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

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.

Pit, Below-Grade Tank, or
Proposed Alternative Method Permit or Closure Plan Application
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.
Operator: BP AMERICA PRODUCTION COMPANY OGRID #: 778
Address: 200 ENERGY COURT, FARMINGTON, NM 87401
Facility or well name: PRITCHARD SWD 001
API Number: 3004528351 OCD Permit Number:
U/L or Qtr/Qtr C Section 34.0 Township 31.0N Range 09W County: San Juan
Center of Proposed Design:         Latitude         36.860508         Longitude         -107.771291         NAD:         □1927 ⋈ 1983
Surface Owner:  Federal  State  Private  Tribal Trust or Indian Allotment
Pit: Subsection F, G or J of 19.15.17.11 NMAC   CONS. DIV.   Temporary:   Drilling   Workover   Oils CONS. DIV.   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 TANK ID: A
Volume: 95 bbl Type of fluid: PRODUCED WATER  Tank Construction material: 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: Thicknessmil
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
1   Alternate, Trease specify

Netting: Subsection E of 19.15.17.11 NMAC (Applies to permanent pits and permanent open top tanks)	
Screen Netting M Other Steel grating over tank	
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:  Institute and or demonstrations of equivalence are required. Places refer to 10.15.17 NMAC for quidance.	
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 acce	ptable 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.	☐ Yes ☑ No
- MM Office of the State Engineer - iWATERS database search; USGS; Data obtained from nearby wells	□ Yes ⊠ No
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
Within incorporated municipal boundaries or within a defined municipal fresh water well field covered under a municipal ordinance	☐ Yes ☐ No
adopted pursuant to NMSA 1978, Section 3-27-3, as amended. ( <b>Does not apply to below grade tanks</b> )  - Written confirmation or verification from the municipality; Written approval obtained from the municipality	
- Written contribution of vertication from the municipality, written approval obtained from the municipality	
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)	☐ Yes ☐ No
- FEMA map	
Below Grade Tanks	
Within 100 feet of a continuously flowing watercourse, significant watercourse, lake bed, sinkhole, wetland or playa lake (measured	☐ Yes ⊠ No
from the ordinary high-water mark).  - Topographic map; Visual inspection (certification) of the proposed site	
Within 200 horizontal feet of a spring or a fresh water well used for public or livestock consumption;.	☐ Yes ☑ No
- NM Office of the State Engineer - iWATERS database search; Visual inspection (certification) of the proposed site	
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	☐ Yes ☐ No
application.  - Visual inspection (certification) of the proposed site; Aerial photo; Satellite image	
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	
Temporary Pits, Emergency Pits, and Below-grade Tanks Permit Application Attachment Checklist: Subsection B of 19.15.17.9 N  Instructions: Each of the following items must be attached to the application. Please indicate, by a check mark in the box, that the doc attached.    Hydrogeologic Report (Below-grade Tanks) - based upon the requirements of Paragraph (4) of Subsection B of 19.15.17.9 NMAC   Hydrogeologic Data (Temporary and Emergency Pits) - based upon the requirements of Paragraph (2) of Subsection B of 19.15.17.9 Siting Criteria Compliance Demonstrations - based upon the appropriate requirements of 19.15.17.10 NMAC   Design Plan - based upon the appropriate requirements of 19.15.17.11 NMAC   Operating and Maintenance Plan - based upon the appropriate requirements of 19.15.17.12 NMAC   Closure Plan (Please complete Boxes 14 through 18, if applicable) - based upon the appropriate requirements of Subsection C of 19.1 and 19.15.17.13 NMAC   Previously Approved Design (attach copy of design)   API Number: or Permit Number: or Permit Number: or Permit Number: or Permit Number:	NMAC  15.17.9 NMAC	
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:		

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 attached.	documents are		
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 H₂S, Prevention Plan ☐ Emergency Response Plan ☐ Oil Field Waste Stream Characterization			
<ul> <li>☐ Monitoring and Inspection Plan</li> <li>☐ Erosion Control Plan</li> <li>☐ Closure Plan - based upon the appropriate requirements of Subsection C of 19.15.17.9 NMAC and 19.15.17.13 NMAC</li> </ul>			
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 F Alternative  Proposed Closure Method: Waste Excavation and Removal	luid Management Pit		
<ul> <li>☐ Waste Removal (Closed-loop systems only)</li> <li>☐ On-site Closure Method (Only for temporary pits and closed-loop systems)</li> <li>☐ In-place Burial ☐ On-site Trench Burial</li> </ul>			
Alternative Closure Method			
Waste Excavation and Removal Closure Plan Checklist: (19.15.17.13 NMAC) Instructions: Each of the following items must be 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			
is. 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 sour provided below. Requests regarding changes to certain siting criteria require justifications and/or demonstrations of equivalency. F 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	☐ Yes ☐ No ☐ 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	Yes No		
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	Yes No		
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	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 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	☐ Yes ☐ No		
Written confirmation or verification from the municipality; Written approval obtained from the municipality	☐ 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 \sum No			
Within incorporated municipal boundaries or within a defined municipal fresh water well field covered under a municipal ordinance			

