

March 07, 2018

**SRC Energy**

**Dave Castro**

**5400 W 11th Street**

**Greely**

**CO 80634**

**Project Name - Ikenouye West Pit Assessment**

**Project Number - [none]**

Attached are your analytical results for Ikenouye West Pit Assessment received by Origins Laboratory, Inc. March 01, 2018. This project is associated with Origins project number Y803024-01.

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: Ikenouye West Pit Assessment

CROSS REFERENCE REPORT

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
EPH1@4.5'	Y803024-01	Soil	March 1, 2018 10:53	03/01/2018 16:55
BSS@9'	Y803024-02	Soil	March 1, 2018 11:13	03/01/2018 16:55
SPH1@3'	Y803024-03	Soil	March 1, 2018 11:27	03/01/2018 16:55
WPH1@3'	Y803024-04	Soil	March 1, 2018 11:41	03/01/2018 16:55

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: Ikenouye West Pit Assessment

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

1982024

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: Ikenouye West Pit Assessment  
 Project Number:  
 Samples Collected By: dcastro@srcenergy.com

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 #
EPH @ 4.5'	3/1/18	10:53	2	X				X				1
BSE @ 9'	3/1/18	11:13	2	X				X				2
SP1 @ 3'	3/1/18	11:27	2	X				X				3
WPH @ 3'	3/1/18	11:41	2	X				X				4
												5
												6
												7
												8
												9
												10

Relinquished By: Dave Castro  
 Date: 3/1/18  
 Time: 16:53

Received By: [Signature]  
 Date: 3/1/18  
 Time: 16:55

Turnaround Time:  
 Same Day  
 48 Hr  
 72 Hr  
 Standard

Date Results Needed: 060

Origins Laboratory, Inc.

*Jefe Pellegrini*

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SRC Energy  
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 Greeley CO 80634

Dave Castro  
 Project Number: [none]  
 Project: Ikenouye West Pit Assessment

Origins Laboratory

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

Sample Receipt Checklist

Origins Work Order: Y803024

Client: SRC Energy  
 Client Project ID: Ikenouye West Pit Assessment

Checklist Completed by: DAV  
 Date/time completed: 3-7-12

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

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

Cooler Number/Temperature: 1 / 0.6 °C 1 / \_\_\_\_\_ °C 1 / \_\_\_\_\_ °C (Describe) 1 / \_\_\_\_\_ °C

Thermometer ID: 2003

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"/>			<u>PH</u>
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? <b>If yes, contact client and note in narrative.</b>			<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) \_\_\_\_\_

Date/Time Reviewed \_\_\_\_\_

Origins Laboratory, Inc.



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SRC Energy  
 5400 W 11th Street  
 Greely CO 80634

Dave Castro  
 Project Number: [none]  
 Project: Ikenouye West Pit Assessment

EPH1@4.5'  
 3/1/2018 10:53:00AM

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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Origins Laboratory, Inc.  
 Y803024-01 (Soil)

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

Diesel (C10-C28)	ND	50.0	mg/kg	1	B8C0105	03/01/2018	03/01/2018	U
<i>Surrogate: o-Terphenyl</i>	81.1 %	59-131			"	"	"	

### GBTEX by EPA 8260C

Gasoline Range Hydrocarbons	ND	0.200	mg/kg	1	B8C0104	03/01/2018	03/01/2018	U
Benzene	0.002	0.002	"	"	"	"	"	
Toluene	0.007	0.002	"	"	"	"	"	
Ethylbenzene	ND	0.002	"	"	"	"	"	U
Xylenes, total	0.007	0.002	"	"	"	"	"	
<i>Surrogate: 1,2-Dichloroethane-d4</i>	110 %	70-130			"	"	"	
<i>Surrogate: Toluene-d8</i>	100 %	70-130			"	"	"	
<i>Surrogate: 4-Bromofluorobenzene</i>	99.6 %	70-130			"	"	"	

### Metals (Saturated Paste Prep)

Calcium	6.36		me/L	1	'[none]'	03/05/2018	03/07/2018	
Magnesium	4.41		"	"	"	"	"	
Sodium	12.07		"	"	"	"	"	

### pH in Soil by EPA 9045D

pH	8.63		pH Units	1	B8C0106	03/01/2018	03/01/2018	
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Greely CO 80634

