

LEGEND

 Site Location



Figure 1  
Location Site Map  
April 19, 2020 LBK

**French Lake 4-63-36 1B  
Location ID: 422497  
SWSW, Sec 36, T4N, R63W, 6<sup>th</sup> PM  
Weld County, Colorado**



Aerial photograph courtesy of COGIS



LEGEND	
	Release Location
	Release Footprint
	Sample Location



Figure 2  
 Site Map  
 August 8, 2020 LBK

**French Lake 4-63-36 1B**  
**Location ID: 422497**  
**SWSW, Sec 36, T4N, R63W, 6<sup>th</sup> PM**  
**Weld County, Colorado**

**TABLE 1**  
**SOIL ANALYTICAL RESULTS**  
**FRENCH LAKE 4-63-36 1B**  
**WELD COUNTY, COLORADO**  
**BONANZA CREEK ENERGY OPERATING COMPANY LLC.**

Parameters		COGCC Table 910-1 Concentration Level	SS01	SS02
Sample Date		<del> </del>	5/19/2020	5/19/2020
Sample Depth (inches)		<del> </del>	6-12	2-8
<b>BTEX</b>	<b>Benzene</b>	<b>0.17</b>	<0.050	<0.050
	<b>Toluene</b>	<b>85</b>	<0.050	<0.050
	<b>Ethylbenzene</b>	<b>100</b>	<0.050	<0.050
	<b>Total Xylenes</b>	<b>175</b>	<0.050	<0.050
<b>TPH</b>	<b>DRO</b>	--	<50	<50
	<b>GRO</b>	--	<50	<50
	<b>Total</b>	<b>500</b>	<50	<50

**Notes:**

COGCC - Colorado Oil and Gas Conservation Commission

-- - no concentration level is available

BTEX - benzene, toluene, ethylbenzene, xylenes (total)

DRO - diesel range organics

GRO - gasoline range organics

TPH - total petroleum hydrocarbons

All results are in mg/kg unless stated otherwise.



May 27, 2020

**Bonanza Creek Energy, Inc.**

**Luke Kelly**

**410 17th St, Suite 1400**

**Denver CO 80211**

**Project Name - French Lake 4-63-36 1 B**

**Project Number - [none]**

Attached are your analytical results for French Lake 4-63-36 1 B received by Origins Laboratory, Inc. May 19, 2020. This project is associated with Origins project number Y005269-01.

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

Bonanza Creek Energy, Inc.

410 17th St, Suite 1400

Denver CO 80211

Luke Kelly

Project Number: [none]

Project: French Lake 4-63-36 1 B

CROSS REFERENCE REPORT

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
SS 01 (N) 6-12"	Y005269-01	Soil	May 19, 2020 11:00	05/19/2020 14:51
SS 02 (S) 2-8"	Y005269-02	Soil	May 19, 2020 11:03	05/19/2020 14:51

Origins Laboratory, Inc.



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Bonanza Creek Energy, Inc.

410 17th St, Suite 1400

Denver CO 80211

Luke Kelly

Project Number: [none]

Project: French Lake 4-63-36 1 B

Origins Laboratory

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

Sample Receipt Checklist

Origins Work Order: Y005269

Client: Bonanza Creek

Client Project ID: French Lake 4-63-36 1B

Checklist Completed by: KDK

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

Date/time completed: 05-20-2020

Airbill #: N/A

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

Cooler Number/Temperature: 01 / 29.8 °C  °C  °C  °C (Describe)

Thermometer ID: T003

Requirement Description	Yes	No	N/A	Comments (if any)
If samples require cooling, was the temperature between 0°C to ≤ 6°C <sup>(1)</sup> ?		<input checked="" type="checkbox"/>		
Is there ice present (document if blue ice is used)	<input checked="" type="checkbox"/>			Same day
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.

Jm  
Reviewed by (Project Manager)

5-21-20  
Date/Time Reviewed

Origins Laboratory, Inc.



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Bonanza Creek Energy, Inc.

