

**TABLE 1**  
**GROUNDWATER ANALYTICAL AND FIELD RESULTS**  
**HATCH UPRR 42-11 #1**  
**WELD COUNTY, COLORADO**  
**KERR-MCGEE OIL & GAS ONSHORE, LP**

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	2/12/2018	167	772	130	2,180	17	NM
MW01	7/2/2018	Not Sampled				14.96	82.64
	7/23/2018	Not Sampled				14.97	82.63
	10/5/2018	<1.00	<1.00	<1.00	<1.00	14.64	82.96
	1/23/2019	<1.00	<1.00	<1.00	<1.00	15.63	81.97
	4/16/2019	<1.00	<1.00	<1.00	<1.00	15.80	81.80
	7/22/2019	<1.00	<1.00	<1.00	<1.00	15.54	82.06
	10/30/2019	<1.00	<1.00	<1.00	<1.00	15.47	82.13
MW02	7/2/2018	Not Sampled				13.36	82.44
	7/23/2018	Not Sampled				13.37	82.43
	10/5/2018	<b>510</b>	<20.0	<20.0	241	13.44	82.36
	1/23/2019	<b>556</b>	18.4	19.9	1,400	13.93	81.87
	4/16/2019	<b>154</b>	<10.0	<10.0	1,100	14.25	81.55
	7/22/2019	<b>239</b>	<10.0	55.6	1,080	13.79	82.01
	10/30/2019	<b>215</b>	<1.00	26.8	268	13.66	82.14
MW03	7/2/2018	Not Sampled				12.26	82.27
	7/23/2018	Not Sampled				12.27	82.26
	10/5/2018	<b>2,440</b>	<b>13,600</b>	658	<b>11,400</b>	12.28	82.25
	1/23/2019	<b>2,450</b>	<b>14,300</b>	<b>908</b>	<b>16,800</b>	12.87	81.66
	4/16/2019	<b>1,330</b>	<b>8,800</b>	590	<b>11,600</b>	13.03	81.50
	7/22/2019	<b>1,350</b>	<b>7,720</b>	569	<b>10,700</b>	12.49	82.04
	10/30/2019	<b>1,540</b>	<b>7,110</b>	646	<b>12,100</b>	12.55	81.98
MW04	7/2/2018	Not Sampled				14.95	82.64
	7/23/2018	Not Sampled				15.07	82.52
	10/5/2018	4.68	<4.00	203	<b>2,860</b>	15.13	82.46
	1/23/2019	<b>5.59</b>	6.27	248	<b>2,780</b>	15.54	82.05
	4/16/2019	<20.0	<20.0	222	<b>1,990</b>	15.78	81.81
	7/22/2019	<4.00	<4.00	206	<b>1,530</b>	15.25	82.34
	10/30/2019	3.05	2.33	268	<b>1,550</b>	15.29	82.30
MW05	7/23/2018	<1.00	<1.00	<1.00	<1.00	13.45	82.22
	10/5/2018	<1.00	<1.00	<1.00	<1.00	13.51	82.16
	1/23/2019	<1.00	<1.00	<1.00	<1.00	13.99	81.68
	4/16/2019	<1.00	<1.00	<1.00	<1.00	13.96	81.71
	7/22/2019	<1.00	<1.00	<1.00	<1.00	13.62	82.05
	10/30/2019	<1.00	<1.00	<1.00	<1.00	13.63	82.04



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**WELD COUNTY, COLORADO**  
**KERR-MCGEE OIL & GAS ONSHORE, LP**

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>		
MW06	7/23/2018	<b>3,200</b>	<20.0	171	<b>6,630</b>	11.56	81.92
	10/5/2018	<b>2,590</b>	<20.0	27.8	<b>4,160</b>	10.59	82.89
	1/23/2019	<b>1,210</b>	1.47	123	<b>2,580</b>	12.12	81.36
	4/16/2019	<b>1,190</b>	<50.0	64.0	<b>1,780</b>	12.24	81.24
	7/22/2019	<b>993</b>	<20.0	82.0	<b>1,940</b>	11.72	81.76
	10/30/2019	<b>846</b>	<1.00	132	<b>1,880</b>	11.79	81.69
MW07	7/23/2018	<1.00	<1.00	<1.00	<1.00	11.31	82.06
	10/5/2018	<1.00	<1.00	<1.00	<1.00	11.39	81.98
	1/23/2019	<1.00	<1.00	<1.00	4.94	11.88	81.49
	4/16/2019	<1.00	<1.00	<1.00	<1.00	12.02	81.35
	7/22/2019	<1.00	<1.00	<1.00	<1.00	11.63	81.74
	10/30/2019	<1.00	<1.00	<1.00	<1.00	11.64	81.73
MW08	7/23/2018	<1.00	<1.00	<1.00	<1.00	13.32	82.35
	10/5/2018	<1.00	<1.00	<1.00	<1.00	13.33	82.34
	1/23/2019	<1.00	<1.00	<1.00	<1.00	13.85	81.82
	4/16/2019	<1.00	<1.00	<1.00	<1.00	14.07	81.60
	7/22/2019	<1.00	<1.00	<1.00	<1.00	13.73	81.94
	10/30/2019	<1.00	<1.00	<1.00	<1.00	13.65	82.02
MW09	7/23/2018	<1.00	<1.00	<1.00	<1.00	15.55	82.61
	10/5/2018	<1.00	<1.00	<1.00	<1.00	15.58	82.58
	1/23/2019	<1.00	<1.00	<1.00	<1.00	16.17	81.99
	4/16/2019	<1.00	<1.00	<1.00	<1.00	16.29	81.87
	7/22/2019	<1.00	<1.00	<1.00	<1.00	15.80	82.36
	10/30/2019	<1.00	<1.00	<1.00	<1.00	15.77	82.39
MW10	11/13/2019	<1.00	<1.00	<1.00	<1.00	14.05	81.70
MW11	11/13/2019	<1.00	<1.00	<1.00	<1.00	12.06	81.35
MW12	11/13/2019	<1.00	<1.00	<1.00	<1.00	11.75	81.32

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  
**BOLD** = Analytical result is in exceedance of COGCC Table 910-1 groundwater standards.





April 22, 2019

LT Environmental, Inc.

Brian Sulzberger

4600 West 60th Avenue

Arvada CO 80003

Project Name - KMG - Hatch UPRR 42-11 #1

Project Number - 014218028/WO #894941

Attached are your analytical results for KMG - Hatch UPRR 42-11 #1 received by Origins Laboratory, Inc. April 16, 2019. This project is associated with Origins project number Y904291-01.

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: 014218028/WO #89494143  
Project: KMG - Hatch UPRR 42-11 #1

CROSS REFERENCE REPORT

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
MW01	Y904291-01	Water	April 16, 2019 14:20	04/16/2019 16:22
MW02	Y904291-02	Water	April 16, 2019 14:25	04/16/2019 16:22
MW03	Y904291-03	Water	April 16, 2019 14:30	04/16/2019 16:22
MW04	Y904291-04	Water	April 16, 2019 14:35	04/16/2019 16:22
MW05	Y904291-05	Water	April 16, 2019 14:40	04/16/2019 16:22
MW06	Y904291-06	Water	April 16, 2019 14:45	04/16/2019 16:22
MW07	Y904291-07	Water	April 16, 2019 14:50	04/16/2019 16:22
MW08	Y904291-08	Water	April 16, 2019 14:55	04/16/2019 16:22
MW09	Y904291-09	Water	April 16, 2019 15:00	04/16/2019 16:22

Origins Laboratory, Inc.



