

State of Colorado
Oil and Gas Conservation Commission

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



FOR OGCC USE ONLY

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.

CAUSE OF CONDITION BEING INVESTIGATED AND REMEDIATED

☒ Spill or Release ☐ Plug & Abandon ☐ Central Facility Closure ☐ Site/Facility Closure ☒ Other (describe) _____

OGCC Employee: _____

☐ Spill ☐ Complaint
☐ Inspection ☐ NOAV

Tracking No: _____

No Further Action Request

GENERAL INFORMATION

OGCC Operator Number: <u>52530</u>		Contact Name and Telephone	
Name of Operator: <u>Maggie Operating Inc</u>		Name: <u>Ryan Warner</u>	
Address: <u>2707 South County Road 11</u>		No: <u>970.669.6308</u>	
City: <u>Loveland</u> State: <u>CO</u> Zip: <u>80537</u>		Fax: <u>970.669.6396</u>	
API/Facility No: <u>05-121-06251</u>		County: <u>Washington</u>	
Facility Name: <u>Flowline</u>		Facility Number: _____	
Well Name: <u>Little Beaver Unit</u>		Well Number: <u>30</u>	
Location (QtrQtr, Sec, Twp, Rng, Meridian): <u>SWSE 32 1S 56W</u>		Latitude: <u>39.9184</u> Longitude: <u>-103.674</u>	

TECHNICAL CONDITIONS

Type of Waste Causing Impact (crude oil, condensate, produced water, etc.): Produced Water

Site Conditions: Is location within a sensitive area (according to Rule 901e)? ☐ Y ☒ N If yes, attach evaluation. Surface water adjacent to site

Adjacent land use (cultivated, irrigated, dry land farming, industrial, residential, etc.): Dry land farming

Soil type, if not previously identified on Form 2A or Federal Surface Use Plan: Weld silt loam

Potential receptors (water wells within 1/4 mi, surface waters, etc.): n/a

Description of Impact (if previously provided, refer to that form or document):

Impacted Media (check):	Extent of Impact:	How Determined:
<input checked="" type="checkbox"/> Soils	<u>50' x 30' (Surface Staining)</u>	<u>Observation, Sampling and laboratory analysis</u>
<input type="checkbox"/> Vegetation	_____	_____
<input type="checkbox"/> Groundwater	_____	_____
<input type="checkbox"/> Surface water	_____	_____

REMEDIAL WORKPLAN

Describe initial action taken (if previously provided, refer to that form or document):

As per remediation agreement #8281, Maggie was required to conduct additional sampling and removal of petroleum hydrocarbon impacted soil in the vicinity of the flowline release and in the surface soils surrounding the flowline. Details and timing of the initial actions taken can be found in the previous Form 27 (filed on July 18, 2014) and in supporting documentation.

Describe how source is to be removed:

As of July 18 2014, two scraping events have been conducted to remove surface staining, and two excavation events have been conducted to remove impacted materials from around the flowline release to approximately 6' bgs. On July 22, 2014, a scraping event was conducted to remove the remaining impacted soil areas focused around the flowline release.

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.:

Currently, there are approximately 15 cubic yards of impacted soils from the July 18 and July 22, 2014 excavation events. On July 28, 2014 this 15 cubic yards of soil will be hauled and disposed of at the Waste Management Buffalo Ridge Facility. Manifest will be forwarded to the COGCC when they are available from the Disposal Facility.



Tracking Number: _____
Name of Operator: Maggie Operating Inc
OGCC Operator No: 52530
Received Date: _____
Well Name & No: Little Beaver #30
Facility Name & No.: _____

REMEDIATION WORKPLAN (CONT.)

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 and sampling activities to a depth of 6 feet below ground surface.

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.
Current use is planted winter wheat. Surface tenants described planting new crop this season. Tenants will be consulted regarding proper soil composition backfill material. Upon receipt of approval from COGCC to backfill and reclaim, a Reclamation plan will be filed with the COGCC.

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 ☒ N If yes, describe:

After the July 18, 2014 excavation and confirmation sampling event, soils not compliant with COGCC Table 910-1 remained. The non-compliant soils were removed on July 22, 2014 and another round of confirmation samples were collected under the guidance of the COGCC. Analytical results indicate soil samples were compliant with Table 910-1.

Maggie requests permission to backfill and grade the area and requests No Further Action with regards to petroleum hydrocarbon impacted soils at the release area. Maggie will conduct the transport of the impacted soils on July 28, 2014 to the Waste Management Buffalo Ridge Facility.

Final disposition of E&P waste (landtreated and disposed onsite, name of licensed disposal facility, recycling, reuse, etc.):
Impacted soil will be disposed of at the Waste Management Buffalo Ridge Facility.

IMPLEMENTATION SCHEDULE

Date Site Investigation Began:	<u>2/18/2014</u>	Date Site Investigation Completed:	<u>7/22/2014</u>	Remediation Plan Submitted:	<u>3/20/2014</u>
Remediation Start Date:	<u>4/22/2014</u>	Anticipated Completion Date:	<u>7/22/2014</u>	Actual Completion Date:	<u>7/22/2014</u>

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

Print Name: Ryan Warner

Signed: D. Kirk Mueller

Title: Vice President (Counsel)

Date: 7/25/14

OGCC Approved: _____ Title: _____ Date: _____



July 25, 2014

Mr. John Axelson
Northeast Region Environmental Protection Specialist
Colorado Oil and Gas Conservation Commission
1120 Lincoln Street, Suite 801
Denver, Colorado 80203

**RE: Magpie Operating Inc.
Little Beaver Unit #30
API 05-121-06251
Remediation # 8281
SWSE Sec. 32 T1N R56W
Washington County, Colorado**

Dear Mr. Noto:

LT Environmental, Inc. (LTE), under the direction of Magpie Operating, Inc. (Magpie), conducted environmental remediation and sampling activities following the identification of petroleum hydrocarbon impacted soil at a flowline release at the Little Beaver Well #30 (Site). The Site is located 0.66 miles east-northeast of the intersection of County Road (CR) B and CR 24 in Washington County, Colorado.

