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

State of New Mexico  
Energy Minerals and Natural Resources  
Oil Conservation Division  
1220 South St. Francis Dr.  
Santa Fe, NM 87505

OIL CONS. DIV DIST. 3

MAR 10 2016

Form C-141  
Revised August 8, 2011

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

**Release Notification and Corrective Action**

**OPERATOR**

Initial Report  Final Report *Update Report*

Name of Company <b>Burlington Resources Oil &amp; Gas Company</b>	Contact <b>Crystal Walker</b>
Address <b>3401 East 30<sup>th</sup> St, Farmington, NM</b>	Telephone No. <b>(505) 326-9837</b>
Facility Name: <b>McGrath 4</b>	Facility Type: <b>SWD</b>

Surface Owner <b>Private</b>	Mineral Owner <b>Federal (SF-077922)</b>	API No. <b>30-045-25923</b>
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**LOCATION OF RELEASE**

Unit Letter	Section	Township	Range	Feet from the	North/South Line	Feet from the	East/West Line	County
<b>B</b>	<b>34</b>	<b>30N</b>	<b>12W</b>	<b>800</b>	<b>North</b>	<b>1730</b>	<b>East</b>	<b>San Juan</b>

Latitude 36.77417 Longitude -108.08192

**NATURE OF RELEASE**

Type of Release <b>Produced Fluids</b>	Volume of Release <b>Unknown</b>	Volume Recovered <b>10,000 cu.yds</b>
Source of Release <b>Production Tanks</b>	Date and Hour of Occurrence <b>Unknown</b>	Date and Hour of Discovery
Was Immediate Notice Given? <input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Not Required	If YES, To Whom?	
By Whom?	Date and Hour	
Was a Watercourse Reached? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	If YES, Volume Impacting the Watercourse.	

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

Describe Cause of Problem and Remedial Action Taken.\*  
**P&A Facility Removal Activities**

Describe Area Affected and Cleanup Action Taken.\*  
**The facility removal activities for the subject well resulted in several excavations. Please see the attached report with maps included. Excavation and confirmation sampling occurred. Field and laboratory results for TPH were below the regulatory standards set forth in the NMOCD Guidelines for Remediation of Leaks, Spills and Releases for all samples except Sample # 7. There are currently two excavations (D&F and 4) that remain open due to landowner issues. Once resolved and access is granted to either backfill or slope the excavations 2:1, sampling of #7 will be taken and analyzed to ensure compliance. The results are attached for review.**

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

Signature: <i>Crystal Walker</i>	<u>OIL CONSERVATION DIVISION</u>	
Printed Name: <b>Crystal Walker</b>	Approved by Environmental Specialist: <i>Crystal Walker</i>	
Title: <b>Regulatory Coordinator</b>	Approval Date: <b>9/21/16</b>	Expiration Date:
E-mail Address: <b>crystal.walker@conocophillips.com</b>	Conditions of Approval: <b>See Attached Email</b>	Attached <input checked="" type="checkbox"/>
Date: <b>3/10/16</b> Phone: (505) 326-9837		

\* Attach Additional Sheets If Necessary

#NCS 16265 49360

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## Smith, Cory, EMNRD

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**From:** Smith, Cory, EMNRD  
**Sent:** Wednesday, September 21, 2016 11:30 AM  
**To:** 'Walker, Crystal'  
**Cc:** Powell, Brandon, EMNRD; Fields, Vanessa, EMNRD; Notor, Lori (Lori.R.Notor@conocophillips.com)  
**Subject:** McGrath #4 30-045-25923 C-141 3/10/16

Crystal,

I have completed the review of the interim C-141 report for the McGrath #4 received on March 10, 2016. Upon review the report has been accepted with the following conditions of approval:

- Once access agreements with the landowner has been resolved COPC will return to the McGrath #4 and finish remediation in the area identified as Sample #7 in the excavation Labeled D-F.
- All future confirmation closure samples will be laboratory analyzed for TPH (DRO-GRO-MRO), and BTEX.
- COPC will submit a final C-141 when remediation is complete.

If you have any additional 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)

MAR 10 2016

# **CONFIRMATION SAMPLING REPORT**

**LOCATED AT:  
MCGRATH #4 SWD (HBR) WELL SITE  
SECTION 34, TOWNSHIP 30 NORTH, RANGE 12 WEST  
SAN JUAN COUNTY, NEW MEXICO**

**PREPARED FOR:  
CONOCOPHILLIPS  
MS. CRYSTAL WALKER  
3401 E. 30<sup>TH</sup> STREET  
FARMINGTON, NEW MEXICO 87402**

**PROJECT NUMBER 92115-2540  
JANUARY 2015**

**CONOCOPHILLIPS**  
**CONFIRMATION SAMPLING REPORT**  
**MCGRATH #4 SWD (hBr) WELL SITE**  
**SECTION 34, TOWNSHIP 30 NORTH, RANGE 12 WEST**  
**SAN JUAN COUNTY, NEW MEXICO**

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## INTRODUCTION

Envirotech, Inc. of Farmington, New Mexico, has been contracted by ConocoPhillips to perform confirmation sampling activities at the McGrath #4 SWD (hBr) well site located in Section 34, Township 30 North, Range 12 West, San Juan County, New Mexico; see enclosed *Figure 1, Vicinity Map*. The scope of work included field screening, sample collection, laboratory analysis, documentation, and reporting.

Due to a horizontal distance to surface water being between 200 and 1000 feet from the site, a depth to groundwater being greater than 100 feet, and the well site not being located within a well head protection area, the regulatory standard for this site was determined to be 1000 parts per million (ppm) total petroleum hydrocarbons (TPH) and 100 ppm organic vapors, pursuant to New Mexico Oil Conservation Division's (NMOCD) Guidelines for Remediation of Spills, Leaks, and Releases.

## ACTIVITIES PERFORMED

### December 20, 2013

On December 20, 2013, Envirotech, Inc. personnel arrived on site to perform confirmation sampling activities. Upon arrival, a brief site assessment was conducted and a Job Safety Analysis (JSA) was completed.

Seven (7) excavations were observed: Excavations A – D and Excavations F – H, see enclosed *Figure 2, Site Map – Excavation Overview, Appendix A - Figure 3, Site Map, 12/20/2013, and Appendix B - Figure 4, Site Map, 1/2/2014*.

### Excavation A

One (1) five (5)-point composite soil sample was collected from Excavation A; see enclosed *Appendix A - Figure 3, Site Map* for sample location. The sample was analyzed in the field for TPH using USEPA Method 418.1 and organic vapor using a photoionization detector (PID). The sample returned results below the regulatory standards for TPH and organic vapor; see enclosed *Table 1, Summary of Analytical Results* and *Appendix A, Analytical Results*.

### Excavation B

Six (6) five (5)-point composite soil samples (*West Wall (B1), North Bottom (B2), North Wall (B3), East Wall (B4), South Wall (B5), and South Bottom (B6)*) were collected from Excavation B; see enclosed *Appendix A - Figure 3, Site Map* for sample locations. All six (6) samples were analyzed in the field for TPH using USEPA Method 418.1 and organic vapor using a PID; see enclosed *Table 1, Summary of Analytical Results* and *Appendix A, Analytical Results*. The West Wall, North Bottom, South Wall, and South Bottom samples returned results below the regulatory standards for TPH and organic vapor. The North Wall and East Wall samples

returned results above the regulatory standards for TPH but below the regulatory standard for organic vapor. Envirotech recommended additional excavation of the North Wall and East Wall of Excavation B.

#### Excavation C

One (1) five (5)-point composite soil sample was collected from Excavation C; see enclosed *Appendix A - Figure 3, Site Map* for sample location. The sample was analyzed in the field for TPH using USEPA Method 418.1 and organic vapor using a PID. The sample returned results below the regulatory standards for TPH and organic vapor; see enclosed *Table 1, Summary of Analytical Results* and *Appendix A, Analytical Results*.

#### Excavation F

Five (5) five (5)-point composite soil samples (*North Wall (F1), South Wall (F2), East Wall (F3), West Wall (F4), and Bottom (F5)*) were collected From Excavation F; see enclosed *Appendix A - Figure 3, Site Map* for sample locations. All five (5) samples were analyzed in the field for organic vapor using a PID. The East Wall and West Wall samples returned results below the regulatory standard for organic vapor. Therefore, the East and West Wall samples were then analyzed in the field for TPH using USEPA Method 418.1. Both samples returned results below the regulatory standard for TPH. The North Wall, South Wall, and Bottom samples returned results above the regulatory standard for organic vapor. The analytical results for sampling conducted on Excavation F can be found in the enclosed *Table 1, Summary of Analytical Results* and *Appendix A, Analytical Results*. Envirotech recommended additional excavation of the North Wall, South Wall, and Bottom of Excavation F.

#### Excavation G

One (1) five (5)-point composite soil sample was collected from Excavation G; see enclosed *Appendix A - Figure 3, Site Map* for sample location. The sample was analyzed in the field for TPH using USEPA Method 418.1 and organic vapor using a PID. The sample returned results above the regulatory standard for TPH but below the regulatory standard for organic vapor; see enclosed *Table 1, Summary of Analytical Results* and *Appendix A, Analytical Results*. Envirotech recommended additional excavation of the entire Excavation G.

#### Excavation H

One (1) five (5)-point composite soil sample was collected from Excavation H; see enclosed *Appendix A - Figure 3, Site Map* for sample location. The sample was analyzed in the field for organic vapor using a PID. The sample returned results above the regulatory standard for organic vapor; see enclosed *Table 1, Summary of Analytical Results*. Envirotech recommended additional excavation of the entire Excavation H.

### Berm Piles

Two (2) soil piles from the berms around former equipment had been staged at the above referenced location: *West Berm Pile (WB)* and *East Berm Pile (EB)*. One (1) five (5)-point composite soil sample was collected from each of the two (2) piles; see enclosed *Appendix A - Figure 3, Site Map* for sample locations. Both samples were analyzed in the field for TPH using USEPA Method 418.1 and organic vapor using a PID. The West Berm Pile sample returned results above the regulatory standard for TPH but below the regulatory standard for organic vapor. Therefore, the soil was loaded and transported for disposal off-site. The East Berm Pile sample returned results below the regulatory standards for TPH and organic vapor. The analytical results for sampling conducted on the two (2) berm piles can be found in the enclosed *Table 1, Summary of Analytical Results* and *Appendix A, Analytical Results*. Therefore, the soil from the *East Berm Pile* was set aside to later be used as backfill material.

### January 2, 2014

On January 2, 2014, Envirotech, Inc. personnel arrived at the above referenced well site to perform additional confirmation sampling activities. Upon arrival, a brief site assessment was conducted and a JSA was completed.

### Excavation B

Excavation B had been further excavated along the north and east walls, since December 20, 2013. Two (2) five (5)-point composite soil samples (*North Wall (B3A)* and *East Wall (B4A)*) were collected; see enclosed *Appendix B - Figure 4, Site Map* for sample locations. Both samples were analyzed in the field for TPH using USEPA Method 418.1 and organic vapor using a PID. Both samples returned results below the regulatory standards for TPH and organic vapor; see enclosed *Table 1, Summary of Analytical Results* and *Appendix B, Analytical Results*.

### Excavation D

Four (4) five (5)-point composite soil samples (*SW Corner (D1)*, *Bottom (D2)*, *NE ¼ Wall (D3)*, and *East Wall (D4)*) were collected from Excavation D; see enclosed *Appendix B - Figure 4, Site Map* for sample locations. All four (4) samples were analyzed in the field for organic vapor using a PID. The SW Corner and Bottom samples returned results above the regulatory standards for organic vapor. The NE ¼ Wall and East Wall samples returned results below the regulatory standards for organic vapor. The NE ¼ Wall and East Wall samples were then analyzed in the field for TPH using USEPA Method 418.1. Both samples returned results below the regulatory standards for TPH. The analytical results for sampling conducted on Excavation D can be found in the enclosed *Table 1, Summary of Analytical Results* and *Appendix B, Analytical Results*. Envirotech recommended further excavation of the *SW Corner* and *Bottom* areas then re-sample for closure.

#### Excavation F

Excavation F had been further excavated along the north and south walls, as well as the bottom of the excavation, since December 20, 2013. Three (3) five (5)-point composite soil samples (*North Wall (F1A), South Wall (F2A), and Bottom (F5A)*) were collected; see enclosed **Appendix B - Figure 4, Site Map** for sample locations. All three (3) samples were analyzed in the field for TPH using USEPA Method 418.1 and organic vapor using a PID; see enclosed **Table 1, Summary of Analytical Results** and **Appendix B, Analytical Results**. All three (3) samples returned results above the regulatory standards for TPH. The only sample of the three (3) that returned a result above the regulatory standard for organic vapor was the Bottom sample. Envirotech recommended additional excavation of the North Wall, South Wall, and Bottom of Excavation F.

#### Excavation G

Five (5) five (5)-point composite soil samples (*Bottom (G1), West Wall (G2), North Wall (G3), East Wall (G4), South Wall (G5)*) were collected from Excavation G; see enclosed **Appendix B - Figure 4, Site Map** for sample locations. All five (5) samples were analyzed in the field for TPH using USEPA Method 418.1 and organic vapor using a PID. All five (5) samples returned results below the regulatory standards for TPH and organic vapor; see enclosed **Table 1, Summary of Analytical Results** and **Appendix B, Analytical Results**.

#### Excavation H

Two (2) five (5)-point composite soil samples (*Wall Composite (H1) and Bottom (H2)*) were collected From Excavation H; see enclosed **Appendix B - Figure 4, Site Map** for sample locations. Both samples were analyzed in the field for TPH using USEPA Method 418.1 and organic vapor using a PID. Both samples returned results below the regulatory standards for TPH and organic vapor; see enclosed **Table 1, Summary of Analytical Results** and **Appendix B, Analytical Results**.

#### January 7, 2014

On January 7, 2014, Envirotech, Inc. personnel arrived at the above referenced well site to perform additional confirmation sampling activities. Upon arrival, a brief site assessment was conducted and a JSA was completed.

Envirotech observed that the two (2) former excavations, D and F, had now converged to form one (1) large excavation, now being referred to as Excavation D-F; see enclosed **Appendix C - Figure 5, Site Map**. A total of nine (9) five (5)-point composite soil samples (*Samples 1-9*) were collected from Excavation D-F; see enclosed **Appendix C - Figure 5, Site Map** for sample locations. All nine (9) samples were analyzed in the field for TPH using USEPA Method 418.1 and organic vapor using a PID; see enclosed **Table 1, Summary of Analytical Results** and **Appendix C, Analytical Results**

*Sample 1*, collected from along the south wall of the excavation, returned a result above the regulatory standard for TPH but below the regulatory standard for organic vapor. The sample was placed into a four (4)-ounce glass jar, capped head space free, and transported on ice, under chain of custody, to Envirotech's Analytical Laboratory to be analyzed for TPH using USEPA Method 8015. The sample returned a result below the regulatory standard for TPH.

*Sample 2*, also collected from along the south wall of the excavation, returned a result above the regulatory standard for TPH but below the regulatory standard for organic vapor. Envirotech recommended additional excavation of the southern wall of the excavation.

*Sample 3*, collected from the eastern-most bottom of the excavation, returned a result above the regulatory standard for TPH but below the regulatory standard for organic vapor. Envirotech recommended additional excavation of eastern-most bottom of the excavation.

*Sample 4*, collected from along the north wall of the excavation, returned a result below the regulatory standard for TPH and organic vapor.

*Sample 5*, collected from the bottom of the middle section of the excavation, returned a result above the regulatory standard for TPH and organic vapor. Envirotech recommended additional excavation of the bottom of the middle section of the excavation.

*Sample 6*, collected from the bottom of the northwestern section of the excavation, returned a result above the regulatory standard for TPH and organic vapor. Envirotech recommended additional excavation of the bottom of the northwestern section of the excavation.

*Sample 7*, collected from along the southwestern wall of the excavation, returned a result below the regulatory standard for TPH and organic vapor.

*Sample 8*, collected from the bottom of the southwestern section of the excavation, returned a result above the regulatory standard for TPH and organic vapor. Envirotech recommended additional excavation of the bottom of the southwestern section of the excavation.

*Sample 9*, collected from along the west wall of the excavation, returned a result above the regulatory standard for TPH and organic vapor. Envirotech recommended additional excavation of the west wall of the excavation.

For details on *Samples 1-9*, collected on January 7, 2014, see enclosed **Appendix C, Figure 5, Site Map, 1/7/2014**, for an overall diagram identifying areas of Excavation D-F that were below regulatory standards and areas that were above regulatory standards.

#### **January 10, 2014**

On January 10, 2014, Envirotech, Inc. personnel arrived at the above referenced well site to perform additional confirmation sampling activities. Upon arrival, a brief site assessment was conducted and a JSA was completed.

Envirotech observed that Excavation D-F had been expanded in the directions that Envirotech had recommended. A total of eight (8) five (5)-point composite soil samples (*Samples 1-5* and *Samples 7-9*) were collected from Excavation D-F; see enclosed *Appendix D - Figure 6, Site Map* for sample locations. Two (2) additional grab samples (*Sample 6 and 10*) were also collected; see enclosed *Appendix D - Figure 6, Site Map* for sample locations. All 10 samples were analyzed in the field for organic vapor using a PID. The analytical results for the 10 samples collected on January 10, 2014, from Excavation D-F can be found in the enclosed *Table 1, Summary of Analytical Results* and *Appendix D, Analytical Results*.

*Sample 1*, collected from the bottom of a northwestern section of the excavation, returned a result below the regulatory standard for organic vapor. The sample was then analyzed in the field for TPH using USEPA Method 418.1. The sample returned a result below the regulatory standard for TPH.

*Sample 2*, collected from the bottom of the southwestern section of the excavation, returned a result above the regulatory standard for organic vapor. The sample was then analyzed in the field for TPH using USEPA Method 418.1. The sample returned a result above the regulatory standard for TPH. The sample was then placed into a four (4)-ounce glass jar, capped head space free, and transported on ice, under chain of custody, to Envirotech's Analytical Laboratory to be analyzed for TPH using USEPA Method 8015 and for benzene and total BTEX using USEPA Method 8021. The sample returned a result below regulatory standards for all constituents analyzed.

*Sample 3*, collected from the bottom of a north section of the excavation, returned a result below the regulatory standard for organic vapor. The sample was then analyzed in the field for TPH using USEPA Method 418.1. The sample returned a result below the regulatory standard for TPH.

*Sample 4*, collected from the bottom of the middle section of the excavation, and *Sample 5*, collected from the wall directly south of it, both returned results above the regulatory standard for organic vapor. Envirotech recommended additional excavation of the bottom of the middle section of the excavation and the wall directly south of it.

*Sample 6*, collected from along the north wall of the excavation, returned a result below the regulatory standard for organic vapor. The sample was then analyzed in the field for TPH using USEPA Method 418.1. The sample returned a result below the regulatory standard for TPH.

*Sample 7*, collected from the bottom of the northwestern-most section of the excavation, returned results above the regulatory standard for organic vapor. Envirotech recommended additional excavation of the bottom of the northwestern-most section of the excavation.

*Samples 8 and 9*, collected from along the north wall of the excavation, returned results below the regulatory standard for organic vapor. Both samples were then analyzed in the field for TPH using USEPA Method 418.1. Both samples returned results below the regulatory standard for

TPH.

*Sample 10*, also collected from along the north wall of the excavation, returned a result above the regulatory standard for organic vapor. Envirotech recommended additional excavation of this portion of the north wall of the excavation.

#### January 14, 2014

On January 14, 2014, Envirotech, Inc. personnel arrived at the above referenced well site to perform additional confirmation sampling activities. Upon arrival, a brief site assessment was conducted and a JSA was completed.

Envirotech observed that Excavation D-F had been expanded in the directions that Envirotech had recommended. A total of 10 five (5)-point composite soil samples (*Samples 1-10*) were collected from Excavation D-F; see enclosed *Appendix E - Figure 7, Site Map* for sample locations. *Sample 1* was analyzed in the field for organic vapor using a PID. *Samples 2-10* were analyzed in the field for TPH using USEPA Method 418.1 and organic vapor using a PID. The analytical results for the 10 samples collected on January 14, 2014, from Excavation D-F can be found in the enclosed *Table 1, Summary of Analytical Results* and *Appendix E, Analytical Results*.

*Sample 1*, collected from the bottom of a small middle section of the excavation, returned results above the regulatory standard for organic vapor. The sample was then placed into a four (4)-ounce glass jar, capped head space free, and transported on ice, under chain of custody, to Envirotech's Analytical Laboratory to be analyzed for TPH using USEPA Method 8015 and for benzene and total BTEX using USEPA Method 8021. The sample returned a result above the regulatory standard for TPH but below the regulatory standard for benzene and total BTEX. Envirotech recommended additional excavation of this small middle section of the excavation.

*Sample 2*, collected from the bottom of the middle/south section of the excavation, and *Sample 3*, taken from the bottom of a northwest section of the excavation, returned results above the regulatory standards for TPH and organic vapor. Both samples were then placed into four (4)-ounce glass jars, capped head space free, and transported on ice, under chain of custody, to Envirotech's Analytical Laboratory to be analyzed for TPH using USEPA Method 8015 and for benzene and total BTEX using USEPA Method 8021. Both samples returned results below regulatory standards for all constituents analyzed.

*Samples 4, 5, and 6*, collected from the walls surrounding a northwest section of the excavation, returned results below the regulatory standards for TPH and organic vapor.

*Sample 7*, collected from the bottom of the northwestern-most section of the excavation, returned results above the regulatory standard for TPH and organic vapor. The sample was then placed into a four (4)-ounce glass jar, capped head space free, and transported on ice, under chain of custody, to Envirotech's Analytical Laboratory to be analyzed for TPH using USEPA Method 8015 and for benzene and total BTEX using USEPA Method 8021. The sample returned a result

a PID; see enclosed *Table 1, Summary of Analytical Results* and *Appendix G, Analytical Results*

*Sample 1*, collected from the north wall of the excavation, *Sample 2*, collected from the east wall of the excavation, and *Sample 3*, collected from the west wall of the excavation, returned results below the regulatory standards for TPH and organic vapor.

*Sample 4*, taken from the bottom of the excavation, returned results above the regulatory standards for TPH and organic vapor. Envirotech recommended additional excavation of the bottom of Excavation 1.

### Excavation 2

From Excavation 2, a total of five (5) five (5)-point composite soil samples (*Samples 5-9*) were collected; see enclosed *Appendix G - Figure 9, Site Map* for sample locations. All five (5) samples were analyzed in the field for TPH using USEPA Method 418.1 and organic vapor using a PID; see enclosed *Table 1, Summary of Analytical Results* and *Appendix G, Analytical Results*.

*Sample 5*, collected from the north wall of the excavation, *Sample 6*, collected from the east wall of the excavation, *Sample 7*, collected from the south wall of the excavation, *Sample 8*, collected from the west wall of the excavation, and *Sample 9*, collected from the bottom of the excavation, returned results below the regulatory standards for TPH and organic vapor.

### Excavation 3

From Excavation 3, a total of three (3) five (5)-point composite soil samples (*Samples 10-12*) were collected; see enclosed *Appendix G - Figure 9, Site Map* for sample locations. All three (3) samples were analyzed in the field for TPH using USEPA Method 418.1 and organic vapor using a PID; see enclosed *Table 1, Summary of Analytical Results* and *Appendix G, Analytical Results*.

*Sample 10*, collected from the north and west walls of the excavation, *Sample 11*, collected from the south and east walls of the excavation, and *Sample 12*, collected from the bottom of the excavation, returned results below the regulatory standards for TPH and organic vapor.

### January 24, 2014

On January 24, 2014, Envirotech, Inc. personnel arrived at the above referenced well site to perform additional confirmation sampling activities. Upon arrival, a brief site assessment was conducted and a JSA was completed.

Upon arrival on site, three (3) new excavations, Excavations 4 – 6, were observed; see enclosed *Appendix H - Figure 10, Site Map*. It was also observed that the bottom of Excavation 1 had been extended vertically.

#### Excavation 1

One (1) five (5)-point composite soil sample (*Sample 1*) was collected from the bottom of Excavation 1; see enclosed *Appendix H - Figure 10, Site Map* for sample location. The sample was analyzed in the field for TPH using USEPA Method 418.1 and organic vapor using a PID. *Sample 1* returned a result below the regulatory standards for TPH and organic vapor; see enclosed *Table 1, Summary of Analytical Results* and *Appendix H, Analytical Results*.

#### Excavation 4

A total of five (5) five (5)-point composite soil samples (*Samples 2-6*) were collected from Excavation 4; see enclosed *Appendix H - Figure 10, Site Map* for sample locations. All five (5) samples were analyzed in the field for TPH using USEPA Method 418.1 and organic vapor using a PID. The analytical results for the five (5) samples collected on January 24, 2014, from Excavation 4 can be found in the enclosed *Table 1, Summary of Analytical Results* and *Appendix H, Analytical Results*.

*Sample 2*, collected from the north wall of the excavation, *Sample 3*, collected from the east wall of the excavation, *Sample 4*, collected from the south wall of the excavation, and *Sample 5*, collected from the west wall of the excavation, returned results below the regulatory standards for TPH and organic vapor.

*Sample 6*, collected from the bottom of the excavation, returned a result above the regulatory standards for TPH and organic vapor. The sample was then placed into a four (4)-ounce glass jar, capped head space free, and transported on ice, under chain of custody, to Envirotech's Analytical Laboratory to be analyzed for TPH using USEPA Method 8015 and for benzene and total BTEX using USEPA Method 8021. The sample returned a result above the regulatory standard for TPH but below the regulatory standard for benzene and total BTEX. Envirotech recommended additional excavation of the bottom of Excavation 4.

#### Excavation 5

One (1) five (5)-point composite soil sample (*Sample 7*) was collected from the bottom of the Excavation 5; see enclosed *Appendix H - Figure 10, Site Map* for sample locations. The sample was analyzed in the field for TPH using USEPA Method 418.1 and organic vapor using a PID. The sample returned a result below the regulatory standards for TPH and organic vapor; see enclosed *Table 1, Summary of Analytical Results* and *Appendix H, Analytical Results*.

#### Excavation 6

One (1) five (5)-point composite soil sample (*Sample 8*) was collected from the east wall of Excavation 6; see enclosed *Appendix H - Figure 10, Site Map* for sample location. The sample

was analyzed in the field for TPH using USEPA Method 418.1 and organic vapor using a PID. The sample returned a result below the regulatory standards for TPH and organic vapor; see enclosed *Table 1, Summary of Analytical Results* and *Appendix H, Analytical Results*.

#### January 28, 2014

On January 28, 2014, Envirotech, Inc. personnel arrived at the above referenced well site to perform additional confirmation sampling activities. Upon arrival, a brief site assessment was conducted and a JSA was completed.

#### Excavation 4

Upon arrival on site, it was also observed that the bottom of Excavation 4 had been extended vertically to a total depth of approximately 10 feet BGS. One (1) five (5)-point composite soil sample (*Sample 1*) was collected from the bottom of Excavation 4; see enclosed *Appendix I - Figure 11, Site Map* for sample location. The sample was analyzed in the field for TPH using USEPA Method 418.1 and organic vapor using a PID. The sample returned results below the regulatory standards for TPH and organic vapor; see enclosed *Table 1, Summary of Analytical Results* and *Appendix I, Analytical Results*.

#### SUMMARY AND CONCLUSIONS

Envirotech, Inc. performed confirmation sampling activities at the McGrath #4 SWD (hBr) well site located in Section 34, Township 30 North, Range 12 West, San Juan County, New Mexico.

Analytical results from sampling conducted on January 14, 2014, confirm that one (1) area, the bottom of the northwestern-most section of the Excavation D-F (*Sample 7*), on the McGrath #4 SWD (hBr) well site remains above the regulatory standards for closure; see enclosed *Appendix E - Figure 7, Site Map* and *Appendix F - Figure 8, Site Map* for location.

For a complete list of all samples that have met closure standards, see enclosed *Table 2, Summary of Analytical Results, Closure Samples*.

Refer to *Figure 2, Site Map – Excavation Overview* for an aerial view of the McGrath #4 SWD well site which includes all of the excavations that were sampled between December 20, 2013 and January 28, 2014. The drawing is not to scale. Enclosed in the map are also approximate final dimensions for the excavations.

Based on the analytical results, Envirotech, Inc. recommends re-sampling the area of *Sample 7* (collected 1-14-14) for closure. All other areas within the McGrath #4 SWD (hBr) well site are within regulatory standards. Upon analytical confirmation of the *Sample 7* area returning results below the regulatory standards, Envirotech recommends that *No Further Action* be performed on this site, due to this incident.

