

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.

TRACKING#  
12891  
Permit #  
13129

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

OIL CONS. DIV DIST. 3

- 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

APR 28 2015

**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: WPX Energy Production' LLC OGRID #: 120782  
Address: PO Box 640/721 S Main Aztec, NM 87410  
Facility or well name: Chaco Trunk 4-1 CDP Tank #004  
API Number: \_\_\_\_\_ OCD Permit Number: \_\_\_\_\_  
U/L or Qtr/Qtr \_\_\_\_\_ Section 13 Township 23N Range 7W County: Rio Arriba  
Center of Proposed Design: Latitude 36.22517N Longitude -107.53020W NAD:  1927  1983  
Surface Owner:  Federal  State  Private  Tribal Trust or Indian Allotment

APPLICATION INCOMPLETE/INCORRECT

MODIFICATION REQUIRED

DATE 5/7/15

CS Mod Req with 60 DAYS

\* Conditions of Approval ON 2nd page

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 \_\_\_\_\_

3.  Below-grade tank: Subsection I of 19.15.17.11 NMAC  
Volume: 120 bbl Type of fluid: Produced Water  
Tank Construction material: Double wall, double bottom, Steel  
 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 \_\_\_\_\_ mil  HDPE  PVC  Other \_\_\_\_\_

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 As per BLM specifications

State of New Mexico  
Energy, Minerals and Natural Resources Department

Susana Martinez  
Governor

David Martin  
Cabinet Secretary

Brett F. Woods, Ph.D.  
Deputy Cabinet Secretary

David R. Catanach, Division Director  
Oil Conservation Division



New Mexico Oil Conservation Division Approval and Conditions  
(C-144)

Application Type:

Temporary Pit     Multi-Well Fluid Management Pit

**Below Grade Tank**     Other:

Site information:

API WELL #	Well Name	Well #	Operator Name	County	Sec	Twsp	N/S	Rng	W/E
N/A	Chaco Trunk 4-1 CDP	Tank #3,4,5	WPX ENERGY PRODUCTION, LLC	Rio Arriba	13	23	N	7	W

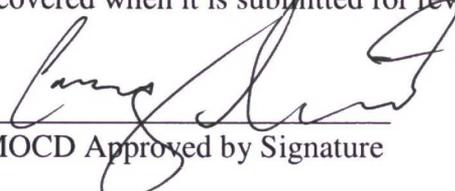
Conditions of Approval:

Acceptance of this registration is contingent on a required modification being submitted within 60 days. The modification must correct the below issues and be a complete registration package, which includes all required attachments. Any below-grade tanks installed without meeting these conditions will be out of compliance with 19.15.17 and/or 19.15.5.11.

Issues:

- Due to the supplied ground water information not following previous discussed procedures for test wells,
  - (Each application must include specific siting information, therefore a test well will be required or another applicable source of ground water information)
- If a new test well is drilled Please Provide OCD District III at least 72 hour Notice Prior to Test Well Drilling and follow the procedures as attached.

**Please note:** A complete review of the entire application will be conducted upon receipt of the modification. It is recommended the operator conduct a review of the application to ensure it is complete and correct. This will help to insure no additional issues are discovered when it is submitted for review.

  
\_\_\_\_\_  
NMOCD Approved by Signature

5/7/15  
\_\_\_\_\_  
Date

## Determining Depth to Groundwater Test Wells

### Test Well Requirements

- Provide minimum 72 hour Notification to NMOCD Aztec Office prior to drilling
- Test Well must be air drilled to the following depths, terminating at the shallowest interval where groundwater is encountered
- Formula for drilling depths: Proposed Pit depth + Variable Siting Depths

### Typical Intervals Used

- 40 ft (25 ft requirement + 15 ft pit depth)
- 65 ft (50 ft requirement + 15 ft pit depth)
- 115 ft (100 ft requirement + 15 ft pit depth)

Wait 1 hour following reaching each depth prior to running down hole with conductivity probe

• If water is encountered, leave hole open for 24 hrs to allow water level to stabilize and re-measure

- Provided test well coordinates and elevation to OCD District III

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.

**Variations 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

Within 300 feet from a occupied 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

- Yes  No

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.

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

- Yes  No

Within 100 feet of a wetland.  
- US Fish and Wildlife Wetland Identification map; Topographic map; Visual inspection (certification) of the proposed site  Yes  No

**Temporary Pit Non-low chloride drilling fluid**

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).  
- 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.  
- Visual inspection (certification) of the proposed site; Aerial photo; Satellite image  Yes  No

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;  
- NM Office of the State Engineer - iWATERS database search; Visual inspection (certification) of the proposed site  Yes  No

Within 300 feet of a wetland.  
- US Fish and Wildlife Wetland Identification map; Topographic map; Visual inspection (certification) of the proposed site  Yes  No

**Permanent Pit or Multi-Well Fluid Management Pit**

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).  
- Topographic map; Visual inspection (certification) of the proposed site  Yes  No

Within 1000 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  Yes  No

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.  
- NM Office of the State Engineer - iWATERS database search; Visual inspection (certification) of the proposed site  Yes  No