Magpie had previously conducted two surficial scraping and two excavation events to remove impacted soils associated with the flowline release on April 23, 2014 and May 5, 2014. Analytical results from these events are shown on Table 1 and details of the excavation activities are depicted on Figures 1 and 2. Additional details of these excavation events were presented in the Form 27 and supporting documentation submitted to the Colorado Oil and Gas Conservation Commission (COGCC) on July 18, 2014.

Excavation and Sampling

On July 18, 2014, LTE and COGCC personnel were present at the Site for the collection of composite samples in the area that had been identified as impacted by a surficial pipeline release. The area had been scraped as well as additional excavation underneath the flowline. Soil scraping and excavation activities were conducted by Magpie. A four-point composite soil sample (SS01) was collected in the excavation bottom underneath the flowline release. A total of five, five-point composite soil samples (SS02 through SS06) were collected from ground surface to 0.5 feet below ground surface (bgs) in the area where the scraping had occurred. Additionally, a composite soil sample was collected from a stockpile of clean soil onsite to verify its suitability to be used as backfill in compliance with Table 910-1. Soil samples were submitted to Summit Laboratory, Inc. (Summit) of Golden, Colorado for analysis of benzene, toluene, ethylbenzene, and total xylenes (BTEX) and total petroleum hydrocarbons (TPH)-gasoline range organics (GRO) by United States Environmental Protection Agency (EPA) Method 8260B, and TPH-



diesel range organics (DRO) by EPA modified Method 8015. Soil sample locations are depicted on Figure 3.

Soil analytical results from the July 18, 2014 confirmation sampling indicated that soils in the excavation bottom and from the clean stockpile were in compliance with Table 910-1. However, additional scraping was required in the non-vegetated area in the vicinity of the pipeline release.

On July 22, 2014, Magpie conducted additional scraping in the non-vegetated area around the pipeline release under direct supervision of LTE. Once visually impacted soils were removed and stockpiled, LTE collected two, seven-point composite soil samples (SS01 and SS02) at the direction of the COGCC. Composite soil samples were collected from ground surface to 2 feet bgs, depending of the depth of the scraped area. Soil samples were again submitted to Summit for analysis of BTEX, TPH-GRO, and TPH-DRO. Soil sample locations are depicted on Figure 4. A photolog depicting the removal activities on July 22, 2014 has been included as Attachment 1.

Results of the July 22, 2014 confirmation sampling indicated that all soil samples were below the COGCC Table 910-1 Concentration Levels for BTEX, TPH-DRO and TPH-GRO. Laboratory analytical reports have been included as Attachment 2.

During these two excavation events, approximately 15 cubic yards of impacted soil was stockpiled onsite. Magpie has scheduled equipment and made arrangements for the impacted soil to be loaded into trucks for offsite disposal on July 28, 2014. The soil will be disposed of at the Waste Management Buffalo Ridge Facility located in Keenesburg, Colorado. Manifests will be forwarded to the COGCC as soon as they are available from the disposal facility.

Please see the Attached Form 27 for additional detail regarding the schedule for upcoming remedial activities.



Please call LTE at 303-433-9788 if you have any questions or comments regarding this report.

LT ENVIRONMENTAL, INC.

A handwritten signature in black ink, appearing to read 'E. Lang'.

Eric Lang, P.G.
Project Geologist

A handwritten signature in black ink, appearing to read 'John D. Peterson'.

John D. Peterson, P.G.
Executive Vice President

Cc: Ryan Warner, Magpie

Attachments: 6:

Figure 1 - Site Map (April 23, 2014)

Figure 2 - Site Map (May 6, 2014)

Figure 3 - Site Map (July 18, 2014)

Figure 4 - Site Map (July 22, 2014)

Table 1 - Soil Analytical Results

Attachment 1 – Photo Log

Attachment 2 - Laboratory Analytical Reports

FIGURES





IMAGE COURTESY OF GOOGLE EARTH 2013

LEGEND

- COMPOSITE SOIL SAMPLE (4/23/14)
- ▲ BACKGROUND SOIL SAMPLE (4/23/14)
- SCRAPED AREA (4/23/14)

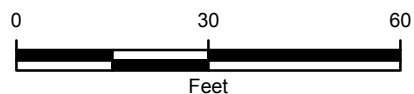


FIGURE 1
SITE MAP
LITTLE BEAVER UNIT #30
WASHINGTON COUNTY, COLORADO

MAGPIE OPERATING





IMAGE COURTESY OF GOOGLE EARTH 2013

LEGEND

- COMPOSITE SOIL SAMPLE (5/6/14)
- ▲ BACKGROUND SOIL SAMPLE (4/23/14)
- EXCAVATION SAMPLE (5/6/14)
- SCRAPPED AREA (5/6/14)
- EXCAVATION EXTENT

