inc.



*The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.*

Fremont Environmental  
8305 6th St, PO Box 1289  
Wellington CO 80549

Paul Henehan  
Project Number: C020-025  
Project: GWOC - Pierce

## Volatile Organic Compounds by TO-15 in Air - Quality Control Origins Laboratory, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
<b>Batch B0L3014 - Default Prep - Air</b>										
<b>Blank (B0L3014-BLK1)</b>					Prepared: 12/30/2020 Analyzed: 12/30/2020					T
Gasoline Range Hydrocarbons	ND	200	ug/m <sup>3</sup> Air							U
Benzene	ND	2.80	"							U
Toluene	ND	5.00	"							U
Ethylbenzene	ND	5.00	"							U
m,p-Xylene	ND	19.0	"							U
o-Xylene	ND	4.70	"							U
Surrogate: 1,2-Dichloroethane-d4	10.4		ppbv	10.0		104	70-130			
Surrogate: Toluene-d8	10.2		"	10.0		102	70-130			
Surrogate: 4-Bromofluorobenzene	12.5		"	10.0		125	70-130			
<b>LCS (B0L3014-BS1)</b>					Prepared: 12/30/2020 Analyzed: 12/30/2020					T
Benzene	31.6	2.80	ug/m <sup>3</sup> Air	31.9		98.8	70-130			
Toluene	34.6	5.00	"	37.7		91.9	70-130			
Ethylbenzene	43.1	5.00	"	43.4		99.2	70-130			
m,p-Xylene	196	19.0	"	174		113	70-130			
o-Xylene	42.3	4.70	"	43.4		97.3	70-130			
Surrogate: 1,2-Dichloroethane-d4	8.91		ppbv	10.0		89.1	70-130			
Surrogate: Toluene-d8	8.97		"	10.0		89.7	70-130			
Surrogate: 4-Bromofluorobenzene	8.62		"	10.0		86.2	70-130			
<b>LCS Dup (B0L3014-BSD1)</b>					Prepared: 12/30/2020 Analyzed: 12/30/2020					T
Benzene	32.5	2.80	ug/m <sup>3</sup> Air	31.9		102	70-130	2.89	25	
Toluene	36.3	5.00	"	37.7		96.3	70-130	4.68	25	
Ethylbenzene	45.2	5.00	"	43.4		104	70-130	4.72	25	
m,p-Xylene	207	19.0	"	174		119	70-130	5.17	25	
o-Xylene	45.2	4.70	"	43.4		104	70-130	6.75	25	
Surrogate: 1,2-Dichloroethane-d4	9.18		ppbv	10.0		91.8	70-130			

Origins Laboratory, Inc.



The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Fremont Environmental  
8305 6th St, PO Box 1289  
Wellington CO 80549

Paul Henehan  
Project Number: C020-025  
Project: GWOC - Pierce

**Volatile Organic Compounds by TO-15 in Air - Quality Control**  
**Origins Laboratory, Inc.**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
---------	--------	-----------------	-------	-------------	---------------	------	-------------	-----	-----------	-------

Batch B0L3014 - Default Prep - Air

LCS Dup (B0L3014-BSD1)

Prepared: 12/30/2020 Analyzed: 12/30/2020

T

Surrogate: Toluene-d8	9.13		ppbv	10.0		91.3	70-130			
Surrogate: 4-Bromofluorobenzene	8.24		"	10.0		82.4	70-130			

Origins Laboratory, Inc.



*The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.*

Fremont Environmental  
8305 6th St, PO Box 1289  
Wellington CO 80549

Paul Henehan  
Project Number: C020-025  
Project: GWOC - Pierce

### Notes and Definitions

- U Sample is Non-Detect.
- T The TO-15 analysis is not part of the NELAC accreditation
- S-04 The surrogate recovery for this sample is outside of established control limits due to a sample matrix effect.
- ND Analyte NOT DETECTED at or above the reporting limit
- RPD Relative Percent Difference
- All soil results are reported at a wet weight basis.

