

District I  
1625 N. French Dr., Hobbs, NM 88240  
District II  
811 S. First St., 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  
Department  
Oil Conservation Division  
1220 South St. Francis Dr.  
Santa Fe, NM 87505

Form C-144  
Revised June 6, 2013

For temporary pits, below-grade tanks, and multi-well fluid management pits, submit to the appropriate NMOCD District Office.  
For permanent pits submit to the Santa Fe Environmental Bureau office and provide a copy to the appropriate NMOCD District Office.

12759  
45-08831

Pit, Below-Grade Tank, or  
Proposed Alternative Method Permit or Closure Plan Application

RECEIVED  
By OCD 3-4-15

- Type of action: ☐ Below grade tank registration  
☐ Permit of a pit or proposed alternative method  
☒ Closure of a pit, below-grade tank, or proposed alternative method  
☐ Modification to an existing permit/or registration  
☐ Closure plan only submitted for an existing permitted or non-permitted pit, below-grade tank, or proposed alternative method

**Instructions:** Please submit one application (Form C-144) per individual pit, 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: ConocoPhillips Company OGRID #: 217817  
Address: PO BOX 4289, Farmington, NM 87499  
Facility or well name: Ludwick LS 19  
API Number: 30-045-08831 OCD Permit Number: \_\_\_\_\_  
U/L or Qtr/Qtr B (NWNE) Section 5 Township 29N Range 10W County: San Juan  
Center of Proposed Design: Latitude 36.75899800 °N Longitude -107.90399000 °W NAD: ☒ 1927 ☐ 1983  
Surface Owner: ☒ Federal ☐ State ☐ Private ☐ Tribal Trust or Indian Allotment

2.  
☐ **Pit:** Subsection F, G or J of 19.15.17.11 NMAC  
Temporary: ☐ Drilling ☐ Workover  
☐ Permanent ☐ Emergency ☐ Cavitation ☐ P&A ☐ Multi-Well Fluid Management Low Chloride Drilling Fluid ☐ yes ☐ no  
☐ 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 \_\_\_\_\_

Closed Prior to Closure Plan Approval

3.  
☒ **Below-grade tank:** Subsection I of 19.15.17.11 NMAC  
Volume: 120 bbl Type of fluid: Produced Water  
Tank Construction material: Metal  
☐ Secondary containment with leak detection ☒ Visible sidewalls, liner, 6-inch lift and automatic overflow shut-off  
☐ Visible sidewalls and liner ☐ Visible sidewalls only ☐ Other \_\_\_\_\_  
Liner type: Thickness 45 mil ☐ HDPE ☐ PVC ☒ Other LLDPE

4.  
☐ **Alternative Method:**  
Submittal of an exception request is required. Exceptions must be submitted to the Santa Fe Environmental Bureau office for consideration of approval.

5.  
**Fencing:** Subsection D of 19.15.17.11 NMAC (Applies to permanent pits, 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 \_\_\_\_\_

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5.

**Fencing:** Subsection D of 19.15.17.11 NMAC (*Applies to permanent pits, 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 \_\_\_\_\_

6.

**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)

7.

**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 19.15.16.8 NMAC

8.

**Variances 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:***

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

9.

**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. Siting criteria does not apply to drying pads or above-grade tanks.***

**General siting**

**Ground water is less than 25 feet below the bottom of a low chloride temporary pit or below-grade tank.**

- ☐ NM Office of the State Engineer - iWATERS database search; ☐ USGS; ☒ Data obtained from nearby wells

☐ Yes ☒ No  
☐ NA

**Ground water is less than 50 feet below the bottom of a Temporary pit, permanent pit, or Multi-Well Fluid Management pit.**

NM Office of the State Engineer - iWATERS database search; USGS; Data obtained from nearby wells

☐ Yes ☐ No  
☒ NA

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. (**Does not apply to below grade tanks**)

- Written confirmation or verification from the municipality; Written approval obtained from the municipality

☐ Yes ☐ No

Within the area overlying a subsurface mine. (**Does not apply to below grade tanks**)

- Written confirmation or verification or map from the NM EMNRD-Mining and Mineral Division

☐ Yes ☐ No

Within an unstable area. (**Does not apply to below grade tanks**)

- 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. (**Does not apply to below grade tanks**)

- FEMA map

☐ Yes ☐ No

**Below Grade Tanks**

Within 100 feet of a continuously flowing watercourse, significant watercourse, lake bed, sinkhole, wetland or playa lake (measured from the ordinary high-water mark).

- Topographic map; Visual inspection (certification) of the proposed site

☐ Yes ☒ No

Within 200 horizontal feet of a spring or a fresh water well used for public or livestock consumption;.

- NM Office of the State Engineer - iWATERS database search; Visual inspection (certification) of the proposed site

☐ Yes ☒ No

**Temporary Pit using Low Chloride Drilling Fluid** (maximum chloride content 15,000 mg/liter)

Within 100 feet of a continuously flowing watercourse, or any other significant watercourse or within 200 feet of any lakebed, sinkhole, or playa lake (measured from the ordinary high-water mark). (Applies to low chloride temporary pits.)

- Topographic map; Visual inspection (certification) of the proposed site

☐ Yes ☐ No



<p>Within 300 feet from a occupied permanent residence, school, hospital, institution, or church in existence at the time of initial application.</p> <ul style="list-style-type: none"> <li>- Visual inspection (certification) of the proposed site; Aerial photo; Satellite image</li> </ul>	<input type="checkbox"/> Yes <input type="checkbox"/> No
<p>Within 200 horizontal feet of a spring or a private, domestic fresh water well used by less than five households for domestic or stock watering purposes, or 300feet of any other fresh water well or spring, in existence at the time of the initial application.</p> <p>NM Office of the State Engineer - iWATERS database search; Visual inspection (certification) of the proposed site</p>	<input type="checkbox"/> Yes <input type="checkbox"/> No
<p>Within 100 feet of a wetland.</p> <ul style="list-style-type: none"> <li>- US Fish and Wildlife Wetland Identification map; Topographic map; Visual inspection (certification) of the proposed site</li> </ul>	<input type="checkbox"/> Yes <input type="checkbox"/> No
<p><b><u>Temporary Pit Non-low chloride drilling fluid</u></b></p>	
<p>Within 300 feet of a continuously flowing watercourse, or any other significant watercourse, or within 200 feet of any lakebed, sinkhole, or playa lake (measured from the ordinary high-water mark).</p> <ul style="list-style-type: none"> <li>- Topographic map; Visual inspection (certification) of the proposed site</li> </ul>	<input type="checkbox"/> Yes <input type="checkbox"/> No
<p>Within 300 feet from a permanent residence, school, hospital, institution, or church in existence at the time of initial application.</p> <ul style="list-style-type: none"> <li>- Visual inspection (certification) of the proposed site; Aerial photo; Satellite image</li> </ul>	<input type="checkbox"/> Yes <input type="checkbox"/> No
<p>Within 500 horizontal feet of a spring or a private, domestic fresh water well used by less than five households for domestic or stock watering purposes, or 1000 feet of any other fresh water well or spring, in the existence at the time of the initial application;</p> <ul style="list-style-type: none"> <li>- NM Office of the State Engineer - iWATERS database search; Visual inspection (certification) of the proposed site</li> </ul>	<input type="checkbox"/> Yes <input type="checkbox"/> No
<p>Within 300 feet of a wetland.</p> <ul style="list-style-type: none"> <li>- US Fish and Wildlife Wetland Identification map; Topographic map; Visual inspection (certification) of the proposed site</li> </ul>	<input type="checkbox"/> Yes <input type="checkbox"/> No
<p><b><u>Permanent Pit or Multi-Well Fluid Management Pit</u></b></p>	
<p>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).</p> <ul style="list-style-type: none"> <li>- Topographic map; Visual inspection (certification) of the proposed site</li> </ul>	<input type="checkbox"/> Yes <input type="checkbox"/> No
<p>Within 1000 feet from a permanent residence, school, hospital, institution, or church in existence at the time of initial application.</p> <ul style="list-style-type: none"> <li>- Visual inspection (certification) of the proposed site; Aerial photo; Satellite image</li> </ul>	<input type="checkbox"/> Yes <input type="checkbox"/> No
<p>Within 500 horizontal feet of a spring or a fresh water well used for domestic or stock watering purposes, in existence at the time of initial application.</p> <ul style="list-style-type: none"> <li>- NM Office of the State Engineer - iWATERS database search; Visual inspection (certification) of the proposed site</li> </ul>	<input type="checkbox"/> Yes <input type="checkbox"/> No
<p>Within 500 feet of a wetland.</p> <ul style="list-style-type: none"> <li>- US Fish and Wildlife Wetland Identification map; Topographic map; Visual inspection (certification) of the proposed site</li> </ul>	<input type="checkbox"/> Yes <input type="checkbox"/> No

10.