adopted pursuant to NMSA 1978, Section 3-27-3, as amended.  - 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				
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			
On-Site Closure Plan Checklist: (19.15.17.13 NMAC) Instructions: Each of the following items must be attached to the closure plants 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.  Construction/Design Plan of Temporary Pit (for in-place burial of a drying pad) - based upon the appropriate requirements of 19.  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 cann 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	11 NMAC 15.17.11 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 believed.	ef.			
Name (Print): JEFFREY PEACE Title: FIELD ENVIRONMENTAL ADV	VISOR			
Signature: Jeffrey Leuce Date: Novamber 22, 2013	<u> </u>			
e-mail address: Peace.Jeffrey @ bp.com  Telephone: 505-326-9479				
18.  OCD Approval: Permit Application (including plosure plan) Closure Plan (only) OCD Conditions (see attachment)				
OCD Representative Signature: Approval Date: 11/26	203			
Title: Compliance Office 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 is required to be submitted to the division within 60 days of the completion of the closure activities. Please do not section of the form until an approved closure plan has been obtained and the closure activities have been completed.  Closure Completion Date:				
Closure Method:	oop systems only)			
Waste Excavation and Removal ☐ On-Site Closure Method ☐ Alternative Closure Method ☐ Waste Removal (Closed-lo ☐ If different from approved plan, please explain.				

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:		

## SITING AND HYDRO-GEOLOGICAL REPORT FOR PRITCHARD SWD 001

#### SITING CRITERIA 19.15.17.10 NMAC

Depth to groundwater at the site is estimated to be between 50 and 100 feet. Local topography and proximity to adjacent water features were also considered. Based on a search of the New Mexico State Engineer's Office (attached) and multiple database sources provided as an aerial map (Figure 1), there are no freshwater wells or springs used for public or livestock consumption within 200 horizontal feet of the below-grade tank (BGT). A topographic map (Figure 2) demonstrates that the BGT is not within 100 feet of any continuously flowing watercourse, significant watercourse, lake bed, sinkhole, wetland or playa lake as measured from the ordinary high water mark.

#### LOCAL GEOLOGY AND HYDROLOGY

This particular site is located in the bottom of Little Pump Canyon, and is about 7000 feet west of Pump Canyon and 100 feet higher. Regional topography of Pump Canyon is composed of mesas dissected by deep, narrow canyons and arroyos. The more resistant cliff-forming sandstones of the San Jose Formation cap the interbedded siltstones, shales and sandstones of the Nacimiento Formation. Accumulations of talus and eroded sands at the base of canyon walls form steep to gentle slopes that transition into flat-bottomed arroyos within the canyons. Deposits of Quaternary alluvial and eolian sands occur prominently near the surface of Pump Canyon, especially near streams and washes.

Groundwater is estimated to be between 50 and 100 feet below ground surface (bgs) at this site. This is based on the elevation difference between the site (6061 feet) and Pump Canyon of 143 to 153 feet, and depth to groundwater in domestic well SJ 03841 POD 7 of 55 feet bgs, located 830 feet northwest of the site. Little Pump Canyon is 1015 feet from the site. The elevation difference between the site and Little Pump Canyon is 62 feet.

# **REGIONAL GEOLOGY AND HYDROLOGY**

The San Juan Basin is situated in the Navajo section of the Colorado Plateau and is characterized by broad open valleys, mesas, buttes and hogbacks. Away from major valleys and canyons topographic relief is generally low. Native vegetation is sparse and shrubby. Drainage is mainly by the San Juan River, the only permanent stream in the Navajo Section of the Colorado Plateau. The San Juan River is a tributary of the Colorado River. Major tributaries include the Animas, Chaco and La Plata Rivers. Flow of the San Juan River across the basin is regulated by the Navajo Dam, located about 30 miles northeast of Farmington, New Mexico. The climate is arid to semiarid with an average annual precipitation of 8 to 10 inches. Soils within the basin consist of weathered parent rock derived from predominantly physical means mostly from eolian depositional system with fluvial having a lesser impact.

Cretaceous and Tertiary sandstones, as well as Quaternary Alluvial deposits, serve as the primary aquifers in the San Juan Basin (Stone et al., 1983). The San Jose Formation of Eocene age occurs in both New Mexico and Colorado, and its outcrop forms the land surface over much of the eastern half of the central basin. It overlies the Nacimiento Formation in the area generally south of the Colorado-New Mexico border and overlies the Animas Formation in the general area north of the State Line. The San Jose Formation was deposited in various fluvial-type environments. In general, the unit consists of an interbedded sequence of sandstone, siltstone, and shale. Thickness of the San Jose Formation increases from west to east. Groundwater is associated with alluvial and fluvial sandstone aquifers.

The occurrence of groundwater is mainly controlled by distribution of sandstone in the formation. The reported or measured discharge from numerous water wells completed in the formation range from 0.15 to 61 gallons per minute (gpm) and with a median of 5 gpm. Most of the wells provide water for livestock and domestic purposes. The formation is suitable for recharge from precipitation due to overlying soils beign sandy, highly permeable and absorbent. Low annual precipitation, relatively high transpiration and evaporation rates and deep dissection of the formation by the San Juan River and its main tributaries all tend to reduce the effective recharge to the formation. Aquifers within the coarser and continuous sandstone bodies of the Nacimiento Formation of Paleocene age are between 0 and 1000 feet deep in the majority of the basin as well (Stone et al., 1983).

### **REFERENCES**

Circular 154—Guidebook to coal geology of northwest New Mexico By E. C. Beaumont, J. W. Shomaker, W. J. Stone, and others, 1976

Stone, et al., 1983, Hydrogeology and Water Resources of the San Juan Basin, New Mexico, Socorro, New Mexico Bureau of Mines and Mineral Resources Hydrologic Report 6, 70 p



# New Mexico Office of the State Engineer Wells with Well Log Information

No wells found.

