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.

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 (PIT EXTENSION PERMIT) 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: Burlington Resources OGRID#: 14538
Address: PO BOX 4289, Farmington, NM 87499
Facility or well name: San Juan 28-6 Unit 120M San Juan 28-6 Unit # 120P 30-039-31243
API Number: 30-039- 31234 OCD Permit Number:
U/L or Qtr/Qtr P (SESE) Section 9 Township 28N Range 6W County: Rio Arriba
Center of Proposed Design: Latitude 36.669262 ∘N Longitude 107.464340 ∘W NAD: □1927 ☑ 1983
Surface Owner: Federal State Trivate Tribal Trust or Indian Allotment
☑ 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: Thickness20mil ☒ LLDPE ☐ HDPE ☐ PVC ☐ Other ☒ String-Reinforced Liner Seams: ☒ Welded ☒ Factory ☐ Other Volume:7700 _ bbl Dimensions: L120' _ x W _55' _ x D _12'
3.
Below-grade tank: Subsection I of 19.15.17.11 NMAC Volume:
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

Page 1 of 6

Oil Conservation Division

2nd well name and API added by OCD 7-14-14, C-144 applies to both wells.

Form C-144

☐ Alternate. Please specify 4' Field Fence w/ 1 strand barbed wire on top

Netting: Subsection E of 19.15.17.11 NMAC (Applies to permanent pits and permanent open top tanks)	
☐ Screen ☐ Netting ☐ Other	
Monthly inspections (If netting or screening is not physically feasible)	
7.	
Signs: Subsection C of 19.15.17.11 NMAC	
12"x 24", 2" lettering, providing Operator's name, site location, and emergency telephone numbers	
☑ Signed in compliance with 19.15.16.8 NMAC	
8. Variances and Exceptions: Justifications and/or demonstrations of equivalency are required. Please refer to 19.15.17 NMAC for guidance. Please check a box if one or more of the following is requested, if not leave blank: □ Variance(s): Requests must be submitted to the appropriate division district for consideration of approval. □ Exception(s): Requests must be submitted to the Santa Fe Environmental Bureau office for consideration of approval.	
9. Siting Criteria (regarding permitting): 19.15.17.10 NMAC Instructions: The applicant must demonstrate compliance for each siting criteria below in the application. Recommendations of accematerial are provided below. Siting criteria does not apply to drying pads or above-grade tanks.	ptable source
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
<u>Ground water is less than 50 feet below the bottom of a Temporary pit, permanent pit, or Multi-Well Fluid Management pit.</u> 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 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.	☐ Yes ☐ No
- 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
·	ĺ

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 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 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 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 Within 300 feet of a vetland. US Fish and Wildlife Wetland Identification map: Topographic map; Visual inspection (certification) of the proposed site 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 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 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 Within 500 feet of a wetland. US Fish and Wildlife Wetland Identification map; Topographic map; Visual inspection (certification) of the proposed site Within 500 feet of a wetland. US Fish and Wildlife Wetland				
initial application.	☐ Yes ☐ No			
Within 500 feet of a wetland.	☐ 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. and 19.15.17.13 NMAC	NMAC 15.17.9 NMAC			
Previously Approved Design (attach copy of design) API Number: or Permit Number:				
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 doc 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.	.15.17.9 NMAC			

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 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 H ₂ 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	
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 Fl	uid 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	
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	attached to the
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.	ce material are lease refer to
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 ☐ NA
Ground water is more than 100 feet below the bottom of the buried waste. - NM Office of the State Engineer - iWATERS database search; USGS; Data obtained from nearby wells	☐ Yes ☐ No ☐ NA
Within 100 feet of a continuously flowing watercourse, or 200 feet of any other significant watercourse, lakebed, sinkhole, or playa lake (measured from the ordinary high-water mark). - Topographic map; Visual inspection (certification) of the proposed site	Yes X 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 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. - 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 	
Within a 100-year floodplain. FEMA map	☐ Yes ☒ No ☐ Yes ☒ No
On-Site Closure Plan Checklist: (19.15.17.13 NMAC) Instructions: Each of the following items must be attached to the closure plan 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 19.15.17.13 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 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
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 beli	ef.
Name (Print): Denise Journey Title: Regulatory Technician	
Signature: Date: 3/24/14	
e-mail address: <u>Denise Journey@conocophillips.com</u> Telephone: <u>505-326-9556</u>	
OCD Approval: Permit Application (including closure plan) Closure Plan (only) OCD Conditions (see attachment) OCD Representative Signature: Approval Date: 3/3/ OCD Permit Number:	12014
19.	<u> </u>
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:	the closure report. complete this
Closure Method: Waste Excavation and Removal On-Site Closure Method Alternative Closure Method Waste Removal (Closed-log If different from approved plan, please explain.	oop systems only)
21. <u>Closure Report Attachment Checklist:</u> Instructions: Each of the following items must be attached to the closure report. Please in mark in the box, that the documents are attached.	diagta by a abaak
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	

Operator Closure Certification:		
I hereby certify that the information and attachments submitted with this closure repobelief. I also certify that the closure complies with all applicable closure requirement		
Name (Print):	Title:	
Signature:	_Date:	The second second
e-mail address:	Telephone:	

SAN JUAN 28-6 UNIT 120M (NEW DRILL)

Burlington Resources Oil & Gas Company LP requests a variance be granted for the following:

- 1. We will be using a liner as described in our Design and Construction Plan (attached).
- 2. Fencing as described in Section 5 under Alternate.
- 3. We will also be using a Flat Pit Marker upon closure.