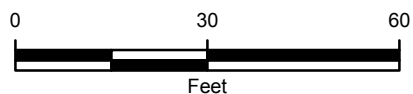


FIGURE 2
SITE MAP
LITTLE BEAVER UNIT #30
WASHINGTON COUNTY, COLORADO

MAGPIE OPERATING



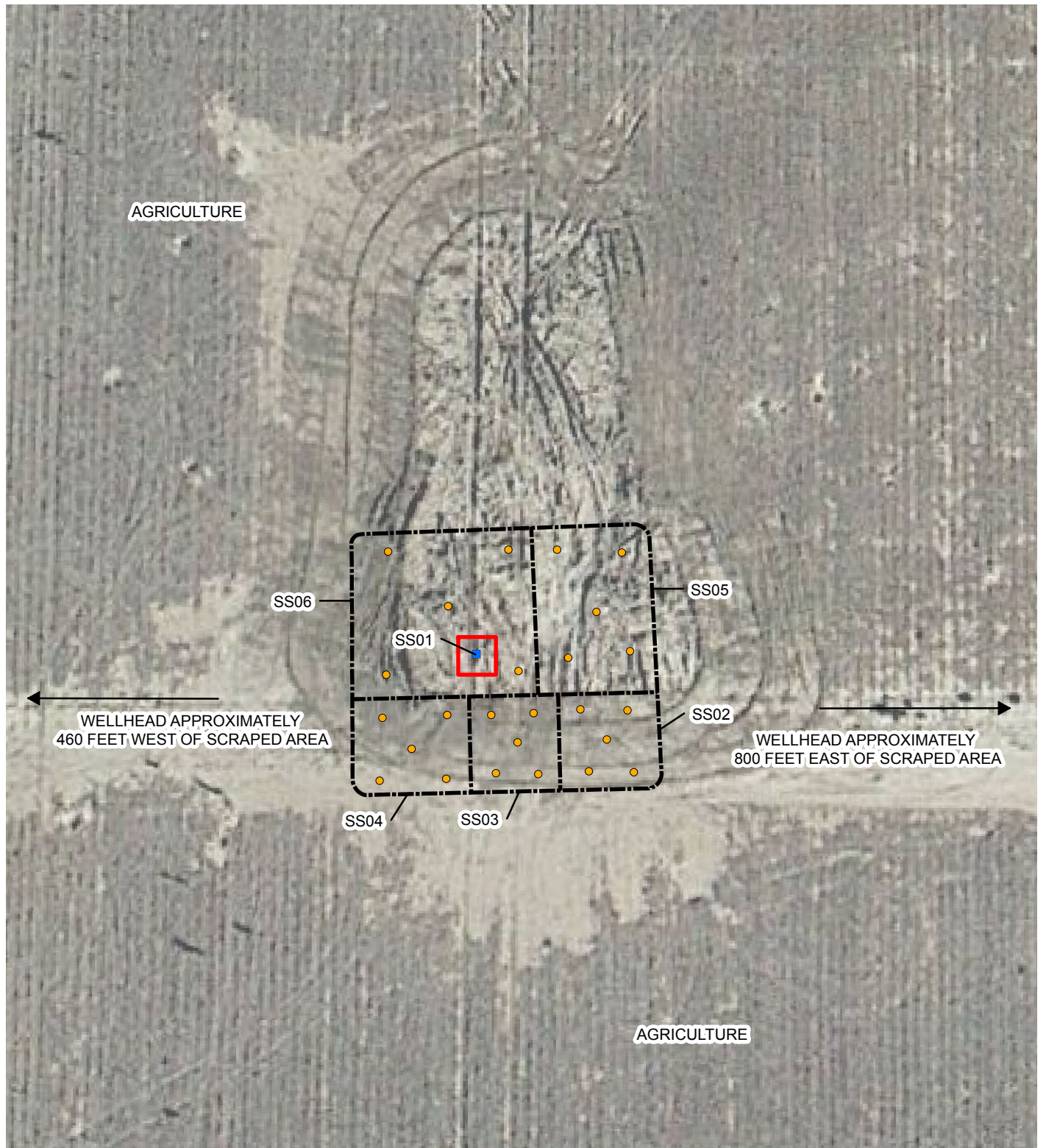


IMAGE COURTESY OF GOOGLE EARTH 2013

LEGEND

- COMPOSITE SOIL SAMPLE (7/18/14)
- EXCAVATION SAMPLE (7/18/14)
- SCRAPPED AREA (7/18/14)
- EXCAVATION EXTENT

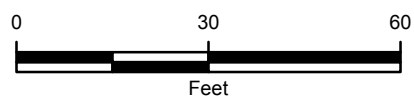


FIGURE 3
SITE MAP
 LITTLE BEAVER UNIT #30
 WASHINGTON COUNTY, COLORADO

MAGPIE OPERATING





IMAGE COURTESY OF GOOGLE EARTH 2013

LEGEND

- COMPOSITE SOIL SAMPLE (7/22/14)
- SCRAPED AREA (7/22/14)
- EXCAVATION EXTENT

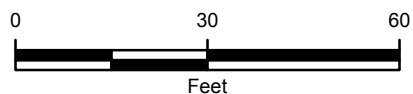


FIGURE 4
SITE MAP
LITTLE BEAVER UNIT #30
WASHINGTON COUNTY, COLORADO

MAGPIE OPERATING



TABLES

TABLE 1
SOIL ANALYTICAL RESULTS
LITTLE BEAVER UNIT #30
WASHINGTON COUNTY, COLORADO

MAGPIE OPERATING

Date	Soil Sample ID	Depth (feet)	Site Feature	Benzene (mg/kg)	Toluene (mg/kg)	Ethylbenzene (mg/kg)	Xylenes (mg/kg)	TPH-GRO (mg/kg)	TPH-DRO (mg/kg)	TPH (mg/kg)	EC (mmhos/cm)	pH (SU)	SAR (unitless)
4/23/2014	SS05	0-0.5	Background	--	--	--	--	--	--	--	0.345	5.01	0.265
4/23/2014	SS01	0-0.5	Pad Confirmation	< 0.002	< 0.002	< 0.002	< 0.002	<0.2	198	198	0.544	8.49	1.42
4/23/2014	SS02	0-0.5	Pad Confirmation	< 0.002	< 0.002	< 0.002	< 0.002	<0.2	< 50	<50	0.897	8.51	8.82
4/23/2014	SS03	0-0.5	Pad Confirmation	< 0.002	< 0.002	< 0.002	< 0.002	<0.2	370	370	0.949	0.576	4.9
4/23/2014	SS04	0-0.5	Pad Confirmation	<0.002	< 0.002	< 0.002	< 0.002	5.42	6550	6555	0.576	8.49	4.59
5/6/2014	SS01	0-0.5	Pad Confirmation	<0.002	< 0.002	< 0.002	< 0.002	<0.2	249	249	--	--	--
5/6/2014	SS02	0-0.5	Pad Confirmation	< 0.002	< 0.002	< 0.002	< 0.002	<0.2	< 50	<50	--	--	--
5/6/2014	SS03	0-0.5	Pad Confirmation	< 0.002	< 0.002	< 0.002	< 0.002	<0.2	< 50	<50	--	--	--
5/6/2014	SS04	0-0.5	Pad Confirmation	<0.002	< 0.002	< 0.002	< 0.002	<0.2	6040	6040	--	--	--
5/6/2014	SS05	0-0.5	Pad Confirmation	<0.002	< 0.002	< 0.002	< 0.002	<0.2	1780	1780	--	--	--
5/6/2014	SS06	0-0.5	Pad Confirmation	<0.002	< 0.002	< 0.002	< 0.002	<0.2	466	466	--	--	--
5/6/2014	EX-BTM	5	Excavation Bottom	<0.002	< 0.002	< 0.002	< 0.002	<0.2	1140	1140	--	--	--
5/6/2014	EX-W	3	Excavation Sidewall	< 0.002	< 0.002	< 0.002	< 0.002	<0.2	< 50	<50	--	--	--
5/6/2014	EX-S	3	Excavation Sidewall	< 0.002	< 0.002	< 0.002	< 0.002	<0.2	< 50	<50	--	--	--
5/6/2014	EX-E	3	Excavation Sidewall	<0.002	< 0.002	< 0.002	< 0.002	<0.2	433	433	--	--	--