UTMNAD83 Radius Search (in meters):

Easting (X): 252944.42

Northing (Y): 4082984

**Radius:** 60.96

The data is furnished by the NMOSE/ISC and is accepted by the recipient with the expressed understanding that the OSE/ISC make no warranties, expressed or implied, concerning the accuracy, completeness, reliability, usability, or suitability for any particular purpose of the data.



# New Mexico Office of the State Engineer

# **Active & Inactive Points of Diversion**

(with Ownership Information)

No PODs found.

POD Search:

POD Number: SJ 03841

UTMNAD83 Radius Search (in meters):

Easting (X): 252944.42

Northing (Y): 4082984

Radius: 60.96

The data is furnished by the NMOSE/ISC and is accepted by the recipient with the expressed understanding that the OSE/ISC make no warranties, expressed or implied, concerning the accuracy, completeness, reliability, or suitability for any particular purpose of the data.



# New Mexico Office of the State Engineer **Point of Diversion Summary**

(quarters are 1=NW 2=NE 3=SW 4=SE)

(quarters are smallest to largest)

(NAD83 UTM in meters)

**POD Number** 

Q64 Q16 Q4 Sec Tws Rng

X

SJ 03841 POD7

252890

4083245

Driller License: NATIONAL EWP

**Driller Name:** 

CAIN, MATTHEW

**Drill Start Date:** 08/15/2008

**Drill Finish Date:** 

Pipe Discharge Size:

08/15/2008

Plug Date:

Source:

Shallow

Log File Date:

09/04/2008

**PCW Rcv Date:** 

**Estimated Yield:** 

Pump Type: Casing Size:

2.00

Depth Well:

60 feet

**Depth Water:** 

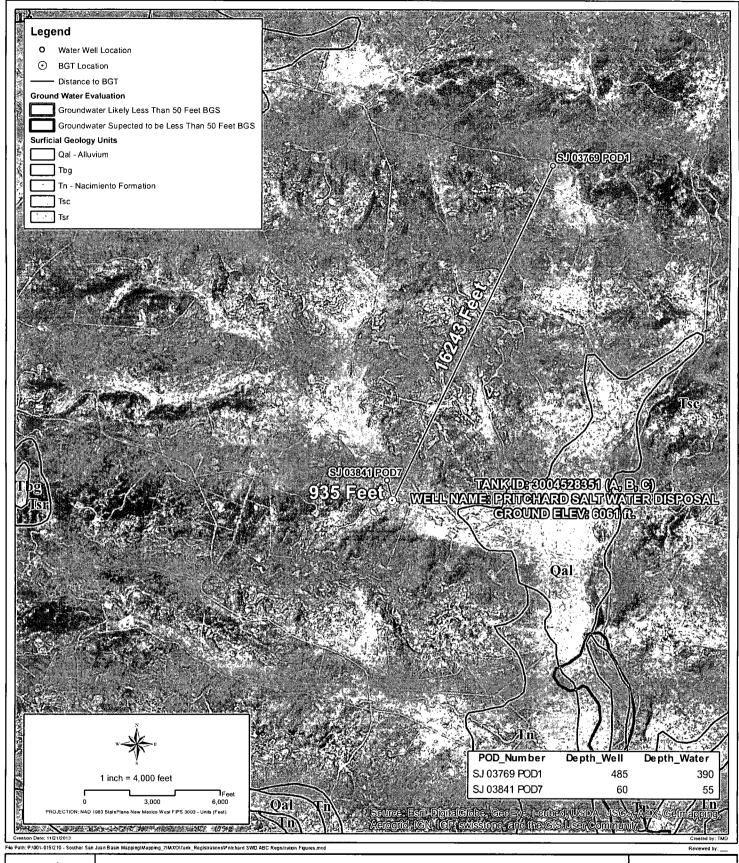
55 feet

Water Bearing Stratifications:

**Top Bottom Description** 

45

Sandstone/Gravel/Conglomerate



bp

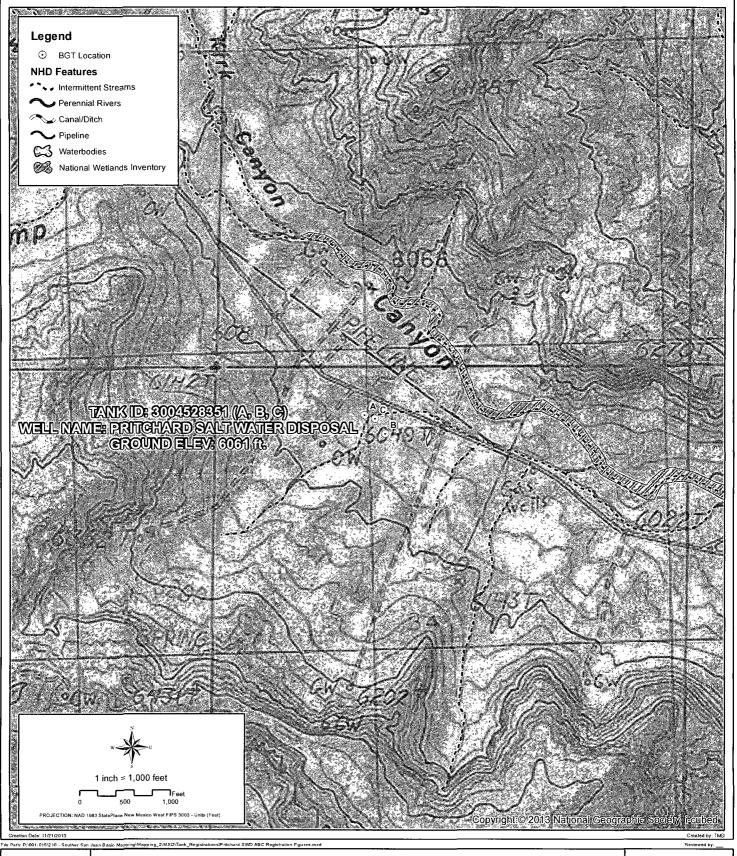
# **GROUNDWATER AND WATER WELL PROXIMITY**