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

Brian Sulzberger  
 Project Number: 014218028/WO #89494143  
 Project: KMG - Hatch UPRR 42-11 #1

**ORIGINS**  
LABORATORY, INC

1725 Elk Place, Denver, CO 80211  
 Laboratory # - 303.433.1322

Project Manager: Brian Sulzberger  
 Project Number: 014218028/WO #89494143

Client: LT Environmental, Inc.  
 Project: KMG - Hatch UPRR 42-11 #1  
 Project Manager: Brian Sulzberger  
 Project Number: 014218028/WO #89494143

Number	Sample Identification	Matrix	Sample Date	Sample Time	Container	Qty	Analyses
01-001	MM01	Water	4-16-19	1420	01_40mL Clear Vial Cool to 4° C	3	BTEX by EPA 8280C
02-001	MM02	Water		1425	01_40mL Clear Vial Cool to 4° C	3	BTEX by EPA 8280C
03-001	MM03	Water		1430	01_40mL Clear Vial Cool to 4° C	3	BTEX by EPA 8280C
04-001	MM04	Water		1435	01_40mL Clear Vial Cool to 4° C	3	BTEX by EPA 8280C
05-001	MM05	Water		1440	01_40mL Clear Vial Cool to 4° C	2	BTEX by EPA 8280C
06-001	MM06	Water		1445	01_40mL Clear Vial Cool to 4° C	3	BTEX by EPA 8280C
07-001	MM07	Water		1450	01_40mL Clear Vial Cool to 4° C	3	BTEX by EPA 8280C
08-001	MM08	Water		1455	01_40mL Clear Vial Cool to 4° C	3	BTEX by EPA 8280C
09-001	MM09	Water		1500	01_40mL Clear Vial Cool to 4° C	3	BTEX by EPA 8280C

Relinquished By: Date / Time: 4-16-19 1622

Received By: Date / Time: 4-16-19 1322

Temperature on Receipt: 4.1

Turn Around Time:  Same Day  24-hr  72-hr  Standard  48-hr

Origins Laboratory, Inc.

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 4600 West 60th Avenue  
 Arvada CO 80003

Brian Sulzberger  
 Project Number: 014218028/WO #89494143  
 Project: KMG - Hatch UPRR 42-11 #1

Origins Laboratory

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

Sample Receipt Checklist

Origins Work Order: Y904291

Client: LT Environmental  
 Client Project ID: KMG - Hatch UPRR 42-11 #1

Checklist Completed by: J.P.  
 Date/time completed: 04/17/12 @ 1112

Shipped Via: H.D.  
 (UPS, FedEx, Hand Delivered, Pick-up, etc.)  
 Airbill #: N/A

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

Cooler Number/Temperature: 141 °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 ≤ 6°C <sup>(1)</sup> ?	<input checked="" type="checkbox"/>			
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 <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.

Reviewed by (Project Manager) J.P.

Date/Time Reviewed 4-15-12

Origins Laboratory, Inc.



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

Brian Sulzberger  
 Project Number: 014218028/WO #89494143  
 Project: KMG - Hatch UPRR 42-11 #1

**MW01**

**4/16/2019 2:20:00PM**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Analyst	Prepared	Analyzed	Notes
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**Origins Laboratory, Inc.**  
**Y904291-01 (Water)**

**BTEX by EPA 8260C**

Benzene	ND	1.00	ug/L	1	B9D1708	JTD	04/17/2019	04/18/2019	U
Toluene	ND	1.00	"	"	"	JTD	"	"	U
Ethylbenzene	ND	1.00	"	"	"	JTD	"	"	U
Xylenes, total	ND	1.00	"	"	"	JTD	"	"	U

Surrogate: 1,2-Dichloroethane-d4	110 %	84-121			"	"	"	
Surrogate: Toluene-d8	100 %	85-115			"	"	"	
Surrogate: 4-Bromofluorobenzene	103 %	84-114			"	"	"	

Origins Laboratory, Inc.



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 Arvada CO 80003

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 Project Number: 014218028/WO #89494143  
 Project: KMG - Hatch UPRR 42-11 #1

**MW02**

**4/16/2019 2:25:00PM**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Analyst	Prepared	Analyzed	Notes
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**Origins Laboratory, Inc.**  
**Y904291-02 (Water)**

**BTEX by EPA 8260C**

Benzene	154	10.0	ug/L	10	B9D1708	JTD	04/17/2019	04/18/2019	
Toluene	ND	10.0	"	"	"	JTD	"	"	U
Ethylbenzene	ND	10.0	"	"	"	JTD	"	"	U
Xylenes, total	1100	10.0	"	"	"	JTD	"	"	

Surrogate: 1,2-Dichloroethane-d4	111 %	84-121			"	"	"	"	
Surrogate: Toluene-d8	103 %	85-115			"	"	"	"	
Surrogate: 4-Bromofluorobenzene	101 %	84-114			"	"	"	"	

Origins Laboratory, Inc.



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**MW03**

**4/16/2019 2:30:00PM**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Analyst	Prepared	Analyzed	Notes
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**Origins Laboratory, Inc.**  
**Y904291-03 (Water)**

**BTEX by EPA 8260C**

Benzene	1330	50.0	ug/L	50	B9D1708	JTD	04/17/2019	04/18/2019	
Toluene	8800	50.0	"	"	"	JTD	"	"	
Ethylbenzene	590	50.0	"	"	"	JTD	"	"	
Xylenes, total	11600	50.0	"	"	"	JTD	"	"	
Surrogate: 1,2-Dichloroethane-d4	113 %	84-121			"	"			
Surrogate: Toluene-d8	102 %	85-115			"	"			
Surrogate: 4-Bromofluorobenzene	102 %	84-114			"	"			

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**MW04**

**4/16/2019 2:35:00PM**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Analyst	Prepared	Analyzed	Notes
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**Origins Laboratory, Inc.**  
**Y904291-04 (Water)**

**BTEX by EPA 8260C**

Benzene	ND	20.0	ug/L	20	B9D1708	JTD	04/17/2019	04/18/2019	U
Toluene	ND	20.0	"	"	"	JTD	"	"	U
Ethylbenzene	<b>222</b>	20.0	"	"	"	JTD	"	"	
Xylenes, total	<b>1990</b>	20.0	"	"	"	JTD	"	"	

Surrogate: 1,2-Dichloroethane-d4	111 %	84-121			"	"	"	"	
Surrogate: Toluene-d8	99.2 %	85-115			"	"	"	"	
Surrogate: 4-Bromofluorobenzene	102 %	84-114			"	"	"	"	

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**MW05**

**4/16/2019 2:40:00PM**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Analyst	Prepared	Analyzed	Notes
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**Origins Laboratory, Inc.**  
**Y904291-05 (Water)**

**BTEX by EPA 8260C**

Benzene	ND	1.00	ug/L	1	B9D1708	JTD	04/17/2019	04/18/2019	U
Toluene	ND	1.00	"	"	"	JTD	"	"	U
Ethylbenzene	ND	1.00	"	"	"	JTD	"	"	U
Xylenes, total	ND	1.00	"	"	"	JTD	"	"	U

Surrogate: 1,2-Dichloroethane-d4	113 %	84-121			"	"	"	"	
Surrogate: Toluene-d8	102 %	85-115			"	"	"	"	
Surrogate: 4-Bromofluorobenzene	105 %	84-114			"	"	"	"	

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Brian Sulzberger  
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**MW06**

**4/16/2019 2:45:00PM**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Analyst	Prepared	Analyzed	Notes
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**Origins Laboratory, Inc.**  
**Y904291-06 (Water)**

**BTEX by EPA 8260C**

Benzene	1190	50.0	ug/L	50	B9D1708	JTD	04/17/2019	04/18/2019	
Toluene	ND	50.0	"	"	"	JTD	"	"	U
Ethylbenzene	64.0	50.0	"	"	"	JTD	"	"	
Xylenes, total	1780	50.0	"	"	"	JTD	"	"	

Surrogate: 1,2-Dichloroethane-d4	109 %	84-121			"	"	"	"	
Surrogate: Toluene-d8	99.9 %	85-115			"	"	"	"	
Surrogate: 4-Bromofluorobenzene	102 %	84-114			"	"	"	"	

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**MW07**

**4/16/2019 2:50:00PM**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Analyst	Prepared	Analyzed	Notes
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**Origins Laboratory, Inc.**  
**Y904291-07 (Water)**

**BTEX by EPA 8260C**

Benzene	ND	1.00	ug/L	1	B9D1708	JTD	04/17/2019	04/18/2019	U
Toluene	ND	1.00	"	"	"	JTD	"	"	U
Ethylbenzene	ND	1.00	"	"	"	JTD	"	"	U
Xylenes, total	ND	1.00	"	"	"	JTD	"	"	U

Surrogate: 1,2-Dichloroethane-d4	113 %	84-121			"	"	"	"	
Surrogate: Toluene-d8	103 %	85-115			"	"	"	"	
Surrogate: 4-Bromofluorobenzene	102 %	84-114			"	"	"	"	

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 Project: KMG - Hatch UPRR 42-11 #1

**MW08**

**4/16/2019 2:55:00PM**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Analyst	Prepared	Analyzed	Notes
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**Origins Laboratory, Inc.**  
**Y904291-08 (Water)**

**BTEX by EPA 8260C**

Benzene	ND	1.00	ug/L	1	B9D1708	JTD	04/17/2019	04/18/2019	U
Toluene	ND	1.00	"	"	"	JTD	"	"	U
Ethylbenzene	ND	1.00	"	"	"	JTD	"	"	U
Xylenes, total	ND	1.00	"	"	"	JTD	"	"	U

Surrogate: 1,2-Dichloroethane-d4	111 %	84-121			"	"	"	"	
Surrogate: Toluene-d8	102 %	85-115			"	"	"	"	
Surrogate: 4-Bromofluorobenzene	104 %	84-114			"	"	"	"	

Origins Laboratory, Inc.



