

August 06, 2018

SRC Energy

Dave Castro

5400 W 11th Street

Greely

CO 80634

Project Name - Boulder-Kawata TB Vault Pit

Project Number - [none]

Attached are your analytical results for Boulder-Kawata TB Vault Pit received by Origins Laboratory, Inc. July 31, 2018. This project is associated with Origins project number Y807440-01.

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



SRC Energy
5400 W 11th Street
Greely CO 80634

Dave Castro
Project Number: [none]
Project: Boulder-Kawata TB Vault Pit

CROSS REFERENCE REPORT

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
WSS@2.5'	Y807440-01	Soil	July 31, 2018 9:13	07/31/2018 16:08
BSS@5'	Y807440-02	Soil	July 31, 2018 9:15	07/31/2018 16:08

Origins Laboratory, Inc.



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Jen Pellegrini, Project Manager

SRC Energy
 5400 W 11th Street
 Greeley CO 80634

Dave Castro
 Project Number: [none]
 Project: Boulder-Kawata TB Vault Pit

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Y87440

page 1 of 1



Client: SRC Energy, Inc.
 Address: 5400 W. 11th St., Ste. C, Greeley, CO 80634
 Telephone Number: 970-475-5245
 Email Address: dcastro@srcenergy.com

Project Manager: Dave Castro
 Project Name: Boulder-Kawata TB Vault Pit
 Project Number:
 Samples Collected By: dcastro@srcenergy.com

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

Sample ID Description	Date Sampled	Time Sampled	# of Containers	Preservative			Matrix			Analysis	Sample Instructions
				Unpreserved	HCl	HNO ₃	Groundwater	Soil	At Summ #		
WSS @ 2.5'	7/31/18	9:13	2	X			X			ISTEX DPO GPO ECP/HSAF	1
BSS @ 5'	7/31/18	9:15	2	X			X				2
											3
											4
											5
											6
											7
											8
											9
											10
Relinquished By: Dave Castro	Date: 7/31/18	Time: 16:08	Received By: 	Date: 7/31/18	Time: 16:08	Received By: 	Date: 7/31/18	Time: 16:08	Turnaround Time: Same Day <input checked="" type="checkbox"/> 24 Hr <input type="checkbox"/> 48 Hr <input type="checkbox"/> 72 Hr <input type="checkbox"/> Standard <input type="checkbox"/>		
Relinquished By:	Date:	Time:	Received By:	Date:	Time:	Received By:	Date:	Time:			

4/6 Date Results Needed

Origins Laboratory, Inc.

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SRC Energy
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 Greeley CO 80634

Dave Castro
 Project Number: [none]
 Project: Boulder-Kawata TB Vault Pit

Origins Laboratory

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

Sample Receipt Checklist

Origins Work Order: Y807440

Client: SRC Energy

Client Project ID: Boulder-Kawata TB Vault Pit

Checklist Completed by: JG

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

Date/time completed: 7/31/2018

Airbill #: N/A

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

Cooler Number/Temperature: 1 / 4.6 °c _____ °c _____ °c _____ °c (Describe)

Thermometer ID: T003

Requirement Description	Yes	No	N/A	Comments (if any)
If samples require cooling, was the temperature between 0°C to ≤ 6°C ⁽¹⁾ ?	<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 ⁽¹⁾ ?	<input checked="" type="checkbox"/>			
Was adequate sample volume provided ⁽¹⁾ ?	<input checked="" type="checkbox"/>			
Are short holding time analytes or samples with HTs due within 48 hours present ⁽¹⁾ ?		<input checked="" type="checkbox"/>		
Is a chain-of-custody (COC) present and filled out completely ⁽¹⁾ ?	<input checked="" type="checkbox"/>			
Does the COC agree with the number and type of sample bottles received ⁽¹⁾ ?	<input checked="" type="checkbox"/>			
Do the sample IDs on the bottle labels match the COC ⁽¹⁾ ?	<input checked="" type="checkbox"/>			
Is the COC properly relinquished by the client with date and time recorded ⁽¹⁾ ?	<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 ⁽¹⁾ ? (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 ₃ , HCL, H ₂ SO ₄) / (pH >10 for samples preserved with NaAsO ₂ +NaOH, ZnAc+NaOH)		<input checked="" type="checkbox"/>		
Additional Comments (if any):				

⁽¹⁾ 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: [Signature] (Project Manager)

Date/Time Reviewed: 8/1/18

Origins Laboratory, Inc.

