

October 24, 2017

LT Environmental, Inc.

Rob Rebel

4600 West 60th Avenue

Arvada CO 80003

**Project Name - Federal Reservoir #1**

**Project Number - 027317021**

Attached are your analytical results for Federal Reservoir #1 received by Origins Laboratory, Inc. October 23, 2017. This project is associated with Origins project number Y710338-01.

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



LT Environmental, Inc.  
4600 West 60th Avenue  
Arvada CO 80003

Rob Rebel  
Project Number: 027317021  
Project: Federal Reservoir #1

CROSS REFERENCE REPORT

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
NW01@4'	Y710338-01	Soil	October 23, 2017 14:00	10/23/2017 17:24
EW01@6'	Y710338-02	Soil	October 23, 2017 14:30	10/23/2017 17:24
WW01@4'	Y710338-03	Soil	October 23, 2017 15:00	10/23/2017 17:24
SW01@4'	Y710338-04	Soil	October 23, 2017 15:30	10/23/2017 17:24

Origins Laboratory, Inc.



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 4600 West 60th Avenue  
 Arvada CO 80003

Rob Rebel  
 Project Number: 027317021  
 Project: Federal Reservoir #1

www.originslaboratory.com

page 1 of 1



1710338

Client: LTE  
 Address: 4600 W. 60th Avenue  
Arvada, CO 80033  
 Telephone Number: (303) 433-9788  
 Email Address: rebel@ltenv.com

Project Manager: Rob Rebel  
 Project Name: Federal Reservoir #1  
 Project Number: 027317021  
 Samples Collected By: B. Finn

1 725 EIK 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 <sub>3</sub>	Other	Groundwater	Soil	Air Sample	Conister #	Other	BTEX	GR0		DRO		
NW01@4'	10/23/2017	1400	1	X				X					X	X				
EW01@6'		1430																
NW01@4'		1500																
SW01@4'		1530																
Relinquished By: <i>Bud F</i>	Date: 10/23/2017	Time: 1724	Date: 10-23-17	Time: 1724	Received By: <i>[Signature]</i>	Date: 10-23-17	Time: 1724	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"/>										

Temp Received: 18.5 Date Results Needed

Origins Laboratory, Inc.

*Jefe Pellegrini*

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LT Environmental, Inc.  
 4600 West 60th Avenue  
 Arvada CO 80003

Rob Rebel  
 Project Number: 027317021  
 Project: Federal Reservoir #1

Origins Laboratory

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

**Sample Receipt Checklist**

Origins Work Order: 1710336

Client: LTE

Client Project ID: Federal Reservoir #1

Checklist Completed by: Dm Lh

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

Date/time completed: 10-23-17 1736

Airbill #: N/A

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

Cooler Number/Temperature:  1 12.5 °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 <sup>(1)</sup> ?		<input checked="" type="checkbox"/>		<u>sampled same day</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? <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) [Signature]

Date/Time Reviewed 10-23-17 1732

Origins Laboratory, Inc.



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LT Environmental, Inc.  
 4600 West 60th Avenue  
 Arvada CO 80003

Rob Rebel  
 Project Number: 027317021  
 Project: Federal Reservoir #1

NW01@4'  
 10/23/2017 2:00:00PM

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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**Origins Laboratory, Inc.**  
 Y710338-01 (Soil)

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

Diesel (C10-C28)	ND	25.0	mg/kg	1	B7J2305	10/23/2017	10/24/2017	U
Surrogate: o-Terphenyl	74.3 %	59-131			"	"	"	

**GBTEX by EPA 8260C**

Gasoline Range Hydrocarbons	ND	0.200	mg/kg	1	B7J2304	10/23/2017	10/24/2017	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	111 %	70-130			"	"	"	
Surrogate: Toluene-d8	98.1 %	70-130			"	"	"	
Surrogate: 4-Bromofluorobenzene	104 %	70-130			"	"	"	

Origins Laboratory, Inc.



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LT Environmental, Inc.  
 4600 West 60th Avenue  
 Arvada CO 80003

Rob Rebel  
 Project Number: 027317021  
 Project: Federal Reservoir #1

EW01@6'  
 10/23/2017 2:30:00PM

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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**Origins Laboratory, Inc.**  
 Y710338-02 (Soil)

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

Diesel (C10-C28)	ND	25.0	mg/kg	1	B7J2305	10/23/2017	10/24/2017	U
Surrogate: o-Terphenyl	117 %	59-131			"	"	"	

**GBTEX by EPA 8260C**

Gasoline Range Hydrocarbons	ND	0.200	mg/kg	1	B7J2304	10/23/2017	10/24/2017	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	114 %	70-130			"	"	"	
Surrogate: Toluene-d8	98.8 %	70-130			"	"	"	
Surrogate: 4-Bromofluorobenzene	104 %	70-130			"	"	"	

Origins Laboratory, Inc.



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LT Environmental, Inc.  
 4600 West 60th Avenue  
 Arvada CO 80003

Rob Rebel  
 Project Number: 027317021  
 Project: Federal Reservoir #1

WW01@4'  
 10/23/2017 3:00:00PM

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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**Origins Laboratory, Inc.**  
 Y710338-03 (Soil)

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

Diesel (C10-C28)	ND	25.0	mg/kg	1	B7J2305	10/23/2017	10/24/2017	U
Surrogate: o-Terphenyl	79.3 %	59-131			"	"	"	

**GBTEX by EPA 8260C**

Gasoline Range Hydrocarbons	ND	0.200	mg/kg	1	B7J2304	10/23/2017	10/24/2017	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	116 %	70-130			"	"	"	
Surrogate: Toluene-d8	96.9 %	70-130			"	"	"	
Surrogate: 4-Bromofluorobenzene	105 %	70-130			"	"	"	

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LT Environmental, Inc.  
 4600 West 60th Avenue  
 Arvada CO 80003

Rob Rebel  
 Project Number: 027317021  
 Project: Federal Reservoir #1

**SW01@4'**  
**10/23/2017 3:30:00PM**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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**Origins Laboratory, Inc.**  
**Y710338-04 (Soil)**

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

Diesel (C10-C28)	ND	25.0	mg/kg	1	B7J2305	10/23/2017	10/24/2017	U
Surrogate: o-Terphenyl	67.5 %	59-131			"	"	"	

**GBTEX by EPA 8260C**

Gasoline Range Hydrocarbons	ND	0.200	mg/kg	1	B7J2304	10/23/2017	10/24/2017	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	116 %	70-130			"	"	"	
Surrogate: Toluene-d8	98.2 %	70-130			"	"	"	
Surrogate: 4-Bromofluorobenzene	104 %	70-130			"	"	"	

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LT Environmental, Inc.  
 4600 West 60th Avenue  
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Rob Rebel  
 Project Number: 027317021  
 Project: Federal Reservoir #1

**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 B7J2304 - EPA 5030 (soil)**

**Blank (B7J2304-BLK1)**

Prepared: 10/23/2017 Analyzed: 10/23/2017

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	71		ug/kg	62.5		113	70-130			
Surrogate: Toluene-d8	62		"	62.5		99.8	70-130			
Surrogate: 4-Bromofluorobenzene	65		"	62.5		105	70-130			

Origins Laboratory, Inc.



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Rob Rebel  
 Project Number: 027317021  
 Project: Federal Reservoir #1

**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 B7J2304 - EPA 5030 (soil)**

**LCS (B7J2304-BS1)**

Prepared: 10/23/2017 Analyzed: 10/23/2017

Benzene	0.120	0.002	mg/kg	0.100		120	77.1-124			
Toluene	0.116	0.002	"	0.100		116	74.5-128			
Ethylbenzene	0.117	0.002	"	0.100		117	66.4-127			
m,p-Xylene	0.228	0.004	"	0.200		114	76.6-124			
o-Xylene	0.112	0.002	"	0.100		112	76.6-124			
Surrogate: 1,2-Dichloroethane-d4	58		ug/kg	62.5		92.9	70-130			
Surrogate: Toluene-d8	60		"	62.5		96.2	70-130			
Surrogate: 4-Bromofluorobenzene	64		"	62.5		102	70-130			

Origins Laboratory, Inc.



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 4600 West 60th Avenue  
 Arvada CO 80003

Rob Rebel  
 Project Number: 027317021  
 Project: Federal Reservoir #1

**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 B7J2304 - EPA 5030 (soil)**

<b>Matrix Spike (B7J2304-MS1)</b>	<b>Source: Y710325-01</b>			<b>Prepared: 10/23/2017 Analyzed: 10/24/2017</b>						
Benzene	0.242	0.002	mg/kg	0.200	ND	121	71.8-126			
Toluene	0.240	0.002	"	0.200	ND	120	65.1-130			
Ethylbenzene	0.245	0.002	"	0.200	ND	122	62.2-130			
m,p-Xylene	0.490	0.004	"	0.400	ND	123	46.5-137			
o-Xylene	0.236	0.002	"	0.200	ND	118	54.2-134			
Surrogate: 1,2-Dichloroethane-d4	57		ug/kg	62.5		91.3	70-130			
Surrogate: Toluene-d8	62		"	62.5		98.9	70-130			
Surrogate: 4-Bromofluorobenzene	62		"	62.5		98.6	70-130			

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 Arvada CO 80003

Rob Rebel  
 Project Number: 027317021  
 Project: Federal Reservoir #1

**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 B7J2304 - EPA 5030 (soil)

Matrix Spike Dup (B7J2304-MSD1)	Source: Y710325-01			Prepared: 10/23/2017 Analyzed: 10/24/2017						
Benzene	0.224	0.002	mg/kg	0.200	ND	112	71.8-126	7.99	11.3	
Toluene	0.222	0.002	"	0.200	ND	111	65.1-130	7.53	15.4	
Ethylbenzene	0.209	0.002	"	0.200	ND	105	62.2-130	15.7	19.6	
m,p-Xylene	0.404	0.004	"	0.400	ND	101	46.5-137	19.2	19.2	
o-Xylene	0.203	0.002	"	0.200	ND	102	54.2-134	15.0	17.9	
Surrogate: 1,2-Dichloroethane-d4	58		ug/kg	62.5		92.2	70-130			
Surrogate: Toluene-d8	62		"	62.5		99.1	70-130			
Surrogate: 4-Bromofluorobenzene	63		"	62.5		100	70-130			

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 4600 West 60th Avenue  
 Arvada CO 80003

Rob Rebel  
 Project Number: 027317021  
 Project: Federal Reservoir #1

**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 B7J2305 - EPA 3580**

**Blank (B7J2305-BLK1)**

Prepared: 10/23/2017 Analyzed: 10/23/2017

Diesel (C10-C28)	ND	50.0	mg/kg							U
Surrogate: o-Terphenyl	48		"	50.0		96.6	59-131			

**LCS (B7J2305-BS1)**

Prepared: 10/23/2017 Analyzed: 10/23/2017

Diesel (C10-C28)	1110	50.0	mg/kg	1000		111	64-121			
Surrogate: o-Terphenyl	48		"	50.0		95.2	59-131			

**Matrix Spike (B7J2305-MS1)**

**Source: Y710325-01**

Prepared: 10/23/2017 Analyzed: 10/23/2017

Diesel (C10-C28)	1070	50.0	mg/kg	1000	ND	107	53-125			
Surrogate: o-Terphenyl	48		"	50.0		95.5	59-131			

**Matrix Spike Dup (B7J2305-MSD1)**

**Source: Y710325-01**

Prepared: 10/23/2017 Analyzed: 10/23/2017

Diesel (C10-C28)	1100	50.0	mg/kg	1000	ND	110	53-125	2.91	20	
Surrogate: o-Terphenyl	48		"	50.0		96.6	59-131			

Origins Laboratory, Inc.



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4600 West 60th Avenue  
Arvada CO 80003

Rob Rebel  
Project Number: 027317021  
Project: Federal Reservoir #1

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### 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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October 27, 2017

LT Environmental, Inc.

Rob Rebel

4600 West 60th Avenue

Arvada CO 80003

**Project Name - Federal Reservoir #1**

**Project Number - 027317021**

Attached are your analytical results for Federal Reservoir #1 received by Origins Laboratory, Inc. October 26, 2017. This project is associated with Origins project number Y710399-01.

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.

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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.

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o-squad@oelabinc.com



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4600 West 60th Avenue  
Arvada CO 80003

Rob Rebel  
Project Number: 027317021  
Project: Federal Reservoir #1

CROSS REFERENCE REPORT

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
FS01@16'	Y710399-01	Soil	October 26, 2017 12:30	10/26/2017 16:08

Origins Laboratory, Inc.