Within 500 feet of a wetland.  
- US Fish and Wildlife Wetland Identification map; Topographic map; Visual inspection (certification) of the proposed site  Yes  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.<br>- NM Office of the State Engineer - iWATERS database search; USGS; Data obtained from nearby wells   | <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No<br><input type="checkbox"/> NA |
| Ground water is between 25-50 feet below the bottom of the buried waste<br>- NM Office of the State Engineer - iWATERS database search; USGS; Data obtained from nearby wells   | <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No<br><input type="checkbox"/> NA |
| 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  | <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No<br><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).<br>- Topographic map; Visual inspection (certification) of the proposed site                        | <input type="checkbox"/> Yes <input checked="" type="checkbox"/> 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  | <input type="checkbox"/> Yes <input checked="" 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.<br>- NM Office of the State Engineer - iWATERS database; Visual inspection (certification) of the proposed site | <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No                                |
| Written confirmation or verification from the municipality; Written approval obtained from the municipality   | <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No                                |
| Within 300 feet of a wetland.<br>US Fish and Wildlife Wetland Identification map; Topographic map; Visual inspection (certification) of the proposed site   | <input type="checkbox"/> Yes <input checked="" 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 checked="" 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

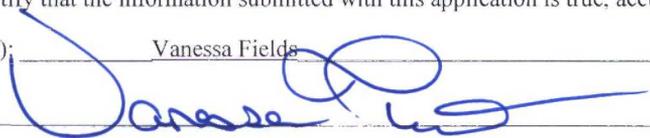
16. **On-Site Closure Plan Checklist:** (19.15.17.13 NMAC) *Instructions: Each of the following items must be attached to the closure plan. Please indicate, by a check mark in the box, that the documents are attached.*

- 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:**

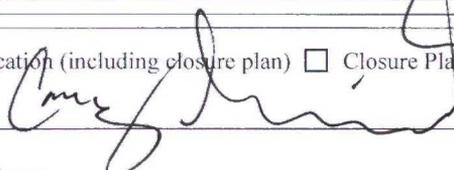
I hereby certify that the information submitted with this application is true, accurate and complete to the best of my knowledge and belief.

Name (Print): Vanessa Fields Title: Environmental Specialist

Signature:  Date: 4/28/2015

e-mail address: Vanessa.Fields@wpenergy.com Telephone: 505-333-1880

18. **OCD Approval:**  Permit Application (including closure plan)  Closure Plan (only)  OCD Conditions (see attachment) *See 2nd page*

OCD Representative Signature:  Approval Date: 5/7/15

Title: Environmental Spec 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: \_\_\_\_\_

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

22.

**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): \_\_\_\_\_ Title: \_\_\_\_\_

Signature: \_\_\_\_\_ Date: \_\_\_\_\_

e-mail address: \_\_\_\_\_ Telephone: \_\_\_\_\_

**Hydrogeological Report  
WPX Energy Production, LLC  
Chaco Trunk 4-1 CDP**

**Regional Hydrological Context**

**Referenced Well Location:**

The referenced well and BGT is located on Bureau of Land Management land within Farmington Field Office (FFO) jurisdiction in San Juan County, New Mexico. This site is positioned in the northeastern portion of the San Juan Basin, an asymmetrical syncline that extends from northwestern New Mexico into southwestern Colorado (Carson National Forest FEIS, 2008). Elevation of the referenced well is approximately 6,997 feet MSL.

**General Regional Groundwater Description:**

As a portion of the San Juan Basin, the FFO region is underlain by sandstone aquifers of the Colorado Plateau. The primary aquifer of potential concern at this location is the Uinta-Animas Aquifer, composed primarily of Lower Tertiary rocks in the San Juan Basin. The aquifer consists of the San Jose Formation; the underlying Animas formation and its lateral equivalent, the Nacimiento formation; and the Ojo Alamo Sandstone. The thickness of the Uinta-Animas aquifer generally increases toward the central part of the basin. In this region, the maximum thickness of the aquifer is approximately 3500 feet (USGS, 2001). This aquifer contains fresh to moderately saline water.

Groundwater generally flows toward the San Juan River and its tributaries, where it becomes alluvial groundwater or is discharged to stream flow. Additional information regarding the hydrogeologic setting can be found in the provided references.

**Site Specific Information:**

<b>Surface Hydrology:</b>	The BGT is located on the broad, flat floor of Escrito Canyon with a gentle slope to the northwest.
<b>1<sup>st</sup> Water Bearing Formation:</b>	San Jose, Tertiary
<b>Formation Thickness:</b>	Approximately 1,900 ft.
<b>Underlying Formation:</b>	Nacimiento, Tertiary
<b>Depth to Groundwater:</b>	Depth to groundwater is at 100 feet below bottom of BGT. A Ground Bed Drilling Logs was performed on the Chaco 4-1 CDP and water depth was determined to be 100" (see Siting Criteria Map 1 for details).

**References:**

- Allen, Erin. Undated. Colorado Plateau Aquifers.  
<http://academic.emporia.edu/schulmem/hydro/TERM%20PROJECTS/2007/Allen/Aquifer.html>.
- New Mexico Energy, Minerals and Natural Resources Department, Division of Mining and Minerals. Database. 2010. Internet accessed January 2010.
- New Mexico Office of the State Engineer. 2013. iWaters database. Internet accessed July 2013.
- New Mexico WQCC. 2005. State of New Mexico Water Quality Act and the Water Control Commission Regulations.
- United States Department of Agriculture, Forest Service. 2008. Final Environmental Impact Statement for Surface Management of Gas Leasing and Development. Jicarilla Ranger District, Carson National Forest, Rio Arriba County, New Mexico.
- United States Department of the Interior. Bureau of Land Management. 2003. Final Farmington Resource Management Plan and Final Environmental Impact Statement. Farmington Field Office, Farmington, New Mexico.
- United States Geological Survey. 2001. Ground Water Atlas of the United States: Arizona, Colorado, New Mexico and Utah. USGS Publication HA 730-C;

