District [

1625 N. French Dr., Hobbs, NM 88240

1301 W. Grand Ave., Artesia, NM 88210

District III

1000 Rio Brazos Rd., Aztec, NM 87410

1

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

Form C-144 July 21, 2008

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

For permanent pits and exceptions submit to the Santa Fe Environmental Bureau office and provide a copy to the

histrict IV	appropriate NMOCD District Office.
220 S. St. Francis Dr., Santa Fe. NM 87505	Pit, Closed-Loop System, Below-Grade Tank, or
Propos	sed Alternative Method Permit or Closure Plan Application
Type of action: Instructions: Please submit one Please be advised that approval re	X Permit of a pit, closed-loop system, below-grade tank, or proposed alternative method Closure of a pit, closed-loop system, below-grade tank, or proposed alternative method Modification to an existing permit Closure plan only submitted for an existing permitted or non-permitted pit, closed-loop system, below-grade tank, or proposed alternative method application (Form C-144) per individual pit, closed-loop system, below-grade tank or alternative request of this request does not relieve the operator of liability should operations result in pollution of surface water, ground water or the elieve the operator of its responsibility to comply with any other applicable governmental authority's rules, regulations or ordinances.
Operator: Burlington Resources C	THE Gas Company
Address: PO Box 4289, Farming Facility or well name: PINON ME	
	3004523286 OCD Permit Number:
API Number: LI/L or Otr/Otr: B Sect	tion: 35 Township: 31N Range: 14W County: San Juan
U/L or Qtr/Qtr: B Section Section Center of Proposed Design: Latitute Latitute Design: Latitute Desig	NAD 17102 1082
Surface Owner: Federal	State Private X Tribal Trust or Indian Allotment
Permanent Emergency Lined Unlined String-Reinforced Liner Seams: Welded 3	Cavitation P&A Liner type: Thickness mil LLDPE HDPE PVC Other Factory Other Volume: bbl Dimensions L x W x D extion H of 19.15.17.11 NMAC
Type of Operation: P&A Drying Pad Above Gr	Drilling a new well Workover or Drilling (Applies to activities which require prior approval of a permit or notice of intent) ound Steel Tanks Haul-off Bins Other iner type: Thickness mil LLDPE HDPE PVD Other Factory Other
X Below-grade tank: Subsection	bil Type of fluid: Produced Water Metal detection X Visible sidewalls, liner, 6-inch lift and automatic overflow shut-off Visible sidewalls only Other mil HDPE PVC X Other Unspecified
5 Alternative Method: Submittal of an exception request is	required. Exceptions must be submitted to the Santa Fe Environmental Bureau office for consideration of approval.

Fencing: Subsection D of 19.15.17.11 NMAC (Applies to permanent pit, temporary pits, and below-grade tanks) Chain link, six feet in height, two strands of barbed wire at top (Required if located within 1000 feet of a permanent residence, school, hospital, institution from foot height, four strands of barbed wire evenly spaced between one and four feet X Alternate. Please specify 4' hog wire fencing topped with two strands barbed wire. Netting: Subsection E of 19.15.17.11 NMAC (Applies to permanent pits and permanent open top tanks) X Screen Netting Other Monthly inspections (If netting or screening is not physically feasible)	viou or church	1)
12" X 24". 2" lettering, providing Operator's name, site location, and emergency telephone numbers X Signed in compliance with 19.15,3.103 NMAC		
Administrative Approvals and Exceptions: Justifications and/or demonstrations of equivalency are required. Please refer to 19.15.17 NMAC for guidance. Please check a box if one or more of the following is requested, if not leave blank: X Administrative approval(s): Requests must be submitted to the appropriate division district of the Santa Fe Environmental Bureau office for consideration of approval. Exception(s): Requests must be submitted to the Santa Fe Environmental Bureau office for consideration of approval.	deration of app	oroval.
Siting Criteria (regarding permitting): 19.15.17.10 NMAC Instructions: The applicant must demonstrate compliance for each siting criteria below in the application. Recommendations of acceptable source material are provided below. Requests regarding changes to certain siting criteria may require administrative approval from the appropriate district office or may be considered an exception which must be submitted to the Santa Fe Environmental Bureau Office for consideration of approval. Applicant must attach justification for request. Please refer to 19.15.17.10 NMAC for guidance. Siting criteria does not apply to drying pads or above grade-tanks associated with a closed-loop system.		ļ
Ground water is less than 50 feet below the hottom of the temporary pit, permanent pit, or below-grade tank. - NM Office of the State Engineer - iWATERS database search; USGS; Data obtained from nearby wells	Yes	X No
Within 300 feet of a continuously flowing watercourse, or 200 feet of any other watercourse, lakebed, sinkhole, or playa lake (measured from the ordinary high-water mark). - Topographic map; Visual inspection (certification) of the proposed site	Yes	XNo
Within 300 feet from a permanent residence, school, hospital, institution, or church in existence at the time of initial application.	Yes	X No
(Applies to temporary, emergency, or cavitation pits and below-grade tanks)	□NA	
- Visual inspection (certification) of the proposed site; Aerial photo; Satellite image	∏Yes	ΠNο
Within 1000 feet from a permanent residence, school, hospital, institution, or church in existence at the time of initial application. (Applied to permanent pits)	X NA	□e
- Visual inspection (certification) of the proposed site; Aerial photo; Satellite image	Yes	XNo
Within 500 horizonal feet of a private, domestic fresh water well or spring that less than five households use for domestic or stock watering purposes, or within 1000 horizontal feet of any other fresh water well or spring, in existence at the time of initial application.	L	MINO
- NM Office of the State Engineer - iWATERS database search; 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 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	X No
Within 500 feet of a wetland. Within 500 feet of a wetland. Topographic map: Visual inspection (certification) of the proposed site.	Yes	XNo
Within the area overlying a subsurface mine. - Written confirmation or verification or map from the NM EMNRD - Mining and Mineral Division	Yes	XNo
Within an unstable area. - Engineering measures incorporated into the design; NM Bureau of Geology & Mineral Resources; USGS; NM Geological	Yes	XNo
Society; Topographic map Within a 100-year floodplain - FEMA map	Yes	XNo

