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

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

Form C-144
July 21, 2008

**For temporary pits, closed-loop sytems, and below-grade tanks**, submit to the appropriate NMOCD District Office.

**For permanent pits and exceptions** submit to the Santa Fe Environmental Bureau office and provide a copy to the appropriate NMOCD District Office

# Pit, Closed-Loop System, Below-Grade Tank, or Proposed Alternative Method Permit or Closure Plan Application

8925

Type of action:
- [ ] Permit of a pit, closed-loop system, below-grade tank, or proposed alternative method
- [X] Closure of a pit, closed-loop system, below-grade tank, or proposed alternative method
- [ ] Modification to an existing permit
- [ ] Closure plan only submitted for an existing permitted or non-permitted pit, closed-loop system, below-grade tank, or proposed alternative method

***Instructions: Please submit one application (Form C-144) per individual pit, closed-loop system, below-grade tank or alternative request***

Please be advised that approval of this request does not relieve the operator of liability should operations result in pollution of surface water, ground water or the environment. Nor does approval relieve the operator of its responsibility to comply with any other applicable governmental authority's rules, regulations or ordinances

1
Operator: **Burlington Resources Oil & Gas Company, LP** OGRID#: **14538**
Address: **PO Box 4289, Farmington, NM 87499**
Facility or well name: **Trail Canyon 100S**
API Number: **30-045-35006** OCD Permit Number:
U/L or Qtr/Qtr: **I(NE/SE)** Section: **12** Township: **32N** Range: **9W** County: **SAN JUAN**
Center of Proposed Design: Latitude: **36.99546** °N Longitude: **107.72261** °W NAD: [ ] 1927 [X] 1983
Surface Owner: [X] Federal [ ] State [ ] Private [ ] Tribal Trust or Indian Allotment

2
[X] **Pit:** Subsection F or G of 19.15.17.11 NMAC
Temporary: [ ] Drilling [ ] Workover
[ ] Permanent [ ] Emergency [X] Cavitation [ ] P&A **(Pre-set)**
[ ] Lined [ ] Unlined Liner type: Thickness _____ mil [ ] LLDPE [ ] HDPE [ ] PVC [ ] Other _____
[ ] String-Reinforced
Liner Seams: [ ] Welded [ ] Factory [ ] Other _____ Volume: _____ bbl Dimensions. L ____ x W ____ x D ____

3
[ ] **Closed-loop System:** Subsection H of 19.15.17.11 NMAC
Type of Operation. [ ] P&A [ ] Drilling a new well [ ] Workover or Drilling (Applies to activities which require prior approval of a permit or notice of intent)
[ ] Drying Pad [ ] Above Ground Steel Tanks [ ] Haul-off Bins [ ] Other _____
[ ] Lined [ ] Unlined Liner type: Thickness _____ mil [ ] LLDPE [ ] HDPE [ ] PVD [ ] Other _____
Liner Seams: [ ] Welded [ ] Factory [ ] Other _____

4
[ ] **Below-grade tank:** Subsection I of 19.15 17.11 NMAC
Volume: _____ bbl Type of fluid. _____
Tank Construction material. _____
[ ] Secondary containment with leak detection [ ] Visible sidewalls, liner, 6-inch lift and automatic overflow shutoff
[ ] Visible sidewalls and liner [ ] Visible sidewalls only [ ] Other _____
Liner Type: Thickness _____ mil [ ] HDPE [ ] PVC [ ] Other _____

RECEIVED
SEP 2011
OIL CONS. DIV.

5
[ ] **Alternative Method:**
Submittal of an exception request is required. Exceptions must be submitted to the Santa Fe Environmental Bureau office for consideration of approval.



13

6

**Fencing:** Subsection D of 19.15.17.11 NMAC *(Applies to permanent pit, temporary pits, and below-grade tanks)*

☐ Chain link, six feet in height, two strands of barbed wire at top *(Required if located within 1000 feet of a permanent residence, school, hospital, institution or church)*

☐ Four foot height, four strands of barbed wire evenly spaced between one and four feet

☐ Alternate. Please specify _____

7

**Netting:** Subsection E of 19.15.17.11 NMAC *(Applies to permanent pits and permanent open top tanks)*

☐ Screen ☐ Netting ☐ Other _____

☐ Monthly inspections *(If netting or screening is not physically feasible)*

8

**Signs:** Subsection C of 19 15 17.11 NMAC

☐ 12" X 24", 2" lettering, providing Operator's name, site location, and emergency telephone numbers

☒ Signed in compliance with 19 15.3.103 NMAC

9

**Administrative Approvals and Exceptions:**

Justifications and/or demonstrations of equivalency are required. Please refer to 19.15.17 NMAC for guidance

***Please check a box if one or more of the following is requested, if not leave blank:***

☒ Administrative approval(s): Requests must be submitted to the appropriate division district of the Santa Fe Environmental Bureau office for consideration of approval. **(Cavitation pit for Pre-set)**

☐ Exception(s): Requests must be submitted to the Santa Fe Environmental Bureau office for consideration of approval.

