OIL CONS. DIV DIST. 3

JUL 29 2015

District I
1625 N. French Dr., Hobbs, NM 88240
District II
1301 W. Grand Avenue, Artesia, NM 88210
District III
1000 Rio Brazos Road, Aztec, NM 87410
District IV
1220 S. St. Francis Dr., Santa Fe, NM 87505

State of New Mexico
Energy Minerals and Natural Resources

Oil Conservation Division
1220 South St. Francis Dr.
Santa Fe, NM 87505

Form C-141
Revised August 8, 2011

Submit 1 Copy to appropriate District Office to accordance with 19.15.29 NMAC.

# Release Notification and Corrective Action

## OPERATOR

☐ Initial Report ☒ Final Report

| | |
|---|---|
| Name of Company **ConocoPhillips Company** | Contact **Crystal Walker** |
| Address 3401 East 30th St, Farmington, NM | Telephone No.(505) 326-9837 |
| Facility Name: **Moore LS 1B** | Facility Type: **Gas Well** |

| | | |
|---|---|---|
| Surface Owner **BLM** | Mineral Owner **BLM (SF-078147)** | API No.**30-045-24652** |

## LOCATION OF RELEASE

| Unit Letter | Section | Township | Range | Feet from the | North/South Line | Feet from the | East/West Line | County |
|---|---|---|---|---|---|---|---|---|
| **H** | **27** | **32N** | **12W** | **1715** | **North** | **809** | **East** | **San Juan** |

**Latitude 36.95967 Longitude -108.07652**

## NATURE OF RELEASE

| | | |
|---|---|---|
| Type of Release **Produced Fluids** | Volume of Release **Unknown** | Volume Recovered **67 cubic yds** |
| Source of Release **Unknown** | Date and Hour of Occurrence **Unknown** | Date and Hour of Discovery **2/11/2015** |
| Was Immediate Notice Given? ☐ Yes ☐ No ☒ Not Required | If YES, To Whom? | |
| By Whom? | Date and Hour | |
| Was a Watercourse Reached? ☐ Yes ☒ No | If YES, Volume Impacting the Watercourse. | |

If a Watercourse was Impacted, Describe Fully.*
**N/A**

Describe Cause of Problem and Remedial Action Taken.*
**Plug & Abandonment Activities**

Describe Area Affected and Cleanup Action Taken.*
**Historical hydrocarbon impacted soil was found during the P&A activities for the subject well. The excavation was 15'x 10' x 10' and 67 yds of soil was transported to IEI landfarm and 67 yds of clean soil was transported to location and placed in the excavation site. The soil sampling report is attached for review.**

I hereby certify that the information given above is true and complete to the best of my knowledge and understand that pursuant to NMOCD rules and regulations all operators are required to report and/or file certain release notifications and perform corrective actions for releases which may endanger public health or the environment. The acceptance of a C-141 report by the NMOCD marked as "Final Report" does not relieve the operator of liability should their operations have failed to adequately investigate and remediate contamination that pose a threat to ground water, surface water, human health or the environment. In addition, NMOCD acceptance of a C-141 report does not relieve the operator of responsibility for compliance with any other federal, state, or local laws and/or regulations.

| | |
|---|---|
| Signature: Crystal Walker | OIL CONSERVATION DIVISION |
| Printed Name: **Crystal Walker** | Approved by Environmental Specialist: |
| Title: **Field Environmental Specialist** | Approval Date: 8/12/15 Expiration Date: |
| E-mail Address: crystal.walker@conocophillips.com | Conditions of Approval: Attached ☐ |
| Date: 7/27/2015 Phone: (505) 326-9837 | |

* Attach Additional Sheets If Necessary

#NCS 1508224 341933

27

June 30, 2015

Crystal Walker
ConocoPhillips
San Juan Business Unit
(505) 326-9837

*Via electronic mail to:*
*SJBUE-Team@ConocoPhillips.com*

**RE: Release Assessment and Final Excavation Report**
**Moore LS #1B**
**San Juan County, New Mexico**

Dear Ms. Walker:

On February 11, 2015, Animas Environmental Services, LLC (AES) completed an initial release assessment and environmental clearance of the final excavation limits at the ConocoPhillips (COPC) Moore LS #1B, located in San Juan County, New Mexico. The historic contamination was discovered during plugging and abandonment activities at the location. The initial release assessment was completed by AES on February 11, 2015, and the final excavation was completed by COPC contractors while AES was on location on the same day.

## 1.0 Site Information

### *1.1 Location*

Site Name – Moore LS #1B
Location – SE¼ NE¼, Section 27, T32N, R12W, San Juan County, New Mexico
Well Head Latitude/Longitude – N36.95967 and W108.07652, respectively
Release Location Latitude/Longitude – N36.95985 and W108.07631, respectively
Land Jurisdiction – Bureau of Land Management (BLM)
Figure 1. Topographic Site Location Map
Figure 2. Aerial Site Map, February 2015

604 W. Piñon St.
Farmington, NM 87401
505-564-2281

1911 Main, Ste 280
Durango, CO 81301
970-403-3084

www.animasenvironmental.com

### *1.2 NMOCD Ranking*

In accordance with New Mexico Oil Conservation Division (NMOCD) release protocols, action levels were established per NMOCD *Guidelines for Remediation of Leaks, Spills, and Releases* (August 1993) prior to site work. The release was given a ranking score of 30 based on the following factors:

- **Depth to Groundwater:** Based on elevation, topographic interpretation and visual reconnaissance, depth to groundwater is interpreted to be between 50 to 100 feet below ground surface (bgs). (10 points)
- **Wellhead Protection Area:** The release location is not within a wellhead protection area. (0 points)
- **Distance to Surface Water Body:** An unnamed wash which discharges to Hartley Wash is located approximately 190 feet north of the location. An intermittent pond is located approximately 330 feet southwest. (20 points)

### *1.3 Assessment*

AES was initially contacted by Mike Morris of COPC on February 10, 2015, and on February 11, 2015, Emilee Skyles and Sam Glasses of AES completed the release assessment field work. The assessment included collection and field sampling of 12 soil samples from 5 test holes (TH-1 through TH-5) in and around the release area. One composite soil sample was collected from stockpiled soil (SP) associated with TH-1. Test holes were terminated between 8 and 10 feet bgs. Based on field sampling results, AES recommended excavation of the release area. Sample locations are shown on Figure 3.

Also on February 11, 2015, AES collected confirmation soil samples from the excavation. The field sampling activities included collection of five composite soil samples (SC-1 through SC-5) from the walls and base of the excavation. The area of the final excavation measured approximately 18 feet by 6 to 15 feet by 10 feet in depth. Sample locations and final excavation extents are presented on Figure 4.

## 2.0 Soil Sampling

A total of 17 soil samples from 5 borings (TH-1 through TH-5), one stockpile sample (SP) and 5 composite samples (SC-1 through SC-5) were collected during the release assessment and excavation clearance. All soil samples were field screened for volatile organic compounds (VOCs) and total petroleum hydrocarbons (TPH). Samples SC-1 through SC-5 collected during the excavation clearance were submitted for confirmation laboratory analysis.

## *2.1 Field Sampling*

### 2.1.1 Volatile Organic Compounds

Field screening for VOC vapors was conducted with a photo-ionization detector (PID) organic vapor meter (OVM). Before beginning field screening, the PID-OVM was first calibrated with 100 parts per million (ppm) isobutylene gas.

### 2.1.2 Total Petroleum Hydrocarbons

Field TPH samples were analyzed per U.S. Environmental Protection Agency (USEPA) Method 418.1 using a Buck Scientific Model HC-404 Total Hydrocarbon Analyzer Infrared Spectrometer (Buck). A 3-point calibration was completed prior to conducting soil analyses. Field analytical protocol followed AES's *Standard Operating Procedure: Field Analysis Total Petroleum Hydrocarbons per EPA Method 418.1.*

## *2.2 Laboratory Analyses*

The soil samples collected for laboratory analysis were placed into new, clean, laboratory-supplied containers, which were then labeled, placed on ice, and logged onto a sample chain of custody record. Samples were maintained on ice until delivery to the analytical laboratory, Hall Environmental Analysis Laboratory (Hall) in Albuquerque, New Mexico. All soil samples were laboratory analyzed for:

- Benzene, toluene, ethylbenzene, and xylene (BTEX) per USEPA Method 8021B.
- TPH for gasoline range organics (GRO), diesel range organics (DRO), and motor oil range organics (MRO) per USEPA Method 8015D.

## *2.3 Field and Laboratory Analytical Results*

On February 11, 2015, initial assessment field screening results for VOCs via OVM showed concentrations ranging from 0.0 ppm in TH-3 and TH-5 up to 3,813 ppm in TH-1. Field TPH concentrations ranged from less than 20.0 mg/kg in TH-4 and TH-5 up to greater than 2,500 mg/kg in TH-1.

