# 3R-1030

# Release Report/ General Correspondence

# San Juan 28-6 Unit #155N
# Date: 2015

## Smith, Cory, EMNRD

**From:** Dumas, Lindsay <Lindsay.Dumas@conocophillips.com>
**Sent:** Tuesday, January 27, 2015 3:14 PM
**To:** Smith, Cory, EMNRD; Ketcham, Shari
**Subject:** Release Notification: San Juan 28-6 155N

**Follow Up Flag:** Follow up
**Due By:** Monday, February 02, 2015 8:00 AM
**Flag Status:** Flagged

**Categories:** Release Inspection

On 1/27/2015 a spill was discovered on the San Juan 28-6 155N, API# 30-039-27601, UL-E, Sec.28, T28N, R06W, Lat:36.63283, Long: -107.4806 due to corrosion releasing ~ 186BBLS of condensate. Surface owner is BLM. 0 was recovered and remained on location. An initial C141 will be filed.

Please contact me if you have any questions.

Thank you,

*Lindsay Dumas*
Environmental Specialist-SJBU
Office: 505-599-4089
Mobile: 505-258-1643
Lindsay.Dumas@conocophillips.com

## Smith, Cory, EMNRD

**From:** Dumas, Lindsay <Lindsay.Dumas@conocophillips.com>
**Sent:** Thursday, January 29, 2015 8:10 AM
**To:** Ketcham, Shari; Smith, Cory, EMNRD
**Cc:** Hunter, Lisa
**Subject:** Remediation Plans: San Juan 27-5 137P and San Juan 28-6 155N
**Attachments:** San Juan 28-6 155N Remediation Plan Outline.pdf; San Juan 27-5 137P Remediation Plan Outline.pdf

Good Morning – Please find attached the remediation plans for the 137P and the 155N significant hydrocarbon releases. Notice that both start dates are for February 3, 2015, pending weather; this is due to the weather conditions expected this weekend. COP plans to start the 155N on 2/3/2015, but the road conditions could prevent access to location. If this is the case, COP will proceed to excavate on the 137P instead. I will provide and update on Monday, 2/2/15, as to the road conditions and what project will begin first.

San Juan 27-5 137P: On 1/22/2014 a spill was discovered on the San Juan 27-5 137P, API# 30-039-29358, UL-I, Sec.18, T27N, R05W, Lat:36.5736, Long: -107.3911 due a production tank releasing ~ 215bbl of condensate (195bbls) & produced water (21 bbls). Surface owner is BLM. None was recovered and all fluid remained on location

San Juan 28-6 155M: On 1/27/2015 a spill was discovered on the San Juan 28-6 155N, API# 30-039-27601, UL-E, Sec.28, T28N, R06W, Lat:36.63283, Long: -107.4806 due to corrosion releasing ~ 186BBLS of condensate. Surface owner is BLM. None was recovered and remained on location.

Please let me know if you have any questions.

Kind regards,

*Lindsay Dumas*
Environmental Specialist-SJBU
Office: 505-599-4089
Mobile: 505-258-1643
Lindsay.Dumas@conocophillips.com

## Smith, Cory, EMNRD

**From:** Dumas, Lindsay <Lindsay.Dumas@conocophillips.com>
**Sent:** Monday, February 16, 2015 4:36 PM
**To:** Smith, Cory, EMNRD; Ketcham, Shari
**Cc:** Soliz, Isabel; Farrell, Larissa L
**Subject:** Initial C-141: San Juan 28-6 155N
**Attachments:** San Juan 28-6 155N Initial C-141.pdf

Good Afternoon – Please find attached the initial C-141 for the release on the San Juan 28-6 155N.

BLM/OCD – A hard copy is in the mail.

Kind regards,

*Lindsay Dumas*
Environmental Specialist-SJBU
Office: 505-599-4089
Mobile: 505-258-1643
Lindsay.Dumas@conocophillips.com

## Smith, Cory, EMNRD

**From:** Hunter, Lisa <Lisa.Hunter@conocophillips.com>
**Sent:** Tuesday, February 17, 2015 9:32 AM
**To:** Smith, Cory, EMNRD
**Subject:** FW: Re: Remediation Plans: San Juan 27-5 137P and San Juan 28-6 155N

**Follow Up Flag:** Follow Up
**Due By:** Monday, June 29, 2015 1:15 PM
**Flag Status:** Flagged

Cory-

As discussed, COP has had the San Juan 27-5 #137P (API# 30-039-29358, UL-I, Sec.18, T27N, R05W, Lat: 36.5736, Long: -107.3911) assessed by Animas Environmental Services (AES), and we are looking at the alternative remediation plan of vapor extraction. This location was ranked a zero by both AES and BLM. Please confirm that you agree with this ranking.

Once COP feels comfortable with a remediation plan, whether it be a dig & haul plan or an alternative, we submit the plan to BLM and OCD for approval.

Thank you, and please let me know if you have any questions or concerns.

*Lisa Hunter*
Field Environmental Specialist
ConocoPhillips Company
505.258.1607
Lisa.Hunter@cop.com

*"Archaeology permits us to see small moments in time to witness events in everyday lives not recorded by history."*

**From:** Ketcham, Shari [mailto:sketcham@blm.gov]
**Sent:** Thursday, January 29, 2015 8:31 AM
**To:** Dumas, Lindsay
**Cc:** cory.smith@state.nm.us; Hunter, Lisa
**Subject:** [EXTERNAL]Re: Remediation Plans: San Juan 27-5 137P and San Juan 28-6 155N

BLM approves the remediation plan for the San Juan 27-5 137P at a ranking score of zero even though this location is in the Cereza Wildlife SDA winter closure area and in the Paleo SDA. Impacts to Paleo should not occur since the release is confined to the berm on the pad and impacts to wildlife should be minimal since excavation activities should not last longer than 1 week.

BLM approves the remediation plan for the San Juan 28-6 155N at a ranking score of 20.

If conditions change, please contact me so that we can make an amendment to your approved remediation plans.

Thank you!

Shari Ketcham
Natural Resource Specialist, Spills Biologist
BLM Farmington Field Office
6251 College Blvd Suite A
Farmington, NM 87402
Office: (505) 564-7713
Fax: (505) 564-7607

On Thu, Jan 29, 2015 at 8:10 AM, Dumas, Lindsay <Lindsay.Dumas@conocophillips.com> wrote:

Good Morning – Please find attached the remediation plans for the 137P and the 155N significant hydrocarbon releases. Notice that both start dates are for February 3, 2015, pending weather; this is due to the weather conditions expected this weekend. COP plans to start the 155N on 2/3/2015, but the road conditions could prevent access to location. If this is the case, COP will proceed to excavate on the 137P instead. I will provide and update on Monday, 2/2/15, as to the road conditions and what project will begin first.

San Juan 27-5 137P: On 1/22/2014 a spill was discovered on the San Juan 27-5 137P, API# 30-039-29358, UL-I, Sec.18, T27N, R05W, Lat:36.5736, Long: -107.3911 due a production tank releasing ~ 215bbl of condensate (195bbls) & produced water (21 bbls). Surface owner is BLM. None was recovered and all fluid remained on location

San Juan 28-6 155M: On 1/27/2015 a spill was discovered on the San Juan 28-6 155N, API# 30-039-27601, UL-E, Sec.28, T28N, R06W, Lat:36.63283, Long: -107.4806 due to corrosion releasing ~ 186BBLS of condensate. Surface owner is BLM. None was recovered and remained on location.

Please let me know if you have any questions.

Kind regards,

*Lindsay Dumas*
Environmental Specialist-SJBU
Office: 505-599-4089
Mobile: 505-258-1643
Lindsay.Dumas@conocophillips.com

## Smith, Cory, EMNRD

**From:** Smith, Cory, EMNRD
**Sent:** Wednesday, February 18, 2015 7:39 AM
**To:** Dumas, Lindsay; Ketcham, Shari
**Subject:** RE: San Juan 28-6 155N

Lindsay,

Sorry for the delay I was in the field yesterday.

I am ok with the application of Potassium permanganate, due to the excavation reaching vertical extent via a confining layer of sandstone.

---

**From:** Dumas, Lindsay [mailto:Lindsay.Dumas@conocophillips.com]
**Sent:** Tuesday, February 17, 2015 3:28 PM
**To:** Smith, Cory, EMNRD; Ketcham, Shari
**Subject:** RE: San Juan 28-6 155N

I have more info to update my previous email...

Below are the field results for the San Juan 28-6 155N Excavation Clearance. Site rank is a 20. Final excavation extent was 71' X 64' X 19' deep and was terminated on sandstone. All samples were submitted for 8021 BTEX and 8015 TPH on a RUSH status.

| Sample ID | Sample Location | OVM (ppm) | TPH (mg/kg) |
|---|---|---|---|
| SC-1 | North Wall | 74.2 | <20.0 |
| SC-2 | South Wall | 48.0 | <20.0 |
| SC-3 | East Wall | 20.2 | <20.0 |
| SC-4 | West Wall | 2.5 | <20.0 |
| SC-5 | Base | **2,536** | **>2,500** |

COP would like to request to spray KMnO4 and backfill after 24 hours. Please respond to this e-mail ASAP. COP aims to spray first thing Wednesday morning (2/18/2015).

Kind regards,

*Lindsay Dumas*
Environmental Specialist-SJBU
Office: 505-599-4089
Mobile: 505-258-1643
Lindsay.Dumas@conocophillips.com

---

**From:** Dumas, Lindsay
**Sent:** Tuesday, February 17, 2015 2:42 PM
**To:** 'cory.smith@state.nm.us'; 'Ketcham, Shari'
**Subject:** San Juan 28-6 155N

Excavation is at 65' X 45' X 19' deep, all sides were cleared in the field by AES today. The bottom is sitting on sandstone and it is still >2500ppm for TPH. COP would like to request to spray KMnO4 and backfill after 24 hours. Please respond to this e-mail ASAP. COP aims to spray first thing Wednesday morning (2/18/2015).

Kind regards,

*Lindsay Dumas*
Environmental Specialist-SJBU
Office: 505-599-4089
Mobile: 505-258-1643
Lindsay.Dumas@conocophillips.com

## Smith, Cory, EMNRD

**From:** Dumas, Lindsay. <Lindsay.Dumas@conocophillips.com>
**Sent:** Monday, March 02, 2015 12:18 PM
**To:** Smith, Cory, EMNRD
**Subject:** RE: [EXTERNAL]RE: San Juan 28-6 155N

Yes, I am hoping to get the workplan for a vent system to you and Shari today. I am waiting on my boss for any edits.

*Lindsay Dumas*
Environmental Specialist-SJBU
Office: 505-599-4089
Mobile: 505-258-1643
Lindsay.Dumas@conocophillips.com

---

**From:** Smith, Cory, EMNRD [mailto:Cory.Smith@state.nm.us]
**Sent:** Monday, March 02, 2015 10:13 AM
**To:** Dumas, Lindsay
**Subject:** RE: [EXTERNAL]RE: San Juan 28-6 155N

Lindsay,

Do you have any updates on the path forward for the 155n?

---

**From:** Dumas, Lindsay [mailto:Lindsay.Dumas@conocophillips.com]
**Sent:** Thursday, February 19, 2015 1:46 PM
**To:** Ketcham, Shari
**Cc:** Smith, Cory, EMNRD; Mark Kelly
**Subject:** RE: [EXTERNAL]RE: San Juan 28-6 155N

COP has chosen to leave the excavation open until Monday. I will be on location to gather a sample and rush the labs so we can reassess our path forward. Thanks!

*Lindsay Dumas*
Environmental Specialist-SJBU
Office: 505-599-4089
Mobile: 505-258-1643
Lindsay.Dumas@conocophillips.com

**From:** Ketcham, Shari [mailto:sketcham@blm.gov]
**Sent:** Wednesday, February 18, 2015 8:17 AM
**To:** Dumas, Lindsay
**Cc:** Smith, Cory, EMNRD; Mark Kelly
**Subject:** Re: [EXTERNAL]RE: San Juan 28-6 155N

BLM will not approve backfilling of this location until all remediation has been exhausted which includes excavating to the extent possible. Most operators are now breaking up the sandstone and removing

it. However, if COP would like to perform risk assessment of the location, then COP will need to determine the extent of contamination throughout the sandstone so BLM knows how far the contamination goes into the ground before risk assessment would be analyzed. Please let BLM know how COP will proceed with remediation.

Thank you!

Shari Ketcham
Natural Resource Specialist, Spills Biologist
BLM Farmington Field Office
6251 College Blvd Suite A
Farmington, NM 87402
Office: (505) 564-7713
Fax: (505) 564-7607

On Wed, Feb 18, 2015 at 8:13 AM, Dumas, Lindsay <Lindsay.Dumas@conocophillips.com> wrote:

Yes this location is ranked a 20.

Lindsay Dumas
Environmental Specialist-SJBU

On Feb 18, 2015, at 8:09 AM, "Ketcham, Shari" <sketcham@blm.gov<mailto:sketcham@blm.gov>> wrote:

BLM approves spraying potassium permanganate on the sandstone; however, BLM will not approve backfilling at this time.

What was the ranking score on this location? I thought it had to be <100 ppm but please remind me since I am not in the office today. I will be in the office tomorrow morning.

Shari Ketcham
Natural Resource Specialist, Spills Biologist
BLM Farmington Field Office
6251 College Blvd Suite A
Farmington, NM 87402
Office: (505) 564-7713
Fax: (505) 564-7607

On Wed, Feb 18, 2015 at 7:45 AM, Dumas, Lindsay <Lindsay.Dumas@conocophillips.com<mailto:Lindsay.Dumas@conocophillips.com>> wrote:
Thanks Cory!

Shari - Do you approve as well?

Lindsay Dumas
Environmental Specialist-SJBU

On Feb 18, 2015, at 7:40 AM, "Smith, Cory, EMNRD" <Cory.Smith@state.nm.us<mailto:Cory.Smith@state.nm.us><mailto:Cory.Smith@state.nm.us<mailto:Cory.Smith@state.nm.us>>> wrote:

Lindsay,

Sorry for the delay I was in the field yesterday.

I am ok with the application of Potassium permanganate, due to the excavation reaching vertical extent via a confining layer of sandstone.

