

**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**  
5/16/2013

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 &amp; 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>5/7/2013</u>	Facility Name & No: <u>HSR-B/R D 15-20, 16-20</u>	County: <u>Weld</u>
Type of Facility (well, tank battery, flow line, pit): <u>Production Facility</u>		QtrQtr: <u>SWSE</u> Section: <u>20</u>
Well Name and Number: <u>HSR-B/R D 15-20</u>		Township: <u>3N</u> Range: <u>67W</u>
API Number: <u>05-123-18240</u>		Meridian: <u>6th</u>
Specify volume spilled and recovered for the following materials:		
Oil spilled: <u>2 bbls</u>	Oil recov'd: <u>1.5 bbls</u>	Water spilled: <u>0</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 checked="" type="checkbox"/> Yes <input type="checkbox"/> No	Area and vertical extent of spill: <u>45' N-S x 30' E-W x 7' bgs</u>	
Current land use: <u>Rangeland</u>	Weather conditions: <u>60° F, clear</u>	
Soil/geology description: <u>Coarse sand</u>		
<b>IF LESS THAN A MILE</b> , report distance <b>IN FEET</b> to nearest ... Surface water: <u>1,215 SE</u> wetlands: <u>755 E</u> buildings: <u>1,375 SW</u>		
Livestock: <u>Unknown</u> Water wells: <u>1,360 N</u> Depth to shallowest ground water: <u>6' bgs</u>		
Cause of spill (e.g. equipment failure, human error, etc.): <u>Human Error</u>		
Detailed description of the spill/release incident: <u>The operator failed to notice that the automation equipment was not working properly. As a result, approximately 1.5 bbls of oil overflowed from the production tank and approximately 0.5 bbls of oil overflowed from the emissions control device (ECD).</u>		

**CORRECTIVE ACTION**

Describe immediate response (how stopped, contained and recovered): The well was shut in and 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. The stained gravel was replaced with clean gravel. The vacuum truck recovered 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. Groundwater was encountered in the excavation at approximately 6 feet bgs. Laboratory analytical results confirmed benzene impacts to groundwater above the CGWQS at a concentration of 480 µg/L.

Describe any emergency pits constructed: NA

How was the extent of contamination determined? Soil and groundwater samples were collected from the tank battery 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. Laboratory results for the excavation groundwater sample (GW01) indicate that the benzene concentration exceeds the CGWQS. Approximately 350 cubic yards of impacted soil were removed from the excavation and transported to Front Range Regional Landfill in Erie, Colorado for disposal, along with the stained gravel removed from inside the ECD containment berm. Approximately 30 bbls of impacted groundwater were removed from the tank battery excavation and transported to a licensed injection facility for disposal.

Further remediation activities proposed (attach separate sheet if needed): Five gallons of MicroBlaze were applied to the groundwater in the open excavation prior to backfilling. Groundwater monitoring wells will be installed to determine the extent and magnitude of the groundwater impacts.

Describe measures taken to prevent problem from reoccurring: Operators will verify that automation equipment is working properly.

**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: 2232971

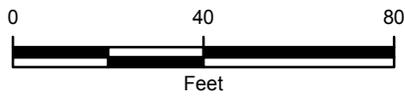




IMAGE COURTESY OF ESRI/BING MAPS

**LEGEND**

-  RELEASE
-  SOIL SAMPLE
-  GROUNDWATER SAMPLE
-  METER HOUSE
-  BERM
-  EXCAVATION EXTENT
- ECD: EMISSION CONTROL DEVICE



**FIGURE 2**  
 EXCAVATION SITE MAP  
 HSR-B/R D 15-20, 16-20  
 SWSE SEC 20-T3N-R67W  
 WELD COUNTY, COLORADO  
 KERR-MCGEE OIL & GAS ONSHORE LP



**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)	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	<b>10</b>	45	17	130	<b>8300</b>	<b>7600</b>	<b>660</b>
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
<b>COGCC Standards</b>			<b>0.17</b>	<b>85</b>	<b>100</b>	<b>175</b>	<b>500*</b>	<b>500*</b>	<b>500*</b>

Notes: bgs - below ground surface

< - less than

DRO - Diesel Range Organics

ORO - Oil Range Organics

GRO - Gasoline Range Organics

\* - Standard applies to combined DRO-GRO-ORO

mg/kg - milligrams per kilogram

NA - Not Analyzed/Not Available

Bold numbers indicate result equaled or exceeded standard.