Final excavation clearance was conducted the same day with field screening results for VOCs via OVM ranging from 0.3 ppm in SC-1 up to 218 ppm in SC-5. Field TPH concentrations ranged from less than 20 mg/kg in SC-3, SC-4, and SC-5 up to 27.6 mg/kg in SC-2. Results are included below in Table 1 and on Figures 3 and 4. The AES Field Sampling Reports are attached.

Table 1. Soil Field VOCs and TPH Results
Moore LS #1B Initial Release Assessment and Final Excavation
February 2015

| Sample ID | Date Sampled | Sample Depth (ft bgs) | VOCs via OVM (ppm) | TPH 418.1 (mg/kg) |
|---|---|---|---|---|
| *NMOCD Action Level** | | | *100* | *100* |
| SP | 2/11/15 | 0 to 4 | **1,890** | **447** |
| TH-1 | 2/11/15 | 4 | **3,813** | **>2,500** |
| | | 8 | **907** | **246** |
| | | 10 | **617** | 72.5 |
| TH-2 | 2/11/15 | 5 | 0.2 | 22.7 |
| | | 8 | 0.1 | 28.9 |
| TH-3 | 2/11/15 | 5 | 0.1 | 21.5 |
| | | 8 | 0.0 | 21.5 |
| TH-4 | 2/11/15 | 5 | 2.6 | <20.0 |
| | | 9 | 1.6 | <20.0 |
| TH-5 | 2/11/15 | 5 | 1.3 | 25.2 |
| | | 8 | 0.0 | <20.0 |
| SC-1 | 2/11/15 | 1 to 10 | 0.3 | 24.0 |
| SC-2 | 2/11/15 | 1 to 10 | 15.2 | 27.6 |
| SC-3 | 2/11/15 | 1 to 10 | 42.8 | <20.0 |
| SC-4 | 2/11/15 | 1 to 10 | 5.5 | <20.0 |
| SC-5 | 2/11/15 | 1 to 10 | **218** | <20.0 |

*Action level determined by the NMOCD ranking score per *NMOCD Guidelines for Remediation of Leaks, Spills, and Releases* (August 1993)

Laboratory analyses for SC-1 through SC-5 were used to confirm field sampling results from the final excavation extents. Benzene and total BTEX concentrations in SC-1 through SC-5 were reported below laboratory detection limits with the exception of SC-5, which reported total BTEX at 0.19 mg/kg. TPH concentrations as GRO/DRO/MRO were also reported below laboratory detection limits in all samples with the exception of SC-5, which reported GRO at 4.0 mg/kg. Results are presented in Table 2 and on Figure 4. The laboratory analytical report is attached.

Table 2. Laboratory Analytical Results – Benzene, Total BTEX, and TPH
Moore LS #1B Initial Release Assessment and Final Excavation
February 2015

| Sample ID | Date Sampled | Sample Depth (ft bgs) | Benzene (mg/kg) | Total BTEX (mg/kg) | GRO (mg/kg) | DRO (mg/kg) | MRO (mg/kg) |
|---|---|---|---|---|---|---|---|
| *NMOCD Action Level** | | | *10* | *50* | | *100* | |
| SC-1 | 2/11/15 | 1 to 10 | <0.048 | <0.240 | <4.8 | <9.8 | <49.0 |
| SC-2 | 2/11/15 | 1 to 10 | <0.050 | <0.249 | <5.0 | <10.0 | <50.0 |
| SC-3 | 2/11/15 | 1 to 10 | <0.047 | <0.236 | <4.7 | <9.9 | <50.0 |
| SC-4 | 2/11/15 | 1 to 10 | <0.050 | <0.250 | <5.0 | <10.0 | <50.0 |
| SC-5 | 2/11/15 | 1 to 10 | <0.025 | 0.19 | 4.0 | <10.0 | <50.0 |

*Action level determined by the NMOCD ranking score per *NMOCD Guidelines for Remediation of Leaks, Spills, and Releases* (August 1993)

## 3.0 Conclusions and Recommendations

On February 11, 2015, AES conducted an initial assessment and excavation clearance of petroleum contaminated soils associated with a historic release at the Moore LS #1B. Action levels for releases are determined by the NMOCD ranking score per *NMOCD Guidelines for Remediation of Leaks, Spills, and Releases* (August 1993), and the site was assigned a rank of 30.

On February 11, 2015, initial assessment field sampling results above the NMOCD action level of 100 ppm VOCs and 100 mg/kg TPH were reported in TH-1, with 3,813 ppm VOCs and TPH greater than 2,500 mg/kg. Based on the results of the release assessment, a release was confirmed and COPC contractors continued with an excavation of contaminated soils.

Also on February 11, 2015, final clearance of the excavation area was completed. Field sampling results of the excavation extents showed that VOC concentrations were below applicable NMOCD action levels for the final walls of the excavation but above the NMOCD action level for the excavation base (SC-5), which had a VOC concentration of 218 ppm. Field TPH concentrations were below the applicable NMOCD action level of 100 mg/kg for the final walls and base of the excavation. Laboratory analytical results reported benzene, total BTEX and TPH (as GRO/DRO/MRO) concentrations below NMOCD action levels in all samples.

Based on final field sampling and laboratory analytical results of the excavation of petroleum contaminated soils at the Moore LS #1B, VOC concentrations were above

NMOCD action levels for the base of the excavation and below NMOCD action levels for each of the excavation sidewalls. Benzene, total BTEX, and TPH concentrations were below applicable NMOCD action levels for each of the sidewalls and base of the excavation. No further work is recommended.

If you have any questions about this report or site conditions, please do not hesitate to contact Emilee Skyles at (505) 564-2281.

Sincerely,

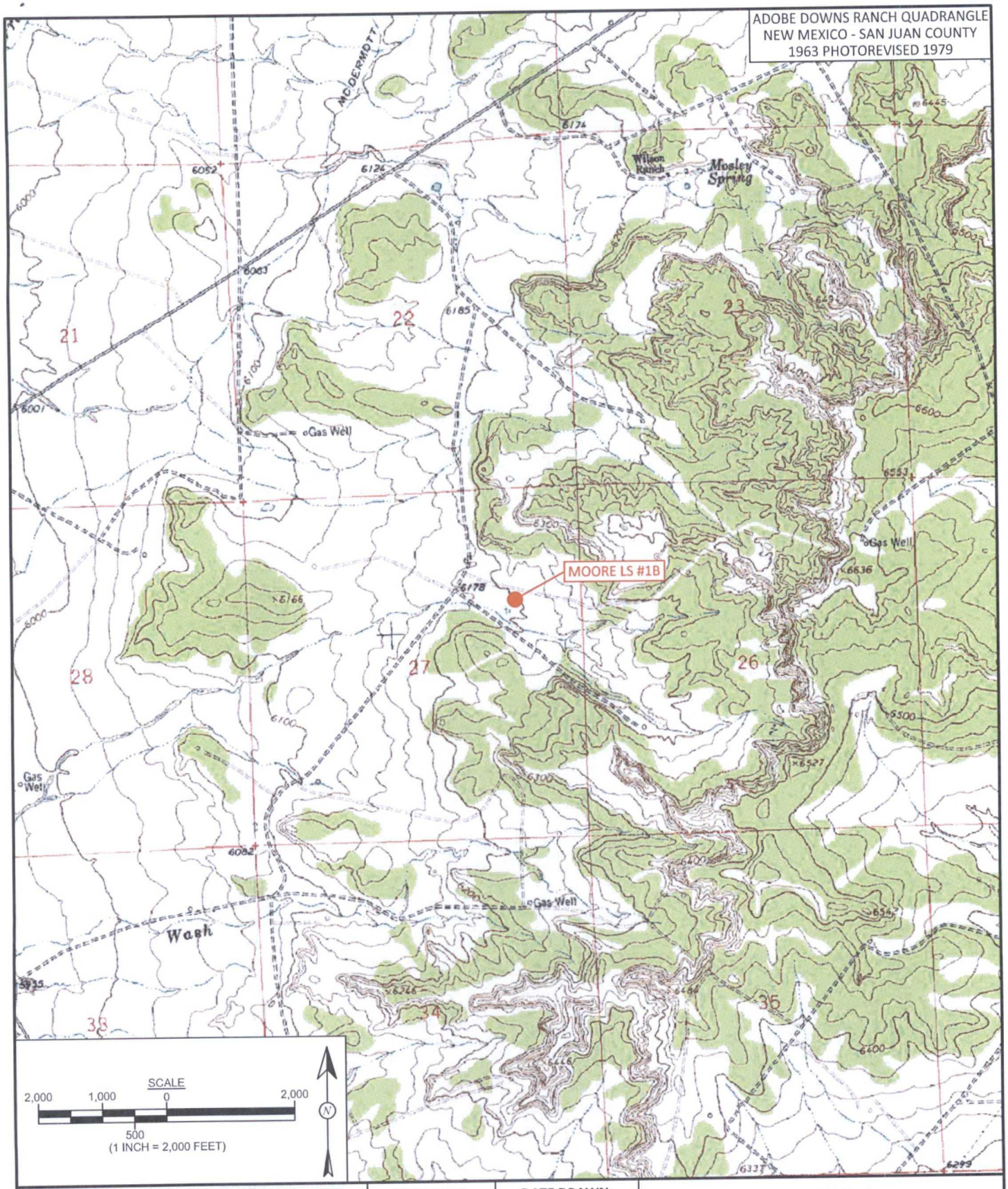
Dylan K. Davis
Staff Geologist

Elizabeth McNally, PE

Attachments:

Figure 1. Topographic Site Location Map
Figure 2. Aerial Site Map, February 2015
Figure 3. Initial Assessment Sample Locations and Results, February 2015
Figure 4. Final Excavation Sample Locations and Results, February 2015
AES Initial Assessment Field Sampling Report 021115
AES Final Excavation Field Sampling Report 021115
Hall Laboratory Analytical Report 1502524

C:\Users\emcnally\Dropbox (Animas Environmental)\0000 Animas Server Dropbox EM\2015 Projects\ConocoPhillips\Moore LS #1B\Release\Moore LS #1B Release and Final Excavation Report 063015.docx




| | |
|---|---|
| DRAWN BY: S. Glasses | DATE DRAWN: February 12, 2015 |
| REVISIONS BY: C. Lameman | DATE REVISED: June 22, 2015 |
| CHECKED BY: E. Skyles | DATE CHECKED: June 22, 2015 |
| APPROVED BY: E. McNally | DATE APPROVED: June 22, 2015 |

Animas Environmental Services, LLC

# FIGURE 1

## TOPOGRAPHIC SITE LOCATION MAP

ConocoPhillips
MOORE LS #1B
SE¼ NE¼, SECTION 27, T32N, R12W
SAN JUAN COUNTY, NEW MEXICO
N36.95967, W108.07652


Animas Environmental Services, LLC

| | | |
|---|---|---|
| **DRAWN BY:** S. Glasses | **DATE DRAWN:** February 12, 2015 | **FIGURE 2** |
| **REVISIONS BY:** C. Lameman | **DATE REVISED:** June 22, 2015 | **AERIAL SITE MAP FEBRUARY 2015** |
| **CHECKED BY:** E. Skyles | **DATE CHECKED:** June 22, 2015 | ConocoPhillips<br>MOORE LS #1B<br>SE¼ NE¼, SECTION 27, T32N, R12W<br>SAN JUAN COUNTY, NEW MEXICO<br>N36.95967, W108.07652 |
| **APPROVED BY:** E. McNally | **DATE APPROVED:** June 22, 2015 | |

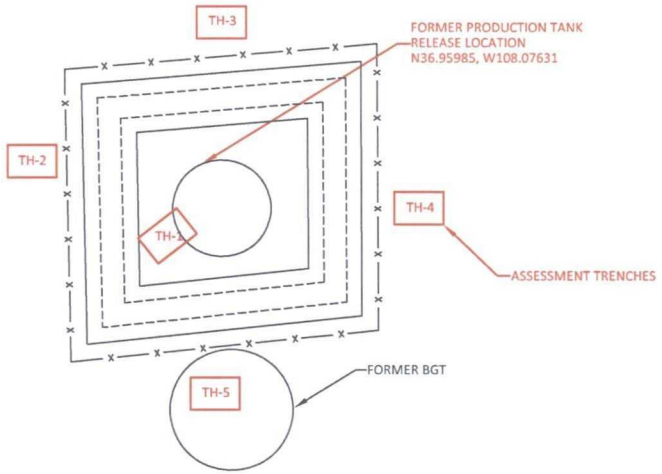
# FIGURE 3

**INITIAL ASSESSMENT SAMPLE LOCATIONS AND RESULTS**
**FEBRUARY 2015**
ConocoPhillips
MOORE LS #1B
SE¼ NE¼, SECTION 27, T32N, R12W
SAN JUAN COUNTY, NEW MEXICO
N36.95967, W108.07652

Animas Environmental Services, LLC

| DRAWN BY: | DATE DRAWN: |
|---|---|
| S. Glasses | February 12, 2015 |
| **REVISIONS BY:** | **DATE REVISED:** |
| C. Lameman | June 22, 2015 |
| **CHECKED BY:** | **DATE CHECKED:** |
| E. Skyles | June 22, 2015 |
| **APPROVED BY:** | **DATE APPROVED:** |
| E. McNally | June 22, 2015 |

| *Field Sampling Results* | | | | |
|---|---|---|---|---|
| *Sample ID* | *Date* | *Depth (ft)* | *OVM-PID (ppm)* | *TPH (mg/kg)* |
| *NMOCD ACTION LEVEL* | | | *100* | *100* |
| SP | 2/11/15 | 0 to 4 | **1,890** | **447** |
| TH-1 | 2/11/15 | 4 | **3,813** | **>2,500** |
| | | 8 | **907** | **246** |
| | | 10 | **617** | 72.5 |
| TH-2 | 2/11/15 | 5 | 0.2 | 22.7 |
| | | 8 | 0.1 | 28.9 |
| TH-3 | 2/11/15 | 5 | 0.1 | 21.5 |
| | | 8 | 0.0 | 21.5 |
| TH-4 | 2/11/15 | 5 | 2.6 | <20.0 |
| | | 9 | 1.6 | <20.0 |
| TH-5 | 2/11/15 | 5 | 1.3 | 25.2 |
| | | 8 | 0.0 | <20.0 |




**LEGEND**

SECONDARY CONTAINMENT BERM

FENCE

SCALE

15 5 0 15

10

(1 INCH = 15 FEET)

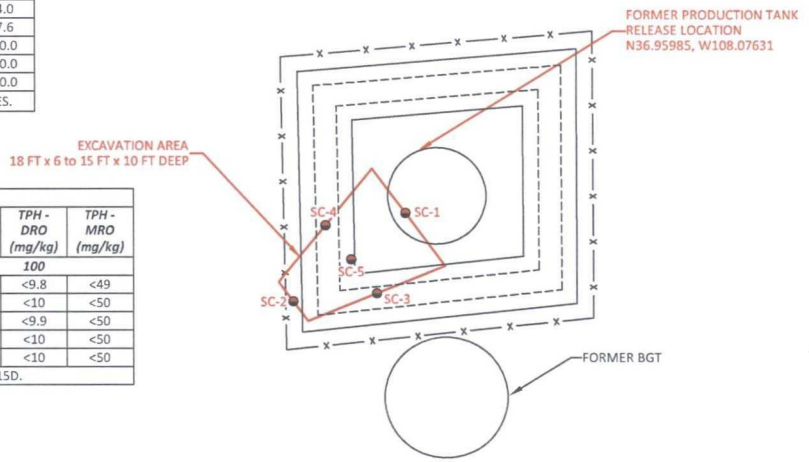
# FIGURE 4

**FINAL EXCAVATION SAMPLE LOCATIONS AND RESULTS**
**FEBRUARY 2015**

ConocoPhillips
MOORE LS #1B
SE¼ NE¼, SECTION 27, T32N, R12W
SAN JUAN COUNTY, NEW MEXICO
N36.95967, W108.07652

| Field Sampling Results | | | | |
|---|---|---|---|---|
| Sample ID | Date | Depth (ft) | OVM-PID (ppm) | TPH (mg/kg) |
| NMOCD ACTION LEVEL | | | 100 | 100 |
| SC-1 | 2/11/15 | 1 to 10 | 0.3 | 24.0 |
| SC-2 | 2/11/15 | 1 to 10 | 15.2 | 27.6 |
| SC-3 | 2/11/15 | 1 to 10 | 42.8 | <20.0 |
| SC-4 | 2/11/15 | 1 to 10 | 5.5 | <20.0 |
| SC-5 | 2/11/15 | 10 | **218** | <20.0 |
| SC-1 THROUGH SC-5 ARE SOIL COMPOSITE SAMPLES. | | | | |

| Laboratory Analytical Results | | | | | | | |
|---|---|---|---|---|---|---|---|
| Sample ID | Date | Depth (ft) | Benzene (mg/kg) | Total BTEX (mg/kg) | TPH - GRO (mg/kg) | TPH - DRO (mg/kg) | TPH - MRO (mg/kg) |
| NMOCD ACTION LEVEL | | | 10 | 50 | 100 | | |
| SC-1 | 2/11/15 | 1 to 10 | <0.048 | <0.240 | <4.8 | <9.8 | <49 |
| SC-2 | 2/11/15 | 1 to 10 | <0.050 | <0.249 | <5.0 | <10 | <50 |
| SC-3 | 2/11/15 | 1 to 10 | <0.047 | <0.236 | <4.7 | <9.9 | <50 |
| SC-4 | 2/11/15 | 1 to 10 | <0.050 | <0.250 | <5.0 | <10 | <50 |
| SC-5 | 2/11/15 | 10 | <0.025 | 0.19 | 4.0 | <10 | <50 |
| ALL SAMPLES WERE ANALYZED PER USEPA METHOD 8021B AND 8015D. | | | | | | | |