**Ground Bed Drilling Log**

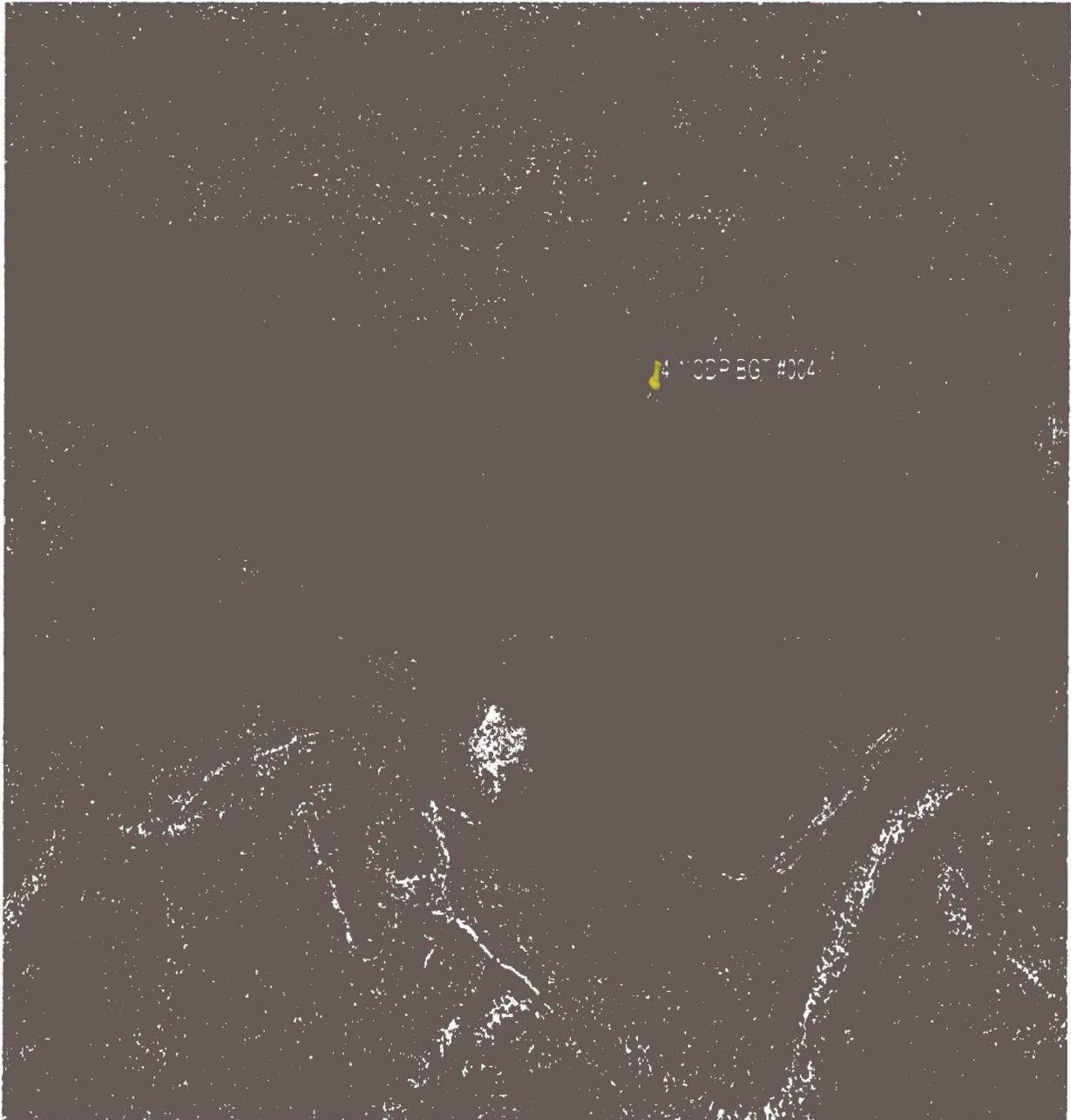
Company: WPX Energy Well: Chaco 4-1 CDP Date: 4/2/15  
 Location: Sec. 13 T23N R1W State: Nm. Rig: Story # 1  
 Ground Bed Depth: 340' Water Depth: 100' Diameter: 8"  
 Fuel Usage: 90 gal

DEPTH	FORMATION	OTHER
<u>0-100</u>	Sand Stone, Shale, Sand w/ Shale w/ Sand	<u>PVC</u>
<u>100-160</u>	Sand Stone, Shale, <u>Sand w/ Shale</u> w/ Sand	
<u>160-220</u>	Sand Stone, <u>Shale</u> , Sand w/ Shale w/ Sand	
<u>220-280</u>	Sand Stone, Shale, Sand w/ <u>Shale w/ Sand</u>	
<u>280-320</u>	Sand Stone, Shale, <u>Sand w/ Shale</u> w/ Sand	
<u>320-340</u>	Sand Stone, <u>Shale</u> , Sand w/ Shale w/ Sand	
	Sand Stone, Shale, Sand w/ Shale w/ Sand	
	Sand Stone, Shale, Sand w/ Shale w/ Sand	
	Sand Stone, Shale, Sand w/ Shale w/ Sand	