From: Dumas, Lindsay
[mailto:Lindsay.Dumas@conocophillips.com<mailto:Lindsay.Dumas@conocophillips.com>]
Sent: Tuesday, February 17, 2015 3:28 PM
To: Smith, Cory, EMNRD; Ketcham, Shari
Subject: RE: San Juan 28-6 155N

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Sample ID

Sample Location

OVM (ppm)

TPH (mg/kg)

SC-1

North Wall

74.2

<20.0

SC-2

South Wall

48.0

<20.0

SC-3

East Wall

20.2

<20.0

SC-4

West Wall

2.5

<20.0

SC-5

Base

2,536

>2,500

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From: Dumas, Lindsay
Sent: Tuesday, February 17, 2015 2:42 PM
To:
'cory.smith@state.nm.us<mailto:cory.smith@state.nm.us><mailto:cory.smith@state.nm.us<mailto:cory.smith@state.nm.us>>'; 'Ketcham, Shari'
Subject: San Juan 28-6 155N

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## Smith, Cory, EMNRD

**From:** Dumas, Lindsay <Lindsay.Dumas@conocophillips.com>
**Sent:** Friday, March 06, 2015 9:56 AM
**To:** Smith, Cory, EMNRD; Ketcham, Shari
**Subject:** Workplan Proposal for San Juan 28-6 155N
**Attachments:** workplan.pdf

Good Morning – Please find attached a proposed workplan for the path forward on the 155N. Please contact me with any questions.

*Lindsay Dumas*
Environmental Specialist-SJBU
Office: 505-599-4089
Mobile: 505-258-1643
Lindsay.Dumas@conocophillips.com

# San Juan 28-6 155N

## Passive Venting System Proposal

### 1.0 Introduction

COP has prepared this workplan for the remediation of petroleum hydrocarbon contaminated sandstone associated with the release on the San Juan 28-6 155N located in Rio Arriba County, New Mexico. Hydrocarbon contaminated sandstone was encountered during the excavation of hydrocarbon contaminated soils on February 16, 2015.

COP excavated approximately 3000 cubic yards of contaminated soils. However, sandstone (19' bgs) shows contamination levels exceeding NMOCD guidelines. The source for contamination migration has been removed during excavation; and only a small portion of hydrocarbons are tightly locked within the sandstone formation. Due to the depth of the sandstone and levels of hydrocarbons, a passive remediation approach will be used to address remediation of subsurface sandstone.

### 2.0 Site Location and Environmental Ranking

The San Juan 28-6 155N is located on BLM within, Section 28, T28N, R06W, Rio Arriba County, New Mexico. The release latitude and longitude were recorded as N36.63291, W107.48120, respectively. An aerial site map illustrating the general site layout and release location is presented as Figure 1.

The San Juan 28-6 155N is located on Bureau of Land Management (BLM) land. BLM adheres to action levels for releases and spills as established by the New Mexico Oil Conservation Division (NMOCD).

In accordance with the New Mexico Oil Conservation Division (NMOCD) *Guidelines for Remediation of Leaks, Spills, and Releases* (August 1993), the location was given a ranking score of 20 based on the following factors:

- **Depth to Ground water:** This location is >100 ft to ground water. (0 points)
- **Wellhead Protection Area:** The release location is not within a known wellhead protection area. (0 points)
- **Distance to Surface Water Body:** A small unnamed wash is located approximately 130 feet to the North. (20 points)

NMOCD remedial action levels for soils for releases ranked 20 + are as follows: 10 mg/kg benzene, 50 mg/kg total BTEX, and 100 mg/kg total petroleum hydrocarbons.

### 3.0 Contaminated Soil Excavation – February 2015

During the week of February 9, 2015 COP contractors excavated approximately 3000 cubic yards of petroleum hydrocarbon impacted soils at the location. At 19 feet bgs, all four walls of the excavation were field cleared, but the base of the excavation (at sandstone) exceeded NMOCD action levels.

### 3.1 Field Screening Results

**AES conducted an excavation clearance on February 17, 2015, they collected five samples; one from each wall (SC-1 through SC-4) and one from the sandstone base (SC-5). Soil samples were field screened for volatile organic compounds (VOCs) and total petroleum hydrocarbons (TPH). Field screening procedures were as follows:**

- **Volatile Organic Compounds (VOCs):** A portion of each sample was utilized for field screening of VOC vapors 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.
- **Total Petroleum Hydrocarbons (TPH):** Field TPH samples were analyzed per U.S. Environmental Protection Agency's (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 conduction soil analyses. Field analytical protocol followed AES's *Standard Operating Procedure: Field Analysis Total Petroleum Hydrocarbons per EPA Method 418.1.*

**Field screening readings for VOCs (via OVM) ranged from 2.5 ppm in SC-4 up to 2536 ppm in SC-5. Field TPH concentrations ranged from <20.0 ppm in SC-1 through SC-4 up to >2500 ppm in SC-5. Field screening results are included in Table 1.**

**Table 1**

| *Sample ID* | *Date Sampled* | *Sample Location* | *VOCs (ppm)* | *Field TPH(ppm)* |
|---|---|---|---|---|
| *SC-1* | 2/17/2015 | North Wall | 74.2 | <20.0 |
| *SC-2* | 2/17/2015 | South Wall | 48.0 | <20.0 |
| *SC-3* | 2/17/2015 | East Wall | 20.0 | <20.0 |
| *SC-4* | 2/17/2015 | West Wall | 2.5 | <20.0 |
| *SC-5* | 2/17/2015 | Base | 2536 | >2500 |

### 3.2 Laboratory Analytical Results

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

- BTEX per U.S. Environmental Protection Agency (USEPA) Method 8021B;
- TPH for gasoline range organics (GRO) and diesel range organics (DRO) per USEPA Method 8015B

**Laboratory analytical results for SC-1 through SC-4 reported BTEX and TPH concentrations below NMOCD action levels. Analytical for SC-5 reported concentrations of BTEX and TPH concentrations above NMOCD action levels (see Table 2).**

Table 2

| Sample ID | Date Sampled | Benzene (mg/kg) | BTEX (mg/kg) | TPH – GRO (mg/kg) | TPH – DRO (mg/kg) | Total TPH |
|---|---|---|---|---|---|---|
| SC-1 | 2/17/2015 | ND | ND | ND | ND | ND |
| SC-2 | 2/17/2015 | ND | ND | ND | ND | ND |
| SC-3 | 2/17/2015 | ND | ND | ND | ND | ND |
| SC-4 | 2/17/2015 | ND | ND | ND | ND | ND |
| SC-5 | 2/17/2015 | 7.6 | 434.6 | 3800 | 610 | 4410 |

## 4.0 Proposed Sandstone Venting System

Based on safety concerns, site conditions, and elevated concentrations of hydrocarbons on sandstone at the base of excavation, COP proposes the use of a sandstone venting system. This vent system is a viable technology for remediation of hydrocarbons in tightly locked sandstone. This system consists of vent lines laid on top of the sandstone, piped to a small turbine above ground. The system introduces an airflow to an otherwise anaerobic environment; enhancing the evaporation of non-aqueous phase liquids, volatilization of contaminants, and desorption of contaminants from the surfaces of soil particles. Before installation of the system COP will spray sandstone base with Quantum Growth to expedite the removal of hydrocarbons.

To implement the use of a vent system as a remediation approach at this site, COP proposes to install six – 65 ft. 4 inch perforated PVC pipes throughout the base of the excavation. Three of these pipes will be connected to one solar powered vent, and the other three to another solar powered vent. The turbine vents are powered by a solar panel on location. The vents will circulate oxygen on the sandstone surface. See attached Figure 2 for reference.

### 4.1 Sandstone Venting System Monitoring and Sampling

On startup, the vent system will be operating with solar power. COP will monitor the air emitted from the turbine for OVMs with a PID meter every 3 months. Achieving the specified remediation goals is anticipated to require operation of the system for approximately 8 months to one year but could extend beyond this time frame. Final closure will be determined by air samples analyzed for BTEX and GRO/DRO (8021B & 8015). Once air samples are below NMOCD action levels, COP will request closure.

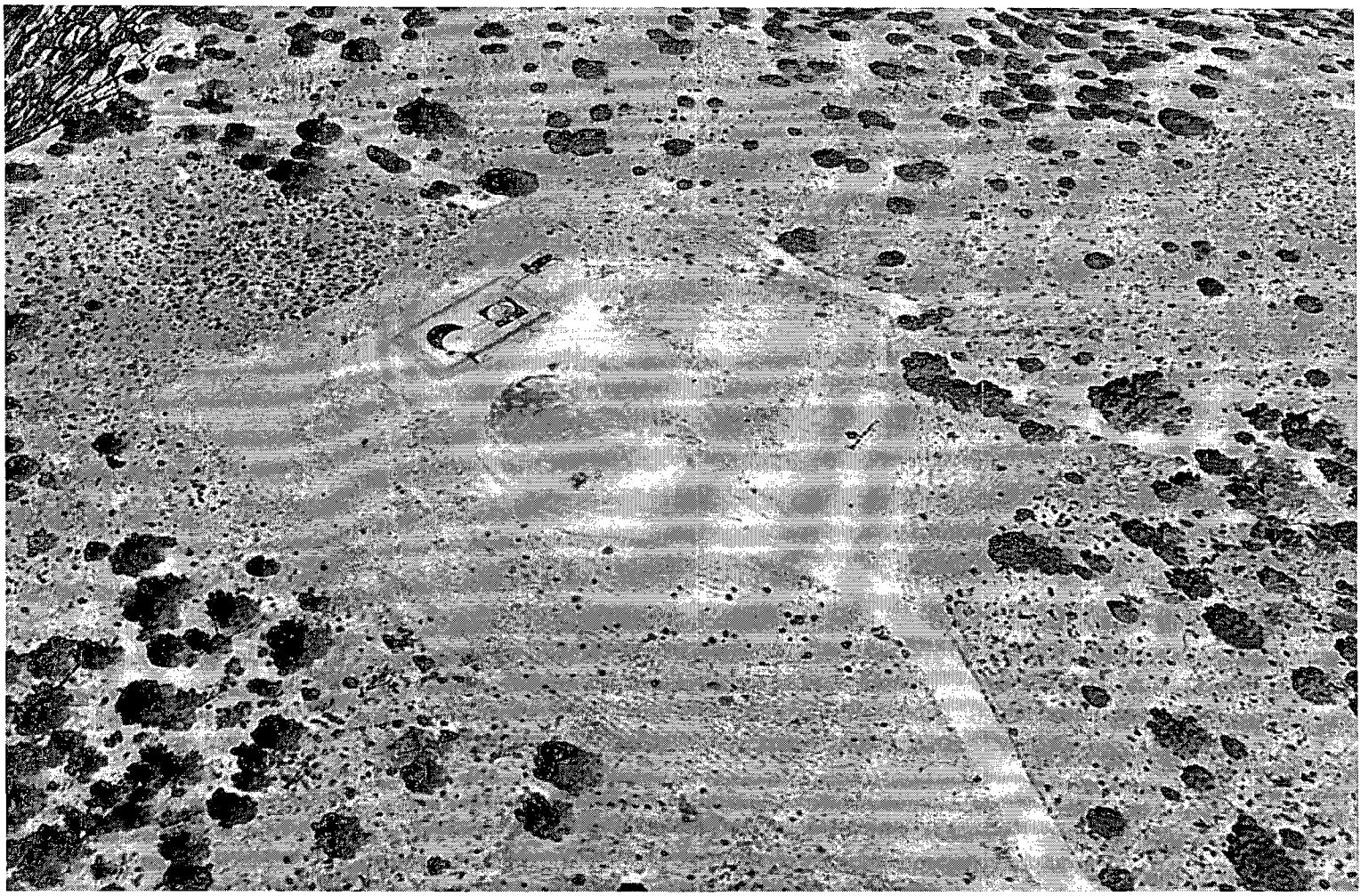
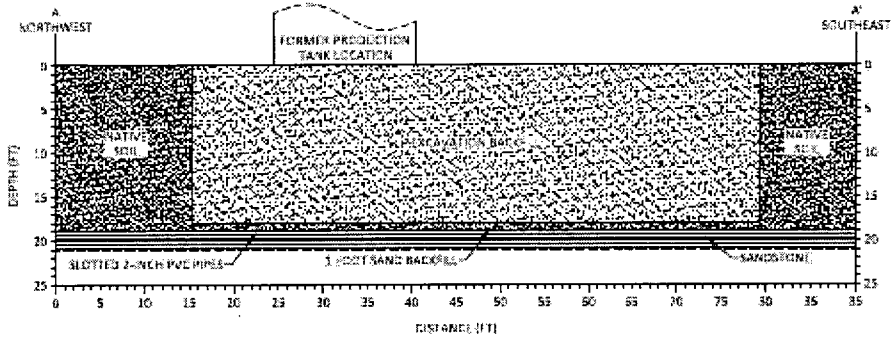
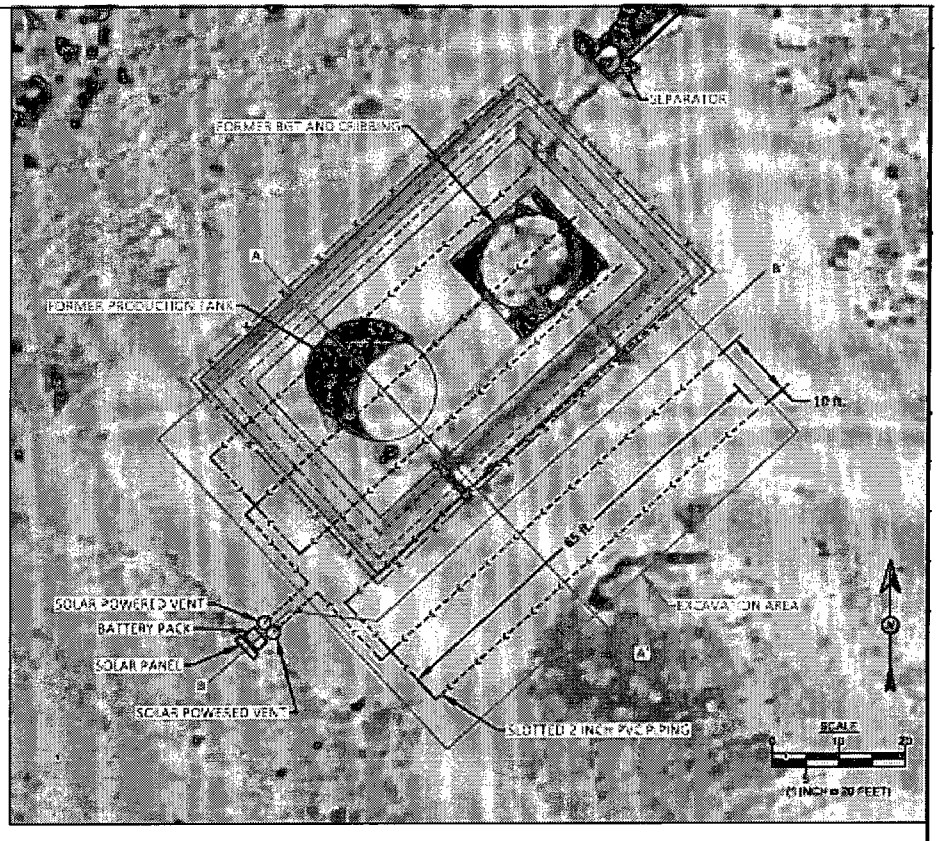


