

State of Colorado Oil and Gas Conservation Commission

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



Received 3/31/2014

SITE INVESTIGATION AND REMEDIATION WORKPLAN

This form shall be submitted to the Director for approval prior to the initiation of site investigation and remediation activities. Form 27 is intended to be used whenever possible. Additional documentation will be required when large volumes of soil and groundwater have been impacted or involve large facilities with multiple source areas. See Rule 910. Attach as many pages as needed to fully describe the proposed work.

OGCC Employee:
[] Spill [] Complaint
[] Inspection [] NOAV
Tracking No: 2147729

CAUSE OF CONDITION BEING INVESTIGATED AND REMEDIATED

- [X] Spill or Release [] Plug & Abandon [] Central Facility Closure [] Site/Facility Closure [X] Other (describe): No Further Action Request

GENERAL INFORMATION

OGCC Operator Number: 8960
Name of Operator: Bonanza Creek Energy Operating Company LLC
Address: 410 17th Street, Suite 1400
City: Denver State: CO Zip: 80202
Contact Name and Telephone: Name: Brian Dodek No: 720-225-6653 Fax: 720-279-2331
API/Facility No: 05-123-37700 County: Weld
Facility Name: North Platte K-22 Pad Facility Number: 433629
Well Name: North Platte Federal Well Number: K-O-22HNB
Location (QtrQtr, Sec, Twp, Rng, Meridian): NWNE 22-T5N-R63W Latitude: 40.391225 Longitude: -104.421929

TECHNICAL CONDITIONS

Type of Waste Causing Impact (crude oil, condensate, produced water, etc.): Oil
Site Conditions: Is location within a sensitive area (according to Rule 901e)? [] Y [X] N If yes, attach evaluation.
Adjacent land use (cultivated, irrigated, dry land farming, industrial, residential, etc.): Rangeland
Soil type, if not previously identified on Form 2A or Federal Surface Use Plan: Valent Sand
Potential receptors (water wells within 1/4 mi, surface waters, etc.): Surface water and wetlands are greater than one mile from the site. The nearest building is located approximately 4,600 feet southeast of the site. A water well (domestic/stock) is located approximately 4,200 feet southeast of the site
Description of Impact (if previously provided, refer to that form or document):
Impacted Media (check): [X] Soils [] Vegetation [] Groundwater [] Surface water
Extent of Impact: 120' N-S x 40' E-W x 1.5' bgs
How Determined: Visual, olfactory and soil sample analytical results

REMEDIALTION WORKPLAN

Describe initial action taken (if previously provided, refer to that form or document):
A Form 19 describing the release was submitted to the COGCC on February 18, 2014 (Spill # 2147729). On February 14, 2014, an oil hauler overfilled the truck's tanker, releasing an estimated 21 bbls of oil through the tanker vent outside of secondary containment. Upon discovery of the release, the truck pump was shut off and a vacuum truck was called in to recover pooled liquid from the ground surface. Approximately 19 bbls of oil were recovered by the vacuum truck.
Describe how source is to be removed:
Following recovery of the pooled liquid, staining was observed on the ground surface outside of the secondary containment to the east and south of the tank battery. Excavation equipment was used to scrape up the impacted soil until visual and olfactory observations indicated that the petroleum hydrocarbon impacted soil had been excavated. Four confirmation soil samples were collected from the base of the excavation and submitted for laboratory analysis of TPH and BTEX. The laboratory analytical results indicate that TPH and BTEX concentrations are compliant with COGCC Table 910-1 concentration levels at the extent of the excavation (Table 1). Approximately 96 cubic yards (yd³) of impacted soil were removed from the excavation and transported to a licensed facility for disposal.
Describe how remediation of existing impacts is to be accomplished, including removal and disposal at an injection well or licensed facility, land treatment on site, removal of impacted groundwater, insitu bioremediation, burning of oily vegetation, etc.:
The excavated soil was transported to Waste Management's Buffalo Ridge landfill in Keenesburg, Colorado for disposal. The waste manifest summary documenting the disposal activities is attached.

Oil and Gas Conservation Commission

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REMEDIATION WORKPLAN (CONT.)