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LT Environmental, Inc.  
 4600 West 60th Avenue  
 Arvada CO 80003

Rob Rebel  
 Project Number: 027317021  
 Project: Federal Reservoir #1

Origins Laboratory

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

**Sample Receipt Checklist**

Origins Work Order: 4710399 Client: LTE  
 Client Project ID: Federal Reservoir #1  
 Checklist Completed by: D. Mathis Shipped Via: HD  
 Date/time completed: 10-26-17 1707 (UPS, FedEx, Hand Delivered, Pick-up, etc.)  
 Airbill #: no  
 Matrix(s) Received: (Check all that apply):  Soil/Solid  Water  Other: \_\_\_\_\_  
 Cooler Number/Temperature: 1 / 12.0 °C  / \_\_\_\_\_ °C  / \_\_\_\_\_ °C (Describe)  
 Thermometer ID: 1003

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"/>		Sampled same Day
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) [Signature] Date/Time Reviewed 10-26-17 1707

Origins Laboratory, Inc.

*Jefe Pellegrini*

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LT Environmental, Inc.  
 4600 West 60th Avenue  
 Arvada CO 80003

Rob Rebel  
 Project Number: 027317021  
 Project: Federal Reservoir #1

**FS01@16'**  
**10/26/2017 12:30:00PM**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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**Origins Laboratory, Inc.**  
**Y710399-01 (Soil)**

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

Diesel (C10-C28)	148	50.0	mg/kg	1	B7J2603	10/26/2017	10/27/2017	
Surrogate: o-Terphenyl	77.7 %	59-131			"	"	"	

**GBTEX by EPA 8260C**

Gasoline Range Hydrocarbons	391	5.00	mg/kg	25	B7J2602	10/26/2017	10/27/2017	
Benzene	0.090	0.050	"	"	"	"	"	
Toluene	ND	0.050	"	"	"	"	"	U
Ethylbenzene	2.17	0.050	"	"	"	"	"	
Xylenes, total	13.6	0.050	"	"	"	"	"	
Surrogate: 1,2-Dichloroethane-d4	126 %	70-130			"	"	"	
Surrogate: Toluene-d8	88.4 %	70-130			"	"	"	
Surrogate: 4-Bromofluorobenzene	119 %	70-130			"	"	"	

Origins Laboratory, Inc.



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LT Environmental, Inc.  
 4600 West 60th Avenue  
 Arvada CO 80003

Rob Rebel  
 Project Number: 027317021  
 Project: Federal Reservoir #1

**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
<b>Batch B7J2602 - EPA 5030 (soil)</b>										
<b>Blank (B7J2602-BLK1)</b>										
					Prepared: 10/26/2017 Analyzed: 10/26/2017					
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	76		ug/kg	62.5		122	70-130			
Surrogate: Toluene-d8	60		"	62.5		96.6	70-130			
Surrogate: 4-Bromofluorobenzene	60		"	62.5		96.5	70-130			

Origins Laboratory, Inc.



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LT Environmental, Inc.  
 4600 West 60th Avenue  
 Arvada CO 80003

Rob Rebel  
 Project Number: 027317021  
 Project: Federal Reservoir #1

**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
<b>Batch B7J2602 - EPA 5030 (soil)</b>										
<b>Blank (B7J2602-BLK2)</b>										
					Prepared: 10/26/2017 Analyzed: 10/26/2017					
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	70		ug/kg	62.5		111	70-130			
Surrogate: Toluene-d8	60		"	62.5		96.8	70-130			
Surrogate: 4-Bromofluorobenzene	60		"	62.5		96.1	70-130			

Origins Laboratory, Inc.



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LT Environmental, Inc.  
 4600 West 60th Avenue  
 Arvada CO 80003

Rob Rebel  
 Project Number: 027317021  
 Project: Federal Reservoir #1

**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 B7J2602 - EPA 5030 (soil)**

**LCS (B7J2602-BS1)**

Prepared: 10/26/2017 Analyzed: 10/26/2017

Benzene	0.097	0.002	mg/kg	0.100		97.1	77.1-124			
Toluene	0.104	0.002	"	0.100		104	74.5-128			
Ethylbenzene	0.101	0.002	"	0.100		101	66.4-127			
m,p-Xylene	0.204	0.004	"	0.200		102	76.6-124			
o-Xylene	0.103	0.002	"	0.100		103	76.6-124			
Surrogate: 1,2-Dichloroethane-d4	64		ug/kg	62.5		102	70-130			
Surrogate: Toluene-d8	61		"	62.5		97.1	70-130			
Surrogate: 4-Bromofluorobenzene	59		"	62.5		95.1	70-130			

Origins Laboratory, Inc.



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LT Environmental, Inc.  
 4600 West 60th Avenue  
 Arvada CO 80003

Rob Rebel  
 Project Number: 027317021  
 Project: Federal Reservoir #1

**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 B7J2602 - EPA 5030 (soil)**

**LCS (B7J2602-BS2)**

Prepared: 10/26/2017 Analyzed: 10/26/2017

Benzene	0.105	0.002	mg/kg	0.100		105	77.1-124			
Toluene	0.104	0.002	"	0.100		104	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	68		ug/kg	62.5		110	70-130			
Surrogate: Toluene-d8	61		"	62.5		97.4	70-130			
Surrogate: 4-Bromofluorobenzene	59		"	62.5		94.8	70-130			

Origins Laboratory, Inc.



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LT Environmental, Inc.  
 4600 West 60th Avenue  
 Arvada CO 80003

Rob Rebel  
 Project Number: 027317021  
 Project: Federal Reservoir #1

**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 B7J2602 - EPA 5030 (soil)

Matrix Spike (B7J2602-MS1)	Source: Y710322-03			Prepared: 10/26/2017 Analyzed: 10/26/2017						
Benzene	0.085	0.002	mg/kg	0.100	ND	84.9	71.8-126			
Toluene	0.084	0.002	"	0.100	ND	83.6	65.1-130			
Ethylbenzene	0.086	0.002	"	0.100	ND	86.4	62.2-130			
m,p-Xylene	0.177	0.004	"	0.200	ND	88.6	46.5-137			
o-Xylene	0.088	0.002	"	0.100	ND	87.7	54.2-134			
Surrogate: 1,2-Dichloroethane-d4	69		ug/kg	62.5		110	70-130			
Surrogate: Toluene-d8	61		"	62.5		97.5	70-130			
Surrogate: 4-Bromofluorobenzene	60		"	62.5		95.8	70-130			

Origins Laboratory, Inc.



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LT Environmental, Inc.  
 4600 West 60th Avenue  
 Arvada CO 80003

Rob Rebel  
 Project Number: 027317021  
 Project: Federal Reservoir #1

**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 B7J2602 - EPA 5030 (soil)**

<b>Matrix Spike (B7J2602-MS2)</b>	<b>Source: Y710322-02</b>			<b>Prepared: 10/26/2017 Analyzed: 10/26/2017</b>						
Benzene	0.096	0.002	mg/kg	0.100	ND	96.2	71.8-126			
Toluene	0.095	0.002	"	0.100	ND	94.8	65.1-130			
Ethylbenzene	0.096	0.002	"	0.100	ND	96.4	62.2-130			
m,p-Xylene	0.197	0.004	"	0.200	ND	98.6	46.5-137			
o-Xylene	0.097	0.002	"	0.100	ND	97.0	54.2-134			
Surrogate: 1,2-Dichloroethane-d4	68		ug/kg	62.5		109	70-130			
Surrogate: Toluene-d8	60		"	62.5		96.7	70-130			
Surrogate: 4-Bromofluorobenzene	58		"	62.5		93.6	70-130			

Origins Laboratory, Inc.



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LT Environmental, Inc.  
 4600 West 60th Avenue  
 Arvada CO 80003

Rob Rebel  
 Project Number: 027317021  
 Project: Federal Reservoir #1

**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 B7J2602 - EPA 5030 (soil)**

Matrix Spike Dup (B7J2602-MSD1)	Source: Y710322-03			Prepared: 10/26/2017 Analyzed: 10/26/2017						
Benzene	0.100	0.002	mg/kg	0.100	ND	100	71.8-126	16.7	11.3	QR-02
Toluene	0.098	0.002	"	0.100	ND	97.9	65.1-130	15.7	15.4	QR-02
Ethylbenzene	0.102	0.002	"	0.100	ND	102	62.2-130	16.1	19.6	
m,p-Xylene	0.205	0.004	"	0.200	ND	103	46.5-137	14.8	19.2	
o-Xylene	0.103	0.002	"	0.100	ND	103	54.2-134	16.0	17.9	
Surrogate: 1,2-Dichloroethane-d4	67		ug/kg	62.5		107	70-130			
Surrogate: Toluene-d8	61		"	62.5		97.9	70-130			
Surrogate: 4-Bromofluorobenzene	60		"	62.5		95.9	70-130			

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LT Environmental, Inc.  
 4600 West 60th Avenue  
 Arvada CO 80003

Rob Rebel  
 Project Number: 027317021  
 Project: Federal Reservoir #1

**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 B7J2602 - EPA 5030 (soil)**

<b>Matrix Spike Dup (B7J2602-MSD2)</b>	<b>Source: Y710322-02</b>			<b>Prepared: 10/26/2017 Analyzed: 10/26/2017</b>						
Benzene	0.102	0.002	mg/kg	0.100	ND	102	71.8-126	5.54	11.3	
Toluene	0.101	0.002	"	0.100	ND	101	65.1-130	6.06	15.4	
Ethylbenzene	0.103	0.002	"	0.100	ND	103	62.2-130	6.46	19.6	
m,p-Xylene	0.210	0.004	"	0.200	ND	105	46.5-137	6.35	19.2	
o-Xylene	0.105	0.002	"	0.100	ND	105	54.2-134	7.59	17.9	
Surrogate: 1,2-Dichloroethane-d4	71		ug/kg	62.5		114	70-130			
Surrogate: Toluene-d8	61		"	62.5		97.1	70-130			
Surrogate: 4-Bromofluorobenzene	60		"	62.5		95.3	70-130			

Origins Laboratory, Inc.



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LT Environmental, Inc.  
 4600 West 60th Avenue  
 Arvada CO 80003

Rob Rebel  
 Project Number: 027317021  
 Project: Federal Reservoir #1

**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 B7J2603 - EPA 3550B**

**Blank (B7J2603-BLK1)**

Prepared: 10/26/2017 Analyzed: 10/27/2017

Diesel (C10-C28)	ND	50.0	mg/kg							U
Surrogate: o-Terphenyl	33		"	50.0		65.8	59-131			

**LCS (B7J2603-BS1)**

Prepared: 10/26/2017 Analyzed: 10/27/2017

Diesel (C10-C28)	985	50.0	mg/kg	1000		98.5	64-121			
Surrogate: o-Terphenyl	50		"	50.0		100	59-131			

**Matrix Spike (B7J2603-MS1)**

**Source: Y710322-03**

Prepared: 10/26/2017 Analyzed: 10/27/2017

Diesel (C10-C28)	958	50.0	mg/kg	1000	ND	95.8	53-125			
Surrogate: o-Terphenyl	46		"	50.0		91.4	59-131			

**Matrix Spike Dup (B7J2603-MSD1)**

**Source: Y710322-03**

Prepared: 10/26/2017 Analyzed: 10/27/2017

Diesel (C10-C28)	1040	50.0	mg/kg	1000	ND	104	53-125	8.38	20	
Surrogate: o-Terphenyl	51		"	50.0		103	59-131			

Origins Laboratory, Inc.



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LT Environmental, Inc.  
4600 West 60th Avenue  
Arvada CO 80003

Rob Rebel  
Project Number: 027317021  
Project: Federal Reservoir #1

---

**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.

Origins Laboratory, Inc.



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---

Jen Pellegrini For Noelle Doyle Mathis, President

October 30, 2017

LT Environmental, Inc.

Rob Rebel

4600 West 60th Avenue

Arvada CO 80003

**Project Name - Federal Reservoir #1**

**Project Number - 027317021**

Attached are your analytical results for Federal Reservoir #1 received by Origins Laboratory, Inc. October 27, 2017. This project is associated with Origins project number Y710422-01.

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



LT Environmental, Inc.  
4600 West 60th Avenue  
Arvada CO 80003

Rob Rebel  
Project Number: 027317021  
Project: Federal Reservoir #1

CROSS REFERENCE REPORT

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
EW02@9'	Y710422-01	Soil	October 27, 2017 13:15	10/27/2017 15:20
FS02@10'	Y710422-02	Soil	October 27, 2017 13:30	10/27/2017 15:20

Origins Laboratory, Inc.



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LT Environmental, Inc.  
 4600 West 60th Avenue  
 Arvada CO 80003

Rob Rebel  
 Project Number: 027317021  
 Project: Federal Reservoir #1

Origins Laboratory

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

**Sample Receipt Checklist**

Origins Work Order: 1710422

Client: LTE  
 Client Project ID: Federal Reservoir #1

Checklist Completed by: Dan  
 Date/time completed: 10-27-17 1524

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

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

Cooler Number/Temperature: 1 / 5.4 °C 1 / \_\_\_\_\_ °C 1 / \_\_\_\_\_ °C

Thermometer ID: 6003

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? <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) [Signature]

Date/Time Reviewed 10-27-17 1524

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.

