

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
11/1/2013

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>Bonanza Creek Energy Operating Company LLC</u> | OGCC Operator No: <u>8960</u> | Phone Numbers |
| Address: <u>410 17th Street, Suite 1500</u> | | No: <u>720-440-6113</u> |
| City: <u>Denver</u> | State: <u>CO</u> Zip: <u>80202</u> | Fax: <u>720-279-2331</u> |
| Contact Person: <u>Tom Peterson</u> | Email: <u>tpeterson@bonanzacrk.com</u> | |

DESCRIPTION OF SPILL OR RELEASE

| | | |
|--|--|---------------------|
| Date of Incident: <u>10/24/2013</u> | Facility Name & No: <u>Pronghorn 31-34-17HZ / # 305297</u> | County: <u>Weld</u> |
| Type of Facility (well, tank battery, flow line, pit): <u>Well</u> | QtrQtr: <u>NWNE</u> | Section: <u>17</u> |
| Well Name and Number: <u>Pronghorn 31-34-17HZ</u> | Township: <u>5N</u> | Range: <u>61W</u> |
| API Number: <u>05-123-33331</u> | Meridian: <u>6th</u> | |

Specify volume spilled and recovered for the following materials:

Oil spilled: 20 bbls Oil recov'd: 17 bbls Water spilled: 0 Water recov'd: 0 Other spilled: 0 Other recov'd: 0

Ground Water impacted? ☐ Yes ☒ No ☐ Unknown Surface Water impacted? ☐ Yes ☒ No

Contained within berm? ☐ Yes ☒ No Area and vertical extent of spill: 100' x 150'

Current land use: Rangeland Weather conditions: 40° F, clear

Soil/geology description: Fine Sand

IF LESS THAN A MILE, report distance IN FEET to nearest ... Surface water: > 1 mile wetlands: > 1 mile buildings: > 1.0 mile

Livestock: Unknown Water wells: 3,856 WNW Depth to shallowest ground water: Unknown

Cause of spill (e.g. equipment failure, human error, etc.): Equipment Failure

Detailed description of the spill/release incident:

The stuffing box rubbers failed overnight, the lid of the stuffing box trapper was damaged by the blow out allowing oil to spray across the location. The trapper box base was also damaged, the leak there allowed oil to flow out the base and kept the automation float from raising to trigger the automated shut down of the pumping unit. Approximately 20 bbls of oil were released on the ground outside of containment.

CORRECTIVE ACTION

Describe immediate response (how stopped, contained and recovered): The pumper arrived in the morning and discovered the incident. He stopped the pumping unit and closed the BOPs on the tubing to stop the flow of fluids. A vacuum truck was called to recover approximately 17 bbls of standing oil.

Describe any emergency pits constructed: NA

How was the extent of contamination determined? The roustabout crew excavated an area of 100' x 150' from 6" to 12" bgs to get to clean soil. Approximately 90 cu yds of soil was placed on plastic on location to be hauled to the Buffalo Ridge landfill in Keenesburg, CO for disposal. Eight samples (B01-B08) were collected from the base of the excavation for laboratory analysis. Two of these were over the COGCC allowable levels (B02 & B05). These areas were re-excavated and new samples collected (B09 & B010). Laboratory results confirmed the soil samples were below the COGCC allowable levels for TPH and BTEX.

Further remediation activities proposed (attach separate sheet if needed): Requesting No Further Action status for this incident.

Describe measures taken to prevent problem from reoccurring: New procedures are in place to add grease to the rubbers and to tighten the stuffing box bolts daily.

OTHER NOTIFICATIONS

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

| Date | Agency | Contact | Phone | Response |
|----------|------------------------|--------------|--------------|--------------------|
| 10/25/13 | Weld Co Emergency Mgmt | Roy Rudisill | 970-304-6540 | Email confirmation |
| | | | | |
| | | | | |
| | | | | |