**STATEMENT OF LIMITATIONS**

Envirotech, Inc. has completed confirmation sampling activities at the McGrath #4 SWD (hBr) well site. The work and services provided by Envirotech, Inc. were in accordance with the NMOCD and USEPA regulatory standards. All observations and conclusions provided here are based on the information and current site conditions found at the site of the incident.

We appreciate the opportunity to be of service. If you have any questions or require additional information, please contact our office at (505) 632-0615.

Respectfully submitted,  
**ENVIROTECH, INC.**

Reviewed by:

---

Tiffany McIntosh  
Staff Scientist  
[tmcintosh@envirotech-inc.com](mailto:tmcintosh@envirotech-inc.com)

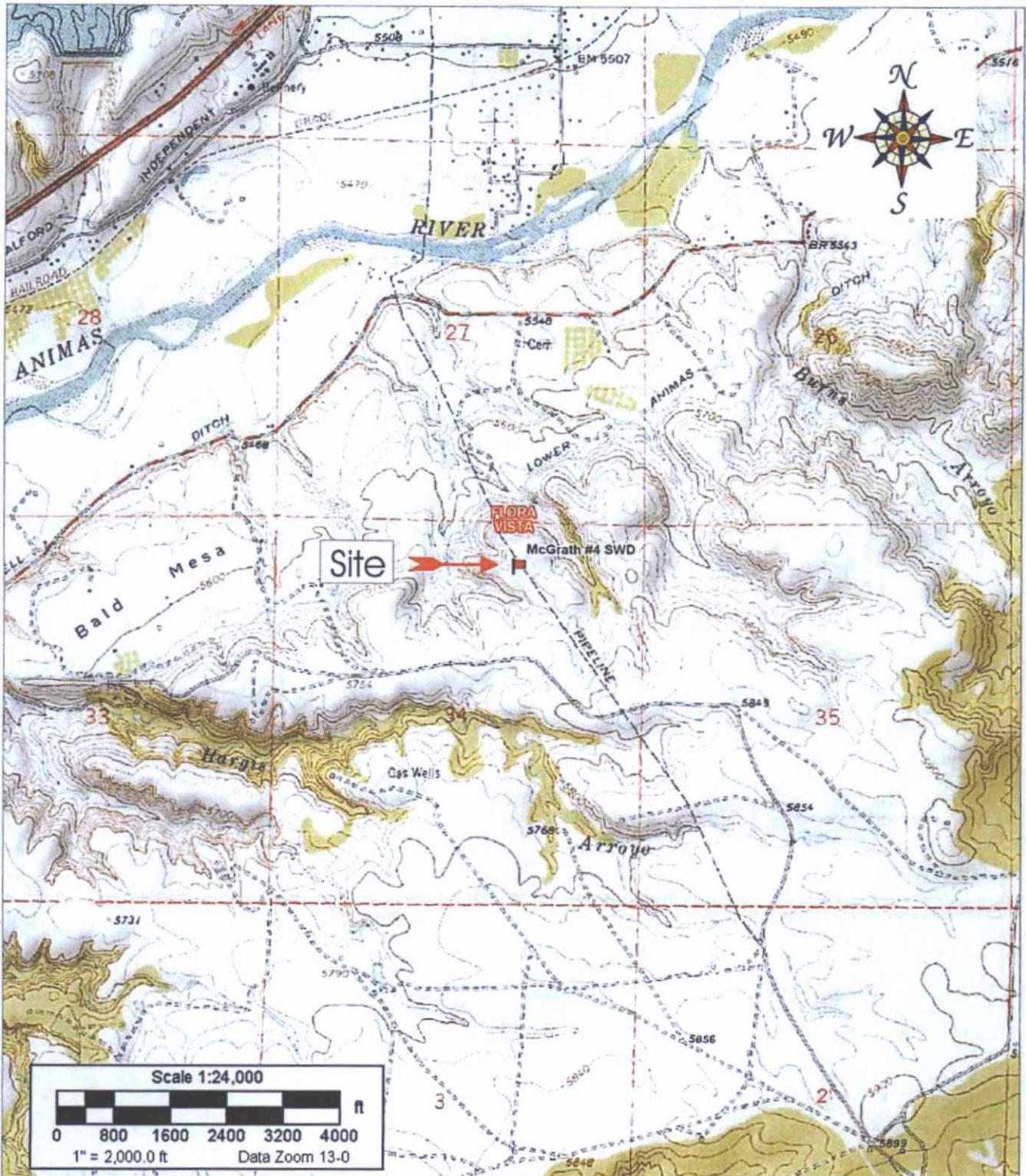
---

Greg Crabtree, PE  
Environmental Manager  
[gcrabtree@envirotech-inc.com](mailto:gcrabtree@envirotech-inc.com)

**FIGURES**

Figure 1, Vicinity Map

Figure 2, Site Map – Excavation Overview



Source: 7.5 Minute, Flora Vista, New Mexico U.S.G.S. Topographic Quadrangle Map  
 Scale: 1:24,000 1" = 2000'

ConocoPhillips  
 McGrath #4 SWD (hBr)  
 Section 34, Township 30N, Range 12W  
 San Juan County, New Mexico

PROJECT Number: 92115-2540 Date Drawn: 2/21/14

**envirotech**  
 ENVIRONMENTAL SCIENTISTS & ENGINEERS

5796 U.S. HIGHWAY 64  
 Farmington, New Mexico 87401  
 505.632.0615

Vicinity Map

Figure #1

DRAWN BY:  
 Tiffany McIntosh

PROJECT MANAGER:  
 Greg Crabtree



1997 Imagery Date: 11/17/2013 lat 36.774350° lon -108.032889° elev 576

## LEGEND

Date The Entire Excavation Met Regulations

-   December 20, 2013
-   January 2, 2014
-   January 22, 2014
-   January 24, 2014
-   January 28, 2014
-   January 16, 2014

Currently Have Not Met Regulations

-   RED

## SITE MAP – Excavation Overview

ConocoPhillips

McGrath #4 SWD (hBr)

SECTION 34, TWP 30 NORTH, RANGE 12 WEST  
SAN JUAN COUNTY, NEW MEXICO

SCALE: NTS	FIGURE NO. 2	REV
PROJECT NO92115-2540		

### REVISIONS

NO.	DATE	BY	DESCRIPTION
FRA	3/04/16		Update map
MAP DRWN	TLM	8/5/14	BASE DRWN TLM 2/25/13



5796 U.S. HIGHWAY 64, FARMINGTON, NM 87401 505-632-0615

**TABLES**

**Table 1, Summary of Analytical Results**

**Table 2, Summary of Analytical Results, Closure Samples**

ConocoPhillips  
 McGrath #4 SWD  
 Table 1, Summary of Analytical Results  
 Project Number 92115-2540

Date	Sample Description	Sample Number	PID OV (ppm)	USEPA Method 418.1 TPH (ppm)	USEPA Method 8015 TPH (ppm)	USEPA Method 8021	
						Benzene (ppm)	BTEX (ppm)
NA	New Mexico Oil Conservation Division Standards	NA	100	1000	1000	10	50
<b>12/20/2013</b>							
12/20/2013	Excavation A	A	ND	172	NS	NS	NS
12/20/2013	Excavation B West Wall	B1	ND	252	NS	NS	NS
12/20/2013	Excavation B North Bottom	B2	ND	312	NS	NS	NS
12/20/2013	Excavation B North Wall	B3	56.0	1720	NS	NS	NS
12/20/2013	Excavation B East Wall	B4	47.0	1220	NS	NS	NS
12/20/2013	Excavation B South Wall	B5	ND	88	NS	NS	NS
12/20/2013	Excavation B South Bottom	B6	ND	84	NS	NS	NS
12/20/2013	Excavation C	C	ND	168	NS	NS	NS
12/20/2013	Excavation F North Wall	F1	>2700	NS	NS	NS	NS
12/20/2013	Excavation F South Wall	F2	672	NS	NS	NS	NS
12/20/2013	Excavation F East Wall	F3	65.0	620	NS	NS	NS
12/20/2013	Excavation F West Wall	F4	ND	192	NS	NS	NS
12/20/2013	Excavation F Bottom	F5	1040	NS	NS	NS	NS
12/20/2013	Excavation G	G	ND	1720	NS	NS	NS
12/20/2013	Excavation H	H	476	NS	NS	NS	NS
12/20/2013	East Berm Pile	EB	ND	416	NS	NS	NS
12/20/2013	West Berm Pile	WB	ND	4140	NS	NS	NS
<b>1/2/2014</b>							
1/2/2014	Excavation B North Wall	B3A	ND	444	NS	NS	NS
1/2/2014	Excavation B East Wall	B4A	ND	672	NS	NS	NS
1/2/2014	Excavation D SW Corner	D1	1930	NS	NS	NS	NS
1/2/2014	Excavation D Bottom	D2	1410	NS	NS	NS	NS
1/2/2014	Excavation D NE 1/4 Wall	D3	ND	ND	NS	NS	NS
1/2/2014	Excavation D East Wall	D4	ND	ND	NS	NS	NS
1/2/2014	Excavation F North Wall	F1A	80.0	2760	NS	NS	NS
1/2/2014	Excavation F South Wall	F2A	ND	2320	NS	NS	NS
1/2/2014	Excavation F Bottom	F5A	449	1990	NS	NS	NS
1/2/2014	Excavation G Bottom	G1	ND	844	NS	NS	NS
1/2/2014	Excavation G West Wall	G2	ND	180	NS	NS	NS
1/2/2014	Excavation G North Wall	G3	ND	280	NS	NS	NS
1/2/2014	Excavation G East Wall	G4	ND	300	NS	NS	NS
1/2/2014	Excavation G South Wall	G5	ND	588	NS	NS	NS

ConocoPhillips  
McGrath #4 SWD  
Table 1, Summary of Analytical Results  
Project Number 92115-2540

Date	Sample Description	Sample Number	PID OV (ppm)	USEPA Method 418.1 TPH (ppm)	USEPA Method 8015 TPH (ppm)	USEPA Method 8021	
						Benzene (ppm)	BTEX (ppm)
NA	New Mexico Oil Conservation Division Standards	NA	100	1000	1000	10	50
1/2/2014	Excavation H Wall Comp	H1	ND	252	NS	NS	NS
1/2/2014	Excavation H Bottom	H2	ND	576	NS	NS	NS
<b>1/7/2014</b>							
1/7/2014	Excavation D-F	1	6.1	1180	162	NS	NS
1/7/2014	Excavation D-F	2	87.6	2170	NS	NS	NS
1/7/2014	Excavation D-F	3	95.3	2250	NS	NS	NS
1/7/2014	Excavation D-F	4	5.9	136	NS	NS	NS
1/7/2014	Excavation D-F	5	549	2570	NS	NS	NS
1/7/2014	Excavation D-F	6	1840	4060	NS	NS	NS
1/7/2014	Excavation D-F	7	1.7	128	NS	NS	NS
1/7/2014	Excavation D-F	8	835	2100	NS	NS	NS
1/7/2014	Excavation D-F	9	1650	3170	NS	NS	NS
<b>1/10/2014</b>							
1/10/2014	Excavation D-F	1	7.0	32	NS	NS	NS
1/10/2014	Excavation D-F	2	617	1060	191	ND	2.65
1/10/2014	Excavation D-F	3	10.6	32	NS	NS	NS
1/10/2014	Excavation D-F	4	1170	NS	NS	NS	NS
1/10/2014	Excavation D-F	5	1040	NS	NS	NS	NS
1/10/2014	Excavation D-F	6	17.0	432	NS	NS	NS
1/10/2014	Excavation D-F	7	1260	NS	NS	NS	NS
1/10/2014	Excavation D-F	8	21.4	120	NS	NS	NS
1/10/2014	Excavation D-F	9	13.4	196	NS	NS	NS
1/10/2014	Excavation D-F	10	356	NS	NS	NS	NS
<b>1/14/2014</b>							
1/14/2014	Excavation D-F	1	952	NS	1356	ND	8.81
1/14/2014	Excavation D-F	2	141	1710	665.3	ND	2.00
1/14/2014	Excavation D-F	3	762	2600	992	ND	23.9
1/14/2014	Excavation D-F	4	16.7	212	NS	NS	NS
1/14/2014	Excavation D-F	5	10.3	144	NS	NS	NS
1/14/2014	Excavation D-F	6	9.2	236	NS	NS	NS
1/14/2014	Excavation D-F	7	1150	3720	1480	ND	29.1
1/14/2014	Excavation D-F	8	7.4	240	NS	NS	NS
1/14/2014	Excavation D-F	9	6.7	164	NS	NS	NS
1/14/2014	Excavation D-F	10	7.1	164	NS	NS	NS

ConocoPhillips  
McGrath #4 SWD  
Table 1, Summary of Analytical Results  
Project Number 92115-2540

Date	Sample Description	Sample Number	PID OV (ppm)	USEPA Method 418.1 TPH (ppm)	USEPA Method 8015 TPH (ppm)	USEPA Method 8021	
						Benzene (ppm)	BTEX (ppm)
NA	New Mexico Oil Conservation Division Standards	NA	100	1000	1000	10	50
<b>1/16/2014</b>							
1/16/2014	Excavation D-F East Wall 12' BGS	1	0.3	36	NS	NS	NS
1/16/2014	Excavation D-F Ramp Area	2	759	2430	988.6	ND	2.63
<b>1/22/2014</b>							
1/22/2014	Excavation 1 North Wall	1	0.8	92	NS	NS	NS
1/22/2014	Excavation 1 East Wall	2	1.9	40	NS	NS	NS
1/22/2014	Excavation 1 West Wall	3	1.7	40	NS	NS	NS
1/22/2014	Excavation 1 Bottom	4	<b>390</b>	<b>6220</b>	NS	NS	NS
1/22/2014	Excavation 2 North Wall	5	1.7	96	NS	NS	NS
1/22/2014	Excavation 2 East Wall	6	1.4	32	NS	NS	NS
1/22/2014	Excavation 2 South Wall	7	1.7	36	NS	NS	NS
1/22/2014	Excavation 2 West Wall	8	0.8	36	NS	NS	NS
1/22/2014	Excavation 2 Bottom	9	1.0	40	NS	NS	NS
1/22/2014	Excavation 3 N&W Walls	10	0.8	48	NS	NS	NS
1/22/2014	Excavation 3 S&E Walls	11	1.7	60	NS	NS	NS
1/22/2014	Excavation 3 Bottom	12	0.8	36	NS	NS	NS
<b>1/24/2014</b>							
1/24/2014	Excavation 1 Bottom	1	ND	120	NS	NS	NS
1/24/2014	Excavation 4 North Wall	2	ND	ND	NS	NS	NS
1/24/2014	Excavation 4 East Wall	3	0.2	20	NS	NS	NS
1/24/2014	Excavation 4 South Wall	4	11.5	680	NS	NS	NS
1/24/2014	Excavation 4 West Wall	5	0.8	56	NS	NS	NS
1/24/2014	Excavation 4 Bottom	6	<b>274</b>	<b>3220</b>	<b>1913.4</b>	ND	1.4
1/24/2014	Excavation 5 Bottom	7	1.0	84	NS	NS	NS
1/24/2014	Excavation 6 East Wall	8	2.6	32	NS	NS	NS
<b>1/28/2014</b>							
1/28/2014	Excavation 4 Bottom	1	2.6	24	NS	NS	NS

\*Values in **BOLD** above regulatory limits

\*Closure Sample

\*NS - Parameter not sampled \*ND - Parameter not detected

\*Sample Has NOT Met Closure Standards

ConocoPhillips  
McGrath #4 SWD  
Table 2, Summary of Analytical Results, Closure Samples  
Project Number 92115-2540

Date	Sample Description	Sample Number	PID OV (ppm)	USEPA Method 418.1 TPH (ppm)	USEPA Method 8015 TPH (ppm)	USEPA Method 8021	
						Benzene (ppm)	BTEX (ppm)
NA	New Mexico Oil Conservation Division Standards	NA	100	1000	1000	10	50
<b>12/20/2013</b>							
12/20/2013	Excavation A	A	ND	172	NS	NS	NS
12/20/2013	Excavation B West Wall	B1	ND	252	NS	NS	NS
12/20/2013	Excavation B North Bottom	B2	ND	312	NS	NS	NS
12/20/2013	Excavation B South Wall	B5	ND	88	NS	NS	NS
12/20/2013	Excavation B South Bottom	B6	ND	84	NS	NS	NS
12/20/2013	Excavation C	C	ND	168	NS	NS	NS
12/20/2013	Excavation F East Wall	F3	65.0	620	NS	NS	NS
12/20/2013	Excavation F West Wall	F4	ND	192	NS	NS	NS
12/20/2013	East Berm Pile	EB	ND	416	NS	NS	NS
<b>1/2/2014</b>							
1/2/2014	Excavation B North Wall	B3A	ND	444	NS	NS	NS
1/2/2014	Excavation B East Wall	B4A	ND	672	NS	NS	NS
1/2/2014	Excavation D NE 1/4 Wall	D3	ND	ND	NS	NS	NS
1/2/2014	Excavation D East Wall	D4	ND	ND	NS	NS	NS
1/2/2014	Excavation G Bottom	G1	ND	844	NS	NS	NS
1/2/2014	Excavation G West Wall	G2	ND	180	NS	NS	NS
1/2/2014	Excavation G North Wall	G3	ND	280	NS	NS	NS
1/2/2014	Excavation G East Wall	G4	ND	300	NS	NS	NS
1/2/2014	Excavation G South Wall	G5	ND	588	NS	NS	NS
1/2/2014	Excavation H Wall Comp	H1	ND	252	NS	NS	NS
1/2/2014	Excavation H Bottom	H2	ND	576	NS	NS	NS
<b>1/7/2014</b>							
1/7/2014	Excavation D-F	1	6.1	1180	162	NS	NS
1/7/2014	Excavation D-F	4	5.9	136	NS	NS	NS
1/7/2014	Excavation D-F	7	1.7	128	NS	NS	NS
<b>1/10/2014</b>							
1/10/2014	Excavation D-F	1	7.0	32	NS	NS	NS
1/10/2014	Excavation D-F	2	617	1060	191	ND	2.65
1/10/2014	Excavation D-F	3	10.6	32	NS	NS	NS
1/10/2014	Excavation D-F	6	17.0	432	NS	NS	NS
1/10/2014	Excavation D-F	8	21.4	120	NS	NS	NS

ConocoPhillips  
McGrath #4 SWD

Table 2, Summary of Analytical Results, Closure Samples  
Project Number 92115-2540

Date	Sample Description	Sample Number	PID OV (ppm)	USEPA Method 418.1 TPH (ppm)	USEPA Method 8015 TPH (ppm)	USEPA Method 8021	
						Benzene (ppm)	BTEX (ppm)
NA	New Mexico Oil Conservation Division Standards	NA	100	1000	1000	10	50
1/10/2014	Excavation D-F	9	13.4	196	NS	NS	NS
<b>1/14/2014</b>							
1/14/2014	Excavation D-F	2	141	1710	665.3	ND	2.00
1/14/2014	Excavation D-F	3	762	2600	992	ND	23.9
1/14/2014	Excavation D-F	4	16.7	212	NS	NS	NS
1/14/2014	Excavation D-F	5	10.3	144	NS	NS	NS
1/14/2014	Excavation D-F	6	9.2	236	NS	NS	NS
1/14/2014	Excavation D-F	8	7.4	240	NS	NS	NS
1/14/2014	Excavation D-F	9	6.7	164	NS	NS	NS
1/14/2014	Excavation D-F	10	7.1	164	NS	NS	NS
<b>1/16/2014</b>							
1/16/2014	Excavation D-F East Wall 12' BGS	1	0.3	36	NS	NS	NS
1/16/2014	Excavation D-F Ramp Area	2	759	2430	988.6	ND	2.63
<b>1/22/2014</b>							
1/22/2014	Excavation 1 North Wall	1	0.8	92	NS	NS	NS
1/22/2014	Excavation 1 East Wall	2	1.9	40	NS	NS	NS
1/22/2014	Excavation 1 West Wall	3	1.7	40	NS	NS	NS
1/22/2014	Excavation 2 North Wall	5	1.7	96	NS	NS	NS
1/22/2014	Excavation 2 East Wall	6	1.4	32	NS	NS	NS
1/22/2014	Excavation 2 South Wall	7	1.7	36	NS	NS	NS
1/22/2014	Excavation 2 West Wall	8	0.8	36	NS	NS	NS
1/22/2014	Excavation 2 Bottom	9	1.0	40	NS	NS	NS
1/22/2014	Excavation 3 N&W Walls	10	0.8	48	NS	NS	NS
1/22/2014	Excavation 3 S&E Walls	11	1.7	60	NS	NS	NS
1/22/2014	Excavation 3 Bottom	12	0.8	36	NS	NS	NS
<b>1/24/2014</b>							
1/24/2014	Excavation 1 Bottom	1	ND	120	NS	NS	NS
1/24/2014	Excavation 4 North Wall	2	ND	ND	NS	NS	NS
1/24/2014	Excavation 4 East Wall	3	0.2	20	NS	NS	NS
1/24/2014	Excavation 4 South Wall	4	11.5	680	NS	NS	NS
1/24/2014	Excavation 4 West Wall	5	0.8	56	NS	NS	NS
1/24/2014	Excavation 5 Bottom	7	1.0	84	NS	NS	NS
1/24/2014	Excavation 6 East Wall	8	2.6	32	NS	NS	NS

ConocoPhillips  
 McGrath #4 SWD  
 Table 2, Summary of Analytical Results, Closure Samples  
 Project Number 92115-2540

Date	Sample Description	Sample Number	PID OV (ppm)	USEPA Method 418.1 TPH (ppm)	USEPA Method 8015 TPH (ppm)	USEPA Method 8021	
						Benzene (ppm)	BTEX (ppm)
NA	New Mexico Oil Conservation Division Standards	NA	100	1000	1000	10	50
<b>1/28/2014</b>							
1/28/2014	Excavation 4 Bottom	1	2.6	24	NS	NS	NS

\*Values in **BOLD** above regulatory limits

\*NS - Parameter not sampled \*ND - Parameter not detected

\*Closure Sample

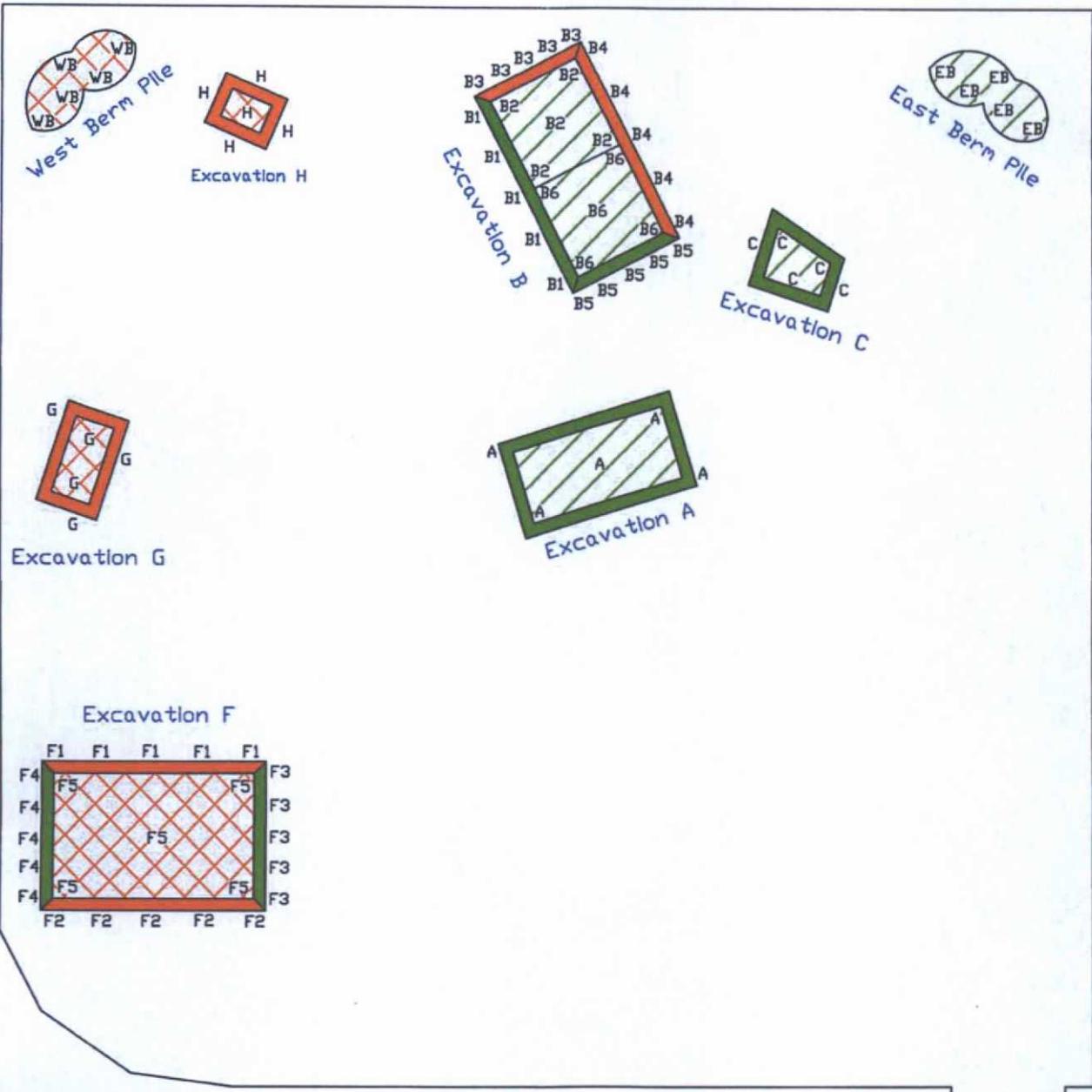
# **APPENDICES**

## **APPENDIX A - I**

**APPENDIX A:**  
**DECEMBER 20, 2013**

**FIGURE 3 - SITE MAP**

**ANALYTICAL RESULTS**



### LEGEND

- Areas Below  
Regulatory  
Standards
  
- Areas Above  
Regulatory  
Standards

**SITE MAP - 12/20/2013**  
**ConocoPhillips**  
**McGrath #4 SWD (hBr)**  
 SECTION 34, TWP 30 NORTH, RANGE 12 WEST  
 SAN JUAN COUNTY, NEW MEXICO

SCALE: NTS	FIGURE NO. 3	REV
PROJECT N092115-2540		

REVISIONS			

NO.	DATE	BY	DESCRIPTION
MAP DRWN	TLM	3/27/14	BASE DRWN TLM 2/25/13



5796 U.S. HIGHWAY 64, FARMINGTON, NM 87401 505-632-0615



EPA METHOD 418.1  
TOTAL PETROLEUM  
HYDROCARBONS

Client: ConocoPhillips Project #: 92115-2540  
Sample No.: A Date Reported: 2/18/2014  
Sample ID: Excavation A Date Sampled: 12/20/2013  
Sample Matrix: Soil Date Analyzed: 12/20/2013  
Preservative: Cool Analysis Needed: TPH-418.1  
Condition: Cool and Intact

Parameter	Concentration (mg/kg)	Det. Limit (mg/kg)
Total Petroleum Hydrocarbons	172	5.0

ND = Parameter not detected at the stated detection limit.

References: Method 418.1, Petroleum Hydrocarbons, Total Recoverable, Chemical Analysis of Water and Waste, USEPA Storet No. 4551, 1978.

Comments: McGrath #4 SWD

Instrument calibrated to 200 ppm standard and zeroed before each sample.

  
\_\_\_\_\_  
Analyst

Toni McKnight, EIT  
\_\_\_\_\_  
Printed

\_\_\_\_\_  
Review

Greg Crabtree, PE  
\_\_\_\_\_  
Printed

Client:	ConocoPhillips	Project #:	92115-2540
Sample No.:	B1	Date Reported:	2/18/2014
Sample ID:	Excavation B West Wall	Date Sampled:	12/20/2013
Sample Matrix:	Soil	Date Analyzed:	12/20/2013
Preservative:	Cool	Analysis Needed:	TPH-418.1
Condition:	Cool and Intact		

Parameter	Concentration (mg/kg)	Det. Limit (mg/kg)
<b>Total Petroleum Hydrocarbons</b>	<b>252</b>	<b>5.0</b>

ND = Parameter not detected at the stated detection limit.

References: Method 418.1, Petroleum Hydrocarbons, Total Recoverable, Chemical Analysis of Water and Waste, USEPA Storet No. 4551, 1978.