LT Environmental, Inc.  
 4600 West 60th Avenue  
 Arvada CO 80003

Rob Rebel  
 Project Number: 027317021  
 Project: Federal Reservoir #1

**EW02@9'**  
**10/27/2017 1:15:00PM**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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**Origins Laboratory, Inc.**  
**Y710422-01 (Soil)**

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

Diesel (C10-C28)	ND	50.0	mg/kg	1	B7J2706	10/27/2017	10/28/2017	U
Surrogate: <i>o</i> -Terphenyl	78.4 %	59-131			"	"	"	

**GBTEX by EPA 8260C**

Gasoline Range Hydrocarbons	ND	0.200	mg/kg	1	B7J2705	10/27/2017	10/28/2017	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	120 %	70-130			"	"	"	
Surrogate: Toluene-d8	95.1 %	70-130			"	"	"	
Surrogate: 4-Bromofluorobenzene	101 %	70-130			"	"	"	

Origins Laboratory, Inc.



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LT Environmental, Inc.  
 4600 West 60th Avenue  
 Arvada CO 80003

Rob Rebel  
 Project Number: 027317021  
 Project: Federal Reservoir #1

**FS02@10'**  
**10/27/2017 1:30:00PM**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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**Origins Laboratory, Inc.**  
**Y710422-02 (Soil)**

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

Diesel (C10-C28)	ND	50.0	mg/kg	1	B7J2706	10/27/2017	10/28/2017	U
Surrogate: o-Terphenyl	80.3 %	59-131			"	"	"	

**GBTEX by EPA 8260C**

Gasoline Range Hydrocarbons	ND	0.200	mg/kg	1	B7J2705	10/27/2017	10/28/2017	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	114 %	70-130			"	"	"	
Surrogate: Toluene-d8	94.4 %	70-130			"	"	"	
Surrogate: 4-Bromofluorobenzene	102 %	70-130			"	"	"	

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 4600 West 60th Avenue  
 Arvada CO 80003

Rob Rebel  
 Project Number: 027317021  
 Project: Federal Reservoir #1

**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
<b>Batch B7J2705 - EPA 5030 (soil)</b>										
<b>Blank (B7J2705-BLK1)</b>										
					Prepared: 10/27/2017 Analyzed: 10/28/2017					
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	66		ug/kg	62.5		105	70-130			
Surrogate: Toluene-d8	61		"	62.5		97.4	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
<b>Batch B7J2705 - EPA 5030 (soil)</b>										
<b>Blank (B7J2705-BLK2)</b>										
					Prepared: 10/27/2017 Analyzed: 10/28/2017					
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	64		ug/kg	62.5		102	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 B7J2705 - EPA 5030 (soil)**

**Blank (B7J2705-BLK3)**

Prepared: 10/27/2017 Analyzed: 10/29/2017

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	65		ug/kg	62.5		104	70-130			
Surrogate: Toluene-d8	63		"	62.5		100	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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**Batch B7J2705 - EPA 5030 (soil)**

**LCS (B7J2705-BS1)**

Prepared: 10/27/2017 Analyzed: 10/28/2017

Benzene	0.097	0.002	mg/kg	0.100		97.3	77.1-124			
Toluene	0.098	0.002	"	0.100		97.5	74.5-128			
Ethylbenzene	0.105	0.002	"	0.100		105	66.4-127			
m,p-Xylene	0.213	0.004	"	0.200		106	76.6-124			
o-Xylene	0.106	0.002	"	0.100		106	76.6-124			
Surrogate: 1,2-Dichloroethane-d4	62		ug/kg	62.5		99.8	70-130			
Surrogate: Toluene-d8	62		"	62.5		98.7	70-130			
Surrogate: 4-Bromofluorobenzene	63		"	62.5		101	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 B7J2705 - EPA 5030 (soil)**

**LCS (B7J2705-BS2)**

Prepared: 10/27/2017 Analyzed: 10/28/2017

Benzene	0.104	0.002	mg/kg	0.100		104	77.1-124			
Toluene	0.113	0.002	"	0.100		113	74.5-128			
Ethylbenzene	0.107	0.002	"	0.100		107	66.4-127			
m,p-Xylene	0.214	0.004	"	0.200		107	76.6-124			
o-Xylene	0.109	0.002	"	0.100		109	76.6-124			
Surrogate: 1,2-Dichloroethane-d4	66		ug/kg	62.5		106	70-130			
Surrogate: Toluene-d8	63		"	62.5		101	70-130			
Surrogate: 4-Bromofluorobenzene	61		"	62.5		97.7	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 B7J2705 - EPA 5030 (soil)**

**LCS (B7J2705-BS3)**

Prepared: 10/27/2017 Analyzed: 10/29/2017

Benzene	0.111	0.002	mg/kg	0.100		111	77.1-124			
Toluene	0.115	0.002	"	0.100		115	74.5-128			
Ethylbenzene	0.118	0.002	"	0.100		118	66.4-127			
m,p-Xylene	0.231	0.004	"	0.200		115	76.6-124			
o-Xylene	0.116	0.002	"	0.100		116	76.6-124			
Surrogate: 1,2-Dichloroethane-d4	69		ug/kg	62.5		110	70-130			
Surrogate: Toluene-d8	62		"	62.5		99.5	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 B7J2705 - EPA 5030 (soil)

Matrix Spike (B7J2705-MS1)	Source: Y710421-01			Prepared: 10/27/2017 Analyzed: 10/28/2017						
Benzene	0.098	0.002	mg/kg	0.100	ND	97.6	71.8-126			
Toluene	0.096	0.002	"	0.100	0.002	94.6	65.1-130			
Ethylbenzene	0.100	0.002	"	0.100	ND	100	62.2-130			
m,p-Xylene	0.205	0.004	"	0.200	ND	102	46.5-137			
o-Xylene	0.101	0.002	"	0.100	ND	101	54.2-134			
Surrogate: 1,2-Dichloroethane-d4	66		ug/kg	62.5		105	70-130			
Surrogate: Toluene-d8	62		"	62.5		99.2	70-130			
Surrogate: 4-Bromofluorobenzene	62		"	62.5		99.5	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 B7J2705 - EPA 5030 (soil)**

<b>Matrix Spike (B7J2705-MS2)</b>	<b>Source: Y710421-02</b>			<b>Prepared: 10/27/2017 Analyzed: 10/28/2017</b>						
Benzene	0.090	0.002	mg/kg	0.100	ND	90.3	71.8-126			
Toluene	0.090	0.002	"	0.100	0.002	87.9	65.1-130			
Ethylbenzene	0.096	0.002	"	0.100	ND	95.8	62.2-130			
m,p-Xylene	0.193	0.004	"	0.200	ND	96.3	46.5-137			
o-Xylene	0.095	0.002	"	0.100	ND	95.1	54.2-134			
Surrogate: 1,2-Dichloroethane-d4	62		ug/kg	62.5		99.5	70-130			
Surrogate: Toluene-d8	62		"	62.5		99.3	70-130			
Surrogate: 4-Bromofluorobenzene	62		"	62.5		98.5	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 B7J2705 - EPA 5030 (soil)**

<b>Matrix Spike (B7J2705-MS3)</b>	<b>Source: Y710431-03</b>			<b>Prepared: 10/27/2017 Analyzed: 10/29/2017</b>						
Benzene	2.59	0.050	mg/kg	2.50	ND	104	71.8-126			
Toluene	2.72	0.050	"	2.50	ND	109	65.1-130			
Ethylbenzene	2.73	0.050	"	2.50	ND	109	62.2-130			
m,p-Xylene	5.35	0.100	"	5.00	ND	107	46.5-137			
o-Xylene	2.68	0.050	"	2.50	ND	107	54.2-134			
Surrogate: 1,2-Dichloroethane-d4	59		ug/kg	62.5		94.2	70-130			
Surrogate: Toluene-d8	63		"	62.5		100	70-130			
Surrogate: 4-Bromofluorobenzene	63		"	62.5		101	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 B7J2705 - EPA 5030 (soil)**

<b>Matrix Spike Dup (B7J2705-MSD1)</b>	<b>Source: Y710421-01</b>			<b>Prepared: 10/27/2017 Analyzed: 10/28/2017</b>						
Benzene	0.100	0.002	mg/kg	0.100	ND	99.5	71.8-126	1.91	11.3	
Toluene	0.098	0.002	"	0.100	0.002	96.0	65.1-130	1.50	15.4	
Ethylbenzene	0.104	0.002	"	0.100	ND	104	62.2-130	4.28	19.6	
m,p-Xylene	0.212	0.004	"	0.200	ND	106	46.5-137	3.45	19.2	
o-Xylene	0.107	0.002	"	0.100	ND	107	54.2-134	5.16	17.9	
Surrogate: 1,2-Dichloroethane-d4	67		ug/kg	62.5		107	70-130			
Surrogate: Toluene-d8	61		"	62.5		97.3	70-130			
Surrogate: 4-Bromofluorobenzene	62		"	62.5		99.5	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 B7J2705 - EPA 5030 (soil)**

Matrix Spike Dup (B7J2705-MSD2)	Source: Y710421-02			Prepared: 10/27/2017 Analyzed: 10/28/2017						
Benzene	0.106	0.002	mg/kg	0.100	ND	106	71.8-126	15.6	11.3	QR-02
Toluene	0.108	0.002	"	0.100	0.002	106	65.1-130	18.2	15.4	QR-02
Ethylbenzene	0.113	0.002	"	0.100	ND	113	62.2-130	16.7	19.6	
m,p-Xylene	0.230	0.004	"	0.200	ND	115	46.5-137	17.6	19.2	
o-Xylene	0.113	0.002	"	0.100	ND	113	54.2-134	17.5	17.9	
Surrogate: 1,2-Dichloroethane-d4	66		ug/kg	62.5		106	70-130			
Surrogate: Toluene-d8	62		"	62.5		99.4	70-130			
Surrogate: 4-Bromofluorobenzene	62		"	62.5		99.5	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 B7J2705 - EPA 5030 (soil)

Matrix Spike Dup (B7J2705-MSD3)	Source: Y710431-03			Prepared: 10/27/2017 Analyzed: 10/29/2017						
Benzene	2.72	0.050	mg/kg	2.50	ND	109	71.8-126	4.78	11.3	
Toluene	2.87	0.050	"	2.50	ND	115	65.1-130	5.36	15.4	
Ethylbenzene	2.88	0.050	"	2.50	ND	115	62.2-130	5.25	19.6	
m,p-Xylene	5.58	0.100	"	5.00	ND	112	46.5-137	4.16	19.2	
o-Xylene	2.77	0.050	"	2.50	ND	111	54.2-134	3.42	17.9	
Surrogate: 1,2-Dichloroethane-d4	59		ug/kg	62.5		93.7	70-130			
Surrogate: Toluene-d8	63		"	62.5		101	70-130			
Surrogate: 4-Bromofluorobenzene	62		"	62.5		99.8	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 B7J2706 - EPA 3550B**

**Blank (B7J2706-BLK1)**

Prepared: 10/27/2017 Analyzed: 10/28/2017

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

42			"	50.0		83.4	59-131			
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**Blank (B7J2706-BLK2)**

Prepared: 10/27/2017 Analyzed: 10/29/2017

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

35			"	50.0		69.1	59-131			
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**Blank (B7J2706-BLK3)**

Prepared: 10/27/2017 Analyzed: 10/29/2017

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

34			"	50.0		67.1	59-131			
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**LCS (B7J2706-BS1)**

Prepared: 10/27/2017 Analyzed: 10/28/2017

Diesel (C10-C28)	864	50.0	mg/kg	1000		86.4	64-121			
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Surrogate: o-Terphenyl

45			"	50.0		89.5	59-131			
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**LCS (B7J2706-BS2)**

Prepared: 10/27/2017 Analyzed: 10/29/2017

Diesel (C10-C28)	734	50.0	mg/kg	1000		73.4	64-121			
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Surrogate: o-Terphenyl

39			"	50.0		77.2	59-131			
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**LCS (B7J2706-BS3)**

Prepared: 10/27/2017 Analyzed: 10/29/2017

Diesel (C10-C28)	743	50.0	mg/kg	1000		74.3	64-121			
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Surrogate: o-Terphenyl

40			"	50.0		80.2	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 B7J2706 - EPA 3550B</b>										
<b>Matrix Spike (B7J2706-MS1)</b>			<b>Source: Y710421-01</b>		Prepared: 10/27/2017 Analyzed: 10/28/2017					
Diesel (C10-C28)	803	50.0	mg/kg	1000	122	68.1	53-125			
Surrogate: o-Terphenyl	41		"	50.0		82.1	59-131			
<b>Matrix Spike (B7J2706-MS2)</b>			<b>Source: Y710421-02</b>		Prepared: 10/27/2017 Analyzed: 10/29/2017					
Diesel (C10-C28)	735	50.0	mg/kg	1000	ND	73.5	53-125			
Surrogate: o-Terphenyl	38		"	50.0		76.2	59-131			
<b>Matrix Spike (B7J2706-MS3)</b>			<b>Source: Y710431-03</b>		Prepared: 10/27/2017 Analyzed: 10/29/2017					
Diesel (C10-C28)	741	50.0	mg/kg	1000	ND	74.1	53-125			
Surrogate: o-Terphenyl	39		"	50.0		77.4	59-131			
<b>Matrix Spike Dup (B7J2706-MSD1)</b>			<b>Source: Y710421-01</b>		Prepared: 10/27/2017 Analyzed: 10/28/2017					
Diesel (C10-C28)	753	50.0	mg/kg	1000	122	63.2	53-125	6.39	20	
Surrogate: o-Terphenyl	40		"	50.0		79.9	59-131			
<b>Matrix Spike Dup (B7J2706-MSD2)</b>			<b>Source: Y710421-02</b>		Prepared: 10/27/2017 Analyzed: 10/29/2017					
Diesel (C10-C28)	730	50.0	mg/kg	1000	ND	73.0	53-125	0.622	20	
Surrogate: o-Terphenyl	39		"	50.0		77.3	59-131			
<b>Matrix Spike Dup (B7J2706-MSD3)</b>			<b>Source: Y710431-03</b>		Prepared: 10/27/2017 Analyzed: 10/29/2017					
Diesel (C10-C28)	711	50.0	mg/kg	1000	ND	71.1	53-125	4.05	20	
Surrogate: o-Terphenyl	37		"	50.0		73.8	59-131			

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Arvada CO 80003

Rob Rebel  
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Project: Federal Reservoir #1

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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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October 31, 2017

LT Environmental, Inc.