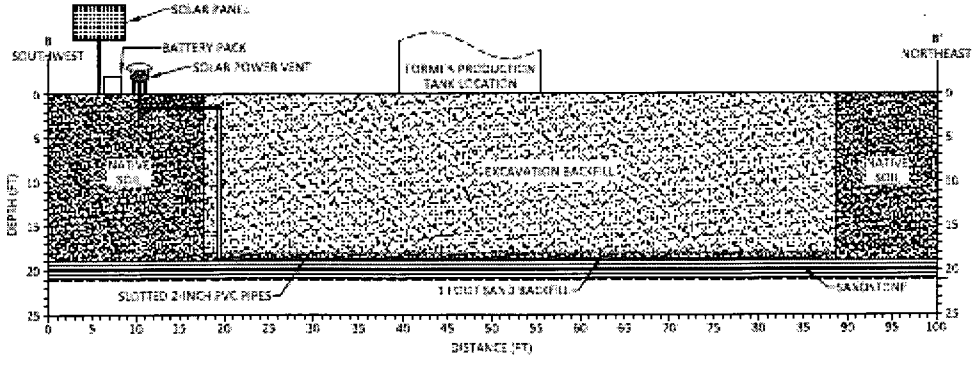
**Figure 1**

Figure 2

Passive Venting System



**Analytical Report**
Lab Order **1502720**
Date Reported:

# Hall Environmental Analysis Laboratory, Inc.

**CLIENT:** Animas Environmental
**Client Sample ID:** SC-1
**Project:** COP SJ 28-6 #155N
**Collection Date:** 2/17/2015 2:10:00 PM
**Lab ID:** 1502720-001
**Matrix:** MEOH (SOIL)
**Received Date:** 2/18/2015 8:00:00 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 | 2/18/2015 10:22:52 AM | 17795 |
| Motor Oil Range Organics (MRO) | ND | 50 | | mg/Kg | 1 | 2/18/2015 10:22:52 AM | 17795 |
| Surr: DNOP | 99.8 | 63.5-128 | | %REC | 1 | 2/18/2015 10:22:52 AM | 17795 |
| **EPA METHOD 8015D: GASOLINE RANGE** | | | | | | Analyst: **NSB** | |
| Gasoline Range Organics (GRO) | ND | 3.2 | | mg/Kg | 1 | 2/18/2015 10:19:26 AM | R24377 |
| Surr: BFB | 99.3 | 80-120 | | %REC | 1 | 2/18/2015 10:19:26 AM | R24377 |
| **EPA METHOD 8021B: VOLATILES** | | | | | | Analyst: **NSB** | |
| Benzene | ND | 0.032 | | mg/Kg | 1 | 2/18/2015 10:19:26 AM | R24377 |
| Toluene | ND | 0.032 | | mg/Kg | 1 | 2/18/2015 10:19:26 AM | R24377 |
| Ethylbenzene | ND | 0.032 | | mg/Kg | 1 | 2/18/2015 10:19:26 AM | R24377 |
| Xylenes, Total | ND | 0.064 | | mg/Kg | 1 | 2/18/2015 10:19:26 AM | R24377 |
| Surr: 4-Bromofluorobenzene | 100 | 80-120 | | %REC | 1 | 2/18/2015 10:19:26 AM | R24377 |

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 | | |

**Analytical Report**
Lab Order **1502720**
Date Reported:

# Hall Environmental Analysis Laboratory, Inc.

**CLIENT:** Animas Environmental
**Client Sample ID:** SC-2
**Project:** COP SJ 28-6 #155N
**Collection Date:** 2/17/2015 12:30:00 PM
**Lab ID:** 1502720-002
**Matrix:** MEOH (SOIL)
**Received Date:** 2/18/2015 8:00:00 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 | 2/18/2015 10:49:56 AM | 17795 |
| Motor Oil Range Organics (MRO) | ND | 50 | | mg/Kg | 1 | 2/18/2015 10:49:56 AM | 17795 |
| Surr: DNOP | 103 | 63.5-128 | | %REC | 1 | 2/18/2015 10:49:56 AM | 17795 |
| **EPA METHOD 8015D: GASOLINE RANGE** | | | | | | Analyst: **NSB** | |
| Gasoline Range Organics (GRO) | ND | 3.8 | | mg/Kg | 1 | 2/18/2015 10:48:11 AM | R24377 |
| Surr: BFB | 94.2 | 80-120 | | %REC | 1 | 2/18/2015 10:48:11 AM | R24377 |
| **EPA METHOD 8021B: VOLATILES** | | | | | | Analyst: **NSB** | |
| Benzene | ND | 0.038 | | mg/Kg | 1 | 2/18/2015 10:48:11 AM | R24377 |
| Toluene | ND | 0.038 | | mg/Kg | 1 | 2/18/2015 10:48:11 AM | R24377 |
| Ethylbenzene | ND | 0.038 | | mg/Kg | 1 | 2/18/2015 10:48:11 AM | R24377 |
| Xylenes, Total | ND | 0.076 | | mg/Kg | 1 | 2/18/2015 10:48:11 AM | R24377 |
| Surr: 4-Bromofluorobenzene | 102 | 80-120 | | %REC | 1 | 2/18/2015 10:48:11 AM | R24377 |

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 | | |

**Analytical Report**
Lab Order **1502720**
Date Reported:

# Hall Environmental Analysis Laboratory, Inc.

**CLIENT:** Animas Environmental
**Client Sample ID:** SC-3
**Project:** COP SJ 28-6 #155N
**Collection Date:** 2/17/2015 12:35:00 PM
**Lab ID:** 1502720-003 **Matrix:** MEOH (SOIL) **Received Date:** 2/18/2015 8:00:00 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 | 2/18/2015 11:16:47 AM | 17795 |
| Motor Oil Range Organics (MRO) | ND | 50 | | mg/Kg | 1 | 2/18/2015 11:16:47 AM | 17795 |
| Surr: DNOP | 105 | 63.5-128 | | %REC | 1 | 2/18/2015 11:16:47 AM | 17795 |
| **EPA METHOD 8015D: GASOLINE RANGE** | | | | | | Analyst: **NSB** | |
| Gasoline Range Organics (GRO) | ND | 4.4 | | mg/Kg | 1 | 2/18/2015 11:16:53 AM | R24377 |
| Surr: BFB | 91.9 | 80-120 | | %REC | 1 | 2/18/2015 11:16:53 AM | R24377 |
| **EPA METHOD 8021B: VOLATILES** | | | | | | Analyst: **NSB** | |
| Benzene | ND | 0.044 | | mg/Kg | 1 | 2/18/2015 11:16:53 AM | R24377 |
| Toluene | ND | 0.044 | | mg/Kg | 1 | 2/18/2015 11:16:53 AM | R24377 |
| Ethylbenzene | ND | 0.044 | | mg/Kg | 1 | 2/18/2015 11:16:53 AM | R24377 |
| Xylenes, Total | ND | 0.088 | | mg/Kg | 1 | 2/18/2015 11:16:53 AM | R24377 |
| Surr: 4-Bromofluorobenzene | 99.5 | 80-120 | | %REC | 1 | 2/18/2015 11:16:53 AM | R24377 |

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 SJ 28-6 #155N
**Lab ID:** 1502720-004
**Matrix:** MEOH (SOIL)
**Client Sample ID:** SC-4
**Collection Date:** 2/17/2015 2:00:00 PM
**Received Date:** 2/18/2015 8:00:00 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 | 2/18/2015 11:43:46 AM | 17795 |
| Motor Oil Range Organics (MRO) | ND | 50 | | mg/Kg | 1 | 2/18/2015 11:43:46 AM | 17795 |
| Surr: DNOP | 110 | 63.5-128 | | %REC | 1 | 2/18/2015 11:43:46 AM | 17795 |
| **EPA METHOD 8015D: GASOLINE RANGE** | | | | | | Analyst: **NSB** | |
| Gasoline Range Organics (GRO) | ND | 3.1 | | mg/Kg | 1 | 2/18/2015 11:45:37 AM | R24377 |
| Surr: BFB | 93.0 | 80-120 | | %REC | 1 | 2/18/2015 11:45:37 AM | R24377 |
| **EPA METHOD 8021B: VOLATILES** | | | | | | Analyst: **NSB** | |
| Benzene | ND | 0.031 | | mg/Kg | 1 | 2/18/2015 11:45:37 AM | R24377 |
| Toluene | ND | 0.031 | | mg/Kg | 1 | 2/18/2015 11:45:37 AM | R24377 |
| Ethylbenzene | ND | 0.031 | | mg/Kg | 1 | 2/18/2015 11:45:37 AM | R24377 |
| Xylenes, Total | ND | 0.062 | | mg/Kg | 1 | 2/18/2015 11:45:37 AM | R24377 |
| Surr: 4-Bromofluorobenzene | 100 | 80-120 | | %REC | 1 | 2/18/2015 11:45:37 AM | R24377 |

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 | | |

**Analytical Report**
Lab Order **1502720**
Date Reported:

# Hall Environmental Analysis Laboratory, Inc.

**CLIENT:** Animas Environmental
**Client Sample ID:** SC-5
**Project:** COP SJ 28-6 #155N
**Collection Date:** 2/17/2015 12:45:00 PM
**Lab ID:** 1502720-005
**Matrix:** MEOH (SOIL)
**Received Date:** 2/18/2015 8:00:00 AM

| Analyses | Result | RL | Qual | Units | DF | Date Analyzed | Batch |
|---|---|---|---|---|---|---|---|
| **EPA METHOD 8015D: DIESEL RANGE ORGANICS** | | | | | | Analyst: **JME** | |
| Diesel Range Organics (DRO) | 610 | 10 | | mg/Kg | 1 | 2/18/2015 12:11:05 PM | 17795 |
| Motor Oil Range Organics (MRO) | ND | 50 | | mg/Kg | 1 | 2/18/2015 12:11:05 PM | 17795 |
| Surr: DNOP | 110 | 63.5-128 | | %REC | 1 | 2/18/2015 12:11:05 PM | 17795 |
| **EPA METHOD 8015D: GASOLINE RANGE** | | | | | | Analyst: **NSB** | |
| Gasoline Range Organics (GRO) | 3800 | 390 | | mg/Kg | 100 | 2/18/2015 12:14:25 PM | R24377 |
| Surr: BFB | 163 | 80-120 | S | %REC | 100 | 2/18/2015 12:14:25 PM | R24377 |
| **EPA METHOD 8021B: VOLATILES** | | | | | | Analyst: **NSB** | |
| Benzene | 7.6 | 0.39 | | mg/Kg | 10 | 2/18/2015 9:50:38 AM | R24377 |
| Toluene | 130 | 3.9 | | mg/Kg | 100 | 2/18/2015 12:14:25 PM | R24377 |
| Ethylbenzene | 27 | 0.39 | | mg/Kg | 10 | 2/18/2015 9:50:38 AM | R24377 |
| Xylenes, Total | 270 | 7.8 | | mg/Kg | 100 | 2/18/2015 12:14:25 PM | R24377 |
| Surr: 4-Bromofluorobenzene | 213 | 80-120 | S | %REC | 10 | 2/18/2015 9:50:38 AM | R24377 |

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 | R | Sample pH Not In Range |
| R | RPD outside accepted recovery limits | RL | Reporting Detection Limit |
| S | Spike Recovery outside accepted recovery limits | | |

**Smith, Cory, EMNRD**

**From:** Ketcham, Shari <sketcham@blm.gov>
**Sent:** Monday, March 09, 2015 8:23 AM
**To:** Dumas, Lindsay
**Cc:** Smith, Cory, EMNRD; Mark Kelly
**Subject:** Re: Workplan Proposal for San Juan 28-6 155N

Lindsay,

Did ConocoPhillips determine the extent of contamination within the sandstone? Extent of contamination should always be determined before a remediation method is planned.

Shari Ketcham
Natural Resource Specialist, Spills Biologist
BLM Farmington Field Office
6251 College Blvd Suite A
Farmington, NM 87402
Office: (505) 564-7713
Fax: (505) 564-7607

On Fri, Mar 6, 2015 at 9:55 AM, Dumas, Lindsay <Lindsay.Dumas@conocophillips.com> wrote:

> Good Morning – Please find attached a proposed workplan for the path forward on the 155N. Please contact me with any questions.
>
> *Lindsay Dumas*
> Environmental Specialist-SJBU
> Office: 505-599-4089
> Mobile: 505-258-1643
> Lindsay.Dumas@conocophillips.com

## Smith, Cory, EMNRD

**From:** Smith, Cory, EMNRD
**Sent:** Monday, March 09, 2015 9:06 AM
**To:** Dumas, Lindsay
**Subject:** RE: Workplan Proposal for San Juan 28-6 155N

Lindsay,

Could you send me more information the design of the vent system?

Specificity, is this forced air? I read the words passive and think of the turbine that only push air when the wind is blowing.

---

**From:** Dumas, Lindsay [mailto:Lindsay.Dumas@conocophillips.com]
**Sent:** Friday, March 06, 2015 9:56 AM
**To:** Smith, Cory, EMNRD; Ketcham, Shari
**Subject:** Workplan Proposal for San Juan 28-6 155N

Good Morning – Please find attached a proposed workplan for the path forward on the 155N. Please contact me with any questions.

