

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
Stonebraker 6-12A
API # 05-123-30443
Location ID # 418016
Remediation # 12132
NWNE SEC 12-T1N-R68W
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 September 19, 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 total 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 3.9 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, pH, and EC concentrations and levels were in full compliance with Colorado Oil and Gas Conservation Commission Table 910-1



allowable levels. The soil sample analytical results are summarized in Table 1, and the laboratory analytical report is attached.

The sump excavation extent measured approximately 18 feet north to south by 25 feet east to west to an approximate depth of 4 feet below ground surface. 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 will be replaced.

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 black ink, appearing to read 'Alex Guy'.

Alexandra Guy
Staff Environmental Scientist

A handwritten signature in black ink, appearing to read 'Brian Sulzberger'.

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

Attachments







IMAGE COURTESY OF GOOGLE EARTH 2018

LEGEND

- SOIL SAMPLE
- x — x REMOVED FENCE
- - - EXCAVATION EXTENT
- REMOVED BERM
- AST: ABOVEGROUND STORAGE TANK

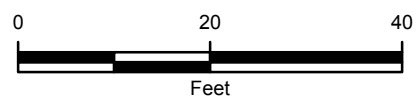


FIGURE 1
EXCAVATION SITE MAP
STONEBRAKER 6-12A
NWNE SEC 12-T1N-R68W
WELD COUNTY, COLORADO
KERR-MCGEE OIL & GAS ONSHORE LP



TABLE 1
SOIL SAMPLE ANALYTICAL RESULTS
STONEBRAKER 6-12A
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'	09/19/2018	<0.050	<0.050	<0.050	<0.050	<25.0	<5.00	<100	7.42	0.266
COGCC Allowable Levels			0.17	85	100	175	500*	500*	500*	6-9	4

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
* - Standard applies to combined DRO-GRO-ORO
< - less than laboratory reporting limit
Bold indicates result exceeds allowable level





September 20, 2018

LT Environmental, Inc.

Brian Sulzberger

4600 West 60th Avenue

Arvada

CO 80003

Project Name - KMG - Stonebraker 6-12A

Project Number - 014218194

Attached are your analytical results for KMG - Stonebraker 6-12A received by Origins Laboratory, Inc. September 19, 2018. This project is associated with Origins project number Y809244-01.

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: 014218194
Project: KMG - Stonebraker 6-12A

CROSS REFERENCE REPORT

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
B01@4'	Y809244-01	Soil	September 19, 2018 13:38	09/19/2018 18:18

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

Brian Sulzberger
Project Number: 014218194
Project: KMG - Stonebraker 6-12A

www.originslaboratory.com

1900244

page 1 of 1

ORIGINS
LABORATORY, INC

Client: LT Environmental

Address:

Project Manager: Brian Sulzberger

Project Name: Stonebraker 6-12A

Project Number: 014218194

Samples Collected By: Glean Thompson

Telephone Number: 303 433 9788

Email Address: KMG Team

Sample ID Description	Date Sampled	Time Sampled	# of Containers	Preservative				Matrix			Analysis				Sample Instructions
				Unpreserved	HCl	HNO ₃	Other	Groundwater	Soil	Air Summ #	Other	GBrex	TPH	DR/PCFO	
B01 @ 4'	9/19/18	1338	2	X				X					X	X	Hold SAR
N01 @ 2.5'		1334	2	X				X					X	X	Hold
E01 @ 2.5'		1330	2	X				X					X	X	
S01 @ 2.5'		1328	2	X				X					X	X	
W01 @ 2.5'		1323	2	X				X					X	X	
B601		1317	2	X				X					X	X	

Relinquished By:	Date:	Time:	Received By:	Date:	Time:
	9/19/18	1618		9/19/18	1318

Relinquished By:	Date:	Time:	Received By:	Date:	Time:

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"/>

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

Date Results Needed

Temp Received- 13.1

Origins Laboratory, Inc.

Jen 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.