Comments: **McGrath #4 SWD**

Instrument calibrated to 200 ppm standard and zeroed before each sample.

  
\_\_\_\_\_  
Analyst

Toni McKnight, EIT

Printed

\_\_\_\_\_  
Review

Greg Crabtree, PE

Printed



EPA METHOD 418.1  
TOTAL PETROLEUM  
HYDROCARBONS

Client: ConocoPhillips Project #: 92115-2540  
Sample No.: B2 Date Reported: 2/18/2014  
Sample ID: Excavation B North Bottom Date Sampled: 12/20/2013  
Sample Matrix: Soil Date Analyzed: 12/20/2013  
Preservative: Cool Analysis Needed: TPH-418.1  
Condition: Cool and Intact

Parameter	Concentration (mg/kg)	Det. Limit (mg/kg)
Total Petroleum Hydrocarbons	312	5.0

ND = Parameter not detected at the stated detection limit.

References: Method 418.1, Petroleum Hydrocarbons, Total Recoverable, Chemical Analysis of Water and Waste, USEPA Storet No. 4551, 1978.

Comments: **McGrath #4 SWD**

Instrument calibrated to 200 ppm standard and zeroed before each sample.

  
Analyst

Toni McKnight, EIT  
Printed

  
Review

Greg Crabtree, PE  
Printed



EPA METHOD 418.1  
TOTAL PETROLEUM  
HYDROCARBONS

Client:	ConocoPhillips	Project #:	92115-2540
Sample No.:	B3	Date Reported:	2/18/2014
Sample ID:	Excavation B North Wall	Date Sampled:	12/20/2013
Sample Matrix:	Soil	Date Analyzed:	12/20/2013
Preservative:	Cool	Analysis Needed:	TPH-418.1
Condition:	Cool and Intact		

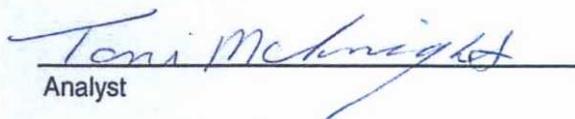
Parameter	Concentration (mg/kg)	Det. Limit (mg/kg)
Total Petroleum Hydrocarbons	1,720	5.0

ND = Parameter not detected at the stated detection limit.

References: Method 418.1, Petroleum Hydrocarbons, Total Recoverable, Chemical Analysis of Water and Waste, USEPA Storet No. 4551, 1978.

Comments: **McGrath #4 SWD**

Instrument calibrated to 200 ppm standard and zeroed before each sample.

  
Analyst

Toni McKnight, EIT  
Printed

  
Review

Greg Crabtree, PE  
Printed

Client:	ConocoPhillips	Project #:	92115-2540
Sample No.:	B4	Date Reported:	2/18/2014
Sample ID:	Excavation B East Wall	Date Sampled:	12/20/2013
Sample Matrix:	Soil	Date Analyzed:	12/20/2013
Preservative:	Cool	Analysis Needed:	TPH-418.1
Condition:	Cool and Intact		

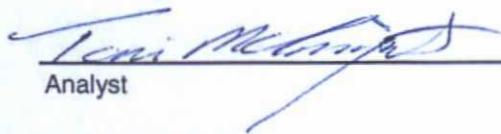
Parameter	Concentration (mg/kg)	Det. Limit (mg/kg)
Total Petroleum Hydrocarbons	1,220	5.0

ND = Parameter not detected at the stated detection limit.

References: Method 418.1, Petroleum Hydrocarbons, Total Recoverable, Chemical Analysis of Water and Waste, USEPA Storet No. 4551, 1978.

Comments: **McGrath #4 SWD**

Instrument calibrated to 200 ppm standard and zeroed before each sample.

  
\_\_\_\_\_  
Analyst

Toni McKnight, EIT

Printed

\_\_\_\_\_  
Review

Greg Crabtree, PE

Printed



EPA METHOD 418.1  
TOTAL PETROLEUM  
HYDROCARBONS

Client: ConocoPhillips Project #: 92115-2540  
Sample No.: B5 Date Reported: 2/18/2014  
Sample ID: Excavation B South Wall Date Sampled: 12/20/2013  
Sample Matrix: Soil Date Analyzed: 12/20/2013  
Preservative: Cool Analysis Needed: TPH-418.1  
Condition: Cool and Intact

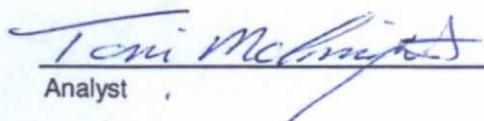
Parameter	Concentration (mg/kg)	Det. Limit (mg/kg)
Total Petroleum Hydrocarbons	88	5.0

ND = Parameter not detected at the stated detection limit.

References: Method 418.1, Petroleum Hydrocarbons, Total Recoverable, Chemical Analysis of Water and Waste, USEPA Storet No. 4551, 1978.

Comments: McGrath #4 SWD

Instrument calibrated to 200 ppm standard and zeroed before each sample.

  
\_\_\_\_\_  
Analyst

Toni McKnight, EIT  
\_\_\_\_\_  
Printed

\_\_\_\_\_  
Review

Greg Crabtree, PE  
\_\_\_\_\_  
Printed



EPA METHOD 418.1  
TOTAL PETROLEUM  
HYDROCARBONS

Client: ConocoPhillips Project #: 92115-2540  
Sample No.: B6 Date Reported: 2/18/2014  
Sample ID: Excavation B South Bottom Date Sampled: 12/20/2013  
Sample Matrix: Soil Date Analyzed: 12/20/2013  
Preservative: Cool Analysis Needed: TPH-418.1  
Condition: Cool and Intact

Parameter	Concentration (mg/kg)	Det. Limit (mg/kg)
Total Petroleum Hydrocarbons	84	5.0

ND = Parameter not detected at the stated detection limit.

References: Method 418.1, Petroleum Hydrocarbons, Total Recoverable, Chemical Analysis of Water and Waste, USEPA Storet No. 4551, 1978.

Comments: **McGrath #4 SWD**

Instrument calibrated to 200 ppm standard and zeroed before each sample.

  
Analyst

Toni McKnight, EIT  
Printed

  
Review

Greg Crabtree, PE  
Printed



EPA METHOD 418.1  
TOTAL PETROLEUM  
HYDROCARBONS

Client: ConocoPhillips Project #: 92115-2540  
Sample No.: C Date Reported: 2/18/2014  
Sample ID: Excavation C Date Sampled: 12/20/2013  
Sample Matrix: Soil Date Analyzed: 12/20/2013  
Preservative: Cool Analysis Needed: TPH-418.1  
Condition: Cool and Intact

Parameter	Concentration (mg/kg)	Det. Limit (mg/kg)
Total Petroleum Hydrocarbons	168	5.0

ND = Parameter not detected at the stated detection limit.

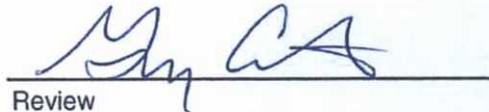
References: Method 418.1, Petroleum Hydrocarbons, Total Recoverable, Chemical Analysis of Water and Waste, USEPA Storet No. 4551, 1978.

Comments: **McGrath #4 SWD**

Instrument calibrated to 200 ppm standard and zeroed before each sample.

  
Analyst

Toni McKnight, EIT  
Printed

  
Review

Greg Crabtree, PE  
Printed



EPA METHOD 418.1  
TOTAL PETROLEUM  
HYDROCARBONS

Client: ConocoPhillips Project #: 92115-2540  
Sample No.: F3 Date Reported: 2/18/2014  
Sample ID: Excavation F East Wall Date Sampled: 12/20/2013  
Sample Matrix: Soil Date Analyzed: 12/20/2013  
Preservative: Cool Analysis Needed: TPH-418.1  
Condition: Cool and Intact

Parameter	Concentration (mg/kg)	Det. Limit (mg/kg)
Total Petroleum Hydrocarbons	620	5.0

ND = Parameter not detected at the stated detection limit.

References: Method 418.1, Petroleum Hydrocarbons, Total Recoverable, Chemical Analysis of Water and Waste, USEPA Storet No. 4551, 1978.

Comments: **McGrath #4 SWD**

Instrument calibrated to 200 ppm standard and zeroed before each sample.

  
Analyst

Toni McKnight, EIT  
Printed

  
Review

Greg Crabtree, PE  
Printed



EPA METHOD 418.1  
TOTAL PETROLEUM  
HYDROCARBONS

Client: ConocoPhillips Project #: 92115-2540  
Sample No.: F4 Date Reported: 2/18/2014  
Sample ID: Excavation F West Wall Date Sampled: 12/20/2013  
Sample Matrix: Soil Date Analyzed: 12/20/2013  
Preservative: Cool Analysis Needed: TPH-418.1  
Condition: Cool and Intact

Parameter	Concentration (mg/kg)	Det. Limit (mg/kg)
Total Petroleum Hydrocarbons	192	5.0

ND = Parameter not detected at the stated detection limit.

References: Method 418.1, Petroleum Hydrocarbons, Total Recoverable, Chemical Analysis of Water and Waste, USEPA Storet No. 4551, 1978.

Comments: **McGrath #4 SWD**

Instrument calibrated to 200 ppm standard and zeroed before each sample.

  
\_\_\_\_\_  
Analyst

Toni McKnight, EIT  
\_\_\_\_\_  
Printed

\_\_\_\_\_  
Review

Greg Crabtree, PE  
\_\_\_\_\_  
Printed



EPA METHOD 418.1  
TOTAL PETROLEUM  
HYDROCARBONS

Client: ConocoPhillips Project #: 92115-2540  
Sample No.: G Date Reported: 2/18/2014  
Sample ID: Excavation G Date Sampled: 12/20/2013  
Sample Matrix: Soil Date Analyzed: 12/20/2013  
Preservative: Cool Analysis Needed: TPH-418.1  
Condition: Cool and Intact

Parameter	Concentration (mg/kg)	Det. Limit (mg/kg)
Total Petroleum Hydrocarbons	1,720	5.0

ND = Parameter not detected at the stated detection limit.

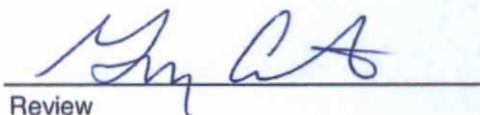
References: Method 418.1, Petroleum Hydrocarbons, Total Recoverable, Chemical Analysis of Water and Waste, USEPA Storet No. 4551, 1978.

Comments: **McGrath #4 SWD**

Instrument calibrated to 200 ppm standard and zeroed before each sample.

  
Analyst

Toni McKnight, EIT  
Printed

  
Review

Greg Crabtree, P E  
Printed



EPA METHOD 418.1  
TOTAL PETROLEUM  
HYDROCARBONS

Client: ConocoPhillips Project #: 92115-2540  
Sample No.: EB Date Reported: 2/18/2014  
Sample ID: East Berm Pile Date Sampled: 12/20/2013  
Sample Matrix: Soil Date Analyzed: 12/20/2013  
Preservative: Cool Analysis Needed: TPH-418.1  
Condition: Cool and Intact

Parameter	Concentration (mg/kg)	Det. Limit (mg/kg)
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Total Petroleum Hydrocarbons	416	5.0
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ND = Parameter not detected at the stated detection limit.

References: Method 418.1, Petroleum Hydrocarbons, Total Recoverable, Chemical Analysis of Water and Waste, USEPA Storet No. 4551, 1978.

Comments: **McGrath #4 SWD**

Instrument calibrated to 200 ppm standard and zeroed before each sample.

  
Analyst

Toni McKnight, EIT  
Printed

  
Review

Greg Crabtree, PE  
Printed



EPA METHOD 418.1  
TOTAL PETROLEUM  
HYDROCARBONS

Client: ConocoPhillips Project #: 92115-2540  
Sample No.: WB Date Reported: 2/18/2014  
Sample ID: West Berm Pile Date Sampled: 12/20/2013  
Sample Matrix: Soil Date Analyzed: 12/20/2013  
Preservative: Cool Analysis Needed: TPH-418.1  
Condition: Cool and Intact

Parameter	Concentration (mg/kg)	Det. Limit (mg/kg)
Total Petroleum Hydrocarbons	4,140	5.0

ND = Parameter not detected at the stated detection limit.

References: Method 418.1, Petroleum Hydrocarbons, Total Recoverable, Chemical Analysis of Water and Waste, USEPA Storet No. 4551, 1978.

Comments: **McGrath #4 SWD**

Instrument calibrated to 200 ppm standard and zeroed before each sample.

  
Analyst

Toni McKnight, EIT  
Printed

  
Review

Greg Crabtree, PE  
Printed



CONTINUOUS CALIBRATION  
EPA METHOD 418.1  
TOTAL PETROLEUM  
HYDROCARBONS

Cal. Date: 20-Dec-13

Parameter	Standard Concentration mg/L	Concentration Reading mg/L
TPH	100	204
	200	
	500	
	1000	

The accepted percent relative deviation (%RSD) of the calibration factor is less than 20% over the working range.

Toni McKnight  
Analyst

2/18/2014  
Date

Toni McKnight, EIT  
Print Name

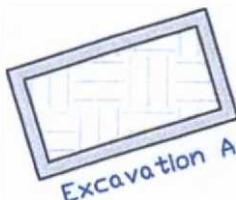
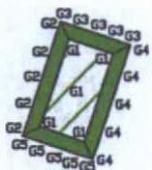
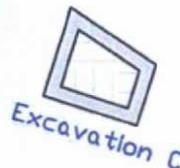
Greg Crabtree  
Review

2/18/2014  
Date

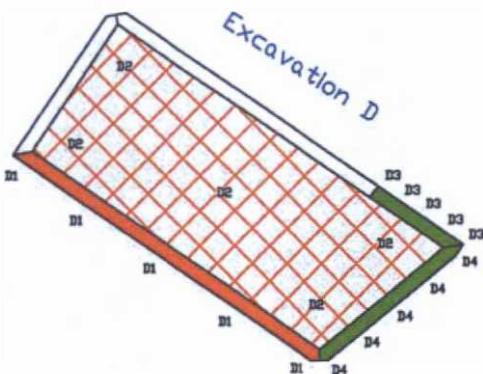
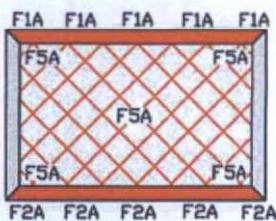
Greg Crabtree, PE  
Print Name

**APPENDIX B:**  
**JANUARY 2, 2014**

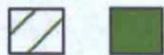
**FIGURE 4 - SITE MAP**  
**ANALYTICAL RESULTS**



Excavation F



### LEGEND



Areas Below  
Regulatory  
Standards



Areas Above  
Regulatory  
Standards



Areas Which  
Previously Met  
Regulatory  
Standards

### SITE MAP - 1/2/2014

ConocoPhillips

McGrath #4 SWD (hBr)

SECTION 34, TWP 30 NORTH, RANGE 12 WEST  
SAN JUAN COUNTY, NEW MEXICO

SCALE: NTS

FIGURE NO. 4

REV

PROJECT NO92115-2540

#### REVISIONS

NO.	DATE	BY	DESCRIPTION
MAP DRWN	TLM	3/27/14	BASE DRWN TLM 2/25/13



**envirotech**

5796 U.S. HIGHWAY 64, FARMINGTON, NM 87401 505-632-0615



EPA METHOD 418.1  
TOTAL PETROLEUM  
HYDROCARBONS

Client: ConocoPhillips Project #: 92115-2540  
Sample No.: B3A Date Reported: 2/18/2014  
Sample ID: Excavation B North Wall Date Sampled: 1/2/2014  
Sample Matrix: Soil Date Analyzed: 1/2/2014  
Preservative: Cool Analysis Needed: TPH-418.1  
Condition: Cool and Intact

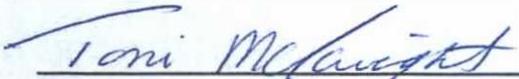
Parameter	Concentration (mg/kg)	Det. Limit (mg/kg)
Total Petroleum Hydrocarbons	444	5.0

ND = Parameter not detected at the stated detection limit.

References: Method 418.1, Petroleum Hydrocarbons, Total Recoverable, Chemical Analysis of Water and Waste, USEPA Storet No. 4551, 1978.

Comments: **McGrath #4 SWD**

Instrument calibrated to 200 ppm standard and zeroed before each sample.

  
\_\_\_\_\_  
Analyst

Toni McKnight, EIT  
\_\_\_\_\_  
Printed

  
\_\_\_\_\_  
Review

Greg Crabtree, PE  
\_\_\_\_\_  
Printed



EPA METHOD 418.1  
TOTAL PETROLEUM  
HYDROCARBONS

Client: ConocoPhillips Project #: 92115-2540  
Sample No.: B4A Date Reported: 2/18/2014  
Sample ID: Excavation B East Wall Date Sampled: 1/2/2014  
Sample Matrix: Soil Date Analyzed: 1/2/2014  
Preservative: Cool Analysis Needed: TPH-418.1  
Condition: Cool and Intact

Parameter	Concentration (mg/kg)	Det. Limit (mg/kg)
Total Petroleum Hydrocarbons	672	5.0

ND = Parameter not detected at the stated detection limit.

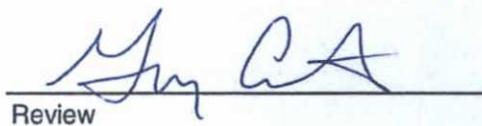
References: Method 418.1, Petroleum Hydrocarbons, Total Recoverable, Chemical Analysis of Water and Waste, USEPA Storet No. 4551, 1978.

Comments: **McGrath #4 SWD**

Instrument calibrated to 200 ppm standard and zeroed before each sample.

  
Analyst

Toni McKnight, EIT  
Printed

  
Review

Greg Crabtree, PE  
Printed



EPA METHOD 418.1  
TOTAL PETROLEUM  
HYDROCARBONS

Client: ConocoPhillips Project #: 92115-2540  
Sample No.: D3 Date Reported: 2/18/2014  
Sample ID: Excavation D NE 1/4 Wall Date Sampled: 1/2/2014  
Sample Matrix: Soil Date Analyzed: 1/2/2014  
Preservative: Cool Analysis Needed: TPH-418.1  
Condition: Cool and Intact

Parameter	Concentration (mg/kg)	Det. Limit (mg/kg)
Total Petroleum Hydrocarbons	ND	5.0

ND = Parameter not detected at the stated detection limit.

References: Method 418.1, Petroleum Hydrocarbons, Total Recoverable, Chemical Analysis of Water and Waste, USEPA Storet No. 4551, 1978.

Comments: **McGrath #4 SWD**

Instrument calibrated to 200 ppm standard and zeroed before each sample.

  
\_\_\_\_\_  
Analyst

Toni McKnight, EIT  
\_\_\_\_\_  
Printed

  
\_\_\_\_\_  
Review

Greg Crabtree, PE  
\_\_\_\_\_  
Printed



EPA METHOD 418.1  
TOTAL PETROLEUM  
HYDROCARBONS

Client: ConocoPhillips Project #: 92115-2540  
Sample No.: D4 Date Reported: 2/18/2014  
Sample ID: Excavation D East Wall Date Sampled: 1/2/2014  
Sample Matrix: Soil Date Analyzed: 1/2/2014  
Preservative: Cool Analysis Needed: TPH-418.1  
Condition: Cool and Intact

Parameter	Concentration (mg/kg)	Det. Limit (mg/kg)
Total Petroleum Hydrocarbons	ND	5.0

ND = Parameter not detected at the stated detection limit.

References: Method 418.1, Petroleum Hydrocarbons, Total Recoverable, Chemical Analysis of Water and Waste, USEPA Storet No. 4551, 1978.

Comments: **McGrath #4 SWD**

Instrument calibrated to 200 ppm standard and zeroed before each sample.

  
Analyst

Toni McKnight, EIT  
Printed

  
Review

Greg Crabtree, PE  
Printed



EPA METHOD 418.1  
TOTAL PETROLEUM  
HYDROCARBONS

Client: ConocoPhillips Project #: 92115-2540  
Sample No.: F1A Date Reported: 2/18/2014  
Sample ID: Excavation F North Wall Date Sampled: 1/2/2014  
Sample Matrix: Soil Date Analyzed: 1/2/2014  
Preservative: Cool Analysis Needed: TPH-418.1  
Condition: Cool and Intact

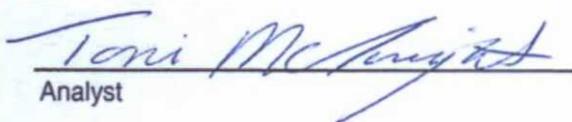
Parameter	Concentration (mg/kg)	Det. Limit (mg/kg)
Total Petroleum Hydrocarbons	2,760	5.0

ND = Parameter not detected at the stated detection limit.

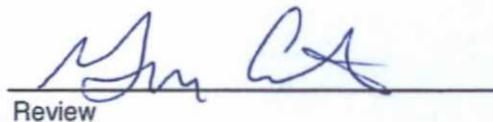
References: Method 418.1, Petroleum Hydrocarbons, Total Recoverable, Chemical Analysis of Water and Waste, USEPA Storet No. 4551, 1978.

Comments: **McGrath #4 SWD**

Instrument calibrated to 200 ppm standard and zeroed before each sample.

  
Analyst

Toni McKnight, EIT  
Printed

  
Review

Greg Crabtree, PE  
Printed



EPA METHOD 418.1  
TOTAL PETROLEUM  
HYDROCARBONS

Client: ConocoPhillips Project #: 92115-2540  
Sample No.: F2A Date Reported: 2/18/2014  
Sample ID: Excavation F South Wall Date Sampled: 1/2/2014  
Sample Matrix: Soil Date Analyzed: 1/2/2014  
Preservative: Cool Analysis Needed: TPH-418.1  
Condition: Cool and Intact

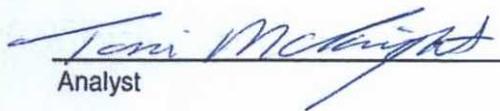
Parameter	Concentration (mg/kg)	Det. Limit (mg/kg)
Total Petroleum Hydrocarbons	2,320	5.0

ND = Parameter not detected at the stated detection limit.

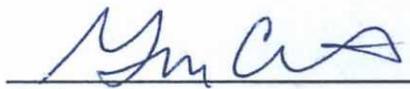
References: Method 418.1, Petroleum Hydrocarbons, Total Recoverable, Chemical Analysis of Water and Waste, USEPA Storet No. 4551, 1978.

Comments: **McGrath #4 SWD**

Instrument calibrated to 200 ppm standard and zeroed before each sample.

  
\_\_\_\_\_  
Analyst

Toni McKnight, EIT  
\_\_\_\_\_  
Printed

  
\_\_\_\_\_  
Review

Greg Crabtree, PE  
\_\_\_\_\_  
Printed



EPA METHOD 418.1  
TOTAL PETROLEUM  
HYDROCARBONS

Client: ConocoPhillips Project #: 92115-2540  
Sample No.: F5A Date Reported: 2/18/2014  
Sample ID: Excavation F Bottom Date Sampled: 1/2/2014  
Sample Matrix: Soil Date Analyzed: 1/2/2014  
Preservative: Cool Analysis Needed: TPH-418.1  
Condition: Cool and Intact

Parameter	Concentration (mg/kg)	Det. Limit (mg/kg)
Total Petroleum Hydrocarbons	1,990	5.0

ND = Parameter not detected at the stated detection limit.

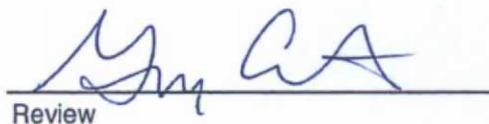
References: Method 418.1, Petroleum Hydrocarbons, Total Recoverable, Chemical Analysis of Water and Waste, USEPA Storet No. 4551, 1978.

Comments: **McGrath #4 SWD**

Instrument calibrated to 200 ppm standard and zeroed before each sample.

  
\_\_\_\_\_  
Analyst

Toni McKnight, EIT  
\_\_\_\_\_  
Printed

  
\_\_\_\_\_  
Review

Greg Crabtree, PE  
\_\_\_\_\_  
Printed



EPA METHOD 418.1  
TOTAL PETROLEUM  
HYDROCARBONS

Client: ConocoPhillips Project #: 92115-2540  
Sample No.: G1 Date Reported: 2/18/2014  
Sample ID: Excavation G Bottom Date Sampled: 1/2/2014  
Sample Matrix: Soil Date Analyzed: 1/2/2014  
Preservative: Cool Analysis Needed: TPH-418.1  
Condition: Cool and Intact

Parameter	Concentration (mg/kg)	Det. Limit (mg/kg)
Total Petroleum Hydrocarbons	844	5.0

ND = Parameter not detected at the stated detection limit.

References: Method 418.1, Petroleum Hydrocarbons, Total Recoverable, Chemical Analysis of Water and Waste, USEPA Storet No. 4551, 1978.

Comments: **McGrath #4 SWD**

Instrument calibrated to 200 ppm standard and zeroed before each sample.

  
Analyst

Toni McKnight, EIT  
Printed

  
Review

Greg Crabtree, P E  
Printed



EPA METHOD 418.1  
TOTAL PETROLEUM  
HYDROCARBONS

Client: ConocoPhillips Project #: 92115-2540  
Sample No.: G2 Date Reported: 2/18/2014  
Sample ID: Excavation G West Wall Date Sampled: 1/2/2014  
Sample Matrix: Soil Date Analyzed: 1/2/2014  
Preservative: Cool Analysis Needed: TPH-418.1  
Condition: Cool and Intact

Parameter	Concentration (mg/kg)	Det. Limit (mg/kg)
Total Petroleum Hydrocarbons	180	5.0

ND = Parameter not detected at the stated detection limit.

References: Method 418.1, Petroleum Hydrocarbons, Total Recoverable, Chemical Analysis of Water and Waste, USEPA Storet No. 4551, 1978.

Comments: **McGrath #4 SWD**

Instrument calibrated to 200 ppm standard and zeroed before each sample.

  
Analyst

Toni McKnight, EIT  
Printed

  
Review

Greg Crabtree, P E  
Printed



EPA METHOD 418.1  
TOTAL PETROLEUM  
HYDROCARBONS

Client: ConocoPhillips Project #: 92115-2540  
Sample No.: G3 Date Reported: 2/18/2014  
Sample ID: Excavation G North Wall Date Sampled: 1/2/2014  
Sample Matrix: Soil Date Analyzed: 1/2/2014  
Preservative: Cool Analysis Needed: TPH-418.1  
Condition: Cool and Intact

Parameter	Concentration (mg/kg)	Det. Limit (mg/kg)
Total Petroleum Hydrocarbons	280	5.0

ND = Parameter not detected at the stated detection limit.

References: Method 418.1, Petroleum Hydrocarbons, Total Recoverable, Chemical Analysis of Water and Waste, USEPA Storet No. 4551, 1978.

Comments: **McGrath #4 SWD**

Instrument calibrated to 200 ppm standard and zeroed before each sample.

  
\_\_\_\_\_  
Analyst

Toni McKnight, EIT  
\_\_\_\_\_  
Printed

  
\_\_\_\_\_  
Review

Greg Crabtree, P E  
\_\_\_\_\_  
Printed



EPA METHOD 418.1  
TOTAL PETROLEUM  
HYDROCARBONS

Client: ConocoPhillips Project #: 92115-2540  
Sample No.: G4 Date Reported: 2/18/2014  
Sample ID: Excavation G East Wall Date Sampled: 1/2/2014  
Sample Matrix: Soil Date Analyzed: 1/2/2014  
Preservative: Cool Analysis Needed: TPH-418.1  
Condition: Cool and Intact

Parameter	Concentration (mg/kg)	Det. Limit (mg/kg)
Total Petroleum Hydrocarbons	300	5.0

ND = Parameter not detected at the stated detection limit.

References: Method 418.1, Petroleum Hydrocarbons, Total Recoverable, Chemical Analysis of Water and Waste, USEPA Stret No. 4551, 1978.

Comments: **McGrath #4 SWD**

Instrument calibrated to 200 ppm standard and zeroed before each sample.

  
Analyst

Toni McKnight, EIT  
Printed

  
Review

Greg Crabtree, P E  
Printed



EPA METHOD 418.1  
TOTAL PETROLEUM  
HYDROCARBONS

Client: ConocoPhillips Project #: 92115-2540  
Sample No.: G5 Date Reported: 2/18/2014  
Sample ID: Excavation G South Wall Date Sampled: 1/2/2014  
Sample Matrix: Soil Date Analyzed: 1/2/2014  
Preservative: Cool Analysis Needed: TPH-418.1  
Condition: Cool and Intact

Parameter	Concentration (mg/kg)	Det. Limit (mg/kg)
Total Petroleum Hydrocarbons	588	5.0

ND = Parameter not detected at the stated detection limit.