Animas Environmental Services, LLC

| | |
|---|---|
| **DRAWN BY:** S. Glasses | **DATE DRAWN:** February 12, 2015 |
| **REVISIONS BY:** C. Lameman | **DATE REVISED:** June 22, 2015 |
| **CHECKED BY:** E. Skyles | **DATE CHECKED:** June 22, 2015 |
| **APPROVED BY:** E. McNally | **DATE APPROVED:** June 22, 2015 |

**LEGEND**

- SAMPLE LOCATIONS
- SECONDARY CONTAINMENT BERM
- FENCE

SCALE
15 5 0 15
10
(1 INCH = 15 FEET)

# AES Field Sampling Report

Animas Environmental Services, LLC

Client: ConocoPhillips

Project Location: Moore LS #1B

Date: 2/11/2015

Matrix: Soil

| Sample ID | Collection Date | Collection Time | OVM (ppm) | Field TPH* (mg/kg) | Field TPH Analysis Time | TPH PQL (mg/kg) | DF | TPH Analysts Initials |
|---|---|---|---|---|---|---|---|---|
| SP | 2/11/2015 | 12:13 | 1,890 | 447 | 12:47 | 20.0 | 1 | EMS |
| TH-1 @ 4' | 2/11/2015 | 12:15 | 3,813 | >2,500 | 12:40 | 20.0 | 1 | EMS |
| TH-1 @ 8' | 2/11/2015 | 12:45 | 907 | 246 | 13:15 | 20.0 | 1 | EMS |
| TH-1 @ 10' | 2/11/2015 | 12:51 | 617 | 72.5 | 13:45 | 20.0 | 1 | EMS |
| TH-2 @ 5' | 2/11/2015 | 13:15 | 0.2 | 22.7 | 13:49 | 20.0 | 1 | EMS |
| TH-2 @ 8' | 2/11/2015 | 13:16 | 0.1 | 28.9 | 13:55 | 20.0 | 1 | EMS |
| TH-3 @ 5' | 2/11/2015 | 13:20 | 0.1 | 21.5 | 13:59 | 20.0 | 1 | EMS |
| TH-3 @ 8' | 2/11/2015 | 13:22 | 0.0 | 21.5 | 14:02 | 20.0 | 1 | EMS |
| TH-4 @ 5' | 2/11/2015 | 13:26 | 2.6 | 19.1 | 14:05 | 20.0 | 1 | EMS |
| TH-4 @ 9' | 2/11/2015 | 13:31 | 1.6 | 17.9 | 14:08 | 20.0 | 1 | EMS |
| TH-5 @ 5' | 2/11/2015 | 13:39 | 1.3 | 25.2 | 14:10 | 20.0 | 1 | EMS |
| TH-5 @ 8' | 2/11/2015 | 13:42 | 0.0 | 9.28 | 14:12 | 20.0 | 1 | EMS |



Report Finalized: 2/11/15

| Sample ID | Collection Date | Collection Time | OVM (ppm) | Field TPH* (mg/kg) | Field TPH Analysis Time | TPH PQL (mg/kg) | DF | TPH Analysts Initials |
|---|---|---|---|---|---|---|---|---|

DF Dilution Factor

NA Not Analyzed

PQL Practical Quantitation Limit

**Field TPH concentrations recorded may be below PQL.*

Total Petroleum Hydrocarbons - USEPA 418.1

Analyst: Erik Sly

# AES Field Sampling Report

Animas Environmental Services, LLC

Client: ConocoPhillips

Project Location: Moore LS #1B

Date: 2/11/2015

Matrix: Soil

| Sample ID | Collection Date | Collection Time | Sample Location | OVM (ppm) | Field TPH* (mg/kg) | Field TPH Analysis Time | TPH PQL (mg/kg) | DF | TPH Analysts Initials |
|---|---|---|---|---|---|---|---|---|---|
| SC-1 | 2/11/2015 | 14:14 | North Wall | 0.3 | 24.0 | 15:08 | 20.0 | 1 | EMS |
| SC-2 | 2/11/2015 | 14:15 | South Wall | 15.2 | 27.6 | 15:10 | 20.0 | 1 | EMS |
| SC-3 | 2/11/2015 | 14:20 | East Wall | 42.8 | 17.9 | 15:12 | 20.0 | 1 | EMS |
| SC-4 | 2/11/2015 | 14:10 | West Wall | 5.5 | 19.1 | 15:15 | 20.0 | 1 | EMS |
| SC-5 | 2/11/2015 | 14:26 | Base | 218 | 19.1 | 15:18 | 20.0 | 1 | EMS |

DF Dilution Factor
NA Not Analyzed
PQL Practical Quantitation Limit
**TPH concentrations recorded may be below PQL.*

Total Petroleum Hydrocarbons - USEPA 418.1

Analyst: Erich Sy L


Report Finalized: 2/11/15

HALL ENVIRONMENTAL ANALYSIS LABORATORY

*Hall Environmental Analysis Laboratory*
*4901 Hawkins NE*
*Albuquerque, NM 87109*
*TEL: 505-345-3975 FAX: 505-345-4107*
*Website: www.hallenvironmental.com*

February 16, 2015

Emilee Skyles
Animas Environmental
604 Pinon Street
Farmington, NM 87401
TEL: (505) 564-2281
FAX

RE: CoP Moore LS # 1B OrderNo.: 1502524

Dear Emilee Skyles:

Hall Environmental Analysis Laboratory received 5 sample(s) on 2/12/2015 for the analyses presented in the following report.

These were analyzed according to EPA procedures or equivalent. To access our accredited tests please go to www.hallenvironmental.com or the state specific web sites. In order to properly interpret your results it is imperative that you review this report in its entirety. See the sample checklist and/or the Chain of Custody for information regarding the sample receipt temperature and preservation. Data qualifiers or a narrative will be provided if the sample analysis or analytical quality control parameters require a flag. When necessary, data qualifers are provided on both the sample analysis report and the QC summary report, both sections should be reviewed. All samples are reported, as received, unless otherwise indicated. Lab measurement of analytes considered field parameters that require analysis within 15 minutes of sampling such as pH and residual chlorine are qualified as being analyzed outside of the recommended holding time.

Please don't hesitate to contact HEAL for any additional information or clarifications.

ADHS Cert #AZ0682 -- NMED-DWB Cert #NM9425 -- NMED-Micro Cert #NM0190

Sincerely,

Andy Freeman
Laboratory Manager
4901 Hawkins NE
Albuquerque, NM 87109

**Analytical Report**
Lab Order **1502524**
Date Reported: **2/16/2015**

# Hall Environmental Analysis Laboratory, Inc.

**CLIENT:** Animas Environmental
**Project:** CoP Moore LS # 1B
**Lab ID:** 1502524-001 **Matrix:** SOIL

**Client Sample ID:** SC-1
**Collection Date:** 2/11/2015 2:04:00 PM
**Received Date:** 2/12/2015 7:28:00 AM

| Analyses | Result | RL | Qual | Units | DF | Date Analyzed | Batch |
|---|---|---|---|---|---|---|---|
| **EPA METHOD 8015D: DIESEL RANGE ORGANICS** | | | | | | Analyst: **JME** | |
| Diesel Range Organics (DRO) | ND | 9.8 | | mg/Kg | 1 | 2/12/2015 2:19:35 PM | 17710 |
| Motor Oil Range Organics (MRO) | ND | 49 | | mg/Kg | 1 | 2/12/2015 2:19:35 PM | 17710 |
| Surr: DNOP | 101 | 63.5-128 | | %REC | 1 | 2/12/2015 2:19:35 PM | 17710 |
| **EPA METHOD 8015D: GASOLINE RANGE** | | | | | | Analyst: **NSB** | |
| Gasoline Range Organics (GRO) | ND | 4.8 | | mg/Kg | 1 | 2/13/2015 11:07:21 AM | 17714 |
| Surr: BFB | 89.7 | 80-120 | | %REC | 1 | 2/13/2015 11:07:21 AM | 17714 |
| **EPA METHOD 8021B: VOLATILES** | | | | | | Analyst: **NSB** | |
| Benzene | ND | 0.048 | | mg/Kg | 1 | 2/13/2015 11:07:21 AM | 17714 |
| Toluene | ND | 0.048 | | mg/Kg | 1 | 2/13/2015 11:07:21 AM | 17714 |
| Ethylbenzene | ND | 0.048 | | mg/Kg | 1 | 2/13/2015 11:07:21 AM | 17714 |
| Xylenes, Total | ND | 0.096 | | mg/Kg | 1 | 2/13/2015 11:07:21 AM | 17714 |
| Surr: 4-Bromofluorobenzene | 96.2 | 80-120 | | %REC | 1 | 2/13/2015 11:07:21 AM | 17714 |

