

FORM 19
Rev 6/99

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
3/15/2012

SPILL/RELEASE REPORT

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>3/5/2012</u>	Facility Name & No: <u>HSR-Knox 10-3, 9-3, Shur View 23-3</u>	County: <u>Weld</u>
Type of Facility (well, tank battery, flow line, pit): <u>Flowline</u>		QtrQtr: <u>NWSE</u> Section: <u>3</u>
Well Name and Number: <u>HSR-Knox 10-3</u>		Township: <u>5N</u> Range: <u>67W</u>
API Number: <u>05-123-17671</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 type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Unknown	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>22' N-S x 25' E-W x 19.5' bgs</u>	
Current land use: <u>Rangeland</u>	Weather conditions: <u>70° F, clear</u>	
Soil/geology description: <u>Sandy clay</u>		
IF LESS THAN A MILE , report distance IN FEET to nearest ... Surface water: <u>250 ENE</u> wetlands: <u>225 ENE</u> buildings: <u>2,325 SSW</u>		
Livestock: <u>Unknown</u> Water wells: <u>2,400 SSW</u> Depth to shallowest ground water: <u>Unknown</u>		
Cause of spill (e.g. equipment failure, human error, etc.): <u>Equipment failure/Corrosion</u>		
Detailed description of the spill/release incident: The operator discovered a flowline leak during a daily site visit when oil surfaced in the lease road. A corrosion hole was discovered in the flowline. The volume released is unknown.		

CORRECTIVE ACTION

Describe immediate response (how stopped, contained and recovered): The well was shut in and the flowline was blown down and flushed out. The petroleum hydrocarbon impacted soil was excavated to a depth of 19.5 feet below ground surface (bgs). The release is reportable to the COGCC due to the volume of soil excavated and the unknown volume of impacted soil left in-place below 19.5'.

Describe any emergency pits constructed: NA

How was the extent of contamination determined? Soil samples were collected from the base and sidewalls of the excavation for TPH and BTEX analysis. Laboratory results for the excavation sidewall samples confirm that TPH and BTEX concentrations are below COGCC allowable levels at the aerial extent of the excavation. However, the base sample collected at 19.5' bgs exceeded the COGCC allowable level for TPH (977 mg/kg). A subsurface assessment will be completed at the site to determine the vertical extent of impacted soil left in-place and determine if shallow groundwater has been impacted. The details of the subsurface assessment will be provided to the COGCC on a Form 27. Approximately 400 cubic yards of impacted soil were removed from the excavation and transported to Kerr-McGee's land treatment facility in Weld County, Colorado.

Further remediation activities proposed (attach separate sheet if needed): A subsurface assessment will be completed at the site to determine the vertical extent of impacted soil left in-place and determine if shallow groundwater has been impacted. The details of the subsurface assessment will be provided to the COGCC on a Form 27.

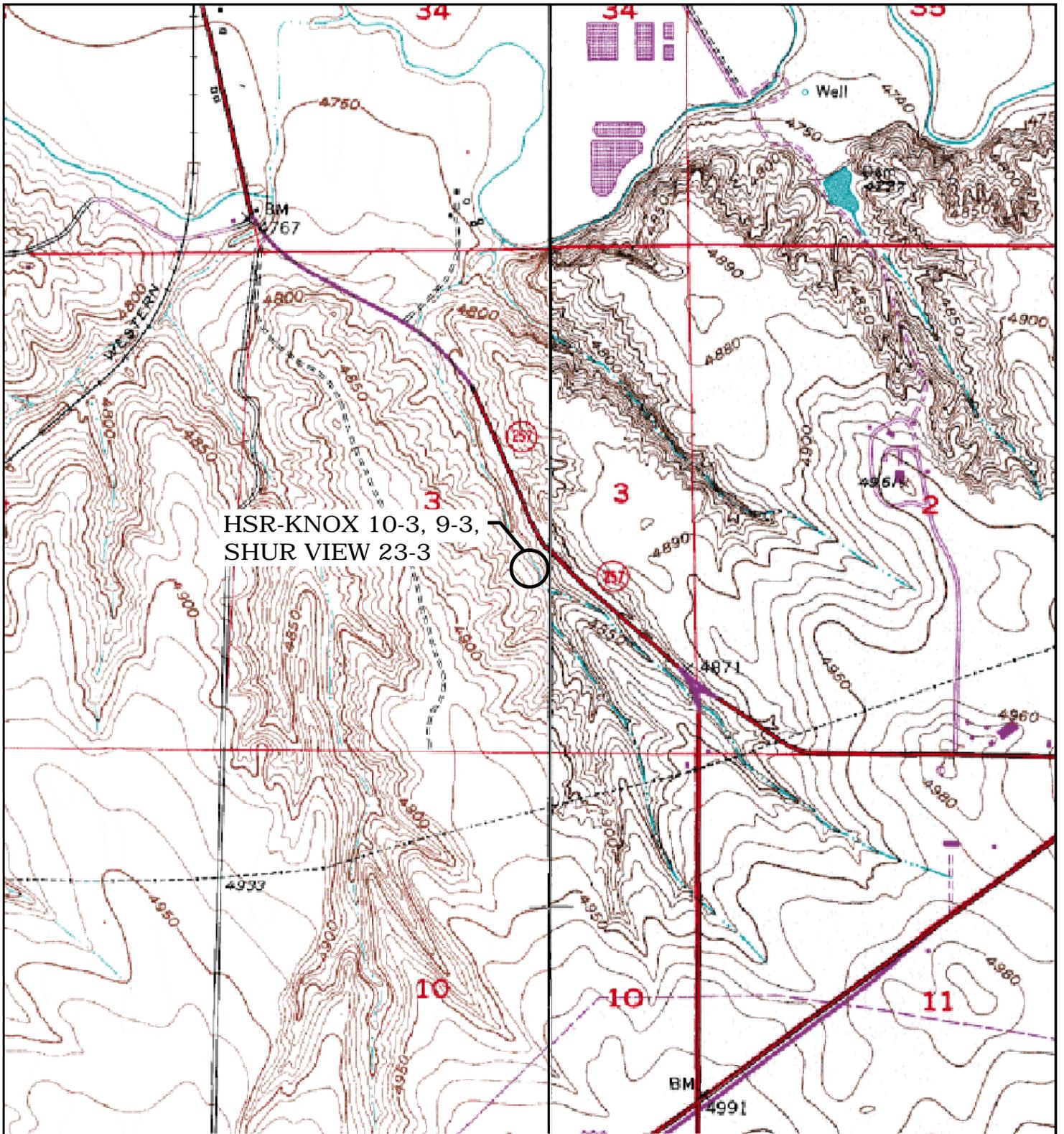
Describe measures taken to prevent problem from reoccurring: The corroded section of flowline was replaced.