Rob Rebel

4600 West 60th Avenue

Arvada CO 80003

**Project Name - Federal Reservoir #1**

**Project Number - 027317021**

Attached are your analytical results for Federal Reservoir #1 received by Origins Laboratory, Inc. October 30, 2017. This project is associated with Origins project number Y710444-01.

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



LT Environmental, Inc.  
4600 West 60th Avenue  
Arvada CO 80003

Rob Rebel  
Project Number: 027317021  
Project: Federal Reservoir #1

CROSS REFERENCE REPORT

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
SW02	Y710444-01	Soil	October 30, 2017 11:00	10/30/2017 16:40
FS02	Y710444-02	Soil	October 30, 2017 11:00	10/30/2017 16:40
EW03	Y710444-03	Soil	October 30, 2017 15:40	10/30/2017 16:40

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 Project Number: 027317021  
 Project: Federal Reservoir #1

Origins Laboratory

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

**Sample Receipt Checklist**

Origins Work Order: Y710444 Client: LTE  
 Client Project ID: Federal Reservoir #1  
 Checklist Completed by: Dan Lu Shipped Via: HD  
 (UPS, FedEx, Hand Delivered, Pick-up, etc.)  
 Date/time completed: 10-30-17 1659 Airbill #: NA  
 Matrix(s) Received: (Check all that apply):  Soil/Solid  Water  Other: \_\_\_\_\_  
 Cooler Number/Temperature:  / 8.8 °C  / \_\_\_\_\_ °C  / \_\_\_\_\_ °C (Describe)  
 Thermometer ID: 1003

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>sampled same day</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? <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) [Signature] Date/Time Reviewed 10-30-17 1659

Origins Laboratory, Inc.

*Jefe Pellegrini*

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Rob Rebel  
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**SW02**  
**10/30/2017 11:00:00AM**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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**Origins Laboratory, Inc.**  
**Y710444-01 (Soil)**

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

Diesel (C10-C28)	ND	50.0	mg/kg	1	B7J3007	10/30/2017	10/31/2017	U
<i>Surrogate: o-Terphenyl</i>	70.9 %	59-131			"	"	"	

**GBTEX by EPA 8260C**

Gasoline Range Hydrocarbons	ND	5.00	mg/kg	25	B7J3006	10/30/2017	10/31/2017	U
Benzene	ND	0.050	"	"	"	"	10/31/2017	U
Toluene	ND	0.050	"	"	"	"	"	U
Ethylbenzene	ND	0.050	"	"	"	"	"	U
Xylenes, total	ND	0.050	"	"	"	"	"	U
<i>Surrogate: 1,2-Dichloroethane-d4</i>	97.1 %	70-130			"	"	"	
<i>Surrogate: Toluene-d8</i>	102 %	70-130			"	"	"	
<i>Surrogate: 4-Bromofluorobenzene</i>	99.2 %	70-130			"	"	"	

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**FS02**  
**10/30/2017 11:00:00AM**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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**Origins Laboratory, Inc.**  
**Y710444-02 (Soil)**

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

Diesel (C10-C28)	ND	50.0	mg/kg	1	B7J3007	10/30/2017	10/31/2017	U
<i>Surrogate: o-Terphenyl</i>	74.2 %	59-131			"	"	"	

**GBTEX by EPA 8260C**

Gasoline Range Hydrocarbons	ND	5.00	mg/kg	25	B7J3006	10/30/2017	10/31/2017	U
Benzene	ND	0.050	"	"	"	"	"	U
Toluene	ND	0.050	"	"	"	"	"	U
Ethylbenzene	ND	0.050	"	"	"	"	"	U
Xylenes, total	ND	0.050	"	"	"	"	"	U
<i>Surrogate: 1,2-Dichloroethane-d4</i>	97.9 %	70-130			"	"	"	
<i>Surrogate: Toluene-d8</i>	100 %	70-130			"	"	"	
<i>Surrogate: 4-Bromofluorobenzene</i>	97.3 %	70-130			"	"	"	

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**EW03**  
**10/30/2017 3:40:00PM**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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**Origins Laboratory, Inc.**  
**Y710444-03 (Soil)**

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

Diesel (C10-C28)	ND	50.0	mg/kg	1	B7J3007	10/30/2017	10/31/2017	U
<i>Surrogate: o-Terphenyl</i>	73.6 %	59-131			"	"	"	

**GBTEX by EPA 8260C**

Gasoline Range Hydrocarbons	ND	0.200	mg/kg	1	B7J3006	10/30/2017	10/31/2017	U
Benzene	ND	0.002	"	"	"	"	"	U
Toluene	ND	0.002	"	"	"	"	"	U
Ethylbenzene	ND	0.002	"	"	"	"	"	U
Xylenes, total	ND	0.002	"	"	"	"	"	U
<i>Surrogate: 1,2-Dichloroethane-d4</i>	114 %	70-130			"	"	"	
<i>Surrogate: Toluene-d8</i>	98.4 %	70-130			"	"	"	
<i>Surrogate: 4-Bromofluorobenzene</i>	104 %	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 B7J3006 - EPA 5030 (soil)**

**Blank (B7J3006-BLK1)**

Prepared: 10/30/2017 Analyzed: 10/30/2017

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	77		ug/kg	62.5		123	70-130			
Surrogate: Toluene-d8	60		"	62.5		96.4	70-130			
Surrogate: 4-Bromofluorobenzene	67		"	62.5		107	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
<b>Batch B7J3006 - EPA 5030 (soil)</b>										
<b>Blank (B7J3006-BLK2)</b>										
					Prepared: 10/30/2017 Analyzed: 10/30/2017					
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	76		ug/kg	62.5		122	70-130			
Surrogate: Toluene-d8	60		"	62.5		96.3	70-130			
Surrogate: 4-Bromofluorobenzene	64		"	62.5		103	70-130			

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**Origins Laboratory, Inc.**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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**Batch B7J3006 - EPA 5030 (soil)**

**LCS (B7J3006-BS1)**

Prepared: 10/30/2017 Analyzed: 10/30/2017

Benzene	0.096	0.002	mg/kg	0.100		96.2	77.1-124			
Toluene	0.091	0.002	"	0.100		90.6	74.5-128			
Ethylbenzene	0.101	0.002	"	0.100		101	66.4-127			
m,p-Xylene	0.204	0.004	"	0.200		102	76.6-124			
o-Xylene	0.100	0.002	"	0.100		100	76.6-124			
Surrogate: 1,2-Dichloroethane-d4	70		ug/kg	62.5		113	70-130			
Surrogate: Toluene-d8	60		"	62.5		96.6	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 B7J3006 - EPA 5030 (soil)**

**LCS (B7J3006-BS2)**

Prepared: 10/30/2017 Analyzed: 10/30/2017

Benzene	0.096	0.002	mg/kg	0.100		95.7	77.1-124			
Toluene	0.093	0.002	"	0.100		93.0	74.5-128			
Ethylbenzene	0.102	0.002	"	0.100		102	66.4-127			
m,p-Xylene	0.206	0.004	"	0.200		103	76.6-124			
o-Xylene	0.101	0.002	"	0.100		101	76.6-124			
Surrogate: 1,2-Dichloroethane-d4	71		ug/kg	62.5		113	70-130			
Surrogate: Toluene-d8	62		"	62.5		98.9	70-130			
Surrogate: 4-Bromofluorobenzene	62		"	62.5		99.5	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 B7J3006 - EPA 5030 (soil)**

<b>Matrix Spike (B7J3006-MS1)</b>	<b>Source: Y710437-01</b>			<b>Prepared: 10/30/2017 Analyzed: 10/30/2017</b>						
Benzene	0.084	0.002	mg/kg	0.100	ND	84.3	71.8-126			
Toluene	0.078	0.002	"	0.100	0.0009	77.5	65.1-130			
Ethylbenzene	0.088	0.002	"	0.100	ND	88.3	62.2-130			
m,p-Xylene	0.177	0.004	"	0.200	ND	88.5	46.5-137			
o-Xylene	0.088	0.002	"	0.100	ND	88.2	54.2-134			
Surrogate: 1,2-Dichloroethane-d4	71		ug/kg	62.5		114	70-130			
Surrogate: Toluene-d8	61		"	62.5		98.2	70-130			
Surrogate: 4-Bromofluorobenzene	66		"	62.5		105	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 B7J3006 - EPA 5030 (soil)

Matrix Spike (B7J3006-MS2)	Source: Y710437-02			Prepared: 10/30/2017 Analyzed: 10/30/2017						
Benzene	0.094	0.002	mg/kg	0.100	ND	93.7	71.8-126			
Toluene	0.090	0.002	"	0.100	0.001	89.0	65.1-130			
Ethylbenzene	0.098	0.002	"	0.100	ND	97.6	62.2-130			
m,p-Xylene	0.196	0.004	"	0.200	ND	98.0	46.5-137			
o-Xylene	0.097	0.002	"	0.100	ND	97.3	54.2-134			
Surrogate: 1,2-Dichloroethane-d4	72		ug/kg	62.5		115	70-130			
Surrogate: Toluene-d8	62		"	62.5		99.0	70-130			
Surrogate: 4-Bromofluorobenzene	63		"	62.5		101	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 B7J3006 - EPA 5030 (soil)**

<b>Matrix Spike Dup (B7J3006-MSD1)</b>	<b>Source: Y710437-01</b>			<b>Prepared: 10/30/2017 Analyzed: 10/30/2017</b>						
Benzene	0.089	0.002	mg/kg	0.100	ND	89.0	71.8-126	5.43	11.3	
Toluene	0.085	0.002	"	0.100	0.0009	83.8	65.1-130	7.79	15.4	
Ethylbenzene	0.092	0.002	"	0.100	ND	91.8	62.2-130	3.91	19.6	
m,p-Xylene	0.187	0.004	"	0.200	ND	93.6	46.5-137	5.56	19.2	
o-Xylene	0.093	0.002	"	0.100	ND	93.0	54.2-134	5.30	17.9	
Surrogate: 1,2-Dichloroethane-d4	70		ug/kg	62.5		111	70-130			
Surrogate: Toluene-d8	61		"	62.5		97.6	70-130			
Surrogate: 4-Bromofluorobenzene	63		"	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 B7J3006 - EPA 5030 (soil)

Matrix Spike Dup (B7J3006-MSD2)	Source: Y710437-02			Prepared: 10/30/2017 Analyzed: 10/30/2017						
Benzene	0.092	0.002	mg/kg	0.100	ND	91.9	71.8-126	1.96	11.3	
Toluene	0.088	0.002	"	0.100	0.001	87.1	65.1-130	2.22	15.4	
Ethylbenzene	0.095	0.002	"	0.100	ND	95.0	62.2-130	2.68	19.6	
m,p-Xylene	0.192	0.004	"	0.200	ND	96.0	46.5-137	2.01	19.2	
o-Xylene	0.096	0.002	"	0.100	ND	95.7	54.2-134	1.64	17.9	
Surrogate: 1,2-Dichloroethane-d4	67		ug/kg	62.5		108	70-130			
Surrogate: Toluene-d8	60		"	62.5		96.6	70-130			
Surrogate: 4-Bromofluorobenzene	62		"	62.5		98.6	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 B7J3007 - EPA 3550B**

**Blank (B7J3007-BLK1)**

Prepared: 10/30/2017 Analyzed: 10/30/2017

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

44	"	50.0	88.2	59-131
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**Blank (B7J3007-BLK2)**