Dave Castro  
Project Number: [none]  
Project: Ikenouye West Pit Assessment

EPH1@4.5'  
3/1/2018 10:53:00AM

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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**Origins Laboratory, Inc.**  
Y803024-01 (Soil)

**SAR by 20B Saturated Paste**

SAR	5.20			1	'[none]'	03/05/2018	03/07/2018	
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**Specific Conductance by Modified 9050A**

Specific Conductance (EC)	0.0945		mmhos/cm	1	B8C0107	03/01/2018	03/01/2018	
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Jen Pellegrini, Project Manager

SRC Energy  
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Dave Castro  
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 Project: Ikenouye West Pit Assessment

**BSS@9'**  
**3/1/2018 11:13:00AM**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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**Origins Laboratory, Inc.**  
**Y803024-02 (Soil)**

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

Diesel (C10-C28)	351	50.0	mg/kg	1	B8C0105	03/01/2018	03/01/2018
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<i>Surrogate: o-Terphenyl</i>	87.0 %	59-131			"	"	"
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**GBTEX by EPA 8260C**

Gasoline Range Hydrocarbons	191	5.00	mg/kg	25	B8C0104	03/01/2018	03/02/2018
Benzene	0.118	0.050	"	"	"	"	"
Toluene	3.13	0.050	"	"	"	"	"
Ethylbenzene	0.276	0.050	"	"	"	"	"
Xylenes, total	11.6	0.050	"	"	"	"	"

<i>Surrogate: 1,2-Dichloroethane-d4</i>	101 %	70-130			"	"	"
<i>Surrogate: Toluene-d8</i>	88.2 %	70-130			"	"	"
<i>Surrogate: 4-Bromofluorobenzene</i>	116 %	70-130			"	"	"

**Metals (Saturated Paste Prep)**

Calcium	1.89		me/L	1	'[none]'	03/05/2018	03/07/2018
Magnesium	1.35		"	"	"	"	"
Sodium	6.58		"	"	"	"	"

**pH in Soil by EPA 9045D**

pH	8.46		pH Units	1	B8C0106	03/01/2018	03/01/2018
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Project Number: [none]  
Project: Ikenouye West Pit Assessment

**BSS@9'**  
**3/1/2018 11:13:00AM**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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**Origins Laboratory, Inc.**  
**Y803024-02 (Soil)**

**SAR by 20B Saturated Paste**

SAR	5.17			1	'[none]'	03/05/2018	03/07/2018	
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**Specific Conductance by Modified 9050A**

Specific Conductance (EC)	0.192		mmhos/cm	1	B8C0107	03/01/2018	03/01/2018	
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**SPH1@3'**  
**3/1/2018 11:27:00AM**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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**Origins Laboratory, Inc.**  
**Y803024-03 (Soil)**

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

Diesel (C10-C28)	ND	50.0	mg/kg	1	B8C0105	03/01/2018	03/01/2018	U
<i>Surrogate: o-Terphenyl</i>	83.7 %	59-131			"	"	"	

**GBTEX by EPA 8260C**

Gasoline Range Hydrocarbons	<b>0.345</b>	0.200	mg/kg	1	B8C0104	03/01/2018	03/02/2018	
Benzene	ND	0.002	"	"	"	"	"	U
Toluene	<b>0.004</b>	0.002	"	"	"	"	"	
Ethylbenzene	ND	0.002	"	"	"	"	"	U
Xylenes, total	<b>0.017</b>	0.002	"	"	"	"	"	
<i>Surrogate: 1,2-Dichloroethane-d4</i>	105 %	70-130			"	"	"	
<i>Surrogate: Toluene-d8</i>	99.7 %	70-130			"	"	"	
<i>Surrogate: 4-Bromofluorobenzene</i>	97.2 %	70-130			"	"	"	

**Metals (Saturated Paste Prep)**

Calcium	<b>4.03</b>		me/L	1	'[none]'	03/05/2018	03/07/2018	
Magnesium	<b>2.13</b>		"	"	"	"	"	
Sodium	<b>3.52</b>		"	"	"	"	"	

**pH in Soil by EPA 9045D**

pH	<b>8.50</b>		pH Units	1	B8C0106	03/01/2018	03/01/2018	
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Project: Ikenouye West Pit Assessment

**SPH1@3'**  
**3/1/2018 11:27:00AM**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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**Origins Laboratory, Inc.**  
**Y803024-03 (Soil)**

**SAR by 20B Saturated Paste**

SAR	2.01			1	'[none]'	03/05/2018	03/07/2018	
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**Specific Conductance by Modified 9050A**