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: **2223290**



HSR-KNOX 10-3, 9-3,
SHUR VIEW 23-3

LEGEND

○ SITE LOCATION

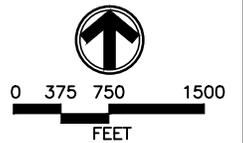
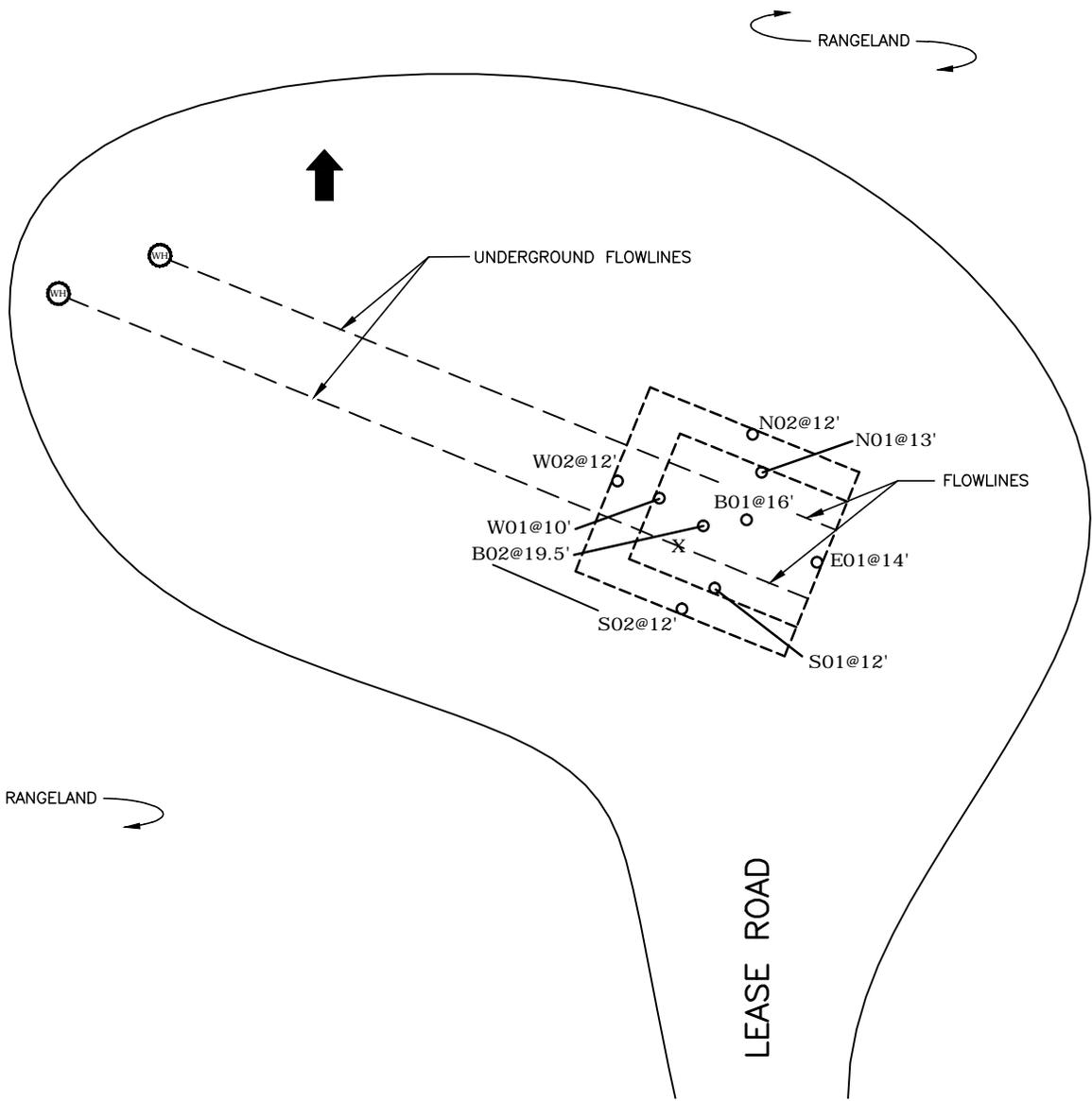