Spill/Release Tracking No: 2146835

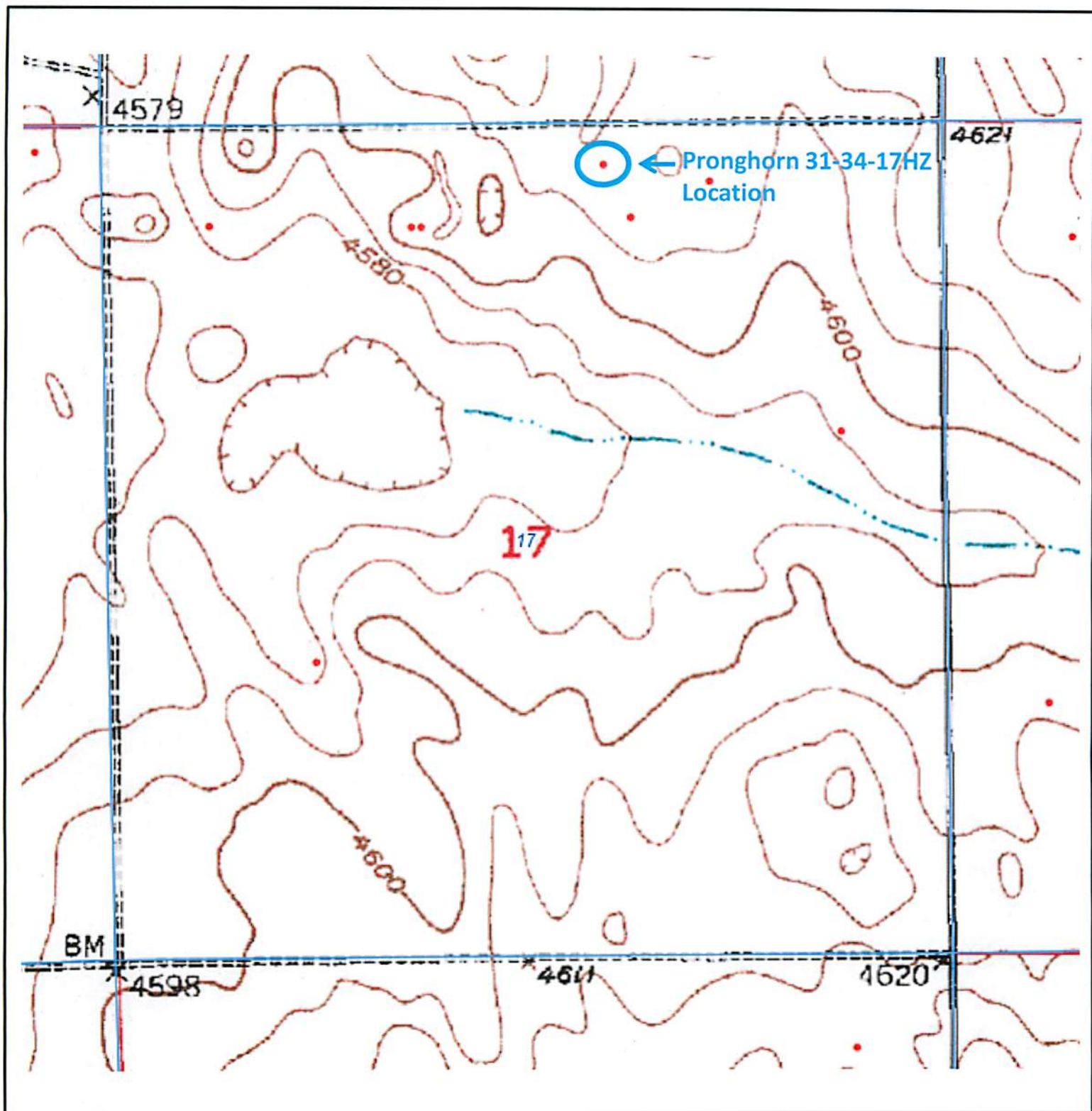
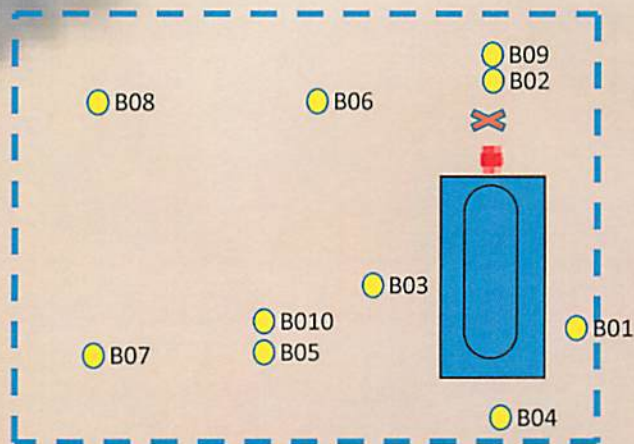


Figure 1
Location Site Map
October 24, 2013 tfp

Pronghorn 31-34-17HZ
API # 05-123-33331 / Location # 305297
NWNE, Sec 17, T5N, R61W, 6th PM
Weld County, Colorado



LEGEND

- Excavation Boundaries
- X Release
- B01 Soil Sample



Pumping Unit

N



Figure 2
Excavation Site Map
November 1, 2013 tfp

Pronghorn 31-34-17HZ
API # 05-123-33331 / Location # 305297
NWNE, Sec 17, T5N, R61W, 6th PM
Weld County, Colorado

Summit Scientific

741 Corporate Circle – Suite I ♦ Golden, Colorado 80401

303.277.9310 - laboratory ♦ 303.277.9531 - fax

October 28, 2013

John Cocroft

LT Environmental, Inc.

4600 West 60th Avenue

Arvada, CO 80003

RE: BC - Pronghorn 31-34-17 Excavation Samples

Enclosed are the results of analyses for samples received by Summit Scientific on 10/28/13 16:31. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

DRAFT REPORT

DATA SUBJECT TO CHANGE



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

Project: BC - Pronghorn 31-34-17 Excavation Samples
Project Number: 0345-Pronghorn 31-34-17
Project Manager: John Cocroft

Reported:
10/28/13 22:11

ANALYTICAL REPORT FOR SAMPLES

| Sample ID | Laboratory ID | Matrix | Date Sampled | Date Received |
|---------------|---------------|--------|----------------|----------------|
| DRAFT: B01@6" | R310279-01 | Soil | 10/28/13 10:30 | 10/28/13 16:31 |
| DRAFT: B02@8" | R310279-02 | Soil | 10/28/13 10:32 | 10/28/13 16:31 |
| DRAFT: B03@8" | R310279-03 | Soil | 10/28/13 10:34 | 10/28/13 16:31 |
| DRAFT: B04@6" | R310279-04 | Soil | 10/28/13 10:36 | 10/28/13 16:31 |
| DRAFT: B05@6" | R310279-05 | Soil | 10/28/13 10:38 | 10/28/13 16:31 |
| DRAFT: B06@6" | R310279-06 | Soil | 10/28/13 10:40 | 10/28/13 16:31 |
| DRAFT: B07@6" | R310279-07 | Soil | 10/28/13 10:42 | 10/28/13 16:31 |
| DRAFT: B08@8" | R310279-08 | Soil | 10/28/13 10:44 | 10/28/13 16:31 |