**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 NMAC  
☐ 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 Number: \_\_\_\_\_ or Permit Number: \_\_\_\_\_

11.

**Multi-Well Fluid Management Pit 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.*

☐ 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  
☐ A List of wells with approved application for permit to drill associated with the pit.  
☐ 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  
☐ Hydrogeologic Data - based upon the requirements of Paragraph (4) of Subsection B of 19.15.17.9 NMAC  
☐ Siting Criteria Compliance Demonstrations - based upon the appropriate requirements of 19.15.17.10 NMAC

☐ Previously Approved Design (attach copy of design)    API Number: \_\_\_\_\_ or Permit Number: \_\_\_\_\_



12.  
**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 (1) 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 H<sub>2</sub>S, 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

13.  
**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 ☐ Multi-well Fluid Management Pit  
☐ 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 Burial  
☐ Alternative Closure Method

14.  
**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 C 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 H of 19.15.17.13 NMAC
- ☒ Site Reclamation Plan - based upon the appropriate requirements of Subsection H of 19.15.17.13 NMAC

15.  
**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 require justifications and/or demonstrations of equivalency. Please refer to 19.15.17.10 NMAC for guidance.

Ground water is less than 25 feet below the bottom of the buried waste. - NM Office of the State Engineer - iWATERS database search; USGS; Data obtained from nearby wells	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> NA
Ground water is between 25-50 feet below the bottom of the buried waste - NM Office of the State Engineer - iWATERS database search; USGS; Data obtained from nearby wells	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> NA
Ground water is more than 100 feet below the bottom of the buried waste. - NM Office of the State Engineer - iWATERS database search; USGS; Data obtained from nearby wells	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> NA
Within 100 feet of a continuously flowing watercourse, or 200 feet of any other significant watercourse, lakebed, sinkhole, or playa lake (measured from the ordinary high-water mark). - Topographic map; Visual inspection (certification) of the proposed site	<input type="checkbox"/> Yes <input type="checkbox"/> No
Within 300 feet from a permanent residence, school, hospital, institution, or church in existence at the time of initial application. - Visual inspection (certification) of the proposed site; Aerial photo; Satellite image	<input type="checkbox"/> Yes <input type="checkbox"/> No
Within 300 horizontal feet of a private, domestic fresh water well or spring used for domestic or stock watering purposes, in existence at the time of initial application. - NM Office of the State Engineer - iWATERS database; Visual inspection (certification) of the proposed site	<input type="checkbox"/> Yes <input type="checkbox"/> No
Written confirmation or verification from the municipality; Written approval obtained from the municipality	<input type="checkbox"/> Yes <input type="checkbox"/> No
Within 300 feet of a wetland. US Fish and Wildlife Wetland Identification map; Topographic map; Visual inspection (certification) of the proposed site	<input type="checkbox"/> Yes <input type="checkbox"/> No
Within incorporated municipal boundaries or within a defined municipal fresh water well field covered under a municipal ordinance	<input type="checkbox"/> Yes <input type="checkbox"/> No



adopted pursuant to NMSA 1978, Section 3-27-3, as amended.

- Written confirmation or verification from the municipality; Written approval obtained from the municipality

☐ Yes ☐ No

Within the area overlying a subsurface mine.

- Written confirmation or verification or map from the NM EMNRD-Mining and Mineral Division

☐ Yes ☐ No

Within an unstable area.

- 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.

- FEMA map

☐ Yes ☐ No

16.

**On-Site 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.*

- ☐ 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 E of 19.15.17.13 NMAC  
☐ Construction/Design Plan of Burial Trench (if applicable) based upon the appropriate requirements of Subsection K 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 19.15.17.13 NMAC  
☐ Waste Material Sampling Plan - based upon the appropriate requirements 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 H of 19.15.17.13 NMAC  
☐ Site Reclamation Plan - based upon the appropriate requirements of Subsection H of 19.15.17.13 NMAC

17.

**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: \_\_\_\_\_

18.

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

OCD Representative Signature:  Approval Date: \_\_\_\_\_ Apr 24, 2015

Title: Environmental Specialist \_\_\_\_\_ OCD Permit Number: \_\_\_\_\_

19.

**Closure Report (required within 60 days of closure completion):** 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: 4/1/14

20.

**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.

21.

**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 for private land only)  
☐ Plot Plan (for on-site closures and temporary pits)  
☒ Confirmation Sampling Analytical Results (if applicable)  
☐ Waste Material Sampling Analytical Results (required for on-site closure)  
☐ 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

**Operator Closure Certification:**

I hereby certify that the information and attachments submitted with this closure report is true, 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): Kenny Davis Title: Staff Regulatory Technician

Signature:  Date: 12/3/14

e-mail address: kenny.r.davis@conocophillips.com Telephone: 505-599-4045



**Burlington Resources Oil Gas Company, LP**  
**San Juan Basin**  
**Below Grade Tank Closure Report**  
**(Without Reclamation)**

**Lease Name: LUDWICK LS 19**  
**API No.: 30-045-08831**

In accordance with Rule 19.15.17.13 NMAC the following information describes the closure of the below-grade tank referenced above. All proper documentation regarding closure activities is being included with the C-144.

General Plan:

1. BR shall close a below-grade tank within 60 days of cessation of operations per Subsection G.4 of 19.15.17.13 NMAC. This will include a) below-grade tanks that do not meet the requirements of Paragraphs (1) through (4) of Subsection I of 19.15.17.11 NMAC or is not included in Paragraph (5) of Subsection I of 19.15.17.11 NMAC within five years, if not retrofitted to comply with Paragraphs (1) through (4) of Subsection I of 19.15.17.11 NMAC; b) an earlier date that the division requires because of imminent danger to fresh water, public health or the environment. For any closure, BR will file the C144 Closure Report as required.
2. **The below-grade tank referenced above was permitted and closed within 60 days of cessation of the below-grade tanks operation.**
3. BR shall remove liquids and sludge from a below-grade tank prior to implementing a closure method and shall dispose of the liquids and sludge in a division-approved facility. The facilities to be used will be Basin Disposal (Permit #NM-01-005), JFJ Landfarm % Industrial Ecosystem Inc. (Permit # NM-01-0010B) and Envirotech Land Farm (Permit #NM-01-011). The liner after being cleaned well (Subsection D, Paragraph 1, Subparagraph (m) of 19.15.9.712 NMAC) will be disposed of at the San Juan County Regional Landfill located on CR 3100.

**All recovered liquids were disposed of at Basin Disposal (Permit #NM-01-005) and any sludge or soil required to be removed to facilitate closure was hauled to Envirotech Land Farm (Permit #NM-01-011) and JFJ Landfarm % IEI (Permit #NM-01-0010B). The liner was cleaned per Subsection D, Paragraph 1, Subparagraph (m) of 19.15.9.712 NMAC was disposed of at the San Juan County Regional Landfill located on CR 3100.**

4. BR Will receive prior approval to remove the below-grade tank and dispose of it in a division-approved facility or recycle, reuse, or reclaim it in a manner that the appropriate division district office approves.

**The below-grade tank was disposed of in a division-approved manner.**

5. If there is any on-site equipment associated with a below-grade tank, then BR shall remove the equipment, unless the equipment is required for some other purpose.

**All on-site equipment associated with the below-grade tank was removed.**

6. BR will test the soils beneath the below-grade tank to determine whether a release has occurred. COPC shall collect, at a minimum, a five point, composite sample; collect individual grab samples from any area that is wet, discolored or showing other evidence of a release; and analyzed for the constituents listed in Table I of 19.15.17.13 NMAC. COPC shall notify the division of its results on form C-141.