Form C 134 Oil Conservation Division Page 3 of 5

Temporary Pits, Emergency Pits and Below-grade Tanks Permit Application Attachment Checklist: Subsection B of 19.15.17.9 NMAC Instructions: Each of the following items must be attached to the application. Please indicate, by a check mark in the box, that the documents are attached.						
X 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						
X Siting Criteria Compliance Demonstrations - based upon the appropriate requirements of 19.15.17.10 NMAC						
X Design Plan - based upon the appropriate requirements of 19.15.17.11 NMAC						
X Operating and Maintenance Plan - based upon the appropriate requirements of 19.15.17.12 NMAC						
X Closure Plan (Please complete Boxes 14 through 18, if applicable) - based upon the appropriate requirements of Subsection C of 19.15.17.9 NMAC and 19.15.17.13 NMAC						
Previously Approved Design (attach copy of design) API or Permit						
Closed-loop Systems Permit Application Attachment Checklist: Subsection B of 19.15.17.9 NMAC Instructions: Each of the following items must be attached to the application. Please indicate, by a check mark in the box, that the documents are attached. Geologic and Hydrogeologic Data (only for on-site closure) - based upon the requirements of Paragraph (3) of Subsection B of 19.15.17.9						
Siting Criteria Compliance Demonstrations (only for on-site closure) - based upon the appropriate requirements of 19.15.17.10 NMAC						
Design Plan - based upon the appropriate requirements of 19.15.17.11 NMAC						
Operating and Maintenance Plan - based upon the appropriate requirements of 19.15.17.12 NMAC						
Closure Plan (Please complete Boxes 14 through 18, if applicable) - based upon the appropriate requirements of Subsection C of 19.15.17.9 NMAC and 19.15.17.13 NMAC						
Previously Approved Design (attach copy of design) API						
Previously Approved Operating and Maintenance Plan API						
Permanent Pits Permit Application Checklist: Subsection B of 19.15.17.9 NMAC Instructions: Each of the following items must be attached to the application. Please indicate, by a check mark in the box, that the documents are attached.						
Hydrogeologic Report - based upon the requirements of Paragraph (1) of Subsection B of 19.15.17.9 NMAC						
Siting Criteria Compliance Demonstrations - based upon the appropriate requirements of 19.15.17.10 NMAC						
Climatological Factors Assessment						
Certified Engineering Design Plans - based upon the appropriate requirements of 19.15.17.11 NMAC						
Dike Protection and Structural Integrity Design: based upon the appropriate requirements of 19.15.17.11 NMAC						
Leak Detection Design - based upon the appropriate requirements of 19.15.17.11 NMAC						
Liner Specifications and Compatibility Assessment - based upon the appropriate requirements of 19.15.17.11 NMAC						
Quality Control/Quality Assurance Construction and Installation Plan						
Operating and Maintenance Plan - based upon the appropriate requirements of 19.15.17.12 NMAC Freeboard and Overtopping Prevention Plan - based upon the appropriate requirements of 19.15.17.11 NMAC						
Nuisance or Hazardous Odors, including H2S. Prevention Plan						
Emergency Response Plan						
Oil Field Waste Stream Characterization						
Monitoring and Inspection Plan						
Erosion Control Plan						
Closure Plan - based upon the appropriate requirements of Subsection C of 19.15.17.9 NMAC and 19.15.17.13 NMAC						
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 X Below-grade Tank Closed-loop System Alternative						
Proposed Closure Method: X Waste Excavation and Removal (Below-Grade Tank)						
Waste Removal (Closed-loop systems only)						
On-site Closure Method (only for temporary pits and closed-loop systems)						
In-place Burtal On-site Trench						
Alternative Closure Method (Exceptions must be submitted to the Santa Fe Environmental Bureau for consideration)						
15						
Waste Excavation and Removal Closure Plan Checklist: (19.15.17.13 NMAC) Instructions: Each of the following items must be attached to the closure plan. Please indicate, by a check mark in the box, that the documents are attached.						
X Protocols and Procedures - based upon the appropriate requirements of 19.15.17.13 NMAC						
X Confirmation Sampling Plan (if applicable) - based upon the appropriate requirements of Subsection F of 19.15.17.13 NMAC						
Disposal Facility Name and Permit Number (for liquids, drilling fluids and drill cuttings)						
Soil Backfill and Cover Design Specifications - based upon the appropriate requirements of Subsection H of 19.45.17.13 NMAC						
Re-vegetation Plan - based upon the appropriate requirements of Subsection I of 19.15.17.13 NMAC						
X Site Reclamation Plan - based upon the appropriate requirements of Subsection G of 19.15.17.13 NMAC						

F .

16							
Waste Removal Closure For Closed-loop Systems That Utilize Above Ground Steel Tanks or Haul-off Bins Only Instructions: Please identify the facility or facilities for the disposal of liquids, drilling fluids and drill entings. Use a arc required.	<u>e</u> (19.15.17.13,D NMAC) ttachment if more than two facilities						
Disposal Facility Name: Disposal Facility Permit #:							
Disposal Facility Name: Disposal Facility Permit#:							
Will any of the proposed closed-loop system operations and associated activities occur on or in areas that will not be used for future service and operations? Yes (If yes, please provide the information No							
Required for impacted areas which will not be used for fidure service and operations: Soil Backfill and Cover Design Specification - based upon the appropriate requirements of Subsection Re-vegetation Plan - based upon the appropriate requirements of Subsection I of 19.15.17.13 NMAC	•						
Site Reclamation Plan - based upon the appropraite requirements of Subsection G of 19.15.17.13 N	MAC						
Siting Criteria (Regarding on-site closure methods only: 19.15.47.10 NMAC Instructions: Each siting criteria requires a demonstration of compliance in the closure plan. Recommendations of acceptable so certain siting criteria may require administrative approval from the appropriate district office or may be considered an exception for consideration of approval. Justifications and/or demonstrations of equivalency are required. Please refer to 19.15.17.10 NM.	which must be submitted to the Santa ee Environmental Barcan office. AC for guidance.						
Ground water is less than 50 feet below the bottom of the buried waste.	Yes No						
- NM Office of the State Engineer - (WATERS database search: USGS: Data obtained from nearby wells	N/A						
Ground water is between 50 and 100 feet below the bottom of the buried waste	Yes No						
- NM Office of the State Engineer - iWATERS database search; USGS; Data obtained from nearby wells	□N/A						
Ground water is more than 100 feet below the bottom of the buried waste.	Yes No						
- NM Office of the State Engineer - iWATERS database search; USGS; Data obtained from nearby wells	□N/A						
Within 300 feet of a continuously flowing watercourse, or 200 feet of any other significant watercourse or lakebed, si (measured from the ordinary high-water mark).	nkhole, or playa lake Yes No						
- 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 a	pplication. Yes No						
- Visual inspection (certification) of the proposed site; Aerial photo: satellite image	!						
	L]Yes L]No						
Within 500 horizontal feet of a private, domestic fresh water well or spring that less than five households use for dom purposes, or within 1000 horizontal fee of any other fresh water well or spring, in existence at the time of the initial a - NM Office of the State Engineer - iWATERS database; Visual inspection (certification) of the proposed site	estic or stock watering oplication.						
Within incorporated municipal boundaries or within a defined municipal fresh water well field covered under a muni- pursuant to NMSA 1978, Section 3-27-3, as amended.	cipal ordinance adopted Yes No						
Written confirmation or verification from the municipality; Written approval obtained from the municipality Within 500 feet of a wetland Yes No							
- US Fish and Wildlife Wetland Identification map; Topographic map; Visual inspection (certification) of the pro-							
Within the area overlying a subsurface mine.	Yes No						
- Written confiramtion 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							
Topographic map							
Within a 100-year floodplain FEMA map	Yes No						
1k	DI CANA						
On-Site Closure Plan Checklist: (19.15.17.13 NMAC) Instructions: Each of the following items must by a check mark in the box, that the documents are attached.							
Siting Criteria Compliance Demonstrations - based upon the appropriate requirements of 19.15.17.							
Proof of Surface Owner Notice - based upon the appropriate requirements of Subsection F of 19.15							
Construction/Design Plan of Burial Trench (if applicable) based upon the appropriate requirements							
Construction/Design Plan of Temporary Pit (for in place burial of a drying pad) - based upon the appropriate requirements of 19.15.17.11 NMAC							
Protocols and Procedures - based upon the appropriate requirements of 19.15.17.13 NMAC							
Confirmation Sampling Plan (if applicable) - based upon the appropriate requirements of Subsection F of 19.15.17.13 NMAC							
Waste Material Sampling Plan - based upon the appropriate requirements of Subsection F of 19.15.17.13 NMAC							
Disposal Facility Name and Permit Number (for liquids, drilling fluids and drill cuttings or in case on-site closure standards cannot be achieved)							
Soil Cover Design - based upon the appropriate requirements of Subsection H of 19.15.17.13 NMAC							
Re-vegetation Plan - based upon the appropriate requirements of Subsection I of 19.15.17.13 NMA Site Reclamation Plan - based upon the appropriate requirements of Subsection G of 19.15.17.13 NMA	IMAC						