10

**Siting Criteria (regarding permitting)** 19.15.17.10 NMAC

***Instructions: The applicant must demonstrate compliance for each siting criteria below in the application. Recommendations of acceptable source material are provided below. Requests regarding changes to certain siting criteria may require administrative approval from the appropriate district office or may be considered an exception which must be submitted to the Santa Fe Environmental Bureau Office for consideration of approval. Applicant must attach justification for request. Please refer to 19.15.17.10 NMAC for guidance.*** **Siting criteria does not apply to drying pads or above grade-tanks associated with a closed-loop system.**

| | |
|---|---|
| **Ground water is less than 50 feet below the bottom of the temporary pit, permanent pit, or below-grade tank.**<br>- NM Office of the State Engineer - iWATERS database search; USGS; Data obtained from nearby wells | ☐ Yes ☐ No |
| **Within 300 feet of a continuously flowing watercourse, or 200 feet of any other watercourse, lakebed, sinkhole, or playa lake (measured from the ordinary high-water mark).**<br>- Topographic map; Visual inspection (certification) of the proposed site | ☐ Yes ☐ No |
| **Within 300 feet from a permanent residence, school, hospital, institution, or church in existence at the time of initial application.**<br>*(Applies to temporary, emergency, or cavitation pits and below-grade tanks)*<br>- Visual inspection (certification) of the proposed site; Aerial photo; Satellite image | ☐ Yes ☐ No<br>☐ NA |
| **Within 1000 feet from a permanent residence, school, hospital, institution, or church in existence at the time of initial application.**<br>*(Applied to permanent pits)*<br>- Visual inspection (certification) of the proposed site; Aerial photo; Satellite image | ☐ Yes ☐ No<br>☐ NA |
| **Within 500 horizonal feet of a private, domestic fresh water well or spring that less than five households use for domestic or stock watering purposes, or within 1000 horizontal feet of any other fresh water well or spring, in existence at the time of initial application.**<br>- NM Office of the State Engineer - iWATERS database search; Visual inspection (certification) of the proposed site. | ☐ Yes ☐ No |
| **Within incorporated municipal boundaries or within a defined municipal fresh water well field covered under a municipal ordinance adopted pursuant to NMSA 1978, Section 3-27-3, as amended**<br>- Written confirmation or verification from the municipality; Written approval obtained from the municipality | ☐ Yes ☐ No |
| **Within 500 feet of a wetland.**<br>- US Fish and Wildlife Wetland Identification map; Topographic map; Visual inspection (certification) of the proposed site | ☐ Yes ☐ No |
| **Within the area overlying a subsurface mine.**<br>- Written confirmation or verification or map from the NM EMNRD - Mining and Mineral Division | ☐ Yes ☐ No |
| **Within an unstable area.**<br>- Engineering measures incorporated into the design; NM Bureau of Geology & Mineral Resources; USGS; NM Geological Society; Topographic map | ☐ Yes ☐ No |
| **Within a 100-year floodplain**<br>- FEMA map | ☐ Yes ☐ No |

11

**Temporary Pits, Emergency Pits and Below-grade Tanks Permit Application Attachment Checklist** Subsection B of 19.15.17.9 NMAC

*Instructions Each of the following items must be attached to the application Please indicate, by a check mark in the box, that the documents are attached.*

- ☐ Hydrogeologic Report (Below-grade Tanks) - based upon the requirements of Paragraph (4) of Subsection B of 19.15.17.9 NMAC
- ☐ Hydrogeologic Data (Temporary and Emergency Pits) - based upon the requirements of Paragraph (2) of Subsection B of 19.15.17.9
- ☐ Siting Criteria Compliance Demonstrations - based upon the appropriate requirements of 19.15 17.10 NMAC
- ☐ Design Plan - based upon the appropriate requirements of 19.15.17.11 NMAC
- ☐ Operating and Maintenance Plan - based upon the appropriate requirements of 19.15.17.12 NMAC
- ☐ Closure Plan (Please complete Boxes 14 through 18, if applicable) - based upon the appropriate requirements of Subsection C of 19.15.17.9 NMAC and 19.15 17 13 NMAC

☐ Previously Approved Design (attach copy of design) API _____ or Permit _____

12

**Closed-loop Systems Permit Application Attachment Checklist:** Subsection B of 19.15.17.9 NMAC

*Instructions· Each of the following items must be attached to the application Please indicate, by a check mark in the box, that the documents are attached*