Journey, Denise D

From:

Journey, Denise D

Sent:

Tuesday, March 25, 2014 7:44 AM

To:

'Kelly, Mark'

Subject:

SJ 28-6 Unit 120M - NEW DRILL - SURFACE OWNER NOTIFICATION

The subject well San Juan 28-6 Unit 120M will have a temporary pit that will be closed on-site. Please let me know if you have any questions or concerns.

Thank you,

Denise Journey

ConocoPhillips Company
(505) 326-9556

Denise.Journey@conocophillips.com

ial Trenches a	nd Waste Left in Place in Temporary Pits	
Constituent	Method*	Limit**
	,	
Chloride	EPA Method 300.0	20,000 mg/kg
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
Chloride	EPA Method 300.0	40,000 mg/kg
	Constituent Chloride TPH BTEX Benzene	Chloride EPA Method 300.0 TPH EPA SW-846 Method 418.1 BTEX EPA SW-846 Method 8021B or 8260B Benzene EPA SW-846 Method 8021B or 8015M

	TPH	EPA SW-846 Method 418.1	2,500 mg/kg
51-100 feet	GRO+DRO	EPA SW-846 Method 8015M	1,000 mg/kg
	ВТЕХ	EPA SW-846 Method 8021B or 8260B	50 mg/kg
	Benzene	EPA SW-846 Method 8021B or 8015M	10 mg/kg
	Chloride	EPA Method 300.0	80,000 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
·	втех	EPA SW-846 Method 8021B or 8260B	50 mg/kg
	Benzene	EPA SW-846 Method 8021B or 8015M	10 mg/kg

^{*}Or other test methods approved by the division

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^{**}Numerical limits or natural background level, whichever is greater [19.15.17.13 NMAC - Rp, 19.15.17.13 NMAC, 6/28/13]