References: Method 418.1, Petroleum Hydrocarbons, Total Recoverable, Chemical Analysis of Water and Waste, USEPA Storet No. 4551, 1978.

Comments: **McGrath #4 SWD**

Instrument calibrated to 200 ppm standard and zeroed before each sample.

  
\_\_\_\_\_  
Analyst

Toni McKnight, EIT  
\_\_\_\_\_  
Printed

  
\_\_\_\_\_  
Review

Greg Crabtree, P E  
\_\_\_\_\_  
Printed



EPA METHOD 418.1  
TOTAL PETROLEUM  
HYDROCARBONS

Client: ConocoPhillips Project #: 92115-2540  
Sample No.: H1 Date Reported: 2/18/2014  
Sample ID: Excavation H Wall Comp Date Sampled: 1/2/2014  
Sample Matrix: Soil Date Analyzed: 1/2/2014  
Preservative: Cool Analysis Needed: TPH-418.1  
Condition: Cool and Intact

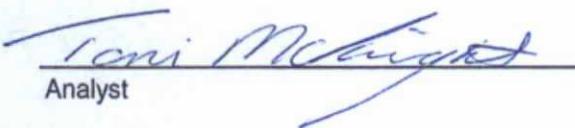
Parameter	Concentration (mg/kg)	Det. Limit (mg/kg)
Total Petroleum Hydrocarbons	252	5.0

ND = Parameter not detected at the stated detection limit.

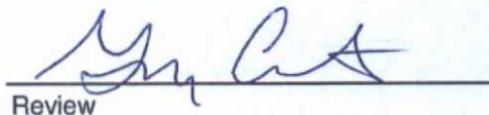
References: Method 418.1, Petroleum Hydrocarbons, Total Recoverable, Chemical Analysis of Water and Waste, USEPA Storet No. 4551, 1978.

Comments: **McGrath #4 SWD**

Instrument calibrated to 200 ppm standard and zeroed before each sample.

  
Analyst

Toni McKnight, EIT  
Printed

  
Review

Greg Crabtree, P E  
Printed



EPA METHOD 418.1  
TOTAL PETROLEUM  
HYDROCARBONS

Client: ConocoPhillips Project #: 92115-2540  
Sample No.: H2 Date Reported: 2/18/2014  
Sample ID: Excavation H Bottom Date Sampled: 1/2/2014  
Sample Matrix: Soil Date Analyzed: 1/2/2014  
Preservative: Cool Analysis Needed: TPH-418.1  
Condition: Cool and Intact

Parameter	Concentration (mg/kg)	Det. Limit (mg/kg)
Total Petroleum Hydrocarbons	576	5.0

ND = Parameter not detected at the stated detection limit.

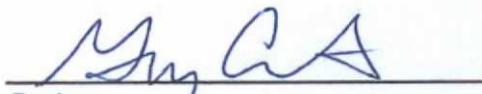
References: Method 418.1, Petroleum Hydrocarbons, Total Recoverable, Chemical Analysis of Water and Waste, USEPA Storet No. 4551, 1978.

Comments: **McGrath #4 SWD**

Instrument calibrated to 200 ppm standard and zeroed before each sample.

  
\_\_\_\_\_  
Analyst

Toni McKnight, EIT  
\_\_\_\_\_  
Printed

  
\_\_\_\_\_  
Review

Greg Crabtree, P E  
\_\_\_\_\_  
Printed



CONTINUOUS CALIBRATION  
EPA METHOD 418.1  
TOTAL PETROLEUM  
HYDROCARBONS

Cal. Date: 2-Jan-14

Parameter	Standard Concentration mg/L	Concentration Reading mg/L
TPH	100	215
	200	
	500	
	1000	

The accepted percent relative deviation (%RSD) of the calibration factor is less than 20% over the working range.

  
\_\_\_\_\_  
Analyst

2/18/2014  
\_\_\_\_\_  
Date

Toni McKnight, EIT  
\_\_\_\_\_  
Print Name

  
\_\_\_\_\_  
Review

2/18/2014  
\_\_\_\_\_  
Date

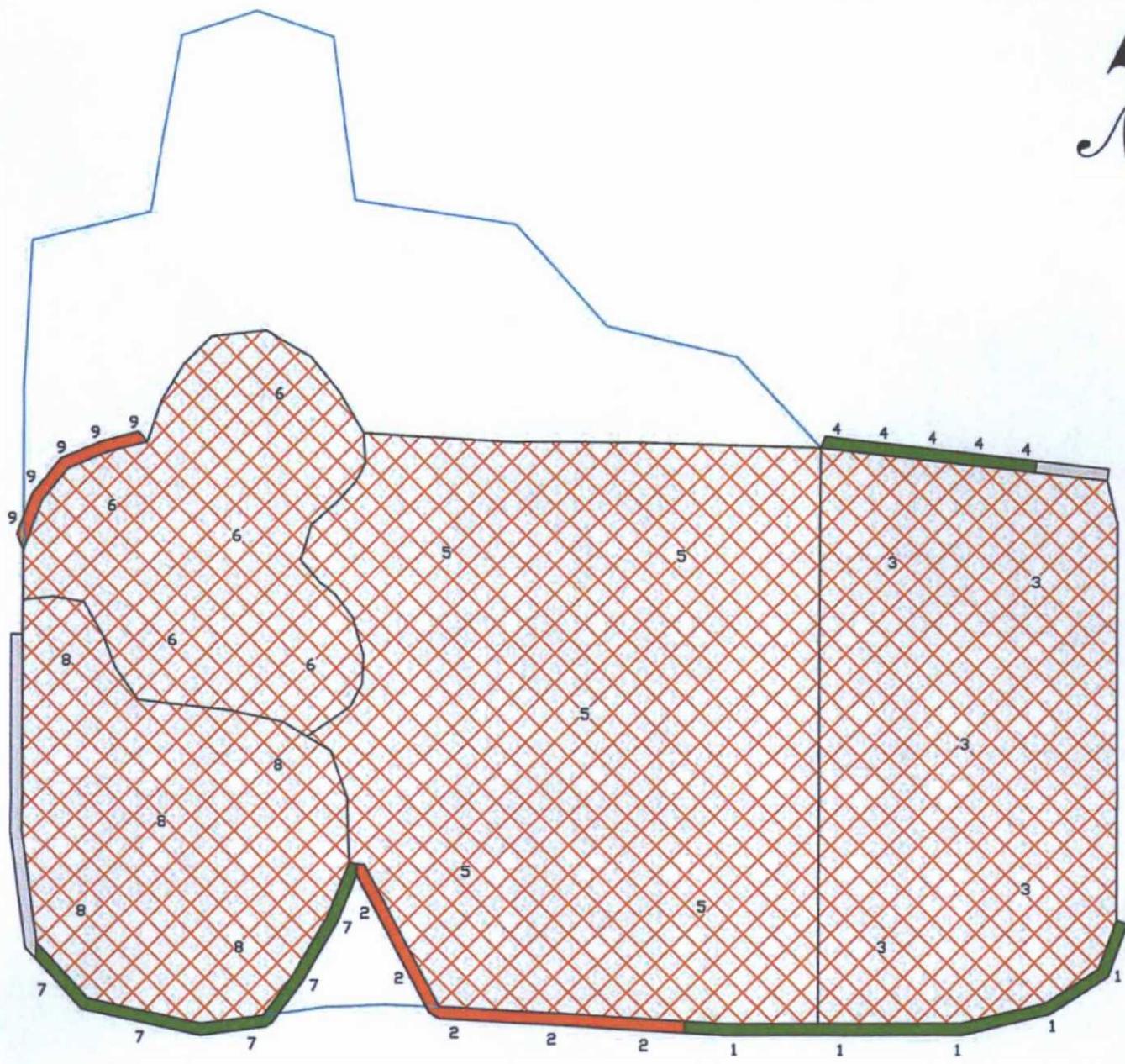
Greg Crabtree, P E  
\_\_\_\_\_  
Print Name

**APPENDIX C:**

**JANUARY 7, 2014**

**FIGURE 5 - SITE MAP**

**ANALYTICAL RESULTS**



### LEGEND

- Areas Below  
Regulatory  
Standards
- Perimeter  
of Final  
Excavation
- Areas Which  
Previously Met  
Regulatory  
Standards

**SITE MAP - 1/7/2014**  
**ConocoPhillips**  
 McGrath #4 SWD (hBr)  
 SECTION 34, TWP 30 NORTH, RANGE 12 WEST  
 SAN JUAN COUNTY, NEW MEXICO

SCALE: NTS	FIGURE NO. 5	REV
PROJECT NO92115--2540		

REVISIONS			

NO.	DATE	BY	DESCRIPTION
MAP DRWN	TLM	3/21/14	BASE DRWN TLM 2/25/13



5796 U.S. HIGHWAY 64, FARMINGTON, NM 87401 505-632-0615



EPA METHOD 418.1  
TOTAL PETROLEUM  
HYDROCARBONS

Client: ConocoPhillips Project #: 92115-2540  
Sample No.: 1 Date Reported: 2/17/2014  
Sample ID: Excavation D-F Date Sampled: 1/7/2014  
Sample Matrix: Soil Date Analyzed: 1/7/2014  
Preservative: Cool Analysis Needed: TPH-418.1  
Condition: Cool and Intact

Parameter	Concentration (mg/kg)	Det. Limit (mg/kg)
Total Petroleum Hydrocarbons	1,180	5.0

ND = Parameter not detected at the stated detection limit.

References: Method 418.1, Petroleum Hydrocarbons, Total Recoverable, Chemical Analysis of Water and Waste, USEPA Storet No. 4551, 1978.

Comments: **McGrath #4 SWD**

Instrument calibrated to 200 ppm standard and zeroed before each sample.

  
Analyst

Tiffany McIntosh  
Printed

  
Review

Toni McKnight, EIT  
Printed



EPA METHOD 418.1  
TOTAL PETROLEUM  
HYDROCARBONS

Client: ConocoPhillips Project #: 92115-2540  
Sample No.: 2 Date Reported: 2/17/2014  
Sample ID: Excavation D-F Date Sampled: 1/7/2014  
Sample Matrix: Soil Date Analyzed: 1/7/2014  
Preservative: Cool Analysis Needed: TPH-418.1  
Condition: Cool and Intact

Parameter	Concentration (mg/kg)	Det. Limit (mg/kg)
Total Petroleum Hydrocarbons	2,170	5.0

ND = Parameter not detected at the stated detection limit.

References: Method 418.1, Petroleum Hydrocarbons, Total Recoverable, Chemical Analysis of Water and Waste, USEPA Storet No. 4551, 1978.

Comments: **McGrath #4 SWD**

Instrument calibrated to 200 ppm standard and zeroed before each sample.

  
\_\_\_\_\_  
Analyst

Tiffany McIntosh  
\_\_\_\_\_  
Printed

  
\_\_\_\_\_  
Review

Toni McKnight, EIT  
\_\_\_\_\_  
Printed



EPA METHOD 418.1  
TOTAL PETROLEUM  
HYDROCARBONS

Client: ConocoPhillips Project #: 92115-2540  
Sample No.: 3 Date Reported: 2/17/2014  
Sample ID: Excavation D-F Date Sampled: 1/7/2014  
Sample Matrix: Soil Date Analyzed: 1/7/2014  
Preservative: Cool Analysis Needed: TPH-418.1  
Condition: Cool and Intact

Parameter	Concentration (mg/kg)	Det. Limit (mg/kg)
Total Petroleum Hydrocarbons	2,250	5.0

ND = Parameter not detected at the stated detection limit.

References: Method 418.1, Petroleum Hydrocarbons, Total Recoverable, Chemical Analysis of Water and Waste, USEPA Storet No. 4551, 1978.

Comments: **McGrath #4 SWD**

Instrument calibrated to 200 ppm standard and zeroed before each sample.

  
\_\_\_\_\_  
Analyst

Tiffany McIntosh  
\_\_\_\_\_  
Printed

  
\_\_\_\_\_  
Review

Toni McKnight, EIT  
\_\_\_\_\_  
Printed



EPA METHOD 418.1  
TOTAL PETROLEUM  
HYDROCARBONS

Client: ConocoPhillips Project #: 92115-2540  
Sample No.: 4 Date Reported: 2/17/2014  
Sample ID: Excavation D-F Date Sampled: 1/7/2014  
Sample Matrix: Soil Date Analyzed: 1/7/2014  
Preservative: Cool Analysis Needed: TPH-418.1  
Condition: Cool and Intact

Parameter	Concentration (mg/kg)	Det. Limit (mg/kg)
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Total Petroleum Hydrocarbons	136	5.0
------------------------------	-----	-----

ND = Parameter not detected at the stated detection limit.

References: Method 418.1, Petroleum Hydrocarbons, Total Recoverable, Chemical Analysis of Water and Waste, USEPA Storet No. 4551, 1978.

Comments: **McGrath #4 SWD**

Instrument calibrated to 200 ppm standard and zeroed before each sample.

  
\_\_\_\_\_  
Analyst

Tiffany McIntosh  
\_\_\_\_\_  
Printed

  
\_\_\_\_\_  
Review

Toni McKnight, EIT  
\_\_\_\_\_  
Printed



EPA METHOD 418.1  
TOTAL PETROLEUM  
HYDROCARBONS

Client:	ConocoPhillips	Project #:	92115-2540
Sample No.:	5	Date Reported:	2/17/2014
Sample ID:	Excavation D-F	Date Sampled:	1/7/2014
Sample Matrix:	Soil	Date Analyzed:	1/7/2014
Preservative:	Cool	Analysis Needed:	TPH-418.1
Condition:	Cool and Intact		

Parameter	Concentration (mg/kg)	Det. Limit (mg/kg)
Total Petroleum Hydrocarbons	2,570	5.0

ND = Parameter not detected at the stated detection limit.

References: Method 418.1, Petroleum Hydrocarbons, Total Recoverable, Chemical Analysis of Water and Waste, USEPA Storet No. 4551, 1978.

Comments: **McGrath #4 SWD**

Instrument calibrated to 200 ppm standard and zeroed before each sample.

  
\_\_\_\_\_  
Analyst

Tiffany McIntosh  
\_\_\_\_\_  
Printed

  
\_\_\_\_\_  
Review

Toni McKnight, EIT  
\_\_\_\_\_  
Printed



EPA METHOD 418.1  
TOTAL PETROLEUM  
HYDROCARBONS

Client: ConocoPhillips Project #: 92115-2540  
Sample No.: 6 Date Reported: 2/17/2014  
Sample ID: Excavation D-F Date Sampled: 1/7/2014  
Sample Matrix: Soil Date Analyzed: 1/7/2014  
Preservative: Cool Analysis Needed: TPH-418.1  
Condition: Cool and Intact

Parameter	Concentration (mg/kg)	Det. Limit (mg/kg)
Total Petroleum Hydrocarbons	4,060	5.0

ND = Parameter not detected at the stated detection limit.

References: Method 418.1, Petroleum Hydrocarbons, Total Recoverable, Chemical Analysis of Water and Waste, USEPA Storet No. 4551, 1978.

Comments: McGrath #4 SWD

Instrument calibrated to 200 ppm standard and zeroed before each sample.

  
\_\_\_\_\_  
Analyst

Tiffany McIntosh  
\_\_\_\_\_  
Printed

  
\_\_\_\_\_  
Review

Toni McKnight, EIT  
\_\_\_\_\_  
Printed



EPA METHOD 418.1  
TOTAL PETROLEUM  
HYDROCARBONS

Client: ConocoPhillips Project #: 92115-2540  
Sample No.: 7 Date Reported: 2/17/2014  
Sample ID: Excavation D-F Date Sampled: 1/7/2014  
Sample Matrix: Soil Date Analyzed: 1/7/2014  
Preservative: Cool Analysis Needed: TPH-418.1  
Condition: Cool and Intact

Parameter	Concentration (mg/kg)	Det. Limit (mg/kg)
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Total Petroleum Hydrocarbons 128 5.0

ND = Parameter not detected at the stated detection limit.

References: Method 418.1, Petroleum Hydrocarbons, Total Recoverable, Chemical Analysis of Water and Waste, USEPA Storet No. 4551, 1978.

Comments: **McGrath #4 SWD**

Instrument calibrated to 200 ppm standard and zeroed before each sample.

  
\_\_\_\_\_  
Analyst

Tiffany McIntosh  
\_\_\_\_\_  
Printed

  
\_\_\_\_\_  
Review

Toni McKnight, EIT  
\_\_\_\_\_  
Printed



EPA METHOD 418.1  
TOTAL PETROLEUM  
HYDROCARBONS

Client:	ConocoPhillips	Project #:	92115-2540
Sample No.:	8	Date Reported:	2/17/2014
Sample ID:	Excavation D-F	Date Sampled:	1/7/2014
Sample Matrix:	Soil	Date Analyzed:	1/7/2014
Preservative:	Cool	Analysis Needed:	TPH-418.1
Condition:	Cool and Intact		

Parameter	Concentration (mg/kg)	Det. Limit (mg/kg)
Total Petroleum Hydrocarbons	2,100	5.0

ND = Parameter not detected at the stated detection limit.

References: Method 418.1, Petroleum Hydrocarbons, Total Recoverable, Chemical Analysis of Water and Waste, USEPA Storet No. 4551, 1978.

Comments: **McGrath #4 SWD**

Instrument calibrated to 200 ppm standard and zeroed before each sample.

  
\_\_\_\_\_  
Analyst

Tiffany McIntosh  
\_\_\_\_\_  
Printed

  
\_\_\_\_\_  
Review

Toni McKnight, EIT  
\_\_\_\_\_  
Printed



EPA METHOD 418.1  
TOTAL PETROLEUM  
HYDROCARBONS

Client: ConocoPhillips Project #: 92115-2540  
Sample No.: 9 Date Reported: 2/17/2014  
Sample ID: Excavation D-F Date Sampled: 1/7/2014  
Sample Matrix: Soil Date Analyzed: 1/7/2014  
Preservative: Cool Analysis Needed: TPH-418.1  
Condition: Cool and Intact

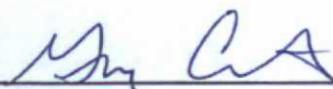
Parameter	Concentration (mg/kg)	Det. Limit (mg/kg)
Total Petroleum Hydrocarbons	3,170	5.0

ND = Parameter not detected at the stated detection limit.

References: Method 418.1, Petroleum Hydrocarbons, Total Recoverable, Chemical Analysis of Water and Waste, USEPA Storet No. 4551, 1978.

Comments: **McGrath #4 SWD**

Instrument calibrated to 200 ppm standard and zeroed before each sample.

  
\_\_\_\_\_  
Analyst

Tiffany McIntosh  
\_\_\_\_\_  
Printed

  
\_\_\_\_\_  
Review

Toni McKnight, EIT  
\_\_\_\_\_  
Printed



CONTINUOUS CALIBRATION  
EPA METHOD 418.1  
TOTAL PETROLEUM  
HYDROCARBONS

Cal. Date: 7-Jan-14

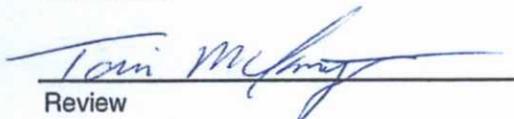
Parameter	Standard Concentration mg/L	Concentration Reading mg/L
TPH	100	212
	200	
	500	
	1000	

The accepted percent relative deviation (%RSD) of the calibration factor is less than 20% over the working range.

  
\_\_\_\_\_  
Analyst

2/17/2014  
\_\_\_\_\_  
Date

Tiffany McIntosh  
\_\_\_\_\_  
Print Name

  
\_\_\_\_\_  
Review

2/17/2014  
\_\_\_\_\_  
Date

Toni McKnight, EIT  
\_\_\_\_\_  
Print Name



## Analytical Report

### Report Summary

Client: ConocoPhillips

Chain Of Custody Number: 16285

Samples Received: 1/7/2014 1:55:00PM

Job Number: 92115-2540

Work Order: P401011

Project Name/Location: McGrath #4 SWD

Entire Report Reviewed By:

A handwritten signature in black ink, appearing to read 'Tim Cain', is written over a horizontal line.

Date: 1/8/14

Tim Cain, Laboratory Manager

The results in this report apply to the samples submitted to Envirotech's Analytical Laboratory and were analyzed in accordance with the chain of custody document supplied by you, the client, and as such are for your exclusive use only. The results in this report are based on the sample as received unless otherwise noted. Partial or incomplete reproduction of this report is prohibited, unless approved by Envirotech, Inc. If you have any questions regarding this analytical report, please don't hesitate to contact Envirotech's Laboratory Staff.



ConocoPhillips PO Box 2200 Bartlesville OK, 74005	Project Name: McGrath #4 SWD Project Number: 92115-2540 Project Manager: Tiffany McIntosh	Reported: 08-Jan-14 13:52
---	---	------------------------------

### Analytical Report for Samples

Client Sample ID	Lab Sample ID	Matrix	Sampled	Received	Container
1	P401011-01A	Soil	01/07/14	01/07/14	Glass Jar, 4 oz.

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Three Springs • 65 Mercado Street, Suite 115, Durango, CO 81301

Ph (505) 632-0615 Fx (505) 632-1865

Ph (970) 259-0615 Fr (800) 362-1879

envirotech-inc.com  
Laboratory@envirotech-inc.com



ConocoPhillips PO Box 2200 Bartlesville OK, 74005	Project Name: McGrath #4 SWD Project Number: 92115-2540 Project Manager: Tiffany McIntosh	Reported: 08-Jan-14 13:52
---	---	------------------------------

1  
P401011-01 (Solid)

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
<b>Nonhalogenated Organics by 8015</b>									
Gasoline Range Organics (C6-C10)	ND	5.00	mg/kg	1	1402012	01/07/14	01/08/14	EPA 8015D	
Diesel Range Organics (C10-C28)	162	30.0	mg/kg	1	1402011	01/07/14	01/08/14	EPA 8015D	
GRO and DRO Combined Fractions	162	5.00	mg/kg		[CALC]	01/07/14	01/08/14	EPA 8015D	

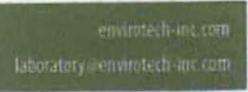
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Ph (970) 259-0615 Fr (800) 362-1879





ConocoPhillips PO Box 2200 Bartlesville OK, 74005	Project Name: McGrath #4 SWD Project Number: 92115-2540 Project Manager: Tiffany McIntosh	Reported: 08-Jan-14 13:52
---	---	------------------------------

**Nonhalogenated Organics by 8015 - Quality Control**  
**Envirotech Analytical Laboratory**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
<b>Batch 1402011 - DRO Extraction EPA 3550C</b>										
<b>Blank (1402011-BLK1)</b>										
Diesel Range Organics (C10-C28)	ND	29.9	mg/kg							Prepared: 07-Jan-14 Analyzed: 08-Jan-14
<b>Duplicate (1402011-DUP1)</b>										
Diesel Range Organics (C10-C28)	158	29.9	mg/kg		162			2.39	30	Source: P401011-01 Prepared: 07-Jan-14 Analyzed: 08-Jan-14
<b>Matrix Spike (1402011-MS1)</b>										
Diesel Range Organics (C10-C28)	402	31.6	mg/kg	263	162	91.3	75-125			Source: P401011-01 Prepared: 07-Jan-14 Analyzed: 08-Jan-14

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Ph (970) 259-0615 Fr (800) 362-1879

envirotech-inc.com  
laboratory@envirotech-inc.com



ConocoPhillips PO Box 2200 Bartlesville OK, 74005	Project Name: McGrath #4 SWD Project Number: 92115-2540 Project Manager: Tiffany McIntosh	Reported: 08-Jan-14 13:52
---	---	------------------------------

**Nonhalogenated Organics by 8015 - Quality Control**  
**Envirotech Analytical Laboratory**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
<b>Batch 1402012 - Purge and Trap EPA 5030A</b>										
<b>Blank (1402012-BLK1)</b>					Prepared: 07-Jan-14 Analyzed: 08-Jan-14					
Gasoline Range Organics (C6-C10)	ND	5.00	mg/kg							
<b>Duplicate (1402012-DUP1)</b>					Source: P401010-01 Prepared: 07-Jan-14 Analyzed: 08-Jan-14					
Gasoline Range Organics (C6-C10)	ND	5.00	mg/kg		ND				30	
<b>Matrix Spike (1402012-MS1)</b>					Source: P401010-01 Prepared: 07-Jan-14 Analyzed: 08-Jan-14					
Gasoline Range Organics (C6-C10)	0.41		mg/L	0.450	0.03	85.3	75-125			

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Ph (970) 259-0615 Fr (800) 362-1879

[envirotech-inc.com](http://envirotech-inc.com)  
[laboratory@envirotech-inc.com](mailto:laboratory@envirotech-inc.com)



ConocoPhillips  
PO Box 2200  
Bartlesville OK, 74005

Project Name: McGrath #4 SWD  
Project Number: 92115-2540  
Project Manager: Tiffany McIntosh

Reported:  
08-Jan-14 13:52

#### Notes and Definitions

DET Analyte DETECTED  
ND Analyte NOT DETECTED at or above the reporting limit  
NR Not Reported  
dry Sample results reported on a dry weight basis  
RPD Relative Percent Difference

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Ph (970) 259-0615 Fr (800) 362-1879

envirotech-inc.com  
laboratory@envirotech-inc.com

RUSH

# CHAIN OF CUSTODY RECORD

16285

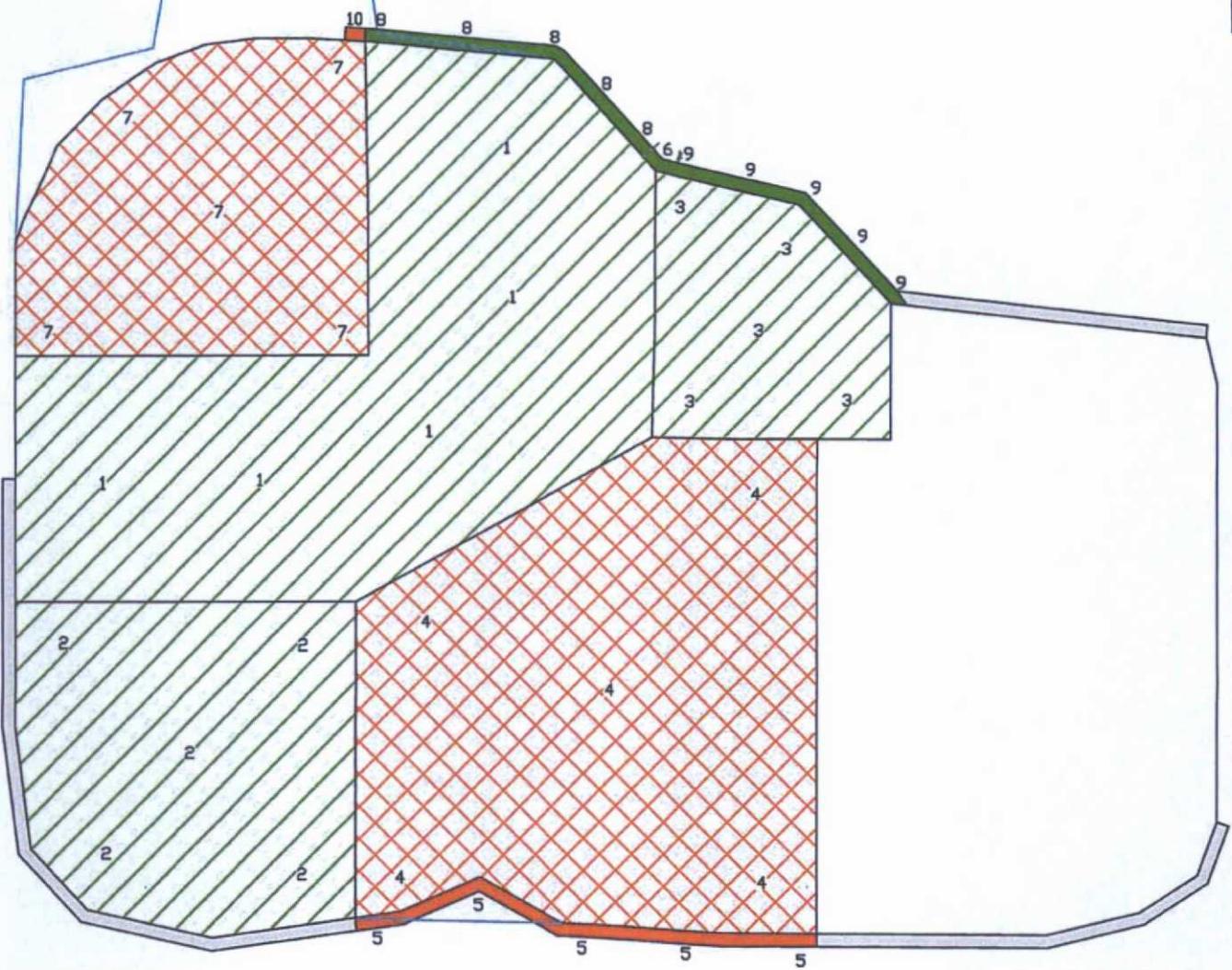
Client: <b>ConocoPhillips</b>			Project Name / Location: <b>McGrath #4 SWD</b>			ANALYSIS / PARAMETERS																
Email results to: <b>T. McIntosh</b>			Sampler Name: <b>T. McIntosh</b>			TPH (Method 8015)	BTEX (Method 8021)	VOC (Method 8260)	PCRA & Metals	Cation / Anion	RCI	TCLP with H/P	CO Table 910-1	TPH (418.1)	CHLORIDE			Sample Cool	Sample Intact			
Client Phone No.:			Client No.: <b>92115-2540</b>																			
Sample No. / Identification	Sample Date	Sample Time	Lab No.	No. / Volume of Containers	Preservative																	
					HNO <sub>3</sub>	HCl	(CCl <sub>4</sub> )															
1	1/7/14	11:07	P401011-01	1 - 4oz jar			X	X												X	X	
Relinquished by: (Signature) <i>Tiffany McIntosh</i>				Date	Time	Received by: (Signature) <i>Michael Joe</i>				Date	Time											
Relinquished by: (Signature)				1/7/14	1355	Received by: (Signature)				1/7/14	13:55											
Sample Matrix																						
Soil <input checked="" type="checkbox"/> Solid <input type="checkbox"/> Sludge <input type="checkbox"/> Aqueous <input type="checkbox"/> Other <input type="checkbox"/>																						
<input type="checkbox"/> Sample(s) dropped off after hours to secure drop off area.																						