OGCC Employee: R. Allison

Tracking Number: 2147729
Name of Operator: Bonanza Creek Energy Operating Company LLC
OGCC Operator No: 8960
Received Date: 3/31/2014
Well Name & No: North Platte Federal K-O-22HNB
Facility Name & No.: North Platte Federal K-22 Pad / 433629

If groundwater has been impacted, describe proposed monitoring plan (# of wells or sample points, sampling schedule, analytical methods, etc.):
Groundwater was not encountered during excavation activities.

Describe reclamation plan. Discuss existing and new grade recontouring; method and testing of compaction alleviation; and reseeding program, including location of new seed, seed mix and noxious weed prevention. Attach diagram or drawing. Use additional sheet for description if required.
The Bonanza Creek production facility remains at the site. The excavation area was backfilled with clean soil and restored to its pre-release grade. As the release occurred within the footprint of the tank battery facility, reclamation is not necessary.

Attach samples and analytical results taken to verify remediation of impacts. Show locations of samples on an onsite schematic or drawing.
Is further site investigation required? [] Y [X] N If yes, describe:
No further investigation is required at this site. Laboratory analytical results for the confirmation soil samples indicate concentration levels of COGCC Table 910-1 contaminants of concern (TPH and BTEX) are below COGCC allowable levels at the extent of the excavation. A copy of the laboratory analytical report is attached. As all impacted material has been removed from the site and disposed of at a licensed disposal facility, Bonanza Creek is requesting a No Further Action determination.

Final disposition of E&P waste (landtreated and disposed onsite, name of licensed disposal facility, recycling, reuse, etc.):
The excavated soil (96 yd³) was transported to Waste Management's Buffalo Ridge landfill in Keenesburg, Colorado for disposal. The waste manifest summary documenting the disposal activities is attached.

IMPLEMENTATION SCHEDULE

Table with 4 columns: Date Site Investigation Began, Date Site Investigation Completed, Remediation Plan Submitted, Remediation Start Date, Anticipated Completion Date, Actual Completion Date. Values: 2/14/14, 2/14/14, 3/31/14, 2/14/14, NA, 2/14/14

I hereby certify that the statements made in this form are, to the best of my knowledge, true, correct, and complete.