- 3/20/96

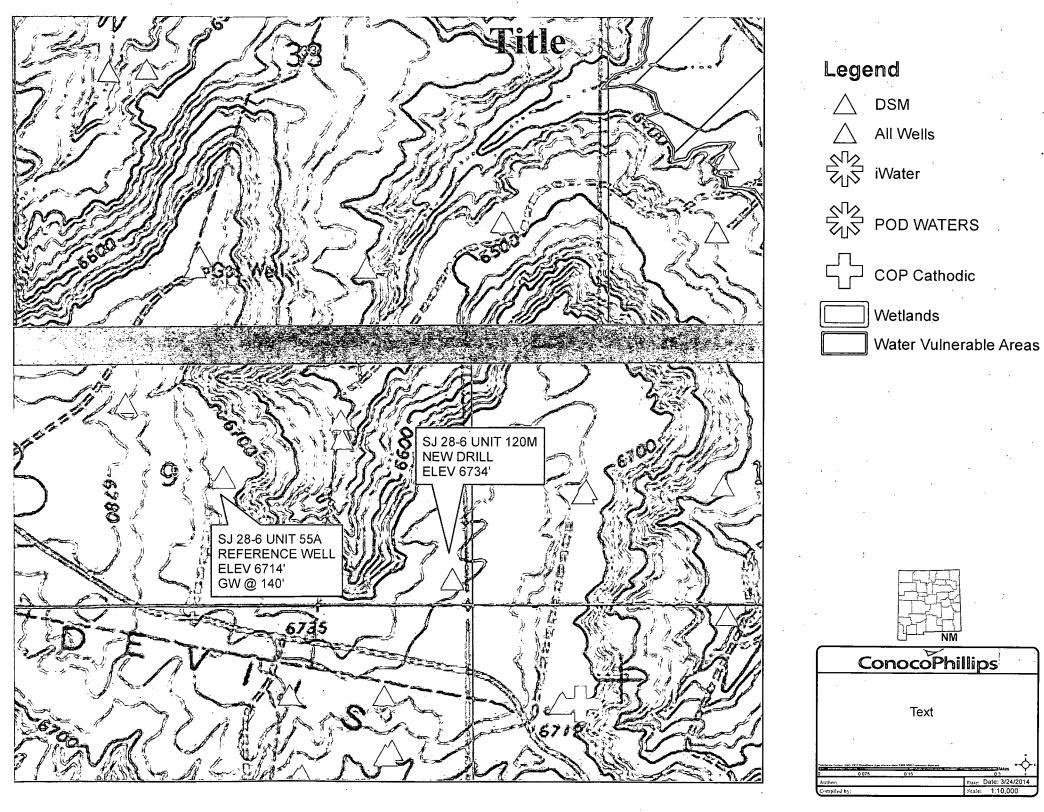
3418 #055A=30-039-21684

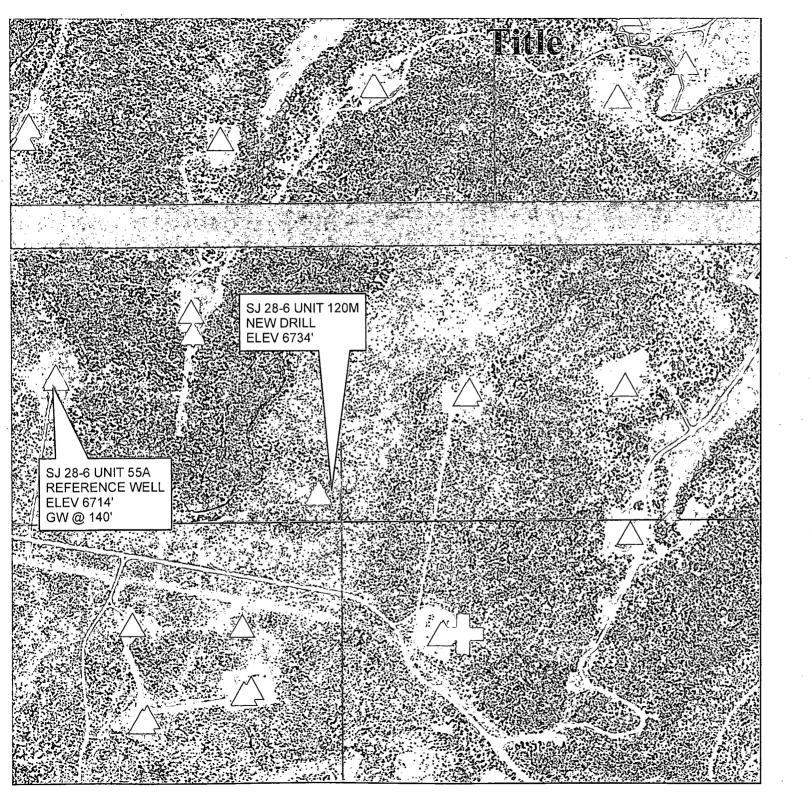
DATA SHEET FOR DEEP GROUND BED CATHODIC PROTECTION WELLS NORTHWESTERN NEW MEXICO

Ω
Operator Metidian Oil INC. Location: Unit O Sec D97-1028 Rug 06
Name of Well/Wells.or Pipeline Serviced
5.J. 28-6 #55A
ElevationCompletion Date 3/20/96 Total Depth 436 Land Type F
Casing Strings; Sizes, Types & Depths 3/14 Set 100 of 8" PVC CASING.
NO GAS, WATER, OF Boulders Were ENCOUNTERED DURING CASING.
If Casing Strings are cemented, show amounts & types used Cemented
WITH 21 SACKS.
If Cement or Bentonite Plugs have been placed, show depths & amounts used
None
Depths & thickness of water zones with description of water: Fresh, Clear,
Salty, Sulphur, Etc. HIT Fresh WATER AT 140.
Depths gas encountered: None
Ground bed depth with type & amount of coke breeze used: 436 DepTH.
Used 111 SACKS OF FORESCO SOU ASbury 218R (5550#)
Depths anodes placed: 388,318, 844, 335, 326,315, 275, 265, 220, 210, 200, 190, 160, 150, +140.
Depths vent pipes placed: Surface To #36
Vent pipe perforations: Bottom 300.
Domester:
OUL COM, DAY.
Disti, 3

If any of the above data is unavailable, please indicate so. Copies of all logs, including Drillers Log, Water Analyses & Well Bore Schematics should be submitted when available. Unplugged abandoned wells are to be inclu

Land Type may be shown: F-Federal: I-Indian: S-State: P-Fee. If Federal or: Indian, add Lease Number.