Specific Conductance (EC)	0.117		mmhos/cm	1	B8C0107	03/01/2018	03/01/2018	
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SRC Energy  
 5400 W 11th Street  
 Greely CO 80634

Dave Castro  
 Project Number: [none]  
 Project: Ikenouye West Pit Assessment

WPH1@3'  
 3/1/2018 11:41:00AM

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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Origins Laboratory, Inc.  
 Y803024-04 (Soil)

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

Diesel (C10-C28)	ND	50.0	mg/kg	1	B8C0105	03/01/2018	03/01/2018	U
Surrogate: o-Terphenyl	83.3 %	59-131			"	"	"	

### GBTEX by EPA 8260C

Gasoline Range Hydrocarbons	ND	0.200	mg/kg	1	B8C0104	03/01/2018	03/02/2018	U
Benzene	ND	0.002	"	"	"	"	"	U
Toluene	<b>0.002</b>	0.002	"	"	"	"	"	
Ethylbenzene	ND	0.002	"	"	"	"	"	U
Xylenes, total	ND	0.002	"	"	"	"	"	U
Surrogate: 1,2-Dichloroethane-d4	105 %	70-130			"	"	"	
Surrogate: Toluene-d8	102 %	70-130			"	"	"	
Surrogate: 4-Bromofluorobenzene	100 %	70-130			"	"	"	

### Metals (Saturated Paste Prep)

Calcium	<b>3.72</b>		me/L	1	'[none]'	03/05/2018	03/07/2018	
Magnesium	<b>1.72</b>		"	"	"	"	"	
Sodium	<b>4.00</b>		"	"	"	"	"	

### pH in Soil by EPA 9045D

pH	<b>8.33</b>		pH Units	1	B8C0106	03/01/2018	03/01/2018	
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5400 W 11th Street  
Greely CO 80634

Dave Castro  
Project Number: [none]  
Project: Ikenouye West Pit Assessment

**WPH1@3'**  
**3/1/2018 11:41:00AM**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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**Origins Laboratory, Inc.**  
**Y803024-04 (Soil)**

**SAR by 20B Saturated Paste**

SAR	2.43			1	'[none]'	03/05/2018	03/07/2018	
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**Specific Conductance by Modified 9050A**

Specific Conductance (EC)	0.0920		mmhos/cm	1	B8C0107	03/01/2018	03/01/2018	
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Jen Pellegrini, Project Manager

SRC Energy  
 5400 W 11th Street  
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Dave Castro  
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 Project: Ikenouye West Pit Assessment

**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 B8C0104 - EPA 5030 (soil)**

**Blank (B8C0104-BLK1)**

Prepared: 03/01/2018 Analyzed: 03/01/2018

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	68		ug/kg	62.5		109	70-130			
Surrogate: Toluene-d8	63		"	62.5		101	70-130			
Surrogate: 4-Bromofluorobenzene	64		"	62.5		102	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 B8C0104 - EPA 5030 (soil)**

**Blank (B8C0104-BLK2)**

Prepared: 03/01/2018 Analyzed: 03/01/2018

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	69		ug/kg	62.5		111	70-130			
Surrogate: Toluene-d8	63		"	62.5		100	70-130			
Surrogate: 4-Bromofluorobenzene	63		"	62.5		100	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 B8C0104 - EPA 5030 (soil)**

**LCS (B8C0104-BS1)**

Prepared: 03/01/2018 Analyzed: 03/01/2018

Benzene	0.095	0.002	mg/kg	0.100		95.3	77.1-124			
Toluene	0.092	0.002	"	0.100		91.6	74.5-128			
Ethylbenzene	0.091	0.002	"	0.100		91.3	66.4-127			
m,p-Xylene	0.190	0.004	"	0.200		94.8	76.6-124			
o-Xylene	0.092	0.002	"	0.100		92.1	76.6-124			
Surrogate: 1,2-Dichloroethane-d4	64		ug/kg	62.5		102	70-130			
Surrogate: Toluene-d8	62		"	62.5		98.9	70-130			
Surrogate: 4-Bromofluorobenzene	61		"	62.5		97.5	70-130			

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Dave Castro  
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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 B8C0104 - EPA 5030 (soil)**