7. A five point composite sample was taken of the below-grade tank using sampling tools and all samples tested per Subsection B of 19.15.17.1 3(B)(1)(b). (Sample results attached).

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	100
Chlorides	EPA 300.1	250

8. If BR or the division determines that a release has occurred, then BR shall comply with 19.15.3.116 NMAC and 19.15.1.19 NMAC, as appropriate.

**A release was not determined for the above referenced well.**

9. If the sampling program demonstrates that a release has not occurred or that any release does not exceed the concentrations specified in Table I of 19.15.17.13 NMAC, then BR shall backfill the excavation with compacted, non-waste containing, earthen material; construct a division-prescribed soil cover; recontour and re-vegetate the site.

**The below-grade tank area passed all requirements of Paragraph (4) of Subsection E of 19.15.17.13 NMAC and was backfilled with compacted, non-waste containing, earthen material.**

10. Notice of Closure will be given prior to closure to the Aztec Division office between 72 hours and one week via email or verbally. The notification of closure will include the following:
- Operator's name
  - Location by Unit Letter, Section, Township, and Range. Well name and API number.

**Notification is missing due to employee turnovers. ConocoPhillips has reviewed our internal processes and has updated them to include the required 72 hour notification.**

11. The surface owner shall be notified of BR's closing of the below-grade tank 72 hours, but not more than one week, prior to closure as per the approved closure plan via certified mail, return receipt requested.

**The closure process notification to the landowner not found. COPC was not aware that the original notification sent at the time of Permitting was not the only closure notification required. ConocoPhillips has reviewed our internal processes and has updated them to include the required 72 hour notification.**

12. Re-contouring of location will match fit, shape, line, form and texture of the surrounding. Re-shaping will include drainage control, prevent ponding, and prevent erosion. Natural drainages will be unimpeded and water bars and/or silt traps will be place in areas where needed to prevent erosion on a large scale. Final re-contour shall have a uniform appearance with smooth surface, fitting the natural landscape.

**The below-grade tank area will be re-contoured to match fit, shape, line, form and texture of the surrounding area. Re-shaping, including drainage control, to prevent ponding and erosion. Natural drainages were unimpeded and water bars and/or silt traps were placed in areas where needed to prevent erosion on a large scale. Final recontour has a uniform appearance with smooth surface, fitting the natural landscape.**

13. BR Shall seed the disturbed areas the first favorable growing season following closure of a below-grade tank. Seeding will be accomplished via drilling on the contour whenever practical or by other division-approved



methods. BLM stipulated seed mixes will be used on federally regulated lands and division-approved seed mixtures (administratively approved if required) will be utilized on all State or private lands. A uniform vegetative cover has been established that reflects a life-form ratio of plus or minus fifty percent (50%) of pre-disturbance levels and a total percent plant cover of at least seventy percent (70%) of pre-disturbance levels, excluding noxious weeds. If an alternate seed mix is required by the state, private owner or tribe, it will be implemented with administrative approval if needed. COPC will repeat seeding or planting will be continued until successful vegetative growth occurs.

**Provision 13 will be accomplished through complying with BLM seeding requirements as allowed by the BLM/OCD MOU.**

14. A minimum of four feet of cover shall be achieved and the cover shall include one foot of suitable material, with chloride concentrations less than 600 mg/kg as analyzed by EPA Method 300.0, to establish vegetation at the site, or the background thickness of topsoil, whichever is greater.

**The below-grade tank area was backfilled and more than four feet of cover was achieved and the cover included one foot of suitable material to establish vegetation at the site.**

15. All closure activities will include proper documentation and be available for review upon request and will be submitted to OCD within 60 days of closure of the below-grade tank. Closure report will be filed on C-144 and incorporate the following:
  - Soil Backfilling and Cover Installation **(See Report)**
  - Re-vegetation application rates and seeding techniques **(See Report)**
  - Photo documentation of the site reclamation **(Included as an attachment)**
  - Confirmation Sampling Results **(Included as an attachment)**
  - Proof of closure notice **(Included as an attachment)**

**Closure Documentation was not submitted within the 60 day requirement due to employee turnovers. ConocoPhillips has reviewed our internal processes and has updated them to ensure closure documentation is submitted within the 60 day time frame.**



Animas Environmental Services, LLC

[www.animasenvironmental.com](http://www.animasenvironmental.com)

624 E. Comanche  
Farmington, NM 87401  
505-564-2281

Durango, Colorado  
970-403-3084

June 9, 2014

Crystal Tafoya  
ConocoPhillips  
San Juan Business Unit  
Office 214-05  
5525 Hwy 64  
Farmington, New Mexico 87401

Via electronic mail to: [SJBUE-Team@ConocoPhillips.com](mailto:SJBUE-Team@ConocoPhillips.com)

**RE: Below Grade Tank Closure Report  
Ludwick LS #19  
San Juan County, New Mexico**

Dear Ms. Tafoya:

Animas Environmental Services, LLC (AES) is pleased to provide the final report associated with two below grade tank (BGT) closures at ConocoPhillips (CoP) Ludwick LS #19, located in San Juan County, New Mexico. Removal of both tanks had been completed by CoP contractors prior to AES' arrival at the location.

---

## 1.0 Site Information

### 1.1 Location

Site Name – Ludwick LS #19

Legal Description – NW¼ NE¼, Section 5, T29N, R10W, San Juan County, New Mexico

Well Latitude/Longitude – N36.75883 and W107.90463, respectively

East BGT Latitude/Longitude – N36.75869 and W107.90439, respectively

West BGT Latitude/Longitude – N36.75869 and W107.90471, respectively

Land Jurisdiction – Bureau of Land Management

Figure 1. Topographic Site Location Map

Figure 2. Aerial Site Map, April 2014

### 1.2 NMOCD Ranking

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



- **Depth to Groundwater:** A cathodic report form dated February 1992 for the Stewart A Com B #3, located 2,900 feet to the northwest and at a similar elevation, reported the depth to water at 90 feet below ground surface (bgs). (10 points)
- **Wellhead Protection Area:** The tank locations are not within a wellhead protection area. (0 points)
- **Distance to Surface Water Body:** A wash which discharges to the wash in Potter Canyon is located approximately 570 feet west of the location. (10 points)

### 1.3 BGT Closure Assessment

AES was initially contacted by Jess Henson, CoP representative, on April 1, 2014, and on April 2, 2014, Stephanie Lynn and Emilee Skyles of AES mobilized to the location. AES personnel collected six soil samples from below each BGT liner. Four samples were collected from the perimeter of each BGT footprint, one sample was collected from the center of each BGT footprint, and one sample was composited from the four perimeter samples and one center sample of each BGT.

---

## 2.0 Soil Sampling

On April 2, 2014, AES personnel conducted field sampling and collected ten soil samples (S-1 through S-10) and two 5-point composites (SC-1 and SC-2) from below the BGTs. Soil samples were collected from approximately 0.5 feet below the former BGTs for field sampling of volatile organic compounds (VOCs) and total petroleum hydrocarbon (TPH). Soil samples SC-1 and SC-2 were field screened for VOCs and chlorides and were submitted for confirmation laboratory analysis. Soil sample locations are included on Figure 2.

### 2.1 Field Sampling

#### 2.1.1 Volatile Organic Compounds

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

#### 2.1.2 Total Petroleum Hydrocarbons

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

### 2.1.3 Chlorides

Soil samples SC-1 and SC-2 were field screened for chlorides using Chloride Drop Count Titration with silver nitrate. Sampling and analysis methods followed procedures provided by Hach Company.

## 2.2 Laboratory Analyses

The composite soil samples SC-1 and SC-2 collected for laboratory analysis were placed into new, clean, laboratory-supplied containers, which were then labeled, placed on ice, and logged onto a sample chain of custody record. Both samples were maintained on ice until delivery to the analytical laboratory, Hall Environmental Analysis Laboratory (Hall), in Albuquerque, New Mexico. Soil samples SC-1 and SC-2 were laboratory analyzed for:

- Benzene, toluene, ethylbenzene, and xylene (BTEX) per USEPA Method 8021B; and
- Chloride per USEPA Method 300.0.