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

Brian Sulzberger  
 Project Number: 014218028/WO #89494143  
 Project: KMG - Hatch UPRR 42-11 #1

**MW09**

**4/16/2019 3:00:00PM**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Analyst	Prepared	Analyzed	Notes
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**Origins Laboratory, Inc.**  
**Y904291-09 (Water)**

**BTEX by EPA 8260C**

Benzene	ND	1.00	ug/L	1	B9D1708	JTD	04/17/2019	04/18/2019	U
Toluene	ND	1.00	"	"	"	JTD	"	"	U
Ethylbenzene	ND	1.00	"	"	"	JTD	"	"	U
Xylenes, total	ND	1.00	"	"	"	JTD	"	"	U

Surrogate: 1,2-Dichloroethane-d4	111 %	84-121			"	"	"		
Surrogate: Toluene-d8	102 %	85-115			"	"	"		
Surrogate: 4-Bromofluorobenzene	101 %	84-114			"	"	"		

Origins Laboratory, Inc.



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

Brian Sulzberger  
 Project Number: 014218028/WO #89494143  
 Project: KMG - Hatch UPRR 42-11 #1

**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
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**Batch B9D1708 - EPA 5030B (Water)**

**Blank (B9D1708-BLK1)**

Prepared: 04/17/2019 Analyzed: 04/18/2019

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	71		"	62.5	113		84-121			
Surrogate: Toluene-d8	64		"	62.5	102		85-115			
Surrogate: 4-Bromofluorobenzene	64		"	62.5	103		84-114			

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Brian Sulzberger  
 Project Number: 014218028/WO #89494143  
 Project: KMG - Hatch UPRR 42-11 #1

**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
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Batch B9D1708 - EPA 5030B (Water)

**LCS (B9D1708-BS1)**

Prepared: 04/17/2019 Analyzed: 04/18/2019

Benzene	45.4	1.00	ug/L	50.0		90.8	73.3-129			
Toluene	45.9	1.00	"	50.0		91.8	76.2-123			
Ethylbenzene	47.5	1.00	"	50.0		95.0	73.6-130			
m,p-Xylene	96.7	2.00	"	100		96.7	76.1-126			
o-Xylene	47.7	1.00	"	50.0		95.3	76.6-124			
Surrogate: 1,2-Dichloroethane-d4	65		"	62.5		103	84-121			
Surrogate: Toluene-d8	63		"	62.5		101	85-115			
Surrogate: 4-Bromofluorobenzene	65		"	62.5		103	84-114			

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 Project Number: 014218028/WO #89494143  
 Project: KMG - Hatch UPRR 42-11 #1

**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
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**Batch B9D1708 - EPA 5030B (Water)**

<b>Matrix Spike (B9D1708-MS1)</b>	<b>Source: Y904291-01</b>			<b>Prepared: 04/17/2019 Analyzed: 04/18/2019</b>						
Benzene	49.3	1.00	ug/L	50.0	ND	98.6	74-130			
Toluene	51.8	1.00	"	50.0	ND	104	73-131			
Ethylbenzene	52.1	1.00	"	50.0	ND	104	76-132			
m,p-Xylene	105	2.00	"	100	ND	105	69-139			
o-Xylene	51.3	1.00	"	50.0	ND	103	74-131			
Surrogate: 1,2-Dichloroethane-d4	67		"	62.5		107	84-121			
Surrogate: Toluene-d8	64		"	62.5		102	85-115			
Surrogate: 4-Bromofluorobenzene	64		"	62.5		102	84-114			

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LT Environmental, Inc.  
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 Arvada CO 80003

Brian Sulzberger  
 Project Number: 014218028/WO #89494143  
 Project: KMG - Hatch UPRR 42-11 #1

**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
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**Batch B9D1708 - EPA 5030B (Water)**

Matrix Spike Dup (B9D1708-MSD1)	Source: Y904291-01			Prepared: 04/17/2019 Analyzed: 04/18/2019						
Benzene	48.2	1.00	ug/L	50.0	ND	96.5	74-130	2.19	20	
Toluene	50.0	1.00	"	50.0	ND	100	73-131	3.46	20	
Ethylbenzene	50.1	1.00	"	50.0	ND	100	76-132	3.88	20	
m,p-Xylene	101	2.00	"	100	ND	101	69-139	3.68	20	
o-Xylene	50.2	1.00	"	50.0	ND	100	74-131	2.31	20	
Surrogate: 1,2-Dichloroethane-d4	65		"	62.5		104	84-121			
Surrogate: Toluene-d8	63		"	62.5		100	85-115			
Surrogate: 4-Bromofluorobenzene	64		"	62.5		103	84-114			

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

Brian Sulzberger  
Project Number: 014218028/WO #89494143  
Project: KMG - Hatch UPRR 42-11 #1

---

**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.



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July 24, 2019

LT Environmental, Inc.

Brian Sulzberger

4600 West 60th Avenue

Arvada CO 80003

Project Name - KMG - Hatch UPRR 42-11 #1

Project Number - 014218028/WO #894941

Attached are your analytical results for KMG - Hatch UPRR 42-11 #1 received by Origins Laboratory, Inc. July 22, 2019. This project is associated with Origins project number Y907332-01.

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: 014218028/WO #89494143  
Project: KMG - Hatch UPRR 42-11 #1

CROSS REFERENCE REPORT

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
MW01	Y907332-01	Water	July 22, 2019 13:37	07/22/2019 17:15
MW02	Y907332-02	Water	July 22, 2019 13:43	07/22/2019 17:15
MW03	Y907332-03	Water	July 22, 2019 13:50	07/22/2019 17:15
MW04	Y907332-04	Water	July 22, 2019 13:56	07/22/2019 17:15
MW05	Y907332-05	Water	July 22, 2019 14:02	07/22/2019 17:15
MW06	Y907332-06	Water	July 22, 2019 14:10	07/22/2019 17:15
MW07	Y907332-07	Water	July 22, 2019 14:16	07/22/2019 17:15
MW08	Y907332-08	Water	July 22, 2019 14:22	07/22/2019 17:15
MW09	Y907332-09	Water	July 22, 2019 14:30	07/22/2019 17:15

Origins Laboratory, Inc.



