

TABLE 1
SOIL SAMPLE ANALYTICAL RESULTS
CANNON 14N-E3HZ O SA
WELD COUNTY, COLORADO
KERR-MCGEE OIL & GAS ONSHORE LP

COGCC Allowable Concentration (Soil) -->				Organics (mg/kg)										
				500			0.17	85	100	175	23	4	(6-9)	12
Sample ID:	Sample Date:	Sample Depth (feet bgs):	Photoionization Detector Reading (ppm):	TPH-GRO (C6-C10) Low Fraction	TPH-DRO (C10-C28) High Fraction	TPH-RRO (C28-C40) High Fraction	Benzene	Toluene	Ethylbenzene	Xylenes - total	Naphthalene	EC (<4 mmhos/cm or 2x background)	pH (unit)	SAR
B01@5'	05/24/2019	5'	0.8	<0.200	<25.0	<100	<0.002	<0.002	<0.002	<0.002	<0.008	0.137	7.65	3.43
E01@4'	05/24/2019	4'	0.7	<5.00	<25.0	<100	<0.002	<0.050	<0.050	<0.050	<0.200	NA	NA	NA
N01@4'	05/24/2019	4'	0.6	<0.200	<25.0	<100	<0.002	<0.002	<0.002	<0.002	<0.008	NA	NA	NA
S01@4'	05/24/2019	4'	0.2	<5.00	<25.0	<100	<0.050	<0.050	<0.050	<0.050	<0.200	NA	NA	NA
W01@4'	05/24/2019	4'	0.7	<5.00	<25.0	<100	<0.050	<0.050	<0.050	<0.050	<0.200	NA	NA	NA

Notes: mg/kg - milligrams per kilogram
COGCC - Colorado Oil and Gas Conservation Commission
bgs - below ground surface
ppm - parts per million
TPH - total petroleum hydrocarbons
GRO - gasoline range organics
DRO - diesel range organics
RRO - residual range organics
mmhos/cm - millimhos per centimeter
NA - not analyzed
Bold indicates result exceeds allowable level



May 30, 2019

LT Environmental, Inc.

Brian Sulzberger

4600 West 60th Avenue

Arvada CO 80003

Project Name - KMG - Cannon 14N-E3HZ

Project Number - 014219066

Attached are your analytical results for KMG - Cannon 14N-E3HZ received by Origins Laboratory, Inc. May 24, 2019. This project is associated with Origins project number Y905366-01.

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

Brian Sulzberger
Project Number: 014219066
Project: KMG - Cannon 14N-E3HZ

CROSS REFERENCE REPORT

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
B01@5'	Y905366-01	Soil	May 24, 2019 15:10	05/24/2019 16:45
N01@4'	Y905366-02	Soil	May 24, 2019 15:13	05/24/2019 16:45
E01@4'	Y905366-03	Soil	May 24, 2019 15:16	05/24/2019 16:45
S01@4'	Y905366-04	Soil	May 24, 2019 15:19	05/24/2019 16:45
W01@4'	Y905366-05	Soil	May 24, 2019 15:23	05/24/2019 16:45

Origins Laboratory, Inc.



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

Brian Sulzberger
 Project Number: 014219066
 Project: KMG - Cannon 14N-E3HZ

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

Sample Receipt Checklist

Origins Work Order: 4905366 Client: LTE
 Client Project ID: KMG - Cannon 14N-E3HZ

Checklist Completed by: JG Shipped Via: HD
 (UPS, FedEx, Hand Delivered, Pick-up, etc.)
 Data/Time completed: 1 / 2019 Airbill #: N/A

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

Cooler Number/Temperature: 1 / 5.6 °C °C °C (Describe) _____ °C

Thermometer ID: T003

Requirement Description	Yes	No	N/A	Comments (if any)
If samples require cooling, was the temperature between 0°C to ≤ 8°C ⁽¹⁾ ?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Is there ice present (document if blue ice is used)	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Are custody seals present on cooler? (if so, document in comments if they are signed and dated, broken or intact)	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input 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 type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Were all samples received intact ⁽¹⁾ ?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Was adequate sample volume provided ⁽¹⁾ ?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Are short holding time analytes or samples with HTs due within 48 hours present ⁽¹⁾ ?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<u>ph</u>
Is a chain-of-custody (COC) present and filled out completely ⁽¹⁾ ?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Does the COC agree with the number and type of sample bottles received ⁽¹⁾ ?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Do the sample IDs on the bottle labels match the COC ⁽¹⁾ ?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Is the COC properly relinquished by the client with date and time recorded ⁽¹⁾ ?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
For volatiles in water — is there headspace (> ¼ inch bubble) present? If yes, contact client and note in narrative.	<input type="checkbox"/>	<input type="checkbox"/>	<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 analytes 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 type="checkbox"/>	<input type="checkbox"/>	<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] Date/Time Reviewed 5-24-19

Origins Laboratory, Inc.