*Lindsay Dumas*
Environmental Specialist-SJBU
Office: 505-599-4089
Mobile: 505-258-1643
Lindsay.Dumas@conocophillips.com

## Smith, Cory, EMNRD

**From:** Smith, Cory, EMNRD
**Sent:** Thursday, March 12, 2015 9:19 AM
**To:** Ketcham, Shari; Cardoza, Clara M
**Cc:** Dumas, Lindsay; Mark Kelly; Powell, Brandon, EMNRD
**Subject:** RE: Re: Re: San Juan 28-6 155N

All,

I would just like to reiterate that OCD has approved COPC Remediation plans to spray Potassium Permanganate at the San Juan 28-6 155N. We are still reviewing the Remediation plan received on March 6 in regards to a vent system for further remediation.

OCD Approval does not relieve Conoco of any additional requirements imposed by other regulatory agencies.

If you have any questions please give me a call.

Cory Smith
Environmental Specialist
Oil Conservation Division
Energy, Minerals, & Natural Resources
1000 Rio Brazos, Aztec, NM 87410
(505)334-6178 ext 115
cory.smith@state.nm.us

**From:** Ketcham, Shari [mailto:sketcham@blm.gov]
**Sent:** Thursday, March 12, 2015 7:05 AM
**To:** Cardoza, Clara M
**Cc:** Dumas, Lindsay; Smith, Cory, EMNRD; Mark Kelly
**Subject:** Re: Re: Re: San Juan 28-6 155N

Remediation activities should not start until extent of contamination is determined.

Shari Ketcham
Natural Resource Specialist, Spills Biologist
BLM Farmington Field Office
6251 College Blvd Suite A
Farmington, NM 87402
Office: (505) 564-7713
Fax: (505) 564-7607

On Thu, Mar 12, 2015 at 7:03 AM, Cardoza, Clara M <Clara.M.Cardoza@conocophillips.com> wrote:

Shari,

Does this mean you do not want COP to spray or sample at this time?

Thank you,

*Clara M Cardoza*

Environmental Supervisor

San Juan Business Unit

505/326/9710 (O)

505/215/7336 (C)



**From:** Ketcham, Shari [mailto:sketcham@blm.gov]
**Sent:** Thursday, March 12, 2015 6:52 AM
**To:** Dumas, Lindsay
**Cc:** cory.smith@state.nm.us; Mark Kelly; Cardoza, Clara M
**Subject:** [EXTERNAL]Re: Re: San Juan 28-6 155N

This location was ranked 20 and GRO from the sandstone was 3800 ppm and DRO was 610 ppm.

Therefore, BLM needs to know what the extent of contamination is so this must be completed before a remediation plan is approved.

Shari Ketcham

Natural Resource Specialist, Spills Biologist

BLM Farmington Field Office

6251 College Blvd Suite A

Farmington, NM 87402

Office: (505) 564-7713

Fax: (505) 564-7607

On Thu, Mar 12, 2015 at 6:40 AM, Dumas, Lindsay <Lindsay.Dumas@conocophillips.com> wrote:

Per NMOCD regulation, if the sample comes back below standards COP will be closing the excavation.

*Lindsay Dumas*
Environmental Specialist-SJBU
Office: 505-599-4089
Mobile: 505-258-1643
Lindsay.Dumas@conocophillips.com

**From:** Ketcham, Shari [mailto:sketcham@blm.gov]
**Sent:** Thursday, March 12, 2015 6:34 AM
**To:** Dumas, Lindsay
**Cc:** cory.smith@state.nm.us; Mark Kelly
**Subject:** [EXTERNAL]Re: San Juan 28-6 155N

The extent of contamination still needs to be determined within the sandstone. How can remediation of a site be determined if extent of contamination is not determined?

Shari Ketcham

Natural Resource Specialist, Spills Biologist

BLM Farmington Field Office

6251 College Blvd Suite A

Farmington, NM 87402

Office: (505) 564-7713

Fax: (505) 564-7607

On Wed, Mar 11, 2015 at 4:08 PM, Dumas, Lindsay <Lindsay.Dumas@conocophillips.com> wrote:

COP will spray potassium permanganate on 3/12/15 per approvals given on 2/18/2015 by both BLM and OCD. Excavation base sampling will occur on Monday 3/16/2015.

Kind regards,

*Lindsay Dumas*
Environmental Specialist-SJBU
Office: 505-599-4089
Mobile: 505-258-1643
Lindsay.Dumas@conocophillips.com

## Smith, Cory, EMNRD

**From:** Cardoza, Clara M <Clara.M.Cardoza@conocophillips.com>
**Sent:** Monday, April 06, 2015 3:55 PM
**To:** Ketcham, Shari (sketcham@blm.gov); Smith, Cory, EMNRD
**Subject:** SJ 28-6 155N API No 3003927601
**Attachments:** San Juan 28-6 155N - Letter to BLM NMOCD 04-06-2015.pdf

Please see attached.

Thank you,

*Clara M Cardoza*
Environmental Supervisor
San Juan Business Unit
505/326/9710 (O)
505/215/7336 (C)

ConocoPhillips

Clara Cardoza
Environmental Supervisor - SJBU
3401 East 30th Street
Farmington, New Mexico 87402
505-326-9710
Email: Clara.M.Cardoza@conocophillips.com

April 6, 2015

**By Email: sketcham@blm.gov**

Ms. Shari Ketcham
Natural Resource Specialist, Spills Biologist
Bureau of Land Management
6251 College Blvd, Suite A
Farmington, New Mexico 87402

**By Email: cory.smith@state.nm.us**

Mr. Cory Smith
Environmental Specialist
Oil Conservation Division
Energy, Minerals, & Natural Resources
1000 Rio Brazos
Aztec, New Mexico 87410

Re: San Juan 28-6 155N, API No. 3003927601, UL-E
Section 28, Township 28 North, Range 6 West, N.M.P.M.
Rio Arriba County, New Mexico

Dear Ms. Ketcham and Mr. Smith:

The purpose of this letter is to respectfully request approval by BLM and NMOCD for additional sampling at the excavation site of the San Juan 28-6 155N well for the purpose of determining appropriate next steps for the site, as discussed in more detail below.

**Background**

On January 27, 2015, ConocoPhillips discovered a spill at the 155N site. Approximately 186 barrels of condensate were spilled and none were recovered. ConocoPhillips filed an initial C-141 form with NMOCD, with a copy to BLM.

A remediation plan for the 155N (copy attached as Exhibit "A" hereto) was approved by BLM and NMOCD on January 29, 2015. Due to scheduling and weather delays, excavation work at the 155N site began on February 11, 2017 and sampling was conducted on February 17, 2015. On February 17, 2015, field results for the 155N were reported to BLM and NMOCD. The results are set forth on Exhibit "B" hereto. The 155N was risk ranked a 20. The final

excavation extent was 71' x 64' x 19' and was terminated on sandstone. All samples were submitted for 8021 BTEX and 8015 TPH status.

On February 18, 2015, Mr. Smith at NMOCD consented via email to ConocoPhillips proposal to apply potassium permanganate (KMnO4) on the bottom of the excavation for the 155N "due to the excavation reaching vertical extent via confining layer of sandstone." The excavation would have been backfilled 24 hours after application of the KMnO4. Ms. Ketcham at BLM also approved application of the KMnO4 but did not approve backfilling the 155N excavation until "all remediation has been exhausted which includes excavating to the extent possible." Ms. Ketcham advised that most operators are now breaking up and removing the sandstone layer, and suggested that if ConocoPhillips wanted to perform a risk assessment of the 155N location, then it would need to determine the extent of sandstone contamination throughout the sandstone.

On March 6, 2015, ConocoPhillips provided BLM and NMOCD with a Passive Venting System Proposal (PVSP) for the 155N site (copy attached as Exhibit "C" hereto). The PVSP notes that approximately 3,000 cubic yards of contaminated soil were removed from the 155N but a small part of the hydrocarbons are tightly locked within the sandstone formation. Due to the depth of the sandstone and levels of hydrocarbons, a passive remediation approach was recommended to address the remediation of the sandstone.

At this point, BLM and NMOCD continue review of the PVSP. BLM advises that remediation activities should not begin until the extent of contamination to the sandstone layer is determined.

**Maintaining Integrity of Sandstone Layer; Testing Request; Remedial Alternatives**

ConocoPhillips respectfully challenges BLM's position to determine the extent of contamination of the sandstone layer before initiating remediation. Determining the extent of contamination would require ConocoPhillips to core through the sandstone layer. ConocoPhillips' main objective is to prevent deeper migration of the locked hydrocarbon in the natural sandstone barrier. Coring into the sandstone layer could potentially create a pathway for migration for the hydrocarbons currently locked there (or a future hydrocarbon release, should there be one), which would significantly increase the risk of contamination at deeper depths. As the 155N is a good well and is expected to produce for many years, ConocoPhillips strongly believes the natural barrier created by the sandstone layer should not be compromised.

The excavation site at the 155N has been exposed to open air since February 17 (48 days). It is possible that levels of BTEX, TPH and benzene have decreased significantly during this time due to the open air exposure – perhaps to levels below permissible NMOCD Spill Guidance Site Ranking Standards. Because of the risks described above, ConocoPhillips continues to believe a passive remediation approach to address the remediation of the sandstone is most appropriate. Therefore, ConocoPhillips proposes to take new field samples of the sandstone at the 155N excavation for the purposes of (i) ascertaining current BTEX and TPH levels after extended open air exposure, (ii) evaluating on the basis of the updated testing data what additional remedial

action, if any, is necessary such that the 155N excavation (risk ranked a 20) meets NMOCD Spill Guidance Site Ranking Standards and could therefore be approved for closure; and (iii) if further remedial action is necessary, consideration of appropriate sequential passive remedial actions (spraying with quantum growth or KMnO4) or ultimately installation of the PVSP.

If further sampling is approved, ConocoPhillips will utilize Animas Environmental Services (AES) to sample the 155N excavation's base. AES will run field 418.1 and samples will be run in the lab for BTEX 8021 and TPH 8015.

ConocoPhillips understands that each remediation must meet NMOCD Spill Guidance Site Ranking Standards and we have historically proven to partner with the governing agencies to achieve this goal. In this case, ConocoPhillips requests collaboration with both BLM and NMOCD to generate a best management practice for remediation projects when sandstone/shale is encountered. To that end, ConocoPhillips has proposed a sequence of alternative remediation techniques that exceed expectations - soil vapor extraction, quantum growth spray and/or KMnO4 spray and ultimately, if necessary, solar powered venting. All of these practices are proven remediation methods and demonstrate ConocoPhillips' dedication to environmental stewardship.

**Conclusion**

For the foregoing reasons, ConocoPhillips respectfully requests approval to conduct additional sampling of the 155N site and making further recommendations to BLM and NMOCD based on that updated data. We believe this sequential process will be successful and provides the safest, least pervasive means to further remediate, if necessary, the 155N spill.

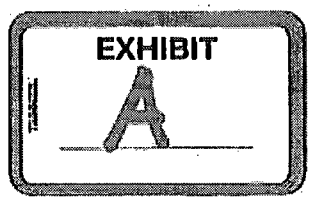
Should you have any questions, please don't hesitate to contact me at (505) 326-9710 or at Clara.M.Cardoza@conocophillips.com with any questions.

Sincerely,

**CONOCOPHILLLIPS COMPANY**

Clara M. Cardoza
Environmental Supervisor - SJBU

Attachments: Exhibit A – Remediation Plan
Exhibit B – Field Results
Exhibit C - PVSP




**San Juan 28-6 155N Remediation Plan Outline**
Bureau of Land Management
Farmington Field Office

1. **Anticipated remediation start date:** February 3, 2015, pending weather conditions
2. **Processes and procedures that will be used to remove contaminated soils:** The soil will be removed with an excavator.
3. **Location where contaminated soils will be taken for disposal:** The soil will be taken to IEI Landfarm.
4. **Soil testing protocol(s) operator would like to use:** COP will utilize AES for soil sampling, they will use a PID for OVMs and a 418.1 screening in the field, samples will be submitted to Hall Laboratory for 8015 and 8021 analysis.
5. **Notify BLM about the date when soil samples will be taken (48 hour notice must be given so BLM can witness the confirmation sampling):** BLM will be notified as soon as possible of when soil sampling activities will occur.
6. **Mail or email BLM with soil sample results prior to backfilling excavation to ensure results are below regulatory standards:** Field results and preliminary labs will be emailed as soon as available.
7. **Location where clean like soil that is certified weed free (no land farmed soils) will be brought in from to backfill excavation area(s):** The backfill material will be from Aztec Machine.
8. **Steps that will be taken to prevent this type of occurrence in the future:** COP is working a more extensive corrosion inspection program.
9. **Anticipated completion date:** approximately 7 business days after project start date
10. **Provide map or sketch of the extent of contamination and soil sampling locations:** No delineation was performed on this location prior to excavation. Excavation will begin below the production tank and will be continuously monitored for OVMs. COP will provide a map of sampled locations after completion of the excavation. COP has ranked this location a 20 due to its proximity to a wash, approximately 145' from location.