- ☐ Geologic and Hydrogeologic Data (only for on-site closure) - based upon the requirements of Paragraph (3) of Subsection B of 19.15.17.9
- ☐ Siting Criteria Compliance Demonstrations (only for on-site closure) - based upon the appropriate requirements of 19.15.17.10 NMAC
- ☐ Design Plan - based upon the appropriate requirements of 19.15.17.11 NMAC
- ☐ Operating and Maintenance Plan - based upon the appropriate requirements of 19.15.17.12 NMAC
- ☐ Closure Plan (Please complete Boxes 14 through 18, if applicable) - based upon the appropriate requirements of Subsection C of 19.15.17.9 NMAC and 19.15.17.13 NMAC

☐ Previously Approved Design (attach copy of design) API _____

☐ Previously Approved Operating and Maintenance Plan API _____

13

**Permanent Pits Permit Application Checklist:** Subsection B of 19.15.17.9 NMAC

***Instructions: Each of the following items must be attached to the application. Please indicate, by a check mark in the box, that the documents are attached.***

- ☐ Hydrogeologic Report - based upon the requirements of Paragraph (I) of Subsection B of 19.15.17.9 NMAC
- ☐ Siting Criteria Compliance Demonstrations - based upon the appropriate requirements of 19.15 17.10 NMAC
- ☐ Climatological Factors Assessment
- ☐ Certified Engineering Design Plans - based upon the appropriate requirements of 19 15.17.11 NMAC
- ☐ Dike Protection and Structural Integrity Design: based upon the appropriate requirements of 19.15.17.11 NMAC
- ☐ Leak Detection Design - based upon the appropriate requirements of 19.15.17.11 NMAC
- ☐ Liner Specifications and Compatibility Assessment - based upon the appropriate requirements of 19.15.17.11 NMAC
- ☐ Quality Control/Quality Assurance Construction and Installation Plan
- ☐ Operating and Maintenance Plan - based upon the appropriate requirements of 19.15.17.12 NMAC
- ☐ Freeboard and Overtopping Prevention Plan - based upon the appropriate requirements of 19.15.17 11 NMAC
- ☐ Nuisance or Hazardous Odors, including H2S, Prevention Plan
- ☐ Emergency Response Plan
- ☐ Oil Field Waste Stream Characterization
- ☐ Monitoring and Inspection Plan
- ☐ Erosion Control Plan
- ☐ Closure Plan - based upon the appropriate requirements of Subsection C of 19.15.17.9 NMAC and 19.15.17.13 NMAC

14

**Proposed Closure:** 19.15.17.13 NMAC

***Instructions: Please complete the applicable boxes, Boxes 14 through 18, in regards to the proposed closure plan.***

Type: ☐ Drilling ☐ Workover ☐ Emergency ☒ Cavitation ☐ P&A ☐ Permanent Pit ☐ Below-grade Tank ☐ Closed-loop System ☐ Alternative

Proposed Closure Method:

- ☐ Waste Excavation and Removal
- ☐ Waste Removal (Closed-loop systems only)
- ☐ On-site Closure Method (only for temporary pits and closed-loop systems)
  - ☐ In-place Burial ☐ On-site Trench
- ☐ Alternative Closure Method (Exceptions must be submitted to the Santa Fe Environmental Bureau for consideration)

15

**Waste Excavation and Removal Closure Plan Checklist** (19.15.17.13 NMAC) ***Instructions: Each of the following items must be attached to the closure plan. Please indicate, by a check mark in the box, that the documents are attached.***

- ☐ Protocols and Procedures - based upon the appropriate requirements of 19.15.17.13 NMAC
- ☐ Confirmation Sampling Plan (if applicable) - based upon the appropriate requirements of Subsection F of 19 15.17.13 NMAC
- ☐ Disposal Facility Name and Permit Number (for liquids, drilling fluids and drill cuttings)
- ☐ Soil Backfill and Cover Design Specifications - based upon the appropriate requirements of Subsection H of 19.15.17.13 NMAC
- ☐ Re-vegetation Plan - based upon the appropriate requirements of Subsection I of 19.15.17.13 NMAC
- ☐ Site Reclamation Plan - based upon the appropriate requirements of Subsection G of 19.15.17.13 NMAC

16

**Waste Removal Closure For Closed-loop Systems That Utilize Above Ground Steel Tanks or Haul-off Bins Only:**(19.15.17 13 D NMAC)

*Instructions Please identify the facility or facilities for the disposal of liquids, drilling fluids and drill cuttings Use attachment if more than two facilities are required*

Disposal Facility Name: Envirotech / JFJ Landfarm % IEI Disposal Facility Permit #: NM-01-0011 / NM-01-0010B

Disposal Facility Name: Basin Disposal Facility Disposal Facility Permit #: NM-01-005