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

Brian Sulzberger  
 Project Number: 014218028/WO #89494143  
 Project: KMG - Hatch UPRR 42-11 #1



1907352

1725 Elk Place, Denver, CO 80211  
 Laboratory # - 303.433.1322

Client:	LT Environmental, Inc.	Project Manager:	Brian Sulzberger				
Project:	KMG - Hatch UPRR 42-11 #1	Project Number:	014218028/WO #89494143				
Number	Sample Identification	Matrix	Sample Date	Sample Time	Container	Qty	Analyses
01-001	MW01	Water	07/03/19	1337	Tc _40mL Clear Vial Cool to 4°	3	BTEX by EPA 8260C
02-001	MW02	Water		1343	_40mL Clear Vial Cool to 4°	3	BTEX by EPA 8260C
03-001	MW03	Water		1350	_40mL Clear Vial Cool to 4°	3	BTEX by EPA 8260C
04-001	MW04	Water		1356	_40mL Clear Vial Cool to 4°	3	BTEX by EPA 8260C
05-001	MW05	Water		1402	_40mL Clear Vial Cool to 4°	3	BTEX by EPA 8260C
06-001	MW06	Water		1410	_40mL Clear Vial Cool to 4°	3	BTEX by EPA 8260C
07-001	MW07	Water		1416	_40mL Clear Vial Cool to 4°	3	BTEX by EPA 8260C
08-001	MW08	Water		1402	_40mL Clear Vial Cool to 4°	3	BTEX by EPA 8260C
09-001	MW09	Water		1430	_40mL Clear Vial Cool to 4°	3	BTEX by EPA 8260C

Temperature on Receipt: 17.6  
 Turn Around Time:  
 72-hr  
 Standard  
 24-hr  
 48-hr

Relinquished By: [Signature]  
 Date / Time: 7/22/19 1715  
 Received By: [Signature]  
 Date / Time: [Blank]

Relinquished By: [Signature]  
 Date / Time: 07/03/19 1710  
 Received By: [Signature]  
 Date / Time: [Blank]

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: 014218028/WO #89494143  
 Project: KMG - Hatch UPRR 42-11 #1

Origins Laboratory

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

Sample Receipt Checklist

Origins Work Order: Y 907337

Client: LTE

Client Project ID: Hatch UPRR 42-11 #1

Checklist Completed by: JG

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

Date/time completed: 7/23/2019

Airbill #: N/A

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

Cooler Number/Temperature: 1 126 °C 1 °C 1 °C 1 °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 <sup>(1)</sup> ?		<input checked="" type="checkbox"/>		<u>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 <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 Na <sub>2</sub> O <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.

JG  
 Reviewed by (Project Manager)

7/24/19  
 Date/Time Reviewed

Origins Laboratory, Inc.



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

Brian Sulzberger  
 Project Number: 014218028/WO #89494143  
 Project: KMG - Hatch UPRR 42-11 #1

**MW01**

**7/22/2019 1:37:00PM**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Analyst	Prepared	Analyzed	Notes
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**Origins Laboratory, Inc.**  
**Y907332-01 (Water)**

**BTEX by EPA 8260D**

Benzene	ND	1.00	ug/L	1	B9G2311	KDK	07/23/2019	07/23/2019	U
Toluene	ND	1.00	"	"	"	KDK	"	"	U
Ethylbenzene	ND	1.00	"	"	"	KDK	"	"	U
Xylenes, total	ND	1.00	"	"	"	KDK	"	"	U

Surrogate: 1,2-Dichloroethane-d4	96.0 %	70-130			"	"	"	"	
Surrogate: Toluene-d8	104 %	70-130			"	"	"	"	
Surrogate: 4-Bromofluorobenzene	95.4 %	70-130			"	"	"	"	

Origins Laboratory, Inc.



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

Brian Sulzberger  
 Project Number: 014218028/WO #89494143  
 Project: KMG - Hatch UPRR 42-11 #1

**MW02**

**7/22/2019 1:43:00PM**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Analyst	Prepared	Analyzed	Notes
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**Origins Laboratory, Inc.**  
**Y907332-02 (Water)**

**BTEX by EPA 8260D**

Benzene	239	10.0	ug/L	10	B9G2311	KDK	07/23/2019	07/23/2019	
Toluene	ND	10.0	"	"	"	KDK	"	"	U
Ethylbenzene	55.6	10.0	"	"	"	KDK	"	"	
Xylenes, total	1080	10.0	"	"	"	KDK	"	"	

Surrogate: 1,2-Dichloroethane-d4	96.2 %	70-130			"	"	"	"	
Surrogate: Toluene-d8	103 %	70-130			"	"	"	"	
Surrogate: 4-Bromofluorobenzene	96.0 %	70-130			"	"	"	"	

Origins Laboratory, Inc.



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

Brian Sulzberger  
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 Project: KMG - Hatch UPRR 42-11 #1

**MW03**

**7/22/2019 1:50:00PM**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Analyst	Prepared	Analyzed	Notes
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**Origins Laboratory, Inc.**  
**Y907332-03 (Water)**

**BTEX by EPA 8260D**

Benzene	1350	100	ug/L	100	B9G2311	KDK	07/23/2019	07/23/2019	
Toluene	7720	100	"	"	"	KDK	"	"	
Ethylbenzene	569	100	"	"	"	KDK	"	"	
Xylenes, total	10700	100	"	"	"	KDK	"	"	
Surrogate: 1,2-Dichloroethane-d4	97.1 %			70-130		"	"	"	
Surrogate: Toluene-d8	102 %			70-130		"	"	"	
Surrogate: 4-Bromofluorobenzene	96.0 %			70-130		"	"	"	

Origins Laboratory, Inc.



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 Arvada CO 80003

Brian Sulzberger  
 Project Number: 014218028/WO #89494143  
 Project: KMG - Hatch UPRR 42-11 #1

**MW04**

**7/22/2019 1:56:00PM**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Analyst	Prepared	Analyzed	Notes
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**Origins Laboratory, Inc.**  
**Y907332-04 (Water)**

**BTEX by EPA 8260D**

Benzene	ND	4.00	ug/L	4	B9G2311	KDK	07/23/2019	07/24/2019	U
Toluene	ND	4.00	"	"	"	KDK	"	"	U
Ethylbenzene	<b>206</b>	20.0	"	20	"	KDK	"	07/23/2019	
Xylenes, total	<b>1530</b>	20.0	"	"	"	KDK	"	"	

Surrogate: 1,2-Dichloroethane-d4	94.8 %	70-130				"	"	"	
Surrogate: Toluene-d8	102 %	70-130				"	"	"	
Surrogate: 4-Bromofluorobenzene	97.3 %	70-130				"	"	"	

Origins Laboratory, Inc.



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

Brian Sulzberger  
 Project Number: 014218028/WO #89494143  
 Project: KMG - Hatch UPRR 42-11 #1

**MW05**

**7/22/2019 2:02:00PM**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Analyst	Prepared	Analyzed	Notes
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**Origins Laboratory, Inc.**  
**Y907332-05 (Water)**

**BTEX by EPA 8260D**

Benzene	ND	1.00	ug/L	1	B9G2311	KDK	07/23/2019	07/24/2019	U
Toluene	ND	1.00	"	"	"	KDK	"	"	U
Ethylbenzene	ND	1.00	"	"	"	KDK	"	"	U
Xylenes, total	ND	1.00	"	"	"	KDK	"	"	U

Surrogate: 1,2-Dichloroethane-d4	95.2 %	70-130			"	"	"	"	
Surrogate: Toluene-d8	103 %	70-130			"	"	"	"	
Surrogate: 4-Bromofluorobenzene	94.7 %	70-130			"	"	"	"	

Origins Laboratory, Inc.



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LT Environmental, Inc.  
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 Arvada CO 80003

Brian Sulzberger  
 Project Number: 014218028/WO #89494143  
 Project: KMG - Hatch UPRR 42-11 #1

**MW06**

**7/22/2019 2:10:00PM**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Analyst	Prepared	Analyzed	Notes
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**Origins Laboratory, Inc.**  
**Y907332-06 (Water)**

**BTEX by EPA 8260D**

Benzene	993	20.0	ug/L	20	B9G2311	KDK	07/23/2019	07/24/2019	
Toluene	ND	20.0	"	"	"	KDK	"	"	U
Ethylbenzene	82.0	20.0	"	"	"	KDK	"	"	
Xylenes, total	1940	20.0	"	"	"	KDK	"	"	

Surrogate: 1,2-Dichloroethane-d4	94.5 %	70-130			"	"	"	"	
Surrogate: Toluene-d8	102 %	70-130			"	"	"	"	
Surrogate: 4-Bromofluorobenzene	96.0 %	70-130			"	"	"	"	

Origins Laboratory, Inc.



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

Brian Sulzberger  
 Project Number: 014218028/WO #89494143  
 Project: KMG - Hatch UPRR 42-11 #1

**MW07**

**7/22/2019 2:16:00PM**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Analyst	Prepared	Analyzed	Notes
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**Origins Laboratory, Inc.**  
**Y907332-07 (Water)**

**BTEX by EPA 8260D**

Benzene	ND	1.00	ug/L	1	B9G2311	KDK	07/23/2019	07/24/2019	U
Toluene	ND	1.00	"	"	"	KDK	"	"	U
Ethylbenzene	ND	1.00	"	"	"	KDK	"	"	U
Xylenes, total	ND	1.00	"	"	"	KDK	"	"	U

Surrogate: 1,2-Dichloroethane-d4	95.8 %	70-130			"	"	"	"	
Surrogate: Toluene-d8	102 %	70-130			"	"	"	"	
Surrogate: 4-Bromofluorobenzene	95.8 %	70-130			"	"	"	"	

Origins Laboratory, Inc.