7/18/2014	SS01	6	Excavation Bottom	<0.002	<0.005	<0.005	<0.005	<0.50	<50	<50	--	--	--
7/18/2014	SS02	0-0.5	Pad Confirmation	<0.002	<0.005	<0.005	<0.005	<0.50	230	230	--	--	--
7/18/2014	SS03	0-0.5	Pad Confirmation	<0.002	<0.005	<0.005	<0.005	<0.50	130	230	--	--	--
7/18/2014	SS04	0-0.5	Pad Confirmation	<0.002	<0.005	<0.005	<0.005	<0.50	100	100	--	--	--
7/18/2014	SS05	0-0.5	Pad Confirmation	<0.002	<0.005	<0.005	<0.005	<0.50	640	640	--	--	--
7/18/2014	SS06	0-0.5	Pad Confirmation	<0.002	<0.005	<0.005	<0.005	<0.50	310	310	--	--	--
7/18/2014	SP01	--	Clean Stockpile Confirmation	<0.002	<0.005	<0.005	<0.005	<0.50	<50	<50	--	--	--
7/22/2014	SS01	0-2	Pad Confirmation	<0.002	<0.005	<0.005	<0.005	<0.50	140	140	--	--	--
7/22/2014	SS02	0-2	Pad Confirmation	<0.002	<0.005	<0.005	<0.005	<0.50	<50	<50	--	--	--
	COGCC Table 910-1 Standard			0.17	85	100	175	*	*	500	4	6-9	12

NOTES:

< - less than the stated laboratory method reporting limit

COGCC - Colorado Oil and Gas Conservation Commission

mg/kg - milligrams per kilograms

TPH-GRO - Total Petroleum Hydrocarbons-Gasoline Range Organics

TPH-DRO - Total Petroleum Hydrocarbons-Diesel Range Organics

TPH - combination of TPH-DRO and TPH-GRO

* - TPH-GRO and TPH-DRO added for cumulative TPH

EC - Specific Conductance in mmhos/cm (milli ohms per centimeter)

SAR - Sodium Absorption Ratio

SU- Standard Units

BOLD - Value exceeds COGCC Table 910-1 values

ATTACHMENT 1

PHOTO LOG





Photo 1 – Surficial removal of visually impacted soil on July 22, 2014




Photo 2 – Surficial removal and stockpile of visually impacted soil on July 22, 2014



Photo 3 – Surficial removal of visually impacted soil on July 22, 2014



Photo 4 – Surficial removal of visually impacted soil on July 22, 2014

<h2>Site Photographs</h2>	<p>Little Beaver Unit #30 Washington County, Colorado</p>	
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ATTACHMENT 2
LABORATORY ANALYTICAL REPORTS



Summit Scientific

741 Corporate Circle – Suite I ♦ Golden, Colorado 80401

303.277.9310 - laboratory ♦ 303.277.9531 - fax

July 22, 2014

Eric Lang
LT Environmental, Inc.
4600 West 60th Avenue
Arvada, CO 80003
RE: Little Beaver

Enclosed are the results of analyses for samples received by Summit Scientific on 07/22/14 17:10. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

A handwritten signature in black ink, appearing to be 'BS' or 'Shrewsbury', written in a cursive style.