Legend

 \triangle DSM

All Wells

iWater

POD WATERS

COP Cathodic

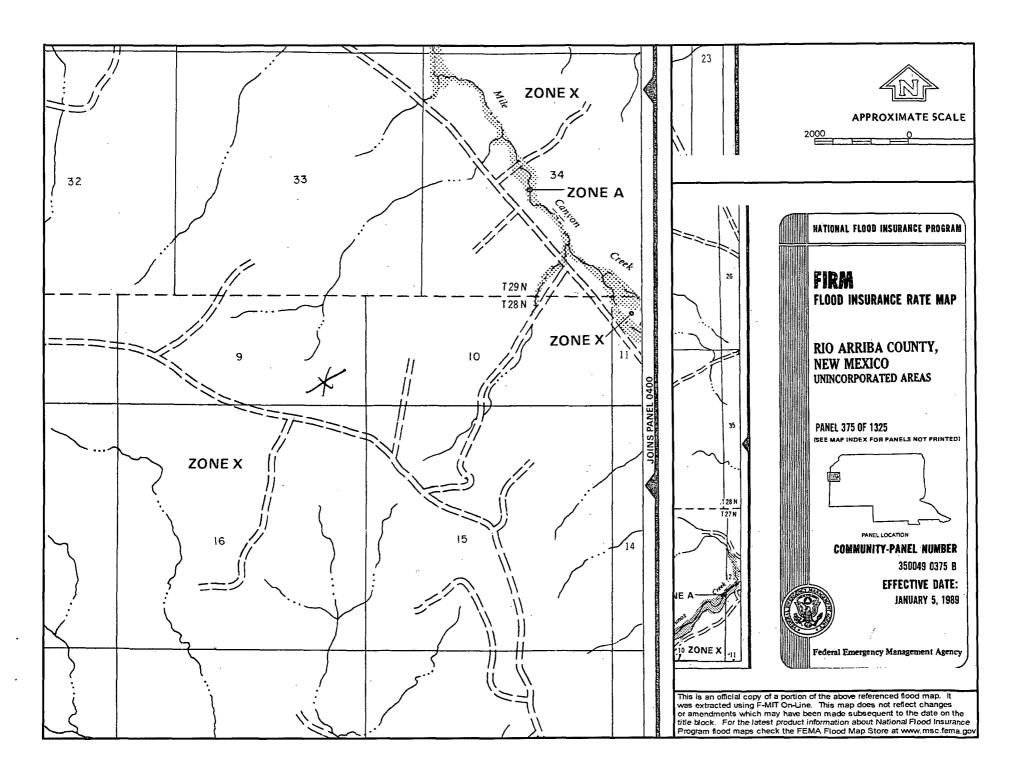
Wetlands

Water Vulnerable Areas

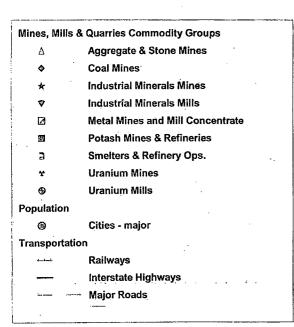


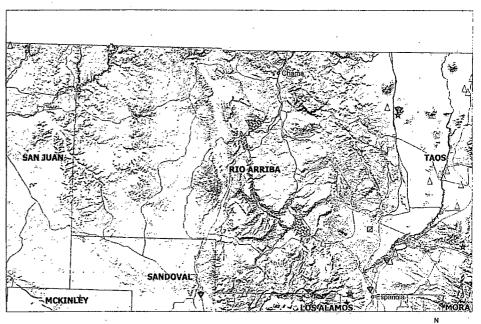
ConocoPhillips Text

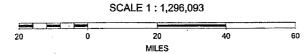
3 005 01 02 Date 3/24/2014



Mines, Mills and Quarries









Siting Criteria Compliance Demonstration & Hydro Geologic Analysis

The San Juan 28-6 Unit 120M is <u>not</u> located in an unstable area. The location is <u>not</u> over a mine and is <u>not</u> on the side of a hill as indicated on the Mines, Mills and Quarries Map and Topographic Map. The location of the excavated pit material will <u>not</u> be located within <u>100</u>° of any continuously flowing watercourse or <u>200</u>° from any other watercourse as indicated on the Topographic Map. The location is not within <u>200</u>° of a spring or fresh water well used for public or livestock consumption. The location is <u>not</u> within a <u>100</u>
<u>year</u> floodplain area as indicated on the FEMA Map. The cathodic well data came from the San Juan 28-6 Unit 55A. The San Juan 28-6 Unit 55A has an elevation of <u>6714</u>° and groundwater depth of <u>140</u>°. The subject well has an elevation of <u>6734</u>° which is greater than the San Juan 28-6 Unit 55A therefore the groundwater is greater than <u>100</u>°. There are no iWATERS data points located in the 1 mile radius area as indicated on the TOPO Map. The hydro geologic analysis indicates the groundwater depth and the San Jose formation will create a stable area for this new location.

Hydrogeological report for SJ 28-6 UNIT 120M

Regional Hydrogeological context:

The San Jose Formation of Eocene age occurs in 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 State line and overlies the Animas Formation in the area generally 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 variegated shale. Thickness of the San Jose Formation generally increases from west to east (200 feet in the west and south to almost 2,700 feet in the center of the structural basin). Ground water is associated with alluvial and fluvial sandstone aquifers. Thus, the occurrence of ground water is mainly controlled by the distribution of sandstone in the formation. The distribution of such sandstone is the result of original depositional extent plus any post-depositional modifications, namely erosion and structural deformation. Transmissivity data for San Jose Formation are minimal. Values of 40 and 120 feet squared per day were determined from two aquifer tests (Stone et al, 1983, table 5). The reported or measured discharge from 46 water wells completed in San Jose Formation ranges from 0.15 to 61 gallons per minute and the median is 5 gallons per minute. Most of the wells provide water for livestock and domestic use.

The San Jose Formation is a very suitable unit for recharge from precipitation because soils that form on the unit are sandy and highly permeable and therefore readily adsorb precipitation. However, low annual precipitation, relatively high transpiration and evaporation rates, and deep dissection of the San Jose Formation by the San Juan River and its tributaries all tend to reduce the effective recharge to the unit.

