

**TABLE 1**  
**GROUNDWATER ANALYTICAL AND FIELD RESULTS**  
**38-0000-5193-3 GATHERING LINE**  
**ADAMS COUNTY, COLORADO**  
**KERR-MCGEE GATHERING, LLC**

Well Name	Date	Benzene (µg/L)	Toluene (µg/L)	Ethylbenzene (µg/L)	Total Xylenes (µg/L)	Depth to Water/ (Product Thickness) (ft bgs)	Relative GW Elev. (ft)
<b>COGCC Allowable Levels</b>		<b>5</b>	<b>560</b>	<b>700</b>	<b>1400</b>		
GW01	1/15/2020	<b>49.9</b>	39.8	<4.00	8.52	1.5	NA
GW02	1/17/2020	<4.00	<4.00	<4.00	<4.00	1.5	NA
MW01	5/14/2020	<1.00	<1.00	<1.00	<1.00	0.73	99.47
MW02	5/14/2020	<1.00	<1.00	<1.00	<1.00	1.48	98.53
MW03	5/14/2020	<1.00	<1.00	<1.00	<1.00	0.85	97.98
MW04	5/14/2020	<1.00	<1.00	<1.00	<1.00	1.65	98.24

Notes: COGCC - Colorado Oil and Gas Conservation Commission      µg/L - micrograms per liter  
ft bgs - feet below ground surface      < - less than laboratory reporting limit  
NA - not analyzed/not available      Excavation groundwater depth is approximate  
NM - not measured  
Corrected Relative GW Elev. is used when LNAPL is present.  
**BOLD** = Analytical result is in exceedance of COGCC Table 910-1 groundwater standards.





May 21, 2020

LT Environmental, Inc.

Brian Sulzberger

4600 West 60th Avenue

Arvada CO 80003

Project Name - KMG - 38-0000-5193-3

Project Number - 01422009

Attached are your analytical results for KMG - 38-0000-5193-3 received by Origins Laboratory, Inc. May 14, 2020. This project is associated with Origins project number Y005210-01.

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



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

Brian Sulzberger  
Project Number: 01422009  
Project: KMG - 38-0000-5193-3

CROSS REFERENCE REPORT

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
MW01	Y005210-01	Water	May 14, 2020 14:41	05/14/2020 16:11
MW02	Y005210-02	Water	May 14, 2020 14:28	05/14/2020 16:11
MW03	Y005210-03	Water	May 14, 2020 13:56	05/14/2020 16:11
MW04	Y005210-04	Water	May 14, 2020 14:36	05/14/2020 16:11

Origins Laboratory, Inc.



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

Brian Sulzberger  
 Project Number: 01422009  
 Project: KMG - 38-0000-5193-3

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

**Sample Receipt Checklist**

Origins Work Order: Y0045210 <sup>KDK</sup> Client: LTE  
 Checklist Completed by: JS KDK Client Project ID: KMG-38-0000-5193  
 Date/time completed: 05/14/2020 Shipped Via: HD  
 (UPS, FedEx, Hand Delivered, Pick-up, etc.)  
 Airbill #: N/A

Matrix(s) Received: (Check all that apply): Soil/Solid  Water  Other: \_\_\_\_\_  
 Cooler Number/Temperature: 1 / 29 °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 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 type="checkbox"/>	<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 type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
Were all samples received intact <sup>(1)</sup> ?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Was adequate sample volume provided <sup>(1)</sup> ?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Are short holding time analytes or samples with HTs due within 48 hours present <sup>(1)</sup> ?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
Is a chain-of-custody (COC) present and filled out completely <sup>(1)</sup> ?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Does the COC agree with the number and type of sample bottles received <sup>(1)</sup> ?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Do the sample IDs on the bottle labels match the COC <sup>(1)</sup> ?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Is the COC properly relinquished by the client with date and time recorded <sup>(1)</sup> ?	<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 checked="" type="checkbox"/>	<input 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 HNO3, HCL, H2SO4) / (pH >10 for samples preserved with NaAsO2+NaOH, ZnAc+NaOH)	<input type="checkbox"/>	<input type="checkbox"/>	<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) Jm Date/Time Reviewed 5-15-20

Origins Laboratory, Inc.



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

Brian Sulzberger  
Project Number: 01422009  
Project: KMG - 38-0000-5193-3

**MW01**

**5/14/2020 2:41:00PM**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Analyst	Prepared	Analyzed	Notes
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**Origins Laboratory, Inc.**  
**Y005210-01 (Water)**

**BTEX by EPA 8260D**

Benzene	ND	1.00	ug/L	1	B0E1506	ZZZ	05/15/2020	05/19/2020	U
Toluene	ND	1.00	"	"	"	ZZZ	"	"	U
Ethylbenzene	ND	1.00	"	"	"	ZZZ	"	"	U
Xylenes, total	ND	1.00	"	"	"	ZZZ	"	"	U

Surrogate: 1,2-Dichloroethane-d4	94.2 %	70-130			"	"	"	"	
Surrogate: Toluene-d8	97.0 %	70-130			"	"	"	"	
Surrogate: 4-Bromofluorobenzene	106 %	70-130			"	"	"	"	

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**MW02**

**5/14/2020 2:28:00PM**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Analyst	Prepared	Analyzed	Notes
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**Origins Laboratory, Inc.**  
**Y005210-02 (Water)**

