

November 29, 2018

Mr. Greg Hamilton  
Senior Staff HSE Representative  
Kerr-McGee Oil & Gas Onshore LP  
1099 18th Street, Suite 1800  
Denver, Colorado 80202

**RE: Sump Closure Report  
Cervi Federal 6-29  
API # 05-123-19198  
Location ID # 330492  
Remediation # 12130  
SENW SEC 29-T3N-R62W  
Weld County, Colorado**

Dear Mr. Hamilton:

LT Environmental, Inc. (LTE) was contracted by Kerr-McGee Oil & Gas Onshore LP (Kerr-McGee) to conduct environmental oversight activities at the above-referenced site. The oversight activities included documenting field activities, collecting soil samples, and reviewing laboratory analytical results.

The objective of the soil sampling was to determine if petroleum hydrocarbon impact to subsurface soil is present as a result of operating a produced water sump at the site. The soil sampling activities, laboratory analytical results, and conclusions are summarized below. The general site layout, soil sample location, and sump excavation dimensions are depicted on the Excavation Site Map provided as Figure 1.

On May 10, 2018, following removal of the produced water sump, soil samples were collected from the sidewalls and base of the excavation. The soil samples were field screened for volatile organic compounds using a photoionization detector (PID). Soil staining, odor, and/or elevated headspace readings were not observed or identified through PID screening; the highest PID reading recorded was 6.1 parts per million. Based on field screening results, the excavation base soil sample (B01@4') was submitted for laboratory analysis of benzene, toluene, ethylbenzene, and total xylenes (BTEX) and total petroleum hydrocarbons (TPH)-gasoline range organics (GRO) by United States Environmental Protection Agency (USEPA) Method 8260C, TPH-diesel range organics (DRO) and oil range organics (ORO) by USEPA Method 8015C, pH by USEPA Method 9045D, and specific conductance (EC) by USEPA Method 9050A. Laboratory analytical results for soil sample B01@4' indicated that BTEX, TPH, and EC concentrations and levels were in full compliance with COGCC Table 910-1 allowable levels. Laboratory analytical



results for base soil sample B01@4' indicated that pH exceeded the COGCC Table 910-1 allowable level of 9.00 standard units (su) at 9.66 su. However, this sample was collected below the root zone (greater than 3 feet below ground surface (bgs)); therefore, no further excavation was required. The soil sample analytical results are summarized in Table 1, and the laboratory analytical report is attached.

The sump excavation extent measured approximately 12 feet north to south by 13 feet east to west to an approximate depth of 4 feet bgs. Groundwater and impacted soil were not encountered in the excavation. A liner was not present beneath the sump at this site. The produced water sump at this facility has been permanently removed. The excavation area was backfilled and contoured to match pre-existing site conditions.

LTE appreciates the opportunity to provide environmental services to Kerr-McGee. Please contact LTE at (303) 433-9788 if you have any questions regarding this Sump Closure Report or if you require additional information.

Sincerely,

LT ENVIRONMENTAL, INC.

A handwritten signature in blue ink that reads 'Kayla White'.

Kayla White, E.I.  
Staff Engineer

A handwritten signature in blue ink that reads 'Brian Sulzberger'.

Brian Sulzberger, P.E., P.G.  
Senior Engineer

Attachments



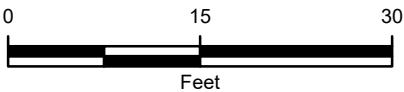




IMAGE COURTESY OF GOOGLE EARTH 2017

**LEGEND**

- SOIL SAMPLE
- EXCAVATION EXTENT
- FORMER BERM
- AST: ABOVEGROUND STORAGE TANK



**FIGURE 1**  
**EXCAVATION SITE MAP**  
**CERVI FEDERAL 6-29**  
**SENW SEC 29-T3N-R62W**  
**WELD COUNTY, COLORADO**  
**KERR-MCGEE OIL & GAS ONSHORE LP**



**TABLE 1**  
**SOIL SAMPLE ANALYTICAL RESULTS**  
**CERVI FEDERAL 6-29**  
**WELD COUNTY, COLORADO**  
**KERR-MCGEE OIL & GAS ONSHORE LP**