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.

DISTRICT I
1625 N. French Dr., Hobbs, N.M. 88240
Phone: (676) S93-6161 Fax: (576) S93-6720
DISTRICT II
811 S. First St., Artesia, N.M. 88210
Phone: (575) 748-1283 Fax: (575) 748-9720
DISTRICT III
1000 Rio Brancos Rd., Artec, N.M. 67410
Phone: (505) 334-6178 Fax: (505) 334-6170

1220 S. St. Francis Dr., Santa Fe, NM 87505 Phone: (505) 476-3460 Fax: (505) 476-3462

DISTRICT IV

16

State of New Mexico Energy, Minerals & Natural Resources Department

OIL CONSERVATION DIVISION 1220 South St. Francis Dr. Santa Fe, NM 87505 Form C-102
Revised August 1, 2011
Submit one copy to appropriate
District Office

☐ AMENDED REPORT

WELL LOCATION AND ACREAGE DEDICATION PLAT

¹ API Number	*Pool Code	⁶ Pool Name DAKOTA/MESAVERDE						
⁴ Property Code	⁶ Pro	⁶ Property Name						
	SAN JUAN	120M ·						
OGRID No.	⁸ Opc	^e Elevation						
	BURLINGTON RESOURCE	BURLINGTON RESOURCES OIL & GAS COMPANY LP						

¹⁰ Surface Location

UL or lot no.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County	ĺ
Р	9	28-N	6-W		239	SOUTH	179	EAST	RIO ARRIBA	ı

11 Bottom Hole Location If Different From Surface

UL or lot no.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County	
			19			_	45.5			
18 Dedicated Acre	8		10 Joint or	Infill	¹⁴ Consolidation C	ode	¹⁵ Order No.			
DK 354.79	ACRES	. 5.								
MV 284.20	ACRES									

NO ALLOWABLE WILL BE ASSIGNED TO THIS COMPLETION UNTIL ALL INTERESTS HAVE BEEN CONSOLIDATED OR A NON-STANDARD UNIT HAS BEEN APPROVED BY THE DIVISION

FND GLO "1914" BC T-29-N T-28-N USA SF-080505-A LOT 4 LOT 3 IOT 4 LOT 3 USA NM-05493 USA NM-05493 239' I FND GLO FND GLO S89'49'36"W "1914" BC "1914" BC 2621.85

MAGNETIC DECLINATION

LATITUDE: 36°40.1502' N LONGITUDE: 107°27.8122' W NAD27

LATITUDE: 36.669178° N LONGITUDE: 107.464140° W NAD83

BASIS OF BEARING:

BETWEEN FOUND MONUMENTS AT THE SOUTHEAST CORNER AND THE SOUTH QUARTER CORNER OF SECTION 9, TOWNSHIP 28 NORTH, RANGE 6 WEST, N.M.P.M. RIO ARRIBA COUNTY, NEW MEXICO.

LINE BEARS: S 89'49'36" W A DISTANCE OF 2621.85 FEET AS MEASURED BY G.P.S. LOCAL GRID NAD83.

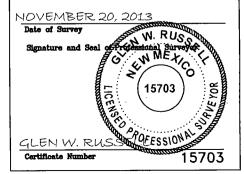
OPERATOR CERTIFICATION

I hereby certify that the information contained herein is true and complete to the best of my knowledge and belief, and that this organisation either owns as working interest or unleased mineral interest in the land including the proposed bottom hole location or has a right to drill this well at this location pursuant to a contract with an owner of such a mineral or a working interest, or to a voluntary pooling agreement or a compulsory pooling order heretofore entered by the division.

Signature	Date
Printed Name	
P-meil Address	

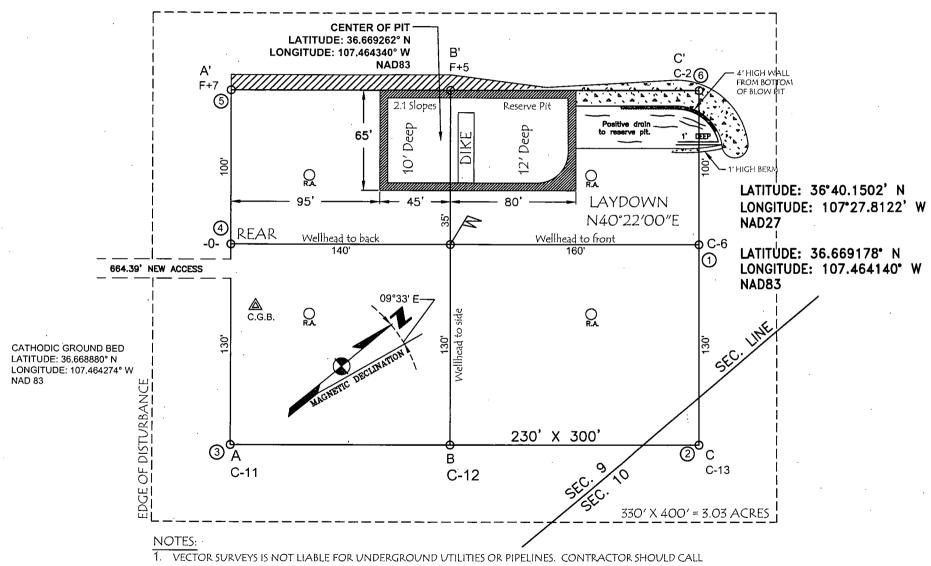
18 SURVEYOR CERTIFICATION

I hereby certify that the well location shown on this plat was plotted from field notes of actual surveys made by me or under my supervision, and that the same is true and correct to the best of my belief.