FIGURE 1
SITE LOCATION MAP
HSR-KNOX 10-3, 9-3, SHUR VIEW 23-3
NWSE 3-T5N-R67W
WELD COUNTY, COLORADO
KERR-McGEE OIL & GAS ONSHORE LP

SOURCE: TOPOZONE.COM
USGS 7.5' QUADRANGLE
(NAD27)





LEGEND

-  WELLHEAD
-  SOIL SAMPLE
-  RELEASE
-  EXTENT OF EXCAVATION
-  ESTIMATED GROUNDWATER FLOW DIRECTION

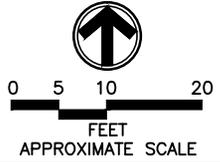


FIGURE 2
EXCAVATION SITE MAP
 HSR-KNOX 10-3, 9-3, SHUR VIEW 23-3
 NWSE 3-T5N-R67W
 WELD COUNTY, COLORADO
 KERR-McGEE OIL & GAS ONSHORE LP



TABLE 1
SOIL SAMPLE ANALYTICAL DATA
HSR-KNOX 10-3, 9-3, SHUR MEW 23-3
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)
B01@16'	3/7/2012	16	6.3	23	9.3	43	1,300	8,390
N01@13'	3/7/2012	13	0.090	0.58	0.21	1.3	34	490
S01@12'	3/7/2012	12	0.29	3.3	0.60	9.5	150	823
E01@14'	3/7/2012	14	0.013	0.028	0.0062	0.062	4.0	<50
W01@10'	3/7/2012	10	0.016	0.10	0.077	0.77	47	470
B02@19.5'	3/13/2012	19.5	0.098	0.61	0.19	1.3	26	951
N02@12'	3/13/2012	12	0.016	0.031	<0.0050	0.016	<0.50	<50
S02@12'	3/13/2012	12	0.023	0.053	0.0065	0.065	0.84	50
W02@12'	3/13/2012	12	<0.0050	<0.0050	<0.0050	<0.0050	<0.50	<50
COGCC Allowable Level			0.17	85	100	175	500	

Notes:

<0.01 - less than reported laboratory reporting limit.

mg/kg - milligrams per kilogram

bgs - below ground surface

GRO - Gasoline Range Organics

DRO - Diesel Range Organics

TPH - Total Petroleum Hydrocarbons

TEPH - Total Extractable Petroleum Hydrocarbons

Results noted in bold exceed COGCC allowable levels.

COGCC - Colorado Oil and Gas Conservation Commission

ORO - Oil Range Organics



Summit Scientific

741 Corporate Circle – Suite I ♦ Golden, Colorado 80401

303.277.9310 - laboratory ♦ 303.277.9531 - fax

March 08, 2012

John Cocroft
LT Environmental, Inc.
4600 West 60th Avenue
Arvada, CO 80003
RE: KMG - HSR-Knox 10-3

Enclosed are the results of analyses for samples received by Summit Scientific on 03/07/12 17:10. If you have any questions concerning this report, please feel free to contact me.

Sincerely,



Paul Shrewsbury For Ben Shrewsbury
President / Laboratory Director



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

Project: KMG - HSR-Knox 10-3

Project Number: 0142-
Project Manager: John Cocroft

Reported:
03/08/12 16:21

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
N01@13'	R203044-01	Soil	03/07/12 14:20	03/07/12 17:10
E01@14'	R203044-02	Soil	03/07/12 14:15	03/07/12 17:10
S01@12'	R203044-03	Soil	03/07/12 14:12	03/07/12 17:10
W01@10'	R203044-04	Soil	03/07/12 14:28	03/07/12 17:10
B01@16'	R203044-05	Soil	03/07/12 14:23	03/07/12 17:10

Summit Scientific

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

Project: KMG - HSR-Knox 10-3

Project Number: 0142-
Project Manager: John Cocroft

Reported:
03/08/12 16:21

N01@13'
R203044-01 (Soil)

Summit Scientific

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **03/07/12 14:20**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (TEPH-DRO)	490	50	mg/kg	1	2030713	03/07/12	03/07/12	8015 Full Carbon Chain	
C28-C36 (TEPH-ORO)	ND	50	"	"	"	"	"	"	

Date Sampled: **03/07/12 14:20**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
<i>Surrogate: o-Terphenyl</i>		100 %	80-124		"	"	"	"	

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **03/07/12 14:20**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	0.090	0.0050	mg/kg	1	2030712	03/07/12	03/08/12	EPA 8260B	
Toluene	0.58	0.0050	"	"	"	"	"	"	
Ethylbenzene	0.21	0.0050	"	"	"	"	"	"	
Xylenes (total)	1.3	0.0050	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	34	0.50	"	"	"	"	"	"	

Date Sampled: **03/07/12 14:20**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
<i>Surrogate: 1,2-Dichloroethane-d4</i>		83.0 %	67.4-143		"	"	"	"	
<i>Surrogate: Toluene-d8</i>		94.0 %	77.3-114		"	"	"	"	
<i>Surrogate: 4-Bromofluorobenzene</i>		99.3 %	78.4-125		"	"	"	"	