Jen Pellegrini For Noelle Doyle Mathis, President

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

Brian Sulzberger
Project Number: 014218194
Project: KMG - Stonebraker 6-12A

Origins Laboratory

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

Sample Receipt Checklist

Origins Work Order: Y809244

Client: LTE

Client Project ID: KMG- Stonebraker 6-12A

Checklist Completed by: JG

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

Date/time completed: 9/19/2018

Airbill #: N/A

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

Cooler Number/Temperature: 1 / 3.1 °C / _____ °C / _____ °C / _____ °C

Thermometer ID: T003

Requirement Description	Yes	No	N/A	Comments (if any)
If samples require cooling, was the temperature between 0°C to ≤ 6°C ⁽¹⁾ ?		<input checked="" type="checkbox"/>		<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 ⁽¹⁾ ?	<input checked="" type="checkbox"/>			
Was adequate sample volume provided ⁽¹⁾ ?	<input checked="" type="checkbox"/>			
Are short holding time analytes or samples with HTs due within 48 hours present ⁽¹⁾ ?		<input checked="" type="checkbox"/>		
Is a chain-of-custody (COC) present and filled out completely ⁽¹⁾ ?	<input checked="" type="checkbox"/>			
Does the COC agree with the number and type of sample bottles received ⁽¹⁾ ?	<input checked="" type="checkbox"/>			
Do the sample IDs on the bottle labels match the COC ⁽¹⁾ ?	<input checked="" type="checkbox"/>			
Is the COC properly relinquished by the client with date and time recorded ⁽¹⁾ ?	<input checked="" type="checkbox"/>			
For volatiles in water – is there headspace (> ¼ inch bubble) present? If yes, contact client and note in narrative.			<input checked="" type="checkbox"/>	
Are samples preserved that require preservation and was it checked ⁽¹⁾ ? (note ID of confirmation instrument used in comments) / (preservation is not confirmed for subcontracted analyses in order to insure sample integrity)/(pH <2 for samples preserved with HNO ₃ , HCL, H ₂ SO ₄) / (pH >10 for samples preserved with NaAsO ₂ +NaOH, ZnAc+NaOH)		<input checked="" type="checkbox"/>		
Additional Comments (if any):				

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

Reviewed by (Project Manager) [Signature]

9/19/18
Date/Time Reviewed

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

Brian Sulzberger
Project Number: 014218194
Project: KMG - Stonebraker 6-12A

B01@4'

9/19/2018 1:38:00PM

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Analyst	Prepared	Analyzed	Notes
---------	--------	-----------------	-------	----------	-------	---------	----------	----------	-------

Origins Laboratory, Inc.
Y809244-01 (Soil)

DRO/RRO by EPA8015C

Diesel (C10-C28)	ND	25.0	mg/kg	1	B8I1903	JTD	09/19/2018	09/20/2018	U
Residual Range Organics (C28-C40)	ND	100	"	"	"	JTD	"	"	U

Surrogate: o-Terphenyl 77.7 % 59-131 " " "

GBTEX by EPA 8260C

Gasoline Range Hydrocarbons	ND	5.00	mg/kg	25	B8I1902	JTD	09/19/2018	09/19/2018	U
Benzene	ND	0.050	"	"	"	JTD	"	"	U
Toluene	ND	0.050	"	"	"	JTD	"	"	U
Ethylbenzene	ND	0.050	"	"	"	JTD	"	"	U
Xylenes, total	ND	0.050	"	"	"	JTD	"	"	U

Surrogate: 1,2-Dichloroethane-d4 98.4 % 70-130 " " "
Surrogate: Toluene-d8 101 % 70-130 " " "
Surrogate: 4-Bromofluorobenzene 100 % 70-130 " " "

pH in Soil by EPA 9045D

pH	7.42		pH Units	1	B8I1907	JTD	09/19/2018	09/19/2018	
----	------	--	----------	---	---------	-----	------------	------------	--

Specific Conductance by Modified 9050A

Specific Conductance (EC)	0.266	0.00500	mmhos/cm	"	B8I1908	JTD	"	"	
---------------------------	-------	---------	----------	---	---------	-----	---	---	--