**BTEX by EPA 8260D**

Benzene	ND	1.00	ug/L	1	B0E1506	ZZZ	05/15/2020	05/19/2020	U
Toluene	ND	1.00	"	"	"	ZZZ	"	"	U
Ethylbenzene	ND	1.00	"	"	"	ZZZ	"	"	U
Xylenes, total	ND	1.00	"	"	"	ZZZ	"	"	U

Surrogate: 1,2-Dichloroethane-d4	98.9 %	70-130			"	"	"	"	
Surrogate: Toluene-d8	95.2 %	70-130			"	"	"	"	
Surrogate: 4-Bromofluorobenzene	104 %	70-130			"	"	"	"	

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**MW03**

**5/14/2020 1:56:00PM**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Analyst	Prepared	Analyzed	Notes
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**Origins Laboratory, Inc.**  
**Y005210-03 (Water)**

**BTEX by EPA 8260D**

Benzene	ND	1.00	ug/L	1	B0E1506	ZZZ	05/15/2020	05/19/2020	U
Toluene	ND	1.00	"	"	"	ZZZ	"	"	U
Ethylbenzene	ND	1.00	"	"	"	ZZZ	"	"	U
Xylenes, total	ND	1.00	"	"	"	ZZZ	"	"	U

Surrogate: 1,2-Dichloroethane-d4	99.5 %	70-130			"	"	"	"	
Surrogate: Toluene-d8	97.7 %	70-130			"	"	"	"	
Surrogate: 4-Bromofluorobenzene	102 %	70-130			"	"	"	"	

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**MW04**

**5/14/2020 2:36:00PM**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Analyst	Prepared	Analyzed	Notes
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**Origins Laboratory, Inc.**  
**Y005210-04 (Water)**

**BTEX by EPA 8260D**

Benzene	ND	1.00	ug/L	1	B0E1506	ZZZ	05/15/2020	05/19/2020	U
Toluene	ND	1.00	"	"	"	ZZZ	"	"	U
Ethylbenzene	ND	1.00	"	"	"	ZZZ	"	"	U
Xylenes, total	ND	1.00	"	"	"	ZZZ	"	"	U

Surrogate: 1,2-Dichloroethane-d4	98.3 %	70-130			"	"	"	"	
Surrogate: Toluene-d8	94.8 %	70-130			"	"	"	"	
Surrogate: 4-Bromofluorobenzene	105 %	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 B0E1506 - EPA 5030B (Water)**

**Blank (B0E1506-BLK1)**

Prepared: 05/15/2020 Analyzed: 05/19/2020

Benzene	ND	1.00	ug/L							U
Toluene	ND	1.00	"							U
Ethylbenzene	ND	1.00	"							U
Xylenes, total	ND	1.00	"							U
Surrogate: 1,2-Dichloroethane-d4	60		"	62.5	95.6		70-130			
Surrogate: Toluene-d8	60		"	62.5	95.5		70-130			
Surrogate: 4-Bromofluorobenzene	64		"	62.5	102		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
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**Batch B0E1506 - EPA 5030B (Water)**

**LCS (B0E1506-BS1)**

Prepared: 05/15/2020 Analyzed: 05/19/2020

Benzene	49.5	1.00	ug/L	50.0		99.0	70-130			
Toluene	47.5	1.00	"	50.0		95.1	70-130			
Ethylbenzene	59.3	1.00	"	50.0		119	70-130			
m,p-Xylene	117	2.00	"	100		117	70-130			
o-Xylene	51.5	1.00	"	50.0		103	70-130			
Surrogate: 1,2-Dichloroethane-d4	62		"	62.5		99.6	70-130			
Surrogate: Toluene-d8	61		"	62.5		97.4	70-130			
Surrogate: 4-Bromofluorobenzene	65		"	62.5		104	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 B0E1506 - EPA 5030B (Water)**

<b>Matrix Spike (B0E1506-MS1)</b>	<b>Source: Y005213-01</b>			<b>Prepared: 05/15/2020 Analyzed: 05/19/2020</b>						
Benzene	62.0	1.00	ug/L	50.0	ND	124	70-130			
Toluene	62.0	1.00	"	50.0	ND	124	70-130			
Ethylbenzene	75.6	1.00	"	50.0	ND	151	70-130			QM-07
m,p-Xylene	148	2.00	"	100	ND	148	70-130			QM-07
o-Xylene	67.1	1.00	"	50.0	ND	134	70-130			QM-07
Surrogate: 1,2-Dichloroethane-d4	62		"	62.5		98.6	70-130			
Surrogate: Toluene-d8	64		"	62.5		103	70-130			
Surrogate: 4-Bromofluorobenzene	64		"	62.5		102	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 B0E1506 - EPA 5030B (Water)**

Matrix Spike Dup (B0E1506-MSD1)	Source: Y005213-01			Prepared: 05/15/2020 Analyzed: 05/19/2020						
Benzene	59.9	1.00	ug/L	50.0	ND	120	70-130	3.38	20	
Toluene	56.9	1.00	"	50.0	ND	114	70-130	8.55	20	
Ethylbenzene	71.0	1.00	"	50.0	ND	142	70-130	6.15	20	QM-07
m,p-Xylene	138	2.00	"	100	ND	138	70-130	6.67	20	QM-07
o-Xylene	62.1	1.00	"	50.0	ND	124	70-130	7.74	20	
Surrogate: 1,2-Dichloroethane-d4	53		"	62.5		84.4	70-130			
Surrogate: Toluene-d8	61		"	62.5		97.5	70-130			
Surrogate: 4-Bromofluorobenzene	66		"	62.5		105	70-130			

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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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