

**TABLE 1
SOIL SAMPLE ANALYTICAL RESULTS
MCPEEK 13-10A
WELD COUNTY, COLORADO
KERR-MCGEE OIL & GAS ONSHORE, LP**

COGCC Allowable Concentration (Soil) -->				Organics (mg/kg)										4	(6-9)	12
				500			0.17	85	100	175	23					
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@6'	4/8/2019	6	0.0	<5.00	<25.0	<100	<0.050	<0.050	<0.050	<0.050	<0.200	0.0848	8.60	1.26		
N01@5'	4/8/2019	5	0.0	<5.00	<25.0	<100	<0.050	<0.050	<0.050	<0.050	<0.200	NA	NA	NA		
E01@5'	4/8/2019	5	0.0	<5.00	<25.0	<100	<0.050	<0.050	<0.050	<0.050	<0.200	NA	NA	NA		
S01@5'	4/8/2019	5	0.0	<5.00	<25.0	<100	<0.050	<0.050	<0.050	<0.050	<0.200	NA	NA	NA		
W01@5'	4/8/2019	5	0.0	<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

SAR - sodium adsorption ratio





April 16, 2019

LT Environmental, Inc.

Brian Sulzberger

4600 West 60th Avenue

Arvada CO 80003

Project Name - KMG - McPeek 13-10A

Project Number - 014219073

Attached are your analytical results for KMG - McPeek 13-10A received by Origins Laboratory, Inc. April 08, 2019. This project is associated with Origins project number Y904160-01.

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: 014219073
Project: KMG - McPeck 13-10A

CROSS REFERENCE REPORT

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
B01@6'	Y904160-01	Soil	April 8, 2019 15:00	04/08/2019 16:50
N01@5'	Y904160-02	Soil	April 8, 2019 15:05	04/08/2019 16:50
E01@5'	Y904160-03	Soil	April 8, 2019 15:10	04/08/2019 16:50
S01@5'	Y904160-04	Soil	April 8, 2019 15:15	04/08/2019 16:50
W01@5'	Y904160-05	Soil	April 8, 2019 15:20	04/08/2019 16:50

Origins Laboratory, Inc.



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

Brian Sulzberger
 Project Number: 014219073
 Project: KMG - McPeck 13-10A

Origins Laboratory

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

Sample Receipt Checklist

Origins Work Order: 17904160

Client: LTE

Client Project ID: McPeck 13-10A

Checklist Completed by: JG

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

Date/time completed: 4/8/2019

Airbill #: N/A

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

Cooler Number/Temperature: 1 / 5.8 °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 ⁽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 type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
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 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 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.

[Signature]
 Reviewed by (Project Manager)

4/8/19
 Date/Time Reviewed

Origins Laboratory, Inc.

[Signature]

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

Brian Sulzberger
 Project Number: 014219073
 Project: KMG - McPeck 13-10A

B01@6'

4/8/2019 3:00:00PM

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Analyst	Prepared	Analyzed	Notes
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Origins Laboratory, Inc.
Y904160-01 (Soil)

DRO/ORO by EPA 8015D

Diesel (C10-C28)	ND	25.0	mg/kg	1	B9D0810	JTD	04/08/2019	04/08/2019	U
Residual Range Organics (C28-C40)	ND	100	"	"	"	JTD	"	"	U

Surrogate: *o*-Terphenyl 64.4 % 50-150 " " "

GBTEX + Naphthalene by EPA 8260D

Gasoline Range Hydrocarbons	ND	5.00	mg/kg	25	B9D0809	JTD	"	04/08/2019	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
Naphthalene	ND	0.200	"	"	"	JTD	"	"	U

Surrogate: 1,2-Dichloroethane-d4 101 % 70-130 " " "
 Surrogate: Toluene-d8 103 % 70-130 " " "
 Surrogate: 4-Bromofluorobenzene 98.7 % 70-130 " " "

Metals (Saturated Paste Prep)

Calcium	38.78		me/L	1	'[none]'		04/10/2019	04/15/2019	
Magnesium	7.58		"	"	"		"	"	
Sodium	6.05		"	"	"		"	"	

Origins Laboratory, Inc.