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

Brian Sulzberger
Project Number: 014218194
Project: KMG - Stonebraker 6-12A

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 B8I1902 - EPA 5030 (soil)										
Blank (B8I1902-BLK1)					Prepared: 09/19/2018 Analyzed: 09/19/2018					
Gasoline Range Hydrocarbons	ND	0.200	mg/kg							U
Benzene	ND	0.002	"							U
Toluene	ND	0.002	"							U
Ethylbenzene	ND	0.002	"							U
Xylenes, total	ND	0.002	"							U
Surrogate: 1,2-Dichloroethane-d4	68		ug/kg	62.5		108	70-130			
Surrogate: Toluene-d8	62		"	62.5		98.6	70-130			
Surrogate: 4-Bromofluorobenzene	62		"	62.5		99.3	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

Brian Sulzberger
Project Number: 014218194
Project: KMG - Stonebraker 6-12A

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 B8I1902 - EPA 5030 (soil)										
Blank (B8I1902-BLK2)					Prepared: 09/19/2018 Analyzed: 09/19/2018					
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	65		ug/kg	62.5		104	70-130			
Surrogate: Toluene-d8	63		"	62.5		100	70-130			
Surrogate: 4-Bromofluorobenzene	63		"	62.5		100	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

Brian Sulzberger
Project Number: 014218194
Project: KMG - Stonebraker 6-12A

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 B8I1902 - EPA 5030 (soil)										
LCS (B8I1902-BS1)					Prepared: 09/19/2018 Analyzed: 09/19/2018					
Benzene	0.096	0.002	mg/kg	0.100		95.9	77.1-124			
Toluene	0.102	0.002	"	0.100		102	74.5-128			
Ethylbenzene	0.103	0.002	"	0.100		103	66.4-127			
m,p-Xylene	0.207	0.004	"	0.200		104	76.6-124			
o-Xylene	0.102	0.002	"	0.100		102	76.6-124			
Surrogate: 1,2-Dichloroethane-d4	63		ug/kg	62.5		101	70-130			
Surrogate: Toluene-d8	61		"	62.5		98.3	70-130			
Surrogate: 4-Bromofluorobenzene	62		"	62.5		98.8	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

Brian Sulzberger
Project Number: 014218194
Project: KMG - Stonebraker 6-12A

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 B8I1902 - EPA 5030 (soil)										
LCS (B8I1902-BS2)					Prepared: 09/19/2018 Analyzed: 09/19/2018					
Benzene	0.100	0.002	mg/kg	0.100		99.9	77.1-124			
Toluene	0.099	0.002	"	0.100		99.4	74.5-128			
Ethylbenzene	0.099	0.002	"	0.100		99.0	66.4-127			
m,p-Xylene	0.197	0.004	"	0.200		98.4	76.6-124			
o-Xylene	0.098	0.002	"	0.100		98.0	76.6-124			
Surrogate: 1,2-Dichloroethane-d4	60		ug/kg	62.5		96.3	70-130			
Surrogate: Toluene-d8	62		"	62.5		99.0	70-130			
Surrogate: 4-Bromofluorobenzene	62		"	62.5		98.6	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

Brian Sulzberger
Project Number: 014218194
Project: KMG - Stonebraker 6-12A

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 B8I1902 - EPA 5030 (soil)

Matrix Spike (B8I1902-MS1)		Source: Y809232-21			Prepared: 09/19/2018 Analyzed: 09/19/2018					
Benzene	0.102	0.002	mg/kg	0.100	ND	102	71.8-126			
Toluene	0.104	0.002	"	0.100	ND	104	65.1-130			
Ethylbenzene	0.118	0.002	"	0.100	ND	118	62.2-130			
m,p-Xylene	0.236	0.004	"	0.200	ND	118	46.5-137			
o-Xylene	0.117	0.002	"	0.100	ND	117	54.2-134			
Surrogate: 1,2-Dichloroethane-d4	62		ug/kg	62.5		100	70-130			
Surrogate: Toluene-d8	64		"	62.5		102	70-130			
Surrogate: 4-Bromofluorobenzene	71		"	62.5		113	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