COGCC - Colorado Oil and Gas Conservation Commission



**TABLE 2**  
**GROUNDWATER ANALYTICAL AND FIELD RESULTS**  
**HSR-B/R D 15-20, 16-20**  
**WELD COUNTY, COLORADO**  
**KERR-McGEE OIL & GAS ONSHORE LP**

<b>Well Name</b>	<b>Date</b>	<b>Benzene (ug/L)</b>	<b>Toluene (ug/L)</b>	<b>Ethylbenzene (ug/L)</b>	<b>Xylenes (ug/L)</b>	<b>Depth to GW (ft bgs)</b>
GW01	05/06/2013	<b>480</b>	930	53	820	NM
<b>Colo GW Quality Standards</b>		<b>5</b>	<b>1000</b>	<b>700</b>	<b>1400</b>	

Notes: < - less than  
ug/L - micrograms per Liter  
NA - Not Analyzed/Not Available

GW - Groundwater                      Elev. - Elevation  
Bold numbers indicate result equaled or exceeded standard.  
NM - Not Measured                      ft bgs - feet below ground surface



# Summit Scientific

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741 Corporate Circle – Suite I ♦ Golden, Colorado 80401

303.277.9310 - laboratory ♦ 303.277.9531 - fax

May 08, 2013

John Cocroft

LT Environmental, Inc.

4600 West 60th Avenue

Arvada, CO 80003

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

Enclosed are the results of analyses for samples received by Summit Scientific on 05/07/13 17:15. 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 - HSR-B/R "D" 15, 16-20

Project Number: 0142  
Project Manager: John Cocroft

**Reported:**  
05/08/13 06:40

### ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
E02@5'	R305073-01	Soil	05/07/13 14:20	05/07/13 17:15
S02@5'	R305073-02	Soil	05/07/13 14:15	05/07/13 17:15
W02@5'	R305073-03	Soil	05/07/13 14:25	05/07/13 17:15

Summit Scientific

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

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

Project Number: 0142  
Project Manager: John Cocroft

**Reported:**  
05/08/13 06:40

**E02@5'**  
**R305073-01 (Soil)**

**Summit Scientific**

**Extractable Petroleum Hydrocarbons by 8015**

Date Sampled: **05/07/13 14:20**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (TEPH-DRO)	ND	50	mg/kg	1	3050716	05/07/13	05/07/13	8015M	
C28-C36 (TEPH-ORO)	ND	50	"	"	"	"	"	"	

Date Sampled: **05/07/13 14:20**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: <i>o</i> -Terphenyl		112 %	30-150		"	"	"	"	

**Volatile Organic Compounds by EPA Method 8260B**

Date Sampled: **05/07/13 14:20**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	ND	0.0050	mg/kg	1	3050715	05/07/13	05/07/13	EPA 8260B	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
Xylenes (total)	ND	0.0050	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	0.50	"	"	"	"	"	"	

Date Sampled: **05/07/13 14:20**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		104 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		99.6 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		99.2 %	21-167		"	"	"	"	

Summit Scientific

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

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

Project Number: 0142  
Project Manager: John Cocroft

**Reported:**  
05/08/13 06:40

**S02@5'**  
**R305073-02 (Soil)**

**Summit Scientific**

**Extractable Petroleum Hydrocarbons by 8015**

Date Sampled: **05/07/13 14:15**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (TEPH-DRO)	ND	50	mg/kg	1	3050716	05/07/13	05/07/13	8015M	
C28-C36 (TEPH-ORO)	ND	50	"	"	"	"	"	"	

Date Sampled: **05/07/13 14:15**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: <i>o</i> -Terphenyl		112 %	30-150		"	"	"	"	

**Volatile Organic Compounds by EPA Method 8260B**

Date Sampled: **05/07/13 14:15**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	ND	0.0050	mg/kg	1	3050715	05/07/13	05/07/13	EPA 8260B	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
Xylenes (total)	ND	0.0050	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	0.50	"	"	"	"	"	"	

Date Sampled: **05/07/13 14:15**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		109 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		101 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		96.4 %	21-167		"	"	"	"	

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4600 West 60th Avenue  
Arvada CO, 80003

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

Project Number: 0142  
Project Manager: John Cocroft

**Reported:**  
05/08/13 06:40

**W02@5'**  
**R305073-03 (Soil)**

**Summit Scientific**

**Extractable Petroleum Hydrocarbons by 8015**

Date Sampled: **05/07/13 14:25**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (TEPH-DRO)	ND	50	mg/kg	1	3050716	05/07/13	05/07/13	8015M	
C28-C36 (TEPH-ORO)	ND	50	"	"	"	"	"	"	

Date Sampled: **05/07/13 14:25**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: <i>o</i> -Terphenyl		109 %	30-150		"	"	"	"	

**Volatile Organic Compounds by EPA Method 8260B**

Date Sampled: **05/07/13 14:25**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	ND	0.0050	mg/kg	1	3050715	05/07/13	05/07/13	EPA 8260B	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
Xylenes (total)	ND	0.0050	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	0.50	"	"	"	"	"	"	