WELL NAME: PRITCHARD SALT WATER DISPOSAL

API NUMBER: 3004528351 TANK ID: 3004528351 (A, B, C) **SECTION 34, TOWNSHIP 31.0N, RANGE 09W, P.M. NM23** 

**FIGURE** 

1



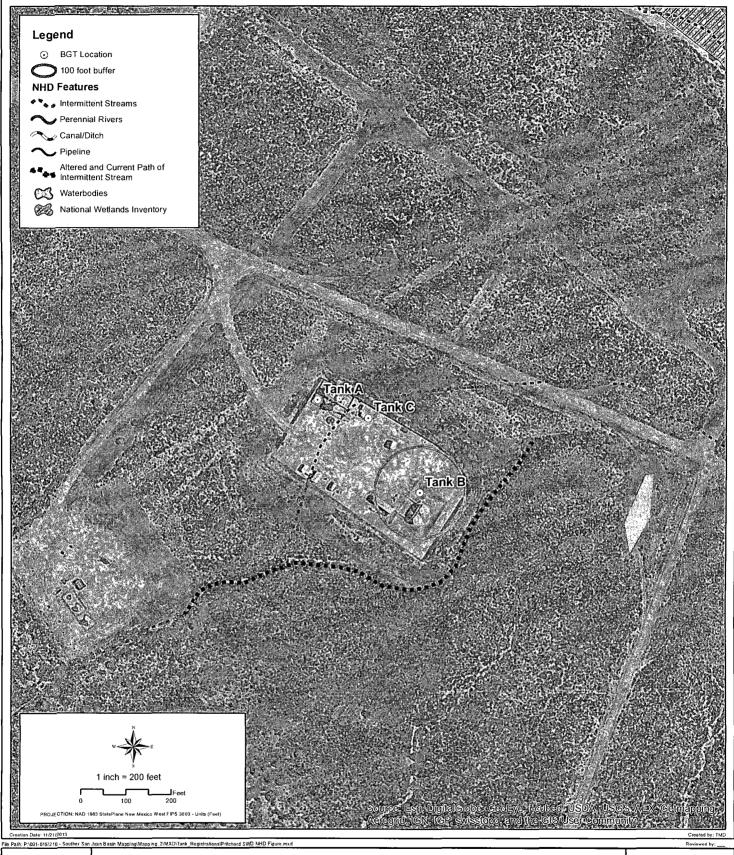


# **PROXIMITY TO WATERCOURSES AND WETLANDS**

WELL NAME: PRITCHARD SALT WATER DISPOSAL

API NUMBER: 3004528351 TANK ID: 3004528351 (A, B, C) **SECTION 34, TOWNSHIP 31.0N, RANGE 09W, P.M. NM23** 

FIGURE





# **PROXIMITY TO WATERCOURSES AND WETLANDS**

WELL NAME: PRITCHARD SALT WATER DISPOSAL

API NUMBER: 3004528351 TANK ID: 3004528351 (A, B, C) **SECTION 34, TOWNSHIP 31.0N, RANGE 09W, P.M. NM23** 

FIGURE

# BP AMERICA PRODUCTION COMPANY

SAN JUAN BASIN, NORTHWEST NEW MEXICO

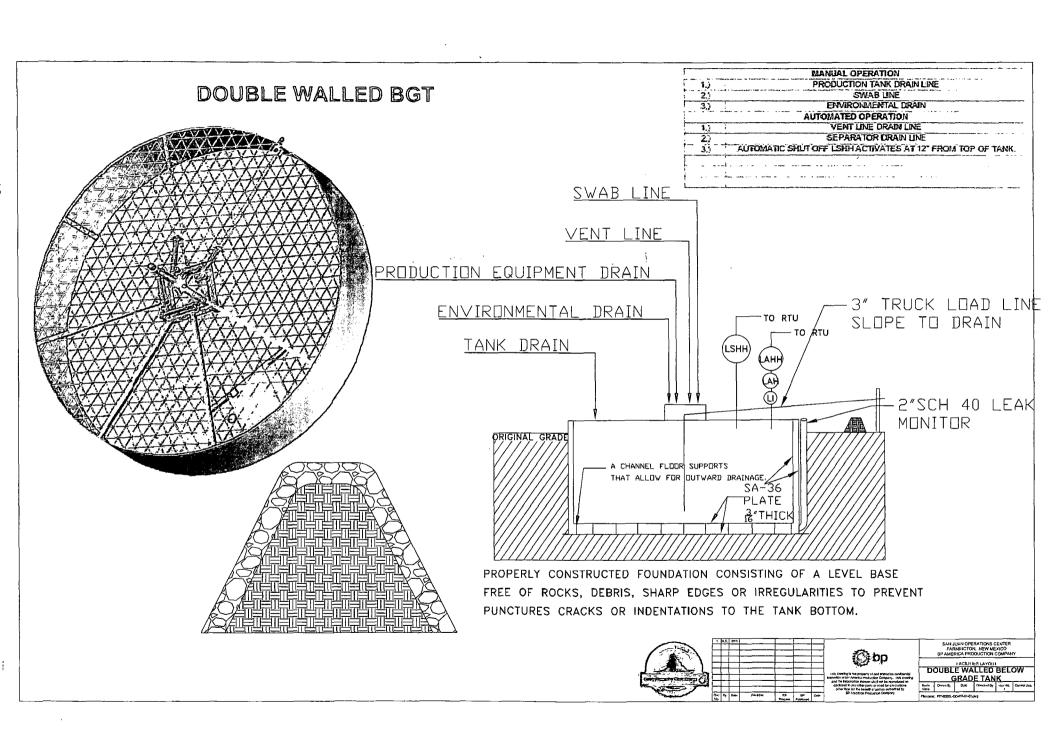
## BELOW-GRADE TANK DESIGN AND CONSTRUCTION PLAN