410 17th St, Suite 1400

Denver CO 80211

Luke Kelly

Project Number: [none]

Project: French Lake 4-63-36 1 B

**SS 01 (N) 6-12"**

**5/19/2020 11:00:00AM**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Analyst	Prepared	Analyzed	Notes
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**Origins Laboratory, Inc.**  
**Y005269-01 (Soil)**

**BTEX by EPA 8260D**

Benzene	ND	0.050	mg/kg	25	B0E2001	KDK	05/20/2020	05/20/2020	U
Toluene	ND	0.050	"	"	"	KDK	"	"	U
Ethylbenzene	ND	0.050	"	"	"	KDK	"	"	U
Xylenes, total	ND	0.050	"	"	"	KDK	"	"	U

Surrogate: 1,2-Dichloroethane-d4	91.6 %	70-130			"	"	"	"	
Surrogate: Toluene-d8	102 %	70-130			"	"	"	"	
Surrogate: 4-Bromofluorobenzene	104 %	70-130			"	"	"	"	

**GRO (TVPH)/DRO (TEPH) by EPA 8015D**

Gasoline (C6-C10)	ND	50.0	mg/kg	1	B0E2002	TEM	05/20/2020	05/20/2020	U
Diesel (C10-C28)	ND	50.0	"	"	"	TEM	"	"	U

Surrogate: o-Terphenyl	79.8 %	50-150			"	"	"	"	
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Origins Laboratory, Inc.



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Bonanza Creek Energy, Inc.

410 17th St, Suite 1400

Denver CO 80211

Luke Kelly

Project Number: [none]

Project: French Lake 4-63-36 1 B

**SS 02 (S) 2-8"**

**5/19/2020 11:03:00AM**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Analyst	Prepared	Analyzed	Notes
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**Origins Laboratory, Inc.**  
**Y005269-02 (Soil)**

**BTEX by EPA 8260D**

Benzene	ND	0.050	mg/kg	25	B0E2001	KDK	05/20/2020	05/20/2020	U
Toluene	ND	0.050	"	"	"	KDK	"	"	U
Ethylbenzene	ND	0.050	"	"	"	KDK	"	"	U
Xylenes, total	ND	0.050	"	"	"	KDK	"	"	U

Surrogate: 1,2-Dichloroethane-d4	89.0 %	70-130				"	"	"	
Surrogate: Toluene-d8	105 %	70-130				"	"	"	
Surrogate: 4-Bromofluorobenzene	103 %	70-130				"	"	"	

**GRO (TVPH)/DRO (TEPH) by EPA 8015D**

Gasoline (C6-C10)	ND	50.0	mg/kg	1	B0E2002	TEM	05/20/2020	05/20/2020	U
Diesel (C10-C28)	ND	50.0	"	"	"	TEM	"	"	U

Surrogate: o-Terphenyl	87.2 %	50-150				"	"	"	
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Denver CO 80211

Luke Kelly

Project Number: [none]

Project: French Lake 4-63-36 1 B

**Volatile Organic Compounds by GC/MS SW846 8260D - 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 B0E2001 - EPA 5030 (soil)**

**Blank (B0E2001-BLK1)**

Prepared: 05/20/2020 Analyzed: 05/20/2020

Benzene	ND	0.002	mg/kg							U
Toluene	ND	0.002	"							U
Ethylbenzene	ND	0.002	"							U
Xylenes, total	ND	0.002	"							U
<i>Surrogate: 1,2-Dichloroethane-d4</i>	<i>0.11</i>		<i>"</i>	<i>0.125</i>		<i>89.4</i>	<i>70-130</i>			
<i>Surrogate: Toluene-d8</i>	<i>0.13</i>		<i>"</i>	<i>0.125</i>		<i>100</i>	<i>70-130</i>			
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>0.13</i>		<i>"</i>	<i>0.125</i>		<i>104</i>	<i>70-130</i>			

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Luke Kelly

Project Number: [none]

Project: French Lake 4-63-36 1 B

**Volatile Organic Compounds by GC/MS SW846 8260D - 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 B0E2001 - EPA 5030 (soil)**

**LCS (B0E2001-BS1)**

Prepared: 05/20/2020 Analyzed: 05/20/2020

Benzene	0.045	0.002	mg/kg	0.0500		90.3	70-130			
Toluene	0.048	0.002	"	0.0500		96.7	70-130			
Ethylbenzene	0.047	0.002	"	0.0500		94.7	70-130			
m,p-Xylene	0.096	0.004	"	0.100		95.7	70-130			
o-Xylene	0.049	0.002	"	0.0500		97.7	70-130			
Surrogate: 1,2-Dichloroethane-d4	0.11		"	0.125		92.0	70-130			
Surrogate: Toluene-d8	0.13		"	0.125		104	70-130			
Surrogate: 4-Bromofluorobenzene	0.13		"	0.125		102	70-130			

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Luke Kelly

Project Number: [none]

Project: French Lake 4-63-36 1 B

**Volatile Organic Compounds by GC/MS SW846 8260D - 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 B0E2001 - EPA 5030 (soil)