Date Sampled: **05/07/13 14:25**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		98.9 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		96.8 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		99.1 %	21-167		"	"	"	"	

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4600 West 60th Avenue  
Arvada CO, 80003

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

Project Number: 0142  
Project Manager: John Cocroft

**Reported:**  
05/08/13 06:40

**Extractable Petroleum Hydrocarbons by 8015 - Quality Control**  
**Summit Scientific**

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

**Batch 3050716 - EPA 3550A**

**Blank (3050716-BLK1)**

Prepared & Analyzed: 05/07/13

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

**LCS (3050716-BS1)**

Prepared: 05/07/13 Analyzed: 05/08/13

C10-C28 (TEPH-DRO)	492	50	mg/kg	501	98.1	73-134				
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**LCS Dup (3050716-BSD1)**

Prepared: 05/07/13 Analyzed: 05/08/13

C10-C28 (TEPH-DRO)	493	50	mg/kg	501	98.4	73-134	0.294	11		
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**Matrix Spike (3050716-MS1)**

Source: R305070-01

Prepared: 05/07/13 Analyzed: 05/08/13

C10-C28 (TEPH-DRO)	513	50	mg/kg	501	45.6	93.4	50-148			
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**Matrix Spike Dup (3050716-MSD1)**

Source: R305070-01

Prepared: 05/07/13 Analyzed: 05/08/13

C10-C28 (TEPH-DRO)	551	50	mg/kg	501	45.6	101	50-148	7.01	13	
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Summit Scientific

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4600 West 60th Avenue  
Arvada CO, 80003

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

Project Number: 0142  
Project Manager: John Cocroft

Reported:  
05/08/13 06:40

**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 3050715 - EPA 5030 Soil MS**

**Blank (3050715-BLK1)**

Prepared & Analyzed: 05/07/13

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>0.0421</i>		<i>"</i>	<i>0.0397</i>	<i>106</i>	<i>23-173</i>				
<i>Surrogate: Toluene-d8</i>	<i>0.0406</i>		<i>"</i>	<i>0.0400</i>	<i>102</i>	<i>20-170</i>				
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>0.0388</i>		<i>"</i>	<i>0.0400</i>	<i>96.9</i>	<i>21-167</i>				

**LCS (3050715-BS1)**

Prepared & Analyzed: 05/07/13

Benzene	0.106	0.0050	mg/kg	0.100	106	58-130				
Toluene	0.102	0.0050	"	0.100	102	61-134				
Ethylbenzene	0.110	0.0050	"	0.100	110	74-139				
m,p-Xylene	0.226	0.010	"	0.200	113	73-137				
o-Xylene	0.109	0.0050	"	0.100	109	73-141				
<i>Surrogate: 1,2-Dichloroethane-d4</i>	<i>0.0438</i>		<i>"</i>	<i>0.0397</i>	<i>110</i>	<i>23-173</i>				
<i>Surrogate: Toluene-d8</i>	<i>0.0394</i>		<i>"</i>	<i>0.0400</i>	<i>98.6</i>	<i>20-170</i>				
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>0.0391</i>		<i>"</i>	<i>0.0400</i>	<i>97.6</i>	<i>21-167</i>				

**LCS Dup (3050715-BSD1)**

Prepared & Analyzed: 05/07/13

Benzene	0.118	0.0050	mg/kg	0.100	118	58-130	11.0	13		
Toluene	0.114	0.0050	"	0.100	114	61-134	11.1	16		
Ethylbenzene	0.116	0.0050	"	0.100	116	74-139	5.08	12		
m,p-Xylene	0.237	0.010	"	0.200	118	73-137	4.70	14		
o-Xylene	0.116	0.0050	"	0.100	116	73-141	6.66	12		
<i>Surrogate: 1,2-Dichloroethane-d4</i>	<i>0.0430</i>		<i>"</i>	<i>0.0397</i>	<i>108</i>	<i>23-173</i>				
<i>Surrogate: Toluene-d8</i>	<i>0.0403</i>		<i>"</i>	<i>0.0400</i>	<i>101</i>	<i>20-170</i>				
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>0.0400</i>		<i>"</i>	<i>0.0400</i>	<i>100</i>	<i>21-167</i>				

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4600 West 60th Avenue  
Arvada CO, 80003