Print Name: Brian Dodek

Signed: [Signature] Title: Environmental Specialist Date: 3/31/14

OGCC Approved: _____ Title: Northeast EPS Date: 4/21/2014

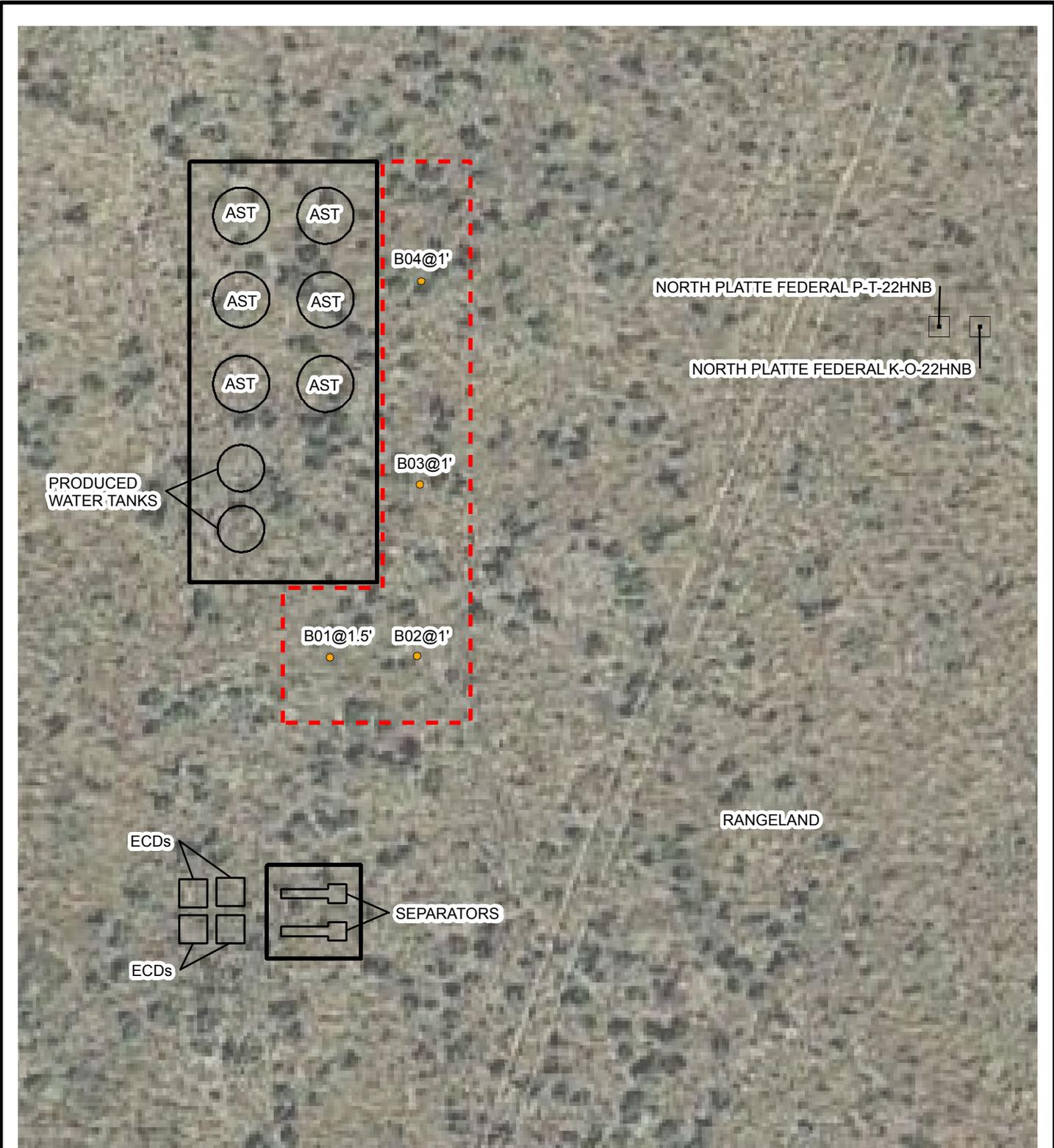


IMAGE COURTESY OF GOOGLE EARTH 2013

LEGEND

- SOIL SAMPLE
- WELLHEAD
- EXCAVATION EXTENT
- BERM

AST: ABOVEGROUND STORAGE TANK
 ECD: EMISSION CONTROL DEVICE

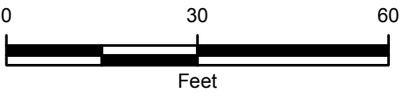


FIGURE 1
SITE MAP
 NORTH PLATTE FEDERAL K-0-22 HNB
 NWNE SEC 22-T5N-R63W
 WELD COUNTY, COLORADO
BONANZA CREEK ENERGY OPERATING COMPANY LLC



TABLE 1
SOIL SAMPLE ANALYTICAL DATA
NORTH PLATTE FEDERAL K-O-22HNB
BONANZA CREEK ENERGY OPERATING COMPANY LLC

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)	TPH-DRO (mg/kg)
B01@1.5'	3/5/2014	1.5	<0.0020	<0.0050	<0.0050	<0.0050	<0.50	<50
B02@1'	3/5/2014	1	0.0068	0.027	0.0080	0.12	2.8	230
B03@1'	3/5/2014	1	<0.0020	<0.0050	<0.0050	0.0089	1.7	<50
B04@1'	3/5/2014	1	<0.0020	<0.0050	<0.0050	<0.0050	<0.50	<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

DRO - Diesel Range Organics

< - less than laboratory reporting limit

COGCC - Colorado Oil and Gas Conservation Commission



Summit Scientific

741 Corporate Circle – Suite I ♦ Golden, Colorado 80401

303.277.9310 - laboratory ♦ 303.277.9531 - fax

March 05, 2014

Justin Solomon

LT Environmental, Inc.

4600 West 60th Avenue

Arvada, CO 80003

RE: BC - North Platte Federal K-O-22

Enclosed are the results of analyses for samples received by Summit Scientific on 03/05/14 16:20. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

A handwritten signature in black ink, appearing to read 'BS', with a long, sweeping horizontal line extending to the right.