 $\mathrm{Form}\subset 144$

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Operator Application Certification:
Hereby certify that the information submitted with this application is true, accurate and complete to the best of my knowledge and belief. Name their the information submitted with this application is true, accurate and complete to the best of my knowledge and belief. Title: Regulatory Technician
Name (Print):
Signature. 505.326.9837
e mail address:
20 OCD Approval: Permit Application (including closure plan) Closure Plan (only) OCD Conditions (see attachment)
OCD Representative Signature: Approval Date:
() () Representative Signature.
Title: OCD Permit Number:
Closure Report (required within 60 days of closure completion); Subsection & of 19.15.17.13 NMAC Instructions: Operators are required to obtain an approved closure plan prior to implementing any closure activities and submitting the closure report. The closure report is required to be submitted to the division within 60 days of the completion of the closure activities. Please do not complete this section of the form until an approved closure plan has been obtained and the closure activities have been completed. Closure Completion Date:
Closure Method: Waste Excavation and Removal On-site Closure Method Alternative Closure Method Waste Removal (Closed-loop systems only) If different from approved plan, please explain.
23
Classes Bayert Bayerting Waste Removal Closure For Closed-loop Systems That Utilize Above Ground Steel Tanks or Haul-off Bins Only:
Instructions: Please identify the facility or facilities for where the liquids, drilling fluids and drill cuttings were disposed. Use attachment if more than two facilities were utilized.
Disposal Facility Name: Disposal Facility Permit Number:
Disposal Facility Name: Disposal Facility Permit Number:
Were the closed-loop system operations and associated activities performed on or in areas that will not be used for future service and operations?
Yes (If yes, please demonstrate compliant to the items below)
Required for impacted areas which will not be used for future service and operations: Site Reclamation (Photo Documentation)
Soil Backfilling and Cover Installation
Re-vegetation Application Rates and Seeding Technique
24
Closure Report Attachment Checklist: Instructions: Each of the following items must be attached to the closure report. Please indicate, by a check mark in
the box, that the documents are attached.
Proof of Closure Notice (surface owner and division) Proof of Deed Notice (required for on-site closure)
Plot Plan (for on-site closures and temporary pits)
Confirmation Sampling Analytical Results (if applicable)
Waste Material Sampling Analytical Results (if applicable)
Disposal Facility Name and Permit Number
Soil Backfilling and Cover Installation
Re-vegetation Application Rates and Seeding Technique
Site Reclamation (Photo Documentation) Longitude: NAD 1927 1983
On-site Closure Location: Latitude: Longitude: NAD 1927 1983
Operator Closure Certification: Operator Closure Certification: Description Des
Thereby certify that the information and attachments submitted with this closure report is ture, accurate and complete to the best of my knowledge and belief. I also certify that the closure complies with all applicable closure requirements and conditions specified in the approved closure plan.
Name (Print): Title:
Signature: Date:
e-mail address:

New Mexico Office of the State Engineer POD Reports and Downloads

Range: 14W Township: 31N Sections: Search Radius: Zone: Y: NAD27 X: Suffix: Number: Basin: County: O Non-Domestic O Domestic O All Owner Name: (First) (Last) Water Column Report Avg Depth to Water Report POD / Surface Data Report iWATERS Menu Help Clear Form

WATER COLUMN REPORT 08/20/2008

		s are 1=NW 2=NE s are biggest t				Depth	th Depth Wat	_	r (in feet)
POD Number	Tws	Rng Sec q q q	Zone	x	Y	Well	Water	Column	
RG 37716	31N	14W 05	C		2164700	47	A =	25	
RG 37737	31N	1 4 W 35	С	736990	2151000	54	24	27	

Record Count: 2

Depth

61

Well

Y

Depth

Water

Wat∈

Colum

New Mexico Office of the State Engineer **POD Reports and Downloads** Township: 30N Range: 14W Sections: Search Radius: NAD27 X: Y: Zone: Number: Suffix: Basin: County: C Non-Domestic ☐ Domestic (Last) Owner Name: (First) Avg Depth to Water Report POD / Surface Data Report Water Column Report Help iWATERS Menu Clear Form WATER COLUMN REPORT 09/06/2008 (quarters are 1=NW 2=NE 3=SW 4=SE)

Zone

(quarters are biggest to smallest)