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

Project Number: 0142  
Project Manager: John Cocroft

**Reported:**  
05/08/13 06:40

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

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

**Batch 3050715 - EPA 5030 Soil MS**

<b>Matrix Spike (3050715-MS1)</b>	<b>Source: R305070-01</b>			Prepared: 05/07/13		Analyzed: 05/08/13	
Benzene	0.105	0.0050	mg/kg	0.100	ND	105	30-131
Toluene	0.0986	0.0050	"	0.100	ND	98.6	30-134
Ethylbenzene	0.102	0.0050	"	0.100	ND	102	22-153
m,p-Xylene	0.207	0.010	"	0.200	ND	103	10-159
o-Xylene	0.100	0.0050	"	0.100	ND	100	31-151
<i>Surrogate: 1,2-Dichloroethane-d4</i>	<i>0.0421</i>		<i>"</i>	<i>0.0397</i>		<i>106</i>	<i>23-173</i>
<i>Surrogate: Toluene-d8</i>	<i>0.0403</i>		<i>"</i>	<i>0.0400</i>		<i>101</i>	<i>20-170</i>
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>0.0388</i>		<i>"</i>	<i>0.0400</i>		<i>96.9</i>	<i>21-167</i>

<b>Matrix Spike Dup (3050715-MSD1)</b>	<b>Source: R305070-01</b>			Prepared: 05/07/13		Analyzed: 05/08/13			
Benzene	0.101	0.0050	mg/kg	0.100	ND	101	30-131	4.29	34
Toluene	0.0967	0.0050	"	0.100	ND	96.7	30-134	2.00	30
Ethylbenzene	0.0958	0.0050	"	0.100	ND	95.8	22-153	5.81	24
m,p-Xylene	0.197	0.010	"	0.200	ND	98.7	10-159	4.57	68
o-Xylene	0.0972	0.0050	"	0.100	ND	97.2	31-151	3.25	38
<i>Surrogate: 1,2-Dichloroethane-d4</i>	<i>0.0424</i>		<i>"</i>	<i>0.0397</i>		<i>107</i>	<i>23-173</i>		
<i>Surrogate: Toluene-d8</i>	<i>0.0404</i>		<i>"</i>	<i>0.0400</i>		<i>101</i>	<i>20-170</i>		
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>0.0401</i>		<i>"</i>	<i>0.0400</i>		<i>100</i>	<i>21-167</i>		

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

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

Project Number: 0142  
Project Manager: John Cocroft

**Reported:**  
05/08/13 06:40

### 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

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741 Corporate Circle – Suite I ♦ Golden, Colorado 80401

303.277.9310 - laboratory ♦ 303.277.9531 - fax

May 07, 2013

John Cocroft

LT Environmental, Inc.

4600 West 60th Avenue

Arvada, CO 80003

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

Enclosed are the results of analyses for samples received by Summit Scientific on 05/06/13 16:55. If you have any questions concerning this report, please feel free to contact me.

Sincerely,



Joseph J Egry IV For Ben Shrewsbury

President / Laboratory Manager

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

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

Project Number: 0142  
Project Manager: John Cocroft

**Reported:**  
05/07/13 14:42

### ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
GW01	R305048-01	Water	05/06/13 13:30	05/06/13 16:55
B01@3'	R305048-02	Soil	05/06/13 13:35	05/06/13 16:55
B02@6'	R305048-03	Soil	05/06/13 13:40	05/06/13 16:55
N01@4'	R305048-04	Soil	05/06/13 13:45	05/06/13 16:55
E01@5'	R305048-05	Soil	05/06/13 13:50	05/06/13 16:55
S01@5'	R305048-06	Soil	05/06/13 13:55	05/06/13 16:55
W01@3'	R305048-07	Soil	05/06/13 14:00	05/06/13 16:55

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

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

Project Number: 0142  
Project Manager: John Cocroft

Reported:  
05/07/13 14:42

R305048  
**Summit Scientific**

741 Corporate Circle Suite 1 • Golden, Colorado 80401  
303-277-9510 • 303-277-9531 Fax

Client: LT Environmental, Inc.

Address: 4600 West 60th Avenue

City/State/Zip: Arvada, CO 80003

Phone: (303) 433-9788

Sample Name: A. Verbeke, 12

Project Manager: John Cocroft

E-Mail: jcocroft@item.com

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

Project Number: 0142

Page 1 of 1

Sample Description	Date Sampled	Time Sampled	Number of Containers	Preservative				Matrix				Analyze For:				Special Instructions	
				HCl	HNO <sub>3</sub>	None	Other (Specify)	Soil	Air - Canister Serial #	Other (Specify)	PRO/ORO	GBTEX	BTEX				
GW01	5/6/13	13:30	3	X				X									
B01@3'		13:35	1		X			X									
B02@6'		13:40	1		X			X									
N01@4'		13:45	1		X			X									
E01@5'		13:50	1		X			X									
S01@5'		13:55	1		X			X									
W01@3'		14:00	1		X			X									
Requisitioned by:	Date/Time:			Received by:	Date/Time:			Turn Around Time (Check)									Notes:
AW	5/6/13 14:55			J	5/6/13 16:55			72 Hours Standard									
Requisitioned by:	Date/Time:			Received by:	Date/Time:			Same Day									
								24 Hours									
Requisitioned by:	Date/Time:			Received in Lab by:	Date/Time:			48 Hours									
								Sample Integrity:									S2
								Temperature Upon Receipt:									
								Intact: Yes									No