Summit Scientific

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

Project: KMG - HSR-Knox 10-3

Project Number: 0142-
Project Manager: John Cocroft

Reported:
03/08/12 16:21

E01@14'
R203044-02 (Soil)

Summit Scientific

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **03/07/12 14:15**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (TEPH-DRO)	ND	50	mg/kg	1	2030713	03/07/12	03/07/12	8015 Full Carbon Chain	
C28-C36 (TEPH-ORO)	ND	50	"	"	"	"	"	"	

Date Sampled: **03/07/12 14:15**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: <i>o</i> -Terphenyl		97.0 %	80-124		"	"	"	"	

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **03/07/12 14:15**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	0.013	0.0050	mg/kg	1	2030712	03/07/12	03/08/12	EPA 8260B	
Toluene	0.028	0.0050	"	"	"	"	"	"	
Ethylbenzene	0.0062	0.0050	"	"	"	"	"	"	
Xylenes (total)	0.062	0.0050	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	4.0	0.50	"	"	"	"	"	"	

Date Sampled: **03/07/12 14:15**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		83.7 %	67.4-143		"	"	"	"	
Surrogate: Toluene-d8		93.7 %	77.3-114		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		105 %	78.4-125		"	"	"	"	

Summit Scientific

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

Project: KMG - HSR-Knox 10-3

Project Number: 0142-
Project Manager: John Cocroft

Reported:
03/08/12 16:21

S01@12'
R203044-03 (Soil)

Summit Scientific

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **03/07/12 14:12**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (TEPH-DRO)	770	50	mg/kg	1	2030713	03/07/12	03/07/12	8015 Full Carbon Chain	
C28-C36 (TEPH-ORO)	53	50	"	"	"	"	"	"	

Date Sampled: **03/07/12 14:12**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
<i>Surrogate: o-Terphenyl</i>		101 %	80-124		"	"	"	"	

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **03/07/12 14:12**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	0.29	0.0050	mg/kg	1	2030712	03/07/12	03/08/12	EPA 8260B	
Toluene	3.3	0.050	"	10	"	"	03/07/12	"	
Ethylbenzene	0.60	0.0050	"	1	"	"	03/08/12	"	
Xylenes (total)	9.5	0.050	"	10	"	"	03/07/12	"	
Gasoline Range Hydrocarbons	150	5.0	"	"	"	"	"	"	

Date Sampled: **03/07/12 14:12**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
<i>Surrogate: 1,2-Dichloroethane-d4</i>		82.5 %	67.4-143		"	"	03/08/12	"	
<i>Surrogate: Toluene-d8</i>		103 %	77.3-114		"	"	"	"	
<i>Surrogate: 4-Bromofluorobenzene</i>		103 %	78.4-125		"	"	"	"	

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

Project: KMG - HSR-Knox 10-3

Project Number: 0142-
Project Manager: John Cocroft

Reported:
03/08/12 16:21

W01@10'
R203044-04 (Soil)

Summit Scientific

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **03/07/12 14:28**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (TEPH-DRO)	470	50	mg/kg	1	2030713	03/07/12	03/08/12	8015 Full Carbon Chain	
C28-C36 (TEPH-ORO)	ND	50	"	"	"	"	"	"	

Date Sampled: **03/07/12 14:28**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
<i>Surrogate: o-Terphenyl</i>		101 %	80-124		"	"	"	"	

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **03/07/12 14:28**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	0.016	0.0050	mg/kg	1	2030712	03/07/12	03/08/12	EPA 8260B	
Toluene	0.10	0.0050	"	"	"	"	"	"	
Ethylbenzene	0.077	0.0050	"	"	"	"	"	"	
Xylenes (total)	0.77	0.0050	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	47	0.50	"	"	"	"	"	"	

Date Sampled: **03/07/12 14:28**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
<i>Surrogate: 1,2-Dichloroethane-d4</i>		82.3 %	67.4-143		"	"	"	"	
<i>Surrogate: Toluene-d8</i>		91.4 %	77.3-114		"	"	"	"	
<i>Surrogate: 4-Bromofluorobenzene</i>		103 %	78.4-125		"	"	"	"	

Summit Scientific

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

Project: KMG - HSR-Knox 10-3

Project Number: 0142-
Project Manager: John Cocroft

Reported:
03/08/12 16:21

B01@16'
R203044-05 (Soil)

Summit Scientific

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **03/07/12 14:23**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (TEPH-DRO)	7900	50	mg/kg	1	2030713	03/07/12	03/08/12	8015 Full Carbon Chain	
C28-C36 (TEPH-ORO)	490	50	"	"	"	"	"	"	

Date Sampled: **03/07/12 14:23**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
<i>Surrogate: o-Terphenyl</i>		87.2 %	80-124		"	"	"	"	

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **03/07/12 14:23**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	6.3	0.050	mg/kg	10	2030712	03/07/12	03/07/12	EPA 8260B	
Toluene	23	0.050	"	"	"	"	03/08/12	"	E
Ethylbenzene	9.3	0.050	"	"	"	"	03/07/12	"	E
Xylenes (total)	43	0.050	"	"	"	"	03/08/12	"	E
Gasoline Range Hydrocarbons	1300	5.0	"	"	"	"	03/07/12	"	E