Jefe Pellegrini

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

Brian Sulzberger
 Project Number: 014219066
 Project: KMG - Cannon 14N-E3HZ

B01@5'

5/24/2019 3:10:00PM

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Analyst	Prepared	Analyzed	Notes
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Origins Laboratory, Inc.
Y905366-01 (Soil)

DRO/ORO by EPA 8015D

Diesel (C10-C28)	ND	25.0	mg/kg	1	B9E2404	JTD	05/24/2019	05/24/2019	U
Residual Range Organics (C28-C40)	ND	100	"	"	"	JTD	"	"	U

Surrogate: *o*-Terphenyl 95.2 % 50-150 " " "

GBTEX + Naphthalene by EPA 8260D

Gasoline Range Hydrocarbons	ND	0.200	mg/kg	1	B9E2411	JTD	05/24/2019	05/24/2019	U
Benzene	ND	0.002	"	"	"	JTD	"	"	U
Toluene	ND	0.002	"	"	"	JTD	"	"	U
Ethylbenzene	ND	0.002	"	"	"	JTD	"	"	U
Xylenes, total	ND	0.002	"	"	"	JTD	"	"	U
Naphthalene	ND	0.008	"	"	"	JTD	"	"	U

Surrogate: 1,2-Dichloroethane-d4 99.4 % 70-130 " " "
 Surrogate: Toluene-d8 97.6 % 70-130 " " "
 Surrogate: 4-Bromofluorobenzene 103 % 70-130 " " "

Metals (Saturated Paste Prep)

Calcium	8.13		me/L	1	'[none]'		05/28/2019	05/29/2019	
Magnesium	5.52		"	"	"		"	"	
Sodium	8.97		"	"	"		"	"	

Origins Laboratory, Inc.



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

Brian Sulzberger
Project Number: 014219066
Project: KMG - Cannon 14N-E3HZ

B01@5'

5/24/2019 3:10:00PM

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Analyst	Prepared	Analyzed	Notes
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Origins Laboratory, Inc.
Y905366-01 (Soil)

pH in Soil by EPA 9045D

pH	7.65		pH Units	1	B9E2405	KDK	05/24/2019	05/24/2019	
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SAR by 20B Saturated Paste

SAR	3.43			1	'[none]'		05/28/2019	05/29/2019	
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Specific Conductance by Modified 9050A

Specific Conductance (EC)	0.137	0.00502	mmhos/cm	1	B9E2406	KDK	05/24/2019	05/24/2019	
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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: 014219066
 Project: KMG - Cannon 14N-E3HZ

N01@4'

5/24/2019 3:13:00PM

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Analyst	Prepared	Analyzed	Notes
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Origins Laboratory, Inc.
 Y905366-02 (Soil)

DRO/ORO by EPA 8015D

Diesel (C10-C28)	ND	25.0	mg/kg	1	B9E2404	JTD	05/24/2019	05/24/2019	U
Residual Range Organics (C28-C40)	ND	100	"	"	"	JTD	"	"	U

Surrogate: o-Terphenyl 91.1 % 50-150 " " "

GBTEX + Naphthalene by EPA 8260D

Gasoline Range Hydrocarbons	ND	0.200	mg/kg	1	B9E2411	JTD	05/24/2019	05/24/2019	U
Benzene	ND	0.002	"	"	"	JTD	"	"	U
Toluene	ND	0.002	"	"	"	JTD	"	"	U
Ethylbenzene	ND	0.002	"	"	"	JTD	"	"	U
Xylenes, total	ND	0.002	"	"	"	JTD	"	"	U
Naphthalene	ND	0.008	"	"	"	JTD	"	"	U