DRAFT REPORT

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

Project: BC - Pronghorn 31-34-17 Excavation Samples

Project Number: 0345-Pronghorn 31-34-17
Project Manager: John Cocroft

Reported:
10/28/13 22:11

R310279
Summit Scientific

341 Corporate Circle Suite 100 Golden, Colorado 80401
303-777-8100 • 303-774-5533 Fax

Page 1 of 1

Client: LT Environmental
Address: 4600 W. 60th Avenue CO
City/State/Zip:
Phone: 303-777-8100 Fax:
Sample Name: Kristofer Siepland
Project Name: Pronghorn 31-34-17 Excavation Samples
Project Number: 0345-Pronghorn 31-34-17
Project Manager:
E-Mail:

| Sample Description | Date Sampled | Time Sampled | Number of Containers | Preservative | | | | Matrix | | | | Analyze For: | | | | Special Instructions |
|--------------------|--------------|--------------|----------------------|--------------|------------------|------|-----------------|-------------|------|-------------------------|-----------------|--------------|--|--|--|----------------------|
| | | | | HCl | HNO ₃ | None | Other (Specify) | Groundwater | Soil | Air - Canister Serial # | Other (Specify) | | | | | |
| B01 (E) | 10/28/13 | 10:25am | 1 | | | | | | | | | | | | | |
| B02 (E) | 10/28/13 | 10:31 | 1 | | | | | | | | | | | | | |
| B03 (E) | 10/28/13 | 10:34 | 1 | | | | | | | | | | | | | |
| B04 (E) | 10/28/13 | 10:36 | 1 | | | | | | | | | | | | | |
| B05 (E) | 10/28/13 | 10:38 | 1 | | | | | | | | | | | | | |
| B06 (E) | 10/28/13 | 10:40 | 1 | | | | | | | | | | | | | |
| B07 (E) | 10/28/13 | 10:42 | 1 | | | | | | | | | | | | | |
| B08 (E) | 10/28/13 | 10:44 | 1 | | | | | | | | | | | | | |

| | | | | | |
|--------------------------------------|----------------------------|---------------------------------|---------------------------|---|--------|
| Requisitioned by: <i>[Signature]</i> | Date Time: 10/28/13 4:31pm | Received by: <i>[Signature]</i> | Date Time: 10/28/13 11:01 | Turn Around Time (Check): Same Day <input checked="" type="checkbox"/> 24 Hours <input type="checkbox"/> 48 Hours <input type="checkbox"/> 72 Hours <input type="checkbox"/> Standard <input type="checkbox"/> | Notes: |
| Requisitioned by: | Date Time: | Received by: | Date Time: | | |
| Requisitioned by: | Date Time: | Received in Lab by: | Date Time: | Sample Integrity: Temperature Upon Receipt <i>8°C</i> Intact <input checked="" type="checkbox"/> No <input type="checkbox"/> | |

www.kstscientific.com

DRAFT REPORT

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

Project: BC - Pronghorn 31-34-17 Excavation Samples
Project Number: 0345-Pronghorn 31-34-17
Project Manager: John Cocroft

Reported:
10/28/13 22:11

DRAFT: B01@6"
R310279-01 (Soil)

Summit Scientific

DRAFT: Extractable Petroleum Hydrocarbons by 8015

Date Sampled: 10/28/13 10:30

| Analyte | Result | Reporting Limit | Units | Dilution | Batch | Prepared | Analyzed | Method | Notes |
|--------------------|--------|-----------------|-------|----------|---------|----------|----------|--------|-------|
| C10-C28 (TEPH-DRO) | ND | 50 | mg/kg | 1 | 3102815 | 10/28/13 | 10/28/13 | 8015M | |
| C28-C36 (TEPH-ORO) | ND | 50 | " | " | " | " | " | " | |

Date Sampled: 10/28/13 10:30

| Analyte | Result | Reporting Limit | Units | Dilution | Batch | Prepared | Analyzed | Method | Notes |
|------------------------|--------|-----------------|--------|----------|-------|----------|----------|--------|-------|
| Surrogate: o-Terphenyl | | 111 % | 30-150 | | " | " | " | " | |

DRAFT: Volatile Organic Compounds by EPA Method 8260B

Date Sampled: 10/28/13 10:30

| Analyte | Result | Reporting Limit | Units | Dilution | Batch | Prepared | Analyzed | Method | Notes |
|-----------------------------|--------|-----------------|-------|----------|---------|----------|----------|-----------|-------|
| Benzene | ND | 0.0020 | mg/kg | 1 | 3102814 | 10/28/13 | 10/28/13 | EPA 8260B | |
| Toluene | ND | 0.0050 | " | " | " | " | " | " | |
| Ethylbenzene | ND | 0.0050 | " | " | " | " | " | " | |
| Xylenes (total) | ND | 0.0050 | " | " | " | " | " | " | |
| Gasoline Range Hydrocarbons | ND | 0.50 | " | " | " | " | " | " | |