Jefe Pellegrini

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SRC Energy
 5400 W 11th Street
 Greely CO 80634

Dave Castro
 Project Number: [none]
 Project: Boulder-Kawata TB Vault Pit

WSS@2.5'

7/31/2018 9:13:00AM

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Analyst	Prepared	Analyzed	Notes
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Origins Laboratory, Inc.
Y807440-01 (Soil)

Diesel Range Organics (DRO/TEPH) by EPA 8015C

Diesel (C10-C28)	ND	50.0	mg/kg	1	B8G3103	ZZZ	07/31/2018	07/31/2018	U
Surrogate: o-Terphenyl	86.0 %	59-131			"	"	"	"	

GBTEX by EPA 8260C

Gasoline Range Hydrocarbons	ND	0.200	mg/kg	1	B8G3102	ZZZ	07/31/2018	07/31/2018	U
Benzene	ND	0.002	"	"	"	ZZZ	"	"	U
Toluene	ND	0.002	"	"	"	ZZZ	"	"	U
Ethylbenzene	ND	0.002	"	"	"	ZZZ	"	"	U
Xylenes, total	ND	0.002	"	"	"	ZZZ	"	"	U

Surrogate: 1,2-Dichloroethane-d4	105 %	70-130			"	"	"	"	
Surrogate: Toluene-d8	98.0 %	70-130			"	"	"	"	
Surrogate: 4-Bromofluorobenzene	104 %	70-130			"	"	"	"	

Metals (Saturated Paste Prep)

Calcium	11.18		me/L	1	'[none]'		08/01/2018	08/03/2018	
Magnesium	2.08		"	"	"		"	"	
Sodium	6.50		"	"	"		"	"	

pH in Soil by EPA 9045D

pH	7.69		pH Units	1	B8G3104	OLAB	07/31/2018	07/31/2018	
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Origins Laboratory, Inc.



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SRC Energy
5400 W 11th Street
Greely CO 80634

Dave Castro
Project Number: [none]
Project: Boulder-Kawata TB Vault Pit

WSS@2.5'

7/31/2018 9:13:00AM

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Analyst	Prepared	Analyzed	Notes
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Origins Laboratory, Inc.
Y807440-01 (Soil)

SAR by 20B Saturated Paste

SAR	2.52			1	'[none]'		08/01/2018	08/03/2018	
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Specific Conductance by Modified 9050A

Specific Conductance (EC)	0.606	0.00500	mmhos/cm	1	B8G3105	OLAB	07/31/2018	07/31/2018	
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Jen Pellegrini, Project Manager

SRC Energy
 5400 W 11th Street
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Dave Castro
 Project Number: [none]
 Project: Boulder-Kawata TB Vault Pit

BSS@5'

7/31/2018 9:15:00AM

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Analyst	Prepared	Analyzed	Notes
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Origins Laboratory, Inc.
Y807440-02 (Soil)

Diesel Range Organics (DRO/TEPH) by EPA 8015C

Diesel (C10-C28)	256	50.0	mg/kg	1	B8G3103	ZZZ	07/31/2018	07/31/2018	
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Surrogate: <i>o</i> -Terphenyl	90.0 %	59-131			"	"	"	"	
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GBTEX by EPA 8260C

Gasoline Range Hydrocarbons	14.3	0.200	mg/kg	1	B8G3102	ZZZ	07/31/2018	07/31/2018	
Benzene	ND	0.002	"	"	"	ZZZ	"	"	U
Toluene	ND	0.002	"	"	"	ZZZ	"	"	U
Ethylbenzene	ND	0.002	"	"	"	ZZZ	"	"	U
Xylenes, total	ND	0.002	"	"	"	ZZZ	"	"	U

Surrogate: 1,2-Dichloroethane-d4	106 %	70-130			"	"	"	"	
Surrogate: Toluene-d8	98.9 %	70-130			"	"	"	"	
Surrogate: 4-Bromofluorobenzene	130 %	70-130			"	"	"	"	

Origins Laboratory, Inc.



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SRC Energy
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 Greely CO 80634

Dave Castro
 Project Number: [none]
 Project: Boulder-Kawata TB Vault Pit

Volatile Organic Compounds by GC/MS SW846 8260C - 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 B8G3102 - EPA 5030 (soil)

Blank (B8G3102-BLK1)

Prepared: 07/31/2018 Analyzed: 07/31/2018

Gasoline Range Hydrocarbons	ND	0.200	mg/kg							U
Benzene	ND	0.002	"							U
Toluene	ND	0.002	"							U
Ethylbenzene	ND	0.002	"							U
Xylenes, total	ND	0.002	"							U
Surrogate: 1,2-Dichloroethane-d4	60		ug/kg	62.5		96.1	70-130			
Surrogate: Toluene-d8	61		"	62.5		97.2	70-130			
Surrogate: 4-Bromofluorobenzene	62		"	62.5		98.4	70-130			

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Volatile Organic Compounds by GC/MS SW846 8260C - 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 B8G3102 - EPA 5030 (soil)

LCS (B8G3102-BS1)

Prepared: 07/31/2018 Analyzed: 07/31/2018

Benzene	0.120	0.002	mg/kg	0.100		120	77.1-124			
Toluene	0.113	0.002	"	0.100		113	74.5-128			
Ethylbenzene	0.109	0.002	"	0.100		109	66.4-127			
m,p-Xylene	0.220	0.004	"	0.200		110	76.6-124			
o-Xylene	0.109	0.002	"	0.100		109	76.6-124			
Surrogate: 1,2-Dichloroethane-d4	58		ug/kg	62.5		93.5	70-130			
Surrogate: Toluene-d8	61		"	62.5		97.1	70-130			
Surrogate: 4-Bromofluorobenzene	60		"	62.5		96.7	70-130			