Will any of the proposed closed-loop system operations and associated activities occur on or in areas that *will nbe* used for future service and
☐ Yes (If yes, please provide the information ☐ No

*Required for impacted areas which will not be used for future service and operations·*

☐ Soil Backfill and Cover Design Specification - based upon the appropriate requirements of Subsection H of 19.15.17.13 NMAC
☐ Re-vegetation Plan - based upon the appropriate requirements of Subsection I of 19.15 17 13 NMAC
☐ Site Reclamation Plan - based upon the appropriate requirements of Subsection G of 19 15 17 13 NMAC

17

**Siting Criteria (Regarding on-site closure methods only:** 19 15 17 10 NMAC

*Instructions Each siting criteria requires a demonstration of compliance in the closure plan Recommendations of acceptable source material are provided below Requests regarding changes to certain siting criteria may require administrative approval from the appropriate district office or may be considered an exception which must be submitted to the Santa Fe Environmental Bureau office for consideration of approval Justifications and/or demonstrations of equivalency are required Please refer to 19 15 17 10 NMAC for guidance*

| | |
|---|---|
| Ground water is less than 50 feet below the bottom of the buried waste.<br>- NM Office of the State Engineer - iWATERS database search; USGS: Data obtained from nearby wells | ☐ Yes ☐ No ☐ N/A |
| Ground water is between 50 and 100 feet below the bottom of the buried waste<br>- NM Office of the State Engineer - iWATERS database search, USGS, Data obtained from nearby wells | ☐ Yes ☐ No ☐ N/A |
| Ground water is more than 100 feet below the bottom of the buried waste.<br>- NM Office of the State Engineer - iWATERS database search; USGS; Data obtained from nearby wells | ☐ Yes ☐ No ☐ N/A |
| Within 300 feet of a continuously flowing watercourse, or 200 feet of any other significant watercourse or lakebed, sinkhole, or playa lake (measured from the ordinary high-water mark).<br>- Topographic map, Visual inspection (certification) of the proposed site | ☐ Yes ☐ No |
| Within 300 feet from a permanent residence, school, hospital, institution, or church in existence at the time of initial application.<br>- Visual inspection (certification) of the proposed site; Aerial photo; satellite image | ☐ Yes ☐ No |
| Within 500 horizontal feet of a private, domestic fresh water well or spring that less than five households use for domestic or stock watering purposes, or within 1000 horizontal fee of any other fresh water well or spring, in existence at the time of the initial application.<br>- NM Office of the State Engineer - iWATERS database, Visual inspection (certification) of the proposed site | ☐ Yes ☐ No |
| Within incorporated municipal boundaries or within a defined municipal fresh water well field covered under a municipal ordinance adopted pursuant to NMSA 1978, Section 3-27-3, as amended.<br>- Written confirmation or verification from the municipality, Written approval obtained from the municipality | ☐ Yes ☐ No |
| Within 500 feet of a wetland<br>- US Fish and Wildlife Wetland Identification map; Topographic map, Visual inspection (certification) of the proposed site | ☐ Yes ☐ No |
| Within the area overlying a subsurface mine.<br>- Written confiramtion or verification or map from the NM EMNRD-Mining and Mineral Division | ☐ Yes ☐ No |
| Within an unstable area.<br>- Engineering measures incorporated into the design; NM Bureau of Geology & Mineral Resources, USGS; NM Geological Society; Topographic map | ☐ Yes ☐ No |
| Within a 100-year floodplain.<br>- FEMA map | ☐ Yes ☐ No |

.18

**On-Site Closure Plan Checklist:** (19.15.17.13 NMAC) ***Instructions: Each of the following items must bee attached to the closure plan. Please indicate, by a check mark in the box, that the documents are attached.***

☐ Siting Criteria Compliance Demonstrations - based upon the appropriate requirements of 19.15.17.10 NMAC
☐ Proof of Surface Owner Notice - based upon the appropriate requirements of Subsection F of 19.15.17.13 NMAC
☐ Construction/Design Plan of Burial Trench (if applicable) based upon the appropriate requirements of 19.15.17.11 NMAC
☐ Construction/Design Plan of Temporary Pit (for in place burial of a drying pad) - based upon the appropriate requirements of 19.15.17.11 NMAC
☒ Protocols and Procedures - based upon the appropriate requirements of 19.15.17.13 NMAC
☐ Confirmation Sampling Plan (if applicable) - based upon the appropriate requirements of Subsection F of 19.15.17.13 NMAC
☒ Waste Material Sampling Plan - based upon the appropriate requirements of Subsection F of 19.15.17 13 NMAC
☒ Disposal Facility Name and Permit Number (for liquids, drilling fluids and drill cuttings or in case on-site closure standards cannot be achieved)
☐ Soil Cover Design - based upon the appropriate requirements of Subsection H of 19.15.17.13 NMAC
☐ Re-vegetation Plan - based upon the appropriate requirements of Subsection I of 19.15.17.13 NMAC
☐ Site Reclamation Plan - based upon the appropriate requirements of Subsection G of 19.15.17.13 NMAC

19

**Operator Application Certification:**

I hereby certify that the information submitted with this application is true, accurate and complete to the best of my knowledge and belief.