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

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

Project Number: 0142  
 Project Manager: John Cocroft

**Reported:**  
 05/07/13 14:42

**GW01**

**R305048-01 (Water)**

**Summit Scientific**

**Volatile Organic Compounds by EPA Method 8260B**

Date Sampled: **05/06/13 13:30**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
<b>Benzene</b>	<b>480</b>	100	ug/l	100	3050616	05/06/13	05/06/13	EPA 8260B	
<b>Toluene</b>	<b>930</b>	100	"	"	"	"	"	"	
<b>Ethylbenzene</b>	<b>53</b>	1.0	"	1	"	"	05/06/13	"	
<b>Xylenes (total)</b>	<b>820</b>	1.0	"	"	"	"	"	"	

Date Sampled: **05/06/13 13:30**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
<i>Surrogate: 1,2-Dichloroethane-d4</i>		87.7 %	37-154		"	"	"	"	
<i>Surrogate: Toluene-d8</i>		105 %	45-149		"	"	"	"	
<i>Surrogate: 4-Bromofluorobenzene</i>		95.9 %	45-146		"	"	"	"	

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

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

Project Number: 0142  
Project Manager: John Cocroft

Reported:  
05/07/13 14:42

**B01@3'**  
**R305048-02 (Soil)**

**Summit Scientific**

**Extractable Petroleum Hydrocarbons by 8015**

Date Sampled: **05/06/13 13:35**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (TEPH-DRO)	ND	50	mg/kg	1	3050615	05/06/13	05/06/13	8015M	
C28-C36 (TEPH-ORO)	ND	50	"	"	"	"	"	"	

Date Sampled: **05/06/13 13:35**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: <i>o</i> -Terphenyl		114 %	30-150		"	"	"	"	

**Volatile Organic Compounds by EPA Method 8260B**

Date Sampled: **05/06/13 13:35**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	ND	0.0050	mg/kg	1	3050614	05/06/13	05/06/13	EPA 8260B	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
Xylenes (total)	ND	0.0050	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	0.50	"	"	"	"	"	"	

Date Sampled: **05/06/13 13:35**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		111 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		98.0 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		102 %	21-167		"	"	"	"	

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

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

Project Number: 0142  
Project Manager: John Cocroft

Reported:  
05/07/13 14:42

**B02@6'**  
**R305048-03 (Soil)**

**Summit Scientific**

**Extractable Petroleum Hydrocarbons by 8015**

Date Sampled: **05/06/13 13:40**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (TEPH-DRO)	ND	50	mg/kg	1	3050615	05/06/13	05/06/13	8015M	
C28-C36 (TEPH-ORO)	ND	50	"	"	"	"	"	"	

Date Sampled: **05/06/13 13:40**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: <i>o</i> -Terphenyl		109 %	30-150		"	"	"	"	

**Volatile Organic Compounds by EPA Method 8260B**

Date Sampled: **05/06/13 13:40**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	ND	0.0050	mg/kg	1	3050614	05/06/13	05/06/13	EPA 8260B	
<b>Toluene</b>	<b>0.0074</b>	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
Xylenes (total)	ND	0.0050	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	0.50	"	"	"	"	"	"	

Date Sampled: **05/06/13 13:40**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		109 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		101 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		101 %	21-167		"	"	"	"	

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

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

Project Number: 0142  
Project Manager: John Cocroft

Reported:  
05/07/13 14:42

**N01@4'**  
**R305048-04 (Soil)**

**Summit Scientific**

**Extractable Petroleum Hydrocarbons by 8015**

Date Sampled: **05/06/13 13:45**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (TEPH-DRO)	ND	50	mg/kg	1	3050615	05/06/13	05/07/13	8015M	
C28-C36 (TEPH-ORO)	ND	50	"	"	"	"	"	"	

Date Sampled: **05/06/13 13:45**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: <i>o</i> -Terphenyl		109 %	30-150		"	"	"	"	

**Volatile Organic Compounds by EPA Method 8260B**

Date Sampled: **05/06/13 13:45**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	ND	0.0050	mg/kg	1	3050614	05/06/13	05/06/13	EPA 8260B	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
<b>Xylenes (total)</b>	<b>0.0052</b>	0.0050	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	0.50	"	"	"	"	"	"	