Date Sampled: **03/07/12 14:23**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
<i>Surrogate: 1,2-Dichloroethane-d4</i>		78.6 %	67.4-143		"	"	03/08/12	"	
<i>Surrogate: Toluene-d8</i>		100 %	77.3-114		"	"	"	"	
<i>Surrogate: 4-Bromofluorobenzene</i>		103 %	78.4-125		"	"	"	"	

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

Project: KMG - HSR-Knox 10-3

Project Number: 0142-
Project Manager: John Cocroft

Reported:
03/08/12 16:21

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 2030713 - EPA 3550A

Blank (2030713-BLK1)				Prepared: 03/07/12 Analyzed: 03/08/12							
C10-C28 (TEPH-DRO)	ND	50	mg/kg								
C28-C36 (TEPH-ORO)	ND	50	"								
<i>Surrogate: o-Terphenyl</i>	<i>12.1</i>		<i>"</i>	<i>12.5</i>		<i>97.1</i>	<i>80-124</i>				
LCS (2030713-BS1)				Prepared: 03/07/12 Analyzed: 03/08/12							
C10-C28 (TEPH-DRO)	453	50	mg/kg	501		90.3	85-129			11.8	
LCS Dup (2030713-BSD1)				Prepared: 03/07/12 Analyzed: 03/08/12							
C10-C28 (TEPH-DRO)	476	50	mg/kg	501		95.0	85-129	5.03		11.8	
Matrix Spike (2030713-MS1)				Source: R203040-01 Prepared: 03/07/12 Analyzed: 03/08/12							
C10-C28 (TEPH-DRO)	481	50	mg/kg	501	ND	96.1	77.3-134			8.39	
Matrix Spike Dup (2030713-MSD1)				Source: R203040-01 Prepared: 03/07/12 Analyzed: 03/08/12							
C10-C28 (TEPH-DRO)	478	50	mg/kg	501	ND	95.5	77.3-134	0.618		8.39	

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

Project: KMG - HSR-Knox 10-3

Project Number: 0142-
Project Manager: John Cocroft

Reported:
03/08/12 16:21

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 2030712 - EPA 5030 Soil MS

Blank (2030712-BLK1)

Prepared: 03/07/12 Analyzed: 03/08/12

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>0.0310</i>		<i>"</i>	<i>0.0397</i>	<i>78.1</i>	<i>67.4-143</i>				
<i>Surrogate: Toluene-d8</i>	<i>0.0375</i>		<i>"</i>	<i>0.0400</i>	<i>93.7</i>	<i>77.3-114</i>				
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>0.0411</i>		<i>"</i>	<i>0.0400</i>	<i>103</i>	<i>78.4-125</i>				

LCS (2030712-BS1)

Prepared: 03/07/12 Analyzed: 03/08/12

Benzene	0.0815	0.0050	mg/kg	0.100	81.5	61-139			11.1	
Toluene	0.0809	0.0050	"	0.100	80.9	64-132			10.9	
Ethylbenzene	0.0910	0.0050	"	0.100	91.0	68.7-135			20	
m,p-Xylene	0.177	0.010	"	0.200	88.7	70.4-129			20	
o-Xylene	0.0873	0.0050	"	0.100	87.3	66.9-126			20	
<i>Surrogate: 1,2-Dichloroethane-d4</i>	<i>0.0295</i>		<i>"</i>	<i>0.0397</i>	<i>74.4</i>	<i>67.4-143</i>				
<i>Surrogate: Toluene-d8</i>	<i>0.0368</i>		<i>"</i>	<i>0.0400</i>	<i>92.0</i>	<i>77.3-114</i>				
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>0.0411</i>		<i>"</i>	<i>0.0400</i>	<i>103</i>	<i>78.4-125</i>				

LCS Dup (2030712-BSD1)

Prepared: 03/07/12 Analyzed: 03/08/12

Benzene	0.0814	0.0050	mg/kg	0.100	81.4	61-139	0.147		11.1	
Toluene	0.0803	0.0050	"	0.100	80.3	64-132	0.745		10.9	
Ethylbenzene	0.0912	0.0050	"	0.100	91.2	68.7-135	0.132		20	
m,p-Xylene	0.178	0.010	"	0.200	89.1	70.4-129	0.354		20	
o-Xylene	0.0869	0.0050	"	0.100	86.9	66.9-126	0.482		20	
<i>Surrogate: 1,2-Dichloroethane-d4</i>	<i>0.0302</i>		<i>"</i>	<i>0.0397</i>	<i>76.0</i>	<i>67.4-143</i>				
<i>Surrogate: Toluene-d8</i>	<i>0.0368</i>		<i>"</i>	<i>0.0400</i>	<i>92.1</i>	<i>77.3-114</i>				
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>0.0409</i>		<i>"</i>	<i>0.0400</i>	<i>102</i>	<i>78.4-125</i>				