BURLINGTON RESOURCES OIL & GAS COMPANY LP

SAN JUAN 28-6 UNIT 120M, 239' FSL & 179' FEL SECTION 9, T-28-N, R-6-W, NMPM, RIO ARRIBA COUNTY, NM GROUND ELEVATION: 6734', DATE: FEBRUARY 11, 2009/RVSD: NOVEMBER 20, 2013



VECTOR SURVEYS IS NOT LIABLE FOR UNDERGROUND UTILITIES OR PIPELINES. CONTRACTOR SHOULD CALL
ONE-CALL FOR LOCATION OF ANY MARKED OR UNMARKED BURIED PIPELINES OR CABLES ON WELL PAD AND OR
ACCESS ROAD AT LEAST TWO (2) WORKING DAYS PRIOR TO CONSTRUCTION.

Scale: 1" = 60'

^{2.} RESERVE PIT DIKE: TO BE 8' ABOVE DEEP SIDE (OVERFLOW - 3' WIDE AND 1' ABOVE SHALLOW SIDE).

Burlington Resources Oil & Gas Company, LP San Juan Basin Pit Design and Construction Plan

In accordance with Rule 19.15.17 the following information describes the design and construction of temporary pits on Burlington Resources Oil & Gas Company, LP (BR) locations. This is BR's standard procedure for all temporary pits. A separate plan will be submitted for any temporary pit which does not conform to this plan.

General Plan:

- 1. BR will design and construct a properly sized and approved temporary pit which will contain liquids and solids and should prevent contamination of fresh water and protect public health and environment.
- 2. Prior to constructing the pit, (except a pit constructed in an emergency), topsoil will be stockpiled for use as the final cover at the time of closure.
- 3. BR will sign the well location in compliance with 19.15.16.8 NMAC.
- 4. BR will construct all new fences around the temporary/permanent pit utilizing 48" steel mesh field-fence (hogwire) on the bottom with a single strand of barbed wire on top. T-posts shall be installed every 12 feet and corners shall be anchored utilizing a secondary T-post. Temporary/permanent pits will be fenced at all times excluding drilling or workover operations, when the front side of the fence will be temporarily removed for operational purposes.
 - If pit is located within 1000 feet of an occupied permanent residence, school, hospital, institution or church, BR will construct all new fences utilizing 60" steel mesh field-fence (hogwire) on the bottom with two strands of barbed wire on top. T-posts shall be installed every 12 feet and corners shall be anchored utilizing a secondary T-post. Temporary/permanent pits will be fenced at all times excluding drilling or workover operations, when the front side of the fence will be temporarily removed for operational purposes. The operator shall ensure that all gates associated with the fence are closed and locked when responsible personnel are not onsite.
- 5. BR shall construct the temporary pit so that the foundation and interior slopes are firm and free of rocks, debris, sharp edges or irregularities to prevent liner failure.
- 6. BR shall construct the pit so that the slopes are no steeper than two horizontal feet to one vertical foot (2H:1V).
- 7. Pit walls will be walked down by a crawler type tractor following construction.
- 8. All temporary pits will be lined with a 20-mil, string reinforced, LLDPE liner, complying with EPA SW-846 method 9090A requirements.
- 9. Geotextile will be installed beneath the liner when rocks, debris, sharp edges or irregularities cannot be avoided.
- All liners will be anchored in the bottom of a compacted earth-filled trench at least 18 inches deep.
- 11. BR will minimize liner seams and orient them up and down, not across a slope. Factory seams will be used whenever possible. BR will ensure all field seams are welded by qualified personnel. Field seams will be overlapped four to six inches and will be oriented parallel to the line of maximum slope. BR will minimize the number of field seams in corners and irregularly shaped areas.
- 12. The liner shall be protected from any fluid force or mechanical damage through the use of mud pit slides, or a manifold system.
- 13. The pit shall be protected from run-off by constructing and maintaining diversion ditches around the location or around the perimeter of the pit in some cases.
- 14. The volume of the pit shall not exceed 10 acre-feet, including freeboard.
- 15. Temporary blow pits will be constructed to allow gravity flow to discharge into lined drill pit.

- 16. The lower half of the blow pit (nearest lined pit) will be lined with a 20-mil, string reinforced, LLDPE liner. The upper half of the blow pit will remain unlined as allowed in Rule 19.15.17.11 F.11.17. BR will not allow freestanding liquids to remain on the unlined portion of a temporary blow pit.