Date Sampled: **05/06/13 13:45**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		112 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		96.4 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		101 %	21-167		"	"	"	"	

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

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

Project Number: 0142  
Project Manager: John Cocroft

Reported:  
05/07/13 14:42

**E01@5'**  
**R305048-05 (Soil)**

**Summit Scientific**

**Extractable Petroleum Hydrocarbons by 8015**

Date Sampled: **05/06/13 13:50**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
<b>C10-C28 (TEPH-DRO)</b>	<b>60</b>	50	mg/kg	1	3050615	05/06/13	05/07/13	8015M	
C28-C36 (TEPH-ORO)	ND	50	"	"	"	"	"	"	

Date Sampled: **05/06/13 13:50**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: <i>o</i> -Terphenyl		108 %	30-150		"	"	"	"	

**Volatile Organic Compounds by EPA Method 8260B**

Date Sampled: **05/06/13 13:50**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	ND	0.0050	mg/kg	1	3050614	05/06/13	05/06/13	EPA 8260B	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
<b>Xylenes (total)</b>	<b>0.0060</b>	0.0050	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	0.50	"	"	"	"	"	"	

Date Sampled: **05/06/13 13:50**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		113 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		98.8 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		100 %	21-167		"	"	"	"	

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

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

Project Number: 0142  
Project Manager: John Cocroft

Reported:  
05/07/13 14:42

**S01@5'**  
**R305048-06 (Soil)**

**Summit Scientific**

**Extractable Petroleum Hydrocarbons by 8015**

Date Sampled: **05/06/13 13:55**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
<b>C10-C28 (TEPH-DRO)</b>	<b>8300</b>	50	mg/kg	1	3050615	05/06/13	05/07/13	8015M	
<b>C28-C36 (TEPH-ORO)</b>	<b>660</b>	50	"	"	"	"	"	"	

Date Sampled: **05/06/13 13:55**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
<i>Surrogate: o-Terphenyl</i>		99.2 %	30-150		"	"	"	"	

**Volatile Organic Compounds by EPA Method 8260B**

Date Sampled: **05/06/13 13:55**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
<b>Benzene</b>	<b>10</b>	0.050	mg/kg	10	3050614	05/06/13	05/06/13	EPA 8260B	E
<b>Toluene</b>	<b>45</b>	0.050	"	"	"	"	05/06/13	"	E
<b>Ethylbenzene</b>	<b>17</b>	0.050	"	"	"	"	"	"	E
<b>Xylenes (total)</b>	<b>130</b>	0.050	"	"	"	"	05/06/13	"	E
<b>Gasoline Range Hydrocarbons</b>	<b>7600</b>	5.0	"	"	"	"	05/06/13	"	E

Date Sampled: **05/06/13 13:55**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
<i>Surrogate: 1,2-Dichloroethane-d4</i>		89.3 %	23-173		"	"	"	"	
<i>Surrogate: Toluene-d8</i>		987 %	20-170		"	"	"	"	S-02
<i>Surrogate: 4-Bromofluorobenzene</i>		391 %	21-167		"	"	"	"	S-02

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

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

Project Number: 0142  
Project Manager: John Cocroft

Reported:  
05/07/13 14:42

**W01@3'**  
**R305048-07 (Soil)**

**Summit Scientific**

**Extractable Petroleum Hydrocarbons by 8015**

Date Sampled: **05/06/13 14:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (TEPH-DRO)	ND	50	mg/kg	1	3050615	05/06/13	05/07/13	8015M	
C28-C36 (TEPH-ORO)	ND	50	"	"	"	"	"	"	

Date Sampled: **05/06/13 14:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: <i>o</i> -Terphenyl		109 %	30-150		"	"	"	"	

**Volatile Organic Compounds by EPA Method 8260B**

Date Sampled: **05/06/13 14:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	ND	0.0050	mg/kg	1	3050614	05/06/13	05/06/13	EPA 8260B	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
Xylenes (total)	ND	0.0050	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	0.50	"	"	"	"	"	"	

Date Sampled: **05/06/13 14:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		112 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		96.5 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		103 %	21-167		"	"	"	"	

Summit Scientific

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

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

Project Number: 0142  
 Project Manager: John Cocroft

**Reported:**  
 05/07/13 14:42

**Extractable Petroleum Hydrocarbons by 8015 - Quality Control**  
**Summit Scientific**

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

**Batch 3050615 - EPA 3550A**

**Blank (3050615-BLK1)**

Prepared: 05/06/13 Analyzed: 05/07/13

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

**LCS (3050615-BS1)**

Prepared: 05/06/13 Analyzed: 05/07/13

C10-C28 (TEPH-DRO)	515	50	mg/kg	501		103	73-134			
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**LCS Dup (3050615-BSD1)**