**LCS (B8C0104-BS2)**

Prepared: 03/01/2018 Analyzed: 03/01/2018

Benzene	0.118	0.002	mg/kg	0.100		118	77.1-124			
Toluene	0.114	0.002	"	0.100		114	74.5-128			
Ethylbenzene	0.109	0.002	"	0.100		109	66.4-127			
m,p-Xylene	0.230	0.004	"	0.200		115	76.6-124			
o-Xylene	0.108	0.002	"	0.100		108	76.6-124			
Surrogate: 1,2-Dichloroethane-d4	62		ug/kg	62.5		99.3	70-130			
Surrogate: Toluene-d8	62		"	62.5		99.8	70-130			
Surrogate: 4-Bromofluorobenzene	60		"	62.5		95.5	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 B8C0104 - EPA 5030 (soil)

Matrix Spike (B8C0104-MS1)	Source: Y802359-03			Prepared: 03/01/2018 Analyzed: 03/01/2018						
Benzene	0.115	0.002	mg/kg	0.100	ND	115	71.8-126			
Toluene	0.111	0.002	"	0.100	0.0008	110	65.1-130			
Ethylbenzene	0.105	0.002	"	0.100	0.0007	105	62.2-130			
m,p-Xylene	0.222	0.004	"	0.200	ND	111	46.5-137			
o-Xylene	0.106	0.002	"	0.100	0.0003	105	54.2-134			
Surrogate: 1,2-Dichloroethane-d4	66		ug/kg	62.5		106	70-130			
Surrogate: Toluene-d8	62		"	62.5		98.5	70-130			
Surrogate: 4-Bromofluorobenzene	59		"	62.5		94.4	70-130			

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SRC Energy  
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 Greely CO 80634

Dave Castro  
 Project Number: [none]  
 Project: Ikenouye West Pit Assessment

**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 B8C0104 - EPA 5030 (soil)

Matrix Spike (B8C0104-MS2)	Source: Y802359-02			Prepared: 03/01/2018 Analyzed: 03/01/2018						
Benzene	0.114	0.002	mg/kg	0.100	ND	114	71.8-126			
Toluene	0.108	0.002	"	0.100	ND	108	65.1-130			
Ethylbenzene	0.107	0.002	"	0.100	ND	107	62.2-130			
m,p-Xylene	0.227	0.004	"	0.200	ND	114	46.5-137			
o-Xylene	0.106	0.002	"	0.100	ND	106	54.2-134			
Surrogate: 1,2-Dichloroethane-d4	60		ug/kg	62.5		95.9	70-130			
Surrogate: Toluene-d8	61		"	62.5		97.6	70-130			
Surrogate: 4-Bromofluorobenzene	61		"	62.5		97.5	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 B8C0104 - EPA 5030 (soil)

Matrix Spike Dup (B8C0104-MSD1)	Source: Y802359-03			Prepared: 03/01/2018 Analyzed: 03/01/2018						
Benzene	0.110	0.002	mg/kg	0.100	ND	110	71.8-126	4.15	11.3	
Toluene	0.105	0.002	"	0.100	0.0008	104	65.1-130	5.12	15.4	
Ethylbenzene	0.103	0.002	"	0.100	0.0007	102	62.2-130	2.77	19.6	
m,p-Xylene	0.216	0.004	"	0.200	ND	108	46.5-137	2.79	19.2	
o-Xylene	0.104	0.002	"	0.100	0.0003	103	54.2-134	1.99	17.9	
Surrogate: 1,2-Dichloroethane-d4	65		ug/kg	62.5		105	70-130			
Surrogate: Toluene-d8	62		"	62.5		98.6	70-130			
Surrogate: 4-Bromofluorobenzene	61		"	62.5		97.9	70-130			

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Jen Pellegrini, Project Manager

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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 B8C0104 - EPA 5030 (soil)

Matrix Spike Dup (B8C0104-MSD2)	Source: Y802359-02			Prepared: 03/01/2018 Analyzed: 03/01/2018						
Benzene	0.100	0.002	mg/kg	0.100	ND	99.9	71.8-126	13.1	11.3	QR-02
Toluene	0.095	0.002	"	0.100	ND	95.4	65.1-130	12.8	15.4	
Ethylbenzene	0.092	0.002	"	0.100	ND	92.0	62.2-130	15.1	19.6	
m,p-Xylene	0.192	0.004	"	0.200	ND	96.0	46.5-137	16.8	19.2	
o-Xylene	0.093	0.002	"	0.100	ND	92.7	54.2-134	13.8	17.9	
Surrogate: 1,2-Dichloroethane-d4	64		ug/kg	62.5		102	70-130			
Surrogate: Toluene-d8	62		"	62.5		98.6	70-130			
Surrogate: 4-Bromofluorobenzene	61		"	62.5		97.1	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 B8C0105 - EPA 3550B**