Ben Shrewsbury
President / Laboratory Manager



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

Project: Little Beaver

Project Number: [none]
Project Manager: Eric Lang

Reported:
07/22/14 22:29

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
SS01	1407134-01	Soil	07/22/14 15:10	07/22/14 17:10
SS02	1407134-02	Soil	07/22/14 15:15	07/22/14 17:10

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.

A handwritten signature in black ink, appearing to be 'JMM'.



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

Project: Little Beaver

Project Number: [none]
Project Manager: Eric Lang

Reported:
07/22/14 22:29

Summit Scientific

S2

741 Corporate Circle, Suite J&K • Golden, Colorado 80401
303-277-9310 • 303-374-5933

Client: LT ENVIRONMENTAL
Address: 4600 W 60th AVE
City/State/Zip: ARVADA CO 80003
Phone: 303 433 9888 Fax:
Sampler Name: B. PACSOLA
Project Manager: ERIC LANG
E-Mail: ELANG@LTENV.COM
Project Name: LITTLE BEAVER
Project Number:
Page 1 of 1

ID	Sample Description	Date Sampled	Time Sampled	# of containers	Preservative				Matrix				Analysis Requested	Special Instructions
					HCl	HNO3	None	Other (Specify)	Groundwater	Soil	Air-Canister #	Other (Specify)		
1	SSO1	7/22/14	1510	1		X				X				
2	SSO2	7/22/14	1515	1		X				X				
3														
4														
5														
6														
7														
8														
9														
10														
Relinquished by: <i>E. Lang</i>		Date/Time: 7/22/14	Received by: <i>[Signature]</i>		Date/Time: 7/22/14 17:10	Turn Around Time (Check)		Notes:						
Relinquished by:		Date/Time:	Received by:		Date/Time:	Same Day		72 hours						
Relinquished by:		Date/Time:	Received by:		Date/Time:	24 hours		Standard						
Relinquished by:		Date/Time:	Received by:		Date/Time:	48 hours		Sample Integrity:						
Relinquished by:		Date/Time:	Received by:		Date/Time:	Temperature Upon Receipt:		Intact: Yes No						

www.s2scientific.com

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.

[Signature]



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

Project: Little Beaver
Project Number: [none]
Project Manager: Eric Lang

Reported:
07/22/14 22:29

SS01
1407134-01 (Soil)

Summit Scientific

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: 07/22/14 15:10

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	140	50	mg/kg	1	1407175	07/22/14	07/22/14	8015M	

Date Sampled: 07/22/14 15:10

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: o-Terphenyl		84.8 %	30-150		"	"	"	"	

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: 07/22/14 15:10

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	ND	0.0020	mg/kg	1	1407174	07/22/14	07/22/14	EPA 8260B	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
Xylenes (total)	ND	0.0050	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	0.50	"	"	"	"	"	"	

Date Sampled: 07/22/14 15:10

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		112 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		100 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		95.7 %	21-167		"	"	"	"	

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: Little Beaver

Project Number: [none]
Project Manager: Eric Lang

Reported:
07/22/14 22:29

SS02
1407134-02 (Soil)

Summit Scientific

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: 07/22/14 15:15

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	ND	50	mg/kg	1	1407175	07/22/14	07/22/14	8015M	

Date Sampled: 07/22/14 15:15

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: o-Terphenyl		84.5 %	30-150		"	"	"	"	

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: 07/22/14 15:15

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	ND	0.0020	mg/kg	1	1407174	07/22/14	07/22/14	EPA 8260B	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
Xylenes (total)	ND	0.0050	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	0.50	"	"	"	"	"	"	

Date Sampled: 07/22/14 15:15

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		117 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		101 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		102 %	21-167		"	"	"	"	

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: Little Beaver
Project Number: [none]
Project Manager: Eric Lang

Reported:
07/22/14 22:29

Extractable Petroleum Hydrocarbons by 8015 - Quality Control
Summit Scientific

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

Batch 1407175 - EPA 3550A

Blank (1407175-BLK1)

Prepared & Analyzed: 07/22/14

C10-C28 (DRO) ND 50 mg/kg

LCS (1407175-BS1)

Prepared & Analyzed: 07/22/14

C10-C28 (DRO) 534 50 mg/kg 501 107 73-134

Matrix Spike (1407175-MS1)

Source: 1407132-01

Prepared & Analyzed: 07/22/14

C10-C28 (DRO) 506 50 mg/kg 486 ND 104 50-148

Matrix Spike Dup (1407175-MSD1)

Source: 1407132-01

Prepared & Analyzed: 07/22/14

C10-C28 (DRO) 515 50 mg/kg 488 ND 105 50-148 1.77 13

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: Little Beaver
Project Number: [none]
Project Manager: Eric Lang