Rng Sec q q q

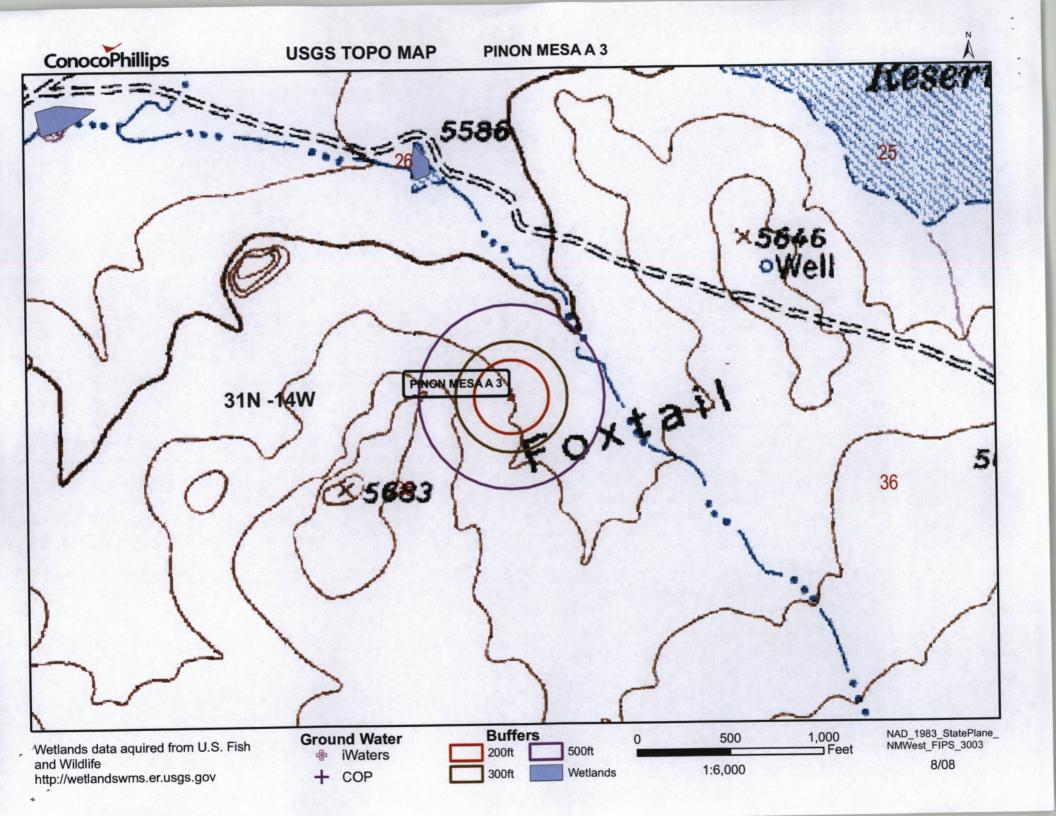
14W 03 1 3

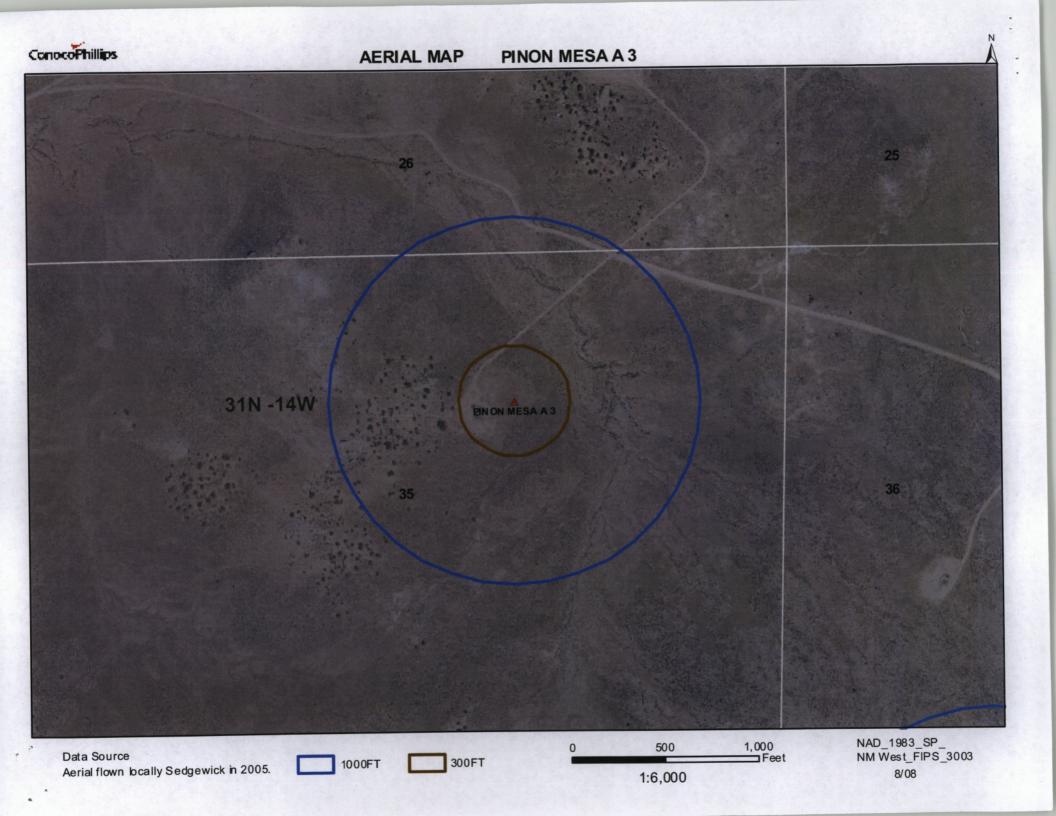
30N

Record Count: 1

POD Number

SJ 00944

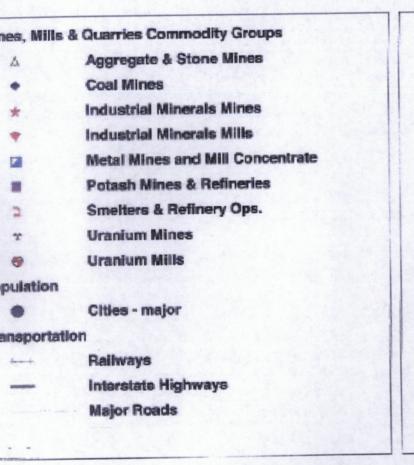


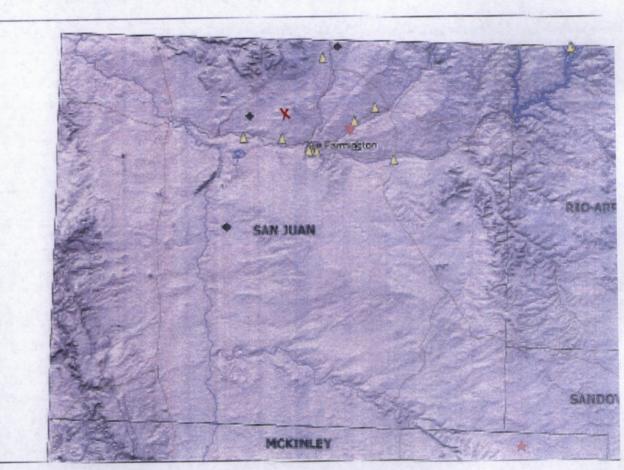


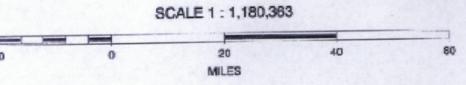
Mines, Mills and Quarries Web Map.

PINON MESA A 3

Unit Letter: B, Section: 35, Town: 031N, Range: 014W







PINON MESA A 3

Site Specific Hydrogeology

A visual site inspection confirming the information contained herein was performed on the well 'PINON MESA A 3', which is located at 36.86244 degree, North latitude and 108.27347 degree, West longitude. This location is located on the Youngs Lake 7.5' USGS topographic quadrangle. This location is in section 0 of Township 31 North Range 14 West of the Public Land Survey System (New Mexico Principal Meridian). This location is located in San Juan County, New Mexico. The nearest town is La Plata, located 6.3 miles to the northeast. The nearest large town (population greater than 10,000) is Farmington, located 9.7 miles to the southeast (National Atlas). The nearest highway is State Highway 170, located 2.8 miles to the southeast. The location is on Tribal land and is 4,420 feet from the edge of the parcel as notated in the BLM land status layer updated January 2008. This location is in the Middle San Juan. Arizona, Colorado, New Mexico, Sub-basin. This location is located 1714 meters or 5621 feet above sea level and receives 10.5 inches of rain each year. The vegetation at this location is classified as Colorado Plateau Mixed Bedrock Canyon and Tableland as per the Southwest Regional Gap Analysis Program.