Pursuant to Rule 19.15.17.11 NMAC, BP America Production Company (BP) shall construct a below-grade tank (BGT) or modify an existing permitted BGT according to the following plan. Any deviations from this plan will be addressed on the New Mexico Oil Conservation Division's (NMCOD) form C-144 at the time of submittal.

# **Design and Construction Plan**

- 1. BP will design and construct a BGT which will be constructed to contain liquids and prevent contamination of fresh water and protect public health and the environment.
- 2. BP is the well operator and shall install and maintain a well sign that is in compliance with 19.15.16.8 NMAC. The sign will be posted at the well site to address, at a minimum;
  - a. Well Number
  - b. Property name
  - c. Operators name
  - d. Location by footage, quarter-quarter-section, township and range (or unit letter)
  - e. API number
  - f. Emergency contact information
- 3. BP will fence or enclose its BGTs in a manner that prevents unauthorized access and shall maintain its fence in good repair.
- 4. BP will fence or enclose a BGT located within 1,000 feet of a permanent residence, school, hospital, institution or church with, at a minimum a chain link security fence at least six (6) feet in height with at least two (2) strands of barbed wire at the top. BP will ensure that all gates associated with the fence are closed and locked when responsible personnel are not on-site.
- 5. BP is requesting NMOCD's approval for an alternative fence design that provides, at a minimum, equivalent protection to the design specified in Paragraph 3 of Subsection D of 19.15.17.11 NMAC for BGTs beyond the stated distance in paragraph 4 of this document. BP's proposed design for its BGTs will utilize 48" steel mesh field-fence (hogwire) with a metal or steel top rail. Perimeter T-post will be installed roughly every 10 feet.
- 6. BP will construct an expanded metal covering that completely covers the top of the BGT. The covering will be constructed such that it will prevent hazardous conditions to wildlife, including migratory birds
- 7. BP shall construct the BGT of materials that are resistant to produced water, any contained liquids, and damage from sunlight. BP's BGTs will be constructed of carbon steel that meets the requirements of ASTM A36.
- 8. BP's BGTs shall have a properly constructed earthen foundation consisting of a level base free of rocks, debris, sharp edges, or irregularities as to prevent punctures, cracks or indentations to the tank bottom as demonstrated on the design drawing.
- 9. BP will construct and operate the BGT to prevent surface water run-on by using both earthen berms and leaving a portion of the BGT above the original grade as demonstrated on the design drawing.
- 10. BP will construct and operate the BGT to prevent overflow and overfilling of the BGT. Overflow will be prevented by use of an electronic high fluid level detector that will automatically engage an electronic shut-off valve when a 1 foot freeboard is reached. The Hi-level automatic alarm notifies well optimizers when liquid level has reached within a pre-set distance to the top of the BGT. The Hi Hi alarm will trigger the Hi-level automatic shutdown valve which will close in the well until the liquid level can be lowered.

- 11. BP will construct and install a double-walled tank design per Subparagraph (b) of Paragraph (4) of Subsection I of19.15.17.11 NMAC with a two (2) inch diameter leak detection port. The floor supports located in the annular space of the tank bottom will be channeled to allow outward movement of liquid between the walls. Leak detection will be monitored per BP's Operating and Maintenance Plan. The walls of the BGT will be constructed of carbon steel that meets the ASTM A36 standard. BP's BGT design will insure containment of tank contents and protect underlying groundwater. The production equipment line drain is an automated drain that allows water level in production equipment (generally the separator) to be maintained within the equipment's operating parameters. The environmental drain is a manually operated drain that is used to drain liquids off of equipment. The tank drain is a manually operated drain, typically in the closed position that is used to rid the condensate tank of any water accumulation. The vent drain is a manually operated drain off the discharge of production equipment (usually the separator) and is used to blowdown the wellsite. The swab drain line is a manually operated drain originating between the wellhead and separator and is used during well workovers when large amounts of liquid are removed from the well and sent straight to the BGT.
- 12. BP owned and operated single walled BGTs constructed and installed prior to June 16, 2008 that has the side walls open for visual inspection and that does not meet all the requirements in Paragraphs (1) through (4) of Subsection I of 19.15.17.11 NMAC is not required to equip or retrofit the BGT to comply with Paragraphs (1) through (4) of Subsection I of 19.15.17.11 NMAC so long as it demonstrates integrity. If the existing BGT does not demonstrate integrity, the operator shall promptly drain the BGT and remove it from service and comply with the closure requirements of 19.15.17.13 NMAC.
- 13. BP owned and operated single walled BGTs constructed and installed prior to June 16, 2008 and where any portion of the tank sidewall is below the ground surface and not visible shall equip or retrofit the BGT to comply with Paragraphs (1) through (4) of Subsection I of 19.15.17.11 NMAC, or close it, by June 16, 2013. If the existing BGT does not demonstrate integrity, the operator shall promptly drain the BGT, remove it from service and comply with the closure requirements of 19.15.17.13 NMAC.
- 14. BP owned and operated double walled BGTs constructed and installed prior to June 16, 2008 and which does not meet all the requirements in Paragraphs (1) through (4) of Subsection I of 19.15.17.11 NMAC is not required to equip or retrofit the BGT to comply with Paragraphs (1) through (4) of Subsection I of 19.15.17.11 NMAC so long as it demonstrates integrity. If the existing BGT does not demonstrate integrity, the operator shall promptly drain the BGT, remove it from service and comply with the closure requirements of 19.15.17.13 NMAC.
- 15. The general specifications for the design and construction of the BGT have been provided in the attached BP design and construction schematic.