Soil Sample ID	Depth (bgs)	Date	Benzene (mg/kg)	Toluene (mg/kg)	Ethylbenzene (mg/kg)	Total Xylenes (mg/kg)	DRO (mg/kg)	GRO (mg/kg)	ORO (mg/kg)	pH (su)	Specific Conductance (mmhos/cm)
B01@4'	4'	05/10/2018	<0.002	<0.002	<0.002	<0.002	<25.0	<0.200	<100	9.66 †	0.0634
<b>COGCC Allowable Levels</b>			<b>0.17</b>	<b>85</b>	<b>100</b>	<b>175</b>	<b>500*</b>	<b>500*</b>	<b>500*</b>	<b>6-9</b>	<b>4</b>

Notes: bgs - below ground surface

COGCC - Colorado Oil and Gas Conservation Commission

DRO - diesel range organics

GRO - gasoline range organics

mg/kg - milligrams per kilogram

mmhos/cm - millimhos per centimeter

NA - not analyzed/not available

ORO - oil range organics

su - standard units

† - Sample was collected at a depth greater than 3 feet bgs

\* - Standard applies to combined DRO-GRO-ORO

< - less than laboratory reporting limit

Bold indicates result exceeds allowable level





May 11, 2018

LT Environmental, Inc.

Brian Sulzberger

4600 West 60th Avenue

Arvada

CO 80003

**Project Name - KMG - Cervi Federal 6-29**

**Project Number - 014218106**

Attached are your analytical results for KMG - Cervi Federal 6-29 received by Origins Laboratory, Inc. May 10, 2018. This project is associated with Origins project number Y805169-01.

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

Brian Sulzberger  
Project Number: 014218106  
Project: KMG - Cervi Federal 6-29

## CROSS REFERENCE REPORT

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
B01@4'	Y805169-01	Soil	May 10, 2018 12:45	05/10/2018 15:30

Origins Laboratory, Inc.



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

Brian Sulzberger  
Project Number: 014218106  
Project: KMG - Cervi Federal 6-29

Origins Laboratory

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

## Sample Receipt Checklist

Origins Work Order: 1805169

Client: LTE

Client Project ID: KMG - Cervi Federal 6-29

Checklist Completed by: JG

Shipped Via: HD

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

Date/time completed: 5/10/2018

Airbill #: N/A

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

Cooler Number/Temperature: 1 / 9.2 °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"/>	<input checked="" type="checkbox"/>		<u>Same Day Sample</u>
Is there ice present (document if blue ice is used)	<input checked="" type="checkbox"/>			
Are custody seals present on cooler? (if so, document in comments if they are signed and dated, broken or intact)		<input checked="" type="checkbox"/>		
Are custody seals present on each sample container? (if so, document in comments if they are signed and dated, broken or intact)		<input checked="" type="checkbox"/>		
Were all samples received intact <sup>(1)</sup> ?	<input checked="" type="checkbox"/>			
Was adequate sample volume provided <sup>(1)</sup> ?	<input checked="" type="checkbox"/>			
Are short holding time analytes or samples with HTs due within 48 hours present <sup>(1)</sup> ?		<input checked="" type="checkbox"/>		
Is a chain-of-custody (COC) present and filled out completely <sup>(1)</sup> ?	<input checked="" type="checkbox"/>			
Does the COC agree with the number and type of sample bottles received <sup>(1)</sup> ?	<input checked="" type="checkbox"/>			
Do the sample IDs on the bottle labels match the COC <sup>(1)</sup> ?	<input checked="" type="checkbox"/>			
Is the COC properly relinquished by the client with date and time recorded <sup>(1)</sup> ?	<input checked="" type="checkbox"/>			
For volatiles in water – is there headspace (> ¼ inch bubble) present? If yes, contact client and note in narrative.			<input checked="" type="checkbox"/>	
Are samples preserved that require preservation and was it checked <sup>(1)</sup> ? (note ID of confirmation instrument used in comments) / (preservation is not confirmed for subcontracted analyses in order to insure sample integrity)/ (pH < 2 for samples preserved with HNO <sub>3</sub> , HCL, H <sub>2</sub> SO <sub>4</sub> ) / (pH > 10 for samples preserved with NaAsO <sub>2</sub> +NaOH, ZnAc+NaOH)		<input checked="" type="checkbox"/>		
Additional Comments (if any):				

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

Reviewed by (Project Manager)

5/10/18  
Date/Time Reviewed

Origins Laboratory, Inc.