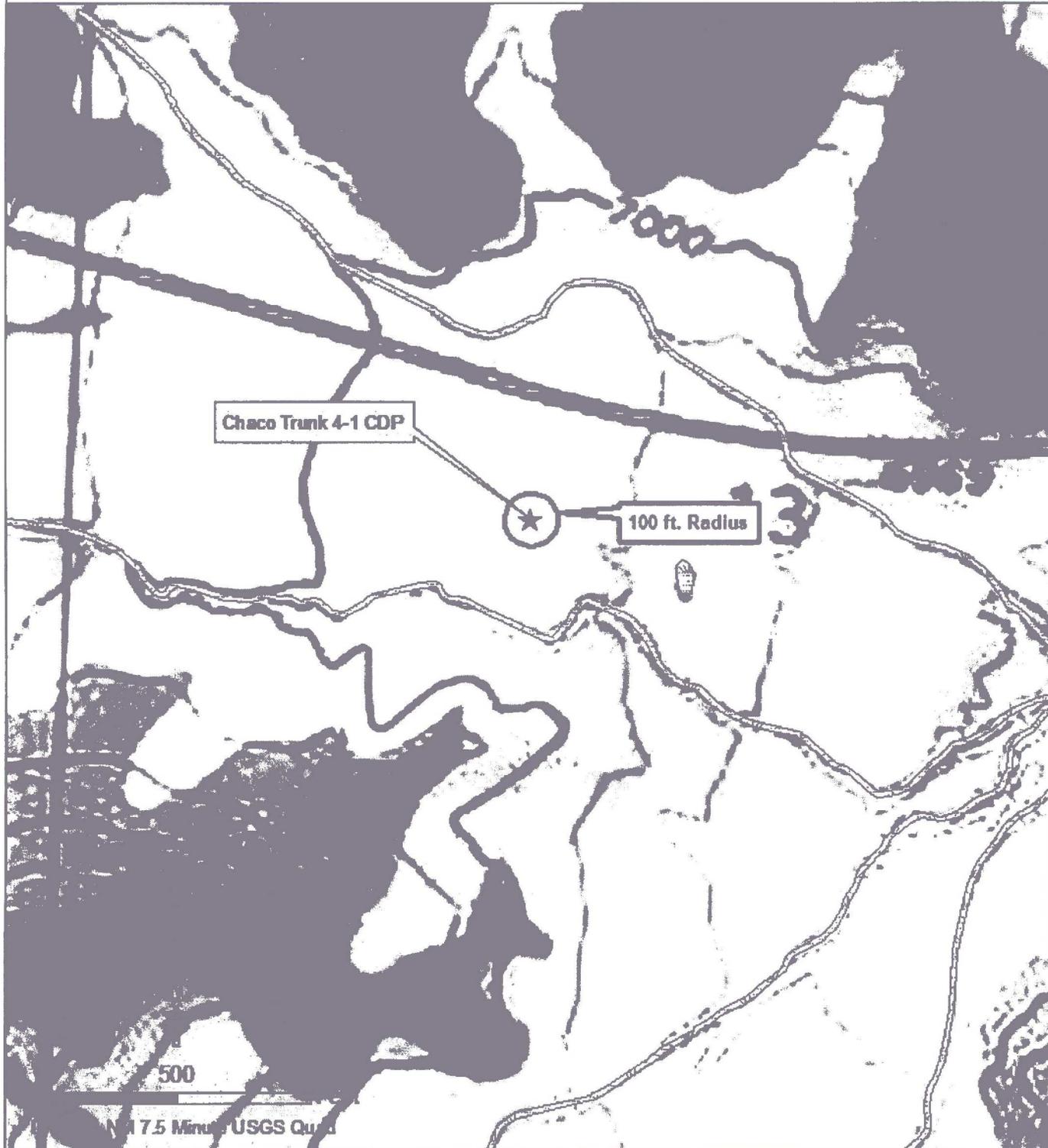
GROUNDWATER DEPTH LOG			
Company: <u>WPX Energy</u>		Location: <u>Chaco 4-1 CDP</u>	
Probe type: <u>Rovers well sampler</u>			
Date	Time	Depth	Comments
<u>4-2-15</u>	<u>1:00pm</u>	<u>340'</u>	<u>Dilled to 340' set overnight</u>
<u>4-3-15</u>	<u>8:15Am</u>	<u>100'</u>	<u>water tested 100' next day</u>

Siting Criteria Map  
WPX Energy Production, LLC  
Chaco Trunk 4-1 CDP  
T23N, R07W, Section 13 NMPM  
Rio Arriba Country, New Mexico

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Siting Criteria Map II  
Topographic Features  
WPX Energy Production, LLC  
Chaco Trunk 4-1 CDP  
T23N, R07W, Section 13 NMPM  
Rio Arriba Country, New Mexico



**Siting Criteria Compliance Demonstrations:**

- The Chaco Trunk 4-1 CDP is not located in an unstable area.
- The site is not within 100 feet of any reported riparian areas or wetlands (see attached USFWS wetland map); within 300 feet of any private, domestic fresh water well or spring; or within 300 feet of any other fresh water well or spring (see Siting Criteria Map I).
- The BGT will not be within any incorporated municipal boundaries or defined municipal freshwater well field covered under a municipal ordinance adopted pursuant to NMSA 1978, Section 3-27-3, as amended. The location of the proposed BGT is not within 300 feet of any permanent residence, school, hospital, institution, or church.