## 2.3 Field and Laboratory Analytical Results

East BGT field screening readings for VOCs via OVM ranged from 0.9 ppm in S-5 up to 2.1 ppm in S-3. TPH concentrations ranged from 36.6 mg/kg in S-1 and S-2 up to 40.1 mg/kg in S-4. The field chloride concentration in SC-1 was 120 mg/kg.

West BGT field screening readings for VOCs via OVM ranged from 0.9 ppm in S-6 and S-10 up to 1.3 ppm in S-9. Field TPH concentrations ranged from 22.6 mg/kg in S-6 up to 46.0 mg/kg in S-8. The field chloride concentration in SC-1 was 80 mg/kg. Field sampling results are summarized in Table 1 and presented on Figure 2. The AES Field Sampling Report is attached.

Table 1. Soil Field Sampling VOCs, TPH, and Chloride Results  
Ludwick LS #19 BGT Closure, April 2014

<i>Sample ID</i>	<i>Date Sampled</i>	<i>Depth below BGT (ft)</i>	<i>VOCs OVM Reading (ppm)</i>	<i>Field TPH (mg/kg)</i>	<i>Field Chlorides (mg/kg)</i>
<b>NMOCD Action Level (NMAC 19.15.17.13E)</b>			<b>—</b>	<b>100</b>	<b>250</b>
S-1 (East)	4/2/14	0.5	1.1	36.6	NA
S-2 (East)	4/2/14	0.5	1.2	36.6	NA
S-3 (East)	4/2/14	0.5	2.1	39.0	NA
S-4 (East)	4/2/14	0.5	1.4	40.1	NA
S-5 (East)	4/2/14	0.5	0.9	39.0	NA



<i>Sample ID</i>	<i>Date Sampled</i>	<i>Depth below BGT (ft)</i>	<i>VOCs OVM Reading (ppm)</i>	<i>Field TPH (mg/kg)</i>	<i>Field Chlorides (mg/kg)</i>
<b>NMOCDC Action Level (NMAC 19.15.17.13E)</b>			<b>--</b>	<b>100</b>	<b>250</b>
SC-1 (East)	4/2/14	0.5	2.0	NA	120
S-6 (West)	4/2/14	0.5	0.9	22.6	NA
S-7 (West)	4/2/14	0.5	1.2	30.8	NA
S-8 (West)	4/2/14	0.5	1.1	46.0	NA
S-9 (West)	4/2/14	0.5	1.3	35.5	NA
S-10 (West)	4/2/14	0.5	0.9	33.1	NA
SC-2 (West)	4/2/14	0.5	1.1	NA	80

NA - not analyzed

In SC-1 and SC-2, laboratory analytical results reported benzene and total BTEX concentrations as less than 0.038 mg/kg and 0.191 mg/kg, respectively. The laboratory chloride concentrations were reported at less than 30 mg/kg. Laboratory analytical results are summarized in Table 2 and included on Figure 2. The laboratory analytical report is attached.

Table 2. Soil Laboratory Analytical Results  
Ludwick LS #19 BGT Closure, April 2014

<i>Sample ID</i>	<i>Date Sampled</i>	<i>Depth (ft)</i>	<i>Benzene (mg/kg)</i>	<i>Total BTEX (mg/kg)</i>	<i>TPH-GRO (mg/kg)</i>	<i>TPH-DRO (mg/kg)</i>	<i>Chlorides (mg/kg)</i>
<b>NMOCDC Action Level (NMAC 19.15.17.13E)</b>			<b>0.2</b>	<b>50</b>	<b>100</b>	<b>250</b>	
SC-1 (East)	4/2/14	0.5	<0.038	<0.191	NA	NA	<30.0
SC-2 (West)	4/2/14	0.5	<0.038	<0.191	NA	NA	<30.0

NA - not analyzed

---

### 3.0 Conclusions and Recommendations

NMOCD action levels for BGT closures are specified in New Mexico Administrative Code (NMAC) 19.15.17.13E. For the east BGT, field TPH concentrations were below the NMOCD action level of 100 mg/kg, with the highest concentration reported in S-4 with 40.1 mg/kg. For the west BGT, field TPH concentrations were also below the NMOCD action level of 100 mg/kg in all samples, with the highest concentration reported in S-8 with 46.0 mg/kg. Benzene and total BTEX concentrations in SC-1 and SC-2 were below the NMOCD action levels of 0.2 mg/kg and 50 mg/kg, respectively. Chloride concentrations in SC-1 and SC-2 were reported below the NMOCD action level of 250 mg/kg. Based on field sampling and laboratory analytical results for benzene, total BTEX, TPH, and chlorides, no further work is recommended at Ludwick LS #19.

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

Sincerely,



David J. Reese  
Environmental Scientist

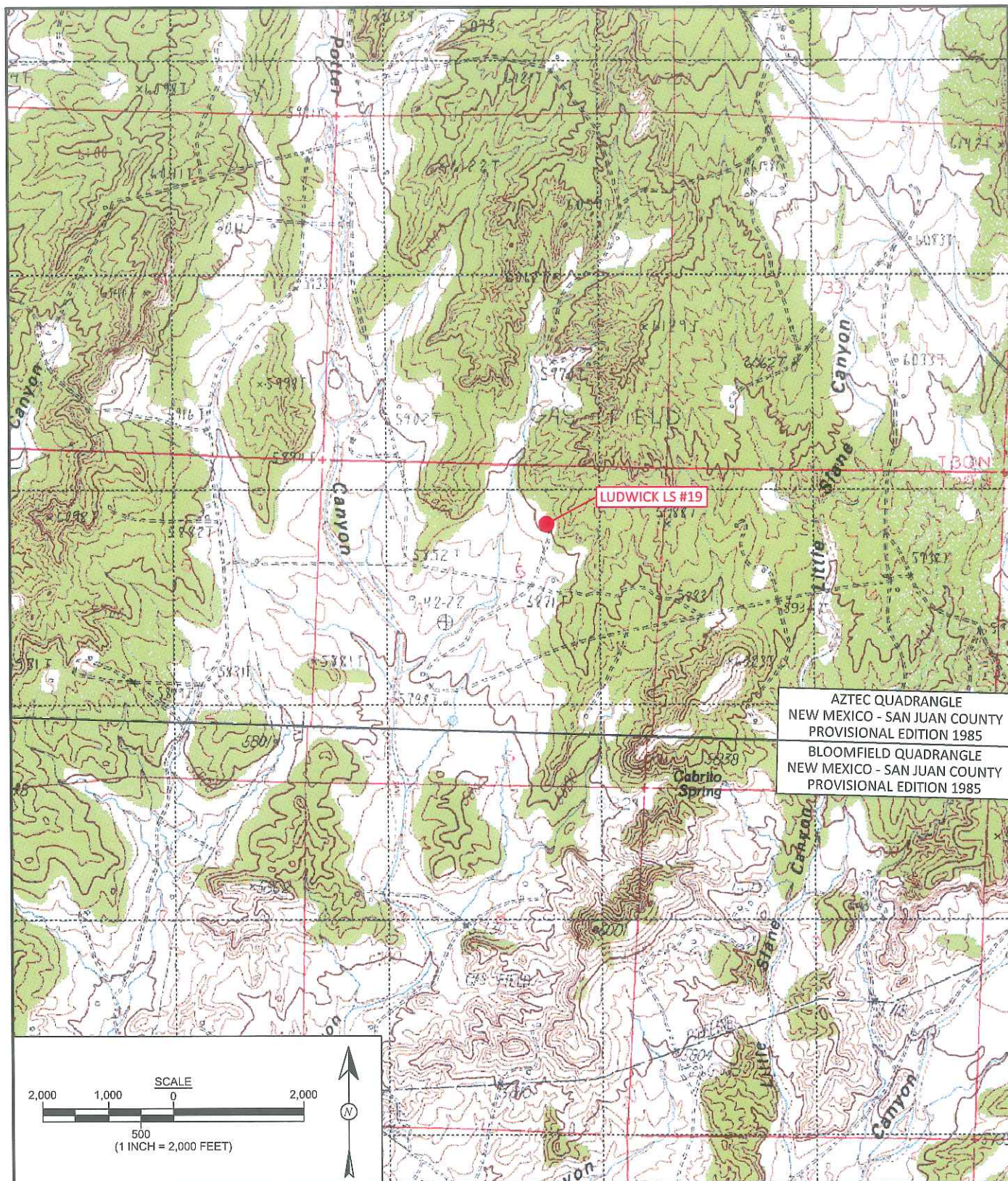


Elizabeth McNally, P.E.