Prepared: 05/06/13 Analyzed: 05/07/13

C10-C28 (TEPH-DRO)	489	50	mg/kg	501		97.6	73-134	5.12	11	
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**Matrix Spike (3050615-MS1)**

**Source: R305047-01**

Prepared: 05/06/13 Analyzed: 05/07/13

C10-C28 (TEPH-DRO)	568	50	mg/kg	501	126	88.3	50-148			
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**Matrix Spike Dup (3050615-MSD1)**

**Source: R305047-01**

Prepared: 05/06/13 Analyzed: 05/07/13

C10-C28 (TEPH-DRO)	543	50	mg/kg	501	126	83.4	50-148	4.41	13	
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Summit Scientific

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

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

Project Number: 0142  
Project Manager: John Cocroft

Reported:  
05/07/13 14:42

**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 3050614 - EPA 5030 Soil MS**

**Blank (3050614-BLK1)**

Prepared & Analyzed: 05/06/13

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	0.0421		"	0.0397	106	23-173				
Surrogate: Toluene-d8	0.0396		"	0.0400	99.0	20-170				
Surrogate: 4-Bromofluorobenzene	0.0416		"	0.0400	104	21-167				

**LCS (3050614-BS1)**

Prepared & Analyzed: 05/06/13

Benzene	0.0838	0.0050	mg/kg	0.100	83.8	58-130				
Toluene	0.0964	0.0050	"	0.100	96.4	61-134				
Ethylbenzene	0.118	0.0050	"	0.100	118	74-139				
m,p-Xylene	0.224	0.010	"	0.200	112	73-137				
o-Xylene	0.115	0.0050	"	0.100	115	73-141				
Surrogate: 1,2-Dichloroethane-d4	0.0411		"	0.0397	103	23-173				
Surrogate: Toluene-d8	0.0397		"	0.0400	99.2	20-170				
Surrogate: 4-Bromofluorobenzene	0.0400		"	0.0400	100	21-167				

**LCS Dup (3050614-BSD1)**

Prepared: 05/06/13 Analyzed: 05/07/13

Benzene	0.0856	0.0050	mg/kg	0.100	85.6	58-130	2.09	13		
Toluene	0.0976	0.0050	"	0.100	97.6	61-134	1.24	16		
Ethylbenzene	0.122	0.0050	"	0.100	122	74-139	3.06	12		
m,p-Xylene	0.229	0.010	"	0.200	114	73-137	2.18	14		
o-Xylene	0.116	0.0050	"	0.100	116	73-141	0.674	12		
Surrogate: 1,2-Dichloroethane-d4	0.0406		"	0.0397	102	23-173				
Surrogate: Toluene-d8	0.0398		"	0.0400	99.4	20-170				
Surrogate: 4-Bromofluorobenzene	0.0394		"	0.0400	98.5	21-167				

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

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

Project Number: 0142  
Project Manager: John Cocroft

Reported:  
05/07/13 14:42

**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 3050614 - EPA 5030 Soil MS**

<b>Matrix Spike (3050614-MS1)</b>	<b>Source: R305047-01</b>			Prepared: 05/06/13	Analyzed: 05/07/13
Benzene	0.0808	0.0050	mg/kg	0.100	ND 80.8 30-131
Toluene	0.0926	0.0050	"	0.100	ND 92.6 30-134
Ethylbenzene	0.115	0.0050	"	0.100	ND 115 22-153
m,p-Xylene	0.217	0.010	"	0.200	ND 108 10-159
o-Xylene	0.113	0.0050	"	0.100	ND 113 31-151
Surrogate: 1,2-Dichloroethane-d4	0.0440		"	0.0397	111 23-173
Surrogate: Toluene-d8	0.0390		"	0.0400	97.4 20-170
Surrogate: 4-Bromofluorobenzene	0.0391		"	0.0400	97.8 21-167

<b>Matrix Spike Dup (3050614-MSD1)</b>	<b>Source: R305047-01</b>			Prepared: 05/06/13	Analyzed: 05/07/13
Benzene	0.0833	0.0050	mg/kg	0.100	ND 83.3 30-131 3.03 34
Toluene	0.0949	0.0050	"	0.100	ND 94.9 30-134 2.50 30
Ethylbenzene	0.120	0.0050	"	0.100	ND 120 22-153 4.16 24
m,p-Xylene	0.224	0.010	"	0.200	ND 112 10-159 3.11 68
o-Xylene	0.116	0.0050	"	0.100	ND 116 31-151 3.25 38
Surrogate: 1,2-Dichloroethane-d4	0.0444		"	0.0397	112 23-173
Surrogate: Toluene-d8	0.0395		"	0.0400	98.8 20-170
Surrogate: 4-Bromofluorobenzene	0.0398		"	0.0400	99.4 21-167