WPX Energy requests the following variances:

1. The BGT will be protected from run on by being installed upon a top felt rock shield with a overlay of 30 mil rubber liner attached to the sidewalls of the inside of the containment berm. The 30 mill rubber liner will provide equal and/or better protection in the prevention of contamination of fresh water and protecting public health and the environment.  
(See attached photo))
2. A 42 inch tall, 12 gauge coated metal steel fence will be constructed around the BGT to protect livestock/wildlife as specified by the federal Surface Management Agency or, if not federal land/minerals; which will provide equal and/or better protection of a fence while preventing contamination of fresh water, protecting public health and the environment.  
(See attached photo)
3. If the surface owner is of public entity (i.e.: BLM) WPX Energy will notify by email the intent to close the BGT in place of a certified mail letter. WPX Energy will request a read receipt of the email which will be equal and/ or equivalent notification as certified mail.

Thank you,

Vanessa Fields  
Environmental Specialist

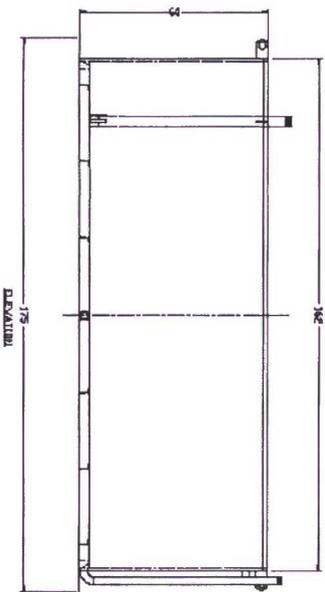
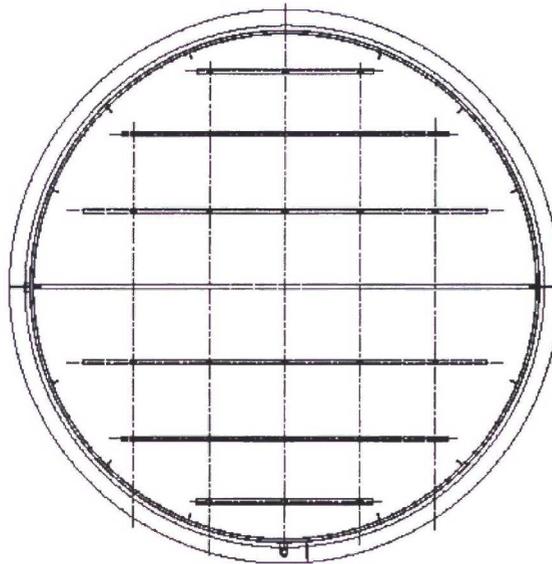
CC: /  
Environmental File

**WPX Energy Co., LLC**  
**San Juan Basin: New Mexico Assets**  
Production BGT: Buried Double-Wall Steel Tank  
Design and Construction Plan

In accordance with Rule 19.15.17 NMAC, the following plan describes the general design and construction (D&C) of Below Grade Tanks (BGT) using buried double-wall steel tanks on WPX Energy Co, LLC (WPX) locations in the San Juan Basin of New Mexico. For those BGT which do not conform to this standard plan, a separate well-specific D&C plan will be developed and utilized.

General Plan Requirements:

1. WPX will post a well sign in accordance with the federal Surface Management Agency and rule NMAC 19.15.17.11.C
2. As a variance a 42 inch tall, 12 gauge coated metal steel "Fence" will be constructed around the BGT to protect livestock/wildlife as specified by the federal Surface Management Agency or, if not federal land/minerals, NMOCD rule 17 requirements. See Attached Design/photo.
3. The buried BGT will be constructed of steel with double-walls and double-bottom, welded following appropriate API and industry codes, coated with an epoxy based paint, covered with a steel #9 mesh screen, and equipped with an EFM to monitor high liquid levels and automatically shut off liquid discharges. A solid riser pipe will be installed between the interstitial space of the double-walls to allow monthly inspection to determine tank integrity.
4. WPX will design and construct a BGT to contain liquids associated with the dehydration and compression of produced natural gas, which will be resistant to ultra violet light and the contents of the tank to prevent contamination of fresh water resources and protect public health and the environment.
5. The BGT foundation will be level and free of rocks, debris, sharp edges or irregularities and have a firm compacted bottom and sidewalls that are stable for the soil conditions.
6. The BGT will be protected from run on by being installed within the impervious secondary containment provided by the AST tanks on location. See attached Design (Same as Fence)
7. The BGT will be placed in the excavation such that there is 30 mil rubber liner overlay between the surrounding soils and the tank top see attached design.
8. A solid riser pipe will be installed to allow withdrawal of liquids by suction. The riser will draw from the bottom of the BGT, capped when not in use and sloped to the BGT to allow drainage of liquids not collected during withdrawal operations.