#### Attachments:

- Figure 1. Topographic Site Location Map
- Figure 2. Aerial Site Map, April 2014
- AES Field Sampling Report 040214
- Hall Analytical Report 1404158





AZTEC QUADRANGLE  
NEW MEXICO - SAN JUAN COUNTY  
PROVISIONAL EDITION 1985

BLOOMFIELD QUADRANGLE  
NEW MEXICO - SAN JUAN COUNTY  
PROVISIONAL EDITION 1985

2,000 1,000 0 2,000  
SCALE  
500  
(1 INCH = 2,000 FEET)



DRAWN BY: S. Glasses	DATE DRAWN: April 3, 2014
REVISIONS BY: C. Lameman	DATE REVISED: April 3, 2014
CHECKED BY: D. Watson	DATE CHECKED: April 3, 2014
APPROVED BY: E. McNally	DATE APPROVED: April 3, 2014

## FIGURE 1

**TOPOGRAPHIC SITE LOCATION MAP**  
ConocoPhillips  
LUDWICK LS #19  
NW¼, NE¼, SECTION 5, T29N, R10W  
SAN JUAN COUNTY, NEW MEXICO  
N36.75883, W107.90463



LEGEND

● SAMPLE LOCATIONS

Field Sampling Results				
Sample ID	Date	OVM-PID (ppm)	TPH (mg/kg)	Chlorides (mg/kg)
NMOCD ACTION LEVEL		--	100	250
S-1	4/2/14	1.1	36.6	NA
S-2	4/2/14	1.2	36.6	NA
S-3	4/2/14	2.1	39.0	NA
S-4	4/2/14	1.4	40.1	NA
S-5	4/2/14	0.9	39.0	NA
SC-1	4/2/14	2.0	NA	120
S-6	4/2/14	0.9	22.6	NA
S-7	4/2/14	1.2	30.8	NA
S-8	4/2/14	1.1	46.0	NA
S-9	4/2/14	1.3	35.5	NA
S-10	4/2/14	0.9	33.1	NA
SC-2	4/2/14	1.1	NA	80

SC-1 IS A 5-POINT COMPOSITE SAMPLE OF S-1 THROUGH S-5. SC-2 IS A 5-POINT COMPOSITE SAMPLE OF S-6 THROUGH S-10. NA - NOT ANALYZED

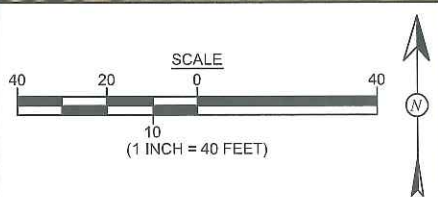
Laboratory Analytical Results						
Sample ID	Date	Benzene (mg/kg)	Total BTEX (mg/kg)	TPH - GRO (mg/kg)	TPH - DRO (mg/kg)	Chlorides (mg/kg)
NMOCD ACTION LEVEL		0.2	50	100		250
SC-1	4/2/14	<0.038	<0.191	NA	NA	<30.0
SC-2	4/2/14	<0.038	<0.191	NA	NA	<30.0

SAMPLES WERE ANALYZED PER EPA METHOD 8021B AND 300.0.

LUDWICK LS #19 WELL MONUMENT

BGT - N36.75869  
W107.90439

BGT - N36.75869  
W107.90471



AERIAL SOURCE: © 2013 PICTOMETRY INTERNATIONAL CORP. ONLINE, AERIAL DATE: APRIL 13, 2013



DRAWN BY: S. Glasses	DATE DRAWN: April 3, 2014
REVISIONS BY: C. Lameman	DATE REVISED: April 3, 2014
CHECKED BY: D. Watson	DATE CHECKED: April 3, 2014
APPROVED BY: E. McNally	DATE APPROVED: April 3, 2014

## FIGURE 2

**AERIAL SITE MAP  
BELOW GRADE TANK CLOSURE  
APRIL 2014**  
ConocoPhillips  
LUDWICK LS #19  
NW¼ NE¼, SECTION 5, T29N, R10W  
SAN JUAN COUNTY, NEW MEXICO  
N36.75883, W107.90463



# AES Field Sampling Report



Animas Environmental Services, LLC

www.animasenvironmental.com

Client: ConocoPhillips

624 E. Comanche  
Farmington, NM 87401  
505-564-2281

Project Location: Ludwick LS #19

Date: 4/2/2014

Durango, Colorado  
970-403-3084

Matrix: Soil

Sample ID	Collection Date	Time of Sample Collection	Sample Location	OVM (ppm)	Field Chloride (mg/kg)	Field TPH Analysis Time	Field TPH* (mg/kg)	TPH PQL (mg/kg)	DF	TPH Analysts Initials
S-1	4/2/2014	10:50	North	1.1	NA	11:28	36.6	20.0	1	SL
S-2	4/2/2014	10:55	South	1.2	NA	11:31	36.6	20.0	1	SL
S-3	4/2/2014	11:00	East	2.1	NA	11:34	39.0	20.0	1	SL
S-4	4/2/2014	11:05	West	1.4	NA	11:36	40.1	20.0	1	SL
S-5	4/2/2014	11:10	Center	0.9	NA	11:39	39.0	20.0	1	SL
SC-1	4/2/2014	11:15	Composite	2.0	120	Not Analyzed for TPH				
S-6	4/2/2014	10:10	North	0.9	NA	10:47	22.6	20.0	1	SL
S-7	4/2/2014	10:15	South	1.2	NA	10:51	30.8	20.0	1	SL
S-8	4/2/2014	10:20	East	1.1	NA	10:56	46.0	20.0	1	SL
S-9	4/2/2014	10:30	West	1.3	NA	11:00	35.5	20.0	1	SL
S-10	4/2/2014	10:35	Center	0.9	NA	11:02	33.1	20.0	1	SL
SC-2	4/2/2014	10:40	Composite	1.1	80	Not Analyzed for TPH				

DF Dilution Factor  
NA Not Analyzed

ND Not Detected at the Reporting Limit

PQL Practical Quantitation Limit

\*Field TPH concentrations recorded may be below PQL.

Field Chloride - Quantab Chloride Titrators or Drop Count  
Titration with Silver Nitrate  
Total Petroleum Hydrocarbons - USEPA 418.1

Analyst:

*Stephanie Olson*





Hall Environmental Analysis Laboratory  
4901 Hawkins NE  
Albuquerque, NM 87109  
TEL: 505-345-3975 FAX: 505-345-4107  
Website: [www.hallenvironmental.com](http://www.hallenvironmental.com)

April 07, 2014

Debbie Watson

Animas Environmental

624 East Comanche

Farmington, NM 87401

TEL: (505) 486-4071

FAX

RE: CoP Ludwick LS #19

OrderNo.: 1404158

Dear Debbie Watson:

Hall Environmental Analysis Laboratory received 2 sample(s) on 4/3/2014 for the analyses presented in the following report.

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

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

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

Sincerely,

A handwritten signature in black ink, appearing to read "Andy Freeman", is written over a faint, circular official stamp.