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

Brian Sulzberger
 Project Number: 014219073
 Project: KMG - McPeek 13-10A

B01@6'

4/8/2019 3:00:00PM

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Analyst	Prepared	Analyzed	Notes
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Origins Laboratory, Inc.
Y904160-01 (Soil)

pH in Soil by EPA 9045D

pH	8.60		pH Units	1	B9D0811	OLAB	04/08/2019	04/08/2019	
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SAR by 20B Saturated Paste

SAR	1.26			1	'[none]'		04/10/2019	04/15/2019	
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Specific Conductance by Modified 9050A

Specific Conductance (EC)	0.0848	0.00506	mmhos/cm	1	B9D0812	OLAB	04/08/2019	04/08/2019	
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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: 014219073
 Project: KMG - McPeek 13-10A

N01@5'

4/8/2019 3:05:00PM

Analyte	Result	Limit	Units	Dilution	Batch	Analyst	Prepared	Analyzed	Notes
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Origins Laboratory, Inc.
 Y904160-02 (Soil)

DRO/ORO by EPA 8015D

Diesel (C10-C28)	ND	25.0	mg/kg	1	B9D0810	JTD	04/08/2019	04/08/2019	U
Residual Range Organics (C28-C40)	ND	100	"	"	"	JTD	"	"	U

Surrogate: o-Terphenyl 63.0 % 50-150 " " "

GBTEX + Naphthalene by EPA 8260D

Gasoline Range Hydrocarbons	ND	5.00	mg/kg	25	B9D0809	JTD	"	04/08/2019	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
Naphthalene	ND	0.200	"	"	"	JTD	"	"	U

Surrogate: 1,2-Dichloroethane-d4 99.8 % 70-130 " " "
 Surrogate: Toluene-d8 101 % 70-130 " " "
 Surrogate: 4-Bromofluorobenzene 98.1 % 70-130 " " "

Origins Laboratory, Inc.



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

Brian Sulzberger
 Project Number: 014219073
 Project: KMG - McPeck 13-10A

E01@5'

4/8/2019 3:10:00PM

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Analyst	Prepared	Analyzed	Notes
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Origins Laboratory, Inc.
 Y904160-03 (Soil)

DRO/ORO by EPA 8015D

Diesel (C10-C28)	ND	25.0	mg/kg	1	B9D0810	JTD	04/08/2019	04/08/2019	U
Residual Range Organics (C28-C40)	ND	100	"	"	"	JTD	"	"	U

Surrogate: o-Terphenyl 68.2 % 50-150 " " "

GBTEX + Naphthalene by EPA 8260D

Gasoline Range Hydrocarbons	ND	5.00	mg/kg	25	B9D0809	JTD	"	04/08/2019	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
Naphthalene	ND	0.200	"	"	"	JTD	"	"	U

Surrogate: 1,2-Dichloroethane-d4 101 % 70-130 " " "
 Surrogate: Toluene-d8 101 % 70-130 " " "
 Surrogate: 4-Bromofluorobenzene 97.5 % 70-130 " " "

Origins Laboratory, Inc.



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

Brian Sulzberger
 Project Number: 014219073
 Project: KMG - McPeck 13-10A

S01@5'

4/8/2019 3:15:00PM

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Analyst	Prepared	Analyzed	Notes
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Origins Laboratory, Inc.
 Y904160-04 (Soil)

DRO/ORO by EPA 8015D

Diesel (C10-C28)	ND	25.0	mg/kg	1	B9D0810	JTD	04/08/2019	04/08/2019	U
Residual Range Organics (C28-C40)	ND	100	"	"	"	JTD	"	"	U

Surrogate: *o*-Terphenyl 64.9 % 50-150 " " "

GBTEX + Naphthalene by EPA 8260D

Gasoline Range Hydrocarbons	ND	5.00	mg/kg	25	B9D0809	JTD	"	04/08/2019	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
Naphthalene	ND	0.200	"	"	"	JTD	"	"	U

Surrogate: 1,2-Dichloroethane-d4 101 % 70-130 " " "
 Surrogate: Toluene-d8 101 % 70-130 " " "
 Surrogate: 4-Bromofluorobenzene 99.6 % 70-130 " " "

Origins Laboratory, Inc.