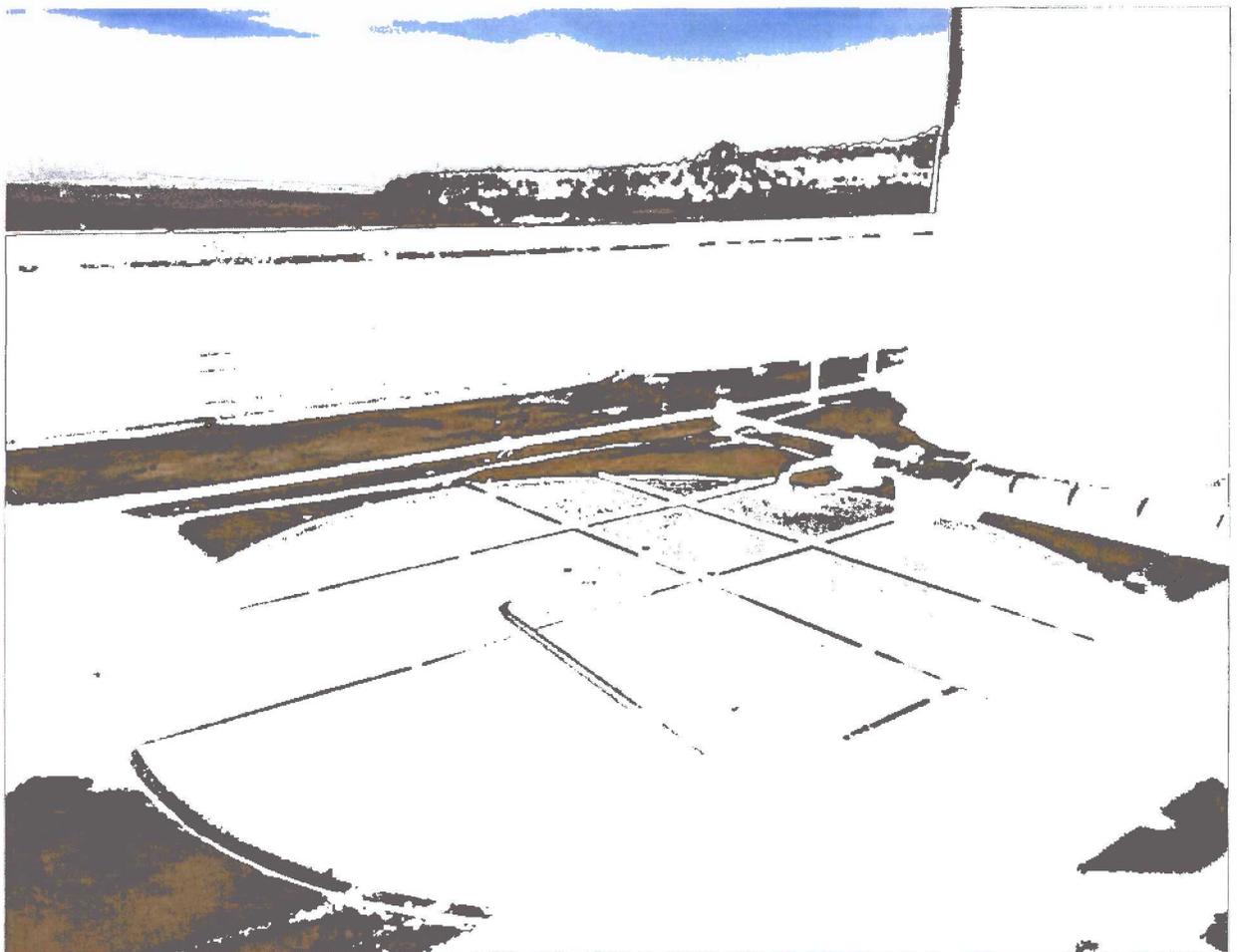
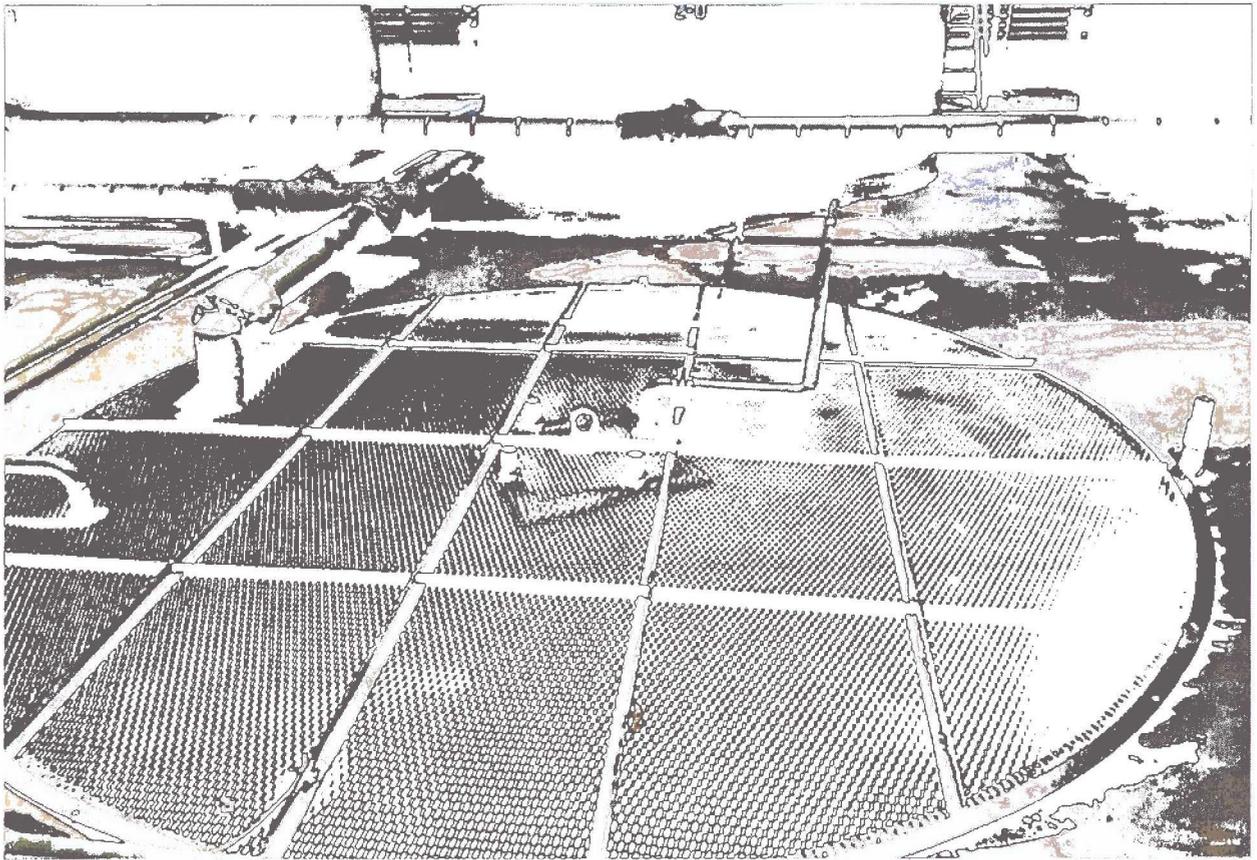