The estimated depth to ground water at this point is 56 feet. This estimation is based on the data published on the New Mexico Engineer's iWaters Database website and water depth data from ConocoPhillips' Cathodic wells. Groundwater data available from the NM State Engineer's iWaters Database for wells near the proposed site are attached. The nearest stream is 297 feet to the northeast and is classified by the USGS as an intermittent stream. The nearest perennial stream is 1,350 feet to the northwest. The nearest water body is 1,346 feet to the northwest. It is classified by the USGS as an intermittent lake and is 0.5 acres in size. The nearest spring is 33,447 feet to the west. All stream, river, water body and spring information was determined as per the USGS Hydrographic Dataset (High Resolution), downloaded 3/2008. The nearest water well is 10,811 feet to the southwest. The nearest wetland is a 0.3 acre other located 1,357 feet to the northwest. The slope at this location is 5 degree, to the east as calculated from USGS 30M National Elevation Dataset. This information is also discerned from the aerial and topographic map included. The surface geology at this location is KIRTLAND SHALE AND FRUITLAND FORMATION--Shale, sandstone, and major coal beds with a Siltstone and or mudstone dominated formations of all ages substrate. The soil at this location is 'Snapill very fine sandy loam, 1 to 6 percent slopes' and is well drained' and not hydric with moderate erosion potential as taken from the NRCS SSURGO map unit, downloaded January 2008. The nearest underground mine is 3.3 miles to the northeast as indicated on the Mines, Mills and Quarries Map of New Mexico provided.

Regional Geological context:

The combined Kirtland Shale and Fruitland Formation, of Late Cretaceous age (Baltz, 1967; Fassett and Hinds, 1971), crops out inside the margins of the central San Juan Basin. Topography formed on the unit typically varies from rolling to rough, and badlands are commonly developed. Erosion-resistant sandstones commonly cap isolated buttes and hillocks, whereas softer shale units form slopes and broad valleys or flats. The upper part of Kirtland Shale generally forms steep slopes below mesas or buttes that are capped by the overlying erosion-resistant Ojo Alamo Sandstone.

The Ojo Alamo Sandstone of Tertiary age and the McDermott Member of Animas Formation of Late Cretaceous age unconformably overlie the Kirtland Shale (Baltz, 1967; Fassett and Hinds, 1971; Molenaar, 1977). The Kirtland Shale conformably overlies the Fruitland Formation. The Fruitland Formation conformably overlies the Pictured Cliffs Sandstone, and intertonguing locally occurs at the contact. In general, the combined Kirtland Shale and Fruitland Formation consist of various thicknesses of interbedded and repetitive sequences of non-marine channel sandstone, siltstone, shale, and claystone. Coal beds and carbonaceous shales are common in the Fruitland Formation. The Kirtland Shale does not contain coal and has been divided into three members, which in descending order are the upper shale member, Farmington Sandstone Member, and lower shale member (Bauer, 1916). Thickness of the combined Kirtland Shale and Fruitland Formation ranges from zero on the east side of the basin, because of pre-Ojo Alamo Sandstone erosion, to a maximum of about 2,000 feet in the northwestern part of the basin (Fassett and Hinds, 1971, Molenaar, 1977). Thickness of the Kirtland Shale ranges from zero in the east to about 1,500 feet in the northwest; the upper shale member, Farmington Sandstone

Member, and lower shale member each are as much as 500 feet thick (Fassett and Hinds, 1971; Molenaar, 1977; Stone et al, 1983). The Fruitland Formation ranges in thickness from zero in the east to about 500 feet in the northwest (Fassett and Hinds, 1971) and averages about 300 to 350 feet thick (Molenaar, 1977).

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Hydraulic Properties:

Reported Transmissivity and hydraulic conductivity data for the Kirtland Shale and Fruitland Formation are limited to aquifer tests conducted for five wells. The transmissivity determined from these tests ranges from 0.6 to 130 feet squared per day (Stone et al, 1983). The only hydraulic conductivity calculated from the tests is 0.00001 foot per day.

The reported or measured discharge from 12 water wells completed in the Kirtland Shale and Fruitland Formation ranges from 1 to 12 gallons per minute and the median is 3 gallons per minute. The specific capacity of six of these wells ranges from 0.01 to 0.42 gallon per minute per foot of drawdown and the median is 0.03 gallon per minute per foot of drawdown. These tests are most probably of wells that produce drinking water from the Farmington Sandstone Member of the Kirtland Shale. Recently, there has been extensive exploration for methane gas resources from coal beds in the Fruitland Formation. The current production practice is to complete the well and pump out water to reduce pressure at the coal bed. Because of the poor-quality water and the identification of over-pressured areas in the center of the San Juan Basin at the Colorado-New Mexico State line, a current question among geologists is whether the water is connate (trapped at the time of deposition) or meteoric (originated from recharge on the outcrop). Some gas and water production is thought to be from both the coal in the Fruitland Formation and sandstone in the underlying Pictured Cliffs Sandstone. Water quality analyses for these two units also show more similarity with each other than with analyses from the overlying Ojo Alamo Sandstone or underlying Cliff House Sandstone aquifers.

References:

Baltz, E.H., 1967, Stratigraphy and regional tectonic implications of part of Upper Cretaceous rocks, east-central San Juan Basin, New Mexico: USGS Professional Paper 552, 101 p.
Fassett, J.E., and Hinds, J.S., 1971, Geology and fuel resources of the Fruitland Formation and Kirtland Shale of the San Juan Basin, New Mexico and Colorado: USGS Professional Paper 676, 76 p.
Molenaar, C.M., 1977, Stratigraphy and depositional history of Upper Cretaceous rocks of the San Juan Basin area, New Mexico and Colorado, with a note on Economic resources, in Fassett, J.E., ed., Guidebook of San Juan Basin III: New Mexico Geological Society, 28th Field Conference, p. 159-166.
Stone, W.J., Lyford, F.P., Frenzel, P.F., Mizell, N.H., and Padgett, E.T., 1983, Hydrogeology and water resources of San Juan Basin, New Mexico: New Mexico Bureau of Mines and Mineral Resources, Hydrologic Report 6.

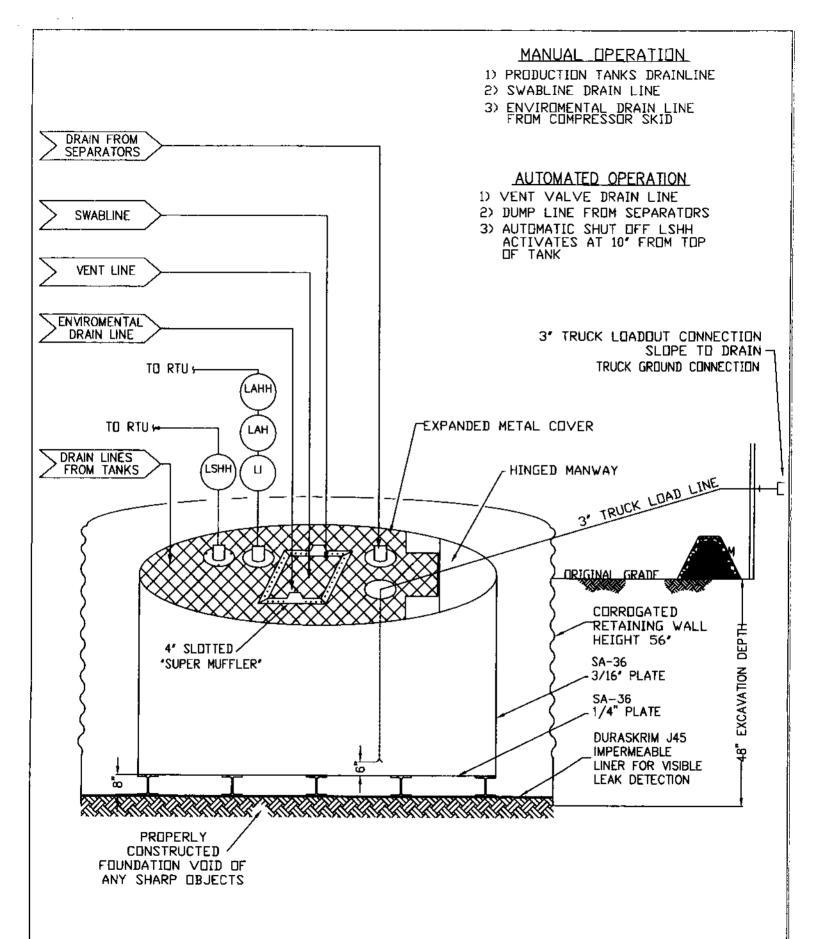
Burlington Resources Oil & Gas Company, LP San Juan Basin Below Grade Tank Design and Construction