Ben Shrewsbury

President / Laboratory Manager



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

Project: BC - North Platte Federal K-O-22

Project Number: 0345
Project Manager: Justin Solomon

Reported:
03/05/14 22:57

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
B01@1.5'	1403026-01	Soil	03/05/14 14:40	03/05/14 16:20
B02@1'	1403026-02	Soil	03/05/14 14:45	03/05/14 16:20
B03@1'	1403026-03	Soil	03/05/14 14:50	03/05/14 16:20
B04@1'	1403026-04	Soil	03/05/14 14:55	03/05/14 16:20

Summit Scientific

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

Project: BC - North Platte Federal K-O-22

Project Number: 0345
Project Manager: Justin Solomon

Reported:
03/05/14 22:57

B01@1.5'
1403026-01 (Soil)

Summit Scientific

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **03/05/14 14:40**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	ND	50	mg/kg	1	1403034	03/05/14	03/05/14	8015M	

Date Sampled: **03/05/14 14:40**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: <i>o</i> -Terphenyl		107 %	30-150		"	"	"	"	

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **03/05/14 14:40**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	ND	0.0020	mg/kg	1	1403033	03/05/14	03/05/14	EPA 8260B	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
Xylenes (total)	ND	0.0050	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	0.50	"	"	"	"	"	"	

Date Sampled: **03/05/14 14:40**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		98.1 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		87.4 %	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: BC - North Platte Federal K-O-22

Project Number: 0345
Project Manager: Justin Solomon

Reported:
03/05/14 22:57

B02@1'
1403026-02 (Soil)

Summit Scientific

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **03/05/14 14:45**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	230	50	mg/kg	1	1403034	03/05/14	03/05/14	8015M	

Date Sampled: **03/05/14 14:45**

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

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **03/05/14 14:45**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	0.0068	0.0020	mg/kg	1	1403033	03/05/14	03/05/14	EPA 8260B	
Toluene	0.027	0.0050	"	"	"	"	"	"	
Ethylbenzene	0.0080	0.0050	"	"	"	"	"	"	
Xylenes (total)	0.12	0.0050	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	2.8	0.50	"	"	"	"	"	"	

Date Sampled: **03/05/14 14:45**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
<i>Surrogate: 1,2-Dichloroethane-d4</i>		102 %	23-173		"	"	"	"	
<i>Surrogate: Toluene-d8</i>		102 %	20-170		"	"	"	"	
<i>Surrogate: 4-Bromofluorobenzene</i>		98.6 %	21-167		"	"	"	"	

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

Project: BC - North Platte Federal K-O-22

Project Number: 0345
Project Manager: Justin Solomon

Reported:
03/05/14 22:57

B03@1'
1403026-03 (Soil)

Summit Scientific

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **03/05/14 14:50**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	ND	50	mg/kg	1	1403034	03/05/14	03/05/14	8015M	

Date Sampled: **03/05/14 14:50**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: <i>o</i> -Terphenyl		102 %	30-150		"	"	"	"	

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **03/05/14 14:50**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	ND	0.0020	mg/kg	1	1403033	03/05/14	03/05/14	EPA 8260B	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
Xylenes (total)	0.0089	0.0050	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	1.7	0.50	"	"	"	"	"	"	

Date Sampled: **03/05/14 14:50**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		152 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		101 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		105 %	21-167		"	"	"	"	

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

Project: BC - North Platte Federal K-O-22

Project Number: 0345
Project Manager: Justin Solomon

Reported:
03/05/14 22:57

B04@1'
1403026-04 (Soil)

Summit Scientific

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **03/05/14 14:55**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	ND	50	mg/kg	1	1403034	03/05/14	03/05/14	8015M	

Date Sampled: **03/05/14 14:55**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: <i>o</i> -Terphenyl		100 %	30-150		"	"	"	"	

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **03/05/14 14:55**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	ND	0.0020	mg/kg	1	1403033	03/05/14	03/05/14	EPA 8260B	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
Xylenes (total)	ND	0.0050	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	0.50	"	"	"	"	"	"	

Date Sampled: **03/05/14 14:55**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane- <i>d</i> 4		87.4 %	23-173		"	"	"	"	
Surrogate: Toluene- <i>d</i> 8		63.1 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		102 %	21-167		"	"	"	"	

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LT Environmental, Inc.
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Arvada CO, 80003