Date Sampled: 10/28/13 10:30

| Analyte | Result | Reporting Limit | Units | Dilution | Batch | Prepared | Analyzed | Method | Notes |
|----------------------------------|--------|-----------------|--------|----------|-------|----------|----------|--------|-------|
| Surrogate: 1,2-Dichloroethane-d4 | | 92.9 % | 23-173 | | " | " | " | " | |
| Surrogate: Toluene-d8 | | 95.0 % | 20-170 | | " | " | " | " | |
| Surrogate: 4-Bromofluorobenzene | | 89.6 % | 21-167 | | " | " | " | " | |

DRAFT REPORT

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

Project: BC - Pronghorn 31-34-17 Excavation Samples
Project Number: 0345-Pronghorn 31-34-17
Project Manager: John Cocroft

Reported:
10/28/13 22:11

DRAFT: B02@8"
R310279-02 (Soil)

Summit Scientific

DRAFT: Extractable Petroleum Hydrocarbons by 8015

Date Sampled: 10/28/13 10:32

| Analyte | Result | Reporting Limit | Units | Dilution | Batch | Prepared | Analyzed | Method | Notes |
|--------------------|--------|-----------------|-------|----------|---------|----------|----------|--------|-------|
| C10-C28 (TEPH-DRO) | 1700 | 50 | mg/kg | 1 | 3102815 | 10/28/13 | 10/28/13 | 8015M | |
| C28-C36 (TEPH-ORO) | 180 | 50 | " | " | " | " | " | " | |

Date Sampled: 10/28/13 10:32

| Analyte | Result | Reporting Limit | Units | Dilution | Batch | Prepared | Analyzed | Method | Notes |
|------------------------|--------|-----------------|--------|----------|-------|----------|----------|--------|-------|
| Surrogate: o-Terphenyl | | 134 % | 30-150 | " | " | " | " | " | |

DRAFT: Volatile Organic Compounds by EPA Method 8260B

Date Sampled: 10/28/13 10:32

| Analyte | Result | Reporting Limit | Units | Dilution | Batch | Prepared | Analyzed | Method | Notes |
|-----------------------------|--------|-----------------|-------|----------|---------|----------|----------|-----------|-------|
| Benzene | 0.0035 | 0.0020 | mg/kg | 1 | 3102814 | 10/28/13 | 10/28/13 | EPA 8260B | |
| Toluene | 0.043 | 0.0050 | " | " | " | " | " | " | |
| Ethylbenzene | 0.042 | 0.0050 | " | " | " | " | " | " | |
| Xylenes (total) | 0.20 | 0.0050 | " | " | " | " | " | " | |
| Gasoline Range Hydrocarbons | 56 | 0.50 | " | " | " | " | " | " | |

Date Sampled: 10/28/13 10:32

| Analyte | Result | Reporting Limit | Units | Dilution | Batch | Prepared | Analyzed | Method | Notes |
|----------------------------------|--------|-----------------|--------|----------|-------|----------|----------|--------|-------|
| Surrogate: 1,2-Dichloroethane-d4 | | 105 % | 23-173 | " | " | " | " | " | |
| Surrogate: Toluene-d8 | | 95.9 % | 20-170 | " | " | " | " | " | |
| Surrogate: 4-Bromofluorobenzene | | 102 % | 21-167 | " | " | " | " | " | |

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

Project: BC - Pronghorn 31-34-17 Excavation Samples
Project Number: 0345-Pronghorn 31-34-17
Project Manager: John Cocroft

Reported:
10/28/13 22:11

DRAFT: B03@8"
R310279-03 (Soil)

Summit Scientific

DRAFT: Extractable Petroleum Hydrocarbons by 8015

Date Sampled: 10/28/13 10:34

| Analyte | Result | Reporting Limit | Units | Dilution | Batch | Prepared | Analyzed | Method | Notes |
|--------------------|--------|-----------------|-------|----------|---------|----------|----------|--------|-------|
| C10-C28 (TEPH-DRO) | ND | 50 | mg/kg | 1 | 3102815 | 10/28/13 | 10/28/13 | 8015M | |
| C28-C36 (TEPH-ORO) | ND | 50 | " | " | " | " | " | " | |

Date Sampled: 10/28/13 10:34

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

DRAFT: Volatile Organic Compounds by EPA Method 8260B

Date Sampled: 10/28/13 10:34

| Analyte | Result | Reporting Limit | Units | Dilution | Batch | Prepared | Analyzed | Method | Notes |
|-----------------------------|--------|-----------------|-------|----------|---------|----------|----------|-----------|-------|
| Benzene | ND | 0.0020 | mg/kg | 1 | 3102814 | 10/28/13 | 10/28/13 | EPA 8260B | |
| Toluene | ND | 0.0050 | " | " | " | " | " | " | |
| Ethylbenzene | ND | 0.0050 | " | " | " | " | " | " | |
| Xylenes (total) | ND | 0.0050 | " | " | " | " | " | " | |
| Gasoline Range Hydrocarbons | ND | 0.50 | " | " | " | " | " | " | |