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

General Plan:

- BR will design and construct a properly sized and approved BGT which will
 contain liquids and should prevent contamination of fresh water to protect the
 public health and environment.
- BR signage will comply with 19.15.3.103 NMAC when BR is the operator. If BR is not the operator it will comply with 19.15.17.11NMAC. BR includes Emergency Contact information on all signage.
- 3. BR has approval to use alternative fencing that provides better protection. BR constructs fencing around the BGT using 4 foot hog wire fencing topped with two strands of barbed wire, or with a pipe top rail. A six foot chain link fence topped with three strands of barbed wire will be use if the well location is within 1000 feet of permanent residence, school, hospital, institution or church. BR ensures that all gates associated with the fence are closed and locked when responsible personnel are not onsite.
- 4. BR will construct a screened, expanded metal covering, on the top of the BGT.
- 5. BR shall ensure that a below-grade tank is constructed of materials resistant to the below-grade tank's particular contents and resistant to damage from sunlight as shown on design drawing and specification sheet.
- The BR below-grade tank system shall have a properly constructed foundation consisting of a level base free of rocks, debris, sharp edges or irregularities to prevent punctures, cracks or indentations of the liner or tank bottom as shown on design drawing.
- 7. BR shall operate and install the below-grade tank to prevent the collection of surface water run-on. BR has built in shut off devices that do not allow a below-grade tank to overflow. BR constructs berms and corrugated retaining walls at least 6" above ground to keep from surface water run-on entering the below grade tank as shown on the design plan.
- 8. BR will construct and use a below-grade tank that does not have double walls. The below-grade tank's side walls will be open for visual inspection for leaks, the below-grade tank's bottom is elevated a minimum of six inches above the underlying ground surface and the below-grade tank is underlain with a geomembrane liner to divert leaked liquid to a location that can be visually inspected.

- 9. BR has equipped the below-grade tanks with the ability to detect high level in the tank and provide alarm notification and shutdown process streams into the tank. Once high level is detected RTU logic closes the inlet separator sales valve and does not permit vent valve to open. This shutdown of the sales valve and gagging of the vent valves prevents any hydrocarbon process streams from entering the pit tank once a high level is detected. Furthermore, an electronic page is sent to the BR MSO for that well site and to the designated contract "Water-Hauling" Company indicating a high level and that action must be taken to address this alarm. The environmental drain line from BR's compressor skid under normal operating conditions is in the open position. The environmental drain line is in place to capture any collected rain water or spilled lubricants from our compressor skids. The swab drain line is a manually operated drain and by normal operating procedures is in the closed position. The tank drain line is also a manually operated drain and during normal operations it is in the closed position.
- 10. The geomembrane liner consists of a 45-mil flexible LLDPE material manufactured by Raven Industries as J45BB. This product is a four layer reinforced laminated containing no adhesives. The outer layers consist of a high strength polyethylene film manufactured using virgin grade resins and stabilizers for UV resistance in exposed applications. The J45BB is reinforced with 1300 denier (minimum) tri-directional scrim reinforcement. It exceeds ASTMD3083 standard by 10%. J45BB has a warranty for 20 years from Raven Industries and is attached. It is typically used in Brine Pond, Oilfield Pit liner and other industrial applications. The manufacture specific sheet is attached and the design attached displays the proper installation of the liner.
- 11. The general specification for design and construction are attached in the BR document.



ConocoPhillips

San Juan Business Unit

PRODUCED WATER PIT TANK
OPEN TOP GRAVITY FLOW TANK
INTERNALLY COATED WITH
12-14 MILS AMERON AMERCDAT 385

DURA-SKRIM®

130, 136 & 145

PROPERTIES	TEST METHOD	J3	0BB	J36BB		J45BB	
·		Min. Roll Averages	Typical Roil Averages	Min. Roll Averages	Typical Roll Averages	Min. Roll Averages	Typical Roll Averages
Appearance		Black/Black		Black/Black		Black/Black	
Thickness	ASTM D 5199	27 mil	30 mil	32 mil	36 mil	40 mil	45 mil
Weight Lbs Per MSF (oz/yd²)	ASTM D 5261	126 lbs (18.14)	140 lbs (20.16)	151 lbs (21.74)	168 lbs (24.19)	189 lbs (27.21)	210 lbs (30.24)
Construction		**Extr	usion laminated	with encapsula	ted tri-direction	al scrim reinford	ement
Ply Adhesion	ASTM D 413	16 lbs	20 lbs	19 lbs	24 lbs	25 lbs	31 lbs
1" Tensile Strength	ASTM D 7003	88 lbf MD 63 lbf DD	110 lbf MD 79 lbf DD	90 lbf MD 70 lbf DD	113 lbf MD 87 lbf DD	110 lbf MD 84 lbf DD	138 lbf MD 105 lbf DD
1" Tensile Elongation @ Break % (Film Break)	ASTM D 7003	550 MD 550 DD	750 MD 750 DD	550 MD 550 DD	750 MD 750 DD	550 MD 550 DD	750 MD 750 DD
1" Tensile Elongation @ Peak % (Scrim Break)	ASTM D 7003	20 MD 20 DD	33 MD 33 DD	20 MD 20 DD	30 MD 31DD	20 MD 20 DD	36 MD 36 DD
Tongue Tear Strength	ASTM D 5884	75 lbf MD 75 lbf DD	97 lbf MD 90 lbf DD	75 lbf MD 75 lbf DD	104 lbf MD 92 lbf DD	100 lbf MD 100 lbf DD	117 lbf MD 118 lbf DD
Grab Tensile	ASTM D 7004	180 lbf MD 180 lbf DD	218 lbf MD 210 lbf DD	180 lbf MD 180 lbf DD	222 lbf MD 223 lbf DD	220 lbf MD 220 lbf DD	257 lbf MD 258 lbf DD
Trapezoid Tear	ASTM D 4533	120 lbf MD 120 lbf DD	146 lbf MD 141 lbf DD	130 lbf MD 130 lbf DD	189 lbf MD 172 lbf DD	160 lbf MD 160 lbf DD	193 lbf MD 191 lbf DD
* Dimensional Stability	ASTM D 1204	<1	<0.5	<1	<0.5	<1	<0.5
Puncture Resistance	ASTM D 4833	50 lbf	64 lbf	65 lbf	83 lbf	80 lbf	99 lbf
Maximum Use Temperature		180° F					
Minimum Use Temperature		-70° F					

MD = Machine Direction DD = Diagonal Directions



Note: Minimum Roll Averages are set to take into account product variability in addition to testing variability between laboratories.