Origins Laboratory, Inc.



*The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.*



January 08, 2021

Fremont Environmental

Paul Henehan

8305 6th St, PO Box 1289

Wellington CO 80549

**Project Name - Great Western - Pierce Station**

**Project Number - C020-025**

Attached are your analytical results for Great Western - Pierce Station received by Origins Laboratory, Inc. January 05, 2021. This project is associated with Origins project number Y101021-01.

The analytical results in the following report were analyzed under the guidelines of EPA Methods. These methods are identified as follows; "SW" are defined in SW-846, "EPA" are defined in 40CFR part 136 and "SM" are defined in the most current revision of Standard Methods For the Examination of Water and Wastewater.

The analytical results apply specifically to the samples and analyses specified per the attached Chain of Custody. As such, this report shall not be reproduced except in full, without the written approval of Origin's laboratory.

Unless otherwise noted, the analytical results for all soil samples are reported on a wet weight basis. All analytical analyses were performed under NELAP guidelines unless noted by a data qualifier.

Any holding time exceedances, deviations from the method specifications or deviations from Origins Laboratory's Standard Operating Procedures are outlined in the case narrative.

Thank you for selecting Origins for your analytical needs. Please contact us with any questions concerning this report, or if we can help with anything at all.

Origins Laboratory, Inc.  
303.433.1322  
o-squad@oelabinc.com



1725 Elk Place, Denver, CO 80211 | Phone: 303.433.1322 | Fax: 303.265.9645

Fremont Environmental

8305 6th St, PO Box 1289

Wellington CO 80549

Paul Henehan

Project Number: C020-025

Project: Great Western - Pierce Station

### CROSS REFERENCE REPORT

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
Pierce SVE	Y101021-01	Air	January 4, 2021 11:15	01/05/2021 09:30

Origins Laboratory, Inc.



*The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.*

Fremont Environmental  
8305 6th St, PO Box 1289  
Wellington CO 80549

Paul Henehan  
Project Number: C020-025  
Project: Great Western - Pierce Station

**ORIGINS** LABORATORY, INC

Client: FREMONT

Address: \_\_\_\_\_

Telephone Number: \_\_\_\_\_

Email Address: \_\_\_\_\_

Project Manager: HENEHAN

Project Name: PIERCE SVE

Project Number: C020-025

Samples Collected By: HENEHAN

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page 1 of 1

Sample ID Description	Date Sampled	Time Sampled	# of Containers	Preservative				Matrix			Analysis	Sample Instructions	
				Unpreserved	HCl	HNO <sub>3</sub>	Other	Groundwater	Soil	Air Summa Canister #			Other
Pierce SVE	1/4/21	1115	1	<input checked="" type="checkbox"/>									1
													2
													3
													4
													5
													6
													7
													8
													9
													10

Relinquished By: PAH-PE

Relinquished By: \_\_\_\_\_

Date: 1/5/21

Date: \_\_\_\_\_

Received By: [Signature]

Received By: \_\_\_\_\_

Date: 1/5/21

Date: \_\_\_\_\_

Time: 930

Time: \_\_\_\_\_

Turnaround Time: Same Day ☐ 24 Hr ☐ 48 Hr ☐ 72 Hr ☒ Standard ☐

Origins Laboratory, Inc.

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



Fremont Environmental

8305 6th St, PO Box 1289

Wellington CO 80549

Paul Henehan

Project Number: C020-025

Project: Great Western - Pierce Station

Origins Laboratory

F-012207-01-R1  
Effective Date: 01/09/12

## Sample Receipt Checklist

Origins Work Order: Y101021

Client: Fremont

Client Project ID: GW - Pierce

Checklist Completed by: JS

Shipped Via: HD

Date/time completed: 1/5/21

(UPS, FedEx, Hand Delivered, Pick-up, etc.)