Andy Freeman

Laboratory Manager

4901 Hawkins NE

Albuquerque, NM 87109

# Hall Environmental Analysis Laboratory, Inc.

## Analytical Report

Lab Order 1404158

Date Reported: 4/7/2014

CLIENT: Animas Environmental

Client Sample ID: SC-1 (East)

Project: CoP Ludwick LS #19

Collection Date: 4/2/2014 11:15:00 AM

Lab ID: 1404158-001

Matrix: MEOH (SOIL)

Received Date: 4/3/2014 10:30:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
<b>EPA METHOD 300.0: ANIONS</b>							Analyst: JRR
Chloride	ND	30		mg/Kg	20	4/3/2014 2:07:23 PM	12522
<b>EPA METHOD 8260B: VOLATILES SHORT LIST</b>							Analyst: cadg
Benzene	ND	0.038		mg/Kg	1	4/3/2014 11:30:42 AM	R17772
Toluene	ND	0.038		mg/Kg	1	4/3/2014 11:30:42 AM	R17772
Ethylbenzene	ND	0.038		mg/Kg	1	4/3/2014 11:30:42 AM	R17772
Xylenes, Total	ND	0.077		mg/Kg	1	4/3/2014 11:30:42 AM	R17772
Surr: 1,2-Dichloroethane-d4	110	70-130		%REC	1	4/3/2014 11:30:42 AM	R17772
Surr: 4-Bromofluorobenzene	94.3	70-130		%REC	1	4/3/2014 11:30:42 AM	R17772
Surr: Dibromofluoromethane	108	70-130		%REC	1	4/3/2014 11:30:42 AM	R17772
Surr: Toluene-d8	90.8	70-130		%REC	1	4/3/2014 11:30:42 AM	R17772

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

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank	Page 1 of 5
	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded	
	J	Analyte detected below quantitation limits	ND	Not Detected at the Reporting Limit	
	O	RSD is greater than RSDlimit	P	Sample pH greater than 2.	
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit	
	S	Spike Recovery outside accepted recovery limits			



# Hall Environmental Analysis Laboratory, Inc.

## Analytical Report

Lab Order 1404158

Date Reported: 4/7/2014

**CLIENT:** Animas Environmental

**Client Sample ID:** SC-2 (West)

**Project:** CoP Ludwick LS #19

**Collection Date:** 4/2/2014 10:40:00 AM

**Lab ID:** 1404158-002

**Matrix:** MEOH (SOIL)

**Received Date:** 4/3/2014 10:30:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
<b>EPA METHOD 300.0: ANIONS</b>							Analyst: JRR
Chloride	ND	30		mg/Kg	20	4/3/2014 2:19:48 PM	12522
<b>EPA METHOD 8260B: VOLATILES SHORT LIST</b>							Analyst: cadg
Benzene	ND	0.038		mg/Kg	1	4/3/2014 11:59:36 AM	R17772
Toluene	ND	0.038		mg/Kg	1	4/3/2014 11:59:36 AM	R17772
Ethylbenzene	ND	0.038		mg/Kg	1	4/3/2014 11:59:36 AM	R17772
Xylenes, Total	ND	0.077		mg/Kg	1	4/3/2014 11:59:36 AM	R17772
Surr: 1,2-Dichloroethane-d4	107	70-130		%REC	1	4/3/2014 11:59:36 AM	R17772
Surr: 4-Bromofluorobenzene	93.6	70-130		%REC	1	4/3/2014 11:59:36 AM	R17772
Surr: Dibromofluoromethane	112	70-130		%REC	1	4/3/2014 11:59:36 AM	R17772
Surr: Toluene-d8	82.5	70-130		%REC	1	4/3/2014 11:59:36 AM	R17772

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

<b>Qualifiers:</b>	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
	J	Analyte detected below quantitation limits	ND	Not Detected at the Reporting Limit
	O	RSD is greater than RSDlimit	P	Sample pH greater than 2.
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
	S	Spike Recovery outside accepted recovery limits		

# QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1404158

07-Apr-14

Client: Animas Environmental

Project: CoP Ludwick LS #19

Sample ID	MB-12522	SampType:	MBLK	TestCode:	EPA Method 300.0: Anions					
Client ID:	PBS	Batch ID:	12522	RunNo:	17803					
Prep Date:	4/3/2014	Analysis Date:	4/3/2014	SeqNo:	513066	Units:	mg/Kg			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	ND	1.5								

Sample ID	LCS-12522	SampType:	LCS	TestCode:	EPA Method 300.0: Anions					
Client ID:	LCSS	Batch ID:	12522	RunNo:	17803					
Prep Date:	4/3/2014	Analysis Date:	4/3/2014	SeqNo:	513067	Units:	mg/Kg			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	14	1.5	15.00	0	94.0	90	110			

## Qualifiers:

- \* Value exceeds Maximum Contaminant Level.
- E Value above quantitation range
- J Analyte detected below quantitation limits
- O RSD is greater than RSDlimit
- R RPD outside accepted recovery limits
- S Spike Recovery outside accepted recovery limits

- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- P Sample pH greater than 2.
- RL Reporting Detection Limit

# QC SUMMARY REPORT

## Hall Environmental Analysis Laboratory, Inc.

WO#: 1404158

07-Apr-14

Client: Animas Environmental

Project: CoP Ludwick LS #19

Sample ID	5mL rb	SampType:	MBLK	TestCode:	EPA Method 8260B: Volatiles Short List					
Client ID:	PBS	Batch ID:	R17772	RunNo:	17772					
Prep Date:		Analysis Date:	4/3/2014	SeqNo:	512652	Units:	mg/Kg			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	ND	0.050								
Toluene	ND	0.050								
Ethylbenzene	ND	0.050								
Xylenes, Total	ND	0.10								
Surr: 1,2-Dichloroethane-d4	0.49		0.5000		98.7	70	130			
Surr: 4-Bromofluorobenzene	0.50		0.5000		99.6	70	130			
Surr: Dibromofluoromethane	0.51		0.5000		102	70	130			
Surr: Toluene-d8	0.47		0.5000		94.6	70	130			

Sample ID	100ng lcs1	SampType:	LCS	TestCode:	EPA Method 8260B: Volatiles Short List					
Client ID:	LCSS	Batch ID:	R17772	RunNo:	17772					
Prep Date:		Analysis Date:	4/3/2014	SeqNo:	512653	Units:	mg/Kg			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	1.0	0.050	1.000	0	103	70	130			
Toluene	0.96	0.050	1.000	0	96.5	60.1	120			
Surr: 1,2-Dichloroethane-d4	0.50		0.5000		100	70	130			
Surr: 4-Bromofluorobenzene	0.51		0.5000		101	70	130			
Surr: Dibromofluoromethane	0.49		0.5000		98.7	70	130			
Surr: Toluene-d8	0.49		0.5000		97.0	70	130			

Sample ID	1404158-001a ms	SampType:	MS	TestCode:	EPA Method 8260B: Volatiles Short List					
Client ID:	SC-1 (East)	Batch ID:	R17772	RunNo:	17772					
Prep Date:		Analysis Date:	4/3/2014	SeqNo:	512655	Units:	mg/Kg			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	0.80	0.038	0.7680	0	104	62.6	140			
Toluene	0.65	0.038	0.7680	0	84.9	66.3	136			
Surr: 1,2-Dichloroethane-d4	0.40		0.3840		103	70	130			
Surr: 4-Bromofluorobenzene	0.35		0.3840		90.9	70	130			
Surr: Dibromofluoromethane	0.40		0.3840		103	70	130			
Surr: Toluene-d8	0.33		0.3840		85.1	70	130			

Sample ID	1404158-001a msd	SampType:	MSD	TestCode:	EPA Method 8260B: Volatiles Short List					
Client ID:	SC-1 (East)	Batch ID:	R17772	RunNo:	17772					
Prep Date:		Analysis Date:	4/3/2014	SeqNo:	512656	Units:	mg/Kg			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	0.78	0.038	0.7680	0	102	62.6	140	2.53	20	
Toluene	0.67	0.038	0.7680	0	87.2	66.3	136	2.59	20	

### Qualifiers:

- \* Value exceeds Maximum Contaminant Level.
- E Value above quantitation range
- J Analyte detected below quantitation limits
- O RSD is greater than RSDlimit
- R RPD outside accepted recovery limits
- S Spike Recovery outside accepted recovery limits

- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- P Sample pH greater than 2.
- RL Reporting Detection Limit



# QC SUMMARY REPORT

## Hall Environmental Analysis Laboratory, Inc.

WO#: 1404158

07-Apr-14

Client: Animas Environmental

Project: CoP Ludwick LS #19

Sample ID	1404158-001a msd	SampType	MSD	TestCode	EPA Method 8260B: Volatiles Short List					
Client ID	SC-1 (East)	Batch ID	R17772	RunNo	17772					
Prep Date		Analysis Date	4/3/2014	SeqNo	512656	Units	mg/Kg			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: 1,2-Dichloroethane-d4	0.40		0.3840		104	70	130	0	0	
Surr: 4-Bromofluorobenzene	0.37		0.3840		97.3	70	130	0	0	
Surr: Dibromofluoromethane	0.40		0.3840		105	70	130	0	0	
Surr: Toluene-d8	0.35		0.3840		91.5	70	130	0	0	