**Batch 3050616 - EPA 5030 Water MS**

<b>Blank (3050616-BLK1)</b>	Prepared & Analyzed: 05/07/13				
Benzene	ND	1.0	ug/l		
Toluene	ND	1.0	"		
Ethylbenzene	ND	1.0	"		
Xylenes (total)	ND	1.0	"		
Surrogate: 1,2-Dichloroethane-d4	11.1		"	13.2	84.0 37-154
Surrogate: Toluene-d8	13.1		"	13.3	98.0 45-149
Surrogate: 4-Bromofluorobenzene	13.3		"	13.3	99.8 45-146

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05/07/13 14:42

**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 3050616 - EPA 5030 Water MS**

**LCS (3050616-BS1)**

Prepared & Analyzed: 05/07/13

Benzene	20.2	1.0	ug/l	33.3	60.6	51-132				
Toluene	24.5	1.0	"	33.3	73.4	51-138				
Ethylbenzene	21.0	1.0	"	33.3	62.9	58-146				
m,p-Xylene	42.8	2.0	"	66.7	64.2	57-144				
o-Xylene	20.6	1.0	"	33.3	61.7	53-146				
Surrogate: 1,2-Dichloroethane-d4	11.8		"	13.2	88.9	37-154				
Surrogate: Toluene-d8	13.3		"	13.3	99.8	45-149				
Surrogate: 4-Bromofluorobenzene	13.2		"	13.3	99.2	45-146				

**LCS Dup (3050616-BSD1)**

Prepared & Analyzed: 05/07/13

Benzene	19.5	1.0	ug/l	33.3	58.4	51-132	3.73	17		
Toluene	23.5	1.0	"	33.3	70.5	51-138	4.09	17		
Ethylbenzene	21.0	1.0	"	33.3	62.9	58-146	0.0477	16		
m,p-Xylene	42.4	2.0	"	66.7	63.6	57-144	0.868	16		
o-Xylene	20.5	1.0	"	33.3	61.5	53-146	0.243	15		
Surrogate: 1,2-Dichloroethane-d4	11.4		"	13.2	86.4	37-154				
Surrogate: Toluene-d8	12.9		"	13.3	96.5	45-149				
Surrogate: 4-Bromofluorobenzene	13.2		"	13.3	99.0	45-146				

**Matrix Spike (3050616-MS1)**

Source: R305039-01

Prepared & Analyzed: 05/07/13

Benzene	20.4	1.0	ug/l	33.3	ND	61.1	34-141			
Toluene	24.8	1.0	"	33.3	ND	74.3	27-151			
Ethylbenzene	21.2	1.0	"	33.3	ND	63.5	29-160			
m,p-Xylene	43.2	2.0	"	66.7	ND	64.9	20-166			
o-Xylene	20.9	1.0	"	33.3	ND	62.7	33-159			
Surrogate: 1,2-Dichloroethane-d4	11.2		"	13.2		84.9	37-154			
Surrogate: Toluene-d8	13.1		"	13.3		98.3	45-149			
Surrogate: 4-Bromofluorobenzene	13.1		"	13.3		98.3	45-146			

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Project Number: 0142  
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**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 3050616 - EPA 5030 Water MS**

<b>Matrix Spike Dup (3050616-MSD1)</b>	<b>Source: R305039-01</b>			<b>Prepared &amp; Analyzed: 05/07/13</b>						
Benzene	19.6	1.0	ug/l	33.3	ND	59.0	34-141	3.60	32	
Toluene	23.9	1.0	"	33.3	ND	71.8	27-151	3.45	25	
Ethylbenzene	20.9	1.0	"	33.3	ND	62.7	29-160	1.28	50	
m,p-Xylene	42.5	2.0	"	66.7	ND	63.8	20-166	1.63	36	
o-Xylene	20.3	1.0	"	33.3	ND	60.8	33-159	3.06	26	
<i>Surrogate: 1,2-Dichloroethane-d4</i>	<i>11.4</i>		<i>"</i>	<i>13.2</i>		<i>85.9</i>	<i>37-154</i>			
<i>Surrogate: Toluene-d8</i>	<i>13.0</i>		<i>"</i>	<i>13.3</i>		<i>97.6</i>	<i>45-149</i>			
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>13.0</i>		<i>"</i>	<i>13.3</i>		<i>97.3</i>	<i>45-146</i>			

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### Notes and Definitions

- S-02 The surrogate recovery for this sample cannot be accurately quantified due to interference from coeluting organic compounds present in the sample extract.
- E The concentration indicated for this analyte is an estimated value above the calibration range of the instrument.
- 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