*Dimensional Stability Maximum Value

**DURA-SKRIM J30BB, J36BB & J45BB are a four layer reinforced laminate containing no adhesives. The outer layers consist of a high strength polyethylene film manufactured using virgin grade resins and stabilizers for UV resistance in exposed applications. DURA-SKRIM J30BB, J36BB & J45BB are reinforced with a 1300 denier (minimum) tri-directional scrim reinforcement.

Note: RAVEN INDUSTRIES MAKES NO WARRANTIES AS TO THE FITNESS FOR A SPECIFIC USE OR MERCHANTABILITY OF PRODUCTS REFERRED TO, no guarantee of satisfactory results from reliance upon contained information or recommendations and disclaims all liability for resulting loss or damage.

PLANT LOCATION

Sioux Falls, South Dakota

SALES OFFICE

P.O. Box 5107

Sioux Falls, \$D 57117-5107 (605) 335-0174 (605) 331-0333 FAX

800-635-3456

RAVEN INDUSTRIES

08/06

RAVEN INDUSTRIES INC. EXPOSED GEOMEMBRANE LIMITED WARRANTY

Raven Industries Inc. warrants Dura-Skrim J30BB, J36BB, and J45BB to be free from manufacturing defects and to be able to withstand normal exposure to sunlight for a period of 20 years from the date of sale for normal use in approved applications in the U.S and Canada, excluding Hawaii. This warranty is effective for products sold and shipped from January 1, 2008 to December 31, 2008. These dates will be updated prior to December 31, 2008.

This Limited Warranty does not include damages or defects in the Raven geomembrane resulting from acts of God, casualty or catastrophe including but not limited to: earthquakes, floods, piercing hail, or tornadoes. The term "normal use" as used herein does not include, among other things improper handling during transportation, unloading, storage or installation, the exposure of Raven geomembranes to harmful chemicals, atypical atmospheric conditions, abuse of Raven geomembranes by machinery, equipment or people; improper site preparation or covering materials, excessive pressures or stresses from any source or improper application or installation. Raven geomembrane material warranty is intended for commercial use only and is not in effect for the consumer as defined in the Magnuson Moss Warranty or any similar federal, state, or local statues. The parties expressly agree that the sale hereunder is for commercial or industrial use only.

Should defects or premature loss of use within the scope of the above Limited Warranty occur, Raven Industries Inc. will, at its option, repair or replace the Raven geomembrane on a pro-rata basis at the then current price in such manner as to charge the Purchaser/User only for that portion of the warranted life which has elapsed since purchase of the material. Raven Industries Inc. will have the right to inspect and determine the cause of any alleged defect in the Raven geomembrane and to take appropriate steps to repair or replace the Raven geomembrane if a defect exists which is covered under this warranty. This Limited Warranty extends only to Raven's geomembrane, and does not extend to the installation service of third parties nor does it extend to materials furnished or installed by others in connection with the intended use of the Raven geomembranes.

Any claim for any alleged breach of this warranty must be made in writing, by certified mail, to the General Manager of Engineered Films Division of Raven Industries Inc. within ten (10) days of becoming aware of the alleged defect. Should the required notice not be given, the defect and all warranties are waived by the Purchaser, and Purchaser shall not have any rights under this warranty. Raven Industries Inc. shall not be obligated to perform repairs or replacements under this warranty unless and until the area to be repaired or replaced is clean, dry, and unencumbered. This includes, but is not limited to, the area made available for repair and/or replacement of Raven geomembrane to be free from all water, dirt, sludge, residuals and liquids of any kind. If after inspection it is determined that there is no claim under this Limited Warranty, Purchaser shall reimburse Raven Industries Inc. for its costs associated with the site inspection.

In the event the exclusive remedy provided herein fails in its essential purpose, and in that event only, the Purchaser shall be entitled to a return of the purchase price for so much of the material as Raven Industries Inc. determines to have violated the warranty provided herein. Raven Industries Inc. shall not be liable for direct, indirect, special, consequential or incidental damages resulting from a breach of this warranty including, but not limited to, damages for loss of production, lost profits, personal injury or property damage. Raven Industries Inc. shall not be obligated to reimburse Purchaser for any repairs, replacement, modifications or alterations made by Purchaser unless Raven Industries Inc. specifically authorized, in writing, said repairs, replacements, modifications or alteration in advance of them having been made. Raven Industry's liability under this warranty shall in no event exceed the replacement cost of the material sold to the Purchaser for the particular installation in which it failed.

Raven Industries Inc. neither assumes nor authorizes any person other than the undersigned of Raven Industries Inc. to assume for it any other or additional liability in connection with the Raven geomembrane made on the basis of the Limited Warranty. The Limited Warranty on the Raven geomembrane herein is given in lieu of all other possible material warranties, either expressed or implied, and by accepting delivery of the material; Purchaser waives all other possible warranties, except those specifically given. This Limited Warranty may only be modified by written document mutually executed by Owner and Raven Industries Inc.

Limited Warranty is extended to the purchaser/owner and is non-transferable and non-assignable; i.e., there are no third-party beneficiaries to this warranty.

Purchaser acknowledges by acceptance that the Limited Warranty given herein is accepted in preference to any and other possible materials warranties.

THIS LIMITED WARRANTY SHALL BE GOVERNED BY SOUTH DAKOTA LAW AND VENUE FOR ALL LEGAL PROCEEDINGS IN CONNECTION WITH THIS LIMITED WARRANTY SHALL BE IN MINNEHAHA COUNTY, SOUTH DAKOTA. RAVEN INDUSTRIES INC. MAKES NO WARRANTY OF ANY KIND OTHER THAN THAT GIVEN ABOVE AND HEREBY DISCLAIMS ALL WARRANTIES, BOTH EXPRESSED OR IMPLIED, OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE. THIS IS THE ONLY WARRANTY THAT APPLIES TO THE MATERIALS REFERRED TO HEREIN AND RAVEN INDUSTRIES INC. DISCLAIMS ANY LIABILITY FOR ANY WARRANTIES GIVEN BY ANY OTHER PERSON OR ENTITY, EITHER WRITTEN OR ORAL.