Burlington Resources Oil & Gas Company, LP San Juan Basin

Maintenance and Operating Plan

In accordance with Rule 19.15.17 the following information describes the operation and maintenance of temporary pits on Burlington Resources Oil & Gas Company, LP (BR) locations. This is BR's standard procedure for all temporary pits. A separate plan will be submitted for any temporary pit which does not conform to this plan.

General Plan:

- 1. BR will operate and maintain a temporary pit to contain liquids and solids and maintain the integrity of the liner and liner system to prevent contamination of fresh water and protect public health and environment.
- 2. BR will conserve drilling fluids by transferring liquids to pits ahead of the rigs whenever possible. All other drilling fluids will be disposed at Basin Disposal Inc., permit # NM-01-005.
- 3. BR will not discharge or store any hazardous waste in any temporary pit.
- 4. If any pit liner's integrity is compromised, or if any penetration of the liner occurs above the liquid's surface, then BR shall notify the Aztec Division office by phone or email within 48 hours of the discovery and repair the damage or replace the liner.
- 5. If a leak develops below the liquid's level, BR will remove all liquids above the damaged liner within 48 hours and repair the damage or replace the liner, notify the appropriate division office pursuant to 19.15.29 NMAC and repair the damage or replace the pit liner as applicable, BR will repair or replace the pit liner. If the pit liner does not demonstrate integrity, BR will promptly remove and install a pit liner that complies with Subsection I of 19.15.17.11 NMAC.
 - A Major Release shall be reported by giving both immediate verbal notice and timely written notice by filing form C-141 within 15 days pursuant to Subsection C, Paragraphs (1) and (2) of 19.15.3.116 NMAC. A Major Release is:
 - (a) an unauthorized release of a volume, excluding natural gases, in excess of 25 barrels;
 - (b) an unauthorized release of any volume which:
 - (i) results in a fire;
 - (ii) will reach a water course;
 - (iii) may with reasonable probability endanger public health; or
 - (iv) results in substantial damage to property or the environment;
 - (c) an unauthorized release of natural gases in excess of 500 mcf; or
 - (d) a release of any volume which may with reasonable probability be detrimental to water or cause an exceedance of the standards in Section 19, Subsection B, Paragraphs (1) and (2) or (3) of 19.15.1 NMAC.
 - A Minor Release shall be reported by giving timely written notice by the filing of form C-141 within 15 days pursuant to Subsection C, Paragraph (2) of 19.15.3.116 NMAC. A Minor Release is an unauthorized release of a volume, greater than 5 barrels but not more than 25 barrels; or greater than 50 mcf but less than 500 mcf of natural gases.
- 6. The liner shall be protected from any fluid force or mechanical damage through the use of mud pit slides, or a manifold system.
- 7. The pit shall be protected from run-off by constructing and maintaining diversion ditches around the location or around the perimeter of the pit in some cases.
- 8. BR shall immediately remove any visible layer of oil from the surface of the temporary pit after cessation of a drilling or workover operation. Oil absorbent booms will be utilized to contain and remove oil from the pit's surface. An oil absorbent boom will be stored on-site until closure of pit.

- 9. Only fluids generated during the drilling or workover process may be discharged into a temporary pit.
- 10. BR will maintain the temporary pit free of miscellaneous solid waste or debris.
- 11. During drilling operations, BR will inspect the temporary pit at least once daily to ensure compliance with this plan. Inspections will be logged in the IADC reports. BR will file this log with the Aztec Division office upon closure of the pit.
- 12. After drilling operations, BR will inspect the temporary pit weekly so long as liquids remain in the temporary pit. A log of the inspections will be stored at BR's office electronically and will be filed with the Aztec Division office upon closure of the pit.
- 13. BR shall maintain at least two feet of freeboard for a temporary pit.
- 14. BR shall remove all free liquids from a temporary pit within 60 days from the date the operator releases the drilling rig.
- 15. BR shall remove all free liquids from a cavitation pit within 48 hours after completing cavitation. BR may request additional time to remove liquids from the Aztec Division office if it is not feasible to remove liquids within 48 hours.

Burlington Resources Oil & Gas Company, LP San Juan Basin Closure Plan

In accordance with Rule 19.15.17.13 NMAC the following information describes the closure requirements of temporary pits on Burlington Resources Oil & Gas Company, LP (BR) locations. This is BR's standard procedure for all temporary pits. A separate plan will be submitted for any temporary pit which does not conform to this plan.