Brian Sulzberger
Project Number: 014218194
Project: KMG - Stonebraker 6-12A

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 B8I1902 - EPA 5030 (soil)

Matrix Spike (B8I1902-MS2)		Source: Y809232-22			Prepared: 09/19/2018 Analyzed: 09/19/2018					
Benzene	0.098	0.002	mg/kg	0.100	ND	97.6	71.8-126			
Toluene	0.096	0.002	"	0.100	ND	95.7	65.1-130			
Ethylbenzene	0.095	0.002	"	0.100	ND	95.3	62.2-130			
m,p-Xylene	0.190	0.004	"	0.200	ND	95.1	46.5-137			
o-Xylene	0.095	0.002	"	0.100	ND	95.2	54.2-134			
Surrogate: 1,2-Dichloroethane-d4	63		ug/kg	62.5		101	70-130			
Surrogate: Toluene-d8	62		"	62.5		98.6	70-130			
Surrogate: 4-Bromofluorobenzene	63		"	62.5		101	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

Brian Sulzberger
Project Number: 014218194
Project: KMG - Stonebraker 6-12A

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 B8I1902 - EPA 5030 (soil)

Matrix Spike Dup (B8I1902-MSD1)		Source: Y809232-21			Prepared: 09/19/2018 Analyzed: 09/19/2018					
Benzene	0.097	0.002	mg/kg	0.100	ND	97.4	71.8-126	4.98	11.3	
Toluene	0.095	0.002	"	0.100	ND	94.7	65.1-130	8.90	15.4	
Ethylbenzene	0.107	0.002	"	0.100	ND	107	62.2-130	9.55	19.6	
m,p-Xylene	0.212	0.004	"	0.200	ND	106	46.5-137	10.7	19.2	
o-Xylene	0.104	0.002	"	0.100	ND	104	54.2-134	11.7	17.9	
Surrogate: 1,2-Dichloroethane-d4	63		ug/kg	62.5		101	70-130			
Surrogate: Toluene-d8	63		"	62.5		102	70-130			
Surrogate: 4-Bromofluorobenzene	72		"	62.5		114	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

Brian Sulzberger
Project Number: 014218194
Project: KMG - Stonebraker 6-12A

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 B8I1902 - EPA 5030 (soil)

Matrix Spike Dup (B8I1902-MSD2)		Source: Y809232-22			Prepared: 09/19/2018 Analyzed: 09/19/2018					
Benzene	0.095	0.002	mg/kg	0.100	ND	95.0	71.8-126	2.70	11.3	
Toluene	0.094	0.002	"	0.100	ND	93.6	65.1-130	2.18	15.4	
Ethylbenzene	0.093	0.002	"	0.100	ND	92.8	62.2-130	2.68	19.6	
m,p-Xylene	0.184	0.004	"	0.200	ND	92.0	46.5-137	3.29	19.2	
o-Xylene	0.093	0.002	"	0.100	ND	92.6	54.2-134	2.79	17.9	
Surrogate: 1,2-Dichloroethane-d4	64		ug/kg	62.5		103	70-130			
Surrogate: Toluene-d8	62		"	62.5		99.2	70-130			
Surrogate: 4-Bromofluorobenzene	63		"	62.5		101	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

Brian Sulzberger
Project Number: 014218194
Project: KMG - Stonebraker 6-12A

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
---------	--------	-----------------	-------	-------------	---------------	------	-------------	-----	-----------	-------

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
---------	--------	-----------------	-------	-------------	---------------	------	-------------	-----	-----------	-------

Batch B8I1903 - EPA 3550B

Blank (B8I1903-BLK1)

Prepared: 09/19/2018 Analyzed: 09/19/2018

Diesel (C10-C28)	ND	50.0	mg/kg							U
Residual Range Organics (C28-C40)	ND	200	"							U
Surrogate: o-Terphenyl	45		"	50.0		89.4	59-131			

Blank (B8I1903-BLK2)