*Jefe Pellegrini*

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

Brian Sulzberger  
Project Number: 014218106  
Project: KMG - Cervi Federal 6-29

B01@4'

5/10/2018 12:45:00PM

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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**Origins Laboratory, Inc.**  
Y805169-01 (Soil)

**DRO/RRO by EPA8015C**

Diesel (C10-C28)	ND	25.0	mg/kg	1	B8E1005	05/10/2018	05/10/2018	U
Residual Range Organics (C28-C40)	ND	100	"	"	"	"	"	U

Surrogate: o-Terphenyl 86.4 % 59-131 " " "

**GBTEX by EPA 8260C**

Gasoline Range Hydrocarbons	ND	0.200	mg/kg	1	B8E1002	05/10/2018	05/10/2018	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 106 % 70-130 " " "  
Surrogate: Toluene-d8 95.2 % 70-130 " " "  
Surrogate: 4-Bromofluorobenzene 100 % 70-130 " " "

**pH in Soil by EPA 9045D**

pH	9.66		pH Units	1	B8E1006	05/10/2018	05/10/2018	
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**Specific Conductance by Modified 9050A**

Specific Conductance (EC)	0.0634		mmhos/cm	"	B8E1007	05/10/2018	"	
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Origins Laboratory, Inc.



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

Brian Sulzberger  
Project Number: 014218106  
Project: KMG - Cervi Federal 6-29

**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 B8E1002 - EPA 5030 (soil)</b>										
<b>Blank (B8E1002-BLK1)</b>					Prepared: 05/10/2018 Analyzed: 05/10/2018					
Gasoline Range Hydrocarbons	ND	0.200	mg/kg							U
Benzene	ND	0.002	"							U
Toluene	ND	0.002	"							U
Ethylbenzene	ND	0.002	"							U
Xylenes, total	ND	0.002	"							U
Surrogate: 1,2-Dichloroethane-d4	59		ug/kg	62.5		94.4	70-130			
Surrogate: Toluene-d8	60		"	62.5		95.8	70-130			
Surrogate: 4-Bromofluorobenzene	61		"	62.5		98.2	70-130			

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Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
<b>Batch B8E1002 - EPA 5030 (soil)</b>										
<b>Blank (B8E1002-BLK2)</b>					Prepared: 05/10/2018 Analyzed: 05/10/2018					
Gasoline Range Hydrocarbons	ND	0.200	mg/kg							U
Benzene	ND	0.002	"							U
Toluene	ND	0.002	"							U
Ethylbenzene	ND	0.002	"							U
Xylenes, total	ND	0.002	"							U
Surrogate: 1,2-Dichloroethane-d4	82		ug/kg	62.5		131	70-130			
Surrogate: Toluene-d8	60		"	62.5		96.4	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
Batch B8E1002 - EPA 5030 (soil)										
LCS (B8E1002-BS1)					Prepared: 05/10/2018 Analyzed: 05/10/2018					
Benzene	0.104	0.002	mg/kg	0.100		104	77.1-124			
Toluene	0.098	0.002	"	0.100		97.7	74.5-128			
Ethylbenzene	0.099	0.002	"	0.100		99.3	66.4-127			
m,p-Xylene	0.186	0.004	"	0.200		93.1	76.6-124			
o-Xylene	0.099	0.002	"	0.100		98.8	76.6-124			
Surrogate: 1,2-Dichloroethane-d4	57		ug/kg	62.5		90.8	70-130			
Surrogate: Toluene-d8	60		"	62.5		96.7	70-130			
Surrogate: 4-Bromofluorobenzene	64		"	62.5		102	70-130			

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Project: KMG - Cervi Federal 6-29

**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
Batch B8E1002 - EPA 5030 (soil)										
LCS (B8E1002-BS2)					Prepared: 05/10/2018 Analyzed: 05/10/2018					
Benzene	0.104	0.002	mg/kg	0.100		104	77.1-124			
Toluene	0.098	0.002	"	0.100		97.7	74.5-128			
Ethylbenzene	0.099	0.002	"	0.100		99.1	66.4-127			
m,p-Xylene	0.190	0.004	"	0.200		94.8	76.6-124			
o-Xylene	0.098	0.002	"	0.100		98.5	76.6-124			
Surrogate: 1,2-Dichloroethane-d4	73		ug/kg	62.5		118	70-130			
Surrogate: Toluene-d8	60		"	62.5		96.3	70-130			
Surrogate: 4-Bromofluorobenzene	65		"	62.5		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 B8E1002 - EPA 5030 (soil)**