**APPENDIX D:**  
**JANUARY 10, 2014**

**FIGURE 6 - SITE MAP**

**ANALYTICAL RESULTS**



### LEGEND

- 

Areas Below  
Regulatory  
Standards
- 

Areas Above  
Regulatory  
Standards
- 
Perimeter  
of Final  
Excavation
- 

Areas Which  
Previously Met  
Regulatory  
Standards

### SITE MAP - 1/10/2014

ConocoPhillips

McGrath #4 SWD (hBr)

SECTION 34, TWP 30 NORTH, RANGE 12 WEST  
SAN JUAN COUNTY, NEW MEXICO

SCALE: NTS	FIGURE NO. 6	REV
PROJECT NO92115-2540		

#### REVISIONS

NO.	DATE	BY	DESCRIPTION
MAP DRWN	TLM	3/20/14	BASE DRWN TLM 2/25/13



5796 U.S. HIGHWAY 64, FARMINGTON, NM 87401 505-632-0615



EPA METHOD 418.1  
TOTAL PETROLEUM  
HYDROCARBONS

Client: ConocoPhillips Project #: 92115-2540  
Sample No.: 1 Date Reported: 2/17/2014  
Sample ID: Excavation D-F Date Sampled: 1/10/2014  
Sample Matrix: Soil Date Analyzed: 1/10/2014  
Preservative: Cool Analysis Needed: TPH-418.1  
Condition: Cool and Intact

Parameter	Concentration (mg/kg)	Det. Limit (mg/kg)
Total Petroleum Hydrocarbons	32	5.0

ND = Parameter not detected at the stated detection limit.

References: Method 418.1, Petroleum Hydrocarbons, Total Recoverable, Chemical Analysis of Water and Waste, USEPA Storet No. 4551, 1978.

Comments: **McGrath #4 SWD**

Instrument calibrated to 200 ppm standard and zeroed before each sample.

  
\_\_\_\_\_  
Analyst

Tiffany McIntosh  
\_\_\_\_\_  
Printed

  
\_\_\_\_\_  
Review

Toni McKnight, EIT  
\_\_\_\_\_  
Printed



EPA METHOD 418.1  
TOTAL PETROLEUM  
HYDROCARBONS

Client:	ConocoPhillips	Project #:	92115-2540
Sample No.:	2	Date Reported:	2/17/2014
Sample ID:	Excavation D-F	Date Sampled:	1/10/2014
Sample Matrix:	Soil	Date Analyzed:	1/10/2014
Preservative:	Cool	Analysis Needed:	TPH-418.1
Condition:	Cool and Intact		

Parameter	Concentration (mg/kg)	Det. Limit (mg/kg)
Total Petroleum Hydrocarbons	1,060	5.0

ND = Parameter not detected at the stated detection limit.

References: Method 418.1, Petroleum Hydrocarbons, Total Recoverable, Chemical Analysis of Water and Waste, USEPA Storet No. 4551, 1978.

Comments: **McGrath #4 SWD**

Instrument calibrated to 200 ppm standard and zeroed before each sample.

  
 Analyst

Tiffany McIntosh  
 Printed

  
 Review

Toni McKnight, EIT  
 Printed



EPA METHOD 418.1  
TOTAL PETROLEUM  
HYDROCARBONS

Client: ConocoPhillips Project #: 92115-2540  
Sample No.: 3 Date Reported: 2/17/2014  
Sample ID: Excavation D-F Date Sampled: 1/10/2014  
Sample Matrix: Soil Date Analyzed: 1/10/2014  
Preservative: Cool Analysis Needed: TPH-418.1  
Condition: Cool and Intact

Parameter	Concentration (mg/kg)	Det. Limit (mg/kg)
-----------	--------------------------	--------------------------

Total Petroleum Hydrocarbons 32 5.0

ND = Parameter not detected at the stated detection limit.

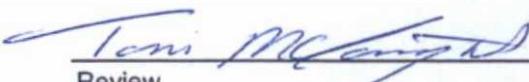
References: Method 418.1, Petroleum Hydrocarbons, Total Recoverable, Chemical Analysis of Water and Waste, USEPA Storet No. 4551, 1978.

Comments: McGrath #4 SWD

Instrument calibrated to 200 ppm standard and zeroed before each sample.

  
\_\_\_\_\_  
Analyst

Tiffany McIntosh  
\_\_\_\_\_  
Printed

  
\_\_\_\_\_  
Review

Toni McKnight, EIT  
\_\_\_\_\_  
Printed



EPA METHOD 418.1  
TOTAL PETROLEUM  
HYDROCARBONS

Client: ConocoPhillips Project #: 92115-2540  
Sample No.: 6 Date Reported: 2/17/2014  
Sample ID: Excavation D-F Date Sampled: 1/10/2014  
Sample Matrix: Soil Date Analyzed: 1/10/2014  
Preservative: Cool Analysis Needed: TPH-418.1  
Condition: Cool and Intact

Parameter	Concentration (mg/kg)	Det. Limit (mg/kg)
Total Petroleum Hydrocarbons	432	5.0

ND = Parameter not detected at the stated detection limit.

References: Method 418.1, Petroleum Hydrocarbons, Total Recoverable, Chemical Analysis of Water and Waste, USEPA Storet No. 4551, 1978.

Comments: **McGrath #4 SWD**

Instrument calibrated to 200 ppm standard and zeroed before each sample.

  
\_\_\_\_\_  
Analyst

Tiffany McIntosh  
\_\_\_\_\_  
Printed

  
\_\_\_\_\_  
Review

Toni McKnight, EIT  
\_\_\_\_\_  
Printed



EPA METHOD 418.1  
TOTAL PETROLEUM  
HYDROCARBONS

Client: ConocoPhillips Project #: 92115-2540  
Sample No.: 8 Date Reported: 2/17/2014  
Sample ID: Excavation D-F Date Sampled: 1/10/2014  
Sample Matrix: Soil Date Analyzed: 1/10/2014  
Preservative: Cool Analysis Needed: TPH-418.1  
Condition: Cool and Intact

Parameter	Concentration (mg/kg)	Det. Limit (mg/kg)
Total Petroleum Hydrocarbons	120	5.0

ND = Parameter not detected at the stated detection limit.

References: Method 418.1, Petroleum Hydrocarbons, Total Recoverable, Chemical Analysis of Water and Waste, USEPA Storet No. 4551, 1978.

Comments: **McGrath #4 SWD**

Instrument calibrated to 200 ppm standard and zeroed before each sample.

  
\_\_\_\_\_  
Analyst

Tiffany McIntosh  
\_\_\_\_\_  
Printed

  
\_\_\_\_\_  
Review

Toni McKnight, EIT  
\_\_\_\_\_  
Printed



EPA METHOD 418.1  
TOTAL PETROLEUM  
HYDROCARBONS

Client: ConocoPhillips Project #: 92115-2540  
Sample No.: 9 Date Reported: 2/17/2014  
Sample ID: Excavation D-F Date Sampled: 1/10/2014  
Sample Matrix: Soil Date Analyzed: 1/10/2014  
Preservative: Cool Analysis Needed: TPH-418.1  
Condition: Cool and Intact

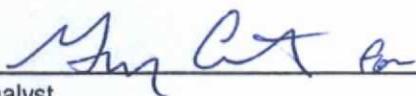
Parameter	Concentration (mg/kg)	Det. Limit (mg/kg)
Total Petroleum Hydrocarbons	196	5.0

ND = Parameter not detected at the stated detection limit.

References: Method 418.1, Petroleum Hydrocarbons, Total Recoverable, Chemical Analysis of Water and Waste, USEPA Storet No. 4551, 1978.

Comments: McGrath #4 SWD

Instrument calibrated to 200 ppm standard and zeroed before each sample.

  
\_\_\_\_\_  
Analyst

Tiffany McIntosh  
\_\_\_\_\_  
Printed

  
\_\_\_\_\_  
Review

Toni McKnight, EIT  
\_\_\_\_\_  
Printed



CONTINUOUS CALIBRATION  
EPA METHOD 418.1  
TOTAL PETROLEUM  
HYDROCARBONS

Cal. Date: 10-Jan-14

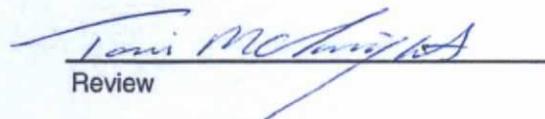
Parameter	Standard Concentration mg/L	Concentration Reading mg/L
TPH	100	185
	200	
	500	
	1000	

The accepted percent relative deviation (%RSD) of the calibration factor is less than 20% over the working range.

  
Analyst

2/17/2014  
Date

Tiffany McIntosh  
Print Name

  
Review

2/17/2014  
Date

Toni McKnight, EIT  
Print Name



## Analytical Report

### Report Summary

Client: ConocoPhillips

Chain Of Custody Number: 16490

Samples Received: 1/10/2014 2:15:00PM

Job Number: 92115-2540

Work Order: P401025

Project Name/Location: McGrath #4 SWD

Entire Report Reviewed By:

A handwritten signature in black ink, appearing to read 'Tim Cain', is written over a horizontal line.

Tim Cain, Laboratory Manager

Date: 1/14/14

The results in this report apply to the samples submitted to Envirotech's Analytical Laboratory and were analyzed in accordance with the chain of custody document supplied by you, the client, and as such are for your exclusive use only. The results in this report are based on the sample as received unless otherwise noted. Partial or incomplete reproduction of this report is prohibited, unless approved by Envirotech, Inc. If you have any questions regarding this analytical report, please don't hesitate to contact Envirotech's Laboratory Staff.



ConocoPhillips PO Box 2200 Bartlesville OK, 74005	Project Name: McGrath #4 SWD Project Number: 92115-2540 Project Manager: Tiffany McIntosh	Reported: 14-Jan-14 13:37
---	---	------------------------------

### Analytical Report for Samples

Client Sample ID	Lab Sample ID	Matrix	Sampled	Received	Container
2	P401025-01A	Soil	01/10/14	01/10/14	Glass Jar, 4 oz.

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laboratory@envirotech-inc.com



ConocoPhillips PO Box 2200 Bartlesville OK, 74005	Project Name: McGrath #4 SWD Project Number: 92115-2540 Project Manager: Tiffany McIntosh	Reported: 14-Jan-14 13:37
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2

**P401025-01 (Solid)**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
<b>Volatile Organics by EPA 8021</b>									
Benzene	ND	0.05	mg/kg	1	1402032	01/10/14	01/13/14	EPA 8021B	
Toluene	ND	0.05	mg/kg	1	1402032	01/10/14	01/13/14	EPA 8021B	
Ethylbenzene	ND	0.05	mg/kg	1	1402032	01/10/14	01/13/14	EPA 8021B	
p,m-Xylene	2.52	0.05	mg/kg	1	1402032	01/10/14	01/13/14	EPA 8021B	
o-Xylene	0.13	0.05	mg/kg	1	1402032	01/10/14	01/13/14	EPA 8021B	
Total Xylenes	2.65	0.05	mg/kg	1	1402032	01/10/14	01/13/14	EPA 8021B	
Total BTEX	2.65	0.05	mg/kg	1	1402032	01/10/14	01/13/14	EPA 8021B	
Surrogate: Bromochlorobenzene		130 %		80-120	1402032	01/10/14	01/13/14	EPA 8021B	Surr1
Surrogate: 1,3-Dichlorobenzene		112 %		80-120	1402032	01/10/14	01/13/14	EPA 8021B	
<b>Nonhalogenated Organics by 8015</b>									
Gasoline Range Organics (C6-C10)	39.5	4.99	mg/kg	1	1402032	01/10/14	01/13/14	EPA 8015D	
Diesel Range Organics (C10-C28)	152	29.9	mg/kg	1	1402031	01/10/14	01/13/14	EPA 8015D	
GRO and DRO Combined Fractions	191	4.99	mg/kg		[CALC]	01/10/14	01/13/14	EPA 8015D	

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laboratory@envirotech-inc.com



ConocoPhillips PO Box 2200 Bartlesville OK, 74005	Project Name: McGrath #4 SWD Project Number: 92115-2540 Project Manager: Tiffany McIntosh	Reported: 14-Jan-14 13:37
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**Notes and Definitions**

- Surr1 Surrogate recovery was above acceptable limits.
- DET Analyte DETECTED
- ND Analyte NOT DETECTED at or above the reporting limit
- NR Not Reported
- dry Sample results reported on a dry weight basis
- RPD Relative Percent Difference

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ConocoPhillips PO Box 2200 Bartlesville OK, 74005	Project Name: McGrath #4 SWD Project Number: 92115-2540 Project Manager: Tiffany McIntosh	Reported: 14-Jan-14 13:37
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**Nonhalogenated Organics by 8015 - Quality Control**

**Envirotech Analytical Laboratory**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
<b>Batch 1402031 - DRO Extraction EPA 3550C</b>										
<b>Blank (1402031-BLK1)</b> Prepared: 10-Jan-14 Analyzed: 13-Jan-14										
Diesel Range Organics (C10-C28)	ND	29.9	mg/kg							
<b>Duplicate (1402031-DUP1)</b> Source: P401023-01 Prepared: 10-Jan-14 Analyzed: 13-Jan-14										
Diesel Range Organics (C10-C28)	ND	29.9	mg/kg		ND				30	
<b>Matrix Spike (1402031-MS1)</b> Source: P401023-01 Prepared: 10-Jan-14 Analyzed: 13-Jan-14										
Diesel Range Organics (C10-C28)	266	31.6	mg/kg	263	ND	101	75-125			

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[laboratory@envirotech-inc.com](mailto:laboratory@envirotech-inc.com)



ConocoPhillips PO Box 2200 Bartlesville OK, 74005	Project Name: McGrath #4 SWD Project Number: 92115-2540 Project Manager: Tiffany McIntosh	Reported: 14-Jan-14 13:37
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**Nonhalogenated Organics by 8015 - Quality Control**  
**Envirotech Analytical Laboratory**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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**Batch 1402032 - Purge and Trap EPA 5030A**

<b>Blank (1402032-BLK1)</b>			Prepared: 10-Jan-14 Analyzed: 13-Jan-14							
Gasoline Range Organics (C6-C10)	ND	5.00	mg/kg							
<b>Duplicate (1402032-DUP1)</b>			Source: P401023-01 Prepared: 10-Jan-14 Analyzed: 13-Jan-14							
Gasoline Range Organics (C6-C10)	ND	5.00	mg/kg		ND				30	
<b>Matrix Spike (1402032-MS1)</b>			Source: P401023-01 Prepared: 10-Jan-14 Analyzed: 13-Jan-14							
Gasoline Range Organics (C6-C10)	0.44		mg/L	0.450	0.01	95.3	75-125			

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Ph (970) 259-0615 Fr (800) 362-1879



RUSH!

# CHAIN OF CUSTODY RECORD

16490

Client: <b>Conoco Phillips (hBr)</b>		Project Name / Location: <b>McGrath #4 SWD</b>		ANALYSIS / PARAMETERS													
Email results to: <b>T. McIntosh</b>		Sampler Name: <b>T. McIntosh</b>		TPH (Method 8015)	BTEX (Method 8021)	VOC (Method 8260)	RCRA 8 Metals	Cation / Anion	RCI	TCLP with H/P	CO Table 910-1	TPH (418.1)	CHLORIDE			Sample Cool	Sample Intact
Client Phone No.:		Client No.: <b>92115-2540</b>															

Sample No./ Identification	Sample Date	Sample Time	Lab No.	No./Volume of Containers	Preservative			TPH (Method 8015)	BTEX (Method 8021)	VOC (Method 8260)	RCRA 8 Metals	Cation / Anion	RCI	TCLP with H/P	CO Table 910-1	TPH (418.1)	CHLORIDE			Sample Cool	Sample Intact	
					HNO <sub>3</sub>	HCl	cool															
2	1/10/14	1415		1-4oz jar			X	X	X												✓	✓

Relinquished by: (Signature) <b>Tiffany McIntosh</b>	Date <b>1/10/14</b>	Time <b>1415</b>	Received by: (Signature) <b>Diane O'Zagari</b>	Date <b>1/10/14</b>	Time <b>1415</b>
--	---------------------	------------------	--	---------------------	------------------

Relinquished by: (Signature)	Date	Time	Received by: (Signature)	Date	Time
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Sample Matrix  
 Soil  Solid  Sludge  Aqueous  Other  \_\_\_\_\_

Sample(s) dropped off after hours to secure drop off area.

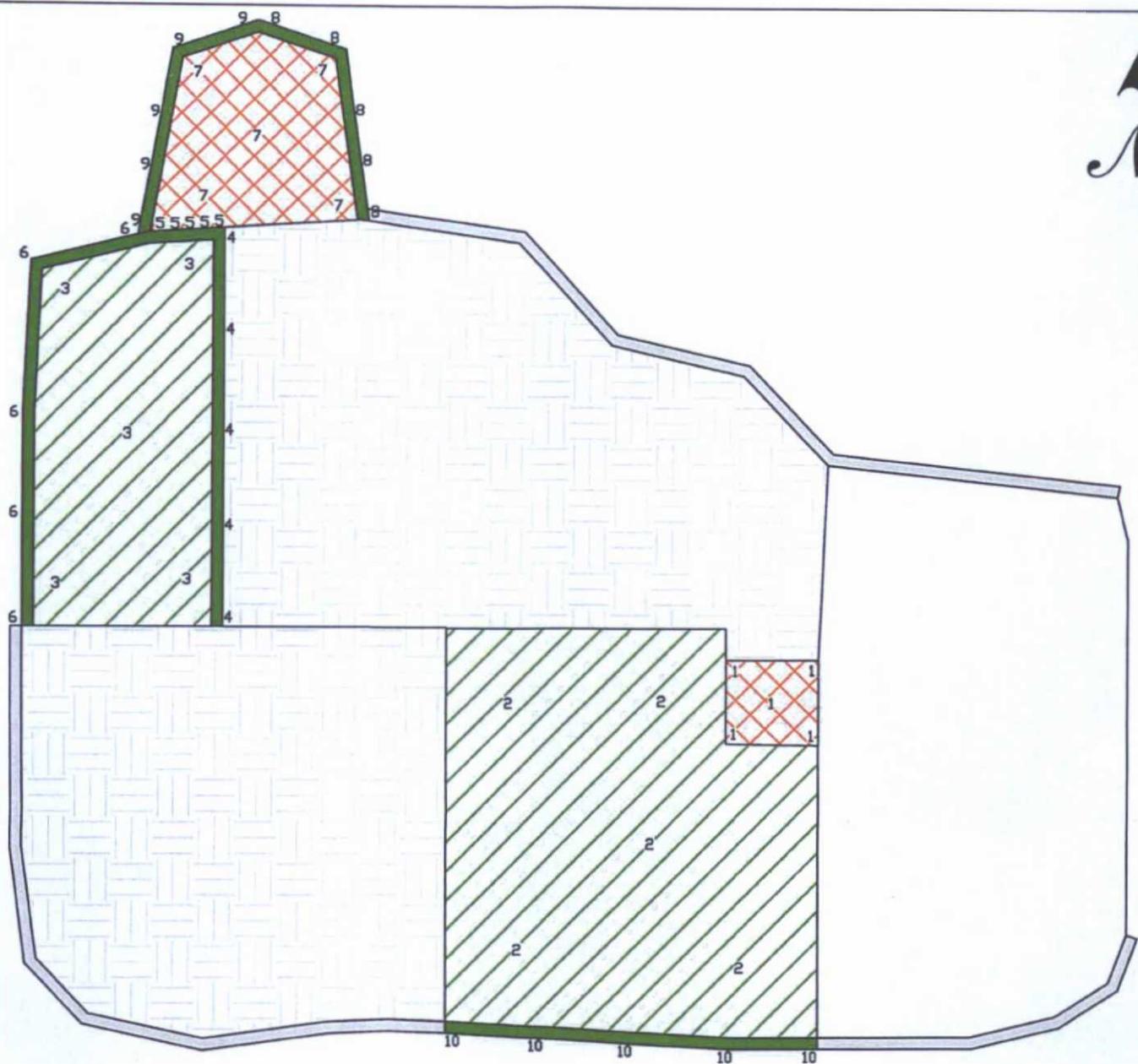


**APPENDIX E:**

**JANUARY 14, 2014**

**FIGURE 7 - SITE MAP**

**ANALYTICAL RESULTS**



**LEGEND**

- 

Areas Below  
Regulatory  
Standards
- 

Areas Above  
Regulatory  
Standards
- 

Areas Which  
Previously Met  
Regulatory  
Standards

**SITE MAP - 1/14/2014**

**ConocoPhillips  
McGrath #4 SWD (hBr)  
SECTION 34, TWP 30 NORTH, RANGE 12 WEST  
SAN JUAN COUNTY, NEW MEXICO**

SCALE: NTS	FIGURE NO. 7	REV
PROJECT NO92115-2540		

REVISIONS			
NO.	DATE	BY	DESCRIPTION
MAP DRWN	TLM	3/20/14	BASE DRWN TLM 2/25/13



5796 U.S. HIGHWAY 64, FARMINGTON, NM 87401 505-632-0615



EPA METHOD 418.1  
TOTAL PETROLEUM  
HYDROCARBONS

Client: ConocoPhillips Project #: 92115-2540  
Sample No.: 2 Date Reported: 2/17/2014  
Sample ID: Excavation D-F Date Sampled: 1/14/2014  
Sample Matrix: Soil Date Analyzed: 1/14/2014  
Preservative: Cool Analysis Needed: TPH-418.1  
Condition: Cool and Intact

Parameter	Concentration (mg/kg)	Det. Limit (mg/kg)
Total Petroleum Hydrocarbons	1,710	5.0

ND = Parameter not detected at the stated detection limit.

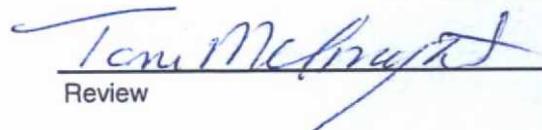
References: Method 418.1, Petroleum Hydrocarbons, Total Recoverable, Chemical Analysis of Water and Waste, USEPA Storet No. 4551, 1978.

Comments: McGrath #4 SWD

Instrument calibrated to 200 ppm standard and zeroed before each sample.

  
\_\_\_\_\_  
Analyst

Tiffany McIntosh  
\_\_\_\_\_  
Printed

  
\_\_\_\_\_  
Review

Toni McKnight, EIT  
\_\_\_\_\_  
Printed



EPA METHOD 418.1  
TOTAL PETROLEUM  
HYDROCARBONS

Client: ConocoPhillips Project #: 92115-2540  
Sample No.: 3 Date Reported: 2/17/2014  
Sample ID: Excavation D-F Date Sampled: 1/14/2014  
Sample Matrix: Soil Date Analyzed: 1/14/2014  
Preservative: Cool Analysis Needed: TPH-418.1  
Condition: Cool and Intact

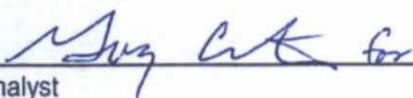
Parameter	Concentration (mg/kg)	Det. Limit (mg/kg)
Total Petroleum Hydrocarbons	2,600	5.0

ND = Parameter not detected at the stated detection limit.

References: Method 418.1, Petroleum Hydrocarbons, Total Recoverable, Chemical Analysis of Water and Waste, USEPA Storet No. 4551, 1978.

Comments: **McGrath #4 SWD**

Instrument calibrated to 200 ppm standard and zeroed before each sample.

  
\_\_\_\_\_  
Analyst

Tiffany McIntosh  
\_\_\_\_\_  
Printed

  
\_\_\_\_\_  
Review

Toni McKnight, EIT  
\_\_\_\_\_  
Printed



EPA METHOD 418.1  
TOTAL PETROLEUM  
HYDROCARBONS

Client: ConocoPhillips Project #: 92115-2540  
Sample No.: 4 Date Reported: 2/17/2014  
Sample ID: Excavation D-F Date Sampled: 1/14/2014  
Sample Matrix: Soil Date Analyzed: 1/14/2014  
Preservative: Cool Analysis Needed: TPH-418.1  
Condition: Cool and Intact

Parameter	Concentration (mg/kg)	Det. Limit (mg/kg)
Total Petroleum Hydrocarbons	212	5.0

ND = Parameter not detected at the stated detection limit.

References: Method 418.1, Petroleum Hydrocarbons, Total Recoverable, Chemical Analysis of Water and Waste, USEPA Storet No. 4551, 1978.

Comments: **McGrath #4 SWD**

Instrument calibrated to 200 ppm standard and zeroed before each sample.

  
\_\_\_\_\_  
Analyst

Tiffany McIntosh  
\_\_\_\_\_  
Printed

  
\_\_\_\_\_  
Review

Toni McKnight, EIT  
\_\_\_\_\_  
Printed



EPA METHOD 418.1  
TOTAL PETROLEUM  
HYDROCARBONS

Client: ConocoPhillips Project #: 92115-2540  
Sample No.: 5 Date Reported: 2/17/2014  
Sample ID: Excavation D-F Date Sampled: 1/14/2014  
Sample Matrix: Soil Date Analyzed: 1/14/2014  
Preservative: Cool Analysis Needed: TPH-418.1  
Condition: Cool and Intact

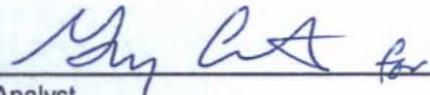
Parameter	Concentration (mg/kg)	Det. Limit (mg/kg)
Total Petroleum Hydrocarbons	144	5.0

ND = Parameter not detected at the stated detection limit.

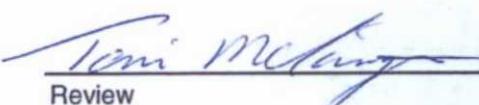
References: Method 418.1, Petroleum Hydrocarbons, Total Recoverable, Chemical Analysis of Water and Waste, USEPA Storet No. 4551, 1978.

Comments: McGrath #4 SWD

Instrument calibrated to 200 ppm standard and zeroed before each sample.

  
\_\_\_\_\_  
Analyst

Tiffany McIntosh  
\_\_\_\_\_  
Printed

  
\_\_\_\_\_  
Review

Toni McKnight, EIT  
\_\_\_\_\_  
Printed



EPA METHOD 418.1  
TOTAL PETROLEUM  
HYDROCARBONS

Client: ConocoPhillips Project #: 92115-2540  
Sample No.: 6 Date Reported: 2/17/2014  
Sample ID: Excavation D-F Date Sampled: 1/14/2014  
Sample Matrix: Soil Date Analyzed: 1/14/2014  
Preservative: Cool Analysis Needed: TPH-418.1  
Condition: Cool and Intact

Parameter	Concentration (mg/kg)	Det. Limit (mg/kg)
Total Petroleum Hydrocarbons	236	5.0

ND = Parameter not detected at the stated detection limit.