All closure activities will include proper documentation and be available for review upon request and will be submitted to NMOCD within 60 days of closure of pit. Closure report will be filed on C-144 and incorporate the following:

- Details on Capping and Covering, where applicable.
- Plot Plan (Pit Diagram)
- Inspection Reports
- Sampling Results
- C-105
- Copy of Deed Notice will be filed with County Clerk for Fee Wells

General Plan:

- All free standing liquids will be removed at the start of the pit closure process from the pit and disposed of in a division-approved facility or recycle, reuse or reclaim the liquids in a manner that the appropriate division district office approves. The facilities to be used will be Basin Disposal (Permit #NM-01-005) and Envirotech Land Farm (Permit #NM-01-011).
- 2. The preferred method of closure for all temporary pits will be on-site burial, assuming that all the criteria listed in sub-section (B) of 19.15.17.13 are met.
- 3. The surface owner shall be notified of BR's closing of the temporary pit within 72 hours, but not more than one week, prior to closure via certified mail, return receipt requested.
- 4. Within 6 months of the Rig Off status occurring BR will ensure that temporary pits are closed, re-contoured, and reseeded.
- 5. Notice of Closure will be given prior to closure to the Aztec Division office within 72 hour, but not more than and one week, via email and verbally. The notification of closure will include the following:
 - i. Operator's name
 - ii. Location by Unit Letter, Section, Township, and Range. Well name and API number.
- 6. Pit contents shall be mixed with non-waste containing, earthen material in order to achieve the solidification process. The solidification process will be accomplished using a combination of natural drying and mechanically mixing. Pit contents will be mixed with non-waste, earthen material to a consistency that is deemed a safe and stable. The mixing ratio shall not exceed 3 parts clean soil to 1 part pit contents and must pass the paint filter liquids test (EPA SW-846, Method 9095) or other test methods approved by the division.
- 7. BR shall collect, at a minimum, a five point composite sample will be taken of the pit using sampling tools and all samples and analyze the samples for the constituents listed in **Table II** of 19.15.17.13 NMAC. In the event that the criteria are not met, all contents will be handled per Subparagraph (a) of Paragraph (1) of Subsection B of 19.15.17.13, **Table I**, Dig and haul.

- 8. BR will fold the outer edges of the liner to overlap the waste material prior to the installation of a geomembrane cover. Install a geomembrane cover over the waste material in the lined temporary pit and in a manner that prevents the collection of infiltration water in the lined temporary pit and on the geomembrane cover after the coil cover is in place; the geomembrane cover shall consist of a 20-mil string reinforced LLDPE liner or equivalent cover that the appropriate division district office approves; the geomembrane cover shall be composed of an impervious, synthetic material that is resistant to petroleum hydrocarbons, salts and acidic and alkaline solutions; cover compatibility shall comply with EPA SW -845 Method 9090A.
- 9. Upon completion of solidification and testing standards being passed, the pit area will be backfilled with compacted, non-waste containing, earthen material. A minimum of four feet of non-waste containing, uncontaminated, earthen material with chloride concentrations less that 600 mg/kg as analyzed by EP:A Method 300.0. The soil cover shall include either the background thickness of topsoil or one foot of suitable material to establish vegetation at the site, whichever is greater. [19.15.17.13 H.3]
- 10. During the stabilization process if the liner is ripped by equipment the Aztec NMOCD office will be notified within 48 hours and the liner will be repaired if possible. If the liner can not be repaired then all contents will be excavated and removed.
- 11. Dig and Haul Material will be transported to the Envirotech Land Farm located 16 miles south of Bloomfield on Angel Peak Road, CR 7175. Permit # NM01001.
- 12. Re-contouring of location will match fit, shape, line, form and texture of the surrounding. Reshaping will include drainage control, prevent ponding, and prevent erosion. Natural drainages will be unimpeded and water bars and/or silt traps will be place in areas where needed to prevent erosion on a large scale. Final re-contour shall have a uniform appearance with smooth surface, fitting the natural landscape.
- 13. Notification will be sent to NMOCD when the reclamation work is completed and the area is seeded. [19.15.17.13.H.5.e]
- 14. BR will seed the disturbed areas in the first favorable growing season following closure of a below-grade tank. Seeding will be accomplished via drilling on the contour whenever practical or by other division-approved methods. BLM stipulated seed mixes will used on federally regulated lands and division-approved seed mixtures (administratively approved if required) will be utilized on all State or private lands. A uniform vegetative cover has been established that reflects a life-form ratio of plus or minus fifty percent (50%) of predisturbance levels and a total percent plant cover of at least seventy percent (70%) of predisturbance levels, excluding noxious weeds. If alternate seed mix is required by the state, private owner or tribe, it will be implemented with administrative approval if needed. BR will repeat seeding or planting will be continued until successful vegetative growth occurs.
- 15. The temporary pit will be located with a steel marker, no less than four inches in diameter, cemented in a hole three feet deep in the center of the onsite burial upon the abandonment of all the wells on the pad. The marker will be flush with the ground to allow access of the active well pad and for safety concerns. The marker will include a threaded collar to be used for future abandonment. The top of the marker will contain a welded steel 12" square plate that indicates the onsite burial of the temporary pit.

The plate will be easily removable and a four foot tall riser will be threaded into the top of the collar marker and welded around the base with the operator's information at the time of all wells on the pad are abandoned. The operator's information will include the following: Operator Name, Lease Name, Well Name and number, Unit Number, Section, Township, Range and an indicator that the marker is an onsite burial location.