Airbill #: N/A

Matrix(s) Received: (Check all that apply): Soil/Solid Water X Other: Air

Cooler Number/Temperature: - / - °C - / - °C - / - °C (Describe) °C

Thermometer ID: N/A

Requirement Description	Yes	No	N/A	Comments (if any)
If samples require cooling, was the temperature between 0°C to ≤ 6°C <sup>(1)</sup> ?			<input checked="" type="checkbox"/>	
Is there ice present (document if blue ice is used)			<input checked="" type="checkbox"/>	
Are custody seals present on cooler? (if so, document in comments if they are signed and dated, broken or intact)			<input checked="" type="checkbox"/>	
Are custody seals present on each sample container? (if so, document in comments if they are signed and dated, broken or intact)			<input checked="" type="checkbox"/>	
Were all samples received intact <sup>(1)</sup> ?	<input checked="" type="checkbox"/>			
Was adequate sample volume provided <sup>(1)</sup> ?	<input checked="" type="checkbox"/>			
Are short holding time analytes or samples with HTs due within 48 hours present <sup>(1)</sup> ?		<input checked="" type="checkbox"/>		
Is a chain-of-custody (COC) present and filled out completely <sup>(1)</sup> ?	<input checked="" type="checkbox"/>			
Does the COC agree with the number and type of sample bottles received <sup>(1)</sup> ?	<input checked="" type="checkbox"/>			
Do the sample IDs on the bottle labels match the COC <sup>(1)</sup> ?	<input checked="" type="checkbox"/>			
Is the COC properly relinquished by the client with date and time recorded <sup>(1)</sup> ?	<input checked="" type="checkbox"/>			
For volatiles in water – is there headspace (> ¼ inch bubble) present? If yes, contact client and note in narrative.			<input checked="" type="checkbox"/>	
Are samples preserved that require preservation and was it checked <sup>(1)</sup> ? (note ID of confirmation instrument used in comments) / (preservation is not confirmed for subcontracted analyses in order to insure sample integrity)/(pH <2 for samples preserved with HNO <sub>3</sub> , HCL, H <sub>2</sub> SO <sub>4</sub> ) / (pH >10 for samples preserved with NaAsO <sub>2</sub> +NaOH, ZnAc+NaOH)			<input checked="" type="checkbox"/>	
Additional Comments (if any):				

<sup>(1)</sup> If NO, then contact the client before proceeding with analysis and note date/time and person contacted as well as the corrective action to in the additional comments (above) and the case narrative.

Reviewed by: JS (Project Manager)

Date/Time Reviewed: 1-6-21

Origins Laboratory, Inc.

*Jordan A. Merrill*

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Fremont Environmental  
8305 6th St, PO Box 1289  
Wellington CO 80549

Paul Henehan  
Project Number: C020-025  
Project: Great Western - Pierce Station

## Pierce SVE

1/4/2021 11:15:00AM

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Analyst	Prepared	Analyzed	Notes
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Origins Laboratory, Inc.  
Y101021-01 (Air)

## GBTEX by TO-15M GC/MS

									T
Gasoline Range Hydrocarbons	2560000	50000	ug/m <sup>3</sup> Air	250	B1A0512	DJL	01/05/2021	01/05/2021	
Benzene	ND	70.0	"	25	"	DJL	"	01/06/2021	R-01, U
Toluene	ND	125	"	"	"	DJL	"	"	R-01, U
Ethylbenzene	ND	125	"	"	"	DJL	"	"	R-01, U
m,p-Xylene	ND	475	"	"	"	DJL	"	"	R-01, U
o-Xylene	ND	118	"	"	"	DJL	"	"	R-01, U
Surrogate: 1,2-Dichloroethane-d4	106 %	70-130			"	"	"	"	
Surrogate: Toluene-d8	323 %	70-130			"	"	"	"	S-04
Surrogate: 4-Bromofluorobenzene	118 %	70-130			"	"	"	"	