# BP AMERICA PRODUCTION COMPANY

SAN JUAN BASIN, NORTHWEST NEW MEXICO

## BELOW-GRADE TANK OPERATING AND MAINTENANCE PLAN

Pursuant to Rule 19.15.17.12 NMAC, BP America Production Company (BP) shall maintain and operate a below-grade tank (BGT) by following the plan shown below. Deviations from this plan will be addressed with a submittal to the New Mexico Oil Conservation Division (NMOCD) using form C-144 at the time of the BGT registration or modification to an existing BGT registration.

## **Operating and Maintenance Plan**

- 1. BP's BGTs will be operated to contain liquids and solids. BP will maintain the integrity of the BGT and secondary containment system as to prevent impacts to fresh water and to protect public health and the environment. BP will use automated high fluid level alarms and automated shut-off valves to insure that liquids are contained within the vessel and that the vessel does not overflow. These alarms and shut-off valves will be consistent with those demonstrated in the design plan.
- 2. BP will not knowingly discharge to or store any hazardous waste in a BGT.
- 3. If a BGT develops a leak below the liquid surface, BP shall remove all liquid above the damage or leak within 48 hours of discovery, notify the appropriate division office pursuant to 19.15.29 NMAC and repair the damage or replace the BGT as applicable.
- 4. BP will adhere to Subsection D of 19.15.17.12 NMAC. The requirements are as follows;
  - a. BP shall not allow a below-grade tank to overflow or allow surface water run-on to enter the BGT.
  - b. BP shall remove any measurable layer of oil from the fluid surface of a BGT.
  - c. BP shall inspect the BGT for leakage and damage at least monthly and will document the integrity of each tank at least annually and maintain a written record of the integrity for five years.
  - d. BP shall maintain adequate freeboard to prevent overtopping of the below-grade tank.
  - e. If BP discovers that the BGT tank does not demonstrate integrity or that the BGT develops any of the conditions identified in Paragraph (5) of Subsection A of 19.15.17.12 NMAC, BP shall repair the damage or close the existing BGT pursuant to the closure requirements of 19.15.17.13 NMAC.
  - f. If any of BP's BGTs are equipped or retrofitted to comply with Paragraphs (1) through (4) of Subsection I of 19.15.17.11 NMAC, then BP shall visually inspect the area beneath the BGT during the retrofit and document any areas that are wet, discolored or showing other evidence of a release on form C-141. BP will attempt to measure and report to the division the concentration of contaminants in the wet or discolored soil with respect to the standards set forth in Table I of 19.15.17.13 NMAC. If there is no wet or discolored soil or if the concentration of contaminants in the wet or discolored soil is less than the standard set forth in Table I of 19.15.17.13 NMAC, then BP shall proceed with the closure requirements of 19.15.17.13 NMAC prior to initiating the retrofit or replacement.