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

Brian Sulzberger  
 Project Number: 014218028/WO #89494143  
 Project: KMG - Hatch UPRR 42-11 #1

**MW08**

**7/22/2019 2:22:00PM**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Analyst	Prepared	Analyzed	Notes
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**Origins Laboratory, Inc.**  
**Y907332-08 (Water)**

**BTEX by EPA 8260D**

Benzene	ND	1.00	ug/L	1	B9G2311	KDK	07/23/2019	07/24/2019	U
Toluene	ND	1.00	"	"	"	KDK	"	"	U
Ethylbenzene	ND	1.00	"	"	"	KDK	"	"	U
Xylenes, total	ND	1.00	"	"	"	KDK	"	"	U

Surrogate: 1,2-Dichloroethane-d4	95.9 %	70-130			"	"	"	"	
Surrogate: Toluene-d8	102 %	70-130			"	"	"	"	
Surrogate: 4-Bromofluorobenzene	95.2 %	70-130			"	"	"	"	

Origins Laboratory, Inc.



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

Brian Sulzberger  
 Project Number: 014218028/WO #89494143  
 Project: KMG - Hatch UPRR 42-11 #1

**MW09**

**7/22/2019 2:30:00PM**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Analyst	Prepared	Analyzed	Notes
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**Origins Laboratory, Inc.**  
**Y907332-09 (Water)**

**BTEX by EPA 8260D**

Benzene	ND	1.00	ug/L	1	B9G2311	KDK	07/23/2019	07/24/2019	U
Toluene	ND	1.00	"	"	"	KDK	"	"	U
Ethylbenzene	ND	1.00	"	"	"	KDK	"	"	U
Xylenes, total	ND	1.00	"	"	"	KDK	"	"	U

Surrogate: 1,2-Dichloroethane-d4	95.2 %	70-130			"	"	"	"	
Surrogate: Toluene-d8	101 %	70-130			"	"	"	"	
Surrogate: 4-Bromofluorobenzene	95.3 %	70-130			"	"	"	"	

Origins Laboratory, Inc.



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LT Environmental, Inc.  
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 Arvada CO 80003

Brian Sulzberger  
 Project Number: 014218028/WO #89494143  
 Project: KMG - Hatch UPRR 42-11 #1

**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 B9G2311 - EPA 5030B (Water)**

**Blank (B9G2311-BLK1)**

Prepared: 07/23/2019 Analyzed: 07/23/2019

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		95.9	70-130			
Surrogate: Toluene-d8	64		"	62.5		102	70-130			
Surrogate: 4-Bromofluorobenzene	60		"	62.5		95.8	70-130			

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Brian Sulzberger  
 Project Number: 014218028/WO #89494143  
 Project: KMG - Hatch UPRR 42-11 #1

**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 B9G2311 - EPA 5030B (Water)

**LCS (B9G2311-BS1)**

Prepared: 07/23/2019 Analyzed: 07/23/2019

Benzene	42.7	1.00	ug/L	50.0		85.4	70-130			
Toluene	44.4	1.00	"	50.0		88.9	70-130			
Ethylbenzene	44.8	1.00	"	50.0		89.6	70-130			
m,p-Xylene	90.2	2.00	"	100		90.2	70-130			
o-Xylene	44.4	1.00	"	50.0		88.7	70-130			
Surrogate: 1,2-Dichloroethane-d4	58		"	62.5		93.0	70-130			
Surrogate: Toluene-d8	63		"	62.5		101	70-130			
Surrogate: 4-Bromofluorobenzene	60		"	62.5		96.5	70-130			

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 Arvada CO 80003

Brian Sulzberger  
 Project Number: 014218028/WO #89494143  
 Project: KMG - Hatch UPRR 42-11 #1

**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 B9G2311 - EPA 5030B (Water)**

<b>Matrix Spike (B9G2311-MS1)</b>	<b>Source: Y907331-21</b>			<b>Prepared: 07/23/2019 Analyzed: 07/23/2019</b>						
Benzene	42.4	1.00	ug/L	50.0	ND	84.9	70-130			
Toluene	44.7	1.00	"	50.0	ND	89.5	70-130			
Ethylbenzene	44.7	1.00	"	50.0	ND	89.4	70-130			
m,p-Xylene	90.2	2.00	"	100	0.190	90.0	70-130			
o-Xylene	45.8	1.00	"	50.0	ND	91.7	70-130			
Surrogate: 1,2-Dichloroethane-d4	57		"	62.5		91.9	70-130			
Surrogate: Toluene-d8	64		"	62.5		103	70-130			
Surrogate: 4-Bromofluorobenzene	60		"	62.5		96.1	70-130			

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Brian Sulzberger  
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 Project: KMG - Hatch UPRR 42-11 #1

**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 B9G2311 - EPA 5030B (Water)**

<b>Matrix Spike Dup (B9G2311-MSD1)</b>	<b>Source: Y907331-21</b>			<b>Prepared: 07/23/2019 Analyzed: 07/23/2019</b>						
Benzene	45.2	1.00	ug/L	50.0	ND	90.3	70-130	6.23	20	
Toluene	46.7	1.00	"	50.0	ND	93.4	70-130	4.35	20	
Ethylbenzene	46.1	1.00	"	50.0	ND	92.2	70-130	3.06	20	
m,p-Xylene	93.7	2.00	"	100	0.190	93.5	70-130	3.81	20	
o-Xylene	48.8	1.00	"	50.0	ND	97.6	70-130	6.27	20	
<i>Surrogate: 1,2-Dichloroethane-d4</i>	58		"	62.5		92.9	70-130			
<i>Surrogate: Toluene-d8</i>	64		"	62.5		102	70-130			
<i>Surrogate: 4-Bromofluorobenzene</i>	59		"	62.5		95.0	70-130			

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

Brian Sulzberger  
Project Number: 014218028/WO #89494143  
Project: KMG - Hatch UPRR 42-11 #1

---

**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.



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---

Jen Pellegrini For Noelle Doyle Mathis, President

November 04, 2019

LT Environmental, Inc.

Brian Sulzberger

4600 West 60th Avenue

Arvada CO 80003

Project Name - KMG - Hatch UPRR 42-11 #1

Project Number - 014218028/WO #894941

Attached are your analytical results for KMG - Hatch UPRR 42-11 #1 received by Origins Laboratory, Inc. October 30, 2019. This project is associated with Origins project number Y910422-01.

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: 014218028/WO #89494143  
Project: KMG - Hatch UPRR 42-11 #1

CROSS REFERENCE REPORT

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
MW01	Y910422-01	Water	October 30, 2019 13:32	10/30/2019 15:00
MW02	Y910422-02	Water	October 30, 2019 13:36	10/30/2019 15:00
MW03	Y910422-03	Water	October 30, 2019 13:40	10/30/2019 15:00
MW04	Y910422-04	Water	October 30, 2019 13:44	10/30/2019 15:00
MW05	Y910422-05	Water	October 30, 2019 13:49	10/30/2019 15:00
MW06	Y910422-06	Water	October 30, 2019 13:55	10/30/2019 15:00
MW07	Y910422-07	Water	October 30, 2019 14:01	10/30/2019 15:00
MW08	Y910422-08	Water	October 30, 2019 14:07	10/30/2019 15:00
MW09	Y910422-09	Water	October 30, 2019 14:12	10/30/2019 15:00

Origins Laboratory, Inc.