Summit Scientific

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

Project: KMG - HSR-Knox 10-3

Project Number: 0142-
Project Manager: John Cocroft

Reported:
03/08/12 16:21

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 2030712 - EPA 5030 Soil MS

Matrix Spike (2030712-MS1)	Source: R203042-01			Prepared: 03/07/12		Analyzed: 03/08/12				
Benzene	0.0823	0.0050	mg/kg	0.100	ND	82.3	42.9-137			17.9
Toluene	0.0814	0.0050	"	0.100	ND	81.4	42.6-130			11.9
Ethylbenzene	0.0904	0.0050	"	0.100	ND	90.4	39-133			20
m,p-Xylene	0.176	0.010	"	0.200	0.00357	86.1	34.7-134			20
o-Xylene	0.0873	0.0050	"	0.100	ND	87.3	41.3-126			20
<i>Surrogate: 1,2-Dichloroethane-d4</i>	<i>0.0325</i>		<i>"</i>	<i>0.0397</i>		<i>81.8</i>	<i>67.4-143</i>			
<i>Surrogate: Toluene-d8</i>	<i>0.0370</i>		<i>"</i>	<i>0.0400</i>		<i>92.4</i>	<i>77.3-114</i>			
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>0.0402</i>		<i>"</i>	<i>0.0400</i>		<i>100</i>	<i>78.4-125</i>			

Matrix Spike Dup (2030712-MSD1)	Source: R203042-01			Prepared: 03/07/12		Analyzed: 03/08/12				
Benzene	0.0831	0.0050	mg/kg	0.100	ND	83.1	42.9-137	1.02		17.9
Toluene	0.0814	0.0050	"	0.100	ND	81.4	42.6-130	0.0369		11.9
Ethylbenzene	0.0902	0.0050	"	0.100	ND	90.2	39-133	0.199		20
m,p-Xylene	0.176	0.010	"	0.200	0.00357	86.1	34.7-134	0.0171		20
o-Xylene	0.0872	0.0050	"	0.100	ND	87.2	41.3-126	0.0688		20
<i>Surrogate: 1,2-Dichloroethane-d4</i>	<i>0.0322</i>		<i>"</i>	<i>0.0397</i>		<i>81.2</i>	<i>67.4-143</i>			
<i>Surrogate: Toluene-d8</i>	<i>0.0375</i>		<i>"</i>	<i>0.0400</i>		<i>93.8</i>	<i>77.3-114</i>			
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>0.0391</i>		<i>"</i>	<i>0.0400</i>		<i>97.6</i>	<i>78.4-125</i>			

Summit Scientific

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

Project: KMG - HSR-Knox 10-3

Project Number: 0142-
Project Manager: John Cocroft

Reported:
03/08/12 16:21

Notes and Definitions

- 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

Summit Scientific

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Summit Scientific

741 Corporate Circle – Suite I ♦ Golden, Colorado 80401

303.277.9310 - laboratory ♦ 303.277.9531 - fax

March 14, 2012

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

RE: KMG - HSR-Knox 10-3,9-3/Shurview 23-3

Enclosed are the results of analyses for samples received by Summit Scientific on 03/13/12 17:15. If you have any questions concerning this report, please feel free to contact me.

Sincerely,



Paul Shrewsbury For Ben Shrewsbury
President / Laboratory Director



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

Project: KMG - HSR-Knox 10-3,9-3/Shurview 23-3

Project Number: 0142-12057
Project Manager: John Cocroft

Reported:
03/14/12 07:31

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
S02@12'	R203090-01	Soil	03/13/12 14:56	03/13/12 17:15
B02@19.5'	R203090-02	Soil	03/13/12 14:50	03/13/12 17:15
W02@12'	R203090-03	Soil	03/13/12 14:54	03/13/12 17:15
N02@12'	R203090-04	Soil	03/13/12 14:52	03/13/12 17:15

Summit Scientific

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

Project: KMG - HSR-Knox 10-3,9-3/Shurview 23-3

Project Number: 0142-12057
Project Manager: John Cocroft

Reported:
03/14/12 07:31

S02@12'
R203090-01 (Soil)

Summit Scientific

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **03/13/12 14:56**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (TEPH-DRO)	50	50	mg/kg	1	2031310	03/13/12	03/13/12	8015 Full Carbon Chain	
C28-C36 (TEPH-ORO)	ND	50	"	"	"	"	"	"	

Date Sampled: **03/13/12 14:56**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
<i>Surrogate: o-Terphenyl</i>		98.9 %	80-124		"	"	"	"	

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **03/13/12 14:56**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	0.023	0.0050	mg/kg	1	2031309	03/13/12	03/13/12	EPA 8260B	
Toluene	0.053	0.0050	"	"	"	"	"	"	
Ethylbenzene	0.0065	0.0050	"	"	"	"	"	"	
Xylenes (total)	0.065	0.0050	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	0.84	0.50	"	"	"	"	"	"	

Date Sampled: **03/13/12 14:56**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
<i>Surrogate: 1,2-Dichloroethane-d4</i>		77.1 %	67.4-143		"	"	"	"	
<i>Surrogate: Toluene-d8</i>		90.5 %	77.3-114		"	"	"	"	
<i>Surrogate: 4-Bromofluorobenzene</i>		101 %	78.4-125		"	"	"	"	

Summit Scientific

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

Project: KMG - HSR-Knox 10-3,9-3/Shurview 23-3

Project Number: 0142-12057
Project Manager: John Cocroft

Reported:
03/14/12 07:31

B02@19.5'
R203090-02 (Soil)