Matrix Spike (B8E1002-MS1)		Source: Y805150-02			Prepared: 05/10/2018 Analyzed: 05/10/2018					
Benzene	0.106	0.002	mg/kg	0.100	ND	106	71.8-126			
Toluene	0.099	0.002	"	0.100	ND	98.5	65.1-130			
Ethylbenzene	0.101	0.002	"	0.100	ND	101	62.2-130			
m,p-Xylene	0.190	0.004	"	0.200	ND	95.1	46.5-137			
o-Xylene	0.101	0.002	"	0.100	ND	101	54.2-134			
Surrogate: 1,2-Dichloroethane-d4	60		ug/kg	62.5		95.7	70-130			
Surrogate: Toluene-d8	58		"	62.5		93.6	70-130			
Surrogate: 4-Bromofluorobenzene	63		"	62.5		101	70-130			

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4600 West 60th Avenue  
Arvada CO 80003

Brian Sulzberger  
Project Number: 014218106  
Project: KMG - Cervi Federal 6-29

**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 B8E1002 - EPA 5030 (soil)**

Matrix Spike (B8E1002-MS2)		Source: Y805169-01			Prepared: 05/10/2018 Analyzed: 05/10/2018					
Benzene	0.219	0.002	mg/kg	0.200	ND	110	71.8-126			
Toluene	0.204	0.002	"	0.200	ND	102	65.1-130			
Ethylbenzene	0.212	0.002	"	0.200	ND	106	62.2-130			
m,p-Xylene	0.429	0.004	"	0.400	ND	107	46.5-137			
o-Xylene	0.210	0.002	"	0.200	ND	105	54.2-134			
Surrogate: 1,2-Dichloroethane-d4	68		ug/kg	62.5		110	70-130			
Surrogate: Toluene-d8	59		"	62.5		94.6	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
<b>Batch B8E1002 - EPA 5030 (soil)</b>										
<b>Matrix Spike Dup (B8E1002-MSD1)</b>		<b>Source: Y805150-02</b>			Prepared: 05/10/2018 Analyzed: 05/10/2018					
Benzene	0.090	0.002	mg/kg	0.100	ND	90.2	71.8-126	16.3	11.3	QR-02
Toluene	0.082	0.002	"	0.100	ND	82.1	65.1-130	18.2	15.4	QR-02
Ethylbenzene	0.083	0.002	"	0.100	ND	82.9	62.2-130	19.7	19.6	QR-02
m,p-Xylene	0.156	0.004	"	0.200	ND	78.1	46.5-137	19.6	19.2	QR-02
o-Xylene	0.084	0.002	"	0.100	ND	84.3	54.2-134	17.8	17.9	
Surrogate: 1,2-Dichloroethane-d4	61		ug/kg	62.5		96.9	70-130			
Surrogate: Toluene-d8	59		"	62.5		94.3	70-130			
Surrogate: 4-Bromofluorobenzene	64		"	62.5		102	70-130			

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Project Number: 014218106  
Project: KMG - Cervi Federal 6-29

**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 B8E1002 - EPA 5030 (soil)**

Matrix Spike Dup (B8E1002-MSD2)		Source: Y805169-01			Prepared: 05/10/2018 Analyzed: 05/10/2018					
Benzene	0.211	0.002	mg/kg	0.200	ND	105	71.8-126	3.78	11.3	
Toluene	0.196	0.002	"	0.200	ND	97.8	65.1-130	4.37	15.4	
Ethylbenzene	0.203	0.002	"	0.200	ND	102	62.2-130	4.23	19.6	
m,p-Xylene	0.405	0.004	"	0.400	ND	101	46.5-137	5.84	19.2	
o-Xylene	0.201	0.002	"	0.200	ND	100	54.2-134	4.26	17.9	
Surrogate: 1,2-Dichloroethane-d4	66		ug/kg	62.5		106	70-130			
Surrogate: Toluene-d8	59		"	62.5		94.2	70-130			
Surrogate: 4-Bromofluorobenzene	66		"	62.5		105	70-130			