**NOTE: Remediation of the impacted area may not begin prior to the approval of the required remediation plan.**

EXHIBIT
B

# Hall Environmental Analysis Laboratory, Inc.

**Analytical Report**
Lab Order 1502720
Date Reported:

**CLIENT:** Animas Environmental
**Project:** COP SJ 28-6 #155N
**Lab ID:** 1502720-001

**Client Sample ID:** SC-1
**Collection Date:** 2/17/2015 2:10:00 PM
**Matrix:** MEOH (SOIL)
**Received Date:** 2/18/2015 8:00:00 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 | 2/18/2015 10:22:52 AM | 17795 |
| Motor Oil Range Organics (MRO) | ND | 50 | | mg/Kg | 1 | 2/18/2015 10:22:52 AM | 17795 |
| Surr: DNOP | 99.8 | 63.5-128 | | %REC | 1 | 2/18/2015 10:22:52 AM | 17795 |
| **EPA METHOD 8015D: GASOLINE RANGE** | | | | | | Analyst: **NSB** | |
| Gasoline Range Organics (GRO) | ND | 3.2 | | mg/Kg | 1 | 2/18/2015 10:19:26 AM | R24377 |
| Surr: BFB | 99.3 | 80-120 | | %REC | 1 | 2/18/2015 10:19:26 AM | R24377 |
| **EPA METHOD 8021B: VOLATILES** | | | | | | Analyst: **NSB** | |
| Benzene | ND | 0.032 | | mg/Kg | 1 | 2/18/2015 10:19:26 AM | R24377 |
| Toluene | ND | 0.032 | | mg/Kg | 1 | 2/18/2015 10:19:26 AM | R24377 |
| Ethylbenzene | ND | 0.032 | | mg/Kg | 1 | 2/18/2015 10:19:26 AM | R24377 |
| Xylenes, Total | ND | 0.064 | | mg/Kg | 1 | 2/18/2015 10:19:26 AM | R24377 |
| Surr: 4-Bromofluorobenzene | 100 | 80-120 | | %REC | 1 | 2/18/2015 10:19:26 AM | R24377 |

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
**Client Sample ID:** SC-2
**Project:** COP SJ 28-6 #155N
**Collection Date:** 2/17/2015 12:30:00 PM
**Lab ID:** 1502720-002
**Matrix:** MEOH (SOIL)
**Received Date:** 2/18/2015 8:00:00 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 | 2/18/2015 10:49:56 AM | 17795 |
| Motor Oil Range Organics (MRO) | ND | 50 | | mg/Kg | 1 | 2/18/2015 10:49:56 AM | 17795 |
| Surr: DNOP | 103 | 63.5-128 | | %REC | 1 | 2/18/2015 10:49:56 AM | 17795 |
| **EPA METHOD 8015D: GASOLINE RANGE** | | | | | | Analyst: **NSB** | |
| Gasoline Range Organics (GRO) | ND | 3.8 | | mg/Kg | 1 | 2/18/2015 10:48:11 AM | R24377 |
| Surr: BFB | 94.2 | 80-120 | | %REC | 1 | 2/18/2015 10:48:11 AM | R24377 |
| **EPA METHOD 8021B: VOLATILES** | | | | | | Analyst: **NSB** | |
| Benzene | ND | 0.038 | | mg/Kg | 1 | 2/18/2015 10:48:11 AM | R24377 |
| Toluene | ND | 0.038 | | mg/Kg | 1 | 2/18/2015 10:48:11 AM | R24377 |
| Ethylbenzene | ND | 0.038 | | mg/Kg | 1 | 2/18/2015 10:48:11 AM | R24377 |
| Xylenes, Total | ND | 0.076 | | mg/Kg | 1 | 2/18/2015 10:48:11 AM | R24377 |
| Surr: 4-Bromofluorobenzene | 102 | 80-120 | | %REC | 1 | 2/18/2015 10:48:11 AM | R24377 |

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
**Client Sample ID:** SC-3
**Project:** COP SJ 28-6 #155N
**Collection Date:** 2/17/2015 12:35:00 PM
**Lab ID:** 1502720-003
**Matrix:** MEOH (SOIL)
**Received Date:** 2/18/2015 8:00:00 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 | 2/18/2015 11:16:47 AM | 17795 |
| Motor Oil Range Organics (MRO) | ND | 50 | | mg/Kg | 1 | 2/18/2015 11:16:47 AM | 17795 |
| Surr: DNOP | 105 | 63.5-128 | | %REC | 1 | 2/18/2015 11:16:47 AM | 17795 |
| **EPA METHOD 8015D: GASOLINE RANGE** | | | | | | Analyst: **NSB** | |
| Gasoline Range Organics (GRO) | ND | 4.4 | | mg/Kg | 1 | 2/18/2015 11:16:53 AM | R24377 |
| Surr: BFB | 91.9 | 80-120 | | %REC | 1 | 2/18/2015 11:16:53 AM | R24377 |
| **EPA METHOD 8021B: VOLATILES** | | | | | | Analyst: **NSB** | |
| Benzene | ND | 0.044 | | mg/Kg | 1 | 2/18/2015 11:16:53 AM | R24377 |
| Toluene | ND | 0.044 | | mg/Kg | 1 | 2/18/2015 11:16:53 AM | R24377 |
| Ethylbenzene | ND | 0.044 | | mg/Kg | 1 | 2/18/2015 11:16:53 AM | R24377 |
| Xylenes, Total | ND | 0.088 | | mg/Kg | 1 | 2/18/2015 11:16:53 AM | R24377 |
| Surr: 4-Bromofluorobenzene | 99.5 | 80-120 | | %REC | 1 | 2/18/2015 11:16:53 AM | R24377 |

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

**Analytical Report**
Lab Order **1502720**
Date Reported:

# Hall Environmental Analysis Laboratory, Inc.

**CLIENT:** Animas Environmental
**Client Sample ID:** SC-4
**Project:** COP SJ 28-6 #155N
**Collection Date:** 2/17/2015 2:00:00 PM
**Lab ID:** 1502720-004
**Matrix:** MEOH (SOIL)
**Received Date:** 2/18/2015 8:00:00 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 | 2/18/2015 11:43:46 AM | 17795 |
| Motor Oil Range Organics (MRO) | ND | 50 | | mg/Kg | 1 | 2/18/2015 11:43:46 AM | 17795 |
| Surr: DNOP | 110 | 63.5-128 | | %REC | 1 | 2/18/2015 11:43:46 AM | 17795 |
| **EPA METHOD 8015D: GASOLINE RANGE** | | | | | | Analyst: **NSB** | |
| Gasoline Range Organics (GRO) | ND | 3.1 | | mg/Kg | 1 | 2/18/2015 11:45:37 AM | R24377 |
| Surr: BFB | 93.0 | 80-120 | | %REC | 1 | 2/18/2015 11:45:37 AM | R24377 |
| **EPA METHOD 8021B: VOLATILES** | | | | | | Analyst: **NSB** | |
| Benzene | ND | 0.031 | | mg/Kg | 1 | 2/18/2015 11:45:37 AM | R24377 |
| Toluene | ND | 0.031 | | mg/Kg | 1 | 2/18/2015 11:45:37 AM | R24377 |
| Ethylbenzene | ND | 0.031 | | mg/Kg | 1 | 2/18/2015 11:45:37 AM | R24377 |
| Xylenes, Total | ND | 0.062 | | mg/Kg | 1 | 2/18/2015 11:45:37 AM | R24377 |
| Surr: 4-Bromofluorobenzene | 100 | 80-120 | | %REC | 1 | 2/18/2015 11:45:37 AM | R24377 |

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
**Client Sample ID:** SC-5
**Project:** COP SJ 28-6 #155N
**Collection Date:** 2/17/2015 12:45:00 PM
**Lab ID:** 1502720-005 **Matrix:** MEOH (SOIL) **Received Date:** 2/18/2015 8:00:00 AM

| Analyses | Result | RL | Qual | Units | DF | Date Analyzed | Batch |
|---|---|---|---|---|---|---|---|
| **EPA METHOD 8015D: DIESEL RANGE ORGANICS** | | | | | | Analyst: **JME** | |
| Diesel Range Organics (DRO) | 610 | 10 | | mg/Kg | 1 | 2/18/2015 12:11:05 PM | 17795 |
| Motor Oil Range Organics (MRO) | ND | 50 | | mg/Kg | 1 | 2/18/2015 12:11:05 PM | 17795 |
| Surr: DNOP | 110 | 63.5-128 | | %REC | 1 | 2/18/2015 12:11:05 PM | 17795 |
| **EPA METHOD 8015D: GASOLINE RANGE** | | | | | | Analyst: **NSB** | |
| Gasoline Range Organics (GRO) | 3800 | 390 | | mg/Kg | 100 | 2/18/2015 12:14:25 PM | R24377 |
| Surr: BFB | 163 | 80-120 | S | %REC | 100 | 2/18/2015 12:14:25 PM | R24377 |
| **EPA METHOD 8021B: VOLATILES** | | | | | | Analyst: **NSB** | |
| Benzene | 7.6 | 0.39 | | mg/Kg | 10 | 2/18/2015 9:50:38 AM | R24377 |
| Toluene | 130 | 3.9 | | mg/Kg | 100 | 2/18/2015 12:14:25 PM | R24377 |
| Ethylbenzene | 27 | 0.39 | | mg/Kg | 10 | 2/18/2015 9:50:38 AM | R24377 |
| Xylenes, Total | 270 | 7.8 | | mg/Kg | 100 | 2/18/2015 12:14:25 PM | R24377 |
| Surr: 4-Bromofluorobenzene | 213 | 80-120 | S | %REC | 10 | 2/18/2015 9:50:38 AM | R24377 |

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

EXHIBIT

C

San Juan 28-6 155N

Passive Venting System Proposal

1.0 Introduction

COP has prepared this workplan for the remediation of petroleum hydrocarbon contaminated sandstone associated with the release on the San Juan 28-6 155N located in Rio Arriba County, New Mexico. Hydrocarbon contaminated sandstone was encountered during the excavation of hydrocarbon contaminated soils on February 16, 2015.

COP excavated approximately 3000 cubic yards of contaminated soils. However, sandstone (19' bgs) shows contamination levels exceeding NMOCD guidelines. The source for contamination migration has been removed during excavation; and only a small portion of hydrocarbons are tightly locked within the sandstone formation. Due to the depth of the sandstone and levels of hydrocarbons, a passive remediation approach will be used to address remediation of subsurface sandstone.

2.0 Site Location and Environmental Ranking

The San Juan 28-6 155N is located on BLM within, Section 28, T28N, R06W, Rio Arriba County, New Mexico. The release latitude and longitude were recorded as N36.63291, W107.48120, respectively. An aerial site map illustrating the general site layout and release location is presented as Figure 1.

The San Juan 28-6 155N is located on Bureau of Land Management (BLM) land. BLM adheres to action levels for releases and spills as established by the New Mexico Oil Conservation Division (NMOCD).

In accordance with the New Mexico Oil Conservation Division (NMOCD) *Guidelines for Remediation of Leaks, Spills, and Releases* (August 1993), the location was given a ranking score of 20 based on the following factors:

- **Depth to Ground water:** This location is >100 ft to ground water. (0 points)
- **Wellhead Protection Area:** The release location is not within a known wellhead protection area. (0 points)
- **Distance to Surface Water Body:** A small unnamed wash is located approximately 130 feet to the North. (20 points)

NMOCD remedial action levels for soils for releases ranked 20 + are as follows: 10 mg/kg benzene, 50 mg/kg total BTEX, and 100 mg/kg total petroleum hydrocarbons.

3.0 Contaminated Soil Excavation – February 2015

During the week of February 9, 2015 COP contractors excavated approximately 3000 cubic yards of petroleum hydrocarbon impacted soils at the location. At 19 feet bgs, all four walls of the excavation were field cleared, but the base of the excavation (at sandstone) exceeded NMOCD action levels.

### 3.1 Field Screening Results

**AES conducted an excavation clearance on February 17, 2015, they collected five samples; one from each wall (SC-1 through SC-4) and one from the sandstone base (SC-5). Soil samples were field screened for volatile organic compounds (VOCs) and total petroleum hydrocarbons (TPH). Field screening procedures were as follows:**

- **Volatile Organic Compounds (VOCs):** A portion of each sample was utilized for field screening of VOC vapors 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.
- **Total Petroleum Hydrocarbons (TPH):** Field TPH samples were analyzed per U.S. Environmental Protection Agency's (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 conduction soil analyses. Field analytical protocol followed AES's *Standard Operating Procedure: Field Analysis Total Petroleum Hydrocarbons per EPA Method 418.1.*

**Field screening readings for VOCs (via OVM) ranged from 2.5 ppm in SC-4 up to 2536 ppm in SC-5. Field TPH concentrations ranged from <20.0 ppm in SC-1 through SC-4 up to >2500 ppm in SC-5. Field screening results are included in Table 1.**

**Table 1**

| *Sample ID* | *Date Sampled* | *Sample Location* | *VOCs (ppm)* | *Field TPH(ppm)* |
|---|---|---|---|---|
| *SC-1* | 2/17/2015 | North Wall | 74.2 | <20.0 |
| *SC-2* | 2/17/2015 | South Wall | 48.0 | <20.0 |
| *SC-3* | 2/17/2015 | East Wall | 20.0 | <20.0 |
| *SC-4* | 2/17/2015 | West Wall | 2.5 | <20.0 |
| *SC-5* | 2/17/2015 | Base | 2536 | >2500 |

### 3.2 Laboratory Analytical Results

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

- BTEX per U.S. Environmental Protection Agency (USEPA) Method 8021B;
- TPH for gasoline range organics (GRO) and diesel range organics (DRO) per USEPA Method 8015B

**Laboratory analytical results for SC-1 through SC-4 reported BTEX and TPH concentrations below NMOCD action levels. Analytical for SC-5 reported concentrations of BTEX and TPH concentrations above NMOCD action levels (see Table 2).**

Table 2

| *Sample ID* | *Date Sampled* | *Benzene (mg/kg)* | *BTEX (mg/kg)* | *TPH – GRO (mg/kg)* | *TPH – DRO (mg/kg)* | *Total TPH* |
|---|---|---|---|---|---|---|
| *SC-1* | 2/17/2015 | ND | ND | ND | ND | ND |
| *SC-2* | 2/17/2015 | ND | ND | ND | ND | ND |
| *SC-3* | 2/17/2015 | ND | ND | ND | ND | ND |
| *SC-4* | 2/17/2015 | ND | ND | ND | ND | ND |
| *SC-5* | 2/17/2015 | 7.6 | 434.6 | 3800 | 610 | 4410 |

## 4.0 Proposed Sandstone Venting System

Based on safety concerns, site conditions, and elevated concentrations of hydrocarbons on sandstone at the base of excavation, COP proposes the use of a sandstone venting system. This vent system is a viable technology for remediation of hydrocarbons in tightly locked sandstone. This system consists of vent lines laid on top of the sandstone, piped to a small turbine above ground. The system introduces an airflow to an otherwise anaerobic environment; enhancing the evaporation of non-aqueous phase liquids, volatilization of contaminants, and desorption of contaminants from the surfaces of soil particles. Before installation of the system COP will spray sandstone base with Quantum Growth to expedite the removal of hydrocarbons.

To implement the use of a vent system as a remediation approach at this site, COP proposes to install six – 65 ft. 4 inch perforated PVC pipes throughout the base of the excavation. Three of these pipes will be connected to one solar powered vent, and the other three to another solar powered vent. The turbine vents are powered by a solar panel on location. The vents will circulate oxygen on the sandstone surface. See attached Figure 2 for reference.

### 4.1 Sandstone Venting System Monitoring and Sampling

On startup, the vent system will be operating with solar power. COP will monitor the air emitted from the turbine for OVMs with a PID meter every 3 months. Achieving the specified remediation goals is anticipated to require operation of the system for approximately 8 months to one year but could extend beyond this time frame. Final closure will be determined by air samples analyzed for BTEX and GRO/DRO (8021B & 8015). Once air samples are below NMOCD action levels, COP will request closure.