Surrogate: 1,2-Dichloroethane-d4 97.7 % 70-130 " " "
 Surrogate: Toluene-d8 97.6 % 70-130 " " "
 Surrogate: 4-Bromofluorobenzene 102 % 70-130 " " "

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

Brian Sulzberger
 Project Number: 014219066
 Project: KMG - Cannon 14N-E3HZ

E01@4'

5/24/2019 3:16:00PM

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Analyst	Prepared	Analyzed	Notes
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Origins Laboratory, Inc.
 Y905366-03 (Soil)

DRO/ORO by EPA 8015D

Diesel (C10-C28)	ND	25.0	mg/kg	1	B9E2404	JTD	05/24/2019	05/24/2019	U
Residual Range Organics (C28-C40)	ND	100	"	"	"	JTD	"	"	U

Surrogate: o-Terphenyl 91.7% 50-150 " " "

GBTEX + Naphthalene by EPA 8260D

Gasoline Range Hydrocarbons	ND	5.00	mg/kg	25	B9E2411	JTD	05/24/2019	05/24/2019	U
Benzene	ND	0.002	"	1	"	JTD	"	"	U
Toluene	ND	0.050	"	25	"	JTD	"	"	U
Ethylbenzene	ND	0.050	"	"	"	JTD	"	"	U
Xylenes, total	ND	0.050	"	"	"	JTD	"	"	U
Naphthalene	ND	0.200	"	"	"	JTD	"	"	U

Surrogate: 1,2-Dichloroethane-d4 91.1% 70-130 " " "
 Surrogate: Toluene-d8 100% 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

Brian Sulzberger
 Project Number: 014219066
 Project: KMG - Cannon 14N-E3HZ

S01@4'

5/24/2019 3:19:00PM

Analyte	Result	Limit	Units	Dilution	Batch	Analyst	Prepared	Analyzed	Notes
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Origins Laboratory, Inc.
 Y905366-04 (Soil)

DRO/ORO by EPA 8015D

Diesel (C10-C28)	ND	25.0	mg/kg	1	B9E2404	JTD	05/24/2019	05/24/2019	U
Residual Range Organics (C28-C40)	ND	100	"	"	"	JTD	"	"	U

Surrogate: o-Terphenyl 94.4 % 50-150 " " "

GBTEX + Naphthalene by EPA 8260D

Gasoline Range Hydrocarbons	ND	5.00	mg/kg	25	B9E2411	KDK	05/24/2019	05/27/2019	U
Benzene	ND	0.050	"	"	"	KDK	"	"	U
Toluene	ND	0.050	"	"	"	KDK	"	"	U
Ethylbenzene	ND	0.050	"	"	"	KDK	"	"	U
Xylenes, total	ND	0.050	"	"	"	KDK	"	"	U
Naphthalene	ND	0.200	"	"	"	KDK	"	"	U

Surrogate: 1,2-Dichloroethane-d4 102 % 70-130 " " "
 Surrogate: Toluene-d8 99.3 % 70-130 " " "
 Surrogate: 4-Bromofluorobenzene 97.8 % 70-130 " " "

Origins Laboratory, Inc.



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

Brian Sulzberger
 Project Number: 014219066
 Project: KMG - Cannon 14N-E3HZ

W01@4'

5/24/2019 3:23:00PM

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Analyst	Prepared	Analyzed	Notes
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Origins Laboratory, Inc.
 Y905366-05 (Soil)

DRO/ORO by EPA 8015D

Diesel (C10-C28)	ND	25.0	mg/kg	1	B9E2404	JTD	05/24/2019	05/24/2019	U
Residual Range Organics (C28-C40)	ND	100	"	"	"	JTD	"	"	U

Surrogate: *o*-Terphenyl 83.3 % 50-150 " " "

GBTEX + Naphthalene by EPA 8260D

Gasoline Range Hydrocarbons	ND	5.00	mg/kg	25	B9E2411	KDK	05/24/2019	05/27/2019	U
Benzene	ND	0.050	"	"	"	KDK	"	"	U
Toluene	ND	0.050	"	"	"	KDK	"	"	U
Ethylbenzene	ND	0.050	"	"	"	KDK	"	"	U
Xylenes, total	ND	0.050	"	"	"	KDK	"	"	U
Naphthalene	ND	0.200	"	"	"	KDK	"	"	U

Surrogate: 1,2-Dichloroethane-d4 103 % 70-130 " " "
 Surrogate: Toluene-d8 99.4 % 70-130 " " "
 Surrogate: 4-Bromofluorobenzene 96.9 % 70-130 " " "

Origins Laboratory, Inc.