Burlington Resources Oil & Gas Company, LP San Juan Basin Below Grade Tank Maintenance and Operating Plan

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

General Plan:

- BR will operate and maintain a BGT to contain liquids and solids and maintain
 the integrity of the liner, liner system and secondary containment system to
 prevent contamination of fresh water and protect public health and environment.
 BR will accomplish this by performing an inspection on a monthly basis, installing
 cathodic protection, and automatic overflow shutoff devices as seen on the
 design plan.
- 2. BR will not discharge into or store any hazardous waste in the BGT.
- 3. BR shall operate and install the below-grade tank to prevent the collection of surface water run-on. BR has built in shut off devices that do not allow a belowgrade tank to overflow. BR constructs berms and corrugated retaining walls at least 6" above ground to keep from surface water run-on entering the below grade tank as shown on the design plan.
- 4. As per 19.17.15.12 Subsection D, Paragraph 3, BR will inspect the below-grade tank at least monthly reviewing several items which include 1) containment berms adequate and no oil present, 2) tanks had no visible leaks or sign of corrosion, 3) tank valves, flanges, and hatches had no visible leaks and 4) no evidence of significant spillage of produced liquids. In addition, BR's multi-skilled operators (MSOs) are required to visit each well location once per week. If detected on either inspection, BR shall remove any visible or measurable layer of oil from the fluid surface of a below-grade tank in an effort to prevent significant accumulation of oil overtime. The written record of the monthly inspections will include the items listed above and will be maintained for five years.
- 5. BR shall require and maintain a 10" adequate freeboard to prevent overtopping of the below-grade tank.
- 6. If the below grade tank develops a leak, or if any penetration of the pit liner or below grade tank, occurs below the liquid's surface, then BR shall remove all liquid above the damage or leak line within 48 hours. BR shall notify the appropriate district office. BR shall repair or replace the pit liner or below grade tank, within 48 hours of discovery. If the below grade tank or pit liner does not demonstrate integrity, BR shall promptly remove and install a below grade tank or pit liner that complies with Subsection I of 19.15.17.11 NMAC. BR shall notify the appropriate district office of a discovery of leaks less than 25 barrels as required pursuant to Subsection B of 19.15.3.116 NMAC shall be reported within twenty-four (24) hours of discovery of leaks greater than 25 barrels. In addition, immediate verbal notification pursuant to Subsection B, Paragraph (1), and Subparagraph (d) of 19.15.3.116 NMAC shall be reported to the division's Environmental Bureau Chief.

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

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

General Requirements:

- 1. BR shall close a below-grade tank within the time periods provided in Subsection A of 19.15.17.13 NMAC. This will include a) below-grade tanks that do not meet the requirements of Paragraphs (1) through (4) of Subsection I of 19.15.17.11 NMAC or is not included in Paragraph (5) of Subsection I of 19.15.17.11 NMAC within five years, if not retrofitted to comply with Paragraphs (1) through (4) of Subsection I of 19.15.17.11 NMAC; b) permitted below-grade tanks within 60 days of cessation of the below-grade tank's operation., or c) an earlier date that the division requires because of imminent danger to fresh water, public health or the environment. For any closure, BR will file the C144 Closure Report as required.
- 2. BR shall remove liquids and sludge from a below-grade tank prior to implementing a closure method and shall dispose of the liquids and sludge in a division-approved facility. The facilities to be used will be Basin Disposal (Permit #NM-01-005) and Envirotech Land Farm (Permit #NM-01-011). The liner after being cleaned well (Subsection D, Paragraph 1, Subparagraph (m) of 19.15.9.712 NMAC) will be disposed of at the San Juan County Regional Landfill located on CR 3100.
- 3. BR will receive prior approval to remove the below-grade tank and dispose of it in a division-approved facility or recycle, reuse, or reclaim it in a manner that the appropriate division district office approves. Documentation of how the below-grade tank was disposed of or recycled will be provided in the closure report.
- 4. If there is any on-site equipment associated with a below-grade tank, then BR shall remove the equipment, unless the equipment is required for some other purpose.
- 5. BR shall test the soils beneath the below-grade tank to determine whether a release has occurred. BR shall collect, at a minimum, a five point, composite sample; collect individual grab samples from any area that is wet, discolored or showing other evidence of a release; and analyze for BTEX, TPH and chlorides to demonstrate that the benzene concentration, as determined by EPA SW-846 methods 8021B or 8260B or other EPA method that the division approves, does not exceed 0.2 mg/kg; total BTEX concentration, as determined by EPA SW-846 methods 8021B or 8260B or other EPA method that the division approves, does not exceed 50 mg/kg; the TPH concentration, as determined by EPA method 418.1 or other EPA method that the division approves, does not exceed 100 mg/kg; and the chloride concentration, as determined by EPA method 300.1 or other EPA method that the division approves, does not exceed 250 mg/kg, or the background concentration, whichever is greater. BR shall notify the division of its results on form C-141.
- 6. If BR or the division determines that a release has occurred, then BR shall comply with 19.15.3.116 NMAC and 19.15.1.19 NMAC, as appropriate.

- 7. If the sampling program demonstrates that a release has not occurred or that any release does not exceed the concentrations specified in Paragraph (4) of Subsection E of 19.15.17.13 NMAC, then BR shall backfill the excavation with compacted, non-waste containing, earthen material; construct a division-prescribed soil cover; recontour and re-vegetate the site.
- 8. Notice of Closure will be given prior to closure to the Aztec Division office between 72 hours and one week via email or verbally. The notification of closure will include the following:
 - Operator's name
 - Location by Unit Letter, Section, Township, and Range. Well name and API number.
- 9. The surface owner shall be notified of BR's closing of the below-grade tank prior to closure as per the approved closure plan via certified mail, return receipt requested.
- 10. Re-contouring of location will match fit, shape, line, form and texture of the surrounding. Re-shaping will include drainage control, prevent ponding, and prevent erosion. Natural drainages will be unimpeded and water bars and/or silt traps will be place in areas where needed to prevent erosion on a large scale. Final re-contour shall have a uniform appearance with smooth surface, fitting the natural landscape.
- 11. BR shall seed the disturbed areas the first growing season after the operator closes the pit. 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 jurisdicted lands and division-approved seed mixtures (administratively approved if required) will be utilized on all State or private lands. Vegetative cover will equal 70% of the native perennial vegetative cover (un-impacted) consisting of at least three native plant species, including at least one grass, but not including noxious weeds, and maintain that cover through two successive growing seasons. 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.
- 12. A minimum of four feet of cover shall be achieved and the cover shall include one foot of suitable material to establish vegetation at the site, or the background thickness of topsoil, whichever is greater.
- 13. All closure activities will include proper documentation and be available for review upon request and will be submitted to OCD within 60 days of closure of the belowgrade tank. Closure report will be filed on C-144 and incorporate the following:
 - Soil Backfilling and Cover Installation
 - · Re-vegetation application rates and seeding techniques
 - Photo documentation of the site reclamation
 - Confirmation Sampling Results
 - Proof of closure notice

Burlington Resources /Conoco Phillips BGT REGISTRATION

✓ Signed C-144 (Page 5 of C-144)
✓ Site Specific Hydrogeology
19.15.17.10 NMAC SITTING REQUIREMENTS
 ✓ New Mexico Office of State Engineer attachment ✓ USGS TOPO map ✓ Aerial Map ✓ Mines, Mills and Quarries Map ✓ FIRM map (flood insurance rate map from Federal Emergency Agency)
19.15.17.11 NMAC DESIGN PLAN CONTENTS
19.15.17.12 NMAC OPERATING AND MAINTENCE PLAN
19.15.17.13 NMAC CLOSURE PLAN
✓ Below Grade Tank Closure Plan
REGISTRATION DATE:
10/06/2015
NOTES: