

State of Colorado
Oil and Gas Conservation Commission

1120 Lincoln Street, Suite 801, Denver, Colorado 80203 Phone: (303)894-2100 Fax:(303)894-2109



FOR OGCC USE ONLY

RECEIVED
12/28/2012

This form is to be submitted by the party responsible for the oil and gas spill or release. Any spill or release which may impact waters of the State must be reported as soon as practicable; any spill over 20 bbls must be reported within 24 hours and all spills over five bbls must be reported within ten days. Submit a Site Investigation and

Spill report taken by:

FACILITY ID:

OPERATOR INFORMATION

Name of Operator: <u>Kerr-McGee Oil & Gas Onshore LP</u>	OGCC Operator No: <u>47120</u>	Phone Numbers
Address: <u>1099 18th Street, Suite 1800</u>		No: <u>720-929-6000</u>
City: <u>Denver</u>	State: <u>CO</u> Zip: <u>80202</u>	Fax: <u>720-929-7726</u>
Contact Person: <u>Paul Schneider</u>		Email: <u>Paul.Schneider@anadarko.com</u>

DESCRIPTION OF SPILL OR RELEASE

Date of Incident: <u>12/21/2012</u>	Facility Name & No: <u>Branch 1-3</u>	County: <u>Weld</u>
Type of Facility (well, tank battery, flow line, pit): <u>Flowline</u>		QtrQtr: <u>NENE</u> Section: <u>3</u>
Well Name and Number: <u>Branch 1-3</u>		Township: <u>4N</u> Range: <u>64W</u>
API Number: <u>05-123-12513</u>		Meridian: <u>6th</u>
Specify volume spilled and recovered for the following materials:		
Oil spilled: <u>Unknown</u>	Oil recov'd: <u>0</u>	Water spilled: <u>Unknown</u> Water recov'd: <u>0</u> Other spilled: <u>0</u> Other recov'd: <u>0</u>
Ground Water impacted? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	Surface Water impacted? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	
Contained within berm? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	Area and vertical extent of spill: <u>25' N-S x 20' E-W x 9' bgs</u>	
Current land use: <u>Agriculture</u>	Weather conditions: <u>50° F, clear</u>	
Soil/geology description: <u>Silty Sand</u>		
IF LESS THAN A MILE , report distance IN FEET to nearest ... Surface water: <u>2,000 NE</u> wetlands: <u>1,975 NE</u> buildings: <u>150 SW</u>		
Livestock: <u>Unknown</u> Water wells: <u>925 NE</u> Depth to shallowest ground water: <u>8' bgs</u>		
Cause of spill (e.g. equipment failure, human error, etc.): <u>Equipment Failure</u>		
Detailed description of the spill/release incident: A leak in the subject flowline was discovered when condensate surfaced above the flowline. Upon excavation, a corrosion hole was discovered in the flowline. The volume of the release is unknown.		

CORRECTIVE ACTION

Describe immediate response (how stopped, contained and recovered): The well was shut in, locked out, and blown down. The petroleum hydrocarbon impacted soil was excavated. Groundwater was encountered in the excavation at approximately 8 feet bgs. Laboratory analytical results confirmed benzene and total xylenes impact to groundwater above the CGWQS at concentrations of 110 µg/L and 2,100 µg/L, respectively.

Describe any emergency pits constructed: NA

How was the extent of contamination determined? Soil and groundwater samples were collected from the excavation for laboratory analysis. Laboratory results for the confirmation soil samples indicate that TPH and BTEX concentrations are below COGCC allowable levels at the extent of the excavation. Approximately 170 cubic yards of impacted soil were removed from the excavation and transported to Kerr-McGee's land treatment facility in Weld County. Laboratory results for the initial excavation groundwater sample (GW01) indicated that BTEX concentrations exceeded the CGWQS. Based on the GW01 analytical results, approximately 123 bbls of impacted groundwater were removed from the excavation and transported to a licensed injection facility for disposal. A second excavation groundwater sample (GW02) was collected after additional soil excavation and impacted groundwater removal activities were completed. Laboratory results for groundwater sample GW02 indicate that the benzene concentration continues to exceed the CGWQS, but at a reduced concentration.

Further remediation activities proposed (attach separate sheet if needed): Five gallons of MicroBlaze microbial solution were applied to the groundwater prior to backfilling the excavation. Groundwater monitoring wells will be installed at the site to determine the magnitude and extent of the shallow groundwater impacts. The groundwater assessment findings will be reported to the COGCC in a Form 27.

Describe measures taken to prevent problem from reoccurring: The flowline was repaired.

OTHER NOTIFICATIONS

List the parties and agencies notified (County, BLM, EPA, DOT, Local Emergency Planning Coordinator or other).

Date	Agency	Contact	Phone	Response

Spill/Release Tracking No: 2231509

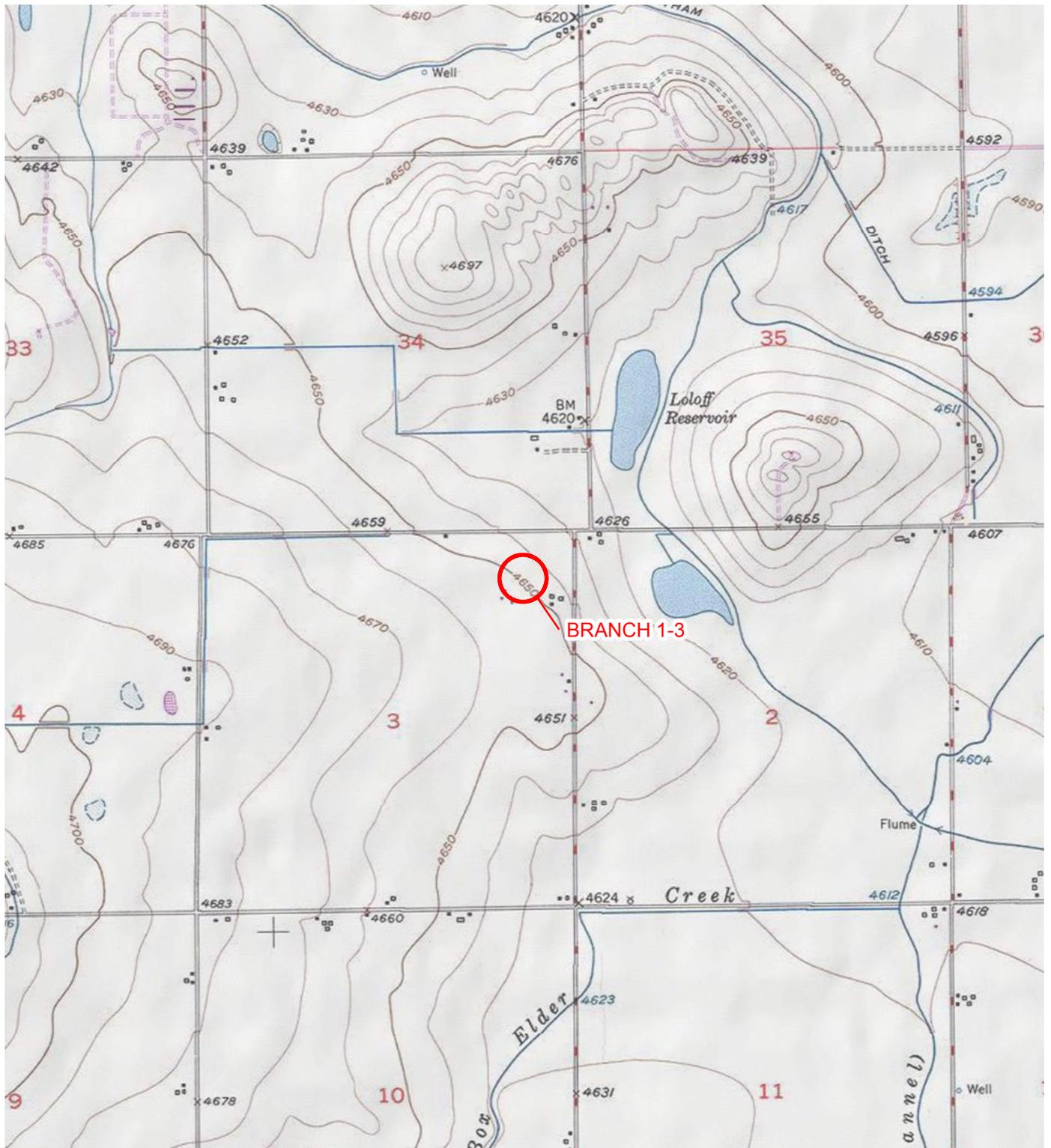


IMAGE COURTESY OF USGS/ESRI

LEGEND

 SITE LOCATION

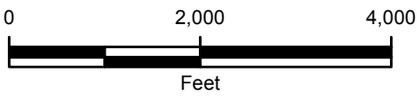


FIGURE 1
SITE LOCATION MAP
BRANCH 1-3
NENE SEC 3-T4N-R64W
WELD COUNTY, COLORADO
KERR-MCGEE OIL & GAS ONSHORE LP



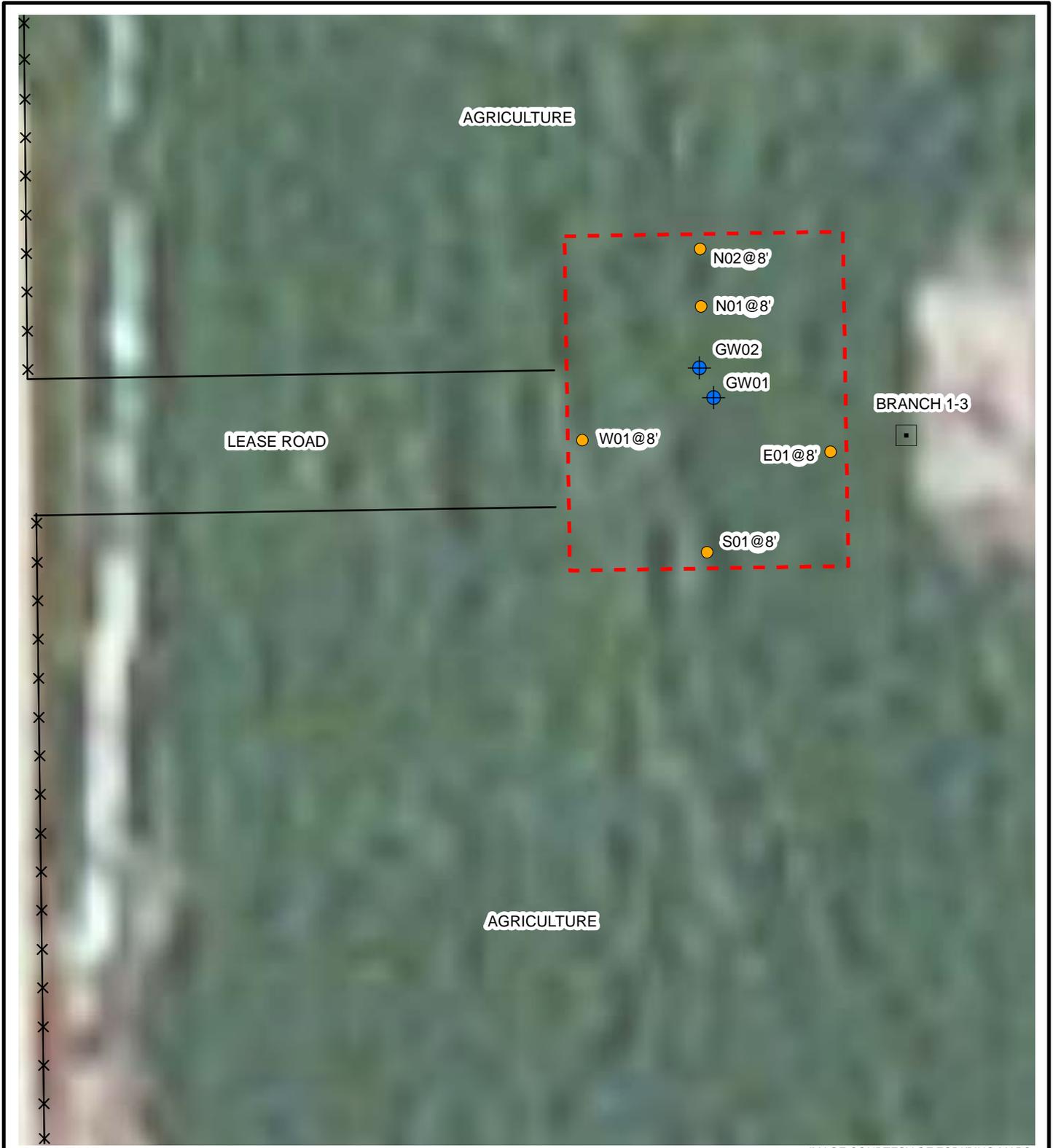


IMAGE COURTESY OF ESRI/BING MAPS

LEGEND

- SOIL SAMPLE
- GROUNDWATER SAMPLE
- WELLHEAD
- ×—× FENCE
- ⎓ EXCAVATION EXTENT

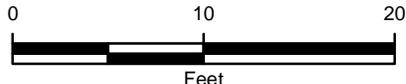


FIGURE 2
SITE MAP
BRANCH 1-3
NENE SEC 3-T4N-R64W
WELD COUNTY, COLORADO
KERR-MCGEE OIL & GAS ONSHORE LP



**TABLE 1
SOIL SAMPLE ANALYTICAL DATA
BRANCH 1-3
KERR-MCGEE OIL & GAS ONSHORE LP**

SAMPLE ID	SAMPLE DATE	DEPTH (feet bgs)	BENZENE (mg/kg)	TOLUENE (mg/kg)	ETHYL-BENZENE (mg/kg)	XYLENES (Total) (mg/kg)	TPH-GRO (mg/kg)	TEPH DRO+ORO (mg/kg)
N01@8'	12/20/2012	8	0.19	0.11	0.095	0.67	21	110
S01@8'	12/20/2012	8	0.015	0.027	<0.0050	0.033	1.8	<50
E01@8'	12/20/2012	8	0.031	0.19	0.13	1.5	40	210
W01@8'	12/20/2012	8	0.028	0.0079	<0.0050	0.032	2.1	<50
N02@8'	12/21/2012	8	0.016	0.049	0.26	2.1	140	<50
COGCC Allowable Level			0.17	85	100	175	500	

Notes:

bgs - below ground surface

mg/kg - milligrams per kilogram

TPH - Total Petroleum Hydrocarbons

GRO - Gasoline Range Organics

TEPH - Total Extractable Petroleum Hydrocarbons

DRO - Diesel Range Organics

ORO - Oil Range Organics

< - less than laboratory reporting limit

COGCC - Colorado Oil and Gas Conservation Commission

Results noted in bold exceed COGCC allowable levels.



**TABLE 2
GROUNDWATER SAMPLE ANALYTICAL DATA
BRANCH 1-3
KERR-MCGEE OIL & GAS ONSHORE LP**

SAMPLE ID	SAMPLE DATE	DEPTH (feet bgs)	BENZENE (µg/L)	TOLUENE (µg/L)	ETHYLBENZENE (µg/L)	XYLENES (Total) (µg/L)
GW01	12/20/2012	9	110	510	180	2,100
GW02	12/21/2012	9	44	190	37	470
The Basic Standards for Groundwater			5	560	700	1,400

Notes:

bgs - below ground surface

µg/L - micrograms per liter

< - less than laboratory reporting limit

Results noted in bold exceed Colorado Department of Public Health and Environment (CDPHE)-Water Quality Control Commission (WQCC) Regulation 41-The Basic Standards for Groundwater.



Summit Scientific

741 Corporate Circle – Suite I ♦ Golden, Colorado 80401

303.277.9310 - laboratory ♦ 303.277.9531 - fax

December 21, 2012

John Cocroft
LT Environmental, Inc.
4600 West 60th Avenue
Arvada, CO 80003
RE: KMG - Branch 1-3

Enclosed are the results of analyses for samples received by Summit Scientific on 12/20/12 17:00. If you have any questions concerning this report, please feel free to contact me.

Sincerely,



Paul Shrewsbury For Ben Shrewsbury
President / Laboratory Manager



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

Project: KMG - Branch 1-3

Project Number: 0142
Project Manager: John Cocroft

Reported:
12/21/12 07:51

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
N01@8'	R212126-01	Soil	12/20/12 14:45	12/20/12 17:00
S01@8'	R212126-02	Soil	12/20/12 14:50	12/20/12 17:00
E01@8'	R212126-03	Soil	12/20/12 14:55	12/20/12 17:00
W01@8'	R212126-04	Soil	12/20/12 15:00	12/20/12 17:00
GW01	R212126-05	Water	12/20/12 15:10	12/20/12 17:00

Summit Scientific

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

Project: KMG - Branch 1-3

Project Number: 0142
Project Manager: John Cocroft

Reported:
12/21/12 07:51

N01@8'
R212126-01 (Soil)

Summit Scientific

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: 12/20/12 14:45

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (TEPH-DRO)	110	50	mg/kg	1	2122009	12/20/12	12/20/12	8015 Full Carbon Chain	
C28-C36 (TEPH-ORO)	ND	50	"	"	"	"	"	"	

Date Sampled: 12/20/12 14:45

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: <i>o</i> -Terphenyl		103 %	30-150		"	"	"	"	

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: 12/20/12 14:45

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	0.19	0.0050	mg/kg	1	2122008	12/20/12	12/20/12	EPA 8260B	
Toluene	0.11	0.0050	"	"	"	"	"	"	
Ethylbenzene	0.095	0.0050	"	"	"	"	"	"	
Xylenes (total)	0.67	0.0050	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	21	0.50	"	"	"	"	"	"	

Date Sampled: 12/20/12 14:45

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		105 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		108 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		116 %	21-167		"	"	"	"	

Summit Scientific

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

Project: KMG - Branch 1-3

Project Number: 0142
Project Manager: John Cocroft

Reported:
12/21/12 07:51

S01@8'
R212126-02 (Soil)

Summit Scientific

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: 12/20/12 14:50

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (TEPH-DRO)	ND	50	mg/kg	1	2122009	12/20/12	12/20/12	8015 Full Carbon Chain	
C28-C36 (TEPH-ORO)	ND	50	"	"	"	"	"	"	

Date Sampled: 12/20/12 14:50

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: <i>o</i> -Terphenyl		104 %	30-150		"	"	"	"	

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: 12/20/12 14:50

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	0.015	0.0050	mg/kg	1	2122008	12/20/12	12/20/12	EPA 8260B	
Toluene	0.027	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
Xylenes (total)	0.033	0.0050	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	1.8	0.50	"	"	"	"	"	"	

Date Sampled: 12/20/12 14:50

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		115 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		102 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		102 %	21-167		"	"	"	"	

Summit Scientific

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

Project: KMG - Branch 1-3

Project Number: 0142
Project Manager: John Cocroft

Reported:
12/21/12 07:51

E01@8'
R212126-03 (Soil)

Summit Scientific

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: 12/20/12 14:55

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (TEPH-DRO)	210	50	mg/kg	1	2122009	12/20/12	12/20/12	8015 Full Carbon Chain	
C28-C36 (TEPH-ORO)	ND	50	"	"	"	"	"	"	

Date Sampled: 12/20/12 14:55

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: <i>o</i> -Terphenyl		104 %	30-150		"	"	"	"	

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: 12/20/12 14:55

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	0.031	0.0050	mg/kg	1	2122008	12/20/12	12/20/12	EPA 8260B	
Toluene	0.19	0.0050	"	"	"	"	"	"	
Ethylbenzene	0.13	0.0050	"	"	"	"	"	"	
Xylenes (total)	1.5	0.0050	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	40	0.50	"	"	"	"	"	"	

Date Sampled: 12/20/12 14:55

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		109 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		109 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		95.2 %	21-167		"	"	"	"	

Summit Scientific

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

Project: KMG - Branch 1-3

Project Number: 0142
Project Manager: John Cocroft

Reported:
12/21/12 07:51

W01@8'
R212126-04 (Soil)

Summit Scientific

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **12/20/12 15:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (TEPH-DRO)	ND	50	mg/kg	1	2122009	12/20/12	12/20/12	8015 Full Carbon Chain	
C28-C36 (TEPH-ORO)	ND	50	"	"	"	"	"	"	

Date Sampled: **12/20/12 15:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: <i>o</i> -Terphenyl		116 %	30-150		"	"	"	"	

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **12/20/12 15:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	0.028	0.0050	mg/kg	1	2122008	12/20/12	12/20/12	EPA 8260B	
Toluene	0.0079	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
Xylenes (total)	0.032	0.0050	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	2.1	0.50	"	"	"	"	"	"	

Date Sampled: **12/20/12 15:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		111 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		101 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		98.0 %	21-167		"	"	"	"	

Summit Scientific

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

Project: KMG - Branch 1-3

Project Number: 0142
 Project Manager: John Cocroft

Reported:
 12/21/12 07:51

GW01
R212126-05 (Water)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: 12/20/12 15:10

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	110	100	ug/l	100	2121907	12/20/12	12/20/12	EPA 8260B	
Toluene	510	100	"	"	"	"	"	"	
Ethylbenzene	180	100	"	"	"	"	"	"	
Xylenes (total)	2100	100	"	"	"	"	"	"	

Date Sampled: 12/20/12 15:10

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
<i>Surrogate: 1,2-Dichloroethane-d4</i>		102 %	37-154		"	"	"	"	
<i>Surrogate: Toluene-d8</i>		98.5 %	45-149		"	"	"	"	
<i>Surrogate: 4-Bromofluorobenzene</i>		101 %	45-146		"	"	"	"	

Summit Scientific

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

Project: KMG - Branch 1-3

Project Number: 0142
 Project Manager: John Cocroft

Reported:
 12/21/12 07:51

Extractable Petroleum Hydrocarbons by 8015 - Quality Control
Summit Scientific

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

Batch 2122009 - EPA 3550A

Blank (2122009-BLK1)

Prepared: 12/20/12 Analyzed: 12/21/12

C10-C28 (TEPH-DRO)	ND	50	mg/kg							
C28-C36 (TEPH-ORO)	ND	50	"							

LCS (2122009-BS1)

Prepared: 12/20/12 Analyzed: 12/21/12

C10-C28 (TEPH-DRO)	597	50	mg/kg	501	119	73-134				
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LCS Dup (2122009-BSD1)

Prepared: 12/20/12 Analyzed: 12/21/12

C10-C28 (TEPH-DRO)	587	50	mg/kg	501	117	73-134	1.68	11		
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Matrix Spike (2122009-MS1)

Source: R212127-01

Prepared: 12/20/12 Analyzed: 12/21/12

C10-C28 (TEPH-DRO)	543	50	mg/kg	501	61.1	96.1	50-148			
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Matrix Spike Dup (2122009-MSD1)

Source: R212127-01

Prepared: 12/20/12 Analyzed: 12/21/12

C10-C28 (TEPH-DRO)	555	50	mg/kg	501	61.1	98.6	50-148	2.23	13	
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Summit Scientific

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

Project: KMG - Branch 1-3

Project Number: 0142
Project Manager: John Cocroft

Reported:
12/21/12 07:51

Volatile Organic Compounds by EPA Method 8260B - Quality Control
Summit Scientific

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

Batch 2121907 - EPA 5030 Water MS

Blank (2121907-BLK1)

Prepared & Analyzed: 12/19/12

Benzene	ND	1.0	ug/l							
Toluene	ND	1.0	"							
Ethylbenzene	ND	1.0	"							
Xylenes (total)	ND	1.0	"							
<i>Surrogate: 1,2-Dichloroethane-d4</i>	<i>13.2</i>		<i>"</i>	<i>13.2</i>		<i>99.5</i>	<i>37-154</i>			
<i>Surrogate: Toluene-d8</i>	<i>13.9</i>		<i>"</i>	<i>13.3</i>		<i>104</i>	<i>45-149</i>			
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>13.3</i>		<i>"</i>	<i>13.3</i>		<i>99.7</i>	<i>45-146</i>			

Blank (2121907-BLK2)

Prepared & Analyzed: 12/19/12

Benzene	ND	1.0	ug/l							
Toluene	ND	1.0	"							
Ethylbenzene	ND	1.0	"							
Xylenes (total)	ND	1.0	"							
<i>Surrogate: 1,2-Dichloroethane-d4</i>	<i>13.5</i>		<i>"</i>	<i>13.2</i>		<i>102</i>	<i>37-154</i>			
<i>Surrogate: Toluene-d8</i>	<i>14.1</i>		<i>"</i>	<i>13.3</i>		<i>106</i>	<i>45-149</i>			
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>13.3</i>		<i>"</i>	<i>13.3</i>		<i>100</i>	<i>45-146</i>			

LCS (2121907-BS1)

Prepared & Analyzed: 12/19/12

Benzene	29.4	1.0	ug/l	33.3		88.1	51-132			
Toluene	35.7	1.0	"	33.3		107	51-138			
Ethylbenzene	43.9	1.0	"	33.3		132	58-146			
m,p-Xylene	79.8	2.0	"	66.7		120	57-144			
o-Xylene	44.6	1.0	"	33.3		134	53-146			
<i>Surrogate: 1,2-Dichloroethane-d4</i>	<i>13.5</i>		<i>"</i>	<i>13.2</i>		<i>102</i>	<i>37-154</i>			
<i>Surrogate: Toluene-d8</i>	<i>13.8</i>		<i>"</i>	<i>13.3</i>		<i>103</i>	<i>45-149</i>			
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>13.4</i>		<i>"</i>	<i>13.3</i>		<i>100</i>	<i>45-146</i>			

LCS (2121907-BS2)

Prepared & Analyzed: 12/19/12

Benzene	30.3	1.0	ug/l	33.3		90.9	51-132			
Toluene	35.1	1.0	"	33.3		105	51-138			
Ethylbenzene	44.0	1.0	"	33.3		132	58-146			
m,p-Xylene	78.7	2.0	"	66.7		118	57-144			
o-Xylene	43.2	1.0	"	33.3		130	53-146			
<i>Surrogate: 1,2-Dichloroethane-d4</i>	<i>13.4</i>		<i>"</i>	<i>13.2</i>		<i>102</i>	<i>37-154</i>			
<i>Surrogate: Toluene-d8</i>	<i>14.1</i>		<i>"</i>	<i>13.3</i>		<i>106</i>	<i>45-149</i>			
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>13.1</i>		<i>"</i>	<i>13.3</i>		<i>98.2</i>	<i>45-146</i>			

Summit Scientific

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

Project: KMG - Branch 1-3

Project Number: 0142
Project Manager: John Cocroft

Reported:
12/21/12 07:51

Volatile Organic Compounds by EPA Method 8260B - Quality Control
Summit Scientific

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

Batch 2121907 - EPA 5030 Water MS

LCS Dup (2121907-BSD1)

Prepared & Analyzed: 12/19/12

Benzene	28.9	1.0	ug/l	33.3		86.6	51-132	1.75	17	
Toluene	34.9	1.0	"	33.3		105	51-138	2.24	17	
Ethylbenzene	44.1	1.0	"	33.3		132	58-146	0.455	16	
m,p-Xylene	78.8	2.0	"	66.7		118	57-144	1.17	16	
o-Xylene	43.3	1.0	"	33.3		130	53-146	2.84	15	
Surrogate: 1,2-Dichloroethane-d4	12.8		"	13.2		97.0	37-154			
Surrogate: Toluene-d8	13.9		"	13.3		104	45-149			
Surrogate: 4-Bromofluorobenzene	13.2		"	13.3		99.0	45-146			

LCS Dup (2121907-BSD2)

Prepared & Analyzed: 12/19/12

Benzene	29.9	1.0	ug/l	33.3		89.8	51-132	1.16	17	
Toluene	35.7	1.0	"	33.3		107	51-138	1.69	17	
Ethylbenzene	43.2	1.0	"	33.3		130	58-146	1.70	16	
m,p-Xylene	77.4	2.0	"	66.7		116	57-144	1.67	16	
o-Xylene	42.4	1.0	"	33.3		127	53-146	1.94	15	
Surrogate: 1,2-Dichloroethane-d4	13.4		"	13.2		101	37-154			
Surrogate: Toluene-d8	14.2		"	13.3		106	45-149			
Surrogate: 4-Bromofluorobenzene	12.7		"	13.3		95.5	45-146			

Matrix Spike (2121907-MS1)

Source: R212085-01

Prepared: 12/19/12 Analyzed: 12/20/12

Benzene	30.1	1.0	ug/l	33.3	ND	90.2	34-141			
Toluene	35.4	1.0	"	33.3	ND	106	27-151			
Ethylbenzene	44.1	1.0	"	33.3	ND	132	29-160			
m,p-Xylene	79.3	2.0	"	66.7	ND	119	20-166			
o-Xylene	43.6	1.0	"	33.3	ND	131	33-159			
Surrogate: 1,2-Dichloroethane-d4	13.3		"	13.2		101	37-154			
Surrogate: Toluene-d8	13.9		"	13.3		104	45-149			
Surrogate: 4-Bromofluorobenzene	12.5		"	13.3		93.7	45-146			

Summit Scientific

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

Project: KMG - Branch 1-3

Project Number: 0142
Project Manager: John Cocroft

Reported:
12/21/12 07:51

Volatile Organic Compounds by EPA Method 8260B - Quality Control
Summit Scientific

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

Batch 2121907 - EPA 5030 Water MS

Matrix Spike (2121907-MS2)	Source: R212085-02			Prepared: 12/19/12		Analyzed: 12/20/12				
Benzene	29.1	1.0	ug/l	33.3	ND	87.4	34-141			
Toluene	34.5	1.0	"	33.3	ND	104	27-151			
Ethylbenzene	43.5	1.0	"	33.3	ND	131	29-160			
m,p-Xylene	77.4	2.0	"	66.7	ND	116	20-166			
o-Xylene	43.3	1.0	"	33.3	ND	130	33-159			
Surrogate: 1,2-Dichloroethane-d4	13.2		"	13.2		99.7	37-154			
Surrogate: Toluene-d8	13.6		"	13.3		102	45-149			
Surrogate: 4-Bromofluorobenzene	12.8		"	13.3		95.6	45-146			

Matrix Spike Dup (2121907-MSD1)	Source: R212085-01			Prepared: 12/19/12		Analyzed: 12/20/12				
Benzene	30.2	1.0	ug/l	33.3	ND	90.5	34-141	0.332	32	
Toluene	36.4	1.0	"	33.3	ND	109	27-151	3.01	25	
Ethylbenzene	44.1	1.0	"	33.3	ND	132	29-160	0.0907	50	
m,p-Xylene	79.1	2.0	"	66.7	ND	119	20-166	0.189	36	
o-Xylene	44.1	1.0	"	33.3	ND	132	33-159	1.05	26	
Surrogate: 1,2-Dichloroethane-d4	13.6		"	13.2		103	37-154			
Surrogate: Toluene-d8	14.3		"	13.3		107	45-149			
Surrogate: 4-Bromofluorobenzene	13.1		"	13.3		98.5	45-146			

Matrix Spike Dup (2121907-MSD2)	Source: R212085-02			Prepared: 12/19/12		Analyzed: 12/20/12				
Benzene	29.6	1.0	ug/l	33.3	ND	88.9	34-141	1.74	32	
Toluene	35.4	1.0	"	33.3	ND	106	27-151	2.57	25	
Ethylbenzene	43.7	1.0	"	33.3	ND	131	29-160	0.298	50	
m,p-Xylene	78.9	2.0	"	66.7	ND	118	20-166	1.83	36	
o-Xylene	43.2	1.0	"	33.3	ND	130	33-159	0.139	26	
Surrogate: 1,2-Dichloroethane-d4	12.9		"	13.2		97.3	37-154			
Surrogate: Toluene-d8	13.6		"	13.3		102	45-149			
Surrogate: 4-Bromofluorobenzene	12.8		"	13.3		95.6	45-146			