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

Brian Sulzberger
 Project Number: 014219073
 Project: KMG - McPeck 13-10A

W01@5'

4/8/2019 3:20:00PM

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Analyst	Prepared	Analyzed	Notes
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Origins Laboratory, Inc.
Y904160-05 (Soil)

DRO/ORO by EPA 8015D

Diesel (C10-C28)	ND	25.0	mg/kg	1	B9D0810	JTD	04/08/2019	04/08/2019	U
Residual Range Organics (C28-C40)	ND	100	"	"	"	JTD	"	"	U

Surrogate: *o*-Terphenyl 64.2 % 50-150 " " "

GBTEX + Naphthalene by EPA 8260D

Gasoline Range Hydrocarbons	ND	5.00	mg/kg	25	B9D0809	JTD	"	04/08/2019	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
Naphthalene	ND	0.200	"	"	"	JTD	"	"	U

Surrogate: 1,2-Dichloroethane-d4 100 % 70-130 " " "
 Surrogate: Toluene-d8 101 % 70-130 " " "
 Surrogate: 4-Bromofluorobenzene 99.3 % 70-130 " " "

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

Brian Sulzberger
 Project Number: 014219073
 Project: KMG - McPeck 13-10A

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 B9D0809 - EPA 5030 (soil)

Blank (B9D0809-BLK1)

Prepared: 04/08/2019 Analyzed: 04/08/2019

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	0.13		"	0.125		103	70-130			
Surrogate: Toluene-d8	0.13		"	0.125		101	70-130			
Surrogate: 4-Bromofluorobenzene	0.12		"	0.125		98.6	70-130			

Origins Laboratory, Inc.



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

Brian Sulzberger
 Project Number: 014219073
 Project: KMG - McPeck 13-10A

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 B9D0809 - EPA 5030 (soil)

Blank (B9D0809-BLK2)

Prepared: 04/08/2019 Analyzed: 04/08/2019

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	0.13		"	0.125	103		70-130			
Surrogate: Toluene-d8	0.12		"	0.125	100		70-130			
Surrogate: 4-Bromofluorobenzene	0.12		"	0.125	98.1		70-130			

Origins Laboratory, Inc.



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

Brian Sulzberger
 Project Number: 014219073
 Project: KMG - McPeek 13-10A

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 B9D0809 - EPA 5030 (soil)

LCS (B9D0809-BS1)

Prepared: 04/08/2019 Analyzed: 04/08/2019

Benzene	0.095	0.002	mg/kg	0.100		95.3	70-130			
Toluene	0.091	0.002	"	0.100		90.9	70-130			
Ethylbenzene	0.089	0.002	"	0.100		88.9	70-130			
m,p-Xylene	0.183	0.004	"	0.200		91.4	70-130			
o-Xylene	0.091	0.002	"	0.100		90.8	70-130			
Naphthalene	0.085	0.008	"	0.100		85.4	70-130			
Surrogate: 1,2-Dichloroethane-d4	0.12		"	0.125		96.9	70-130			
Surrogate: Toluene-d8	0.13		"	0.125		103	70-130			
Surrogate: 4-Bromofluorobenzene	0.12		"	0.125		97.9	70-130			

Origins Laboratory, Inc.



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

Brian Sulzberger
 Project Number: 014219073
 Project: KMG - McPeek 13-10A

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 B9D0809 - EPA 5030 (soil)

LCS (B9D0809-BS2)

Prepared: 04/08/2019 Analyzed: 04/08/2019

Benzene	0.099	0.002	mg/kg	0.100		99.3	70-130			
Toluene	0.096	0.002	"	0.100		96.4	70-130			
Ethylbenzene	0.094	0.002	"	0.100		94.0	70-130			
m,p-Xylene	0.191	0.004	"	0.200		95.7	70-130			
o-Xylene	0.096	0.002	"	0.100		96.2	70-130			
Naphthalene	0.078	0.008	"	0.100		78.2	70-130			
Surrogate: 1,2-Dichloroethane-d4	0.12		"	0.125		97.3	70-130			
Surrogate: Toluene-d8	0.13		"	0.125		103	70-130			
Surrogate: 4-Bromofluorobenzene	0.12		"	0.125		99.2	70-130			