1. RIBS AND EXTENSOR TO BE WELD WELDED PERFORMED  
 2. AFTER WELDING TEST SPACE BETWEEN RIBS W/ /  
 3. AFTER WELDING TEST SPACE BETWEEN RIBS W/ /  
 4. NO MORE THAN 3 PSI AIR

WEIGHT: 6,471 LBS.

THE INFORMATION ON THIS DRAWING IS THE PROPERTY OF PESCO. IT IS TO BE USED ONLY FOR THE PROJECT AND SITE SPECIFICALLY IDENTIFIED HEREON. NO OTHER USE, REPRODUCTION OR TRANSMISSION IS PERMITTED WITHOUT THE WRITTEN PERMISSION OF PESCO.	
PROJECT: <b>WALLING</b>	SHEET: <b>1/16</b>
DRAWN BY: <b>WALLING</b>	CHECKED BY: <b>WALLING</b>
DATE: <b>1/16</b>	SCALE: <b>AS SHOWN</b>
PROJECT NO: <b>100</b>	DRAWING NO: <b>100-1</b>
CUSTOMER: <b>100</b>	DRAWING TITLE: <b>100</b>





**WPX Energy Co., LLC**  
**San Juan Basin: New Mexico Assets**  
Production BGT: Buried Double-Wall Steel Tank  
Operations and Maintenance Plan

In accordance with Rule 19.15.17 NMAC, the following plan describes the general operations and maintenance (O&M) of production Below Grade Tanks (BGT) on WPX Energy Co, LLC (WPX) locations in the San Juan Basin of New Mexico. For those BGT which do not conform to this standard O&M plan, a separate well specific O&M plan will be developed and utilized.

1. WPX will inspect the BGT monthly for leaks and damage. Electronic copies of the inspections will be kept at the WPX San Juan Basin office for a minimum of five years following completion. Copies of the inspections will be available to NMOCD upon request.
2. Any oil or hydrocarbon collecting on the BGT will be removed. Saleable condensate will be returned to the sales tank. Slop oil from compression will be recycled with Safety Kleen, Farmington, NM or Hydropure, Aztec, NM (No Permit Required).
3. WPX will only allow produced liquids meeting the RCRA exemption for O&G wastes to be stored in the BGT. WPX will not discharge or store any hazardous waste as defined under RCRA 40CFR 261 and 19.15.2.7.H.3 NMAC in any BGT.
4. WPX shall maintain sufficient freeboard for to prevent overflow. Discharges to the BGT will be shutoff automatically if the high-level alarm is triggered from the EFM or manually if the EFM is not functional.
5. The Steel fencing around the perimeter of the BGT shall be maintained as protection from run-on.
6. Produced water will be disposed by evaporation or transport any of the following NMOCD approved facilities depending on the well location: Basin Disposal, Inc in Bloomfield, New Mexico (Permit # NM-01-005), WPX Energy Rosa SWD#1 (Permit # SWD-916), WPX Energy Rosa #94 (Permit # SWD-758), Burlington Resources Jillson SWD#1 (Permit #R10168A), or other NMOCD approved water disposal facilities.
7. If the tank integrity is compromised:
  - a. All discharges will be shut off to the BGT.
  - b. All liquids will be removed as soon as possible but no later than 24 hours after discovery.
  - c. WPX will notify and report to NMOCD in accordance to 19.15.29 NMAC and all other applicable agency's as require.

**WPX Energy Co., LLC**  
**San Juan Basin: New Mexico Assets**  
Production BGT: Buried Double-Wall Steel Tank  
Closure Plan

In accordance with Rule 19.15.17.13 NMAC, the following plan describes the general closure requirements of below-grade tanks (BGT) on WPX Energy Co, LLC (WPX) locations in the San Juan Basin of New Mexico. This is WPX's standard closure procedure for all BGTs regulated under Rule 19.15.17 NMAC and operated by WPX. For those closures which do not conform to this standard closure plan, a separate BGT specific closure plan will be developed and utilized.