Name (Print): _____ Title: _____

Signature: _____ Date: _____

e-mail address. _____ Telephone: _____

20

**OCD Approval:** ☐ Permit Application (including closure plan) ☒ Closure Plan (only) ☐ OCD Conditions (see attachment)

**OCD Representative Signature:** Jonathan D. Kelly **Approval Date:** 9/12/2011

**Title:** Compliance Officer **OCD Permit Number:** _____

21

**Closure Report (required within 60 days of closure completion):** Subsection K of 19 15 17 13 NMAC

*Instructions Operators are required to obtain an approved closure plan prior to implementing any closure activities and submitting the closure report The closure report is required to be submitted to the division within 60 days of the completion of the closure activities Please do not complete this section of the form until an approved closure plan has been obtained and the closure activities have been completed*

☐ **Closure Completion Date:** 5/6/2010

22

**Closure Method:**

☐ Waste Excavation and Removal ☐ On-site Closure Method ☒ Alternative Closure Method ☐ Waste Removal (Closed-loop systems only)

☐ If different from approved plan, please explain.

23

**Closure Report Regarding Waste Removal Closure For Closed-loop Systems That Utilize Above Ground Steel Tanks or Haul-off Bins Only:**

***Instructions: Please identify the facility or facilities for where the liquids, drilling fluids and drill cuttings were disposed. Use attachment if more than two facilities were utilized.***

Disposal Facility Name: _____ Disposal Facility Permit Number _____

Disposal Facility Name: _____ Disposal Facility Permit Number. _____

Were the closed-loop system operations and associated activities performed on or in areas that *will not* be used for future service and opeartions?

☐ Yes (If yes, please demonstrate compliance to the items below) ☐ No

*Required for impacted areas which will not be used for future service and operations*

☐ Site Reclamation (Photo Documentation)

☐ Soil Backfilling and Cover Installation

☐ Re-vegetation Application Rates and Seeding Technique

24

**Closure Report Attachment Checklist:** ***Instructions: Each of the following items must be attached to the closure report. Please indicate, by a check mark in the box, that the documents are attached.***

☐ Proof of Closure Notice (surface owner and division)

☐ Proof of Deed Notice (required for on-site closure)

☐ Plot Plan (for on-site closures and temporary pits)

☐ Confirmation Sampling Analytical Results (if applicable)

☐ Waste Material Sampling Analytical Results (if applicable)

☐ Disposal Facility Name and Permit Number

☐ Soil Backfilling and Cover Installation

☐ Re-vegetation Application Rates and Seeding Technique

☐ Site Reclamation (Photo Documentation)

On-site Closure Location: Latitude. _____ Longitude: _____ NAD ☐ 1927 ☐ 1983

25

**Operator Closure Certification:**

*I hereby certify that the information and attachments submitted with this closure report is ture, accurate and complete to the best of my knowledge and belief. I also certify that the closure complies with all applicable closure requirements and conditions specified in the approved closure plan.*

Name (Print): Jamie Goodwin Title: Regulatory Technician

Signature: Jamie Goodwin Date: 9/8/11

e-mail address jamie.l.goodwin@conocophillips.com Telephone: 505-326-9784

envirotech
Analytical Laboratory

# EPA METHOD 8015 Modified
# Nonhalogenated Volatile Organics
# Total Petroleum Hydrocarbons

| | | | |
|---|---|---|---|
| Client: | ConocoPhillips | Project #: | 96052-1706 |
| Sample ID: | Pre-Set Cuttings | Date Reported: | 05-10-10 |
| Laboratory Number: | 54073 | Date Sampled: | 05-06-10 |
| Chain of Custody No: | 6748 | Date Received: | 05-06-10 |
| Sample Matrix: | Soil | Date Extracted: | 05-06-10 |
| Preservative: | Cool | Date Analyzed: | 05-07-10 |
| Condition: | Intact | Analysis Requested: | 8015 TPH |

| Parameter | Concentration (mg/Kg) | Det. Limit (mg/Kg) |
|---|---|---|
| **Gasoline Range (C5 - C10)** | **3.0** | **0.2** |
| **Diesel Range (C10 - C28)** | **ND** | **0.1** |
| **Total Petroleum Hydrocarbons** | **3.0** | **0.2** |

ND - Parameter not detected at the stated detection limit.