Reported:
07/22/14 22:29

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 1407174 - EPA 5030 Soil MS

Blank (1407174-BLK1)

Prepared & Analyzed: 07/22/14

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	0.0479		"	0.0397		121	23-173			
Surrogate: Toluene-d8	0.0387		"	0.0400		96.8	20-170			
Surrogate: 4-Bromofluorobenzene	0.0419		"	0.0400		105	21-167			

LCS (1407174-BS1)

Prepared & Analyzed: 07/22/14

Benzene	0.0988	0.0020	mg/kg	0.100		98.8	58-130			
Toluene	0.104	0.0050	"	0.100		104	61-134			
Ethylbenzene	0.106	0.0050	"	0.0992		107	74-139			
m,p-Xylene	0.218	0.010	"	0.200		109	73-137			
o-Xylene	0.106	0.0050	"	0.0984		108	73-141			
Surrogate: 1,2-Dichloroethane-d4	0.0467		"	0.0397		118	23-173			
Surrogate: Toluene-d8	0.0392		"	0.0400		97.9	20-170			
Surrogate: 4-Bromofluorobenzene	0.0407		"	0.0400		102	21-167			

Matrix Spike (1407174-MS1)

Source: 1407131-01

Prepared & Analyzed: 07/22/14

Benzene	0.0985	0.0020	mg/kg	0.0978	ND	101	30-131			
Toluene	0.0999	0.0050	"	0.0978	ND	102	30-134			
Ethylbenzene	0.101	0.0050	"	0.0971	ND	105	22-153			
m,p-Xylene	0.208	0.010	"	0.195	ND	106	10-159			
o-Xylene	0.104	0.0050	"	0.0963	ND	108	31-151			
Surrogate: 1,2-Dichloroethane-d4	0.0489		"	0.0388		126	23-173			
Surrogate: Toluene-d8	0.0389		"	0.0391		99.4	20-170			
Surrogate: 4-Bromofluorobenzene	0.0409		"	0.0391		104	21-167			

Summit Scientific

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

Project: Little Beaver
Project Number: [none]
Project Manager: Eric Lang

Reported:
07/22/14 22:29

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 1407174 - EPA 5030 Soil MS

Matrix Spike Dup (1407174-MSD1)	Source: 1407131-01			Prepared & Analyzed: 07/22/14						
Benzene	0.0900	0.0020	mg/kg	0.0940	ND	95.8	30-131	9.00	34	
Toluene	0.0920	0.0050	"	0.0940	ND	97.9	30-134	8.19	30	
Ethylbenzene	0.0908	0.0050	"	0.0932	ND	97.4	22-153	11.1	24	
m,p-Xylene	0.191	0.010	"	0.188	ND	102	10-159	8.15	68	
o-Xylene	0.0943	0.0050	"	0.0925	ND	102	31-151	9.54	38	
Surrogate: 1,2-Dichloroethane-d4	0.0468		"	0.0373		125	23-173			
Surrogate: Toluene-d8	0.0372		"	0.0376		99.1	20-170			
Surrogate: 4-Bromofluorobenzene	0.0374		"	0.0376		99.5	21-167			

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: Little Beaver

Project Number: [none]
Project Manager: Eric Lang

Reported:
07/22/14 22:29

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

A handwritten signature in black ink, appearing to be 'J.M.' followed by a long, sweeping horizontal stroke.

Summit Scientific

741 Corporate Circle – Suite I ♦ Golden, Colorado 80401

303.277.9310 - laboratory ♦ 303.277.9531 - fax

July 20, 2014

Eric Lang
LT Environmental, Inc.
4600 West 60th Avenue
Arvada, CO 80003
RE: Little Beaver

Enclosed are the results of analyses for samples received by Summit Scientific on 07/18/14 15:30. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

A handwritten signature in black ink, appearing to be 'BS' or 'Shrewsbury', written in a cursive style.

Ben Shrewsbury
President / Laboratory Manager



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

Project: Little Beaver

Project Number: [none]
Project Manager: Eric Lang

Reported:
07/20/14 21:36

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
SS01	1407109-01	Soil	07/18/14 12:00	07/18/14 15:30
SS02	1407109-02	Soil	07/18/14 12:05	07/18/14 15:30
SS03	1407109-03	Soil	07/18/14 12:10	07/18/14 15:30
SS04	1407109-04	Soil	07/18/14 12:15	07/18/14 15:30
SP01	1407109-05	Soil	07/18/14 12:20	07/18/14 15:30
SS05	1407109-06	Soil	07/18/14 12:30	07/18/14 15:30
SS06	1407109-07	Soil	07/18/14 13:00	07/18/14 15:30

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: Little Beaver

Project Number: [none]
Project Manager: Eric Lang

Reported:
07/20/14 21:36

1407109

Summit Scientific

S₂

741 Corporate Circle, Suite 188 • Golden, Colorado 80401
303-277-9310 • 303-374-5933

Page 1 of 1

Client: LT ENVIRONMENTAL
Address: 4600 W 60th AVE
City/State/Zip: ARVADA CO 80003
Phone: 303 433 9788 Fax:
Sampler Name: B. PAPERNO
Project Manager: ERIC LANG
E-Mail: ELANG@LTENVI.COM
Project Name: LITTLE BEAVER
Project Number:

ID	Sample Description	Date Sampled	Time Sampled	# of containers	Preservative				Matrix				Analysis Requested	Special Instructions	
					HCl	HNO ₃	None	Other (Specify)	Groundwater	Soil	Air-Canister #	Other (Specify)			
1	SS01	7/18/14	1200	1			X								
2	SS02		1205	1			X								
3	SS03		1216	1			X								
4	SS04		1215	1			X								
5	SP01		1226	1			X								
6	SS05		1230	1			X								
7	SS06		1300	1			X								
8															
9															
10															

Relinquished by: <i>B. Paperno</i>	Date/Time: 7/18/14 15:30	Received by: <i>[Signature]</i>	Date/Time: 7/18/14 15:30	Turn Around Time (Check):	Notes: RESULTS NEEDED BY 1500 MONDAY AFTERNOON
Relinquished by:	Date/Time:	Received by:	Date/Time:	Sample Integrity: 64	
Relinquished by:	Date/Time:	Received by:	Date/Time:	Temperature Upon Receipt: Inact: Yes No	

www.s2scientific.com



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

Project: Little Beaver
Project Number: [none]
Project Manager: Eric Lang

Reported:
07/20/14 21:36

SS01
1407109-01 (Soil)

Summit Scientific

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: 07/18/14 12:00

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	ND	50	mg/kg	1	1407149	07/18/14	07/19/14	8015M	

Date Sampled: 07/18/14 12:00

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: o-Terphenyl		105 %	30-150		"	"	"	"	

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: 07/18/14 12:00

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	ND	0.0020	mg/kg	1	1407152	07/18/14	07/18/14	EPA 8260B	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
Xylenes (total)	ND	0.0050	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	0.50	"	"	"	"	"	"	

Date Sampled: 07/18/14 12:00

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		101 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		99.3 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		102 %	21-167		"	"	"	"	

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: Little Beaver
Project Number: [none]
Project Manager: Eric Lang

Reported:
07/20/14 21:36

SS02
1407109-02 (Soil)

Summit Scientific

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **07/18/14 12:05**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	230	50	mg/kg	1	1407149	07/18/14	07/19/14	8015M	

Date Sampled: **07/18/14 12:05**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: o-Terphenyl		101 %	30-150		"	"	"	"	

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **07/18/14 12:05**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	ND	0.0020	mg/kg	1	1407152	07/18/14	07/18/14	EPA 8260B	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
Xylenes (total)	ND	0.0050	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	0.50	"	"	"	"	"	"	

Date Sampled: **07/18/14 12:05**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		103 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		102 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		105 %	21-167		"	"	"	"	

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: Little Beaver
Project Number: [none]
Project Manager: Eric Lang

Reported:
07/20/14 21:36

SS03
1407109-03 (Soil)

Summit Scientific

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: 07/18/14 12:10

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	130	50	mg/kg	1	1407149	07/18/14	07/19/14	8015M	

Date Sampled: 07/18/14 12:10

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: o-Terphenyl		105 %	30-150		"	"	"	"	

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: 07/18/14 12:10

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	ND	0.0020	mg/kg	1	1407152	07/18/14	07/18/14	EPA 8260B	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
Xylenes (total)	ND	0.0050	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	0.50	"	"	"	"	"	"	

Date Sampled: 07/18/14 12:10

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		106 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		100 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		103 %	21-167		"	"	"	"	

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: Little Beaver
Project Number: [none]
Project Manager: Eric Lang

Reported:
07/20/14 21:36

SS04
1407109-04 (Soil)

Summit Scientific

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **07/18/14 12:15**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	100	50	mg/kg	1	1407149	07/18/14	07/19/14	8015M	

Date Sampled: **07/18/14 12:15**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: o-Terphenyl		105 %	30-150		"	"	"	"	

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **07/18/14 12:15**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	ND	0.0020	mg/kg	1	1407152	07/18/14	07/18/14	EPA 8260B	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
Xylenes (total)	ND	0.0050	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	0.50	"	"	"	"	"	"	

Date Sampled: **07/18/14 12:15**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		108 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		100 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		103 %	21-167		"	"	"	"	

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: Little Beaver
Project Number: [none]
Project Manager: Eric Lang

Reported:
07/20/14 21:36

SP01
1407109-05 (Soil)

Summit Scientific

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: 07/18/14 12:20

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	ND	50	mg/kg	1	1407149	07/18/14	07/19/14	8015M	

Date Sampled: 07/18/14 12:20

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: o-Terphenyl		98.5 %	30-150		"	"	"	"	

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: 07/18/14 12:20

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	ND	0.0020	mg/kg	1	1407152	07/18/14	07/18/14	EPA 8260B	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
Xylenes (total)	ND	0.0050	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	0.50	"	"	"	"	"	"	

Date Sampled: 07/18/14 12:20

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		104 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		101 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		102 %	21-167		"	"	"	"	

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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: Little Beaver
Project Number: [none]
Project Manager: Eric Lang

Reported:
07/20/14 21:36

SS05
1407109-06 (Soil)

Summit Scientific

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **07/18/14 12:30**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	640	50	mg/kg	1	1407149	07/18/14	07/19/14	8015M	

Date Sampled: **07/18/14 12:30**

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

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **07/18/14 12:30**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	ND	0.0020	mg/kg	1	1407152	07/18/14	07/19/14	EPA 8260B	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
Xylenes (total)	ND	0.0050	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	0.50	"	"	"	"	"	"	

Date Sampled: **07/18/14 12:30**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
<i>Surrogate: 1,2-Dichloroethane-d4</i>		104 %	23-173		"	"	"	"	
<i>Surrogate: Toluene-d8</i>		100 %	20-170		"	"	"	"	
<i>Surrogate: 4-Bromofluorobenzene</i>		103 %	21-167		"	"	"	"	