Prepared: 10/30/2017 Analyzed: 10/31/2017

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

35	"	50.0	70.0	59-131
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**LCS (B7J3007-BS1)**

Prepared: 10/30/2017 Analyzed: 10/31/2017

Diesel (C10-C28)	789	50.0	mg/kg	1000	78.9	64-121
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Surrogate: o-Terphenyl

44	"	50.0	87.2	59-131
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**LCS (B7J3007-BS2)**

Prepared: 10/30/2017 Analyzed: 10/31/2017

Diesel (C10-C28)	744	50.0	mg/kg	1000	74.4	64-121
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Surrogate: o-Terphenyl

38	"	50.0	77.0	59-131
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**Matrix Spike (B7J3007-MS1)**

Source: Y710437-01

Prepared: 10/30/2017 Analyzed: 10/31/2017

Diesel (C10-C28)	649	50.0	mg/kg	1000	ND	64.9	53-125
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Surrogate: o-Terphenyl

39	"	50.0	78.0	59-131
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**Matrix Spike (B7J3007-MS2)**

Source: Y710437-02

Prepared: 10/30/2017 Analyzed: 10/31/2017

Diesel (C10-C28)	823	50.0	mg/kg	1000	ND	82.3	53-125
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Surrogate: o-Terphenyl

48	"	50.0	96.8	59-131
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 Project Number: 027317021  
 Project: Federal Reservoir #1

**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 B7J3007 - EPA 3550B</b>										
<b>Matrix Spike Dup (B7J3007-MSD1)</b>		<b>Source: Y710437-01</b>			Prepared: 10/30/2017 Analyzed: 10/31/2017					
Diesel (C10-C28)	759	50.0	mg/kg	1000	ND	75.9	53-125	15.5	20	
Surrogate: o-Terphenyl	44		"	50.0		87.4	59-131			
<b>Matrix Spike Dup (B7J3007-MSD2)</b>		<b>Source: Y710437-02</b>			Prepared: 10/30/2017 Analyzed: 10/31/2017					
Diesel (C10-C28)	779	50.0	mg/kg	1000	ND	77.9	53-125	5.51	20	
Surrogate: o-Terphenyl	46		"	50.0		93.0	59-131			

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.*

LT Environmental, Inc.  
4600 West 60th Avenue  
Arvada CO 80003

Rob Rebel  
Project Number: 027317021  
Project: Federal Reservoir #1

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**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.



*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



November 01, 2017

LT Environmental, Inc.

Rob Rebel

4600 West 60th Avenue

Arvada CO 80003

Project Name - Federal Reservoir #1

Project Number - 027317021

Attached are your analytical results for Federal Reservoir #1 received by Origins Laboratory, Inc. October 31, 2017. This project is associated with Origins project number Y710460-01.

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

LT Environmental, Inc.  
4600 West 60th Avenue  
Arvada CO 80003

Rob Rebel  
Project Number: 027317021  
Project: Federal Reservoir #1

CROSS REFERENCE REPORT

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
EW04	Y710460-01	Soil	October 31, 2017 14:30	10/31/2017 15:45
FS04	Y710460-02	Soil	October 31, 2017 14:30	10/31/2017 15:45
SW04	Y710460-03	Soil	October 31, 2017 14:30	10/31/2017 15:45
SW05	Y710460-04	Soil	October 31, 2017 14:30	10/31/2017 15:45
SW06	Y710460-05	Soil	October 31, 2017 14:30	10/31/2017 15:45

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.*



LT Environmental, Inc.  
 4600 West 60th Avenue  
 Arvada CO 80003

Rob Rebel  
 Project Number: 027317021  
 Project: Federal Reservoir #1

Origins Laboratory

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

**Sample Receipt Checklist**

Origins Work Order: 710460 Client: LTE  
 Client Project ID: Federal Reservoir #1  
 Checklist Completed by: DL Shipped Via: IAS  
 Date/time completed: 10-31-12 1612 (UPS, FedEx, Hand Delivered, Pick-up, etc.)  
 Airbill #: 222  
 Matrix(s) Received: (Check all that apply):  Soil/Solid  Water  Other: \_\_\_\_\_  
 Cooler Number/Temperature:  20.9 °C  \_\_\_\_\_ °C  \_\_\_\_\_ °C (Describe)  
 Thermometer ID: 603

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"/>		Sampled same Day
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? <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 HNO3, HCL, H2SO4) / (pH >10 for samples preserved with NaAsO2+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) [Signature] Date/Time Reviewed 10-31-12 1613

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.

LT Environmental, Inc.  
 4600 West 60th Avenue  
 Arvada CO 80003

Rob Rebel  
 Project Number: 027317021  
 Project: Federal Reservoir #1

**EW04**  
**10/31/2017 2:30:00PM**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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**Origins Laboratory, Inc.**  
**Y710460-01 (Soil)**

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

Diesel (C10-C28)	ND	50.0	mg/kg	1	B7J3104	10/31/2017	10/31/2017	U
<i>Surrogate: o-Terphenyl</i>	73.7 %	59-131			"	"	"	

**GBTEX by EPA 8260C**

Gasoline Range Hydrocarbons	ND	0.200	mg/kg	1	B7J3103	10/31/2017	10/31/2017	U
Benzene	ND	0.002	"	"	"	"	"	U
Toluene	ND	0.002	"	"	"	"	"	U
Ethylbenzene	ND	0.002	"	"	"	"	"	U
Xylenes, total	ND	0.002	"	"	"	"	"	U
<i>Surrogate: 1,2-Dichloroethane-d4</i>	119 %	70-130			"	"	"	
<i>Surrogate: Toluene-d8</i>	94.7 %	70-130			"	"	"	
<i>Surrogate: 4-Bromofluorobenzene</i>	104 %	70-130			"	"	"	

Origins Laboratory, Inc.



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LT Environmental, Inc.  
 4600 West 60th Avenue  
 Arvada CO 80003

Rob Rebel  
 Project Number: 027317021  
 Project: Federal Reservoir #1

**FS04**

**10/31/2017 2:30:00PM**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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**Origins Laboratory, Inc.**  
**Y710460-02 (Soil)**

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

Diesel (C10-C28)	ND	50.0	mg/kg	1	B7J3104	10/31/2017	10/31/2017	U
Surrogate: <i>o</i> -Terphenyl	65.2 %	59-131			"	"	"	

**GBTEX by EPA 8260C**

Gasoline Range Hydrocarbons	ND	0.200	mg/kg	1	B7J3103	10/31/2017	10/31/2017	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	112 %	70-130			"	"	"	
Surrogate: Toluene-d8	96.5 %	70-130			"	"	"	
Surrogate: 4-Bromofluorobenzene	101 %	70-130			"	"	"	

Origins Laboratory, Inc.



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LT Environmental, Inc.  
 4600 West 60th Avenue  
 Arvada CO 80003

Rob Rebel  
 Project Number: 027317021  
 Project: Federal Reservoir #1

**SW04**  
**10/31/2017 2:30:00PM**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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**Origins Laboratory, Inc.**  
**Y710460-03 (Soil)**

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

Diesel (C10-C28)	ND	50.0	mg/kg	1	B7J3104	10/31/2017	10/31/2017	U
Surrogate: o-Terphenyl	78.6 %	59-131			"	"	"	

**GBTEX by EPA 8260C**

Gasoline Range Hydrocarbons	ND	0.200	mg/kg	1	B7J3103	10/31/2017	10/31/2017	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	122 %	70-130			"	"	"	
Surrogate: Toluene-d8	93.9 %	70-130			"	"	"	
Surrogate: 4-Bromofluorobenzene	105 %	70-130			"	"	"	

Origins Laboratory, Inc.



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LT Environmental, Inc.  
 4600 West 60th Avenue  
 Arvada CO 80003

Rob Rebel  
 Project Number: 027317021  
 Project: Federal Reservoir #1

**SW05**  
**10/31/2017 2:30:00PM**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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**Origins Laboratory, Inc.**  
**Y710460-04 (Soil)**

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

Diesel (C10-C28)	ND	50.0	mg/kg	1	B7J3104	10/31/2017	10/31/2017	U
<i>Surrogate: o-Terphenyl</i>	65.8 %	59-131			"	"	"	

**GBTEX by EPA 8260C**

Gasoline Range Hydrocarbons	ND	0.200	mg/kg	1	B7J3103	10/31/2017	10/31/2017	U
Benzene	ND	0.002	"	"	"	"	"	U
Toluene	ND	0.002	"	"	"	"	"	U
Ethylbenzene	ND	0.002	"	"	"	"	"	U
Xylenes, total	ND	0.002	"	"	"	"	"	U
<i>Surrogate: 1,2-Dichloroethane-d4</i>	129 %	70-130			"	"	"	
<i>Surrogate: Toluene-d8</i>	92.7 %	70-130			"	"	"	
<i>Surrogate: 4-Bromofluorobenzene</i>	102 %	70-130			"	"	"	

Origins Laboratory, Inc.



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LT Environmental, Inc.  
 4600 West 60th Avenue  
 Arvada CO 80003

Rob Rebel  
 Project Number: 027317021  
 Project: Federal Reservoir #1

**SW06**  
**10/31/2017 2:30:00PM**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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**Origins Laboratory, Inc.**  
**Y710460-05 (Soil)**

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

Diesel (C10-C28)	ND	50.0	mg/kg	1	B7J3104	10/31/2017	10/31/2017	U
<i>Surrogate: o-Terphenyl</i>	78.2 %	59-131			"	"	"	

**GBTEX by EPA 8260C**

Gasoline Range Hydrocarbons	ND	0.200	mg/kg	1	B7J3103	10/31/2017	11/01/2017	U
Benzene	ND	0.002	"	"	"	"	"	U
Toluene	ND	0.002	"	"	"	"	"	U
Ethylbenzene	ND	0.002	"	"	"	"	"	U
Xylenes, total	ND	0.002	"	"	"	"	"	U
<i>Surrogate: 1,2-Dichloroethane-d4</i>	124 %	70-130			"	"	"	
<i>Surrogate: Toluene-d8</i>	93.0 %	70-130			"	"	"	
<i>Surrogate: 4-Bromofluorobenzene</i>	104 %	70-130			"	"	"	

Origins Laboratory, Inc.



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LT Environmental, Inc.  
 4600 West 60th Avenue  
 Arvada CO 80003

Rob Rebel  
 Project Number: 027317021  
 Project: Federal Reservoir #1

**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
<b>Batch B7J3103 - EPA 5030 (soil)</b>										
<b>Blank (B7J3103-BLK1)</b>										
					Prepared: 10/31/2017 Analyzed: 10/31/2017					
Gasoline Range Hydrocarbons	ND	0.200	mg/kg							U
Benzene	ND	0.002	"							U
Toluene	ND	0.002	"							O-01, U
Ethylbenzene	ND	0.002	"							U
Xylenes, total	ND	0.002	"							U
Surrogate: 1,2-Dichloroethane-d4	77		ug/kg	62.5		123	70-130			
Surrogate: Toluene-d8	59		"	62.5		95.1	70-130			
Surrogate: 4-Bromofluorobenzene	64		"	62.5		102	70-130			

Origins Laboratory, Inc.



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LT Environmental, Inc.  
 4600 West 60th Avenue  
 Arvada CO 80003

Rob Rebel  
 Project Number: 027317021  
 Project: Federal Reservoir #1

**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 B7J3103 - EPA 5030 (soil)**

**LCS (B7J3103-BS1)**

Prepared: 10/31/2017 Analyzed: 10/31/2017

Benzene	0.097	0.002	mg/kg	0.100		97.1	77.1-124			
Toluene	0.091	0.002	"	0.100		91.0	74.5-128			
Ethylbenzene	0.097	0.002	"	0.100		96.7	66.4-127			
m,p-Xylene	0.198	0.004	"	0.200		99.1	76.6-124			
o-Xylene	0.100	0.002	"	0.100		99.6	76.6-124			
Surrogate: 1,2-Dichloroethane-d4	73		ug/kg	62.5		117	70-130			
Surrogate: Toluene-d8	60		"	62.5		96.8	70-130			
Surrogate: 4-Bromofluorobenzene	63		"	62.5		100	70-130			

Origins Laboratory, Inc.



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LT Environmental, Inc.  
 4600 West 60th Avenue  
 Arvada CO 80003

Rob Rebel  
 Project Number: 027317021  
 Project: Federal Reservoir #1

**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 B7J3103 - EPA 5030 (soil)

Matrix Spike (B7J3103-MS1)	Source: Y710386-01			Prepared: 10/31/2017 Analyzed: 10/31/2017						
Benzene	0.093	0.002	mg/kg	0.100	93.0	71.8-126				
Toluene	0.084	0.002	"	0.100	83.7	65.1-130				
Ethylbenzene	0.084	0.002	"	0.100	83.8	62.2-130				
m,p-Xylene	0.166	0.004	"	0.200	83.2	46.5-137				
o-Xylene	0.084	0.002	"	0.100	83.6	54.2-134				
Surrogate: 1,2-Dichloroethane-d4	65		ug/kg	62.5	104	70-130				
Surrogate: Toluene-d8	62		"	62.5	98.6	70-130				
Surrogate: 4-Bromofluorobenzene	66		"	62.5	106	70-130				

Origins Laboratory, Inc.



