



received 09/20/2015
Project 8261
Document #: 2210538

Kerr-McGee Oil & Gas Onshore LP
1099 18th Street, Suite 1800
Denver, Colorado 80202
720-929-6000 Fax 720-929-7000

September 17, 2015

Mr. Peter Gintautas
Environmental Protection Specialist
Colorado Oil and Gas Conservation Commission
1120 Lincoln Street, Suite 801
Denver, Colorado 80203

**Re: No Further Action Status Request
HSR-B/R D 15-20, 16-20 Tank Battery
COGCC Remediation No. 8261
SWSE 20-T3N-R67W**

Dear Mr. Gintautas:

Kerr-McGee Oil and Gas Onshore LP (Kerr-McGee) is submitting this letter report as an update to the Form 27, submitted on March 3, 2014, for the HSR-B/R D 15-20, 16-20 tank battery. We are requesting a No Further Action (NFA) status for this site.

On May 7, 2013, approximately 1.5 barrels (bbls) of oil overflowed from the production tank and approximately 0.5 bbl of oil overflowed from the emissions control device (ECD). The release was attributed to a failure of the automation equipment. Upon discovery of the release, pressure was released from the separator. A vacuum truck was used to recover approximately 0.5 bbl of oil from the concrete pad and gravel beneath the ECD and approximately 1.0 bbl of oil from inside the tank battery berm. The production tanks were removed and the petroleum hydrocarbon impacted soil was excavated. Approximately 350 cubic yards of petroleum hydrocarbon impacted soil and gravel were removed from the site and transported to the Front Range Landfill in Erie, Colorado, for disposal. Kerr-McGee contracted LT Environmental, Inc. (LTE) to document excavation activities, collect confirmation soil and groundwater samples from the excavation, install groundwater monitoring wells, conduct quarterly groundwater monitoring, and track the laboratory analytical results. A topographic Site Location Map depicting the general location of the release is attached as Figure 1.

On May 6 and 7, 2013, confirmation soil samples were collected from the excavation sidewalls for total petroleum hydrocarbon (TPH) analysis by United States Environmental Protection Agency (USEPA) Methods 8015 and 8260B and benzene, toluene, ethylbenzene, and total xylenes (BTEX) analysis by USEPA Method 8260B. The soil sample analytical results confirmed that TPH and BTEX concentrations were less than the Colorado Oil and Gas Conservation Commission Table 910-1 allowable levels at the extent of the excavation. The excavation soil sample results are summarized in Table 1.

Groundwater was encountered in the excavation at approximately 6 feet below ground surface. One groundwater sample (GW01) was collected from the excavation and submitted for BTEX analysis by USEPA Method 8260B. The benzene concentration in the GW01 groundwater sample exceeded the Colorado Groundwater Quality Standard (CGWQS) of 5.0 micrograms per liter ($\mu\text{g/L}$) at a concentration of 480 $\mu\text{g/L}$. Based on the groundwater analytical results, 30 bbls of impacted groundwater were removed from the excavation and disposed of at a licensed injection facility. Five gallons of MicroBlaze[®] microbial solution were applied to the groundwater and exposed smear zone prior to backfilling the excavation. The excavation area was restored to its pre-release grade and the tank battery was reconstructed to the west of its former location. The general site layout, excavation outline, and excavation soil and groundwater sample locations are depicted on the Excavation Site Map provided as Figure 2. The excavation groundwater results are summarized on Table 2.

In order to assess the extent and magnitude of the residual dissolved-phase groundwater impacts, four monitoring wells (MW01 through MW04) were installed at the site in August 2013. During the initial quarterly groundwater monitoring event conducted in September 2013, BTEX concentrations in all four monitoring wells were less than the CGWQS and less than the laboratory reporting limit of 1.0 $\mu\text{g/L}$. Based on the groundwater analytical results, wells MW01 through MW04 were designated as point of compliance (POC) wells. Groundwater monitoring has continued on a quarterly basis. The monitoring well locations are provided on Figure 3A.

On November 19, 2013, groundwater monitoring wells MW01 through MW04 were surveyed to determine the groundwater flow direction at the site. The relative elevation data confirmed the groundwater flow direction is to the northeast. The relative groundwater elevation data are provided in Table 2.

Based on the surveyed flow direction, one additional monitoring well (MW05) was installed north-northeast of the excavated source area on June 8, 2015, to ensure POC had been established. Soil staining, odors, and/or elevated photo-ionization detector headspace readings (greater than 0.0 parts per million) were not encountered while continuously sampling the soil boring completed as monitoring well MW05. The boring log for monitoring well MW05 is attached.

As of the June 2015 quarterly monitoring event, BTEX concentrations in monitoring wells MW01 through MW04 have remained compliant with the CGWQS and the laboratory reporting limit of 1.0 $\mu\text{g/L}$ for four consecutive quarterly monitoring events. On June 15, 2015, the new down-gradient monitoring well (MW05) was sampled for BTEX analysis by USEPA Method 8260C. BTEX concentrations were less than the CGWQS and less than the laboratory reporting limit of 1.0 $\mu\text{g/L}$ in well MW05. The groundwater analytical results are summarized in Table 2. The laboratory analytical reports for the four most recent quarterly monitoring events are attached.

On August 3, 2015, the site was re-surveyed to include monitoring well MW05 and to reconfirm the groundwater flow direction. The relative elevation data confirmed the groundwater flow

direction is to the northeast. Groundwater Elevation Contour Maps for each of the last four quarterly monitoring events (third quarter 2014 through second quarter 2015) are provided as Figures 3A through 3D, respectively. The relative groundwater elevation data are provided in Table 2.

Remedial actions employed at the site included excavation of the source area, removal of impacted ground water from the excavation, and application of the MicroBlaze[®] amendment to the excavation groundwater. Based on these remedial actions and groundwater sample analytical results indicating BTEX concentrations in compliance with the CGWQS and less than the laboratory reporting limit of 1.0 µg/L for the duration of the monitoring program, Kerr-McGee is requesting an NFA status for this site.

Feel free to contact me at 720-929-6726 if you have any questions regarding this information.