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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: Little Beaver
Project Number: [none]
Project Manager: Eric Lang

Reported:
07/20/14 21:36

SS06
1407109-07 (Soil)

Summit Scientific

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: 07/18/14 13:00

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	310	50	mg/kg	1	1407149	07/18/14	07/19/14	8015M	

Date Sampled: 07/18/14 13:00

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

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: 07/18/14 13:00

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	ND	0.0020	mg/kg	1	1407152	07/18/14	07/19/14	EPA 8260B	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
Xylenes (total)	ND	0.0050	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	0.50	"	"	"	"	"	"	

Date Sampled: 07/18/14 13:00

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		105 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		101 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		103 %	21-167		"	"	"	"	

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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: Little Beaver
Project Number: [none]
Project Manager: Eric Lang

Reported:
07/20/14 21:36

Extractable Petroleum Hydrocarbons by 8015 - Quality Control
Summit Scientific

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

Batch 1407149 - EPA 3550A

Blank (1407149-BLK1)

Prepared & Analyzed: 07/18/14

C10-C28 (DRO) ND 50 mg/kg

LCS (1407149-BS1)

Prepared & Analyzed: 07/18/14

C10-C28 (DRO) 465 50 mg/kg 485 95.7 73-134

Matrix Spike (1407149-MS1)

Source: 1407110-01

Prepared & Analyzed: 07/18/14

C10-C28 (DRO) 447 50 mg/kg 485 ND 92.2 50-148

Matrix Spike Dup (1407149-MSD1)

Source: 1407110-01

Prepared & Analyzed: 07/18/14

C10-C28 (DRO) 460 50 mg/kg 483 ND 95.3 50-148 2.87 13

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: Little Beaver
Project Number: [none]
Project Manager: Eric Lang

Reported:
07/20/14 21:36

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 1407152 - EPA 5030 Soil MS

Blank (1407152-BLK1)

Prepared & Analyzed: 07/18/14

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	0.0393		"	0.0385	102	23-173				
Surrogate: Toluene-d8	0.0386		"	0.0388	99.4	20-170				
Surrogate: 4-Bromofluorobenzene	0.0398		"	0.0388	102	21-167				

LCS (1407152-BS1)

Prepared & Analyzed: 07/18/14

Benzene	0.121	0.0020	mg/kg	0.0986	123	58-130				
Toluene	0.120	0.0050	"	0.0986	121	61-134				
Ethylbenzene	0.128	0.0050	"	0.0978	130	74-139				
m,p-Xylene	0.249	0.010	"	0.197	127	73-137				
o-Xylene	0.119	0.0050	"	0.0970	123	73-141				
Surrogate: 1,2-Dichloroethane-d4	0.0380		"	0.0392	97.0	23-173				
Surrogate: Toluene-d8	0.0402		"	0.0394	102	20-170				
Surrogate: 4-Bromofluorobenzene	0.0391		"	0.0394	99.2	21-167				

Matrix Spike (1407152-MS1)

Source: 1407110-01

Prepared & Analyzed: 07/18/14

Benzene	0.301	0.0020	mg/kg	0.0963	0.106	203	30-131			QM-07
Toluene	0.576	0.0050	"	0.0963	0.284	303	30-134			QM-07
Ethylbenzene	0.146	0.0050	"	0.0956	0.0110	141	22-153			
m,p-Xylene	0.476	0.010	"	0.192	0.140	174	10-159			QM-07
o-Xylene	0.190	0.0050	"	0.0948	0.0434	155	31-151			QM-07
Surrogate: 1,2-Dichloroethane-d4	0.0392		"	0.0382		103	23-173			
Surrogate: Toluene-d8	0.0401		"	0.0385		104	20-170			
Surrogate: 4-Bromofluorobenzene	0.0379		"	0.0385		98.5	21-167			

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: Little Beaver
Project Number: [none]
Project Manager: Eric Lang

Reported:
07/20/14 21:36

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 1407152 - EPA 5030 Soil MS

Matrix Spike Dup (1407152-MSD1)		Source: 1407110-01			Prepared & Analyzed: 07/18/14					
Benzene	0.414	0.0020	mg/kg	0.0996	0.106	309	30-131	31.5	34	QM-07
Toluene	0.797	0.0050	"	0.0996	0.284	515	30-134	32.2	30	QM-07
Ethylbenzene	0.161	0.0050	"	0.0988	0.0110	152	22-153	9.65	24	
m,p-Xylene	0.595	0.010	"	0.199	0.140	229	10-159	22.3	68	QM-07
o-Xylene	0.224	0.0050	"	0.0980	0.0434	185	31-151	16.3	38	QM-07
Surrogate: 1,2-Dichloroethane-d4	0.0428		"	0.0395		108	23-173			
Surrogate: Toluene-d8	0.0420		"	0.0398		105	20-170			
Surrogate: 4-Bromofluorobenzene	0.0403		"	0.0398		101	21-167			

Summit Scientific

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Notes and Definitions

QM-07 The spike recovery was outside acceptance limits for the MS and/or MSD. The batch was accepted based on acceptable LCS/LCSD recovery.

DET Analyte DETECTED

ND Analyte NOT DETECTED at or above the reporting limit

NR Not Reported

dry Sample results reported on a dry weight basis

RPD Relative Percent Difference