References: Method 418.1, Petroleum Hydrocarbons, Total Recoverable, Chemical Analysis of Water and Waste, USEPA Storet No. 4551, 1978.

Comments: **McGrath #4 SWD**

Instrument calibrated to 200 ppm standard and zeroed before each sample.

  
\_\_\_\_\_  
Analyst

Tiffany McIntosh  
\_\_\_\_\_  
Printed

  
\_\_\_\_\_  
Review

Toni McKnight, EIT  
\_\_\_\_\_  
Printed



EPA METHOD 418.1  
TOTAL PETROLEUM  
HYDROCARBONS

Client:	ConocoPhillips	Project #:	92115-2540
Sample No.:	7	Date Reported:	2/17/2014
Sample ID:	Excavation D-F	Date Sampled:	1/14/2014
Sample Matrix:	Soil	Date Analyzed:	1/14/2014
Preservative:	Cool	Analysis Needed:	TPH-418.1
Condition:	Cool and Intact		

Parameter	Concentration (mg/kg)	Det. Limit (mg/kg)
Total Petroleum Hydrocarbons	3,720	5.0

ND = Parameter not detected at the stated detection limit.

References: Method 418.1, Petroleum Hydrocarbons, Total Recoverable, Chemical Analysis of Water and Waste, USEPA Storet No. 4551, 1978.

Comments: **McGrath #4 SWD**

Instrument calibrated to 200 ppm standard and zeroed before each sample.

  
\_\_\_\_\_  
Analyst

Tiffany McIntosh  
\_\_\_\_\_  
Printed

  
\_\_\_\_\_  
Review

Toni McKnight, EIT  
\_\_\_\_\_  
Printed



EPA METHOD 418.1  
TOTAL PETROLEUM  
HYDROCARBONS

Client:	ConocoPhillips	Project #:	92115-2540
Sample No.:	8	Date Reported:	2/17/2014
Sample ID:	Excavation D-F	Date Sampled:	1/14/2014
Sample Matrix:	Soil	Date Analyzed:	1/14/2014
Preservative:	Cool	Analysis Needed:	TPH-418.1
Condition:	Cool and Intact		

Parameter	Concentration (mg/kg)	Det. Limit (mg/kg)
Total Petroleum Hydrocarbons	240	5.0

ND = Parameter not detected at the stated detection limit.

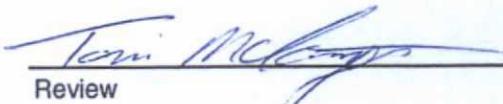
References: Method 418.1, Petroleum Hydrocarbons, Total Recoverable, Chemical Analysis of Water and Waste, USEPA Storet No. 4551, 1978.

Comments: **McGrath #4 SWD**

Instrument calibrated to 200 ppm standard and zeroed before each sample.

  
\_\_\_\_\_  
Analyst

Tiffany McIntosh  
\_\_\_\_\_  
Printed

  
\_\_\_\_\_  
Review

Toni McKnight, EIT  
\_\_\_\_\_  
Printed



EPA METHOD 418.1  
TOTAL PETROLEUM  
HYDROCARBONS

Client: ConocoPhillips Project #: 92115-2540  
Sample No.: 9 Date Reported: 2/17/2014  
Sample ID: Excavation D-F Date Sampled: 1/14/2014  
Sample Matrix: Soil Date Analyzed: 1/14/2014  
Preservative: Cool Analysis Needed: TPH-418.1  
Condition: Cool and Intact

Parameter	Concentration (mg/kg)	Det. Limit (mg/kg)
Total Petroleum Hydrocarbons	164	5.0

ND = Parameter not detected at the stated detection limit.

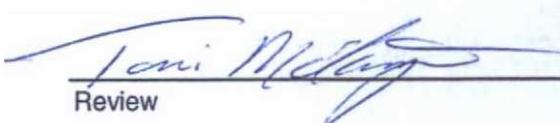
References: Method 418.1, Petroleum Hydrocarbons, Total Recoverable, Chemical Analysis of Water and Waste, USEPA Storet No. 4551, 1978.

Comments: McGrath #4 SWD

Instrument calibrated to 200 ppm standard and zeroed before each sample.

  
\_\_\_\_\_  
Analyst

Tiffany McIntosh  
\_\_\_\_\_  
Printed

  
\_\_\_\_\_  
Review

Toni McKnight, EIT  
\_\_\_\_\_  
Printed



EPA METHOD 418.1  
TOTAL PETROLEUM  
HYDROCARBONS

Client: ConocoPhillips Project #: 92115-2540  
Sample No.: 10 Date Reported: 2/17/2014  
Sample ID: Excavation D-F Date Sampled: 1/14/2014  
Sample Matrix: Soil Date Analyzed: 1/14/2014  
Preservative: Cool Analysis Needed: TPH-418.1  
Condition: Cool and Intact

Parameter	Concentration (mg/kg)	Det. Limit (mg/kg)
Total Petroleum Hydrocarbons	164	5.0

ND = Parameter not detected at the stated detection limit.

References: Method 418.1, Petroleum Hydrocarbons, Total Recoverable, Chemical Analysis of Water and Waste, USEPA Storet No. 4551, 1978.

Comments: **McGrath #4 SWD**

Instrument calibrated to 200 ppm standard and zeroed before each sample.

  
\_\_\_\_\_  
Analyst

Tiffany McIntosh  
\_\_\_\_\_  
Printed

  
\_\_\_\_\_  
Review

Toni McKnight, EIT  
\_\_\_\_\_  
Printed



CONTINUOUS CALIBRATION  
EPA METHOD 418.1  
TOTAL PETROLEUM  
HYDROCARBONS

Cal. Date: 14-Jan-14

Parameter	Standard Concentration mg/L	Concentration Reading mg/L
TPH	100	193
	200	
	500	
	1000	

The accepted percent relative deviation (%RSD) of the calibration factor is less than 20% over the working range.

  
\_\_\_\_\_  
Analyst

2/17/2014  
\_\_\_\_\_  
Date

Tiffany McIntosh  
\_\_\_\_\_  
Print Name

  
\_\_\_\_\_  
Review

2/17/2014  
\_\_\_\_\_  
Date

Toni McKnight, EIT  
\_\_\_\_\_  
Print Name

## Analytical Report

### Report Summary

Client: ConocoPhillips

Chain Of Custody Number: 16294

Samples Received: 1/14/2014 4:55:00PM

Job Number: 92115-2540

Work Order: P401031

Project Name/Location: McGrath #4 SWD

Entire Report Reviewed By:



Date: 1/16/14

Tim Cain, Laboratory Manager

The results in this report apply to the samples submitted to Envirotech's Analytical Laboratory and were analyzed in accordance with the chain of custody document supplied by you, the client, and as such are for your exclusive use only. The results in this report are based on the sample as received unless otherwise noted. Partial or incomplete reproduction of this report is prohibited, unless approved by Envirotech, Inc. If you have any questions regarding this analytical report, please don't hesitate to contact Envirotech's Laboratory Staff.



ConocoPhillips PO Box 2200 Bartlesville OK, 74005	Project Name: McGrath #4 SWD Project Number: 92115-2540 Project Manager: Tiffany McIntosh	Reported: 16-Jan-14 11:05
---	---	------------------------------

### Analytical Report for Samples

Client Sample ID	Lab Sample ID	Matrix	Sampled	Received	Container
1	P401031-01A	Soil	01/14/14	01/14/14	Glass Jar, 4 oz.
2	P401031-02A	Soil	01/14/14	01/14/14	Glass Jar, 4 oz.
3	P401031-03A	Soil	01/14/14	01/14/14	Glass Jar, 4 oz.
7	P401031-04A	Soil	01/14/14	01/14/14	Glass Jar, 4 oz.

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ConocoPhillips PO Box 2200 Bartlesville OK, 74005	Project Name: McGrath #4 SWD Project Number: 92115-2540 Project Manager: Tiffany McIntosh	Reported: 16-Jan-14 11:05
---	---	------------------------------

1

P401031-01 (Solid)

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
<b>Volatile Organics by EPA 8021</b>									
Benzene	ND	0.05	mg/kg	1	1403011	01/15/14	01/15/14	EPA 8021B	
Toluene	0.32	0.05	mg/kg	1	1403011	01/15/14	01/15/14	EPA 8021B	
Ethylbenzene	1.80	0.05	mg/kg	1	1403011	01/15/14	01/15/14	EPA 8021B	
p,m-Xylene	6.28	0.05	mg/kg	1	1403011	01/15/14	01/15/14	EPA 8021B	
o-Xylene	0.42	0.05	mg/kg	1	1403011	01/15/14	01/15/14	EPA 8021B	
Total Xylenes	6.69	0.05	mg/kg	1	1403011	01/15/14	01/15/14	EPA 8021B	
Total BTEX	8.81	0.05	mg/kg	1	1403011	01/15/14	01/15/14	EPA 8021B	
Surrogate: Bromochlorobenzene		171 %	80-120		1403011	01/15/14	01/15/14	EPA 8021B	S-02
Surrogate: 1,3-Dichlorobenzene		119 %	80-120		1403011	01/15/14	01/15/14	EPA 8021B	
<b>Nonhalogenated Organics by 8015</b>									
Gasoline Range Organics (C6-C10)	156	5.00	mg/kg	1	1403011	01/15/14	01/15/14	EPA 8015D	
Diesel Range Organics (C10-C28)	1200	29.9	mg/kg	1	1403012	01/15/14	01/15/14	EPA 8015D	

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ConocoPhillips PO Box 2200 Bartlesville OK, 74005	Project Name: McGrath #4 SWD Project Number: 92115-2540 Project Manager: Tiffany McIntosh	Reported: 16-Jan-14 11:05
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2

**P401031-02 (Solid)**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
<b>Volatile Organics by EPA 8021</b>									
Benzene	ND	0.05	mg/kg	1	1403011	01/15/14	01/15/14	EPA 8021B	
Toluene	ND	0.05	mg/kg	1	1403011	01/15/14	01/15/14	EPA 8021B	
Ethylbenzene	ND	0.05	mg/kg	1	1403011	01/15/14	01/15/14	EPA 8021B	
p,m-Xylene	1.55	0.05	mg/kg	1	1403011	01/15/14	01/15/14	EPA 8021B	
o-Xylene	0.45	0.05	mg/kg	1	1403011	01/15/14	01/15/14	EPA 8021B	
Total Xylenes	2.00	0.05	mg/kg	1	1403011	01/15/14	01/15/14	EPA 8021B	
Total BTEX	2.00	0.05	mg/kg	1	1403011	01/15/14	01/15/14	EPA 8021B	
Surrogate: Bromochlorobenzene		126 %		80-120	1403011	01/15/14	01/15/14	EPA 8021B	S-02
Surrogate: 1,3-Dichlorobenzene		116 %		80-120	1403011	01/15/14	01/15/14	EPA 8021B	
<b>Nonhalogenated Organics by 8015</b>									
Gasoline Range Organics (C6-C10)	50.3	5.00	mg/kg	1	1403011	01/15/14	01/15/14	EPA 8015D	
Diesel Range Organics (C10-C28)	615	30.0	mg/kg	1	1403012	01/15/14	01/15/14	EPA 8015D	

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ConocoPhillips PO Box 2200 Bartlesville OK, 74005	Project Name: McGrath #4 SWD Project Number: 92115-2540 Project Manager: Tiffany McIntosh	Reported: 16-Jan-14 11:05
---	---	------------------------------

3

**P401031-03 (Solid)**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
<b>Volatile Organics by EPA 8021</b>									
Benzene	ND	0.05	mg/kg	1	1403011	01/15/14	01/15/14	EPA 8021B	
Toluene	ND	0.05	mg/kg	1	1403011	01/15/14	01/15/14	EPA 8021B	
Ethylbenzene	0.91	0.05	mg/kg	1	1403011	01/15/14	01/15/14	EPA 8021B	
p,m-Xylene	20.9	0.05	mg/kg	1	1403011	01/15/14	01/15/14	EPA 8021B	
o-Xylene	2.11	0.05	mg/kg	1	1403011	01/15/14	01/15/14	EPA 8021B	
Total Xylenes	23.0	0.05	mg/kg	1	1403011	01/15/14	01/15/14	EPA 8021B	
Total BTEX	23.9	0.05	mg/kg	1	1403011	01/15/14	01/15/14	EPA 8021B	
Surrogate: Bromochlorobenzene		145 %		80-120	1403011	01/15/14	01/15/14	EPA 8021B	S-02
Surrogate: 1,3-Dichlorobenzene		147 %		80-120	1403011	01/15/14	01/15/14	EPA 8021B	S-02
<b>Nonhalogenated Organics by 8015</b>									
Gasoline Range Organics (C6-C10)	179	5.00	mg/kg	1	1403011	01/15/14	01/15/14	EPA 8015D	
Diesel Range Organics (C10-C28)	813	29.9	mg/kg	1	1403012	01/15/14	01/15/14	EPA 8015D	

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ConocoPhillips PO Box 2200 Bartlesville OK, 74005	Project Name: McGrath #4 SWD Project Number: 92115-2540 Project Manager: Tiffany McIntosh	Reported: 16-Jan-14 11:05
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7

P401031-04 (Solid)

Analyte	Result	Reporting			Batch	Prepared	Analyzed	Method	Notes
		Limit	Units	Dilution					
<b>Volatile Organics by EPA 8021</b>									
Benzene	ND	0.05	mg/kg	1	1403011	01/15/14	01/15/14	EPA 8021B	
Toluene	ND	0.05	mg/kg	1	1403011	01/15/14	01/15/14	EPA 8021B	
Ethylbenzene	2.17	0.05	mg/kg	1	1403011	01/15/14	01/15/14	EPA 8021B	
p,m-Xylene	25.0	0.05	mg/kg	1	1403011	01/15/14	01/15/14	EPA 8021B	
o-Xylene	1.94	0.05	mg/kg	1	1403011	01/15/14	01/15/14	EPA 8021B	
Total Xylenes	27.0	0.05	mg/kg	1	1403011	01/15/14	01/15/14	EPA 8021B	
Total BTEX	29.1	0.05	mg/kg	1	1403011	01/15/14	01/15/14	EPA 8021B	
<i>Surrogate: Bromochlorobenzene</i>		151 %		80-120	1403011	01/15/14	01/15/14	EPA 8021B	S-02
<i>Surrogate: 1,3-Dichlorobenzene</i>		154 %		80-120	1403011	01/15/14	01/15/14	EPA 8021B	S-02
<b>Nonhalogenated Organics by 8015</b>									
Gasoline Range Organics (C6-C10)	180	4.99	mg/kg	1	1403011	01/15/14	01/15/14	EPA 8015D	
Diesel Range Organics (C10-C28)	1300	29.9	mg/kg	1	1403012	01/15/14	01/15/14	EPA 8015D	

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ConocoPhillips  
PO Box 2200  
Bartlesville OK, 74005

Project Name: McGrath #4 SWD  
Project Number: 92115-2540  
Project Manager: Tiffany McIntosh

Reported:  
16-Jan-14 11:05

**Volatile Organics by EPA 8021 - Quality Control**  
**Envirotech Analytical Laboratory**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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**Batch 1403011 - Purge and Trap EPA 5030A**

Blank (1403011-BLK1)			Prepared & Analyzed: 15-Jan-14							
Benzene	ND	0.001	mg/kg							
Toluene	ND	0.001	"							
Ethylbenzene	ND	0.001	"							
p,m-Xylene	ND	0.001	"							
o-Xylene	ND	0.001	"							
Total Xylenes	ND	0.001	"							
Total BTEX	ND	0.001	"							
Surrogate: 1,3-Dichlorobenzene	49.1		ug/L	50.0		98.2	80-120			
Surrogate: Bromochlorobenzene	50.4		"	50.0		101	80-120			

Duplicate (1403011-DUP1)			Source: P401031-01		Prepared & Analyzed: 15-Jan-14					
Benzene	ND	0.05	mg/kg		ND				30	
Toluene	0.23	0.05	"		0.32			33.8	30	D1
Ethylbenzene	1.72	0.05	"		1.80			4.25	30	
p,m-Xylene	7.25	0.05	"		6.28			14.4	30	
o-Xylene	0.35	0.05	"		0.42			16.4	30	
Surrogate: 1,3-Dichlorobenzene	65.4		ug/L	50.0		131	80-120			S-02
Surrogate: Bromochlorobenzene	95.3		"	50.0		191	80-120			S-02

Matrix Spike (1403011-MS1)			Source: P401031-01		Prepared & Analyzed: 15-Jan-14					
Benzene	52.6		ug/L	50.0	ND	105	39-150			
Toluene	67.0		"	50.0	6.43	121	46-148			
Ethylbenzene	106		"	50.0	35.9	141	32-160			
p,m-Xylene	253		"	100	126	128	46-148			
o-Xylene	69.4		"	50.0	8.32	122	46-148			
Surrogate: 1,3-Dichlorobenzene	56.9		"	50.0		114	80-120			
Surrogate: Bromochlorobenzene	93.7		"	50.0		187	80-120			S-02

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laboratory@envirotech-inc.com



ConocoPhillips PO Box 2200 Bartlesville OK, 74005	Project Name: McGrath #4 SWD Project Number: 92115-2540 Project Manager: Tiffany McIntosh	Reported: 16-Jan-14 11:05
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**Nonhalogenated Organics by 8015 - Quality Control**

**Envirotech Analytical Laboratory**

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

**Batch 1403011 - Purge and Trap EPA 5030A**

<b>Blank (1403011-BLK1)</b>		Prepared & Analyzed: 15-Jan-14								
Gasoline Range Organics (C6-C10)	ND	0.10	mg/kg							
<b>Duplicate (1403011-DUP1)</b>		Source: P401031-01 Prepared & Analyzed: 15-Jan-14								
Gasoline Range Organics (C6-C10)	174	4.99	mg/kg		156			10.7	30	
<b>Matrix Spike (1403011-MS1)</b>		Source: P401031-01 Prepared & Analyzed: 15-Jan-14								
Gasoline Range Organics (C6-C10)	3.82		mg/L	0.450	3.13	154	75-125			SPK1

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ConocoPhillips PO Box 2200 Bartlesville OK, 74005	Project Name: McGrath #4 SWD Project Number: 92115-2540 Project Manager: Tiffany McIntosh	Reported: 16-Jan-14 11:05
---	---	------------------------------

**Nonhalogenated Organics by 8015 - Quality Control**  
**Envirotech Analytical Laboratory**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
<b>Batch 1403012 - DRO Extraction EPA 3550C</b>										
<b>Blank (1403012-BLK1)</b> Prepared & Analyzed: 15-Jan-14										
Diesel Range Organics (C10-C28)	ND	29.9	mg/kg							
<b>Duplicate (1403012-DUP1)</b> Source: P401031-01 Prepared & Analyzed: 15-Jan-14										
Diesel Range Organics (C10-C28)	1010	29.9	mg/kg		1200			17.1	30	
<b>Matrix Spike (1403012-MS1)</b> Source: P401031-01 Prepared & Analyzed: 15-Jan-14										
Diesel Range Organics (C10-C28)	1630	31.6	mg/kg	263	1200	163	75-125			SPK1

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ConocoPhillips  
PO Box 2200  
Bartlesville OK, 74005

Project Name: McGrath #4 SWD  
Project Number: 92115-2540  
Project Manager: Tiffany McIntosh

Reported:  
16-Jan-14 11:05

### Notes and Definitions

- SPK1 The spike recovery for this QC sample is outside of control limits.
- S-02 The surrogate recovery for this sample cannot be accurately quantified due to interference from coeluting organic compounds present in the sample extract.
- D1 Duplicates or Matrix Spike Duplicates Relative Percent Difference exceeds 30%.
- DET Analyte DETECTED
- ND Analyte NOT DETECTED at or above the reporting limit
- NR Not Reported
- dry Sample results reported on a dry weight basis
- RPD Relative Percent Difference

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RUSH!!!

# CHAIN OF CUSTODY RECORD

16294

Client: <b>ConocoPhillips (hBr)</b>	Project Name / Location: <b>McGrath # 4 SWD</b>	ANALYSIS / PARAMETERS														
Email results to: <b>T. McIntosh</b>	Sampler Name: <b>T. McIntosh</b>	TPH (Method 8015)	BTEX (Method 8021)	VOC (Method 8260)	RCRA 8 Metals	Cation / Anion	RCI	TCLP with H/P	CO Table 910-1	TPH (418.1)	CHLORIDE				Sample Cool	Sample Intact
Client Phone No.: <b>505-608-1387</b>	Client No.: <b>92115-2540</b>															

Sample No./ Identification	Sample Date	Sample Time	Lab No.	No./Volume of Containers	Preservative			TPH (Method 8015)	BTEX (Method 8021)	VOC (Method 8260)	RCRA 8 Metals	Cation / Anion	RCI	TCLP with H/P	CO Table 910-1	TPH (418.1)	CHLORIDE			Sample Cool	Sample Intact	
					HNO <sub>3</sub>	HCl	Loe															
1	1/14/14	1434	P401031-01	1-4oz jar			X	X	X											✓	✓	
2	I	1436	P401031-02	I			I	I	I											✓	✓	
3	I	1439	P401031-03	I			I	I	I											✓	✓	
7	I	1448	P401031-04	I			I	I	I											✓	✓	

Relinquished by: (Signature) <i>Tiffany McIntosh</i>	Date 1/14/14	Time 16:55	Received by: (Signature) <i>Danielle B...</i>	Date 1/14/14	Time 16:55
Relinquished by: (Signature)			Received by: (Signature)		

Sample Matrix  
 Soil  Solid  Sludge  Aqueous  Other

Sample(s) dropped off after hours to secure drop off area.

ASAP RUSH!!!



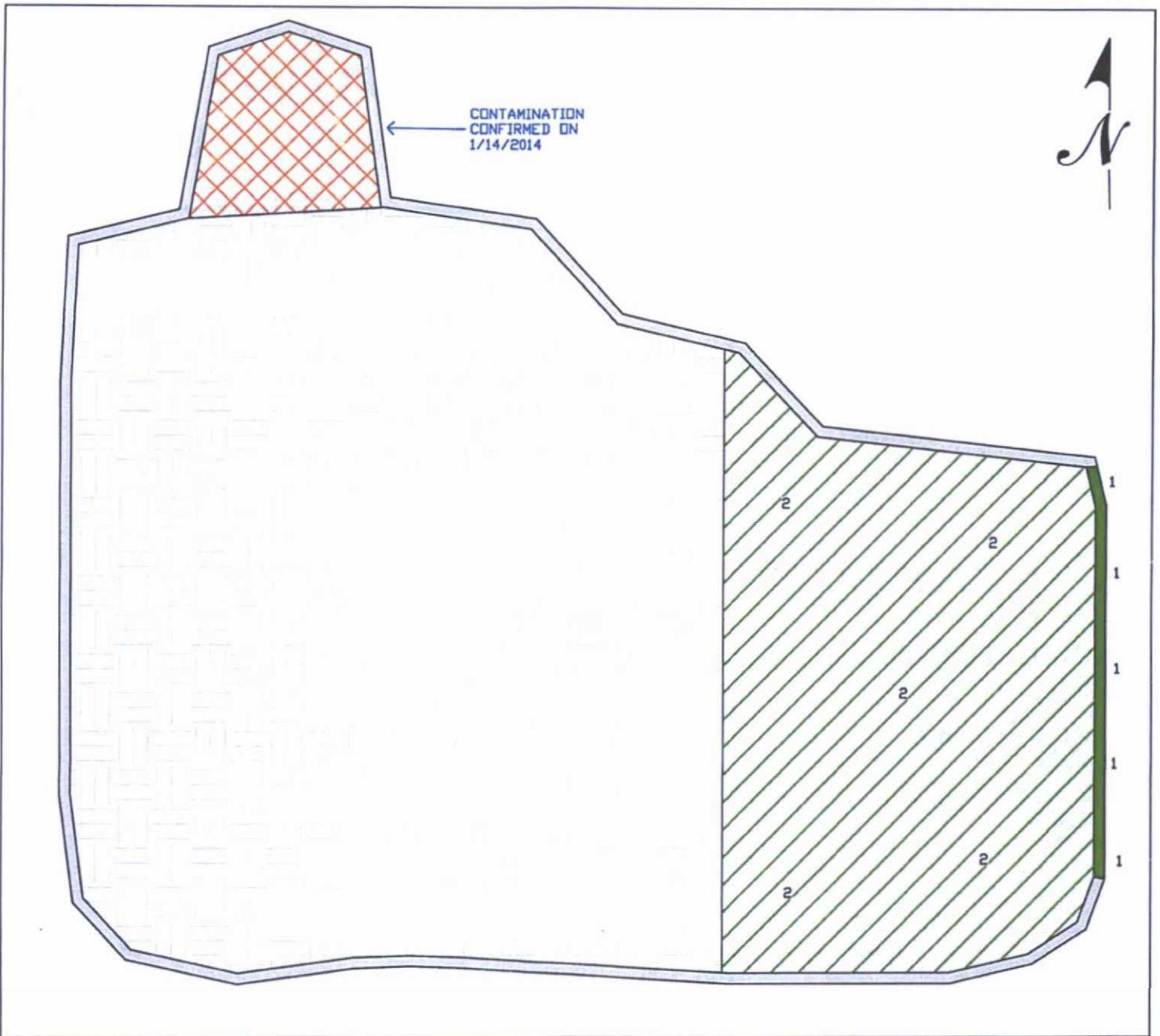
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# **APPENDIX F:**

**JANUARY 16, 2014**

**FIGURE 8 - SITE MAP**

**ANALYTICAL RESULTS**



### LEGEND



Areas Below  
Regulatory  
Standards



Areas Above  
Regulatory  
Standards



Areas Which  
Previously Met  
Regulatory  
Standards

### SITE MAP - 1/16/2014

ConocoPhillips

McGrath #4 SWD (hBr)

SECTION 34, TWP 30 NORTH, RANGE 12 WEST  
SAN JUAN COUNTY, NEW MEXICO

SCALE: NTS	FIGURE NO. 8	REV
PROJECT NO92115-2540		

#### REVISIONS

NO.	DATE	BY	DESCRIPTION
MAP DRWN	TLM	3/21/14	BASE DRWN TLM 2/25/13



**envirotech**

5796 U.S. HIGHWAY 64, FARMINGTON, NM 87401 505-632-0615



CONTINUOUS CALIBRATION  
EPA METHOD 418.1  
TOTAL PETROLEUM  
HYDROCARBONS

Cal. Date: 16-Jan-14

Parameter	Standard Concentration mg/L	Concentration Reading mg/L
TPH	100	194
	200	
	500	
	1000	

The accepted percent relative deviation (%RSD) of the calibration factor is less than 20% over the working range.

  
\_\_\_\_\_  
Analyst

2/17/2014  
\_\_\_\_\_  
Date

Isaac Garcia  
\_\_\_\_\_  
Print Name

  
\_\_\_\_\_  
Review

2/17/2014  
\_\_\_\_\_  
Date

Toni McKnight, EIT  
\_\_\_\_\_  
Print Name

## Analytical Report

### Report Summary

Client: ConocoPhillips  
Chain Of Custody Number: 16516  
Samples Received: 1/16/2014 2:49:00PM  
Job Number: 92115-2540  
Work Order: P401039  
Project Name/Location: McGrath #4 SWD

Entire Report Reviewed By:



Date: 1/20/14

Tim Cain, Laboratory Manager

Supplement to analytical report generated on: 1/17/14 2:21 pm

The results in this report apply to the samples submitted to Envirotech's Analytical Laboratory and were analyzed in accordance with the chain of custody document supplied by you, the client, and as such are for your exclusive use only. The results in this report are based on the sample as received unless otherwise noted. Partial or incomplete reproduction of this report is prohibited, unless approved by Envirotech, Inc. If you have any questions regarding this analytical report, please don't hesitate to contact Envirotech's Laboratory Staff.



ConocoPhillips PO Box 2200 Bartlesville OK, 74005	Project Name: McGrath #4 SWD Project Number: 92115-2540 Project Manager: Isaac Garcia	Reported: 20-Jan-14 09:45
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### Analytical Report for Samples

Client Sample ID	Lab Sample ID	Matrix	Sampled	Received	Container
Ramp Area	P401039-01A	Soil	01/16/14	01/16/14	Glass Jar, 4 oz.