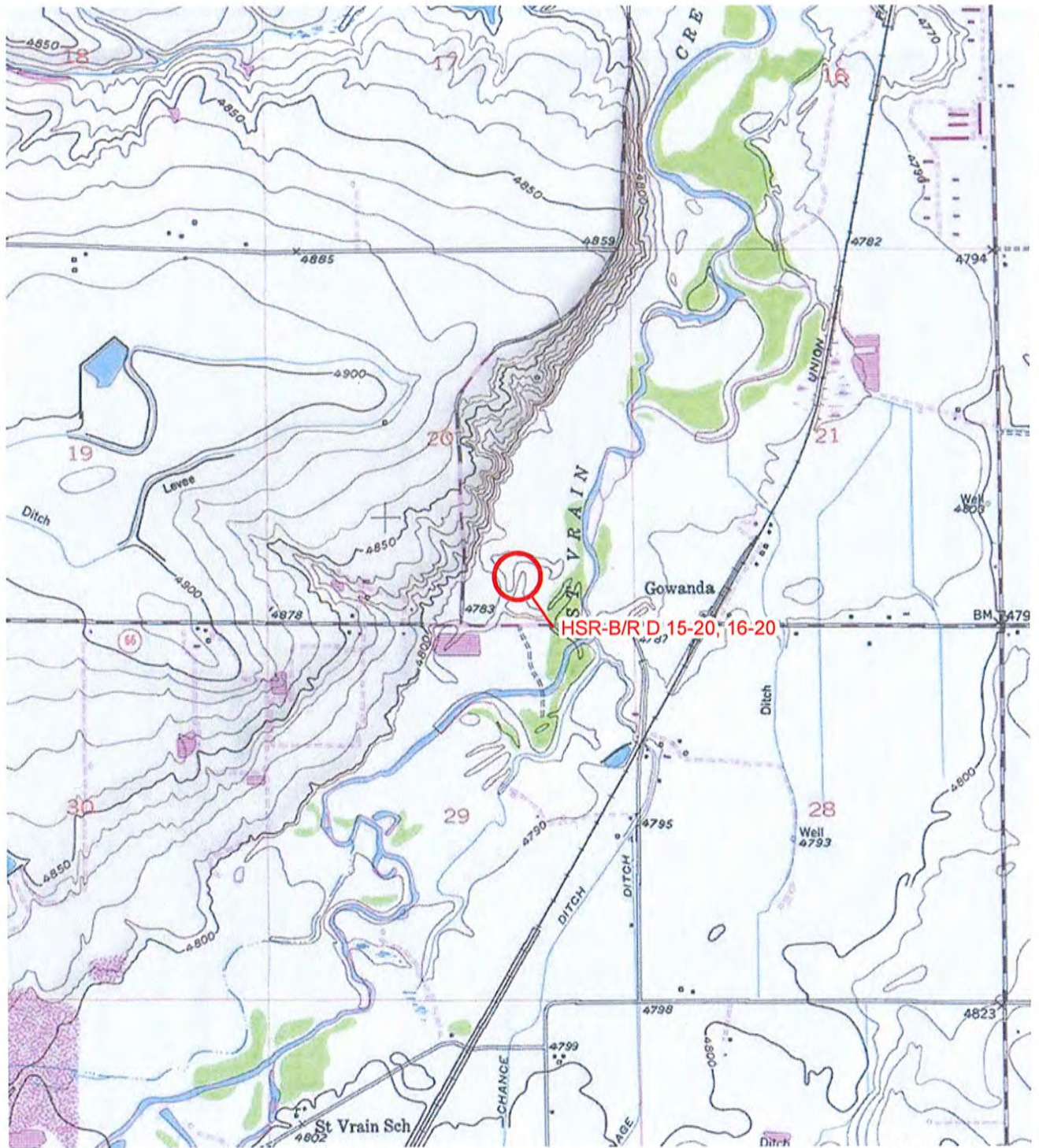
Sincerely,

Kerr-McGee Oil & Gas Onshore LP



Paul Schneider, P.G.
HSE Manager

Attachments



LEGEND

○ SITE LOCATION

IMAGE COURTESY OF ESRI/USGS

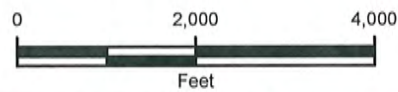
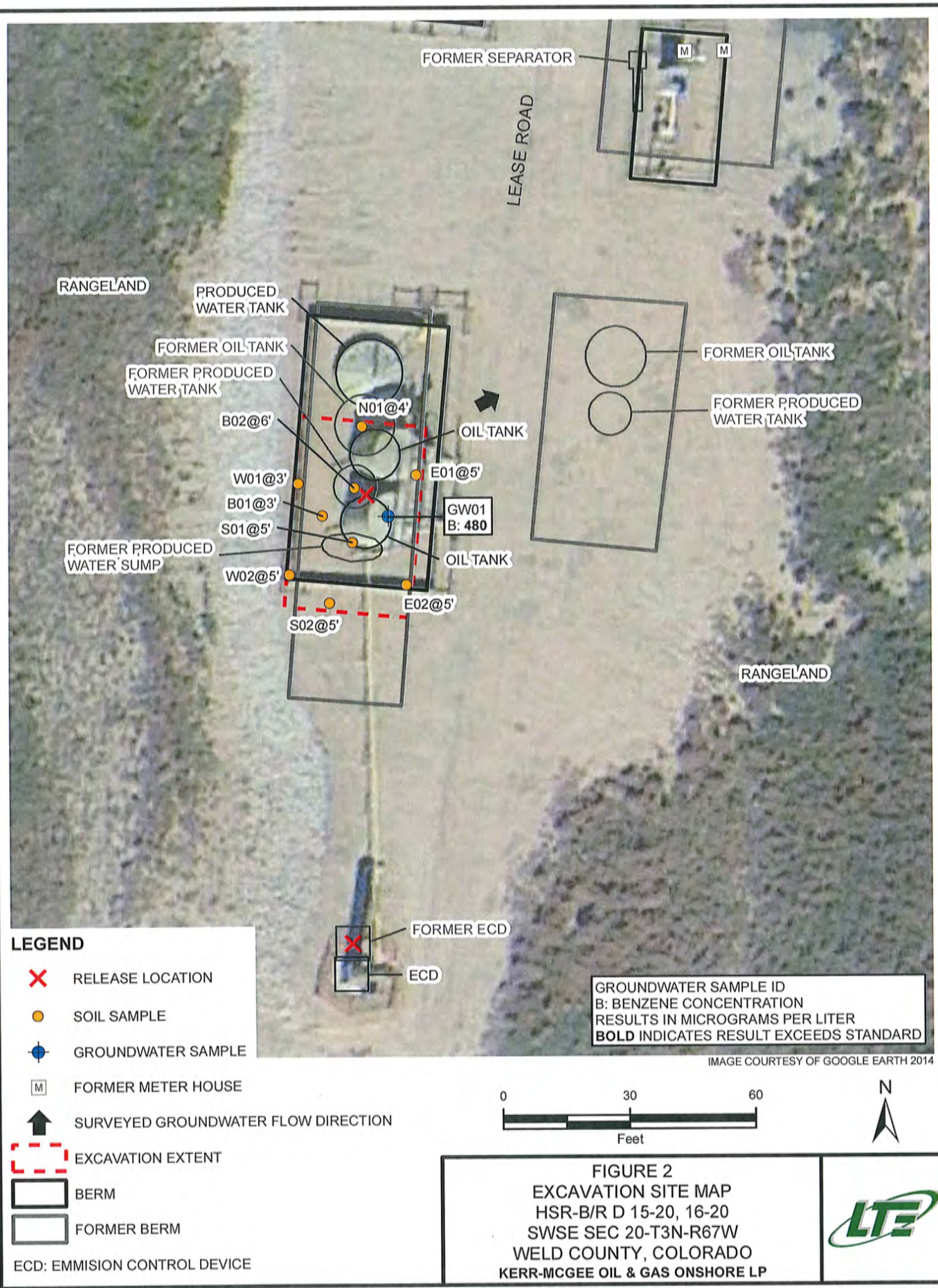
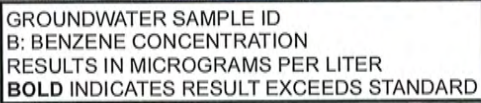


FIGURE 1
 SITE LOCATION MAP
 HSR-B/R D 15-20, 16-20
 SWSE SEC 20-T3N-R67W
 WELD COUNTY, COLORADO
 KERR-MCGEE OIL & GAS ONSHORE LP

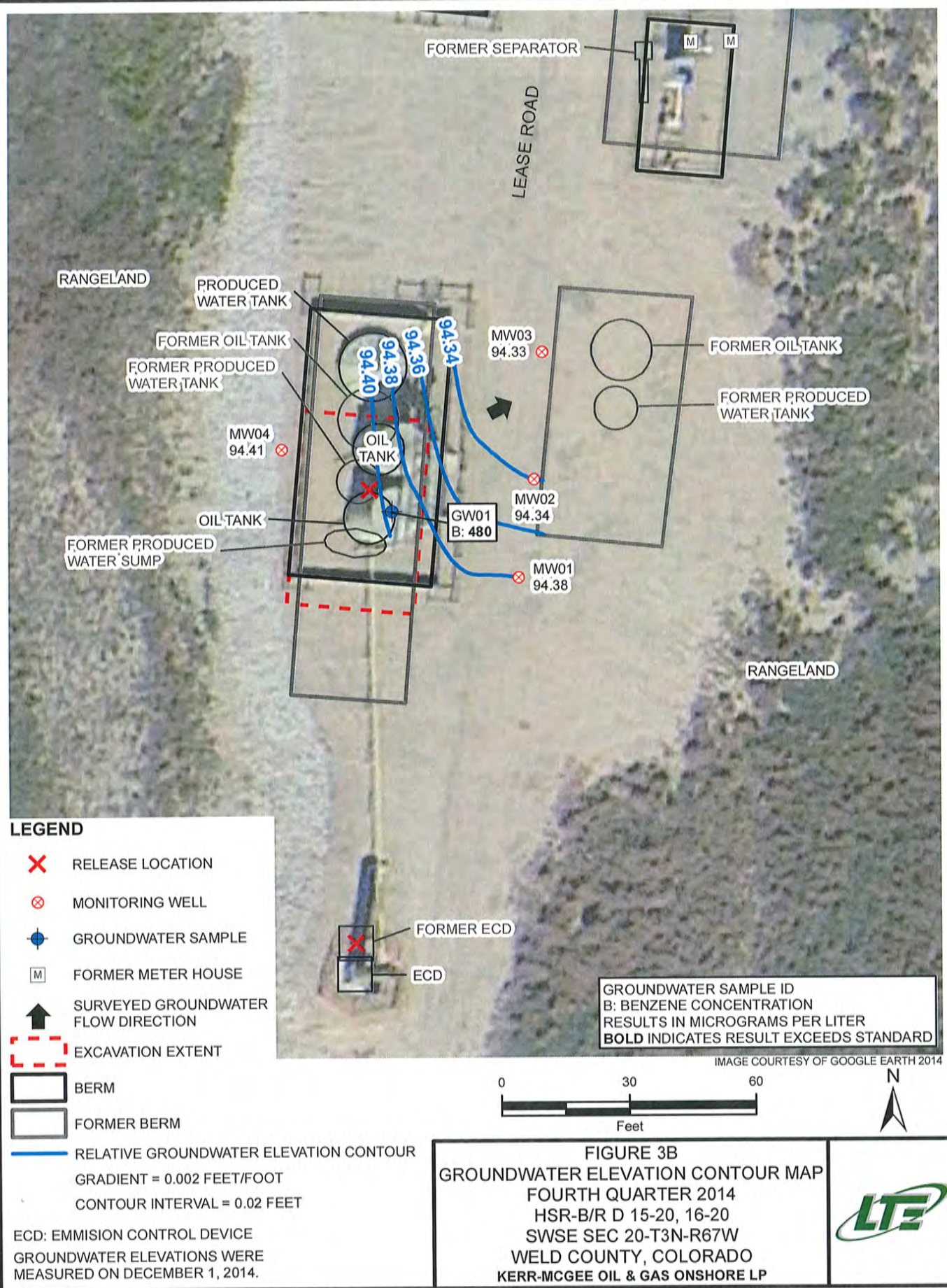


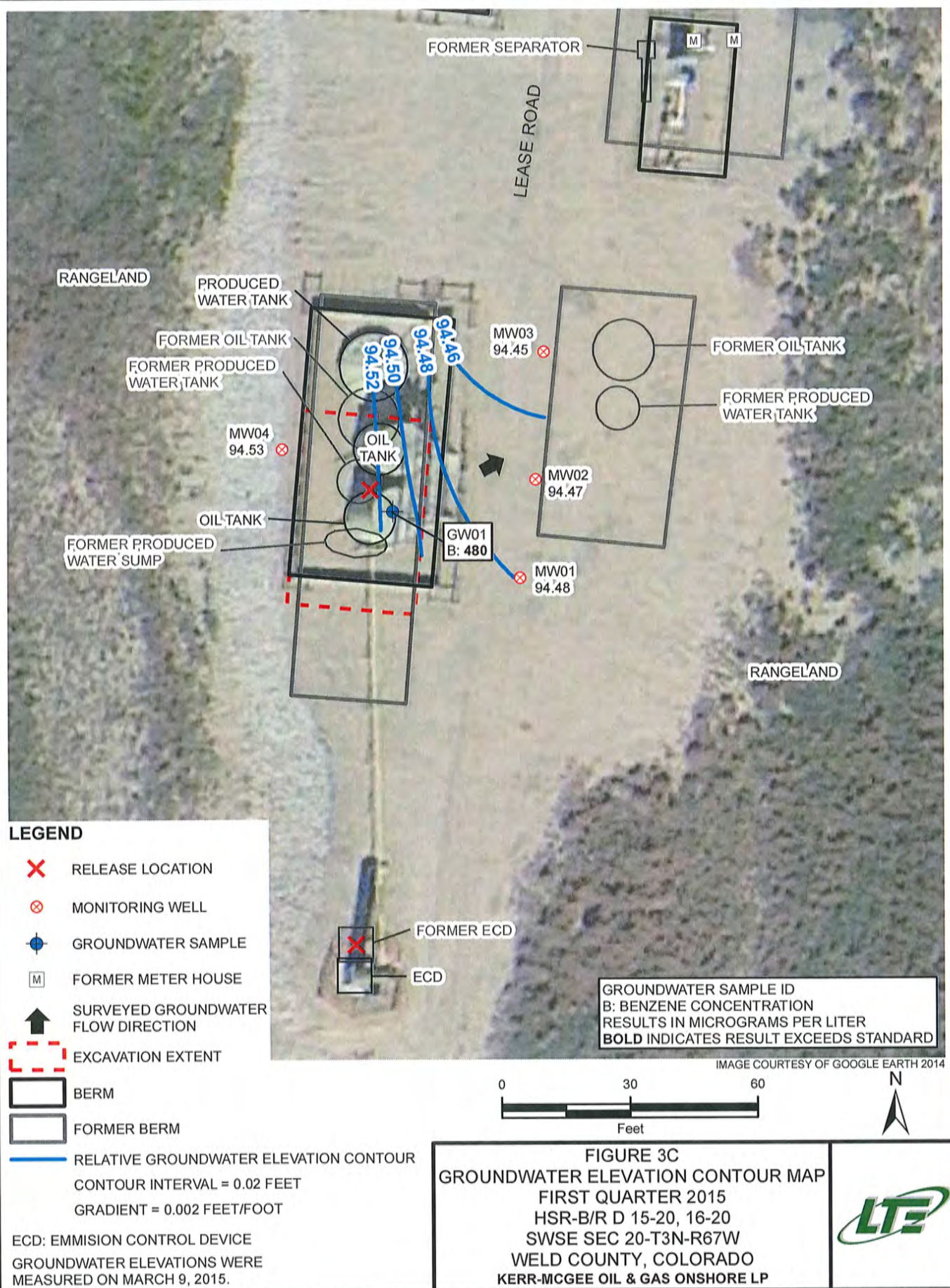




A horizontal number line is shown with tick marks at 0, 30, and 60. The word "Feet" is written below the line. A shaded rectangular region is drawn above the line, starting at the 10-foot mark and ending at the 30-foot mark.







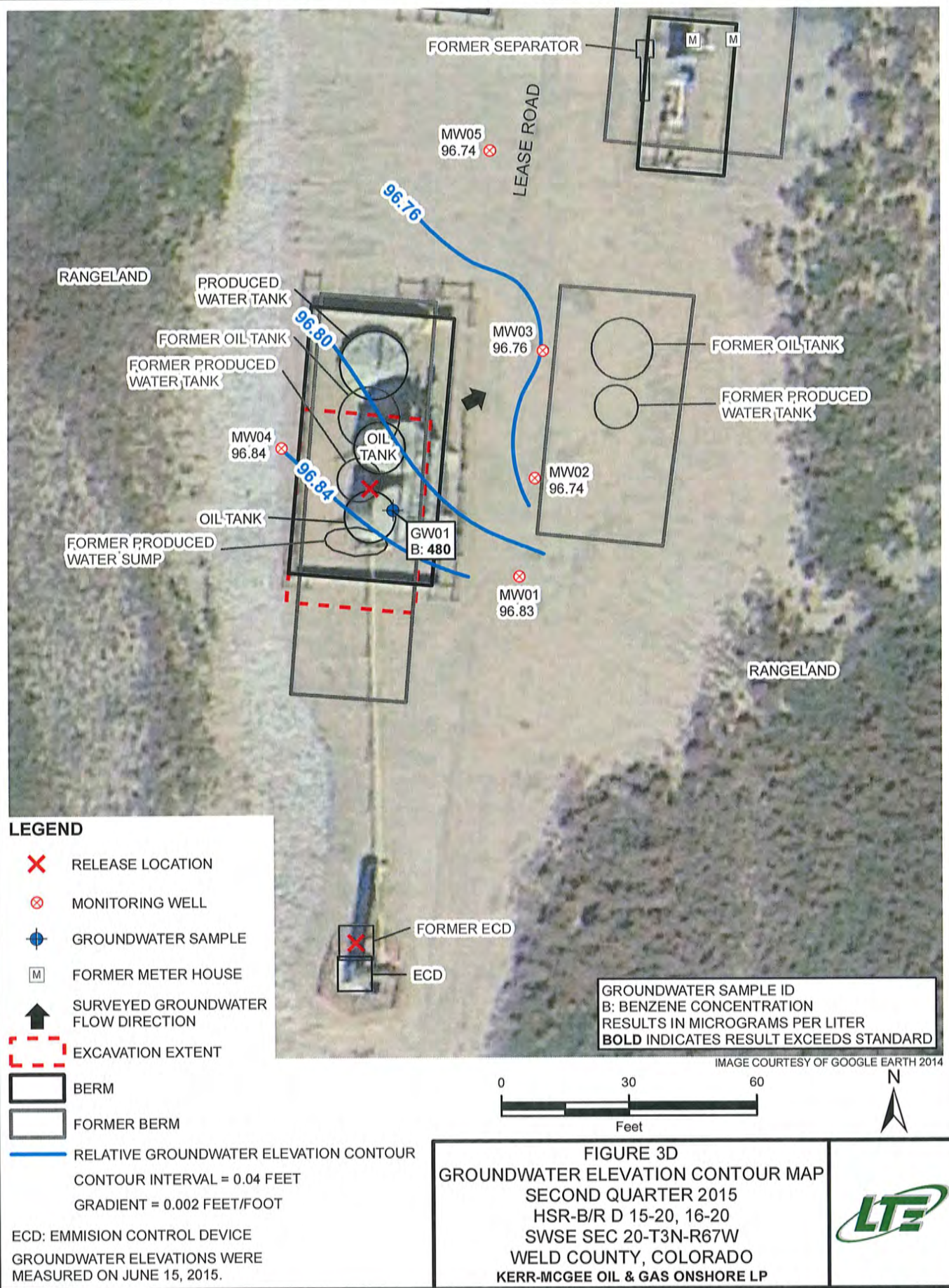


TABLE 1
SOIL SAMPLE ANALYTICAL RESULTS
HSR-B/R D 15-20, 16-20
WELD COUNTY, COLORADO
KERR-MCGEE OIL & GAS ONSHORE LP

Soil Sample ID	Depth (bgs)	Date	Benzene (mg/kg)	Toluene (mg/kg)	Ethylbenzene (mg/kg)	Total Xylenes (mg/kg)	DRO (mg/kg)	GRO (mg/kg)	ORO (mg/kg)
B01@3'	3'	05/06/2013	<0.0050	<0.0050	<0.0050	<0.0050	<50	<0.50	<50
B02@6'	6'	05/06/2013	<0.0050	0.0074	<0.0050	<0.0050	<50	<0.50	<50
E01@5'	5'	05/06/2013	<0.0050	<0.0050	<0.0050	0.0060	60	<0.50	<50
N01@4'	4'	05/06/2013	<0.0050	<0.0050	<0.0050	0.0052	<50	<0.50	<50
S01@5'	5'	05/06/2013	10	45	17	130	8300	7600	660
W01@3'	3'	05/06/2013	<0.0050	<0.0050	<0.0050	<0.0050	<50	<0.50	<50
E02@5'	5'	05/07/2013	<0.0050	<0.0050	<0.0050	<0.0050	<50	<0.50	<50
S02@5'	5'	05/07/2013	<0.0050	<0.0050	<0.0050	<0.0050	<50	<0.50	<50
W02@5'	5'	05/07/2013	<0.0050	<0.0050	<0.0050	<0.0050	<50	<0.50	<50
COGCC Allowable Levels			0.17	85	100	175	500*	500*	500*

Notes: bgs - below ground surface
COGCC - Colorado Oil and Gas Conservation Commission
DRO - diesel range organics
GRO - gasoline range organics
mg/kg - milligrams per kilogram

NA - not analyzed/not available
ORO - oil range organics
* - Standard applies to combined DRO-GRO-ORO
< - less than laboratory reporting limit
Bold indicates result exceeds allowable level



TABLE 2
GROUNDWATER ANALYTICAL AND FIELD RESULTS
HSR-B/R D 15-20, 16-20
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 Water/ (Product Thickness) (ft bgs)	Relative GW Elev. (ft)
GW01	05/06/2013	480	930	53	820	6.00	NA
MW01	09/25/2013	<1.0	<1.0	<1.0	<1.0	2.30	97.70
	11/19/2013	Survey - Not Sampled				3.21	95.89
	12/17/2013	<1.0	<1.0	<1.0	<1.0	4.62	95.38
	03/05/2014	Not Found - Not Sampled				NM	NA
	06/25/2014	<1.0	<1.0	<1.0	<1.0	4.81	95.64
	09/15/2014	<1.0	<1.0	<1.0	<1.0	5.45	95.00
	12/01/2014	<1.0	<1.0	<1.0	<1.0	6.07	94.38
	03/09/2015	<1.0	<1.0	<1.0	<1.0	5.97	94.48
	06/15/2015	<1.0	<1.0	<1.0	<1.0	3.62	96.83
	08/03/2015	Surveyed - Not Sampled				5.95	94.48
MW02	09/25/2013	Under flood water - Not Sampled				Inaccessible	NA
	09/27/2013	<1.0	<1.0	<1.0	<1.0	2.50	97.47
	11/19/2013	Survey - Not Sampled				3.18	95.91
	12/17/2013	<1.0	<1.0	<1.0	<1.0	5.63	94.34
	03/05/2014	Not Found - Not Sampled				NM	NA
	06/25/2014	<1.0	<1.0	<1.0	<1.0	4.79	95.62
	09/15/2014	<1.0	<1.0	<1.0	<1.0	5.40	94.96
	12/01/2014	<1.0	<1.0	<1.0	<1.0	6.02	94.34
	03/09/2015	<1.0	<1.0	<1.0	<1.0	5.89	94.47
	06/15/2015	<1.0	<1.0	<1.0	<1.0	3.62	96.74
	08/03/2015	Surveyed - Not Sampled				5.87	94.43
MW03	09/25/2013	<1.0	<1.0	<1.0	<1.0	2.65	97.21
	11/19/2013	Survey - Not Sampled				3.00	95.84
	12/17/2013	<1.0	<1.0	<1.0	<1.0	5.51	94.35
	03/05/2014	Not Found - Not Sampled				NM	NA
	06/25/2014	<1.0	<1.0	<1.0	<1.0	4.78	95.59
	09/15/2014	<1.0	<1.0	<1.0	<1.0	5.42	94.95
	12/01/2014	<1.0	<1.0	<1.0	<1.0	6.04	94.33
	03/09/2015	<1.0	<1.0	<1.0	<1.0	5.92	94.45
	06/15/2015	<1.0	<1.0	<1.0	<1.0	3.61	96.76
	08/03/2015	Surveyed - Not Sampled				5.84	94.42
MW04	09/25/2013	Under flood water - Not Sampled				Inaccessible	NA
	09/27/2013	<1.0	<1.0	<1.0	<1.0	10.50	97.74



TABLE 2 (Continued)
GROUNDWATER ANALYTICAL AND FIELD RESULTS
HSR-B/R D 15-20, 16-20
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 Water/ (Product Thickness) (ft bgs)	Relative GW Elev. (ft)
MW04	11/19/2013	Survey - Not Sampled				1.44	95.93
	12/17/2013	<1.0	<1.0	<1.0	<1.0	2.00	95.39
	03/05/2014	Not Found - Not Sampled				NM	NA
	06/25/2014	<1.0	<1.0	<1.0	<1.0	1.71	95.66
	09/15/2014	<1.0	<1.0	<1.0	<1.0	2.33	95.05
	12/01/2014	<1.0	<1.0	<1.0	<1.0	2.97	94.41
	03/09/2015	<1.0	<1.0	<1.0	<1.0	2.85	94.53
	06/15/2015	<1.0	<1.0	<1.0	<1.0	0.54	96.84
	08/03/2015	Surveyed - Not Sampled				4.49	94.51
MW05	06/15/2015	<1.0	<1.0	<1.0	<1.0	3.12	96.74
	08/03/2015	Surveyed - Not Sampled				5.87	94.44
CGWQS		5	1000	700	1400		

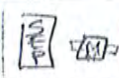
Notes: CGWQS - Colorado Groundwater Quality Standards
Elev. - elevation
ft bgs - feet below ground surface
GW - groundwater
NA - not analyzed/not available

NM - not measured
µg/L - micrograms per liter
< - less than laboratory reporting limit
Bold indicates result exceeds allowable level
Excavation groundwater depth is approximate



Well Location Sketch:

N



M1005

M1004



Lease Road



Compliance • Engineering • Remediation

LT Environmental, Inc.

4600 W. 60th Avenue

Arvada, Colorado 80003

BORING LOG/MONITORING WELL COMPLETION DIAGRAM

Boring/Well Number:

M1005

Project:

HSR B/R D 15,16-20

Date:

6/8/2015

Project Number:

14213107

Logged By:

Kris Shepherd

Drilled By:

Drill Pro

Elevation:

Detector:

PID

Drilling Method:

Direct Push

Sampling Method:

Continuous

Gravel Pack:

Silica Sand

Seal:

Bentonite

Grout:

-

Casing Type:

PVC

Diameter:

1"

Length:

2'

Hole Diameter:

3"

Depth to Liquid:

-

Screen Type:

PVC

Slot:

0.01

Diameter:

1"

Length:

13'

Total Depth:

15'

Depth to Water:

~3'

Penetration Resistance	Moisture Content	Vapor (ppm)	Staining	Sample #	Depth (ft. bgs.)	Sample Run	Recovery	Soil/Rock Type	Lithology/Remarks	Well Completion Diagram
					0					
					2				Hydrovac, Not Logged	
					4					
					6					
	Wet	3.8	None		8	2'	2'		6' → 15' v.fg → coarse	
		493	Black		10	4'	2'	SD	Sand, tan, no odor, no	
		291	None		12				stain, wet	
		1.7			14	3'	3'		- Black stain + odor	
		4.1			16				@ ~8' bgs → ~10.5' bgs	
		2.6			18				- Trace gravel starting	
					20				@ ~9' bgs → TD	
					22				→ completed as	
					24				flush mount	
					26					
					28					
					30					
					32					
					34					
					36					
					38					
					40					

NOTES:

Page 1 of 1



September 19, 2014

LT Environmental, Inc.

John Cocroft

4600 West 60th Avenue

Arvada

CO 80003

Project Name - KMG - HSR-B/R D 15, 16-20

Project Number - 014213107

Attached are your analytical results for KMG - HSR-B/R D 15, 16-20 received by Origins Laboratory, Inc. September 16, 2014. This project is associated with Origins project number X409157-01.

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

John Cocroft
Project Number: 014213107
Project: KMG - HSR-B/R D 15, 16-20

CROSS REFERENCE REPORT

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
MW01	X409157-01	Water	September 15, 2014 9:40	09/16/2014 16:10
MW02	X409157-02	Water	September 15, 2014 9:50	09/16/2014 16:10
MW03	X409157-03	Water	September 15, 2014 10:00	09/16/2014 16:10
MW04	X409157-04	Water	September 15, 2014 10:10	09/16/2014 16:10

Origins Laboratory, Inc.



Noelle Doyle Mathis, President

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.

John Cocroft
Project Number: 014213107
Project: KMG - HSR-B/R D 15, 16-20

ORIGINS

LABORATORY, INC

X409157



www.originslaboratory.com

page 1 of 1

Client: LTE
 Address: 4800 West 60th Ave, Arvada, CO
 Telephone Number: (303)433-9788
 Email Address: JCocroft@Origins.com

Project Manager: J. Cocroft
 Project Name: HSR B2 D 15, 16, 20
 Project Number: 014213107
 Samples Collected By: Kris Shepherd

Fax: 303.265.9645

Sample ID Description	Date Sampled	Time Sampled	# of Containers	Preservative				Matrix			Analyte	Sample Instructions
				Unpreserved	HCl	HNO ₃	Other	Groundwater	Soil	Air Surface Contaminant & Other		
M1001	9/15/14	0740	3	X				X				1
M1002		0950	3	X				X				2
M1003		1000	3	X				X				3
M1004		1010	3	X				X				4
												5
												6
												7
												8
												9
												10
Relinquished By: 	Date: 9/16/2014	Time: 1010	Time: 1010	Time: 1010	Time: 1010	Time: 1010	Time: 1010	Time: 1010	Time: 1010	Time: 1010	Time: 1010	Turnaround Time: Same Day <input type="checkbox"/> 24 Hr <input type="checkbox"/> 48 Hr <input type="checkbox"/> 72 Hr <input type="checkbox"/> Standard <input checked="" type="checkbox"/> 33°
Relinquished By: 	Date: 9/16/2014	Time: 1010	Time: 1010	Time: 1010	Time: 1010	Time: 1010	Time: 1010	Time: 1010	Time: 1010	Time: 1010	Time: 1010	

Date Results Needed

1725 Elk Place

Denver, CO 80211

Phone: 303.433.1322

Origins Laboratory, Inc.

ABM

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

John Cocroft
Project Number: 014213107
Project: KMG - HSR-B/R D 15, 16-20

Origins Laboratory

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

Sample Receipt Checklist

Origins Work Order: X409157

Client: LTE

Client Project ID: HSR-BR D 15, 16-20

Checklist Completed by: Jeff Smith

Shipped Via: H/D

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

Date/time completed: 9/17/14

Airbill #: NA

Matrix(s) Received: (Check all that apply)

Soil/Solid

☒ Water

Other:

(Describe)

Cooler Number/Temperature: 1 15.3 °C

1 °C

1 °C

Thermometer ID: T002

Requirement Description	Yes	No	N/A	Comments (if any)
If samples require cooling, was the temperature between 0°C to ≤ 6°C ^{1,2} ?	<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 ^{1,2} ?	<input checked="" type="checkbox"/>			
Was adequate sample volume provided ^{1,2} ?	<input checked="" type="checkbox"/>			
Are short holding time analytes or samples with HTs due within 48 hours present ^{1,2} ?		<input checked="" type="checkbox"/>		
Is a chain-of-custody (COC) present and filled out completely ^{1,2} ?	<input checked="" type="checkbox"/>			
Does the COC agree with the number and type of sample bottles received ^{1,2} ?	<input checked="" type="checkbox"/>			
Do the sample IDs on the bottle labels match the COC ^{1,2} ?	<input checked="" type="checkbox"/>			
Is the COC properly relinquished by the client with date and time recorded ^{1,2} ?	<input checked="" type="checkbox"/>			
For volatiles in water – Is there headspace (> ¼ inch bubble) present? If yes, contact client and note in narrative.		<input checked="" type="checkbox"/>		
Are samples preserved that require preservation and was it checked ^{1,2} ? (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 Na ₂ CO ₃ +NaOH, ZnAc+NaOH)		<input checked="" type="checkbox"/>		
Additional Comments (if any):				

^{1,2}If NO, then contact the client before proceeding with analysis and note date/time and person contacted as well as the corrective action to be in the additional comments (above) and the data narrative.

Reviewed by (Project Manager)

9-17-14 1340
Date/Time Reviewed

Origins Laboratory, Inc.

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

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

John Cocroft
Project Number: 014213107
Project: KMG - HSR-B/R D 15, 16-20

MW01

9/15/2014 9:40:00AM

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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Origins Laboratory, Inc.
X409157-01 (Water)

BTEX by EPA 8260C

Benzene	ND	1.0	ug/L	1	4117014	09/17/2014	09/18/2014	
Toluene	ND	1.0	"	"	"	"	"	
Ethylbenzene	ND	1.0	"	"	"	"	"	
Xylenes, total	ND	1.0	"	"	"	"	"	

Surrogate: 1,2-Dichloroethane-d4	107 %	87.3-113			"	"	"	
Surrogate: Toluene-d8	101 %	90.9-108			"	"	"	
Surrogate: 4-Bromofluorobenzene	97.0 %	88.6-111			"	"	"	

Origins Laboratory, Inc.



The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Noelle Doyle Mathis, President

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

John Cocroft
Project Number: 014213107
Project: KMG - HSR-B/R D 15, 16-20

MW02

9/15/2014 9:50:00AM

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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Origins Laboratory, Inc.
X409157-02 (Water)

BTEX by EPA 8260C

Benzene	ND	1.0	ug/L	1	4117014	09/17/2014	09/18/2014	
Toluene	ND	1.0	"	"	"	"	"	
Ethylbenzene	ND	1.0	"	"	"	"	"	
Xylenes, total	ND	1.0	"	"	"	"	"	

Surrogate: 1,2-Dichloroethane-d4	106 %	87.3-113	"	"	"
Surrogate: Toluene-d8	99.2 %	90.9-108	"	"	"
Surrogate: 4-Bromofluorobenzene	97.5 %	88.6-111	"	"	"

Origins Laboratory, Inc.



The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Noelle Doyle Mathis, President

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

John Cocroft
Project Number: 014213107
Project: KMG - HSR-B/R D 15, 16-20

MW03

9/15/2014 10:00:00AM

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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Origins Laboratory, Inc.
X409157-03 (Water)

BTEX by EPA 8260C

Benzene	ND	1.0	ug/L	1	4117014	09/17/2014	09/18/2014	
Toluene	ND	1.0	"	"	"	"	"	
Ethylbenzene	ND	1.0	"	"	"	"	"	
Xylenes, total	ND	1.0	"	"	"	"	"	

Surrogate: 1,2-Dichloroethane-d4	108 %	87.3-113			"	"	"	
Surrogate: Toluene-d8	101 %	90.9-108			"	"	"	
Surrogate: 4-Bromofluorobenzene	95.1 %	88.6-111			"	"	"	

Origins Laboratory, Inc.



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Noelle Doyle Mathis, President

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

John Cocroft
Project Number: 014213107
Project: KMG - HSR-B/R D 15, 16-20

MW04

9/15/2014 10:10:00AM

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Notes
		Limit							

Origins Laboratory, Inc.
X409157-04 (Water)

BTEX by EPA 8260C

Benzene	ND	1.0	ug/L	1	4117014	09/17/2014	09/18/2014
Toluene	ND	1.0	"	"	"	"	"
Ethylbenzene	ND	1.0	"	"	"	"	"
Xylenes, total	ND	1.0	"	"	"	"	"

Surrogate: 1,2-Dichloroethane-d4	107 %	87.3-113	"	"	"
Surrogate: Toluene-d8	99.4 %	90.9-108	"	"	"
Surrogate: 4-Bromofluorobenzene	96.3 %	88.6-111	"	"	"

Origins Laboratory, Inc.



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Noelle Doyle Mathis, President

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

John Cocroft
Project Number: 014213107
Project: KMG - HSR-B/R D 15, 16-20

Volatile Organic Compounds by GC/MS SW846 8260C - Quality Control
Origins Laboratory, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
---------	--------	-----------------	-------	-------------	---------------	------	-------------	-----	-----------	-------

Batch 4I17014 - EPA 5030B (Water)

Blank (4I17014-BLK1)

Prepared: 09/17/2014 Analyzed: 09/18/2014

Benzene	ND	1.0	ug/L							
Toluene	ND	1.0	"							
Ethylbenzene	ND	1.0	"							
Xylenes, total	ND	1.0	"							
Surrogate: 1,2-Dichloroethane-d4	67		"	62.5	107		87.3-113			
Surrogate: Toluene-d8	63		"	62.5	101		90.9-108			
Surrogate: 4-Bromofluorobenzene	61		"	62.5	97.4		88.6-111			

Origins Laboratory, Inc.



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Noelle Doyle Mathis, President

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

John Cocroft
Project Number: 014213107
Project: KMG - HSR-B/R D 15, 16-20

Volatile Organic Compounds by GC/MS SW846 8260C - Quality Control
Origins Laboratory, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
---------	--------	-----------------	-------	-------------	---------------	------	-------------	-----	-----------	-------

Batch 4I17014 - EPA 5030B (Water)

LCS (4I17014-BS1)

Prepared: 09/17/2014 Analyzed: 09/18/2014

Benzene	52.1	1.0	ug/L	50.0	104	75-126
Toluene	58.8	1.0	"	50.0	118	78.7-126
Ethylbenzene	59.0	1.0	"	50.0	118	81-130
m,p-Xylene	117	2.0	"	100	117	77.2-133
o-Xylene	57.6	1.0	"	50.0	115	77.9-126
Surrogate: 1,2-Dichloroethane-d4	62		"	62.5	99.0	87.3-113
Surrogate: Toluene-d8	64		"	62.5	102	90.9-108
Surrogate: 4-Bromofluorobenzene	61		"	62.5	96.0	88.6-111

Origins Laboratory, Inc.



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Noelle Doyle Mathis, President

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

John Cocroft
Project Number: 014213107
Project: KMG - HSR-B/R D 15, 16-20

Volatile Organic Compounds by GC/MS SW846 8260C - Quality Control
Origins Laboratory, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
---------	--------	-----------------	-------	-------------	---------------	------	-------------	-----	-----------	-------

Batch 4I17014 - EPA 5030B (Water)

Matrix Spike (4I17014-MS1)		Source: X409157-01			Prepared: 09/17/2014 Analyzed: 09/18/2014					
Benzene	49.0	1.0	ug/L	50.0	ND	98.0	74-130			
Toluene	54.3	1.0	"	50.0	ND	109	73-131			
Ethylbenzene	54.7	1.0	"	50.0	ND	109	76-132			
m,p-Xylene	110	2.0	"	100	ND	110	69-139			
o-Xylene	53.2	1.0	"	50.0	ND	106	74-131			
Surrogate: 1,2-Dichloroethane-d4	61		"	62.5		97.4	87.3-113			
Surrogate: Toluene-d8	63		"	62.5		101	90.9-108			
Surrogate: 4-Bromofluorobenzene	61		"	62.5		97.4	88.6-111			

Origins Laboratory, Inc.



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Noelle Doyle Mathis, President

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

John Cocroft
Project Number: 014213107
Project: KMG - HSR-B/R D 15, 16-20

Volatile Organic Compounds by GC/MS SW846 8260C - Quality Control
Origins Laboratory, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
---------	--------	-----------------	-------	-------------	---------------	------	-------------	-----	-----------	-------

Batch 4I17014 - EPA 5030B (Water)

Matrix Spike Dup (4I17014-MSD1)		Source: X409157-01			Prepared: 09/17/2014 Analyzed: 09/18/2014					
Benzene	51.5	1.0	ug/L	50.0	ND	103	74-130	4.94	20	
Toluene	58.8	1.0	"	50.0	ND	118	73-131	7.94	20	
Ethylbenzene	59.0	1.0	"	50.0	ND	118	76-132	7.51	20	
m,p-Xylene	120	2.0	"	100	ND	120	69-139	8.27	20	
o-Xylene	58.0	1.0	"	50.0	ND	116	74-131	8.69	20	
Surrogate: 1,2-Dichloroethane-d4	61		"	62.5		98.2	87.3-113			
Surrogate: Toluene-d8	63		"	62.5		100	90.9-108			
Surrogate: 4-Bromofluorobenzene	61		"	62.5		97.5	88.6-111			

Origins Laboratory, Inc.



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Noelle Doyle Mathis, President

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

John Cocroft
Project Number: 014213107
Project: KMG - HSR-B/R D 15, 16-20

Notes and Definitions

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.



Noelle Doyle Mathis, President

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.



December 08, 2014

LT Environmental, Inc.

John Cocroft

4600 West 60th Avenue

Arvada

CO 80003

Project Name - KMG - HSR-B/R D 15, 16-20

Project Number - 014213107

Attached are your analytical results for KMG - HSR-B/R D 15, 16-20 received by Origins Laboratory, Inc. December 01, 2014. This project is associated with Origins project number X412019-01.

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

John Cocroft
Project Number: 014213107
Project: KMG - HSR-B/R D 15, 16-20

CROSS REFERENCE REPORT

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
MW01	X412019-01	Water	December 1, 2014 14:10	12/01/2014 17:00
MW02	X412019-02	Water	December 1, 2014 14:20	12/01/2014 17:00
MW03	X412019-03	Water	December 1, 2014 14:30	12/01/2014 17:00
MW04	X412019-04	Water	December 1, 2014 14:40	12/01/2014 17:00

Origins Laboratory, Inc.



Jen Pellegrini For Noelle Doyle Mathis, President

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.

John Cocroft
Project Number: 014213107
Project: KMG - HSR-B/R D 15, 16-20

ORIGINS

LABORATORY, INC

www.originslaboratory.com

X412019

page 1 of 1

Client: LTE
Address: 4600 W 60TH AVE

Project Manager: J. Coccroft
Project Name: HSC 512-D 15-16-20
Project Number: D1021310+
Samples Collected By: Kris Singler

Telephone Number: (303)433-9788
Email Address: Ksingler@ltaenv.com

Sample ID Description	Date Sampled	Time Sampled	# of Containers	Preservative				Matrix			Analysis	Sample Instructions	
				Unpreserved	HCl	HNO ₃	Other	Groundwater	Soil	Air Sampling			Other
D102001	12/1/14	14:10	3	X				X			Y	1	
D102002		14:26	3	X				X			X	2	
D102003		14:30	3	X				X			X	3	
D102004	V	14:40	3	X				X			X	4	
												5	
												6	
												7	
												8	
												9	
												10	
Relinquished By: <u>[Signature]</u>	Date: <u>12/1/2014</u>		Time: <u>1500</u>	Received By: <u>[Signature]</u>				Received By: <u>[Signature]</u>			Date: <u>12/1/14</u>	Time: <u>1500</u>	Turnaround time: Same Day <input type="checkbox"/> 24 Hr <input type="checkbox"/> 48 Hr <input type="checkbox"/> 72 Hr <input type="checkbox"/> Standard <input checked="" type="checkbox"/>
Relinquished By: <u>[Signature]</u>	Date: <u>12-1-14</u>		Time: <u>1700</u>	Received By: <u>[Signature]</u>				Received By: <u>[Signature]</u>			Date: <u>12/1/14</u>	Time: <u>1700</u>	Turnaround time: Same Day <input type="checkbox"/> 24 Hr <input type="checkbox"/> 48 Hr <input type="checkbox"/> 72 Hr <input type="checkbox"/> Standard <input checked="" type="checkbox"/>

Date Results Needed:

Origins Laboratory, Inc.

Jose 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

John Cocroft
Project Number: 014213107
Project: KMG - HSR-B/R D 15, 16-20

Origins Laboratory

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

Sample Receipt Checklist

Origins Work Order: 4112019

Client: LTE

Client Project ID: HSR BIR D 15-16-20

Checklist Completed by: Jeff Smith

Shipped Via: Pick up

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

Date/time completed: 12/8/14

Airbill #: N/A

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

Cooler Number/Temperature: 1 17 °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 ⁽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 checked="" type="checkbox"/>	<input type="checkbox"/>	
Are samples preserved that require preservation and was it checked ⁽¹⁾ ? (note ID of confirmation instrument used in comments) / (preservation is not confirmed for subcontracted analyses in order to insure sample integrity) (pH < 2 for samples preserved with HNO ₃ , HCl, H ₂ SO ₄) / (pH > 10 for samples preserved with NaAsO ₂ •NaOH, ZnAc•NaOH)	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<u>HCC</u>
Additional Comments (if any):				

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

Reviewed by (Project Manager)

12.2.14
Date/Time Reviewed

Origins Laboratory, Inc.

Jeff 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

John Cocroft
Project Number: 014213107
Project: KMG - HSR-B/R D 15, 16-20

MW01**12/1/2014 2:10:00PM**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Notes
		Limit							

Origins Laboratory, Inc.
X412019-01 (Water)

BTEX by EPA 8260C

Benzene	ND	1.0	ug/L	1	4L02009	12/02/2014	12/05/2014
Toluene	ND	1.0	"	"	"	"	"
Ethylbenzene	ND	1.0	"	"	"	"	"
Xylenes, total	ND	1.0	"	"	"	"	"

Surrogate: 1,2-Dichloroethane-d4	107 %	87.3-113	"	"	"
Surrogate: Toluene-d8	101 %	90.9-108	"	"	"
Surrogate: 4-Bromofluorobenzene	92.7 %	88.6-111	"	"	"

Origins Laboratory, Inc.



The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Jen Pellegrini For Noelle Doyle Mathis, President

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

John Cocroft
Project Number: 014213107
Project: KMG - HSR-B/R D 15, 16-20

MW02**12/1/2014 2:20:00PM**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Notes
		Limit							

Origins Laboratory, Inc.
X412019-02 (Water)

BTEX by EPA 8260C

Benzene	ND	1.0	ug/L	1	4L02009	12/02/2014	12/05/2014
Toluene	ND	1.0	"	"	"	"	"
Ethylbenzene	ND	1.0	"	"	"	"	"
Xylenes, total	ND	1.0	"	"	"	"	"

Surrogate: 1,2-Dichloroethane-d4	108 %	87.3-113	"	"	"
Surrogate: Toluene-d8	101 %	90.9-108	"	"	"
Surrogate: 4-Bromofluorobenzene	91.8 %	88.6-111	"	"	"

Origins Laboratory, Inc.



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Jen Pellegrini For Noelle Doyle Mathis, President

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

John Cocroft
Project Number: 014213107
Project: KMG - HSR-B/R D 15, 16-20

MW03

12/1/2014 2:30:00PM

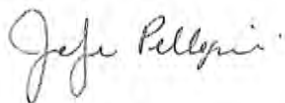
Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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Origins Laboratory, Inc.
X412019-03 (Water)

BTEX by EPA 8260C

Benzene	ND	1.0	ug/L	1	4L02009	12/02/2014	12/07/2014
Toluene	ND	1.0	"	"	"	"	"
Ethylbenzene	ND	1.0	"	"	"	"	"
Xylenes, total	ND	1.0	"	"	"	"	"
Surrogate: 1,2-Dichloroethane-d4	111 %	87.3-113			"	"	"
Surrogate: Toluene-d8	100 %	90.9-108			"	"	"
Surrogate: 4-Bromofluorobenzene	90.9 %	88.6-111			"	"	"

Origins Laboratory, Inc.



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Jen Pellegrini For Noelle Doyle Mathis, President

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

John Cocroft
Project Number: 014213107
Project: KMG - HSR-B/R D 15, 16-20

MW04

12/11/2014 2:40:00PM

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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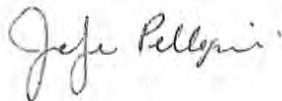
Origins Laboratory, Inc. X412019-04 (Water)

BTEX by EPA 8260C

Benzene	ND	1.0	ug/L	1	4L02009	12/02/2014	12/07/2014	
Toluene	ND	1.0	"	"	"	"	"	
Ethylbenzene	ND	1.0	"	"	"	"	"	
Xylenes, total	ND	1.0	"	"	"	"	"	

Surrogate: 1,2-Dichloroethane-d4	109 %	87.3-113			"	"	"	
Surrogate: Toluene-d8	101 %	90.9-108			"	"	"	
Surrogate: 4-Bromofluorobenzene	89.7 %	88.6-111			"	"	"	

Origins Laboratory, Inc.



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

John Cocroft
Project Number: 014213107
Project: KMG - HSR-B/R D 15, 16-20

Volatile Organic Compounds by GC/MS SW846 8260C - Quality Control
Origins Laboratory, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
---------	--------	-----------------	-------	-------------	---------------	------	-------------	-----	-----------	-------

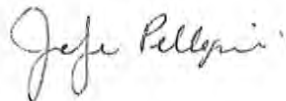
Batch 4L02009 - EPA 5030B (Water)

Blank (4L02009-BLK1)

Prepared: 12/02/2014 Analyzed: 12/04/2014

Benzene	ND	1.0	ug/L							
Toluene	ND	1.0	"							
Ethylbenzene	ND	1.0	"							
Xylenes, total	ND	1.0	"							
Surrogate: 1,2-Dichloroethane-d4	68		"	62.5	109		87.3-113			
Surrogate: Toluene-d8	62		"	62.5	99.5		90.9-108			
Surrogate: 4-Bromofluorobenzene	58		"	62.5	93.2		88.6-111			

Origins Laboratory, Inc.



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Jen Pellegrini For Noelle Doyle Mathis, President

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

John Cocroft
Project Number: 014213107
Project: KMG - HSR-B/R D 15, 16-20

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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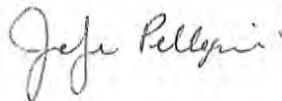
Batch 4L02009 - EPA 5030B (Water)

Blank (4L02009-BLK2)

Prepared: 12/02/2014 Analyzed: 12/04/2014

Benzene	ND	1.0	ug/L							
Toluene	ND	1.0	"							
Ethylbenzene	ND	1.0	"							
Xylenes, total	ND	1.0	"							
Surrogate: 1,2-Dichloroethane-d4	64		"	62.5		102	87.3-113			
Surrogate: Toluene-d8	62		"	62.5		99.3	90.9-108			
Surrogate: 4-Bromofluorobenzene	63		"	62.5		101	88.6-111			

Origins Laboratory, Inc.



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Jen Pellegrini For Noelle Doyle Mathis, President

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

John Cocroft
Project Number: 014213107
Project: KMG - HSR-B/R D 15, 16-20

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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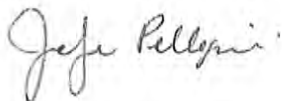
Batch 4L02009 - EPA 5030B (Water)

LCS (4L02009-BS1)

Prepared: 12/02/2014 Analyzed: 12/04/2014

Benzene	47.3	1.0	ug/L	50.0		94.5	75-126			
Toluene	45.0	1.0	"	50.0		90.0	78.7-126			
Ethylbenzene	45.3	1.0	"	50.0		90.7	81-130			
m,p-Xylene	89.0	2.0	"	100		89.0	77.2-133			
o-Xylene	48.2	1.0	"	50.0		96.5	77.9-126			
Surrogate: 1,2-Dichloroethane-d4	62		"	62.5		99.3	87.3-113			
Surrogate: Toluene-d8	62		"	62.5		99.1	90.9-108			
Surrogate: 4-Bromofluorobenzene	58		"	62.5		92.6	88.6-111			

Origins Laboratory, Inc.



The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Jen Pellegrini For Noelle Doyle Mathis, President

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

John Cocroft
Project Number: 014213107
Project: KMG - HSR-B/R D 15, 16-20

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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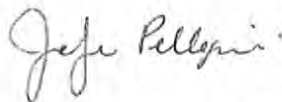
Batch 4L02009 - EPA 5030B (Water)

LCS (4L02009-BS2)

Prepared: 12/02/2014 Analyzed: 12/04/2014

Benzene	58.0	1.0	ug/L	50.0	116	75-126
Toluene	56.4	1.0	"	50.0	113	78.7-126
Ethylbenzene	53.8	1.0	"	50.0	108	81-130
m,p-Xylene	109	2.0	"	100	109	77.2-133
o-Xylene	55.5	1.0	"	50.0	111	77.9-126
Surrogate: 1,2-Dichloroethane-d4	58		"	62.5	93.0	87.3-113
Surrogate: Toluene-d8	62		"	62.5	99.1	90.9-108
Surrogate: 4-Bromofluorobenzene	63		"	62.5	101	88.6-111

Origins Laboratory, Inc.