Prepared: 09/19/2018 Analyzed: 09/19/2018

Diesel (C10-C28)	ND	50.0	mg/kg							U
Residual Range Organics (C28-C40)	ND	200	"							U
Surrogate: o-Terphenyl	42		"	50.0		83.0	59-131			

LCS (B8I1903-BS1)

Prepared: 09/19/2018 Analyzed: 09/19/2018

Diesel (C10-C28)	996	50.0	mg/kg	1000		99.6	64-121			
Residual Range Organics (C28-C40)	1020	200	"	1000		102	58-124			
Surrogate: o-Terphenyl	54		"	50.0		108	59-131			

LCS (B8I1903-BS2)

Prepared: 09/19/2018 Analyzed: 09/19/2018

Diesel (C10-C28)	921	50.0	mg/kg	1000		92.1	64-121			
Residual Range Organics (C28-C40)	915	200	"	1000		91.5	58-124			
Surrogate: o-Terphenyl	50		"	50.0		100	59-131			

Matrix Spike (B8I1903-MS1)

Source: Y809232-21

Prepared: 09/19/2018 Analyzed: 09/19/2018

Diesel (C10-C28)	1070	50.0	mg/kg	1000	288	77.9	53-125			
Residual Range Organics (C28-C40)	2270	200	"	1000	1170	110	47-133			

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

Brian Sulzberger
Project Number: 014218194
Project: KMG - Stonebraker 6-12A

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
Batch B811903 - EPA 3550B										
Matrix Spike (B811903-MS1)		Source: Y809232-21			Prepared: 09/19/2018 Analyzed: 09/19/2018					
Surrogate: o-Terphenyl	44		mg/kg	50.0		87.8	59-131			
Matrix Spike (B811903-MS2)		Source: Y809232-22			Prepared: 09/19/2018 Analyzed: 09/19/2018					
Diesel (C10-C28)	916	50.0	mg/kg	1000	18.0	89.8	53-125			
Residual Range Organics (C28-C40)	917	200	"	1000	33.7	88.3	47-133			
Surrogate: o-Terphenyl	49		"	50.0		98.4	59-131			
Matrix Spike Dup (B811903-MSD1)		Source: Y809232-21			Prepared: 09/19/2018 Analyzed: 09/19/2018					
Diesel (C10-C28)	1020	50.0	mg/kg	1000	288	73.3	53-125	6.06	20	
Residual Range Organics (C28-C40)	2170	200	"	1000	1170	100	47-133	8.72	20	
Surrogate: o-Terphenyl	52		"	50.0		105	59-131			
Matrix Spike Dup (B811903-MSD2)		Source: Y809232-22			Prepared: 09/19/2018 Analyzed: 09/19/2018					
Diesel (C10-C28)	913	50.0	mg/kg	1000	18.0	89.5	53-125	0.242	20	
Residual Range Organics (C28-C40)	921	200	"	1000	33.7	88.7	47-133	0.489	20	
Surrogate: o-Terphenyl	50		"	50.0		99.6	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

Brian Sulzberger
Project Number: 014218194
Project: KMG - Stonebraker 6-12A

Classical Chemistry Parameters - Quality Control
Origins Laboratory, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch B8I1907 - NO PREP										
Duplicate (B8I1907-DUP1)		Source: Y809232-01			Prepared: 09/19/2018 Analyzed: 09/19/2018					
pH	7.33		pH Units		7.37			0.544	25	
Batch B8I1908 - NO PREP										
Blank (B8I1908-BLK1)		Prepared: 09/19/2018 Analyzed: 09/19/2018								
Specific Conductance (EC)	0.00180	0.00500	mmhos/cm							
Duplicate (B8I1908-DUP1)		Source: Y809232-01			Prepared: 09/19/2018 Analyzed: 09/19/2018					
Specific Conductance (EC)	0.0551	0.00500	mmhos/cm		0.0582			5.47	25	

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

Brian Sulzberger
Project Number: 014218194
Project: KMG - Stonebraker 6-12A

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.