References: Method 8015B, Nonhalogenated Volatile Organics, Test Methods for Evaluating Solid Waste, SW-846, USEPA, December 1996.

Comments: **Trail Canyon 100S**

Analyst

Review

5796 US Highway 64, Farmington, NM 87401 | Ph (505)632-0615 Fx (800)362-1879 Fx (505)632-1865 lab@envirotech-inc.com envirotech-inc.com

envirotech
Analytical Laboratory

# EPA Method 8015 Modified
## Nonhalogenated Volatile Organics
## Total Petroleum Hydrocarbons

## Quality Assurance Report

| | | | |
|---|---|---|---|
| Client: | QA/QC | Project #: | N/A |
| Sample ID: | 05-07-10 QA/QC | Date Reported: | 05-10-10 |
| Laboratory Number: | 54017 | Date Sampled: | N/A |
| Sample Matrix: | Methylene Chloride | Date Received: | N/A |
| Preservative: | N/A | Date Analyzed: | 05-07-10 |
| Condition: | N/A | Analysis Requested: | TPH |

| | I-Cal Date | I-Cal RF: | C-Cal RF: | % Difference | Accept. Range |
|---|---|---|---|---|---|
| Gasoline Range C5 - C10 | 05-07-07 | 1.0302E+003 | 1.0306E+003 | 0.04% | 0 - 15% |
| Diesel Range C10 - C28 | 05-07-07 | 1.0009E+003 | 1.0013E+003 | 0.04% | 0 - 15% |

| Blank Conc. (mg/L - mg/Kg) | Concentration | Detection Limit |
|---|---|---|
| Gasoline Range C5 - C10 | ND | 0.2 |
| Diesel Range C10 - C28 | ND | 0.1 |
| Total Petroleum Hydrocarbons | ND | 0.2 |

| Duplicate Conc. (mg/Kg) | Sample | Duplicate | % Difference | Accept. Range |
|---|---|---|---|---|
| Gasoline Range C5 - C10 | 11.8 | 12.2 | 3.4% | 0 - 30% |
| Diesel Range C10 - C28 | 2,008 | 2,057 | 2.4% | 0 - 30% |

| Spike Conc. (mg/Kg) | Sample | Spike Added | Spike Result | % Recovery | Accept. Range |
|---|---|---|---|---|---|
| Gasoline Range C5 - C10 | 11.8 | 250 | 265 | 101% | 75 - 125% |
| Diesel Range C10 - C28 | 2,008 | 250 | 2,270 | 101% | 75 - 125% |

ND - Parameter not detected at the stated detection limit.

References: Method 8015B, Nonhalogenated Volatile Organics, Test Methods for Evaluating Solid Waste, SW-846, USEPA, December 1996.

Comments: QA/QC for Samples 54017 - 54019, 54031 - 54032, 54046, 54049 - 54051 and 54073.

Analyst

Review

5796 US Highway 64 Farmington NM 87401 | Ph (505)632-0615 Fx (800)362-1879 Fx (505)632-1865 lab@envirotech-inc.com envirotech-inc.com

envirotech
Analytical Laboratory

## EPA METHOD 8021
## AROMATIC VOLATILE ORGANICS

| | | | |
|---|---|---|---|
| Client: | ConocoPhillips | Project #: | 96052-1706 |
| Sample ID: | Pre-Set Cuttings | Date Reported: | 05-10-10 |
| Laboratory Number: | 54073 | Date Sampled: | 05-06-10 |
| Chain of Custody: | 6748 | Date Received: | 05-06-10 |
| Sample Matrix: | Soil | Date Analyzed: | 05-07-10 |
| Preservative: | Cool | Date Extracted: | 05-06-10 |
| Condition: | Intact | Analysis Requested: | BTEX |

| Parameter | Concentration (ug/Kg) | Det. Limit (ug/Kg) |
|---|---|---|
| **Benzene** | **32.2** | **0.9** |
| **Toluene** | **551** | **1.0** |
| **Ethylbenzene** | **118** | **1.0** |
| **p,m-Xylene** | **1,090** | **1.2** |
| **o-Xylene** | **309** | **0.9** |
| **Total BTEX** | **2,100** | |

ND - Parameter not detected at the stated detection limit.

| Surrogate Recoveries: | Parameter | Percent Recovery |
|---|---|---|
| | **Fluorobenzene** | **98.4 %** |
| | **1,4-difluorobenzene** | **102 %** |
| | **Bromochlorobenzene** | **105 %** |

References: Method 5030B, Purge-and-Trap, Test Methods for Evaluating Solid Waste, SW-846, USEPA, December 1996.

Method 8021B, Aromatic Volatile Organics, Test Methods for Evaluating Solid Waste, SW-846, USEPA, December 1996.