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Wellington CO 80549

Paul Henehan  
Project Number: C020-025  
Project: Great Western - Pierce Station

## Volatile Organic Compounds by TO-15 in Air - Quality Control Origins Laboratory, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
<b>Batch B1A0512 - Default Prep - Air</b>										
<b>Blank (B1A0512-BLK1)</b>					Prepared: 01/05/2021 Analyzed: 01/05/2021					T
Gasoline Range Hydrocarbons	ND	200	ug/m <sup>3</sup> Air							U
Benzene	ND	2.80	"							U
Toluene	ND	5.00	"							U
Ethylbenzene	ND	5.00	"							U
m,p-Xylene	ND	19.0	"							U
o-Xylene	ND	4.70	"							U
Surrogate: 1,2-Dichloroethane-d4	10.5		ppbv	10.0		105	70-130			
Surrogate: Toluene-d8	10.0		"	10.0		100	70-130			
Surrogate: 4-Bromofluorobenzene	12.4		"	10.0		124	70-130			
<b>LCS (B1A0512-BS1)</b>					Prepared: 01/05/2021 Analyzed: 01/05/2021					T
Benzene	35.0	2.80	ug/m <sup>3</sup> Air	31.9		110	70-130			
Toluene	37.3	5.00	"	37.7		99.0	70-130			
Ethylbenzene	46.1	5.00	"	43.4		106	70-130			
m,p-Xylene	207	19.0	"	174		119	70-130			
o-Xylene	45.7	4.70	"	43.4		105	70-130			
Surrogate: 1,2-Dichloroethane-d4	9.58		ppbv	10.0		95.8	70-130			
Surrogate: Toluene-d8	9.28		"	10.0		92.8	70-130			
Surrogate: 4-Bromofluorobenzene	8.66		"	10.0		86.6	70-130			
<b>LCS Dup (B1A0512-BSD1)</b>					Prepared: 01/05/2021 Analyzed: 01/05/2021					T
Benzene	33.8	2.80	ug/m <sup>3</sup> Air	31.9		106	70-130	3.34	25	
Toluene	36.3	5.00	"	37.7		96.4	70-130	2.66	25	
Ethylbenzene	46.8	5.00	"	43.4		108	70-130	1.50	25	
m,p-Xylene	207	19.0	"	174		119	70-130	0.252	25	
o-Xylene	46.9	4.70	"	43.4		108	70-130	2.44	25	
Surrogate: 1,2-Dichloroethane-d4	9.25		ppbv	10.0		92.5	70-130			

Origins Laboratory, Inc.

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Fremont Environmental

8305 6th St, PO Box 1289

Wellington CO 80549

Paul Henehan

Project Number: C020-025

Project: Great Western - Pierce Station

## Volatile Organic Compounds by TO-15 in Air - Quality Control

### Origins Laboratory, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch B1A0512 - Default Prep - Air

LCS Dup (B1A0512-BSD1)

Prepared: 01/05/2021 Analyzed: 01/05/2021

T

Surrogate: Toluene-d8	9.16		ppbv	10.0		91.6	70-130			
Surrogate: 4-Bromofluorobenzene	8.33		"	10.0		83.3	70-130			

Origins Laboratory, Inc.



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Wellington CO 80549

Paul Henehan  
Project Number: C020-025  
Project: Great Western - Pierce Station

### Notes and Definitions

- U Sample is Non-Detect.
- T The TO-15 analysis is not part of the NELAC accreditation
- S-04 The surrogate recovery for this sample is outside of established control limits due to a sample matrix effect.
- R-01 The Reporting Limit for this analyte has been raised to account for matrix interference.
- ND Analyte NOT DETECTED at or above the reporting limit
- RPD Relative Percent Difference
- All soil results are reported at a wet weight basis.

Origins Laboratory, Inc.



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