Matrix Spike (B0E2001-MS1)	Source: Y005269-01			Prepared: 05/20/2020 Analyzed: 05/20/2020						
Benzene	0.057	0.002	mg/kg	0.0500	ND	113	70-130			
Toluene	0.062	0.002	"	0.0500	ND	124	70-130			
Ethylbenzene	0.063	0.002	"	0.0500	ND	126	70-130			
m,p-Xylene	0.126	0.004	"	0.100	ND	126	70-130			
o-Xylene	0.067	0.002	"	0.0500	ND	135	70-130			QM-07
Surrogate: 1,2-Dichloroethane-d4	0.11		"	0.125		91.2	70-130			
Surrogate: Toluene-d8	0.13		"	0.125		107	70-130			
Surrogate: 4-Bromofluorobenzene	0.12		"	0.125		99.2	70-130			

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Denver CO 80211

Luke Kelly

Project Number: [none]

Project: French Lake 4-63-36 1 B

**Volatile Organic Compounds by GC/MS SW846 8260D - 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 B0E2001 - EPA 5030 (soil)

Matrix Spike Dup (B0E2001-MSD1)	Source: Y005269-01			Prepared: 05/20/2020 Analyzed: 05/20/2020						
Benzene	0.059	0.002	mg/kg	0.0500	ND	118	70-130	4.12	20	
Toluene	0.064	0.002	"	0.0500	ND	128	70-130	3.20	20	
Ethylbenzene	0.063	0.002	"	0.0500	ND	127	70-130	0.856	20	
m,p-Xylene	0.127	0.004	"	0.100	ND	127	70-130	0.836	20	
o-Xylene	0.066	0.002	"	0.0500	ND	133	70-130	1.37	20	QM-07
Surrogate: 1,2-Dichloroethane-d4	0.11		"	0.125		88.2	70-130			
Surrogate: Toluene-d8	0.13		"	0.125		107	70-130			
Surrogate: 4-Bromofluorobenzene	0.13		"	0.125		101	70-130			

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410 17th St, Suite 1400

Denver CO 80211

Luke Kelly

Project Number: [none]

Project: French Lake 4-63-36 1 B

**Volatile Organic Compounds by GC/MS SW846 8260D - Quality Control**  
**Origins Laboratory, Inc.**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
<b>Batch B0E2002 - EPA 3580</b>										
<b>Blank (B0E2002-BLK1)</b>										
					Prepared: 05/20/2020 Analyzed: 05/20/2020					
Gasoline (C6-C10)	ND	25.0	mg/kg							U
Diesel (C10-C28)	ND	25.0	"							U
Surrogate: o-Terphenyl	22		"	25.0		88.6	50-150			

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Denver CO 80211

Luke Kelly

Project Number: [none]

Project: French Lake 4-63-36 1 B

**Extractable Petroleum Hydrocarbons by 8015D - 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 B0E2002 - EPA 3580

**LCS (B0E2002-BS1)**

Prepared: 05/20/2020 Analyzed: 05/20/2020

Gasoline (C6-C10)	1040	50.0	mg/kg	1000		104	70-130			
Diesel (C10-C28)	1220	50.0	"	1000		122	70-130			
Surrogate: o-Terphenyl	62		"	50.0		124	50-150			

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Denver CO 80211

Luke Kelly

Project Number: [none]

Project: French Lake 4-63-36 1 B

**Extractable Petroleum Hydrocarbons by 8015D - 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 B0E2002 - EPA 3580

Matrix Spike (B0E2002-MS1)	Source: Y005269-01			Prepared: 05/20/2020 Analyzed: 05/20/2020						
Gasoline (C6-C10)	1160	50.0	mg/kg	1000	ND	116	70-130			
Diesel (C10-C28)	1180	50.0	"	1000	ND	118	70-130			
Surrogate: o-Terphenyl	61		"	50.0		123	50-150			

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Luke Kelly

Project Number: [none]

Project: French Lake 4-63-36 1 B

**Extractable Petroleum Hydrocarbons by 8015D - 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 B0E2002 - EPA 3580

Matrix Spike Dup (B0E2002-MSD1)	Source: Y005269-01			Prepared: 05/20/2020 Analyzed: 05/20/2020						
Gasoline (C6-C10)	1100	50.0	mg/kg	1000	ND	110	70-130	4.91	35	
Diesel (C10-C28)	1170	50.0	"	1000	ND	117	70-130	1.16	35	
Surrogate: o-Terphenyl	59		"	50.0		117	50-150			

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Bonanza Creek Energy, Inc.  
410 17th St, Suite 1400  
Denver CO 80211

Luke Kelly  
Project Number: [none]  
Project: French Lake 4-63-36 1 B

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**Notes and Definitions**

U Sample is Non-Detect.

QM-07 The spike recovery was outside acceptance limits for the MS and/or MSD. The batch was accepted based on acceptable LCS recovery.

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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