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 Project: KMG - McPeck 13-10A

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 B9D0809 - EPA 5030 (soil)

Matrix Spike (B9D0809-MS1)	Source: Y904154-01			Prepared: 04/08/2019 Analyzed: 04/08/2019						
Benzene	2.47	0.050	mg/kg	2.50	ND	98.8	70-130			
Toluene	2.39	0.050	"	2.50	ND	95.5	70-130			
Ethylbenzene	2.35	0.050	"	2.50	ND	94.0	70-130			
m,p-Xylene	4.82	0.100	"	5.00	ND	96.4	70-130			
o-Xylene	2.38	0.050	"	2.50	ND	95.4	70-130			
Naphthalene	2.64	0.200	"	2.50	ND	106	70-130			
Surrogate: 1,2-Dichloroethane-d4	0.12		"	0.125		95.5	70-130			
Surrogate: Toluene-d8	0.13		"	0.125		102	70-130			
Surrogate: 4-Bromofluorobenzene	0.12		"	0.125		99.6	70-130			

Origins Laboratory, Inc.



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 4600 West 60th Avenue
 Arvada CO 80003

Brian Sulzberger
 Project Number: 014219073
 Project: KMG - McPeck 13-10A

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 B9D0809 - EPA 5030 (soil)

Matrix Spike (B9D0809-MS2)	Source: Y904154-02			Prepared: 04/08/2019 Analyzed: 04/08/2019						
Benzene	2.34	0.050	mg/kg	2.50	ND	93.5	70-130			
Toluene	2.23	0.050	"	2.50	ND	89.0	70-130			
Ethylbenzene	2.22	0.050	"	2.50	ND	88.7	70-130			
m,p-Xylene	4.54	0.100	"	5.00	ND	90.7	70-130			
o-Xylene	2.27	0.050	"	2.50	ND	90.9	70-130			
Naphthalene	2.57	0.200	"	2.50	ND	103	70-130			
Surrogate: 1,2-Dichloroethane-d4	0.12		"	0.125		95.3	70-130			
Surrogate: Toluene-d8	0.13		"	0.125		101	70-130			
Surrogate: 4-Bromofluorobenzene	0.12		"	0.125		98.2	70-130			

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

Brian Sulzberger
 Project Number: 014219073
 Project: KMG - McPeek 13-10A

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 B9D0809 - EPA 5030 (soil)

Matrix Spike Dup (B9D0809-MSD1)	Source: Y904154-01			Prepared: 04/08/2019 Analyzed: 04/08/2019						
Benzene	2.41	0.050	mg/kg	2.50	ND	96.3	70-130	2.58	20	
Toluene	2.31	0.050	"	2.50	ND	92.6	70-130	3.08	20	
Ethylbenzene	2.27	0.050	"	2.50	ND	90.8	70-130	3.44	20	
m,p-Xylene	4.64	0.100	"	5.00	ND	92.9	70-130	3.69	20	
o-Xylene	2.36	0.050	"	2.50	ND	94.2	70-130	1.27	20	
Naphthalene	2.65	0.200	"	2.50	ND	106	70-130	0.359	20	
Surrogate: 1,2-Dichloroethane-d4	0.12		"	0.125		95.9	70-130			
Surrogate: Toluene-d8	0.13		"	0.125		103	70-130			
Surrogate: 4-Bromofluorobenzene	0.12		"	0.125		99.9	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 B9D0809 - EPA 5030 (soil)