Project: BC - North Platte Federal K-O-22

Project Number: 0345
Project Manager: Justin Solomon

Reported:
03/05/14 22:57

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 1403034 - EPA 3550A

Blank (1403034-BLK1)				Prepared & Analyzed: 03/05/14						
C10-C28 (DRO)	ND	50	mg/kg							
LCS (1403034-BS1)				Prepared & Analyzed: 03/05/14						
C10-C28 (DRO)	436	50	mg/kg	467	93.2	73-134				
Matrix Spike (1403034-MS1)				Source: 1403023-01 Prepared & Analyzed: 03/05/14						
C10-C28 (DRO)	457	50	mg/kg	480	ND	95.2	50-148			
Matrix Spike Dup (1403034-MSD1)				Source: 1403023-01 Prepared & Analyzed: 03/05/14						
C10-C28 (DRO)	490	50	mg/kg	484	ND	101	50-148	7.07	13	

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Project: BC - North Platte Federal K-O-22

Project Number: 0345
Project Manager: Justin Solomon

Reported:
03/05/14 22:57

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 1403033 - EPA 5030 Soil MS

Blank (1403033-BLK1)

Prepared & Analyzed: 03/05/14

Benzene	ND	0.0020	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	0.0375		"	0.0397		94.5	23-173			
Surrogate: Toluene-d8	0.0370		"	0.0400		92.6	20-170			
Surrogate: 4-Bromofluorobenzene	0.0387		"	0.0400		96.7	21-167			

LCS (1403033-BS1)

Prepared & Analyzed: 03/05/14

Benzene	0.0854	0.0020	mg/kg	0.0997		85.7	58-130			
Toluene	0.0933	0.0050	"	0.100		93.3	61-134			
Ethylbenzene	0.100	0.0050	"	0.0992		101	74-139			
m,p-Xylene	0.201	0.010	"	0.200		101	73-137			
o-Xylene	0.0985	0.0050	"	0.0988		99.7	73-141			
Surrogate: 1,2-Dichloroethane-d4	0.0367		"	0.0397		92.4	23-173			
Surrogate: Toluene-d8	0.0378		"	0.0400		94.5	20-170			
Surrogate: 4-Bromofluorobenzene	0.0376		"	0.0400		93.9	21-167			

Matrix Spike (1403033-MS1)

Source: 1403023-01

Prepared & Analyzed: 03/05/14

Benzene	0.0885	0.0020	mg/kg	0.0995	ND	88.9	30-131			
Toluene	0.0941	0.0050	"	0.0998	ND	94.3	30-134			
Ethylbenzene	0.102	0.0050	"	0.0990	ND	103	22-153			
m,p-Xylene	0.226	0.010	"	0.200	0.0161	105	10-159			
o-Xylene	0.105	0.0050	"	0.0986	0.00500	101	31-151			
Surrogate: 1,2-Dichloroethane-d4	0.0404		"	0.0396		102	23-173			
Surrogate: Toluene-d8	0.0379		"	0.0399		95.0	20-170			
Surrogate: 4-Bromofluorobenzene	0.0384		"	0.0399		96.1	21-167			

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

Project: BC - North Platte Federal K-O-22

Project Number: 0345
Project Manager: Justin Solomon

Reported:
03/05/14 22:57

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 1403033 - EPA 5030 Soil MS

Matrix Spike Dup (1403033-MSD1)	Source: 1403023-01			Prepared & Analyzed: 03/05/14						
Benzene	0.0870	0.0020	mg/kg	0.0989	ND	88.0	30-131	1.72	34	
Toluene	0.0937	0.0050	"	0.0992	ND	94.4	30-134	0.470	30	
Ethylbenzene	0.0992	0.0050	"	0.0984	ND	101	22-153	2.47	24	
m,p-Xylene	0.212	0.010	"	0.198	0.0161	98.6	10-159	6.33	68	
o-Xylene	0.103	0.0050	"	0.0980	0.00500	99.8	31-151	1.86	38	
Surrogate: 1,2-Dichloroethane-d4	0.0394		"	0.0394		100	23-173			
Surrogate: Toluene-d8	0.0377		"	0.0397		95.0	20-170			
Surrogate: 4-Bromofluorobenzene	0.0380		"	0.0397		95.8	21-167			

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Project: BC - North Platte Federal K-O-22

Project Number: 0345
Project Manager: Justin Solomon

Reported:
03/05/14 22:57

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