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ConocoPhillips  
PO Box 2200  
Bartlesville OK, 74005

Project Name: McGrath #4 SWD  
Project Number: 92115-2540  
Project Manager: Isaac Garcia

Reported:  
20-Jan-14 09:45

**Ramp Area**  
**P401039-01 (Solid)**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
<b>Volatile Organics by EPA 8021</b>										
Benzene	ND	0.05		mg/kg	1	1403020	01/16/14	01/16/14	EPA 8021B	
Toluene	ND	0.05		mg/kg	1	1403020	01/16/14	01/16/14	EPA 8021B	
Ethylbenzene	0.14	0.05		mg/kg	1	1403020	01/16/14	01/16/14	EPA 8021B	
p,m-Xylene	2.40	0.05		mg/kg	1	1403020	01/16/14	01/16/14	EPA 8021B	
o-Xylene	0.09	0.05		mg/kg	1	1403020	01/16/14	01/16/14	EPA 8021B	
Total Xylenes	2.49	0.05		mg/kg	1	1403020	01/16/14	01/16/14	EPA 8021B	
Total BTEX	2.63	0.05		mg/kg	1	1403020	01/16/14	01/16/14	EPA 8021B	
<i>Surrogate: Bromochlorobenzene</i>		105 %		80-120		1403020	01/16/14	01/16/14	EPA 8021B	
<i>Surrogate: 1,3-Dichlorobenzene</i>		103 %		80-120		1403020	01/16/14	01/16/14	EPA 8021B	
<b>Nonhalogenated Organics by 8015</b>										
Gasoline Range Organics (C6-C10)	56.6	4.99		mg/kg	1	1403020	01/16/14	01/16/14	EPA 8015D	
Diesel Range Organics (C10-C28)	932	29.9		mg/kg	1	1403021	01/16/14	01/17/14	EPA 8015D	

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ConocoPhillips PO Box 2200 Bartlesville OK, 74005	Project Name: McGrath #4 SWD Project Number: 92115-2540 Project Manager: Isaac Garcia	Reported: 20-Jan-14 09:45
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**Volatile Organics by EPA 8021 - Quality Control**  
**Envirotech Analytical Laboratory**

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

**Batch 1403020 - Purge and Trap EPA 5030A**

Blank (1403020-BLK1)			Prepared: 16-Jan-14 Analyzed: 17-Jan-14							
Benzene	ND	0.05	mg/kg							
Toluene	ND	0.05	"							
Ethylbenzene	ND	0.05	"							
p,m-Xylene	ND	0.05	"							
o-Xylene	ND	0.05	"							
Total Xylenes	ND	0.05	"							
Total BTEX	ND	0.05	"							
Surrogate: 1,3-Dichlorobenzene	49.6		ug/L	50.0		99.2	80-120			
Surrogate: Bromochlorobenzene	52.3		"	50.0		105	80-120			

Duplicate (1403020-DUP1)			Source: P401035-01		Prepared: 16-Jan-14 Analyzed: 17-Jan-14					
Benzene	ND	0.05	mg/kg		ND					30
Toluene	ND	0.05	"		ND					30
Ethylbenzene	ND	0.05	"		ND					30
p,m-Xylene	ND	0.05	"		ND					30
o-Xylene	ND	0.05	"		ND					30
Surrogate: 1,3-Dichlorobenzene	48.3		ug/L	50.0		96.5	80-120			
Surrogate: Bromochlorobenzene	50.8		"	50.0		102	80-120			

Matrix Spike (1403020-MS1)			Source: P401035-01		Prepared: 16-Jan-14 Analyzed: 17-Jan-14					
Benzene	48.5		ug/L	50.0	ND	97.1	39-150			
Toluene	48.9		"	50.0	ND	97.7	46-148			
Ethylbenzene	48.6		"	50.0	ND	97.1	32-160			
p,m-Xylene	97.6		"	100	ND	97.6	46-148			
o-Xylene	49.8		"	50.0	ND	99.7	46-148			
Surrogate: 1,3-Dichlorobenzene	48.4		"	50.0		96.8	80-120			
Surrogate: Bromochlorobenzene	50.6		"	50.0		101	80-120			

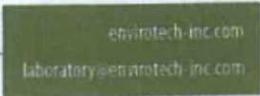
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5796 US Highway 64, Farmington, NM 87401

Ph (505) 632-0615 Fx (505) 632-1865

Three Springs • 65 Mercado Street, Suite 115, Durango, CO 81301

Ph (970) 259-0615 Fr (800) 362-1879



ConocoPhillips PO Box 2200 Bartlesville OK, 74005	Project Name: McGrath #4 SWD Project Number: 92115-2540 Project Manager: Isaac Garcia	Reported: 20-Jan-14 09:45
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**Nonhalogenated Organics by 8015 - Quality Control**  
**Envirotech Analytical Laboratory**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
<b>Batch 1403020 - Purge and Trap EPA 5030A</b>										
<b>Blank (1403020-BLK1)</b>										
Prepared: 16-Jan-14 Analyzed: 17-Jan-14										
Gasoline Range Organics (C6-C10)	ND	5.00	mg/kg							
<b>Duplicate (1403020-DUP1)</b>										
Source: P401035-01 Prepared: 16-Jan-14 Analyzed: 17-Jan-14										
Gasoline Range Organics (C6-C10)	ND	4.98	mg/kg		ND				30	
<b>Matrix Spike (1403020-MS1)</b>										
Source: P401035-01 Prepared: 16-Jan-14 Analyzed: 17-Jan-14										
Gasoline Range Organics (C6-C10)	0.47		mg/L	0.450	ND	104	75-125			

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PO Box 2200  
Bartlesville OK, 74005

Project Name: McGrath #4 SWD  
Project Number: 92115-2540  
Project Manager: Isaac Garcia

Reported:  
20-Jan-14 09:45

### Nonhalogenated Organics by 8015 - Quality Control

#### Envirotech Analytical Laboratory

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
<b>Batch 1403021 - DRO Extraction EPA 3550C</b>										
<b>Blank (1403021-BLK1)</b>										
					Prepared: 16-Jan-14 Analyzed: 17-Jan-14					
Diesel Range Organics (C10-C28)	ND	29.9	mg/kg							
<b>Duplicate (1403021-DUP1)</b>										
					Source: P401035-01 Prepared: 16-Jan-14 Analyzed: 17-Jan-14					
Diesel Range Organics (C10-C28)	145	30.0	mg/kg		158			8.78	30	
<b>Matrix Spike (1403021-MS1)</b>										
					Source: P401035-01 Prepared: 16-Jan-14 Analyzed: 17-Jan-14					
Diesel Range Organics (C10-C28)	414	31.6	mg/kg	263	158	97.1	75-125			

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ConocoPhillips  
PO Box 2200  
Bartlesville OK, 74005

Project Name: McGrath #4 SWD  
Project Number: 92115-2540  
Project Manager: Isaac Garcia

**Reported:**  
20-Jan-14 09:45

#### Notes and Definitions

DET Analyte DETECTED  
ND Analyte NOT DETECTED at or above the reporting limit  
NR Not Reported  
dry Sample results reported on a dry weight basis  
RPD Relative Percent Difference

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Rush

# CHAIN OF CUSTODY RECORD

16516

Client: <i>Conoco Phillips</i>		Project Name / Location: <i>McGrath #4 SWD</i>			ANALYSIS / PARAMETERS											
Email results to: <i>J Isaac</i>		Sampler Name: <i>E. Garcia</i>			TPH (Method 8015)	BTEX (Method 8021)	VOC (Method 8260)	RCRA 8 Metals	Cation / Anion	RCI	TCLP with H/P	CO Table 910-1	TPH (418.1)	CHLORIDE	Sample Cool	Sample Intact
Client Phone No.:		Client No.: <i>9215-2540</i>														

Sample No./ Identification	Sample Date	Sample Time	Lab No.	No./Volume of Containers	Preservative			TPH (Method 8015)	BTEX (Method 8021)	VOC (Method 8260)	RCRA 8 Metals	Cation / Anion	RCI	TCLP with H/P	CO Table 910-1	TPH (418.1)	CHLORIDE	Sample Cool	Sample Intact
					HNO <sub>3</sub>	HCl	Cool												
<i>Ramp Area</i>	<i>11/6/14</i>	<i>9:20</i>	<i>P401039-01</i>	<i>1-4oz</i>				<i>X</i>	<i>X</i>									<i>Y</i>	<i>Y</i>

Relinquished by: (Signature) <i>J Isaac</i>	Date <i>11/6/14</i>	Time <i>14:47</i>	Received by: (Signature) <i>[Signature]</i>	Date <i>11/6/14</i>	Time <i>14:19</i>
Relinquished by: (Signature)			Received by: (Signature)		
Sample Matrix Soil <input checked="" type="checkbox"/> Solid <input type="checkbox"/> Sludge <input type="checkbox"/> Aqueous <input type="checkbox"/> Other <input type="checkbox"/>					

Sample(s) dropped off after hours to secure drop off area.



# **APPENDIX G:**

**JANUARY 22, 2014**

**FIGURE 9 - SITE MAP**

**ANALYTICAL RESULTS**

above the regulatory standard for TPH but below the regulatory standard for benzene and total BTEX. Envirotech recommended additional excavation of the bottom of the northwestern-most section of the excavation.

*Samples 8 and 9*, collected from the walls surrounding the northwestern-most section of the excavation, and *Sample 10*, collected along the walls of the middle/southern section of the excavation, returned results below the regulatory standards for TPH and organic vapor.

#### January 16, 2014

On January 16, 2014, Envirotech, Inc. personnel arrived at the above referenced well site to perform additional confirmation sampling activities. Upon arrival, a brief site assessment was conducted and a JSA was completed.

Two (2) five (5)-point composite soil samples (*Excavation D-F East Wall 12' BGS (1)* and *Excavation D-F Ramp Area (2)*) were collected from Excavation D-F; see enclosed **Appendix F - Figure 8, Site Map** for sample locations. Both samples were analyzed in the field for TPH using USEPA Method 418.1 and organic vapor using a PID. The analytical results for the two (2) samples collected on January 16, 2014, from Excavation D-F can be found in the enclosed **Table 1, Summary of Analytical Results** and **Appendix F, Analytical Results**.

*Excavation D-F East Wall 12' BGS (1)*, collected from the east wall of the excavation, returned results below the regulatory standards for TPH and organic vapor.

*Excavation D-F Ramp Area (2)*, taken from the bottom of the east section of the excavation, returned results above the regulatory standards for TPH and organic vapor. The sample was then placed into a four (4)-ounce glass jar, capped head space free, and transported on ice, under chain of custody, to Envirotech's Analytical Laboratory to be analyzed for TPH using USEPA Method 8015 and for benzene and total BTEX using USEPA Method 8021. The sample returned results below regulatory standards for all constituents analyzed.

#### January 22, 2014

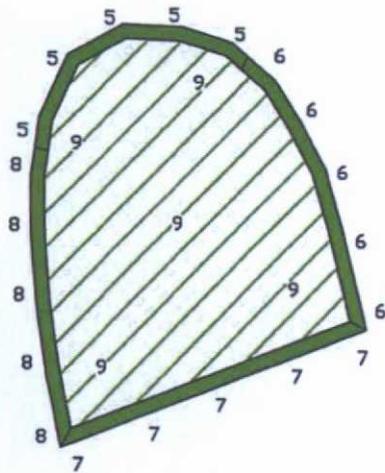
On January 22, 2014, Envirotech, Inc. personnel arrived at the above referenced well site to perform additional confirmation sampling activities. Upon arrival, a brief site assessment was conducted and a JSA was completed.

Upon arrival on site, three (3) new excavations, Excavations 1 – 3, located north of Excavation D-F, were observed; see enclosed **Appendix G - Figure 9, Site Map**.

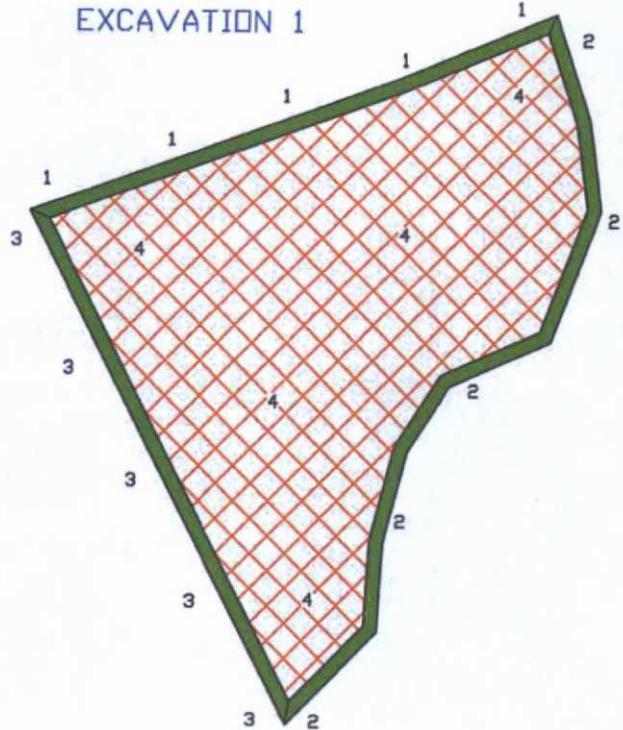
#### Excavation 1

From Excavation 1, a total of four (4) five (5)-point composite soil samples (*Samples 1-4*) were collected; see enclosed **Appendix G - Figure 9, Site Map** for sample locations. All four (4) samples were analyzed in the field for TPH using USEPA Method 418.1 and organic vapor using

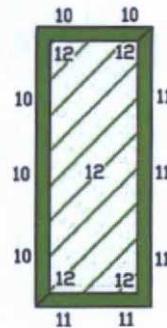
EXCAVATION 2



EXCAVATION 1



EXCAVATION 3



LEGEND

  Areas Below  
Regulatory  
Standards

  Areas Above  
Regulatory  
Standards

SITE MAP - 1/22/2014

ConocoPhillips

McGrath #4 SWD (hBr)

SECTION 34, TWP 30 NORTH, RANGE 12 WEST  
SAN JUAN COUNTY, NEW MEXICO

SCALE: NTS

FIGURE NO. 9

REV

PROJECT NO92115-2540

REVISIONS

NO.	DATE	BY	DESCRIPTION
MAP DRWN	TLM	3/21/14	BASE DRWN TLM 2/25/13



envirotech

5796 U.S. HIGHWAY 64, FARMINGTON, NM 87401 505-632-0615



EPA METHOD 418.1  
TOTAL PETROLEUM  
HYDROCARBONS

Client: ConocoPhillips Project #: 92115-2540  
Sample No.: 1 Date Reported: 2/17/2014  
Sample ID: Excavation 1 North Wall Date Sampled: 1/22/2014  
Sample Matrix: Soil Date Analyzed: 1/22/2014  
Preservative: Cool Analysis Needed: TPH-418.1  
Condition: Cool and Intact

Parameter	Concentration (mg/kg)	Det. Limit (mg/kg)
Total Petroleum Hydrocarbons	92	5.0

ND = Parameter not detected at the stated detection limit.

References: Method 418.1, Petroleum Hydrocarbons, Total Recoverable, Chemical Analysis of Water and Waste, USEPA Storet No. 4551, 1978.

Comments: **McGrath #4 SWD**

Instrument calibrated to 200 ppm standard and zeroed before each sample.

  
Analyst

Tiffany McIntosh  
Printed

  
Review

Toni McKnight, EIT  
Printed



EPA METHOD 418.1  
TOTAL PETROLEUM  
HYDROCARBONS

Client: ConocoPhillips Project #: 92115-2540  
Sample No.: 2 Date Reported: 2/17/2014  
Sample ID: Excavation 1 East Wall Date Sampled: 1/22/2014  
Sample Matrix: Soil Date Analyzed: 1/22/2014  
Preservative: Cool Analysis Needed: TPH-418.1  
Condition: Cool and Intact

Parameter	Concentration (mg/kg)	Det. Limit (mg/kg)
Total Petroleum Hydrocarbons	40	5.0

ND = Parameter not detected at the stated detection limit.

References: Method 418.1, Petroleum Hydrocarbons, Total Recoverable, Chemical Analysis of Water and Waste, USEPA Storet No. 4551, 1978.

Comments: **McGrath #4 SWD**

Instrument calibrated to 200 ppm standard and zeroed before each sample.

  
\_\_\_\_\_  
Analyst

Tiffany McIntosh  
\_\_\_\_\_  
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Review

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EPA METHOD 418.1  
TOTAL PETROLEUM  
HYDROCARBONS

Client: ConocoPhillips Project #: 92115-2540  
Sample No.: 3 Date Reported: 2/17/2014  
Sample ID: Excavation 1 West Wall Date Sampled: 1/22/2014  
Sample Matrix: Soil Date Analyzed: 1/22/2014  
Preservative: Cool Analysis Needed: TPH-418.1  
Condition: Cool and Intact

Parameter	Concentration (mg/kg)	Det. Limit (mg/kg)
Total Petroleum Hydrocarbons	40	5.0

ND = Parameter not detected at the stated detection limit.

References: Method 418.1, Petroleum Hydrocarbons, Total Recoverable, Chemical Analysis of Water and Waste, USEPA Storet No. 4551, 1978.

Comments: McGrath #4 SWD

Instrument calibrated to 200 ppm standard and zeroed before each sample.

  
\_\_\_\_\_  
Analyst

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\_\_\_\_\_  
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\_\_\_\_\_  
Review

Toni McKnight, EIT  
\_\_\_\_\_  
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EPA METHOD 418.1  
TOTAL PETROLEUM  
HYDROCARBONS

Client: ConocoPhillips Project #: 92115-2540  
Sample No.: 4 Date Reported: 2/17/2014  
Sample ID: Excavation 1 Bottom Date Sampled: 1/22/2014  
Sample Matrix: Soil Date Analyzed: 1/22/2014  
Preservative: Cool Analysis Needed: TPH-418.1  
Condition: Cool and Intact

Parameter	Concentration (mg/kg)	Det. Limit (mg/kg)
Total Petroleum Hydrocarbons	6,220	5.0

ND = Parameter not detected at the stated detection limit.

References: Method 418.1, Petroleum Hydrocarbons, Total Recoverable, Chemical Analysis of Water and Waste, USEPA Storet No. 4551, 1978.

Comments: **McGrath #4 SWD**

Instrument calibrated to 200 ppm standard and zeroed before each sample.

  
\_\_\_\_\_  
Analyst

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\_\_\_\_\_  
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EPA METHOD 418.1  
TOTAL PETROLEUM  
HYDROCARBONS

Client: ConocoPhillips Project #: 92115-2540  
Sample No.: 5 Date Reported: 2/17/2014  
Sample ID: Excavation 2 North Wall Date Sampled: 1/22/2014  
Sample Matrix: Soil Date Analyzed: 1/22/2014  
Preservative: Cool Analysis Needed: TPH-418.1  
Condition: Cool and Intact

Parameter	Concentration (mg/kg)	Det. Limit (mg/kg)
Total Petroleum Hydrocarbons	96	5.0

ND = Parameter not detected at the stated detection limit.

References: Method 418.1, Petroleum Hydrocarbons, Total Recoverable, Chemical Analysis of Water and Waste, USEPA Storet No. 4551, 1978.

Comments: McGrath #4 SWD

Instrument calibrated to 200 ppm standard and zeroed before each sample.

  
\_\_\_\_\_  
Analyst

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EPA METHOD 418.1  
TOTAL PETROLEUM  
HYDROCARBONS

Client: ConocoPhillips Project #: 92115-2540  
Sample No.: 6 Date Reported: 2/17/2014  
Sample ID: Excavation 2 East Wall Date Sampled: 1/22/2014  
Sample Matrix: Soil Date Analyzed: 1/22/2014  
Preservative: Cool Analysis Needed: TPH-418.1  
Condition: Cool and Intact

Parameter	Concentration (mg/kg)	Det. Limit (mg/kg)
Total Petroleum Hydrocarbons	32	5.0

ND = Parameter not detected at the stated detection limit.

References: Method 418.1, Petroleum Hydrocarbons, Total Recoverable, Chemical Analysis of Water and Waste, USEPA Storet No. 4551, 1978.

Comments: **McGrath #4 SWD**

Instrument calibrated to 200 ppm standard and zeroed before each sample.

  
\_\_\_\_\_  
Analyst

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EPA METHOD 418.1  
TOTAL PETROLEUM  
HYDROCARBONS

Client: ConocoPhillips Project #: 92115-2540  
Sample No.: 7 Date Reported: 2/17/2014  
Sample ID: Excavation 2 South Wall Date Sampled: 1/22/2014  
Sample Matrix: Soil Date Analyzed: 1/22/2014  
Preservative: Cool Analysis Needed: TPH-418.1  
Condition: Cool and Intact

Parameter	Concentration (mg/kg)	Det. Limit (mg/kg)
Total Petroleum Hydrocarbons	36	5.0

ND = Parameter not detected at the stated detection limit.

References: Method 418.1, Petroleum Hydrocarbons, Total Recoverable, Chemical Analysis of Water and Waste, USEPA Storet No. 4551, 1978.

Comments: McGrath #4 SWD

Instrument calibrated to 200 ppm standard and zeroed before each sample.

  
\_\_\_\_\_  
Analyst

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EPA METHOD 418.1  
TOTAL PETROLEUM  
HYDROCARBONS

Client: ConocoPhillips Project #: 92115-2540  
Sample No.: 8 Date Reported: 2/17/2014  
Sample ID: Excavation 2 West Wall Date Sampled: 1/22/2014  
Sample Matrix: Soil Date Analyzed: 1/22/2014  
Preservative: Cool Analysis Needed: TPH-418.1  
Condition: Cool and Intact

Parameter	Concentration (mg/kg)	Det. Limit (mg/kg)
-----------	--------------------------	--------------------------

Total Petroleum Hydrocarbons 36 5.0

ND = Parameter not detected at the stated detection limit.

References: Method 418.1, Petroleum Hydrocarbons, Total Recoverable, Chemical Analysis of Water and Waste, USEPA Storet No. 4551, 1978.

Comments: McGrath #4 SWD

Instrument calibrated to 200 ppm standard and zeroed before each sample.

  
\_\_\_\_\_  
Analyst

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EPA METHOD 418.1  
TOTAL PETROLEUM  
HYDROCARBONS

Client: ConocoPhillips Project #: 92115-2540  
Sample No.: 9 Date Reported: 2/17/2014  
Sample ID: Excavation 2 Bottom Date Sampled: 1/22/2014  
Sample Matrix: Soil Date Analyzed: 1/22/2014  
Preservative: Cool Analysis Needed: TPH-418.1  
Condition: Cool and Intact

Parameter	Concentration (mg/kg)	Det. Limit (mg/kg)
Total Petroleum Hydrocarbons	40	5.0

ND = Parameter not detected at the stated detection limit.

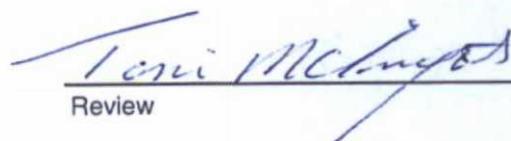
References: Method 418.1, Petroleum Hydrocarbons, Total Recoverable, Chemical Analysis of Water and Waste, USEPA Storet No. 4551, 1978.

Comments: McGrath #4 SWD

Instrument calibrated to 200 ppm standard and zeroed before each sample.

  
\_\_\_\_\_  
Analyst

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EPA METHOD 418.1  
TOTAL PETROLEUM  
HYDROCARBONS

Client: ConocoPhillips Project #: 92115-2540  
Sample No.: 10 Date Reported: 2/17/2014  
Sample ID: Excavation 3 N & W Walls Date Sampled: 1/22/2014  
Sample Matrix: Soil Date Analyzed: 1/22/2014  
Preservative: Cool Analysis Needed: TPH-418.1  
Condition: Cool and Intact

Parameter	Concentration (mg/kg)	Det. Limit (mg/kg)
Total Petroleum Hydrocarbons	48	5.0

ND = Parameter not detected at the stated detection limit.

References: Method 418.1, Petroleum Hydrocarbons, Total Recoverable, Chemical Analysis of Water and Waste, USEPA Storet No. 4551, 1978.

Comments: McGrath #4 SWD

Instrument calibrated to 200 ppm standard and zeroed before each sample.

  
\_\_\_\_\_  
Analyst

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\_\_\_\_\_  
Review

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EPA METHOD 418.1  
TOTAL PETROLEUM  
HYDROCARBONS

Client: ConocoPhillips Project #: 92115-2540  
Sample No.: 11 Date Reported: 2/17/2014  
Sample ID: Excavation 3 S & E Walls Date Sampled: 1/22/2014  
Sample Matrix: Soil Date Analyzed: 1/22/2014  
Preservative: Cool Analysis Needed: TPH-418.1  
Condition: Cool and Intact

Parameter	Concentration (mg/kg)	Det. Limit (mg/kg)
-----------	--------------------------	--------------------------

Total Petroleum Hydrocarbons 60 5.0

ND = Parameter not detected at the stated detection limit.

References: Method 418.1, Petroleum Hydrocarbons, Total Recoverable, Chemical Analysis of Water and Waste, USEPA Storet No. 4551, 1978.

Comments: McGrath #4 SWD

Instrument calibrated to 200 ppm standard and zeroed before each sample.

  
\_\_\_\_\_  
Analyst

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EPA METHOD 418.1  
TOTAL PETROLEUM  
HYDROCARBONS

Client: ConocoPhillips Project #: 92115-2540  
Sample No.: 12 Date Reported: 2/17/2014  
Sample ID: Excavation 3 Bottom Date Sampled: 1/22/2014  
Sample Matrix: Soil Date Analyzed: 1/22/2014  
Preservative: Cool Analysis Needed: TPH-418.1  
Condition: Cool and Intact

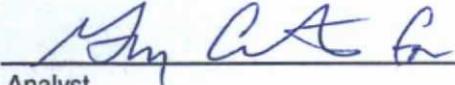
Parameter	Concentration (mg/kg)	Det. Limit (mg/kg)
Total Petroleum Hydrocarbons	36	5.0

ND = Parameter not detected at the stated detection limit.

References: Method 418.1, Petroleum Hydrocarbons, Total Recoverable, Chemical Analysis of Water and Waste, USEPA Storet No. 4551, 1978.

Comments: **McGrath #4 SWD**

Instrument calibrated to 200 ppm standard and zeroed before each sample.

  
\_\_\_\_\_  
Analyst

Tiffany McIntosh  
\_\_\_\_\_  
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\_\_\_\_\_  
Review

Toni McKnight, EIT  
\_\_\_\_\_  
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CONTINUOUS CALIBRATION  
EPA METHOD 418.1  
TOTAL PETROLEUM  
HYDROCARBONS

Cal. Date: 22-Jan-14

Parameter	Standard Concentration mg/L	Concentration Reading mg/L
TPH	100	200
	200	
	500	
	1000	

The accepted percent relative deviation (%RSD) of the calibration factor is less than 20% over the working range.