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Jen Pellegrini For Noelle Doyle Mathis, President

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

John Cocroft
Project Number: 014213107
Project: KMG - HSR-B/R D 15, 16-20

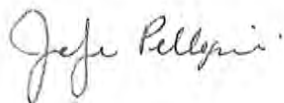
Volatile Organic Compounds by GC/MS SW846 8260C - Quality Control
Origins Laboratory, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch 4L02009 - EPA 5030B (Water)

Matrix Spike (4L02009-MS1)		Source: X412019-01			Prepared: 12/02/2014 Analyzed: 12/05/2014					
Benzene	59.2	1.0	ug/L	50.0	ND	118	74-130			
Toluene	57.9	1.0	"	50.0	ND	116	73-131			
Ethylbenzene	61.8	1.0	"	50.0	ND	124	76-132			
m,p-Xylene	118	2.0	"	100	ND	118	69-139			
o-Xylene	60.2	1.0	"	50.0	ND	120	74-131			
Surrogate: 1,2-Dichloroethane-d4	63		"	62.5		100	87.3-113			
Surrogate: Toluene-d8	63		"	62.5		101	90.9-108			
Surrogate: 4-Bromofluorobenzene	57		"	62.5		91.1	88.6-111			

Origins Laboratory, Inc.



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Jen Pellegrini For Noelle Doyle Mathis, President

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

John Cocroft
Project Number: 014213107
Project: KMG - HSR-B/R D 15, 16-20

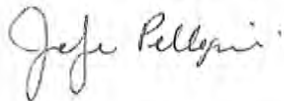
Volatile Organic Compounds by GC/MS SW846 8260C - Quality Control
Origins Laboratory, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch 4L02009 - EPA 5030B (Water)

Matrix Spike (4L02009-MS2)		Source: X412019-02			Prepared: 12/02/2014 Analyzed: 12/05/2014					
Benzene	53.4	1.0	ug/L	50.0	ND	107	74-130			
Toluene	52.7	1.0	"	50.0	ND	105	73-131			
Ethylbenzene	56.3	1.0	"	50.0	ND	113	76-132			
m,p-Xylene	108	2.0	"	100	ND	108	69-139			
o-Xylene	55.3	1.0	"	50.0	ND	111	74-131			
Surrogate: 1,2-Dichloroethane-d4	63		"	62.5		100	87.3-113			
Surrogate: Toluene-d8	63		"	62.5		100	90.9-108			
Surrogate: 4-Bromofluorobenzene	58		"	62.5		93.0	88.6-111			

Origins Laboratory, Inc.



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Jen Pellegrini For Noelle Doyle Mathis, President

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

John Cocroft
Project Number: 014213107
Project: KMG - HSR-B/R D 15, 16-20

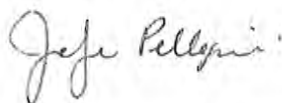
Volatile Organic Compounds by GC/MS SW846 8260C - Quality Control
Origins Laboratory, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch 4L02009 - EPA 5030B (Water)

Matrix Spike Dup (4L02009-MSD1)		Source: X412019-01			Prepared: 12/02/2014 Analyzed: 12/05/2014					
Benzene	54.7	1.0	ug/L	50.0	ND	109	74-130	7.81	20	
Toluene	55.0	1.0	"	50.0	ND	110	73-131	5.13	20	
Ethylbenzene	59.0	1.0	"	50.0	ND	118	76-132	4.72	20	
m,p-Xylene	113	2.0	"	100	ND	113	69-139	4.24	20	
o-Xylene	57.4	1.0	"	50.0	ND	115	74-131	4.64	20	
Surrogate: 1,2-Dichloroethane-d4	61		"	62.5		97.9	87.3-113			
Surrogate: Toluene-d8	63		"	62.5		100	90.9-108			
Surrogate: 4-Bromofluorobenzene	57		"	62.5		91.6	88.6-111			

Origins Laboratory, Inc.



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Jen Pellegrini For Noelle Doyle Mathis, President

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

John Cocroft
Project Number: 014213107
Project: KMG - HSR-B/R D 15, 16-20

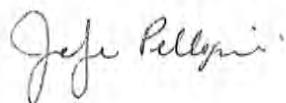
Volatile Organic Compounds by GC/MS SW846 8260C - Quality Control
Origins Laboratory, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch 4L02009 - EPA 5030B (Water)

Matrix Spike Dup (4L02009-MSD2)		Source: X412019-02			Prepared: 12/02/2014 Analyzed: 12/05/2014					
Benzene	53.1	1.0	ug/L	50.0	ND	106	74-130	0.526	20	
Toluene	53.9	1.0	"	50.0	ND	108	73-131	2.21	20	
Ethylbenzene	57.8	1.0	"	50.0	ND	116	76-132	2.56	20	
m,p-Xylene	111	2.0	"	100	ND	111	69-139	2.70	20	
o-Xylene	56.4	1.0	"	50.0	ND	113	74-131	2.01	20	
Surrogate: 1,2-Dichloroethane-d4	61		"	62.5		98.0	87.3-113			
Surrogate: Toluene-d8	62		"	62.5		99.6	90.9-108			
Surrogate: 4-Bromofluorobenzene	57		"	62.5		92.0	88.6-111			

Origins Laboratory, Inc.



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Jen Pellegrini For Noelle Doyle Mathis, President

LT Environmental, Inc.

4600 West 60th Avenue

Arvada CO 80003

John Cocroft

Project Number: 014213107

Project: KMG - HSR-B/R D 15, 16-20

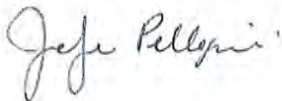
Notes and Definitions

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.



Jen Pellegrini For Noelle Doyle Mathis, President

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.



March 17, 2015

LT Environmental, Inc.

John Cocroft

4600 West 60th Avenue

Arvada

CO 80003

Project Name - KMG - HSR-B/R D 15, 16-20

Project Number - 014213107

Attached are your analytical results for KMG - HSR-B/R D 15, 16-20 received by Origins Laboratory, Inc. March 10, 2015. This project is associated with Origins project number X503111-01.

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

John Cocroft
Project Number: 014213107
Project: KMG - HSR-B/R D 15, 16-20

CROSS REFERENCE REPORT

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
MW01	X503111-01	Water	March 9, 2015 14:00	03/10/2015 16:44
MW02	X503111-02	Water	March 9, 2015 14:15	03/10/2015 16:44
MW03	X503111-03	Water	March 9, 2015 14:30	03/10/2015 16:44
MW04	X503111-04	Water	March 9, 2015 14:45	03/10/2015 16:44

Origins Laboratory, Inc.



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Jen Pellegrini For Noelle Doyle Mathis, President

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

John Cocroft
Project Number: 014213107
Project: KMG - HSR-B/R D 15, 16-20

ORIGINS

LABORATORY, INC

X503111

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

Client: LT Environmental, Inc.		Project Manager: John Cocroft		Project Number: 014213107	
Project: KMG - HSR-B/R D 15, 16-20		Sample Identification		Sample Date	
Number	Sample Identification	Matrix	Sample Date	Sample Time	Sampled By
01-001	MW01	Water	3/19/15	1400	PS
02-001	MW02	Water		1415	
03-001	MW03	Water		1430	
04-001	MW04	Water		1445	
		Container	Qty	Analyses	
		01_40mL Amber VOA Vial - HCL	3	BTEX by EPA 8260C	
		01_40mL Amber VOA Vial - HCL	3	BTEX by EPA 8260C	
		01_40mL Amber VOA Vial - HCL	3	BTEX by EPA 8260C	
		01_40mL Amber VOA Vial - HCL	3	BTEX by EPA 8260C	

Temperature on Receipt: 57
Ice present? (Yes) No
Turn Around Time: Same Day, 24-hr, 72-hr, Standard

Relinquished By: [Signature] Date / Time: 3/10/15
Received By: [Signature] Date / Time: 3/10/15

Relinquished By: [Signature] Date / Time: 3/10/15 1535
Received By: [Signature] Date / Time: 3/10/15 1555

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

John Cocroft
Project Number: 014213107
Project: KMG - HSR-B/R D 15, 16-20

Origins Laboratory

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

Sample Receipt Checklist

Origins Work Order: XSOB111

Client: LTF

Client Project ID: KMG-HSR-B/R D 15, 16-20

Checklist Completed by: Jen Pellegrini

Shipped Via: HID

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

Date/time completed: 3/11/15

Airbill #: N/A

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

Cooler Number/Temperature: 1 15.7 °C 1 °C 1 °C 1 °C

Thermometer ID: 7003

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"/>			
Is there ice present (document if blue ice is used)	<input checked="" type="checkbox"/>			
Are custody seals present on cooler? (if so, document in comments if they are signed and dated, broken or intact)		<input checked="" type="checkbox"/>		
Are custody seals present on each sample container? (if so, document in comments if they are signed and dated, broken or intact)		<input checked="" type="checkbox"/>		
Were all samples received intact ¹ ?	<input checked="" type="checkbox"/>			
Was adequate sample volume provided ¹ ?	<input checked="" type="checkbox"/>			
Are short holding time analytes or samples with HTs due within 48 hours present ¹ ?		<input checked="" type="checkbox"/>		
Is a chain-of-custody (COC) present and filled out completely ¹ ?	<input checked="" type="checkbox"/>			
Does the COC agree with the number and type of sample bottles received ¹ ?	<input checked="" type="checkbox"/>			
Do the sample IDs on the bottle labels match the COC ¹ ?	<input checked="" type="checkbox"/>			
Is the COC properly relinquished by the client with date and time recorded ¹ ?	<input checked="" type="checkbox"/>			
For volatiles in water – is there headspace (> ¼ inch bubble) present? If yes, contact client and note in narrative.		<input checked="" type="checkbox"/>		
Are samples preserved that require preservation and was it checked ¹ ? (note ID of confirmation instrument used in comments) / (preservation is not confirmed for subcontracted analyses in order to insure sample integrity)/pH <2 for samples preserved with HNO ₃ , HCL, H ₂ SO ₄ / pH >10 for samples preserved with NaAsO ₂ •NaOH, ZnAc•NaOH	<input checked="" type="checkbox"/>			HCL
Additional Comments (if any):				

¹If 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.

Jen Pellegrini
Reviewed by (Project Manager)

3/12/15
Date/Time Reviewed

Origins Laboratory, Inc.

Jen Pellegrini

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

John Cocroft
Project Number: 014213107
Project: KMG - HSR-B/R D 15, 16-20

MW01**3/9/2015 2:00:00PM**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Notes
		Limit							

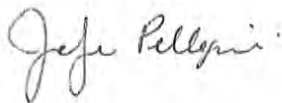
Origins Laboratory, Inc.
X503111-01 (Water)

BTEX by EPA 8260C

Benzene	ND	1.0	ug/L	1	5C16012	03/16/2015	03/16/2015
Toluene	ND	1.0	"	"	"	"	"
Ethylbenzene	ND	1.0	"	"	"	"	"
Xylenes, total	ND	1.0	"	"	"	"	"

Surrogate: 1,2-Dichloroethane-d4	102 %	87.3-113	"	"	"
Surrogate: Toluene-d8	101 %	90.9-108	"	"	"
Surrogate: 4-Bromofluorobenzene	97.0 %	88.6-111	"	"	"

Origins Laboratory, Inc.



Jen Pellegrini For Noelle Doyle Mathis, President

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

John Cocroft
Project Number: 014213107
Project: KMG - HSR-B/R D 15, 16-20

MW02

3/9/2015 2:15:00PM

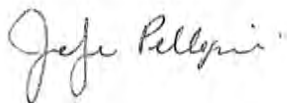
Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Notes
		Limit							

Origins Laboratory, Inc.
X503111-02 (Water)

BTEX by EPA 8260C

Benzene	ND	1.0	ug/L	1	5C16012	03/16/2015	03/16/2015
Toluene	ND	1.0	"	"	"	"	"
Ethylbenzene	ND	1.0	"	"	"	"	"
Xylenes, total	ND	1.0	"	"	"	"	"
Surrogate: 1,2-Dichloroethane-d4	101 %	87.3-113			"	"	"
Surrogate: Toluene-d8	102 %	90.9-108			"	"	"
Surrogate: 4-Bromofluorobenzene	97.3 %	88.6-111			"	"	"

Origins Laboratory, Inc.