Summit Scientific

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **03/13/12 14:50**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (TEPH-DRO)	890	50	mg/kg	1	2031310	03/13/12	03/13/12	8015 Full Carbon Chain	
C28-C36 (TEPH-ORO)	61	50	"	"	"	"	"	"	

Date Sampled: **03/13/12 14:50**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
<i>Surrogate: o-Terphenyl</i>		104 %	80-124		"	"	"	"	

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **03/13/12 14:50**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	0.098	0.0050	mg/kg	1	2031309	03/13/12	03/13/12	EPA 8260B	
Toluene	0.61	0.0050	"	"	"	"	"	"	
Ethylbenzene	0.19	0.0050	"	"	"	"	"	"	
Xylenes (total)	1.3	0.0050	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	26	0.50	"	"	"	"	"	"	

Date Sampled: **03/13/12 14:50**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
<i>Surrogate: 1,2-Dichloroethane-d4</i>		77.3 %	67.4-143		"	"	"	"	
<i>Surrogate: Toluene-d8</i>		92.1 %	77.3-114		"	"	"	"	
<i>Surrogate: 4-Bromofluorobenzene</i>		102 %	78.4-125		"	"	"	"	

Summit Scientific

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

Project: KMG - HSR-Knox 10-3,9-3/Shurview 23-3

Project Number: 0142-12057
Project Manager: John Cocroft

Reported:
03/14/12 07:31

W02@12'
R203090-03 (Soil)

Summit Scientific

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **03/13/12 14:54**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (TEPH-DRO)	ND	50	mg/kg	1	2031310	03/13/12	03/13/12	8015 Full Carbon Chain	
C28-C36 (TEPH-ORO)	ND	50	"	"	"	"	"	"	

Date Sampled: **03/13/12 14:54**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: <i>o</i> -Terphenyl		97.3 %	80-124		"	"	"	"	

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **03/13/12 14:54**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	ND	0.0050	mg/kg	1	2031309	03/13/12	03/13/12	EPA 8260B	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
Xylenes (total)	ND	0.0050	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	0.50	"	"	"	"	"	"	

Date Sampled: **03/13/12 14:54**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		71.7 %	67.4-143		"	"	"	"	
Surrogate: Toluene-d8		90.0 %	77.3-114		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		104 %	78.4-125		"	"	"	"	

Summit Scientific

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

Project: KMG - HSR-Knox 10-3,9-3/Shurview 23-3

Project Number: 0142-12057
Project Manager: John Cocroft

Reported:
03/14/12 07:31

N02@12'
R203090-04 (Soil)

Summit Scientific

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **03/13/12 14:52**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (TEPH-DRO)	ND	50	mg/kg	1	2031310	03/13/12	03/13/12	8015 Full Carbon Chain	
C28-C36 (TEPH-ORO)	ND	50	"	"	"	"	"	"	

Date Sampled: **03/13/12 14:52**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: <i>o</i> -Terphenyl		96.0 %	80-124		"	"	"	"	

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **03/13/12 14:52**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	0.016	0.0050	mg/kg	1	2031309	03/13/12	03/13/12	EPA 8260B	
Toluene	0.031	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
Xylenes (total)	0.016	0.0050	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	0.50	"	"	"	"	"	"	

Date Sampled: **03/13/12 14:52**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		78.1 %	67.4-143		"	"	"	"	
Surrogate: Toluene-d8		91.2 %	77.3-114		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		98.9 %	78.4-125		"	"	"	"	

Summit Scientific

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

Project: KMG - HSR-Knox 10-3,9-3/Shurview 23-3

Project Number: 0142-12057
Project Manager: John Cocroft

Reported:
03/14/12 07:31

Extractable Petroleum Hydrocarbons by 8015 - Quality Control
Summit Scientific

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

Batch 2031310 - EPA 3550A

Blank (2031310-BLK1)				Prepared & Analyzed: 03/13/12							
C10-C28 (TEPH-DRO)	ND	50	mg/kg								
C28-C36 (TEPH-ORO)	ND	50	"								
<i>Surrogate: o-Terphenyl</i>	12.3		"	12.5		98.2	80-124				
LCS (2031310-BS1)				Prepared: 03/13/12 Analyzed: 03/14/12							
C10-C28 (TEPH-DRO)	536	50	mg/kg	501		107	85-129			11.8	
LCS Dup (2031310-BSD1)				Prepared: 03/13/12 Analyzed: 03/14/12							
C10-C28 (TEPH-DRO)	504	50	mg/kg	501		101	85-129	6.14		11.8	
Matrix Spike (2031310-MS1)				Source: R203091-05 Prepared: 03/13/12 Analyzed: 03/14/12							
C10-C28 (TEPH-DRO)	523	50	mg/kg	501	28.0	98.8	77.3-134			8.39	
Matrix Spike Dup (2031310-MSD1)				Source: R203091-05 Prepared: 03/13/12 Analyzed: 03/14/12							
C10-C28 (TEPH-DRO)	504	50	mg/kg	501	28.0	95.0	77.3-134	3.71		8.39	

Summit Scientific

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

Project: KMG - HSR-Knox 10-3,9-3/Shurview 23-3

Project Number: 0142-12057
Project Manager: John Cocroft

Reported:
03/14/12 07:31

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 2031309 - EPA 5030 Soil MS

Blank (2031309-BLK1)