Summit Scientific

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

Project: KMG - Branch 1-3

Project Number: 0142
Project Manager: John Cocroft

Reported:
12/21/12 07:51

Volatile Organic Compounds by EPA Method 8260B - Quality Control
Summit Scientific

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

Batch 2122008 - EPA 5030 Soil MS

Blank (2122008-BLK1)

Prepared & Analyzed: 12/20/12

Benzene	ND	0.0050	mg/kg							
Toluene	ND	0.0050	"							
Ethylbenzene	ND	0.0050	"							
Xylenes (total)	ND	0.0050	"							
Gasoline Range Hydrocarbons	ND	0.50	"							
Surrogate: 1,2-Dichloroethane-d4	0.0419		"	0.0397	105	23-173				
Surrogate: Toluene-d8	0.0406		"	0.0400	102	20-170				
Surrogate: 4-Bromofluorobenzene	0.0395		"	0.0400	98.7	21-167				

LCS (2122008-BS1)

Prepared: 12/20/12 Analyzed: 12/21/12

Benzene	0.0860	0.0050	mg/kg	0.100	86.0	58-130				
Toluene	0.107	0.0050	"	0.100	107	61-134				
Ethylbenzene	0.128	0.0050	"	0.100	128	74-139				
m,p-Xylene	0.232	0.010	"	0.200	116	73-137				
o-Xylene	0.131	0.0050	"	0.100	131	73-141				
Surrogate: 1,2-Dichloroethane-d4	0.0432		"	0.0397	109	23-173				
Surrogate: Toluene-d8	0.0420		"	0.0400	105	20-170				
Surrogate: 4-Bromofluorobenzene	0.0389		"	0.0400	97.2	21-167				

LCS Dup (2122008-BSD1)

Prepared: 12/20/12 Analyzed: 12/21/12

Benzene	0.0829	0.0050	mg/kg	0.100	82.9	58-130	3.62	13		
Toluene	0.100	0.0050	"	0.100	100	61-134	6.66	16		
Ethylbenzene	0.125	0.0050	"	0.100	125	74-139	2.69	12		
m,p-Xylene	0.223	0.010	"	0.200	112	73-137	3.93	14		
o-Xylene	0.124	0.0050	"	0.100	124	73-141	4.92	12		
Surrogate: 1,2-Dichloroethane-d4	0.0412		"	0.0397	104	23-173				
Surrogate: Toluene-d8	0.0414		"	0.0400	104	20-170				
Surrogate: 4-Bromofluorobenzene	0.0387		"	0.0400	96.7	21-167				

Summit Scientific

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

Project: KMG - Branch 1-3

Project Number: 0142
Project Manager: John Cocroft

Reported:
12/21/12 07:51

Volatile Organic Compounds by EPA Method 8260B - Quality Control
Summit Scientific

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

Batch 2122008 - EPA 5030 Soil MS

Matrix Spike (2122008-MS1)	Source: R212127-01			Prepared: 12/20/12		Analyzed: 12/21/12					
Benzene	0.0834	0.0050	mg/kg	0.100	ND	83.4	30-131				
Toluene	0.104	0.0050	"	0.100	ND	104	30-134				
Ethylbenzene	0.132	0.0050	"	0.100	ND	132	22-153				
m,p-Xylene	0.235	0.010	"	0.200	ND	118	10-159				
o-Xylene	0.129	0.0050	"	0.100	ND	129	31-151				
Surrogate: 1,2-Dichloroethane-d4	0.0405		"	0.0397		102	23-173				
Surrogate: Toluene-d8	0.0411		"	0.0400		103	20-170				
Surrogate: 4-Bromofluorobenzene	0.0383		"	0.0400		95.8	21-167				

Matrix Spike Dup (2122008-MSD1)	Source: R212127-01			Prepared: 12/20/12		Analyzed: 12/21/12					
Benzene	0.0804	0.0050	mg/kg	0.100	ND	80.4	30-131	3.66		34	
Toluene	0.103	0.0050	"	0.100	ND	103	30-134	0.492		30	
Ethylbenzene	0.126	0.0050	"	0.100	ND	126	22-153	4.64		24	
m,p-Xylene	0.223	0.010	"	0.200	ND	112	10-159	5.28		68	
o-Xylene	0.125	0.0050	"	0.100	ND	125	31-151	3.27		38	
Surrogate: 1,2-Dichloroethane-d4	0.0391		"	0.0397		98.4	23-173				
Surrogate: Toluene-d8	0.0414		"	0.0400		103	20-170				
Surrogate: 4-Bromofluorobenzene	0.0384		"	0.0400		96.0	21-167				

Summit Scientific

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

Project: KMG - Branch 1-3

Project Number: 0142
Project Manager: John Cocroft

Reported:
12/21/12 07:51

Notes and Definitions

DET Analyte DETECTED
ND Analyte NOT DETECTED at or above the reporting limit
NR Not Reported
dry Sample results reported on a dry weight basis
RPD Relative Percent Difference

Summit Scientific

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Summit Scientific

741 Corporate Circle – Suite I ♦ Golden, Colorado 80401

303.277.9310 - laboratory ♦ 303.277.9531 - fax

December 26, 2012

John Cocroft
LT Environmental, Inc.
4600 West 60th Avenue
Arvada, CO 80003
RE: KMG - Branch 1-3

Enclosed are the results of analyses for samples received by Summit Scientific on 12/21/12 17:05. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

A handwritten signature in black ink, appearing to read "Joseph J. Egry IV". The signature is fluid and cursive, with a distinct "IV" at the end.