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

**Qualifiers:**

| | | | |
|---|---|---|---|
| * | Value exceeds Maximum Contaminant Level. | B | Analyte detected in the associated Method Blank |
| E | Value above quantitation range | H | Holding times for preparation or analysis exceeded |
| J | Analyte detected below quantitation limits | ND | Not Detected at the Reporting Limit |
| O | RSD is greater than RSDlimit | P | Sample pH Not In Range |
| R | RPD outside accepted recovery limits | RL | Reporting Detection Limit |
| S | Spike Recovery outside accepted recovery limits | | |

# Hall Environmental Analysis Laboratory, Inc.

**CLIENT:** Animas Environmental
**Project:** CoP Moore LS # 1B
**Lab ID:** 1502524-002 **Matrix:** SOIL

**Client Sample ID:** SC-2
**Collection Date:** 2/11/2015 2:15:00 PM
**Received Date:** 2/12/2015 7:28:00 AM

| Analyses | Result | RL | Qual | Units | DF | Date Analyzed | Batch |
|---|---|---|---|---|---|---|---|
| **EPA METHOD 8015D: DIESEL RANGE ORGANICS** | | | | | | Analyst: **JME** | |
| Diesel Range Organics (DRO) | ND | 10 | | mg/Kg | 1 | 2/12/2015 3:23:59 PM | 17710 |
| Motor Oil Range Organics (MRO) | ND | 50 | | mg/Kg | 1 | 2/12/2015 3:23:59 PM | 17710 |
| Surr: DNOP | 99.4 | 63.5-128 | | %REC | 1 | 2/12/2015 3:23:59 PM | 17710 |
| **EPA METHOD 8015D: GASOLINE RANGE** | | | | | | Analyst: **NSB** | |
| Gasoline Range Organics (GRO) | ND | 5.0 | | mg/Kg | 1 | 2/13/2015 12:33:31 PM | 17714 |
| Surr: BFB | 91.3 | 80-120 | | %REC | 1 | 2/13/2015 12:33:31 PM | 17714 |
| **EPA METHOD 8021B: VOLATILES** | | | | | | Analyst: **NSB** | |
| Benzene | ND | 0.050 | | mg/Kg | 1 | 2/13/2015 12:33:31 PM | 17714 |
| Toluene | ND | 0.050 | | mg/Kg | 1 | 2/13/2015 12:33:31 PM | 17714 |
| Ethylbenzene | ND | 0.050 | | mg/Kg | 1 | 2/13/2015 12:33:31 PM | 17714 |
| Xylenes, Total | ND | 0.099 | | mg/Kg | 1 | 2/13/2015 12:33:31 PM | 17714 |
| Surr: 4-Bromofluorobenzene | 100 | 80-120 | | %REC | 1 | 2/13/2015 12:33:31 PM | 17714 |

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

**Qualifiers:**

| | | | |
|---|---|---|---|
| * | Value exceeds Maximum Contaminant Level. | B | Analyte detected in the associated Method Blank |
| E | Value above quantitation range | H | Holding times for preparation or analysis exceeded |
| J | Analyte detected below quantitation limits | ND | Not Detected at the Reporting Limit |
| O | RSD is greater than RSDlimit | P | Sample pH Not In Range |
| R | RPD outside accepted recovery limits | RL | Reporting Detection Limit |
| S | Spike Recovery outside accepted recovery limits | | |

# Hall Environmental Analysis Laboratory, Inc.

**CLIENT:** Animas Environmental
**Project:** CoP Moore LS # 1B
**Lab ID:** 1502524-003 **Matrix:** SOIL

**Client Sample ID:** SC-3
**Collection Date:** 2/11/2015 2:20:00 PM
**Received Date:** 2/12/2015 7:28:00 AM

| Analyses | Result | RL | Qual | Units | DF | Date Analyzed | Batch |
|---|---|---|---|---|---|---|---|
| **EPA METHOD 8015D: DIESEL RANGE ORGANICS** | | | | | | Analyst: **JME** | |
| Diesel Range Organics (DRO) | ND | 9.9 | | mg/Kg | 1 | 2/12/2015 3:45:36 PM | 17710 |
| Motor Oil Range Organics (MRO) | ND | 50 | | mg/Kg | 1 | 2/12/2015 3:45:36 PM | 17710 |
| Surr: DNOP | 99.6 | 63.5-128 | | %REC | 1 | 2/12/2015 3:45:36 PM | 17710 |
| **EPA METHOD 8015D: GASOLINE RANGE** | | | | | | Analyst: **NSB** | |
| Gasoline Range Organics (GRO) | ND | 4.7 | | mg/Kg | 1 | 2/13/2015 10:07:45 PM | 17714 |
| Surr: BFB | 91.1 | 80-120 | | %REC | 1 | 2/13/2015 10:07:45 PM | 17714 |
| **EPA METHOD 8021B: VOLATILES** | | | | | | Analyst: **NSB** | |
| Benzene | ND | 0.047 | | mg/Kg | 1 | 2/13/2015 10:07:45 PM | 17714 |
| Toluene | ND | 0.047 | | mg/Kg | 1 | 2/13/2015 10:07:45 PM | 17714 |
| Ethylbenzene | ND | 0.047 | | mg/Kg | 1 | 2/13/2015 10:07:45 PM | 17714 |
| Xylenes, Total | ND | 0.095 | | mg/Kg | 1 | 2/13/2015 10:07:45 PM | 17714 |
| Surr: 4-Bromofluorobenzene | 97.0 | 80-120 | | %REC | 1 | 2/13/2015 10:07:45 PM | 17714 |

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

**Qualifiers:**

| | | | |
|---|---|---|---|
| * | Value exceeds Maximum Contaminant Level. | B | Analyte detected in the associated Method Blank |
| E | Value above quantitation range | H | Holding times for preparation or analysis exceeded |
| J | Analyte detected below quantitation limits | ND | Not Detected at the Reporting Limit |
| O | RSD is greater than RSDlimit | P | Sample pH Not In Range |
| R | RPD outside accepted recovery limits | RL | Reporting Detection Limit |
| S | Spike Recovery outside accepted recovery limits | | |

# Hall Environmental Analysis Laboratory, Inc.

**CLIENT:** Animas Environmental
**Project:** CoP Moore LS # 1B
**Lab ID:** 1502524-004 **Matrix:** SOIL

**Client Sample ID:** SC-4
**Collection Date:** 2/11/2015 2:10:00 PM
**Received Date:** 2/12/2015 7:28:00 AM

| Analyses | Result | RL | Qual | Units | DF | Date Analyzed | Batch |
|---|---|---|---|---|---|---|---|
| **EPA METHOD 8015D: DIESEL RANGE ORGANICS** | | | | | | Analyst: **JME** | |
| Diesel Range Organics (DRO) | ND | 10 | | mg/Kg | 1 | 2/12/2015 4:07:06 PM | 17710 |
| Motor Oil Range Organics (MRO) | ND | 50 | | mg/Kg | 1 | 2/12/2015 4:07:06 PM | 17710 |
| Surr: DNOP | 101 | 63.5-128 | | %REC | 1 | 2/12/2015 4:07:06 PM | 17710 |
| **EPA METHOD 8015D: GASOLINE RANGE** | | | | | | Analyst: **NSB** | |
| Gasoline Range Organics (GRO) | ND | 5.0 | | mg/Kg | 1 | 2/13/2015 10:36:22 PM | 17714 |
| Surr: BFB | 90.6 | 80-120 | | %REC | 1 | 2/13/2015 10:36:22 PM | 17714 |
| **EPA METHOD 8021B: VOLATILES** | | | | | | Analyst: **NSB** | |
| Benzene | ND | 0.050 | | mg/Kg | 1 | 2/13/2015 10:36:22 PM | 17714 |
| Toluene | ND | 0.050 | | mg/Kg | 1 | 2/13/2015 10:36:22 PM | 17714 |
| Ethylbenzene | ND | 0.050 | | mg/Kg | 1 | 2/13/2015 10:36:22 PM | 17714 |
| Xylenes, Total | ND | 0.10 | | mg/Kg | 1 | 2/13/2015 10:36:22 PM | 17714 |
| Surr: 4-Bromofluorobenzene | 96.2 | 80-120 | | %REC | 1 | 2/13/2015 10:36:22 PM | 17714 |

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

**Qualifiers:**

| | | | |
|---|---|---|---|
| * | Value exceeds Maximum Contaminant Level. | B | Analyte detected in the associated Method Blank |
| E | Value above quantitation range | H | Holding times for preparation or analysis exceeded |
| J | Analyte detected below quantitation limits | ND | Not Detected at the Reporting Limit |
| O | RSD is greater than RSDlimit | P | Sample pH Not In Range |
| R | RPD outside accepted recovery limits | RL | Reporting Detection Limit |
| S | Spike Recovery outside accepted recovery limits | | |