<b>Blank (B8C0105-BLK1)</b>					Prepared: 03/01/2018 Analyzed: 03/01/2018					
Diesel (C10-C28)	ND	50.0	mg/kg							U
Surrogate: o-Terphenyl	42		"	50.0		84.6	59-131			
<b>Blank (B8C0105-BLK2)</b>					Prepared: 03/01/2018 Analyzed: 03/01/2018					
Diesel (C10-C28)	ND	50.0	mg/kg							U
Surrogate: o-Terphenyl	43		"	50.0		86.9	59-131			
<b>LCS (B8C0105-BS1)</b>					Prepared: 03/01/2018 Analyzed: 03/01/2018					
Diesel (C10-C28)	979	50.0	mg/kg	1000		97.9	64-121			
Surrogate: o-Terphenyl	49		"	50.0		98.2	59-131			
<b>LCS (B8C0105-BS2)</b>					Prepared: 03/01/2018 Analyzed: 03/01/2018					
Diesel (C10-C28)	998	50.0	mg/kg	1000		99.8	64-121			
Surrogate: o-Terphenyl	48		"	50.0		96.4	59-131			
<b>Matrix Spike (B8C0105-MS1)</b>		<b>Source: Y802359-01</b>			Prepared: 03/01/2018 Analyzed: 03/01/2018					
Diesel (C10-C28)	1000	50.0	mg/kg	1000	ND	100	53-125			
Surrogate: o-Terphenyl	49		"	50.0		97.2	59-131			
<b>Matrix Spike (B8C0105-MS2)</b>		<b>Source: Y802359-02</b>			Prepared: 03/01/2018 Analyzed: 03/01/2018					
Diesel (C10-C28)	983	50.0	mg/kg	1000	ND	98.3	53-125			
Surrogate: o-Terphenyl	48		"	50.0		96.6	59-131			

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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
<b>Batch B8C0105 - EPA 3550B</b>										
<b>Matrix Spike Dup (B8C0105-MSD1)</b>		<b>Source: Y802359-01</b>			Prepared: 03/01/2018 Analyzed: 03/01/2018					
Diesel (C10-C28)	1020	50.0	mg/kg	1000	ND	102	53-125	1.60	20	
Surrogate: o-Terphenyl	48		"	50.0		95.6	59-131			
<b>Matrix Spike Dup (B8C0105-MSD2)</b>		<b>Source: Y802359-02</b>			Prepared: 03/01/2018 Analyzed: 03/01/2018					
Diesel (C10-C28)	969	50.0	mg/kg	1000	ND	96.9	53-125	1.46	20	
Surrogate: o-Terphenyl	48		"	50.0		95.9	59-131			

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 Project: Ikenouye West Pit Assessment

**Classical Chemistry Parameters - Quality Control**  
**Origins Laboratory, Inc.**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
<b>Batch B8C0106 - NO PREP</b>										
<b>Duplicate (B8C0106-DUP1)</b>		<b>Source: Y803020-02</b>			Prepared: 03/01/2018 Analyzed: 03/01/2018					
pH	7.75		pH Units		8.02			3.42	25	
<b>Batch B8C0107 - NO PREP</b>										
<b>Blank (B8C0107-BLK1)</b>		Prepared: 03/01/2018 Analyzed: 03/01/2018								
Specific Conductance (EC)	0.00190		mmhos/cm							
<b>Duplicate (B8C0107-DUP1)</b>		<b>Source: Y803020-02</b>			Prepared: 03/01/2018 Analyzed: 03/01/2018					
Specific Conductance (EC)	0.476		mmhos/cm		0.448			6.06	25	

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Jen Pellegrini, Project Manager

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Dave Castro  
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Project: Ikenouye West Pit Assessment

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### Notes and Definitions

U Sample is Non-Detect.

QR-02 The RPD result exceeded the QC control limits; however, both percent recoveries were acceptable. Sample results for the QC batch were accepted based on percent recoveries and completeness of QC data.

ND Analyte NOT DETECTED at or above the reporting limit

RPD Relative Percent Difference

All soil results are reported at a wet weight basis.

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Jen Pellegrini, Project Manager