Date Sampled: 10/28/13 10:34

| Analyte | Result | Reporting Limit | Units | Dilution | Batch | Prepared | Analyzed | Method | Notes |
|----------------------------------|--------|-----------------|--------|----------|-------|----------|----------|--------|-------|
| Surrogate: 1,2-Dichloroethane-d4 | | 101 % | 23-173 | | " | " | " | " | |
| Surrogate: Toluene-d8 | | 98.0 % | 20-170 | | " | " | " | " | |
| Surrogate: 4-Bromofluorobenzene | | 92.8 % | 21-167 | | " | " | " | " | |

DRAFT REPORT

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

Project: BC - Pronghorn 31-34-17 Excavation Samples
Project Number: 0345-Pronghorn 31-34-17
Project Manager: John Cocroft

Reported:
10/28/13 22:11

DRAFT: B04@6"
R310279-04 (Soil)

Summit Scientific

DRAFT: Extractable Petroleum Hydrocarbons by 8015

Date Sampled: 10/28/13 10:36

| Analyte | Result | Reporting Limit | Units | Dilution | Batch | Prepared | Analyzed | Method | Notes |
|--------------------|--------|-----------------|-------|----------|---------|----------|----------|--------|-------|
| C10-C28 (TEPH-DRO) | ND | 50 | mg/kg | 1 | 3102815 | 10/28/13 | 10/28/13 | 8015M | |
| C28-C36 (TEPH-ORO) | ND | 50 | " | " | " | " | " | " | |

Date Sampled: 10/28/13 10:36

| Analyte | Result | Reporting Limit | Units | Dilution | Batch | Prepared | Analyzed | Method | Notes |
|------------------------|--------|-----------------|--------|----------|-------|----------|----------|--------|-------|
| Surrogate: o-Terphenyl | | 113 % | 30-150 | | " | " | " | " | |

DRAFT: Volatile Organic Compounds by EPA Method 8260B

Date Sampled: 10/28/13 10:36

| Analyte | Result | Reporting Limit | Units | Dilution | Batch | Prepared | Analyzed | Method | Notes |
|-----------------------------|--------|-----------------|-------|----------|---------|----------|----------|-----------|-------|
| Benzene | ND | 0.0020 | mg/kg | 1 | 3102814 | 10/28/13 | 10/28/13 | EPA 8260B | |
| Toluene | 0.017 | 0.0050 | " | " | " | " | " | " | |
| Ethylbenzene | 0.012 | 0.0050 | " | " | " | " | " | " | |
| Xylenes (total) | 0.055 | 0.0050 | " | " | " | " | " | " | |
| Gasoline Range Hydrocarbons | 7.8 | 0.50 | " | " | " | " | " | " | |

Date Sampled: 10/28/13 10:36

| Analyte | Result | Reporting Limit | Units | Dilution | Batch | Prepared | Analyzed | Method | Notes |
|----------------------------------|--------|-----------------|--------|----------|-------|----------|----------|--------|-------|
| Surrogate: 1,2-Dichloroethane-d4 | | 102 % | 23-173 | | " | " | " | " | |
| Surrogate: Toluene-d8 | | 97.6 % | 20-170 | | " | " | " | " | |
| Surrogate: 4-Bromofluorobenzene | | 98.0 % | 21-167 | | " | " | " | " | |

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

Project: BC - Pronghorn 31-34-17 Excavation Samples
Project Number: 0345-Pronghorn 31-34-17
Project Manager: John Cocroft

Reported:
10/28/13 22:11

DRAFT: B05@6"
R310279-05 (Soil)

Summit Scientific

DRAFT: Extractable Petroleum Hydrocarbons by 8015

Date Sampled: 10/28/13 10:38

| Analyte | Result | Reporting Limit | Units | Dilution | Batch | Prepared | Analyzed | Method | Notes |
|--------------------|--------|-----------------|-------|----------|---------|----------|----------|--------|-------|
| C10-C28 (TEPH-DRO) | 1000 | 50 | mg/kg | 1 | 3102815 | 10/28/13 | 10/28/13 | 8015M | |
| C28-C36 (TEPH-ORO) | 130 | 50 | " | " | " | " | " | " | |

Date Sampled: 10/28/13 10:38

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

DRAFT: Volatile Organic Compounds by EPA Method 8260B

Date Sampled: 10/28/13 10:38

| Analyte | Result | Reporting Limit | Units | Dilution | Batch | Prepared | Analyzed | Method | Notes |
|-----------------------------|--------|-----------------|-------|----------|---------|----------|----------|-----------|-------|
| Benzene | ND | 0.0020 | mg/kg | 1 | 3102814 | 10/28/13 | 10/28/13 | EPA 8260B | |
| Toluene | ND | 0.0050 | " | " | " | " | " | " | |
| Ethylbenzene | ND | 0.0050 | " | " | " | " | " | " | |
| Xylenes (total) | ND | 0.0050 | " | " | " | " | " | " | |
| Gasoline Range Hydrocarbons | ND | 0.50 | " | " | " | " | " | " | |

Date Sampled: 10/28/13 10:38

| Analyte | Result | Reporting Limit | Units | Dilution | Batch | Prepared | Analyzed | Method | Notes |
|----------------------------------|--------|-----------------|--------|----------|-------|----------|----------|--------|-------|
| Surrogate: 1,2-Dichloroethane-d4 | | 113 % | 23-173 | | " | " | " | " | |
| Surrogate: Toluene-d8 | | 97.7 % | 20-170 | | " | " | " | " | |
| Surrogate: 4-Bromofluorobenzene | | 103 % | 21-167 | | " | " | " | " | |