# Hall Environmental Analysis Laboratory, Inc.

**CLIENT:** Animas Environmental
**Project:** CoP Moore LS # 1B
**Lab ID:** 1502524-005
**Matrix:** MEOH (SOIL)
**Client Sample ID:** SC-5
**Collection Date:** 2/11/2015 2:26:00 PM
**Received Date:** 2/12/2015 7:28:00 AM

| Analyses | Result | RL | Qual | Units | DF | Date Analyzed | Batch |
|---|---|---|---|---|---|---|---|
| **EPA METHOD 8015D: DIESEL RANGE ORGANICS** | | | | | | Analyst: **JME** | |
| Diesel Range Organics (DRO) | ND | 10 | | mg/Kg | 1 | 2/12/2015 12:10:38 PM | 17710 |
| Motor Oil Range Organics (MRO) | ND | 50 | | mg/Kg | 1 | 2/12/2015 12:10:38 PM | 17710 |
| Surr: DNOP | 102 | 63.5-128 | | %REC | 1 | 2/12/2015 12:10:38 PM | 17710 |
| **EPA METHOD 8015D: GASOLINE RANGE** | | | | | | Analyst: **NSB** | |
| Gasoline Range Organics (GRO) | 4.0 | 2.5 | | mg/Kg | 1 | 2/12/2015 11:10:25 AM | 17666 |
| Surr: BFB | 136 | 80-120 | S | %REC | 1 | 2/12/2015 11:10:25 AM | 17666 |
| **EPA METHOD 8021B: VOLATILES** | | | | | | Analyst: **NSB** | |
| Benzene | ND | 0.025 | | mg/Kg | 1 | 2/12/2015 11:10:25 AM | 17666 |
| Toluene | ND | 0.025 | | mg/Kg | 1 | 2/12/2015 11:10:25 AM | 17666 |
| Ethylbenzene | ND | 0.025 | | mg/Kg | 1 | 2/12/2015 11:10:25 AM | 17666 |
| Xylenes, Total | 0.19 | 0.050 | | mg/Kg | 1 | 2/12/2015 11:10:25 AM | 17666 |
| Surr: 4-Bromofluorobenzene | 102 | 80-120 | | %REC | 1 | 2/12/2015 11:10:25 AM | 17666 |

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

**Qualifiers:**

| | | | |
|---|---|---|---|
| * | Value exceeds Maximum Contaminant Level. | B | Analyte detected in the associated Method Blank |
| E | Value above quantitation range | H | Holding times for preparation or analysis exceeded |
| J | Analyte detected below quantitation limits | ND | Not Detected at the Reporting Limit |
| O | RSD is greater than RSDlimit | P | Sample pH Not In Range |
| R | RPD outside accepted recovery limits | RL | Reporting Detection Limit |
| S | Spike Recovery outside accepted recovery limits | | |

# QC SUMMARY REPORT

## Hall Environmental Analysis Laboratory, Inc.

WO#: **1502524**

*16-Feb-15*

**Client:** Animas Environmental

**Project:** CoP Moore LS # 1B

| Sample ID **MB-17710** | SampType: **MBLK** | TestCode: **EPA Method 8015D: Diesel Range Organics** |
|---|---|---|
| Client ID: **PBS** | Batch ID: **17710** | RunNo: **24258** |
| Prep Date: **2/12/2015** | Analysis Date: **2/12/2015** | SeqNo: **714976** Units: **mg/Kg** |

| Analyte | Result | PQL | SPK value | SPK Ref Val | %REC | LowLimit | HighLimit | %RPD | RPDLimit | Qual |
|---|---|---|---|---|---|---|---|---|---|---|
| Diesel Range Organics (DRO) | ND | 10 | | | | | | | | |
| Motor Oil Range Organics (MRO) | ND | 50 | | | | | | | | |
| Surr: DNOP | 9.1 | | 10.00 | | 91.5 | 63.5 | 128 | | | |

| Sample ID **LCS-17710** | SampType: **LCS** | TestCode: **EPA Method 8015D: Diesel Range Organics** |
|---|---|---|
| Client ID: **LCSS** | Batch ID: **17710** | RunNo: **24260** |
| Prep Date: **2/12/2015** | Analysis Date: **2/12/2015** | SeqNo: **714989** Units: **mg/Kg** |

| Analyte | Result | PQL | SPK value | SPK Ref Val | %REC | LowLimit | HighLimit | %RPD | RPDLimit | Qual |
|---|---|---|---|---|---|---|---|---|---|---|
| Diesel Range Organics (DRO) | 48 | 10 | 50.00 | 0 | 96.2 | 67.8 | 130 | | | |
| Surr: DNOP | 5.0 | | 5.000 | | 101 | 63.5 | 128 | | | |

| Sample ID **1502524-001AMS** | SampType: **MS** | TestCode: **EPA Method 8015D: Diesel Range Organics** |
|---|---|---|
| Client ID: **SC-1** | Batch ID: **17710** | RunNo: **24260** |
| Prep Date: **2/12/2015** | Analysis Date: **2/12/2015** | SeqNo: **715176** Units: **mg/Kg** |

| Analyte | Result | PQL | SPK value | SPK Ref Val | %REC | LowLimit | HighLimit | %RPD | RPDLimit | Qual |
|---|---|---|---|---|---|---|---|---|---|---|
| Diesel Range Organics (DRO) | 52 | 9.8 | 49.21 | 0 | 106 | 29.2 | 176 | | | |
| Surr: DNOP | 5.4 | | 4.921 | | 110 | 63.5 | 128 | | | |

| Sample ID **1502524-001AMSD** | SampType: **MSD** | TestCode: **EPA Method 8015D: Diesel Range Organics** |
|---|---|---|
| Client ID: **SC-1** | Batch ID: **17710** | RunNo: **24260** |
| Prep Date: **2/12/2015** | Analysis Date: **2/12/2015** | SeqNo: **715209** Units: **mg/Kg** |

| Analyte | Result | PQL | SPK value | SPK Ref Val | %REC | LowLimit | HighLimit | %RPD | RPDLimit | Qual |
|---|---|---|---|---|---|---|---|---|---|---|
| Diesel Range Organics (DRO) | 50 | 9.9 | 49.26 | 0 | 101 | 29.2 | 176 | 4.88 | 23 | |
| Surr: DNOP | 5.6 | | 4.926 | | 114 | 63.5 | 128 | 0 | 0 | |

**Qualifiers:**

- * Value exceeds Maximum Contaminant Level.
- E Value above quantitation range
- J Analyte detected below quantitation limits
- O RSD is greater than RSDlimit
- R RPD outside accepted recovery limits
- S Spike Recovery outside accepted recovery limits
- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- P Sample pH Not In Range
- RL Reporting Detection Limit

# QC SUMMARY REPORT

## Hall Environmental Analysis Laboratory, Inc.

WO#: **1502524**

*16-Feb-15*

**Client:** Animas Environmental

**Project:** CoP Moore LS # 1B

| Sample ID **MB-17666** | SampType: **MBLK** | TestCode: **EPA Method 8015D: Gasoline Range** |
|---|---|---|
| Client ID: **PBS** | Batch ID: **17666** | RunNo: **24264** |
| Prep Date: **2/10/2015** | Analysis Date: **2/12/2015** | SeqNo: **715459** Units: **mg/Kg** |

| Analyte | Result | PQL | SPK value | SPK Ref Val | %REC | LowLimit | HighLimit | %RPD | RPDLimit | Qual |
|---|---|---|---|---|---|---|---|---|---|---|
| Gasoline Range Organics (GRO) | ND | 5.0 | | | | | | | | |
| Surr: BFB | 860 | | 1000 | | 85.5 | 80 | 120 | | | |

| Sample ID **LCS-17666** | SampType: **LCS** | TestCode: **EPA Method 8015D: Gasoline Range** |
|---|---|---|
| Client ID: **LCSS** | Batch ID: **17666** | RunNo: **24264** |
| Prep Date: **2/10/2015** | Analysis Date: **2/12/2015** | SeqNo: **715460** Units: **mg/Kg** |

| Analyte | Result | PQL | SPK value | SPK Ref Val | %REC | LowLimit | HighLimit | %RPD | RPDLimit | Qual |
|---|---|---|---|---|---|---|---|---|---|---|
| Gasoline Range Organics (GRO) | 27 | 5.0 | 25.00 | 0 | 110 | 64 | 130 | | | |
| Surr: BFB | 960 | | 1000 | | 95.7 | 80 | 120 | | | |

| Sample ID **MB-17714** | SampType: **MBLK** | TestCode: **EPA Method 8015D: Gasoline Range** |
|---|---|---|
| Client ID: **PBS** | Batch ID: **17714** | RunNo: **24310** |
| Prep Date: **2/12/2015** | Analysis Date: **2/13/2015** | SeqNo: **716430** Units: **mg/Kg** |