Manage Date:	d Form NOP-5878 F Run:	Revision 1	San Juan Lease Inspection Custodian: Fie Location: Name of Inspector:	eld Environmental Coordinator
_				
Yes	Action	N/A	Required Signs	
			Does location have Well Sign and emergency phone number?	
			Do compressor engines have Hearing Protection signs?	
e din e dege Edward da	The state of the s	20 July 10 10 10 10 10 10 10 10 10 10 10 10 10	Hydrogen Sulfide Signs (where applicable) Chemical containers and tanks have proper Hazcom label or BP Multi-Product	Hazcom numbers?
Yes	Action	N/A	Location- General	
1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1		10	Housekeeping satisfactory?  Tripping or falling hazards are absent? If NO, identify and report to FSC.	<b>建筑中央、山楂水管等、水</b> 蚕)
			· · · · · · · · · · · · · · · · · · ·	4a dui
			Rig anchors/Deadmen adequately marked and visible if they present a hazard	to drivers?
Party of Jacky	Park Same and Same Same Same Same Same Same Same Same	<u>V. Sv</u>	Driving hazards such as risers are marked or flagged? Painting meets safety standards? (Cattleguards/gates properly maintained?)	
			Tarps in good repair?	
Electric de la constant de la consta	The second secon		Seeps, drips, or leaks are absent? Is weed control adequate?	
-	a.	1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	Stains on ground are absent? If NO, remediate immediately, identify and re	port to FEC
			Are there any open ended valves that are not plugged?	portio i co.
Yes	Action	N/A	Vessel/Tank	
163 184 184 184 184	ACTION AND	100 also	Adequate lencing around below grade tank?	
	F 1 2 24 1 2 2 3	W. 2.	Are the dike/berm walkover in place, used and stable?  Are dikes/berms in good condition?	
			Is there adequate and safe access to pit for gauging?	
			Does the pit have a high level alarm?	
			Are stairways and catwalks properly maintained and in good condition?	
			Toprail, midrail and toeboard in place?	
			Are thief hatches in good condition, seal properly, and in the closed position?	
			Is tank vent line equipped with a PV valve? (Enardo)	
			Does the tank have a high level alarm?	
			Are open ended load lines and pipes capped?	
mand.	Section 1985	160 mm	ls soil around load lines clean of oil stains?	
			Is tank area free of any evidence of seeps or leaks (including manway cover)?	
	-		Are there proper seals on sales and drain valves?	
			Are all suspected dump lines well supported?	
			Are above ground dump lines marked with t-posts and plastic covers?	•
			Have all fiberglass drip pits been removed?	
Yes	Action	N/A	Treaters/Separators/Compressors/Pump Jacks	
		:	If there is a block valve upstream of the relief valve, is the block valve secured in	n the open position?
			Are relief valve discharge and blow downs piped to a safe area and secured ag	
			Has flame arrestor been inspected within the last 5 years?	
			Is flame port closed?	
			Do all lines pass through a super muffler or swirl pot to the pit/tank? If not, are	all lines secured?
			Is starting gas vented to a safe area, at least 10' vertically?	
	<del></del>		No excessive vibration, knocking or unusual noises anywhere on unit or piping?	?
			Are site glasses in operating condition?	
			Are environmental rails piped to a pit in a dedicated line?	
N. 18 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	11-4-1-80-1000 1-1000	16 (Pr. 17 - 17)	Do all blow downs, relief valve discharges, and risers have rain caps?	e spacifica y filmada e forcar e e est
<u> 23 </u>	The second second	197 x 171 22 1 2 2	Stuffing box leaks are absent?  Are the weight guards and belt guard in place?	orando formado e planto e electrono e electrono.
			Are skids in good condition?	
			Are concrete bases / foundations in good condition?	
			Are concrete bases free from erosion or settlement problems?	
34,31	Acres & Acres &	10 10 10 10 10 10 10 10 10 10 10 10 10 1	Is secondary containment in place for day tanks?	

Comments:

Signature of Inspector:

My signature assures that this location is SAFE, is in compliance with the LAW, and exhibits high standards of Pride, Ownership and Excellence.

# BP AMERICA PRODUCTION COMPANY

SAN JUAN BASIN, NORTHWEST NEW MEXICO

### BELOW-GRADE TANK CLOSURE PLAN

This plan will address the method, procedures, and protocols for closure of below-grade tanl's (BGTs) on BP America Production Company (BP) well sites pursuant to Subsection A of 19.15.17.13 NMAC. As stipulated in Paragraph (1) of Subsection C of 19.15.17.13 NMAC, BP will not commence closure without first obtaining approval of the closure plan submitted pursuant to Paragraph (3) of Subsection B of 19.15.17.9 NMAC. If deviations from this plan are necessary, BP will request preapproval from the Division District III office of any specific changes and will be included on form C-144. BP shall close its BGTs within 60 days of cessation of the operation as required by Paragraph (4) of Subsection G of 19.15.17.13 NMAC.

# General Closure Plan

- 1. BP shall notify the surface owner by certified mail; return receipt requested that it plans to close a BGT. Notice given will be at least 72 hours in advanced, but not more than one weel prior to any closure operation. The notice shall include the well name, API number, and legal description of the location. Evidence of mailing of the notice to the address of the surface owner shown in the county tax records demonstrates compliance with this requirement.
- 2. BP shall notify the Division District III office verbally and in writing at least 72 hours, but not more than one weel, prior to any closure operation. The notice shall include the Operator's name, and the location of the BGT to be closed by unit letter, section, township and range. If the BGT closure is associated with a particular well, then the notice shall also include the well's name, number and API number.
- 3. BP shall remove liquids and sludge from the BGT prior to implementing a closure method and dispose of the liquids and sludge in a NMOCD approved facility. The facilities to be used are:
  - a. BP Crouch Mesa Landfarm, Permit NM-02-003 (Solids)
  - b. JFJ Landfarm, Permit NM-01-010(B) (Solids and Sludge)
  - c. Basin Disposal, Permit NM-01-0005 (Liquids)
  - d. Envirotech Inc Soil Remediation Facility, Permit NM-01-0011 (Solids and Sludge)
  - e. BP Operated E.E. Elliott SWD #1, API 30-045-27799 (Liquids)
  - f. BP Operated 13 GCU SWD #1, API 30-045-28601 (Liquids)
  - g. BP Operated GCU 259 SWD, API 30-045-20006 (Liquids)
  - h. BP Operated GCU 306 SWD, API 30-045-24286 (Liquids)
  - i. BP Operated GCU 307 SWD, API 30-045-24248 (Liquids)
  - j. BP Operated GCU 328 SWD, API 30-045-24735 (Liquids)
  - J. BP Operated Pritchard SWD #1, API 30-045-28351 (Liquids)
- 4. BP shall remove the BGT and dispose of it in a NMOCD approved facility or recycle, reuse, or reclaim it in a manner that the Division District III office approves. Documentation as to the final disposition of the removed BGT will be provided in the final closure report.
- 5. BP shall remove any on-site equipment associated with a BGT unless the equipment is required for some other purpose.
- 6. BP shall test the soils beneath the BGT to determine whether a release has occurred. BP shall collect at a minimum: a five (5) point composite sample to include any obvious stained or wet soils, or other evidence of a release under the BGT. The composite sample shall be collected and analyzed as required for the constituents listed in Table I within Subparagraph (a) of Paragraph (3) of Subsection C of 19.15.17.13 NMAC (see Table 1 on following page).