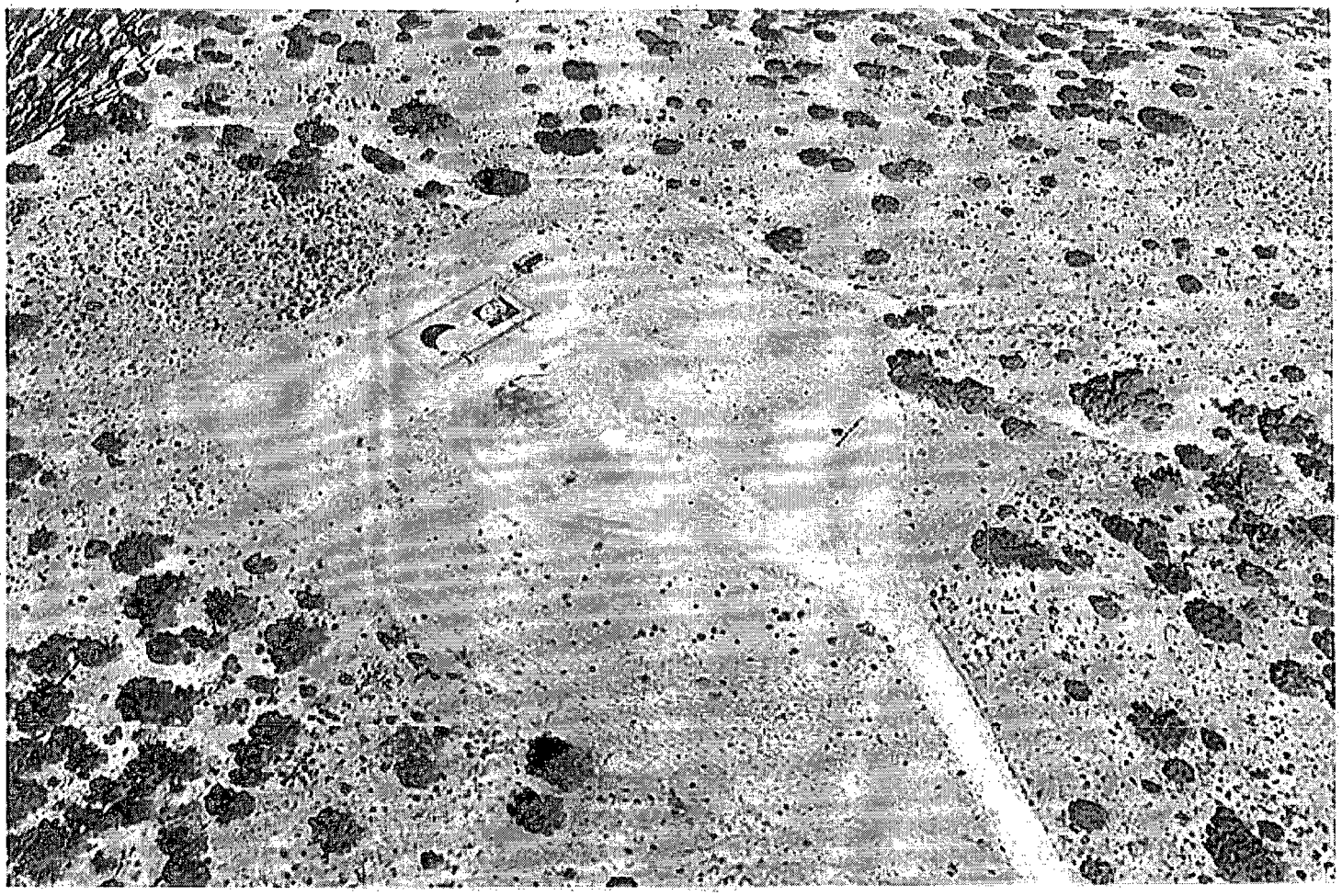
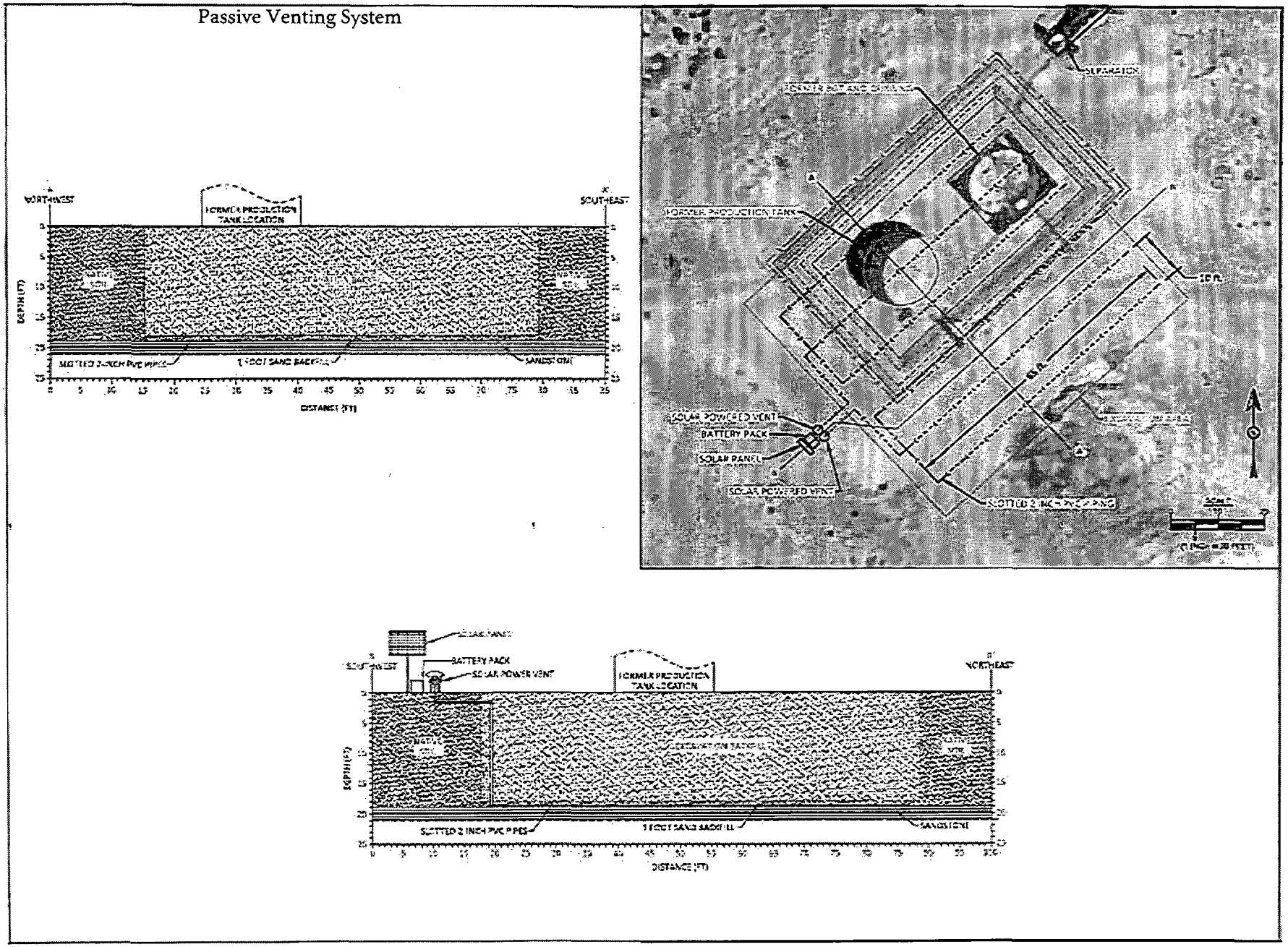


Figure 1

Figure 2


Passive Venting System
NORTHWEST
SOUTHEAST
FORMER PRODUCTION TANK LOCATION
DEPTH (FT)
DISTANCE (FT)
SLOTTED 2-INCH PVC PIPE
SAND STONE
SOLAR POWERED VENT
BATTERY PACK
SOLAR PANEL
SOLAR POWERED VENT
SLOTTED 2 INCH PVC PIPING
SOUTHWEST
NORTHEAST
SLOTTED 2 INCH PVC PIPES
SAND STONE

# Hall Environmental Analysis Laboratory, Inc.

**Analytical Report**
Lab Order 1502720
Date Reported:

**CLIENT:** Animas Environmental
**Project:** COP SJ 28-6 #155N
**Lab ID:** 1502720-001

**Client Sample ID:** SC-1
**Collection Date:** 2/17/2015 2:10:00 PM
**Matrix:** MEOH (SOIL)
**Received Date:** 2/18/2015 8:00:00 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 | 2/18/2015 10:22:52 AM | 17795 |
| Motor Oil Range Organics (MRO) | ND | 50 | | mg/Kg | 1 | 2/18/2015 10:22:52 AM | 17795 |
| Surr: DNOP | 99.8 | 63.5-128 | | %REC | 1 | 2/18/2015 10:22:52 AM | 17795 |
| **EPA METHOD 8015D: GASOLINE RANGE** | | | | | | | Analyst: **NSB** |
| Gasoline Range Organics (GRO) | ND | 3.2 | | mg/Kg | 1 | 2/18/2015 10:19:26 AM | R24377 |
| Surr: BFB | 99.3 | 80-120 | | %REC | 1 | 2/18/2015 10:19:26 AM | R24377 |
| **EPA METHOD 8021B: VOLATILES** | | | | | | | Analyst: **NSB** |
| Benzene | ND | 0.032 | | mg/Kg | 1 | 2/18/2015 10:19:26 AM | R24377 |
| Toluene | ND | 0.032 | | mg/Kg | 1 | 2/18/2015 10:19:26 AM | R24377 |
| Ethylbenzene | ND | 0.032 | | mg/Kg | 1 | 2/18/2015 10:19:26 AM | R24377 |
| Xylenes, Total | ND | 0.064 | | mg/Kg | 1 | 2/18/2015 10:19:26 AM | R24377 |
| Surr: 4-Bromofluorobenzene | 100 | 80-120 | | %REC | 1 | 2/18/2015 10:19:26 AM | R24377 |

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
**Client Sample ID:** SC-2
**Project:** COP SJ 28-6 #155N
**Collection Date:** 2/17/2015 12:30:00 PM
**Lab ID:** 1502720-002
**Matrix:** MEOH (SOIL)
**Received Date:** 2/18/2015 8:00:00 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 | 2/18/2015 10:49:56 AM | 17795 |
| Motor Oil Range Organics (MRO) | ND | 50 | | mg/Kg | 1 | 2/18/2015 10:49:56 AM | 17795 |
| Surr: DNOP | 103 | 63.5-128 | | %REC | 1 | 2/18/2015 10:49:56 AM | 17795 |
| **EPA METHOD 8015D: GASOLINE RANGE** | | | | | | Analyst: **NSB** | |
| Gasoline Range Organics (GRO) | ND | 3.8 | | mg/Kg | 1 | 2/18/2015 10:48:11 AM | R24377 |
| Surr: BFB | 94.2 | 80-120 | | %REC | 1 | 2/18/2015 10:48:11 AM | R24377 |
| **EPA METHOD 8021B: VOLATILES** | | | | | | Analyst: **NSB** | |
| Benzene | ND | 0.038 | | mg/Kg | 1 | 2/18/2015 10:48:11 AM | R24377 |
| Toluene | ND | 0.038 | | mg/Kg | 1 | 2/18/2015 10:48:11 AM | R24377 |
| Ethylbenzene | ND | 0.038 | | mg/Kg | 1 | 2/18/2015 10:48:11 AM | R24377 |
| Xylenes, Total | ND | 0.076 | | mg/Kg | 1 | 2/18/2015 10:48:11 AM | R24377 |
| Surr: 4-Bromofluorobenzene | 102 | 80-120 | | %REC | 1 | 2/18/2015 10:48:11 AM | R24377 |

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

**Analytical Report**
Lab Order 1502720
Date Reported:

# Hall Environmental Analysis Laboratory, Inc.

**CLIENT:** Animas Environmental
**Client Sample ID:** SC-3
**Project:** COP SJ 28-6 #155N
**Collection Date:** 2/17/2015 12:35:00 PM
**Lab ID:** 1502720-003
**Matrix:** MEOH (SOIL)
**Received Date:** 2/18/2015 8:00:00 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 | 2/18/2015 11:16:47 AM | 17795 |
| Motor Oil Range Organics (MRO) | ND | 50 | | mg/Kg | 1 | 2/18/2015 11:16:47 AM | 17795 |
| Surr: DNOP | 105 | 63.5-128 | | %REC | 1 | 2/18/2015 11:16:47 AM | 17795 |
| **EPA METHOD 8015D: GASOLINE RANGE** | | | | | | Analyst: **NSB** | |
| Gasoline Range Organics (GRO) | ND | 4.4 | | mg/Kg | 1 | 2/18/2015 11:16:53 AM | R24377 |
| Surr: BFB | 91.9 | 80-120 | | %REC | 1 | 2/18/2015 11:16:53 AM | R24377 |
| **EPA METHOD 8021B: VOLATILES** | | | | | | Analyst: **NSB** | |
| Benzene | ND | 0.044 | | mg/Kg | 1 | 2/18/2015 11:16:53 AM | R24377 |
| Toluene | ND | 0.044 | | mg/Kg | 1 | 2/18/2015 11:16:53 AM | R24377 |
| Ethylbenzene | ND | 0.044 | | mg/Kg | 1 | 2/18/2015 11:16:53 AM | R24377 |
| Xylenes, Total | ND | 0.088 | | mg/Kg | 1 | 2/18/2015 11:16:53 AM | R24377 |
| Surr: 4-Bromofluorobenzene | 99.5 | 80-120 | | %REC | 1 | 2/18/2015 11:16:53 AM | R24377 |