DRAFT REPORT

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

Project: BC - Pronghorn 31-34-17 Excavation Samples
Project Number: 0345-Pronghorn 31-34-17
Project Manager: John Cocroft

Reported:
10/28/13 22:11

DRAFT: B06@6"
R310279-06 (Soil)

Summit Scientific

DRAFT: Extractable Petroleum Hydrocarbons by 8015

Date Sampled: 10/28/13 10:40

| Analyte | Result | Reporting Limit | Units | Dilution | Batch | Prepared | Analyzed | Method | Notes |
|--------------------|--------|-----------------|-------|----------|---------|----------|----------|--------|-------|
| C10-C28 (TEPH-DRO) | ND | 50 | mg/kg | 1 | 3102815 | 10/28/13 | 10/28/13 | 8015M | |
| C28-C36 (TEPH-ORO) | ND | 50 | " | " | " | " | " | " | |

Date Sampled: 10/28/13 10:40

| Analyte | Result | Reporting Limit | Units | Dilution | Batch | Prepared | Analyzed | Method | Notes |
|------------------------|--------|-----------------|--------|----------|-------|----------|----------|--------|-------|
| Surrogate: o-Terphenyl | | 84.3 % | 30-150 | | " | " | " | " | |

DRAFT: Volatile Organic Compounds by EPA Method 8260B

Date Sampled: 10/28/13 10:40

| Analyte | Result | Reporting Limit | Units | Dilution | Batch | Prepared | Analyzed | Method | Notes |
|-----------------------------|--------|-----------------|-------|----------|---------|----------|----------|-----------|-------|
| Benzene | ND | 0.0020 | mg/kg | 1 | 3102814 | 10/28/13 | 10/28/13 | EPA 8260B | |
| Toluene | ND | 0.0050 | " | " | " | " | " | " | |
| Ethylbenzene | ND | 0.0050 | " | " | " | " | " | " | |
| Xylenes (total) | ND | 0.0050 | " | " | " | " | " | " | |
| Gasoline Range Hydrocarbons | ND | 0.50 | " | " | " | " | " | " | |

Date Sampled: 10/28/13 10:40

| Analyte | Result | Reporting Limit | Units | Dilution | Batch | Prepared | Analyzed | Method | Notes |
|----------------------------------|--------|-----------------|--------|----------|-------|----------|----------|--------|-------|
| Surrogate: 1,2-Dichloroethane-d4 | | 111 % | 23-173 | | " | " | " | " | |
| Surrogate: Toluene-d8 | | 98.5 % | 20-170 | | " | " | " | " | |
| Surrogate: 4-Bromofluorobenzene | | 103 % | 21-167 | | " | " | " | " | |

DRAFT REPORT

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

Project: BC - Pronghorn 31-34-17 Excavation Samples
Project Number: 0345-Pronghorn 31-34-17
Project Manager: John Cocroft

Reported:
10/28/13 22:11

DRAFT: B07@6"
R310279-07 (Soil)

Summit Scientific

DRAFT: Extractable Petroleum Hydrocarbons by 8015

Date Sampled: 10/28/13 10:42

| Analyte | Result | Reporting Limit | Units | Dilution | Batch | Prepared | Analyzed | Method | Notes |
|--------------------|--------|-----------------|-------|----------|---------|----------|----------|--------|-------|
| C10-C28 (TEPH-DRO) | 170 | 50 | mg/kg | 1 | 3102815 | 10/28/13 | 10/28/13 | 8015M | |
| C28-C36 (TEPH-ORO) | ND | 50 | " | " | " | " | " | " | |

Date Sampled: 10/28/13 10:42

| Analyte | Result | Reporting Limit | Units | Dilution | Batch | Prepared | Analyzed | Method | Notes |
|------------------------|--------|-----------------|--------|----------|-------|----------|----------|--------|-------|
| Surrogate: o-Terphenyl | | 94.3 % | 30-150 | | " | " | " | " | |

DRAFT: Volatile Organic Compounds by EPA Method 8260B

Date Sampled: 10/28/13 10:42

| Analyte | Result | Reporting Limit | Units | Dilution | Batch | Prepared | Analyzed | Method | Notes |
|-----------------------------|--------|-----------------|-------|----------|---------|----------|----------|-----------|-------|
| Benzene | ND | 0.0020 | mg/kg | 1 | 3102814 | 10/28/13 | 10/28/13 | EPA 8260B | |
| Toluene | ND | 0.0050 | " | " | " | " | " | " | |
| Ethylbenzene | ND | 0.0050 | " | " | " | " | " | " | |
| Xylenes (total) | ND | 0.0050 | " | " | " | " | " | " | |
| Gasoline Range Hydrocarbons | ND | 0.50 | " | " | " | " | " | " | |

Date Sampled: 10/28/13 10:42

| Analyte | Result | Reporting Limit | Units | Dilution | Batch | Prepared | Analyzed | Method | Notes |
|----------------------------------|--------|-----------------|--------|----------|-------|----------|----------|--------|-------|
| Surrogate: 1,2-Dichloroethane-d4 | | 112 % | 23-173 | | " | " | " | " | |
| Surrogate: Toluene-d8 | | 98.7 % | 20-170 | | " | " | " | " | |
| Surrogate: 4-Bromofluorobenzene | | 102 % | 21-167 | | " | " | " | " | |