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

Brian Sulzberger  
 Project Number: 014218028/WO #89494143  
 Project: KMG - Hatch UPRR 42-11 #1



7910422

1725 Elk Place, Denver, CO 80211  
 Laboratory # - 303.433.1322

Client: LT Environmental, Inc. Project Manager: Brian Sulzberger  
 Project: KMG - Hatch UPRR 42-11 #1 Project Number: 014218028/WO #89494143

Number	Sample Identification	Matrix	Sample Date	Sample Time	Sampled By	Container	Qty	Analysis
01-001	MW01	Water	10/20/19	1332	HG	01_40mL Clear Vial Cool to 4° C	3	BTEX by EPA 8260C
02-001	MW02	Water		1334	HG	01_40mL Clear Vial Cool to 4° C	3	BTEX by EPA 8260C
03-001	MW03	Water		1340	HG	01_40mL Clear Vial Cool to 4° C	3	BTEX by EPA 8260C
04-001	MW04	Water		1344	HG	01_40mL Clear Vial Cool to 4° C	3	BTEX by EPA 8260C
05-001	MW05	Water		1349	PJ	01_40mL Clear Vial Cool to 4° C	3	BTEX by EPA 8260C
06-001	MW06	Water		1355	PJ	01_40mL Clear Vial Cool to 4° C	3	BTEX by EPA 8260C
07-001	MW07	Water		1401	PJ	01_40mL Clear Vial Cool to 4° C	3	BTEX by EPA 8260C
08-001	MW08	Water		1407	PJ	01_40mL Clear Vial Cool to 4° C	3	BTEX by EPA 8260C
09-001	MW09	Water		1412	PJ	01_40mL Clear Vial Cool to 4° C	3	BTEX by EPA 8260C

Relinquished By: Date / Time: 10/20/19 1500

Relinquished By: Date / Time: 10/20/19 1500

Temperature on Receipt: 1.7

Turn Around Time:  72-hr  Standard

Same Day:  24-hr  48-hr

Origins Laboratory, Inc.

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

Brian Sulzberger  
 Project Number: 014218028/WO #89494143  
 Project: KMG - Hatch UPRR 42-11 #1

Origins Laboratory

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

**Sample Receipt Checklist**

Origins Work Order: Y910422 Client: LTE  
 Client Project ID: Hatch UPRR 42-11 #1  
 Checklist Completed by: JG Shipped Via: HD  
 (UPS, FedEx, Hand Delivered, Pick-up, etc.)  
 Date/time completed: 10/31/2019 Airbill #: N/A  
 Matrix(s) Received: (Check all that apply): Soil/Solid  Water Other: \_\_\_\_\_ (Describe)  
 Cooler Number/Temperature: 1 / 1.7 °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 <sup>(1)</sup> ?	<input checked="" type="checkbox"/>			
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 <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? <b>If yes, contact client and note in narrative.</b>		<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"/>		
<u>Additional Comments (if any):</u>				

<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) JG

Date/Time Reviewed 11/4/19

Origins Laboratory, Inc.



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

Brian Sulzberger  
 Project Number: 014218028/WO #89494143  
 Project: KMG - Hatch UPRR 42-11 #1

**MW01**

**10/30/2019 1:32:00PM**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Analyst	Prepared	Analyzed	Notes
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**Origins Laboratory, Inc.**  
**Y910422-01 (Water)**

**BTEX by EPA 8260D**

Benzene	ND	1.00	ug/L	1	B9J3106	KDK	10/31/2019	11/01/2019	U
Toluene	ND	1.00	"	"	"	KDK	"	"	U
Ethylbenzene	ND	1.00	"	"	"	KDK	"	"	U
Xylenes, total	ND	1.00	"	"	"	KDK	"	"	U

Surrogate: 1,2-Dichloroethane-d4	98.6 %	70-130			"	"	"	"	
Surrogate: Toluene-d8	99.8 %	70-130			"	"	"	"	
Surrogate: 4-Bromofluorobenzene	99.9 %	70-130			"	"	"	"	

Origins Laboratory, Inc.



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

Brian Sulzberger  
 Project Number: 014218028/WO #89494143  
 Project: KMG - Hatch UPRR 42-11 #1

**MW02**

**10/30/2019 1:36:00PM**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Analyst	Prepared	Analyzed	Notes
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**Origins Laboratory, Inc.**  
**Y910422-02 (Water)**

**BTEX by EPA 8260D**

Benzene	215	4.00	ug/L	4	B9J3106	KDK	10/31/2019	11/01/2019	
Toluene	ND	1.00	"	1	"	KDK	"	11/01/2019	U
Ethylbenzene	26.8	1.00	"	"	"	KDK	"	"	
Xylenes, total	268	4.00	"	4	"	KDK	"	"	

Surrogate: 1,2-Dichloroethane-d4	97.4 %	70-130			"	"		"	
Surrogate: Toluene-d8	105 %	70-130			"	"		"	
Surrogate: 4-Bromofluorobenzene	97.7 %	70-130			"	"		"	

Origins Laboratory, Inc.



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Brian Sulzberger  
 Project Number: 014218028/WO #89494143  
 Project: KMG - Hatch UPRR 42-11 #1

**MW03**

**10/30/2019 1:40:00PM**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Analyst	Prepared	Analyzed	Notes
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**Origins Laboratory, Inc.**  
**Y910422-03 (Water)**

**BTEX by EPA 8260D**

Benzene	<b>1540</b>	50.0	ug/L	50	B9J3106	KDK	10/31/2019	11/01/2019	
Toluene	<b>7110</b>	50.0	"	"	"	KDK	"	"	
Ethylbenzene	<b>646</b>	50.0	"	"	"	KDK	"	"	
Xylenes, total	<b>12100</b>	50.0	"	"	"	KDK	"	"	
Surrogate: 1,2-Dichloroethane-d4	98.8 %			70-130		"	"	"	
Surrogate: Toluene-d8	101 %			70-130		"	"	"	
Surrogate: 4-Bromofluorobenzene	101 %			70-130		"	"	"	

Origins Laboratory, Inc.



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 Arvada CO 80003

Brian Sulzberger  
 Project Number: 014218028/WO #89494143  
 Project: KMG - Hatch UPRR 42-11 #1

**MW04**

**10/30/2019 1:44:00PM**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Analyst	Prepared	Analyzed	Notes
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**Origins Laboratory, Inc.**  
**Y910422-04 (Water)**

**BTEX by EPA 8260D**

Benzene	3.05	1.00	ug/L	1	B9J3106	KDK	10/31/2019	11/01/2019	
Toluene	2.33	1.00	"	"	"	KDK	"	"	
Ethylbenzene	268	4.00	"	4	"	KDK	"	11/01/2019	
Xylenes, total	1550	50.0	"	50	"	KDK	"	11/01/2019	
Surrogate: 1,2-Dichloroethane-d4	96.6 %			70-130		"	"	11/01/2019	
Surrogate: Toluene-d8	103 %			70-130		"	"	"	
Surrogate: 4-Bromofluorobenzene	101 %			70-130		"	"	"	

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Brian Sulzberger  
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 Project: KMG - Hatch UPRR 42-11 #1

**MW05**

**10/30/2019 1:49:00PM**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Analyst	Prepared	Analyzed	Notes
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**Origins Laboratory, Inc.**  
**Y910422-05 (Water)**

**BTEX by EPA 8260D**

Benzene	ND	1.00	ug/L	1	B9J3106	KDK	10/31/2019	11/01/2019	U
Toluene	ND	1.00	"	"	"	KDK	"	11/01/2019	U
Ethylbenzene	ND	1.00	"	"	"	KDK	"	"	U
Xylenes, total	ND	1.00	"	"	"	KDK	"	"	U

Surrogate: 1,2-Dichloroethane-d4	96.9 %	70-130			"	"		11/01/2019	
Surrogate: Toluene-d8	99.4 %	70-130			"	"		"	
Surrogate: 4-Bromofluorobenzene	97.0 %	70-130			"	"		"	

Origins Laboratory, Inc.



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

Brian Sulzberger  
 Project Number: 014218028/WO #89494143  
 Project: KMG - Hatch UPRR 42-11 #1

**MW06**

**10/30/2019 1:55:00PM**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Analyst	Prepared	Analyzed	Notes
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**Origins Laboratory, Inc.**  
**Y910422-06 (Water)**

**BTEX by EPA 8260D**

Benzene	<b>846</b>	10.0	ug/L	10	B9J3106	KDK	10/31/2019	11/01/2019	
Toluene	ND	1.00	"	1	"	KDK	"	11/01/2019	U
Ethylbenzene	<b>132</b>	1.00	"	"	"	KDK	"	"	
Xylenes, total	<b>1880</b>	10.0	"	10	"	KDK	"	11/01/2019	

Surrogate: 1,2-Dichloroethane-d4	97.4 %	70-130			"	"		11/01/2019	
Surrogate: Toluene-d8	99.7 %	70-130			"	"		"	
Surrogate: 4-Bromofluorobenzene	99.5 %	70-130			"	"		"	

Origins Laboratory, Inc.