Joseph J Egry IV
Laboratory Director



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

Project: KMG - Branch 1-3

Project Number: 0142
Project Manager: John Cocroft

Reported:
12/26/12 14:34

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
N02@8'	R212145-01	Soil	12/21/12 00:00	12/21/12 17:05
GW02	R212145-02	Water	12/21/12 00:00	12/21/12 17:05

Summit Scientific

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

Project: KMG - Branch 1-3

Project Number: 0142
Project Manager: John Cocroft

Reported:
12/26/12 14:34

N02@8'
R212145-01 (Soil)

Summit Scientific

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: 12/21/12 00:00

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (TEPH-DRO)	ND	50	mg/kg	1	2122303	12/23/12	12/23/12	8015 Full Carbon Chain	
C28-C36 (TEPH-ORO)	ND	50	"	"	"	"	"	"	

Date Sampled: 12/21/12 00:00

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: o-Terphenyl		84.7 %	30-150		"	"	"	"	

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: 12/21/12 00:00

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	0.016	0.0050	mg/kg	1	2122302	12/23/12	12/23/12	EPA 8260B	
Toluene	0.049	0.0050	"	"	"	"	"	"	
Ethylbenzene	0.26	0.0050	"	"	"	"	"	"	
Xylenes (total)	2.1	0.0050	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	140	5.0	"	10	"	"	12/23/12	"	

Date Sampled: 12/21/12 00:00

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		108 %	23-173		"	"	12/23/12	"	
Surrogate: Toluene-d8		104 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		91.3 %	21-167		"	"	"	"	

Summit Scientific

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

Project: KMG - Branch 1-3

Project Number: 0142
 Project Manager: John Cocroft

Reported:
 12/26/12 14:34

GW02
R212145-02 (Water)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: 12/21/12 00:00

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	44	1.0	ug/l	1	2122301	12/23/12	12/23/12	EPA 8260B	
Toluene	190	1.0	"	"	"	"	"	"	
Ethylbenzene	37	1.0	"	"	"	"	"	"	
Xylenes (total)	470	1.0	"	"	"	"	"	"	

Date Sampled: 12/21/12 00:00

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
<i>Surrogate: 1,2-Dichloroethane-d4</i>		98.6 %	37-154		"	"	"	"	
<i>Surrogate: Toluene-d8</i>		109 %	45-149		"	"	"	"	
<i>Surrogate: 4-Bromofluorobenzene</i>		120 %	45-146		"	"	"	"	

Summit Scientific

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

Project: KMG - Branch 1-3

Project Number: 0142
Project Manager: John Cocroft

Reported:
12/26/12 14:34

Extractable Petroleum Hydrocarbons by 8015 - Quality Control
Summit Scientific

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

Batch 2122303 - EPA 3550A

Blank (2122303-BLK1)				Prepared & Analyzed: 12/23/12							
C10-C28 (TEPH-DRO)	ND	50	mg/kg								
C28-C36 (TEPH-ORO)	ND	50	"								
LCS (2122303-BS1)				Prepared & Analyzed: 12/23/12							
C10-C28 (TEPH-DRO)	470	50	mg/kg	501	93.8	73-134					
LCS Dup (2122303-BSD1)				Prepared & Analyzed: 12/23/12							
C10-C28 (TEPH-DRO)	450	50	mg/kg	501	89.8	73-134	4.37		11		
Matrix Spike (2122303-MS1)				Source: R212145-01		Prepared & Analyzed: 12/23/12					
C10-C28 (TEPH-DRO)	419	50	mg/kg	462	33.4	83.4	50-148				
Matrix Spike Dup (2122303-MSD1)				Source: R212145-01		Prepared & Analyzed: 12/23/12					
C10-C28 (TEPH-DRO)	423	50	mg/kg	458	33.4	85.0	50-148	0.942		13	

Summit Scientific

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

Project: KMG - Branch 1-3

Project Number: 0142
Project Manager: John Cocroft

Reported:
12/26/12 14:34

Volatile Organic Compounds by EPA Method 8260B - Quality Control
Summit Scientific

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

Batch 2122301 - EPA 5030 Water MS

Blank (2122301-BLK1)

Prepared & Analyzed: 12/23/12

Benzene	ND	1.0	ug/l							
Toluene	ND	1.0	"							
Ethylbenzene	ND	1.0	"							
Xylenes (total)	ND	1.0	"							
Surrogate: 1,2-Dichloroethane-d4	13.8		"	13.2	104	37-154				
Surrogate: Toluene-d8	13.5		"	13.3	101	45-149				
Surrogate: 4-Bromofluorobenzene	12.6		"	13.3	94.9	45-146				

LCS (2122301-BS1)

Prepared & Analyzed: 12/23/12

Benzene	52.9	1.0	ug/l	50.0	106	51-132				
Toluene	53.5	1.0	"	50.0	107	51-138				
Ethylbenzene	54.6	1.0	"	50.0	109	58-146				
m,p-Xylene	108	2.0	"	100	108	57-144				
o-Xylene	52.0	1.0	"	50.0	104	53-146				
Surrogate: 1,2-Dichloroethane-d4	13.4		"	13.2	101	37-154				
Surrogate: Toluene-d8	13.4		"	13.3	100	45-149				
Surrogate: 4-Bromofluorobenzene	13.5		"	13.3	101	45-146				

LCS Dup (2122301-BSD1)

Prepared & Analyzed: 12/23/12

Benzene	50.1	1.0	ug/l	50.0	100	51-132	5.40	17		
Toluene	50.1	1.0	"	50.0	100	51-138	6.62	17		
Ethylbenzene	52.0	1.0	"	50.0	104	58-146	4.84	16		
m,p-Xylene	103	2.0	"	100	103	57-144	4.89	16		
o-Xylene	50.7	1.0	"	50.0	101	53-146	2.67	15		
Surrogate: 1,2-Dichloroethane-d4	13.9		"	13.2	105	37-154				
Surrogate: Toluene-d8	13.6		"	13.3	102	45-149				
Surrogate: 4-Bromofluorobenzene	13.8		"	13.3	103	45-146				

Summit Scientific

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

Project: KMG - Branch 1-3

Project Number: 0142
Project Manager: John Cocroft

Reported:
12/26/12 14:34

Volatile Organic Compounds by EPA Method 8260B - Quality Control
Summit Scientific

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

Batch 2122301 - EPA 5030 Water MS

Matrix Spike (2122301-MS1)	Source: R212105-01			Prepared & Analyzed: 12/23/12						
Benzene	48.9	1.0	ug/l	50.0	ND	97.9	34-141			
Toluene	49.3	1.0	"	50.0	ND	98.6	27-151			
Ethylbenzene	49.5	1.0	"	50.0	ND	98.9	29-160			
m,p-Xylene	97.0	2.0	"	100	ND	97.0	20-166			
o-Xylene	47.3	1.0	"	50.0	ND	94.6	33-159			
<i>Surrogate: 1,2-Dichloroethane-d4</i>	<i>14.3</i>		<i>"</i>	<i>13.2</i>		<i>108</i>	<i>37-154</i>			
<i>Surrogate: Toluene-d8</i>	<i>13.3</i>		<i>"</i>	<i>13.3</i>		<i>99.6</i>	<i>45-149</i>			
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>13.4</i>		<i>"</i>	<i>13.3</i>		<i>100</i>	<i>45-146</i>			