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 RSD limit
- 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
**Client Sample ID:** SC-4
**Project:** COP SJ 28-6 #155N
**Collection Date:** 2/17/2015 2:00:00 PM
**Lab ID:** 1502720-004
**Matrix:** MEOH (SOIL)
**Received Date:** 2/18/2015 8:00:00 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 | 2/18/2015 11:43:46 AM | 17795 |
| Motor Oil Range Organics (MRO) | ND | 50 | | mg/Kg | 1 | 2/18/2015 11:43:46 AM | 17795 |
| Surr: DNOP | 110 | 63.5-128 | | %REC | 1 | 2/18/2015 11:43:46 AM | 17795 |
| **EPA METHOD 8015D: GASOLINE RANGE** | | | | | | Analyst: **NSB** | |
| Gasoline Range Organics (GRO) | ND | 3.1 | | mg/Kg | 1 | 2/18/2015 11:45:37 AM | R24377 |
| Surr: BFB | 93.0 | 80-120 | | %REC | 1 | 2/18/2015 11:45:37 AM | R24377 |
| **EPA METHOD 8021B: VOLATILES** | | | | | | Analyst: **NSB** | |
| Benzene | ND | 0.031 | | mg/Kg | 1 | 2/18/2015 11:45:37 AM | R24377 |
| Toluene | ND | 0.031 | | mg/Kg | 1 | 2/18/2015 11:45:37 AM | R24377 |
| Ethylbenzene | ND | 0.031 | | mg/Kg | 1 | 2/18/2015 11:45:37 AM | R24377 |
| Xylenes, Total | ND | 0.062 | | mg/Kg | 1 | 2/18/2015 11:45:37 AM | R24377 |
| Surr: 4-Bromofluorobenzene | 100 | 80-120 | | %REC | 1 | 2/18/2015 11:45:37 AM | R24377 |

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 SJ 28-6 #155N
**Lab ID:** 1502720-005 **Matrix:** MEOH (SOIL)

**Client Sample ID:** SC-5
**Collection Date:** 2/17/2015 12:45:00 PM
**Received Date:** 2/18/2015 8:00:00 AM

| Analyses | Result | RL | Qual | Units | DF | Date Analyzed | Batch |
|---|---|---|---|---|---|---|---|
| **EPA METHOD 8015D: DIESEL RANGE ORGANICS** | | | | | | Analyst: **JME** | |
| Diesel Range Organics (DRO) | 610 | 10 | | mg/Kg | 1 | 2/18/2015 12:11:05 PM | 17795 |
| Motor Oil Range Organics (MRO) | ND | 50 | | mg/Kg | 1 | 2/18/2015 12:11:05 PM | 17795 |
| Surr: DNOP | 110 | 63.5-128 | | %REC | 1 | 2/18/2015 12:11:05 PM | 17795 |
| **EPA METHOD 8015D: GASOLINE RANGE** | | | | | | Analyst: **NSB** | |
| Gasoline Range Organics (GRO) | 3800 | 390 | | mg/Kg | 100 | 2/18/2015 12:14:25 PM | R24377 |
| Surr: BFB | 163 | 80-120 | S | %REC | 100 | 2/18/2015 12:14:25 PM | R24377 |
| **EPA METHOD 8021B: VOLATILES** | | | | | | Analyst: **NSB** | |
| Benzene | 7.6 | 0.39 | | mg/Kg | 10 | 2/18/2015 9:50:38 AM | R24377 |
| Toluene | 130 | 3.9 | | mg/Kg | 100 | 2/18/2015 12:14:25 PM | R24377 |
| Ethylbenzene | 27 | 0.39 | | mg/Kg | 10 | 2/18/2015 9:50:38 AM | R24377 |
| Xylenes, Total | 270 | 7.8 | | mg/Kg | 100 | 2/18/2015 12:14:25 PM | R24377 |
| Surr: 4-Bromofluorobenzene | 213 | 80-120 | S | %REC | 10 | 2/18/2015 9:50:38 AM | R24377 |

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

## Smith, Cory, EMNRD

**From:** Cardoza, Clara M <Clara.M.Cardoza@conocophillips.com>
**Sent:** Friday, May 08, 2015 3:51 PM
**To:** Ketcham, Shari (sketcham@blm.gov); Smith, Cory, EMNRD
**Cc:** Mark Kelly (mkelly@blm.gov)
**Subject:** SJ 28-6 155N API No 3003927601 Update
**Attachments:** San Juan 28-6 155N - Letter to BLM NMOCD (05-08-2015) (2).pdf

**Please find attached an update of the referenced remediation.**

Thank you,

*Clara M Cardoza*
Environmental Supervisor
San Juan Business Unit
505/326/9710 (O)
505/215/7336 (C)

ConocoPhillips

Clara Cardoza
Environmental Supervisor - SJBU
3401 East 30th Street
Farmington, New Mexico 87402
505-326-9710
Email: Clara.M.Cardoza@conocophillips.com

May 8, 2015

**By Email: sketcham@blm.gov**

Ms. Shari Ketcham
Natural Resource Specialist, Spills Biologist
Bureau of Land Management
6251 College Blvd, Suite A
Farmington, New Mexico 87402

**By Email: cory.smith@state.nm.us**

Mr. Cory Smith
Environmental Specialist
Oil Conservation Division
Energy, Minerals, & Natural Resources
1000 Rio Brazos
Aztec, New Mexico 87410

Re: San Juan 28-6 155N, API No. 3003927601, UL-E
Section 28, Township 28 North, Range 6 West, N.M.P.M.
Rio Arriba County, New Mexico

Dear Ms. Ketcham and Mr. Smith:

Please refer to the following:

(i) ConocoPhillips' letter dated April 6, 2015 to BLM and NMOCD concerning additional sampling at the excavation site of the San Juan 28-6 155N well for the purpose of determining appropriate remedial steps for the site; and

(ii) BLM's letter dated April 14, 2015 to ConocoPhillips regarding additional sampling at the excavation site of the 155N well.

The excavation site for the 155N well has been open since February 11, 2015. On April 30, 2015, ConocoPhillips sampled the sandstone at the bottom of the 155N excavation site. The sandstone was sampled by Animas Environmental Services (AES) with the following results:

| Sample ID | Date Sampled | Benzene (mg/kg) | BTEX (mg/kg) | TPH-GRO (mg/kg) | TPH-DRO (mg/kg) | Total TPH |
|---|---|---|---|---|---|---|
| SC-5 | 4/30/2015 | ND | ND | ND | 20 | 20 |

These test results confirm contamination levels for the sandstone sampled at the base of the 155N excavation site are well below NMOCD remedial action levels for releases ranked a 20 of >100 TPH, 10 mg/kg benzene and 50 mg/kg total BTEX. Accordingly, ConocoPhillips plans to backfill the 155N excavation with certified weed free material from Aztec Machine and complete surface grading and other final remediation requirements at the site. This work is expected to commence on or about May 18, 2015.

Should you have any questions, please don't hesitate to contact me at (505) 326-9710 or at Clara.M.Cardoza@conocophillips.com with any questions.

Sincerely,

Clara M. Cardoza
Environmental Supervisor - SJBU

cc: **By Email: mkelly@blm.gov**

Mr. Mark Kelly
Branch Chief, Environmental Protection
Bureau of Land Management
6251 College Blvd, Suite A
Farmington, New Mexico 87402

## Smith, Cory, EMNRD

**From:** Ketcham, Shari <sketcham@blm.gov>
**Sent:** Tuesday, April 07, 2015 1:41 PM
**To:** Cardoza, Clara M
**Cc:** Smith, Cory, EMNRD
**Subject:** Re: SJ 28-6 155N API No 3003927601

Please submit this document as a hard copy through mail or electronic commerce to make this an official document for consideration.

Shari Ketcham
Natural Resource Specialist, Spills Biologist
BLM Farmington Field Office
6251 College Blvd Suite A
Farmington, NM 87402
Office: (505) 564-7713
Fax: (505) 564-7607

On Mon, Apr 6, 2015 at 3:54 PM, Cardoza, Clara M <Clara.M.Cardoza@conocophillips.com> wrote:

> **Please see attached.**
>
> **Thank you,**
>
> *Clara M Cardoza*
>
> Environmental Supervisor
>
> San Juan Business Unit
>
> 505/326/9710 (O)
>
> 505/215/7336 (C)
>
> Please consider the environment before printing this email.

## Smith, Cory, EMNRD

**From:** Ketcham, Shari <sketcham@blm.gov>
**Sent:** Monday, May 11, 2015 6:57 AM
**To:** Cardoza, Clara M
**Cc:** Smith, Cory, EMNRD; Mark Kelly (mkelly@blm.gov)
**Subject:** Re: SJ 28-6 155N API No 3003927601 Update

Please submit the soil sample results from the laboratory.

Shari Ketcham
Natural Resource Specialist, Spills Biologist
BLM Farmington Field Office
6251 College Blvd Suite A
Farmington, NM 87402
Office: (505) 564-7713
Fax: (505) 564-7607

On Fri, May 8, 2015 at 3:50 PM, Cardoza, Clara M <Clara.M.Cardoza@conocophillips.com> wrote:

> **Please find attached an update of the referenced remediation.**
>
> **Thank you,**
>
> *Clara M Cardoza*
>
> Environmental Supervisor
>
> San Juan Business Unit
>
> 505/326/9710 (O)
>
> 505/215/7336 (C)
>
> Please consider the environment before printing this email.

## Smith, Cory, EMNRD

**From:** Cardoza, Clara M <Clara.M.Cardoza@conocophillips.com>
**Sent:** Monday, May 11, 2015 8:15 AM
**To:** Ketcham, Shari
**Cc:** Smith, Cory, EMNRD; Mark Kelly (mkelly@blm.gov)
**Subject:** RE: Re: SJ 28-6 155N API No 3003927601 Update
**Attachments:** CoP San Juan 28-6 155N rush data.pdf

My apologize for not including this in the submission. Attached please find the lab results.

Please let me know if you have any questions.

Thank you,
Clara

**From:** Ketcham, Shari [mailto:sketcham@blm.gov]
**Sent:** Monday, May 11, 2015 6:57 AM
**To:** Cardoza, Clara M
**Cc:** cory.smith@state.nm.us; Mark Kelly (mkelly@blm.gov)
**Subject:** [EXTERNAL]Re: SJ 28-6 155N API No 3003927601 Update

Please submit the soil sample results from the laboratory.

Shari Ketcham
Natural Resource Specialist, Spills Biologist
BLM Farmington Field Office
6251 College Blvd Suite A
Farmington, NM 87402
Office: (505) 564-7713
Fax: (505) 564-7607

On Fri, May 8, 2015 at 3:50 PM, Cardoza, Clara M <Clara.M.Cardoza@conocophillips.com> wrote:

Please find attached an update of the referenced remediation.

Thank you,

*Clara M Cardoza*

Environmental Supervisor

San Juan Business Unit

505/326/9710 (O)

505/215/7336 (C)


Please consider the environment before printing this email.

Attachment
CoP San Juan 28-6 155N rush data.pdf

**Analytical Report**
Lab Order **1505007**
Date Reported:

# Hall Environmental Analysis Laboratory, Inc.

**CLIENT:** Animas Environmental
**Client Sample ID:** SC-5
**Project:** CoP San Juan 28-6 # 155N
**Collection Date:** 4/30/2015 9:20:00 AM
**Lab ID:** 1505007-001
**Matrix:** MEOH (SOIL)
**Received Date:** 5/1/2015 5:50:00 AM

| Analyses | Result | RL | Qual | Units | DF | Date Analyzed | Batch |
|---|---|---|---|---|---|---|---|
| **EPA METHOD 8015D: DIESEL RANGE ORGANICS** | | | | | | Analyst: **KJH** | |
| Diesel Range Organics (DRO) | 20 | 9.9 | | mg/Kg | 1 | 5/1/2015 10:09:37 AM | 19002 |
| Motor Oil Range Organics (MRO) | ND | 49 | | mg/Kg | 1 | 5/1/2015 10:09:37 AM | 19002 |
| Surr: DNOP | 85.3 | 57.9-140 | | %REC | 1 | 5/1/2015 10:09:37 AM | 19002 |
| **EPA METHOD 8015D: GASOLINE RANGE** | | | | | | Analyst: **NSB** | |
| Gasoline Range Organics (GRO) | ND | 5.0 | | mg/Kg | 1 | 5/1/2015 10:14:22 AM | R25904 |
| Surr: BFB | 95.0 | 80-120 | | %REC | 1 | 5/1/2015 10:14:22 AM | R25904 |
| **EPA METHOD 8021B: VOLATILES** | | | | | | Analyst: **NSB** | |
| Benzene | ND | 0.050 | | mg/Kg | 1 | 5/1/2015 10:14:22 AM | R25904 |
| Toluene | ND | 0.050 | | mg/Kg | 1 | 5/1/2015 10:14:22 AM | R25904 |
| Ethylbenzene | ND | 0.050 | | mg/Kg | 1 | 5/1/2015 10:14:22 AM | R25904 |
| Xylenes, Total | ND | 0.10 | | mg/Kg | 1 | 5/1/2015 10:14:22 AM | R25904 |
| Surr: 4-Bromofluorobenzene | 105 | 80-120 | | %REC | 1 | 5/1/2015 10:14:22 AM | R25904 |

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 | | |

## Smith, Cory, EMNRD

**From:** Ketcham, Shari <sketcham@blm.gov>
**Sent:** Monday, May 11, 2015 8:36 AM
**To:** Cardoza, Clara M
**Cc:** Smith, Cory, EMNRD; Mark Kelly (mkelly@blm.gov)
**Subject:** Re: Re: SJ 28-6 155N API No 3003927601 Update

Was the extent of contamination determined as per the letter that BLM mailed to ConocoPhillips on April 14, 2015? If not, please determined the extent of contamination as originally requested by BLM.

Shari Ketcham
Natural Resource Specialist, Spills Biologist
BLM Farmington Field Office
6251 College Blvd Suite A
Farmington, NM 87402
Office: (505) 564-7713
Fax: (505) 564-7607

On Mon, May 11, 2015 at 8:14 AM, Cardoza, Clara M <Clara.M.Cardoza@conocophillips.com> wrote:

My apologize for not including this in the submission. Attached please find the lab results.

Please let me know if you have any questions.

Thank you,

Clara

**From:** Ketcham, Shari [mailto:sketcham@blm.gov]
**Sent:** Monday, May 11, 2015 6:57 AM
**To:** Cardoza, Clara M
**Cc:** cory.smith@state.nm.us; Mark Kelly (mkelly@blm.gov)
**Subject:** [EXTERNAL]Re: SJ 28-6 155N API No 3003927601 Update

Please submit the soil sample results from the laboratory.