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

Brian Sulzberger  
 Project Number: 014218028/WO #89494143  
 Project: KMG - Hatch UPRR 42-11 #1

**MW07**

**10/30/2019 2:01:00PM**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Analyst	Prepared	Analyzed	Notes
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**Origins Laboratory, Inc.**  
**Y910422-07 (Water)**

**BTEX by EPA 8260D**

Benzene	ND	1.00	ug/L	1	B9J3106	KDK	10/31/2019	11/01/2019	U
Toluene	ND	1.00	"	"	"	KDK	"	"	U
Ethylbenzene	ND	1.00	"	"	"	KDK	"	"	U
Xylenes, total	ND	1.00	"	"	"	KDK	"	"	U

Surrogate: 1,2-Dichloroethane-d4	97.9 %	70-130			"	"	"	"	
Surrogate: Toluene-d8	99.6 %	70-130			"	"	"	"	
Surrogate: 4-Bromofluorobenzene	98.3 %	70-130			"	"	"	"	

Origins Laboratory, Inc.



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

Brian Sulzberger  
 Project Number: 014218028/WO #89494143  
 Project: KMG - Hatch UPRR 42-11 #1

**MW08**

**10/30/2019 2:07:00PM**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Analyst	Prepared	Analyzed	Notes
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**Origins Laboratory, Inc.**  
**Y910422-08 (Water)**

**BTEX by EPA 8260D**

Benzene	ND	1.00	ug/L	1	B9J3106	KDK	10/31/2019	11/01/2019	U
Toluene	ND	1.00	"	"	"	KDK	"	"	U
Ethylbenzene	ND	1.00	"	"	"	KDK	"	"	U
Xylenes, total	ND	1.00	"	"	"	KDK	"	"	U

Surrogate: 1,2-Dichloroethane-d4	101 %	70-130			"	"	"	"	
Surrogate: Toluene-d8	100 %	70-130			"	"	"	"	
Surrogate: 4-Bromofluorobenzene	95.2 %	70-130			"	"	"	"	

Origins Laboratory, Inc.



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LT Environmental, Inc.  
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 Arvada CO 80003

Brian Sulzberger  
 Project Number: 014218028/WO #89494143  
 Project: KMG - Hatch UPRR 42-11 #1

**MW09**

**10/30/2019 2:12:00PM**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Analyst	Prepared	Analyzed	Notes
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**Origins Laboratory, Inc.**  
**Y910422-09 (Water)**

**BTEX by EPA 8260D**

Benzene	ND	1.00	ug/L	1	B9J3106	KDK	10/31/2019	11/01/2019	U
Toluene	ND	1.00	"	"	"	KDK	"	"	U
Ethylbenzene	ND	1.00	"	"	"	KDK	"	"	U
Xylenes, total	ND	1.00	"	"	"	KDK	"	"	U

Surrogate: 1,2-Dichloroethane-d4	101 %	70-130			"	"	"	"	
Surrogate: Toluene-d8	100 %	70-130			"	"	"	"	
Surrogate: 4-Bromofluorobenzene	96.3 %	70-130			"	"	"	"	

Origins Laboratory, Inc.



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 4600 West 60th Avenue  
 Arvada CO 80003

Brian Sulzberger  
 Project Number: 014218028/WO #89494143  
 Project: KMG - Hatch UPRR 42-11 #1

**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 B9J3106 - EPA 5030B (Water)**

**Blank (B9J3106-BLK1)**

Prepared: 10/31/2019 Analyzed: 11/01/2019

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	62		"	62.5	98.7		70-130			
Surrogate: Toluene-d8	62		"	62.5	98.8		70-130			
Surrogate: 4-Bromofluorobenzene	62		"	62.5	99.2		70-130			

Origins Laboratory, Inc.



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 Arvada CO 80003

Brian Sulzberger  
 Project Number: 014218028/WO #89494143  
 Project: KMG - Hatch UPRR 42-11 #1

**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 B9J3106 - EPA 5030B (Water)**

**LCS (B9J3106-BS1)**

Prepared: 10/31/2019 Analyzed: 11/01/2019

Benzene	55.7	1.00	ug/L	50.0		111	70-130			
Toluene	53.4	1.00	"	50.0		107	70-130			
Ethylbenzene	53.3	1.00	"	50.0		107	70-130			
m,p-Xylene	105	2.00	"	100		105	70-130			
o-Xylene	51.1	1.00	"	50.0		102	70-130			
Surrogate: 1,2-Dichloroethane-d4	65		"	62.5		104	70-130			
Surrogate: Toluene-d8	62		"	62.5		99.7	70-130			
Surrogate: 4-Bromofluorobenzene	62		"	62.5		98.4	70-130			

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LT Environmental, Inc.  
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 Arvada CO 80003

Brian Sulzberger  
 Project Number: 014218028/WO #89494143  
 Project: KMG - Hatch UPRR 42-11 #1

**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 B9J3106 - EPA 5030B (Water)**

Matrix Spike (B9J3106-MS1)	Source: Y910430-05			Prepared: 10/31/2019 Analyzed: 11/01/2019						
Benzene	46.6	1.00	ug/L	50.0	ND	93.1	70-130			
Toluene	44.7	1.00	"	50.0	ND	89.4	70-130			
Ethylbenzene	45.4	1.00	"	50.0	ND	90.8	70-130			
m,p-Xylene	89.1	2.00	"	100	ND	89.1	70-130			
o-Xylene	44.5	1.00	"	50.0	ND	89.0	70-130			
Surrogate: 1,2-Dichloroethane-d4	60		"	62.5		95.5	70-130			
Surrogate: Toluene-d8	62		"	62.5		99.0	70-130			
Surrogate: 4-Bromofluorobenzene	62		"	62.5		98.9	70-130			

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Brian Sulzberger  
 Project Number: 014218028/WO #89494143  
 Project: KMG - Hatch UPRR 42-11 #1

**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 B9J3106 - EPA 5030B (Water)**

Matrix Spike Dup (B9J3106-MSD1)	Source: Y910430-05			Prepared: 10/31/2019 Analyzed: 11/01/2019						
Benzene	53.0	1.00	ug/L	50.0	ND	106	70-130	12.9	20	
Toluene	51.1	1.00	"	50.0	ND	102	70-130	13.4	20	
Ethylbenzene	51.4	1.00	"	50.0	ND	103	70-130	12.4	20	
m,p-Xylene	101	2.00	"	100	ND	101	70-130	12.2	20	
o-Xylene	49.0	1.00	"	50.0	ND	97.9	70-130	9.59	20	
Surrogate: 1,2-Dichloroethane-d4	59		"	62.5		94.6	70-130			
Surrogate: Toluene-d8	63		"	62.5		101	70-130			
Surrogate: 4-Bromofluorobenzene	63		"	62.5		101	70-130			

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

Brian Sulzberger  
Project Number: 014218028/WO #89494143  
Project: KMG - Hatch UPRR 42-11 #1

---

**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.



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---

Jen Pellegrini For Noelle Doyle Mathis, President



November 19, 2019

**LT Environmental, Inc.**

**Brian Sulzberger**

**4600 West 60th Avenue**

**Arvada CO 80003**

**Project Name - KMG - Hatch UPRR 42-11 #1**

**Project Number - 014218028/WO #894941**

Attached are your analytical results for KMG - Hatch UPRR 42-11 #1 received by Origins Laboratory, Inc. November 13, 2019. This project is associated with Origins project number Y911225-01.

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: 014218028/WO #89494143  
Project: KMG - Hatch UPRR 42-11 #1

CROSS REFERENCE REPORT

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
MW10	Y911225-01	Water	November 13, 2019 10:15	11/13/2019 17:42
MW11	Y911225-02	Water	November 13, 2019 10:30	11/13/2019 17:42
MW12	Y911225-03	Water	November 13, 2019 10:45	11/13/2019 17:42

Origins Laboratory, Inc.