DRAFT REPORT

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: BC - Pronghorn 31-34-17 Excavation Samples
Project Number: 0345-Pronghorn 31-34-17
Project Manager: John Cocroft

Reported:
10/28/13 22:11

DRAFT: B08@8"
R310279-08 (Soil)

Summit Scientific

DRAFT: Extractable Petroleum Hydrocarbons by 8015

Date Sampled: 10/28/13 10:44

| Analyte | Result | Reporting Limit | Units | Dilution | Batch | Prepared | Analyzed | Method | Notes |
|--------------------|--------|-----------------|-------|----------|---------|----------|----------|--------|-------|
| C10-C28 (TEPH-DRO) | ND | 50 | mg/kg | 1 | 3102815 | 10/28/13 | 10/28/13 | 8015M | |
| C28-C36 (TEPH-ORO) | ND | 50 | " | " | " | " | " | " | |

Date Sampled: 10/28/13 10:44

| Analyte | Result | Reporting Limit | Units | Dilution | Batch | Prepared | Analyzed | Method | Notes |
|------------------------|--------|-----------------|--------|----------|-------|----------|----------|--------|-------|
| Surrogate: o-Terphenyl | | 88.3 % | 30-150 | | " | " | " | " | |

DRAFT: Volatile Organic Compounds by EPA Method 8260B

Date Sampled: 10/28/13 10:44

| Analyte | Result | Reporting Limit | Units | Dilution | Batch | Prepared | Analyzed | Method | Notes |
|-----------------------------|--------|-----------------|-------|----------|---------|----------|----------|-----------|-------|
| Benzene | ND | 0.0020 | mg/kg | 1 | 3102814 | 10/28/13 | 10/28/13 | EPA 8260B | |
| Toluene | ND | 0.0050 | " | " | " | " | " | " | |
| Ethylbenzene | ND | 0.0050 | " | " | " | " | " | " | |
| Xylenes (total) | ND | 0.0050 | " | " | " | " | " | " | |
| Gasoline Range Hydrocarbons | ND | 0.50 | " | " | " | " | " | " | |

Date Sampled: 10/28/13 10:44

| Analyte | Result | Reporting Limit | Units | Dilution | Batch | Prepared | Analyzed | Method | Notes |
|----------------------------------|--------|-----------------|--------|----------|-------|----------|----------|--------|-------|
| Surrogate: 1,2-Dichloroethane-d4 | | 112 % | 23-173 | | " | " | " | " | |
| Surrogate: Toluene-d8 | | 97.6 % | 20-170 | | " | " | " | " | |
| Surrogate: 4-Bromofluorobenzene | | 104 % | 21-167 | | " | " | " | " | |

DRAFT REPORT

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

Project: BC - Pronghorn 31-34-17 Excavation Samples
Project Number: 0345-Pronghorn 31-34-17
Project Manager: John Cocroft

Reported:
10/28/13 22:11

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

DRAFT REPORT

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

Project: BC - Pronghorn 31-34-17 Excavation Samples
Project Number: 0345-Pronghorn 31-34-17
Project Manager: John Cocroft

Reported:
10/28/13 22:11

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

DRAFT REPORT

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.

Summit Scientific

741 Corporate Circle – Suite I ♦ Golden, Colorado 80401

303.277.9310 - laboratory ♦ 303.277.9531 - fax

October 30, 2013

John Cocroft

LT Environmental, Inc.

4600 West 60th Avenue

Arvada, CO 80003

RE: BC - Pronghorn 31-34-17 Excavation Samples

Enclosed are the results of analyses for samples received by Summit Scientific on 10/30/13 16:05. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

DRAFT REPORT

DATA SUBJECT TO CHANGE



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

Project: BC - Pronghorn 31-34-17 Excavation Samples
Project Number: 0345-13027
Project Manager: John Cocroft

Reported:
10/30/13 22:32

ANALYTICAL REPORT FOR SAMPLES

| Sample ID | Laboratory ID | Matrix | Date Sampled | Date Received |
|-----------------|---------------|--------|----------------|----------------|
| DRAFT: B09@2.5' | R310306-01 | Soil | 10/30/13 14:10 | 10/30/13 16:05 |
| DRAFT: B10@1' | R310306-02 | Soil | 10/30/13 14:20 | 10/30/13 16:05 |

DRAFT REPORT

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

Project: BC - Pronghorn 31-34-17 Excavation Samples

Project Number: 0345-13027
Project Manager: John Cocroft

Reported:
10/30/13 22:32

Summit Scientific
R310306

S₂
741 Corporate Circle Suite J • Golden, Colorado 80401
303-277-9310 • 303-374-5933 Fax

| | | | |
|----------------|------------------|-----------------|--------------------------------|
| Client | LT Environmental | Page | 1 of 1 |
| Address | 4400 17th St | Project Manager | |
| City/State/Zip | Alaska 99501 | E-Mail | |
| Phone | | Project Name | Bascom Creek Reservoir 3-34-17 |
| Fax | | Project Number | 03451277 |
| Sample Name | K169 (as noted) | | |

[illegible]

www.s2scientific.com

DRAFT REPORT

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: BC - Pronghorn 31-34-17 Excavation Samples
Project Number: 0345-13027
Project Manager: John Cocroft