**Closure Conditions and Timing for BGT:**

- Within 60 days of cessation of operation WPX will:
  - Remove all liquids and sludge and dispose in a division approved manner
- Within 72 Hrs or 1 week prior to closure WPX will:
  - Give notice to Surface owners by certified mail. For public entities by email as specified on the variance page.
  - Give notice to District Division verbally and in writing/email
- Within 6 months of cessation of operation WPX will:
  - Remove BGT and dispose, recycle, reuse, or reclaim in a division approved manner
  - Remove unused onsite equipment associated with the BGT
- Within 60 Days of Closure WPX will:
  - Send the District Division a Closure Report per 19.15.17.13.F

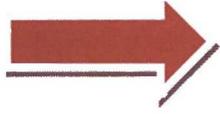
**General Plan Requirements:**

1. Prior to initiating any BGT Closure except in the case of an emergency, WPX will notify the surface owner of the intent to close the BGT by certified mail no later than 72 hours or 1 week before closure and a copy of this notification will be included in the closure report. In the case of an emergency, the surface owner of record will be notified as soon as practical.
2. Notice of Closure will be given to the Aztec District office between 72 hours and one week of the scheduled closure via email or phone. The notification of closure will include the following:
  - a. Operators Name (WPX)
  - b. Well Name and API Number
  - c. Location (USTR)
3. All liquids will be removed from the BGT following cessation of operation. Produced water will be disposed at one of the following NMOCD approved facilities depending on the proximity of the BGT site: Rosa Unit SWD #1 (Order: SWD-916, API: 30-039-27055), Rosa Unit #94 (Order: SWD-3RP-1003-0, API: 30-039-23035), Jillson Fed. SWD #001 (Order: R10168/R10168A, API: 30-039-25465), Middle Mesa SWD #001 (Order: SWD-350-0, API: 30-045-27004) and/or Basin Disposal (Permit: NM-01-0005).
4. Solids and sludge's will be shoveled and /or vacuumed out for disposal at Envirotech (Permit Number NM-01-0011).

5. WPX will obtain prior approval from NMOCD to dispose, recycle, reuse, or reclaim the BGT and provide documentation of the disposition of the BGT in the closure report. Steel materials will be recycled or reused as approved by the Division. Fiberglass tanks will be empty, cut up or shredded, and EPA cleaned for disposal as solid waste. Liners materials will be cleaned without soils or contaminated material for disposal as solid waste. Fiberglass tanks and liner materials will meet the conditions of 19.15.35 NMAC. Disposal will be at a licensed disposal facility, presently San Juan Regional Landfill operated by Waste Management under NMED Permit SWM-052426.
6. Any equipment associated with the BGT that is no longer required for some other purpose, following the closure will be removed from the location.
7. Following removal of the tank and any liner material, WPX will test the soils beneath the BGT as follows:
  - a. At a minimum, a five-point composite sample will be taken to include any obvious stained or wet soils or any other evidence of contamination.
  - b. The laboratory sample shall be analyzed for the constituents listed in Table I of 19.15.17.13

Depth below bottom of pit to groundwater less than 10,000 mg/1 TDS	Constituent	Method	Limit
≤50 feet	Chloride	EPA 300.0	600 mg/kg
	TPH	EPA SW-846 Method 418.1	100 mg/kg
	BTEX	EPA SE-846 Method 8021B or 8015M	50 mg/kg
	Benzene	EPA SW-846 Method 8021B or 8015M	10 mg/kg

Depth below bottom of pit to groundwater less than 10,000 mg/1 TDS	Constituent	Method	Limit
51 feet-100 feet	Chloride	EPA 300.0	10,000 mg/kg
	TPH	EPA SW-846 Method 418.1	2,500 mg/kg
	GRO+DRO	EPA SW-846 Method 8015M	1,000 mg/kg
	BTEX	EPA SE-846 Method 8021B or 8015M	50 mg/kg
	Benzene	EPA SW-846 Method 8021B or 8015M	10 mg/kg



Depth below bottom of pit to groundwater less than 10,000 mg/l TDS	Constituent	Method	Limit
>100 feet	Chloride	EPA 300.0	20,000 mg/kg
	TPH	EPA SW-846 Method 418.1	2,500 mg/kg
	GRO+DRO	EPA SW-846 Method 8015M	1,000 mg/kg
	BTEX	EPA SE-846 Method 8021B or 8015M	50 mg/kg
	Benzene	EPA SW-846 Method 8021B or 8015M	10 mg/kg

- (1) Or other test methods approved by the division  
 (2) Numerical limits or natural background level, whichever is greater  
 (19.15.17.13 NMAC-Ro, 19.15.17.13 NMAC 3/28/2013)

8. If the Division and/or WPX determine there is a release, WPX will comply with 19.15.17.13.C.3b
9. Upon completion of the tank removal, the excavation will be backfilled with non-waste earthen material compacted and covered with a minimum of one foot of top soil or background thickness whichever is greater and to existing grade. The surface will be re-contoured to match the native grade and prevent ponding.

For those portions of the former BGT area no longer required for production activities, WPX will seed the disturbed areas the first favorable growing season after the BGT is covered. Seeding will be accomplished via drilling on the contour whenever practical, or by other Division-approved methods. WPX will notify the Division when reclamation and re-vegetation is complete.

Reclamation of the BGT shall be considered complete when:

- a. Vegetative cover reflects a life form ratio of +/- 50% of pre disturbance levels
  - b. Total percent plant cover of at least 70% of pre-disturbance levels  
(Excluding noxious weeds)
- OR
- c. Pursuant to 19.15.17.13.H.5d WPX will comply with obligations imposed by other applicable federal or tribal agencies in which their re-vegetation and reclamation requirements provide equal or better protection of fresh water, human health and the environment.
10. For those portions of the former BGT area required for production activities, reseeded will be done at well abandonment, and following the procedure noted above.

**Closure Report:**

All closure activities will include proper documentation and will be submitted to OCD within 60 days of the BGT closure on a Closure Report using Division Form C-144. The Report will include the following:

- Proof of Closure Notice (surface owner & NMOCD)
- Backfilling & Cover Installation
- Confirmation Sampling Analytical Results
- Disposal Facility Name(s) and Permit Number(s)
- Application Rate & Seeding techniques
- Photo Documentation of Reclamation