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

Brian Sulzberger
 Project Number: 014219066
 Project: KMG - Cannon 14N-E3HZ

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
Batch B9E2404 - EPA 3550B										
Blank (B9E2404-BLK1)										
					Prepared: 05/24/2019 Analyzed: 05/24/2019					
Diesel (C10-C28)	ND	50.0	mg/kg							U
Residual Range Organics (C28-C40)	ND	200	"							U
Surrogate: o-Terphenyl	44		"	50.0		88.3	50-150			

Origins Laboratory, Inc.



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

Brian Sulzberger
 Project Number: 014219066
 Project: KMG - Cannon 14N-E3HZ

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
Batch B9E2404 - EPA 3550B										
Blank (B9E2404-BLK2)										
					Prepared: 05/24/2019 Analyzed: 05/24/2019					
Diesel (C10-C28)	ND	50.0	mg/kg							U
Residual Range Organics (C28-C40)	ND	200	"							U
Surrogate: o-Terphenyl	46		"	50.0		91.5	50-150			

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LT Environmental, Inc.
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 Arvada CO 80003

Brian Sulzberger
 Project Number: 014219066
 Project: KMG - Cannon 14N-E3HZ

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
Batch B9E2404 - EPA 3550B										
LCS (B9E2404-BS1)					Prepared: 05/24/2019 Analyzed: 05/24/2019					
Diesel (C10-C28)	953	50.0	mg/kg	1000		95.3	70-130			
Residual Range Organics (C28-C40)	1000	200	"	1000		100	70-130			
Surrogate: o-Terphenyl	52		"	50.0		104	50-150			

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Brian Sulzberger
 Project Number: 014219066
 Project: KMG - Cannon 14N-E3HZ

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
Batch B9E2404 - EPA 3550B										
LCS (B9E2404-BS2)					Prepared: 05/24/2019 Analyzed: 05/24/2019					
Diesel (C10-C28)	999	50.0	mg/kg	1000		99.9	70-130			
Residual Range Organics (C28-C40)	987	200	"	1000		98.7	70-130			
Surrogate: o-Terphenyl	54		"	50.0		109	50-150			

Origins Laboratory, Inc.



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

Brian Sulzberger
 Project Number: 014219066
 Project: KMG - Cannon 14N-E3HZ

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 B9E2404 - EPA 3550B

Matrix Spike (B9E2404-MS1)	Source: Y905354-01			Prepared: 05/24/2019 Analyzed: 05/24/2019						
Diesel (C10-C28)	1010	50.0	mg/kg	1000	ND	101	70-130			
Residual Range Organics (C28-C40)	1020	200	"	1000	ND	102	70-130			
Surrogate: o-Terphenyl	53		"	50.0		107	50-150			

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 4600 West 60th Avenue
 Arvada CO 80003

Brian Sulzberger
 Project Number: 014219066
 Project: KMG - Cannon 14N-E3HZ

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 B9E2404 - EPA 3550B

Matrix Spike (B9E2404-MS2)	Source: Y905359-06			Prepared: 05/24/2019 Analyzed: 05/24/2019						
Diesel (C10-C28)	964	50.0	mg/kg	1000	ND	96.4	70-130			
Residual Range Organics (C28-C40)	1000	200	"	1000	28.4	97.7	70-130			
Surrogate: o-Terphenyl	51		"	50.0		101	50-150			

Origins Laboratory, Inc.