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

Brian Sulzberger  
Project Number: 014218106  
Project: KMG - Cervi Federal 6-29

## 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 B8E1005 - EPA 3580

##### Blank (B8E1005-BLK1)

Prepared: 05/10/2018 Analyzed: 05/10/2018

Diesel (C10-C28)	ND	50.0	mg/kg							U
Residual Range Organics (C28-C40)	ND	200	"							U
Surrogate: o-Terphenyl	46		"	50.0		92.0	59-131			

##### Blank (B8E1005-BLK2)

Prepared: 05/10/2018 Analyzed: 05/11/2018

Diesel (C10-C28)	ND	50.0	mg/kg							U
Residual Range Organics (C28-C40)	ND	200	"							U
Surrogate: o-Terphenyl	52		"	50.0		104	59-131			

##### LCS (B8E1005-BS1)

Prepared: 05/10/2018 Analyzed: 05/10/2018

Diesel (C10-C28)	989	50.0	mg/kg	1000		98.9	64-121			
Residual Range Organics (C28-C40)	869	200	"	1000		86.9	58-124			
Surrogate: o-Terphenyl	51		"	50.0		103	59-131			

##### LCS (B8E1005-BS2)

Prepared: 05/10/2018 Analyzed: 05/11/2018

Diesel (C10-C28)	1140	50.0	mg/kg	1000		114	64-121			
Residual Range Organics (C28-C40)	994	200	"	1000		99.4	58-124			
Surrogate: o-Terphenyl	61		"	50.0		122	59-131			

##### Matrix Spike (B8E1005-MS1)

Source: Y805169-01

Prepared: 05/10/2018 Analyzed: 05/10/2018

Diesel (C10-C28)	967	50.0	mg/kg	1000	ND	96.7	53-125			
Residual Range Organics (C28-C40)	858	200	"	1000	13.8	84.4	47-133			

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

Brian Sulzberger  
Project Number: 014218106  
Project: KMG - Cervi Federal 6-29

## 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 B8E1005 - EPA 3580</b>										
<b>Matrix Spike (B8E1005-MS1)</b>		<b>Source: Y805169-01</b>			Prepared: 05/10/2018 Analyzed: 05/10/2018					
Surrogate: o-Terphenyl	52		mg/kg	50.0		104	59-131			
<b>Matrix Spike (B8E1005-MS2)</b>		<b>Source: Y805173-08</b>			Prepared: 05/10/2018 Analyzed: 05/11/2018					
Diesel (C10-C28)	1140	50.0	mg/kg	1000	ND	114	53-125			
Residual Range Organics (C28-C40)	1000	200	"	1000	ND	100	47-133			
Surrogate: o-Terphenyl	64		"	50.0		129	59-131			
<b>Matrix Spike Dup (B8E1005-MSD1)</b>		<b>Source: Y805169-01</b>			Prepared: 05/10/2018 Analyzed: 05/10/2018					
Diesel (C10-C28)	965	50.0	mg/kg	1000	ND	96.5	53-125	0.129	20	
Residual Range Organics (C28-C40)	869	200	"	1000	13.8	85.5	47-133	1.27	20	
Surrogate: o-Terphenyl	48		"	50.0		96.9	59-131			
<b>Matrix Spike Dup (B8E1005-MSD2)</b>		<b>Source: Y805173-08</b>			Prepared: 05/10/2018 Analyzed: 05/11/2018					
Diesel (C10-C28)	1110	50.0	mg/kg	1000	ND	111	53-125	2.93	20	
Residual Range Organics (C28-C40)	991	200	"	1000	ND	99.1	47-133	1.36	20	
Surrogate: o-Terphenyl	59		"	50.0		118	59-131			

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

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
<b>Batch B8E1006 - EPA 1311</b>										
<b>Duplicate (B8E1006-DUP1)</b>		<b>Source: Y805169-01</b>			Prepared: 05/10/2018 Analyzed: 05/10/2018					
pH	9.48		pH Units		9.66			1.88	25	
<b>Batch B8E1007 - EPA 1311</b>										
<b>Blank (B8E1007-BLK1)</b>		Prepared: 05/10/2018 Analyzed: 05/10/2018								
Specific Conductance (EC)	0.00220		mmhos/cm							
<b>Duplicate (B8E1007-DUP1)</b>		<b>Source: Y805169-01</b>			Prepared: 05/10/2018 Analyzed: 05/10/2018					
Specific Conductance (EC)	0.0618		mmhos/cm		0.0634			2.56	25	

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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.

Origins Laboratory, Inc.



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