Reported:
10/30/13 22:32

DRAFT: B09@2.5'
R310306-01 (Soil)

Summit Scientific

DRAFT: Extractable Petroleum Hydrocarbons by 8015

Date Sampled: 10/30/13 14:10

| Analyte | Result | Reporting Limit | Units | Dilution | Batch | Prepared | Analyzed | Method | Notes |
|--------------------|--------|-----------------|-------|----------|---------|----------|----------|--------|-------|
| C10-C28 (TEPH-DRO) | ND | 50 | mg/kg | 1 | 3103016 | 10/30/13 | 10/30/13 | 8015M | |
| C28-C36 (TEPH-ORO) | ND | 50 | " | " | " | " | " | " | |

Date Sampled: 10/30/13 14:10

| Analyte | Result | Reporting Limit | Units | Dilution | Batch | Prepared | Analyzed | Method | Notes |
|------------------------|--------|-----------------|--------|----------|-------|----------|----------|--------|-------|
| Surrogate: o-Terphenyl | | 106 % | 30-150 | | " | " | " | " | |

DRAFT: Volatile Organic Compounds by EPA Method 8260B

Date Sampled: 10/30/13 14:10

| Analyte | Result | Reporting Limit | Units | Dilution | Batch | Prepared | Analyzed | Method | Notes |
|-----------------------------|--------|-----------------|-------|----------|---------|----------|----------|-----------|-------|
| Benzene | ND | 0.0020 | mg/kg | 1 | 3103015 | 10/30/13 | 10/30/13 | EPA 8260B | |
| Toluene | ND | 0.0050 | " | " | " | " | " | " | |
| Ethylbenzene | ND | 0.0050 | " | " | " | " | " | " | |
| Xylenes (total) | ND | 0.0050 | " | " | " | " | " | " | |
| Gasoline Range Hydrocarbons | ND | 0.50 | " | " | " | " | " | " | |

Date Sampled: 10/30/13 14:10

| Analyte | Result | Reporting Limit | Units | Dilution | Batch | Prepared | Analyzed | Method | Notes |
|----------------------------------|--------|-----------------|--------|----------|-------|----------|----------|--------|-------|
| Surrogate: 1,2-Dichloroethane-d4 | | 99.0 % | 23-173 | | " | " | " | " | |
| Surrogate: Toluene-d8 | | 95.0 % | 20-170 | | " | " | " | " | |
| Surrogate: 4-Bromofluorobenzene | | 97.0 % | 21-167 | | " | " | " | " | |

DRAFT REPORT

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

Project: BC - Pronghorn 31-34-17 Excavation Samples
Project Number: 0345-13027
Project Manager: John Cocroft

Reported:
10/30/13 22:32

DRAFT: B10@1'
R310306-02 (Soil)

Summit Scientific

DRAFT: Extractable Petroleum Hydrocarbons by 8015

Date Sampled: 10/30/13 14:20

| Analyte | Result | Reporting Limit | Units | Dilution | Batch | Prepared | Analyzed | Method | Notes |
|--------------------|--------|-----------------|-------|----------|---------|----------|----------|--------|-------|
| C10-C28 (TEPH-DRO) | ND | 50 | mg/kg | 1 | 3103016 | 10/30/13 | 10/30/13 | 8015M | |
| C28-C36 (TEPH-ORO) | ND | 50 | " | " | " | " | " | " | |

Date Sampled: 10/30/13 14:20

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

DRAFT: Volatile Organic Compounds by EPA Method 8260B

Date Sampled: 10/30/13 14:20

| Analyte | Result | Reporting Limit | Units | Dilution | Batch | Prepared | Analyzed | Method | Notes |
|-----------------------------|--------|-----------------|-------|----------|---------|----------|----------|-----------|-------|
| Benzene | ND | 0.0020 | mg/kg | 1 | 3103015 | 10/30/13 | 10/30/13 | EPA 8260B | |
| Toluene | ND | 0.0050 | " | " | " | " | " | " | |
| Ethylbenzene | ND | 0.0050 | " | " | " | " | " | " | |
| Xylenes (total) | ND | 0.0050 | " | " | " | " | " | " | |
| Gasoline Range Hydrocarbons | ND | 0.50 | " | " | " | " | " | " | |

Date Sampled: 10/30/13 14:20

| Analyte | Result | Reporting Limit | Units | Dilution | Batch | Prepared | Analyzed | Method | Notes |
|----------------------------------|--------|-----------------|--------|----------|-------|----------|----------|--------|-------|
| Surrogate: 1,2-Dichloroethane-d4 | | 103 % | 23-173 | | " | " | " | " | |
| Surrogate: Toluene-d8 | | 96.1 % | 20-170 | | " | " | " | " | |
| Surrogate: 4-Bromofluorobenzene | | 92.2 % | 21-167 | | " | " | " | " | |

DRAFT REPORT

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

Project: BC - Pronghorn 31-34-17 Excavation Samples

Project Number: 0345-13027
Project Manager: John Cocroft

Reported:
10/30/13 22:32

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

DRAFT REPORT

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

Project: BC - Pronghorn 31-34-17 Excavation Samples
Project Number: 0345-13027
Project Manager: John Cocroft

Reported:
10/30/13 22:32

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

DRAFT REPORT

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