Cl		ble 1 Beneath Below-Grade Tanks	
Depth below bottom of pit to groundwater less than 10,000 mg/l TDS	Constituent	Method*	Limit**
	Chloride	EPA 300.0	600 mg/kg
≤50 feet `	ТРН	EPA SW-846 Method 418.1	100 mg/kg
	BTEX	EPA SW-846 Method 8021B or 8260B	50 mg/kg
	Benzene	EPA SW-846 Method 8021B or 8015M	10 mg/kg
51 feet-100 feet	Chloride	EPA 300.0	10,000 mg/kg
	ТРН	EPA SW-846 Method 418.1	2,500 mg/kg
	GRO+DRO	EPA SW-846 Method 8015M	1,000 mg/kg
	BTEX	EPA SW-846 Method 8021B or 8260B	50 mg/kg
	Benzene	EPA SW-846 Method 8021B or 8015M	10 mg/kg
	Cinoride	EPA 300.0	20,000 mg/kg
> 100 feet	ТРН	EPA SW-846 Method 418.1	2,500 mg/kg
	GRO+DRO	EPA SW-846 Method 8015M	1,000 mg/kg
	BTEX	EPA SW-846 Method 8021B or 8260B	50 mg/kg
	Benzene	EPA SW-846 Method 8021B or 8015M	10 mg/kg

Notes:

mg/Kg = milligram per kilogram, BTEX = benzene, toluene, ethylbenzene, and total xylenes, TPH

- = total petroleum hydrocarbons, TDS = total dissolved solids.
- \* Or other test methods approved by the division
- \*\* Numerical limits or natural background level, whichever is greater
- 7. If any contaminant concentration exceeds those standards set in Table I, BP will acknowledge NMOCD's position to require additional delineation upon review of the results. BP will not proceed with any further closure activities until approval is first granted by NMOCD.
- 8. If the sampling demonstrates that all contaminant constituents do not exceed the concentrations specified in Table I, then BP shall backfill the excavation, with non-waste containing, uncontaminated, earthen material.
- 9. If it is determined that a release has occurred, then BP will comply with 19.15.30 NMAC and 19.15.29 NMAC, as appropriate.
- 10. BP shall reclaim the BGT location and all areas associated with the BGT including associated access roads to a safe and stable condition that blends with the surrounding undisturbed area. BP shall substantially restore the impacted surface area to the condition that existed prior to oil and gas operations by placement of the soil cover as provided in Paragraph (2) of Subsection H of 19.15.17.13 NMAC, re-contour the BGT location and associated areas to a contour that approximates the original contour and blends with the surrounding topography and re-vegetate according to Paragraph (5) of Subsection H of 19.15.17.13 NMAC.
- 11. BP may propose an alternative to the re-vegetation or recontouring requirement if it can demonstrate to the NMOCD's District III office that the proposed alternative provides equal or greater prevention of erosion, and protection of fresh water, public health and the environment. BP will seek surface owner approval of the proposed alternative and provide written documentation of the surface owner's approval to NMOCD for its approval.
- 12. Areas reasonably needed for production operations or for subsequent drilling operations shall be compacted, covered, paved, or otherwise stabilized and maintained in such a way as to minimize dust and erosion to the extent practicable.

- 13. The soil cover for closures after site contouring, where the BGT has been removed and if necessary remediated beneath the BGT to chloride concentrations less than 600 mg/kg as analyzed by EPA Method 300.0, shall consist of the background thickness of topsoil or one foot or suitable material, whichever is greater.
- 14. The soil cover will be constructed to the site's existing grade and all practicable efforts will be made to prevent ponding of water and erosion of the cover material.
- 15. All areas disturbed by the closure of the BGT, except areas reasonably needed for production operations or for subsequent drilling operations, shall be reclaimed as early and as nearly as practicable to their original condition or their final land use and shall be maintained to control dust and minimize erosion to the extent practicable.
- 16. Topsoils and subsoils shall be replaced to their original relative positions and contoured so as to achieve erosion control, long-term stability and preservation of surface water flow patterns. The disturbed area then shall be reseeded in the first favorable growing season following closure of the BGT.
- 17. Reclamation of all disturbed areas no longer in use shall be considered complete when all ground surface disturbing activities at the site have been completed, and 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.
- 18. The re-vegetation and reclamation obligations imposed by other applicable federal or tribal agencies on lands managed by those agencies shall supersede these provisions and govern the obligations of BP subject to those provisions, provided that the other requirements provide equal or better protection of fresh water, human health and the environment.
- 19. Pursuant to Subparagraph (e) of Paragraph (5) of Subsection H of 19.15.17.13 NMAC, BP shall notify the NMOCD when reclamation and re-vegetation has been successfully achieved.
- 20. Within 60 days of closure completion, BP shall submit a closure report on NMOCD's form C-144, and will include the following;
  - a. necessary attachments to document all closure activities
  - b. sampling results
  - c. information required by 19.15.17 NMAC
  - d. details on back-filling, capping and covering, where applicable.
- 21. BP shall certify that all information in the report and attachments is accurate, truthful, and compliant with all applicable closure requirements and conditions specified in the approved closure plan.