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LT Environmental, Inc.  
 4600 West 60th Avenue  
 Arvada CO 80003

Rob Rebel  
 Project Number: 027317021  
 Project: Federal Reservoir #1

**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 B7J3103 - EPA 5030 (soil)

Matrix Spike Dup (B7J3103-MSD1)	Source: Y710386-01			Prepared: 10/31/2017 Analyzed: 10/31/2017						
Benzene	0.098	0.002	mg/kg	0.100	97.9	71.8-126	5.11	11.3		
Toluene	0.089	0.002	"	0.100	89.4	65.1-130	6.68	15.4		
Ethylbenzene	0.087	0.002	"	0.100	86.9	62.2-130	3.61	19.6		
m,p-Xylene	0.174	0.004	"	0.200	87.0	46.5-137	4.49	19.2		
o-Xylene	0.088	0.002	"	0.100	88.4	54.2-134	5.58	17.9		
Surrogate: 1,2-Dichloroethane-d4	64		ug/kg	62.5	103	70-130				
Surrogate: Toluene-d8	60		"	62.5	96.3	70-130				
Surrogate: 4-Bromofluorobenzene	65		"	62.5	103	70-130				

Origins Laboratory, Inc.



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LT Environmental, Inc.  
 4600 West 60th Avenue  
 Arvada CO 80003

Rob Rebel  
 Project Number: 027317021  
 Project: Federal Reservoir #1

**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 B7J3104 - EPA 3550B**

**Blank (B7J3104-BLK1)**

Prepared: 10/31/2017 Analyzed: 11/01/2017

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

33

"

50.0

66.8

59-131

**LCS (B7J3104-BS1)**

Prepared: 10/31/2017 Analyzed: 10/31/2017

Diesel (C10-C28)	834	50.0	mg/kg	1000		83.4	64-121			
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Surrogate: o-Terphenyl

47

"

50.0

93.7

59-131

**Matrix Spike (B7J3104-MS1)**

**Source: Y710362-01**

Prepared: 10/31/2017 Analyzed: 10/31/2017

Diesel (C10-C28)	818	50.0	mg/kg	1000	ND	81.8	53-125			
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Surrogate: o-Terphenyl

46

"

50.0

91.5

59-131

**Matrix Spike Dup (B7J3104-MSD1)**

**Source: Y710362-01**

Prepared: 10/31/2017 Analyzed: 10/31/2017

Diesel (C10-C28)	769	50.0	mg/kg	1000	ND	76.9	53-125	6.28	20	
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Surrogate: o-Terphenyl

44

"

50.0

88.9

59-131

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.

LT Environmental, Inc.  
4600 West 60th Avenue  
Arvada CO 80003

Rob Rebel  
Project Number: 027317021  
Project: Federal Reservoir #1

---

**Notes and Definitions**

U Sample is Non-Detect.

O-01 This compound is a common laboratory contaminant.

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.*

---

Jen Pellegrini For Noelle Doyle Mathis, President

November 02, 2017

LT Environmental, Inc.

Rob Rebel

4600 West 60th Avenue

Arvada CO 80003

**Project Name - Federal Reservoir #1**

**Project Number - 027317021**

Attached are your analytical results for Federal Reservoir #1 received by Origins Laboratory, Inc. November 01, 2017. This project is associated with Origins project number Y711013-01.

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



LT Environmental, Inc.  
4600 West 60th Avenue  
Arvada CO 80003

Rob Rebel  
Project Number: 027317021  
Project: Federal Reservoir #1

CROSS REFERENCE REPORT

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
NW02@8'	Y711013-01	Soil	November 1, 2017 10:45	11/01/2017 16:09
NW03@8'	Y711013-02	Soil	November 1, 2017 11:00	11/01/2017 16:09
NW04@8'	Y711013-03	Soil	November 1, 2017 11:45	11/01/2017 16:09
WW02@6'	Y711013-04	Soil	November 1, 2017 12:00	11/01/2017 16:09
WW03@6'	Y711013-05	Soil	November 1, 2017 12:15	11/01/2017 16:09

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.*



LT Environmental, Inc.  
 4600 West 60th Avenue  
 Arvada CO 80003

Rob Rebel  
 Project Number: 027317021  
 Project: Federal Reservoir #1

Origins Laboratory

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

**Sample Receipt Checklist**

Origins Work Order: Y711013 Client: LTE  
 Client Project ID: Federal Reservoir #1  
 Checklist Completed by: Don Lu Shipped Via: HD  
 Date/time completed: 11-1-12 1628 (UPS, FedEx, Hand Delivered, Pick-up, etc.)  
 Airbill #: None  
 Matrix(s) Received: (Check all that apply):  Soil/Solid  Water  Other: \_\_\_\_\_  
 Cooler Number/Temperature:  16.6 °C  \_\_\_\_\_ °C  \_\_\_\_\_ °C (Describe) \_\_\_\_\_ °C  
 Thermometer ID: 1003

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"/>		Sampled Same Day
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? <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)

11-1-12 1628  
 Date/Time Reviewed

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.

LT Environmental, Inc.  
 4600 West 60th Avenue  
 Arvada CO 80003

Rob Rebel  
 Project Number: 027317021  
 Project: Federal Reservoir #1

NW02@8'

11/1/2017 10:45:00AM

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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**Origins Laboratory, Inc.**  
 Y711013-01 (Soil)

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

Diesel (C10-C28)	ND	50.0	mg/kg	1	B7K0107	11/01/2017	11/02/2017	U
Surrogate: o-Terphenyl	63.6 %	59-131			"	"	"	

**GBTEX by EPA 8260C**

Gasoline Range Hydrocarbons	ND	5.00	mg/kg	25	B7K0106	"	11/01/2017	U
Benzene	ND	0.050	"	"	"	"	"	U
Toluene	ND	0.050	"	"	"	"	"	U
Ethylbenzene	ND	0.050	"	"	"	"	"	U
Xylenes, total	ND	0.050	"	"	"	"	"	U
Surrogate: 1,2-Dichloroethane-d4	102 %	70-130			"	"	"	
Surrogate: Toluene-d8	101 %	70-130			"	"	"	
Surrogate: 4-Bromofluorobenzene	97.8 %	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.

LT Environmental, Inc.  
 4600 West 60th Avenue  
 Arvada CO 80003

Rob Rebel  
 Project Number: 027317021  
 Project: Federal Reservoir #1

NW03@8'

11/1/2017 11:00:00AM

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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**Origins Laboratory, Inc.**  
 Y711013-02 (Soil)

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

Diesel (C10-C28)	ND	50.0	mg/kg	1	B7K0107	11/01/2017	11/02/2017	U
<i>Surrogate: o-Terphenyl</i>	58.1 %	59-131			"	"	"	S-DUP

**GBTEX by EPA 8260C**

Gasoline Range Hydrocarbons	ND	5.00	mg/kg	25	B7K0106	"	11/01/2017	U
Benzene	ND	0.050	"	"	"	"	"	U
Toluene	ND	0.050	"	"	"	"	"	U
Ethylbenzene	ND	0.050	"	"	"	"	"	U
Xylenes, total	ND	0.050	"	"	"	"	"	U

<i>Surrogate: 1,2-Dichloroethane-d4</i>	102 %	70-130			"	"	"	
<i>Surrogate: Toluene-d8</i>	100 %	70-130			"	"	"	
<i>Surrogate: 4-Bromofluorobenzene</i>	97.6 %	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.

LT Environmental, Inc.  
 4600 West 60th Avenue  
 Arvada CO 80003

Rob Rebel  
 Project Number: 027317021  
 Project: Federal Reservoir #1

NW04@8'

11/1/2017 11:45:00AM

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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**Origins Laboratory, Inc.**  
 Y711013-03 (Soil)

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

Diesel (C10-C28)	ND	50.0	mg/kg	1	B7K0107	11/01/2017	11/02/2017	U
Surrogate: o-Terphenyl	58.9 %	59-131			"	"	"	S-DUP

**GBTEX by EPA 8260C**

Gasoline Range Hydrocarbons	ND	5.00	mg/kg	25	B7K0106	"	11/01/2017	U
Benzene	ND	0.050	"	"	"	"	"	U
Toluene	ND	0.050	"	"	"	"	"	U
Ethylbenzene	ND	0.050	"	"	"	"	"	U
Xylenes, total	ND	0.050	"	"	"	"	"	U
Surrogate: 1,2-Dichloroethane-d4	101 %	70-130			"	"	"	
Surrogate: Toluene-d8	99.9 %	70-130			"	"	"	
Surrogate: 4-Bromofluorobenzene	97.6 %	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.

LT Environmental, Inc.  
 4600 West 60th Avenue  
 Arvada CO 80003

Rob Rebel  
 Project Number: 027317021  
 Project: Federal Reservoir #1

**WW02@6'**

**11/1/2017 12:00:00PM**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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**Origins Laboratory, Inc.**  
**Y711013-04 (Soil)**

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

Diesel (C10-C28)	ND	50.0	mg/kg	1	B7K0107	11/01/2017	11/02/2017	U
<i>Surrogate: o-Terphenyl</i>	59.0 %	59-131			"	"	"	

**GBTEX by EPA 8260C**

Gasoline Range Hydrocarbons	ND	5.00	mg/kg	25	B7K0106	"	11/01/2017	U
Benzene	ND	0.050	"	"	"	"	"	U
Toluene	ND	0.050	"	"	"	"	"	U
Ethylbenzene	ND	0.050	"	"	"	"	"	U
Xylenes, total	ND	0.050	"	"	"	"	"	U
<i>Surrogate: 1,2-Dichloroethane-d4</i>	101 %	70-130			"	"	"	
<i>Surrogate: Toluene-d8</i>	101 %	70-130			"	"	"	
<i>Surrogate: 4-Bromofluorobenzene</i>	97.2 %	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.*

LT Environmental, Inc.  
 4600 West 60th Avenue  
 Arvada CO 80003

Rob Rebel  
 Project Number: 027317021  
 Project: Federal Reservoir #1

**WW03@6'**

**11/1/2017 12:15:00PM**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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**Origins Laboratory, Inc.**  
**Y711013-05 (Soil)**

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

Diesel (C10-C28)	ND	50.0	mg/kg	1	B7K0107	11/01/2017	11/02/2017	U
<i>Surrogate: o-Terphenyl</i>	63.7 %	59-131			"	"	"	

**GBTEX by EPA 8260C**

Gasoline Range Hydrocarbons	ND	5.00	mg/kg	25	B7K0106	"	11/01/2017	U
Benzene	ND	0.050	"	"	"	"	"	U
Toluene	ND	0.050	"	"	"	"	"	U
Ethylbenzene	ND	0.050	"	"	"	"	"	U
Xylenes, total	ND	0.050	"	"	"	"	"	U
<i>Surrogate: 1,2-Dichloroethane-d4</i>	102 %	70-130			"	"	"	
<i>Surrogate: Toluene-d8</i>	102 %	70-130			"	"	"	
<i>Surrogate: 4-Bromofluorobenzene</i>	96.8 %	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.*

LT Environmental, Inc.  
 4600 West 60th Avenue  
 Arvada CO 80003

Rob Rebel  
 Project Number: 027317021  
 Project: Federal Reservoir #1

**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 B7K0106 - EPA 5030 (soil)**

**Blank (B7K0106-BLK1)**

Prepared: 11/01/2017 Analyzed: 11/01/2017

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	63		ug/kg	62.5		100	70-130			
Surrogate: Toluene-d8	64		"	62.5		102	70-130			
Surrogate: 4-Bromofluorobenzene	61		"	62.5		97.6	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.*

LT Environmental, Inc.  
 4600 West 60th Avenue  
 Arvada CO 80003

Rob Rebel  
 Project Number: 027317021  
 Project: Federal Reservoir #1

**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 B7K0106 - EPA 5030 (soil)**

**LCS (B7K0106-BS1)**

Prepared: 11/01/2017 Analyzed: 11/01/2017

Benzene	0.091	0.002	mg/kg	0.100		90.9	77.1-124			
Toluene	0.092	0.002	"	0.100		92.2	74.5-128			
Ethylbenzene	0.097	0.002	"	0.100		97.4	66.4-127			
m,p-Xylene	0.174	0.004	"	0.200		87.0	76.6-124			
o-Xylene	0.098	0.002	"	0.100		98.2	76.6-124			
Surrogate: 1,2-Dichloroethane-d4	60		ug/kg	62.5		96.4	70-130			
Surrogate: Toluene-d8	64		"	62.5		102	70-130			
Surrogate: 4-Bromofluorobenzene	61		"	62.5		97.8	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.*