Matrix Spike Dup (B9D0809-MSD2)	Source: Y904154-02			Prepared: 04/08/2019 Analyzed: 04/08/2019						
Benzene	2.29	0.050	mg/kg	2.50	ND	91.6	70-130	2.01	20	
Toluene	2.18	0.050	"	2.50	ND	87.1	70-130	2.18	20	
Ethylbenzene	2.12	0.050	"	2.50	ND	85.0	70-130	4.26	20	
m,p-Xylene	4.33	0.100	"	5.00	ND	86.6	70-130	4.60	20	
o-Xylene	2.22	0.050	"	2.50	ND	88.6	70-130	2.52	20	
Naphthalene	2.52	0.200	"	2.50	ND	101	70-130	2.04	20	
Surrogate: 1,2-Dichloroethane-d4	0.12		"	0.125		95.3	70-130			
Surrogate: Toluene-d8	0.13		"	0.125		101	70-130			
Surrogate: 4-Bromofluorobenzene	0.13		"	0.125		100	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
Batch B9D0810 - EPA 3580										
Blank (B9D0810-BLK1)										
					Prepared: 04/08/2019 Analyzed: 04/08/2019					
Diesel (C10-C28)	ND	50.0	mg/kg							U
Residual Range Organics (C28-C40)	ND	200	"							U
Surrogate: o-Terphenyl	35		"	50.0		70.7	50-150			

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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 B9D0810 - EPA 3580										
Blank (B9D0810-BLK2)										
					Prepared: 04/08/2019 Analyzed: 04/08/2019					
Diesel (C10-C28)	ND	50.0	mg/kg							U
Residual Range Organics (C28-C40)	ND	200	"							U
Surrogate: o-Terphenyl	36		"	50.0		71.7	50-150			

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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 B9D0810 - EPA 3580

LCS (B9D0810-BS1)

Prepared: 04/08/2019 Analyzed: 04/08/2019

Diesel (C10-C28)	790	50.0	mg/kg	1000		79.0	70-130			
Residual Range Organics (C28-C40)	890	200	"	1000		89.0	70-130			
Surrogate: o-Terphenyl	42		"	50.0		83.5	50-150			

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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 B9D0810 - EPA 3580

LCS (B9D0810-BS2)

Prepared: 04/08/2019 Analyzed: 04/09/2019

Diesel (C10-C28)	735	50.0	mg/kg	1000		73.5	70-130			
Residual Range Organics (C28-C40)	828	200	"	1000		82.8	70-130			
Surrogate: o-Terphenyl	40		"	50.0		80.1	50-150			

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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 B9D0810 - EPA 3580										
Matrix Spike (B9D0810-MS1)		Source: Y904154-01			Prepared: 04/08/2019 Analyzed: 04/08/2019					
Diesel (C10-C28)	752	50.0	mg/kg	1000	135	61.7	70-130			QM-07
Residual Range Organics (C28-C40)	830	200	"	1000	ND	83.0	70-130			
Surrogate: o-Terphenyl	39		"	50.0		77.4	50-150			

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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 B9D0810 - EPA 3580

Matrix Spike (B9D0810-MS2)	Source: Y904102-02			Prepared: 04/08/2019 Analyzed: 04/09/2019						
Diesel (C10-C28)	889	50.0	mg/kg	1000	22.8	86.6	70-130			
Residual Range Organics (C28-C40)	886	200	"	1000	ND	88.6	70-130			
Surrogate: o-Terphenyl	43		"	50.0		85.5	50-150			

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Extractable Petroleum Hydrocarbons by 8015D - 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 B9D0810 - EPA 3580

Matrix Spike Dup (B9D0810-MSD1)	Source: Y904154-01			Prepared: 04/08/2019 Analyzed: 04/08/2019						
Diesel (C10-C28)	792	50.0	mg/kg	1000	135	65.7	70-130	6.17	35	QM-07
Residual Range Organics (C28-C40)	858	200	"	1000	ND	85.8	70-130	3.42	35	
Surrogate: o-Terphenyl	36		"	50.0		71.2	50-150			

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Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch B9D0810 - EPA 3580										
Matrix Spike Dup (B9D0810-MSD2)					Source: Y904102-02					Prepared: 04/08/2019 Analyzed: 04/09/2019
Diesel (C10-C28)	853	50.0	mg/kg	1000	22.8	83.0	70-130	4.26	35	
Residual Range Organics (C28-C40)	837	200	"	1000	ND	83.7	70-130	5.71	35	
Surrogate: o-Terphenyl	39		"	50.0		78.9	50-150			

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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.

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Jen Pellegrini For Noelle Doyle Mathis, President