Shari Ketcham

Natural Resource Specialist, Spills Biologist

BLM Farmington Field Office

6251 College Blvd Suite A

Farmington, NM 87402

Office: (505) 564-7713

Fax: (505) 564-7607

On Fri, May 8, 2015 at 3:50 PM, Cardoza, Clara M <Clara.M.Cardoza@conocophillips.com> wrote:

**Please find attached an update of the referenced remediation.**

**Thank you,**

*Clara M Cardoza*

Environmental Supervisor

San Juan Business Unit

505/326/9710 (O)

505/215/7336 (C)

## Smith, Cory, EMNRD

**From:** Cardoza, Clara M <Clara.M.Cardoza@conocophillips.com>
**Sent:** Monday, June 08, 2015 7:11 AM
**To:** Ketcham, Shari (sketcham@blm.gov); Smith, Cory, EMNRD
**Cc:** Mark Kelly (mkelly@blm.gov)
**Subject:** San Juan 28-6 155N
**Attachments:** San Juan 28-6 155N - Letter to BLM NMOCD (06-08-2015).pdf

**Please find attached correspondence concerning the ConocoPhillips Company's San Juan 28-6 155N.**

Thank you,

*Clara M Cardoza*
Environmental Supervisor
San Juan Business Unit
505/326/9710 (O)
505/215/7336 (C)

ConocoPhillips

Clara Cardoza
Environmental Supervisor - SJBU
3401 East 30th Street
Farmington, New Mexico 87402
505-326-9710
Email: Clara.M.Cardoza@conocophillips.com

June 8, 2015

**By Email: sketcham@blm.gov**

Ms. Shari Ketcham
Natural Resource Specialist, Spills Biologist
Bureau of Land Management
6251 College Blvd, Suite A
Farmington, New Mexico 87402

**By Email: cory.smith@state.nm.us**

Mr. Cory Smith
Environmental Specialist
Oil Conservation Division
Energy, Minerals, & Natural Resources
1000 Rio Brazos
Aztec, New Mexico 87410

Re: San Juan 28-6 155N, API No. 3003927601, UL-E
Section 28, Township 28 North, Range 6 West, N.M.P.M.
Rio Arriba County, New Mexico

Dear Ms. Ketcham and Mr. Smith:

Please refer to the following:

(i) ConocoPhillips' letter dated April 6, 2015 to BLM and NMOCD concerning additional sampling at the excavation site of the San Juan 28-6 155N well for the purpose of determining appropriate remedial steps for the site;

(ii) BLM's letter dated April 14, 2015 to ConocoPhillips regarding additional sampling at the excavation site of the 155N well;

(iii) ConocoPhillips letter dated May 8, 2015 to BLM and NMOCD regarding results of additional sampling at the excavation site of the 155N well; and

(iv) BLM's email dated May 11, 2015 to ConocoPhillips regarding the extent of sandstone contamination at the excavation site of the 155N well.

The excavation site for the 155N well has been open since February 11, 2015. In our May 8 letter, we confirmed to NMOCD and BLM that sandstone sampled by Animas Environmental

Services (AES) from the bottom of the 155N excavation site had contamination levels well below NMOCD remedial action levels for releases ranked a 20 (less than 100 TPH, 10 mg/kg benzene and 50 mg/kg total BTEX).

In spill situations similar to the 155N well, NMOCD has previously allowed application of Quantum Growth and Potassium Permanganate as remedial measures, and once samples were below remedial action levels, the excavated sites were approved by NMOCD for backfilling and closure. See Exhibit A for specific references to these previously approved closures.

We also believe that based on the amount of soil excavated from the spill site for the 155N (approximately 3,000 cubic yards), the volume of spilled hydrocarbons that actually reached the sandstone layer was insignificant in terms of being a threat to sub-sandstone aquafers and by now has largely dissipated due to the amount of time the excavation has been open – this being borne out by the results of recent testing conducted by AES. To the extent staining remains on the sandstone, applications of either Quantum Growth or Potassium Permanganate should be more than adequate as final remedial measures. Given these circumstances, we strongly reiterate our position that coring into the sandstone of the 155N excavation site would be imprudent due to the obvious risk of creating fractures that could result in migration paths though the otherwise natural barrier. In other words, a requirement to core the sandstone could deliberately create a problem where none demonstrably exists.

We therefore respectfully request permission to close the 155N excavation site, with or without the application of Quantum Growth or Potassium Permanganate per directive of NMOCD or BLM, as discussed above. Again, our request is consistent with long-standing and prudent remedial actions approved by NMOCD for other spills and we see no reason under current circumstances to deviate from that practice.

Should you have any questions, please don't hesitate to contact me at (505) 326-9710 or at Clara.M.Cardoza@conocophillips.com with any questions.

Sincerely,

Clara M. Cardoza
Environmental Supervisor - SJBU

cc: **By Email: mkelly@blm.gov**

Mr. Mark Kelly
Branch Chief, Environmental Protection
Bureau of Land Management
6251 College Blvd, Suite A
Farmington, New Mexico 87402

**Exhibit A**

1. San Juan 29-6 #84 (May 2014; Rank 20) – Quantum Growth was applied, sampled, samples above NMOCD Guidelines, Potassium Permanganate applied, sampled, samples were below, excavation backfilled

2. Largo Federal 1 A (March 2014; Rank 20) – Quantum Growth was applied, sampled, samples below NMOCD Guidelines, excavation backfilled

3. Hare 15 (March 2014; Rank 10) – Quantum Growth was applied, sampled, samples above NMOCD Guidelines, BLM & NMOCD approved backfill with samples above NMOCD Guidelines

4. San Juan 28-6 #38 (December 2013; Rank 10) – Potassium Permanganate was applied, sampled, samples below NMOCD Guidelines, excavation backfilled

5. San Juan 28-6 #170M (August 2013; Rank 10) – Potassium Permanganate was applied, sampled, samples below NMOCD Guidelines, excavation backfilled

## Smith, Cory, EMNRD

**From:** Ketcham, Shari <sketcham@blm.gov>
**Sent:** Wednesday, June 10, 2015 10:50 AM
**To:** Smith, Cory, EMNRD
**Subject:** San Juan 28-6 155N

Good afternoon!

I just wanted to let you know that BLM was not invited or notified of the soil sampling event for the San Juan 28-6 155N that took place on 4/30. NMOCD may have not been invited as well.

I witnessed the San Juan 28-6 #149N soil sampling event on 5/13. FYI...

Shari Ketcham
Natural Resource Specialist, Spills Biologist
BLM Farmington Field Office
6251 College Blvd Suite A
Farmington, NM 87402
Office: (505) 564-7713
Fax: (505) 564-7607

## Smith, Cory, EMNRD

**From:** Smith, Cory, EMNRD
**Sent:** Thursday, June 11, 2015 2:57 PM
**To:** Cardoza, Clara M
**Cc:** Mark Kelly (mkelly@blm.gov); Ketcham, Shari (sketcham@blm.gov); Powell, Brandon, EMNRD
**Subject:** RE: San Juan 28-6 155N

Mrs. Cardoza,

OCD has approved COPC request to backfill and close the excavation at the San Juan 28-6 155N (API# 30-039-27601) following the sampling event on 4/30/15 that has indicated the surface of the sandstone base is below the closure standards for the excavation.

OCD would like to note that recent events and delineation of recent spills has shown evidence that sandstone may not always be a strong confining layer, as once thought.

OCD approval to allow COPC to backfill does not relieve COPC of any additional requirements imposed by other regulatory agencies.

If you have any questions please give me a call.

Cory Smith
Environmental Specialist
Oil Conservation Division
Energy, Minerals, & Natural Resources
1000 Rio Brazos, Aztec, NM 87410
(505)334-6178 ext. 115
cory.smith@state.nm.us

---

**From:** Cardoza, Clara M [mailto:Clara.M.Cardoza@conocophillips.com]
**Sent:** Monday, June 08, 2015 7:11 AM
**To:** Ketcham, Shari (sketcham@blm.gov); Smith, Cory, EMNRD
**Cc:** Mark Kelly (mkelly@blm.gov)
**Subject:** San Juan 28-6 155N

**Please find attached correspondence concerning the ConocoPhillips Company's San Juan 28-6 155N.**

Thank you,

*Clara M Cardoza*
Environmental Supervisor
San Juan Business Unit
505/326/9710 (O)
505/215/7336 (C)

## Smith, Cory, EMNRD

**From:** Cardoza, Clara M <Clara.M.Cardoza@conocophillips.com>
**Sent:** Wednesday, July 29, 2015 8:04 AM
**To:** Ketcham, Shari
**Cc:** Smith, Cory, EMNRD; Mark Kelly; Powell, Brandon, EMNRD
**Subject:** RE: Re: Re: Re: San Juan 28-6 155N

We have not but I tracked it on the USPS website and it appears to be in transit.

Thank you.

**From:** Ketcham, Shari [mailto:sketcham@blm.gov]
**Sent:** Wednesday, July 29, 2015 6:33 AM
**To:** Cardoza, Clara M
**Cc:** cory.smith@state.nm.us; Mark Kelly; EMNRD Powell Brandon
**Subject:** [EXTERNAL]Re: Re: Re: San Juan 28-6 155N

BLM sent that certified mail (#70141820000020128970). Have you received the certified letter?

Shari Ketcham
Natural Resource Specialist, Spills Biologist
BLM Farmington Field Office
6251 College Blvd Suite A
Farmington, NM 87402
Office: (505) 564-7713
Fax: (505) 564-7607

On Tue, Jul 28, 2015 at 2:49 PM, Cardoza, Clara M <Clara.M.Cardoza@conocophillips.com> wrote:

Thank you for the update Shari. I have checked with Lori and she has not received the order. The envelop COPC received from BLM today was empty. We kindly request that you email the order and resend a hard copy.

Thank you,

Clara

**From:** Ketcham, Shari [mailto:sketcham@blm.gov]
**Sent:** Tuesday, July 28, 2015 2:02 PM
**To:** Cardoza, Clara M
**Cc:** cory.smith@state.nm.us; Mark Kelly; EMNRD Powell Brandon
**Subject:** [EXTERNAL]Re: Re: San Juan 28-6 155N

BLM mailed a written order to ConocoPhillips on July 24, 2015. The letter should be in ConocoPhillips office and was sent to the attention of Lori Notor.

Thank you!

Shari Ketcham

Natural Resource Specialist, Spills Biologist

BLM Farmington Field Office

6251 College Blvd Suite A

Farmington, NM 87402

Office: (505) 564-7713

Fax: (505) 564-7607

On Tue, Jul 28, 2015 at 9:45 AM, Cardoza, Clara M <Clara.M.Cardoza@conocophillips.com> wrote:

Good morning, Ms. Ketcham. Do you have any update on my July 20th email below?

Thank you,

Clara

---

**From:** Cardoza, Clara M
**Sent:** Monday, July 20, 2015 2:53 PM
**To:** 'Ketcham, Shari'
**Cc:** cory.smith@state.nm.us; Mark Kelly; EMNRD Powell Brandon
**Subject:** RE: Re: San Juan 28-6 155N

Good afternoon Ms. Ketcham. I wanted to circle back to see if BLM has made a decision regarding ConocoPhillips request to close the excavation at the San Juan 28-6 155N facility? Again, as I mentioned in my previous email, ConocoPhillips is prepared to promptly proceed with the work and then return the 155N well to production. We appreciate the BLM's response as soon as possible.

Thank you,

Clara

**From:** Ketcham, Shari [mailto:sketcham@blm.gov]

**Sent:** Wednesday, June 24, 2015 8:53 AM
**To:** Cardoza, Clara M
**Cc:** cory.smith@state.nm.us; Mark Kelly; EMNRD Powell Brandon
**Subject:** [EXTERNAL]Re: San Juan 28-6 155N

NMOCD does not have primacy on BLM surface. I informed you via email yesterday that we are evaluating this location and will have a reply back to you by mid-July when I am back from vacation.

Shari Ketcham

Natural Resource Specialist, Spills Biologist

BLM Farmington Field Office

6251 College Blvd Suite A

Farmington, NM 87402

Office: (505) 564-7713

Fax: (505) 564-7607

On Wed, Jun 24, 2015 at 8:50 AM, Cardoza, Clara M <Clara.M.Cardoza@conocophillips.com> wrote:

Ms. Ketcham,

We (again) received approval to close the 155N excavation from Mr. Smith at NMOCD nearly two weeks ago per the email below. We are prepared to promptly proceed with the work and then return the 155N well to production. We would therefore appreciate BLM's response as soon as possible.

Thank you,
Clara Cardoza

Sent from my iPhone

From: Smith, Cory, EMNRD [mailto:Cory.Smith@state.nm.us]
Sent: Thursday, June 11, 2015 2:57 PM
To: Cardoza, Clara M

Cc: Mark Kelly (mkelly@blm.gov<mailto:mkelly@blm.gov>); Ketcham, Shari (sketcham@blm.gov<mailto:sketcham@blm.gov>); Powell, Brandon, EMNRD
Subject: [EXTERNAL]RE: San Juan 28-6 155N
Mrs. Cardoza,
OCD has approved COPC request to backfill and close the excavation at the San Juan 28-6 155N (API# 30-039-27601) following the sampling event on 4/30/15 that has indicated the surface of the sandstone base is below the closure standards for the excavation.
OCD would like to note that recent events and delineation of recent spills has shown evidence that sandstone may not always be a strong confining layer, as once thought.
OCD approval to allow COPC to backfill does not relieve COPC of any additional requirements imposed by other regulatory agencies.
If you have any questions please give me a call.
Cory Smith
Environmental Specialist
Oil Conservation Division
Energy, Minerals, & Natural Resources
1000 Rio Brazos, Aztec, NM 87410
(505)334-6178 ext. 115
cory.smith@state.nm.us<mailto:cory.smith@state.nm.us>
From: Cardoza, Clara M [mailto:Clara.M.Cardoza@conocophillips.com]
Sent: Monday, June 08, 2015 7:11 AM
To: Ketcham, Shari (sketcham@blm.gov<mailto:sketcham@blm.gov>); Smith, Cory, EMNRD
Cc: Mark Kelly (mkelly@blm.gov<mailto:mkelly@blm.gov>)
Subject: San Juan 28-6 155N
Please find attached correspondence concerning the ConocoPhillips Company's San Juan 28-6 155N.
Thank you,
Clara M Cardoza
Environmental Supervisor
San Juan Business Unit
505/326/9710 (o)
505/215/7336 (c)
P Please consider the environment before printing this email.