LT Environmental, Inc.  
 4600 West 60th Avenue  
 Arvada CO 80003

Rob Rebel  
 Project Number: 027317021  
 Project: Federal Reservoir #1

**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 B7K0106 - EPA 5030 (soil)**

<b>Matrix Spike (B7K0106-MS1)</b>	<b>Source: Y711013-01</b>			<b>Prepared: 11/01/2017 Analyzed: 11/01/2017</b>						
Benzene	2.25	0.050	mg/kg	2.50	ND	90.0	71.8-126			
Toluene	2.23	0.050	"	2.50	ND	89.1	65.1-130			
Ethylbenzene	2.38	0.050	"	2.50	ND	95.1	62.2-130			
m,p-Xylene	4.26	0.100	"	5.00	ND	85.1	46.5-137			
o-Xylene	2.46	0.050	"	2.50	ND	98.5	54.2-134			
Surrogate: 1,2-Dichloroethane-d4	61		ug/kg	62.5		97.5	70-130			
Surrogate: Toluene-d8	63		"	62.5		101	70-130			
Surrogate: 4-Bromofluorobenzene	61		"	62.5		97.2	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.*

LT Environmental, Inc.  
 4600 West 60th Avenue  
 Arvada CO 80003

Rob Rebel  
 Project Number: 027317021  
 Project: Federal Reservoir #1

**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 B7K0106 - EPA 5030 (soil)

Matrix Spike Dup (B7K0106-MSD1)	Source: Y711013-01			Prepared: 11/01/2017 Analyzed: 11/01/2017						
Benzene	2.35	0.050	mg/kg	2.50	ND	93.9	71.8-126	4.22	11.3	
Toluene	2.31	0.050	"	2.50	ND	92.3	65.1-130	3.48	15.4	
Ethylbenzene	2.44	0.050	"	2.50	ND	97.5	62.2-130	2.55	19.6	
m,p-Xylene	4.39	0.100	"	5.00	ND	87.8	46.5-137	3.07	19.2	
o-Xylene	2.53	0.050	"	2.50	ND	101	54.2-134	2.84	17.9	
Surrogate: 1,2-Dichloroethane-d4	60		ug/kg	62.5		96.8	70-130			
Surrogate: Toluene-d8	63		"	62.5		101	70-130			
Surrogate: 4-Bromofluorobenzene	62		"	62.5		98.7	70-130			

Origins Laboratory, Inc.



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LT Environmental, Inc.  
 4600 West 60th Avenue  
 Arvada CO 80003

Rob Rebel  
 Project Number: 027317021  
 Project: Federal Reservoir #1

**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 B7K0107 - EPA 3550B**

**Blank (B7K0107-BLK1)**

Prepared: 11/01/2017 Analyzed: 11/01/2017

Diesel (C10-C28)	ND	50.0	mg/kg							U
Surrogate: o-Terphenyl	33		"	50.0		65.2	59-131			

**LCS (B7K0107-BS1)**

Prepared: 11/01/2017 Analyzed: 11/02/2017

Diesel (C10-C28)	817	50.0	mg/kg	1000		81.7	64-121			
Surrogate: o-Terphenyl	44		"	50.0		88.6	59-131			

**Matrix Spike (B7K0107-MS1)**

**Source: Y711013-01**

Prepared: 11/01/2017 Analyzed: 11/02/2017

Diesel (C10-C28)	605	50.0	mg/kg	1000	ND	60.5	53-125			
Surrogate: o-Terphenyl	36		"	50.0		72.3	59-131			

**Matrix Spike Dup (B7K0107-MSD1)**

**Source: Y711013-01**

Prepared: 11/01/2017 Analyzed: 11/02/2017

Diesel (C10-C28)	605	50.0	mg/kg	1000	ND	60.5	53-125	0.164	20	
Surrogate: o-Terphenyl	36		"	50.0		72.2	59-131			

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.

LT Environmental, Inc.  
4600 West 60th Avenue  
Arvada CO 80003

Rob Rebel  
Project Number: 027317021  
Project: Federal Reservoir #1

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**Notes and Definitions**

U Sample is Non-Detect.

S-DUP Duplicate analysis confirmed surrogate failure due to matrix effects.

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.*

---

Jen Pellegrini For Noelle Doyle Mathis, President

LT Environmental, Inc.

Rob Rebel

4600 West 60th Avenue

Arvada CO 80003

**Project Name - Federal Reservoir #1**

**Project Number - 027317021**

Attached are your analytical results for Federal Reservoir #1 received by Origins Laboratory, Inc. November 02, 2017. This project is associated with Origins project number Y711033-01.

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



LT Environmental, Inc.  
4600 West 60th Avenue  
Arvada CO 80003

Rob Rebel  
Project Number: 027317021  
Project: Federal Reservoir #1

CROSS REFERENCE REPORT

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
FS04@17.5'	Y711033-01	Soil	November 2, 2017 14:30	11/02/2017 15:52

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.*



LT Environmental, Inc.  
 4600 West 60th Avenue  
 Arvada CO 80003

Rob Rebel  
 Project Number: 027317021  
 Project: Federal Reservoir #1

Origins Laboratory

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

**Sample Receipt Checklist**

Origins Work Order: 1711033 Client: LTE  
 Client Project ID: Federal Reservoir #1  
 Checklist Completed by: Don V Shipped Via: 4D  
 (UPS, FedEx, Hand Delivered, Pick-up, etc.)  
 Date/time completed: 11-2-12 1559 Airbill #: NA  
 Matrix(s) Received: (Check all that apply):  Soil/Solid  Water  Other: \_\_\_\_\_  
 Cooler Number/Temperature: 1 / 4.9 °C 1 °C 1 °C (Describe)  
 Thermometer ID: 1003

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? <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) [Signature] Date/Time Reviewed 11-2-12 1641

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.

LT Environmental, Inc.  
 4600 West 60th Avenue  
 Arvada CO 80003

Rob Rebel  
 Project Number: 027317021  
 Project: Federal Reservoir #1

**FS04@17.5'**  
**11/2/2017 2:30:00PM**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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**Origins Laboratory, Inc.**  
**Y711033-01 (Soil)**

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

Diesel (C10-C28)	ND	50.0	mg/kg	1	B7K0204	11/02/2017	11/02/2017	U
<i>Surrogate: o-Terphenyl</i>	79.1 %	59-131			"	"	"	

**GBTEX by EPA 8260C**

Gasoline Range Hydrocarbons	ND	0.200	mg/kg	1	B7K0203	"	11/02/2017	U
Benzene	<b>0.051</b>	0.002	"	"	"	"	"	
Toluene	ND	0.002	"	"	"	"	"	U
Ethylbenzene	<b>0.003</b>	0.002	"	"	"	"	"	
Xylenes, total	ND	0.002	"	"	"	"	"	U
<i>Surrogate: 1,2-Dichloroethane-d4</i>	105 %	70-130			"	"	"	
<i>Surrogate: Toluene-d8</i>	103 %	70-130			"	"	"	
<i>Surrogate: 4-Bromofluorobenzene</i>	104 %	70-130			"	"	"	

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 Arvada CO 80003

Rob Rebel  
 Project Number: 027317021  
 Project: Federal Reservoir #1

**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 B7K0203 - EPA 5030 (soil)**

**Blank (B7K0203-BLK1)**

Prepared: 11/02/2017 Analyzed: 11/02/2017

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	80		ug/kg	62.5		127	70-130			
Surrogate: Toluene-d8	63		"	62.5		100	70-130			
Surrogate: 4-Bromofluorobenzene	70		"	62.5		112	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
<b>Batch B7K0203 - EPA 5030 (soil)</b>										
<b>Blank (B7K0203-BLK2)</b>										
					Prepared: 11/02/2017 Analyzed: 11/02/2017					
Gasoline Range Hydrocarbons	ND	0.200	mg/kg							U
Benzene	ND	0.002	"							U
Toluene	0.002	0.002	"							
Ethylbenzene	ND	0.002	"							U
Xylenes, total	ND	0.002	"							U
Surrogate: 1,2-Dichloroethane-d4	70		ug/kg	62.5		113	70-130			
Surrogate: Toluene-d8	64		"	62.5		103	70-130			
Surrogate: 4-Bromofluorobenzene	66		"	62.5		106	70-130			

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**Origins Laboratory, Inc.**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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**Batch B7K0203 - EPA 5030 (soil)**

**Blank (B7K0203-BLK3)**

Prepared: 11/02/2017 Analyzed: 11/03/2017

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	72		ug/kg	62.5		115	70-130			
Surrogate: Toluene-d8	64		"	62.5		103	70-130			
Surrogate: 4-Bromofluorobenzene	69		"	62.5		110	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 B7K0203 - EPA 5030 (soil)

**LCS (B7K0203-BS1)**

Prepared: 11/02/2017 Analyzed: 11/02/2017

Benzene	0.093	0.002	mg/kg	0.100		93.4	77.1-124			
Toluene	0.097	0.002	"	0.100		96.8	74.5-128			
Ethylbenzene	0.115	0.002	"	0.100		115	66.4-127			
m,p-Xylene	0.236	0.004	"	0.200		118	76.6-124			
o-Xylene	0.117	0.002	"	0.100		117	76.6-124			
Surrogate: 1,2-Dichloroethane-d4	73		ug/kg	62.5		117	70-130			
Surrogate: Toluene-d8	63		"	62.5		101	70-130			
Surrogate: 4-Bromofluorobenzene	63		"	62.5		101	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 B7K0203 - EPA 5030 (soil)**

**LCS (B7K0203-BS2)**

Prepared: 11/02/2017 Analyzed: 11/02/2017

Benzene	0.092	0.002	mg/kg	0.100		91.9	77.1-124			
Toluene	0.097	0.002	"	0.100		97.2	74.5-128			
Ethylbenzene	0.110	0.002	"	0.100		110	66.4-127			
m,p-Xylene	0.223	0.004	"	0.200		112	76.6-124			
o-Xylene	0.110	0.002	"	0.100		110	76.6-124			
Surrogate: 1,2-Dichloroethane-d4	65		ug/kg	62.5		104	70-130			
Surrogate: Toluene-d8	63		"	62.5		101	70-130			
Surrogate: 4-Bromofluorobenzene	62		"	62.5		98.5	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 B7K0203 - EPA 5030 (soil)**

**LCS (B7K0203-BS3)**

Prepared: 11/02/2017 Analyzed: 11/02/2017

Benzene	0.089	0.002	mg/kg	0.100		89.0	77.1-124			
Toluene	0.095	0.002	"	0.100		94.9	74.5-128			
Ethylbenzene	0.094	0.002	"	0.100		94.2	66.4-127			
m,p-Xylene	0.191	0.004	"	0.200		95.4	76.6-124			
o-Xylene	0.094	0.002	"	0.100		94.0	76.6-124			
Surrogate: 1,2-Dichloroethane-d4	65		ug/kg	62.5		105	70-130			
Surrogate: Toluene-d8	64		"	62.5		103	70-130			
Surrogate: 4-Bromofluorobenzene	54		"	62.5		87.0	70-130			

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**Origins Laboratory, Inc.**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch B7K0203 - EPA 5030 (soil)

Matrix Spike (B7K0203-MS1)	Source: Y711037-03			Prepared: 11/02/2017 Analyzed: 11/02/2017						
Benzene	0.095	0.002	mg/kg	0.100	ND	94.6	71.8-126			
Toluene	0.098	0.002	"	0.100	ND	97.8	65.1-130			
Ethylbenzene	0.111	0.002	"	0.100	ND	111	62.2-130			
m,p-Xylene	0.223	0.004	"	0.200	ND	112	46.5-137			
o-Xylene	0.112	0.002	"	0.100	ND	112	54.2-134			
Surrogate: 1,2-Dichloroethane-d4	69		ug/kg	62.5		110	70-130			
Surrogate: Toluene-d8	63		"	62.5		102	70-130			
Surrogate: 4-Bromofluorobenzene	63		"	62.5		101	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 B7K0203 - EPA 5030 (soil)

Matrix Spike (B7K0203-MS2)	Source: Y711037-05			Prepared: 11/02/2017 Analyzed: 11/02/2017						
Benzene	0.079	0.002	mg/kg	0.100	ND	78.5	71.8-126			
Toluene	0.080	0.002	"	0.100	ND	80.5	65.1-130			
Ethylbenzene	0.090	0.002	"	0.100	ND	89.9	62.2-130			
m,p-Xylene	0.181	0.004	"	0.200	ND	90.6	46.5-137			
o-Xylene	0.091	0.002	"	0.100	ND	90.7	54.2-134			
Surrogate: 1,2-Dichloroethane-d4	65		ug/kg	62.5		105	70-130			
Surrogate: Toluene-d8	65		"	62.5		104	70-130			
Surrogate: 4-Bromofluorobenzene	63		"	62.5		101	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 B7K0203 - EPA 5030 (soil)