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Jen Pellegrini For Noelle Doyle Mathis, President

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

Brian Sulzberger
 Project Number: 014219066
 Project: KMG - Cannon 14N-E3HZ

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
Batch B9E2404 - EPA 3550B										
Matrix Spike Dup (B9E2404-MSD1)					Source: Y905354-01					Prepared: 05/24/2019 Analyzed: 05/24/2019
Diesel (C10-C28)	983	50.0	mg/kg	1000	ND	98.3	70-130	3.18	35	
Residual Range Organics (C28-C40)	1000	200	"	1000	ND	100	70-130	1.71	35	
Surrogate: o-Terphenyl	58		"	50.0		115	50-150			

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 Project Number: 014219066
 Project: KMG - Cannon 14N-E3HZ

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

Batch B9E2404 - EPA 3550B

Matrix Spike Dup (B9E2404-MSD2)	Source: Y905359-06			Prepared: 05/24/2019 Analyzed: 05/24/2019						
Diesel (C10-C28)	901	50.0	mg/kg	1000	ND	90.1	70-130	6.68	35	
Residual Range Organics (C28-C40)	943	200	"	1000	28.4	91.4	70-130	6.60	35	
Surrogate: o-Terphenyl	47		"	50.0		94.6	50-150			

Origins Laboratory, Inc.



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Brian Sulzberger
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 Project: KMG - Cannon 14N-E3HZ

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 B9E2411 - EPA 5030 (soil)

Blank (B9E2411-BLK1)

Prepared: 05/24/2019 Analyzed: 05/24/2019

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
Naphthalene	ND	0.008	"							U
Surrogate: 1,2-Dichloroethane-d4	0.12		"	0.125		99.4	70-130			
Surrogate: Toluene-d8	0.12		"	0.125		97.9	70-130			
Surrogate: 4-Bromofluorobenzene	0.13		"	0.125		103	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: 014219066
 Project: KMG - Cannon 14N-E3HZ

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 B9E2411 - EPA 5030 (soil)

LCS (B9E2411-BS1)

Prepared: 05/24/2019 Analyzed: 05/24/2019

Benzene	0.096	0.002	mg/kg	0.100		95.9	70-130			
Toluene	0.093	0.002	"	0.100		92.6	70-130			
Ethylbenzene	0.099	0.002	"	0.100		98.9	70-130			
m,p-Xylene	0.175	0.004	"	0.200		87.4	70-130			
o-Xylene	0.102	0.002	"	0.100		102	70-130			
Naphthalene	0.093	0.008	"	0.100		93.3	70-130			
Surrogate: 1,2-Dichloroethane-d4	0.12		"	0.125		97.7	70-130			
Surrogate: Toluene-d8	0.12		"	0.125		97.8	70-130			
Surrogate: 4-Bromofluorobenzene	0.13		"	0.125		103	70-130			

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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 B9E2411 - EPA 5030 (soil)

Matrix Spike (B9E2411-MS1)	Source: Y905365-04			Prepared: 05/24/2019 Analyzed: 05/27/2019						
Benzene	0.097	0.002	mg/kg	0.100	ND	96.8	70-130			
Toluene	0.100	0.002	"	0.100	ND	99.9	70-130			
Ethylbenzene	0.101	0.002	"	0.100	ND	101	70-130			
m,p-Xylene	0.201	0.004	"	0.200	ND	100	70-130			
o-Xylene	0.099	0.002	"	0.100	ND	99.1	70-130			
Naphthalene	0.110	0.008	"	0.100	0.001	109	70-130			
Surrogate: 1,2-Dichloroethane-d4	0.12		"	0.125		98.6	70-130			
Surrogate: Toluene-d8	0.12		"	0.125		98.8	70-130			
Surrogate: 4-Bromofluorobenzene	0.12		"	0.125		98.1	70-130			

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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 B9E2411 - EPA 5030 (soil)

Matrix Spike Dup (B9E2411-MSD1)	Source: Y905365-04			Prepared: 05/24/2019 Analyzed: 05/27/2019						
Benzene	0.094	0.002	mg/kg	0.100	ND	94.4	70-130	2.55	20	
Toluene	0.099	0.002	"	0.100	ND	99.2	70-130	0.683	20	
Ethylbenzene	0.098	0.002	"	0.100	ND	97.8	70-130	2.80	20	
m,p-Xylene	0.196	0.004	"	0.200	ND	97.9	70-130	2.52	20	
o-Xylene	0.097	0.002	"	0.100	ND	96.9	70-130	2.24	20	
Naphthalene	0.119	0.008	"	0.100	0.001	118	70-130	7.56	20	
Surrogate: 1,2-Dichloroethane-d4	0.12		"	0.125		98.1	70-130			
Surrogate: Toluene-d8	0.12		"	0.125		99.9	70-130			
Surrogate: 4-Bromofluorobenzene	0.12		"	0.125		98.4	70-130			

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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.

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