Prepared: 03/13/12 Analyzed: 03/14/12

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>0.0290</i>		<i>"</i>	<i>0.0397</i>	<i>72.9</i>	<i>67.4-143</i>				
<i>Surrogate: Toluene-d8</i>	<i>0.0366</i>		<i>"</i>	<i>0.0400</i>	<i>91.5</i>	<i>77.3-114</i>				
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>0.0394</i>		<i>"</i>	<i>0.0400</i>	<i>98.6</i>	<i>78.4-125</i>				

LCS (2031309-BS1)

Prepared: 03/13/12 Analyzed: 03/14/12

Benzene	0.0755	0.0050	mg/kg	0.100	75.5	61-139			11.1	
Toluene	0.0771	0.0050	"	0.100	77.1	64-132			10.9	
Ethylbenzene	0.0878	0.0050	"	0.100	87.8	68.7-135			20	
m,p-Xylene	0.170	0.010	"	0.200	85.2	70.4-129			20	
o-Xylene	0.0834	0.0050	"	0.100	83.4	66.9-126			20	
<i>Surrogate: 1,2-Dichloroethane-d4</i>	<i>0.0280</i>		<i>"</i>	<i>0.0397</i>	<i>70.7</i>	<i>67.4-143</i>				
<i>Surrogate: Toluene-d8</i>	<i>0.0357</i>		<i>"</i>	<i>0.0400</i>	<i>89.2</i>	<i>77.3-114</i>				
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>0.0397</i>		<i>"</i>	<i>0.0400</i>	<i>99.2</i>	<i>78.4-125</i>				

LCS Dup (2031309-BSD1)

Prepared: 03/13/12 Analyzed: 03/14/12

Benzene	0.0781	0.0050	mg/kg	0.100	78.1	61-139	3.40		11.1	
Toluene	0.0765	0.0050	"	0.100	76.5	64-132	0.820		10.9	
Ethylbenzene	0.0857	0.0050	"	0.100	85.7	68.7-135	2.46		20	
m,p-Xylene	0.165	0.010	"	0.200	82.7	70.4-129	3.02		20	
o-Xylene	0.0808	0.0050	"	0.100	80.8	66.9-126	3.18		20	
<i>Surrogate: 1,2-Dichloroethane-d4</i>	<i>0.0287</i>		<i>"</i>	<i>0.0397</i>	<i>72.2</i>	<i>67.4-143</i>				
<i>Surrogate: Toluene-d8</i>	<i>0.0359</i>		<i>"</i>	<i>0.0400</i>	<i>89.8</i>	<i>77.3-114</i>				
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>0.0394</i>		<i>"</i>	<i>0.0400</i>	<i>98.6</i>	<i>78.4-125</i>				

Summit Scientific

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

Project: KMG - HSR-Knox 10-3,9-3/Shurview 23-3

Project Number: 0142-12057
Project Manager: John Cocroft

Reported:
03/14/12 07:31

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 2031309 - EPA 5030 Soil MS

Matrix Spike (2031309-MS1)	Source: R203091-05			Prepared: 03/13/12		Analyzed: 03/14/12				
Benzene	0.0791	0.0050	mg/kg	0.100	ND	79.1	42.9-137			17.9
Toluene	0.0771	0.0050	"	0.100	ND	77.1	42.6-130			11.9
Ethylbenzene	0.0868	0.0050	"	0.100	ND	86.8	39-133			20
m,p-Xylene	0.167	0.010	"	0.200	ND	83.4	34.7-134			20
o-Xylene	0.0836	0.0050	"	0.100	ND	83.6	41.3-126			20
<i>Surrogate: 1,2-Dichloroethane-d4</i>	<i>0.0310</i>		"	<i>0.0397</i>		<i>78.1</i>	<i>67.4-143</i>			
<i>Surrogate: Toluene-d8</i>	<i>0.0357</i>		"	<i>0.0400</i>		<i>89.2</i>	<i>77.3-114</i>			
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>0.0404</i>		"	<i>0.0400</i>		<i>101</i>	<i>78.4-125</i>			

Matrix Spike Dup (2031309-MSD1)	Source: R203091-05			Prepared: 03/13/12		Analyzed: 03/14/12				
Benzene	0.0786	0.0050	mg/kg	0.100	ND	78.6	42.9-137	0.723		17.9
Toluene	0.0775	0.0050	"	0.100	ND	77.5	42.6-130	0.466		11.9
Ethylbenzene	0.0860	0.0050	"	0.100	ND	86.0	39-133	0.973		20
m,p-Xylene	0.166	0.010	"	0.200	ND	82.9	34.7-134	0.613		20
o-Xylene	0.0832	0.0050	"	0.100	ND	83.2	41.3-126	0.432		20
<i>Surrogate: 1,2-Dichloroethane-d4</i>	<i>0.0319</i>		"	<i>0.0397</i>		<i>80.3</i>	<i>67.4-143</i>			
<i>Surrogate: Toluene-d8</i>	<i>0.0360</i>		"	<i>0.0400</i>		<i>90.1</i>	<i>77.3-114</i>			
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>0.0398</i>		"	<i>0.0400</i>		<i>99.5</i>	<i>78.4-125</i>			

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

Project: KMG - HSR-Knox 10-3,9-3/Shurview 23-3

Project Number: 0142-12057
Project Manager: John Cocroft

Reported:
03/14/12 07:31

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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