| Analyte | Result | PQL | SPK value | SPK Ref Val | %REC | LowLimit | HighLimit | %RPD | RPDLimit | Qual |
|---|---|---|---|---|---|---|---|---|---|---|
| Gasoline Range Organics (GRO) | ND | 5.0 | | | | | | | | |
| Surr: BFB | 890 | | 1000 | | 88.8 | 80 | 120 | | | |

| Sample ID **LCS-17714** | SampType: **LCS** | TestCode: **EPA Method 8015D: Gasoline Range** |
|---|---|---|
| Client ID: **LCSS** | Batch ID: **17714** | RunNo: **24310** |
| Prep Date: **2/12/2015** | Analysis Date: **2/13/2015** | SeqNo: **716432** Units: **mg/Kg** |

| Analyte | Result | PQL | SPK value | SPK Ref Val | %REC | LowLimit | HighLimit | %RPD | RPDLimit | Qual |
|---|---|---|---|---|---|---|---|---|---|---|
| Gasoline Range Organics (GRO) | 27 | 5.0 | 25.00 | 0 | 108 | 64 | 130 | | | |
| Surr: BFB | 950 | | 1000 | | 95.4 | 80 | 120 | | | |

| Sample ID **1502524-001AMS** | SampType: **MS** | TestCode: **EPA Method 8015D: Gasoline Range** |
|---|---|---|
| Client ID: **SC-1** | Batch ID: **17714** | RunNo: **24310** |
| Prep Date: **2/12/2015** | Analysis Date: **2/13/2015** | SeqNo: **716435** Units: **mg/Kg** |

| Analyte | Result | PQL | SPK value | SPK Ref Val | %REC | LowLimit | HighLimit | %RPD | RPDLimit | Qual |
|---|---|---|---|---|---|---|---|---|---|---|
| Gasoline Range Organics (GRO) | 31 | 4.8 | 23.92 | 0 | 130 | 47.9 | 144 | | | |
| Surr: BFB | 950 | | 956.9 | | 99.3 | 80 | 120 | | | |

| Sample ID **1502524-001AMSD** | SampType: **MSD** | TestCode: **EPA Method 8015D: Gasoline Range** |
|---|---|---|
| Client ID: **SC-1** | Batch ID: **17714** | RunNo: **24310** |
| Prep Date: **2/12/2015** | Analysis Date: **2/13/2015** | SeqNo: **716436** Units: **mg/Kg** |

| Analyte | Result | PQL | SPK value | SPK Ref Val | %REC | LowLimit | HighLimit | %RPD | RPDLimit | Qual |
|---|---|---|---|---|---|---|---|---|---|---|

**Qualifiers:**

- * Value exceeds Maximum Contaminant Level.
- E Value above quantitation range
- J Analyte detected below quantitation limits
- O RSD is greater than RSDlimit
- R RPD outside accepted recovery limits
- S Spike Recovery outside accepted recovery limits
- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- P Sample pH Not In Range
- RL Reporting Detection Limit

# QC SUMMARY REPORT

## Hall Environmental Analysis Laboratory, Inc.

WO#: **1502524**

*16-Feb-15*

**Client:** Animas Environmental

**Project:** CoP Moore LS # 1B

Sample ID **1502524-001AMSD** SampType: **MSD** TestCode: **EPA Method 8015D: Gasoline Range**

Client ID: **SC-1** Batch ID: **17714** RunNo: **24310**

Prep Date: **2/12/2015** Analysis Date: **2/13/2015** SeqNo: **716436** Units: **mg/Kg**

| Analyte | Result | PQL | SPK value | SPK Ref Val | %REC | LowLimit | HighLimit | %RPD | RPDLimit | Qual |
|---|---|---|---|---|---|---|---|---|---|---|
| Gasoline Range Organics (GRO) | 28 | 4.8 | 23.88 | 0 | 119 | 47.9 | 144 | 9.21 | 29.9 | |
| Surr: BFB | 940 | | 955.1 | | 98.7 | 80 | 120 | 0 | 0 | |

**Qualifiers:**

- * Value exceeds Maximum Contaminant Level.
- E Value above quantitation range
- J Analyte detected below quantitation limits
- O RSD is greater than RSDlimit
- R RPD outside accepted recovery limits
- S Spike Recovery outside accepted recovery limits
- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- P Sample pH Not In Range
- RL Reporting Detection Limit

# QC SUMMARY REPORT

## Hall Environmental Analysis Laboratory, Inc.

WO#: **1502524**

*16-Feb-15*

**Client:** Animas Environmental
**Project:** CoP Moore LS # 1B

| Sample ID **MB-17666** | SampType: **MBLK** | TestCode: **EPA Method 8021B: Volatiles** |
|---|---|---|
| Client ID: **PBS** | Batch ID: **17666** | RunNo: **24264** |
| Prep Date: **2/10/2015** | Analysis Date: **2/12/2015** | SeqNo: **715490** Units: **mg/Kg** |

| Analyte | Result | PQL | SPK value | SPK Ref Val | %REC | LowLimit | HighLimit | %RPD | RPDLimit | Qual |
|---|---|---|---|---|---|---|---|---|---|---|
| Benzene | ND | 0.050 | | | | | | | | |
| Toluene | ND | 0.050 | | | | | | | | |
| Ethylbenzene | ND | 0.050 | | | | | | | | |
| Xylenes, Total | ND | 0.10 | | | | | | | | |
| Surr: 4-Bromofluorobenzene | 0.92 | | 1.000 | | 92.5 | 80 | 120 | | | |

| Sample ID **LCS-17666** | SampType: **LCS** | TestCode: **EPA Method 8021B: Volatiles** |
|---|---|---|
| Client ID: **LCSS** | Batch ID: **17666** | RunNo: **24264** |
| Prep Date: **2/10/2015** | Analysis Date: **2/12/2015** | SeqNo: **715491** Units: **mg/Kg** |

| Analyte | Result | PQL | SPK value | SPK Ref Val | %REC | LowLimit | HighLimit | %RPD | RPDLimit | Qual |
|---|---|---|---|---|---|---|---|---|---|---|
| Benzene | 1.1 | 0.050 | 1.000 | 0 | 109 | 80 | 120 | | | |
| Toluene | 1.1 | 0.050 | 1.000 | 0 | 108 | 80 | 120 | | | |
| Ethylbenzene | 1.1 | 0.050 | 1.000 | 0 | 108 | 80 | 120 | | | |
| Xylenes, Total | 3.2 | 0.10 | 3.000 | 0 | 107 | 80 | 120 | | | |
| Surr: 4-Bromofluorobenzene | 1.0 | | 1.000 | | 103 | 80 | 120 | | | |

| Sample ID **MB-17714** | SampType: **MBLK** | TestCode: **EPA Method 8021B: Volatiles** |
|---|---|---|
| Client ID: **PBS** | Batch ID: **17714** | RunNo: **24310** |
| Prep Date: **2/12/2015** | Analysis Date: **2/13/2015** | SeqNo: **716465** Units: **mg/Kg** |

| Analyte | Result | PQL | SPK value | SPK Ref Val | %REC | LowLimit | HighLimit | %RPD | RPDLimit | Qual |
|---|---|---|---|---|---|---|---|---|---|---|
| Benzene | ND | 0.050 | | | | | | | | |
| Toluene | ND | 0.050 | | | | | | | | |
| Ethylbenzene | ND | 0.050 | | | | | | | | |
| Xylenes, Total | ND | 0.10 | | | | | | | | |
| Surr: 4-Bromofluorobenzene | 0.96 | | 1.000 | | 95.6 | 80 | 120 | | | |

| Sample ID **LCS-17714** | SampType: **LCS** | TestCode: **EPA Method 8021B: Volatiles** |
|---|---|---|
| Client ID: **LCSS** | Batch ID: **17714** | RunNo: **24310** |
| Prep Date: **2/12/2015** | Analysis Date: **2/13/2015** | SeqNo: **716466** Units: **mg/Kg** |

| Analyte | Result | PQL | SPK value | SPK Ref Val | %REC | LowLimit | HighLimit | %RPD | RPDLimit | Qual |
|---|---|---|---|---|---|---|---|---|---|---|
| Benzene | 1.1 | 0.050 | 1.000 | 0 | 107 | 80 | 120 | | | |
| Toluene | 1.1 | 0.050 | 1.000 | 0 | 106 | 80 | 120 | | | |
| Ethylbenzene | 1.1 | 0.050 | 1.000 | 0 | 107 | 80 | 120 | | | |
| Xylenes, Total | 3.2 | 0.10 | 3.000 | 0 | 106 | 80 | 120 | | | |
| Surr: 4-Bromofluorobenzene | 1.0 | | 1.000 | | 101 | 80 | 120 | | | |

**Qualifiers:**

- * Value exceeds Maximum Contaminant Level.
- E Value above quantitation range
- J Analyte detected below quantitation limits
- O RSD is greater than RSDlimit
- R RPD outside accepted recovery limits
- S Spike Recovery outside accepted recovery limits
- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- P Sample pH Not In Range
- RL Reporting Detection Limit