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Jen Pellegrini For Noelle Doyle Mathis, President

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

John Cocroft
Project Number: 014213107
Project: KMG - HSR-B/R D 15, 16-20

MW03

3/9/2015 2:30:00PM

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Notes
		Limit							

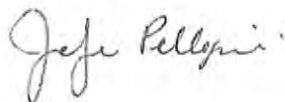
Origins Laboratory, Inc.
X503111-03 (Water)

BTEX by EPA 8260C

Benzene	ND	1.0	ug/L	1	5C16012	03/16/2015	03/16/2015
Toluene	ND	1.0	"	"	"	"	"
Ethylbenzene	ND	1.0	"	"	"	"	"
Xylenes, total	ND	1.0	"	"	"	"	"

Surrogate: 1,2-Dichloroethane-d4	101 %	87.3-113	"	"	"
Surrogate: Toluene-d8	101 %	90.9-108	"	"	"
Surrogate: 4-Bromofluorobenzene	96.1 %	88.6-111	"	"	"

Origins Laboratory, Inc.



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Jen Pellegrini For Noelle Doyle Mathis, President

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

John Cocroft
Project Number: 014213107
Project: KMG - HSR-B/R D 15, 16-20

MW04

3/9/2015 2:45:00PM

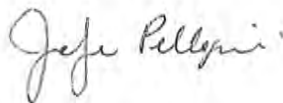
Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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Origins Laboratory, Inc.
X503111-04 (Water)

BTEX by EPA 8260C

Benzene	ND	1.0	ug/L	1	5C16012	03/16/2015	03/16/2015	
Toluene	ND	1.0	"	"	"	"	"	
Ethylbenzene	ND	1.0	"	"	"	"	"	
Xylenes, total	ND	1.0	"	"	"	"	"	
Surrogate: 1,2-Dichloroethane-d4	102 %	87.3-113			"	"	"	
Surrogate: Toluene-d8	100 %	90.9-108			"	"	"	
Surrogate: 4-Bromofluorobenzene	96.5 %	88.6-111			"	"	"	

Origins Laboratory, Inc.



Jen Pellegrini For Noelle Doyle Mathis, President

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

John Cocroft
Project Number: 014213107
Project: KMG - HSR-B/R D 15, 16-20

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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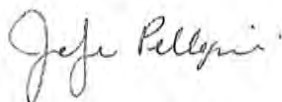
Batch 5C16012 - EPA 5030B (Water)

Blank (5C16012-BLK1)

Prepared: 03/16/2015 Analyzed: 03/16/2015

Benzene	ND	1.0	ug/L							
Toluene	ND	1.0	"							
Ethylbenzene	ND	1.0	"							
Xylenes, total	ND	1.0	"							
Surrogate: 1,2-Dichloroethane-d4	63		"	62.5		101	87.3-113			
Surrogate: Toluene-d8	62		"	62.5		99.6	90.9-108			
Surrogate: 4-Bromofluorobenzene	61		"	62.5		97.8	88.6-111			

Origins Laboratory, Inc.



The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Jen Pellegrini For Noelle Doyle Mathis, President

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

John Cocroft
Project Number: 014213107
Project: KMG - HSR-B/R D 15, 16-20

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 5C16012 - EPA 5030B (Water)

Blank (5C16012-BLK2)

Prepared: 03/16/2015 Analyzed: 03/16/2015

Benzene	ND	1.0	ug/L							
Toluene	ND	1.0	"							
Ethylbenzene	ND	1.0	"							
Xylenes, total	ND	1.0	"							
Surrogate: 1,2-Dichloroethane-d4	63		"	62.5		101	87.3-113			
Surrogate: Toluene-d8	63		"	62.5		101	90.9-108			
Surrogate: 4-Bromofluorobenzene	60		"	62.5		96.3	88.6-111			

Origins Laboratory, Inc.



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Jen Pellegrini For Noelle Doyle Mathis, President

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

John Cocroft
Project Number: 014213107
Project: KMG - HSR-B/R D 15, 16-20

Volatile Organic Compounds by GC/MS SW846 8260C - Quality Control
Origins Laboratory, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 5C16012 - EPA 5030B (Water)										
LCS (5C16012-BS1)					Prepared: 03/16/2015 Analyzed: 03/16/2015					
Benzene	51.3	1.0	ug/L	50.0		103	75-126			
Toluene	51.3	1.0	"	50.0		103	78.7-126			
Ethylbenzene	51.9	1.0	"	50.0		104	80-130			
m,p-Xylene	103	2.0	"	100		103	77.2-133			
o-Xylene	50.8	1.0	"	50.0		102	77.9-126			
Surrogate: 1,2-Dichloroethane-d4	59		"	62.5		94.3	87.3-113			
Surrogate: Toluene-d8	63		"	62.5		101	90.9-108			
Surrogate: 4-Bromofluorobenzene	61		"	62.5		98.3	88.6-111			

Origins Laboratory, Inc.



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Jen Pellegrini For Noelle Doyle Mathis, President

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

John Cocroft
Project Number: 014213107
Project: KMG - HSR-B/R D 15, 16-20

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 5C16012 - EPA 5030B (Water)

LCS (5C16012-BS2)

Prepared: 03/16/2015 Analyzed: 03/16/2015

Benzene	54.8	1.0	ug/L	50.0	110	75-126
Toluene	55.4	1.0	"	50.0	111	78.7-126
Ethylbenzene	56.4	1.0	"	50.0	113	80-130
m,p-Xylene	113	2.0	"	100	113	77.2-133
o-Xylene	54.1	1.0	"	50.0	108	77.9-126
Surrogate: 1,2-Dichloroethane-d4	61		"	62.5	98.0	87.3-113
Surrogate: Toluene-d8	63		"	62.5	101	90.9-108
Surrogate: 4-Bromofluorobenzene	61		"	62.5	97.7	88.6-111

Origins Laboratory, Inc.



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Jen Pellegrini For Noelle Doyle Mathis, President

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

John Cocroft
Project Number: 014213107
Project: KMG - HSR-B/R D 15, 16-20

Volatile Organic Compounds by GC/MS SW846 8260C - Quality Control
Origins Laboratory, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 5C16012 - EPA 5030B (Water)										
Matrix Spike (5C16012-MS1)		Source: X503179-01			Prepared: 03/16/2015 Analyzed: 03/16/2015					
Benzene	54.4	1.0	ug/L	50.0	109	74-130				
Toluene	56.0	1.0	"	50.0	112	73-131				
Ethylbenzene	59.2	1.0	"	50.0	118	76-132				
m,p-Xylene	118	2.0	"	100	118	69-139				
o-Xylene	57.0	1.0	"	50.0	114	74-131				
Surrogate: 1,2-Dichloroethane-d4	60		"	62.5	96.0	87.3-113				
Surrogate: Toluene-d8	63		"	62.5	101	90.9-108				
Surrogate: 4-Bromofluorobenzene	61		"	62.5	98.3	88.6-111				

Origins Laboratory, Inc.



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Jen Pellegrini For Noelle Doyle Mathis, President

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

John Cocroft
Project Number: 014213107
Project: KMG - HSR-B/R D 15, 16-20

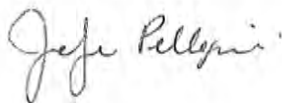
Volatile Organic Compounds by GC/MS SW846 8260C - Quality Control
Origins Laboratory, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch 5C16012 - EPA 5030B (Water)

Matrix Spike (5C16012-MS2)		Source: X503179-02			Prepared: 03/16/2015 Analyzed: 03/16/2015					
Benzene	52.2	1.0	ug/L	50.0	104	74-130				
Toluene	53.0	1.0	"	50.0	106	73-131				
Ethylbenzene	54.8	1.0	"	50.0	110	76-132				
m,p-Xylene	110	2.0	"	100	110	69-139				
o-Xylene	55.0	1.0	"	50.0	110	74-131				
Surrogate: 1,2-Dichloroethane-d4	60		"	62.5	95.6	87.3-113				
Surrogate: Toluene-d8	63		"	62.5	101	90.9-108				
Surrogate: 4-Bromofluorobenzene	61		"	62.5	97.7	88.6-111				

Origins Laboratory, Inc.



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Jen Pellegrini For Noelle Doyle Mathis, President

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

John Cocroft
Project Number: 014213107
Project: KMG - HSR-B/R D 15, 16-20

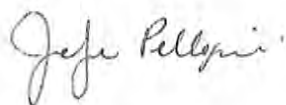
Volatile Organic Compounds by GC/MS SW846 8260C - Quality Control
Origins Laboratory, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch 5C16012 - EPA 5030B (Water)

Matrix Spike Dup (5C16012-MSD1)		Source: X503179-01			Prepared: 03/16/2015 Analyzed: 03/16/2015					
Benzene	55.3	1.0	ug/L	50.0	111	74-130	1.66	20		
Toluene	57.3	1.0	"	50.0	115	73-131	2.24	20		
Ethylbenzene	60.7	1.0	"	50.0	121	76-132	2.60	20		
m,p-Xylene	120	2.0	"	100	120	69-139	1.94	20		
o-Xylene	58.1	1.0	"	50.0	116	74-131	1.88	20		
Surrogate: 1,2-Dichloroethane-d4	60		"	62.5	95.3	87.3-113				
Surrogate: Toluene-d8	64		"	62.5	102	90.9-108				
Surrogate: 4-Bromofluorobenzene	60		"	62.5	96.6	88.6-111				

Origins Laboratory, Inc.



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Jen Pellegrini For Noelle Doyle Mathis, President

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

John Cocroft
Project Number: 014213107
Project: KMG - HSR-B/R D 15, 16-20

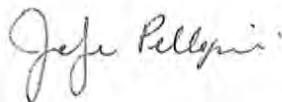
Volatile Organic Compounds by GC/MS SW846 8260C - Quality Control
Origins Laboratory, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
---------	--------	-----------------	-------	-------------	---------------	------	-------------	-----	-----------	-------

Batch 5C16012 - EPA 5030B (Water)

Matrix Spike Dup (5C16012-MSD2)		Source: X503179-02			Prepared: 03/16/2015 Analyzed: 03/16/2015					
Benzene	55.5	1.0	ug/L	50.0	111	74-130	6.09	20		
Toluene	56.4	1.0	"	50.0	113	73-131	6.27	20		
Ethylbenzene	60.0	1.0	"	50.0	120	76-132	9.18	20		
m,p-Xylene	119	2.0	"	100	119	69-139	8.16	20		
o-Xylene	57.7	1.0	"	50.0	115	74-131	4.65	20		
Surrogate: 1,2-Dichloroethane-d4	60		"	62.5	95.4	87.3-113				
Surrogate: Toluene-d8	63		"	62.5	100	90.9-108				
Surrogate: 4-Bromofluorobenzene	61		"	62.5	98.2	88.6-111				

Origins Laboratory, Inc.



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Jen Pellegrini For Noelle Doyle Mathis, President

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

John Cocroft
Project Number: 014213107
Project: KMG - HSR-B/R D 15, 16-20

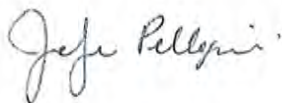
Notes and Definitions

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.



Jen Pellegrini For Noelle Doyle Mathis, President

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.

June 18, 2015

LT Environmental, Inc.

John Cocroft

4600 West 60th Avenue

Arvada

CO 80003

Project Name - KMG - HSR-B/R D 15, 16-20

Project Number - 014213107

Attached are your analytical results for KMG - HSR-B/R D 15, 16-20 received by Origins Laboratory, Inc. June 15, 2015. This project is associated with Origins project number X506189-01.

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



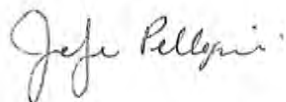
LT Environmental, Inc.
4600 West 60th Avenue
Arvada CO 80003

John Cocroft
Project Number: 014213107
Project: KMG - HSR-B/R D 15, 16-20

CROSS REFERENCE REPORT

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
MW01	X506189-01	Water	June 15, 2015 13:30	06/15/2015 17:00
MW02	X506189-02	Water	June 15, 2015 13:35	06/15/2015 17:00
MW03	X506189-03	Water	June 15, 2015 13:40	06/15/2015 17:00
MW04	X506189-04	Water	June 15, 2015 13:45	06/15/2015 17:00
MW05	X506189-05	Water	June 15, 2015 13:50	06/15/2015 17:00

Origins Laboratory, Inc.