Matrix Spike (B7K0203-MS3)	Source: Y711037-01			Prepared: 11/02/2017 Analyzed: 11/02/2017						
Benzene	0.093	0.002	mg/kg	0.100	ND	92.6	71.8-126			
Toluene	0.099	0.002	"	0.100	ND	98.8	65.1-130			
Ethylbenzene	0.108	0.002	"	0.100	ND	108	62.2-130			
m,p-Xylene	0.218	0.004	"	0.200	ND	109	46.5-137			
o-Xylene	0.108	0.002	"	0.100	ND	108	54.2-134			
Surrogate: 1,2-Dichloroethane-d4	67		ug/kg	62.5		107	70-130			
Surrogate: Toluene-d8	64		"	62.5		103	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**  
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Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch B7K0203 - EPA 5030 (soil)

Matrix Spike Dup (B7K0203-MSD1)	Source: Y711037-03			Prepared: 11/02/2017 Analyzed: 11/02/2017						
Benzene	0.090	0.002	mg/kg	0.100	ND	90.3	71.8-126	4.65	11.3	
Toluene	0.092	0.002	"	0.100	ND	91.6	65.1-130	6.55	15.4	
Ethylbenzene	0.106	0.002	"	0.100	ND	106	62.2-130	4.78	19.6	
m,p-Xylene	0.217	0.004	"	0.200	ND	108	46.5-137	3.06	19.2	
o-Xylene	0.108	0.002	"	0.100	ND	108	54.2-134	3.57	17.9	
Surrogate: 1,2-Dichloroethane-d4	67		ug/kg	62.5		108	70-130			
Surrogate: Toluene-d8	65		"	62.5		104	70-130			
Surrogate: 4-Bromofluorobenzene	62		"	62.5		98.9	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 B7K0203 - EPA 5030 (soil)

Matrix Spike Dup (B7K0203-MSD2)	Source: Y711037-05			Prepared: 11/02/2017 Analyzed: 11/02/2017						
Benzene	0.089	0.002	mg/kg	0.100	ND	88.6	71.8-126	12.1	11.3	QR-02
Toluene	0.090	0.002	"	0.100	ND	90.0	65.1-130	11.1	15.4	
Ethylbenzene	0.101	0.002	"	0.100	ND	101	62.2-130	11.7	19.6	
m,p-Xylene	0.206	0.004	"	0.200	ND	103	46.5-137	12.7	19.2	
o-Xylene	0.104	0.002	"	0.100	ND	104	54.2-134	13.6	17.9	
Surrogate: 1,2-Dichloroethane-d4	63		ug/kg	62.5		101	70-130			
Surrogate: Toluene-d8	62		"	62.5		99.5	70-130			
Surrogate: 4-Bromofluorobenzene	63		"	62.5		101	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 B7K0203 - EPA 5030 (soil)

Matrix Spike Dup (B7K0203-MSD3)	Source: Y711037-01			Prepared: 11/02/2017 Analyzed: 11/02/2017						
Benzene	0.089	0.002	mg/kg	0.100	ND	89.3	71.8-126	3.65	11.3	
Toluene	0.094	0.002	"	0.100	ND	93.9	65.1-130	5.02	15.4	
Ethylbenzene	0.081	0.002	"	0.100	ND	80.9	62.2-130	28.7	19.6	QR-02
m,p-Xylene	0.164	0.004	"	0.200	ND	81.8	46.5-137	28.3	19.2	QR-02
o-Xylene	0.082	0.002	"	0.100	ND	82.2	54.2-134	26.9	17.9	QR-02
Surrogate: 1,2-Dichloroethane-d4	65		ug/kg	62.5		103	70-130			
Surrogate: Toluene-d8	63		"	62.5		101	70-130			
Surrogate: 4-Bromofluorobenzene	49		"	62.5		78.8	70-130			

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**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 B7K0204 - EPA 3550B**

<b>Blank (B7K0204-BLK1)</b>					Prepared: 11/02/2017 Analyzed: 11/02/2017					
Diesel (C10-C28)	ND	50.0	mg/kg							U
Surrogate: o-Terphenyl	46		"	50.0		92.7	59-131			
<b>Blank (B7K0204-BLK3)</b>					Prepared: 11/02/2017 Analyzed: 11/02/2017					
Diesel (C10-C28)	ND	50.0	mg/kg							U
Surrogate: o-Terphenyl	40		"	50.0		80.9	59-131			
<b>LCS (B7K0204-BS1)</b>					Prepared: 11/02/2017 Analyzed: 11/02/2017					
Diesel (C10-C28)	892	50.0	mg/kg	1000		89.2	64-121			
Surrogate: o-Terphenyl	49		"	50.0		98.4	59-131			
<b>LCS (B7K0204-BS3)</b>					Prepared: 11/02/2017 Analyzed: 11/02/2017					
Diesel (C10-C28)	818	50.0	mg/kg	1000		81.8	64-121			
Surrogate: o-Terphenyl	50		"	50.0		99.2	59-131			
<b>Matrix Spike (B7K0204-MS1)</b>					<b>Source: Y710457-01</b>		Prepared: 11/02/2017 Analyzed: 11/02/2017			
Diesel (C10-C28)	784	50.0	mg/kg	1000	ND	78.4	53-125			
Surrogate: o-Terphenyl	43		"	50.0		86.8	59-131			
<b>Matrix Spike (B7K0204-MS3)</b>					<b>Source: Y711037-01</b>		Prepared: 11/02/2017 Analyzed: 11/02/2017			
Diesel (C10-C28)	751	50.0	mg/kg	1000	ND	75.1	53-125			
Surrogate: o-Terphenyl	44		"	50.0		87.1	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
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**Batch B7K0204 - EPA 3550B**

<b>Matrix Spike Dup (B7K0204-MSD1)</b>		<b>Source: Y710457-01</b>			<b>Prepared: 11/02/2017 Analyzed: 11/02/2017</b>					
Diesel (C10-C28)	774	50.0	mg/kg	1000	ND	77.4	53-125	1.25	20	
Surrogate: o-Terphenyl	44		"	50.0		87.4	59-131			
<b>Matrix Spike Dup (B7K0204-MSD3)</b>		<b>Source: Y711037-01</b>			<b>Prepared: 11/02/2017 Analyzed: 11/02/2017</b>					
Diesel (C10-C28)	755	50.0	mg/kg	1000	ND	75.5	53-125	0.473	20	
Surrogate: o-Terphenyl	46		"	50.0		91.2	59-131			

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Project: Federal Reservoir #1

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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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November 10, 2017

LT Environmental, Inc.

Rob Rebel

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**Project Name - Federal Reservoir #1**

**Project Number - 027317021**

Attached are your analytical results for Federal Reservoir #1 received by Origins Laboratory, Inc. November 06, 2017. This project is associated with Origins project number Y711086-01.

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.  
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LT Environmental, Inc.  
4600 West 60th Avenue  
Arvada CO 80003

Rob Rebel  
Project Number: 027317021  
Project: Federal Reservoir #1

CROSS REFERENCE REPORT

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
FS05@10'	Y711086-01	Soil	November 2, 2017 15:30	11/06/2017 16:04

Origins Laboratory, Inc.



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Origins Laboratory

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

**Sample Receipt Checklist**

Origins Work Order: 4711096 Client: LTE  
 Client Project ID: Federal Reservoir #1  
 Checklist Completed by: Dan Len Shipped Via: HD  
 Date/time completed: 11-6-12 1628 (UPS, FedEx, Hand Delivered, Pick-up, etc.)  
 Airbill #: NA  
 Matrix(s) Received: (Check all that apply):  Soil/Solid  Water  Other: \_\_\_\_\_  
 Cooler Number/Temperature: 1 / 12.9 °C / \_\_\_\_\_ °C (Describe)  
 Thermometer ID: 1003

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"/>		sampled same Day
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) [Signature] Date/Time Reviewed 11/7/12

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*Jefe Pellegrini*

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**FS05@10'**  
**11/2/2017 3:30:00PM**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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**Origins Laboratory, Inc.**  
**Y711086-01 (Soil)**

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

Diesel (C10-C28)	ND	50.0	mg/kg	1	B7K0801	11/08/2017	11/09/2017	U
Surrogate: o-Terphenyl	75.2 %	59-131			"	"	"	

**GBTEX by EPA 8260C**

Gasoline Range Hydrocarbons	ND	0.200	mg/kg	1	B7K0709	11/07/2017	11/09/2017	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	125 %	70-130			"	"	"	
Surrogate: Toluene-d8	97.5 %	70-130			"	"	"	
Surrogate: 4-Bromofluorobenzene	103 %	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 B7K0709 - EPA 5030 (soil)**

**Blank (B7K0709-BLK1)**

Prepared: 11/07/2017 Analyzed: 11/08/2017

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		108	70-130			
Surrogate: Toluene-d8	62		"	62.5		99.3	70-130			
Surrogate: 4-Bromofluorobenzene	64		"	62.5		102	70-130			

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**Origins Laboratory, Inc.**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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**Batch B7K0709 - EPA 5030 (soil)**

**LCS (B7K0709-BS1)**

Prepared: 11/07/2017 Analyzed: 11/08/2017

Benzene	0.110	0.002	mg/kg	0.100		110	77.1-124			
Toluene	0.106	0.002	"	0.100		106	74.5-128			
Ethylbenzene	0.119	0.002	"	0.100		119	66.4-127			
m,p-Xylene	0.220	0.004	"	0.200		110	76.6-124			
o-Xylene	0.116	0.002	"	0.100		116	76.6-124			
Surrogate: 1,2-Dichloroethane-d4	62		ug/kg	62.5		100	70-130			
Surrogate: Toluene-d8	62		"	62.5		98.6	70-130			
Surrogate: 4-Bromofluorobenzene	61		"	62.5		98.2	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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Batch B7K0709 - EPA 5030 (soil)

Matrix Spike (B7K0709-MS1)	Source: Y711050-01			Prepared: 11/07/2017 Analyzed: 11/08/2017						
Benzene	0.100	0.002	mg/kg	0.100	ND	99.9	71.8-126			
Toluene	0.098	0.002	"	0.100	ND	97.5	65.1-130			
Ethylbenzene	0.104	0.002	"	0.100	ND	104	62.2-130			
m,p-Xylene	0.193	0.004	"	0.200	0.001	95.7	46.5-137			
o-Xylene	0.101	0.002	"	0.100	ND	101	54.2-134			
Surrogate: 1,2-Dichloroethane-d4	61		ug/kg	62.5		98.0	70-130			
Surrogate: Toluene-d8	61		"	62.5		98.1	70-130			
Surrogate: 4-Bromofluorobenzene	61		"	62.5		97.8	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 B7K0709 - EPA 5030 (soil)

Matrix Spike Dup (B7K0709-MSD1)	Source: Y711050-01			Prepared: 11/07/2017 Analyzed: 11/08/2017						
Benzene	0.087	0.002	mg/kg	0.100	ND	86.8	71.8-126	14.1	11.3	QR-02
Toluene	0.083	0.002	"	0.100	ND	83.3	65.1-130	15.7	15.4	QR-02
Ethylbenzene	0.088	0.002	"	0.100	ND	88.4	62.2-130	16.3	19.6	
m,p-Xylene	0.165	0.004	"	0.200	0.001	81.8	46.5-137	15.6	19.2	
o-Xylene	0.087	0.002	"	0.100	ND	86.7	54.2-134	15.2	17.9	
Surrogate: 1,2-Dichloroethane-d4	61		ug/kg	62.5		97.8	70-130			
Surrogate: Toluene-d8	62		"	62.5		98.8	70-130			
Surrogate: 4-Bromofluorobenzene	62		"	62.5		98.9	70-130			

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**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 B7K0801 - EPA 3550B**

**Blank (B7K0801-BLK1)**

Prepared: 11/08/2017 Analyzed: 11/09/2017

Diesel (C10-C28)	ND	50.0	mg/kg							U
Surrogate: o-Terphenyl	38		"	50.0		76.5	59-131			

**LCS (B7K0801-BS1)**

Prepared: 11/08/2017 Analyzed: 11/09/2017

Diesel (C10-C28)	771	50.0	mg/kg	1000		77.1	64-121			
Surrogate: o-Terphenyl	47		"	50.0		93.7	59-131			

**Matrix Spike (B7K0801-MS1)**

**Source: Y711055-01**

Prepared: 11/08/2017 Analyzed: 11/09/2017

Diesel (C10-C28)	819	50.0	mg/kg	1000	ND	81.9	53-125			
Surrogate: o-Terphenyl	47		"	50.0		94.6	59-131			

**Matrix Spike Dup (B7K0801-MSD1)**

**Source: Y711055-01**

Prepared: 11/08/2017 Analyzed: 11/09/2017

Diesel (C10-C28)	821	50.0	mg/kg	1000	ND	82.1	53-125	0.249	20	
Surrogate: o-Terphenyl	48		"	50.0		95.8	59-131			

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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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