# QC SUMMARY REPORT

## Hall Environmental Analysis Laboratory, Inc.

WO#: **1502524**

*16-Feb-15*

**Client:** Animas Environmental

**Project:** CoP Moore LS # 1B

Sample ID **1502524-002AMS** SampType: **MS** TestCode: **EPA Method 8021B: Volatiles**

Client ID: **SC-2** Batch ID: **17714** RunNo: **24310**

Prep Date: **2/12/2015** Analysis Date: **2/13/2015** SeqNo: **716469** Units: **mg/Kg**

| Analyte | Result | PQL | SPK value | SPK Ref Val | %REC | LowLimit | HighLimit | %RPD | RPDLimit | Qual |
|---|---|---|---|---|---|---|---|---|---|---|
| Benzene | 1.1 | 0.050 | 0.9950 | 0 | 112 | 69.2 | 126 | | | |
| Toluene | 1.1 | 0.050 | 0.9950 | 0.008750 | 113 | 65.6 | 128 | | | |
| Ethylbenzene | 1.2 | 0.050 | 0.9950 | 0 | 116 | 65.5 | 138 | | | |
| Xylenes, Total | 3.6 | 0.10 | 2.985 | 0.04389 | 118 | 63 | 139 | | | |
| Surr: 4-Bromofluorobenzene | 1.1 | | 0.9950 | | 109 | 80 | 120 | | | |

Sample ID **1502524-002AMSD** SampType: **MSD** TestCode: **EPA Method 8021B: Volatiles**

Client ID: **SC-2** Batch ID: **17714** RunNo: **24310**

Prep Date: **2/12/2015** Analysis Date: **2/13/2015** SeqNo: **716470** Units: **mg/Kg**

| Analyte | Result | PQL | SPK value | SPK Ref Val | %REC | LowLimit | HighLimit | %RPD | RPDLimit | Qual |
|---|---|---|---|---|---|---|---|---|---|---|
| Benzene | 1.2 | 0.050 | 0.9930 | 0 | 118 | 69.2 | 126 | 4.69 | 18.5 | |
| Toluene | 1.2 | 0.050 | 0.9930 | 0.008750 | 117 | 65.6 | 128 | 3.30 | 20.6 | |
| Ethylbenzene | 1.2 | 0.050 | 0.9930 | 0 | 120 | 65.5 | 138 | 2.94 | 20.1 | |
| Xylenes, Total | 3.5 | 0.099 | 2.979 | 0.04389 | 117 | 63 | 139 | 1.43 | 21.1 | |
| Surr: 4-Bromofluorobenzene | 1.0 | | 0.9930 | | 105 | 80 | 120 | 0 | 0 | |

**Qualifiers:**

- * Value exceeds Maximum Contaminant Level.
- E Value above quantitation range
- J Analyte detected below quantitation limits
- O RSD is greater than RSDlimit
- R RPD outside accepted recovery limits
- S Spike Recovery outside accepted recovery limits
- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- P Sample pH Not In Range
- RL Reporting Detection Limit

HALL ENVIRONMENTAL ANALYSIS LABORATORY

*Hall Environmental Analysis Laboratory*
*4901 Hawkins NE*
*Albuquerque, NM 87109*
*TEL: 505-345-3975 FAX: 505-345-4107*
*Website: www.hallenvironmental.com*

# Sample Log-In Check List

Client Name: **Animas Environmental** Work Order Number: **1502524** RcptNo: **1**

Received by/date: 02/12/15

Logged By: **Lindsay Mangin** 2/12/2015 7:28:00 AM

Completed By: **Lindsay Mangin** 2/12/2015 8:12:05 AM

Reviewed By: CS 02/12/15

## Chain of Custody

| | | | |
|---|---|---|---|
| 1. Custody seals intact on sample bottles? | Yes ☐ | No ☐ | Not Present ☑ |
| 2. Is Chain of Custody complete? | Yes ☑ | No ☐ | Not Present ☐ |
| 3. How was the sample delivered? | Courier | | |

## Log In

| | | | |
|---|---|---|---|
| 4. Was an attempt made to cool the samples? | Yes ☑ | No ☐ | NA ☐ |
| 5. Were all samples received at a temperature of >0° C to 6.0°C | Yes ☑ | No ☐ | NA ☐ |
| 6. Sample(s) in proper container(s)? | Yes ☑ | No ☐ | |
| 7. Sufficient sample volume for indicated test(s)? | Yes ☑ | No ☐ | |
| 8. Are samples (except VOA and ONG) properly preserved? | Yes ☑ | No ☐ | |
| 9. Was preservative added to bottles? | Yes ☐ | No ☑ | NA ☐ |
| 10. VOA vials have zero headspace? | Yes ☐ | No ☐ | No VOA Vials ☑ |
| 11. Were any sample containers received broken? | Yes ☐ | No ☑ | |
| 12. Does paperwork match bottle labels? (Note discrepancies on chain of custody) | Yes ☑ | No ☐ | # of preserved bottles checked for pH: (<2 or >12 unless noted) |
| 13. Are matrices correctly identified on Chain of Custody? | Yes ☑ | No ☐ | Adjusted? |
| 14. Is it clear what analyses were requested? | Yes ☑ | No ☐ | |
| 15. Were all holding times able to be met? (If no, notify customer for authorization.) | Yes ☑ | No ☐ | Checked by: |

## Special Handling (if applicable)

16. Was client notified of all discrepancies with this order? Yes ☐ No ☐ NA ☑

Person Notified: _____ Date: _____

By Whom: _____ Via: ☐ eMail ☐ Phone ☐ Fax ☐ In Person

Regarding: _____

Client Instructions: _____

17. Additional remarks:

18. Cooler Information

| Cooler No | Temp °C | Condition | Seal Intact | Seal No | Seal Date | Signed By |
|---|---|---|---|---|---|---|
| 1 | 2.1 | Good | Yes | | | |

# Chain-of-Custody Record

**HALL ENVIRONMENTAL ANALYSIS LABORATORY**
www.hallenvironmental.com
4901 Hawkins NE - Albuquerque, NM 87109
Tel. 505-345-3975 Fax 505-345-4107

Client: Animas Environmental Services
Mailing Address: 604 W. Pinon St. Farmington, NM 87401
Phone #: 505-564-2281
email or Fax#: eskyles@animasenvironmental.com
QA/QC Package: ☒ Standard ☐ Level 4 (Full Validation)
Accreditation: ☐ NELAP ☐ Other ____
☐ EDD (Type) ____

Turn-Around Time: ☑ Standard (SC-1 and SC-4) ☑ Rush Same Day JUST SC-5
Project Name: Col Moore LS #1B
Project #:
Project Manager: E. Skyles
Sampler: E. Skyles / S. Glasses
On Ice: ☒ Yes ☐ No
Sample Temperature: 7.1

HEAL No. 1502524

| Date | Time | Matrix | Sample Request ID | Container Type and # | Preservative Type | BTEX + MTBE + TMB's (8021) | BTEX + MTBE + TPH (Gas only) | TPH 8015B (GRO / DRO / MRO) | TPH (Method 418.1) | EDB (Method 504.1) | PAH's (8310 or 8270 SIMS) | RCRA 8 Metals | Anions (F,Cl,NO3,NO2,PO4,SO4) | 8081 Pesticides / 8082 PCB's | 8260B (VOA) | 8270 (Semi-VOA) | Air Bubbles (Y or N) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2/11/15 | 1404 | Soil | SC-1 | 1-4oz | cool | X | | X | | | | | | | | | |
| 2/11/15 | 1415 | Soil | SC-2 | 1-4oz. | cool | X | | X | | | | | | | | | |
| 2/11/15 | 1420 | Soil | SC-3 | 1-4oz | cool | X | | X | | | | | | | | | |
| 2/11/15 | 1410 | Soil | SC-4 | 1-4oz. | cool | X | | X | | | | | | | | | |
| 2/11/15 | 1426 | Soil | SC-5 | 1-4oz. MeOH kit | cool MeOH | X | | X | | | | | | | | | |
| ~~2/11/15~~ 2/12/15 | mrs | | | | | | | | | | | | | | | | |

| Date: | Time: | Relinquished by: | Received by: | Date | Time |
|---|---|---|---|---|---|
| 2/11/15 | 1706 | Eric L Skyles | Christie Walters | 2/11/15 | 1706 |
| 2/11/15 | 1744 | Christie Walters | | 02/12/15 | 0728 |

Remarks: Bill to ConocoPhillips *PLEASE RUSH THE SC-5.
WO#: 10371252
Supervisor: Mike Morris
USER: KGARCIA
Area 1
Act. Code C200
Ordered by: Mike Morris

If necessary, samples submitted to Hall Environmental may be subcontracted to other accredited laboratories. This serves as notice of this possibility. Any sub-contracted data will be clearly notated on the analytical report.