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

Brian Sulzberger  
 Project Number: 014218028/WO #89494143  
 Project: KMG - Hatch UPRR 42-11 #1

**ORIGINS**  
 LABORATORY, INC

www.originslaboratory.com

Y911225

page 1 of 1

Client: LT Environmental, Inc  
 Address: 4600 W 60th Ave  
Arvada CO 80003  
 Telephone Number: 303-433-9788  
 Email Address: KMG Group

Project Manager: Brian Sulzberger  
 Project Name: Hatch UPRR 42-11 #1  
 Project Number: 014218028  
 Samples Collected By: Ryan Jelozajak

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

Sample ID Description	Date Sampled	Time Sampled	# of Containers	Preservative				Matrix			Analysis	Sample Instructions		
				Unpreserved	HCl	HNO <sub>3</sub>	Other	Groundwater	Soil	At Summa Center #			Other	
MW10	11-13-19	1015	2	X				X					1	
MW11	↓	1030	2	X				X					2	
MW12	↓	1045	2	X				X					3	
													4	
													5	
													6	
													7	
													8	
													9	
													10	

Relinquished By: [Signature]  
 Relinquished By: [Signature]

Date: 11-13-19  
 Date: 11-13-19

Received By: [Signature]  
 Received By: [Signature]

Date: 11-13-19  
 Date: 11-13-19

Turnaround Time:  
 Same Day  24 Hr   
 48 Hr  72 Hr   
 Standard

Temp Received: 63 Date Results Needed

Origins Laboratory, Inc.

Jefe Pellegrini

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

Brian Sulzberger  
 Project Number: 014218028/WO #89494143  
 Project: KMG - Hatch UPRR 42-11 #1

Origins Laboratory

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

Sample Receipt Checklist

Origins Work Order: Y911225

Client: LTE

Client Project ID: UP Hatch UPRR 42-11 #1

Checklist Completed by: JG

Shipped Via: HD

(UPS, FedEx, Hand Delivered, Pick-up, etc.)

Date/time completed: 11/14/2019

Airbill #: N/A

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

Cooler Number/Temperature: 1 / 8.3 °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 ≤ 6°C <sup>(1)</sup> ?		<input checked="" type="checkbox"/>		<u>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 <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.

JG  
 Reviewed by (Project Manager)

11/15/19  
 Date/Time Reviewed

Origins Laboratory, Inc.



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

Brian Sulzberger  
 Project Number: 014218028/WO #89494143  
 Project: KMG - Hatch UPRR 42-11 #1

**MW10**  
**11/13/2019 10:15:00AM**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Analyst	Prepared	Analyzed	Notes
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**Origins Laboratory, Inc.**  
**Y911225-01 (Water)**

**BTEX by EPA 8260D**

Benzene	ND	1.00	ug/L	1	B9K1404	ZZZ	11/14/2019	11/15/2019	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	103 %	70-130			"	"	"	
Surrogate: Toluene-d8	99.1 %	70-130			"	"	"	
Surrogate: 4-Bromofluorobenzene	102 %	70-130			"	"	"	

Origins Laboratory, Inc.



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

Brian Sulzberger  
 Project Number: 014218028/WO #89494143  
 Project: KMG - Hatch UPRR 42-11 #1

**MW11**

**11/13/2019 10:30:00AM**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Analyst	Prepared	Analyzed	Notes
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**Origins Laboratory, Inc.**  
**Y911225-02 (Water)**

**BTEX by EPA 8260D**

Benzene	ND	1.00	ug/L	1	B9K1404	ZZZ	11/14/2019	11/15/2019	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	99.6 %	70-130			"	"	"		
Surrogate: Toluene-d8	98.8 %	70-130			"	"	"		
Surrogate: 4-Bromofluorobenzene	100 %	70-130			"	"	"		

Origins Laboratory, Inc.



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

Brian Sulzberger  
 Project Number: 014218028/WO #89494143  
 Project: KMG - Hatch UPRR 42-11 #1

**MW12**  
**11/13/2019 10:45:00AM**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Analyst	Prepared	Analyzed	Notes
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**Origins Laboratory, Inc.**  
**Y911225-03 (Water)**

**BTEX by EPA 8260D**

Benzene	ND	1.00	ug/L	1	B9K1404	ZZZ	11/14/2019	11/15/2019	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	99.2 %	70-130			"	"	"	
Surrogate: Toluene-d8	97.6 %	70-130			"	"	"	
Surrogate: 4-Bromofluorobenzene	103 %	70-130			"	"	"	

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 Arvada CO 80003

Brian Sulzberger  
 Project Number: 014218028/WO #89494143  
 Project: KMG - Hatch UPRR 42-11 #1

**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 B9K1404 - EPA 5030B (Water)**

**Blank (B9K1404-BLK1)**

Prepared: 11/14/2019 Analyzed: 11/15/2019

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	62		"	62.5	99.2		70-130			
Surrogate: Toluene-d8	61		"	62.5	98.2		70-130			
Surrogate: 4-Bromofluorobenzene	63		"	62.5	100		70-130			

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 4600 West 60th Avenue  
 Arvada CO 80003

Brian Sulzberger  
 Project Number: 014218028/WO #89494143  
 Project: KMG - Hatch UPRR 42-11 #1

**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 B9K1404 - EPA 5030B (Water)**

**LCS (B9K1404-BS1)**

Prepared: 11/14/2019 Analyzed: 11/15/2019

Benzene	45.3	1.00	ug/L	50.0		90.7	70-130			
Toluene	50.3	1.00	"	50.0		101	70-130			
Ethylbenzene	51.8	1.00	"	50.0		104	70-130			
m,p-Xylene	103	2.00	"	100		103	70-130			
o-Xylene	49.7	1.00	"	50.0		99.4	70-130			
Surrogate: 1,2-Dichloroethane-d4	62		"	62.5		99.4	70-130			
Surrogate: Toluene-d8	63		"	62.5		100	70-130			
Surrogate: 4-Bromofluorobenzene	63		"	62.5		101	70-130			

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 Arvada CO 80003

Brian Sulzberger  
 Project Number: 014218028/WO #89494143  
 Project: KMG - Hatch UPRR 42-11 #1

**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 B9K1404 - EPA 5030B (Water)

Matrix Spike (B9K1404-MS1)	Source: Y911199-09			Prepared: 11/14/2019 Analyzed: 11/15/2019						
Benzene	62.2	1.00	ug/L	50.0	0.120	124	70-130			
Toluene	64.2	1.00	"	50.0	ND	128	70-130			
Ethylbenzene	92.6	1.00	"	50.0	19.3	147	70-130			QM-07
m,p-Xylene	425	2.00	"	100	342	82.8	70-130			
o-Xylene	100	1.00	"	50.0	39.2	122	70-130			
Surrogate: 1,2-Dichloroethane-d4	61		"	62.5		97.9	70-130			
Surrogate: Toluene-d8	65		"	62.5		104	70-130			
Surrogate: 4-Bromofluorobenzene	63		"	62.5		100	70-130			

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

Brian Sulzberger  
 Project Number: 014218028/WO #89494143  
 Project: KMG - Hatch UPRR 42-11 #1

**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 B9K1404 - EPA 5030B (Water)**

<b>Matrix Spike Dup (B9K1404-MSD1)</b>	<b>Source: Y911199-09</b>			<b>Prepared: 11/14/2019 Analyzed: 11/15/2019</b>						
Benzene	53.1	1.00	ug/L	50.0	0.120	106	70-130	15.7	20	
Toluene	54.8	1.00	"	50.0	ND	110	70-130	15.8	20	
Ethylbenzene	73.3	1.00	"	50.0	19.3	108	70-130	23.3	20	QR-03
m,p-Xylene	350	2.00	"	100	342	7.73	70-130	19.4	20	QM-07
o-Xylene	84.3	1.00	"	50.0	39.2	90.2	70-130	17.4	20	
Surrogate: 1,2-Dichloroethane-d4	61		"	62.5		97.6	70-130			
Surrogate: Toluene-d8	64		"	62.5		102	70-130			
Surrogate: 4-Bromofluorobenzene	62		"	62.5		99.9	70-130			

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### Notes and Definitions

U Sample is Non-Detect.

QR-03 The RPD value for the sample duplicate or MS/MSD was outside of QC acceptance limits due to matrix interference. QC batch accepted based on LCS and/or LCSD recovery and/or RPD values.

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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