Matrix Spike Dup (2122301-MSD1)	Source: R212105-01			Prepared & Analyzed: 12/23/12						
Benzene	50.2	1.0	ug/l	50.0	ND	100	34-141	2.46	32	
Toluene	50.7	1.0	"	50.0	ND	101	27-151	2.84	25	
Ethylbenzene	52.8	1.0	"	50.0	ND	106	29-160	6.53	50	
m,p-Xylene	104	2.0	"	100	ND	104	20-166	7.35	36	
o-Xylene	51.2	1.0	"	50.0	ND	102	33-159	8.02	26	
<i>Surrogate: 1,2-Dichloroethane-d4</i>	<i>13.9</i>		<i>"</i>	<i>13.2</i>		<i>105</i>	<i>37-154</i>			
<i>Surrogate: Toluene-d8</i>	<i>13.5</i>		<i>"</i>	<i>13.3</i>		<i>101</i>	<i>45-149</i>			
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>13.9</i>		<i>"</i>	<i>13.3</i>		<i>105</i>	<i>45-146</i>			

Batch 2122302 - EPA 5030 Soil MS

Blank (2122302-BLK1)	Prepared & Analyzed: 12/23/12									
Benzene	ND	0.0050	mg/kg							
Toluene	ND	0.0050	"							
Ethylbenzene	ND	0.0050	"							
Xylenes (total)	ND	0.0050	"							
Gasoline Range Hydrocarbons	ND	0.50	"							
<i>Surrogate: 1,2-Dichloroethane-d4</i>	<i>0.0405</i>		<i>"</i>	<i>0.0397</i>		<i>102</i>	<i>23-173</i>			
<i>Surrogate: Toluene-d8</i>	<i>0.0400</i>		<i>"</i>	<i>0.0400</i>		<i>100</i>	<i>20-170</i>			
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>0.0376</i>		<i>"</i>	<i>0.0400</i>		<i>94.0</i>	<i>21-167</i>			

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

Project: KMG - Branch 1-3

Project Number: 0142
Project Manager: John Cocroft

Reported:
12/26/12 14:34

Volatile Organic Compounds by EPA Method 8260B - Quality Control
Summit Scientific

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

Batch 2122302 - EPA 5030 Soil MS

LCS (2122302-BS1)

Prepared: 12/23/12 Analyzed: 12/26/12

Benzene	0.0802	0.0050	mg/kg	0.100		80.2	58-130			
Toluene	0.0848	0.0050	"	0.100		84.8	61-134			
Ethylbenzene	0.0863	0.0050	"	0.100		86.3	74-139			
m,p-Xylene	0.171	0.010	"	0.200		85.6	73-137			
o-Xylene	0.0814	0.0050	"	0.100		81.4	73-141			
Surrogate: 1,2-Dichloroethane-d4	0.0441		"	0.0397		111	23-173			
Surrogate: Toluene-d8	0.0404		"	0.0400		101	20-170			
Surrogate: 4-Bromofluorobenzene	0.0395		"	0.0400		98.8	21-167			

LCS Dup (2122302-BSD1)

Prepared: 12/23/12 Analyzed: 12/26/12

Benzene	0.0856	0.0050	mg/kg	0.100		85.6	58-130	6.48	13	
Toluene	0.0916	0.0050	"	0.100		91.6	61-134	7.76	16	
Ethylbenzene	0.0952	0.0050	"	0.100		95.2	74-139	9.82	12	
m,p-Xylene	0.188	0.010	"	0.200		93.8	73-137	9.10	14	
o-Xylene	0.0909	0.0050	"	0.100		90.9	73-141	11.1	12	
Surrogate: 1,2-Dichloroethane-d4	0.0452		"	0.0397		114	23-173			
Surrogate: Toluene-d8	0.0406		"	0.0400		102	20-170			
Surrogate: 4-Bromofluorobenzene	0.0394		"	0.0400		98.4	21-167			

Matrix Spike (2122302-MS1)

Source: R212145-01

Prepared: 12/23/12 Analyzed: 12/26/12

Benzene	0.0798	0.0050	mg/kg	0.0973	0.0164	65.1	30-131			
Toluene	0.0935	0.0050	"	0.0973	0.0492	45.6	30-134			
Ethylbenzene	0.134	0.0050	"	0.0973	0.255	NR	22-153			QM-07
m,p-Xylene	0.927	0.010	"	0.195	1.67	NR	10-159			QM-07
o-Xylene	0.306	0.0050	"	0.0973	0.461	NR	31-151			QM-07
Surrogate: 1,2-Dichloroethane-d4	0.0421		"	0.0386		109	23-173			
Surrogate: Toluene-d8	0.0395		"	0.0389		101	20-170			
Surrogate: 4-Bromofluorobenzene	0.0519		"	0.0389		133	21-167			

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Project: KMG - Branch 1-3

Project Number: 0142
Project Manager: John Cocroft

Reported:
12/26/12 14:34

Volatile Organic Compounds by EPA Method 8260B - Quality Control
Summit Scientific

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

Batch 2122302 - EPA 5030 Soil MS

Matrix Spike Dup (2122302-MSD1)	Source: R212145-01			Prepared: 12/23/12		Analyzed: 12/26/12				
Benzene	0.0670	0.0050	mg/kg	0.0971	0.0164	52.1	30-131	17.4	34	
Toluene	0.0748	0.0050	"	0.0971	0.0492	26.4	30-134	22.2	30	QM-07
Ethylbenzene	0.0811	0.0050	"	0.0971	0.255	NR	22-153	49.3	24	QM-07
m,p-Xylene	0.406	0.010	"	0.194	1.67	NR	10-159	78.2	68	QM-07
o-Xylene	0.148	0.0050	"	0.0971	0.461	NR	31-151	69.8	38	QM-07
Surrogate: 1,2-Dichloroethane-d4	0.0434		"	0.0385		113	23-173			
Surrogate: Toluene-d8	0.0384		"	0.0388		98.8	20-170			
Surrogate: 4-Bromofluorobenzene	0.0396		"	0.0388		102	21-167			

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Project: KMG - Branch 1-3

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12/26/12 14:34

Notes and Definitions

- QM-07 The spike recovery was outside acceptance limits for the MS and/or MSD. The batch was accepted based on acceptable LCS/LCSD recovery.
- DET Analyte DETECTED
- ND Analyte NOT DETECTED at or above the reporting limit
- NR Not Reported
- dry Sample results reported on a dry weight basis
- RPD Relative Percent Difference