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Volatile Organic Compounds by GC/MS SW846 8260C - 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 B8G3102 - EPA 5030 (soil)

Matrix Spike (B8G3102-MS1)	Source: Y807433-01			Prepared: 07/31/2018 Analyzed: 07/31/2018						
Benzene	0.096	0.002	mg/kg	0.100	ND	96.4	71.8-126			
Toluene	0.089	0.002	"	0.100	ND	88.9	65.1-130			
Ethylbenzene	0.089	0.002	"	0.100	ND	88.5	62.2-130			
m,p-Xylene	0.176	0.004	"	0.200	ND	87.8	46.5-137			
o-Xylene	0.088	0.002	"	0.100	ND	87.7	54.2-134			
Surrogate: 1,2-Dichloroethane-d4	60		ug/kg	62.5		96.1	70-130			
Surrogate: Toluene-d8	60		"	62.5		96.2	70-130			
Surrogate: 4-Bromofluorobenzene	62		"	62.5		99.1	70-130			

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Dave Castro
 Project Number: [none]
 Project: Boulder-Kawata TB Vault Pit

Volatile Organic Compounds by GC/MS SW846 8260C - 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 B8G3102 - EPA 5030 (soil)

Matrix Spike Dup (B8G3102-MSD1)	Source: Y807433-01			Prepared: 07/31/2018 Analyzed: 07/31/2018						
Benzene	0.098	0.002	mg/kg	0.100	ND	98.2	71.8-126	1.85	11.3	
Toluene	0.090	0.002	"	0.100	ND	90.4	65.1-130	1.67	15.4	
Ethylbenzene	0.090	0.002	"	0.100	ND	90.1	62.2-130	1.70	19.6	
m,p-Xylene	0.180	0.004	"	0.200	ND	89.8	46.5-137	2.17	19.2	
o-Xylene	0.090	0.002	"	0.100	ND	89.9	54.2-134	2.48	17.9	
Surrogate: 1,2-Dichloroethane-d4	60		ug/kg	62.5		95.2	70-130			
Surrogate: Toluene-d8	60		"	62.5		95.8	70-130			
Surrogate: 4-Bromofluorobenzene	62		"	62.5		99.2	70-130			

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Volatile Organic Compounds by GC/MS SW846 8260C - 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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Extractable Petroleum Hydrocarbons by 8015C - 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 B8G3103 - EPA 3580

Blank (B8G3103-BLK1)

Prepared: 07/31/2018 Analyzed: 07/31/2018

Diesel (C10-C28)	ND	50.0	mg/kg							U
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Surrogate: o-Terphenyl

47			"	50.0		94.6	59-131			
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LCS (B8G3103-BS1)

Prepared: 07/31/2018 Analyzed: 07/31/2018

Diesel (C10-C28)	950	50.0	mg/kg	1000		95.0	64-121			
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Surrogate: o-Terphenyl

48			"	50.0		96.3	59-131			
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Matrix Spike (B8G3103-MS1)

Source: Y807433-01

Prepared: 07/31/2018 Analyzed: 07/31/2018

Diesel (C10-C28)	867	50.0	mg/kg	1000	ND	86.7	53-125			
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Surrogate: o-Terphenyl

37			"	50.0		73.5	59-131			
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Matrix Spike Dup (B8G3103-MSD1)

Source: Y807433-01

Prepared: 07/31/2018 Analyzed: 07/31/2018

Diesel (C10-C28)	862	50.0	mg/kg	1000	ND	86.2	53-125	0.555	20	
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Surrogate: o-Terphenyl

37			"	50.0		73.5	59-131			
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Dave Castro
 Project Number: [none]
 Project: Boulder-Kawata TB Vault Pit

Classical Chemistry Parameters - Quality Control
Origins Laboratory, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch B8G3104 - NO PREP										
Duplicate (B8G3104-DUP1)		Source: Y807433-01			Prepared: 07/31/2018 Analyzed: 07/31/2018					
pH	8.33		pH Units		8.41			0.956	25	
Batch B8G3105 - NO PREP										
Blank (B8G3105-BLK1)		Prepared: 07/31/2018 Analyzed: 07/31/2018								
Specific Conductance (EC)	0.00270	0.00500	mmhos/cm							
Duplicate (B8G3105-DUP1)		Source: Y807433-01			Prepared: 07/31/2018 Analyzed: 07/31/2018					
Specific Conductance (EC)	0.135	0.00503	mmhos/cm		0.146			7.91	25	

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Jen Pellegrini, Project Manager

SRC Energy
5400 W 11th Street
Greely CO 80634

Dave Castro
Project Number: [none]
Project: Boulder-Kawata TB Vault Pit

Notes and Definitions

U Sample is Non-Detect.

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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Jen Pellegrini, Project Manager