### Qualifiers:

\* Value exceeds Maximum Contaminant Level.  
E Value above quantitation range  
J Analyte detected below quantitation limits  
O RSD is greater than RSDlimit  
R RPD outside accepted recovery limits  
S Spike Recovery outside accepted recovery limits

B Analyte detected in the associated Method Blank  
H Holding times for preparation or analysis exceeded  
ND Not Detected at the Reporting Limit  
P Sample pH greater than 2.  
RL Reporting Detection Limit



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

## Sample Log-In Check List

Client Name: Animas Environmental

Work Order Number: 1404158

RcptNo: 1

Received by/date:

Logged By: Lindsay Mangin

4/3/2014 10:30:00 AM

Completed By: Lindsay Mangin

4/3/2014 10:39:37 AM

Reviewed By:

### Chain of Custody

1. Custody seals intact on sample bottles?

Yes ☐

No ☐

Not Present ☒

2. Is Chain of Custody complete?

Yes ☒

No ☐

Not Present ☐

3. How was the sample delivered?

Courier

### Log In

4. Was an attempt made to cool the samples?

Yes ☒

No ☐

NA ☐

5. Were all samples received at a temperature of  $>0^{\circ}\text{C}$  to  $6.0^{\circ}\text{C}$ ?

Yes ☒

No ☐

NA ☐

6. Sample(s) in proper container(s)?

Yes ☒

No ☐

7. Sufficient sample volume for indicated test(s)?

Yes ☒

No ☐

8. Are samples (except VOA and ONG) properly preserved?

Yes ☒

No ☐

9. Was preservative added to bottles?

Yes ☐

No ☒

NA ☐

10. VOA vials have zero headspace?

Yes ☐

No ☐

No VOA Vials ☒

11. Were any sample containers received broken?

Yes ☐

No ☒

# of preserved  
bottles checked  
for pH:

(<2 or >12 unless noted)

12. Does paperwork match bottle labels?

Yes ☒

No ☐

(Note discrepancies on chain of custody)

13. Are matrices correctly identified on Chain of Custody?

Yes ☒

No ☐

Adjusted? ☐

14. Is it clear what analyses were requested?

Yes ☒

No ☐

15. Were all holding times able to be met?

Yes ☒

No ☐

Checked by: \_\_\_\_\_

(If no, notify customer for authorization.)

### Special Handling (if applicable)

16. Was client notified of all discrepancies with this order?

Yes ☐

No ☐

NA ☒

Person Notified:

Date:

By Whom:

Via:

eMail

Phone

Fax

In Person

Regarding:

Client Instructions:

17. Additional remarks:

### 18. Cooler Information

Cooler No.	Temp °C	Condition	Seal Intact	Seal No.	Seal Date	Signed By
1	1.8	Good	Yes			



החוקים וההנהגות, וכל מה שיש להם להגות, וכל מה שיש להם להגות.

## HALL ENVIRONMENTAL ANALYSIS LABORATORY

[www.hallenvironmental.com](http://www.hallenvironmental.com)

4901 Hawkins NE - Albuquerque, NM 87109

Tel. 505-345-3975 Fax 505-345-4107

# Analysis Request

**Project Manager:**

D. Watson

Sampler: E. Skyles

On Ice: ☒ Yes ☐ No

Sample Temperature:

Date	Time	Matrix	Sample Request ID
------	------	--------	-------------------

## Matrix

## Sample Request ID

Type

# HEALING

6/2/14	11:15	Soil	SC-1 (East)
--------	-------	------	-------------

1

SC-1 (East)

now	1402
1402	1402

15

6/2/14	10:40	Soil	SC-2 (West)
--------	-------	------	-------------

5

SC-2 (West)

non	$\text{MeOH}$
sol-	$\text{MeOH}$

3

Relinquished by:	Time:	Relinquished by:
------------------	-------	------------------

Time:

Relinquished by:

Received by:

Date \_\_\_\_\_ Time \_\_\_\_\_

Remarks:  $\mathbb{B}:11$  to Conoco Phillips

Date:	Time:	Relinquished by:
-------	-------	------------------

Time:

Relinquished by: \_\_\_\_\_

Received by:

[illegible]

Ver ID: KGAUA

—

10

三

—

11

Wesley: Joe Hansen

\_\_\_\_\_ hereby certifies that the information submitted to Hall Environmental may be subcontracted to other subcontracted laboratories. This serves as notice of this possibility. Any sub-contracted data will be clearly notated on the analytical report.



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

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

Form C-141  
Revised October 10, 2003

Submit 2 Copies to appropriate  
District Office in accordance  
with Rule 116 on back  
side of form

## Release Notification and Corrective Action

### OPERATOR

☐ Initial Report ☒ Final Report

Name of Company <b>ConocoPhillips</b>	Contact <b>Kenny Davis</b>	
Address <b>3401 East 30<sup>th</sup> St, Farmington, NM</b>	Telephone No. <b>(505) 599-4045</b>	
Facility Name: <b>Ludwick LS 19</b>	Facility Type: <b>Gas Well</b>	
Surface Owner <b>Federal</b>	Mineral Owner <b>Federal</b>	Lease No. <b>SF-078194</b>

### LOCATION OF RELEASE

Unit Letter <b>B</b>	Section <b>5</b>	Township <b>29N</b>	Range <b>10W</b>	Feet from the <b>890</b>	North/South Line <b>North</b>	Feet from the <b>1800</b>	East/West Line <b>East</b>	County <b>San Juan</b>
-------------------------	---------------------	------------------------	---------------------	-----------------------------	----------------------------------	------------------------------	-------------------------------	---------------------------

Latitude **36.75899800** Longitude **-107.90399000**

### NATURE OF RELEASE

Type of Release <b>BGT Closure Summary</b>	Volume of Release <b>N/A</b>	Volume Recovered <b>N/A</b>
Source of Release: <b>NONE</b>	Date and Hour of Occurrence <b>N/A</b>	Date and Hour of Discovery <b>N/A</b>
Was Immediate Notice Given? <input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Not Required	If YES, To Whom? <b>N/A</b>	
By Whom? <b>N/A</b>	Date and Hour <b>N/A</b>	
Was a Watercourse Reached? <b>N/A</b> <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	If YES, Volume Impacting the Watercourse. <b>N/A</b>	
If a Watercourse was Impacted, Describe Fully.* <b>N/A</b>		
Describe Cause of Problem and Remedial Action Taken.* <b>N/A</b>		
Describe Area Affected and Cleanup Action Taken.* <b>BGT Closure: NO RELEASE FOUND UPON REMOVAL</b>		

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: 	<u>OIL CONSERVATION DIVISION</u>	
Printed Name: <b>Kenny Davis</b>	Approved by District Supervisor:	
Title: <b>Staff Regulatory Technician</b>	Approval Date:	Expiration Date:
E-mail Address: <b>Kenny.r.davis@conocophillips.com</b>	Conditions of Approval:	Attached <input type="checkbox"/>
Date: <b>12/8/14</b> Phone: <b>(505) 599-4045</b>		