**Comments:** **Trail Canyon 100S**

Analyst

Review

5796 US Highway 64, Farmington, NM 87401 | Ph (505) 632-0615 Fr (800) 362-1879 Fx (505) 632-1865 lab@envirotech-inc.com envirotech-inc.com

envirotech
Analytical Laboratory

# EPA METHOD 8021
# AROMATIC VOLATILE ORGANICS

| | | | |
|---|---|---|---|
| Client: | N/A | Project #: | N/A |
| Sample ID: | 05-07-BTX QA/QC | Date Reported: | 05-10-10 |
| Laboratory Number: | 54017 | Date Sampled: | N/A |
| Sample Matrix: | Soil | Date Received: | N/A |
| Preservative: | N/A | Date Analyzed: | 05-07-10 |
| Condition: | N/A | Analysis: | BTEX |

| Calibration and Detection Limits (ug/L) | I-Cal RF: | C-Cal RF: | %Diff. Accept. Range 0 - 15% | Blank Conc | Detect. Limit |
|---|---|---|---|---|---|
| Benzene | 1.3796E+006 | 1.3824E+006 | 0.2% | ND | 0.1 |
| Toluene | 1.2610E+006 | 1.2635E+006 | 0.2% | ND | 0.1 |
| Ethylbenzene | 1.1556E+006 | 1.1579E+006 | 0.2% | ND | 0.1 |
| p,m-Xylene | 2.7946E+006 | 2.8003E+006 | 0.2% | ND | 0.1 |
| o-Xylene | 1.0788E+006 | 1.0810E+006 | 0.2% | ND | 0.1 |

| Duplicate Conc. (ug/Kg) | Sample | Duplicate | %Diff. | Accept Range | Detect. Limit |
|---|---|---|---|---|---|
| Benzene | ND | ND | 0.0% | 0 - 30% | 0.9 |
| Toluene | 17.4 | 15.5 | 10.9% | 0 - 30% | 1.0 |
| Ethylbenzene | 14.7 | 12.5 | 15.0% | 0 - 30% | 1.0 |
| p,m-Xylene | 55.3 | 45.0 | 18.6% | 0 - 30% | 1.2 |
| o-Xylene | 15.0 | 14.4 | 4.0% | 0 - 30% | 0.9 |

| Spike Conc. (ug/Kg) | Sample | Amount Spiked | Spiked Sample | % Recovery | Accept Range |
|---|---|---|---|---|---|
| Benzene | ND | 50.0 | 49.5 | 99.1% | 39 - 150 |
| Toluene | 17.4 | 50.0 | 60.1 | 89.2% | 46 - 148 |
| Ethylbenzene | 14.7 | 50.0 | 52.4 | 80.9% | 32 - 160 |
| p,m-Xylene | 55.3 | 100 | 143 | 92.0% | 46 - 148 |
| o-Xylene | 15.0 | 50.0 | 52.4 | 80.6% | 46 - 148 |

ND - Parameter not detected at the stated detection limit.

References: Method 5030B, Purge-and-Trap, Test Methods for Evaluating Solid Waste, SW-846, USEPA, December 1996.
Method 8021B, Aromatic and Halogenated Volatiles by Gas Chromatography Using Photoionization and/or Electrolytic Conductivity Detectors, SW-846, USEPA December 1996.

**Comments:** **QA/QC for Samples 54017 - 54019, 54046, 54049 - 54051 and 54073.**

Analyst

Review

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envirotech
Analytical Laboratory

# EPA METHOD 418.1
# TOTAL PETROLEUM HYDROCARBONS

| | | | |
|---|---|---|---|
| Client: | ConocoPhillips | Project #: | 96052-1706 |
| Sample ID: | Pre-Set Cuttings | Date Reported: | 05-10-10 |
| Laboratory Number: | 54073 | Date Sampled: | 05-06-10 |
| Chain of Custody No: | 6748 | Date Received: | 05-06-10 |
| Sample Matrix: | Soil | Date Extracted: | 05-07-10 |
| Preservative: | Cool | Date Analyzed: | 05-07-10 |
| Condition: | Intact | Analysis Needed: | TPH-418.1 |

| Parameter | Concentration (mg/kg) | Det. Limit (mg/kg) |
|---|---|---|
| **Total Petroleum Hydrocarbons** | **39.2** | **21.6** |