Jen Pellegrini For Noelle Doyle Mathis, President

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

John Cocroft
Project Number: 014213107
Project: KMG - HSR-B/R D 15, 16-20

ORIGINS
LABORATORY, INC

X506189

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

Client: LT Environmental, Inc.		Project Manager: John Cocroft						
Project: KMG - HSR-BRD 15, 16-20		Project Number: 014213107						
Number	Sample Identification	Matrix	Sample Date	Sample Time	Sampled By	Container	Qty	Analyses
01-001	MW01	Water	6/5/15	1330	CT	01 40mL Amber VOA Vol - HCL	3	BTEX by EPA 8260C
02-001	MW02	Water		1335		01 40mL Amber VOA Vol - HCL	3	BTEX by EPA 8260C
03-001	MW03	Water		1340		01 40mL Amber VOA Vol - HCL	3	BTEX by EPA 8260C
04-001	MW04	Water		1345		01 40mL Amber VOA Vol - HCL	3	BTEX by EPA 8260C
MW05	Water			1350		Amber HCL	3	BTEX

Temperature on Receipt: ()
Ice present? (Yes) No
Turn Around Time:
Same Day ☐ 24-hr ☐ 72-hr ☐ Standard ☒ 48-hr

Relinquished By _____ Date / Time _____
Received By _____ Date / Time _____

Relinquished By *[Signature]* Date / Time 6/15/15 1700
Received By *[Signature]* Date / Time 6/15/15 1700

Origins Laboratory, Inc.

John Pellegrini

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

John Cocroft
Project Number: 014213107
Project: KMG - HSR-B/R D 15, 16-20

Origins Laboratory

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

Sample Receipt Checklist

Origins Work Order: X506189

Client: LTE

Client Project ID: KMG - HSR-B/R D 15, 16-20

Checklist Completed by: Jen Pellegrini

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

Date/time completed: 6/16/15

Airbill #: 214

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

Cooler Number/Temperature: 1 4.1 °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 ⁽¹⁾ ?	X			
Is there ice present (document if blue ice is used)	X			
Are custody seals present on cooler? (if so, document in comments if they are signed and dated, broken or intact)		X		
Are custody seals present on each sample container? (if so, document in comments if they are signed and dated, broken or intact)		X		
Were all samples received intact ⁽¹⁾ ?	X			
Was adequate sample volume provided ⁽¹⁾ ?	X			
Are short holding time analytes or samples with HTs due within 48 hours present ⁽¹⁾ ?		X		
Is a chain-of-custody (COC) present and filled out completely ⁽¹⁾ ?	X			
Does the COC agree with the number and type of sample bottles received ⁽¹⁾ ?	X			
Do the sample IDs on the bottle labels match the COC ⁽¹⁾ ?	X			
Is the COC properly relinquished by the client with date and time recorded ⁽¹⁾ ?	X			
For volatiles in water – is there headspace (> ½ inch bubble) present? If yes, contact client and note in narrative.		X		
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)	X			HCL
Additional Comments (if any):				

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

Reviewed by (Project Manager)

Date/Time Reviewed

Origins Laboratory, Inc.

Jen Pellegrini

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

John Cocroft
Project Number: 014213107
Project: KMG - HSR-B/R D 15, 16-20

MW01**6/15/2015 1:30:00PM**

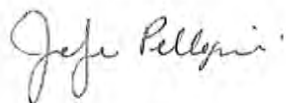
Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Notes
		Limit							

Origins Laboratory, Inc.
X506189-01 (Water)

BTEX by EPA 8260C

Benzene	ND	1.0	ug/L	1	5F16011	06/16/2015	06/16/2015
Toluene	ND	1.0	"	"	"	"	"
Ethylbenzene	ND	1.0	"	"	"	"	"
Xylenes, total	ND	1.0	"	"	"	"	"
Surrogate: 1,2-Dichloroethane-d4	105 %	87.3-113			"	"	"
Surrogate: Toluene-d8	98.0 %	90.9-108			"	"	"
Surrogate: 4-Bromofluorobenzene	99.4 %	88.6-111			"	"	"

Origins Laboratory, Inc.



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Jen Pellegrini For Noelle Doyle Mathis, President

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

John Cocroft
Project Number: 014213107
Project: KMG - HSR-B/R D 15, 16-20

MW02**6/15/2015 1:35:00PM**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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Origins Laboratory, Inc.
X506189-02 (Water)**BTEX by EPA 8260C**

Benzene	ND	1.0	ug/L	1	5F16011	06/16/2015	06/16/2015	
Toluene	ND	1.0	"	"	"	"	"	
Ethylbenzene	ND	1.0	"	"	"	"	"	
Xylenes, total	ND	1.0	"	"	"	"	"	

Surrogate: 1,2-Dichloroethane-d4	103 %	87.3-113			"	"	"	
Surrogate: Toluene-d8	101 %	90.9-108			"	"	"	
Surrogate: 4-Bromofluorobenzene	102 %	88.6-111			"	"	"	

Origins Laboratory, Inc.



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Jen Pellegrini For Noelle Doyle Mathis, President

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

John Cocroft
Project Number: 014213107
Project: KMG - HSR-B/R D 15, 16-20

MW03

6/15/2015 1:40:00PM

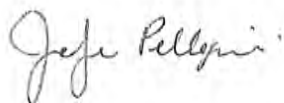
Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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Origins Laboratory, Inc. X506189-03 (Water)

BTEX by EPA 8260C

Benzene	ND	1.0	ug/L	1	5F16011	06/16/2015	06/16/2015	
Toluene	ND	1.0	"	"	"	"	"	
Ethylbenzene	ND	1.0	"	"	"	"	"	
Xylenes, total	ND	1.0	"	"	"	"	"	
Surrogate: 1,2-Dichloroethane-d4	103 %	87.3-113			"	"	"	
Surrogate: Toluene-d8	100 %	90.9-108			"	"	"	
Surrogate: 4-Bromofluorobenzene	99.6 %	88.6-111			"	"	"	

Origins Laboratory, Inc.



The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

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

John Cocroft
Project Number: 014213107
Project: KMG - HSR-B/R D 15, 16-20

MW04**6/15/2015 1:45:00PM**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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Origins Laboratory, Inc.
X506189-04 (Water)

BTEX by EPA 8260C

Benzene	ND	1.0	ug/L	1	5F16011	06/16/2015	06/16/2015	
Toluene	ND	1.0	"	"	"	"	"	
Ethylbenzene	ND	1.0	"	"	"	"	"	
Xylenes, total	ND	1.0	"	"	"	"	"	

Surrogate: 1,2-Dichloroethane-d4	103 %	87.3-113			"	"	"	
Surrogate: Toluene-d8	97.5 %	90.9-108			"	"	"	
Surrogate: 4-Bromofluorobenzene	100 %	88.6-111			"	"	"	

Origins Laboratory, Inc.



The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Jen Pellegrini For Noelle Doyle Mathis, President

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

John Cocroft
Project Number: 014213107
Project: KMG - HSR-B/R D 15, 16-20

MW05**6/15/2015 1:50:00PM**

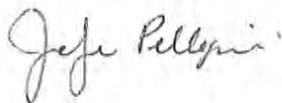
Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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Origins Laboratory, Inc.
X506189-05 (Water)

BTEX by EPA 8260C

Benzene	ND	1.0	ug/L	1	5F16011	06/16/2015	06/16/2015	
Toluene	ND	1.0	"	"	"	"	"	
Ethylbenzene	ND	1.0	"	"	"	"	"	
Xylenes, total	ND	1.0	"	"	"	"	"	
Surrogate: 1,2-Dichloroethane-d4	104 %	87.3-113			"	"	"	
Surrogate: Toluene-d8	100 %	90.9-108			"	"	"	
Surrogate: 4-Bromofluorobenzene	100 %	88.6-111			"	"	"	

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Jen Pellegrini For Noelle Doyle Mathis, President

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

John Cocroft
Project Number: 014213107
Project: KMG - HSR-B/R D 15, 16-20

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 5F16011 - EPA 5030B (Water)

Blank (5F16011-BLK1)

Prepared: 06/16/2015 Analyzed: 06/16/2015

Benzene	ND	1.0	ug/L							
Toluene	ND	1.0	"							
Ethylbenzene	ND	1.0	"							
Xylenes, total	ND	1.0	"							
Surrogate: 1,2-Dichloroethane-d4	65		"	62.5		105	87.3-113			
Surrogate: Toluene-d8	62		"	62.5		99.5	90.9-108			
Surrogate: 4-Bromofluorobenzene	62		"	62.5		99.5	88.6-111			

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Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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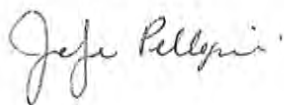
Batch 5F16011 - EPA 5030B (Water)

LCS (5F16011-BS1)

Prepared: 06/16/2015 Analyzed: 06/16/2015

Benzene	49.0	1.0	ug/L	50.0		98.0	75-126			
Toluene	48.4	1.0	"	50.0		96.8	78.7-126			
Ethylbenzene	49.1	1.0	"	50.0		98.3	80-130			
m,p-Xylene	98.2	2.0	"	100		98.2	77.2-133			
o-Xylene	48.9	1.0	"	50.0		97.8	77.9-126			
Surrogate: 1,2-Dichloroethane-d4	60		"	62.5		96.4	87.3-113			
Surrogate: Toluene-d8	62		"	62.5		98.6	90.9-108			
Surrogate: 4-Bromofluorobenzene	63		"	62.5		101	88.6-111			

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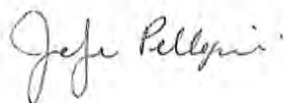
Volatile Organic Compounds by GC/MS SW846 8260C - Quality Control
Origins Laboratory, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch 5F16011 - EPA 5030B (Water)

Matrix Spike (5F16011-MS1)		Source: X506189-01			Prepared: 06/16/2015 Analyzed: 06/16/2015					
Benzene	55.2	1.0	ug/L	50.0	ND	110	74-130			
Toluene	59.4	1.0	"	50.0	ND	119	73-131			
Ethylbenzene	60.4	1.0	"	50.0	ND	121	76-132			
m,p-Xylene	120	2.0	"	100	ND	120	69-139			
o-Xylene	58.3	1.0	"	50.0	ND	117	74-131			
Surrogate: 1,2-Dichloroethane-d4	58		"	62.5		92.6	87.3-113			
Surrogate: Toluene-d8	67		"	62.5		107	90.9-108			
Surrogate: 4-Bromofluorobenzene	63		"	62.5		101	88.6-111			

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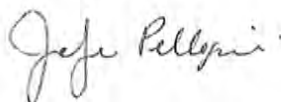
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Volatile Organic Compounds by GC/MS SW846 8260C - Quality Control
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Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 5F16011 - EPA 5030B (Water)										
Matrix Spike Dup (5F16011-MSD1)		Source: X506189-01			Prepared: 06/16/2015 Analyzed: 06/16/2015					
Benzene	55.4	1.0	ug/L	50.0	ND	111	74-130	0.217	20	
Toluene	54.6	1.0	"	50.0	ND	109	73-131	8.44	20	
Ethylbenzene	55.4	1.0	"	50.0	ND	111	76-132	8.55	20	
m,p-Xylene	110	2.0	"	100	ND	110	69-139	9.20	20	
o-Xylene	53.6	1.0	"	50.0	ND	107	74-131	8.37	20	
Surrogate: 1,2-Dichloroethane-d4	62		"	62.5		99.0	87.3-113			
Surrogate: Toluene-d8	62		"	62.5		98.5	90.9-108			
Surrogate: 4-Bromofluorobenzene	64		"	62.5		102	88.6-111			

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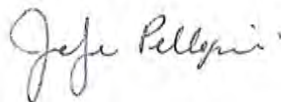
Notes and Definitions

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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