  
\_\_\_\_\_  
Analyst

2/17/2014  
\_\_\_\_\_  
Date

Tiffany McIntosh  
\_\_\_\_\_  
Print Name

  
\_\_\_\_\_  
Review

2/17/2014  
\_\_\_\_\_  
Date

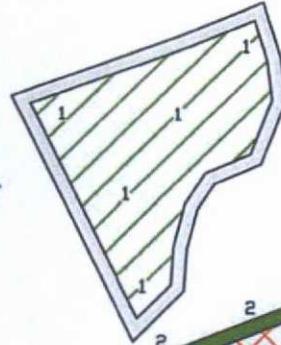
Toni McKnight, EIT  
\_\_\_\_\_  
Print Name

**APPENDIX H:**  
**JANUARY 24, 2014**

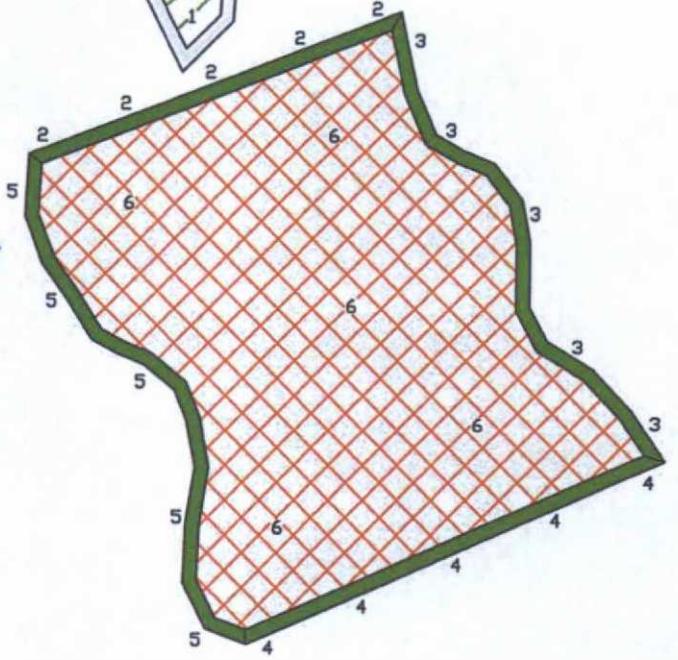
**FIGURE 10 - SITE MAP**  
**ANALYTICAL RESULTS**



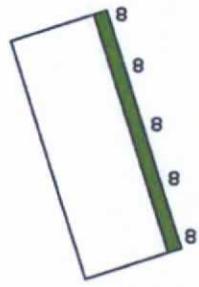
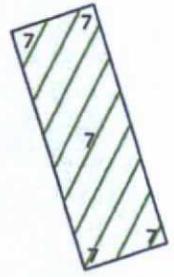
EXCAVATION 1



EXCAVATION 4



EXCAVATION 5



EXCAVATION 6



### LEGEND



Areas Below  
Regulatory  
Standards



Areas Above  
Regulatory  
Standards



Areas Which  
Previously Met  
Regulatory  
Standards

### SITE MAP - 1/24/2014

ConocoPhillips

McGrath #4 SWD (hBr)

SECTION 34, TWP 30 NORTH, RANGE 12 WEST  
SAN JUAN COUNTY, NEW MEXICO

SCALE: NTS

FIGURE NO. 10

REV

PROJECT N092115-2540

#### REVISIONS

NO.	DATE	BY	DESCRIPTION
MAP DRWN	TLM	3/21/14	BASE DRWN TLM 2/25/13



envirotech

5796 U.S. HIGHWAY 64, FARMINGTON, NM 87401 505-632-0615



EPA METHOD 418.1  
TOTAL PETROLEUM  
HYDROCARBONS

Client: ConocoPhillips Project #: 92115-2540  
Sample No.: 1 Date Reported: 2/17/2014  
Sample ID: Excavation 1 Bottom Date Sampled: 1/24/2014  
Sample Matrix: Soil Date Analyzed: 1/24/2014  
Preservative: Cool Analysis Needed: TPH-418.1  
Condition: Cool and Intact

Parameter	Concentration (mg/kg)	Det. Limit (mg/kg)
Total Petroleum Hydrocarbons	120	5.0

ND = Parameter not detected at the stated detection limit.

References: Method 418.1, Petroleum Hydrocarbons, Total Recoverable, Chemical Analysis of Water and Waste, USEPA Storet No. 4551, 1978.

Comments: **McGrath #4 SWD**

Instrument calibrated to 200 ppm standard and zeroed before each sample.

  
\_\_\_\_\_  
Analyst

Tiffany McIntosh  
\_\_\_\_\_  
Printed

  
\_\_\_\_\_  
Review

Toni McKnight, EIT  
\_\_\_\_\_  
Printed



EPA METHOD 418.1  
TOTAL PETROLEUM  
HYDROCARBONS

Client: ConocoPhillips Project #: 92115-2540  
Sample No.: 2 Date Reported: 2/17/2014  
Sample ID: Excavation 4 North Wall Date Sampled: 1/24/2014  
Sample Matrix: Soil Date Analyzed: 1/24/2014  
Preservative: Cool Analysis Needed: TPH-418.1  
Condition: Cool and Intact

Parameter	Concentration (mg/kg)	Det. Limit (mg/kg)
Total Petroleum Hydrocarbons	ND	5.0

ND = Parameter not detected at the stated detection limit.

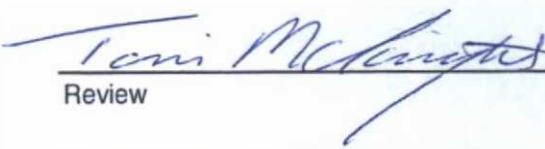
References: Method 418.1, Petroleum Hydrocarbons, Total Recoverable, Chemical Analysis of Water and Waste, USEPA Storet No. 4551, 1978.

Comments: **McGrath #4 SWD**

Instrument calibrated to 200 ppm standard and zeroed before each sample.

  
\_\_\_\_\_  
Analyst

Tiffany McIntosh  
\_\_\_\_\_  
Printed

  
\_\_\_\_\_  
Review

Toni McKnight, EIT  
\_\_\_\_\_  
Printed



EPA METHOD 418.1  
TOTAL PETROLEUM  
HYDROCARBONS

Client: ConocoPhillips Project #: 92115-2540  
Sample No.: 3 Date Reported: 2/17/2014  
Sample ID: Excavation 4 East Wall Date Sampled: 1/24/2014  
Sample Matrix: Soil Date Analyzed: 1/24/2014  
Preservative: Cool Analysis Needed: TPH-418.1  
Condition: Cool and Intact

Parameter	Concentration (mg/kg)	Det. Limit (mg/kg)
Total Petroleum Hydrocarbons	20	5.0

ND = Parameter not detected at the stated detection limit.

References: Method 418.1, Petroleum Hydrocarbons, Total Recoverable, Chemical Analysis of Water and Waste, USEPA Storet No. 4551, 1978.

Comments: **McGrath #4 SWD**

Instrument calibrated to 200 ppm standard and zeroed before each sample.

  
\_\_\_\_\_  
Analyst

Tiffany McIntosh  
\_\_\_\_\_  
Printed

  
\_\_\_\_\_  
Review

Toni McKnight, EIT  
\_\_\_\_\_  
Printed



EPA METHOD 418.1  
TOTAL PETROLEUM  
HYDROCARBONS

Client: ConocoPhillips Project #: 92115-2540  
Sample No.: 4 Date Reported: 2/17/2014  
Sample ID: Excavation 4 South Wall Date Sampled: 1/24/2014  
Sample Matrix: Soil Date Analyzed: 1/24/2014  
Preservative: Cool Analysis Needed: TPH-418.1  
Condition: Cool and Intact

Parameter	Concentration (mg/kg)	Det. Limit (mg/kg)
Total Petroleum Hydrocarbons	680	5.0

ND = Parameter not detected at the stated detection limit.

References: Method 418.1, Petroleum Hydrocarbons, Total Recoverable, Chemical Analysis of Water and Waste, USEPA Storet No. 4551, 1978.

Comments: McGrath #4 SWD

Instrument calibrated to 200 ppm standard and zeroed before each sample.

  
\_\_\_\_\_  
Analyst

Tiffany McIntosh  
\_\_\_\_\_  
Printed

  
\_\_\_\_\_  
Review

Toni McKnight, EIT  
\_\_\_\_\_  
Printed



EPA METHOD 418.1  
TOTAL PETROLEUM  
HYDROCARBONS

Client: ConocoPhillips Project #: 92115-2540  
Sample No.: 5 Date Reported: 2/17/2014  
Sample ID: Excavation 4 West Wall Date Sampled: 1/24/2014  
Sample Matrix: Soil Date Analyzed: 1/24/2014  
Preservative: Cool Analysis Needed: TPH-418.1  
Condition: Cool and Intact

Parameter	Concentration (mg/kg)	Det. Limit (mg/kg)
Total Petroleum Hydrocarbons	56	5.0

ND = Parameter not detected at the stated detection limit.

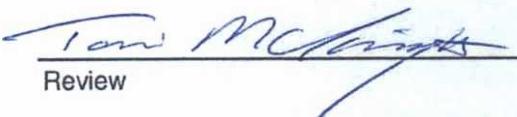
References: Method 418.1, Petroleum Hydrocarbons, Total Recoverable, Chemical Analysis of Water and Waste, USEPA Storet No. 4551, 1978.

Comments: McGrath #4 SWD

Instrument calibrated to 200 ppm standard and zeroed before each sample.

  
\_\_\_\_\_  
Analyst

Tiffany McIntosh  
\_\_\_\_\_  
Printed

  
\_\_\_\_\_  
Review

Toni McKnight, EIT  
\_\_\_\_\_  
Printed



EPA METHOD 418.1  
TOTAL PETROLEUM  
HYDROCARBONS

Client: ConocoPhillips Project #: 92115-2540  
Sample No.: 6 Date Reported: 2/17/2014  
Sample ID: Excavation 4 Bottom Date Sampled: 1/24/2014  
Sample Matrix: Soil Date Analyzed: 1/24/2014  
Preservative: Cool Analysis Needed: TPH-418.1  
Condition: Cool and Intact

Parameter	Concentration (mg/kg)	Det. Limit (mg/kg)
Total Petroleum Hydrocarbons	3,220	5.0

ND = Parameter not detected at the stated detection limit.

References: Method 418.1, Petroleum Hydrocarbons, Total Recoverable, Chemical Analysis of Water and Waste, USEPA Storet No. 4551, 1978.

Comments: **McGrath #4 SWD**

Instrument calibrated to 200 ppm standard and zeroed before each sample.

  
\_\_\_\_\_  
Analyst

Tiffany McIntosh  
\_\_\_\_\_  
Printed

  
\_\_\_\_\_  
Review

Toni McKnight, EIT  
\_\_\_\_\_  
Printed



EPA METHOD 418.1  
TOTAL PETROLEUM  
HYDROCARBONS

Client: ConocoPhillips Project #: 92115-2540  
Sample No.: 7 Date Reported: 2/17/2014  
Sample ID: Excavation 5 Bottom Date Sampled: 1/24/2014  
Sample Matrix: Soil Date Analyzed: 1/24/2014  
Preservative: Cool Analysis Needed: TPH-418.1  
Condition: Cool and Intact

Parameter	Concentration (mg/kg)	Det. Limit (mg/kg)
Total Petroleum Hydrocarbons	84	5.0

ND = Parameter not detected at the stated detection limit.

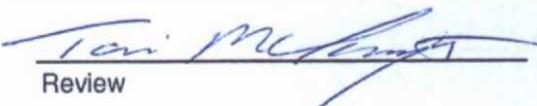
References: Method 418.1, Petroleum Hydrocarbons, Total Recoverable, Chemical Analysis of Water and Waste, USEPA Storet No. 4551, 1978.

Comments: **McGrath #4 SWD**

Instrument calibrated to 200 ppm standard and zeroed before each sample.

  
\_\_\_\_\_  
Analyst

Tiffany McIntosh  
\_\_\_\_\_  
Printed

  
\_\_\_\_\_  
Review

Toni McKnight, EIT  
\_\_\_\_\_  
Printed



EPA METHOD 418.1  
TOTAL PETROLEUM  
HYDROCARBONS

Client: ConocoPhillips Project #: 92115-2540  
Sample No.: 8 Date Reported: 2/17/2014  
Sample ID: Excavation 6 East Wall Date Sampled: 1/24/2014  
Sample Matrix: Soil Date Analyzed: 1/24/2014  
Preservative: Cool Analysis Needed: TPH-418.1  
Condition: Cool and Intact

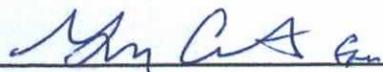
Parameter	Concentration (mg/kg)	Det. Limit (mg/kg)
Total Petroleum Hydrocarbons	32	5.0

ND = Parameter not detected at the stated detection limit.

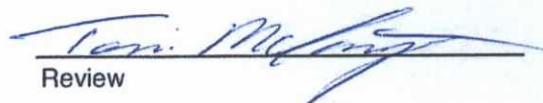
References: Method 418.1, Petroleum Hydrocarbons, Total Recoverable, Chemical Analysis of Water and Waste, USEPA Storet No. 4551, 1978.

Comments: **McGrath #4 SWD**

Instrument calibrated to 200 ppm standard and zeroed before each sample.

  
\_\_\_\_\_  
Analyst

Tiffany McIntosh  
\_\_\_\_\_  
Printed

  
\_\_\_\_\_  
Review

Toni McKnight, EIT  
\_\_\_\_\_  
Printed

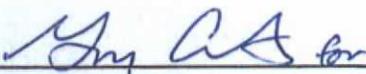


CONTINUOUS CALIBRATION  
EPA METHOD 418.1  
TOTAL PETROLEUM  
HYDROCARBONS

Cal. Date: 24-Jan-14

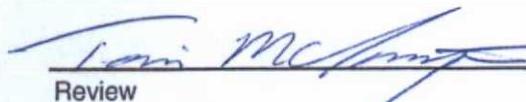
Parameter	Standard Concentration mg/L	Concentration Reading mg/L
TPH	100	190
	200	
	500	
	1000	

The accepted percent relative deviation (%RSD) of the calibration factor is less than 20% over the working range.

  
\_\_\_\_\_  
Analyst

\_\_\_\_\_  
Date 2/17/2014

Tiffany McIntosh  
\_\_\_\_\_  
Print Name

  
\_\_\_\_\_  
Review

\_\_\_\_\_  
Date 2/17/2014

Toni McKnight, EIT  
\_\_\_\_\_  
Print Name



## Analytical Report

### Report Summary

Client: ConocoPhillips

Chain Of Custody Number: 16493

Samples Received: 1/24/2014 1:52:00PM

Job Number: 92115-2540

Work Order: P401076

Project Name/Location: McGrath #4 SWD

Entire Report Reviewed By:

Date: 1/27/14

Tim Cain, Laboratory Manager

The results in this report apply to the samples submitted to Envirotech's Analytical Laboratory and were analyzed in accordance with the chain of custody document supplied by you, the client, and as such are for your exclusive use only. The results in this report are based on the sample as received unless otherwise noted. Partial or incomplete reproduction of this report is prohibited, unless approved by Envirotech, Inc. If you have any questions regarding this analytical report, please don't hesitate to contact Envirotech's Laboratory Staff.

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Ph (970) 259-0615 Fr (800) 362-1879

envirotech-inc.com  
laboratory@envirotech-inc.com



ConocoPhillips PO Box 2200 Bartlesville OK, 74005	Project Name: McGrath #4 SWD Project Number: 92115-2540 Project Manager: Tiffany McIntosh	Reported: 27-Jan-14 07:59
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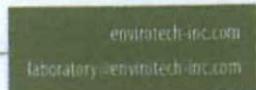
### Analytical Report for Samples

Client Sample ID	Lab Sample ID	Matrix	Sampled	Received	Container
Excavation 4 Bottom	P401076-01A	Soil	01/24/14	01/24/14	Glass Jar, 4 oz.

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ConocoPhillips PO Box 2200 Bartlesville OK, 74005	Project Name: McGrath #4 SWD Project Number: 92115-2540 Project Manager: Tiffany McIntosh	Reported: 27-Jan-14 07:59
---	---	------------------------------

**Excavation 4 Bottom  
P401076-01 (Solid)**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes	
		Limit	Units							
<b>Volatiles Organics by EPA 8021</b>										
Benzene	ND	0.05	mg/kg	1	1404027	01/24/14	01/24/14	EPA 8021B		
Toluene	ND	0.05	mg/kg	1	1404027	01/24/14	01/24/14	EPA 8021B		
Ethylbenzene	ND	0.05	mg/kg	1	1404027	01/24/14	01/24/14	EPA 8021B		
p,m-Xylene	1.40	0.05	mg/kg	1	1404027	01/24/14	01/24/14	EPA 8021B		
o-Xylene	ND	0.05	mg/kg	1	1404027	01/24/14	01/24/14	EPA 8021B		
Total Xylenes	1.40	0.05	mg/kg	1	1404027	01/24/14	01/24/14	EPA 8021B		
Total BTEX	1.40	0.05	mg/kg	1	1404027	01/24/14	01/24/14	EPA 8021B		
Surrogate: Bromochlorobenzene		106 %		80-120	1404027	01/24/14	01/24/14	EPA 8021B		
Surrogate: 1,3-Dichlorobenzene		103 %		80-120	1404027	01/24/14	01/24/14	EPA 8021B		
<b>Nonhalogenated Organics by 8015</b>										
Gasoline Range Organics (C6-C10)	13.4	4.99	mg/kg	1	1404027	01/24/14	01/24/14	EPA 8015D		
Diesel Range Organics (C10-C28)	1900	30.0	mg/kg	1	1404026	01/24/14	01/24/14	EPA 8015D		

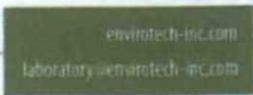
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Ph (970) 259-0615 Fr (800) 362-1879





ConocoPhillips PO Box 2200 Bartlesville OK, 74005	Project Name: McGrath #4 SWD Project Number: 92115-2540 Project Manager: Tiffany McIntosh	Reported: 27-Jan-14 07:59
---	---	------------------------------

**Volatile Organics by EPA 8021 - Quality Control**  
**Envirotech Analytical Laboratory**

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

**Batch 1404027 - Purge and Trap EPA 5030A**

Blank (1404027-BLK1)			Prepared: 23-Jan-14 Analyzed: 24-Jan-14							
Benzene	ND	0.05	mg/kg							
Toluene	ND	0.05	"							
Ethylbenzene	ND	0.05	"							
p,m-Xylene	ND	0.05	"							
o-Xylene	ND	0.05	"							
Total Xylenes	ND	0.05	"							
Total BTEX	ND	0.05	"							
Surrogate: 1,3-Dichlorobenzene	52.6		ug/L	50.0		105	80-120			
Surrogate: Bromochlorobenzene	54.5		"	50.0		109	80-120			

Duplicate (1404027-DUP1)			Source: P401066-01 Prepared: 23-Jan-14 Analyzed: 24-Jan-14							
Benzene	4.84	0.05	mg/kg		4.19			14.5	30	
Toluene	12.4	0.05	"		12.7			2.09	30	
Ethylbenzene	0.81	0.05	"		0.78			3.59	30	
p,m-Xylene	7.34	0.05	"		7.47			1.79	30	
o-Xylene	1.11	0.05	"		1.11			0.436	30	
Surrogate: 1,3-Dichlorobenzene	202		ug/L	50.0		404	80-120			S-02
Surrogate: Bromochlorobenzene	68.3		"	50.0		137	80-120			S-02

Matrix Spike (1404027-MS1)			Source: P401066-01 Prepared: 23-Jan-14 Analyzed: 24-Jan-14							
Benzene	7.68	0.05	mg/kg	2.50	4.19	140	39-150			
Toluene	16.3	0.05	"	2.50	12.7	144	46-148			
Ethylbenzene	3.49	0.05	"	2.50	0.78	108	32-160			
p,m-Xylene	13.0	0.05	"	5.00	7.47	111	46-148			
o-Xylene	3.91	0.05	"	2.50	1.11	112	46-148			
Surrogate: 1,3-Dichlorobenzene	221		ug/L	50.0		443	80-120			S-02
Surrogate: Bromochlorobenzene	72.1		"	50.0		144	80-120			S-02

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ConocoPhillips PO Box 2200 Bartlesville OK, 74005	Project Name: McGrath #4 SWD Project Number: 92115-2540 Project Manager: Tiffany McIntosh	Reported: 27-Jan-14 07:59
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**Nonhalogenated Organics by 8015 - Quality Control**  
**Envirotech Analytical Laboratory**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
<b>Batch 1404026 - DRO Extraction EPA 3550C</b>										
<b>Blank (1404026-BLK1)</b>										
Diesel Range Organics (C10-C28)	ND	30.0	mg/kg							Prepared: 23-Jan-14 Analyzed: 24-Jan-14
<b>Duplicate (1404026-DUP1)</b>										
Diesel Range Organics (C10-C28)	340	29.9	mg/kg		372			9.05	30	Source: P401066-01 Prepared: 23-Jan-14 Analyzed: 24-Jan-14
<b>Matrix Spike (1404026-MS1)</b>										
Diesel Range Organics (C10-C28)	605	31.6	mg/kg	263	372	88.5	75-125			Source: P401066-01 Prepared: 23-Jan-14 Analyzed: 24-Jan-14

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laboratory@envirotech-inc.com



ConocoPhillips PO Box 2200 Bartlesville OK, 74005	Project Name: McGrath #4 SWD Project Number: 92115-2540 Project Manager: Tiffany McIntosh	Reported: 27-Jan-14 07:59
---	---	------------------------------

**Nonhalogenated Organics by 8015 - Quality Control**  
**Envirotech Analytical Laboratory**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
<b>Batch 1404027 - Purge and Trap EPA 5030A</b>										
<b>Blank (1404027-BLK1)</b>										
					Prepared: 23-Jan-14 Analyzed: 24-Jan-14					
Gasoline Range Organics (C6-C10)	ND	4.99	mg/kg							
<b>Duplicate (1404027-DUP1)</b>										
					Source: P401066-01 Prepared: 23-Jan-14 Analyzed: 24-Jan-14					
Gasoline Range Organics (C6-C10)	133	4.99	mg/kg		133			0.0246	30	
<b>Matrix Spike (1404027-MS1)</b>										
					Source: P401066-01 Prepared: 23-Jan-14 Analyzed: 24-Jan-14					
Gasoline Range Organics (C6-C10)	159	5.00	mg/kg	22.5	133	118	75-125			

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laboratory@envirotech-inc.com

ConocoPhillips  
PO Box 2200  
Bartlesville OK, 74005

Project Name: McGrath #4 SWD  
Project Number: 92115-2540  
Project Manager: Tiffany McIntosh

Reported:  
27-Jan-14 07:59

#### Notes and Definitions

- S-02 The surrogate recovery for this sample cannot be accurately quantified due to interference from coeluting organic compounds present in the sample extract.
- DET Analyte DETECTED
- ND Analyte NOT DETECTED at or above the reporting limit
- NR Not Reported
- dry Sample results reported on a dry weight basis
- RPD Relative Percent Difference

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RUSH

# CHAIN OF CUSTODY RECORD

16493

Client: <b>COPC (hBr)</b>	Project Name / Location: <b>McGrath #4 SWD</b>	ANALYSIS / PARAMETERS											
Email results to: <b>T. McIntosh</b>	Sampler Name: <b>T. McIntosh</b>	TPH (Method 8015)	BTEX (Method 8021)	VOC (Method 8260)	RCRA 8 Metals	Cation / Anion	RCI	TCLP with H/P	CO Table 910-1	TPH (418.1)	CHLORIDE	Sample Cool	Sample Intact
Client Phone No.:	Client No.:												

Sample No/ Identification	Sample Date	Sample Time	Lab No.	No./Volume of Containers	Preservative			TPH (Method 8015)	BTEX (Method 8021)	VOC (Method 8260)	RCRA 8 Metals	Cation / Anion	RCI	TCLP with H/P	CO Table 910-1	TPH (418.1)	CHLORIDE	Sample Cool	Sample Intact
					HNO <sub>3</sub>	HCl	COO												
Excavation 4 Bottom	1/24/14	1200	P4010716-01	1-4oz jar			X	X	X									X	X

Relinquished by: (Signature) <i>Tiffany McIntosh</i>	Date 1/24/14	Time 1352	Received by: (Signature) <i>Marianne</i>	Date 1-24-14	Time 1352
Relinquished by: (Signature)			Received by: (Signature)		

Sample Matrix  
 Soil  Solid  Sludge  Aqueous  Other  \_\_\_\_\_

Sample(s) dropped off after hours to secure drop off area.

**envirotech** 18.6°C  
Analytical Laboratory

# **APPENDIX I:**

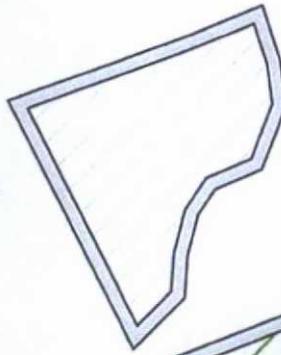
**JANUARY 28, 2014**

**FIGURE 11 - SITE MAP**

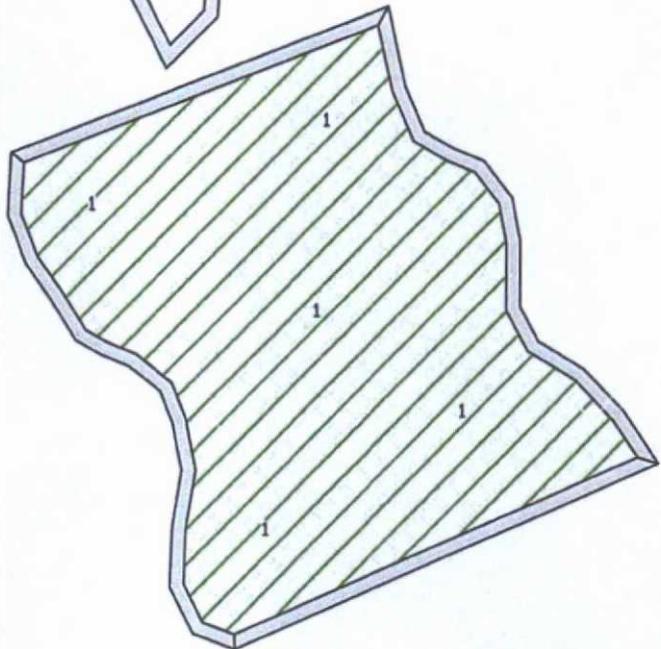
**ANALYTICAL RESULTS**



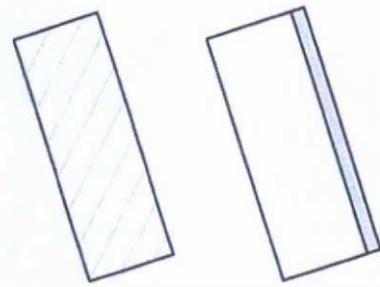
EXCAVATION 1



EXCAVATION 4



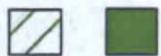
EXCAVATION 5



EXCAVATION 6



### LEGEND



Areas Below  
Regulatory  
Standards



Areas Above  
Regulatory  
Standards



Areas Which  
Previously Met  
Regulatory  
Standards

SITE MAP - 1/28/2014

ConocoPhillips

McGrath #4 SWD (hBr)

SECTION 34, TWP 30 NORTH, RANGE 12 WEST  
SAN JUAN COUNTY, NEW MEXICO

SCALE: NTS

FIGURE NO. 11

REV

PROJECT N092115-2540

#### REVISIONS

NO.	DATE	BY	DESCRIPTION
MAP DRWN	TLM	3/21/14	BASE DRWN TLM 2/25/13



# envirotech

5796 U.S. HIGHWAY 64, FARMINGTON, NM 87401 505-632-0615



EPA METHOD 418.1  
TOTAL PETROLEUM  
HYDROCARBONS

Client:	ConocoPhillips	Project #:	92115-2540
Sample No.:	1	Date Reported:	2/17/2014
Sample ID:	Excavation 4 Bottom	Date Sampled:	1/28/2014
Sample Matrix:	Soil	Date Analyzed:	1/28/2014
Preservative:	Cool	Analysis Needed:	TPH-418.1
Condition:	Cool and Intact		

Parameter	Concentration (mg/kg)	Det. Limit (mg/kg)
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<b>Total Petroleum Hydrocarbons</b>	<b>24</b>	<b>5.0</b>
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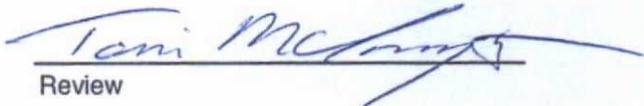
ND = Parameter not detected at the stated detection limit.

References: Method 418.1, Petroleum Hydrocarbons, Total Recoverable, Chemical Analysis of Water and Waste, USEPA Storet No. 4551, 1978.

Comments: **McGrath #4 SWD**

Instrument calibrated to 200 ppm standard and zeroed before each sample.

  
 \_\_\_\_\_  
 Analyst

  
 \_\_\_\_\_  
 Review

Tiffany McIntosh  
 \_\_\_\_\_  
 Printed

Toni McKnight, EIT  
 \_\_\_\_\_  
 Printed



CONTINUOUS CALIBRATION  
EPA METHOD 418.1  
TOTAL PETROLEUM  
HYDROCARBONS

Cal. Date: 28-Jan-14

Parameter	Standard Concentration mg/L	Concentration Reading mg/L
TPH	100	200
	200	
	500	
	1000	

The accepted percent relative deviation (%RSD) of the calibration factor is less than 20% over the working range.

  
\_\_\_\_\_  
Analyst

2/17/2014  
\_\_\_\_\_  
Date

Tiffany McIntosh  
\_\_\_\_\_  
Print Name

  
\_\_\_\_\_  
Review

2/17/2014  
\_\_\_\_\_  
Date

Toni McKnight, EIT  
\_\_\_\_\_  
Print Name