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: **Trail Canyon 100S**

Analyst

Review

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# EPA METHOD 418.1
# TOTAL PETROLEUM HYROCARBONS
# QUALITY ASSURANCE REPORT

| | | | |
|---|---|---|---|
| Client: | QA/QC | Project #: | N/A |
| Sample ID: | QA/QC | Date Reported: | 05-07-10 |
| Laboratory Number: | 05-07-TPH.QA/QC 54038 | Date Sampled: | N/A |
| Sample Matrix: | Freon-113 | Date Analyzed: | 05-07-10 |
| Preservative: | N/A | Date Extracted: | 05-07-10 |
| Condition: | N/A | Analysis Needed: | TPH |

| Calibration | I-Cal Date | C-Cal Date | I-Cal RF: | C-Cal RF: | % Difference | Accept. Range |
|---|---|---|---|---|---|---|
| | 04/22/2010 | 05-07-10 | 1,690 | 1,720 | 1.8% | +/- 10% |

| Blank Conc. (mg/Kg) | Concentration | Detection Limit |
|---|---|---|
| TPH | ND | 21.6 |

| Duplicate Conc. (mg/Kg) | Sample | Duplicate | % Difference | Accept. Range |
|---|---|---|---|---|
| TPH | 24.3 | 25.7 | 5.8% | +/- 30% |

| Spike Conc. (mg/Kg) | Sample | Spike Added | Spike Result | % Recovery | Accept Range |
|---|---|---|---|---|---|
| TPH | 24.3 | 2,000 | 1,790 | 88.4% | 80 - 120% |

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: **QA/QC for Samples 54037 - 54043, 54049, 54050 and 54073.**

Analyst

Review

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## Chloride

| | | | |
|---|---|---|---|
| Client: | ConocoPhillips | Project #: | 96052-1706 |
| Sample ID: | Pre-Set Cuttings | Date Reported: | 05-10-10 |
| Lab ID#: | 54073 | Date Sampled: | 05-06-10 |
| Sample Matrix: | Soil | Date Received: | 05-06-10 |
| Preservative: | Cool | Date Analyzed: | 05-07-10 |
| Condition: | Intact | Chain of Custody: | 6748 |

| Parameter | Concentration (mg/Kg) |
|---|---|
| **Total Chloride** | **50** |

Reference: U.S.E.P.A., 4500B, "Methods for Chemical Analysis of Water and Wastes", 1983. Standard Methods For The Examination of Water And Waste Water", 18th ed., 1992.

Comments: **Trail Canyon 100S**

Analyst

Review

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# Burlington Resources Oil & Gas Company, LP
# Cavitation Pit for Closed-Loop Locations

**Design:**

Burlington Resources Oil & Gas Company, LP will use a cavitation pit plan when the surface casing will be pre-set on closed-loop locations. The drill cuttings will be stockpiled on the surface.

**Operations and Maintenance:**

The cavitation pit will be operated and maintained as follows:

1. Only Fresh water and air will be used in the drilling of the surface casing.
2. The Cement used will be: Neat Cement with no additives.
3. All of the fluids will be removed within 48hrs after drilling.
4. A representative five point composite sample will be taken of the drill cuttings, after the setting of the surface casing is complete, using sampling tools and all samples will be tested per Subsection B of 19.15.17.13(B)(1)(b). In the event that the testing criteria is not met, all contents will be dug and hauled per Subparagraph (a) of Paragraph (1) of Subsection B of 19.15.17.13 i.e.

| Components | Tests Method | Limit (mg/Kg) |
|---|---|---|
| Benzene | EPA SW-846 8021B or 8260B | 0.2 |
| BTEX | EPA SW-846 8021B or 8260B | 50 |
| TPH | EPA SW-846 418.1 | 2500 |
| GRO/DRO | EPA SW-846 8015M | 500 |
| Chlorides | EPA 300.1 | 500 |

5. The NMOCD will be notified via email of the test results of the cavitation surface as follows:

| Components | Tests Method | Limit (mg/Kg) | Results |
|---|---|---|---|
| Benzene | EPA SW-846 8021B or 8260B | 0.2 | 32.2 |
| BTEX | EPA SW-846 8021B or 8260B | 50 | 2100 |
| TPH | EPA SW-846 418.1 | 2500 | 39.2 |
| GRO/DRO | EPA SW-846 8015M | 500 | 3.0 |
| Chlorides | EPA 300.1 | 500 | 50 |

**Closure Plan:**

1. The NMOCD will be notified of the sample results and the intent to start the closure process 3-7 days prior to the drill cuttings being transported, moved, or distributed on location.
2. In the event the criteria are not met, all solids and liquids will be removed and disposed of at Envirotech (Permit #NM-01-0011) and/or Basin Disposal Facility (Permit #NM-01-005) and/or JFJ Landfarm % Industrial Ecosystem Inc. (Permit # NM-01-0010B).
3. Testing results will be submitted with the Closure Report of the well locations Closed-Loop Permit on Form C-144.

**Burlington Resources is aware that approval of this plan does not relieve Burlington Resources of liability should operations result in pollution of surface water, ground water, or the environment. Nor does approval relieve ConocoPhillips of its responsibility to comply with any other applicable governmental authority's rules and regulations.**