\* Attach Additional Sheets If Necessary

14



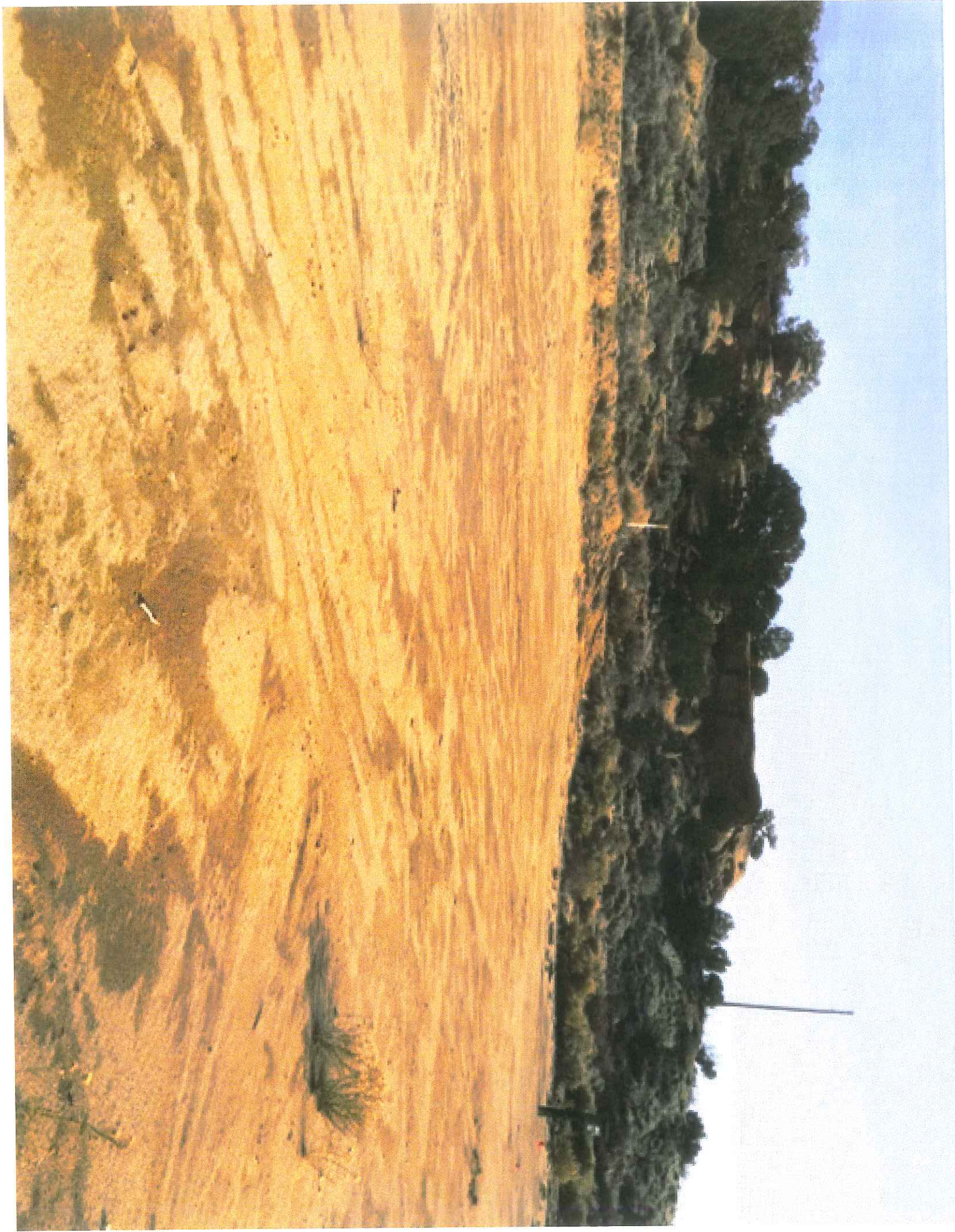
61 # 19  
LS  
WICK  
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**BGT Closure Packet Check List - Well Name:** Ludwick LS 19  
 (S:\gsRED\Regulatory Pits (ADM090-12yrs)\New Requirements\Checklists\BGT Closure Check List)

12/8/14 12 ✓ Below-grade Tank Closure Report from HSE  
 (S:\gsHSE\Element 6-Programs & Procedures\Underground Storage Tanks, Vessels, & Pits\Tank and Line Test Results HSE800 E+20Y\Below Grade Tanks\ZZ-BGT Closure Reports (there are two folders-Below Grade Tanks & ZZ-BGT Closure Reports - check in both places for documents))

12/8/14 12 ✓ Sampling (S:\gsHSE\Element 6-Programs & Procedures\Underground Storage Tanks, Vessels, & Pits\Tank and Line Test Results HSE800 E+20Y\Below Grade Tanks\ZZ-BGT Closure Reports (there are two folders-Below Grade Tanks & ZZ-BGT Closure Reports - check in both places for documents))

NO RECORD  
 FOUND Proof of Closure (72 Hour Notice) e-mail to NMOCD E-mail notice located @  
 S:\gsREG\WELLS LIST\WELL NAME\72 Hour Notice BGT Closure (for post 2008 BGT's.) or research through Jamie's Folder in LRM (subfolders designated) - some have been moved to Wells List or Regulatory Pits\New Requirements\BGT\_Closure Report\_e-mails\some don't exist at all.

NO RECORD  
 FOUND Surface Owner Notification -(S:\gsREG\Wells List\Well Name) Saved copy of e-mail you sent

NOT yet 12/8/14 12 Pictures (Pit Closure Form located @ S:\gsProj\tssjd-copy\Construction\Open Pit Inspections (EEF170). Print the reclamation form for reference of Closure Date for C144 (use Start of Reclamation as the Closure Date)-If Reclamation has not taken place, we only need a picture of when they backfilled after removing the BGT.

12/8/14 12 ✓ C144 with correct operator, well name, lat/long., surface owner  
 (S:\gs REG\Regulatory Pits (ADM090-12yrs)\New Requirements\C-144 Forms\Pre 2013 C144 Forms\BGT Closure (OLD)-Closure date for BGT's that have not had reclamation work done would be the date the samples were taken when BGT was removed. operator name to be corrected 14

12/8/14 12 ✓ Below-grade Tank Closure Report Summary w/ C-141  
 (S:\gs REG\Regulatory Pits (ADM090-12yrs)\New Requirements\BGT Closure Summary Report Templates\Normal or Without Reclamation  
 C-141 found @ S:\gsHSE\Element 6-Programs & Procedures\Underground Storage Tanks, Vessels, & Pits\Tank and Line Test Results HSE800 E+20Y\Below Grade Tanks

Order for submitting the packet

1. C144 Form
2. BGT Closure Report Summary
3. Proof of Closure (72 Hour Notice) e-mail to NMOCD
4. BGT Closure Report from HSE & C141 Form
5. Sampling Results
6. Pictures

The items on this checklist need to be checked off and initialed by the person completing the work and must accompany the C-144 Closure Packet when it is handed off for QC and the QC person must initial it as well. This checklist is to be scanned into Wells List & DSM as part of the BGT Closure Packet.



Pre-BGT Closure Check List - Well Name: LUDWICK LS 19  
(S:\gsRED\Regulatory Pits (ADM090-12yrs)\New Requirements\Checklists\Pre-BGT Closure Check List)

NO RECORD  
- HISTORICAL

E-Mail received from O&M for P&A Facility Strip Notice  
(Save this e-mail in the Wells List - S:\gsREG\1 Wells List under well name)

12/8/14 (10)

Verify Twinned Location (Check in DSM under General Tab for notes about twinned well or check 1<sup>st</sup> Delivery Database under Facilities located on MPAD)

3/3/15  
12/8/14

N/A

Call or e-mail Area MSO (Ask them to verify if there is a BGT on location and have them send you a picture to verify. Save the picture - S:\gsREG\1 Wells List under well name)

12/8/14 (10)

Request Closure Plan Approval from Santa Fe - (If this is a historic BGT Closure and the well is on the BGT Master List an e-mail is sent to Leonard Lowe @ Leonrd.Lowe@state.nm.us)

NO RECORD  
FOUND

Send 72-hour closure notification to NMOCD (In the e-mail received from O&M there is an 'estimated start date', use this start date when sending your 72-hour but not more than one week notice to NMOCD)

NO RECORD  
FOUND

Send 72-hour Surface Owner Notification (If surface owner is BLM/Tribal then we send an e-mail notification to Mark Kelly and Shari Ketchum giving notification that a BGT will be closed) (Note: previously we were submitting the 'original' surface owner notification that was submitted with the Permit; however, that part of the process was incorrect according to Cory @ NMOCD and going forward we will need to send this notification) For the Historic Closures, we will be stating that the notification cannot be found in our Closure Summary Report.

The items on this checklist need to be checked off and initialed by the person completing the work and must accompany the C-144 Closure Packet when it is handed off for QC and the QC person must initial it as well. This checklist is to be scanned into Wells List & DSM as part of the BGT Closure Packet.